







2020-2021

ROTATING METALCUTTING TOOLS



TaeguTec
Member IMC Group

Contenuti

Filettatura		Contenuti Filettatura ad interpolazione Maschiatura	C2 C11 C55	C	Filettatura
Foratura		Contenuti Utensili per foratura Utensili per alesatura	D2 D15 D212	D	Foratura
Fresatura		Contenuti Corpi fresa Inserti per fresatura	E2 E39 E221	E	Fresatura
Frese integrali		Contenuti MAXI-RUSH Frese integrali	F2 F4 F33	F	Frese Integrali
Mandrini		Contenuti Mandrini Pinze e accessori	G2 G8 G137	G	Mandrini
MPT		Contenuti Attacchi e testine per barenatura Ricambi	H2 H6 H71	H	MPT
Materiali e gradi		Tabella comparazione gradi Tabella conversione durezza Tabella conversione materiali	I2 I8 I10	I	Materiali e gradi
Indice					Indice



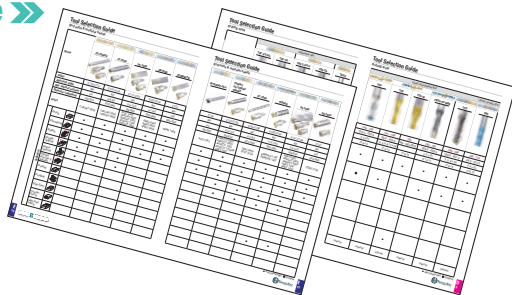
« Argomento principale

Selezionare la linea corrispondente all'applicazione nella tabella principale dei contenuti. Ogni linea è distinguibile con sigla alfabetica e colore



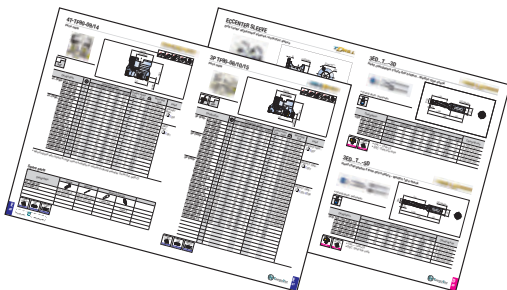
Guida alla scelta dell'utensile »

Scegliere le soluzioni di lavorazione e gli utensili richiesti consultando la "Guida alla scelta dell'utensile".



Pagine prodotti »

Le informazioni sui prodotti come dimensioni, gradi e le parti correlate possono essere acquisite consultando le relative pagine prodotti



Indice alfabetico »

Tutti gli utensili sono elencati nell'indice alfabetico contenuto alla fine del catalogo

ABC

Per ulteriori informazioni, si prega di contattare il centro di assistenza Taegutec più vicino o di visitare il nostro sito internet www.taegutec.com

FILETTATURA



FILETTATURA

INDUSTRY 4.0

Contenuti

Guida alla scelta dell'utensile

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TS-THREAD (Filettatura ad interpolazione)	
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Sistema di codifica inserti	C38
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Guida alle icone



➤ Pagina utensile
TS-THREAD



➤ Pagina inserto



➤ Pagina condizioni di taglio











T-TAP (maschiatura)

Maschi con eliche dritte e imbocco corretto	C56
Maschi con eliche destre e angolo a 40°	C59
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Guida alla scelta dell'utensile

Frese in metallo duro

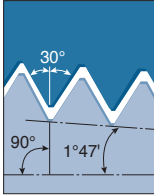
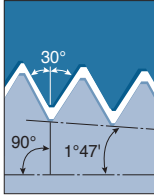
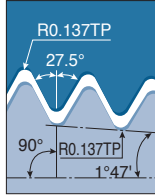
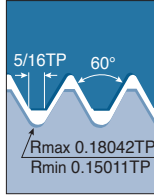
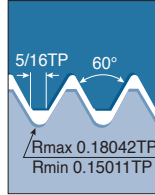
Filetto	TS-THREAD		
	Metrico ISO	Americano UN	Whitworth
Applicazione	Uso generale in tutti i tipi di industria	Uso generale in tutti i tipi di industria	Uso generale in tutti i tipi di industria. Giunti e raccordi per tubi
MTEC  Tipo generale	● C15	● C21	● C25
MTECB  Refrigerazione assiale	● C13	● C20	● C25
MTECZ  Refrigerazione radiale	● C14	● C22	● C25
MTECS  Tagliante corto	● C17-C18	● C23	
MTECSH  Tagliante corto per acciaio temprati	● C19	● C24	
MTECQ  Scaricata per elevate profondità	● C16		
MTECI  Profilo parziale	● C29	● C29	
MTEC E  Filettatura Esterna	● C16	● C22	

• Per una corretta scelta degli utensili e della programmazione CNC utilizzare il software "TS-thread guide" (Disponibile sul sito www.taegutec.com)

Guida alla scelta dell'utensile

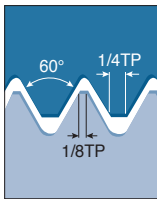
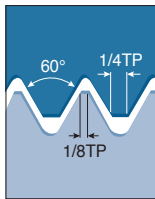
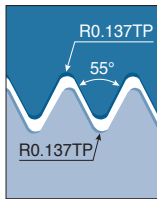
Frese in metallo duro

TS-THREAD

NPT	NPTF	BSPT	UNJ	MJ
				
Tubi idraulici, vapore e gas	Tubi idraulici, vapore e gas. Sigillo a secco	Filetto a 55° per tubi idraulici, vapore e gas	Industria aeronautica e aerospaziale	Industria aeronautica e aerospaziale
● C26	● C26	● C27		
● C26		● C27		
	● C26	● C27		
			● C28	● C28

Guida alla scelta dell'utensile

Frese ad inserto

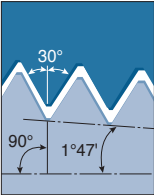
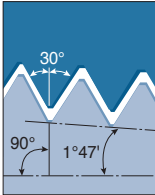
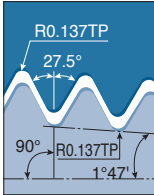
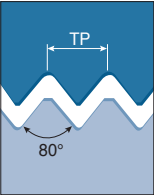
Filetto	TS-THREAD		
	Metrico ISO	Americano UN	Whitworth
			
Pagina inserti	C39, C47	C40, C41, C48	C42, C49
Applicazione	Uso generale in tutti i tipi di industria	Uso generale in tutti i tipi di industria	Uso generale in tutti i tipi di industria. Giunti e raccordi per tubi
MTE D C31 Inserto singolo	•	•	•
MTE D-C C32 Gambo in metallo duro	•	•	•
MTE D-W C33 Inserto doppio	•	•	•
TMTSRH C34 Fresa elicoidale cilindrica	•	•	•
MTF D C35 Filetto di grandi dimensioni	•	•	•
MTFLE D C36 Filetto esterno multidente	•	•	•
TMTSRH C37 Fresa elicoidale a manicotto	•	•	•

• Per una corretta scelta degli utensili e della programmazione CNC utilizzare il software "TS-thread guide" (Disponibile sul sito www.taegutec.com)

Guida alla scelta dell'utensile



Frese ad inserto

TS-THREAD

NPT	NPTF	BSPT	PG
			
C43, C49	C44	C45, C50	C46
Tubi idraulici, vapore e gas	Tubi idraulici, vapore e gas. Sigillo a secco	Filetto a 55° per tubi idraulici, vapore e gas	Connettori elettrici
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•

Guida alla scelta dell'utensile



Maschi

Serie		T-TAP		
		Elica dritta e imbocco corretto		
		TPH...52B	TPH...52B05	TPH...52B10
Pagina		C56	C57	C58
Rivestimento		Non rivestito	Vaporizzato	Rivestito TiN
Imbocco		Forma B 4-5 filetti	Forma B 4-5 filetti	Forma B 4-5 filetti
Gamma (ISO metrico)	Passo grosso	M2 - M20	M2 - M20	M2 - M20
	Passo fine	M8 - M16	M8 - M16	M8 - M16
Tolleranza		ISO 2-6H	ISO 2-6H	ISO 2-6H
Materiale	P	○	●	●
	M		●	●
	K	○	○	○
	N	●	○	○
	S			○
Applicazione	Foro passante  (2xTDZ) (3xTDZ)	●	●	●
	Foro cieco  (2xTDZ) (3xTDZ)			

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile

Maschi

Serie		T-TAP		
		Elica destra con angolo a 40°		
		TPH...54C	TPH...54C05	TPH...54C10
Pagina		C59	C60	C61
Rivestimento		Non rivestito	Vaporizzato	Rivestito TiN
Imbocco		Forma C 2-3 filetti	Forma C 2-3 filetti	Forma C 2-3 filetti
Gamma (ISO metrico)	Passo grosso	M2 - M20	M2 - M20	M2 - M20
	Passo fine	M8 - M16	M8 - M16	M8 - M16
Tolleranza		ISO 2-6H	ISO 2-6H	ISO 2-6H
Materiale	P	○	●	●
	M		●	●
	K	○	○	○
	N	●	○	○
	S			○
Applicazione	Foro passante  (2xTDZ) (3xTDZ)			
	Foro cieco  (2xTDZ) (3xTDZ)	●	●	●

● Raccomandata, ○ Adatta

Gradi

Filettatura

Gradi	ISO	Caratteristiche e applicazioni									
TT9030 Rivestito PVD	<table border="1"><tr><td>P20</td><td>—</td><td>P40</td></tr><tr><td>M20</td><td>—</td><td>M40</td></tr><tr><td>S20</td><td>—</td><td>S40</td></tr></table>	P20	—	P40	M20	—	M40	S20	—	S40	<ul style="list-style-type: none">• Lavorazione generale di acciaio• Lavorazione generale di acciaio inossidabile• Lavorazione generale di superleghe
P20	—	P40									
M20	—	M40									
S20	—	S40									

TS-THREAD

Filettatura ad interpolazione



MTEC **06** **04** **C** **14** **1.0** **ISO** **TT9030**
 1 2 3 4 5 6 7 8 9

1 Tipo di fresa

MT - Mill thread (fresa filetto)
E - End mill (cilindrica)
C - Carbide (metallo duro)

2 Caratteristiche fresa

B - Refrigerazione assiale
Z - Refrigerazione radiale
S - Tagliente corto
SH - Tagliente corto per acciaio temprato
Q - Scaricata per elevate profondità
I - Profilo parziale

3 Diametro gambo

06 6.0 mm
10 10.0 mm

4 Diametro fresa

031 3.1 mm
04 4.0 mm

5 No. di taglienti

C - 3 taglienti
D - 4 taglienti
E - 5 taglienti
F - 6 taglienti

6 Lungh. di taglio (APMX)

10 10.0 mm

7 Passo

0.25 - 4.0 mm (Passo del filetto)
72-7 TPI (Filetti per pollice)

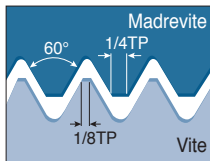
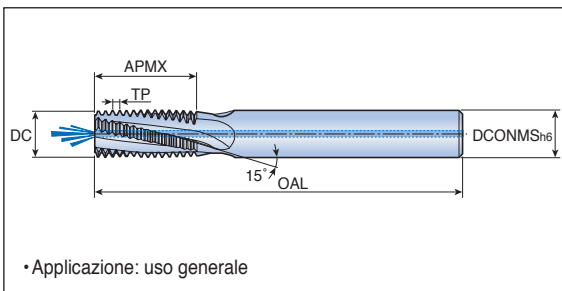
8 Standard filetto

ISO
UN
W
NPT
NPTF
BSPT
UNJ
MJ

9 Grado

Rivestito
TT9030
TT1040

Fresa per filettatura ad interpolazione con refrigerazione assiale



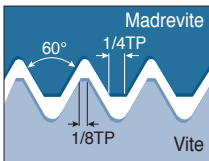
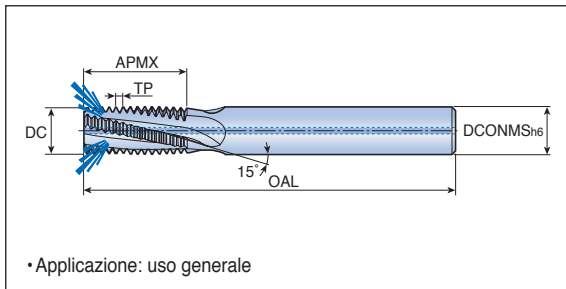
Descrizione	TP (mm)	M grosso	M fine	Dimensioni (mm)				NOF	Grado TT9030
				DC ONMS	DC	APMX	OAL		
MTECB 06038C10 0.5 ISO	0.5	-	$\text{Ø} \geq 5$	6	3.8	10.3	58	3	●
06031C7 0.7 ISO	0.7	M4	$\text{Ø} \geq 5$	6	3.1	7.4	58	3	●
06045C10 0.75 ISO	0.75	-	$\text{Ø} \geq 6$	6	4.5	10.1	58	3	●
06038C9 0.8 ISO	0.8	M5	$\text{Ø} \geq 6$	6	3.8	9.2	58	3	●
06046C10 1.0 ISO	1.0	M6	$\text{Ø} \geq 7$	6	4.6	10.5	58	3	●
06046C14 1.0 ISO	1.0	M6	$\text{Ø} \geq 7$	6	4.6	14.5	58	3	●
0606C12 1.0 ISO	1.0	-	$\text{Ø} \geq 9$	6	6.0	12.5	58	3	●
0808D16 1.0 ISO	1.0	-	$\text{Ø} \geq 10$	8	8.0	16.5	64	4	●
1010D24 1.0 ISO	1.0	-	$\text{Ø} \geq 12$	10	10.0	24.5	73	4	●
0606C14 1.25 ISO	1.25	M8	$\text{Ø} \geq 10$	6	6.0	14.4	58	3	●
0606C19 1.25 ISO	1.25	M8	$\text{Ø} \geq 10$	6	6.0	19.4	58	3	●
08078C17 1.5 ISO	1.5	M10	$\text{Ø} \geq 12$	8	7.8	17.0	64	3	●
08078C24 1.5 ISO	1.5	M10	$\text{Ø} \geq 12$	8	7.8	24.8	64	3	●
1010D21 1.5 ISO	1.5	-	$\text{Ø} \geq 14$	10	10.0	21.8	73	4	●
1212D26 1.5 ISO	1.5	-	$\text{Ø} \geq 16$	12	12.0	26.3	84	4	●
1616F33 1.5 ISO	1.5	-	$\text{Ø} \geq 20$	16	16.0	33.8	105	6	●
1009C20 1.75 ISO	1.75	M12	$\text{Ø} \geq 12$	10	9.0	20.1	73	3	●
1009C28 1.75 ISO	1.75	M12	$\text{Ø} \geq 12$	10	9.0	28.9	73	3	●
1010C27 2.0 ISO	2.0	M14	$\text{Ø} \geq 15$	10	10.0	27.0	73	3	●
12118D27 2.0 ISO	2.0	M16	$\text{Ø} \geq 17$	12	11.8	27.0	84	4	●
12118D39 2.0 ISO	2.0	M16	$\text{Ø} \geq 17$	12	11.8	39.0	105	4	●
1615E33 2.5 ISO	2.5	M20	$\text{Ø} \geq 22$	16	15.0	33.8	105	5	●
1615E48 2.5 ISO	2.5	M20	$\text{Ø} \geq 22$	16	15.0	48.8	105	5	●
2018D58 3.0 ISO	3.0	M24	$\text{Ø} \geq 25$	20	18.0	58.5	120	4	●



• NOF: numero di taglianti

●: Standard

Fresa per filettatura ad interpolazione con refrigerazione radiale

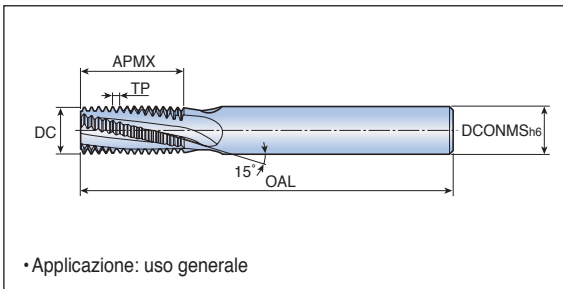
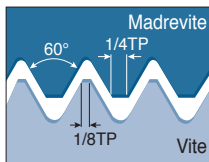


Descrizione	TP (mm)	M grosso	M fine	Dimensioni (mm)				NOF	Grado TT9030
				DCONMS	DC	APMX	OAL		
MTECZ 0606C14 1.25 ISO	1.25	M8	$\varnothing \geq 10$	6	6.0	14.4	58	3	●
0606C19 1.25 ISO	1.25	M8	$\varnothing \geq 10$	6	6.0	19.4	58	3	●
08078C17 1.5 ISO	1.5	M10	$\varnothing \geq 12$	8	7.8	17.0	64	3	●
1010D21 1.5 ISO	1.5	-	$\varnothing \geq 14$	10	10.0	21.8	73	4	●
1212D26 1.5 ISO	1.5	-	$\varnothing \geq 16$	12	12.0	26.3	84	4	●
1616E33 1.5 ISO	1.5	-	$\varnothing \geq 20$	16	16.0	33.8	101	5	●
1009C28 1.75 ISO	1.75	M12	$\varnothing \geq 12$	10	9.0	28.9	73	3	●
1010C27 2.0 ISO	2.0	M14	$\varnothing \geq 15$	10	10.0	27.0	73	3	●
12118D27 2.0 ISO	2.0	M16	$\varnothing \geq 17$	12	11.8	27.0	84	4	●

Condizioni di taglio
C52-C53

• NOF: numero di taglienti ●: Standard

Fresa per filettatura ad interpolazione



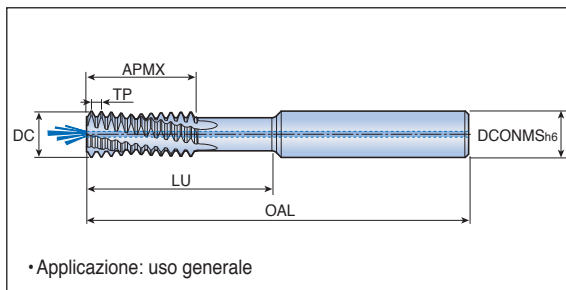
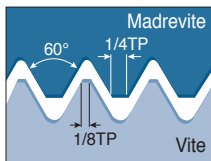
Descrizione	TP (mm)	M grosso	M fine	Dimensioni (mm)				NOF	Grado TT9030
				DCONMS	DC	APMX	OAL		
MTEC 06022C5 0.5 ISO	0.5	M3	$\varnothing \geq 4$	6	2.2	5.3	58	3	●
06038C10 0.5 ISO	0.5	-	$\varnothing \geq 5$	6	3.8	10.4	58	3	●
06031C7 0.7 ISO	0.7	M4	$\varnothing \geq 5$	6	3.1	7.4	58	3	●
06045C10 0.75 ISO	0.75	-	$\varnothing \geq 6$	6	4.5	10.1	58	3	●
06036C9 0.8 ISO	0.8	M5	$\varnothing \geq 6$	6	3.6	9.2	58	3	●
0604C10 1.0 ISO	1.0	M6	$\varnothing \geq 7$	6	4.0	10.5	58	3	●
0604C14 1.0 ISO	1.0	M6	$\varnothing \geq 7$	6	4.0	14.5	58	3	●
0606C12 1.0 ISO	1.0	-	$\varnothing \geq 9$	6	6.0	12.5	58	3	●
0808D16 1.0 ISO	1.0	-	$\varnothing \geq 10$	8	8.0	16.5	64	4	●
0605C14 1.25 ISO	1.25	M8	$\varnothing \geq 10$	6	5.0	14.4	58	3	●
0605C19 1.25 ISO	1.25	M8	$\varnothing \geq 10$	6	5.0	19.4	58	3	●
0807C17 1.5 ISO	1.5	M10	$\varnothing \geq 12$	8	7.0	17.3	64	3	●
0807C24 1.5 ISO	1.5	M10	$\varnothing \geq 12$	8	7.0	24.8	76	3	●
1010D21 1.5 ISO	1.5	-	$\varnothing \geq 14$	10	10.0	21.8	73	4	●
1616F33 1.5 ISO	1.5	-	$\varnothing \geq 20$	16	16.0	33.8	105	6	●
0808C20 1.75 ISO	1.75	M12	$\varnothing \geq 14$	8	8.0	20.1	64	3	●
0808C28 1.75 ISO	1.75	M12	$\varnothing \geq 14$	8	8.0	28.9	76	3	●
1010C27 2.0 ISO	2.0	M16	$\varnothing \geq 17$	10	10.0	27.0	73	3	●
1010C39 2.0 ISO	2.0	M16	$\varnothing \geq 17$	10	10.0	39.0	105	3	●
1212D27 2.0 ISO	2.0	-	$\varnothing \geq 18$	12	12.0	27.0	84	4	●
2020F41 2.0 ISO	2.0	-	$\varnothing \geq 26$	20	20.0	41.0	105	6	●
1414D33 2.5 ISO	2.5	M20	$\varnothing \geq 22$	14	14.0	33.8	84	4	●
1414D48 2.5 ISO	2.5	M20	$\varnothing \geq 22$	14	14.0	48.8	105	4	●
1616C40 3.0 ISO	3.0	M24	$\varnothing \geq 25$	16	16.0	40.5	105	3	●
1616C58 3.0 ISO	3.0	M24	$\varnothing \geq 25$	16	16.0	58.5	120	3	●



• NOF: numero di taglianti

●: Standard

Fresa per filettatura ad interpolazione scaricate per elevate profondità



Descrizione	TP (mm)	TDZ	Dimensioni (mm)					NOF	Grado TT9030
			DCONMS	DC	APMX	LU	OAL		
MTECQ 1010D32 1.0 ISO	1.0	$\varnothing \geq 12$	10	10.0	18.0	32.0	73	4	●
1212D38 1.0 ISO	1.0	$\varnothing \geq 14$	12	12.0	21.0	38.0	84	4	●
1010D30 1.5 ISO	1.5	$\varnothing \geq 13$	10	10.0	18.0	30.0	73	4	●
2020F56 2.0 ISO	2.0	$\varnothing \geq 24$	20	20.0	34.0	56.0	105	6	●

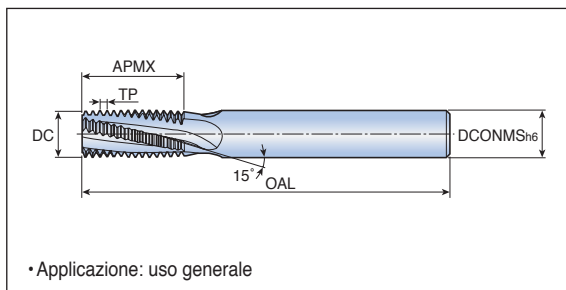
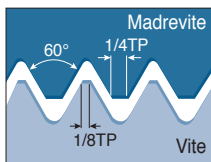


- TDZ: diametro del filetto
- NOF: numero di taglienti

●: Standard

MTEC E-ISO

Fresa per filettatura ad interpolazione esterna



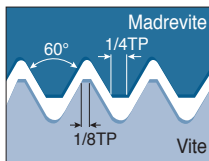
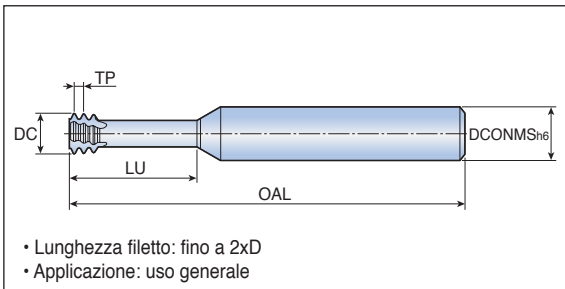
Descrizione	TP (mm)	Dimensioni (mm)				NOF	Grado TT9030
		DCONMS	DC	APMX	OAL		
MTEC E 1010D16 1.0 ISO	1.0	10	10.0	16.5	73	4	●
1010D16 1.25 ISO	1.25	10	10.0	16.9	73	4	●
1010D15 1.5 ISO	1.5	10	10.0	15.8	73	4	●
1212D20 1.5 ISO	1.5	12	12.0	20.3	84	4	●
1212D21 2.0 ISO	2.0	12	12.0	21.0	84	4	●



- NOF: numero di taglienti

●: Standard

Fresa per filettatura ad interpolazione con tagliente corto

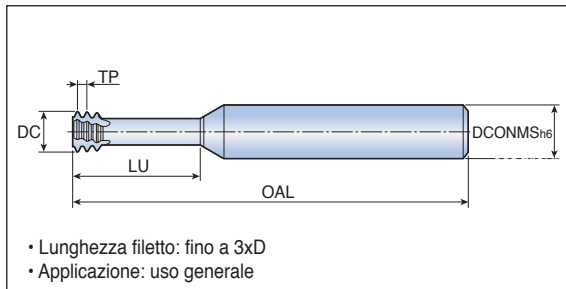
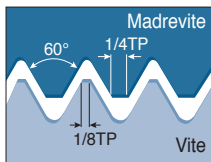


Descrizione	TP (mm)	TDZ	Dimensioni (mm)				NOF	Grado TT9030
			DCONMS	DC	LU	OAL		
MTECS 06016C4 0.4 ISO	0.40	M2	6	1.55	4.5	58	3	•
06017C5 0.45 ISO	0.45	M2.2	6	1.65	5.0	58	3	•
0602C5 0.45 ISO	0.45	M2.5	6	1.95	5.5	58	3	•
06024C6 0.5 ISO	0.50	M3	6	2.35	6.5	58	3	•
06028C7 0.6 ISO	0.60	M3.5	6	2.75	7.5	58	3	•
06031C9 0.7 ISO	0.70	M4	6	3.10	9.0	58	3	•
06038C12 0.8 ISO	0.80	M5	6	3.80	12.5	58	3	•
06047C14 1.0 ISO	1.00	M6	6	4.65	14.0	58	3	•
0606C18 1.25 ISO	1.25	M8	6	5.95	18.0	58	3	•
0808D25 0.75 ISO	0.75	M10	8	8.00	25.0	64	4	•
08078C23 1.5 ISO	1.50	M10	8	7.80	23.0	64	3	•
1009C26 1.75 ISO	1.75	M12	10	9.00	26.0	73	3	•
12118D35 2.0 ISO	2.00	M16	12	11.80	35.0	84	4	•
1615E43 2.5 ISO	2.50	M20	16	15.00	43.0	105	5	•



- TDZ: diametro del filetto
- NOF: numero di taglienti
- Standard

Fresa per filettatura ad interpolazione con tagliente corto



Descrizione	TP (mm)	TDZ	Dimensioni (mm)				NOF	Grado TT9030
			DCONMS	DC	LU	OAL		
MTECS 03007C2 0.25 ISO	0.25	M1.0	3	0.72	2.5	39	3	●
03009C3 0.25 ISO	0.25	M1.2	3	0.90	3.0	39	3	●
03011C4 0.3 ISO⁽¹⁾	0.30	M1.4	3	1.05	4.0	39	3	●
03012C5 0.35 ISO⁽¹⁾	0.35	M1.6	3	1.20	5.0	39	3	●
03016C6 0.4 ISO⁽¹⁾	0.40	M2	3	1.55	6.0	39	3	●
0602C7 0.45 ISO	0.45	M2.5	6	1.95	7.5	58	3	●
06024C9 0.5 ISO	0.50	M3	6	2.35	9.5	58	3	●
06028C10 0.6 ISO	0.60	M3.5	6	2.75	10.5	58	3	●
06031C12 0.7 ISO	0.70	M4	6	3.10	12.5	58	3	●
06038C16 0.8 ISO	0.80	M5	6	3.80	16.0	58	3	●
06047C20 1.0 ISO	1.00	M6	6	4.65	20.0	58	3	●
0606C24 1.25 ISO	1.25	M8	6	5.95	24.0	58	3	●

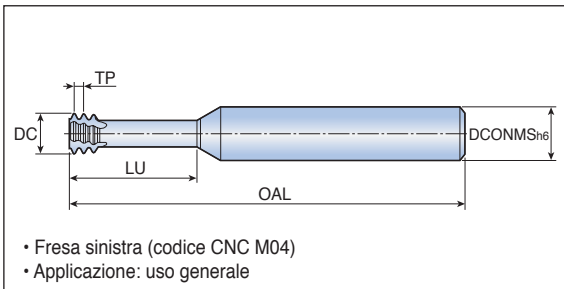
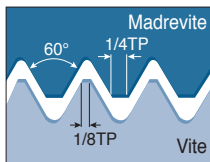


- TDZ: diametro del filetto
- NOF: numero di taglienti
- ⁽¹⁾ Appositamente studiata per la produzione di impianti dentali

●: Standard

MTECSH-ISO

Fresa per filettatura ad interpolazione con tagliente corto per acciaio temprato



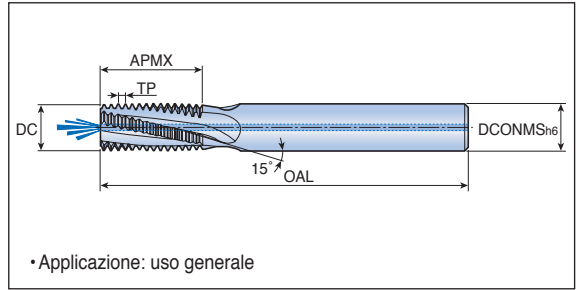
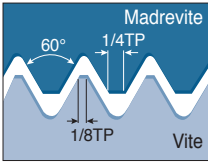
Descrizione	TP (mm)	TDZ	Dimensioni (mm)				NOF	Grado TT9030
			DCONMS	DC	LU	OAL		
MTECSH 03011C4 0.3 ISO	0.30	M1.4	3	1.05	4.0	39	3	●
03012C5 0.35 ISO	0.35	M1.6	3	1.20	4.8	39	3	●
03016C6 0.4 ISO	0.40	M2	3	1.55	6.0	58	3	●
06016C4 0.4 ISO	0.40	M2	6	1.55	4.5	58	3	●
06017C5 0.45 ISO	0.45	M2.2	6	1.65	5.0	58	3	●
0602C5 0.45 ISO	0.45	M2.5	6	1.95	5.5	58	3	●
0602C7 0.45 ISO	0.45	M2.5	6	1.95	7.5	58	3	●
06024C6 0.5 ISO	0.50	M3	6	2.35	6.5	58	3	●
06024C9 0.5 ISO	0.50	M3	6	2.35	9.5	58	3	●
06028C7 0.6 ISO	0.60	M3.5	6	2.75	7.5	58	3	●
06031C9 0.7 ISO	0.70	M4	6	3.10	9.0	58	3	●
06031C12 0.7 ISO	0.70	M4	6	3.10	12.5	58	3	●
06038C12 0.8 ISO	0.80	M5	6	3.80	12.5	58	3	●
06038C16 0.8 ISO	0.80	M5	6	3.80	16.0	58	3	●
06047C14 1.0 ISO	1.00	M6	6	4.65	14.0	58	3	●
06047C20 1.0 ISO	1.00	M6	6	4.65	20.0	58	3	●
0606C18 1.25 ISO	1.25	M8	6	5.95	18.0	58	3	●
0606C24 1.25 ISO	1.25	M8	6	5.95	24.0	58	3	●
08078C23 1.5 ISO	1.50	M10	8	7.80	23.0	64	3	●
1009C26 1.75 ISO	1.75	M12	10	9.00	26.0	73	3	●
12118D35 2.0 ISO	2.00	M16	12	11.80	35.0	84	4	●



- TDZ: diametro del filetto
- NOF: numero di taglienti

●: Standard

Fresa per filettatura ad interpolazione con refrigerazione assiale



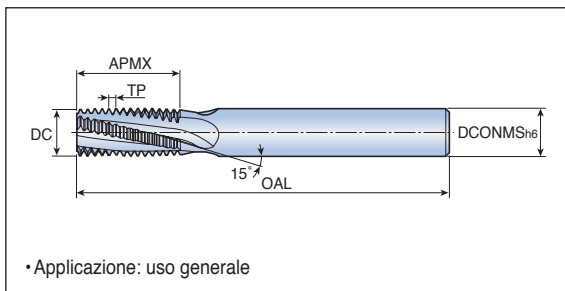
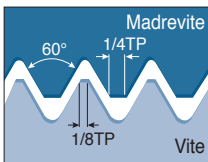
Descrizione	TPI	UNC	UNF	UNEF	Dimensioni (mm)				NOF	Grado TT9030
					DCONMS	DC	APMX	OAL		
MTECB 06032C6 32 UN	32	8	10	12	6	3.2	6.8	58	3	●
0605C11 28 UN	28	-	1/4	-	6	5.0	11.3	58	3	●
08066C14 24 UN	24	-	5/16	-	8	6.6	14.3	64	3	●
0808D21 24 UN	24	-	3/8	9/16-5/8	8	8.0	20.6	64	4	●
0808C21 20 UN	20	-	7/16	-	8	8.0	21.0	64	3	●
1010D22 20 UN	20	-	1/2	-	10	10.0	22.3	73	4	●
06056C14 18 UN	18	5/16	-	-	6	5.6	14.8	58	3	●
12113D26 18 UN	18	-	9/16-5/8	1 1/8-15/8	12	11.3	26.1	84	4	●
08067C16 16 UN	16	3/8	-	-	8	6.7	16.7	64	3	●
10092C22 13 UN	13	1/2	-	-	10	9.2	22.5	73	3	●
12114C28 11 UN	11	5/8	-	-	12	11.4	28.9	84	3	●
16144D34 10 UN	10	3/4	-	-	16	14.4	34.3	105	4	●
20195D42 8 UN	8	1	-	-	20	19.5	42.9	105	4	●



• NOF: numero di taglienti

●: Standard

Fresa per filettatura ad interpolazione



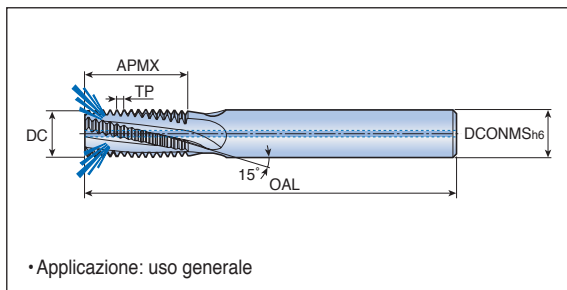
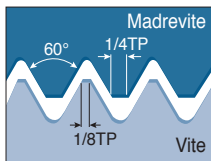
	Descrizione	TPI	UNC	UNF	UNEF	Dimensioni (mm)				NOF	Grado TT9030
						DCONMS	DC	APMX	OAL		
MTEC	06032C6 32 UN	32	8	10	12	6	3.2	6.8	58	3	●
	0604C11 28 UN	28	-	1/4	-	6	4.0	11.3	58	3	●
	0605C14 24 UN	24	-	5/16	-	6	5.0	14.8	58	3	●
	0807C21 24 UN	24	-	3/8	9/16-5/8	8	7.0	20.0	64	3	●
	06045C12 20 UN	20	1/4	-	-	6	4.5	12.1	58	3	●
	0807C21 20 UN	20	-	7/16-1/2	-	8	7.0	20.0	64	3	●
	1212E27 20 UN	20	-	-	3/4-1	12	12.0	27.3	84	5	●
	0605C14 18 UN	18	5/16	-	-	6	5.0	14.8	58	3	●
	1010D26 18 UN	18	-	9/16-5/8	11/8-15/8	10	10.0	26.1	73	4	●
	0606C16 16 UN	16	3/8	-	-	6	6.0	16.7	58	3	●
	1212D31 16 UN	16	-	3/4	-	12	12.0	30.0	84	4	●
	1615E37 14 UN	14	-	7/8	-	16	15.0	37.2	105	5	●
	0808C22 13 UN	13	1/2	-	-	8	8.0	22.5	64	3	●
	1010C26 12 UN	12	9/16	-	-	10	10.0	26.5	73	3	●
	1616E41 12 UN	12	-	1 -1 1/2	-	16	16.0	41.3	105	5	●
	1010C28 11 UN	11	5/8	-	-	10	10.0	28.9	73	3	●
	1212C34 10 UN	10	3/4	-	-	12	12.0	34.3	84	3	●
	1616C42 8 UN	8	1	-	-	16	16.0	42.9	105	3	●



• NOF: numero di taglianti

●: Standard

Fresa per filettatura ad interpolazione con refrigerazione radiale



Descrizione	TPI	UNC	UNF	UNEF	Dimensioni (mm)				NOF	Grado TT9030
					DCONMS	DC	APMX	OAL		
MTECZ 1010D22 20 UN	20	-	1/2	-	10	10.0	22.3	73	4	●
12113D26 18 UN	18	-	9/16-5/8	11/8-15/8	12	11.3	26.1	84	4	●
08067C16 16 UN	16	3/8	-	-	8	6.7	16.7	64	3	●
10092C22 13 UN	13	1/2	-	-	10	9.2	22.5	73	3	●

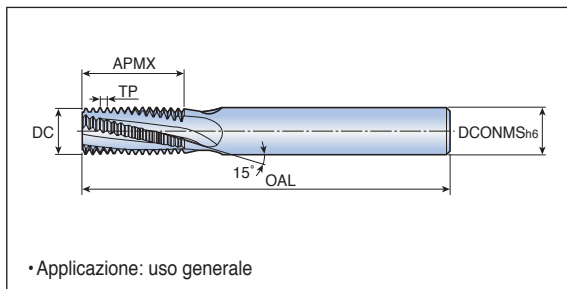
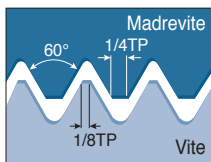


• NOF: numero di taglienti

●: Standard

MTEC E-UN

Fresa per filettatura ad interpolazione esterna



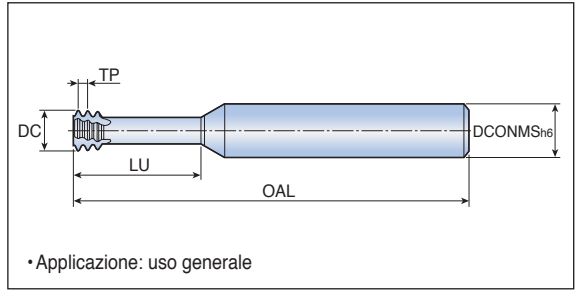
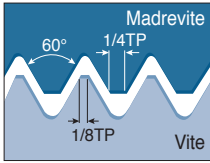
Descrizione	TPI	Dimensioni (mm)				NOF	Grado TT9030
		DCONMS	DC	APMX	OAL		
MTEC E 1010D16 24 UN	24	10	10.0	16.4	73	4	●



• NOF: numero di taglienti

●: Standard

Fresa per filettatura ad interpolazione con tagliente corto



Descrizione	TPI	UNC	UNF	Dimensioni (mm)				NOF	Grado TT9030
				DCONMS	DC	LU	OAL		
MTECS 06019C5 48 UN	48	3	4	6	1.90	5.2	58	3	●
06021C6 40 UN	40	4	-	6	2.10	6.3	58	3	●
06033C9 36 UN	36	-	8	6	3.30	9.0	58	3	●
06025C7 32 UN	32	6	-	6	2.55	7.1	58	3	●
06032C9 32 UN	32	8	-	6	3.20	9.5	58	3	●
06037C10 32 UN	32	-	10	6	3.70	10.5	58	3	●
0605C14 28 UN	28	-	1/4	6	5.00	14.5	58	3	●
08066C17 24 UN	24	-	5/16, 3/8	8	6.60	17.0	58	3	●
06047C14 20 UN	20	1/4	-	6	4.75	14.0	58	3	●
0606C17 18 UN	18	5/16	-	6	6.00	17.0	58	3	●
1212D35 18 UN	18	-	5/8	12	12.00	35.0	84	4	●
08067C22 16 UN	16	3/8	-	8	6.70	22.0	64	3	●
10092C27 13 UN	13	1/2	-	10	9.20	27.5	73	3	●
12114C34 11 UN	11	5/8	-	12	11.40	34.5	84	3	●
06032C12 32 UN	32	8	-	6	3.20	12.5	58	3	●
06025C10 32 UN	32	6	-	6	2.55	10.5	58	3	●
0605C19 28 UN	28	-	1/4	6	5.00	19.0	58	3	●
06047C19 20 UN	20	1/4	-	6	4.75	19.0	58	3	●
0606C23 18 UN	18	5/16	-	6	6.00	23.0	58	3	●



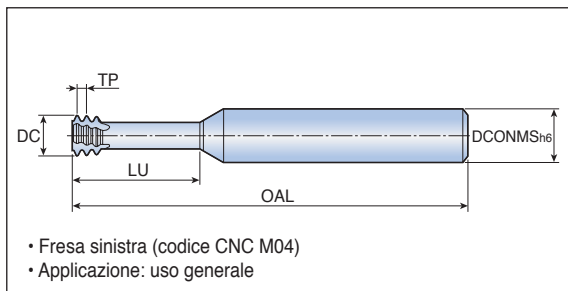
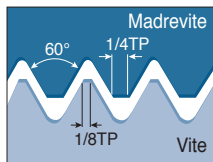
• NOF: numero di taglienti

●: Standard

MTECSH-UN



Fresa per filettatura ad interpolazione con tagliente corto per acciaio temprato



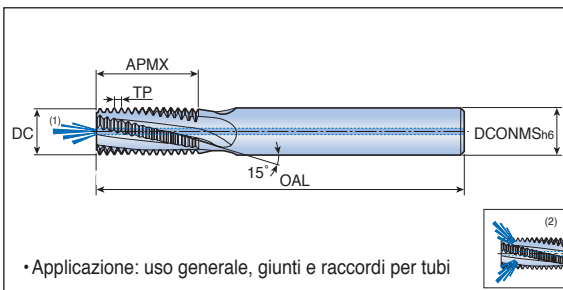
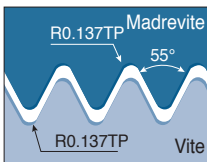
Descrizione	TPI	UNC	UNF	Dimensioni (mm)				NOF	Grado TT9030
				DCONMS	DC	LU	OAL		
MTECSH 06019C5 48 UN	48	3	4	6	1.90	5.2	58	3	●
06021C6 40 UN	40	4	-	6	2.10	6.3	58	3	●
06037C10 32 UN	32	-	10	6	3.70	10.5	58	3	●
0605C14 28 UN	28	-	1/4	6	5.00	14.5	58	3	●
06035C10 24 UN	24	10,12	-	6	3.50	10.6	58	3	●
08066C17 24 UN	24	-	5/16	8	6.60	17.0	64	3	●
0808C25 20 UN	20	-	7/16	8	8.00	25.0	64	3	●
08067C22 16 UN	16	3/8	-	8	6.70	22.0	64	3	●
10092C27 13 UN	13	1/2	-	10	9.20	27.5	73	3	●
06037C15 32 UN	32	-	10	6	3.70	15.0	58	3	●
0605C19 28 UN	28	-	1/4	6	5.00	19.0	58	3	●
08066C24 24 UN	24	-	5/16	8	6.60	24.0	64	3	●
06047C19 20 UN	20	1/4	-	6	4.75	19.0	58	3	●
0606C23 18 UN	18	5/16	-	6	6.00	23.0	58	3	●

Condizioni di taglio
 C54

• NOF: numero di taglienti ●: Standard

MTECB-W / MTECZ-W / MTEC-W

Fresa per filettatura ad interpolazione con e senza refrigerazione assiale e radiale



Descrizione	TPI	TDZ	Dimensioni (mm)				NOF	Grado TT9030	
			DCONMS	DC	APMX	OAL			
MTECB	08078C14 28 W	28	G1/8	8	7.8	14.1	64	3	●
	1010D16 19 W	19	G1/4-3/8	10	10.0	16.7	73	4	●
	1616E26 14 W	14	G1/2-7/8	16	16.0	26.3	105	5	●
	1616D38 11 W	11	G ≥ 1	16	16.0	38.1	105	4	●
	2020E47 11 W	11	G ≥ 1	20	20.0	47.3	105	5	●
MTECZ	08078C14 28 W	28	G1/8	8	7.8	14.1	64	3	●
	1010D16 19 W	19	G1/4-3/8	10	10.0	16.7	73	4	●
	10086D24 12 W	12	-	10	8.6	24.4	73	4	●
	12109D28 11 W	11	-	12	10.9	28.9	84	4	●
	1616D38 11 W	11	G	16	16.0	38.1	101	4	●
	1616E26 14 W	14	G1/2-7/8	16	16.0	26.3	101	5	●
MTEC	0606C9 28 W	28	G1/8	6	6.0	9.5	58	3	●
	0808C14 19 W	19	G1/4-3/8	8	8.0	14.0	64	3	●
	1212D19 14 W	14	G1/2-7/8	12	12.0	19.0	84	4	●
	1212D26 14 W	14	G1/2-7/8	12	12.0	26.3	84	4	●
	1212C24 11 W	11	G1-1 1/2	12	12.0	24.2	84	3	●
	1616D38 11 W	11	G1-3	16	16.0	38.1	105	4	●



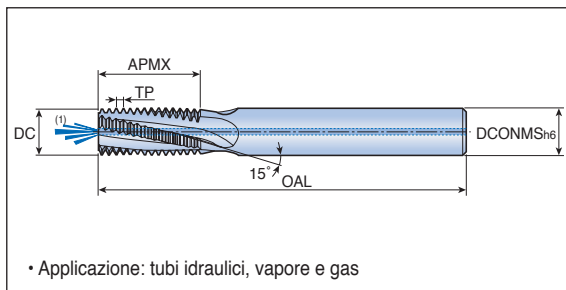
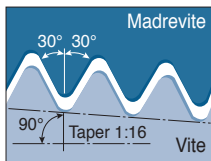
- TDZ: diametro del filetto
- NOF: numero di taglienti
- ⁽¹⁾ Tipo B ⁽²⁾ Tipo Z

●: Standard

MTECB-NPT / MTEC-NPT

TS-THREAD

Fresa per filettatura ad interpolazione con e senza refrigerazione assiale



Descrizione	TPI	TDZ	Dimensioni (mm)				NOF	Grado TT9030
			DCONMS	DC	APMX	OAL		
MTECB 08076C10 27 NPT	27	1/8	8	7.6	10.8	64	3	●
1010D16 18 NPT	18	1/4-3/8	10	10.0	16.2	73	4	●
16155D22 14 NPT	14	1/2-3/4	16	15.5	22.7	105	4	●
MTEC 0606C9 27 NPT	27	1/8	6	6.0	9.9	58	3	●
0808C14 18 NPT	18	1/4-3/8	8	8.0	14.8	64	3	●
1212D20 14 NPT	14	1/2-3/4	12	12.0	20.9	84	4	●
1616D27 11.5 NPT	11.5	1-2	16	16.0	27.6	105	4	●



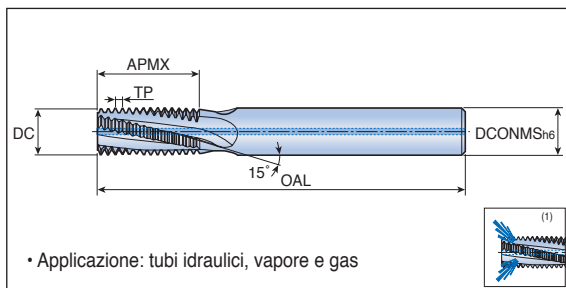
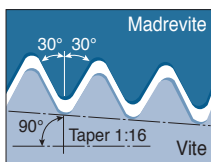
- TDZ: diametro del filetto
- NOF: numero di taglienti
- ⁽¹⁾ Tipo B

●: Standard

MTECZ-NPTF / MTEC-NPTF

TS-THREAD

Fresa per filettatura ad interpolazione con e senza refrigerazione radiale



Descrizione	TPI	TDZ	Dimensioni (mm)				NOF	Grado TT9030
			DCONMS	DC	APMX	OAL		
MTECZ 1010D16 18 NPTF	18	1/4-3/8	10	10.0	16.2	73	4	●
MTEC 0606C9 27 NPTF	27	1/8	6	6.0	9.9	58	3	●
0808C14 18 NPTF	18	1/4-3/8	8	8.0	14.8	64	3	●
1212D20 14 NPTF	14	1/2-3/4	12	12.0	20.9	84	4	●



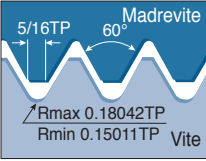
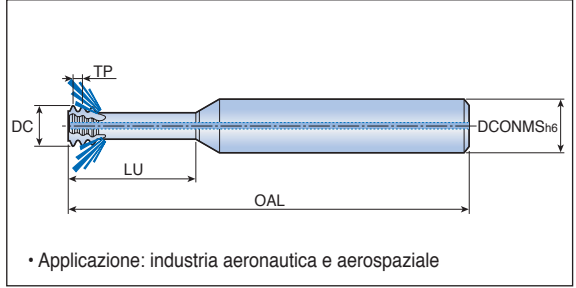
- TDZ: diametro del filetto
- NOF: numero di taglienti
- ⁽¹⁾ Tipo Z

●: Standard

MTECS-MJ / MTECS-UNJ



Fresa per filettatura ad interpolazione con tagliente corto e refrigerazione radiale

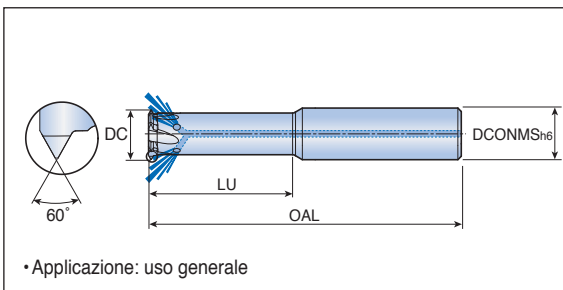
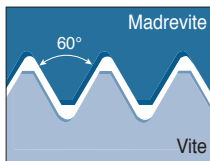


Descrizione	TP (mm)	TPI	MJ	UNJC	UNJF	Dimensioni (mm)				NOF	Grado TT9030
						DCONMS	DC	LU	OAL		
MTECS 06039C12 0.8 MJ ⁽¹⁾	0.8	-	MJ5	-	-	6	3.90	12.5	58	3	●
06048C15 1.0 MJ ⁽¹⁾	1.0	-	MJ6	-	-	6	4.80	15.0	58	3	●
08061C20 1.25 MJ	1.25	-	MJ8	-	-	8	6.10	20.0	64	3	●
0808C25 1.5 MJ	1.5	-	MJ10	-	-	8	8.00	25.0	64	3	●
1010C35 2.0 MJ	2.0	-	MJ14, MJ16	-	-	10	10.00	35.0	73	3	●
MTECS 06033C10 32 UNJ ⁽¹⁾	-	32	-	8	10	6	3.30	10.5	58	3	●
08051C16 28 UNJ	-	28	-	-	1/4	8	5.10	16.0	64	3	●
08069C24 16 UNJ	-	16	-	3/8	-	8	6.90	24.0	64	3	●



- NOF: numero di taglienti
- (1) Senza fori per il refrigerante
- : Standard

Fresa per filettatura ad interpolazione con profilo parziale a 60° e refrigerazione radiale



Descrizione	TP (mm)	TPI	TDZ	Dimensioni (mm)				NOF	Grado TT9030
				DCONMS	DC	LU	OAL		
MTECI 0605D20 A60	Int. 0.5-0.8 Est. 0.4-0.8	56-28	$\varnothing \geq 6$	6	5.0	20	58	4	●
		64-32		8	8.0	30	64		
	Int. 1.0-1.75 Est. 0.8-1.5	28-14	$\varnothing \geq 10$	10	10.0	35	73	4	●
		32-16	$\varnothing \geq 12$	12	12.0	39	84	5	●
	Int. 2.3-3.0 Est. 1.75-2.5	23-8 15-10	$\varnothing \geq 14$	12	12.0	40	84	5	●
	$\varnothing \geq 16$		16	16.0	45	101	5	●	
$\varnothing \geq 18$	16		16.0	50	101	5	●		
1212E40 A60									
1614E45 A60									
1616E50 A60									



- TDZ: diametro del filetto
- NOF: numero di taglienti

●: Standard

Cilindrica

MT E D25 - 1 - W 20 (C) - 21

1 2 3 4 5 6 7 8

1 Tipo di fresa

M - Mill (fresa)
T - Thread (filetto)

2 Tipo di utensile

E - Cilindrica

3 Diametro fresa

D25 - 25.0 mm

4 Numero di inserti

1 1 inserto
2 2 inserti

5 Tipo di attacco

W - Weldon
C - Cilindrico

6 Diametro gambo

20 - 20.0 mm

7 Materiale gambo

C Metallo duro

8 Lunghezza inserto (APMX)

12 12.0 mm
14 14.0 mm
21 21.0 mm
30 30.0 mm
40 40.0 mm

Manicotto

MT F D063 - 5 - 22 - 21

1 2 3 4 5 6

1 Tipo di fresa

M - Mill (fresa)
T - Thread (filetto)

2 Tipo di utensile

F - Manicotto

3 Diametro fresa

D063 - 63.0 mm

4 Numero di inserti

4 4 inserti
5 5 inserti

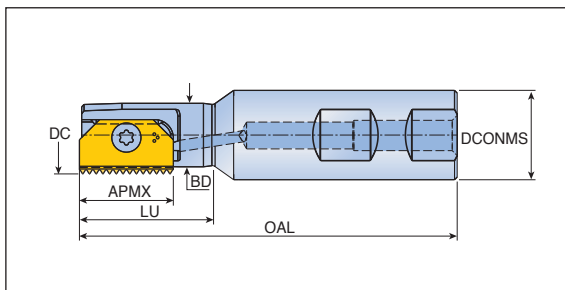
5 Diametro foro di attacco

22 22.0 mm
27 27.0 mm
32 32.0 mm

6 Lunghezza inserto (APMX)

21 21.0 mm
30 30.0 mm
40 40.0 mm

Fresa cilindrica per filettatura ad interpolazione con attacco weldon



Descrizione	Dimensioni (mm)						Gambo	Kg	Inserto
	APMX	DC	DCONMS	BD	LU	OAL			
MTE D09.5-1-W20-12 ⁽¹⁾	12	9.5	20	7.5	15.5	85	W	0.16	TTMT12
D09.9-1-W20-12	12	9.9	20	7.5	16.0	85	W	0.16	TTMT12
D12.2-1-W20-14	14	12.2	20	8.6	20.0	75	W	0.15	TTMT14
D14.5-1-W20-14	14	14.5	20	11.2	25.0	85	W	0.16	TTMT14
D17.0-1-W20-14	14	17.0	20	12.8	30.0	85	W	0.23	TTMT14
D18-1-W20-21 ⁽²⁾	21	18.0	20	14.2	30.0	85	W	0.20	TTMT21
D21-1-W20-21	21	21.0	20	15.9	40.0	94	W	0.23	TTMT21
D25-1-W20-21	21	25.0	20	-	-	115	W	0.24	TTMT21
D29-1-W25-30	30	29.0	25	22.2	50.0	110	W	0.32	TTMT30
D31-1-W25-30	30	31.0	25	-	-	150	W	0.60	TTMT30
D38-1-W32-30	30	38.0	32	-	-	150	W	0.90	TTMT30
D48-1-W40-40	40	48.0	40	35.0	78.0	153	W	1.30	TTMT40
D48-1-W40-40-B	40	48.0	40	-	-	210	W	1.50	TTMT40

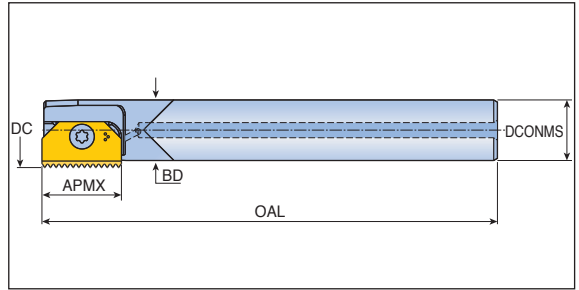
- Il diametro minimo del foro deve essere di 1/3 più grande del diametro della fresa DC
- Tutte le frese cilindriche sono dotate di fori di refrigerazione interna
- ⁽¹⁾ Non adatta per gli inserti: TTMT12 18 NPT, TTMT12 18 NPTF, TTMT12 19 BSPT
- ⁽²⁾ Non adatta per gli inserti: TTMT21 | 3.50 ISO, TTMT21 | 7 UN, TTMT21 | 11.5 NPT, TTMT21 | 11.5 NPTF

Ricambi

Descrizione	Vite	Chiave	Manico chiave	
MTE D...12	SR M2.5-T8-MT	BLD T08/M7	SW4-SD	-
MTE D...14	S11	BLD T08/M7	SW4-SD	-
MTE D...21	SR M4-IP15-MT	BLD IP15/S7	SW6-SD	-
MTE D...30/40(-B)	SR M5-IP25-MT	BLD IP25/S7	-	SW6-T



Fresa cilindrica in metallo duro per filettatura ad interpolazione



Descrizione	Dimensioni (mm)					Gambo	Kg	Inserto
	APMX	DC	DCONMS	BD	OAL			
MTE D09.9-1-C08C-12	12	9.9	8	8	127.0	C	0.10	TTMT12
D13.7-1-C10C-14	14	13.7	10	10	110.0	C	0.12	TTMT14
D13.7-1-C10C-14-B	14	13.7	10	10	153.5	C	0.17	TTMT14
D15.2-1-C12C-14	14	15.2	12	12	182.3	C	0.30	TTMT14
D21-1-C16C-21	21	21.0	16	16	130.0	C	0.35	TTMT21
D21-1-C16C-21-B	21	21.0	16	16	206.3	C	0.50	TTMT21
D27-1-C20C-30	30	27.0	20	20	263.0	C	1.20	TTMT30

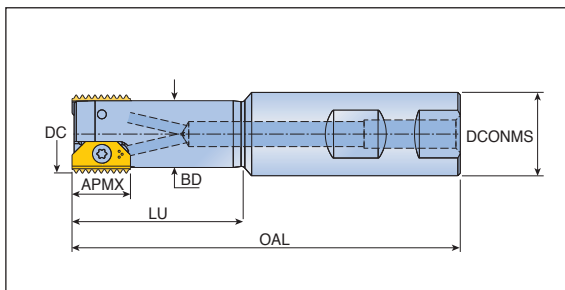
- Per elevate sporgenze ridurre la velocità di taglio e l'avanzamento dal 20 al 40% (in funzione del materiale del pezzo, del passo e della lunghezza della fresa)

Ricambi

Descrizione	Vite	Chiave	Manico chiave	
MTE D...C...12	SR M2.5-T8-MT	BLD T08/M7	SW4-SD	-
MTE D...C...14(-B)	S11	BLD T08/M7	SW4-SD	-
MTE D...C...21(-B)	SR M4-IP15-MT	BLD IP15/S7	SW6-SD	-
MTE D...C...30	SR M5-IP25-MT-S	BLD IP25/S7	-	SW6-T



Fresa cilindrica a doppio inserto per filettatura ad interpolazione con attacco weldon



Descrizione	Dimensioni (mm)						Gambo	Kg	Insero
	APMX	DC	DCNMS	BD	LU	OAL			
MTE D20.0-2-W20-14	14	20	20	16	41	93	W	0.20	TTMT14
D30-2-W25-21	21	30	25	24	52	108	W	0.40	TTMT21
D40-2-W32-30	30	40	32	30	70	130	W	0.70	TTMT30
D50-2-W40-40	40	50	40	38	78	153	W	0.80	TTMT40

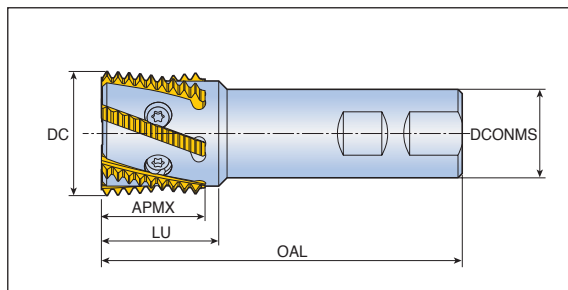
- Il diametro minimo del foro deve essere di 1/3 più grande del diametro della fresa DC
- Tutte le frese cilindriche sono dotate di fori di refrigerazione interna

Ricambi

Descrizione	Vite	Chiave	Manico chiave	
MTE D...W...14	S11	BLD T08/M7	SW4-SD	-
MTE D...W...21	SR M4-IP15-MT	BLD IP15/S7	SW6-SD	-
MTE D...W...30/40	SR M5-IP25-MT	BLD IP25/S7	-	SW6-T

Condizioni di taglio

Fresa cilindrica ad inserti elicoidali per filettatura ad interpolazione con attacco weldon



Descrizione	NOF	Dimensioni (mm)					Kg	Inserto
		APMX	DC	DCONMS	LU	OAL		
TMTSRH 23-2	2	27	23	25	50	110	0.30	TMTH 23
32-5	5	32	32	32	60	130	0.65	TMTH 32

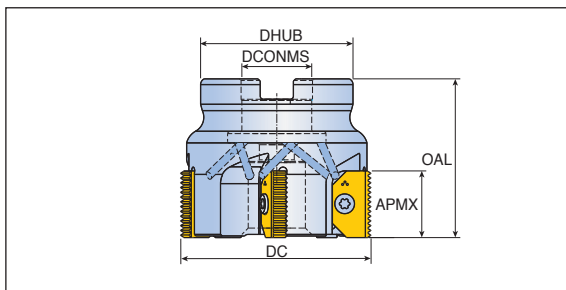
- Tutte le frese cilindriche sono dotate di fori di refrigerazione interna
- NOF: numero di taglienti

Ricambi

Descrizione	Vite	Chiave		
TMTSRH 23	TS23	TK21		
TMTSRH 32	TS32	TK22		
TMTSRH 45	TS45	TK40		



Fresa a manicotto per filettatura ad interpolazione



Descrizione	CICT	Dimensioni (mm)					Kg	Inserto
		APMX	DC	DHUB	DCONMS	OAL		
MTF D063-5-22-21	5	21	63	40	22	50	0.70	TTMT21
D063-4-22-30	4	30	63	48	22	50	0.60	TTMT30
D080-4-27-30	4	30	80	60	27	50	1.22	TTMT30
D080-4-27-40	4	40	80	60	27	65	1.22	TTMT30
D100-4-32-30	4	30	100	78	32	50	1.29	TTMT40
D100-4-32-40	4	40	100	78	32	65	1.22	TTMT40

- Tutte le frese a manicotto sono dotate di fori di refrigerazione interna
- CICT: numero di inserti

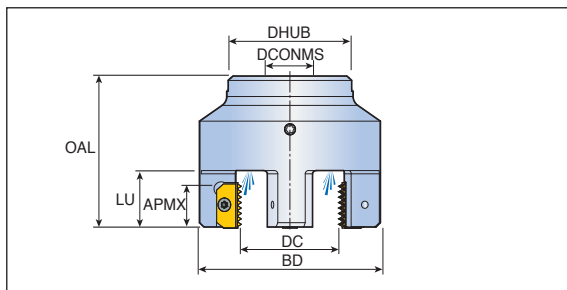
Ricambi

Descrizione	Vite	Vite 1	Chiave	Manico chiave	
MTF D063...21	SR M4-IP15-MT	SR M10X25 DIN912	BLD IP15/S7	SW6-SD	-
MTF D063...30	SR M5-IP25-MT	SR M10X25 DIN912	BLD IP25/S7	-	SW6-T
MTF D080...30/40	SR M5-IP25-MT	SR M12X25	BLD IP25/S7	-	SW6-T
MTF D100...30/40	SR M5-IP25-MT	SR M16X30 DIN912	BLD IP25/S7	-	SW6-T

C39-C46

Condizioni di taglio
C81

Fresa a manicotto per filettatura ad interpolazione esterna



Descrizione	CICT	Dimensioni (mm)							Kg	Inserto
		APMX	DC	BD	DHUB	DCONMS	LU	OAL		
MTFLE D20-3-22-21	3	21	20	58.2	48	22	27	63	0.70	TTMT21 E
D30-3-22-21	3	21	30	68.2	48	22	27	63	0.90	TTMT21 E
D45-4-27-21	4	21	45	83.2	60	27	27	67	1.40	TTMT21 E

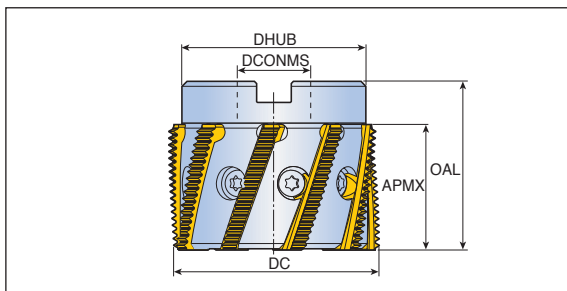
- Tutte le frese a manicotto sono dotate di fori di refrigerazione interna
- CICT: numero di taglienti

Ricambi

Descrizione	Vite	Chiave	Manico chiave	
MTFLE D...21	SR M4-IP15-MT	BLD IP15/S7	SW6-SD	

 C39-C46	 C51
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Fresa a manicotto ad inserti elicoidali per filettatura ad interpolazione



Descrizione	NOF	Dimensioni (mm)					Kg	Inserto
		APMX	DC	DHUB	DCONMS	OAL		
TMTSRH 32-5M	5	32	32	26.0	16	52	0.15	TMTH 32
45-6M	6	37	45	38.0	22	60	0.30	TMTH 45
63-9	9	38	63	51.7	22	50	0.66	TMTH 63

- Tutte le frese a manicotto sono dotate di fori di refrigerazione interna
- NOF: numero di taglienti

Ricambi

Descrizione	Vite	Chiave		
TMTSRH 32	TS32S	TK22		
TMTSRH 45	TS45S	TK40		
TMTSRH 63	TS63	TK40		



TTMT(H)	30	E	1.5	ISO	TT9030
1	2	3	4	5	6

1 Tipo di inserto

TT - TaeguTec
M - Mill (fresa)
T - Thread (filetto)
H - Helical insert
 (inserto elicoidale)

2 Lunghezza inserto (INSL)

12 12.0 mm
14 14.0 mm
21 21.0 mm
30 30.0 mm
40 40.0 mm



3 Applicazione

E - Esterna
I - Interna
 - Esterna + interna

4 Passo

0.5 - 6.0 mm (Passo del filetto)
32 - 4 TPI (Filetti per pollice)

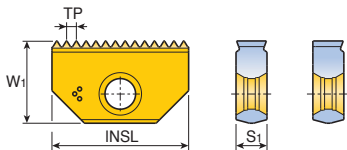
5 Standard filetto

ISO
UN
WHIT
NPT
NPTF
BSPT

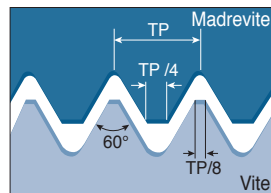
6 Grado

Rivestito
TT9030

Inserti ISO Metrico



TTMT12 I ⁽¹⁾



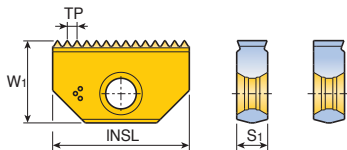
Inserto	Descrizione	TP (mm)	Dimensioni (mm)			Grado TT9030
			INSL	W1	S1	
	TTMT12 I 0.5 ISO⁽¹⁾	0.50	12	6.5	2.9	●
	TTMT12 I 0.75 ISO⁽¹⁾	0.75	12	6.5	2.9	●
	TTMT12 I 1.0 ISO⁽¹⁾	1.00	12	6.5	2.9	●
	TTMT12 I 1.25 ISO⁽¹⁾	1.25	12	6.5	2.9	●
	TTMT12 I 1.5 ISO⁽¹⁾	1.50	12	6.5	2.9	●
	TTMT14 I 0.5 ISO	0.50	14	7.9	3.2	●
	TTMT14 E/I 0.75 ISO	0.75	14	7.9	3.2	●
	TTMT14 E/I 1.0 ISO	1.00	14	7.9	3.2	●
	TTMT14 E/I 1.25 ISO	1.25	14	7.9	3.2	●
	TTMT14 E/I 1.5 ISO	1.50	14	7.9	3.2	●
	TTMT14 E/I 1.75 ISO	1.75	14	7.9	3.2	●
	TTMT14 E/I 2.0 ISO	2.00	14	7.9	3.2	●
	TTMT14 E/I 2.5 ISO	2.50	14	7.9	3.2	●
	TTMT21 E/I 1.0 ISO	1.00	21	12.6	4.8	●
	TTMT21 E/I 1.5 ISO	1.50	21	12.6	4.8	●
	TTMT21 I 1.75 ISO	1.75	21	12.6	4.8	●
	TTMT21 E/I 2.0 ISO	2.00	21	12.6	4.8	●
	TTMT21 E/I 2.5 ISO	2.50	21	12.6	4.8	●
	TTMT21 E/I 3.0 ISO	3.00	21	12.6	4.8	●
	TTMT21 I 3.5 ISO	3.50	21	12.6	4.8	●
TTMT30 E/I 1.5 ISO	1.50	30	16.7	5.6	●	
TTMT30 E/I 2.0 ISO	2.00	30	16.7	5.6	●	
TTMT30 E/I 3.0 ISO	3.00	30	16.7	5.6	●	
TTMT30 E/I 3.5 ISO	3.50	30	16.7	5.6	●	
TTMT30 E/I 4.0 ISO	4.00	30	16.7	5.6	●	
TTMT30 I 4.5 ISO	4.50	30	16.7	5.6	●	
TTMT30 I 5.0 ISO	5.00	30	16.7	5.6	●	
TTMT40 E/I 1.5 ISO	1.50	40	20.8	6.4	●	
TTMT40 E/I 2.0 ISO	2.00	40	20.8	6.4	●	
TTMT40 E/I 3.0 ISO	3.00	40	20.8	6.4	●	
TTMT40 I 3.5 ISO	3.50	40	20.8	6.4	●	
TTMT40 E/I 4.0 ISO	4.00	40	20.8	6.4	●	
TTMT40 I 4.5 ISO	4.50	40	20.8	6.4	●	
TTMT40 E/I 5.0 ISO	5.00	40	20.8	6.4	●	
TTMT40 I 5.5 ISO	5.50	40	20.8	6.4	●	
TTMT40 E/I 6.0 ISO	6.00	40	20.8	6.4	●	



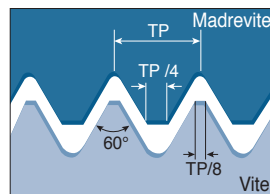
• ⁽¹⁾ L'inserto TTMT12 è disponibile solo con tagliente singolo

●: Standard

Inserti UN, UNC, UNF, UNEF, UNS



TTMT12 I ⁽¹⁾



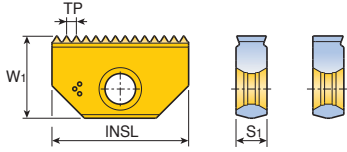
Inserto	Descrizione	TPI	Dimensioni (mm)			Grado
			INSL	W1	S1	
	TTMT12 I 32 UN ⁽¹⁾	32	12	6.5	2.9	●
	TTMT12 I 28 UN ⁽¹⁾	28	12	6.5	2.9	●
	TTMT12 I 24 UN ⁽¹⁾	24	12	6.5	2.9	●
	TTMT12 I 20 UN ⁽¹⁾	20	12	6.5	2.9	●
	TTMT12 I 18 UN ⁽¹⁾	18	12	6.5	2.9	●
	TTMT12 I 16 UN ⁽¹⁾	16	12	6.5	2.9	●
	TTMT14 E/I 32 UN	32	14	7.9	3.2	●
	TTMT14 E/I 28 UN	28	14	7.9	3.2	●
	TTMT14 I 27 UN	27	14	7.9	3.2	●
	TTMT14 E/I 24 UN	24	14	7.9	3.2	●
	TTMT14 E/I 20 UN	20	14	7.9	3.2	●
	TTMT14 E/I 18 UN	18	14	7.9	3.2	●
	TTMT14 E/I 16 UN	16	14	7.9	3.2	●
	TTMT14 E/I 14 UN	14	14	7.9	3.2	●
	TTMT14 E/I 12 UN	12	14	7.9	3.2	●
	TTMT14 I 11 UN	11	14	7.9	3.2	●
	TTMT14 I 10 UN	10	14	7.9	3.2	●
	TTMT21 E/I 24 UN	24	21	12.6	4.8	●
	TTMT21 E/I 20 UN	20	21	12.6	4.8	●
	TTMT21 E/I 18 UN	18	21	12.6	4.8	●
	TTMT21 E/I 16 UN	16	21	12.6	4.8	●
	TTMT21 E/I 14 UN	14	21	12.6	4.8	●
	TTMT21 E/I 12 UN	12	21	12.6	4.8	●
	TTMT21 E/I 10 UN	10	21	12.6	4.8	●
	TTMT21 I 8 UN	8	21	12.6	4.8	●
	TTMT21 I 7 UN	7	21	12.6	4.8	●
	TTMT30 E/I 20 UN	20	30	16.7	5.6	●
	TTMT30 E/I 18 UN	18	30	16.7	5.6	●
	TTMT30 E/I 16 UN	16	30	16.7	5.6	●
	TTMT30 E/I 14 UN	14	30	16.7	5.6	●
	TTMT30 E/I 12 UN	12	30	16.7	5.6	●
	TTMT30 E/I 10 UN	10	30	16.7	5.6	●
TTMT30 E/I 8 UN	8	30	16.7	5.6	●	
TTMT30 E/I 6 UN	6	30	16.7	5.6	●	
TTMT30 I 5 UN	5	30	16.7	5.6	●	

⁽¹⁾ L'inserto TTMT12 è disponibile solo con tagliente singolo

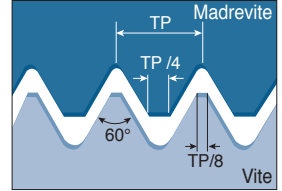
●: Standard



Inserti UN, UNC, UNF, UNEF, UNS



TTMT12 I ⁽¹⁾

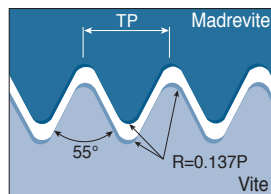
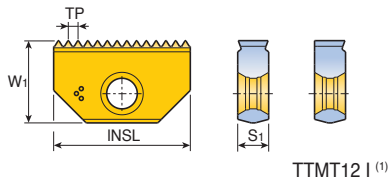


Inserto	Descrizione	TPI	Dimensioni (mm)			Grado TT9030
			INSL	W1	S1	
	TTMT40 E/I 16 UN	16	40	20.8	6.4	•
	TTMT40 E/I 14 UN	14	40	20.8	6.4	•
	TTMT40 E/I 12 UN	12	40	20.8	6.4	•
	TTMT40 E/I 10 UN	10	40	20.8	6.4	•
	TTMT40 E/I 8 UN	8	40	20.8	6.4	•
	TTMT40 E/I 6 UN	6	40	20.8	6.4	•
	TTMT40 I 4.5 UN	4.5	40	20.8	6.4	•
	TTMT40 I 4 UN	4	40	20.8	6.4	•



• ⁽¹⁾ L'inserto TTMT12 è disponibile solo con tagliente singolo • Standard

Inserti whitworth (BSW, BSF, BSP)



Inserto	Descrizione	TPI	Dimensioni (mm)			Grado TT9030
			INSL	W1	S1	
	TTMT12 19 W⁽¹⁾	19	12	6.5	2.9	●
	TTMT14 24 W	24	14	7.9	3.2	●
	TTMT14 20 W	20	14	7.9	3.2	●
	TTMT14 19 W	19	14	7.9	3.2	●
	TTMT14 16 W	16	14	7.9	3.2	●
	TTMT14 14 W	14	14	7.9	3.2	●
	TTMT21 20 W	20	21	12.6	4.8	●
	TTMT21 19 W	19	21	12.6	4.8	●
	TTMT21 16 W	16	21	12.6	4.8	●
	TTMT21 14 W	14	21	12.6	4.8	●
	TTMT21 11 W	11	21	12.6	4.8	●
	TTMT30 16 W	16	30	16.7	5.6	●
	TTMT30 14 W	14	30	16.7	5.6	●
	TTMT30 11 W	11	30	16.7	5.6	●
TTMT40 11 W	11	40	20.8	6.4	●	
TTMT40 8 W	8	40	20.8	6.4	●	

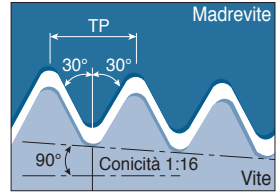
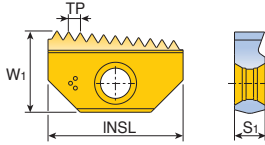


- Lo stesso inserto per filettatura esterna ed interna
- ⁽¹⁾ L'inserto TTMT12 è disponibile solo con tagliante singolo

●: Standard

TTMT-NPT

Inserti NPT national pipe threads



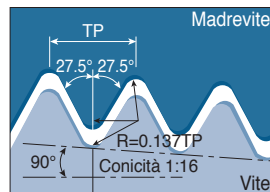
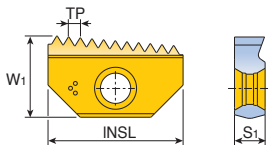
Inserto	Descrizione	TPI	Dimensioni (mm)			Grado TT9030
			INSL	W ₁	S ₁	
	TTMT12 18 NPT	18	12	6.5	2.9	●
	TTMT14 18 NPT	18	14	7.9	3.2	●
	TTMT14 14 NPT	14	14	7.9	3.2	●
	TTMT21 14 NPT	14	21	12.6	4.8	●
	TTMT21 11.5 NPT	11.5	21	12.6	4.8	●
	TTMT30 11.5 NPT	11.5	30	16.7	5.6	●
	TTMT30 8 NPT	8	30	16.7	5.6	●
	TTMT40 11.5 NPT	11.5	40	20.8	6.4	●
	TTMT40 8 NPT	8	40	20.8	6.4	●



- Lo stesso inserto per filettatura esterna ed interna
- Gli inserti per filettatura NPT sono monolaterali

●: Standard

Inserti BSPT british standard pipe



Inserto	Descrizione	TPI	Dimensioni (mm)			Grado
			INSL	W1	S1	
	TTMT12 19 BSPT	19	12	6.5	2.9	●
	TTMT14 19 BSPT	19	14	7.9	3.2	●
	TTMT14 14 BSPT	14	14	7.9	3.2	●
	TTMT21 14 BSPT	14	21	12.6	4.8	●
	TTMT21 11 BSPT	11	21	12.6	4.8	●
	TTMT30 11 BSPT	11	30	16.7	5.6	●
	TTMT40 11 BSPT	11	40	20.8	6.4	●

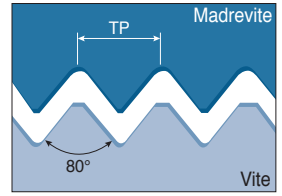
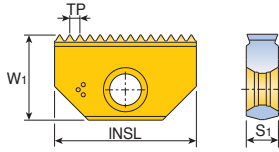


- Lo stesso inserto per filettatura esterna ed interna
- Gli inserti per filettatura BSPT sono monolaterali

●: Standard

TTMT-PG

Inserti per connettori elettrici (DIN 40430)



Inserto	Descrizione	TPI	Misura filetto	Dimensioni (mm)			Grado
				INSL	W1	S1	TT9030
	TTMT14 18 PG	18	PG9, 11, 13.5, 16	14	7.9	3.2	●
	TTMT21 18 PG	18	PG16	21	12.6	4.8	●
	TTMT21 16 PG	16	PG21, 29, 36, 42, 48	21	12.6	4.8	●
	TTMT30 16 PG	16	PG36, 42, 48	30	16.7	5.6	●

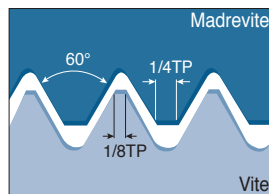
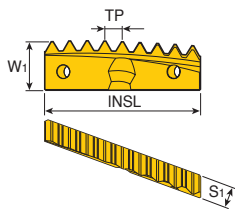


• Lo stesso inserto per filettatura esterna ed interna

●: Standard

TMTH-ISO

Inserti elicoidali ISO metrico (interna)



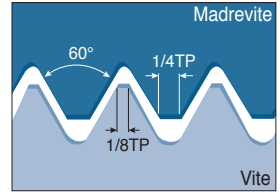
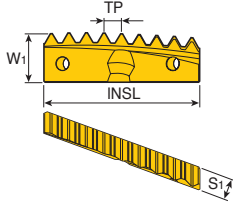
Inserto	Descrizione	TP (mm)	THID	Dimensioni (mm)			Utensile	Grado TT9030
				INSL	W1	S1		
	TMTH 23 I 1.0 ISO	1.0	≥M26	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 1.5 ISO	1.5	≥M27	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 2.0 ISO	2.0	≥M28	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 3.0 ISO	3.0	≥M30	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 32 I 1.0 ISO	1.0	≥M34	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 1.5 ISO	1.5	≥M35	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 2.0 ISO	2.0	≥M36	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 3.0 ISO	3.0	≥M38	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 4.0 ISO	4.0	≥M40	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 45 I 1.5 ISO	1.5	≥M50	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 45 I 2.0 ISO	2.0	≥M50	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 45 I 3.0 ISO	3.0	≥M56	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 45 I 4.0 ISO	4.0	≥M56	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 63 I 1.5 ISO	1.5	≥M70	38	11.9	5.0	TMTSRH 63-9	●
	TMTH 63 I 2.0 ISO	2.0	≥M70	38	11.9	5.0	TMTSRH 63-9	●
	TMTH 63 I 3.0 ISO	3.0	≥M75	38	11.9	5.0	TMTSRH 63-9	●
TMTH 63 I 4.0 ISO	4.0	≥M75	38	11.9	5.0	TMTSRH 63-9	●	
TMTH 63 I 6.0 ISO	6.0	≥M78	38	11.9	5.0	TMTSRH 63-9	●	



• THID: diametro di filettatura interna

●: Standard

Inseri elicoidali UN, UNC, UNF, UNEF, UNS (interna)



Inserto	Descrizione	TPI	THID	Dimensioni (mm)			Utensile	Grado TT9030
				INSL	W ₁	S ₁		
	TMTH 23 I 24 UN	24	≥1"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 20 UN	20	≥1"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 18 UN	18	≥1 1/16"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 16 UN	16	≥1 1/16"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 14 UN	14	≥1 1/8"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 12 UN	12	≥1 1/8"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 8 UN	8	≥1 3/16"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 23 I 7 UN	7	≥1 1/4"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 32 I 20 UN	20	≥1 3/8"	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 18 UN	18	≥1 3/8"	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 16 UN	16	≥1 3/8"	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 12 UN	12	≥1 7/16"	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 8 UN	8	≥1 1/2"	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 32 I 6 UN	6	≥1 9/16"	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 45 I 16 UN	16	≥2"	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 45 I 12 UN	12	≥2"	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 45 I 8 UN	8	≥2 1/4"	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 45 I 6 UN	6	≥2 1/4"	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 63 I 16 UN	16	≥2 3/4"	38	11.9	5.0	TMTSRH 63-9	●
	TMTH 63 I 12 UN	12	≥2 3/4"	38	11.9	5.0	TMTSRH 63-9	●
TMTH 63 I 8 UN	8	≥3"	38	11.9	5.0	TMTSRH 63-9	●	
TMTH 63 I 6 UN	6	≥3"	38	11.9	5.0	TMTSRH 63-9	●	

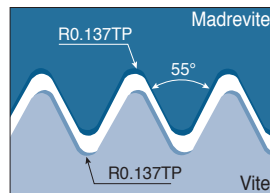
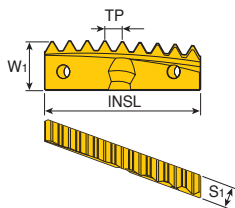


• THID: diametro di filettatura interna

●: Standard

TMTH-W

Inserti elicoidali whitworth, BSW, BSF, BSP (interna ed esterna)



Inserto	Descrizione	TPI	THID	THOD	Dimensioni (mm)			Utensile	Grado TT9030
					INSL	W1	S1		
	TMTH 23 11 W	11	≥G 1"	≥G 1"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 32 11 W	11	≥G 1 1/8"	≥G 1"	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 45 11 W	11	≥G 1 3/4"	≥G 1"	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 63 11 W	11	≥G 2 1/2"	≥G 1"	38	11.9	5.0	TMTSRH 63-9	●

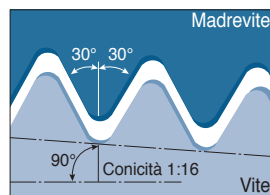
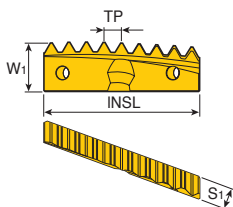


- THID: diametro di filettatura interna
- THOD: diametro di filettatura esterna

●: Standard

TMTH-NPT

Inserti elicoidali NPT (interna ed esterna)



Inserto	Descrizione	TPI	THID	THOD	Dimensioni (mm)			Utensile	Grado TT9030
					INSL	W1	S1		
	TMTH 23 11.5 NPT	11.5	1"-2" NPT	1"-2" NPT	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 32 11.5 NPT	11.5	1 1/4"-2" NPT	1"-2" NPT	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 45 11.5 NPT	11.5	2" NPT	1"-2" NPT	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 63 11.5 NPT	11.5	-	≥1" NPT	38	11.9	5.0	TMTSRH 63-9	●

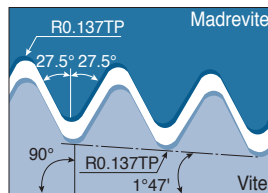
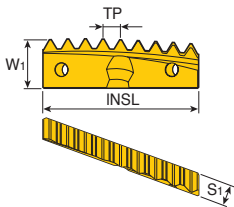


- THID: diametro di filettatura interna
- THOD: diametro di filettatura esterna

●: Standard

TMTH-BSPT

Inserti elicoidali BSPT (interna ed esterna)



Inserto	Descrizione	TPI	THID	THOD	Dimensioni (mm)			Utensile	Grado TT9030
					INSL	W1	S1		
	TMTH 23 11 BSPT	11	≥1" BSPT	≥1" BSPT	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 32 11 BSPT	11	≥1 1/8" BSPT	≥1" BSPT	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 45 11 BSPT	11	≥1 3/4" BSPT	≥1" BSPT	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 63 11 BSPT	11	≥2 1/2" BSPT	≥1" BSPT	38	11.9	5.0	TMTSRH 63-9	●

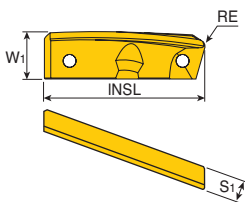


- THID: diametro di filettatura interna
- THOD: diametro di filettatura esterna

●: Standard

TMTH-F

Inserti elicoidali per finitura



Inserto	Descrizione	Dimensioni (mm)				Utensile	Grado TT9030
		INSL	W1	S1	RE		
	TMTH 23F R0.2	27	8.0	3.5	0.2	TMTSRH 23-2	●
	TMTH 23F R0.5	27	8.0	3.5	0.5	TMTSRH 23-2	●
	TMTH 23F R1.0	27	8.0	3.5	1.0	TMTSRH 23-2	●
	TMTH 32F R0.2	32	9.0	4.0	0.2	TMTSRH 32-5	●
	TMTH 32F R0.5	32	9.0	4.0	0.5	TMTSRH 32-5	●
	TMTH 32F R1.0	32	9.0	4.0	1.0	TMTSRH 32-5	●
	TMTH 45F R0.2	37	11.9	5.0	0.2	TMTSRH 45-6	●



●: Standard

Condizioni di taglio raccomandate

Dati di lavorazione per frese ad inserto per filettatura ad interpolazione

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)		
						TT9030		
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	100-200		
		≥ 0.25% C Ricotto	650	190	2	95-190		
		< 0.55% C Bonificato	850	250	3	90-180		
		≥ 0.55% C Ricotto	750	220	4	90-170		
		Bonificato	1000	300	5	80-150		
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto	600	200	6	120-170		
		Bonificato	930	275	7	115-160		
			1000	300	8	105-150		
			1200	350	9	140		
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	90-170		
Bonificato		1100	325	11	75-145			
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	110-170		
		Martensitico	820	240	13	100-160		
		Austenitico	600	180	14	90-145		
K	Ghisa grigia (GG)	Ferritico		160	15	65-135		
		Perlitico		250	16	65-110		
	Ghisa nodulare (GGG)	Ferritico		180	17	65-135		
		Perlitico		260	18	60-100		
Ghisa malleabile	Ferritico		130	19	65-135			
	Perlitico		230	20	60-120			
N	Alluminio	Non trattato		60	21	110-260		
		Trattato		100	22	110-200		
	Leghe di alluminio	≤ 12% Si	Non trattato		75	23	145-350	
			Trattato		90	24	145-275	
		> 12% Si	Alte temperature		130	25	95-225	
	Leghe di rame	> 1% Pb	Alta lavorabilità		110	26	145-350	
			Ottone		90	27	145-350	
			Rame elettrolitico		100	28	145-350	
	Materiali non metallici	Materiali plastici, grafite				29	90-370	
		Gomma dura				30	80-330	
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	20-60	
			Trattato		280	32	20-50	
		Base Ni o Co	Ricotto		250	33	20-30	
			Trattato		350	34	10-20	
			Fuso		320	35	15-25	
	Titanio, leghe di titanio		Rm 400			36	30-90	
	Leghe trattate alpha+beta	Rm 1050			37	20-70		
H	Acciaio temprato	Temprato		55HRC	38	25-60		
		Temprato		60HRC	39	20-40		
	Ghisa in conchiglia	Fuso		400	40	25-60		
	Ghisa nodulare	Temprato		55HRC	41	20-50		

• Avanzamento:
0.05-0.15 mm/z

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio ■ Acciaio inox ■ Ghisa ■ Non ferrosi ■ Superleghe ■ Temprato

Condizioni di taglio raccomandate

Dati di lavorazione per frese in metallo duro per filettatura ad interpolazione

ISO	Materiale		Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
							TT9030	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C	Ricotto	420	125	1	100-250	
		≥ 0.25% C	Ricotto	650	190	2	80-210	
		< 0.55% C	Bonificato	850	250	3	65-170	
		≥ 0.55% C	Ricotto	750	220	4	110-180	
			Bonificato	1000	300	5	95-160	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)		Ricotto	600	200	6	90-160	
			Bonificato	930	275	7	65-200	
				1000	300	8	70-210	
				1200	350	9	95-160	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili		Ricotto	680	200	10	130-170	
			Bonificato	1100	325	11	75-100	
M	Acciaio inox e acciaio inox da fusione		Ferritico / martensitico	680	200	12	110-170	
			Martensitico	820	240	13	70-155	
			Austenitico	600	180	14	85-100	
K	Ghisa grigia (GG)		Ferritico		160	15	70-150	
			Perlitico		250	16	110-140	
	Ghisa nodulare (GGG)		Ferritico		180	17	120-160	
			Perlitico		260	18	75-160	
Ghisa malleabile		Ferritico		130	19	120-160		
		Perlitico		230	20	110-140		
N	Alluminio		Non trattato		60	21	160-300	
			Trattato		100	22		
	Leghe di alluminio	≤ 12% Si		Non trattato		75	23	
				Trattato		90	24	
		> 12% Si		Alte temperature		130	25	
	Leghe di rame	> 1% Pb		Alta lavorabilità		110	26	
				Ottone		90	27	
			Rame elettrolitico		100	28		
	Materiali non metallici			Materiali plastici, grafite			29	100-400
				Gomma dura			30	
S	Leghe resistenti al calore	Base Fe		Ricotto		200	31	
				Trattato		280	32	
		Base Ni o Co		Ricotto		250	33	20-80
				Trattato		350	34	
				Fuso		320	35	
	Titanio, leghe di titanio			Rm 400		36		
		Leghe trattate alpha+beta	Rm 1050		37	20-80		
H	Acciaio temprato		Temprato		55HRC	38	55-65	
			Temprato		60HRC	39	45-55	
	Ghisa in conchiglia		Fuso		400	40	90-105	
	Ghisa nodulare		Temprato		55HRC	41	55-65	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per frese in metallo duro per filettatura ad Interpolazione

Avanzamento (mm/z) in funzione del diametro fresa											
Ø2	Ø3	Ø4	Ø6	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø30
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.05	0.06	0.07	0.09	0.1	0.11	0.12	0.13	0.15	0.18	0.22	0.25
0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05
0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05

• Per frese con eliche lunghe ridurre l'avanzamento del 40%

Condizioni di taglio raccomandate

Dati di lavorazione per frese in metallo duro con tagliente corto per filettatura ad Interpolazione

ISO	Materiale	Durezza (HRC)	Velocità di taglio Vt (m/min)	Avanzamento (mm/z) in funzione del diametro fresa													
				Ø1.5	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø15	
P	Acciaio a basso e medio tenore di carbonio		60-120	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18	
	Acciaio ad alto tenore di carbonio		60-90	0.04	0.05	0.06	0.08	0.09	0.10	0.12	0.13	0.14	0.14	0.16	0.17	0.18	
	Acciaio legato, acciaio trattato		50-80	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14	
	Acciaio da fusione		70-90	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14	
M	Acciaio inox		60-90	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.1	0.11	0.12	0.13	
K	Ghisa		40-80	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18	
N	Alluminio		80-150	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18	
	Materiali non metallici		50-200	0.10	0.11	0.12	0.14	0.16	0.18	0.19	0.19	0.19	0.19	0.19	0.20	0.20	
S	Leghe di nichel leghe di titanio		20-40	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	
H	Acciaio temprato	45-50	60-70	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08					
		51-55	50-60	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07					
		56-62	40-50	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06					

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

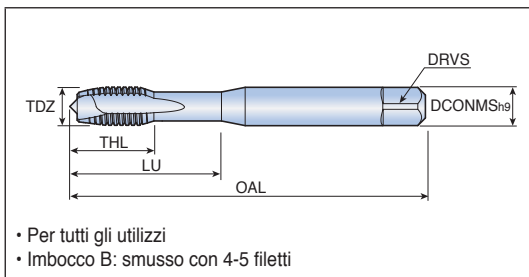
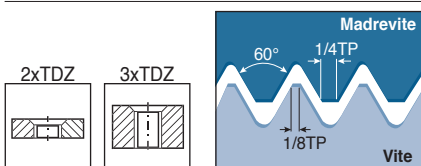
■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

T-TAP

Maschiatura



Eliche dritte e imbocco corretto - non rivestito



Filetto metrico ISO standard DIN 13 standard

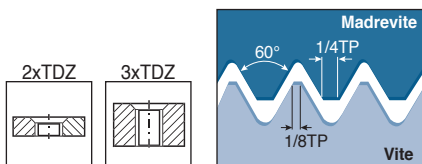
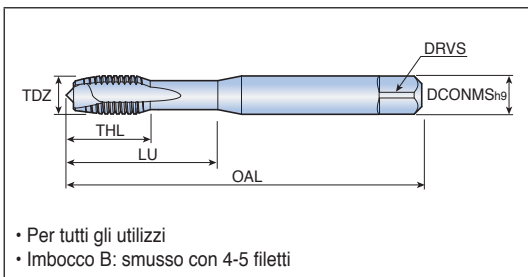
Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)					
					OAL	THL	LU	DCONMS	DRVS	Preforo
TPH452B M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	8	-	2.8	2.1	1.6
TPH452B M2.5x0.45	M2.5	0.45			50	9	-	2.8	2.1	2.05
TPH452B M3x0.5	M3	0.5			56	10	18	3.5	2.7	2.5
TPH452B M4x0.7	M4	0.7			63	12	21	4.5	3.4	3.3
TPH452B M5x0.8	M5	0.8			70	14	25	6	4.9	4.2
TPH452B M6x1.0	M6	1			80	16	30	6	4.9	5
TPH452B M8x1.25	M8	1.25			90	18	35	8	6.2	6.8
TPH452B M10x1.5	M10	1.5			100	20	39	10	8	8.5
TPH652B M12x1.75	M12	1.75	DIN376	ISO 2-6H	110	22	-	9	7	10.2
TPH652B M14x2.0	M14	2			110	24	-	11	9	12
TPH652B M16x2.0	M16	2			110	26	-	12	9	14
TPH652B M20x2.5	M20	2.5			140	30	-	16	12	17.5

Filetto metrico ISO fine DIN 13 standard

Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)					
					OAL	THL	LU	DCONMS	DRVS	Preforo
TPH552B MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH552B MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH552B MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH552B MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH552B MF16x1.5	M16	1.5			100	18	-	12	9	14.5



Eliche dritte e imbocco corretto - vaporizzato



Filetto metrico ISO standard DIN 13 standard

Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)							
					OAL	THL	LU	DCONMS	DRVS	Preforo		
TPH452B05 M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	8	-	2.8	2.1	1.6		
TPH452B05 M2.5x0.45	M2.5	0.45			50	9	-	2.8	2.1	2.05		
TPH452B05 M3x0.5	M3	0.5			56	10	18	3.5	2.7	2.5		
TPH452B05 M4x0.7	M4	0.7			63	12	21	4.5	3.4	3.3		
TPH452B05 M5x0.8	M5	0.8			70	14	25	6	4.9	4.2		
TPH452B05 M6x1.0	M6	1			80	16	30	6	4.9	5		
TPH452B05 M8x1.25	M8	1.25			90	18	35	8	6.2	6.8		
TPH452B05 M10x1.5	M10	1.5			100	20	39	10	8	8.5		
TPH652B05 M12x1.75	M12	1.75			DIN376	ISO 2-6H	110	22	-	9	7	10.2
TPH652B05 M14x2.0	M14	2					110	24	-	11	9	12
TPH652B05 M16x2.0	M16	2	110	26			-	12	9	14		
TPH652B05 M20x2.5	M20	2.5	140	30			-	16	12	17.5		

Filetto metrico ISO fine DIN 13 standard

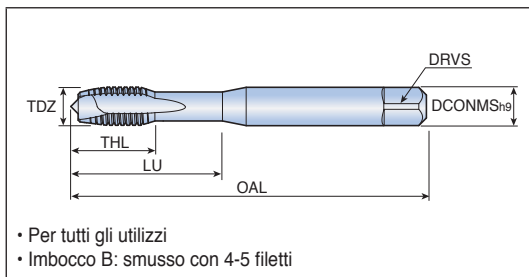
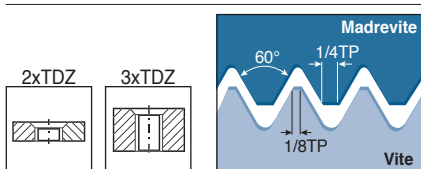
Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)					
					OAL	THL	LU	DCONMS	DRVS	Preforo
TPH552B05 MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH552B05 MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH552B05 MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH552B05 MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH552B05 MF16x1.5	M16	1.5			100	18	-	12	9	14.5



TPH...52B10



Eliche dritte e imbocco corretto - rivestito TiN



Filetto metrico ISO standard DIN 13 standard

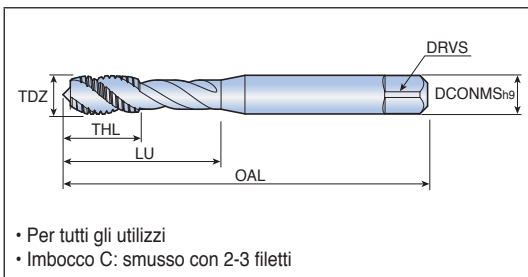
Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)					
					OAL	THL	LU	DCONMS	DRVS	Preforo
TPH452B10 M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	8	-	2.8	2.1	1.6
TPH452B10 M2.5x0.45	M2.5	0.45			50	9	-	2.8	2.1	2.05
TPH452B10 M3x0.5	M3	0.5			56	10	18	3.5	2.7	2.5
TPH452B10 M4x0.7	M4	0.7			63	12	21	4.5	3.4	3.3
TPH452B10 M5x0.8	M5	0.8			70	14	25	6	4.9	4.2
TPH452B10 M6x1.0	M6	1			80	16	30	6	4.9	5
TPH452B10 M8x1.25	M8	1.25			90	18	35	8	6.2	6.8
TPH452B10 M10x1.5	M10	1.5			100	20	39	10	8	8.5
TPH652B10 M12x1.75	M12	1.75	DIN376	ISO 2-6H	110	22	-	9	7	10.2
TPH652B10 M14x2.0	M14	2			110	24	-	11	9	12
TPH652B10 M16x2.0	M16	2			110	26	-	12	9	14
TPH652B10 M20x2.5	M20	2.5			140	30	-	16	12	17.5

Filetto metrico ISO fine DIN 13 standard

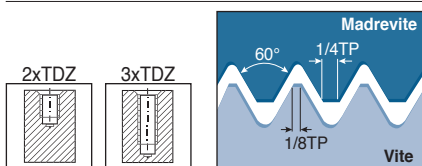
Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)					
					OAL	THL	LU	DCONMS	DRVS	Preforo
TPH552B10 MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH552B10 MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH552B10 MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH552B10 MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH552B10 MF16x1.5	M16	1.5			100	18	-	12	9	14.5



Eliche destre con angolo a 40° - non rivestito



- Per tutti gli utilizzi
- Imbocco C: smusso con 2-3 filetti



Filetto metrico ISO standard DIN 13 standard

Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)							
					OAL	THL	LU	DCONMS	DRVS	Preforo		
TPH454C M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	6	10	2.8	2.1	1.6		
TPH454C M2.5x0.45	M2.5	0.45			50	6	12	2.8	2.1	2.05		
TPH454C M3x0.5	M3	0.5			56	7	18	3.5	2.7	2.5		
TPH454C M4x0.7	M4	0.7			63	8	21	4.5	3.4	3.3		
TPH454C M5x0.8	M5	0.8			70	10	25	6	4.9	4.2		
TPH454C M6x1.0	M6	1			80	12	30	6	4.9	5		
TPH454C M8x1.25	M8	1.25			90	15	35	8	6.2	6.8		
TPH454C M10x1.5	M10	1.5			100	18	39	10	8	8.5		
TPH654C M12x1.75	M12	1.75			DIN376	ISO 2-6H	110	18	-	9	7	10.2
TPH654C M14x2.0	M14	2					110	20	-	11	9	12
TPH654C M16x2.0	M16	2	110	20			-	12	9	14		
TPH654C M20x2.5	M20	2.5	140	25			-	16	12	17.5		

Filetto metrico ISO fine DIN 13 standard

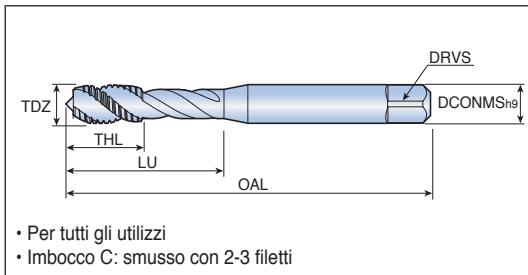
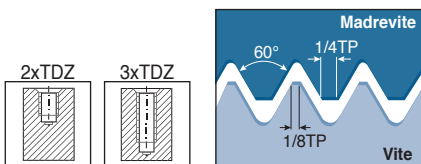
Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)					
					OAL	THL	LU	DCONMS	DRVS	Preforo
TPH554C MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH554C MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH554C MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH554C MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH554C MF16x1.5	M16	1.5			100	18	-	12	9	14.5



TPH...54C05



Eliche destre con angolo a 40° - vaporizzato



Filetto metrico ISO standard DIN 13 standard

Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)							
					OAL	THL	LU	DCONMS	DRVS	Preforo		
TPH454C05 M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	6	10	2.8	2.1	1.6		
TPH454C05 M2.5x0.45	M2.5	0.45			50	6	12	2.8	2.1	2.05		
TPH454C05 M3x0.5	M3	0.5			56	7	18	3.5	2.7	2.5		
TPH454C05 M4x0.7	M4	0.7			63	8	21	4.5	3.4	3.3		
TPH454C05 M5x0.8	M5	0.8			70	10	25	6	4.9	4.2		
TPH454C05 M6x1.0	M6	1			80	12	30	6	4.9	5		
TPH454C05 M8x1.25	M8	1.25			90	15	35	8	6.2	6.8		
TPH454C05 M10x1.5	M10	1.5			100	18	39	10	8	8.5		
TPH654C05 M12x1.75	M12	1.75			DIN376	ISO 2-6H	110	18	-	9	7	10.2
TPH654C05 M14x2.0	M14	2					110	20	-	11	9	12
TPH654C05 M16x2.0	M16	2	110	20			-	12	9	14		
TPH654C05 M20x2.5	M20	2.5	140	25			-	16	12	17.5		

Filetto metrico ISO fine DIN 13 standard

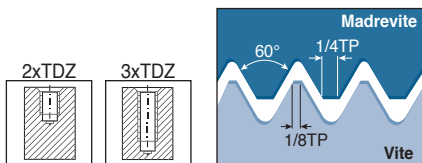
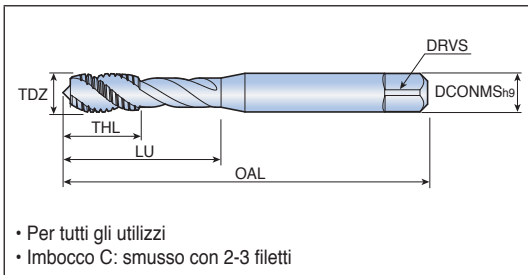
Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)					
					OAL	THL	LU	DCONMS	DRVS	Preforo
TPH554C05 MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH554C05 MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH554C05 MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH554C05 MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH554C05 MF16x1.5	M16	1.5			100	18	-	12	9	14.5



TPH...54C10



Eliche destre con angolo a 40° - rivestito TiN



Filetto metrico ISO standard DIN 13 standard

Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)							
					OAL	THL	LU	DCONMS	DRVS	Preforo		
TPH454C10 M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	6	10	2.8	2.1	1.6		
TPH454C10 M2.5x0.45	M2.5	0.45			50	6	12	2.8	2.1	2.05		
TPH454C10 M3x0.5	M3	0.5			56	7	18	3.5	2.7	2.5		
TPH454C10 M4x0.7	M4	0.7			63	8	21	4.5	3.4	3.3		
TPH454C10 M5x0.8	M5	0.8			70	10	25	6	4.9	4.2		
TPH454C10 M6x1.0	M6	1			80	12	30	6	4.9	5		
TPH454C10 M8x1.25	M8	1.25			90	15	35	8	6.2	6.8		
TPH454C10 M10x1.5	M10	1.5			100	18	39	10	8	8.5		
TPH654C10 M12x1.75	M12	1.75			DIN376	ISO 2-6H	110	18	-	9	7	10.2
TPH654C10 M14x2.0	M14	2					110	20	-	11	9	12
TPH654C10 M16x2.0	M16	2	110	20			-	12	9	14		
TPH654C10 M20x2.5	M20	2.5	140	25			-	16	12	17.5		

Filetto metrico ISO fine DIN 13 standard

Descrizione	TDZ	TP (mm)	Standard (DIN)	Tolleranza	Dimensioni (mm)					
					OAL	THL	LU	DCONMS	DRVS	Preforo
TPH554C10 MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH554C10 MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH554C10 MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH554C10 MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH554C10 MF16x1.5	M16	1.5			100	18	-	12	9	14.5



Condizioni di taglio raccomandate



Dati di lavorazione per maschiatura

Velocità di taglio Vt (m/min)

ISO	Materiale		Condizione	Maschi con eliche dritte e imbocco corretto			Refrigerante
				Non rivestito	Vaporizzato	Rivestito TiN	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C	Ricotto	5-25	5-25 *	15-45 *	E/O
		≥ 0.25% C	Ricotto	5-20	5-20 *	10-40 *	E/O
		< 0.55% C	Bonificato	-	2-15 *	5-25 *	E/O
		≥ 0.55% C	Ricotto	5-20	5-20 *	10-40 *	E/O
			Bonificato	-	2-15 *	5-25 *	E/O
	Acciaio basso legato e da fusione (elementi leganti inferiori al 5%)		Ricotto	5-25	5-25 *	15-45 *	E/O
			Bonificato	-	2-15 *	5-20 *	E/O
	Acciaio alto legato, acciaio da fusione e acciaio da utensili		Ricotto	5-20	5-20	10-40 *	E/O
			Bonificato	-	-	5-20	O/S
M	Acciaio inox e acciaio inox da fusione		Ferritico / martensitico	-	2-10 *	5-20 *	E/O
			Martensitico	-	2-10 *	5-20 *	E/O
			Austenitico	-	2-10 *	5-20 *	E/O
K	Ghisa grigia (GG)		Ferritico	10-15	10-25	15-45	E/A
			Perlitico	10-15	10-25	10-40	E/A
	Ghisa nodulare (GGG)		Ferritico	8-12	5-20	10-30	E/A
			Perlitico	8-12	5-15	10-25	E/A
	Ghisa malleabile		Ferritico	10-15	10-25	15-45	E/A
			Perlitico	10-15	10-20	10-40	E/A
N	Alluminio		Non trattato	15-25 *	15-25	15-25	E/O
			Trattato	15-25 *	15-25	15-25	E/O
	Leghe di alluminio	≤ 12% Si	Non trattato	15-20 *	10-20	15-40 *	E/O
			Trattato	15-20 *	10-20	15-40 *	E/O
		> 12% Si	Alte temperature	15-20 *	15-20	10-30	E/O
		>1% Pb	Alta lavorabilità	15-25 *	15-25	10-30	E/O
	Leghe di rame		Ottone	10-40	10-40	20-60	E/O
			Rame elettrolitico	10-15 *	2-10	5-25	E/O
Materiali non metallici		Materiali plastici, grafite	-	10-20	10-20	A	
		Gomma dura	-	10-20	10-20	A	
S	Leghe resistenti al calore	Base Fe	Ricotto	-	-	3-5	S
			Trattato	-	-	3-5	S
		Base Ni o Co	Ricotto	-	-	2-4	S
			Trattato	-	-	2-4	S
	Titanio, leghe di titanio		Fuso	-	-	2-4	S
			Leghe trattate alpha+beta	-	-	4-6	S

• **Lubrificazione** E: Emulsione O: Olio da taglio S: Olio da taglio speciale A: Aria/secco * : Raccomandato

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio ■ Acciaio inox ■ Ghisa ■ Non ferrosi ■ Superleghe ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per maschiatura

Velocità di taglio Vt (m/min)

ISO	Materiale		Condizione	Maschi con eliche destre e angolo a 40°			Refrigerante
				Non rivestito	Vaporizzato	Rivestito TiN	
P	Acciaio non legato, acciaio da fusione,	< 0.25% C	Ricotto	5-25	5-25 *	15-45 *	E/O
		≥ 0.25% C	Ricotto	5-20	5-20 *	10-40 *	E/O
	acciaio ad alta lavorabilità	< 0.55% C	Bonificato	-	2-15 *	5-25 *	E/O
		≥ 0.55% C	Ricotto	5-20	5-20 *	10-40 *	E/O
	Acciaio basso legato e da fusione (elementi leganti inferiori al 5%)		Bonificato	-	2-15 *	5-20 *	E/O
			Ricotto	5-25	5-25 *	15-45 *	E/O
M	Acciaio inox e acciaio inox da fusione		Ricotto	5-20	5-20	10-40 *	E/O
			Bonificato	-	-	5-20	O/S
			Ferritico / martensitico	-	2-10 *	5-20 *	E/O
			Martensitico	-	2-10 *	5-20 *	E/O
K	Ghisa grigia (GG)		Austenitico	-	2-10 *	5-20 *	E/O
			Ferritico	10-15	10-25	15-45	E/A
	Ghisa nodulare (GGG)		Perlitico	10-15	10-20	10-40	E/A
			Ferritico	8-12	5-20	10-30	E/A
	Ghisa malleabile		Perlitico	8-12	5-15	10-25	E/A
			Ferritico	10-15	10-25	15-45	E/A
N	Alluminio		Perlitico	10-15	10-20	10-40	E/A
			Non trattato	15-25 *	15-25	15-25	E/O
	Leghe di alluminio	≤ 12% Si	Trattato	15-25 *	15-25	15-25	E/O
		> 12% Si	Non trattato	15-20 *	10-20	15-40 *	E/O
	Leghe di rame	>1% Pb	Alte temperature	15-20 *	15-20	10-30	E/O
			Alta lavorabilità	15-25 *	15-25	10-30	E/O
	Materiali non metallici		Ottone	10-40	10-40	50-60	E/O
			Rame elettrolitico	10-15 *	2-10	5-25	E/O
S	Leghe resistenti al calore	Base Fe	Ricotto	-	-	3-5	S
			Trattato	-	-	3-5	S
		Base Ni o Co	Ricotto	-	-	2-4	S
			Trattato	-	-	2-4	S
	Titanio, leghe di titanio		Fuso	-	-	2-4	S
				-	-	4-6	S
				-	-	4-6	S
			Leghe trattate alpha+beta	-	-	4-6	S

• **Lubrificazione** E: Emulsione O: Olio da taglio S: Olio da taglio speciale A: Aria/secco * : Raccomandato

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio ■ Acciaio inox ■ Ghisa ■ Non ferrosi ■ Superleghe ■ Temprato



FORATURA



FORATURA

INDUSTRY 4.0



Contenuti

Guida alla scelta dell'utensile	D4
Gradi	D14
Utensili per foratura	
TOP-DRILL	D16
T-DRILL	D32
DRILL-SFEED	D49
DRILL-RUSH	D51
Utensili per smussatura	D61
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SPADE-RUSH	D66
SOLID-3-DRILL	D69
H-DRILL	D71
T-CHAMFER	D87
TOP-CAP	D89
T-DEEP	D94
Inseri e cuspidi per foratura	D145
Condizioni di taglio raccomandate (Foratura)	D180

Guida alle icone



➤ Refrigerante esterno



➤ Refrigerante interno



➤ Foro passante



➤ Foro cieco



➤ Pagina tubo



➤ Pagina cuspidi e testina



➤ Pagina pattino



➤ Pagina cartuccia



➤ Pagina inserto



➤ Pagina corpo punta e teste per foratura profonda



➤ Pagina assemblaggio



➤ Pagina inform. tecniche



➤ Pagina Condizioni di taglio



Utensili per alesatura

TS-REAM

D213

TM-REAM

D215

TB-REAM

D217

Testine e lame per alesatura

D220

Condizioni di taglio raccomandate (Alesatura)

D223

Informazioni tecniche

D230

Modulo d'ordine speciale

D238

Guida alla scelta dell'utensile

Utensili per foratura

Serie		Punte ad inserti					
		TOPDRILL		TDRILL		TDEEP	
		TOP 2/3/4/5	TOP-CA	TDR 2/3/4/5	TDR-CA	TRGD	
Pagina		D16 - D27	D28 - D31	D32 - D44	D45 - D47	D139 - D144	
Diametro (mm)		Ø12.0 - Ø50.0	Ø51.0 - Ø80.0	Ø12.5 - Ø50.0	Ø51.0 - Ø80.0	Ø14.0 - Ø36.0	
Profondità foratura (L/D)		2, 3, 4, 5 x D	2, 3, 4 x D	2, 3, 4, 5 x D	2.5, 3.5 x D	10-25 x D	
Tolleranza foro		IT 11-13	IT 12-13	IT 12-13	IT 12-13	IT 10-11	
Applicazione	Foratura generale		●	●	●	●	●
	Incrocio di fori		●	●	●	●	○
	Superficie irregolare		○	○	○	○	
	Taglio interrotto		○	○	○	○	
	Smussatura						
Refrigerazione		Interna	Interna	Interna	Interna	Interna	

Guida alla scelta dell'utensile











Utensili per foratura

Punte con cuspidi intercambiabile					Punte in met. duro
<i>DRILLSPEED</i>	<i>DRILLRUSH</i>	<i>MODURDRILL</i>	<i>SPADERUSH</i>	<i>SOLID3DRILL</i>	
3ED	TCD	TCD-M	TNDH-TP/ MDB	LCD	3HD
					
D49 - D50	D51 - D59	D60	D62 - D65	D66 - D68	D69 - D70
Ø16.0 - Ø20.9	Ø6.0 - Ø25.9	M8 - M24 (ISO)	Ø26.0 - Ø50.0	Ø20.0 - Ø41.0	Ø4.0 - Ø12.0
3, 5 x D	1.5, 3, 5, 8, 12 x D		3, 5 x D	3, 5, 8 x D	3, 5 x D
IT 9-10	IT 9-10	IT 9-10	IT 10-12	IT 9-10	IT 8-10
●	●	●	●	●	●
○	●		●	●	●
		●			
Interna	Interna	Interna	Interna	Interna	Interna

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile

Utensili per foratura

Serie		Punte in metallo duro				Multifunzione	
		HDRILL				TOPCAP	
		NHD-PE/PI	SHO 10/15/20	SHO-M	CDF	TCAP	
							
Pagina		D71 - D82	D84	D85	D86	D89 - D93	
Diametro (mm)		Ø3.0 - Ø12.0	Ø4.0 - Ø10.0	M4 - M10 (ISO)	Ø3.0 - Ø12.7	Ø8.0 - Ø32.0	
Profondità foratura (L/D)		3, 5 x D	10, 15, 20 x D			2.25, 3 x D	
Tolleranza foro		IT 8-10	IT 8-10	IT 8-10	IT 8-10	IT 10-12	
Applicazione	Foratura generale		●	●	●	●	●
	Incrocio di fori		●	○			
	Superficie irregolare						●
	Taglio interrotto						
	Smussatura				●		
Refrigerazione		Esterna / interna	Interna	Interna	Esterna	Interna	

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile

Utensili per foratura profonda

Serie		Testine per foratura ad inserti				
		TDEEP				
		TBTA3	TBTA5	TBTA7	TBTA9	TBTA-FB
Pagina		D95 - D100	D101 - D104	D105 - D107	D108 - D110	D111 - D115
Diametro (mm)		Ø38.00 - Ø106.99	Ø107.00 - Ø168.99	Ø169.00 - Ø232.99	Ø233.00 - Ø291.99	Ø25.00 - Ø65.00
Profondità foratura (L/D)		100 x D	100 x D	100 x D	100 x D	100 x D
Tolleranza foro		IT 10	IT 10	IT 10	IT 10	IT 10
Finitura superficiale		3µm	3µm	3µm	3µm	3µm
Tubo singolo	Filetto est. 4 principi	●	●	●	●	●
	Filetto int. 1 principio	●	●	●★	●	●
Tubo doppio	Filetto est. 4 principi	●	●			●

★ Nel caso di un filetto interno ad un principio la TBTA7 può arrivare fino al diametro 245.99 mm












Serie		Testine per foratura ed allargatura ad inserti		Testine per foratura saldobrasate	
		TDEEP			
		TBTA-TR	TBTA-R	BTA-SE/DE	BTS-SE
Pagina		D122 - D125	D116 - D121	D126 - D128	D129
Diametro (mm)		Ø16.00 - Ø28.00	Ø25.00 - Ø110.99	Ø12.60 - Ø65.00	Ø8.00 - Ø20.00
Profondità foratura (L/D)		100 x D	100 x D	100 x D	100 x D
Tolleranza foro		IT 10	IT 7 - IT 9	IT 9	IT 9
Finitura superficiale		3µm	1-2µm	2µm	2µm
Tubo singolo	Filetto est. 4 principi	●	●	●	●★
	Filetto int. 1 principio	●	●		
Tubo doppio	Filetto est. 4 principi	●		●	

★ Da diametro 12.60 a 15.59 mm con filetto esterno a due principi

● Raccomandata

Guida alla scelta dell'utensile

Utensili per alesatura











Serie				Alesatori integrali		Alesatori intercambiabili			
				<i>TSREAM</i>		<i>TMREAM</i>		<i>TBREAM</i>	
				TS		TM		TB	
									
Pagina				D213 - D214	D215 - D216	D217 - D219			
Diametro (mm)				Ø3.000 - Ø12.000	Ø11.501 - Ø32.000	Ø8.000 - Ø32.000			
Profondità di alesatura (L/D)				7.5-10 x D	3, 5, 8 x D	5-9 x D			
Tolleranza foro				IT 7	IT 7 ★	IT 6 ★★			
Applicazione		Passante	Cieco						
	Alesatura generale			●	●	●			
	Incrocio di fori			●		●			
	Superficie irregolare			●		●			
	Taglio interrotto			●	●	●			
Refrigerazione				Interna	Interna	Interna			

★ Fino a tolleranza IT 6 ★★ Fino a tolleranza IT 5

● Raccomandata

Guida alla scelta dell'utensile











Inserti e cuspidi per foratura

		TOPDRILL	TDRILL	DRILLSPEED	DRILLRUSH		
		SOMT	SPMG	3ED-P+	TCD-P/M/K/N	TCD-P+	
Serie							
Pagina		D146 - D147	D148 - D149	D149	D150 - D156	D157 - D158	
Diametro / misura		04/05/06/07/08 09/11/13/15	05/06/07/09 11/12/14	Ø16.0 - Ø20.5	Ø6.0 - Ø25.9	Ø6.0 - Ø25.9	
Geometria		DP, DK, DL, DA	DG, DK, DA	P+	P/M/K/N	P+	
Grado		TT9080, TT9300 TT8020, TT6080 K10	TT9030, TT8020 TT7400, TT6030 K10	TT5130	TT9080 UF10	TT9080	
Applicazione	Foratura generale		●	●	●	●	●
	Incrocio di fori		●	●	●	●	●
	Superficie irregolare		○	○	○	○	○
	Taglio interrotto		○	○			
	Smussatura						

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile

Inserti e cuspidi per foratura

		DRILLRUSH			MODURDRILL	
		TCD-F	TCD-P2	AOMT	TCD-P-CO+	SPGX...DW
Serie						
Pagina		D159 - D160	D161	D162	D163	D163
Diametro / misura		Ø8.0 - Ø25.5	Ø8.0 - Ø19.5	06 - C45	Ø15.9 - Ø25.9	06/07/09/11/14
Geometria		F	P2	-	P-CO+	DW
Grado		TT9080	TT9080	TT9080	TT9080	TT9080
Applicazione	Foratura generale		•	•	•	•
	Incrocio di fori		•	•	•	•
	Superficie irregolare		○	○	○	○
	Taglio interrotto					
	Smussatura				•	

Guida alla scelta dell'utensile
















Inserti e cuspidi per foratura

<i>SPADERUSH</i>		<i>DRILLRUSH</i>	<i>TCHAMFER</i>	<i>TOPCAP</i>
LCD-P	LCD-F	CRNG	XCGT	XCGT XCMT
				
D164 - D165	D165 - D166	D162	D167	D168 - D169
Ø20.0 - Ø41.0	Ø20.0 - Ø41.0	08 - 45CD	06/09	04/05/06/07/08 10/13/17
P	F	-	C30/C45/C60	TA/GV/TC
TT9080	TT9080	TT9080	TT9050	TT9080, TT8020, TT9030, K10
●				●
●				
○				
	●		●	

● Raccomandata, ○ Adatta











Guida alla scelta dell'utensile

Inserti e cuspidi per foratura

		<i>TDEEP</i>			
		NPHT NPMT	NPMX TPMX	TOGT	TPMX XPMT
Serie					
Pagina		D170 - D171	D172	D173	D174
Diametro / misura		05/06/07/08/09 /11/12/13	08/14/17/24/28	07/08/09/10/11/12	14/16/17/24
Geometria		RG/LG	RB/RG	RS/GF	LG/-45
Grado		TT9030, TT6020, TT8125	TT9030, TT8125, TT7400, TT9300, TT7100, TT3500	TT9030	TT9030
Applicazione	Foratura generale	 ●	 ●	 ●	 ●
	Incrocio di fori	 ○	 ○	 ○	 ○
	Superficie irregolare				
	Taglio interrotto				
	Smussatura				

Guida alla scelta dell'utensile

Testine e lame per alesatura

			TMREAM	TBREAM
			TM	TB
Serie				
Pagina			D220 - D221	D222
Diametro / misura			Ø11.501 - Ø32.000	1/2/3/4
Geometria			BL/AS	A06/B06/B12
Grado			TT9030	TT5030, TT5050
Applicazione		Passante	Cieco	
	Alesatura generale			●
	Incrocio di fori			
	Superficie irregolare			
	Taglio interrotto			

● Raccomandata, ○ Adatta

Gradi

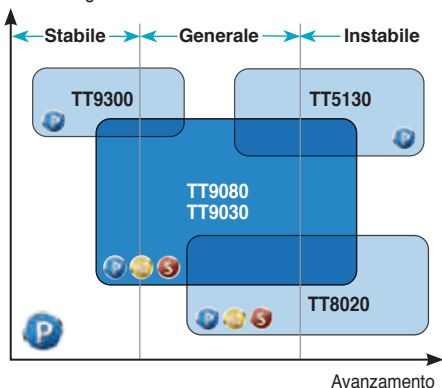
Foratura

Gradi	ISO	Caratteristiche e applicazioni
TT6080 Rivestito PVD	K05 – K25 H05 – H25	<ul style="list-style-type: none"> Lavorazione generale di ghisa grigia e ghisa duttile Lavorazione media e finitura di acciaio temprato
TT9300 Rivestito CVD	P10 – P25	<ul style="list-style-type: none"> Lavorazione ad alta velocità di acciaio al carbonio e acciaio legato
TT5130 Rivestito PVD	P20 – P40 K20 – K40	<ul style="list-style-type: none"> Lavorazione ad alta velocità di acciaio al carbonio e acciaio legato
TT9080 Rivestito PVD	P20 – P40 M20 – M40 S20 – S40	<ul style="list-style-type: none"> Lavorazione generale di acciaio Lavorazione generale di acciaio inossidabile Lavorazione generale di superleghe
TT9030 Rivestito PVD	P20 – P40 M20 – M40 S20 – S40	<ul style="list-style-type: none"> Lavorazione generale di acciaio Lavorazione generale di acciaio inossidabile Lavorazione generale di superleghe
TT8020 Rivestito PVD	P30 – P50 M30 – M50 S30 – S50	<ul style="list-style-type: none"> Lavorazione di sgrossatura e taglio interrotto di acciaio Lavorazione di sgrossatura e taglio interrotto di acciaio inossidabile Lavorazione a basse velocità e taglio interrotto di superleghe
K10 Non rivestito	K05 – K15 N05 – N15 S05 – S15	<ul style="list-style-type: none"> Lavorazione generale di ghisa Lavorazione generale di leghe di alluminio e materiali non ferrosi Lavorazione generale di superleghe
UF1A/UF10 Non rivestito	N10 – N25 S10 – S30	<ul style="list-style-type: none"> Lavorazione generale di leghe di alluminio e materiali non ferrosi Lavorazione generale di superleghe

Guida alla scelta dei gradi di foratura

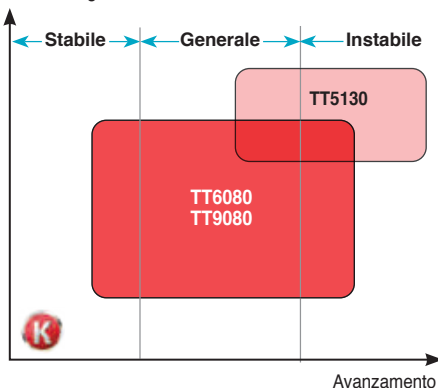
Per acciaio

Velocità di taglio



Per ghisa

Velocità di taglio



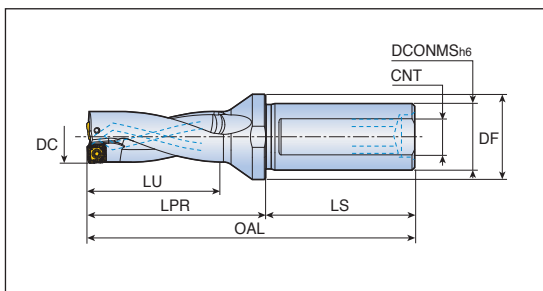
Utensili per foratura



Corpo punta ad inserti



• Profondità foratura: 2x diametro

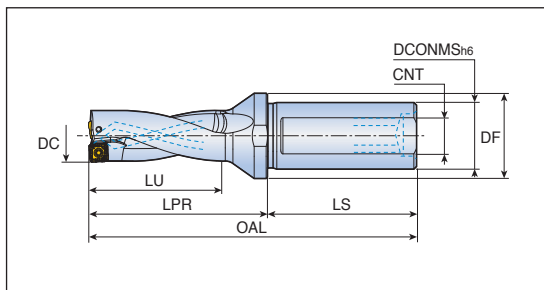


Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 2120-20T2-04	12.0	20	25	24	44	50	M13X1.0	SOMT 04...DP
2125-20T2-04	12.5	20	25	26	46	50	M13X1.0	D146
2130-20T2-04	13.0	20	25	26	46	50	M13X1.0	
2135-20T2-04	13.5	20	25	28	46	50	M13X1.0	SOMT 05...DP/DL/DK/DA
2140-20T2-05	14.0	20	25	28	46	50	M13X1.0	
2145-20T2-05	14.5	20	25	30	49	50	M13X1.0	D146-147
2150-20T2-05	15.0	20	25	30	49	50	M13X1.0	
2155-20T2-05	15.5	20	25	32	52	50	M13X1.0	SOMT 06...DP/DL/DK/DA
2160-20T2-05	16.0	20	25	32	52	50	M13X1.0	
2165-25T2-06	16.5	25	32	34	54	56	M16X1.5	D146-147
2170-25T2-06	17.0	25	32	34	54	56	M16X1.5	
2175-25T2-06	17.5	25	32	36	57	56	M16X1.5	SOMT 07...DP/DL/DK/DA
2180-25T2-06	18.0	25	32	36	57	56	M16X1.5	
2185-25T2-06	18.5	25	32	38	59	56	M16X1.5	D146-147
2190-25T2-06	19.0	25	32	38	59	56	M16X1.5	
2195-25T2-07	19.5	25	32	40	63	56	M16X1.5	SOMT 08...DP/DL/DK/DA
2200-25T2-07	20.0	25	32	40	63	56	M16X1.5	
2205-25T2-07	20.5	25	32	42	65	56	M16X1.5	D146-147
2210-25T2-07	21.0	25	32	42	65	56	M16X1.5	
2215-25T2-07	21.5	25	32	44	67	56	M16X1.5	SOMT 08...DP/DL/DK/DA
2220-25T2-07	22.0	25	32	44	67	56	M16X1.5	
2225-25T2-08	22.5	25	32	46	68	56	M16X1.5	D146-147
2230-25T2-08	23.0	25	32	46	68	56	M16X1.5	
2230-32T2-08	23.0	32	40	46	68	60	M22X2.0	SOMT 08...DP/DL/DK/DA
2235-25T2-08	23.5	25	32	48	70	56	M16X1.5	
2235-32T2-08	23.5	32	40	48	70	60	M22X2.0	D146-147
2240-25T2-08	24.0	25	32	48	70	56	M16X1.5	
2240-32T2-08	24.0	32	40	48	70	60	M22X2.0	SOMT 08...DP/DL/DK/DA
2245-25T2-08	24.5	25	32	50	72	56	M16X1.5	
2245-32T2-08	24.5	32	40	50	72	60	M22X2.0	D146-147
2250-25T2-08	25.0	25	32	50	72	56	M16X1.5	
2250-32T2-08	25.0	32	40	50	72	60	M22X2.0	SOMT 08...DP/DL/DK/DA
2255-25T2-08	25.5	25	32	52	73	56	M16X1.5	
2255-32T2-08	25.5	32	40	52	73	60	M22X2.0	D146-147
2260-25T2-08	26.0	25	32	52	73	56	M16X1.5	
2260-32T2-08	26.0	32	40	52	73	60	M22X2.0	

• OAL = LPR + LS



Corpo punta ad inserti



- Profondità foratura: 2xdiametro



Descrizione	Dimensioni (mm)							Inserto	
	DC	DCONMS	DF	LU	LPR	LS	CNT		
TOP 2265-32T2-09	26.5	32	40	54	77	60	M22X2.0	SOMT 09...DP/DL/DK/DA D146-147	
2270-25T2-09	27.0	25	40	54	77	56	M16X1.5		
2270-32T2-09	27.0	32	40	54	77	60	M22X2.0		
2275-32T2-09	27.5	32	40	56	79	60	M22X2.0		
2280-25T2-09	28.0	25	40	56	79	56	M16X1.5		
2280-32T2-09	28.0	32	40	56	79	60	M22X2.0		
2285-32T2-09	28.5	32	40	58	81	60	M22X2.0		
2290-25T2-09	29.0	25	40	58	81	56	M16X1.5		
2290-32T2-09	29.0	32	40	58	81	60	M22X2.0		
2295-32T2-09	29.5	32	40	60	83	60	M22X2.0		
2300-32T2-09	30.0	32	40	60	83	60	M22X2.0		
2305-32T2-09	30.5	32	40	62	85	60	M22X2.0		
2310-32T2-09	31.0	32	40	62	85	60	M22X2.0		
2320-32T2-11	32.0	32	40	64	87	60	M22X2.0	SOMT 11...DP/DL/DK/DA D146-147	
2320-40T2-11	32.0	40	50	64	87	70	M30X2.0		
2330-32T2-11	33.0	32	40	66	89	60	M22X2.0		
2330-40T2-11	33.0	40	50	66	89	70	M30X2.0		
2340-32T2-11	34.0	32	40	68	91	60	M22X2.0		
2340-40T2-11	34.0	40	50	68	91	70	M30X2.0		
2350-32T2-11	35.0	32	40	70	93	60	M22X2.0		
2350-40T2-11	35.0	40	50	70	93	70	M30X2.0		
2360-32T2-11	36.0	32	40	72	95	60	M22X2.0		
2360-40T2-11	36.0	40	50	72	95	70	M30X2.0		
2370-32T2-13	37.0	32	50	74	102	60	M22X2.0		SOMT 13...DP/DL/DK/DA D146-147
2370-40T2-13	37.0	40	50	74	102	70	M30X2.0		
2380-32T2-13	38.0	32	50	76	104	60	M22X2.0		
2380-40T2-13	38.0	40	50	76	104	70	M30X2.0		
2390-32T2-13	39.0	32	50	78	106	60	M22X2.0		
2390-40T2-13	39.0	40	50	78	106	70	M30X2.0		
2400-32T2-13	40.0	32	50	80	108	60	M22X2.0		
2400-40T2-13	40.0	40	50	80	108	70	M30X2.0		
2410-40T2-13	41.0	40	50	82	110	70	M30X2.0		
2420-40T2-13	42.0	40	50	84	112	70	M30X2.0		
2430-40T2-13	43.0	40	50	86	114	70	M30X2.0		

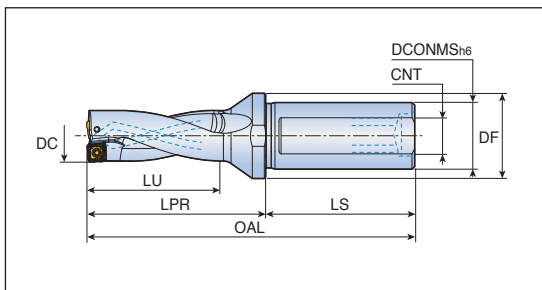
- OAL = LPR+LS



Corpo punta ad inserti



- Profondità foratura: 2xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 2440-40T2-15	44.0	40	60	88	123	70	M30X2.0	SOMT 15...DP/DL/DK/DA D146-147
2450-40T2-15	45.0	40	60	90	125	70	M30X2.0	
2460-40T2-15	46.0	40	60	92	127	70	M30X2.0	
2470-40T2-15	47.0	40	60	94	129	70	M30X2.0	
2480-40T2-15	48.0	40	60	96	131	70	M30X2.0	
2490-40T2-15	49.0	40	60	98	133	70	M30X2.0	
2500-40T2-15	50.0	40	60	100	135	70	M30X2.0	

- OAL = LPR+LS

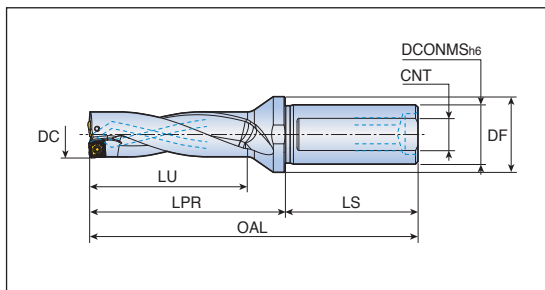
Ricambi

Descrizione	Vite	Chiave	Tappo filettato*	
TOP 2120 - 2135	TS 18041/HG	TD 6P	SL 20M	
TOP 2140 - 2160	TS 20043/HG-P	TD 6P	SL 20M	
TOP 2165 - 2220	TS 22052/HG-P	TD 7P	SL 25M	
TOP 2225 - 2260	SO 25065I	TD 7	SL 25M / SL 32M	
TOP 2265 - 2360	TS 35088I	TD 10	SL 25M / SL 32M / SL 40M	
TOP 2370 - 2430	TS 40093I	TD 15	SL 32M / SL 40M	
TOP 2440 - 2550	TS 50115I	TD 20	SL 40M	



- * Note: Il tappo filettato per l'attacco del refrigerante sul tornio deve essere ordinato separatamente (esempio d'ordine: tappo filettato per diametro gambo 25.0 mm - SL 25M)

Corpo punta ad inserti



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 3120-20T2-04	12.0	20	25	36	56	50	M13X1.0	SOMT 04...DP
3125-20T2-04	12.5	20	25	39	59	50	M13X1.0	D146
3130-20T2-04	13.0	20	25	39	59	50	M13X1.0	
3135-20T2-04	13.5	20	25	42	60	50	M13X1.0	
3140-20T2-05	14.0	20	25	42	60	50	M13X1.0	SOMT 05...DP/DL/DK/DA
3145-20T2-05	14.5	20	25	45	64	50	M13X1.0	D146-147
3150-20T2-05	15.0	20	25	45	64	50	M13X1.0	
3155-20T2-05	15.5	20	25	48	68	50	M13X1.0	
3160-20T2-05	16.0	20	25	48	68	50	M13X1.0	
3165-25T2-06	16.5	25	32	51	71	56	M16X1.5	SOMT 06...DP/DL/DK/DA
3167-25T2-06 *	16.7	25	32	51	71	56	M16X1.5	D146-147
3170-25T2-06	17.0	25	32	51	71	56	M16X1.5	
3175-25T2-06	17.5	25	32	54	75	56	M16X1.5	
3180-25T2-06	18.0	25	32	54	75	56	M16X1.5	
3185-25T2-06	18.5	25	32	57	78	56	M16X1.5	
3190-25T2-06	19.0	25	32	57	78	56	M16X1.5	
3195-25T2-07	19.5	25	32	60	83	56	M16X1.5	SOMT 07...DP/DL/DK/DA
3200-25T2-07	20.0	25	32	60	83	56	M16X1.5	D146-147
3205-25T2-07	20.5	25	32	63	86	56	M16X1.5	
3210-25T2-07	21.0	25	32	63	86	56	M16X1.5	
3215-25T2-07	21.5	25	32	66	89	56	M16X1.5	
3220-25T2-07	22.0	25	32	66	89	56	M16X1.5	
3222-25T2-07 *	22.2	25	32	66	89	56	M16X1.5	
3225-25T2-08	22.5	25	32	69	91	56	M16X1.5	SOMT 08...DP/DL/DK/DA
3230-25T2-08	23.0	25	32	69	91	56	M16X1.5	D146-147
3230-32T2-08	23.0	32	40	69	91	60	M22X2.0	
3235-25T2-08	23.5	25	32	72	94	56	M16X1.5	
3235-32T2-08	23.5	32	40	72	94	60	M22X2.0	
3240-25T2-08	24.0	25	32	72	94	56	M16X1.5	
3240-32T2-08	24.0	32	40	72	94	60	M22X2.0	
3245-25T2-08	24.5	25	32	75	97	56	M16X1.5	
3245-32T2-08	24.5	32	40	75	97	60	M22X2.0	
3250-25T2-08	25.0	25	32	75	97	56	M16X1.5	
3250-32T2-08	25.0	32	40	75	97	60	M22X2.0	
3254-25T2-08 *	25.4	25	32	75	97	56	M16X1.5	

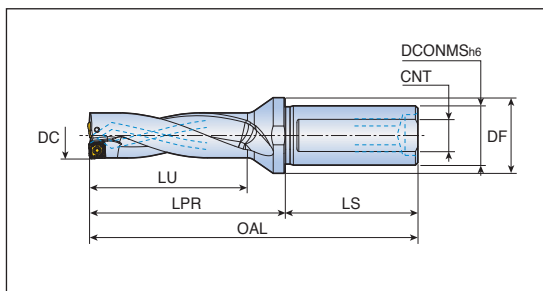


- *! Gli articoli contrassegnati sono per eseguire i fori in pollici
- OAL = LPR+LS

Corpo punta ad inserti



- Profondità foratura: 3xdiametro

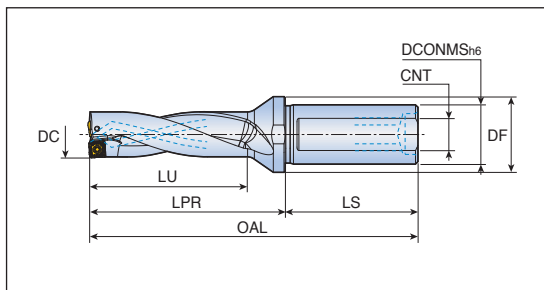


Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 3255-25T2-08	25.5	25	32	78	99	56	M16X1.5	SOMT 08...DP/DL/DK/DA
3255-32T2-08	25.5	32	40	78	99	60	M22X2.0	D146-147
3260-25T2-08	26.0	25	32	78	99	56	M16X1.5	
3260-32T2-08	26.0	32	32	78	99	60	M22X2.0	
3265-25T2-09	26.5	25	40	81	104	56	M16X1.5	SOMT 09...DP/DL/DK/DA
3265-32T2-09	26.5	32	40	81	104	60	M22X2.0	D146-147
3270-25T2-09	27.0	25	40	81	104	56	M16X1.5	
3270-32T2-09	27.0	32	40	81	104	60	M22X2.0	
3275-25T2-09	27.5	25	40	84	107	56	M16X1.5	
3275-32T2-09	27.5	32	40	84	107	60	M22X2.0	
3280-25T2-09	28.0	25	40	84	107	56	M16X1.5	
3280-32T2-09	28.0	32	40	84	107	60	M22X2.0	
3285-25T2-09	28.5	25	40	87	110	56	M16X1.5	
3285-32T2-09	28.5	32	40	87	110	60	M22X2.0	
3290-25T2-09	29.0	25	40	87	110	56	M16X1.5	
3290-32T2-09	29.0	32	40	87	110	60	M22X2.0	
3295-32T2-09	29.5	32	40	90	113	60	M22X2.0	
3300-32T2-09	30.0	32	40	90	113	60	M22X2.0	
3305-32T2-09	30.5	32	40	93	116	60	M22X2.0	
3310-32T2-09	31.0	32	40	93	116	60	M22X2.0	
3320-32T2-11	32.0	32	40	96	119	60	M22X2.0	SOMT 11...DP/DL/DK/DA
3320-40T2-11	32.0	40	50	96	119	70	M30X2.0	D146-147
3330-32T2-11	33.0	32	40	99	122	60	M22X2.0	
3330-40T2-11	33.0	40	50	99	122	70	M30X2.0	
3340-32T2-11	34.0	32	40	102	125	60	M22X2.0	
3340-40T2-11	34.0	40	50	102	125	70	M30X2.0	
3350-32T2-11	35.0	32	40	105	128	60	M22X2.0	
3350-40T2-11	35.0	40	50	105	128	70	M30X2.0	
3360-32T2-11	36.0	32	40	108	131	60	M22X2.0	
3360-40T2-11	36.0	40	50	108	131	70	M30X2.0	
3370-32T2-13	37.0	32	50	111	139	60	M22X2.0	SOMT 13...DP/DL/DK/DA
3370-40T2-13	37.0	40	50	111	139	70	M30X2.0	D146-147
3380-32T2-13	38.0	32	50	114	142	60	M22X2.0	
3380-40T2-13	38.0	40	50	114	142	70	M30X2.0	
3390-32T2-13	39.0	32	50	117	145	60	M22X2.0	



- OAL = LPR + LS

Corpo punta ad inserti



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 3390-40T2-13	39.0	40	50	117	145	70	M30X2.0	SOMT 13...DP/DL/DK/DA D146-147
3400-32T2-13	40.0	32	50	120	148	60	M22X2.0	
3400-40T2-13	40.0	40	50	120	148	70	M30X2.0	
3410-40T2-13	41.0	40	50	123	151	70	M30X2.0	
3420-40T2-13	42.0	40	50	126	154	70	M30X2.0	
3430-40T2-13	43.0	40	50	129	157	70	M30X2.0	SOMT 15...DP/DL/DK/DA D146-147
3440-40T2-15	44.0	40	60	132	167	70	M30X2.0	
3450-40T2-15	45.0	40	60	135	170	70	M30X2.0	
3460-40T2-15	46.0	40	60	138	173	70	M30X2.0	
3470-40T2-15	47.0	40	60	141	176	70	M30X2.0	
3480-40T2-15	48.0	40	60	144	179	70	M30X2.0	
3490-40T2-15	49.0	40	60	147	182	70	M30X2.0	
3500-40T2-15	50.0	40	60	150	185	70	M30X2.0	

- OAL = LPR+LS

Ricambi

Descrizione	Vite	Chiave	Tappo filettato*	
TOP 3120 - 3135	TS 18041/HG	TD 6P	SL 20M	
TOP 3140 - 3160	TS 20043I/HG-P	TD 6P	SL 20M	
TOP 3165 - 3220	TS 22052I/HG-P	TD 7P	SL 25M	
TOP 3225 - 3260	SO 25065I	TD 7	SL 25M / SL 32M	
TOP 3265 - 3360	TS 35088I	TD 10	SL 25M / SL 32M / SL 40M	
TOP 3370 - 3430	TS 40093I	TD 15	SL 32M / SL 40M	
TOP 3440 - 3500	TS 50115I	TD 20	SL 40M	

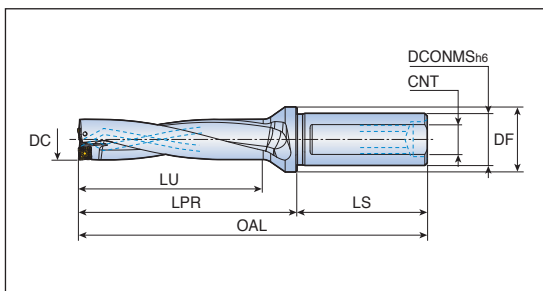


- * Note: Il tappo filettato per l'attacco del refrigerante sul tornio deve essere ordinato separatamente (esempio d'ordine: tappo filettato per diametro gambo 25.0 mm - SL 25M)

Corpo punta ad inserti



- Profondità foratura: 4xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 4120-20T2-04	12.0	20	25	48	68	50	M13X1.0	SOMT 04...DP
4125-20T2-04	12.5	20	25	52	72	50	M13X1.0	D146
4130-20T2-04	13.0	20	25	52	72	50	M13X1.0	
4135-20T2-04	13.5	20	25	56	74	50	M13X1.0	
4140-20T2-05	14.0	20	25	56	74	50	M13X1.0	SOMT 05...DP/DL/DK/DA
4145-20T2-05	14.5	20	25	60	79	50	M13X1.0	D146-147
4150-20T2-05	15.0	20	25	60	79	50	M13X1.0	
4155-20T2-05	15.5	20	25	64	84	50	M13X1.0	
4160-20T2-05	16.0	20	25	64	84	50	M13X1.0	
4165-25T2-06	16.5	25	32	68	88	56	M16X1.5	SOMT 06...DP/DL/DK/DA
4170-25T2-06	17.0	25	32	68	88	56	M16X1.5	D146-147
4175-25T2-06	17.5	25	32	72	93	56	M16X1.5	
4180-25T2-06	18.0	25	32	72	93	56	M16X1.5	
4185-25T2-06	18.5	25	32	76	97	56	M16X1.5	
4190-25T2-06	19.0	25	32	76	97	56	M16X1.5	
4195-25T2-07	19.5	25	32	80	103	56	M16X1.5	SOMT 07...DP/DL/DK/DA
4200-25T2-07	20.0	25	32	80	103	56	M16X1.5	D146-147
4205-25T2-07	20.5	25	32	84	107	56	M16X1.5	
4210-25T2-07	21.0	25	32	84	107	56	M16X1.5	
4215-25T2-07	21.5	25	32	88	111	56	M16X1.5	
4220-25T2-07	22.0	25	32	88	111	56	M16X1.5	
4225-25T2-08	22.5	25	32	92	114	56	M16X1.5	SOMT 08...DP/DL/DK/DA
4230-25T2-08	23.0	25	32	92	114	56	M16X1.5	D146-147
4230-32T2-08	23.0	32	40	92	114	60	M22X2.0	
4235-25T2-08	23.5	25	32	96	118	56	M16X1.5	
4235-32T2-08	23.5	32	40	96	118	60	M22X2.0	
4240-25T2-08	24.0	25	32	96	118	56	M16X1.5	
4240-32T2-08	24.0	32	40	96	118	60	M22X2.0	
4245-25T2-08	24.5	25	32	100	122	56	M16X1.5	
4245-32T2-08	24.5	32	40	100	122	60	M22X2.0	
4250-25T2-08	25.0	25	32	100	122	56	M16X1.5	
4250-32T2-08	25.0	32	40	100	122	60	M22X2.0	
4254-25T2-08 *	25.4	25	32	100	122	56	M16X1.5	
4255-25T2-08	25.5	25	32	104	125	56	M16X1.5	
4255-32T2-08	25.5	32	40	104	125	60	M22X2.0	

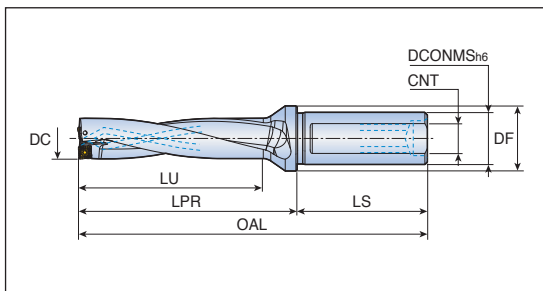


- *1* Gli articoli contrassegnati sono per eseguire i fori in pollici
- OAL = LPR+LS

Corpo punta ad inserti



- Profondità foratura: 4xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 4260-25T2-08	26.0	25	32	104	125	56	M16X1.5	SOMT 08...DP/DL/DK/DA D146-147
4260-32T2-08	26.0	32	40	104	125	60	M22X2.0	
4265-25T2-09	26.5	25	40	108	131	56	M16X1.5	
4265-32T2-09	26.5	32	40	108	131	60	M22X2.0	
4270-25T2-09	27.0	25	40	108	131	56	M16X1.5	
4270-32T2-09	27.0	32	40	108	131	60	M22X2.0	
4275-25T2-09	27.5	25	40	112	135	56	M16X1.5	
4275-32T2-09	27.5	32	40	112	135	60	M22X2.0	
4280-25T2-09	28.0	25	40	112	135	56	M16X1.5	
4280-32T2-09	28.0	32	40	112	135	60	M22X2.0	
4285-25T2-09	28.5	25	40	116	139	56	M16X1.5	
4285-32T2-09	28.5	32	40	116	139	60	M22X2.0	
4286-32T2-09 *	28.6	32	40	116	139	60	M22X2.0	
4290-25T2-09	29.0	25	40	116	139	56	M16X1.5	SOMT 09...DP/DL/DK/DA D146-147
4290-32T2-09	29.0	32	40	116	139	60	M22X2.0	
4295-32T2-09	29.5	32	40	120	143	60	M22X2.0	
4300-32T2-09	30.0	32	40	120	143	60	M22X2.0	
4305-32T2-09	30.5	32	40	124	147	60	M22X2.0	
4310-32T2-09	31.0	32	40	124	147	60	M22X2.0	
4318-32T2-11 *	31.8	32	40	128	151	60	M22X2.0	
4320-32T2-11	32.0	32	40	128	151	60	M22X2.0	
4320-40T2-11	32.0	40	50	128	151	70	M30X2.0	
4330-32T2-11	33.0	32	40	132	155	60	M22X2.0	
4330-40T2-11	33.0	40	50	132	155	70	M30X2.0	
4340-32T2-11	34.0	32	40	136	159	60	M22X2.0	
4340-40T2-11	34.0	40	50	136	159	70	M30X2.0	
4349-40T2-11 *	34.9	40	50	140	163	70	M30X2.0	
4350-32T2-11	35.0	32	40	140	163	60	M22X2.0	SOMT 11...DP/DL/DK/DA D146-147
4350-40T2-11	35.0	40	50	140	163	70	M30X2.0	
4360-32T2-11	36.0	32	40	144	167	60	M22X2.0	
4360-40T2-11	36.0	40	50	144	167	70	M30X2.0	
4370-32T2-13	37.0	32	50	148	176	60	M22X2.0	
4370-40T2-13	37.0	40	50	148	176	70	M30X2.0	
4371-40T2-13 *	37.1	40	50	148	176	70	M30X2.0	
4371-40T2-13 *	37.1	40	50	148	176	70	M30X2.0	

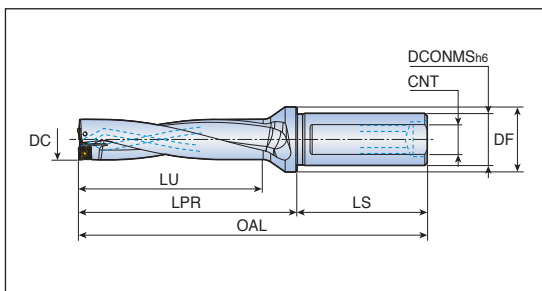


- *! Gli articoli contrassegnati sono per eseguire i fori in pollici
- OAL = LPR+LS

Corpo punta ad inserti



- Profondità foratura: 4xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 4380-32T2-13	38.0	32	50	152	180	60	M22X2.0	SOMT 13...DP/DL/DK/DA D146-147
4380-40T2-13	38.0	40	50	152	180	70	M30X2.0	
4381-40T2-13 *	38.1	40	50	152	180	70	M30X2.0	
4390-32T2-13	39.0	32	50	156	184	60	M22X2.0	
4390-40T2-13	39.0	40	50	156	184	70	M30X2.0	
4400-32T2-13	40.0	32	50	160	188	60	M22X2.0	
4400-40T2-13	40.0	40	50	160	188	70	M30X2.0	
4410-40T2-13	41.0	40	50	164	192	70	M30X2.0	
4413-40T2-13 *	41.3	40	50	164	192	70	M30X2.0	
4420-40T2-13	42.0	40	50	168	196	70	M30X2.0	
4429-40T2-13 *	42.9	40	50	172	200	70	M30X2.0	SOMT 15...DP/DL/DK/DA D146-147
4430-40T2-13	43.0	40	50	172	200	70	M30X2.0	
4440-40T2-15	44.0	40	60	176	211	70	M30X2.0	
4445-40T2-15 *	44.5	40	60	180	215	70	M30X2.0	
4450-40T2-15	45.0	40	60	180	215	70	M30X2.0	
4460-40T2-15	46.0	40	60	184	219	70	M30X2.0	
4470-40T2-15	47.0	40	60	188	223	70	M30X2.0	
4476-40T2-15 *	47.6	40	60	192	227	70	M30X2.0	
4480-40T2-15	48.0	40	60	192	227	70	M30X2.0	
4490-40T2-15	49.0	40	60	196	231	70	M30X2.0	
4500-40T2-15	50.0	40	60	200	235	70	M30X2.0	
4508-40T2-15 *	50.8	40	60	204	239	70	M30X2.0	

- '*' Gli articoli contrassegnati sono per eseguire i fori in pollici
- OAL = LPR+LS

Ricambi

Descrizione	Vite	Chiave	Tappo filettato*	
TOP 4120 - 4135	TS 18041/HG	TD 6P	SL 20M	
TOP 4140 - 4160	TS 20043I/HG-P	TD 6P	SL 20M	
TOP 4165 - 4220	TS 22052I/HG-P	TD 7P	SL 25M	
TOP 4225 - 4260	SO 25065I	TD 7	SL 25M / SL 32M	
TOP 4265 - 4360	TS 35088I	TD 10	SL 25M / SL 32M / SL 40M	
TOP 4370 - 4430	TS 40093I	TD 15	SL 32M / SL 40M	
TOP 4440 - 4508	TS 50115I	TD 20	SL 40M	

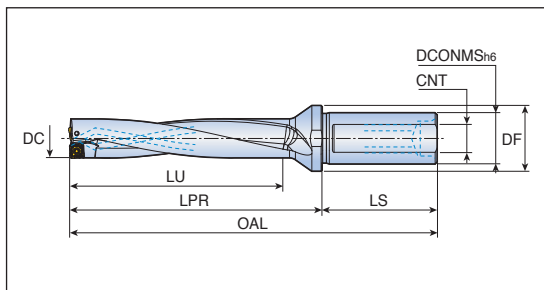


- * Note: Il tappo filettato per l'attacco del refrigerante sul tornio deve essere ordinato separatamente (esempio d'ordine: tappo filettato per diametro gambo 25.0 mm - SL 25M)

Corpo punta ad inserti



- Profondità foratura: 5x diametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 5120-20T2-04	12.0	20	25	60	80	50	M13X1.0	SOMT 04...DP
5125-20T2-04	12.5	20	25	65	85	50	M13X1.0	D146
5130-20T2-04	13.0	20	25	65	85	50	M13X1.0	
5135-20T2-04	13.5	20	25	70	88	50	M13X1.0	
5140-20T2-05	14.0	20	25	70	88	50	M13X1.0	SOMT 05...DP/DL/DK/DA
5145-20T2-05	14.5	20	25	75	94	50	M13X1.0	D146-147
5150-20T2-05	15.0	20	25	75	94	50	M13X1.0	
5155-20T2-05	15.5	20	25	80	100	50	M13X1.0	
5160-20T2-05	16.0	20	25	80	100	50	M13X1.0	
5165-25T2-06	16.5	25	32	85	105	56	M16X1.5	SOMT 06...DP/DL/DK/DA
5170-25T2-06	17.0	25	32	85	105	56	M16X1.5	D146-147
5175-25T2-06	17.5	25	32	90	111	56	M16X1.5	
5180-25T2-06	18.0	25	32	90	111	56	M16X1.5	
5185-25T2-06	18.5	25	32	95	116	56	M16X1.5	
5190-25T2-06	19.0	25	32	95	116	56	M16X1.5	
5195-25T2-07	19.5	25	32	100	123	56	M16X1.5	SOMT 07...DP/DL/DK/DA
5200-25T2-07	20.0	25	32	100	123	56	M16X1.5	D146-147
5205-25T2-07	20.5	25	32	105	128	56	M16X1.5	
5210-25T2-07	21.0	25	32	105	128	56	M16X1.5	
5215-25T2-07	21.5	25	32	110	133	56	M16X1.5	
5220-25T2-07	22.0	25	32	110	133	56	M16X1.5	
5222-25T2-07 *	22.2	25	32	110	133	56	M16X1.5	
5225-25T2-08	22.5	25	32	115	137	56	M16X1.5	SOMT 08...DP/DL/DK/DA
5230-25T2-08	23.0	25	32	115	137	56	M16X1.5	D146-147
5230-32T2-08	23.0	32	40	115	137	60	M22X2.0	
5235-25T2-08	23.5	25	32	120	142	56	M16X1.5	
5235-32T2-08	23.5	32	40	120	142	60	M22X2.0	
5240-25T2-08	24.0	25	32	120	142	56	M16X1.5	
5240-32T2-08	24.0	32	40	120	142	60	M22X2.0	
5245-25T2-08	24.5	25	32	125	147	56	M16X1.5	
5245-32T2-08	24.5	32	40	125	147	60	M22X2.0	
5250-25T2-08	25.0	25	32	125	147	56	M16X1.5	
5250-32T2-08	25.0	32	40	125	147	60	M22X2.0	
5255-25T2-08	25.5	25	32	130	151	56	M16X1.5	
5255-32T2-08	25.5	32	40	130	151	60	M22X2.0	

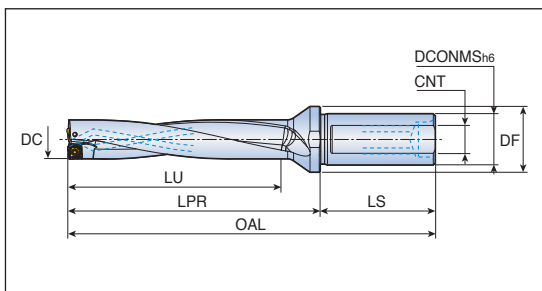


- *! Gli articoli contrassegnati sono per eseguire i fori in pollici
- OAL = LPR+LS

Corpo punta ad inserti



- Profondità foratura: 5xdiametro

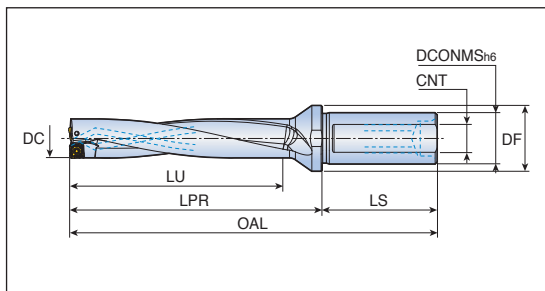


Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 5260-25T2-08	26.0	25	32	130	151	56	M16X1.5	SOMT 08...DP/DL/DK/DA
5260-32T2-08	26.0	32	40	130	151	60	M22X2.0	D146-147
5265-32T2-09	26.5	32	40	135	158	60	M22X2.0	SOMT 09...DP/DL/DK/DA
5270-25T2-09	27.0	25	40	135	158	56	M16X1.5	D146-147
5270-32T2-09	27.0	32	40	135	158	60	M22X2.0	
5275-32T2-09	27.5	32	40	140	163	60	M22X2.0	
5280-25T2-09	28.0	25	40	140	163	56	M16X1.5	
5280-32T2-09	28.0	32	40	140	163	60	M22X2.0	
5282-32T2-09 *	28.2	32	40	140	163	60	M22X2.0	
5285-32T2-09	28.5	32	40	145	168	60	M22X2.0	
5290-25T2-09	29.0	25	40	145	168	56	M16X1.5	
5290-32T2-09	29.0	32	40	145	168	60	M22X2.0	
5295-32T2-09	29.5	32	40	150	173	60	M22X2.0	
5300-32T2-09	30.0	32	40	150	173	60	M22X2.0	
5305-32T2-09	30.5	32	40	155	178	60	M22X2.0	
5310-32T2-09	31.0	32	40	155	178	60	M22X2.0	
5320-32T2-11	32.0	32	40	160	183	60	M22X2.0	SOMT 11...DP/DL/DK/DA
5320-40T2-11	32.0	40	50	160	183	70	M30X2.0	D146-147
5330-32T2-11	33.0	32	40	165	188	60	M22X2.0	
5330-40T2-11	33.0	40	50	165	188	70	M30X2.0	
5340-32T2-11	34.0	32	40	170	193	60	M22X2.0	
5340-40T2-11	34.0	40	50	170	193	70	M30X2.0	
5350-32T2-11	35.0	32	40	175	198	60	M22X2.0	
5350-40T2-11	35.0	40	50	175	198	70	M30X2.0	
5360-32T2-11	36.0	32	40	180	203	60	M22X2.0	
5360-40T2-11	36.0	40	50	180	203	70	M30X2.0	
5370-32T2-13	37.0	32	50	185	213	60	M22X2.0	SOMT 13...DP/DL/DK/DA
5370-40T2-13	37.0	40	50	185	213	70	M30X2.0	D146-147
5380-32T2-13	38.0	32	50	190	218	60	M22X2.0	
5380-40T2-13	38.0	40	50	190	218	70	M30X2.0	
5390-32T2-13	39.0	32	50	195	223	60	M22X2.0	
5390-40T2-13	39.0	40	50	195	223	70	M30X2.0	
5400-32T2-13	40.0	32	50	200	228	60	M22X2.0	
5400-40T2-13	40.0	40	50	200	228	70	M30X2.0	



- *1* Gli articoli contrassegnati sono per eseguire i fori in pollici
- OAL = LPR+LS

Corpo punta ad inserti



- Profondità foratura: 5x diametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TOP 5410-40T2-13	41.0	40	50	205	233	70	M30X2.0	SOMT 13...DP/DL/DK/DA
5420-40T2-13	42.0	40	50	210	238	70	M30X2.0	D146-147
5430-40T2-13	43.0	40	50	215	243	70	M30X2.0	
5440-40T2-15	44.0	40	60	220	255	70	M30X2.0	SOMT 15...DP/DL/DK/DA
5450-40T2-15	45.0	40	60	225	260	70	M30X2.0	D146-147
5460-40T2-15	46.0	40	60	230	265	70	M30X2.0	
5470-40T2-15	47.0	40	60	235	270	70	M30X2.0	
5480-40T2-15	48.0	40	60	240	275	70	M30X2.0	
5490-40T2-15	49.0	40	60	245	280	70	M30X2.0	
5500-40T2-15	50.0	40	60	250	285	70	M30X2.0	

- OAL = LPR+LS

Ricambi

Descrizione	Vite	Chiave	Tappo filettato*	
TOP 5120 - 5135	TS 18041/HG	TD 6P	SL 20M	
TOP 5140 - 5160	TS 200431/HG-P	TD 6P	SL 20M	
TOP 5165 - 5220	TS 220521/HG-P	TD 7P	SL 25M	
TOP 5225 - 5260	SO 25065I	TD 7	SL 25M / SL 32M	
TOP 5265 - 5360	TS 35088I	TD 10	SL 25M / SL 32M / SL 40M	
TOP 5370 - 5430	TS 40093I	TD 15	SL 32M / SL 40M	
TOP 5440 - 5500	TS 50115I	TD 20	SL 40M	

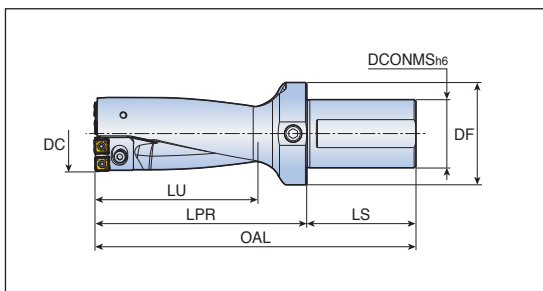


- * Note: Il tappo filettato per l'attacco del refrigerante sul tornio deve essere ordinato separatamente (esempio d'ordine: tappo filettato per diametro gambo 25.0 mm - SL 25M)

Corpo punta ad inserti con cartucce



• Profondità foratura: 2x diametro



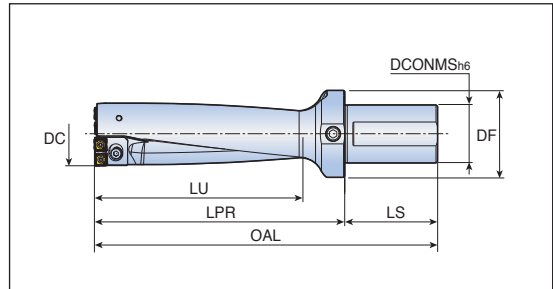
Descrizione	Dimensioni (mm)							Spessore di regolazione	Inserto
	DC	DCONMS	DF	OAL	LU	LPR	LS		
TOP 2051-55-50T2-09CA	51	50	75	223	110	143	80	-	SOMT 09 ...
	52	50	75	223	110	143	80	TOP-0901	DP/DL/DK/DA
	53	50	75	223	110	143	80	TOP-0902	D146-147
	54	50	75	223	110	143	80	TOP-0903	
	55	50	75	223	110	143	80	TOP-0904	
TOP 2056-60-50T2-11CA	56	50	75	236	120	156	80	-	SOMT 11 ...
	57	50	75	236	120	156	80	TOP-0901	DP/DL/DK/DA
	58	50	75	236	120	156	80	TOP-0902	D146-147
	59	50	75	236	120	156	80	TOP-0903	
	60	50	75	236	120	156	80	TOP-0904	
TOP 2061-65-50T2-11CA	61	50	75	249	130	169	80	-	SOMT 11 ...
	62	50	75	249	130	169	80	TOP-0901	DP/DL/DK/DA
	63	50	75	249	130	169	80	TOP-0902	D146-147
	64	50	75	249	130	169	80	TOP-0903	
	65	50	75	249	130	169	80	TOP-0904	
TOP 2066-70-50T2-11CA	66	50	75	262	140	182	80	-	SOMT 11 ...
	67	50	75	262	140	182	80	TOP-0901	DP/DL/DK/DA
	68	50	75	262	140	182	80	TOP-0902	D146-147
	69	50	75	262	140	182	80	TOP-0903	
	70	50	75	262	140	182	80	TOP-0904	
TOP 2071-75-50T2-13CA	71	50	75	275	150	195	80	-	SOMT 13 ...
	72	50	75	275	150	195	80	TOP-0901	DP/DL/DK/DA
	73	50	75	275	150	195	80	TOP-0902	D146-147
	74	50	75	275	150	195	80	TOP-0903	
	75	50	75	275	150	195	80	TOP-0904	
TOP 2076-80-50T2-13CA	76	50	75	288	160	208	80	-	SOMT 13 ...
	77	50	75	288	160	208	80	TOP-0901	DP/DL/DK/DA
	78	50	75	288	160	208	80	TOP-0902	D146-147
	79	50	75	288	160	208	80	TOP-0903	
	80	50	75	288	160	208	80	TOP-0904	



Corpo punta ad inserti con cartucce



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Spessore di regolazione	Inserto
	DC	DCONMS	DF	OAL	LU	LPR	LS		
TOP 3051-55-50T2-09CA	51	50	75	278	165	198	80	-	SOMT 09... DP/DL/DK/DA
	52	50	75	278	165	198	80	TOP-0901	
	53	50	75	278	165	198	80	TOP-0902	
	54	50	75	278	165	198	80	TOP-0903	
	55	50	75	278	165	198	80	TOP-0904	
TOP 3056-60-50T2-11CA	56	50	75	296	180	216	80	-	
	57	50	75	296	180	216	80	TOP-0901	
	58	50	75	296	180	216	80	TOP-0902	
	59	50	75	296	180	216	80	TOP-0903	
	60	50	75	296	180	216	80	TOP-0904	
TOP 3061-65-50T2-11CA	61	50	75	314	195	234	80	-	
	62	50	75	314	195	234	80	TOP-0901	
	63	50	75	314	195	234	80	TOP-0902	
	64	50	75	314	195	234	80	TOP-0903	
	65	50	75	314	195	234	80	TOP-0904	
TOP 3066-70-50T2-11CA	66	50	75	332	210	252	80	-	
	67	50	75	332	210	252	80	TOP-0901	
	68	50	75	332	210	252	80	TOP-0902	
	69	50	75	332	210	252	80	TOP-0903	
	70	50	75	332	210	252	80	TOP-0904	
TOP 3071-75-50T2-13CA	71	50	75	350	225	270	80	-	
	72	50	75	350	225	270	80	TOP-0901	
	73	50	75	350	225	270	80	TOP-0902	
	74	50	75	350	225	270	80	TOP-0903	
	75	50	75	350	225	270	80	TOP-0904	
TOP 3076-80-50T2-13CA	76	50	75	368	240	288	80	-	
	77	50	75	368	240	288	80	TOP-0901	
	78	50	75	368	240	288	80	TOP-0902	
	79	50	75	368	240	288	80	TOP-0903	
	80	50	75	368	240	288	80	TOP-0904	

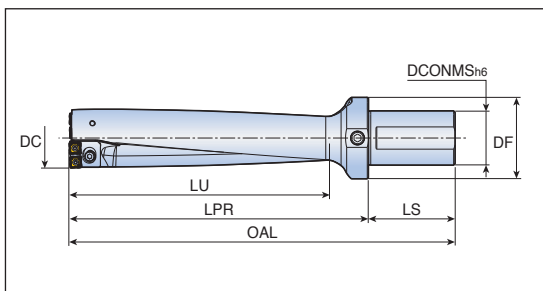


TOP 40...CA

Corpo punta ad inserti con cartucce



- Profondità foratura: 4xdiametro






Descrizione	Dimensioni (mm)							Spessore di regolazione	Inserto
	DC	DCONMS	DF	OAL	LU	LPR	LS		
TOP 4051-55-50T2-09CA	51	50	75	333	220	253	80	-	SOMT 09 ...
	52	50	75	333	220	253	80	TOP-0901	DP/DL/DK/DA
	53	50	75	333	220	253	80	TOP-0902	D146-147
	54	50	75	333	220	253	80	TOP-0903	
	55	50	75	333	220	253	80	TOP-0904	
TOP 4056-60-50T2-11CA	56	50	75	356	240	276	80	-	SOMT 11 ...
	57	50	75	356	240	276	80	TOP-0901	DP/DL/DK/DA
	58	50	75	356	240	276	80	TOP-0902	D146-147
	59	50	75	356	240	276	80	TOP-0903	
	60	50	75	356	240	276	80	TOP-0904	
TOP 4061-65-50T2-11CA	61	50	75	379	260	299	80	-	SOMT 11 ...
	62	50	75	379	260	299	80	TOP-0901	DP/DL/DK/DA
	63	50	75	379	260	299	80	TOP-0902	D146-147
	64	50	75	379	260	299	80	TOP-0903	
	65	50	75	379	260	299	80	TOP-0904	
TOP 4066-70-50T2-11CA	66	50	75	402	280	322	80	-	SOMT 11 ...
	67	50	75	402	280	322	80	TOP-0901	DP/DL/DK/DA
	68	50	75	402	280	322	80	TOP-0902	D146-147
	69	50	75	402	280	322	80	TOP-0903	
	70	50	75	402	280	322	80	TOP-0904	
TOP 4071-75-50T2-13CA	71	50	75	425	300	345	80	-	SOMT 13 ...
	72	50	75	425	300	345	80	TOP-0901	DP/DL/DK/DA
	73	50	75	425	300	345	80	TOP-0902	D146-147
	74	50	75	425	300	345	80	TOP-0903	
	75	50	75	425	300	345	80	TOP-0904	
TOP 4076-80-50T2-13CA	76	50	75	448	320	368	80	-	SOMT 13 ...
	77	50	75	448	320	368	80	TOP-0901	DP/DL/DK/DA
	78	50	75	448	320	368	80	TOP-0902	D146-147
	79	50	75	448	320	368	80	TOP-0903	
	80	50	75	448	320	368	80	TOP-0904	



Corpo punta ad inserti con cartucce

Ricambi

Descrizione	Vite	Cartuccia periferica	Cartuccia centrale
			
TOP ..51-55-50T2-09CA	TS 35088I	TOP 09CA-P1	TOP 09CA-C1
TOP ..56-60-50T2-11CA	TS 35088I	TOP 11CA-P1	TOP 11CA-C1
TOP ..61-65-50T2-11CA	TS 35088I	TOP 11CA-P2	TOP 11CA-C2
TOP ..66-70-50T2-11CA	TS 35088I	TOP 11CA-P3	TOP 11CA-C3
TOP ..71-75-50T2-13CA	TS 40093I	TOP 13CA-P1	TOP 13CA-C1
TOP ..76-80-50T2-13CA	TS 40093I	TOP 13CA-P2	TOP 13CA-C2

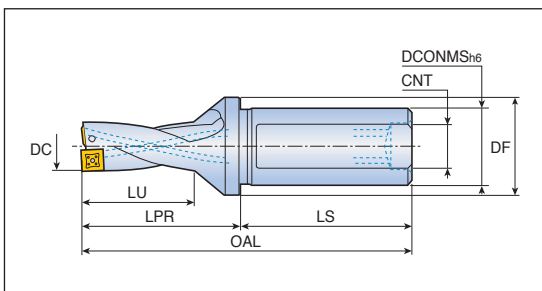
Ricambi per cartucce

Descrizione	Vite bloccaggio cartuccia	Rondella	Vite spessore
TOP 09CA-P1	SH M4x0.7x16	MW 4.3x8	TS 20043I/HG-P
TOP 09CA-C1	SH M4x0.7x16	MW 4.3x8	-
TOP 11CA-P1	SH M5x0.8x16	MW 5.5x10	TS 20043I/HG-P
TOP 11CA-C1	SH M5x0.8x16	MW 5.5x10	-
TOP 11CA-P2	SH M5x0.8x16	MW 5.5x10	TS 20043I/HG-P
TOP 11CA-C2	SH M5x0.8x16	MW 5.5x10	-
TOP 11CA-P3	SH M5x0.8x16	MW 5.5x10	TS 20043I/HG-P
TOP 11CA-C3	SH M5x0.8x16	MW 5.5x10	-
TOP 13CA-P1	SH M6x1.0x20	MW 6.4x12	TS 20043I/HG-P
TOP 13CA-C1	SH M6x1.0x20	MW 6.4x12	-
TOP 13CA-P2	SH M6x1.0x20	MW 6.4x12	TS 20043I/HG-P
TOP 13CA-C2	SH M6x1.0x20	MW 6.4x12	-

Corpo punta ad inserti



- Profondità foratura: 2x diametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 2125-20T2-05	12.5	20	25	26	44	50	M13X1.0	SPMG 05...
2130-20T2-05	13.0	20	25	26	44	50	M13X1.0	DG/DK/DA
2135-20T2-05	13.5	20	25	28	46	50	M13X1.0	D148-149
2140-20T2-05	14.0	20	25	28	46	50	M13X1.0	
2145-20T2-05	14.5	20	25	30	49	50	M13X1.0	
2150-20T2-05	15.0	20	25	30	49	50	M13X1.0	
2155-25T2-06	15.5	25	32	32	52	56	M16X1.5	SPMG 06...
2160-25T2-06	16.0	25	32	32	52	56	M16X1.5	DG/DK/DA
2165-25T2-06	16.5	25	32	34	54	56	M16X1.5	D148-149
2170-25T2-06	17.0	25	32	34	54	56	M16X1.5	
2175-25T2-06	17.5	25	32	36	57	56	M16X1.5	
2180-25T2-06	18.0	25	32	36	57	56	M16X1.5	
2185-25T2-06	18.5	25	32	38	59	56	M16X1.5	
2190-25T2-06	19.0	25	32	38	59	56	M16X1.5	
2195-25T2-06	19.5	25	32	40	63	56	M16X1.5	
2200-25T2-06	20.0	25	32	40	63	56	M16X1.5	
2205-25T2-06	20.5	25	32	42	65	56	M16X1.5	
2210-25T2-06	21.0	25	32	42	65	56	M16X1.5	
2215-25T2-06	21.5	25	32	44	67	56	M16X1.5	
2220-25T2-07	22.0	25	32	44	67	56	M16X1.5	SPMG 07...
2225-25T2-07	22.5	25	45	46	71	56	M16X1.5	DG/DK/DA
2225-32T2-07	22.5	32	45	46	71	60	M22X2.0	D148-149
2230-25T2-07	23.0	25	45	46	71	56	M16X1.5	
2230-32T2-07	23.0	32	45	46	71	60	M22X2.0	
2235-25T2-07	23.5	25	45	48	74	56	M16X1.5	
2235-32T2-07	23.5	32	45	48	74	60	M22X2.0	
2240-25T2-07	24.0	25	45	48	74	56	M16X1.5	
2240-32T2-07	24.0	32	45	48	74	60	M22X2.0	
2245-25T2-07	24.5	25	45	50	77	56	M16X1.5	
2245-32T2-07	24.5	32	45	50	77	60	M22X2.0	
2250-25T2-07	25.0	25	45	50	77	56	M16X1.5	
2250-32T2-07	25.0	32	45	50	77	60	M22X2.0	
2255-25T2-07	25.5	25	45	52	79	56	M16X1.5	
2255-32T2-07	25.5	32	45	52	79	60	M22X2.0	
2260-25T2-07	26.0	25	45	52	79	56	M16X1.5	

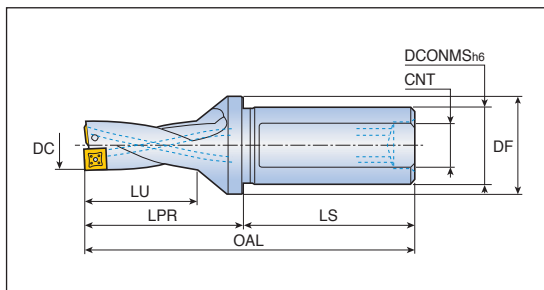
• OAL = LPR+LS



Corpo punta ad inserti



- Profondità foratura: 2x diametro



Descrizione	Dimensioni (mm)							Inserto	
	DC	DCONMS	DF	LU	LPR	LS	CNT		
TDR 2260-32T2-07	26.0	32	45	52	79	60	M22X2.0	SPMG 07... DG/DK/DA D148-149	
2265-25T2-07	26.5	25	45	54	81	56	M16X1.5		
2265-32T2-07	26.5	32	45	54	81	60	M22X2.0		
2270-25T2-07	27.0	25	45	54	81	56	M16X1.5		
2270-32T2-07	27.0	32	45	54	81	60	M22X2.0		
2275-25T2-07	27.5	25	45	56	84	56	Rc 1/8		
2275-32T2-07	27.5	32	45	56	84	60	Rc 1/4		
2280-25T2-09	28.0	25	45	56	84	56	Rc 1/8		SPMG 09... DG/DK/DA D148-149
2280-32T2-09	28.0	32	45	56	84	60	Rc 1/4		
2285-25T2-09	28.5	25	45	58	86	56	Rc 1/8		
2285-32T2-09	28.5	32	45	58	86	60	Rc 1/4		
2290-25T2-09	29.0	25	45	58	86	56	Rc 1/8		
2290-32T2-09	29.0	32	45	58	86	60	Rc 1/4		
2295-32T2-09	29.5	32	55	60	91	60	Rc 1/4		
2295-40T2-09	29.5	40	55	60	91	70	Rc 1/4		
2300-32T2-09	30.0	32	55	60	91	60	Rc 1/4		
2300-40T2-09	30.0	40	55	60	91	70	Rc 1/4		
2305-32T2-09	30.5	32	55	62	94	60	Rc 1/4		
2305-40T2-09	30.5	40	55	62	94	70	Rc 1/4		
2310-32T2-09	31.0	32	55	62	94	60	Rc 1/4		
2310-40T2-09	31.0	40	55	62	94	70	Rc 1/4		
2315-32T2-09	31.5	32	55	64	96	60	Rc 1/4		
2315-40T2-09	31.5	40	55	64	96	70	Rc 1/4		
2320-32T2-09	32.0	32	55	64	96	60	Rc 1/4		
2320-40T2-09	32.0	40	55	64	96	70	Rc 1/4		
2325-32T2-09	32.5	32	55	66	99	60	Rc 1/4		
2325-40T2-09	32.5	40	55	66	99	70	Rc 1/4		
2330-32T2-09	33.0	32	55	66	99	60	Rc 1/4		
2330-40T2-09	33.0	40	55	66	99	70	Rc 1/4		
2340-32T2-11	34.0	32	55	68	101	60	Rc 1/4	SPMG 11... DG/DA/DK D148-149	
2340-40T2-11	34.0	40	55	68	101	70	Rc 1/4		
2350-32T2-11	35.0	32	55	70	104	60	Rc 1/4		
2350-40T2-11	35.0	40	55	70	104	70	Rc 1/4		
2360-32T2-11	36.0	32	55	72	107	60	Rc 1/4		
2360-40T2-11	36.0	40	55	72	107	70	Rc 1/4		

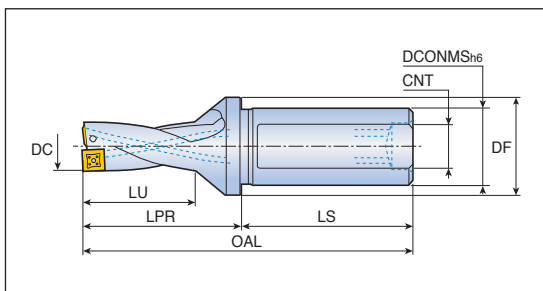
• OAL = LPR+LS



Corpo punta ad inserti



- Profondità foratura: 2x diametro



Descrizione	Dimensioni (mm)							Inserto	
	DC	DCONMS	DF	LU	LPR	LS	CNT		
TDR 2370-32T2-11	37.0	32	55	74	110	60	Rc 1/4	SPMG 11... DG/DK/DA D148-149	
2370-40T2-11	37.0	40	55	74	110	70	Rc 1/4		
2380-32T2-11	38.0	32	55	76	113	60	Rc 1/4		
2380-40T2-11	38.0	40	55	76	113	70	Rc 1/4		
2390-32T2-11	39.0	32	55	78	115	60	Rc 1/4		
2390-40T2-11	39.0	40	55	78	115	70	Rc 1/4		
2400-32T2-11	40.0	32	60	80	118	60	Rc 1/4		
2400-40T2-11	40.0	40	60	80	118	70	Rc 1/4		
2410-40T2-11	41.0	40	60	82	121	70	Rc 1/4		
2420-40T2-14	42.0	40	60	84	123	70	Rc 1/4		SPMG 14... DG/DK/DA D148-149
2430-40T2-14	43.0	40	60	86	126	70	Rc 1/4		
2440-40T2-14	44.0	40	60	88	128	70	Rc 1/4		
2450-40T2-14	45.0	40	60	90	132	70	Rc 1/4		
2460-40T2-14	46.0	40	60	92	135	70	Rc 1/4		
2470-40T2-14	47.0	40	60	94	137	70	Rc 1/4		
2480-40T2-14	48.0	40	60	96	140	70	Rc 1/4		
2490-40T2-14	49.0	40	60	98	142	70	Rc 1/4		
2500-40T2-14	50.0	40	60	100	145	70	Rc 1/4		

- OAL = LPR + LS

Ricambi

Descrizione	Vite	Chiave	Tappo filettato	
TDR 2125 - 2150	TS 20043I/HG-P	TD 6P	SL 20 M	
TDR 2155 - 2215	TS 22052I/HG	TD 7	SL 25 M	
TDR 2220 - 2270	TS 25064I	TD 8	SL 25 M / SL 32 M	
TDR 2275	TS 25064I	TD 8	-	
TDR 2280 - 2330	TS 35088I	TD 10	-	
TDR 2340 - 2390	TS 40093I	TD 15	-	
TDR 2400 - 2410	TS 40093I	TD 15	-	
TDR 2420 - 2500	SO 50090I	TD 20	-	

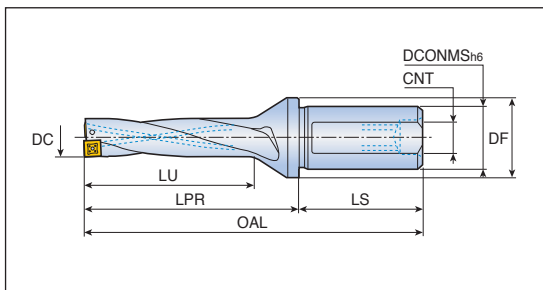


TDR 3...-T2

Corpo punta ad inserti



- Profondità foratura: 3x diametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 3125-20T2-05	12.5	20	25	39	57	50	M13X1.0	SPMG 05... DG/DK/DA D148-149
3130-20T2-05	13.0	20	25	39	57	50	M13X1.0	
3135-20T2-05	13.5	20	25	42	60	50	M13X1.0	
3140-20T2-05	14.0	20	25	42	60	50	M13X1.0	
3145-20T2-05	14.5	20	25	45	64	50	M13X1.0	
3150-20T2-05	15.0	20	25	45	64	50	M13X1.0	SPMG 06... DG/DK/DA D148-149
3155-25T2-06	15.5	25	32	48	68	56	M16X1.5	
3160-25T2-06	16.0	25	32	48	68	56	M16X1.5	
3165-25T2-06	16.5	25	32	51	71	56	M16X1.5	
3170-25T2-06	17.0	25	32	51	71	56	M16X1.5	
3175-25T2-06	17.5	25	32	54	75	56	M16X1.5	
3180-25T2-06	18.0	25	32	54	75	56	M16X1.5	
3185-25T2-06	18.5	25	32	57	78	56	M16X1.5	
3190-25T2-06	19.0	25	32	57	78	56	M16X1.5	
3195-25T2-06	19.5	25	32	60	83	56	M16X1.5	
3200-25T2-06 *	20.0	25	32	60	83	56	M16X1.5	
3205-25T2-06	20.5	25	32	63	86	56	M16X1.5	
3209-25T2-06 *	20.9	25	32	63	86	56	M16X1.5	
3210-25T2-06	21.0	25	32	63	86	56	M16X1.5	
3215-25T2-06	21.5	25	32	66	89	56	M16X1.5	
3220-25T2-07	22.0	25	32	66	89	56	M16X1.5	SPMG 07... DG/DK/DA D148-149
3225-25T2-07	22.5	25	45	69	94	56	M16X1.5	
3225-32T2-07	22.5	32	45	69	94	60	M22X2.0	
3230-25T2-07	23.0	25	45	69	94	56	M16X1.5	
3230-32T2-07	23.0	32	45	69	94	60	M22X2.0	
3235-25T2-07	23.5	25	45	72	98	56	M16X1.5	
3235-32T2-07	23.5	32	45	72	98	60	M22X2.0	
3239-25T2-07 *	23.9	25	32	72	98	56	M16X1.5	
3239-32T2-07 *	23.9	32	45	72	98	60	M22X2.0	
3240-25T2-07	24.0	25	45	72	98	56	M16X1.5	
3240-32T2-07	24.0	32	45	72	98	60	M22X2.0	
3245-25T2-07	24.5	25	45	75	102	56	M16X1.5	
3245-32T2-07	24.5	32	45	75	102	60	M22X2.0	
3250-25T2-07	25.0	25	45	75	102	56	M16X1.5	
3250-32T2-07	25.0	32	45	75	102	60	M22X2.0	

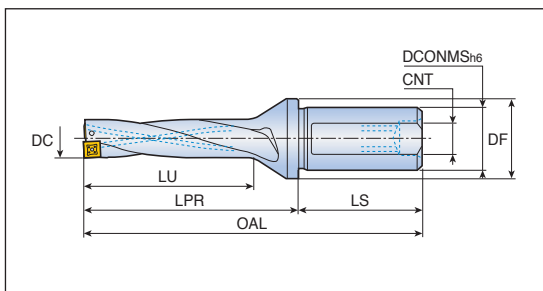


- * Gli articoli contrassegnati sono per eseguire i prefiori di filettatura
- OAL = LPR+LS

Corpo punta ad inserti



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Inserto	
	DC	DCONMS	DF	LU	LPR	LS	CNT		
TDR 3255-25T2-07	25.5	25	45	78	105	56	M16X1.5	SPMG 07... DG/DK/DA D148-149	
3255-32T2-07	25.5	32	45	78	105	60	M22X2.0		
3260-25T2-07	26.0	25	45	78	105	56	M16X1.5		
3260-32T2-07	26.0	32	45	78	105	60	M22X2.0		
3264-25T2-07 *	26.4	25	45	81	108	56	M16X1.5		
3264-32T2-07 *	26.4	32	45	81	108	60	M22X2.0		
3265-25T2-07	26.5	25	45	81	108	56	M16X1.5		
3265-32T2-07	26.5	32	45	81	108	60	M22X2.0		
3270-25T2-07	27.0	25	45	81	108	56	M16X1.5		
3270-32T2-07	27.0	32	45	81	108	60	M22X2.0		
3275-25T2-07	27.5	25	45	84	112	56	Rc 1/8		
3275-32T2-07	27.5	32	45	84	112	60	Rc 1/4		
3280-25T2-09	28.0	25	45	84	112	56	Rc 1/8		SPMG 09... DG/DK/DA D148-149
3280-32T2-09	28.0	32	45	84	112	60	Rc 1/4		
3285-25T2-09	28.5	25	45	87	115	56	Rc 1/8		
3285-32T2-09	28.5	32	45	87	115	56	Rc 1/4		
3290-25T2-09	29.0	25	45	87	115	56	Rc 1/8		
3290-32T2-09	29.0	32	45	87	115	60	Rc 1/4		
3294-32T2-09 *	29.4	32	55	90	121	60	Rc 1/4		
3294-40T2-09 *	29.4	40	55	90	121	70	Rc 1/4		
3295-32T2-09	29.5	32	55	90	121	60	Rc 1/4		
3295-40T2-09	29.5	40	55	90	121	70	Rc 1/4		
3300-32T2-09	30.0	32	55	90	121	60	Rc 1/4		
3300-40T2-09	30.0	40	55	90	121	70	Rc 1/4		
3305-32T2-09	30.5	32	55	93	125	60	Rc 1/4		
3305-40T2-09	30.5	40	55	93	125	70	Rc 1/4		
3310-32T2-09	31.0	32	55	93	125	60	Rc 1/4		
3310-40T2-09	31.0	40	55	93	125	70	Rc 1/4		
3315-32T2-09	31.5	32	55	96	128	60	Rc 1/4		
3315-40T2-09	31.5	40	55	96	128	70	Rc 1/4		
3320-32T2-09	32.0	32	55	96	128	60	Rc 1/4		
3320-40T2-09	32.0	40	55	96	128	70	Rc 1/4		

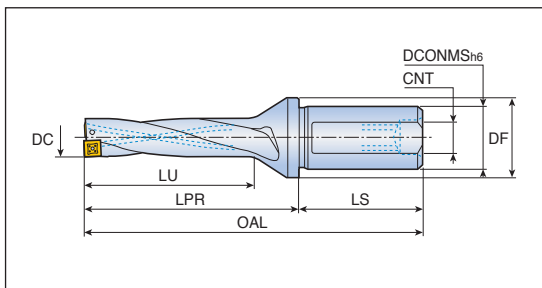


- *! Gli articoli contrassegnati sono per eseguire i prefiori di filettatura
- OAL = LPR+LS

Corpo punta ad inserti



- Profondità foratura: 3x diametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 3325-32T2-09	32.5	32	55	99	132	60	Rc 1/4	SPMG 09...
3325-40T2-09	32.5	40	55	99	132	70	Rc 1/4	DG/DK/DA
3330-32T2-09	33.0	32	55	99	132	60	Rc 1/4	D148-149
3330-40T2-09	33.0	40	55	99	132	70	Rc 1/4	
3340-32T2-11	34.0	32	55	102	135	60	Rc 1/4	SPMG 11...
3340-40T2-11	34.0	40	55	102	135	70	Rc 1/4	DG/DK/DA
3350-32T2-11	35.0	32	55	105	139	60	Rc 1/4	D148-149
3350-40T2-11	35.0	40	55	105	139	70	Rc 1/4	
3360-32T2-11	36.0	32	55	108	143	60	Rc 1/4	
3360-40T2-11	36.0	40	55	108	143	70	Rc 1/4	
3370-32T2-11	37.0	32	55	111	147	60	Rc 1/4	
3370-40T2-11	37.0	40	55	111	147	70	Rc 1/4	
3375-32T2-11 *	37.5	32	55	114	151	60	Rc 1/4	
3375-40T2-11 *	37.5	40	55	114	151	70	Rc 1/4	
3380-32T2-11	38.0	32	55	114	151	60	Rc 1/4	
3380-40T2-11	38.0	40	55	114	151	70	Rc 1/4	
3390-32T2-11	39.0	32	55	117	154	60	Rc 1/4	
3390-40T2-11	39.0	40	55	117	154	70	Rc 1/4	
3400-32T2-11	40.0	32	60	120	158	60	Rc 1/4	
3400-40T2-11	40.0	40	60	120	158	70	Rc 1/4	
3405-40T2-11 *	40.5	40	60	123	162	70	Rc 1/4	
3410-40T2-11	41.0	40	60	123	162	70	Rc 1/4	

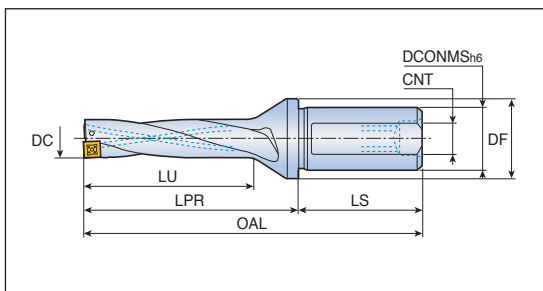


- '* ' Gli articoli contrassegnati sono per eseguire i prefiori di filettatura
- OAL = LPR+LS

Corpo punta ad inserti



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 3420-40T2-14	42.0	40	60	126	165	70	Rc 1/4	SPMG 14... DG/DK/DA D148-149
3430-40T2-14	43.0	40	60	129	169	70	Rc 1/4	
3440-40T2-14	44.0	40	60	132	172	70	Rc 1/4	
3450-40T2-14	45.0	40	60	135	177	70	Rc 1/4	
3460-40T2-14	46.0	40	60	138	181	70	Rc 1/4	
3470-40T2-14	47.0	40	60	141	184	70	Rc 1/4	
3480-40T2-14	48.0	40	60	144	188	70	Rc 1/4	
3490-40T2-14	49.0	40	60	147	191	70	Rc 1/4	
3500-40T2-14	50.0	40	60	150	195	70	Rc 1/4	

- OAL = LPR+LS

Ricambi

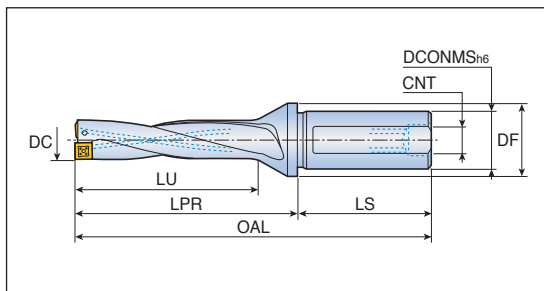
Descrizione	Vite	Chiave	Tappe filettate	
TDR 3125 - 3150	TS 20043I/HG-P	TD 6P	SL 20 M	
TDR 3155 - 3215	TS 22052I/HG	TD 7	SL 25 M	
TDR 3220 - 3270	TS 25064I	TD 8	SL 25 M / SL 32 M	
TDR 3275	TS 25064I	TD 8	-	
TDR 3280 - 3330	TS 35088I	TD 10	-	
TDR 3340 - 3390	TS 40093I	TD 15	-	
TDR 3400 - 3410	TS 40093I	TD 15	-	
TDR 3420 - 3500	SO 50090I	TD 20	-	



Corpo punta ad inserti



- Profondità foratura: 4xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 4125-20T2-05	12.5	20	25	52	70	50	M13X1.0	SPMG 05... DG/DK/DA D148-149
4130-20T2-05	13.0	20	25	52	70	50	M13X1.0	
4135-20T2-05	13.5	20	25	56	74	50	M13X1.0	
4140-20T2-05	14.0	20	25	56	74	50	M13X1.0	
4145-20T2-05	14.5	20	25	60	79	50	M13X1.0	
4150-20T2-05	15.0	20	25	60	79	50	M13X1.0	SPMG 06... DG/DK/DA D148-149
4155-25T2-06	15.5	25	32	64	84	56	M16X1.5	
4160-25T2-06	16.0	25	32	64	84	56	M16X1.5	
4165-25T2-06	16.5	25	32	68	88	56	M16X1.5	
4170-25T2-06	17.0	25	32	68	88	56	M16X1.5	
4175-25T2-06	17.5	25	32	72	93	56	M16X1.5	
4180-25T2-06	18.0	25	32	72	93	56	M16X1.5	
4185-25T2-06	18.5	25	32	76	97	56	M16X1.5	
4190-25T2-06	19.0	25	32	76	97	56	M16X1.5	
4195-25T2-06	19.5	25	32	80	103	56	M16X1.5	
4200-25T2-06	20.0	25	32	80	103	56	M16X1.5	
4205-25T2-06	20.5	25	32	84	107	56	M16X1.5	
4210-25T2-06	21.0	25	32	84	107	56	M16X1.5	
4215-25T2-06	21.5	25	32	88	111	56	M16X1.5	
4220-25T2-07	22.0	25	32	88	111	56	M16X1.5	
4225-25T2-07	22.5	25	45	92	117	56	M16X1.5	
4225-32T2-07	22.5	32	45	92	117	60	M22X2.0	
4230-25T2-07	23.0	25	45	92	117	56	M16X1.5	
4230-32T2-07	23.0	32	45	92	117	60	M22X2.0	
4235-25T2-07	23.5	25	45	96	122	56	M16X1.5	
4235-32T2-07	23.5	32	45	96	122	60	M22X2.0	
4240-25T2-07	24.0	25	45	96	122	56	M16X1.5	
4240-32T2-07	24.0	32	45	96	122	60	M22X2.0	
4245-25T2-07	24.5	25	45	100	127	56	M16X1.5	
4245-32T2-07	24.5	32	45	100	127	60	M22X2.0	
4250-25T2-07	25.0	25	45	100	127	56	M16X1.5	
4250-32T2-07	25.0	32	45	100	127	60	M22X2.0	
4255-25T2-07	25.5	25	45	104	131	56	M16X1.5	
4255-32T2-07	25.5	32	45	104	131	60	M22X2.0	
4260-25T2-07	26.0	25	45	104	131	56	M16X1.5	

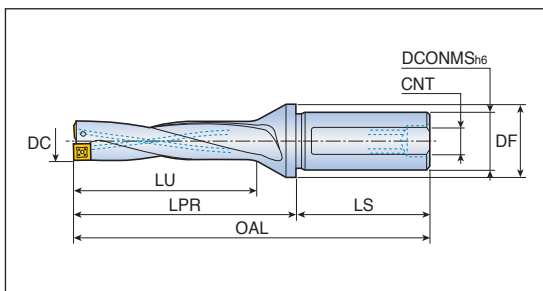
• OAL = LPR+LS



Corpo punta ad inserti



- Profondità foratura: 4xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 4260-32T2-07	26.0	32	45	104	131	60	M22X2.0	SPMG 07... DG/DK/DA D148-149
4265-25T2-07	26.5	25	45	108	135	56	M16X1.5	
4265-32T2-07	26.5	32	45	108	135	60	M22X2.0	
4270-25T2-07	27.0	25	45	108	135	56	M16X1.5	
4270-32T2-07	27.0	32	45	108	135	60	M22X2.0	
4275-25T2-07	27.5	25	45	112	140	56	Rc 1/8	
4275-32T2-07	27.5	32	45	112	140	60	Rc 1/4	
4280-25T2-09	28.0	25	45	112	140	56	Rc 1/8	SPMG 09... DG/DK/DA D148-149
4280-32T2-09	28.0	32	45	112	140	60	Rc 1/4	
4285-25T2-09	28.5	25	45	116	144	56	Rc 1/8	
4285-32T2-09	28.5	32	45	116	144	60	Rc 1/4	
4290-25T2-09	29.0	25	45	116	144	56	Rc 1/8	
4290-32T2-09	29.0	32	45	116	144	60	Rc 1/4	
4295-32T2-09	29.5	32	55	120	151	60	Rc 1/4	
4295-40T2-09	29.5	40	55	120	151	70	Rc 1/4	
4300-32T2-09	30.0	32	55	120	151	60	Rc 1/4	
4300-40T2-09	30.0	40	55	120	151	70	Rc 1/4	
4305-32T2-09	30.5	32	55	124	156	60	Rc 1/4	
4305-40T2-09	30.5	40	55	124	156	70	Rc 1/4	
4310-32T2-09	31.0	32	55	124	156	60	Rc 1/4	
4310-40T2-09	31.0	40	55	124	156	70	Rc 1/4	
4315-32T2-09	31.5	32	55	128	160	60	Rc 1/4	
4315-40T2-09	31.5	40	55	128	160	70	Rc 1/4	
4320-32T2-09	32.0	32	55	128	160	60	Rc 1/4	
4320-40T2-09	32.0	40	55	128	160	70	Rc 1/4	
4325-32T2-09	32.5	32	55	132	165	60	Rc 1/4	
4325-40T2-09	32.5	40	55	132	165	70	Rc 1/4	
4330-32T2-09	33.0	32	55	132	165	60	Rc 1/4	
4330-40T2-09	33.0	40	55	132	165	70	Rc 1/4	
4340-32T2-11	34.0	32	55	136	169	60	Rc 1/4	SPMG 11... DG/DK/DA D148-149
4340-40T2-11	34.0	40	55	136	169	70	Rc 1/4	
4350-32T2-11	35.0	32	55	140	174	60	Rc 1/4	
4350-40T2-11	35.0	40	55	140	174	70	Rc 1/4	
4360-32T2-11	36.0	32	55	144	179	60	Rc 1/4	
4360-40T2-11	36.0	40	55	144	179	70	Rc 1/4	

- OAL = LPR+LS

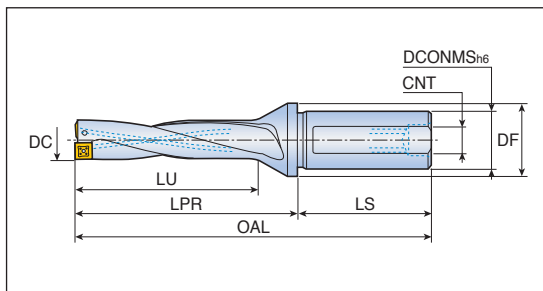


D184

Corpo punta ad inserti



- Profondità foratura: 4xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 4370-32T2-11	37.0	32	55	148	184	60	Rc 1/4	SPMG 11... DG/DK/DA D148-149
4370-40T2-11	37.0	40	55	148	184	70	Rc 1/4	
4380-32T2-11	38.0	32	55	152	189	60	Rc 1/4	
4380-40T2-11	38.0	40	55	152	189	70	Rc 1/4	
4390-32T2-11	39.0	32	55	156	193	60	Rc 1/4	
4390-40T2-11	39.0	40	55	156	193	70	Rc 1/4	
4400-32T2-11	40.0	32	60	160	198	60	Rc 1/4	
4400-40T2-11	40.0	40	60	160	198	70	Rc 1/4	
4410-40T2-11	41.0	40	60	164	203	70	Rc 1/4	
4420-40T2-14	42.0	40	60	168	207	70	Rc 1/4	
4430-40T2-14	43.0	40	60	172	212	70	Rc 1/4	
4440-40T2-14	44.0	40	60	176	216	70	Rc 1/4	
4450-40T2-14	45.0	40	60	180	222	70	Rc 1/4	
4460-40T2-14	46.0	40	60	184	227	70	Rc 1/4	
4470-40T2-14	47.0	40	60	188	231	70	Rc 1/4	
4480-40T2-14	48.0	40	60	192	236	70	Rc 1/4	
4490-40T2-14	49.0	40	60	196	240	70	Rc 1/4	
4500-40T2-14	50.0	40	60	200	245	70	Rc 1/4	

- OAL = LPR+LS

Ricambi

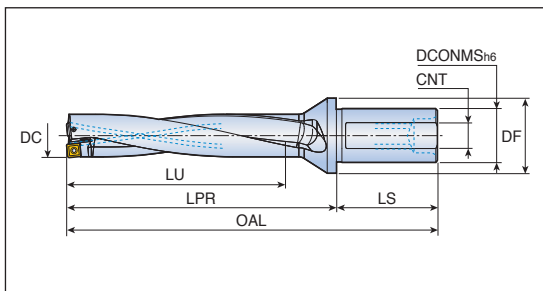
Descrizione	Vite 	Chiave 	Tappe filettate 	
TDR 4125 - 4150	TS 20043I/HG-P	TD 6P	SL 20 M	
TDR 4155 - 4215	TS 22052I/HG	TD 7	SL 25 M	
TDR 4220 - 4270	TS 25064I	TD 8	SL 25 M / SL 32 M	
TDR 4275	TS 25064I	TD 8	-	
TDR 4280 - 4330	TS 35088I	TD 10	-	
TDR 4340 - 4390	TS 40093I	TD 15	-	
TDR 4400 - 4410	TS 40093I	TD 15	-	
TDR 4420 - 4500	SO 50090I	TD 20	-	



Corpo punta ad inserti



- Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 5125-20T2-05	12.5	20	25	65	83	50	M13X1.0	SPMG 05...
5130-20T2-05	13.0	20	25	65	83	50	M13X1.0	DG/DK/DA
5135-20T2-05	13.5	20	25	70	88	50	M13X1.0	D148-149
5140-20T2-05	14.0	20	25	70	88	50	M13X1.0	
5145-20T2-05	14.5	20	25	75	94	50	M13X1.0	
5150-20T2-05	15.0	20	25	75	94	50	M13X1.0	
5155-25T2-06	15.5	25	32	80	100	56	M16X1.5	SPMG 06...
5160-25T2-06	16.0	25	32	80	100	56	M16X1.5	DG/DK/DA
5165-25T2-06	16.5	25	32	85	105	56	M16X1.5	D148-149
5170-25T2-06	17.0	25	32	85	105	56	M16X1.5	
5175-25T2-06	17.5	25	32	90	111	56	M16X1.5	
5180-25T2-06	18.0	25	32	90	111	56	M16X1.5	
5185-25T2-06	18.5	25	32	95	116	56	M16X1.5	
5190-25T2-06	19.0	25	32	95	116	56	M16X1.5	
5195-25T2-06	19.5	25	32	100	123	56	M16X1.5	
5200-25T2-06	20.0	25	32	100	123	56	M16X1.5	
5205-25T2-06	20.5	25	32	105	128	56	M16X1.5	
5210-25T2-06	21.0	25	32	105	128	56	M16X1.5	
5215-25T2-06	21.5	25	32	110	133	56	M16X1.5	
5220-25T2-07	22.0	25	32	110	133	56	M22X2.0	SPMG 07...
5225-32T2-07	22.5	32	45	115	140	60	M22X2.0	DG/DK/DA
5230-32T2-07	23.0	32	45	115	140	60	M22X2.0	D148-149
5235-32T2-07	23.5	32	45	120	146	60	M22X2.0	
5240-32T2-07	24.0	32	45	120	146	60	M22X2.0	
5245-32T2-07	24.5	32	45	125	152	60	M22X2.0	
5250-32T2-07	25.0	32	45	125	152	60	M22X2.0	
5255-32T2-07	25.5	32	45	130	157	60	M22X2.0	
5260-32T2-07	26.0	32	45	130	157	60	M22X2.0	
5265-32T2-07	26.5	32	45	135	162	60	M22X2.0	
5270-32T2-07	27.0	32	45	135	162	60	M22X2.0	
5275-32T2-07	27.5	32	45	140	168	60	Rc 1/4	

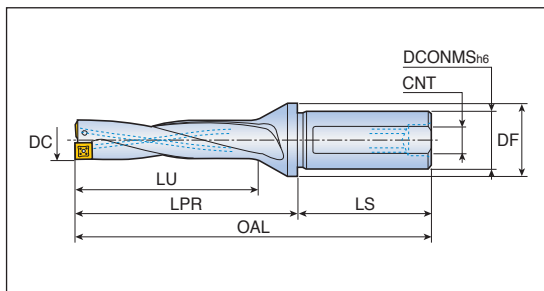
• OAL = LPR+LS



Corpo punta ad inserti



- Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)							Inserto	
	DC	DCONMS	DF	LU	LPR	LS	CNT		
TDR 5280-32T2-09	28.0	32	45	140	168	60	Rc 1/4	SPMG 09... DG/DK/DA D148-149	
5285-32T2-09	28.5	32	45	145	173	60	Rc 1/4		
5290-32T2-09	29.0	32	45	145	173	60	Rc 1/4		
5295-32T2-09	29.5	32	55	150	181	60	Rc 1/4		
5300-32T2-09	30.0	32	55	150	181	60	Rc 1/4		
5300-40T2-09	30.0	40	55	150	181	70	Rc 1/4		
5310-32T2-09	31.0	32	55	155	187	60	Rc 1/4		
5310-40T2-09	31.0	40	55	155	187	70	Rc 1/4		
5320-32T2-09	32.0	32	55	160	192	60	Rc 1/4		
5320-40T2-09	32.0	40	55	160	192	70	Rc 1/4		
5330-32T2-09	33.0	32	55	165	198	60	Rc 1/4		
5330-40T2-09	33.0	40	55	165	198	70	Rc 1/4		
5340-32T2-11	34.0	32	55	170	203	60	Rc 1/4		SPMG 11... DG/DK/DA D148-149
5340-40T2-11	34.0	40	55	170	203	70	Rc 1/4		
5350-32T2-11	35.0	32	55	175	209	60	Rc 1/4		
5350-40T2-11	35.0	40	55	175	209	70	Rc 1/4		
5360-32T2-11	36.0	32	55	180	215	60	Rc 1/4		
5360-40T2-11	36.0	40	55	180	215	70	Rc 1/4		
5370-32T2-11	37.0	32	55	185	221	60	Rc 1/4		
5370-40T2-11	37.0	40	55	185	221	70	Rc 1/4		
5380-32T2-11	38.0	32	55	190	227	60	Rc 1/4		
5380-40T2-11	38.0	40	55	190	227	70	Rc 1/4		
5390-32T2-11	39.0	32	55	195	232	60	Rc 1/4		
5390-40T2-11	39.0	40	55	195	232	70	Rc 1/4		
5400-32T2-11	40.0	32	60	200	238	60	Rc 1/4		
5400-40T2-11	40.0	40	60	200	238	70	Rc 1/4		
5410-40T2-11	41.0	40	60	205	244	70	Rc 1/4		

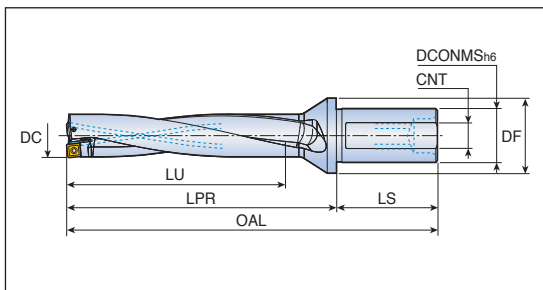
• OAL = LPR+LS



Corpo punta ad inserti



- Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)							Inserto
	DC	DCONMS	DF	LU	LPR	LS	CNT	
TDR 5420-40T2-14	42.0	40	60	210	249	70	Rc 1/4	SPMG 14... DG/DK/DA D148-149
5430-40T2-14	43.0	40	60	215	255	70	Rc 1/4	
5440-40T2-14	44.0	40	60	220	260	70	Rc 1/4	
5450-40T2-14	45.0	40	60	225	267	70	Rc 1/4	
5460-40T2-14	46.0	40	60	230	273	70	Rc 1/4	
5470-40T2-14	47.0	40	60	235	278	70	Rc 1/4	
5480-40T2-14	48.0	40	60	240	284	70	Rc 1/4	
5490-40T2-14	49.0	40	60	245	289	70	Rc 1/4	
5500-40T2-14	50.0	40	60	250	295	70	Rc 1/4	

• OAL = LPR+LS

Ricambi

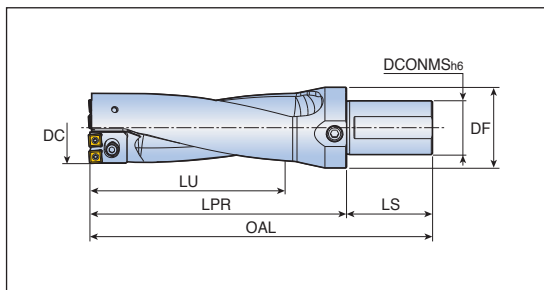
Descrizione	Vite	Chiave	Tappo filettato	
TDR 5125 - 5150	TS 20043I/HG-P	TD 6P	SL 20 M	
TDR 5155 - 5215	TS 22052I/HG	TD 7	SL 25 M	
TDR 5220 - 5270	TS 25064I	TD 8	SL 25 M / SL 32 M	
TDR 5275	TS 25064I	TD 8	-	
TDR 5280 - 5330	TS 35088I	TD 10	-	
TDR 5340 - 5390	TS 40093I	TD 15	-	
TDR 5400 - 5410	TS 40093I	TD 15	-	
TDR 5420 - 5500	SO 50090I	TD 20	-	



TDR 25...CA-T



Corpo punta ad inserti con cartucce



• Profondità foratura: 2.5xdiametro



Descrizione	Dimensioni (mm)						Spessore di regolazione	Inserto	
	DC	DCONMS	DF	LU	LPR	LS			
TDR 2551-53-50T2-07CA-T	51	50	75	133	170	80	-	SPMG 07... DG/DK/DA	
	52	50	75	133	170	80	TDP-0701	D148-149	
	53	50	75	133	170	80	TDP-0702		
2554-56-50T2-07CA-T	54	50	75	140	180	80	-	SPMG 07... DG/DK/DA	
	55	50	75	140	180	80	TDP-0701	D148-149	
	56	50	75	140	180	80	TDP-0702		
2557-62-50T2-09CA-T	57	50	75	155	201	80	-	SPMG 09... DG/DK/DA	
	58	50	75	155	201	80	TDP-0901	D148-149	
	59	50	75	155	201	80	TDP-0902		
	60	50	75	155	201	80	TDP-0903		
	61	50	75	155	201	80	TDP-0904		
	62	50	75	155	201	80	TDP-0905		
2563-66-50T2-09CA-T	63	50	75	165	215	80	-		SPMG 09... DG/DK/DA
	64	50	75	165	215	80	TDP-0901	D148-149	
	65	50	75	165	215	80	TDP-0902		
	66	50	75	165	215	80	TDP-0903		
2567-73-50T2-11CA-T	67	50	75	183	240	80	-		SPMG 11... DG/DK/DA
	68	50	75	183	240	80	TDP-1101	D148-149	
	69	50	75	183	240	80	TDP-1102		
	70	50	75	183	240	80	TDP-1103		
	71	50	75	183	240	80	TDP-1104		
	72	50	75	183	240	80	TDP-1105		
	73	50	75	183	240	80	TDP-1106		
	2574-80-50T2-12CA-T	74	50	75	200	250	80		-
75		50	75	200	250	80	TDP-1101		D148
76		50	75	200	250	80	TDP-1102		
77		50	75	200	250	80	TDP-1103		
78		50	75	200	250	80	TDP-1104		
79		50	75	200	250	80	TDP-1105		
80		50	75	200	250	80	TDP-1106		

• OAL = LPR+LS



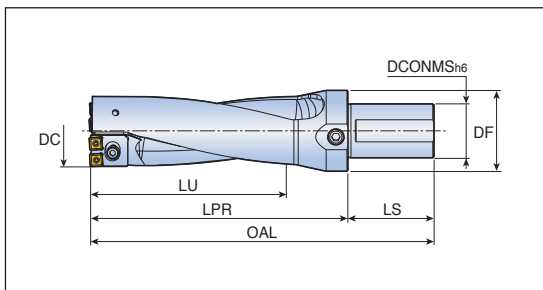
TDR 35...CA-T



Corpo punta ad inserti con cartucce



• Profondità foratura: 3.5xdiámetro



Descrizione	Dimensioni (mm)						Spessore di regolazione	Inserto
	DC	DCONMS	DF	LU	LPR	LS		
TDR 3551-53-50T2-07CA-T	51	50	75	186	223	80	-	SPMG 07... DG/DK/DA
	52	50	75	186	223	80	TDP-0701	D148-149
	53	50	75	186	223	80	TDP-0702	
3554-56-50T2-07CA-T	54	50	75	196	236	80	-	SPMG 07... DG/DK/DA
	55	50	75	196	236	80	TDP-0701	D148-149
	56	50	75	196	236	80	TDP-0702	
3557-62-50T2-09CA-T	57	50	75	217	263	80	-	SPMG 09... DG/DK/DA
	58	50	75	217	263	80	TDP-0901	D148-149
	59	50	75	217	263	80	TDP-0902	
	60	50	75	217	263	80	TDP-0903	
	61	50	75	217	263	80	TDP-0904	
	62	50	75	217	263	80	TDP-0905	
3563-66-50T2-09CA-T	63	50	75	231	281	80	-	
	64	50	75	231	281	80	TDP-0901	D148-149
	65	50	75	231	281	80	TDP-0902	
	66	50	75	231	281	80	TDP-0903	
3567-73-50T2-11CA-T	67	50	75	256	313	80	-	
	68	50	75	256	313	80	TDP-1101	D148-149
	69	50	75	256	313	80	TDP-1102	
	70	50	75	256	313	80	TDP-1103	
	71	50	75	256	313	80	TDP-1104	
	72	50	75	256	313	80	TDP-1105	
	73	50	75	256	313	80	TDP-1106	

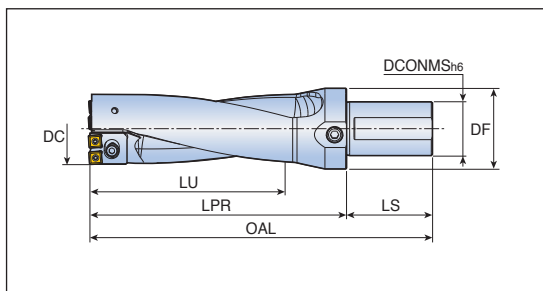
• OAL = LPR+LS



Corpo punta ad inserti con cartucce



- Profondità foratura: 3.5xdiametro



Descrizione	Dimensioni (mm)						Spessore di regolazione	Inserto
	DC	DCONMS	DF	LU	LPR	LS		
TDR 3574-80-50T2-12CA-T	74	50	75	280	330	80	-	SPMG 12...DG D148
	75	50	75	280	330	80	TDP-1101	
	76	50	75	280	330	80	TDP-1102	
	77	50	75	280	330	80	TDP-1103	
	78	50	75	280	330	80	TDP-1104	
	79	50	75	280	330	80	TDP-1105	
	80	50	75	280	330	80	TDP-1106	

- OAL = LPR+LS

Ricambi

Descrizione	Vite	Cartuccia periferica	Cartuccia centrale
TDR.. 51-53...	TS 25064I	TDR 07CA-P1-T	TDR 07CA-C1-T
TDR.. 54-56...	TS 25064I	TDR 07CA-P2-T	TDR 07CA-C2-T
TDR.. 57-62...	TS 35088I	TDR 09CA-P1-T	TDR 09CA-C1-T
TDR.. 63-66...	TS 35088I	TDR 09CA-P2-T	TDR 09CA-C2-T
TDR.. 67-73...	TS 40093I	TDR 11CA-P1-T	TDR 11CA-C1-T
TDR.. 74-80...	TS 40093I	TDR 12CA-P2-T	TDR 12CA-C2-T

Ricambi per cartucce

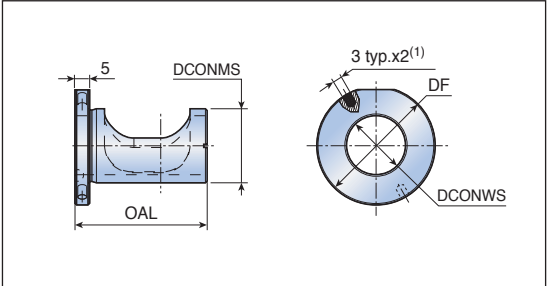
Descrizione	Vite bloccaggio cartuccia	Rondella	Vite spessore
TDR 07CA-P1-T	SH M4x0.7x16	MW 4.3x8	TS 20043I/HG-P
TDR 07CA-C1-T	SH M4x0.7x16	MW 4.3x8	-
TDR 07CA-P2-T	SH M4x0.7x16	MW 4.3x8	TS 20043I/HG-P
TDR 07CA-C2-T	SH M4x0.7x16	MW 4.3x8	-
TDR 09CA-P1-T	SH M5x0.8x16	MW 5.5x10	SO 30055I
TDR 09CA-C1-T	SH M5x0.8x16	MW 5.5x10	-
TDR 09CA-P2-T	SH M5x0.8x16	MW 5.5x10	SO 30055I
TDR 09CA-C2-T	SH M5x0.8x16	MW 5.5x10	-
TDR 11CA-P1-T	SH M6x1.0x20	MW 6.4x12	SO 30055I
TDR 11CA-C1-T	SH M6x1.0x20	MW 6.4x12	-
TDR 12CA-P2-T	SH M6x1.0x20	MW 6.4x12	SO 30055I
TDR 12CA-C2-T	SH M6x1.0x20	MW 6.4x12	-



BUSSOLA ECCENTRICA



Bussola eccentrica per la regolazione dei fori



Descrizione	Dimensioni (mm)			
	DCONWS	DCONMS	DF	OAL
ECCENTER SLEEVE 20x25	20	25	40	44
25x32	25	32	50	46
32x40	32	40	65	55
40x50	40	50	75	62

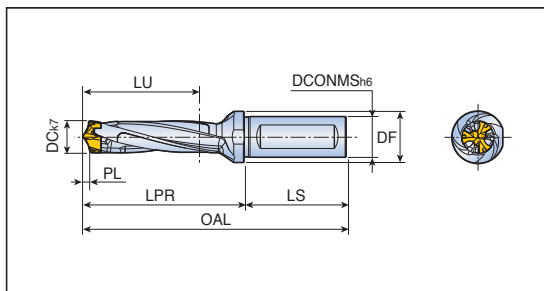
⁽¹⁾ Il foro per l'inserimento del perno è usato per facilitare la regolazione della bussola (perno non in dotazione)

3ED...T...-3D

Corpo punta con cuspidi intercambiabile a 3 taglianti - attacco weldon



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)								Chiave di bloccaggio
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC	
3ED 160-169-20T3-3D	16.0-16.9	20	25	52	79.0	50	3.70	16	K 3ED D16-D17
170-179-20T3-3D	17.0-17.9	20	25	55	84.0	50	3.88	17	K 3ED D16-D17
180-189-25T2-3D	18.0-18.9	25	32	58	90.1	56	4.07	18	K 3ED D18-D19
190-199-25T2-3D	19.0-19.9	25	32	61	94.7	56	4.26	19	K 3ED D18-D19
200-209-25T2-3D	20.0-20.9	25	32	64	99.3	56	4.44	20	K 3ED D20-D21



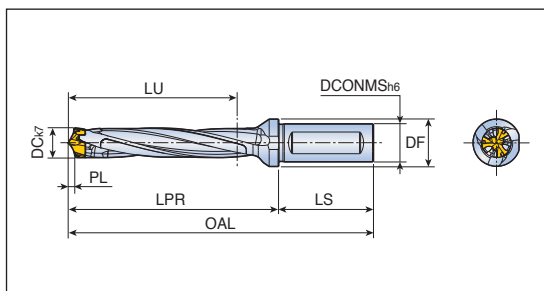
- OAL = LPR+LS
- SSC: codice misura sede

3ED...T...-5D

Corpo punta con cuspidi intercambiabile a 3 taglianti - attacco weldon



- Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)								Chiave di bloccaggio
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC	
3ED 160-169-20T3-5D	16.0-16.9	20	25	84	111.0	50	3.70	16	K 3ED D16-D17
170-179-20T3-5D	17.0-17.9	20	25	89	118.0	50	3.88	17	K 3ED D16-D17
180-189-25T2-5D	18.0-18.9	25	32	94	126.1	56	4.07	18	K 3ED D18-D19
190-199-25T2-5D	19.0-19.9	25	32	99	132.7	56	4.26	19	K 3ED D18-D19
200-209-25T2-5D	20.0-20.9	25	32	104	139.3	56	4.44	20	K 3ED D20-D21



- OAL = LPR+LS
- SSC: codice misura sede

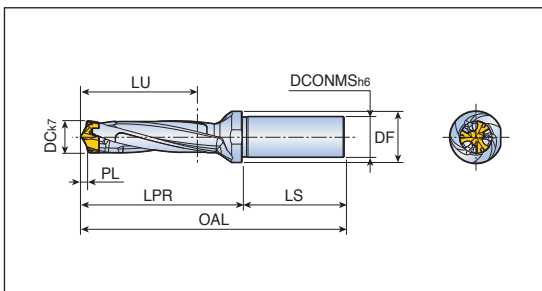
3ED...T0...-3D

DRILLSPEED
INNOVATIVE & PROFIT

Corpo punta con cuspidi intercambiabile a 3 taglienti - attacco cilindrico



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)								Chiave di bloccaggio
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC	
3ED 160-169-20T0-3D	16.0-16.9	20	25	52	79.0	50	3.70	16	K 3ED D16-D17
170-179-20T0-3D	17.0-17.9	20	25	55	84.0	50	3.88	17	K 3ED D16-D17
180-189-25T0-3D	18.0-18.9	25	32	58	90.1	56	4.07	18	K 3ED D18-D19
190-199-25T0-3D	19.0-19.9	25	32	61	94.7	56	4.26	19	K 3ED D18-D19
200-209-25T0-3D	20.0-20.9	25	32	64	99.3	56	4.44	20	K 3ED D20-D21



- OAL = LPR+LS
- SSC: codice misura sede

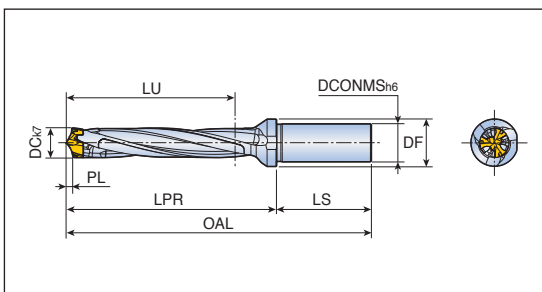
3ED...T0...-5D

DRILLSPEED
INNOVATIVE & PROFIT

Corpo punta con cuspidi intercambiabile a 3 taglienti - attacco cilindrico



- Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)								Chiave di bloccaggio
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC	
3ED 160-169-20T0-5D	16.0-16.9	20	25	84	111.0	50	3.70	16	K 3ED D16-D17
170-179-20T0-5D	17.0-17.9	20	25	89	118.0	50	3.88	17	K 3ED D16-D17
180-189-25T0-5D	18.0-18.9	25	32	94	126.1	56	4.07	18	K 3ED D18-D19
190-199-25T0-5D	19.0-19.9	25	32	99	132.7	56	4.26	19	K 3ED D18-D19
200-209-25T0-5D	20.0-20.9	25	32	104	139.3	56	4.44	20	K 3ED D20-D21



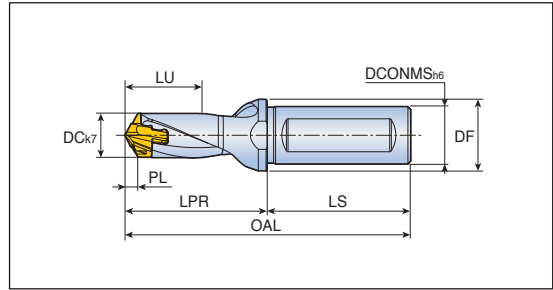
- OAL = LPR+LS
- SSC: codice misura sede

TCD...T...-1.5D

Corpo punta con cuspidi intercambiabile - attacco weldon



- Profondità foratura: 1.5xdiámetro



Descrizione	Dimensioni (mm)								Chiave di bloccaggio	
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC		
TCD 060-064-12T3-1.5D	6.0-6.4	12	16	10	23.0	45	0.96	6	K TCD D060-D099	
065-069-12T3-1.5D	6.5-6.9	12	16	11	24.1	45	1.18	6.5		
070-074-12T3-1.5D	7.0-7.4	12	16	12	25.1	45	1.01	7		
075-079-12T3-1.5D	7.5-7.9	12	16	12	25.9	45	1.10	7		
080-089-12T3-1.5D	8.0-8.9	12	16	13	27.4	45	1.20	8		
090-099-12T3-1.5D	9.0-9.9	12	16	15	29.3	45	1.35	9		
100-109-16T3-1.5D	10.0-10.9	16	20	17	31.2	48	1.50	10		K TCD D100-D199
110-119-16T3-1.5D	11.0-11.9	16	20	19	33.1	48	1.67	11		
120-129-16T3-1.5D	12.0-12.9	16	20	20	35.0	48	1.82	12		
130-139-16T3-1.5D	13.0-13.9	16	20	22	37.1	48	1.96	13		
140-149-16T3-1.5D	14.0-14.9	16	20	23	41.1	48	2.12	14		
150-159-20T3-1.5D	15.0-15.9	20	25	25	46.2	50	2.27	15		
160-169-20T3-1.5D	16.0-16.9	20	25	26	49.3	50	2.42	16		
170-179-20T3-1.5D	17.0-17.9	20	25	29	52.4	50	2.59	17		
180-189-25T2-1.5D	18.0-18.9	25	32	30	55.5	56	2.73	18		
190-199-25T2-1.5D	19.0-19.9	25	32	32	58.5	56	2.88	19	K TCD D200-D269	
200-209-25T2-1.5D	20.0-20.9	25	32	33	61.6	56	3.02	20		
210-219-25T2-1.5D	21.0-21.9	25	32	35	64.7	56	3.18	21		
220-229-25T2-1.5D	22.0-22.9	25	32	36	67.8	56	3.24	22		
230-239-32T2-1.5D	23.0-23.9	32	42	38	70.8	60	3.46	23		
240-249-32T2-1.5D	24.0-24.9	32	42	40	73.9	60	3.62	24		
250-259-32T2-1.5D	25.0-25.9	32	42	42	77.0	60	3.80	25		



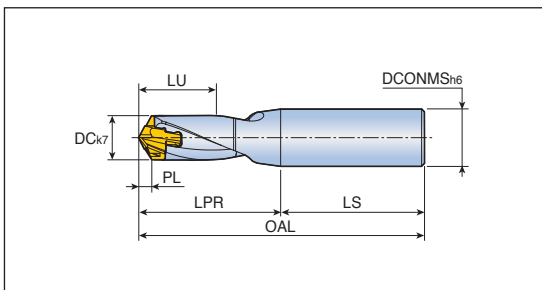
- OAL = LPR+LS
- SSC: codice misura sede

TCD...S0-1.5D

Corpo punta con cuspidi intercambiabile - attacco cilindrico



• Profondità foratura: 1.5x diametro



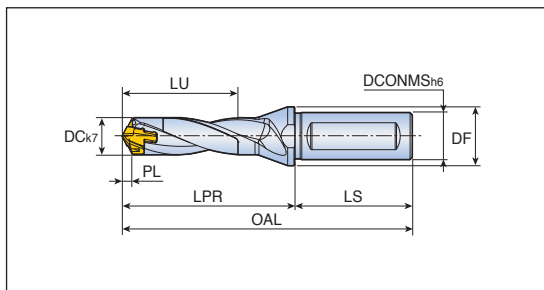
Descrizione	Dimensioni (mm)							Chiave di bloccaggio	
	DC	DCONMS	LU	LPR	LS	PL	SSC		
TCD 060-064-12S0-1.5D	6.0-6.4	12	10	23.0	45	0.96	6	K TCD D060-D099	
065-069-12S0-1.5D	6.5-6.9	12	11	24.1	45	1.18	6.5		
070-074-12S0-1.5D	7.0-7.4	12	12	25.1	45	1.01	7		
075-079-12S0-1.5D	7.5-7.9	12	12	25.9	45	1.10	7		
080-089-12S0-1.5D	8.0-8.9	12	13	27.4	45	1.20	8		
090-099-12S0-1.5D	9.0-9.9	12	15	29.3	45	1.35	9		
100-109-16S0-1.5D	10.0-10.9	16	17	31.2	48	1.50	10		K TCD D100-D199
110-119-16S0-1.5D	11.0-11.9	16	19	33.1	48	1.67	11		
120-129-16S0-1.5D	12.0-12.9	16	20	35.0	48	1.82	12		
130-139-16S0-1.5D	13.0-13.9	16	22	37.1	48	1.96	13		
140-149-16S0-1.5D	14.0-14.9	16	23	41.1	48	2.12	14		
150-159-20S0-1.5D	15.0-15.9	20	25	46.2	50	2.27	15		
160-169-20S0-1.5D	16.0-16.9	20	26	49.3	50	2.42	16		
170-179-20S0-1.5D	17.0-17.9	20	29	52.4	50	2.59	17		
180-189-25S0-1.5D	18.0-18.9	25	30	55.5	56	2.73	18		
190-199-25S0-1.5D	19.0-19.9	25	32	58.5	56	2.88	19	K TCD D200-D269	
200-209-25S0-1.5D	20.0-20.9	25	33	61.6	56	3.02	20		
210-219-25S0-1.5D	21.0-21.9	25	35	64.7	56	3.18	21		
220-229-25S0-1.5D	22.0-22.9	25	36	67.8	56	3.24	22		
230-239-32S0-1.5D	23.0-23.9	32	38	70.8	60	3.46	23		
240-249-32S0-1.5D	24.0-24.9	32	40	73.9	60	3.62	24		
250-259-32S0-1.5D	25.0-25.9	32	42	77.0	60	3.80	25		



- OAL = LPR+LS
- SSC: codice misura sede

TCD...T...-3D

Corpo punta con cuspidi intercambiabile - attacco weldon



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)								Chiave di bloccaggio	
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC		
TCD 060-064-12T3-3D	6.0-6.4	12	16	19	32.0	45	0.96	6	K TCD D060-D099	
065-069-12T3-3D	6.5-6.9	12	16	21	33.8	45	1.18	6.5		
070-074-12T3-3D	7.0-7.4	12	16	22	35.6	45	1.01	7		
075-079-12T3-3D	7.5-7.9	12	16	24	37.1	45	1.10	7		
080-084-12T3-3D	8.0-8.4	12	16	25	39.4	45	1.20	8		
085-089-12T3-3D	8.5-8.9	12	16	27	40.9	45	1.29	8		
090-094-12T3-3D	9.0-9.4	12	16	28	42.8	45	1.35	9		
095-099-12T3-3D	9.5-9.9	12	16	30	44.3	45	1.44	9		
100-104-16T3-3D	10.0-10.4	16	20	32	46.2	48	1.50	10		K TCD D100-D199
105-109-16T3-3D	10.5-10.9	16	20	34	47.7	48	1.59	10		
110-114-16T3-3D	11.0-11.4	16	20	35	49.6	48	1.67	11		
115-119-16T3-3D	11.5-11.9	16	20	37	51.1	48	1.76	11		
120-124-16T3-3D	12.0-12.4	16	20	38	53.0	48	1.82	12		
125-129-16T3-3D	12.5-12.9	16	20	39	54.5	48	1.91	12		
130-134-16T3-3D	13.0-13.4	16	20	41	56.6	48	1.96	13		
135-139-16T3-3D	13.5-13.9	16	20	43	58.1	48	2.05	13		
140-144-16T3-3D	14.0-14.4	16	20	44	62.2	48	2.12	14		
145-149-16T3-3D	14.5-14.9	16	20	46	63.7	48	2.21	14		
150-159-20T3-3D	15.0-15.9	20	25	47	68.7	50	2.27	15	K TCD D200-D269	
160-169-20T3-3D	16.0-16.9	20	25	50	73.3	50	2.42	16		
170-179-20T3-3D	17.0-17.9	20	25	54	77.9	50	2.59	17		
180-189-25T2-3D	18.0-18.9	25	32	57	82.5	56	2.73	18		
190-199-25T2-3D	19.0-19.9	25	32	60	87.0	56	2.88	19		
200-209-25T2-3D	20.0-20.9	25	32	63	91.6	56	3.02	20		
210-219-25T2-3D	21.0-21.9	25	32	66	96.2	56	3.18	21		
220-229-25T2-3D	22.0-22.9	25	32	69	100.8	56	3.24	22		
230-239-32T2-3D	23.0-23.9	32	42	72	105.3	60	3.46	23		
240-249-32T2-3D	24.0-24.9	32	42	76	109.9	60	3.62	24		
250-259-32T2-3D	25.0-25.9	32	42	79	114.5	60	3.80	25		

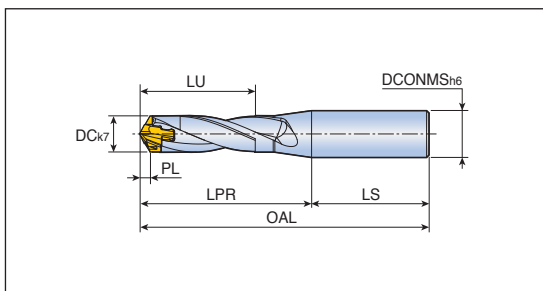


- OAL = LPR+LS
- SSC: codice misura sede

Corpo punta con cuspidi intercambiabile - attacco cilindrico



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Chiave di bloccaggio
	DC	DCONMS	LU	LPR	LS	PL	SSC	
TCD 060-064-12S0-3D	6.0-6.4	12	19	32.0	45	0.96	6	K TCD D060-D099
065-069-12S0-3D	6.5-6.9	12	21	33.8	45	1.18	6.5	
070-074-12S0-3D	7.0-7.4	12	22	35.6	45	1.01	7	
075-079-12S0-3D	7.5-7.9	12	24	37.1	45	1.10	7	
080-084-12S0-3D	8.0-8.4	12	25	39.4	45	1.20	8	
085-089-12S0-3D	8.5-8.9	12	27	40.9	45	1.29	8	
090-094-12S0-3D	9.0-9.4	12	28	42.8	45	1.35	9	
095-099-12S0-3D	9.5-9.9	12	30	44.3	45	1.44	9	
100-104-16S0-3D	10.0-10.4	16	32	46.2	48	1.50	10	
105-109-16S0-3D	10.5-10.9	16	34	47.7	48	1.59	10	
110-114-16S0-3D	11.0-11.4	16	35	49.6	48	1.67	11	
115-119-16S0-3D	11.5-11.9	16	37	51.1	48	1.76	11	
120-124-16S0-3D	12.0-12.4	16	38	53.0	48	1.82	12	
125-129-16S0-3D	12.5-12.9	16	39	54.5	48	1.91	12	
130-134-16S0-3D	13.0-13.4	16	41	56.6	48	1.96	13	
135-139-16S0-3D	13.5-13.9	16	43	58.1	48	2.05	13	
140-144-16S0-3D	14.0-14.4	16	44	62.1	48	2.12	14	
145-149-16S0-3D	14.5-14.9	16	46	63.7	48	2.21	14	
150-159-20S0-3D	15.0-15.9	20	47	68.7	50	2.27	15	K TCD D200-D269
160-169-20S0-3D	16.0-16.9	20	50	73.3	50	2.42	16	
170-179-20S0-3D	17.0-17.9	20	54	77.9	50	2.59	17	
180-189-25S0-3D	18.0-18.9	25	57	82.5	56	2.73	18	
190-199-25S0-3D	19.0-19.9	25	60	87.0	56	2.88	19	
200-209-25S0-3D	20.0-20.9	25	63	91.6	56	3.02	20	
210-219-25S0-3D	21.0-21.9	25	66	96.2	56	3.18	21	
220-229-25S0-3D	22.0-22.9	25	69	100.8	56	3.24	22	
230-239-32S0-3D	23.0-23.9	32	72	105.3	60	3.46	23	
240-249-32S0-3D	24.0-24.9	32	76	109.9	60	3.62	24	
250-259-32S0-3D	25.0-25.9	32	79	114.5	60	3.80	25	

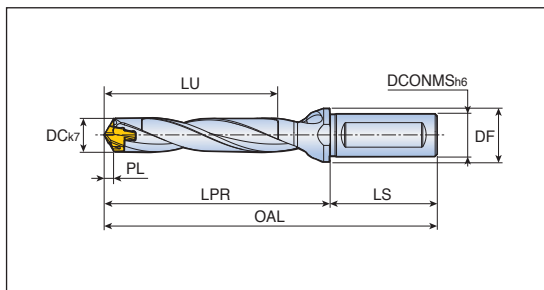


- OAL = LPR+LS
- SSC: codice misura sede

Corpo punta con cuspidi intercambiabile - attacco weldon



- Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)								Chiave di bloccaggio	
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC		
TCD 060-064-12T3-5D	6.0-6.4	12	16	31	44.0	45	0.96	6	K TCD D060-D099	
065-069-12T3-5D	6.5-6.9	12	16	34	46.8	45	1.18	6.5		
070-074-12T3-5D	7.0-7.4	12	16	36	49.6	45	1.01	7		
075-079-12T3-5D	7.5-7.9	12	16	39	52.1	45	1.10	7		
080-084-12T3-5D	8.0-8.4	12	16	41	55.4	45	1.20	8		
085-089-12T3-5D	8.5-8.9	12	16	44	57.9	45	1.29	8		
090-094-12T3-5D	9.0-9.4	12	16	46	60.8	45	1.35	9		
095-099-12T3-5D	9.5-9.9	12	16	49	63.3	45	1.44	9		
100-104-16T3-5D	10.0-10.4	16	20	52	66.2	48	1.50	10		K TCD D100-D199
105-109-16T3-5D	10.5-10.9	16	20	55	68.7	48	1.59	10		
110-114-16T3-5D	11.0-11.4	16	20	57	71.6	48	1.67	11		
115-119-16T3-5D	11.5-11.9	16	20	60	74.1	48	1.76	11		
120-124-16T3-5D	12.0-12.4	16	20	62	77.0	48	1.82	12		
125-129-16T3-5D	12.5-12.9	16	20	64	79.5	48	1.91	12		
130-134-16T3-5D	13.0-13.4	16	20	67	82.6	48	1.96	13		
135-139-16T3-5D	13.5-13.9	16	20	70	85.1	48	2.05	13		
140-144-16T3-5D	14.0-14.4	16	20	72	90.2	48	2.12	14		
145-149-16T3-5D	14.5-14.9	16	20	75	92.7	48	2.21	14		
150-159-20T3-5D	15.0-15.9	20	25	77	98.7	50	2.27	15	K TCD D200-D269	
160-169-20T3-5D	16.0-16.9	20	25	82	105.3	50	2.42	16		
170-179-20T3-5D	17.0-17.9	20	25	88	111.9	50	2.59	17		
180-189-25T2-5D	18.0-18.9	25	32	93	118.5	56	2.73	18		
190-199-25T2-5D	19.0-19.9	25	32	98	125.0	56	2.88	19		
200-209-25T2-5D	20.0-20.9	25	32	103	131.6	56	3.02	20		
210-219-25T2-5D	21.0-21.9	25	32	108	138.2	56	3.18	21		
220-229-25T2-5D	22.0-22.9	25	32	113	144.8	56	3.24	22		
230-239-32T2-5D	23.0-23.9	32	42	118	151.3	60	3.46	23		
240-249-32T2-5D	24.0-24.9	32	42	124	157.9	60	3.62	24		
250-259-32T2-5D	25.0-25.9	32	42	129	164.5	60	3.80	25		

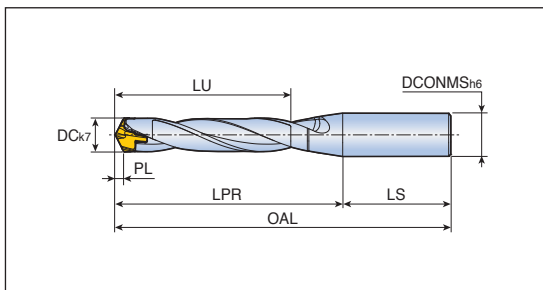


- OAL = LPR+LS
- SSC: codice misura sede

Corpo punta con cuspidi intercambiabile - attacco cilindrico



- Profondità foratura: 5xdiametro

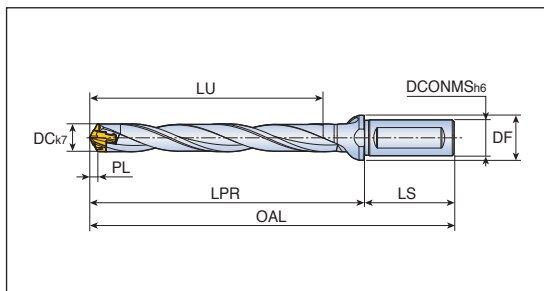


Descrizione	Dimensioni (mm)							Chiave di bloccaggio	
	DC	DCONMS	LU	LPR	LS	PL	SSC		
TCD 060-064-12S0-5D	6.0-6.4	12	31	44.0	45	0.96	6	K TCD D060-D099	
065-069-12S0-5D	6.5-6.9	12	34	46.8	45	1.18	6.5		
070-074-12S0-5D	7.0-7.4	12	36	49.6	45	1.01	7		
075-079-12S0-5D	7.5-7.9	12	39	52.1	45	1.10	7		
080-084-12S0-5D	8.0-8.4	12	41	55.4	45	1.20	8		
085-089-12S0-5D	8.5-8.9	12	44	57.9	45	1.29	8		
090-094-12S0-5D	9.0-9.4	12	46	60.8	45	1.35	9		
095-099-12S0-5D	9.5-9.9	12	49	63.3	45	1.44	9		
100-104-16S0-5D	10.0-10.4	16	52	66.2	48	1.50	10		K TCD D100-D199
105-109-16S0-5D	10.5-10.9	16	55	68.7	48	1.59	10		
110-114-16S0-5D	11.0-11.4	16	57	71.6	48	1.67	11		
115-119-16S0-5D	11.5-11.9	16	60	74.1	48	1.76	11		
120-124-16S0-5D	12.0-12.4	16	62	77.0	48	1.82	12		
125-129-16S0-5D	12.5-12.9	16	64	79.5	48	1.91	12		
130-134-16S0-5D	13.0-13.4	16	67	82.6	48	1.96	13		
135-139-16S0-5D	13.5-13.9	16	70	85.1	48	2.05	13		
140-144-16S0-5D	14.0-14.4	16	72	90.2	48	2.12	14		
145-149-16S0-5D	14.5-14.9	16	75	92.7	48	2.21	14		
150-159-20S0-5D	15.0-15.9	20	77	98.7	50	2.27	15	K TCD D200-D269	
160-169-20S0-5D	16.0-16.9	20	82	105.3	50	2.42	16		
170-179-20S0-5D	17.0-17.9	20	88	111.9	50	2.59	17		
180-189-25S0-5D	18.0-18.9	25	93	118.5	56	2.73	18		
190-199-25S0-5D	19.0-19.9	25	98	125.0	56	2.88	19		
200-209-25S0-5D	20.0-20.9	25	103	131.6	56	3.02	20		
210-219-25S0-5D	21.0-21.9	25	108	138.2	56	3.18	21		
220-229-25S0-5D	22.0-22.9	25	113	144.8	56	3.24	22		
230-239-32S0-5D	23.0-23.9	32	118	151.3	60	3.46	23		
240-249-32S0-5D	24.0-24.9	32	124	157.9	60	3.62	24		
250-259-32S0-5D	25.0-25.9	32	129	164.5	60	3.80	25		



- OAL = LPR+LS
- SSC: codice misura sede

Corpo punta con cuspidi intercambiabile - attacco weldon



• Profondità foratura: 8xdiametro



Descrizione	Dimensioni (mm)								Chiave di bloccaggio
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC	
TCD 070-074-12T3-8D	7.0-7.4	12	16	57	70.6	45	1.01	7	K TCD D060-D099
075-079-12T3-8D	7.5-7.9	12	16	61	74.6	45	1.10	7	
080-084-12T3-8D	8.0-8.4	12	16	65	79.4	45	1.20	8	
085-089-12T3-8D	8.5-8.9	12	16	69	83.4	45	1.29	8	
090-094-12T3-8D	9.0-9.4	12	16	73	87.8	45	1.35	9	
095-099-12T3-8D	9.5-9.9	12	16	77	91.8	45	1.44	9	
100-104-16T3-8D	10.0-10.4	16	20	82	96.2	48	1.50	10	K TCD D100-D199
105-109-16T3-8D	10.5-10.9	16	20	86	100.2	48	1.59	10	
110-114-16T3-8D	11.0-11.4	16	20	90	104.6	48	1.67	11	
115-119-16T3-8D	11.5-11.9	16	20	94	108.6	48	1.76	11	
120-124-16T3-8D	12.0-12.4	16	20	98	113.0	48	1.82	12	
125-129-16T3-8D	12.5-12.9	16	20	102	117.0	48	1.91	12	
130-134-16T3-8D	13.0-13.4	16	20	106	121.6	48	1.96	13	
135-139-16T3-8D	13.5-13.9	16	20	110	125.6	48	2.05	13	
140-144-16T3-8D	14.0-14.4	16	20	114	132.2	48	2.12	14	
145-149-16T3-8D	14.5-14.9	16	20	118	136.2	48	2.21	14	
150-159-20T3-8D	15.0-15.9	20	25	122	143.7	50	2.27	15	K TCD D200-D269
160-169-20T3-8D	16.0-16.9	20	25	130	153.3	50	2.42	16	
170-179-20T3-8D	17.0-17.9	20	25	139	162.9	50	2.59	17	
180-189-25T2-8D	18.0-18.9	25	32	147	172.5	56	2.73	18	
190-199-25T2-8D	19.0-19.9	25	32	155	182.0	56	2.88	19	
200-209-25T2-8D	20.0-20.9	25	32	163	191.6	56	3.02	20	
210-219-25T2-8D	21.0-21.9	25	32	171	201.2	56	3.18	21	
220-229-25T2-8D	22.0-22.9	25	32	179	210.8	56	3.24	22	
230-239-32T2-8D	23.0-23.9	32	42	187	220.3	60	3.46	23	
240-249-32T2-8D	24.0-24.9	32	42	196	229.9	60	3.62	24	
250-259-32T2-8D	25.0-25.9	32	42	204	239.5	60	3.80	25	

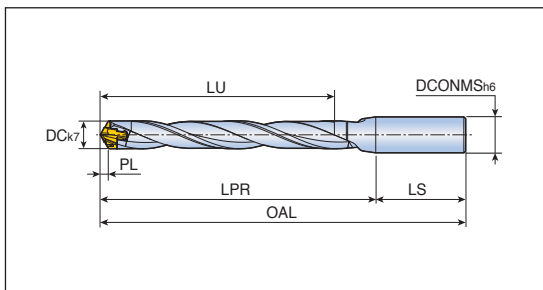


- Si consiglia di eseguire un foro pilota con una punta da 1.5 x D
- OAL = LPR+LS
- SSC: codice misura sede

Corpo punta con cuspidi intercambiabile - attacco cilindrico



• Profondità foratura: 8x diametro



Descrizione	Dimensioni (mm)							Chiave di bloccaggio
	DC	DCONMS	LU	LPR	LS	PL	SSC	
TCD 070-074-12S0-8D	7.0-7.4	12	57	70.6	45	1.01	7	K TCD D060-D099
075-079-12S0-8D	7.5-7.9	12	61	74.6	45	1.10	7	
080-084-12S0-8D	8.0-8.4	12	65	79.4	45	1.20	8	
085-089-12S0-8D	8.5-8.9	12	69	83.4	45	1.29	8	
090-094-12S0-8D	9.0-9.4	12	73	91.8	45	1.35	9	
095-099-12S0-8D	9.5-9.9	12	77	92.7	45	1.44	9	
100-104-16S0-8D	10.0-10.4	16	82	96.2	48	1.50	10	K TCD D100-D199
105-109-16S0-8D	10.5-10.9	16	86	100.2	48	1.59	10	
110-114-16S0-8D	11.0-11.4	16	90	104.6	48	1.67	11	
115-119-16S0-8D	11.5-11.9	16	94	108.6	48	1.76	11	
120-124-16S0-8D	12.0-12.4	16	98	113.0	48	1.82	12	
125-129-16S0-8D	12.5-12.9	16	102	117.0	48	1.91	12	
130-134-16S0-8D	13.0-13.4	16	106	121.6	48	1.96	13	
135-139-16S0-8D	13.5-13.9	16	110	125.6	48	2.05	13	
140-144-16S0-8D	14.0-14.4	16	114	132.2	48	2.12	14	
145-149-16S0-8D	14.5-14.9	16	118	136.2	48	2.21	14	
150-159-20S0-8D	15.0-15.9	20	122	143.7	50	2.27	15	K TCD D200-D269
160-169-20S0-8D	16.0-16.9	20	130	153.3	50	2.42	16	
170-179-20S0-8D	17.0-17.9	20	139	162.9	50	2.59	17	
180-189-25S0-8D	18.0-18.9	25	147	172.5	56	2.73	18	
190-199-25S0-8D	19.0-19.9	25	155	182.0	56	2.88	19	
200-209-25S0-8D	20.0-20.9	25	163	191.6	56	3.02	20	
210-219-25S0-8D	21.0-21.9	25	171	201.2	56	3.18	21	
220-229-25S0-8D	22.0-22.9	25	179	210.8	56	3.24	22	
230-239-32S0-8D	23.0-23.9	32	187	220.3	60	3.46	23	
240-249-32S0-8D	24.0-24.9	32	196	229.9	60	3.62	24	
250-259-32S0-8D	25.0-25.9	32	204	239.5	60	3.80	25	

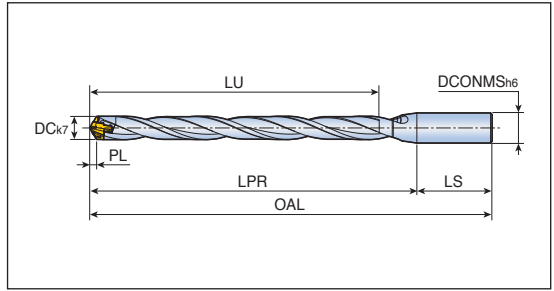


- Si consiglia di eseguire un foro pilota con una punta da 1.5 x D
- OAL = LPR+LS
- SSC: codice misura sede

TCD...S0-12D



Corpo punta con cuspidi intercambiabile - attacco cilindrico



- Profondità foratura: 12xdiametro

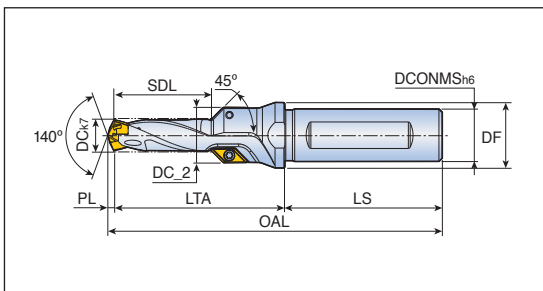


Descrizione	Dimensioni (mm)							Chiave di bloccaggio	
	DC	DCONMS	LU	LPR	LS	PL	SSC		
TCD 080-084-12S0-12D	8.0-8.4	12	97	111.4	45	1.20	8	K TCD D060-D099	
085-089-12S0-12D	8.5-8.9	12	103	117.4	45	1.29	8		
090-094-12S0-12D	9.0-9.4	12	109	123.8	45	1.35	9		
095-099-12S0-12D	9.5-9.9	12	115	129.8	45	1.44	9		
100-104-16S0-12D	10.0-10.4	16	122	136.2	48	1.50	10		K TCD D100-D199
105-109-16S0-12D	10.5-10.9	16	128	142.2	48	1.59	10		
110-114-16S0-12D	11.0-11.4	16	134	148.6	48	1.67	11		
115-119-16S0-12D	11.5-11.9	16	140	154.6	48	1.76	11		
120-124-16S0-12D	12.0-12.4	16	146	161.0	48	1.82	12		
125-129-16S0-12D	12.5-12.9	16	152	167.0	48	1.91	12		
130-134-16S0-12D	13.0-13.4	16	158	173.6	48	1.96	13	K TCD D200-D269	
135-139-16S0-12D	13.5-13.9	16	164	179.6	48	2.05	13		
140-144-16S0-12D	14.0-14.4	16	170	188.2	48	2.12	14		
145-149-16S0-12D	14.5-14.9	16	176	194.2	48	2.21	14		
150-159-20S0-12D	15.0-15.9	20	182	203.7	50	2.27	15		
160-169-20S0-12D	16.0-16.9	20	194	217.3	50	2.42	16		
170-179-20S0-12D	17.0-17.9	20	207	230.9	50	2.59	17	K TCD D200-D269	
180-189-25S0-12D	18.0-18.9	25	219	244.5	56	2.73	18		
190-199-25S0-12D	19.0-19.9	25	221	258.0	56	2.88	19		
200-209-25S0-12D	20.0-20.9	25	243	271.6	56	3.02	20		
210-219-25S0-12D	21.0-21.9	25	255	285.2	56	3.18	21		
220-229-25S0-12D	22.0-22.9	25	267	298.8	56	3.24	22		
230-239-32S0-12D	23.0-23.9	32	289	312.3	60	3.46	23	K TCD D200-D269	
240-249-32S0-12D	24.0-24.9	32	292	325.9	60	3.62	24		
250-259-32S0-12D	25.0-25.9	32	304	339.5	60	3.80	25		



- Si consiglia di eseguire un foro pilota con una punta da 1.5 x D
- OAL = LPR+LS
- SSC: codice misura sede

Corpo punta con cuspidi intercambiabile per preforo di maschiatura



Descrizione	Filetto ISO	DC	Dimensioni (mm)							Gamma Ø punta	Inserito
			SDL	LTA	LS	DC_2	DCONMS	DF	PL		
TCD 068x21x12T3-M8	M8	6.8	21	43.77	45	13.5	12	16	1.23	6.5-6.9	AOMT 06...-C45 D162
085x26x12T3-M10	M10	8.5	26	48.71	45	15.5	12	16	1.29	8.5-8.9	
102x30x16T3-M12	M12	10.2	30	52.46	48	17.0	16	20	1.54	10.0-10.4	
120x35x16T3-M14	M14	12.0	35	59.18	48	19.0	16	20	1.82	12.0-12.4	
140x39x20T3-M16	M16	14.0	39	66.88	50	21.0	20	25	2.12	14.0-14.4	
175x42x20T3-M20	M20	17.5	42	69.32	50	24.5	20	27	2.68	17.0-17.9	
210x48x25T2-M24	M24	21.0	48	76.82	56	28.0	25	32	3.18	21.0-21.9	

• OAL = LTA+LS+PL

Ricambi

Descrizione	Vite	Chiave	Chiave di bloccaggio	
TCD 068	TS 220461	TD 7	K TCD D060-D099	
TCD 085	TS 220461	TD 7	K TCD D060-D099	
TCD 102 - 175	TS 220461	TD 7	K TCD D100-D199	
TCD 210	TS 220461	TD 7	K TCD D200-D269	



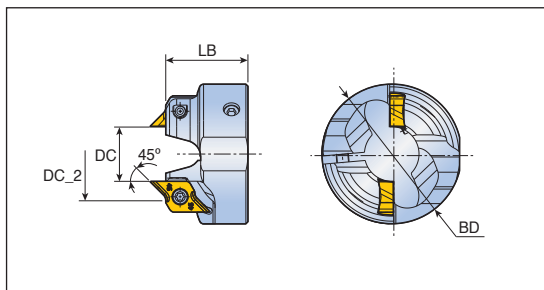
Connettore per la refrigerazione interna per torni

Taegutec fornisce uno speciale connettore con filettatura interna, che può essere inserito a pressione nel foro sul retro del gambo, per l'utilizzo della refrigerazione interna su torni

Descrizione	Diametro gambo	Filetto interno
PL-TCD-12	12	G 1/16
PL-TCD-16	16	G 1/16
PL-TCD-20	20	G 1/8
PL-TCD-25	25	G 1/8
PL-TCD-32	32	G 1/8



Anello per smussi



Descrizione	Dimensioni (mm)				Misura smusso	Inserto per smusso
	DC	DC_2	BD	LB		
CFR D100-A45	9.8	16.56	34	20	2.5	CRNG 08...-45CD D162
D105-A45	10.3	17.06	34	20	2.5	
D110-A45	10.8	17.56	34	20	2.5	
D115-A45	11.3	18.06	34	20	2.5	
D120-A45	11.8	18.56	34	20	2.5	
D125-A45	12.3	19.06	34	20	2.5	
D130-A45	12.8	19.56	34	20	2.5	
D135-A45	13.3	20.06	34	20	2.5	
D140-A45	13.8	20.56	38	22	2.5	
D145-A45	14.3	21.06	38	22	2.5	
D150-A45	14.6	21.36	38	22	2.5	
D160-A45	15.6	22.36	42	23	2.5	
D170-A45	16.6	23.36	42	23	2.5	
D180-A45	17.6	24.36	42	23	2.5	
D190-A45	18.6	25.36	42	24	2.5	
D200-A45	19.6	26.36	42	24	2.5	
D210-A45	20.6	27.36	47	24	2.5	
D220-A45	21.6	28.36	47	24	2.5	
D230-A45	22.6	29.36	47	24	2.5	
D240-A45	23.6	30.36	47	24	2.5	
D250-A45	24.6	31.36	47	24	2.5	

Ricambi

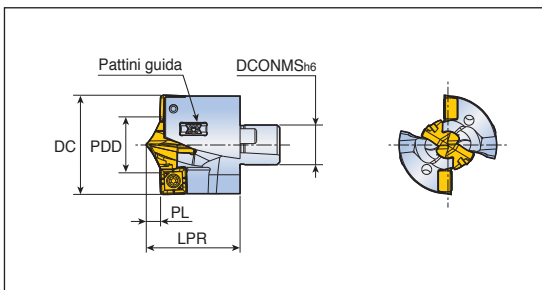
Descrizione	Vite inserto	Chiave	Vite di bloccaggio	Chiave a L
CFR D100 - D135	SO 25065I	TD 7	SH M3x0.5x10 ⁽¹⁾	L-W2.5
CFR D140 - D150	SO 25065I	TD 7	SH M4x0.7x12 ⁽²⁾	L-W3
CFR D160 - D250	SO 25065I	TD 7	SH M5x0.8x16 ⁽³⁾	L-W4

• ⁽¹⁾ Coppia di serraggio: 2-3 [N·m] ⁽²⁾ Coppia di serraggio: 3.5-4.5 [N·m] ⁽³⁾ Coppia di serraggio: 5-6 [N·m]



D230

Testa modulare di foratura



Descrizione	Dimensioni (mm)					Chiave di bloccaggio	Inserto	
	DC	DCONMS	LPR	PL	PDD		Centrale	Periferico
TNDH 2600-C26-TP	26	10.4	24.9	3.98	15.9	K TCD D15-CO	TCD-159-P-CO+	SPGX 06...DW
2700-C26-TP	27	10.4	25.4	4.14	16.9	K TCD D16-CO	TCD-169-P-CO+	SPGX 06...DW
2800-C28-TP	28	11.2	26.9	4.29	17.9	K TCD D17-CO	TCD-179-P-CO+	SPGX 06...DW
2900-C28-TP	29	11.2	26.6	3.97	15.9	K TCD D15-CO	TCD-159-P-CO+	SPGX 07...DW
3000-C30-TP	30	12.0	28.3	4.14	16.9	K TCD D16-CO	TCD-169-P-CO+	SPGX 07...DW
3100-C30-TP	31	12.0	28.5	4.30	17.9	K TCD D17-CO	TCD-179-P-CO+	SPGX 07...DW
3200-C32-TP	32	12.8	30.3	4.46	18.9	K TCD D18-CO	TCD-189-P-CO+	SPGX 07...DW
3300-C32-TP	33	12.8	29.8	3.97	15.9	K TCD D15-CO	TCD-159-P-CO+	SPGX 09...DW
3400-C34-TP	34	13.6	31.6	4.14	16.9	K TCD D16-CO	TCD-169-P-CO+	SPGX 09...DW
3500-C34-TP	35	13.6	31.8	4.30	17.9	K TCD D17-CO	TCD-179-P-CO+	SPGX 09...DW
3600-C36-TP	36	14.4	33.5	4.46	18.9	K TCD D18-CO	TCD-189-P-CO+	SPGX 09...DW
3700-C36-TP	37	14.4	33.3	4.14	16.9	K TCD D16-CO	TCD-169-P-CO+	SPGX 11...DW
3800-C38-TP	38	15.2	35.0	4.30	17.9	K TCD D17-CO	TCD-179-P-CO+	SPGX 11...DW
3900-C38-TP	39	15.2	35.2	4.46	18.9	K TCD D18-CO	TCD-189-P-CO+	SPGX 11...DW
4000-C40-TP	40	16.0	36.9	4.62	19.9	K TCD D19-CO	TCD-199-P-CO+	SPGX 11...DW
4100-C40-TP	41	16.0	37.1	4.78	20.9	K TCD D20-CO	TCD-209-P-CO+	SPGX 11...DW
4200-C42-TP	42	16.8	38.9	4.95	21.9	K TCD D21-CO	TCD-219-P-CO+	SPGX 11...DW
4300-C42-TP	43	16.8	38.9	5.11	22.9	K TCD D22-CO	TCD-229-P-CO+	SPGX 11...DW



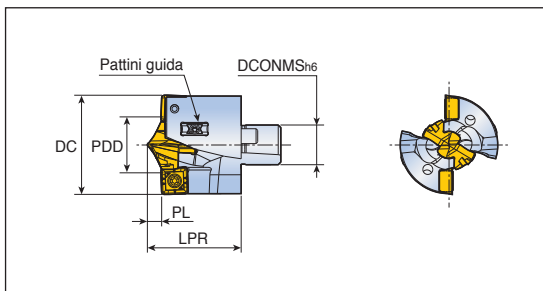
- DCONMS: misura attacco modulare
- I pattini guida sono venduti separatamente dalla testa modulare di foratura

Ricambi

Descrizione	Per vite a doppio passo		Per SPGX		Per pattini guida	
	Vite1	Chiave1	Vite2	Chiave2	Vite3	Chiave3
TNDH 2600-2800	TDPS 0512-W2.0	F-W2.0	TS 22052I/HG	TD 7	TS 20043I/HG-P	TD 6P
TNDH 2900-3200	TDPS 0512-W2.0	F-W2.0	TS 25064I	TD 8	TS 20043I/HG-P	TD 6P
TNDH 3300-3500	TDPS 0512-W2.0	F-W2.0	TS 35088I	TD 10	TS 20043I/HG-P	TD 6P
TNDH 3600	TDPS 0618-W2.5	F-W2.5	TS 35088I	TD 10	TS 20043I/HG-P	TD 6P
TNDH 3700-4300	TDPS 0618-W2.5	F-W2.5	TS 40093I	TD 15	TS 20043I/HG-P	TD 6P



Testa modulare di foratura



Descrizione	Dimensioni (mm)					Chiave di bloccaggio	Inserto	
	DC	DCONMS	LPR	PL	PDD		Centrale	periferico
TNDH 4400-C44-TP	44	17.6	40.8	5.28	23.9	K TCD D23-CO	TCD-239-P-CO+	SPGX 11...DW
4500-C44-TP	45	17.6	41.0	5.44	24.9	K TCD D24-CO	TCD-249-P-CO+	SPGX 11...DW
4600-C46-TP	46	18.4	42.2	4.95	21.9	K TCD D21-CO	TCD-219-P-CO+	SPGX 14...DW
4700-C46-TP	47	18.4	42.3	5.11	22.9	K TCD D22-CO	TCD-229-P-CO+	SPGX 14...DW
4800-C48-TP	48	19.2	44.0	5.28	23.9	K TCD D23-CO	TCD-239-P-CO+	SPGX 14...DW
4900-C48-TP	49	19.2	44.3	5.44	24.9	K TCD D24-CO	TCD-249-P-CO+	SPGX 14...DW
5000-C48-TP	50	19.2	46.0	5.61	25.9	K TCD D25-CO	TCD-259-P-CO+	SPGX 14...DW
								D163

- DCONMS: misura attacco modulare
- I pattini guida sono venduti separatamente dalla testa modulare di foratura

Ricambi

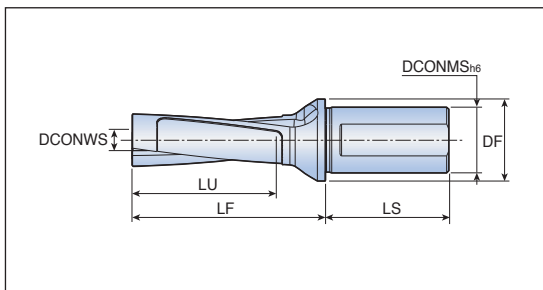
Descrizione	Per vite a doppio passo		Per SPGX		Per pattini guida	
	Vite1	Chiave1	Vite2	Chiave2	Vite3	Chiave3
TNDH 4400-4500	TDPS 0722-W3.0	F-W3.0	TS 40093I	TD 15	TS 20043I/HG-P	TD 6P
TNDH 4600-5000	TDPS 0722-W3.0	F-W3.0	SO 50090I	TD 20	TS 20043I/HG-P	TD 6P



Corpo punta modulare - attacco weldon



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)						
	DC	DCONWS	DCONMS	DF	LU	LF	LS
MDB D26/27-081-32T2-C26-3	26-27	10.4	32	40	60	94.3	60
D28/29-087-32T2-C28-3	28-29	11.2	32	40	64	100.5	60
D30/31-093-32T2-C30-3	30-31	12.0	32	40	69	105.5	60
D32/33-099-32T2-C32-3	32-33	12.8	32	40	73	111.7	60
D34/35-105-40T2-C34-3	34-35	13.6	40	50	78	120.2	68
D36/37-111-40T2-C36-3	36-37	14.4	40	50	82	126.5	68
D38/39-117-40T2-C38-3	38-39	15.2	40	50	86	131.4	68
D40/41-123-40T2-C40-3	40-41	16.0	40	50	91	137.6	68
D42/43-129-40T2-C42-3	42-43	16.8	40	50	95	143.8	68
D44/45-135-40T2-C44-3	44-45	17.6	40	50	99	150.0	68
D46/47-141-50T2-C46-3	46-47	18.4	50	60	104	154.5	80
D48/50-150-50T2-C48-3	48-50	19.2	50	60	111	160.9	80

- DC: gamma diametri di foratura
- DCONWS: misura attacco modulare

Ricambi

Descrizione	Chiave	Manico chiave		
MDB D26/27-D34/35-3	BLD H-W2.5x210	SW6-T-SH		
MDB D36/37-D42/43-3	BLD H-W3.0x225	SW6-T-SH		
MDB D44/45-D48/50-3	BLD H-W4.0x255	SW6-T-SH		

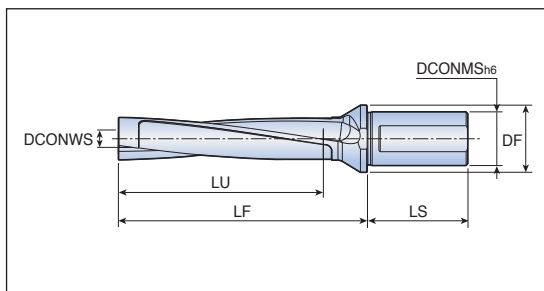
- Chiave per smontare la testa dal corpo punta (da inserire nel gambo)



Corpo punta modulare - attacco weldon



- Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)						
	DC	DCONWS	DCONMS	DF	LU	LF	LS
MDB D26/27-135-32T2-C26-5	26-27	10.4	32	40	114	148.3	60
D28/29-145-32T2-C28-5	28-29	11.2	32	40	122	158.5	60
D30/31-155-32T2-C30-5	30-31	12.0	32	40	131	167.5	60
D32/33-165-32T2-C32-5	32-33	12.8	32	40	139	177.7	60
D34/35-175-40T2-C34-5	34-35	13.6	40	50	148	190.2	68
D36/37-185-40T2-C36-5	36-37	14.4	40	50	156	200.5	68
D38/39-195-40T2-C38-5	38-39	15.2	40	50	164	209.4	68
D40/41-205-40T2-C40-5	40-41	16.0	40	50	173	219.6	68
D42/43-215-40T2-C42-5	42-43	16.8	40	50	181	229.8	68
D44/45-225-40T2-C44-5	44-45	17.6	40	50	189	240.0	68
D46/47-235-50T2-C46-5	46-47	18.4	50	60	198	248.5	80
D48/50-250-50T2-C48-5	48-50	19.2	50	60	211	258.9	80

- DC: gamma diametri di foratura
- DCONWS: misura attacco modulare

Ricambi

Descrizione	Chiave	Manico chiave		
MDB D26/27-D34/35-5	BLD H-W2.5x280	SW6-T-SH		
MDB D36/37-D42/43-5	BLD H-W3.0x310	SW6-T-SH		
MDB D44/45-D48/50-5	BLD H-W4.0x350	SW6-T-SH		

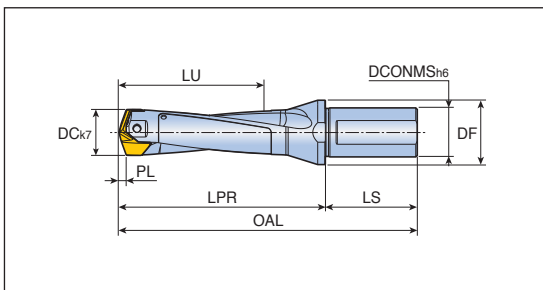
- Chiave per smontare la testa dal corpo punta (da inserire nel gambo)



Corpo punta con cuspidi intercambiabile - attacco weldon



• Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC
LCD 200-209-25T2-3D	20.0-20.9	25	32	63	92.1	56	3.11	20
210-219-25T2-3D	21.0-21.9	25	32	66	95.3	56	3.29	21
220-229-25T2-3D	22.0-22.9	25	32	69	98.4	56	3.42	22
230-239-25T2-3D	23.0-23.9	25	32	73	101.6	56	3.60	23
240-249-32T2-3D	24.0-24.9	32	40	76	110.7	60	3.73	24
250-259-32T2-3D	25.0-25.9	32	40	79	113.9	60	3.91	25
260-269-32T2-3D	26.0-26.9	32	40	82	117.0	60	4.04	26
270-279-32T2-3D	27.0-27.9	32	40	85	120.0	60	4.22	27
280-289-32T2-3D	28.0-28.9	32	40	88	128.4	60	4.35	28
290-299-32T2-3D	29.0-29.9	32	40	92	131.4	60	4.53	29
300-309-32T2-3D	30.0-30.9	32	42	95	134.7	60	4.67	30
310-319-32T2-3D	31.0-31.9	32	42	98	137.7	60	4.85	31
320-329-40T2-3D	32.0-32.9	40	48	101	143.0	68	4.98	32
330-339-40T2-3D	33.0-33.9	40	48	104	146.0	68	5.16	33
340-349-40T2-3D	34.0-34.9	40	48	107	149.0	68	5.34	34
350-359-40T2-3D	35.0-35.9	40	48	110	152.4	68	5.44	35
360-369-40T2-3D	36.0-36.9	40	48	114	155.4	68	5.62	36
370-379-40T2-3D	37.0-37.9	40	48	117	158.4	68	5.80	37
380-389-40T2-3D	38.0-38.9	40	50	120	166.9	68	5.91	38
390-399-40T2-3D	39.0-39.9	40	50	123	169.9	68	6.09	39
400-410-40T2-3D	40.0-41.0	40	50	126	172.9	68	6.27	40

• OAL = LPR+LS • SSC: codice misura sede

Ricambi

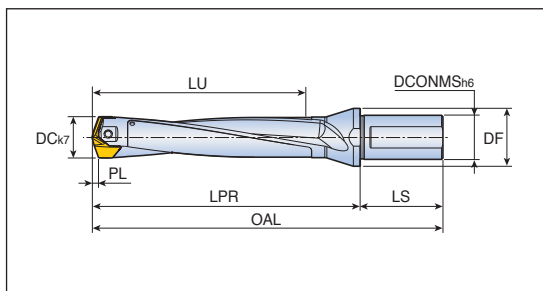
Descrizione	Vite	Chiave	Manico chiave	
LCD 200-219-3D	TS 40178D25	BLD T20/S7	SW6-T-SH	
LCD 220-239-3D	TS 40198D28	BLD T20/S7	SW6-T-SH	
LCD 240-259-3D	TS 40210D3	BLD T20/S7	SW6-T-SH	
LCD 260-279-3D	TS 50230D3	BLD T20/S7	SW6-T-SH	
LCD 280-299-3D	TS 50250D35	BLD T25/S7	SW6-T-SH	
LCD 300-319-3D	TS 60265D4	BLD T25/S7	SW6-T-SH	
LCD 320-349-3D	TS 60285D42	BLD T25/S7	SW6-T-SH	
LCD 350-379-3D	TS 60320D5	BLD T25/S7	SW6-T-SH	
LCD 380-410-3D	TS 80340D6	BLD T25/S7	SW6-T-SH	



Corpo punta con cuspidi intercambiabile - attacco weldon



- Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)							
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC
LCD 200-209-25T2-5D	20.0-20.9	25	32	103	132.1	56	3.11	20
210-219-25T2-5D	21.0-21.9	25	32	108	137.3	56	3.29	21
220-229-25T2-5D	22.0-22.9	25	32	113	142.4	56	3.42	22
230-239-25T2-5D	23.0-23.9	25	32	119	147.6	56	3.60	23
240-249-32T2-5D	24.0-24.9	32	40	124	158.7	60	3.73	24
250-259-32T2-5D	25.0-25.9	32	40	129	163.9	60	3.91	25
260-269-32T2-5D	26.0-26.9	32	40	134	169.0	60	4.04	26
270-279-32T2-5D	27.0-27.9	32	40	139	174.0	60	4.22	27
280-289-32T2-5D	28.0-28.9	32	40	144	184.4	60	4.35	28
290-299-32T2-5D	29.0-29.9	32	40	150	189.4	60	4.53	29
300-309-32T2-5D	30.0-30.9	32	42	155	194.7	60	4.67	30
310-319-32T2-5D	31.0-31.9	32	42	160	199.7	60	4.85	31
320-329-40T2-5D	32.0-32.9	40	48	165	207.0	68	4.98	32
330-339-40T2-5D	33.0-33.9	40	48	170	212.0	68	5.16	33
340-349-40T2-5D	34.0-34.9	40	48	175	217.0	68	5.34	34
350-359-40T2-5D	35.0-35.9	40	48	180	222.4	68	5.44	35
360-369-40T2-5D	36.0-36.9	40	48	186	227.4	68	5.62	36
370-379-40T2-5D	37.0-37.9	40	48	191	232.4	68	5.80	37
380-389-40T2-5D	38.0-38.9	40	50	196	242.9	68	5.91	38
390-399-40T2-5D	39.0-39.9	40	50	201	247.9	68	6.09	39
400-410-40T2-5D	40.0-41.0	40	50	206	252.9	68	6.27	40

- OAL = LPR+LS
- SSC: codice misura sede

Ricambi

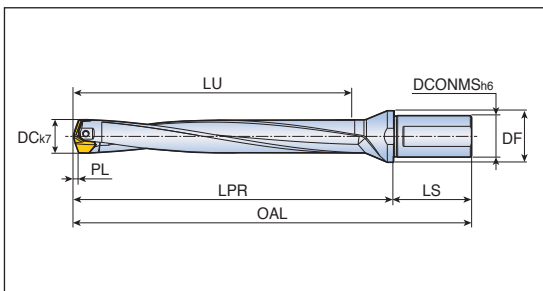
Descrizione	Vite	Chiave	Manico chiave	
LCD 200-219-5D	TS 40178D25	BLD T20/S7	SW6-T-SH	
LCD 220-239-5D	TS 40198D28	BLD T20/S7	SW6-T-SH	
LCD 240-259-5D	TS 40210D3	BLD T20/S7	SW6-T-SH	
LCD 260-279-5D	TS 50230D3	BLD T20/S7	SW6-T-SH	
LCD 280-299-5D	TS 50250D35	BLD T25/S7	SW6-T-SH	
LCD 300-319-5D	TS 60265D4	BLD T25/S7	SW6-T-SH	
LCD 320-349-5D	TS 60285D42	BLD T25/S7	SW6-T-SH	
LCD 350-379-5D	TS 60320D5	BLD T25/S7	SW6-T-SH	
LCD 380-410-5D	TS 80340D6	BLD T25/S7	SW6-T-SH	



Corpo punta con cuspidi intercambiabile - attacco weldon



• Profondità foratura: 8xdiametro



Descrizione	Dimensioni (mm)							
	DC	DCONMS	DF	LU	LPR	LS	PL	SSC
LCD 200-209-25T2-8D	20.0-20.9	25	32	163.1	192.1	56	3.11	20
210-219-25T2-8D	21.0-21.9	25	32	171.3	200.1	56	3.29	21
220-229-25T2-8D	22.0-22.9	25	32	179.4	208.4	56	3.42	22
230-239-25T2-8D	23.0-23.9	25	32	187.6	216.4	56	3.60	23
240-249-32T2-8D	24.0-24.9	32	40	195.7	230.7	60	3.73	24
250-259-32T2-8D	25.0-25.9	32	40	203.9	238.7	60	3.91	25
260-269-32T2-8D	26.0-26.9	32	40	212.0	247.0	60	4.04	26
270-279-32T2-8D	27.0-27.9	32	40	220.2	255.0	60	4.22	27
280-289-32T2-8D	28.0-28.9	32	40	228.4	268.4	60	4.35	28
290-299-32T2-8D	29.0-29.9	32	40	236.5	276.4	60	4.53	29
300-309-32T2-8D	30.0-30.9	32	42	244.7	284.7	60	4.67	30
310-319-32T2-8D	31.0-31.9	32	42	252.9	292.7	60	4.85	31
320-329-40T2-8D	32.0-32.9	40	48	261.0	303.0	68	4.98	32
330-339-40T2-8D	33.0-33.9	40	48	269.2	311.0	68	5.16	33
340-349-40T2-8D	34.0-34.9	40	48	277.3	319.0	68	5.34	34
350-359-40T2-8D	35.0-35.9	40	48	285.4	327.4	68	5.44	35
360-369-40T2-8D	36.0-36.9	40	48	293.6	335.4	68	5.62	36
370-379-40T2-8D	37.0-37.9	40	48	301.8	343.4	68	5.80	37
380-389-40T2-8D	38.0-38.9	40	50	309.9	356.9	68	5.91	38
390-399-40T2-8D	39.0-39.9	40	50	318.1	364.9	68	6.09	39
400-410-40T2-8D	40.0-41.0	40	50	326.3	372.9	68	6.27	40

• OAL = LPR + LS • SSC: codice misura sede • Si consiglia di eseguire un foro pilota con una punta da 3 x D

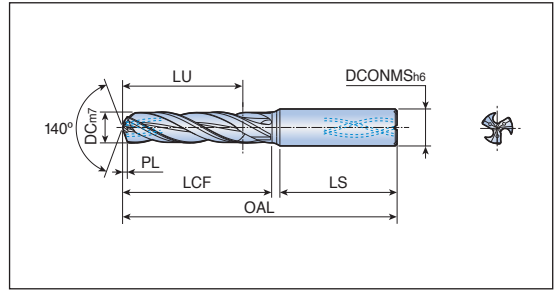
Ricambi

Descrizione	Vite	Chiave	Manico chiave	
LCD 200-219-8D	TS 40178D25	BLD T20/S7	SW6-T-SH	
LCD 220-239-8D	TS 40198D28	BLD T20/S7	SW6-T-SH	
LCD 240-259-8D	TS 40210D3	BLD T20/S7	SW6-T-SH	
LCD 260-279-8D	TS 50230D3	BLD T20/S7	SW6-T-SH	
LCD 280-299-8D	TS 50250D35	BLD T25/S7	SW6-T-SH	
LCD 300-319-8D	TS 60265D4	BLD T25/S7	SW6-T-SH	
LCD 320-349-8D	TS 60285D42	BLD T25/S7	SW6-T-SH	
LCD 350-379-8D	TS 60320D5	BLD T25/S7	SW6-T-SH	
LCD 380-410-8D	TS 80340D6	BLD T25/S7	SW6-T-SH	



3HD...PI3

Punta in metallo duro a 3 taglianti con fori di refrigerazione



• Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Grado TT5130
	DC	DCONMS	OAL	LU	LCF	LS	PL	
3HD 040-017-06 PI3	4.0	6.0	66	17	25	35	0.82	•
045-017-06 PI3	4.5	6.0	66	17	25	35	0.88	•
050-020-06 PI3	5.0	6.0	66	20	29	36	0.96	•
051-020-06 PI3	5.1	6.0	66	20	29	36	0.98	•
055-020-06 PI3	5.5	6.0	66	20	29	36	1.08	•
060-020-06 PI3	6.0	6.0	66	20	29	36	1.17	•
065-024-08 PI3	6.5	8.0	79	24	35	36	1.26	•
068-024-08 PI3	6.8	8.0	79	24	35	36	1.31	•
070-024-08 PI3	7.0	8.0	79	24	35	36	1.35	•
075-029-08 PI3	7.5	8.0	79	29	42	36	1.40	•
080-029-08 PI3	8.0	8.0	79	29	42	36	1.49	•
085-035-10 PI3	8.5	10.0	89	35	48	40	1.63	•
086-035-10 PI3	8.6	10.0	89	35	48	40	1.65	•
090-035-10 PI3	9.0	10.0	89	35	48	40	1.72	•
095-035-10 PI3	9.5	10.0	89	35	48	40	1.75	•
100-035-10 PI3	10.0	10.0	89	35	48	40	1.85	•
103-040-12 PI3	10.3	12.0	102	40	55	45	1.94	•
105-040-12 PI3	10.5	12.0	102	40	55	45	1.98	•
110-040-12 PI3	11.0	12.0	102	40	55	45	2.07	•
115-040-12 PI3	11.5	12.0	102	40	56	45	2.12	•
120-040-12 PI3	12.0	12.0	102	40	56	45	2.21	•

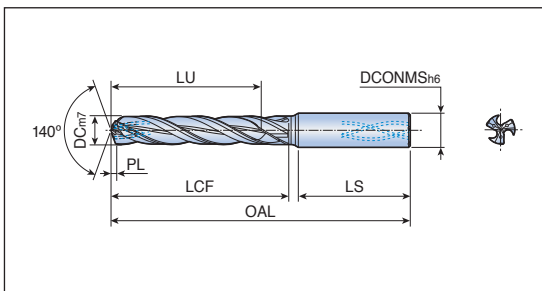
•: Standard



Punta in metallo duro a 3 taglianti con fori di refrigerazione



• Profondità foratura: 5xdiametro



Descrizione	Dimensioni (mm)							Grado TT5130
	DC	DCONMS	OAL	LU	LCF	LS	PL	
3HD 040-029-06 PI5	4.0	6.0	74	29	37	35	0.82	●
045-029-06 PI5	4.5	6.0	74	29	37	35	0.88	●
050-035-06 PI5	5.0	6.0	82	35	45	36	0.96	●
051-035-06 PI5	5.1	6.0	82	35	45	36	0.98	●
055-035-06 PI5	5.5	6.0	82	35	45	36	1.08	●
060-035-06 PI5	6.0	6.0	82	35	45	36	1.17	●
065-043-08 PI5	6.5	8.0	91	43	54	36	1.26	●
068-043-08 PI5	6.8	8.0	91	43	54	36	1.31	●
070-043-08 PI5	7.0	8.0	91	43	54	36	1.35	●
075-043-08 PI5	7.5	8.0	91	43	54	36	1.40	●
080-043-08 PI5	8.0	8.0	91	43	54	36	1.49	●
085-049-10 PI5	8.5	10.0	103	49	62	40	1.63	●
086-049-10 PI5	8.6	10.0	103	49	62	40	1.65	●
090-049-10 PI5	9.0	10.0	103	49	62	40	1.72	●
095-049-10 PI5	9.5	10.0	103	49	62	40	1.75	●
100-049-10 PI5	10.0	10.0	103	49	62	40	1.85	●
103-056-12 PI5	10.3	12.0	118	56	71	45	1.94	●
105-056-12 PI5	10.5	12.0	118	56	71	45	1.98	●
110-056-12 PI5	11.0	12.0	118	56	71	45	2.07	●
115-056-12 PI5	11.5	12.0	118	56	72	45	2.12	●
120-056-12 PI5	12.0	12.0	118	56	72	45	2.21	●

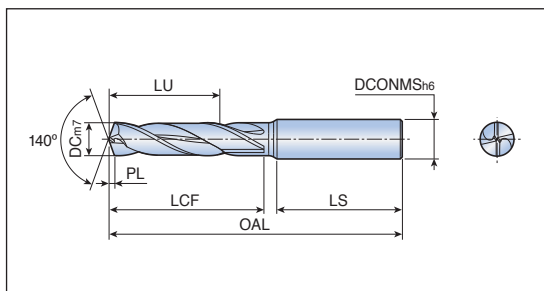
●: Standard



Punta in metallo duro



- Profondità foratura: 3x diametro



Descrizione	Dimensioni (mm)							Grado
	DC	DCONMS	OAL	LU	LCF	LS	PL	TT9030
NHD 030-014-06 PE3	3.0	6.0	62	14	20	34	0.5	●
031-014-06 PE3	3.1	6.0	62	14	20	34	0.5	●
032-014-06 PE3	3.2	6.0	62	14	20	34	0.5	●
033-014-06 PE3	3.3	6.0	62	14	20	34	0.5	●
034-014-06 PE3	3.4	6.0	62	14	20	34	0.5	●
035-014-06 PE3	3.5	6.0	62	14	20	34	0.6	●
036-014-06 PE3	3.6	6.0	62	14	20	34	0.6	●
037-014-06 PE3	3.7	6.0	62	14	20	34	0.6	●
038-017-06 PE3	3.8	6.0	66	17	24	35	0.6	●
039-017-06 PE3	3.9	6.0	66	17	24	35	0.6	●
040-017-06 PE3	4.0	6.0	66	17	24	35	0.6	●
041-017-06 PE3	4.1	6.0	66	17	24	35	0.7	●
042-017-06 PE3	4.2	6.0	66	17	24	35	0.7	●
043-017-06 PE3	4.3	6.0	66	17	24	35	0.7	●
044-017-06 PE3	4.4	6.0	66	17	24	35	0.7	●
045-017-06 PE3	4.5	6.0	66	17	24	35	0.7	●
046-017-06 PE3	4.6	6.0	66	17	24	35	0.7	●
047-017-06 PE3	4.7	6.0	66	17	24	35	0.8	●
048-020-06 PE3	4.8	6.0	66	20	28	36	0.8	●
049-020-06 PE3	4.9	6.0	66	20	28	36	0.8	●
050-020-06 PE3	5.0	6.0	66	20	28	36	0.8	●
051-020-06 PE3	5.1	6.0	66	20	28	36	0.8	●
052-020-06 PE3	5.2	6.0	66	20	28	36	0.8	●
053-020-06 PE3	5.3	6.0	66	20	28	36	0.8	●
054-020-06 PE3	5.4	6.0	66	20	28	36	0.8	●
055-020-06 PE3	5.5	6.0	66	20	28	36	0.9	●
056-020-06 PE3	5.6	6.0	66	20	28	36	0.9	●
057-020-06 PE3	5.7	6.0	66	20	28	36	0.9	●
058-020-06 PE3	5.8	6.0	66	20	28	36	0.9	●
059-020-06 PE3	5.9	6.0	66	20	28	36	0.9	●
060-020-06 PE3	6.0	6.0	66	20	28	36	0.9	●
061-024-08 PE3	6.1	8.0	79	24	34	36	1.0	●
062-024-08 PE3	6.2	8.0	79	24	34	36	1.0	●
063-024-08 PE3	6.3	8.0	79	24	34	36	1.0	●
064-024-08 PE3	6.4	8.0	79	24	34	36	1.0	●

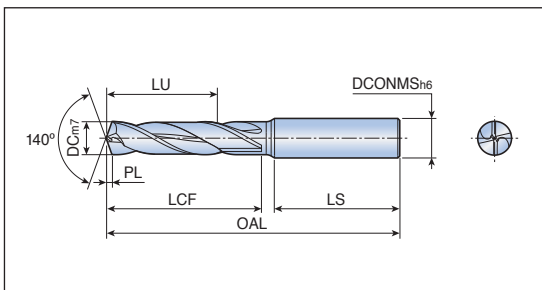
●: Standard



Punta in metallo duro



• Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Grado
	DC	DCONMS	OAL	LU	LCF	LS	PL	TT9030
NHD 065-024-08 PE3	6.5	8.0	79	24	34	36	1.0	●
066-024-08 PE3	6.6	8.0	79	24	34	36	1.0	●
067-024-08 PE3	6.7	8.0	79	24	34	36	1.1	●
068-024-08 PE3	6.8	8.0	79	24	34	36	1.1	●
069-024-08 PE3	6.9	8.0	79	24	34	36	1.1	●
070-024-08 PE3	7.0	8.0	79	24	34	36	1.1	●
071-029-08 PE3	7.1	8.0	79	29	41	36	1.1	●
072-029-08 PE3	7.2	8.0	79	29	41	36	1.1	●
073-029-08 PE3	7.3	8.0	79	29	41	36	1.1	●
074-029-08 PE3	7.4	8.0	79	29	41	36	1.2	●
075-029-08 PE3	7.5	8.0	79	29	41	36	1.2	●
076-029-08 PE3	7.6	8.0	79	29	41	36	1.2	●
077-029-08 PE3	7.7	8.0	79	29	41	36	1.2	●
078-029-08 PE3	7.8	8.0	79	29	41	36	1.2	●
079-029-08 PE3	7.9	8.0	79	29	41	36	1.3	●
080-029-08 PE3	8.0	8.0	79	29	41	36	1.3	●
081-035-10 PE3	8.1	10.0	89	35	47	40	1.3	●
082-035-10 PE3	8.2	10.0	89	35	47	40	1.3	●
083-035-10 PE3	8.3	10.0	89	35	47	40	1.3	●
084-035-10 PE3	8.4	10.0	89	35	47	40	1.3	●
085-035-10 PE3	8.5	10.0	89	35	47	40	1.3	●
086-035-10 PE3	8.6	10.0	89	35	47	40	1.4	●
087-035-10 PE3	8.7	10.0	89	35	47	40	1.4	●
088-035-10 PE3	8.8	10.0	89	35	47	40	1.4	●
089-035-10 PE3	8.9	10.0	89	35	47	40	1.4	●
090-035-10 PE3	9.0	10.0	89	35	47	40	1.4	●
091-035-10 PE3	9.1	10.0	89	35	47	40	1.4	●
092-035-10 PE3	9.2	10.0	89	35	47	40	1.4	●
093-035-10 PE3	9.3	10.0	89	35	47	40	1.5	●
094-035-10 PE3	9.4	10.0	89	35	47	40	1.5	●
095-035-10 PE3	9.5	10.0	89	35	47	40	1.5	●
096-035-10 PE3	9.6	10.0	89	35	47	40	1.5	●
097-035-10 PE3	9.7	10.0	89	35	47	40	1.5	●
098-035-10 PE3	9.8	10.0	89	35	47	40	1.6	●
099-035-10 PE3	9.9	10.0	89	35	47	40	1.6	●

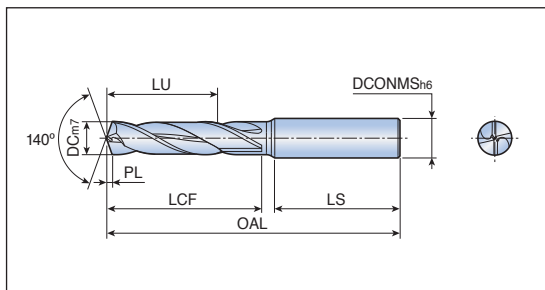
●: Standard



Punta in metallo duro



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Grado TT9030
	DC	DCONMS	OAL	LU	LCF	LS	PL	
NHD 100-035-10 PE3	10.0	10.0	89	35	47	40	1.6	●
101-040-12 PE3	10.1	12.0	101	40	55	45	1.6	●
102-040-12 PE3	10.2	12.0	101	40	55	45	1.6	●
103-040-12 PE3	10.3	12.0	101	40	55	45	1.6	●
104-040-12 PE3	10.4	12.0	101	40	55	45	1.6	●
105-040-12 PE3	10.5	12.0	101	40	55	45	1.6	●
106-040-12 PE3	10.6	12.0	101	40	55	45	1.7	●
107-040-12 PE3	10.7	12.0	101	40	55	45	1.7	●
108-040-12 PE3	10.8	12.0	101	40	55	45	1.7	●
109-040-12 PE3	10.9	12.0	101	40	55	45	1.7	●
110-040-12 PE3	11.0	12.0	101	40	55	45	1.7	●
111-040-12 PE3	11.1	12.0	101	40	55	45	1.7	●
112-040-12 PE3	11.2	12.0	101	40	55	45	1.8	●
113-040-12 PE3	11.3	12.0	101	40	55	45	1.8	●
114-040-12 PE3	11.4	12.0	101	40	55	45	1.8	●
115-040-12 PE3	11.5	12.0	101	40	55	45	1.8	●
116-040-12 PE3	11.6	12.0	101	40	55	45	1.8	●
117-040-12 PE3	11.7	12.0	101	40	55	45	1.9	●
118-040-12 PE3	11.8	12.0	101	40	55	45	1.9	●
119-040-12 PE3	11.9	12.0	101	40	55	45	1.9	●
120-040-12 PE3	12.0	12.0	101	40	55	45	1.9	●

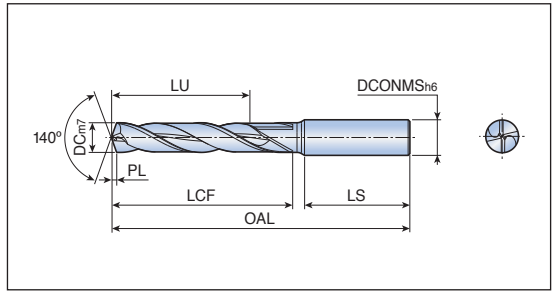


●: Standard

Punta in metallo duro



• Profondità foratura: 4-5xdiametro



Descrizione	Dimensioni (mm)							Grado TT9030
	DC	DCONMS	OAL	LU	LCF	LS	PL	
NHD 030-023-06 PE5	3.0	6.0	66	23	28	34	0.5	●
031-023-06 PE5	3.1	6.0	66	23	28	34	0.5	●
032-023-06 PE5	3.2	6.0	66	23	28	34	0.5	●
033-023-06 PE5	3.3	6.0	66	23	28	34	0.5	●
034-023-06 PE5	3.4	6.0	66	23	28	34	0.5	●
035-023-06 PE5	3.5	6.0	66	23	28	34	0.6	●
036-023-06 PE5	3.6	6.0	66	23	28	34	0.6	●
037-023-06 PE5	3.7	6.0	66	23	28	34	0.6	●
038-029-06 PE5	3.8	6.0	74	29	36	35	0.6	●
039-029-06 PE5	3.9	6.0	74	29	36	35	0.6	●
040-029-06 PE5	4.0	6.0	74	29	36	35	0.6	●
041-029-06 PE5	4.1	6.0	74	29	36	35	0.7	●
042-029-06 PE5	4.2	6.0	74	29	36	35	0.7	●
043-029-06 PE5	4.3	6.0	74	29	36	35	0.7	●
044-029-06 PE5	4.4	6.0	74	29	36	35	0.7	●
045-029-06 PE5	4.5	6.0	74	29	36	35	0.7	●
046-029-06 PE5	4.6	6.0	74	29	36	35	0.7	●
047-029-06 PE5	4.7	6.0	74	29	36	35	0.8	●
048-035-06 PE5	4.8	6.0	82	35	44	36	0.8	●
049-035-06 PE5	4.9	6.0	82	35	44	36	0.8	●
050-035-06 PE5	5.0	6.0	82	35	44	36	0.8	●
051-035-06 PE5	5.1	6.0	82	35	44	36	0.8	●
052-035-06 PE5	5.2	6.0	82	35	44	36	0.8	●
053-035-06 PE5	5.3	6.0	82	35	44	36	0.8	●
054-035-06 PE5	5.4	6.0	82	35	44	36	0.8	●
055-035-06 PE5	5.5	6.0	82	35	44	36	0.9	●
056-035-06 PE5	5.6	6.0	82	35	44	36	0.9	●
057-035-06 PE5	5.7	6.0	82	35	44	36	0.9	●
058-035-06 PE5	5.8	6.0	82	35	44	36	0.9	●
059-035-06 PE5	5.9	6.0	82	35	44	36	0.9	●
060-035-06 PE5	6.0	6.0	82	35	44	36	0.9	●
061-043-08 PE5	6.1	8.0	91	43	53	36	1.0	●
062-043-08 PE5	6.2	8.0	91	43	53	36	1.0	●
063-043-08 PE5	6.3	8.0	91	43	53	36	1.0	●
064-043-08 PE5	6.4	8.0	91	43	53	36	1.0	●

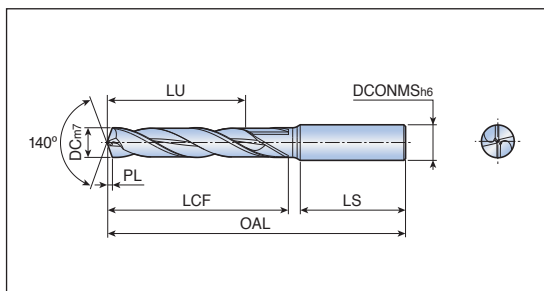
●: Standard



Punta in metallo duro



- Profondità foratura: 4-5xdiametro



Descrizione	Dimensioni (mm)							Grado TT9030
	DC	DCONMS	OAL	LU	LCF	LS	PL	
NHD 065-043-08 PE5	6.5	8.0	91	43	53	36	1.0	●
066-043-08 PE5	6.6	8.0	91	43	53	36	1.0	●
067-043-08 PE5	6.7	8.0	91	43	53	36	1.1	●
068-043-08 PE5	6.8	8.0	91	43	53	36	1.1	●
069-043-08 PE5	6.9	8.0	91	43	53	36	1.1	●
070-043-08 PE5	7.0	8.0	91	43	53	36	1.1	●
071-043-08 PE5	7.1	8.0	91	43	53	36	1.1	●
072-043-08 PE5	7.2	8.0	91	43	53	36	1.1	●
073-043-08 PE5	7.3	8.0	91	43	53	36	1.1	●
074-043-08 PE5	7.4	8.0	91	43	53	36	1.2	●
075-043-08 PE5	7.5	8.0	91	43	53	36	1.2	●
076-043-08 PE5	7.6	8.0	91	43	53	36	1.2	●
077-043-08 PE5	7.7	8.0	91	43	53	36	1.2	●
078-043-08 PE5	7.8	8.0	91	43	53	36	1.2	●
079-043-08 PE5	7.9	8.0	91	43	53	36	1.3	●
080-043-08 PE5	8.0	8.0	91	43	53	36	1.3	●
081-049-10 PE5	8.1	10.0	103	49	61	40	1.3	●
082-049-10 PE5	8.2	10.0	103	49	61	40	1.3	●
083-049-10 PE5	8.3	10.0	103	49	61	40	1.3	●
084-049-10 PE5	8.4	10.0	103	49	61	40	1.3	●
085-049-10 PE5	8.5	10.0	103	49	61	40	1.3	●
086-049-10 PE5	8.6	10.0	103	49	61	40	1.4	●
087-049-10 PE5	8.7	10.0	103	49	61	40	1.4	●
088-049-10 PE5	8.8	10.0	103	49	61	40	1.4	●
089-049-10 PE5	8.9	10.0	103	49	61	40	1.4	●
090-049-10 PE5	9.0	10.0	103	49	61	40	1.4	●
091-049-10 PE5	9.1	10.0	103	49	61	40	1.4	●
092-049-10 PE5	9.2	10.0	103	49	61	40	1.4	●
093-049-10 PE5	9.3	10.0	103	49	61	40	1.5	●
094-049-10 PE5	9.4	10.0	103	49	61	40	1.5	●
095-049-10 PE5	9.5	10.0	103	49	61	40	1.5	●
096-049-10 PE5	9.6	10.0	103	49	61	40	1.5	●
097-049-10 PE5	9.7	10.0	103	49	61	40	1.5	●
098-049-10 PE5	9.8	10.0	103	49	61	40	1.6	●
099-049-10 PE5	9.9	10.0	103	49	61	40	1.6	●

●: Standard



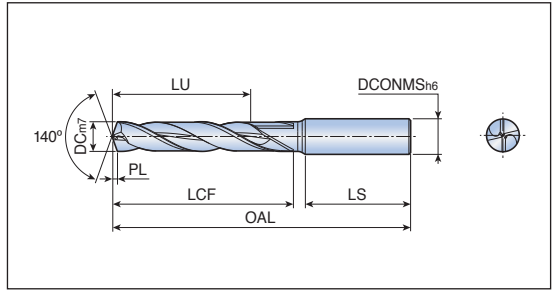
NHD...PE5



Punta in metallo duro



● Profondità foratura: 4-5xdiámetro

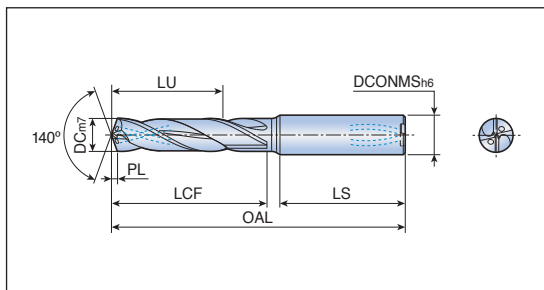


Descrizione	Dimensioni (mm)							Grado
	DC	DCONMS	OAL	LU	LCF	PL	LS	TT9030
NHD 100-049-10 PE5	10.0	10.0	103	49	61	1.6	40	●
101-056-12 PE5	10.1	12.0	118	56	71	1.6	45	●
102-056-12 PE5	10.2	12.0	118	56	71	1.6	45	●
103-056-12 PE5	10.3	12.0	118	56	71	1.6	45	●
104-056-12 PE5	10.4	12.0	118	56	71	1.6	45	●
105-056-12 PE5	10.5	12.0	118	56	71	1.6	45	●
106-056-12 PE5	10.6	12.0	118	56	71	1.7	45	●
107-056-12 PE5	10.7	12.0	118	56	71	1.7	45	●
108-056-12 PE5	10.8	12.0	118	56	71	1.7	45	●
109-056-12 PE5	10.9	12.0	118	56	71	1.7	45	●
110-056-12 PE5	11.0	12.0	118	56	71	1.7	45	●
111-056-12 PE5	11.1	12.0	118	56	71	1.7	45	●
112-056-12 PE5	11.2	12.0	118	56	71	1.8	45	●
113-056-12 PE5	11.3	12.0	118	56	71	1.8	45	●
114-056-12 PE5	11.4	12.0	118	56	71	1.8	45	●
115-056-12 PE5	11.5	12.0	118	56	71	1.8	45	●
116-056-12 PE5	11.6	12.0	118	56	71	1.8	45	●
117-056-12 PE5	11.7	12.0	118	56	71	1.9	45	●
118-056-12 PE5	11.8	12.0	118	56	71	1.9	45	●
119-056-12 PE5	11.9	12.0	118	56	71	1.9	45	●
120-056-12 PE5	12.0	12.0	118	56	71	1.9	45	●



●: Standard

Punta in metallo duro con fori di refrigerazione



- Profondità foratura: 3xdiametro



Descrizione	Dimensioni (mm)							Grado
	DC	DCONMS	OAL	LU	LCF	LS	PL	TT9030
NHD 030-014-06 PI3	3.0	6.0	62	14	20	34	0.5	●
031-014-06 PI3	3.1	6.0	62	14	20	34	0.5	●
032-014-06 PI3	3.2	6.0	62	14	20	34	0.5	●
033-014-06 PI3	3.3	6.0	62	14	20	34	0.5	●
034-014-06 PI3	3.4	6.0	62	14	20	34	0.5	●
035-014-06 PI3	3.5	6.0	62	14	20	34	0.6	●
036-014-06 PI3	3.6	6.0	62	14	20	34	0.6	●
037-014-06 PI3	3.7	6.0	62	14	20	34	0.6	●
038-017-06 PI3	3.8	6.0	66	17	24	35	0.6	●
039-017-06 PI3	3.9	6.0	66	17	24	35	0.6	●
040-017-06 PI3	4.0	6.0	66	17	24	35	0.6	●
041-017-06 PI3	4.1	6.0	66	17	24	35	0.7	●
042-017-06 PI3	4.2	6.0	66	17	24	35	0.7	●
043-017-06 PI3	4.3	6.0	66	17	24	35	0.7	●
044-017-06 PI3	4.4	6.0	66	17	24	35	0.7	●
045-017-06 PI3	4.5	6.0	66	17	24	35	0.7	●
046-017-06 PI3	4.6	6.0	66	17	24	35	0.7	●
047-017-06 PI3	4.7	6.0	66	17	24	35	0.8	●
048-020-06 PI3	4.8	6.0	66	20	28	36	0.8	●
049-020-06 PI3	4.9	6.0	66	20	28	36	0.8	●
050-020-06 PI3	5.0	6.0	66	20	28	36	0.8	●
051-020-06 PI3	5.1	6.0	66	20	28	36	0.8	●
052-020-06 PI3	5.2	6.0	66	20	28	36	0.8	●
053-020-06 PI3	5.3	6.0	66	20	28	36	0.8	●
054-020-06 PI3	5.4	6.0	66	20	28	36	0.8	●
055-020-06 PI3	5.5	6.0	66	20	28	36	0.9	●
056-020-06 PI3	5.6	6.0	66	20	28	36	0.9	●
057-020-06 PI3	5.7	6.0	66	20	28	36	0.9	●
058-020-06 PI3	5.8	6.0	66	20	28	36	0.9	●
059-020-06 PI3	5.9	6.0	66	20	28	36	0.9	●
060-020-06 PI3	6.0	6.0	66	20	28	36	0.9	●
061-024-08 PI3	6.1	8.0	79	24	34	36	1.0	●
062-024-08 PI3	6.2	8.0	79	24	34	36	1.0	●
063-024-08 PI3	6.3	8.0	79	24	34	36	1.0	●
064-024-08 PI3	6.4	8.0	79	24	34	36	1.0	●

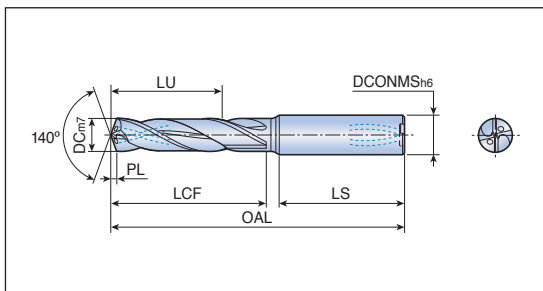
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Punta in metallo duro con fori di refrigerazione



- Profondità foratura: 3xdiametro

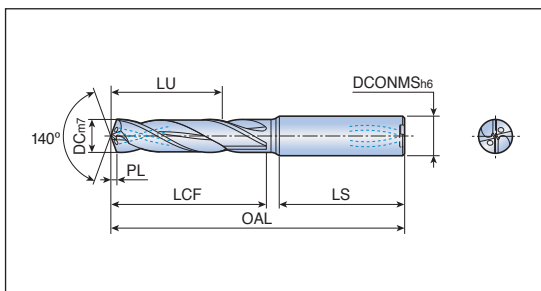


Descrizione	Dimensioni (mm)							Grado
	DC	DCONMS	OAL	LU	LCF	LS	PL	TT9030
NHD 065-024-08 PI3	6.5	8.0	79	24	34	36	1.0	●
066-024-08 PI3	6.6	8.0	79	24	34	36	1.0	●
067-024-08 PI3	6.7	8.0	79	24	34	36	1.1	●
068-024-08 PI3	6.8	8.0	79	24	34	36	1.1	●
069-024-08 PI3	6.9	8.0	79	24	34	36	1.1	●
070-024-08 PI3	7.0	8.0	79	24	34	36	1.1	●
071-029-08 PI3	7.1	8.0	79	29	41	36	1.1	●
072-029-08 PI3	7.2	8.0	79	29	41	36	1.1	●
073-029-08 PI3	7.3	8.0	79	29	41	36	1.1	●
074-029-08 PI3	7.4	8.0	79	29	41	36	1.2	●
075-029-08 PI3	7.5	8.0	79	29	41	36	1.2	●
076-029-08 PI3	7.6	8.0	79	29	41	36	1.2	●
077-029-08 PI3	7.7	8.0	79	29	41	36	1.2	●
078-029-08 PI3	7.8	8.0	79	29	41	36	1.2	●
079-029-08 PI3	7.9	8.0	79	29	41	36	1.3	●
080-029-08 PI3	8.0	8.0	79	29	41	36	1.3	●
081-035-10 PI3	8.1	10.0	89	35	47	40	1.3	●
082-035-10 PI3	8.2	10.0	89	35	47	40	1.3	●
083-035-10 PI3	8.3	10.0	89	35	47	40	1.3	●
084-035-10 PI3	8.4	10.0	89	35	47	40	1.3	●
085-035-10 PI3	8.5	10.0	89	35	47	40	1.3	●
086-035-10 PI3	8.6	10.0	89	35	47	40	1.4	●
087-035-10 PI3	8.7	10.0	89	35	47	40	1.4	●
088-035-10 PI3	8.8	10.0	89	35	47	40	1.4	●
089-035-10 PI3	8.9	10.0	89	35	47	40	1.4	●
090-035-10 PI3	9.0	10.0	89	35	47	40	1.4	●
091-035-10 PI3	9.1	10.0	89	35	47	40	1.4	●
092-035-10 PI3	9.2	10.0	89	35	47	40	1.4	●
093-035-10 PI3	9.3	10.0	89	35	47	40	1.5	●
094-035-10 PI3	9.4	10.0	89	35	47	40	1.5	●
095-035-10 PI3	9.5	10.0	89	35	47	40	1.5	●
096-035-10 PI3	9.6	10.0	89	35	47	40	1.5	●
097-035-10 PI3	9.7	10.0	89	35	47	40	1.5	●
098-035-10 PI3	9.8	10.0	89	35	47	40	1.6	●
099-035-10 PI3	9.9	10.0	89	35	47	40	1.6	●

●: Standard



Punta in metallo duro con fori di refrigerazione



- Profondità foratura: 3x diametro



Descrizione	Dimensioni (mm)							Grado TT9030
	DC	DCONMS	OAL	LU	LCF	LS	PL	
NHD 100-035-10 PI3	10.0	10.0	89	35	47	40	1.6	●
101-040-12 PI3	10.1	12.0	102	40	55	45	1.6	●
102-040-12 PI3	10.2	12.0	102	40	55	45	1.6	●
103-040-12 PI3	10.3	12.0	102	40	55	45	1.6	●
104-040-12 PI3	10.4	12.0	102	40	55	45	1.6	●
105-040-12 PI3	10.5	12.0	102	40	55	45	1.6	●
106-040-12 PI3	10.6	12.0	102	40	55	45	1.7	●
107-040-12 PI3	10.7	12.0	102	40	55	45	1.7	●
108-040-12 PI3	10.8	12.0	102	40	55	45	1.7	●
109-040-12 PI3	10.9	12.0	102	40	55	45	1.7	●
110-040-12 PI3	11.0	12.0	102	40	55	45	1.7	●
111-040-12 PI3	11.1	12.0	102	40	55	45	1.7	●
112-040-12 PI3	11.2	12.0	102	40	55	45	1.8	●
113-040-12 PI3	11.3	12.0	102	40	55	45	1.8	●
114-040-12 PI3	11.4	12.0	102	40	55	45	1.8	●
115-040-12 PI3	11.5	12.0	102	40	55	45	1.8	●
116-040-12 PI3	11.6	12.0	102	40	55	45	1.8	●
117-040-12 PI3	11.7	12.0	102	40	55	45	1.9	●
118-040-12 PI3	11.8	12.0	102	40	55	45	1.9	●
119-040-12 PI3	11.9	12.0	102	40	55	45	1.9	●
120-040-12 PI3	12.0	12.0	102	40	55	45	1.9	●

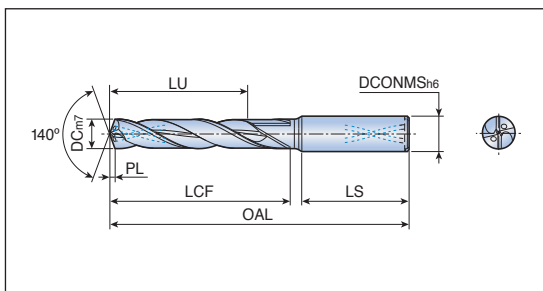
●: Standard



Punta in metallo duro con fori di refrigerazione



- Profondità foratura: 4-5xdiametro

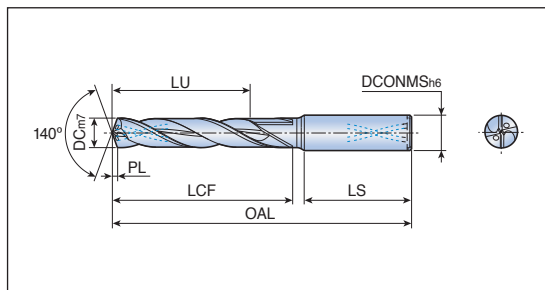


Descrizione	Dimensioni (mm)							Grado TT9030
	DC	DCONMS	OAL	LU	LCF	LS	PL	
NHD 030-023-06 PI5	3.0	6.0	66	23	28	34	0.5	●
031-023-06 PI5	3.1	6.0	66	23	28	34	0.5	●
032-023-06 PI5	3.2	6.0	66	23	28	34	0.5	●
033-023-06 PI5	3.3	6.0	66	23	28	34	0.5	●
034-023-06 PI5	3.4	6.0	66	23	28	34	0.5	●
035-023-06 PI5	3.5	6.0	66	23	28	34	0.6	●
036-023-06 PI5	3.6	6.0	66	23	28	34	0.6	●
037-023-06 PI5	3.7	6.0	66	23	28	34	0.6	●
038-029-06 PI5	3.8	6.0	74	29	36	35	0.6	●
039-029-06 PI5	3.9	6.0	74	29	36	35	0.6	●
040-029-06 PI5	4.0	6.0	74	29	36	35	0.6	●
041-029-06 PI5	4.1	6.0	74	29	36	35	0.7	●
042-029-06 PI5	4.2	6.0	74	29	36	35	0.7	●
043-029-06 PI5	4.3	6.0	74	29	36	35	0.7	●
044-029-06 PI5	4.4	6.0	74	29	36	35	0.7	●
045-029-06 PI5	4.5	6.0	74	29	36	35	0.7	●
046-029-06 PI5	4.6	6.0	74	29	36	35	0.7	●
047-029-06 PI5	4.7	6.0	74	29	36	35	0.8	●
048-035-06 PI5	4.8	6.0	82	35	44	36	0.8	●
049-035-06 PI5	4.9	6.0	82	35	44	36	0.8	●
050-035-06 PI5	5.0	6.0	82	35	44	36	0.8	●
051-035-06 PI5	5.1	6.0	82	35	44	36	0.8	●
052-035-06 PI5	5.2	6.0	82	35	44	36	0.8	●
053-035-06 PI5	5.3	6.0	82	35	44	36	0.8	●
054-035-06 PI5	5.4	6.0	82	35	44	36	0.8	●
055-035-06 PI5	5.5	6.0	82	35	44	36	0.9	●
056-035-06 PI5	5.6	6.0	82	35	44	36	0.9	●
057-035-06 PI5	5.7	6.0	82	35	44	36	0.9	●
058-035-06 PI5	5.8	6.0	82	35	44	36	0.9	●
059-035-06 PI5	5.9	6.0	82	35	44	36	0.9	●
060-035-06 PI5	6.0	6.0	82	35	44	36	0.9	●
061-043-08 PI5	6.1	8.0	91	43	53	36	1.0	●
062-043-08 PI5	6.2	8.0	91	43	53	36	1.0	●
063-043-08 PI5	6.3	8.0	91	43	53	36	1.0	●
064-043-08 PI5	6.4	8.0	91	43	53	36	1.0	●

●: Standard



Punta in metallo duro con fori di refrigerazione



• Profondità foratura: 4-5xdiametro



Descrizione	Dimensioni (mm)							Grado TT9030
	DC	DCONMS	OAL	LU	LCF	LS	PL	
NHD 065-043-08 PI5	6.5	8.0	91	43	53	36	1.0	●
066-043-08 PI5	6.6	8.0	91	43	53	36	1.0	●
067-043-08 PI5	6.7	8.0	91	43	53	36	1.1	●
068-043-08 PI5	6.8	8.0	91	43	53	36	1.1	●
069-043-08 PI5	6.9	8.0	91	43	53	36	1.1	●
070-043-08 PI5	7.0	8.0	91	43	53	36	1.1	●
071-043-08 PI5	7.1	8.0	91	43	53	36	1.1	●
072-043-08 PI5	7.2	8.0	91	43	53	36	1.1	●
073-043-08 PI5	7.3	8.0	91	43	53	36	1.1	●
074-043-08 PI5	7.4	8.0	91	43	53	36	1.2	●
075-043-08 PI5	7.5	8.0	91	43	53	36	1.2	●
076-043-08 PI5	7.6	8.0	91	43	53	36	1.2	●
077-043-08 PI5	7.7	8.0	91	43	53	36	1.2	●
078-043-08 PI5	7.8	8.0	91	43	53	36	1.2	●
079-043-08 PI5	7.9	8.0	91	43	53	36	1.3	●
080-043-08 PI5	8.0	8.0	91	43	53	36	1.3	●
081-049-10 PI5	8.1	10.0	103	49	61	40	1.3	●
082-049-10 PI5	8.2	10.0	103	49	61	40	1.3	●
083-049-10 PI5	8.3	10.0	103	49	61	40	1.3	●
084-049-10 PI5	8.4	10.0	103	49	61	40	1.3	●
085-049-10 PI5	8.5	10.0	103	49	61	40	1.3	●
086-049-10 PI5	8.6	10.0	103	49	61	40	1.4	●
087-049-10 PI5	8.7	10.0	103	49	61	40	1.4	●
088-049-10 PI5	8.8	10.0	103	49	61	40	1.4	●
089-049-10 PI5	8.9	10.0	103	49	61	40	1.4	●
090-049-10 PI5	9.0	10.0	103	49	61	40	1.4	●
091-049-10 PI5	9.1	10.0	103	49	61	40	1.4	●
092-049-10 PI5	9.2	10.0	103	49	61	40	1.4	●
093-049-10 PI5	9.3	10.0	103	49	61	40	1.5	●
094-049-10 PI5	9.4	10.0	103	49	61	40	1.5	●
095-049-10 PI5	9.5	10.0	103	49	61	40	1.5	●
096-049-10 PI5	9.6	10.0	103	49	61	40	1.5	●
097-049-10 PI5	9.7	10.0	103	49	61	40	1.5	●
098-049-10 PI5	9.8	10.0	103	49	61	40	1.6	●
099-049-10 PI5	9.9	10.0	103	49	61	40	1.6	●

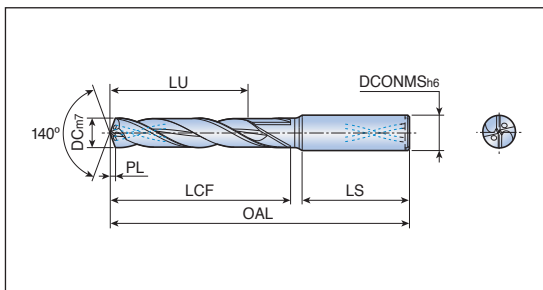
●: Standard



Punta in metallo duro con fori di refrigerazione



• Profondità foratura: 4-5xdiámetro



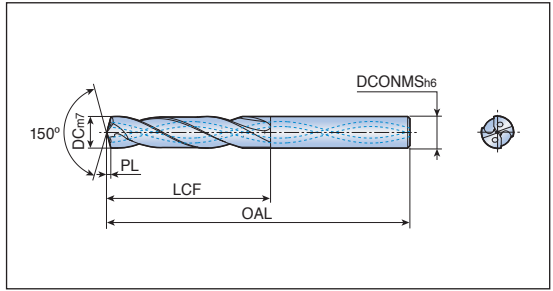
Descrizione	Dimensioni (mm)							Grado
	DC	DCONMS	OAL	LU	LCF	LS	PL	TT9030
NHD 100-049-10 PI5	10.0	10.0	103	49	61	40	1.6	●
101-056-12 PI5	10.1	12.0	118	56	71	45	1.6	●
102-056-12 PI5	10.2	12.0	118	56	71	45	1.6	●
103-056-12 PI5	10.3	12.0	118	56	71	45	1.6	●
104-056-12 PI5	10.4	12.0	118	56	71	45	1.6	●
105-056-12 PI5	10.5	12.0	118	56	71	45	1.6	●
106-056-12 PI5	10.6	12.0	118	56	71	45	1.7	●
107-056-12 PI5	10.7	12.0	118	56	71	45	1.7	●
108-056-12 PI5	10.8	12.0	118	56	71	45	1.7	●
109-056-12 PI5	10.9	12.0	118	56	71	45	1.7	●
110-056-12 PI5	11.0	12.0	118	56	71	45	1.7	●
111-056-12 PI5	11.1	12.0	118	56	71	45	1.7	●
112-056-12 PI5	11.2	12.0	118	56	71	45	1.8	●
113-056-12 PI5	11.3	12.0	118	56	71	45	1.8	●
114-056-12 PI5	11.4	12.0	118	56	71	45	1.8	●
115-056-12 PI5	11.5	12.0	118	56	71	45	1.8	●
116-056-12 PI5	11.6	12.0	118	56	71	45	1.8	●
117-056-12 PI5	11.7	12.0	118	56	71	45	1.9	●
118-056-12 PI5	11.8	12.0	118	56	71	45	1.9	●
119-056-12 PI5	11.9	12.0	118	56	71	45	1.9	●
120-056-12 PI5	12.0	12.0	118	56	71	45	1.9	●



●: Standard

SHO 3...-PH

Punta in metallo duro pilota per forature profonde



- È possibile forare con MQL



Descrizione	Dimensioni (mm)					Grado
	DC	DCONMS	OAL	LCF	PL	TT9030
SHO 30403-PH	4.03	4	66.5	24.5	0.5	●
30503-PH	5.03	5	68.6	30.6	0.6	●
30603-PH	6.03	6	68.7	30.7	0.7	●
30703-PH	7.03	7	73.8	35.8	0.8	●
30803-PH	8.03	8	79.9	41.9	0.9	●
30903-PH	9.03	9	91.0	49.0	1.0	●
31003-PH	10.03	10	91.1	49.1	1.1	●



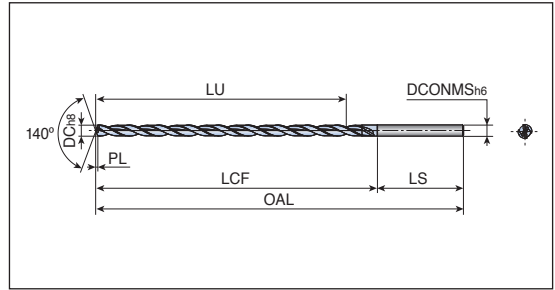
●: Standard

Punta in metallo duro per forature profonde con fori di refrigerazione



MQL DRILL

- Profondità foratura: 10/15/20xdiametro
- È possibile forare con MQL



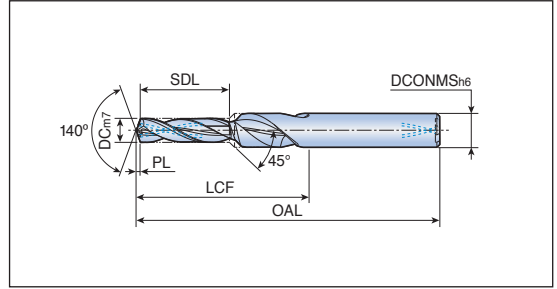
Descrizione	Dimensioni (mm)							Grado
	DC	DCONMS	OAL	LU	LCF	LS	PL	TT9030
SHO 10040	4.0	4	105.6	50	55.6	50	0.6	●
10050	5.0	5	115.8	60	65.8	50	0.8	●
10060	6.0	6	131.0	76	81.0	50	1.0	●
10070	7.0	7	141.1	86	91.1	50	1.1	●
10080	8.0	8	156.3	98	106.3	50	1.3	●
10090	9.0	9	171.4	108	116.4	55	1.4	●
10100	10.0	10	191.6	123	131.6	60	1.6	●
15040	4.0	4	125.6	70	75.6	50	0.6	●
15050	5.0	5	140.8	85	90.8	50	0.8	●
15060	6.0	6	161.0	106	111.0	50	1.0	●
15070	7.0	7	176.1	121	126.1	50	1.1	●
15080	8.0	8	196.3	138	146.3	50	1.3	●
15090	9.0	9	221.4	153	161.4	60	1.4	●
15100	10.0	10	241.6	173	181.6	60	1.6	●
20040	4.0	4	140.6	85	90.6	50	0.6	●
20050	5.0	5	165.8	110	115.8	50	0.8	●
20060	6.0	6	191.0	136	141.0	50	1.0	●
20070	7.0	7	211.1	156	161.1	50	1.1	●
20080	8.0	8	231.3	173	181.3	50	1.3	●
20090	9.0	9	266.4	198	206.4	60	1.4	●
20100	10.0	10	286.6	218	226.6	60	1.6	●



●: Standard

SHO...-M

Punta in metallo duro per preforo di maschiatura

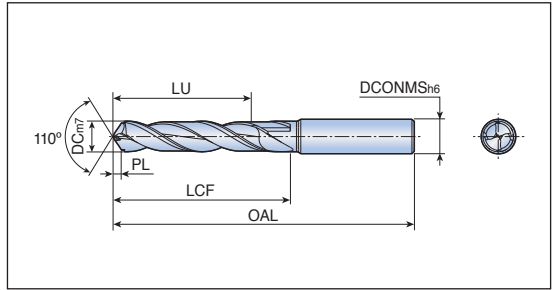


Descrizione	Filetto ISO	Dimensioni (mm)						Grado TT9030
		DC	OAL	SDL	LCF	DCONMS	PL	
SHO 033x12x6-M4	M4	3.3	62.5	12	26.5	6	0.5	●
042x15x6-M5	M5	4.2	66.6	15	28.6	6	0.6	●
050x18x8-M6	M6	5.0	79.8	18	36.8	8	0.8	●
068x24x10-M8	M8	6.8	91.0	24	49.0	10	1.0	●
085x30x12-M10	M10	8.5	103.3	30	56.3	12	1.3	●



●: Standard

Punta in metallo duro per materiali compositi



Descrizione	Dimensioni (mm)							Grado
	DC (Metrica)	DC (Pollici)	DCONMS	OAL	LU	LCF	PL	TTD610
CDF 030-027-06	3	-	6	72.7	28	34.7	0.7	●
040-027-06	4	-	6	73.0	28	35.0	1.0	●
0476-034-06	4.76	3/16	6	81.3	35	43.3	1.3	●
050-034-06	5	-	6	81.3	35	43.3	1.3	●
060-034-06	6	-	6	81.7	36	43.7	1.7	●
0635-040-08	6.35	-	8	89.7	42	51.7	1.7	●
070-040-08	7	-	8	89.9	42	51.9	1.9	●
0794-040-08	7.94	5/16	8	90.2	42	52.2	2.2	●
080-040-08	8	-	8	90.2	42	52.2	2.2	●
090-045-10	9	-	10	101.5	48	59.5	2.5	●
0952-045-10	9.52	3/8	10	101.6	48	59.6	2.6	●
100-045-10	10	-	10	101.8	48	59.8	2.8	●
110-052-12	11	-	12	117.1	55	70.1	3.1	●
1111-052-12	11.11	7/16	12	117.1	55	70.1	3.1	●
120-052-12	12	-	12	117.4	55	70.4	3.4	●
127-055-14	12.7	1/2	14	122.6	59c	75.6	3.6	●

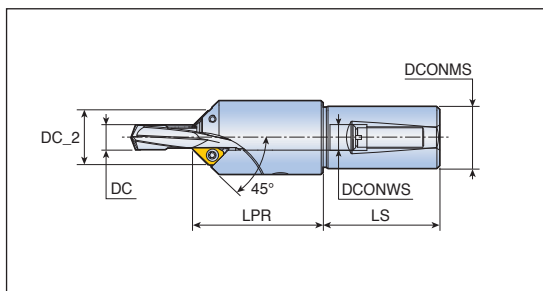


●: Standard

T-CHAMFER...T1

TCHAMFER

Utensile di smussatura con punta in metallo duro



Descrizione	DC	Dimensioni (mm)					Inserto
		DCONWS	DC_2	DCONMS	LPR	LS	
T-CHAMFER 080-20T1-06	7.1-8.0	8	18.8	20	47.4	50	XCGT 06...-C..
090-20T1-06	8.1-9.0	9	19.8	20	47.4	50	D167
100-32T1-09	9.1-10.0	10	24.9	32	67.3	60	XCGT 09...-C..
110-32T1-09	10.1-11.0	11	25.9	32	67.3	60	D167
120-32T1-09	11.1-12.0	12	26.9	32	67.3	60	
130-32T1-09	12.1-13.0	13	27.9	32	67.3	60	
140-32T1-09	13.1-14.0	14	28.4	32	67.3	60	
150-32T1-09	14.1-15.0	15	29.4	32	67.3	60	
160-32T1-09	15.1-16.0	16	30.4	32	67.3	60	
170-32T1-09	16.1-17.0	17	31.4	32	67.3	60	
180-32T1-09	17.1-18.0	18	32.4	32	67.3	60	
190-32T1-09	18.1-19.0	19	33.4	32	75.0	60	
200-32T1-09	19.1-20.0	20	34.4	32	75.0	60	

Ricambi

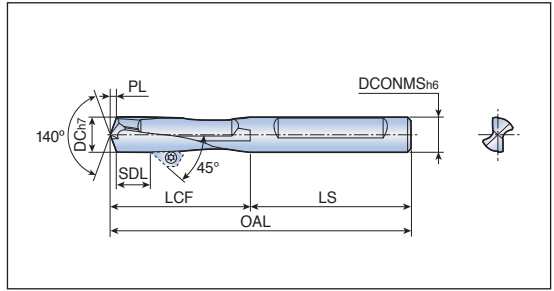
Descrizione	Vite laterale	Vite posteriore	Chiave a L	Vite inserto	Chiave
T-CHAMFER 080 - 090	SS M6x1x6	M6x1-SP	L-W 3	TS 25064I	TD 8
T-CHAMFER 100 - 200	SS M10x1.5x10	M10x1.5-SP	L-W 5	TS 40093I	TD 15

Assemblaggio



D88

Punta in metallo duro per T-CHAMFER



Descrizione	Dimensioni (mm)								Grado TT9030
	DC	DCONMS	OAL	LCF	LS	SDL _{min}	SDL _{max}	PL	
SHD 3080-CF	8.0	8.0	80.3	37.3	43	9.5	17.5	1.3	●
3090-CF	9.0	9.0	85.4	42.4	43	13.0	23.5	1.4	●
3100-CF	10.0	10.0	90.6	47.6	43	15.5	25.0	1.6	●
3110-CF	11.0	11.0	96.8	53.8	43	21.5	30.0	1.8	●
3120-CF	12.0	12.0	103.9	60.9	43	25.5	37.0	1.9	●
3130-CF	13.0	13.0	104.1	61.1	43	25.5	35.0	2.1	●
3150-CF	15.0	15.0	113.4	65.4	48	26.5	40.5	2.4	●
3170-CF	17.0	17.0	121.7	71.7	50	24.5	44.0	2.7	●
3180-CF	18.0	18.0	125.9	75.9	50	26.5	48.0	2.9	●
3190-CF	19.0	19.0	130.0	76	54	26.5	49.0	3.0	●

- 'SDL' è determinata dal posizionamento della punta nell'utensile
 - La punta in metallo duro con i fori di refrigerazione è disponibile su richiesta
- : Standard

Inserto	Angolo smusso	Misura smusso
XCGT 0603-C30	30°	1.5
0603-C45	45°	4.5
0603-C60	60°	2.5
XCGT 0903-C30	30°	1.5
0903-C45	45°	6.0
0903-C60	60°	3.5

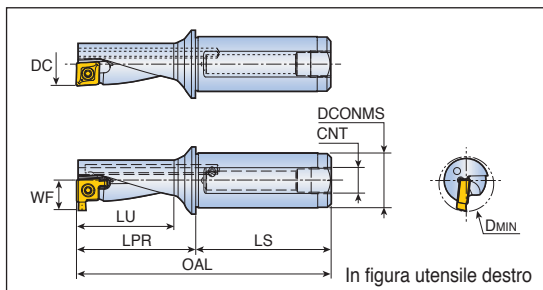
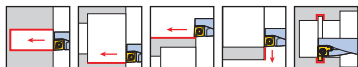
• La misura massima dello smusso si ottiene utilizzando la punta con il diametro più piccolo

TCAP...-2.25DN

Utensile multifunzione - 2.25xD



- Refrigerante interno



Descrizione	Dimensioni (mm)								Inserto	
	DC	DCONMS	WF	LU	LPR	LS	DMIN	CNT	Foratura, barenatura, tornitura	Scanalatura
TCAP 08R/L-2.25DN	8	12	-	18.0	22.5	42	-	G 1/16	XCM(G)T 04...TC/TA	-
10R/L-2.25DN-GV	10	12	7.1	22.5	27.5	42	12.0	G 1/16	XCM(G)T 05...TC/TA	XCMT 05R...GV
12R/L-2.25DN-GV	12	16	8.5	27.0	33.0	45	14.5	G 1/8	XCM(G)T 06...TC/TA	XCMT 06R...GV
14R/L-2.25DN-GV	14	16	9.5	31.5	38.5	45	16.5	G 1/8	XCM(G)T 07...TC/TA	XCMT 07R...GV
16R/L-2.25DN-GV	16	20	11.1	36.0	44.0	50	19.0	G 1/8	XCM(G)T 08...TC/TA	XCMT 08R...GV
20R/L-2.25DN-GV	20	25	13.2	45.0	55.0	56	23.5	G 1/8	XCM(G)T 10...TC/TA	XCMT 10R...GV
25R/L-2.25DN-GV	25	32	16.5	56.5	69.0	61	29.0	G 1/8	XCM(G)T 13...TC/TA	XCMT 13R...GV
32R/L-2.25DN-GV	32	40	20.5	72.0	86.0	74	36.5	G 1/8	XCM(G)T 17...TC/TA	XCMT 17R...GV
									D168-169	D168

- OAL = LPR+LS
- L'inserto per scanalatura è disponibile per utensile destro

Ricambi

Descrizione	Vite	Chiave	
TCAP 08	TS 18034I/HG-P	T 6P	
TCAP 10	TS 20038I/HG-P	T 6P	
TCAP 12	TS 22052I/HG-P	T 7P	
TCAP 14	TS 25064I/HG-P	T 8P	
TCAP 16	TS 30100I/HG-P		TD 9P
TCAP 20	TS 35088I/HG-P		TD10P
TCAP 25	TS 45A100I/HG		TD 20
TCAP 32	TS 45A100I/HG		TD 20



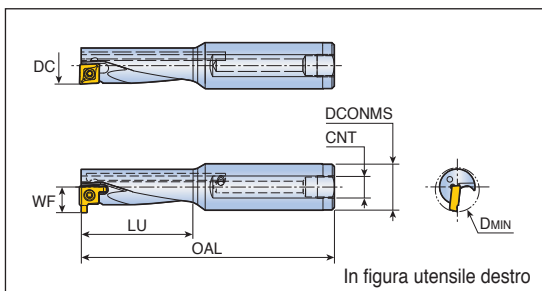
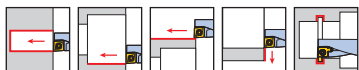
TCAP...-3.0DN



Utensile multifunzione - 3.0xD



• Refrigerante interno



Descrizione	Dimensioni (mm)							Inserto	
	DC	DCONMS	WF	LU	OAL	DMIN	CNT	Foratura, barenatura, tornitura	Scanalatura
TCAP 08R/L-3.0DN12	8	12	-	24	80	-	G 1/16	XCM(G)T 04...TC/TA	-
10R/L-3.0DN-GV	10	12	7.1	30	85	12.0	G 1/16	XCM(G)T 05...TC/TA	XCMT 05R...GV
12R/L-3.0DN-GV	12	16	8.5	36	95	14.5	G 1/8	XCM(G)T 06...TC/TA	XCMT 06R...GV
14R/L-3.0DN-GV	14	16	9.5	42	100	16.5	G 1/8	XCM(G)T 07...TC/TA	XCMT 07R...GV
16R/L-3.0DN-GV	16	20	11.1	48	110	19.0	G 1/8	XCM(G)T 08...TC/TA	XCMT 08R...GV
20R/L-3.0DN-GV	20	25	13.2	60	130	23.5	G 1/8	XCM(G)T 10...TC/TA	XCMT 10R...GV
25R/L-3.0DN-GV	25	32	16.5	75	150	29.0	G 1/8	XCM(G)T 13...TC/TA	XCMT 13R...GV
32R/L-3.0DN-GV	32	40	20.5	96	185	36.5	G 1/8	XCM(G)T 17...TC/TA	XCMT 17R...GV
								D168-169	D168

- OAL = LPR+LS
- L'inserto per scanalatura è disponibile solo per utensile destro

Ricambi

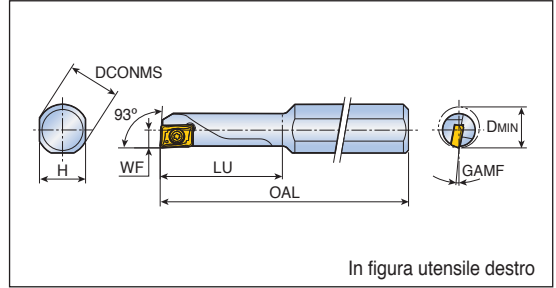
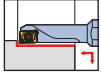
Descrizione	Vite	Chiave	
TCAP 08	TS 18034I/HG-P	T 6P	
TCAP 10	TS 20038I/HG-P	T 6P	
TCAP 12	TS 22052I/HG-P	T 7P	
TCAP 14	TS 25064I/HG-P	T 8P	
TCAP 16	TS 30100I/HG-P		TD 9P
TCAP 20	TS 35088I/HG-P		TD10P
TCAP 25	TS 45A100I/HG		TD 20
TCAP 32	TS 45A100I/HG		TD 20



Bareno con inserto TOPCAP



- Per barenatura
- Refrigerante esterno



Descrizione	Dimensioni (mm)							Inserto
	DCONMS	H	OAL	LU	WF	DMIN	GAMF	
S10H SXUCR/L 04-06 ⁽¹⁾	10	9	100	20	3.0	6	9°	XCMT 04...R/L TC
S10J SXUCR/L 04-07 ⁽¹⁾	10	9	110	23	3.5	7	5°	D169
S10J SXUCR/L 04-08 ⁽¹⁾	10	9	110	27	4.0	8	2°	
S10K SXUCR/L 05-10	10	9	125	34	5.0	10	2°	XCMT 05..TC D169

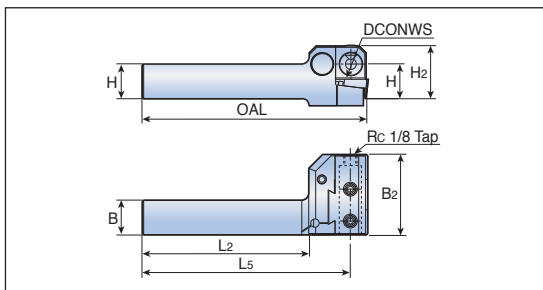
• ⁽¹⁾ L'inserto destro deve essere usato sul bareno destro

Ricambi

Descrizione	Vite	Chiave		
S10H SXUCR/L 04-06	TS 18034I/HG-P	T 6P		
S10J SXUCR/L 04-07	TS 18034I/HG-P	T 6P		
S10J SXUCR/L 04-08	TS 18034I/HG-P	T 6P		
S10K SXUCR/L 05-10	TS 20038I/HG-P	T 6P		



Unità di bloccaggio (Sistema di allineamento)

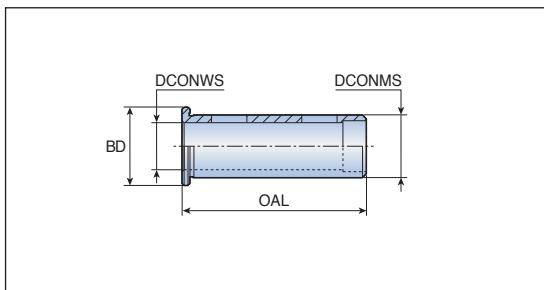
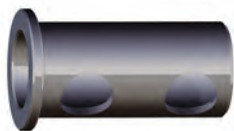


Descrizione	Dimensioni (mm)								Utensile
	H	B	DCONWS	H2	B2	L2	L5	OAL	
TGHR 2020-D16	20	20	16	38	58	120	150	161	TCAP 08R/L...
2525-D16	25	25	16	38	58	120	150	161	TCAP 10R/L...
									TCAP 12R/L...
									TCAP 14R/L...
2525-D25	25	25	25	56	75	120	157	174	TCAP 16R/L...
									TCAP 20R/L...

Ricambi

Descrizione	Blocco	Cuneo	Anello	Vite cuneo	Perno di montaggio	Vite di montaggio	Vite di bloccaggio		Vite di bloccaggio	Chiave
TGHR 2020-D16	TGHR-D16-BL	TGHR-WD	WSR 4	TGH-WS	TGH-MPI	TGH-MPS	SSxM8 1.25X10-C	SSxM8 x1.25x8	-	L-W 4
TGHR 2525-D16										
TGHR 2525-D25	TGHR-D25-BL	TGHR-WD-25	WSR 4	TGH-WS-25	TGH-MPI-25	TGH-MPS-25	SS M10 x1.5x12-C	SS M101.5x10	SH M6x1x20	L-W 4 L-W 5

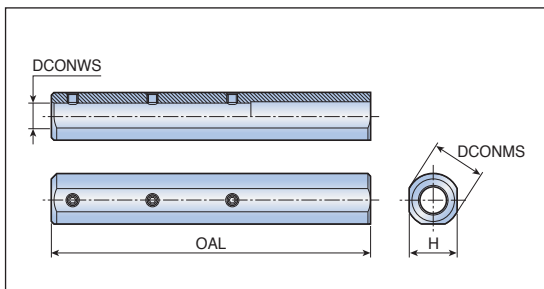
Bussola per unità di bloccaggio



Descrizione	Dimensioni (mm)				Utensile
	DCONMS	DCONWS	BD	OAL	
TSL 16-12	16	12	20	47	TCAP 10R/L...
25-20	25	20	32	55	TCAP 16R/L...

TBSL

Bussola per bareno



Descrizione	Dimensioni (mm)			
	DCONMS	DCONWS	OAL	H
TBSL 20-10-120	20	10	120	18

Ricambi

Descrizione	Vite	Chiave		
TBSL 20-10-120	SS M4x0.7x4	L-W 2		

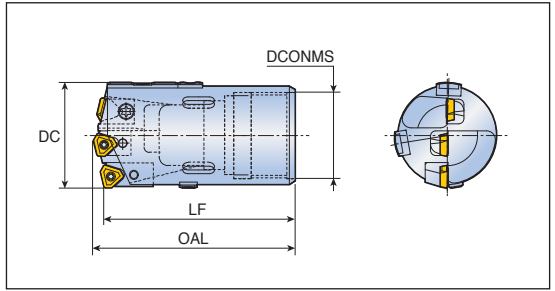
Utensili per foratura profonda



Sistema tubo singolo



- Filetto interno a un principio



Descrizione	DC	Dimensioni (mm)			Tubo	
		LF	OAL	DCONMS	Codice	Diametro (mm)
TBTA3- xxx.xxS11-33	38.00-39.99	80	85	30	BTSE 033	33
xxx.xxS11-36	40.00-43.99	80	86	33	BTSE 036	36
xxx.xxS11-39	44.00-46.99	90	96	37	BTSE 039	39
xxx.xxS11-43	47.00-51.99	90	97	41	BTSE 043	43
xxx.xxS11-47	52.00-56.99	100	107	44	BTSE 047	47
xxx.xxS11-51	57.00-60.99	110	118	49	BTSE 051	51
xxx.xxS11-56	61.00-67.99	110	119	53	BTSE 056	56
xxx.xxS11-62	68.00-74.99	120	129	59	BTSE 062	62
xxx.xxS11-68	75.00-80.99	150	161	65	BTSE 068	68
xxx.xxS11-75	81.00-90.99	150	162	71	BTSE 075	75
xxx.xxS11-82	91.00-98.99	150	162	79	BTSE 082	82
xxx.xxS11-94	99.00-106.99	150	163	90	BTSE 094	94

Assemblaggio

D98

Tubo

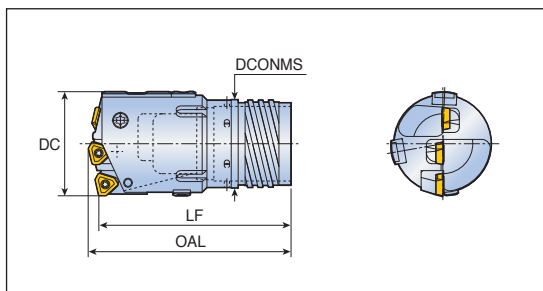
D130

Condizioni di taglio

D202

TBTA3...DE4

Sistema tubo doppio



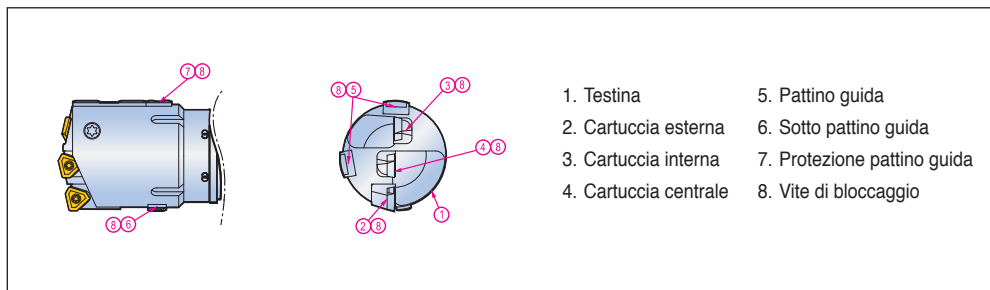
- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)			Tubo		
		LF	OAL	DCONMS	Tubo esterno	Tubo interno	Diametro (mm)
TBTA3-xxx.xxDE4-35.5	38.00-39.60	85	90	33	BTDO 035.5	BTDI 026	35.5
xxx.xxDE4-39	39.61-43.00	85	91	36	BTDO 039	BTDI 029	39.0
xxx.xxDE4-42.5	43.01-47.00	95	101	39	BTDO 042.5	BTDI 032	42.5
xxx.xxDE4-46.5	47.01-51.70	100	102	43	BTDO 046.5	BTDI 035	46.5
xxx.xxDE4-51	51.71-56.20	100	107	47	BTDO 051	BTDI 039	51.0
xxx.xxDE4-55.5	56.21-65.00	110	119	51	BTDO 055.5	BTDI 043A	55.5
xxx.xxDE4-56	65.00-66.99	150	159	52	BTDO 056	BTDI 043B	56.0
xxx.xxDE4-62	67.00-72.99	150	159	58	BTDO 062	BTDI 048	62.0
xxx.xxDE4-68	73.00-79.99	150	160	63	BTDO 068	BTDI 053	68.0
xxx.xxDE4-75	80.00-86.99	180	191	70	BTDO 075	BTDI 059	75.0
xxx.xxDE4-82	87.00-99.99	180	193	77	BTDO 082	BTDI 066	82.0
xxx.xxDE4-94	100.00-106.99	180	193	89	BTDO 094	BTDI 078	94.0

Assemblaggio Tubo Condizioni di taglio

D98 D130 D202

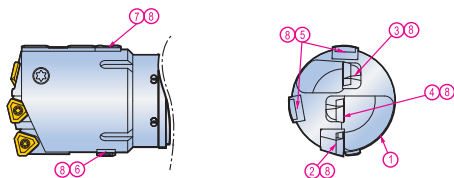
Assemblaggio della serie TBTA3



Componenti		Diametro (mm)				
		38.00-39.99	40.00-44.99	45.00-47.99	48.00-51.99	52.00-54.99
Cartuccia	ESTERNA	PERC 05R	PERC 402-04	PERC 402-04	PERC 402-04	PERC 402-32
	Vite regolazione	AS0003-5	AS0004-8	AS0004-8	AS0004-8	AS0005-10
	Chiave	H1.5	H2	H2	H2	H2.5
	Vite	LS1803RH	LS1803.5RH	LS1803.5RH	LS1803.5RH	LS1805RH
	Chiave	H2	H2.5	H2.5	H2.5	H3
	INTERNA	CENC 05R	CENC 05R	CENC 05R	CENC 402-04	CENC 402-04
	Vite	CSTB3	CSTB3	CSTB3	CSTB3.5	CSTB3.5
	Chiave	T-9D	T-9D	T-9D	T-15D	T-15D
	CENTRALE	CENC 05R	CENC 05R	CENC 402-04	CENC 402-04	CENC 402-04
	Vite	CSTB3	CSTB3	CSTB3.5	CSTB3.5	CSTB3.5
Inserto	Chiave	T-9D	T-9D	T-15D	T-15D	T-15D
	ESTERNO	NPMX 0803RG	TPMX 1403RG	TPMX 1403RG	TPMX 1403RG	TPMX 1704RG
	Vite	CSTB2.2	CSTB2.5	CSTB2.5	CSTB2.5	CSTB3.5D
	Chiave	T-7D	T-8D	T-8D	T-8D	T-9D
	INTERNO	NPMX 0803RG	NPMX 0803RG	NPMX 0803RG	TPMX 1403RG	TPMX 1403RG
	Vite	CSTB2.2	CSTB2.2	CSTB2.2	CSTB2.5	CSTB2.5
	Chiave	T-7D	T-7D	T-7D	T-8D	T-8D
	CENTRALE	NPMX 0803RG	NPMX 0803RG	TPMX 1403RG	TPMX 1403RG	TPMX 1403RG
	Vite	CSTB2.2	CSTB2.2	CSTB2.5	CSTB2.5	CSTB2.5
	Chiave	T-7D	T-7D	T-8D	T-8D	T-8D
Pattino	PATTINO	PAD-GO08CD-SA-FB	PAD-GO08CD-SA-FB	PAD-GC10-SA	PAD-GC10-SA	PAD-GC10-SA
	Vite	PAD-GO08CD-SB-FB	PAD-GO08CD-SB-FB	PAD-GC10-SB	PAD-GC10-SB	PAD-GC10-SB
	Chiave	CSTB3S	CSTB3S	CSTB4S	CSTB4S	CSTB4S
	PROTEZIONE	T-9D	T-9D	T-15D	T-15D	T-15D
	Vite	PAD-P08	PAD-P08	PAD-P10	PAD-P10	PAD-P10
	Chiave	CSTB3S	CSTB3S	CSTB4S	CSTB4S	CSTB4S
	SOTTO PATTINO	T-9D	T-9D	T-15D	T-15D	T-15D
	Vite	PAD-S08	PAD-S08	PAD-S08	PAD-S08	PAD-S08
	Chiave	CSTB3S	CSTB3S	CSTB3S	CSTB3S	CSTB3S
	Chiave	T-9D	T-9D	T-9D	T-9D	T-9D



Assemblaggio della serie TBTA3

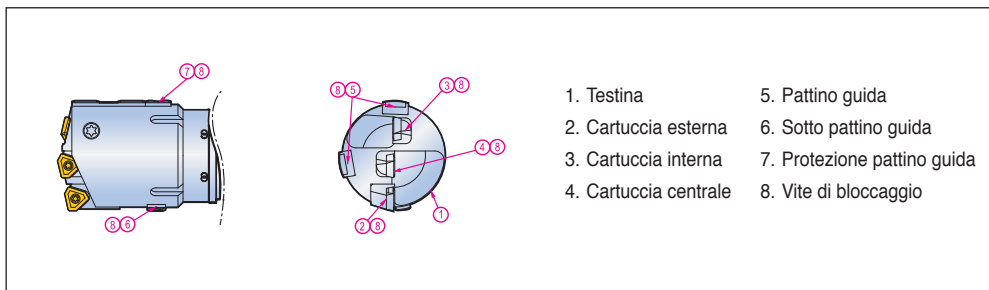


- | | |
|-----------------------|-----------------------------|
| 1. Testina | 5. Pattino guida |
| 2. Cartuccia esterna | 6. Sotto pattino guida |
| 3. Cartuccia interna | 7. Protezione pattino guida |
| 4. Cartuccia centrale | 8. Vite di bloccaggio |

Componenti		Diametro (mm)				
		55.00-57.99	58.00-59.99	60.00-63.99	64.00-67.99	68.00-77.99
Cartuccia	ESTERNA	PERC 402-32	PERC 402-32	PERC 402-32	PERC 402-43	PERC 402-32
	Vite regolazione	AS0005-10	AS0005-10	AS0005-10	AS0005-15	AS0005-10
	Chiave	H2.5	H2.5	H2.5	H2.5	H2.5
	Vite	LS1805RH	LS1805RH	LS1805RH	LS1806RH	LS1805RH
	Chiave	H3	H3	H3	H4	H3
	INTERNA	CENC 402-04	CENC 402-32	CENC 402-32	CENC 402-32	CENC 402-43
	Vite	CSTB3.5	CSTA5	CSTA5	CSTA5	LS1206
	Chiave	T-15D	T-15D	T-15D	T-15D	H3
	CENTRALE	CENC 402-32	CENC 402-32	CENC 402-32	CENC 402-32	CENC 402-43
	Vite	CSTA5	CSTA5	CSTA5	CSTA5	LS1206
Chiave	T-15D	T-15D	T-15D	T-15D	H3	
Inserto	ESTERNO	TPMX 1704RG	TPMX 1704RG	TPMX 1704RG	TPMX 2405RG	TPMX 1704RG
	Vite	CSTB3.5D	CSTB3.5D	CSTB3.5D	CSTB4M	CSTB3.5D
	Chiave	T-9D	T-9D	T-9D	T-15D	T-9D
	INTERNO	TPMX 1403RG	TPMX 1704RG	TPMX 1704RG	TPMX 1704RG	TPMX 2405RG
	Vite	CSTB2.5	CSTB3.5D	CSTB3.5D	CSTB3.5D	CSTB4M
	Chiave	T-8D	T-9D	T-9D	T-9D	T-15D
	CENTRALE	TPMX 1704RG	TPMX 1704RG	TPMX 1704RG	TPMX 1704RG	TPMX 2405RG
Vite	CSTB3.5D	CSTB3.5D	CSTB3.5D	CSTB3.5D	CSTB4M	
Chiave	T-9D	T-9D	T-9D	T-9D	T-15D	
Pattino	PATTINO	PAD-GC10-SA	PAD-GC10-SA	PAD-GC14-SB	PAD-GC14-SB	PAD-GC14-SB
		PAD-GC10-SB	PAD-GC10-SB	-	-	-
	Vite	CSTB4S	CSTB4S	CSTA5S	CSTA5S	CSTA5S
	Chiave	T-15D	T-15D	T-15D	T-15D	T-15D
	PROTEZIONE	PAD-P10	PAD-P10	PAD-P14	PAD-P14	PAD-P14
	Vite	CSTB4S	CSTB4S	CSTA5S	CSTA5S	CSTA5S
	Chiave	T-15D	T-15D	T-15D	T-15D	T-15D
	SOTTO PATTINO	PAD-S08	PAD-S08	PAD-S08	PAD-S10	PAD-S10
	Vite	CSTB3S	CSTB3S	CSTB3S	CSTB3S	CSTB3S
	Chiave	T-9D	T-9D	T-9D	T-9D	T-9D



Assemblaggio della serie TBTA3



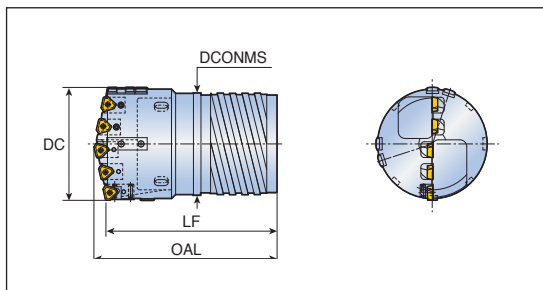
Componenti		Diametro (mm)			
		78.00-84.99	85.00-91.99	92.00-98.99	99.00-106.99
Cartuccia	ESTERNA	PERC 402-43	PERC 402-63	PERC 402-43	PERC 402-63
	Vite regolazione	AS0005-15	AS0006-15	AS0005-15	AS0006-15
	Chiave	H2.5	H3	H2.5	H3
	Vite	LS1806RH	LS1806RH	LS1806RH	LS1806RH
	Chiave	H4	H4	H4	H4
	INTERNA	CENC 402-43	CENC 402-43	CENC 402-63	CENC 402-63
	Vite	LS1206	LS1206	LS1206	LS1206
	Chiave	H3	H3	H3	H3
	CENTRALE	CENC 402-43	CENC 402-43	CENC 402-63	CENC 402-63
	Vite	LS1206	LS1206	LS1206	LS1206
Inserto	ESTERNO	TPMX 2405RG	TPMX 2807RG	TPMX 2405RG	TPMX 2807RG
	Vite	CSTB4M	CSTB5	CSTB4M	CSTB5
	Chiave	T-15D	T-20D	T-15D	T-20D
	INTERNO	TPMX 2405RG	TPMX 2405RG	TPMX 2807RG	TPMX 2807RG
	Vite	CSTB4M	CSTB4M	CSTB5	CSTB5
	Chiave	T-15D	T-15D	T-20D	T-20D
	CENTRALE	TPMX 2405RG	TPMX 2405RG	TPMX 2807RG	TPMX 2807RG
	Vite	CSTB4M	CSTB4M	CSTB5	CSTB5
	Chiave	T-15D	T-15D	T-20D	T-20D
	Pattino	PATTINO	PAD-GC14-SB	PAD-GC14-SB	PAD-GC14-SB
Vite		CSTA5S	CSTA5S	CSTA5S	LS1206S
Chiave		T-15D	T-15D	T-15D	H3
PROTEZIONE		PAD-P14	PAD-P14	PAD-P14	PAD-P18
Vite		CSTB5S	CSTB5S	CSTA5S	LS1206S
Chiave		T-15D	T-15D	T-15D	H3
SOTTO PATTINO		PAD-S10	PAD-S10	PAD-S10	PAD-S14
Vite		CSTB3S	CSTB3S	CSTB3S	CSTA5S
Chiave		T-9D	T-9D	T-9D	T-15D



TBTA5...SE4



Sistema tubo singolo



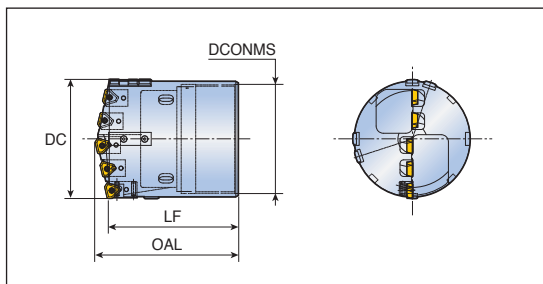
- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)			Tubo	
		LF	OAL	DCONMS	Codice	Diametro (mm)
TBTA5- xxx.xxSE4-094	107.00-111.99	180	197	89	BTSI 094	94
xxx.xxSE4-106	112.00-123.99	205	221	101	BTSI 106	106
xxx.xxSE4-118	124.00-135.99	205	222	113	BTSI 118	118
xxx.xxSE4-130	136.00-147.99	205	223	125	BTSI 130	130
xxx.xxSE4-142	148.00-159.99	225	245	137	BTSI 142	142
xxx.xxSE4-154	160.00-168.99	225	246	149	BTSI 154	154

TBTA5...SI1



Sistema tubo singolo

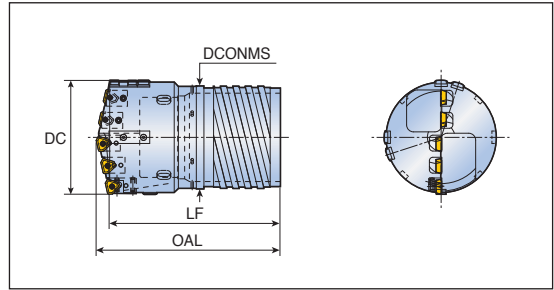


- Filetto interno a un principio

Descrizione	DC	Dimensioni (mm)			Tubo	
		LF	OAL	DCONMS	Codice	Diametro (mm)
TBTA5- xxx.xxSI1-094	107.00-110.99	150	164	90	BTSE 094	94
xxx.xxSI1-106	111.00-122.99	150	165	102	BTSE 106	106
xxx.xxSI1-118	123.00-134.99	150	167	114	BTSE 118	118
xxx.xxSI1-130	135.00-148.99	150	168	126	BTSE 130	130
xxx.xxSI1-142	149.00-161.99	150	170	139	BTSE 142	142
xxx.xxSI1-154	162.00-168.99	190	211	151	BTSE 154	154

 Assemblaggio D103	 Tubo D130	 Condizioni di taglio D202
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Sistema tubo doppio

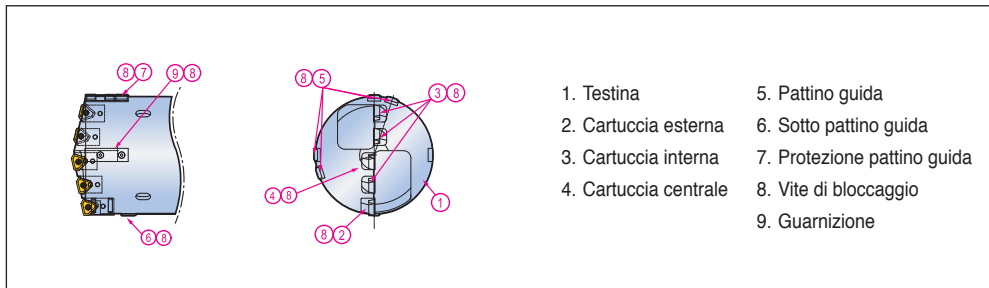


- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)			Tubo		
		LF	OAL	DCONMS	Tubo interno	Tubo esterno	Diametro (mm)
TBTA5- xxx.xxDE4-094	107.00-111.99	180	197	89	BTDO 094	BTDI 078	94
xxx.xxDE4-106	112.00-123.99	205	221	101	BTDO 106	BTDI 090	106
xxx.xxDE4-118	124.00-135.99	205	222	113	BTDO 118	BTDI 092	118
xxx.xxDE4-130	136.00-147.99	205	223	125	BTDO 130	BTDI 093	130
xxx.xxDE4-142	148.00-159.99	225	245	137	BTDO 142	BTDI 094	142
xxx.xxDE4-154	160.00-168.99	225	246	149	BTDO 154	BTDI 095	154

Assemblaggio	Tubo	Condizioni di taglio
D103	D130	D202

Assemblaggio della serie TBTA5

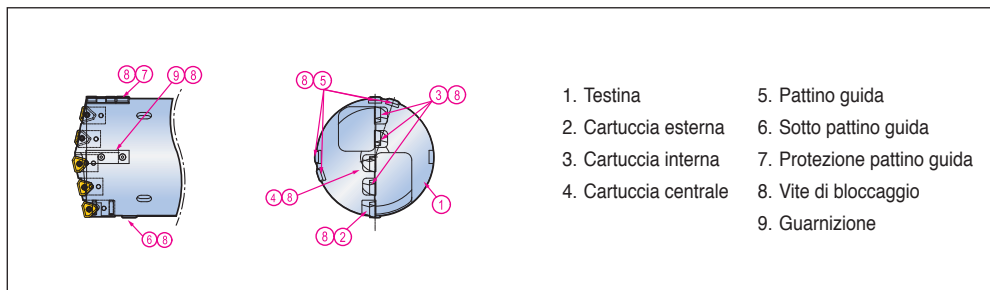


- | | |
|-----------------------|-----------------------------|
| 1. Testina | 5. Pattino guida |
| 2. Cartuccia esterna | 6. Sotto pattino guida |
| 3. Cartuccia interna | 7. Protezione pattino guida |
| 4. Cartuccia centrale | 8. Vite di bloccaggio |
| | 9. Guarnizione |

Componenti	Diametro (mm)				
	107.00-117.99	118.00-135.99	136.00-144.99	145.00-150.99	
Cartuccia	ESTERNA	PERC 402-43	PERC 402-43	PERC 402-43	PERC 402-43
	Vite di regolazione	AS0005-15	AS0005-15	AS0005-15	AS0005-15
	Chiave	H2.5	H2.5	H2.5	H2.5
	Vite	LS1806RH	LS1806RH	LS1806RH	LS1806RH
	Chiave	H4	H4	H4	H4
	INTERNA	CENC 402-32	CENC 402-43	CENC 402-43	CENC 402-43
	Vite	CSTA5	LS1206	LS1206	LS1206
	Chiave	T-15D	H3	H3	H3
	CENTRALE	CENC 402-43	CENC 402-43	CENC 402-63	CENC 402-63
	Vite	LS1206	LS1206	LS1206	LS1206
Chiave	H3	H3	H3	H3	
Inserto	ESTERNO	TPMX 2405RG	TPMX 2405RG	TPMX 2405RG	TPMX 2405RG
	Vite	CSTB4M	CSTB4M	CSTB4M	CSTB4M
	Chiave	T-15D	T-15D	T-15D	T-15D
	INTERNO	TPMX 1704RG	TPMX 2405RG	TPMX 2405RG	TPMX 2405RG
	Vite	CSTB3.5D	CSTB4M	CSTB4M	CSTB4M
	Chiave	T-9D	T-15D	T-15D	T-15D
	CENTRALE	TPMX 2405RG	TPMX 2405RG	TPMX 2807RG	TPMX 2807RG
Vite	CSTB4M	CSTB4M	CSTB5	CSTB5	
Chiave	T-15D	T-15D	T-20D	T-20D	
Pattino	PATTINO	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB
	Vite	LS1206S	LS1206S	LS1206S	LS1206S
	Chiave	H3	H3	H3	H3
	PROTEZIONE	PAD-P18	PAD-P18	PAD-P18	PAD-P18
	Vite	LS1206S	LS1206S	LS1206S	LS1206S
	Chiave	H3	H3	H3	H3
	SOTTO PATTINO	PAD-S14	PAD-S14	PAD-S14	PAD-S14
	Vite	CSTA5S	CSTA5S	CSTA5S	CSTA5S
	Chiave	T-15D	T-15D	T-15D	T-15D



Assemblaggio della serie TBTA5



1. Testina
2. Cartuccia esterna
3. Cartuccia interna
4. Cartuccia centrale
5. Pattino guida
6. Sotto pattino guida
7. Protezione pattino guida
8. Vite di bloccaggio
9. Guarnizione

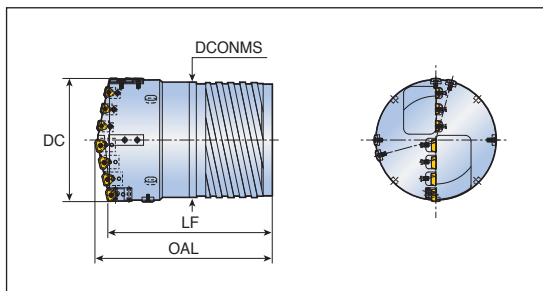
Componenti		Diametro (mm)		
		151.00-156.99	157.00-162.99	163.00-168.99
Cartuccia	ESTERNA	PERC 402-63	PERC 402-63	PERC 402-63
	Vite di regolazione	AS0006-15	AS0006-15	AS0006-15
	Chiave	H3	H3	H3
	Vite	LS1806RH	LS1806RH	LS1806RH
	Chiave	H4	H4	H4
	INTERNA	CENC 402-43	CENC 402-43	CENC 402-63
	Vite	LS1206	LS1206	LS1206
	Chiave	H3L	H3L	H3L
	CENTRALE	CENC 402-63	CENC 402-63	CENC 402-63
	Vite	LS1206S	LS1206S	LS1206S
Inserto	ESTERNO	TPMX 2807RG	TPMX 2807RG	TPMX 2807RG
	Vite	CSTB5	CSTB5	CSTB5
	Chiave	T-20D	T-20D	T-20D
	INTERNO	TPMX 2405RG	TPMX 2405RG	TPMX 2807RG
	Vite	CSTB4M	CSTB4M	CSTB5
	Chiave	T-15D	T-15D	T-20D
	CENTRALE	TPMX 2807RG	TPMX 2807RG	TPMX 2807RG
	Vite	CSTB5	CSTB5	CSTB5
	Chiave	T-20D	T-20D	T-20D
	Pattino	PATTINO	PAD-GC18-SB	PAD-GC18-SB
Vite		LS1206S	LS1206S	LS1206S
Chiave		H3	H3	H3L
PROTEZIONE		PAD-P18	PAD-P18	PAD-P18
Vite		LS1206S	LS1206S	LS1206S
Chiave		H3	H3	H3
SOTTO PATTINO		PAD-S14	PAD-S14	PAD-S14
Vite		CSTA5S	CSTA5S	CSTA5S
Chiave		T-15D	T-15D	T-15D



TBTA7...SE4



Sistema tubo singolo



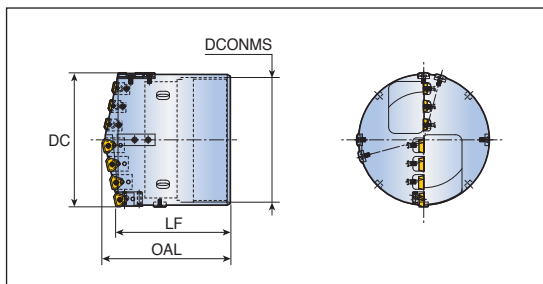
- Filetto esterno a quattro principi
- Disponibile su richiesta anche sistema tubo doppio

Descrizione	DC	Dimensioni (mm)			Tubo	
		LF	OAL	DCONMS	Codice	Diametro (mm)
TBTA7- xxx.xxSE4-154	169.00-171.99	225	246	149	BTSI 154	154
xxx.xxSE4-166	172.00-183.99	225	247	161	BTSI 166	166
xxx.xxSE4-178	184.00-195.99	245	267	173	BTSI 178	178
xxx.xxSE4-190	196.00-207.99	245	270	185	BTSI 190	190
xxx.xxSE4-202	208.00-219.99	245	271	197	BTSI 202	202
xxx.xxSE4-214	220.00-231.99	265	293	208	BTSI 214	214
xxx.xxSE4-226	232.00-232.99	265	293	220	BTSI 226	226

TBTA7...SI1



Sistema tubo singolo

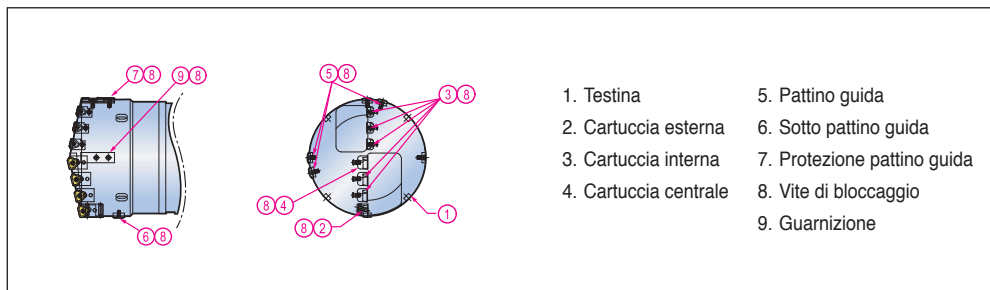


- Filetto interno a un principio

Descrizione	DC	Dimensioni (mm)			Tubo	
		LF	OAL	DCONMS	Codice	Diametro (mm)
TBTA7- xxx.xxSI1-154	169.00-173.99	190	211	151	BTSE 154	154
xxx.xxSI1-166	174.00-185.99	190	213	163	BTSE 166	166
xxx.xxSI1-178	186.00-197.99	190	212	175	BTSE 178	178
xxx.xxSI1-190	198.00-209.99	190	215	187	BTSE 190	190
xxx.xxSI1-202	210.00-221.99	190	217	199	BTSE 202	202
xxx.xxSI1-214	222.00-232.99	190	218	211	BTSE 214	214

 Assemblaggio D106	 Tubo D130	 Condizioni di taglio D202
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Assemblaggio della serie TBTA7

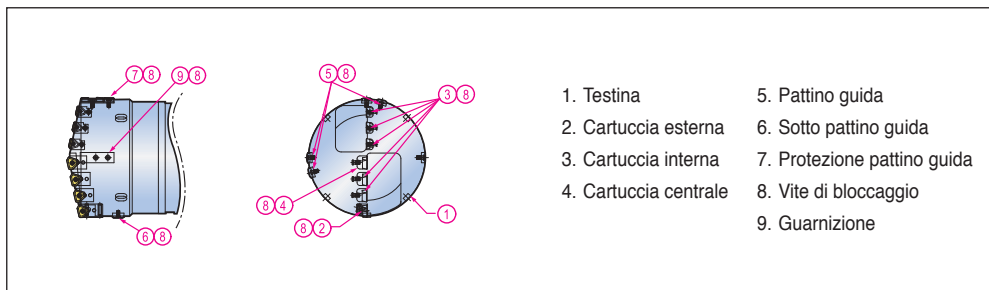


1. Testina
2. Cartuccia esterna
3. Cartuccia interna
4. Cartuccia centrale
5. Pattino guida
6. Sotto pattino guida
7. Protezione pattino guida
8. Vite di bloccaggio
9. Guarnizione

Componenti		Diametro (mm)			
		169.00-188.99	189.00-196.99	197.00-202.99	203.00-208.99
Cartuccia	ESTERNA	PERC 402-43	PERC 402-43	PERC 402-43	PERC 402-43
	Vite di regolazione	AS0005-15	AS0005-15	AS0005-15	AS0005-15
	Chiave	H2.5	H2.5	H2.5	H2.5
	Vite	LS1806RH	LS1806RH	LS1806RH	LS1806RH
	Chiave	H4	H4	H4	H4
	INTERNA	CENC 402-43	CENC 402-43	CENC 402-43	CENC 402-43
	Vite	LS1206	LS1206	LS1206	LS1206
	Chiave	H3L	H3L	H3L	H3L
	CENTRALE	CENC 402-43	CENC 402-63	CENC 402-63	CENC 402-63
	Vite	LS1206	LS1206S	LS1206S	LS1206S
Chiave	H3L	H3L	H3L	H3L	
Inserto	ESTERNO	TPMX 2405RG	TPMX 2405RG	TPMX 2405RG	TPMX 2405RG
	Vite	CSTB4M	CSTB4M	CSTB4M	CSTB4M
	Chiave	T-15D	T-15D	T-15D	T-15D
	INTERNO	TPMX 2405RG	TPMX 2405RG	TPMX 2405RG	TPMX 2405RG
	Vite	CSTB4M	CSTB4M	CSTB4M	CSTB4M
	Chiave	T-15D	T-15D	T-15D	T-15D
Pattino	CENTRALE	TPMX 2405RG	TPMX 2807RG	TPMX 2807RG	TPMX 2807RG
	Vite	CSTB4M	CSTB5	CSTB5	CSTB5
	Chiave	T-15D	T-15D	T-15D	T-15D
	PATTINO	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB
	Vite	LS1206S	LS1206S	LS1206S	LS1206S
	Chiave	H3	H3	H3	H3
	PROTEZIONE	PAD-P18	PAD-P18	PAD-P18	PAD-P18
	Vite	LS1206S	LS1206S	LS1206S	LS1206S
	Chiave	H3	H3	H3	H3
	SOTTO PATTINO	PAD-S14	PAD-S14	PAD-S14	PAD-S14
Vite	CSTA5S	CSTA5S	CSTA5S	CSTA5S	
Chiave	T-15D	T-15D	T-15D	T-15D	



Assemblaggio della serie TBTA7



1. Testina
2. Cartuccia esterna
3. Cartuccia interna
4. Cartuccia centrale
5. Pattino guida
6. Sotto pattino guida
7. Protezione pattino guida
8. Vite di bloccaggio
9. Guarnizione

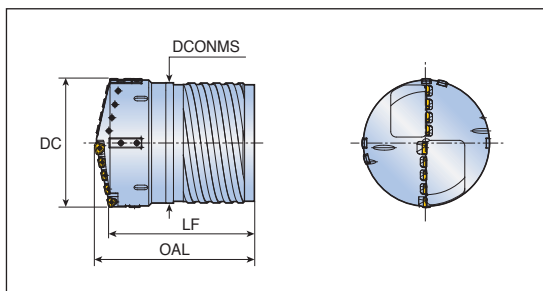
Componenti		Diametro (mm)			
		209.00-214.99	215.00-220.99	221.00-226.99	227.00-232.99
Cartuccia	ESTERNA	PERC 402-63	PERC 402-63	PERC 402-63	PERC 402-63
	Vite di regolazione	AS0006-15	AS0006-15	AS0006-15	AS0005-15
	Chiave	H3	H3	H3	H3
	Vite	L1806RH	L1806RH	L1806RH	LS1806RH
	Chiave	H4	H4	H4	H4
	INTERNA	CENC 402-43	CENC 402-43	CENC 402-43	CENC 402-63
	Vite	LS1206	LS1206	LS1206	LS1206
	Chiave	H3L	H3L	H3L	H3L
	CENTRALE	CENC 402-63	CENC 402-63	CENC 402-63	CENC 402-63
	Vite	LS1206S	LS1206	LS1206	LS1206S
Inserto	Chiave	H3L	H3L	H3L	H3L
	ESTERNO	TPMX 2807RG	TPMX 2807RG	TPMX 2807RG	TPMX 2807RG
	Vite	CSTB5	CSTB5	CSTB5	CSTB5
	Chiave	T-20D	T-20D	T-20D	T-20D
	INTERNO	TPMX 2405RG	TPMX 2405RG	TPMX 2405RG	TPMX 2807RG
	Vite	CSTB4M	CSTB4M	CSTB4M	CSTB5
Pattino	Chiave	T-15D	T-15D	T-15D	T-15D
	CENTRALE	TPMX 2807RG	TPMX 2807RG	TPMX 2807RG	TPMX 2807RG
	Vite	CSTB5	CSTB5	CSTB5	CSTB5
	Chiave	T-20D	T-20D	T-20D	T-20D
	PATTINO	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB
	Vite	LS1206S	LS1206S	LS1206S	LS1206S
	Chiave	H3	H3	H3	H3
	PROTEZIONE	PAD-P18	PAD-P18	PAD-P18	PAD-P18
	Vite	LS1206S	LS1206S	LS1206S	LS1206S
	Chiave	H3	H3	H3	H3
SOTTO PATTINO	SOTTO PATTINO	PAD-S14	PAD-S14	PAD-S14	PAD-S14
	Vite	CSTA5S	CSTA5S	CSTA5S	CSTA5S
	Chiave	T-15D	T-15D	T-15D	T-15D



TBTA9...SE4



Sistema tubo singolo



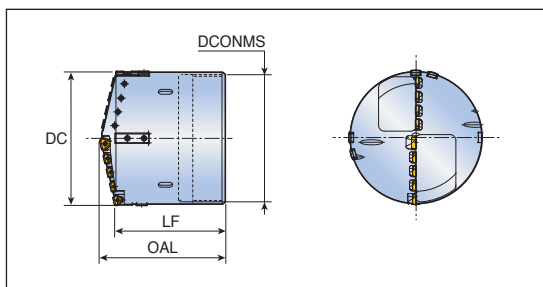
- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)			Tubo	
		LF	OAL	DCONMS	Codice	Diametro (mm)
TBTA9 - xxx.xxSE4-226	233.00-243.99	265	294	220	BTSI 226	226
xxx.xxSE4-238	244.00-255.99	265	294	232	BTSI 238	238
xxx.xxSE4-250	256.00-267.99	290	322	244	BTSI 250	250
xxx.xxSE4-262	268.00-279.99	290	323	256	BTSI 262	262
xxx.xxSE4-274	280.00-291.99	290	325	268	BTSI 274	274

TBTA9...SI1



Sistema tubo singolo

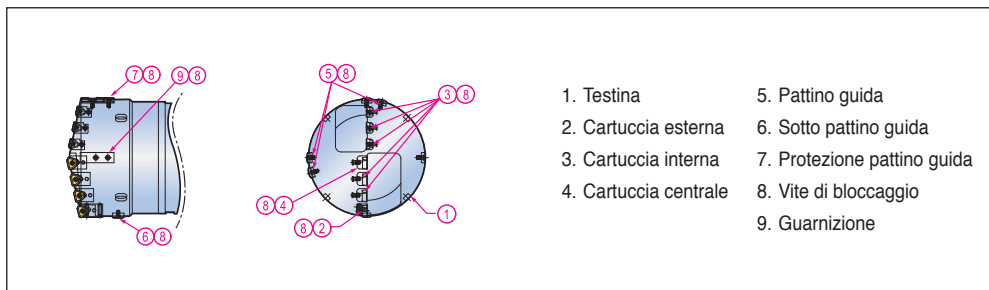


- Filetto interno a un principio

Descrizione	DC	Dimensioni (mm)			Tubo	
		LF	OAL	DCONMS	Codice	Diametro (mm)
TBTA9 - xxx.xxSI1-214	233.00-233.99	190	217	211	BTSE 214	214
xxx.xxSI1-226	234.00-245.99	190	219	223	BTSE 226	226
xxx.xxSI1-238	246.00-257.99	190	221	235	BTSE 238	238
xxx.xxSI1-250	258.00-269.99	210	242	245	BTSE 250	250
xxx.xxSI1-262	270.00-281.99	210	244	259	BTSE 262	262
xxx.xxSI1-274	282.00-293.99	210	245	271	BTSE 274	274

Assemblaggio	Tubo	Condizioni di taglio
D109	D130	D202

Assemblaggio della serie TBTA9

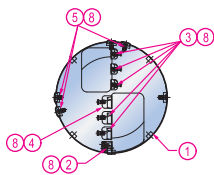
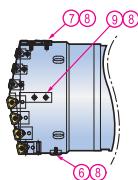


- | | |
|-----------------------|-----------------------------|
| 1. Testina | 5. Pattino guida |
| 2. Cartuccia esterna | 6. Sotto pattino guida |
| 3. Cartuccia interna | 7. Protezione pattino guida |
| 4. Cartuccia centrale | 8. Vite di bloccaggio |
| | 9. Guarnizione |

Componenti		Diametro (mm)				
		233.00-247.99	248.00-253.99	254.00-258.99	259.00-264.99	265.00-271.99
Cartuccia	ESTERNA	PERC 402-43	PERC 402-63	PERC 402-63	PERC 402-63	PERC 402-63
	Vite di regolazione	AS0005-15	AS0006-15	AS0006-15	AS0006-15	AS0006-15
	Chiave	H2.5	H3	H3	H3	H3
	Vite	LS1806RH	L1806RH	L1806RH	L1806RH	L1806RH
	Chiave	H4	H4	H4	H4	H4
	INTERNA	CENC 402-43	CENC 402-43	CENC 402-43	CENC 402-43	CENC 402-43
	Vite	LS1206	LS1206	LS1206	LS1206	LS1206
	Chiave	H3L	H3L	H3L	H3L	H3L
	CENTRALE	CENC 402-63	CENC 402-63	CENC 402-63	CENC 402-63	CENC 402-63
	Vite	LS1206S	LS1206S	LS1206S	LS1206S	LS1206S
Inserto	ESTERNO	TPMX 2405 RG	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG
	Vite	CSTB4M	CSTB5	CSTB5	CSTB5	CSTB5
	Chiave	T-15D	T-20D	T-20D	T-20D	T-20D
	INTERNO	TPMX 2405 RG	TPMX 2405 RG	TPMX 2405 RG	TPMX 2405 RG	TPMX 2405 RG
	Vite	CSTB4M	CSTB4M	CSTB4M	CSTB4M	CSTB4M
	Chiave	T-15D	T-15D	T-15D	T-15D	T-15D
	CENTRALE	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG
	Vite	CSTB5	CSTB5	CSTB5	CSTB5	CSTB5
	Chiave	T-20D	T-20D	T-20D	T-20D	T-20D
	Pattino	PATTINO	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB
Vite		LS1206S	LS1206S	LS1206S	LS1206S	LS1206S
Chiave		H3	H3	H3	H3	H3
PROTEZIONE		PAD-P18	PAD-P18	PAD-P18	PAD-P18	PAD-P18
Vite		LS1206S	LS1206S	LS1206S	LS1206S	LS1206S
Chiave		H3	H3	H3	H3	H3
SOTTO PATTINO		PAD-S14	PAD-S14	PAD-S14	PAD-S14	PAD-S14
Vite		CSTA5S	CSTA5S	CSTA5S	CSTA5S	CSTA5S
Chiave		T-15D	T-15D	T-15D	T-15D	T-15D



Assemblaggio della serie TBTA9



1. Testina
2. Cartuccia esterna
3. Cartuccia interna
4. Cartuccia centrale
5. Pattino guida
6. Sotto pattino guida
7. Protezione pattino guida
8. Vite di bloccaggio
9. Guarnizione

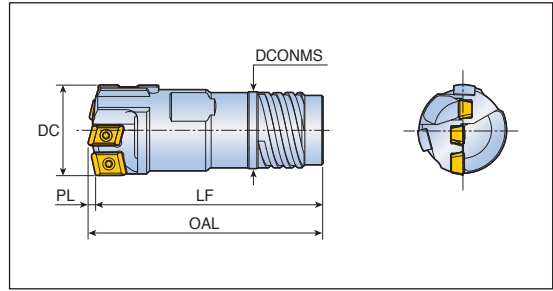
Componenti		Diametro (mm)			
		272.00-275.99	276.00-284.99	285.00-289.99	290.00-293.99
Cartuccia	ESTERNA	PERC 402-63	PERC 402-63	PERC 402-63	PERC 402-63
	Vite di regolazione	AS0006-15	AS0006-15	AS0006-15	AS0006-15
	Chiave	H3	H3	H3	H3
	Vite	L1806RH	L1806RH	L1806RH	L1806RH
	Chiave	H4	H4	H4	H4
	INTERNA	CENC 402-63	CENC 402-63	CENC 402-63	CENC 402-63
	Vite	LS1206S	LS1206S	LS1206S	LS1206S
	Chiave	H3L	H3L	H3L	H3L
	CENTRALE	CENC 402-63	CENC 402-63	CENC 402-63	CENC 402-63
	Vite	LS1206S	LS1206S	LS1206S	LS1206S
Inserto	ESTERNO	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG
	Vite	CSTB5	CSTB5	CSTB5	CSTB5
	Chiave	T-20D	T-20D	T-20D	T-20D
	INTERNO	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG
	Vite	CSTB5	CSTB5	CSTB5	CSTB5
	Chiave	T-20D	T-20D	T-20D	T-20D
	CENTRALE	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG	TPMX 2807 RG
	Vite	CSTB5	CSTB5	CSTB5	CSTB5
	Chiave	T-20D	T-20D	T-20D	T-20D
	Pattino	PATTINO	PAD-GC18-SB	PAD-GC18-SB	PAD-GC18-SB
Vite		LS1206S	LS1206S	LS1206S	LS1206S
Chiave		H3	H3	H3	H3
PROTEZIONE		PAD-P18	PAD-P18	PAD-P18	PAD-P18
Vite		LS1206S	LS1206S	LS1206S	LS1206S
Chiave		H3	H3	H3	H3
SOTTO PATTINO		PAD-S14	PAD-S14	PAD-S14	PAD-S14
Vite		CSTA5S	CSTA5S	CSTA5S	CSTA5S
Chiave		T-15D	T-15D	T-15D	T-15D



TBTA-FB...SE4



Sistema tubo singolo



- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)				Tubo	
		LF	OAL	DCONMS	PL	Codice	Diametro (mm)
TBTA-FB xx.xxSE4-22	25.00-26.40	70	73	19.5	3	BTSI 022	22
xx.xxSE4-24	26.41-28.70	70	73	21.0	3	BTSI 024	24
xx.xxSE4-26	28.71-31.00	75	78	23.5	3	BTSI 026	26
xx.xxSE4-28	31.01-33.30	75	78	25.5	3	BTSI 028	28
xx.xxSE4-30	33.31-36.20	80	83	28.0	3	BTSI 030	30
xx.xxSE4-33	36.21-39.60	90	93	30.0	3	BTSI 033	33
xx.xxSE4-36	39.61-43.00	95	99	33.0	4	BTSI 036	36
xx.xxSE4-39	43.01-47.00	100	104	36.0	4	BTSI 039	39
xx.xxSE4-43	47.01-51.70	100	104	39.0	4	BTSI 043	43
xx.xxSE4-47	51.71-56.20	110	114	43.0	4	BTSI 047	47
xx.xxSE4-51	56.21-60.60	115	120	47.0	5	BTSI 051	51
xx.xxSE4-51	60.61-65.00	115	120	47.0	5	BTSI 051	51
xx.xxSE4-56A	60.61-65.00	115	120	51.0	5	BTSI 056A	56

Assemblaggio

D114

Tubo

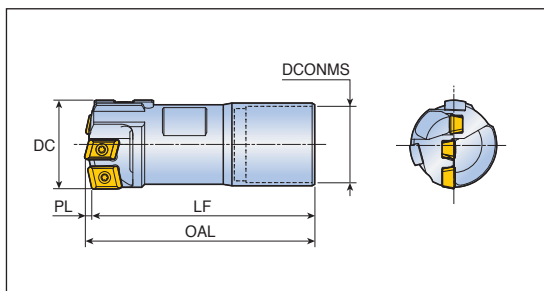
D130

Condizioni di taglio

D204

• Inserto e pattino guida sono venduti separatamente dal corpo punta

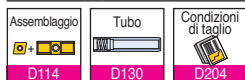
Sistema tubo singolo



- Filetto interno a un principio

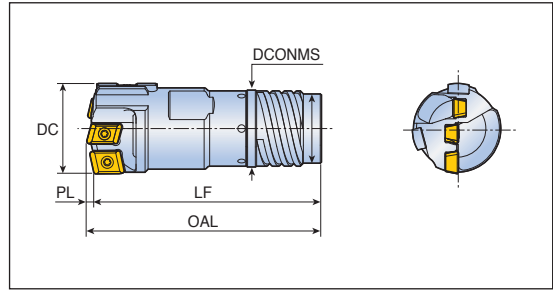
Descrizione	DC	Dimensioni (mm)				Tubo	
		LF	OAL	DCONMS	PL	Codice	Diametro (mm)
TBTA-FB xx.xxSI1-22	25.00-26.99	70	73	20	3	BTSE 022	22
xx.xxSI1-24	27.00-29.00	70	73	22	3	BTSE 024	24
xx.xxSI1-24	29.01-29.99	70	73	22	3	BTSE 024	24
xx.xxSI1-26	30.00-31.99	75	78	24	3	BTSE 026	26
xx.xxSI1-28	32.00-33.99	75	78	26	3	BTSE 028	28
xx.xxSI1-30	34.00-36.99	90	93	27	3	BTSE 030	30
xx.xxSI1-33	37.00-39.99	95	98	30	3	BTSE 033	33
xx.xxSI1-36	40.00-43.99	100	104	33	4	BTSE 036	36
xx.xxSI1-39	44.00-46.99	105	109	37	4	BTSE 039	39
xx.xxSI1-43	47.00-51.99	105	109	41	4	BTSE 043	43
xx.xxSI1-47	52.00-56.99	110	114	44	4	BTSE 047	47
xx.xxSI1-51	57.00-60.99	115	120	49	5	BTSE 051	51
xx.xxSI1-56	61.00-65.00	115	120	53	5	BTSE 056	56

- Inserto e pattino guida sono venduti separatamente dal corpo punta



TBTA-FB...DE4

Sistema tubo doppio



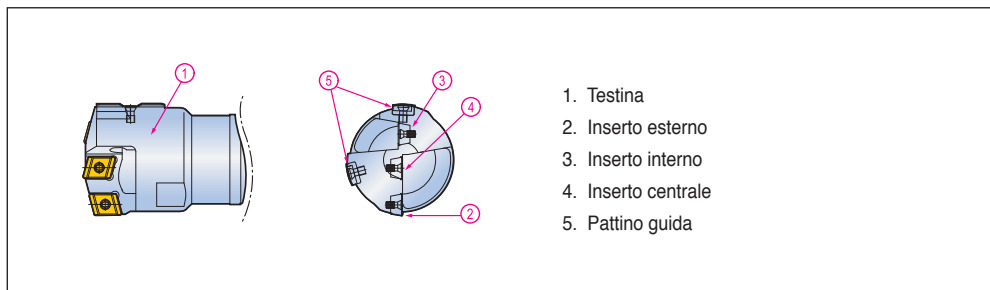
- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)				Tubo		
		LF	OAL	DCONMS	PL	Tubo esterno	Tubo interno	Diametro (mm)
TBTA-FB xx.xxDE4-23.5	25.00-26.40	70	73	21.0	3	BTDO 023.5	BTDI 016	23.5
xx.xxDE4-26	26.41-28.70	75	78	23.5	3	BTDO 026	BTDI 018	26.0
xx.xxDE4-28	28.71-31.00	75	78	25.5	3	BTDO 028	BTDI 020	28.0
xx.xxDE4-30.5	31.01-33.30	80	83	28.0	3	BTDO 030.5	BTDI 022	30.5
xx.xxDE4-33	33.31-36.20	90	93	30.0	3	BTDO 033	BTDI 024	33.0
xx.xxDE4-35.5	36.21-39.60	95	99	33.0	4	BTDO 035.5	BTDI 026	35.5
xx.xxDE4-39	39.61-43.00	100	104	36.0	4	BTDO 039	BTDI 029	39.0
xx.xxDE4-42.5	43.01-47.00	100	104	39.0	4	BTDO 042.5	BTDI 032	42.5
xx.xxDE4-46.5	47.01-51.70	110	114	43.0	4	BTDO 046.5	BTDI 035	46.5
xx.xxDE4-51	51.71-56.20	115	120	47.5	5	BTDO 051	BTDI 039	51.0
xx.xxDE4-55.5	56.21-65.00	115	120	51.0	5	BTDO 055.5	BTDI 043A	55.5

- Inserto e pattino guida sono venduti separatamente dal corpo punta



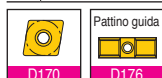
Assemblaggio della serie TBTA-FB



1. Testina
2. Insetto esterno
3. Insetto interno
4. Insetto centrale
5. Pattino guida

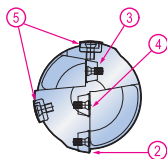
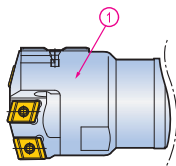
Componenti	Diametro (mm)				
	25.00-28.00	28.01-29.99	30.00-35.00	35.01-38.00	
Inserto	ESTERNO	NPHT 06003 RG	NPHT 06003 RG	NPHT 07504 RG	NPHT 07504 RG
	Vite	CSTB2.2	CSTB2.2	SR14-560-HG	SR14-560-HG
	Chiave	T-7F	T-7F	T-8F	T-8F
	INTERNO	NPMT 05503 RG	NPMT 05503 RG	NPMT 06504 RG	NPMT 06504 RG
	Vite	CSTB2.2	CSTB2.2	SR14-560-HG	SR14-560-HG
	Chiave	T-7F	T-7F	T-8F	T-8F
	CENTRALE	NPMT 05503 LG	NPMT 06504 LG	NPMT 06504 LG	NPMT 08004 LG
	Vite	CSTB2.2	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-7F	T-8F	T-8F	T-8F
Pattino	PATTINO	PAD-GO06CD-SA	PAD-GO06CD-SA	PAD-GO07CD-SA	PAD-GO07CD-SA
		PAD-GO06CD-SB	PAD-GO06CD-SB	PAD-GO07CD-SB	PAD-GO07CD-SB
	Vite	SR34-508	SR34-508	CSTB-3L065	CSTB-3L065
	Chiave	T-7F	T-7F	T-9F	T-9F

Componenti	Diametro (mm)				
	38.01-39.00	39.01-41.00	41.01-44.00	44.01-45.00	
Inserto	ESTERNO	NPHT 09004 RG	NPHT 09004 RG	NPHT 09004 RG	NPHT 09004 RG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F	T-8F
	INTERNO	NPMT 06504 RG	NPMT 06504 RG	NPMT 08004 RG	NPMT 08004 RG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F	T-8F
	CENTRALE	NPMT 08004 LG	NPMT 08004 LG	NPMT 08004 LG	NPMT 09504 LG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F	T-8F
Pattino	PATTINO	PAD-GO07CD-SA	PAD-GO08CD-SA-FB	PAD-GO08CD-SA-FB	PAD-GO08CD-SA-FB
		PAD-GO07CD-SB	PAD-GO08CD-SB-FB	PAD-GO08CD-SB-FB	PAD-GO08CD-SB-FB
	Vite	CSTB-3L065	SR34-506-C	SR34-506-C	SR34-506-C
	Chiave	T-9F	T-9F	T-9F	T-9F



• Insetto e pattino guida sono venduti separatamente dal corpo punta

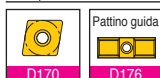
Assemblaggio della serie TBTA-FB



1. Testina
2. Inserito esterno
3. Inserito interno
4. Inserito centrale
5. Pattino guida

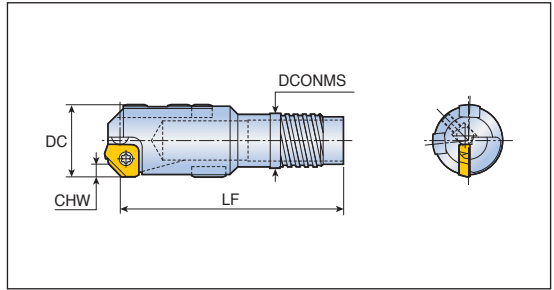
Componenti	Diametro (mm)				
	45.01-47.00	47.01-51.00	51.01-54.00	54.01-57.00	
Inserito	ESTERNO	NPHT 09004 RG	NPHT 11004 RG	NPHT 11004 RG	NPHT 11004 RG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F	T-8F
	INTERNO	NPMT 08004 RG	NPMT 08004 RG	NPMT 09504 RG	NPMT 09504 RG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F	T-8F
	CENTRALE	NPMT 09504 LG	NPMT 09504 LG	NPMT 09504 LG	NPMT 12504 LG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F	T-8F
Pattino	PATTINO	PAD-GO10CD-SA	PAD-GO10CD-SA	PAD-GO10CD-SA	PAD-GO10CD-SA
		PAD-GO10CD-SB	PAD-GO10CD-SB	PAD-GO10CD-SB	PAD-GO10CD-SB
	Vite	SR14-571/S	SR14-571/S	SR14-571/S	SR14-571/S
	Chiave	T-10/5	T-10/5	T-10/5	T-10/5

Componenti	Diametro (mm)			
	57.01-60.00	60.01-64.00	64.01-65.00	
Inserito	ESTERNO	NPHT 11004 RG	NPHT 13004 RG	NPHT 13004 RG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F
	INTERNO	NPMT 09504 RG	NPMT 09504 RG	NPMT 12504 RG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F
	CENTRALE	NPMT 12504 LG	NPMT 12504 LG	NPMT 12504 LG
	Vite	SR14-560-HG	SR14-560-HG	SR14-560-HG
	Chiave	T-8F	T-8F	T-8F
Pattino	PATTINO	PAD-GO12CD-SA	PAD-GO12CD-SA	PAD-GO12CD-SA
		PAD-GO12CD-SB	PAD-GO12CD-SB	PAD-GO12CD-SB
	Vite	SR14-571/S	SR14-571/S	SR14-571/S
	Chiave	T-10/5	T-10/5	T-10/5



• Inserito e pattino guida sono venduti separatamente dal corpo punta

Sistema tubo singolo




- Filetto esterno a quattro principi

Descrizione	DC	CHW	Dimensioni (mm)		Tubo	
			LF	DCONMS	Codice	Diametro (mm)
TBTA-R xxx.xxSE4-22	25.00-26.40	2.8	72.5	19.5	BTSI 022	22
xxx.xxSE4-24	26.41-28.70	2.8	72.5	21.0	BTSI 024	24
xxx.xxSE4-26	28.71-31.00	2.8	72.5	23.5	BTSI 026	26
xxx.xxSE4-28	31.01-33.30	2.8	75.5	25.5	BTSI 028	28
xxx.xxSE4-30	33.31-36.20	2.8	75.5	28.0	BTSI 030	30
xxx.xxSE4-33	36.21-39.60	2.8	90.5	30.0	BTSI 033	33
xxx.xxSE4-36	39.61-39.99	2.8	90.5	33.0	BTSI 036	36

Assemblaggio

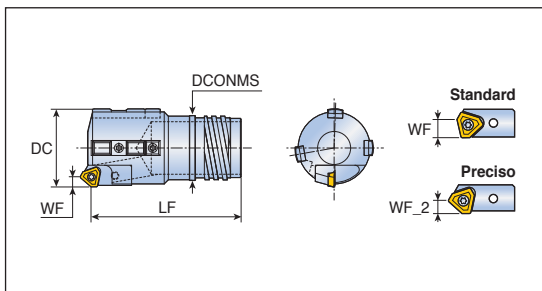
D119

Tubo

D130

Condizioni di taglio

D202

Sistema tubo singolo

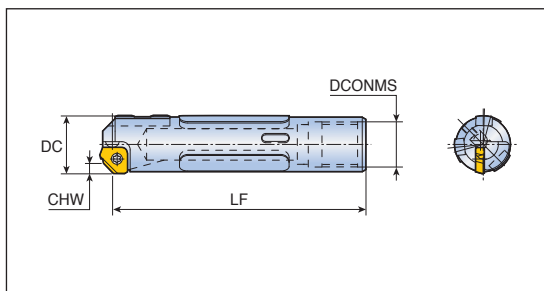


- Filetto esterno a quattro principi

Descrizione	DC	WF (mm)		Dimensioni (mm)		Tubo	
		Standard	Preciso	LF	DCONMS	Codice	Diametro (mm)
TBTA-R xxx.xxSE4-36	40.00-43.00	6.4	4	90	33.0	BTSI 036	36
xxx.xxSE4-39	43.01-47.00	6.4	4	95	36.0	BTSI 039	39
xxx.xxSE4-43	47.01-51.70	6.4	4	95	39.0	BTSI 043	43
xxx.xxSE4-47	51.71-56.20	6.4/7.2	4/4.8	100	43.0	BTSI 047	47
xxx.xxSE4-51	56.21-60.60	7.2	4.8	110	47.0	BTSI 051	51
xxx.xxSE4-56A	60.61-65.00	7.2	4.8	110	51.0	BTSI 056A	56
xxx.xxSE4-56B	65.00-66.99	7.2	4.8	150	52.0	BTSI 056B	56
xxx.xxSE4-62	67.00-72.99	10.4	6.4	150	58.0	BTSI 062	62
xxx.xxSE4-68	73.00-79.99	10.4	6.4	150	63.0	BTSI 068	68
xxx.xxSE4-75	80.00-86.99	10.4	6.4	180	70.0	BTSI 075	75
xxx.xxSE4-82	87.00-99.99	10.4	6.4	180	77.0	BTSI 082	82

 Assemblaggio	 Tubo	 Condizioni di taglio
D119	D130	D202

Sistema tubo singolo

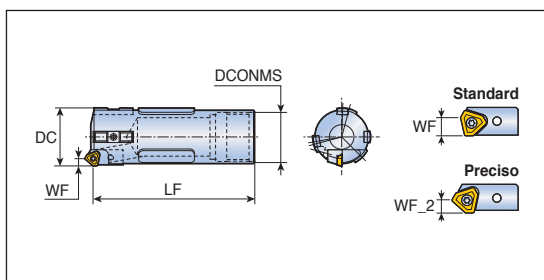


- Filetto interno a un principio

Descrizione	DC	CHW (mm)	Dimensioni (mm)		Tubo	
			LF	DCONMS	Codice	Diametro (mm)
TBTA-R- xxx.xxSI1-22	25.00-26.99	2.8	110.5	20	BTSE 022	22
xxx.xxSI1-24	27.00-29.99	2.8	110.5	22	BTSE 024	24
xxx.xxSI1-26	30.00-31.99	2.8	110.5	24	BTSE 026	26
xxx.xxSI1-28	32.00-33.99	2.8	110.5	26	BTSE 028	28
xxx.xxSI1-30	34.00-36.99	2.8	135.5	27	BTSE 030	30
xxx.xxSI1-33	37.00-39.99	2.8	135.5	30	BTSE 033	33

TBTA-R...SI1

Sistema tubo singolo

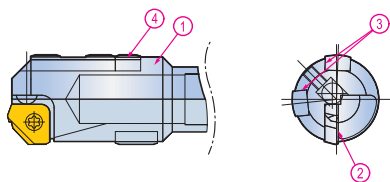


- Filetto interno a un principio

Descrizione	DC	WF (mm)		Dimensioni (mm)		Tubo	
		Standard	Preciso	LF	DCONMS	Codice	Diametro (mm)
TBTA-R- xxx.xxSI1-36	40.00-43.99	6.4	4	135	33	BTSE 036	36
xxx.xxSI1-39	44.00-46.99	6.4	4	135	37	BTSE 039	39
xxx.xxSI1-43	47.00-51.99	6.4	4	145	41	BTSE 043	43
xxx.xxSI1-47	52.00-56.99	7.2	4.8	145	44	BTSE 047	47
xxx.xxSI1-51	57.00-60.99	7.2	4.8	170	49	BTSE 051	51
xxx.xxSI1-56	61.00-67.99	7.2/10.4	4.8/6.4	170	53	BTSE 056	56
xxx.xxSI1-62	68.00-74.99	10.4	6.4	170	59	BTSE 062	62
xxx.xxSI1-68	75.00-80.99	10.4	6.4	205	65	BTSE 068	68
xxx.xxSI1-75	81.00-90.99	10.4	6.4	215	71	BTSE 075	75
xxx.xxSI1-82	91.00-98.99	10.4	6.4	225	79	BTSE 082	82
xxx.xxSI1-94	99.00-110.99	10.4	6.4	235	90	BTSE 094	94

Assemblaggio	Tubo	Condizioni di taglio
D119	D130	D202

Assemblaggio della serie TBTA-R



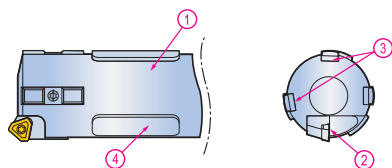
1. Testina
2. Inserto
3. Pattino guida
4. Protezione pattino guida

Componenti		Diametro (mm)				
		25.00-27.99	28.00-29.99	30.00-37.99	38.00-39.99	
Tolleranza stretta	Cartuccia	Sfera di regolazione	BALL5	BALL5	BALL5	BALL5
		Vite di regolazione	AS0005-5	AS0005-5	AS0005-5	AS0005-5
		Chiave	H2.5	H2.5	H2.5	H2.5
	Inserto	Vite	-	-	-	-
		Chiave	-	-	-	-
		Inserto	XPMT 16002-45	XPMT 16002-45	XPMT 16002-45	XPMT 16002-45
Tolleranza normale	Cartuccia	Vite	CSTANO3	CSTANO3	CSTANO3	CSTANO3
		Chiave	T-9D	T-9D	T-9D	T-9D
		Esterna	-	-	-	-
		Vite di regolazione	-	-	-	-
	Inserto	Chiave	-	-	-	-
		Chiave	-	-	-	-
		Inserto	XPMT 16002-45	XPMT 16002-45	XPMT 16002-45	XPMT 16002-45
		Vite	CSTANO3	CSTANO3	CSTANO3	CSTANO3
		Chiave	T9	T9	T9	T9
		Chiave	T9	T9	T9	T9
Pattino	Pattino guida (A)	PAD-GO06CD	PAD-GO06CD	PAD-GO07CD	PAD-GO08CD-SA-FB	
		-	-	-	PAD-GO08CD-SB-FB	
	Vite	CSTB3S	CSTB3S	CSTB3S	CSTB3S	
	Chiave	T-9D	T-9D	T-9D	T-9D	
	Protezione pattino (B)	PAD-P08-120	PAD-P08-120	PAD-P08-140	PAD-P08	
	Vite	CSTB3S	CSTB3S	CSTB3S	CSTB3S	
	Chiave	T-9D	T-9D	T-9D	T-9D	
	Pattino guida resina (C)	PAD-R10	PAD-R10	PAD-R12	PAD-R15	
	Vite	LS0902, 5-6	LS0902, 5-6	LS0903-8	LS0904-10	
	Chiave	-	-	H2	H2.5	



- A + B è per attacco con filetto esterno a quattro principi
- A + C è per attacco con filetto interno a un principio

Assemblaggio della serie TBTA-R



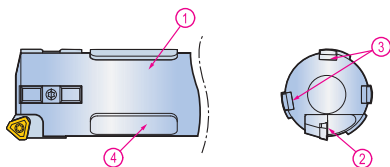
1. Testina
2. Cartuccia e vite di bloccaggio
3. Pattino guida
4. Pattino guida in resina e vite di bloccaggio

Componenti		Diametro (mm)				
		40.00-45.99	46.00-51.99	52.00-56.99	57.00-59.99	
Tolleranza stretta	Cartuccia	Esterna	PERC-P 04R	PERC-P 04R	PERC-P 32R	PERC-P 32R
		Vite di regolazione	AS0004-8	AS0004-8	AS0005-10	AS0005-10
		Chiave	H2	H2	H2.5	H2.5
		Vite	LS1803.5RH	LS1803.5RH	LS1805RH	LS1805RH
	Inserto	Chiave	H2.5	H2.5	H3	H3
		Inserto	TPMX 1403LG	TPMX 1403LG	TPMX 1704LG	TPMX 1704LG
		Vite	CSTB2.5	CSTB2.5	CSTB3.5D	CSTB3.5D
	Chiave	T-8D	T-8D	T-8D	T-8D	
Tolleranza normale	Cartuccia	Esterna	PERC 402-04	PERC 402-04	PERC 402-32	PERC 402-32
		Vite di regolazione	AS0004-8	AS0004-8	AS0005-10	AS0005-10
		Chiave	H2	H2	H2.5	H2.5
		Vite	LS1803.5RH	LS1803.5RH	LS1805RH	LS1805RH
	Inserto	Chiave	H2.5	H2.5	H3	H3
		Inserto	TPMX 1403RG	TPMX 1403RG	TPMX 1704RG	TPMX 1704RG
		Vite	CSTB2.5	CSTB2.5	CSTB3.5D	CSTB3.5D
	Chiave	T-8D	T-8D	T-8D	T-8D	
Pattino	Pattino guida (A)	PAD-GO08CD-SA-FB	PAD-GC10-SA	PAD-GC10-SA	PAD-GC14-SB *1	
		PAD-GO08CD-SB-FB	PAD-GC10-SB	PAD-GC10-SB	-	
	Vite	CSTB3S	CSTB4S	CSTB4S	CSTA5S *2	
	Chiave	T-9D	T-15D	T-15D	T-15D	
	Protezione pattino (B)	PAD-P08	PAD-P10	PAD-P10	PAD-P14	
		CSTB3S	CSTB4S	CSTB4S	CSTA5S	
	Chiave	T-9D	T-15D	T-15D	T-15D	
	Pattino guida resina (C)	PAD-R15	PAD-R15	PAD-R15	PAD-R20	
	Vite	LS0904-10	LS0904-10	LS0904-10	LS0905-12	
	Chiave	H2.5	H2.5	H2.5	H3	



- A + B è per attacco con filetto esterno a quattro principi
- A + C è per attacco con filetto interno a un principio
- *1) Filetto interno = PAD-GC10-SA/SB
- *2) CSTB4S

Assemblaggio della serie TBTA-R



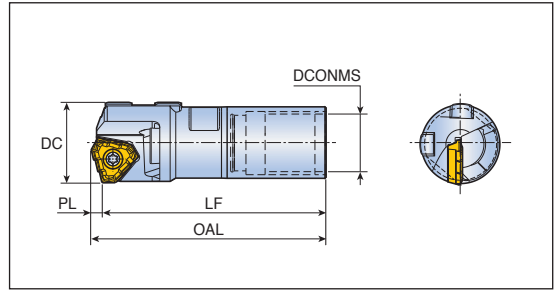
1. Testina
2. Cartuccia e vite di bloccaggio
3. Pattino guida
4. Pattino guida in resina e vite di bloccaggio

Componenti		Diametro (mm)				
		60.00-80.99	81.00-90.99	91.00-99.99	100.00-122.99	
Tolleranza stretta	Cartuccia	Esterna	PERC-P 43R	PERC-P 43R	PERC-P 43R	PERC-P 43R
		Vite di regolazione	AS0005-15	AS0005-15	AS0005-15	AS0005-15
		Chiave	H2.5	H2.5	H2.5	H2.5
	Inserto	Vite	LS1806RH	LS1806RH	LS1806RH	LS1806RH
		Chiave	H4	H4	H4	H4
		Chiave	T-15D	T-15D	T-15D	T-15D
Tolleranza normale	Cartuccia	Esterna	PERC 402-43	PERC 402-43	PERC 402-43	PERC 402-43
		Vite di regolazione	AS0005-15	AS0005-15	AS0005-15	AS0005-15
		Chiave	H2.5	H2.5	H2.5	H2.5
	Inserto	Vite	LS1806RH	LS1806RH	LS1806RH	LS1806RH
		Chiave	H4	H4	H4	H4
		Chiave	T-15D	T-15D	T-15D	T-15D
	Pattino	Pattino guida (A)	PAD-GC14-SB	PAD-GC14-SB	PAD-GC14-SB	PAD-GC18-SB
		Vite	CSTA5S	CSTA5S	CSTA5S	LS1206S
		Chiave	T-15D	T-15D	T-15D	H3
Protezione pattino (B)		PAD-P14	PAD-P14	PAD-P14	PAD-P18	
Vite		CSTA5S	CSTA5S	CSTA5S	LS1206S	
Chiave		T-15D	T-15D	T-15D	H3	
Pattino guida resina (C)		PAD-R20	PAD-R30	PAD-R35	PAD-R35	
Vite		LS0905-12	LS0906-15	LS0906-15	LS0906-15	
Chiave		H3	H4	H4	H4	



- A + B è per attacco con filetto esterno a quattro principi
- A + C è per attacco con filetto interno a un principio




Sistema tubo singolo



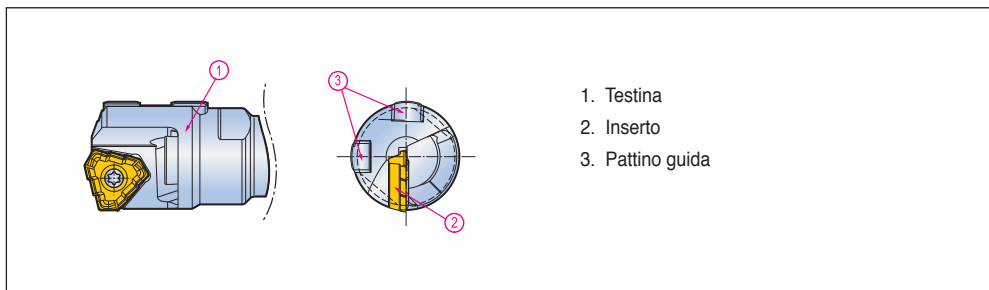
- Filetto interno a un principio

Descrizione	DC	Dimensioni (mm)				Tubo	
		LF	OAL	DCONMS	PL	Codice	Diametro (mm)
TBTA- TR16.00S11-13A	16.00	53.5	55.7	10.8	2.2	BTSE 013A	13
TRxx.xxS11-13B	16.01-16.50	53.5	55.7	11.1	2.2	BTSE 013B	13
TRxx.xxS11-14A	16.51-17.25	53.5	55.7	11.8	2.2	BTSE 014A	14
TRxx.xxS11-14B	17.26-18.00	53.5	55.7	12.1	2.2	BTSE 014B	14
TRxx.xxS11-15	18.01-19.00	53.5	56.5	12.8	3.0	BTSE 015	15
TRxx.xxS11-16.5	19.01-19.99	53.5	56.7	13.8	3.2	BTSE 016.5	16.5
TRxx.xxS11-18	20.00-21.99	58.0	61.2	14.5	3.2	BTSE 018	18
TRxx.xxS11-20	22.00-24.99	60.0	63.4	16.0	3.4	BTSE 020	20
TR25.00S11-22	25.00	60.0	63.4	17.0	3.4	BTSE 022	22
TRxx.xxS11-22	25.01-26.99	65.0	68.6	17.0	3.6	BTSE 022	22
TRxx.xxS11-24	27.00-28.00	65.0	68.6	19.0	3.6	BTSE 024	24

- Inserto e pattino guida sono venduti separatamente dal corpo punta

Assemblaggio  D125	Tubo  D130	Condizioni di taglio  D208
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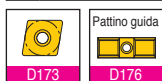
Assemblaggio della serie TBTA-TR



1. Testina
2. Inserito
3. Pattino guida

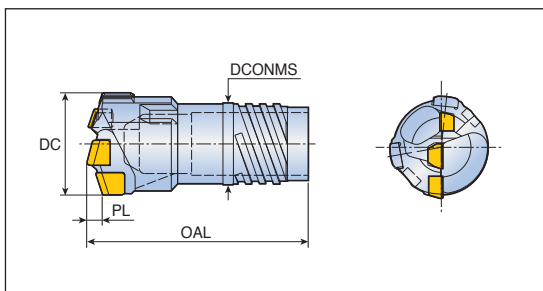
Componenti		Diametro (mm)		
		16.00-18.00	18.01-20.00	20.01-21.00
Inserito	Inserito	TOGT 080305 RS TT9030	TOGT 090305 RS TT9030	TOGT 100305 RS TT9030
	Vite	SR14-560/S	CSTB2.5S*	CSTB3S*
	Chiave	T-8F	T-8F	T-9F
Pattino guida	Pattino guida	PAD-GO05-075CD-SA	PAD-GO06-085CD-SA	PAD-GO06-085CD-SA
		PAD-GO05-075CD-SB	PAD-GO06-085CD-SB	PAD-GO06-085CD-SB
	Vite	SR34-508	CSTB2.5S*	CSTB2.5S*
	Chiave	T-7F	T-7F	T-7F

Componenti		Diametro (mm)		
		21.01-21.99	22.00-25.00	25.01-28.00
Inserito	Inserito	TOGT 100305 RS TT9030	TOGT 110405 RS TT9030	TOGT 120405 RS TT9030
	Vite	CSTB3S*	CSTB3.5H*	CSTB4S*
	Chiave	T-9F	T-15F	T-15F
Pattino guida	Pattino guida	PAD-GO06-100CD-SA	PAD-GO06-100CD-SA	PAD-GO06CD-SA
		PAD-GO06-100CD-SB	PAD-GO06-100CD-SB	PAD-GO06CD-SB
	Vite	CSTB2.2S*	CSTB2.2S*	CSTB2.2S*
	Chiave	T-7F	T-7F	T-7F



• Inserito e pattino guida sono venduti separatamente dal corpo punta

Sistema tubo singolo



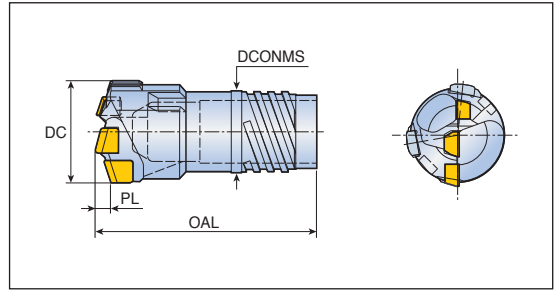
- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)			Tubo	
		OAL	PL	DCONMS	Codice	Diametro (mm)
BTA xxx.xx SE2-11*	12.60-13.10	43.0	1.1	9.6	BTSI011	11
xxx.xx SE2-11*	13.11-13.60	43.0	1.1	9.6	BTSI011	11
xxx.xx SE2-12*	13.61-14.10	43.0	1.2	10.6	BTSI012	12
xxx.xx SE2-12*	14.11-14.60	43.0	1.2	10.6	BTSI012	12
xxx.xx SE2-13*	14.61-15.10	43.0	1.3	11.6	BTSI013	13
xxx.xx SE2-13*	15.11-15.59	43.0	1.3	11.6	BTSI013	13
xxx.xx SE4-14	15.60-16.20	43.0	2.7	12.6	BTSI014	14
xxx.xx SE4-14	16.21-16.70	43.0	2.7	12.6	BTSI014	14
xxx.xx SE4-15	16.71-17.20	43.0	2.7	13.6	BTSI015	15
xxx.xx SE4-15	17.21-17.70	43.0	2.7	13.6	BTSI015	15
xxx.xx SE4-16	17.71-18.40	47.0	2.8	14.5	BTSI016	16
xxx.xx SE4-16	18.41-18.90	47.0	2.9	14.5	BTSI016	16
xxx.xx SE4-17	18.91-19.20	47.0	2.9	15.5	BTSI017	17
xxx.xx SE4-17	19.21-20.00	47.0	2.9	15.5	BTSI017	17
xxx.xx SE4-18	20.01-20.90	52.5	3.2	16.0	BTSI018	18
xxx.xx SE4-18	20.91-21.80	52.5	3.2	16.0	BTSI018	18
xxx.xx SE4-20	21.81-22.90	56.0	3.2	18.0	BTSI020	20
xxx.xx SE4-20	22.91-24.10	56.0	3.2	18.0	BTSI020	20
xxx.xx SE4-22	24.11-25.20	57.5	3.5	19.5	BTSI022	22
xxx.xx SE4-22	25.21-26.40	57.5	3.5	19.5	BTSI022	22
xxx.xx SE4-24	26.41-27.50	57.5	3.7	21.0	BTSI024	24
xxx.xx SE4-24	27.51-28.70	57.5	3.7	21.0	BTSI024	24
xxx.xx SE4-26	28.71-29.80	63.5	4.0	23.5	BTSI026	26
xxx.xx SE4-26	29.81-31.00	63.5	4.0	23.5	BTSI026	26
xxx.xx SE4-28	31.01-32.10	63.5	4.3	25.5	BTSI028	28
xxx.xx SE4-28	32.11-33.30	63.5	4.3	25.5	BTSI028	28
xxx.xx SE4-30	33.31-34.80	63.5	4.5	28.0	BTSI030	30
xxx.xx SE4-30	34.81-36.20	63.5	4.5	28.0	BTSI030	30
xxx.xx SE4-33	36.21-37.30	73.5	4.8	30.0	BTSI033	33
xxx.xx SE4-33	37.31-38.40	73.5	4.8	30.0	BTSI033	33
xxx.xx SE4-33	38.41-39.60	73.5	4.8	30.0	BTSI033	33
xxx.xx SE4-36	39.61-40.60	73.5	5.6	33.0	BTSI036	36
xxx.xx SE4-36	40.61-41.80	73.5	5.6	33.0	BTSI036	36
xxx.xx SE4-36	41.81-43.00	73.5	5.6	33.0	BTSI036	36
xxx.xx SE4-39	43.01-44.30	75.0	5.4	36.0	BTSI039	39



- *!* Testina con due taglianti e filetto esterno a due principi

Sistema tubo singolo



- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)			Tubo	
		OAL	PL	DCONMS	Codice	Diametro (mm)
BTA xxx.xx SE4-39	44.31-45.60	75.0	5.4	36.0	BTSI039	39
xxx.xx SE4-39	45.61-47.00	75.0	5.4	36.0	BTSI039	39
xxx.xx SE4-43	47.01-48.50	75.0	6.1	39.0	BTSI043	43
xxx.xx SE4-43	48.51-50.10	75.0	6.1	39.0	BTSI043	43
xxx.xx SE4-43	50.11-51.70	75.0	6.1	39.0	BTSI043	43
xxx.xx SE4-47	51.71-53.20	82.0	6.5	43.0	BTSI047	47
xxx.xx SE4-47	53.21-54.70	82.0	6.5	43.0	BTSI047	47
xxx.xx SE4-47	54.71-56.20	82.0	6.5	43.0	BTSI047	47
xxx.xx SE4-51	56.21-58.40	84.0	6.6	47.0	BTSI051	51
xxx.xx SE4-51	58.41-60.60	84.0	6.6	47.0	BTSI051	51
xxx.xx SE4-51	60.61-62.80	84.0	7.0	47.0	BTSI051	51
xxx.xx SE4-51	62.81-65.00	84.0	7.0	47.0	BTSI051	51
xxx.xx SE4-56	60.61-62.80	84.0	7.0	51.0	BTSI056	56
xxx.xx SE4-56	62.81-65.00	84.0	7.0	51.0	BTSI056	56

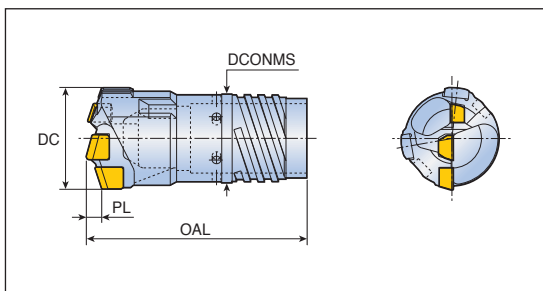
Tubo

D130

Condizioni di taglio

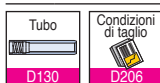
D206

Sistema tubo doppio

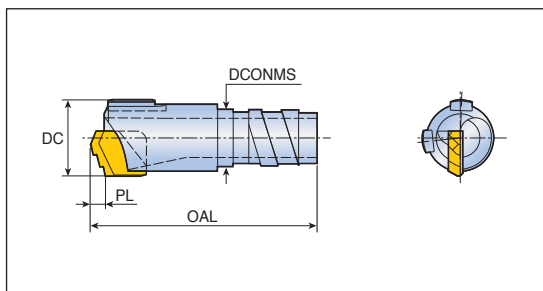


- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)			Tubo		
		OAL	PL	DCONMS	Tubo esterno	Tubo interno	Diámetro (mm)
BTA xxx.xx DE4-18	18.41-19.20	50.0	2.9	16.0	BTDO018	BTDI012	18.0
xxx.xx DE4-18	19.21-20.00	50.0	2.9	16.0	BTDO018	BTDI012	18.0
xxx.xx DE4-19.5	20.01-20.90	56.0	3.2	18.0	BTDO019.5	BTDI014	19.5
xxx.xx DE4-19.5	20.91-21.80	56.0	3.2	18.0	BTDO019.5	BTDI014	19.5
xxx.xx DE4-21.5	21.81-22.90	56.0	3.2	19.5	BTDO021.5	BTDI015	21.5
xxx.xx DE4-21.5	22.91-24.10	56.0	3.2	19.5	BTDO021.5	BTDI015	21.5
xxx.xx DE4-23.5	24.11-25.20	57.5	3.5	21.0	BTDO023.5	BTDI016	23.5
xxx.xx DE4-23.5	25.21-26.40	57.5	3.5	21.0	BTDO023.5	BTDI016	23.5
xxx.xx DE4-26	26.41-27.50	60.5	3.7	23.5	BTDO026	BTDI018	26.0
xxx.xx DE4-26	27.51-28.70	60.5	3.7	23.5	BTDO026	BTDI018	26.0
xxx.xx DE4-28	28.71-29.80	63.5	4.0	25.5	BTDO028	BTDI020	28.0
xxx.xx DE4-28	29.81-31.00	63.5	4.0	25.5	BTDO028	BTDI020	28.0
xxx.xx DE4-30.5	31.01-32.10	63.5	4.1	28.0	BTDO030.5	BTDI022	30.5
xxx.xx DE4-30.5	32.11-33.30	63.5	4.1	28.0	BTDO030.5	BTDI022	30.5
xxx.xx DE4-33	33.31-34.80	70.5	4.5	30.0	BTDO033.0	BTDI024	33.0
xxx.xx DE4-33	34.81-36.20	70.5	4.5	30.0	BTDO033.0	BTDI024	33.0
xxx.xx DE4-35.5	36.21-37.30	73.5	4.8	33.0	BTDO035.5	BTDI026	35.5
xxx.xx DE4-35.5	37.31-38.40	73.5	4.8	33.0	BTDO035.5	BTDI026	35.5
xxx.xx DE4-35.5	38.41-39.60	73.5	4.8	33.0	BTDO035.5	BTDI026	35.5
xxx.xx DE4-39	39.61-40.60	73.5	5.3	36.0	BTDO039	BTDI029	39.0
xxx.xx DE4-39	40.61-41.80	73.5	5.3	36.0	BTDO039	BTDI029	39.0
xxx.xx DE4-39	41.81-43.00	73.5	5.3	36.0	BTDO039	BTDI029	39.0
xxx.xx DE4-42.5	43.01-44.30	75.0	5.5	39.0	BTDO042.5	BTDI032	42.5
xxx.xx DE4-42.5	44.31-45.60	75.0	5.5	39.0	BTDO042.5	BTDI032	42.5
xxx.xx DE4-42.5	45.61-47.00	75.0	5.5	39.0	BTDO042.5	BTDI032	42.5
xxx.xx DE4-46.5	47.01-48.50	79.0	6.1	43.0	BTDO046.5	BTDI035	46.5
xxx.xx DE4-46.5	48.51-50.10	79.0	6.1	43.0	BTDO046.5	BTDI035	46.5
xxx.xx DE4-46.5	50.11-51.70	79.0	6.1	43.0	BTDO046.5	BTDI035	46.5
xxx.xx DE4-51	51.71-53.20	82.0	6.5	47.0	BTDO051	BTDI039	51.0
xxx.xx DE4-51	53.21-54.70	82.0	6.5	47.0	BTDO051	BTDI039	51.0
xxx.xx DE4-51	54.71-56.20	82.0	6.5	47.0	BTDO051	BTDI039	51.0
xxx.xx DE4-55.5	56.21-58.40	84.0	6.6	51.0	BTDO055.5	BTDI043A	55.5
xxx.xx DE4-55.5	58.41-60.60	84.0	6.6	51.0	BTDO055.5	BTDI043A	55.5
xxx.xx DE4-55.5	60.61-62.80	84.0	6.6	51.0	BTDO055.5	BTDI043A	55.5
xxx.xx DE4-55.5	62.81-65.00	84.0	6.6	51.0	BTDO055.5	BTDI043A	55.5



Sistema tubo singolo

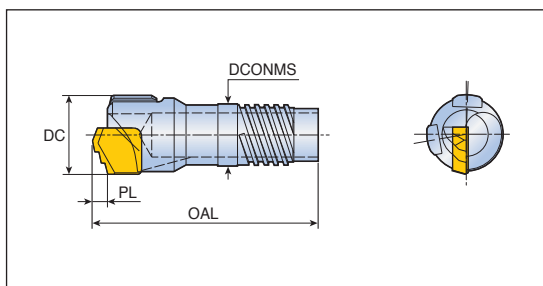


- Filetto esterno a un principio

Descrizione	DC	Dimensioni (mm)			Tubo	
		OAL	PL	DCONMS	Codice	Diametro (mm)
BTS xxx.xx SE1-7.1	8.00-8.99	34	2.0	6.0	BTSO071	7.1
xxx.xx SE1-8.3	9.00-9.99	34	2.0	7.2	BTSO083	8.3
xxx.xx SE1-9	10.00-10.99	34	2.2	7.6	BTSO090	9.0
xxx.xx SE1-10	11.00-11.99	34	2.2	8.6	BTSO100	10.0
xxx.xx SE1-11	12.00-13.49	34	2.3	9.1	BTSO110	11.0
xxx.xx SE1-12	13.50-14.79	34	2.4	10.8	BTSO120	12.0

BTS...SE2/SE4

Sistema tubo singolo



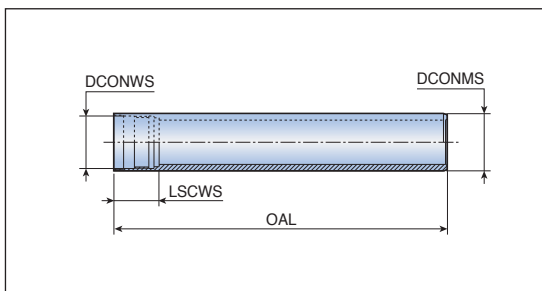
- Filetto esterno a quattro principi

Descrizione	DC	Dimensioni (mm)			Tubo	
		OAL	PL	DCONMS	Codice	Diametro (mm)
BTS xxx.xx SE2-11*	12.60-13.60	40	2.3	9.6	BTSI011	11
xxx.xx SE2-12*	13.61-14.60	40	2.4	10.6	BTSI012	12
xxx.xx SE2-13*	14.61-15.59	40	3.0	11.6	BTSI013	13
xxx.xx SE4-14	15.60-16.70	40	2.4	12.6	BTSI014	14
xxx.xx SE4-15	16.71-17.70	40	3.0	13.6	BTSI015	15
xxx.xx SE4-16	17.71-18.90	40	3.3	14.5	BTSI016	16
xxx.xx SE4-17	18.91-20.00	40	3.3	15.5	BTSI017	17



- '*1' Filetto esterno a due principi

Tubo singolo

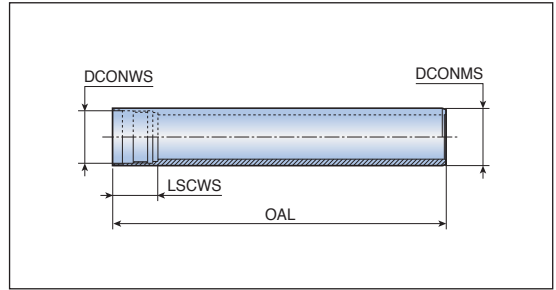


- Filetto interno a quattro principi

Descrizione	DC	Dimensioni (mm)		
		DCONMS	DCONWS	LSCWS
BTSI 011 *	12.60-13.60	11.0	9.6	22
012 *	13.61-14.60	12.0	10.6	22
013 *	14.61-15.59	13.0	11.6	22
014	15.60-16.70	14.0	12.6	21
015	16.71-17.70	15.0	13.6	21
016	17.71-18.90	16.0	14.5	22
017	18.91-20.00	17.0	15.5	22
018	20.01-21.80	18.0	16.0	27.5
020	21.81-24.10	20.0	18.0	30
022	24.11-26.40	22.0	19.5	30
024	26.41-28.70	24.0	21.0	30
026	28.71-31.00	26.0	23.5	33
028	31.01-33.30	28.0	25.5	33
030	33.31-36.20	30.0	28.0	33
033	36.21-39.60	33.0	30.0	40
036	39.61-43.00	36.0	33.0	40
039	43.01-47.00	39.0	36.0	40
043	47.01-51.70	43.0	39.0	40
047	51.71-56.20	47.0	43.0	44

- Indicare la lunghezza totale (OAL) in fase di ordine
- '*' Filetto esterno a due principi

Tubo singolo

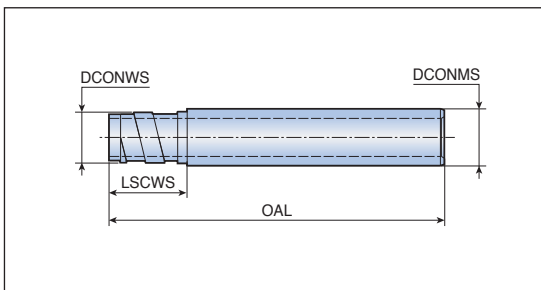


- Filetto interno a quattro principi

Descrizione	DC	Dimensioni (mm)		
		DCONMS	DCONWS	LSCWS
BTSI 051	56.21-60.60	51.0	47.0	44
056A	60.61-65.00	56.0	51.0	44
056B	65.00-66.99	56.0	52.0	75
062	67.00-72.99	62.0	58.0	75
068	73.00-79.99	68.0	63.0	75
075	80.00-86.99	75.0	70.0	97
082	87.00-99.99	82.0	77.0	97
094	100.00-111.99	94.0	89.0	97
106	112.00-123.99	106.0	101.0	118
118	124.00-135.99	118.0	113.0	118
130	136.00-147.99	130.0	125.0	118
142	148.00-159.99	142.0	137.0	139
154	160.00-171.99	154.0	149.0	139
166	172.00-183.99	166.0	161.0	139
178	184.00-195.99	178.0	173.0	144
190	196.00-207.99	190.0	185.0	144
202	208.00-219.99	202.0	197.0	144
214	220.00-231.99	214.0	208.0	164
226	232.00-243.99	226.0	220.0	164
238	244.00-255.99	238.0	232.0	164
250	256.00-267.99	250.0	244.0	184
262	268.00-279.99	262.0	256.0	184
274	280.00-291.99	274.0	268.0	184

- Indicare la lunghezza totale (OAL) in fase di ordine

Tubo singolo

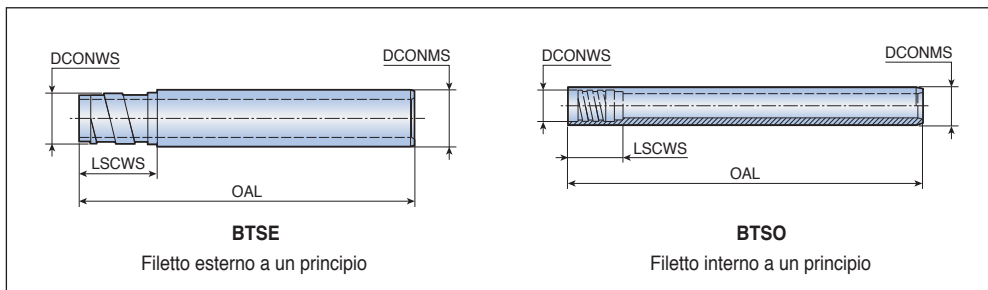


- Filetto esterno a un principio

Descrizione	DC	Dimensioni (mm)		
		DCONMS	DCONWS	LSCWS
BTSE 012A	14.50-15.00	12.0	11.5	23
012B	15.01-15.50	12.0	11.8	23
013A	15.51-16.00	13.0	12.4	23
013B	16.01-16.50	13.0	12.7	23
014A	16.51-17.25	14.0	13.4	23
014B	17.26-18.00	14.0	13.7	23
015	18.01-19.00	15.0	14.4	23
016.5	19.01-19.99	16.5	15.4	23
018	20.00-21.99	18.0	16.5	26
020	22.00-24.99	20.0	19.0	26
022	25.00-26.99	22.0	20.0	26
024	27.00-29.99	24.0	22.0	26
026	30.00-31.99	26.0	24.0	26
028	32.00-33.99	28.0	26.0	26
030	34.00-36.99	30.0	27.0	41
033	37.00-39.99	33.0	30.0	41
036	40.00-43.99	36.0	33.0	41
039	44.00-46.99	39.0	37.0	41
043	47.00-51.99	43.0	41.0	41

- Indicare la lunghezza totale (OAL) in fase di ordine

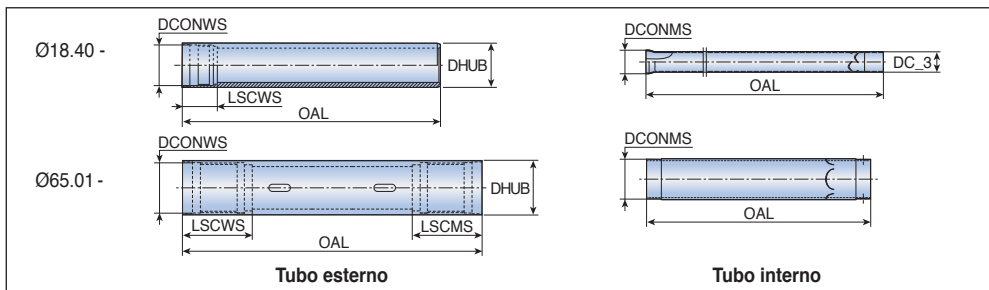
Tubo singolo



Descrizione	DC	Dimensioni (mm)			
		DCONMS	DCONWS	LSCWS	
BTSE 047	52.00-56.99	47.0	44	-	41
051	57.00-60.99	51.0	49	-	41
056	61.00-67.99	56.0	53	-	41
062	68.00-74.99	62.0	59	-	41
068	75.00-80.99	68.0	65	-	71
075	81.00-90.99	75.0	71	-	71
082	91.00-98.99	82.0	79	-	71
094	99.00-110.99	94.0	90	-	71
106	111.00-122.99	106.0	102	-	71
118	123.00-134.99	118.0	114	-	71
130	135.00-148.99	130.0	126	-	71
142	149.00-161.99	142.0	139	-	71
154	162.00-173.99	154.0	151	-	86
166	174.00-185.99	166.0	163	-	86
178	186.00-197.99	178.0	175	-	86
190	198.00-209.99	190.0	187	-	86
202	210.00-221.99	202.0	199	-	86
214	222.00-233.99	214.0	211	-	86
226	234.00-245.99	226.0	223	-	86
238	246.00-257.99	238.0	235	-	86
250	258.00-269.99	250.0	247	-	121
262	270.00-281.99	262.0	259	-	121
274	282.00-293.99	274.0	271	-	121
BTSO 071	8.00-8.99	7.1	-	6.0	13.5
083	9.00-9.99	8.3	-	7.2	13.5
090	10.00-10.99	9.0	-	7.6	13.5
100	11.00-11.99	10.0	-	8.6	13.5
110	12.00-13.49	11.0	-	9.1	13.5
120	13.50-14.79	12.0	-	10.8	13.5

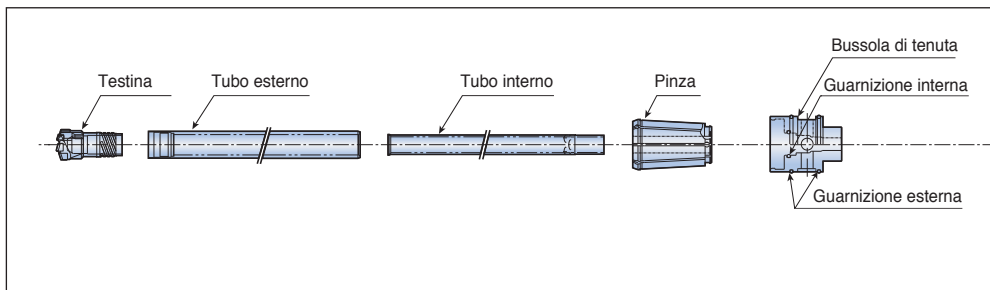
• Indicare la lunghezza totale (OAL) in fase di ordine

Tubo doppio



DC	Tubo esterno	Dimensioni (mm)			Tubo interno	Dimensioni (mm)	
		DHUB	DCONWS	LSCWS		DCONMS	DC_3
18.40-20.00	BTDO 018	18.0	16	27.5	BTDI 012	12	10
20.01-21.80	019.5	19.5	18	30	014	14	12
21.81-24.10	021.5	21.5	19.5	30	015	15	13
24.11-26.40	023.5	23.5	21	30	016	16	14
26.41-28.70	026	26.0	23.5	33	018	18	16
28.71-31.00	028	28.0	25.5	33	020	20	18
31.01-33.30	030.5	30.5	28	33	022	22	20
33.31-36.20	033	33.0	30	40	024	24	22
36.21-39.60	035.5	35.5	33	40	026	26	24
39.61-43.00	039	39.0	36	40	029	29	27
43.01-47.00	042.5	42.5	39	40	032	32	30
47.01-51.70	046.5	46.5	43	44	035	35	32
51.71-56.20	051	51.0	47	44	039	39	36
56.21-65.00	055.5	55.5	51	44	043A	43	40
65.01-69.99	056	56.0	52	75	043B	40	-
70.00-72.99	062	62.0	58	75	048	44	-
73.00-79.99	068	68.0	63	75	053	48	-
80.00-86.99	075	75.0	70	97	059	54	-
87.00-99.99	082	82.0	77	97	066	60	-
100.00-111.99	094	94.0	89	97	078	70	-
112.00-123.99	106	106.0	101	118	090	80	-
124.00-135.99	118	118.0	113	118	092	80	-
136.00-147.99	130	130.0	125	118	104	95	-
148.00-159.99	142	142.0	137	139	116	100	-
160.00-171.99	154	154.0	149	139	128	120	-
172.00-183.99	166	166.0	161	139	138	130	-

- Indicare la lunghezza totale (OAL) in fase di ordine
- Per la gamma dei diametri 18.40 - 65.00 il tubo interno deve essere ordinato 30 mm più lungo del tubo esterno
- Per la gamma dei diametri 65.01 - 123.99 il tubo interno deve essere ordinato 190 mm più lungo del tubo esterno
- Per la gamma dei diametri 124.00 - 183.99 il tubo interno deve essere ordinato 220 mm più lungo del tubo esterno

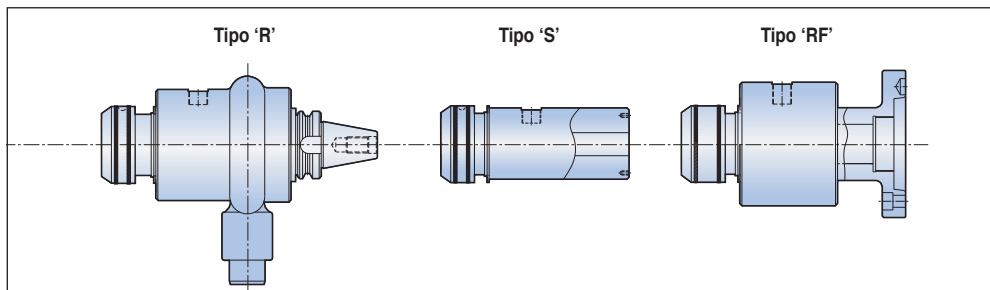


Descrizione		DC	Pinza
BTDO 018	BTDI 012	18.40-19.20	COLLET 4-18
018	012	19.21-20.00	COLLET 4-18
019.5	014	20.01-20.90	COLLET 4-19.5
019.5	014	20.91-21.80	COLLET 4-19.5
021.5	015	21.81-22.90	COLLET 4-21.5
021.5	015	22.91-24.10	COLLET 4-21.5
023.5	016	24.11-25.20	COLLET 4-23.5
023.5	016	25.21-26.40	COLLET 4-23.5
026	018	26.41-27.50	COLLET 4-26
026	018	27.51-28.70	COLLET 4-26
028	020	28.71-29.80	COLLET 4-28
028	020	29.81-31.00	COLLET 4-28
030.5	022	31.01-32.10	COLLET 4-30.5
030.5	022	32.11-33.30	COLLET 4-30.5
033	024	33.31-34.80	COLLET 4-33
033	024	34.81-36.20	COLLET 4-33
035.5	026	36.21-37.30	COLLET 4-35.5
035.5	026	37.31-38.40	COLLET 4-35.5
035.5	026	38.41-39.60	COLLET 4-35.5
039	029	39.61-40.60	COLLET 4-39
039	029	40.61-41.80	COLLET 4-39
039	029	41.81-43.00	COLLET 4-39
042.5	032	43.01-44.30	COLLET 4-42.5
042.5	032	44.31-45.60	COLLET 4-42.5
042.5	032	45.61-47.00	COLLET 4-42.5
046.5	035	47.01-48.50	COLLET 4-46.5
046.5	035	48.51-50.10	COLLET 4-46.5
046.5	035	50.11-51.70	COLLET 4-46.5
051	039	51.71-53.20	COLLET 4-51
051	039	53.21-54.70	COLLET 4-51
051	039	54.71-56.20	COLLET 4-51
055.5	043A	56.21-58.40	COLLET 4-55.5
055.5	043A	58.41-60.60	COLLET 4-55.5
055.5	043A	60.61-62.80	COLLET 4-55.5
055.5	043A	62.81-65.00	COLLET 4-55.5

• Il tubo interno deve essere più lungo del tubo esterno. Fare riferimento alle pagine **D130-D131** per maggiori dettagli

Assemblaggio sistema a tubo doppio

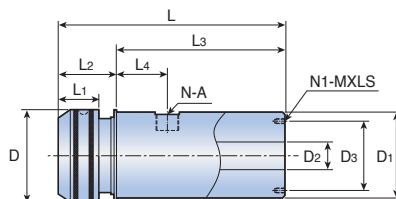
Connettore



Bussola di tenuta	Guarnizione esterna	Guarnizione interna	Connettore
SEALING SLEEVE 4R-18	OOR 25.24	IOR18	
SEALING SLEEVE 4R-18		IOR18	
SEALING SLEEVE 4R-19.5		IOR19.5	
SEALING SLEEVE 4R-19.5		IOR19.5	
SEALING SLEEVE 4R-21.5		IOR21.5	
SEALING SLEEVE 4R-21.5		IOR21.5	
SEALING SLEEVE 4R-23.5		IOR23.5	
SEALING SLEEVE 4R-23.5		IOR23.5	
SEALING SLEEVE 4R-26		IOR26	
SEALING SLEEVE 4R-26		IOR26	
SEALING SLEEVE 4R-28		IOR28	
SEALING SLEEVE 4R-28		IOR28	
SEALING SLEEVE 4R-30.5		IOR30.5	
SEALING SLEEVE 4R-30.5		IOR30.5	
SEALING SLEEVE 4R-33	IOR33	DTC-4S/4R/4RF	
SEALING SLEEVE 4R-33	IOR33		
SEALING SLEEVE 4R-35.5	IOR35.5		
SEALING SLEEVE 4R-35.5	IOR35.5		
SEALING SLEEVE 4R-35.5	IOR35.5		
SEALING SLEEVE 4R-39	IOR39		
SEALING SLEEVE 4R-39	IOR39		
SEALING SLEEVE 4R-39	IOR39		
SEALING SLEEVE 4R-42.5	IOR42.5		
SEALING SLEEVE 4R-42.5	IOR42.5		
SEALING SLEEVE 4R-42.5	IOR42.5		
SEALING SLEEVE 4R-46.5	IOR46.5		
SEALING SLEEVE 4R-46.5	IOR46.5		
SEALING SLEEVE 4R-46.5	IOR46.5		
SEALING SLEEVE 4R-51	IOR51		
SEALING SLEEVE 4R-51	IOR51		
SEALING SLEEVE 4R-51	IOR51		
SEALING SLEEVE 4R-55.5	IOR55.5		
SEALING SLEEVE 4R-55.5	IOR55.5		
SEALING SLEEVE 4R-55.5	IOR55.5		
SEALING SLEEVE 4R-55.5	IOR55.5		

• Il tubo interno deve essere più lungo del tubo esterno. Fare riferimento alle pagine D130-D131 per maggiori dettagli

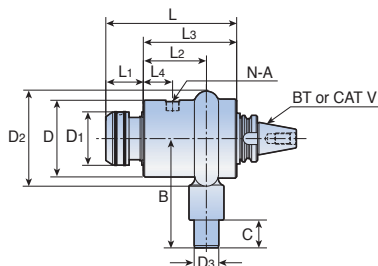
Connettore tipo 'S'



Descrizione	DC	D	D1	D2	D3	L	L1	L2	L3	L4	N-A	N1-MXLS
DTC 4S	18.4-65.0	115	100	45	80	310	50	60	250	68	2-PT3/4"	4-M8x15
5S	65.0-123.9	164	140	81	120	415	47	115	300		2-PT1"	6-M8x20

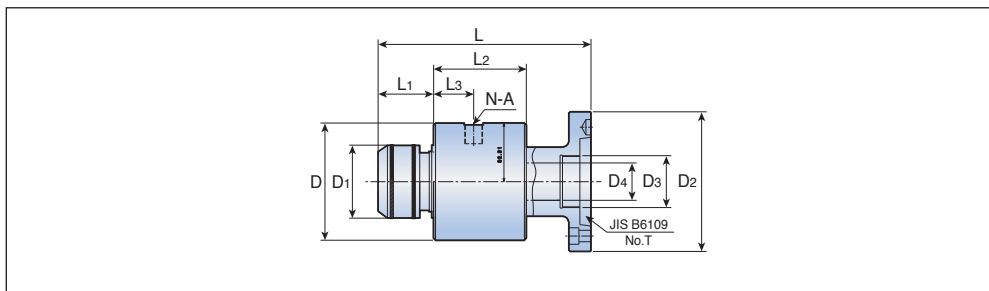
DTC-R

Connettore tipo 'R'



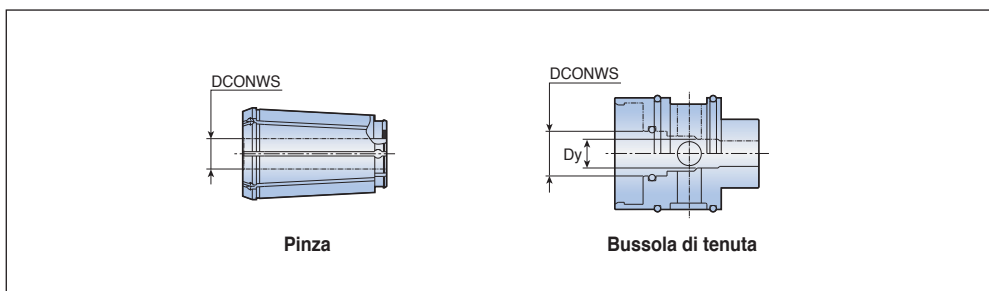
Descrizione	DC	D	D1	D2	D3	B	C	L	L1	L2	L3	L4	N-A
DTC 4R	18.4-65.0	165	115	206	53	186.5	60	319.7	59.2	152	228	75	2-PT1"
5R	65.0-123.9	225	164	312	100	310	100	382	62	201	320	95	2-PT1 1/4"
6R	124.0-183.9	350	244	445	152.4	412	120	487	75	250	412	118	4-PT1-1/4"

Connettore tipo 'RF'



Descrizione	DC	D	D1	D2	D3	D4	L	L1	L2	L3	N-A
DTC 4RF	18.4-65.0	160	115	210	M62x2	46	291.5	64.5	150	75	2-PT1"

Pinza / Bussola di tenuta

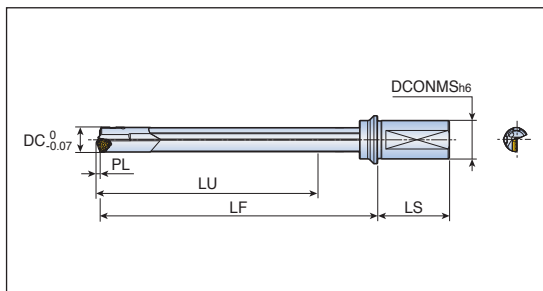


Descrizione	DC	DCONWS	Descrizione	DC	DCONWS	Dy	O-ring esterno	O-ring interno
COLLET 4-18	18.40-20.00	18.0	SEALING SLEEVE 4-18	4-18	18.40-20.00	18.0	OOR 65	IOR 18
4-19.5	20.01-21.80	19.5		4-19.5	20.01-21.80	19.5		IOR 19.5
4-21.5	21.81-24.10	21.5		4-21.5	21.81-24.10	21.5		IOR 21.5
4-23.5	24.11-26.40	23.5		4-23.5	24.11-26.40	23.5		IOR 23.5
4-26	26.41-28.70	26.0		4-26	26.41-28.70	26.0		IOR 26
4-28	28.71-31.00	28.0		4-28	28.71-31.00	28.0		IOR 28
4-30.5	31.01-33.30	30.5		4-30.5	31.01-33.30	30.5		IOR 30.5
4-33	33.31-36.20	33.0		4-33	33.31-36.20	33.0		IOR 33
4-35.5	36.21-39.60	35.5		4-35.5	36.21-39.60	35.5		IOR 35.5
4-39	39.61-43.00	39.0		4-39	39.61-43.00	39.0		IOR 39
4-42.5	43.01-47.00	42.5		4-42.5	43.01-47.00	42.5		IOR 42.5
4-46.5	47.01-51.70	46.5		4-46.5	47.01-51.70	46.5		IOR 46.5
4-51	51.71-56.20	51.0		4-51	51.71-56.20	51.0		IOR 51
4-55.5	56.21-65.00	55.5		4-55.5	56.21-65.00	55.5		IOR 55.5

Corpo punta a cannone standard



- Profondità di foratura: 10xDC - 25xDC



Descrizione	Dimensioni (mm)						
	DC	LU	LF	LS	DCONMS	PL	L/D
TRGD 16.00xM25-10	16.0	172	209	56	25	2.2	10
16.50xM25-10	16.5	172	209	56	25	2.2	10
17.00xM25-10	17.0	182	220	56	25	2.2	10
18.00xM25-10	18.0	193	232	56	25	3.0	10
19.00xM25-10	19.0	203	243	56	25	3.0	10
20.00xM32-10	20.0	213	255	60	32	3.2	10
14.00xM25-15	14.0	227	261	56	25	2.0	15
14.50xM25-15	14.5	227	262	56	25	2.0	15
15.00xM25-15	15.0	242	278	56	25	2.0	15
16.00xM25-15	16.0	257	294	56	25	2.2	15
16.50xM25-15	16.5	257	294	56	25	2.2	15
17.00xM25-15	17.0	272	310	56	25	2.2	15
17.50xM25-15	17.5	272	310	56	25	2.2	15
18.00xM25-15	18.0	288	327	56	25	3.0	15
18.50xM25-15	18.5	288	327	56	25	3.0	15
19.00xM25-15	19.0	303	343	56	25	3.0	15
19.50xM25-15	19.5	303	343	56	25	3.0	15
20.00xM32-15	20.0	318	360	60	32	3.2	15
21.00xM32-15	21.0	333	376	60	32	3.2	15
22.00xM32-15	22.0	348	393	60	32	3.4	15
23.00xM32-15	23.0	363	409	60	32	3.4	15
24.00xM32-15	24.0	378	426	60	32	3.4	15
25.00xM32-15	25.0	394	442	60	32	3.6	15
26.00xM40-15	26.0	409	449	70	40	3.6	15
27.00xM40-15	27.0	424	465	70	40	3.6	15
28.00xM40-15	28.0	424	467	70	40	3.6	15
14.00xM25-20	14.0	302	336	56	25	2.0	20
14.50xM25-20	14.5	302	337	56	25	2.0	20
15.00xM25-20	15.0	322	358	56	25	2.0	20
14.00xM25-25	14.0	377	411	56	25	2.0	25
14.50xM25-25	14.5	377	412	56	25	2.0	25
15.00xM25-25	15.0	402	438	56	25	2.0	25
16.00xM25-25	16.0	427	464	56	25	2.2	25
16.50xM25-25	16.5	427	464	56	25	2.2	25
17.00xM25-25	17.0	452	490	56	25	2.2	25



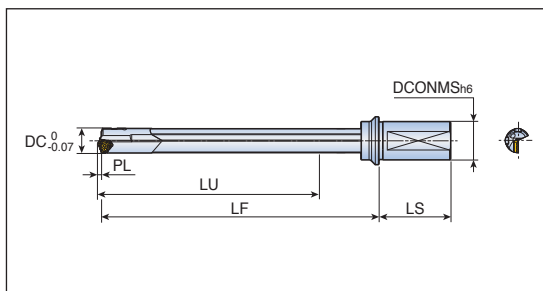
- Il pattino guida è venduto separatamente dal corpo punta

- Disponibile su richiesta

Corpo punta a cannone standard



- Profondità di foratura: 10xDC - 25xDC



Descrizione	Dimensioni (mm)						
	DC	LU	LF	LS	DCONMS	PL	L/D
TRGD 17.50xM25-25	17.5	452	490	56	25	2.2	25
18.00xM25-25	18.0	478	517	56	25	3.0	25
18.50xM25-25	18.5	478	517	56	25	3.0	25
19.00xM25-25	19.0	503	543	56	25	3.0	25
19.50xM25-25	19.5	503	543	56	25	3.0	25
20.00xM32-25	20.0	528	570	60	32	3.2	25
21.00xM32-25	21.0	553	596	60	32	3.2	25
22.00xM32-25	22.0	578	623	60	32	3.4	25
23.00xM32-25	23.0	603	649	60	32	3.4	25
24.00xM32-25	24.0	628	676	60	32	3.4	25
25.00xM32-25	25.0	654	702	60	32	3.6	25
26.00xM40-25	26.0	679	719	70	40	3.6	25
27.00xM40-25	27.0	704	745	70	40	3.6	25
28.00xM40-25	28.0	704	747	70	40	3.6	25

- Il Pattino guida è venduto separatamente dal corpo punta.

- Disponibile su richiesta

Inserto e pattino guida

Diametro (mm)	Inserto			Pattino guida		
	Inserto	Vite	Chiave	Pattino guida	Vite	Chiave
14.00-15.99	TOGT 070304 RS TT9030	SR14-560/S	T-8F	PAD-GO05-060CD-SA PAD-GO05-060CD-SB	SR34-508	T-7F
16.00-18.00	TOGT 080305 RS TT9030	SR14-560/S	T-8F	PAD-GO05-075CD-SA PAD-GO05-075CD-SB	SR34-508	T-7F
18.01-20.00	TOGT 090305 RS TT9030	CSTB2.5S*	T-8F	PAD-GO06-085CD-SA PAD-GO06-085CD-SB	CSTB2.2S*	T-7F
20.01-21.00	TOGT 100305 RS TT9030	CSTB3S*	T-9F			
21.01-21.99	TOGT 100305 RS TT9030	CSTB3S*	T-9F	PAD-GO06-100CD-SA PAD-GO06-100CD-SB	CSTB2.2S*	T-7F
22.00-25.00	TOGT 110405 RS TT9030	CSTB3.5H*	T-15F			
25.01-28.00	TOGT 120405 RS TT9030	CSTB4S*	T-15F	PAD-GO06CD-SA PAD-GO06CD-SB	CSTB2.2S*	T-7F

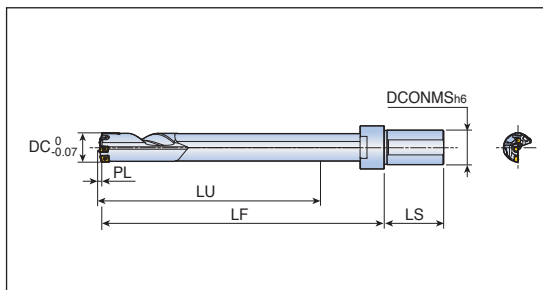


- Il pattino guida con "SB" è raccomandato per tutte le lavorazioni "SA" è da utilizzare solo con olio intero
- Inserto e pattino guida sono venduti separatamente dal corpo punta

Corpo punta a cannone standard



- Profondità di foratura: 10xDC - 15xDC



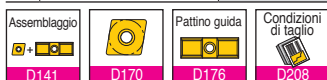
Descrizione	Dimensioni (mm)						
	DC	LU	LF	LS	DCONMS	PL	L/D
TRGD 29.00XFM40-10	29.0	293	360	69	40	2.6	10
30.00XFM40-10	30.0	313	383	69	40	2.9	10
31.00XFM40-10	31.0	313	383	69	40	2.9	10
32.00XFM40-10	32.0	323	395	69	40	3.0	10
33.00XFM40-10	33.0	333	406	69	40	3.1	10
34.00XFM40-10	34.0	343	418	69	40	3.0	10
35.00XFM40-10	35.0	353	428	69	40	3.1	10
36.00XFM40-10	36.0	363	441	69	40	3.1	10
29.00XFM40-15	29.0	438	505	69	40	2.6	15
30.00XFM40-15	30.0	468	538	69	40	2.9	15
31.00XFM40-15	31.0	468	538	69	40	2.9	15
32.00XFM40-15	32.0	483	555	69	40	3.0	15
33.00XFM40-15	33.0	498	571	69	40	3.1	15
34.00XFM40-15	34.0	513	588	69	40	3.0	15
35.00XFM40-15	35.0	528	603	69	40	3.1	15
36.00XFM40-15	36.0	543	621	69	40	3.1	15

- Il Pattino guida è venduto separatamente dal corpo punta.
- Fornibile fino a diametro 40.0 mm

- Disponibile su richiesta

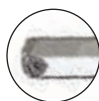
Inserto e pattino guida

Componenti	Diametro (mm)				
	29.0	30.0-33.0	34.0-35.0	36.0	
Inserto	ESTERNO	NPHT 06003RG	NPHT 07504RG	NPHT 07504RG	NPHT 07504RG
	Vite	CSTB2.2	CSTB2.5	CSTB2.5	CSTB2.5
	Chiave	T-7F	T-8F	T-8F	T-8F
	INTERNO	NPMT 05503RG	NPMT 06504RG	NPMT 06504RG	NPMT 06504RG
	Vite	CSTB2.2	CSTB2.5	CSTB2.5	CSTB2.5
	Chiave	T-7F	T-8F	T-8F	T-8F
	CENTRALE	NPMT 06504LG	NPMT 06504LG	NPMT 06504LG	NPMT 08004LG
	Vite	CSTB2.5	CSTB2.6	CSTB2.7	CSTB2.8
	Chiave	T-8F	T-8F	T-8F	T-8F
Pattino	PATTINO	PAD-GO06CD	PAD-GO06CD	PAD-GO07CD	PAD-GO07CD
	Vite	CSTB2.2S*	CSTB2.2S*	CSTB3S	CSTB3S
	Chiave	T-7F	T-7F	T-9F	T-9F

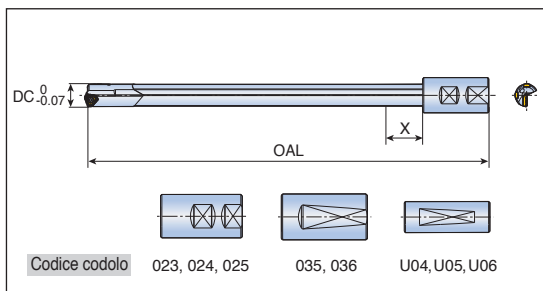


- Inserto e pattino guida sono venduti separatamente dal corpo punta

Corpo punta a cannone standard



- Profondità di foratura: 10xDC - 25xDC

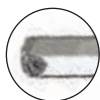


Descrizione	Codice codolo	Dimensioni (mm)		
		DC	OAL	X
TRGDL 14.00X800-XXX	U04 023	14	800	21
14.00X1000-XXX		14	1000	21
14.00X1650-XXX		14	1650	21
14.50X800-XXX		14.5	800	22
14.50X1000-XXX		14.5	1000	22
14.50X1650-XXX		14.5	1650	22
15.00X800-XXX		15	800	23
15.00X1000-XXX		15	1000	23
15.00X1650-XXX		15	1650	23
16.00x800-XXX	U04 023 035	16	800	24
16.00x1000-XXX		16	1000	24
16.00x1500-XXX		16	1500	24
17.00x1000-XXX		17	1000	25
17.00x1500-XXX		17	1500	25
18.00x800-XXX		18	800	27
18.00x1000-XXX		18	1000	27
18.00x1500-XXX		18	1500	27
19.00x800-XXX		19	800	28
19.00x1000-XXX	19	1000	28	
19.00x1500-XXX	19	1500	28	
20.00x800-XXX	U05 024 036	20	800	30
20.00x1000-XXX		20	1000	30
20.00x1500-XXX		20	1500	30
21.00x1000-XXX		21	1000	31
21.00x1500-XXX		21	1500	31
22.00x1000-XXX		22	1000	33
22.00x1500-XXX		22	1500	33
23.00x1000-XXX		23	1000	34
23.00x1500-XXX		23	1500	34
24.00x1000-XXX		24	1000	36
24.00x1500-XXX		24	1500	36
25.00x1000-XXX	25	1000	37	
25.00x1500-XXX	25	1500	37	

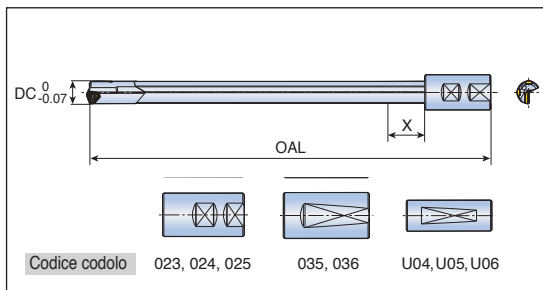


- Il pattino guida è venduto separatamente dal corpo punta.
- Disponibile su richiesta
- Scegliere codolo "XXX"

Corpo punta a cannone standard



- Profondità di foratura: 10xDC - 25xDC



Descrizione	Codice codolo	Dimensioni (mm)		
		DC	OAL	X
TRGDL 26.00x1000-XXX	U06 025 026 036	26	1000	39
26.00x1500-XXX		26	1500	39
27.00x1000-XXX		27	1000	40
27.00x1500-XXX		27	1500	40
28.00x1000-XXX		28	1000	42
28.00x1500-XXX		28	1500	42

- Il Pattino guida è venduto separatamente dal corpo punta.

- Disponibile su richiesta
- Scegliere codolo "XXX"

Inserto e Pattino guida

Diametro (mm)	Inserto			Pattino guida		
	Inserto	Vite	Chiave	Pattino guida	Vite	Chiave
14.00-15.99	TOGT 070304 RS TT9030	SR14-560/S	T-8F	PAD-GO05-060CD-SA PAD-GO05-060CD-SB	SR34-508	T-7F
16.00-18.00	TOGT 080305 RS TT9030	SR14-560/S	T-8F	PAD-GO05-075CD-SA PAD-GO05-075CD-SB	SR34-508	T-7F
18.01-20.00	TOGT 090305 RS TT9030	CSTB2.5S*	T-8F	PAD-GO06-085CD-SA PAD-GO06-085CD-SB	CSTB2.2S*	T-7F
20.01-21.00	TOGT 100305 RS TT9030	CSTB3S*	T-9F	PAD-GO06-100CD-SA PAD-GO06-100CD-SB	CSTB2.2S*	T-7F
21.01-21.99	TOGT 100305 RS TT9030	CSTB3S*	T-9F	PAD-GO06-100CD-SA PAD-GO06-100CD-SB	CSTB2.2S*	T-7F
22.00-25.00	TOGT 110405 RS TT9030	CSTB3.5H*	T-15F	PAD-GO06-100CD-SA PAD-GO06-100CD-SB	CSTB2.2S*	T-7F
25.01-28.00	TOGT 120405 RS TT9030	CSTB4S*	T-15F	PAD-GO06CD-SA PAD-GO06CD-SB	CSTB2.2S*	T-7F



- Il Pattino guida con "SB" è raccomandato per tutte le lavorazioni
- "SA" è da utilizzare solo con olio intero
- Inserto e pattino guida sono venduti separatamente dal corpo punta

Codolo	Diametro utensile	Codice codolo	Dimensioni (mm)	
			LS	DCONMS
	14.00-19.69	023	56	25.00
	16.00-25.69	024	60	32.00
	16.00-28.00	025	70	40.00
	16.00-28.00	026	80	50.00
	16.00-19.69	035	56	25.00
	16.00-25.69	036	60	32.00
	16.00-19.69	U04	70	25.40
	16.00-25.69	U05	70	31.75
	16.00-28.00	U06	70	38.10

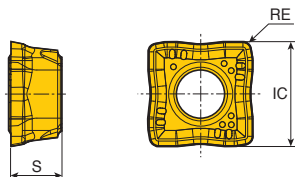
Inserti e cuspidi per foratura



SOMT...DP



Inserti per lavorazioni generali



Misura	Dimensioni (mm)		
	IC	S	RE
04	4.4	2.38	0.4
05	4.9	2.38	0.4
06	5.7	2.38	0.4
07	6.8	2.80	0.6
08	7.9	3.97	0.6
09	9.2	3.97	0.8
11	11.0	3.97	0.8
13	12.8	4.40	0.8
15	15.0	4.80	1.0

Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT8020	TT9300	TT9030	TT6030	TT7400	K10	
	SOMT 040204 DP	●	●	●					
	050204 DP	●	●	●					
	060204 DP	●	●	●					
	070306 DP	●	●	●					
	08T306 DP	●	●	●					
	09T308 DP	●	●	●					
	11T308 DP	●	●	●					
	130408 DP	●	●	●					
	150510 DP	●	●	●					



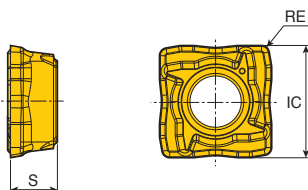
- TT9080: prima scelta per lavorazioni generali
- TT8020: per condizioni instabili
- TT9300: per lavorazioni ad alta velocità di acciaio (**solo** esterno)

●: Standard

SOMT...DL



Inserti per acciaio a basso tenore di carbonio



Misura	Dimensioni (mm)		
	IC	S	RE
05	4.9	2.38	0.4
06	5.7	2.38	0.4
07	6.8	2.80	0.6
08	7.9	3.97	0.6
09	9.2	3.97	0.8
11	11.0	3.97	0.8
13	12.8	4.40	0.8
15	15.0	4.80	1.0

Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT9030	TT8020	TT6030	TT9300	TT7400	K10	
	SOMT 050204 DL	●							
	060204 DL	●							
	070306 DL	●							
	08T306 DL	●							
	09T308 DL	●							
	11T308 DL	●							
	130408 DL	●							
	150510 DL	●							



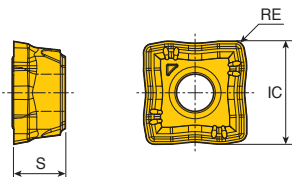
- TT9080: prima scelta per lavorazioni generali

●: Standard

SOMT...DK



Inserti per ghisa



Misura	Dimensioni (mm)		
	IC	S	RE
05	4.9	2.38	0.4
06	5.7	2.38	0.4
07	6.8	2.80	0.6
08	7.9	3.97	0.6
09	9.2	3.97	0.8
11	11.0	3.97	0.8
13	12.8	4.40	0.8
15	15.0	4.80	1.0

Inserto	Descrizione	Rivestito							Non rivestito		
		TT9080	TT8020	TT9300	TT9030	TT6030	TT6080	TT7400			K10
	SOMT 050204 DK						●				
	060204 DK						●				
	070306 DK						●				
	08T306 DK						●				
	09T308 DK						●				
	11T308 DK						●				
	130408 DK						●				
150510 DK						●					

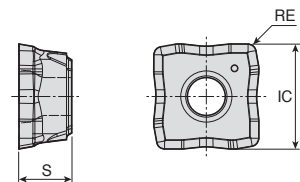


●: Standard

SOMT...DA



Inserti per lega di alluminio



Misura	Dimensioni (mm)		
	IC	S	RE
05	4.9	2.38	0.4
06	5.7	2.38	0.4
07	6.8	2.80	0.6
08	7.9	3.97	0.6
09	9.2	3.97	0.8
11	11.0	3.97	0.8
13	12.8	4.40	0.8
15	15.0	4.80	1.0

Inserto	Descrizione	Rivestito							Non rivestito		
		TT9080	TT8020	TT9300	TT9030	TT6030	TT6080	TT7400			K10
	SOMT 050204 DA										●
	060204 DA										●
	070306 DA										●
	08T306 DA										●
	09T308 DA										●
	11T308 DA										●
	130408 DA										●
150510 DA										●	

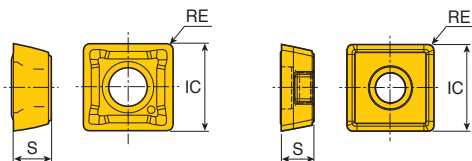


●: Standard

SPMG...DG



Inserti per lavorazioni generali



SPMG 120408 DG

Misura	Dimensioni (mm)		
	IC	S	RE
05	5.00	2.38	0.4
06	6.00	2.38	0.4
07	7.94	3.97	0.8
09	9.80	4.30	0.8
11	11.50	4.80	0.8
12	12.70	4.76	0.8
14	14.30	5.20	1.2

Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT9030	TT8020	TT6030	TT9300	TT7400	K10	
	SPMG 050204 DG		●	●			●		
	060204 DG		●	●			●		
	07T308 DG		●	●			●		
	090408 DG		●	●			●		
	110408 DG		●	●			●		
	120408 DG		●						
	140512 DG		●	●			●		



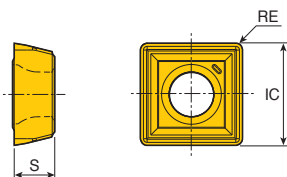
- TT9030: prima scelta per lavorazioni generali
- TT8020: per condizioni instabili
- TT7400: per lavorazioni ad alta velocità di acciaio (**solo esterno**)

●: Standard

SPMG...DK



Inserti per ghisa



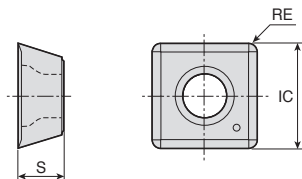
Misura	Dimensioni (mm)		
	IC	S	RE
05	5.00	2.38	0.4
06	6.00	2.38	0.4
07	7.94	3.97	0.8
09	9.80	4.30	0.8
11	11.50	4.80	0.8
14	14.30	5.20	1.2

Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT9030	TT8020	TT6030	TT9300	TT7400	K10	
	SPMG 050204 DK				●				
	060204 DK				●				
	07T308 DK				●				
	090408 DK				●				
	110408 DK				●				
	140512 DK				●				



●: Standard

Inseri per lega di alluminio



Misura	Dimensioni (mm)		
	IC	S	RE
05	5.00	2.38	0.4
06	6.00	2.38	0.4
07	7.94	3.97	0.8
09	9.80	4.30	0.8
11	11.50	4.80	0.8
14	14.30	5.20	1.2

Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT9030	TT8020	TT6030	TT9300	TT7400	K10	
	SPGG 050204 DA							●	
	060204 DA							●	
	07T308 DA							●	
	090408 DA							●	
	110408 DA							●	
	140512 DA							●	

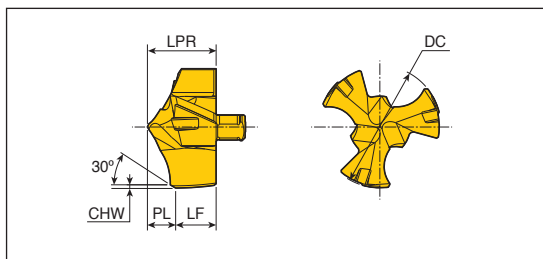


●: Standard

3ED...-P+



Cuspidi a 3 taglianti



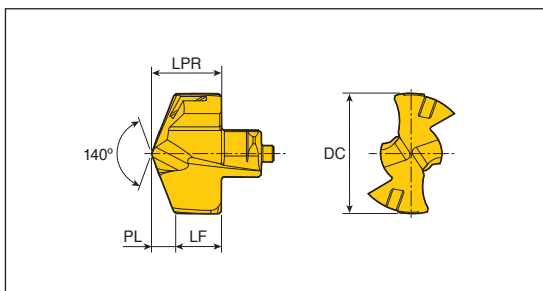
Descrizione	Dimensioni (mm)						Grado
	DC	LPR	PL	LF	CHW	SSC	TT5130
3ED-160-P+	16.0	9.00	3.70	5.30	0.40	16	●
165-P+	16.5	9.00	3.71	5.29	0.40	16	●
170-P+	17.0	9.50	3.88	5.62	0.40	17	●
175-P+	17.5	9.50	3.89	5.61	0.40	17	●
180-P+	18.0	10.10	4.07	6.03	0.40	18	●
185-P+	18.5	10.10	4.08	6.02	0.40	18	●
190-P+	19.0	10.70	4.26	6.44	0.40	19	●
195-P+	19.5	10.70	4.27	6.43	0.40	19	●
200-P+	20.0	11.30	4.44	6.86	0.40	20	●
205-P+	20.5	11.30	4.45	6.85	0.40	20	●



● SSC: codice misura sede

●: Standard

Cuspidi



Descrizione	Dimensioni (mm)					Grado
	DC	LPR	PL	LF	SSC	TT9080
TCD - 060-P/M/K	6.0	4.0	0.96	3.04	6	●
061-P/M/K	6.1	4.0	0.98	3.02	6	●
062-P/M/K	6.2	4.0	1.00	3.00	6	●
063-P/M/K	6.3	4.0	1.01	2.99	6	●
064-P/M/K	6.4	4.0	1.03	2.97	6	●
065-P/M/K	6.5	4.3	1.18	3.12	6.5	●
066-P/M/K	6.6	4.3	1.20	3.10	6.5	●
067-P/M/K	6.7	4.3	1.22	3.08	6.5	●
068-P/M/K	6.8	4.3	1.23	3.07	6.5	●
069-P/M/K	6.9	4.3	1.25	3.05	6.5	●
070-P/M/K	7.0	4.6	1.01	3.59	7	●
071-P/M/K	7.1	4.6	1.03	3.57	7	●
072-P/M/K	7.2	4.6	1.05	3.55	7	●
073-P/M/K	7.3	4.6	1.06	3.54	7	●
074-P/M/K	7.4	4.6	1.08	3.52	7	●
075-P/M/K	7.5	4.6	1.10	3.50	7	●
076-P/M/K	7.6	4.6	1.12	3.48	7	●
077-P/M/K	7.7	4.6	1.14	3.46	7	●
078-P/M/K	7.8	4.6	1.16	3.44	7	●
079-P/M/K	7.9	4.6	1.17	3.43	7	●
080-P/M/K	8.0	5.4	1.20	4.20	8	●
081-P/M/K	8.1	5.4	1.22	4.18	8	●
082-P/M/K	8.2	5.4	1.24	4.16	8	●
083-P/M/K	8.3	5.4	1.25	4.15	8	●
084-P/M/K	8.4	5.4	1.27	4.13	8	●
085-P/M/K	8.5	5.4	1.29	4.11	8	●
086-P/M/K	8.6	5.4	1.31	4.09	8	●
087-P/M/K	8.7	5.4	1.33	4.07	8	●
088-P/M/K	8.8	5.4	1.35	4.05	8	●
089-P/M/K	8.9	5.4	1.36	4.04	8	●
090-P/M/K	9.0	5.8	1.35	4.45	9	●
091-P/M/K	9.1	5.8	1.37	4.43	9	●
092-P/M/K	9.2	5.8	1.39	4.41	9	●
093-P/M/K	9.3	5.8	1.40	4.40	9	●
094-P/M/K	9.4	5.8	1.42	4.38	9	●



- SSC: codice misura sede
- Le cuspidi sono da ordinare in base al materiale:
(esempio d'ordine: cuspidi diametro 10.0 mm per acciaio ISO P TCD-100-P TT9080)



Acciaio



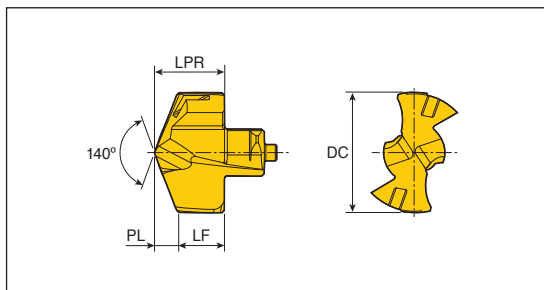
Acciaio inox



Ghisa

●: Standard

Cuspidi



Descrizione	Dimensioni (mm)					Grado TT9080
	DC	LPR	PL	LF	SSC	
TCD - 095-P/M/K	9.5	5.8	1.44	4.36	9	●
096-P/M/K	9.6	5.8	1.46	4.34	9	●
097-P/M/K	9.7	5.8	1.48	4.32	9	●
098-P/M/K	9.8	5.8	1.50	4.30	9	●
099-P/M/K	9.9	5.8	1.51	4.29	9	●
100-P/M/K	10.0	6.2	1.50	4.70	10	●
101-P/M/K	10.1	6.2	1.52	4.68	10	●
102-P/M/K	10.2	6.2	1.54	4.66	10	●
103-P/M/K	10.3	6.2	1.55	4.65	10	●
104-P/M/K	10.4	6.2	1.57	4.63	10	●
105-P/M/K	10.5	6.2	1.59	4.61	10	●
106-P/M/K	10.6	6.2	1.61	4.59	10	●
107-P/M/K	10.7	6.2	1.63	4.57	10	●
108-P/M/K	10.8	6.2	1.65	4.55	10	●
109-P/M/K	10.9	6.2	1.66	4.54	10	●
110-P/M/K	11.0	6.6	1.67	4.93	11	●
111-P/M/K	11.1	6.6	1.69	4.91	11	●
112-P/M/K	11.2	6.6	1.71	4.89	11	●
113-P/M/K	11.3	6.6	1.72	4.88	11	●
114-P/M/K	11.4	6.6	1.74	4.86	11	●
115-P/M/K	11.5	6.6	1.76	4.84	11	●
116-P/M/K	11.6	6.6	1.78	4.82	11	●
117-P/M/K	11.7	6.6	1.80	4.80	11	●
118-P/M/K	11.8	6.6	1.82	4.78	11	●
119-P/M/K	11.9	6.6	1.83	4.77	11	●
120-P/M/K	12.0	7.0	1.82	5.18	12	●
121-P/M/K	12.1	7.0	1.84	5.16	12	●
122-P/M/K	12.2	7.0	1.86	5.14	12	●
123-P/M/K	12.3	7.0	1.87	5.13	12	●
124-P/M/K	12.4	7.0	1.89	5.11	12	●
125-P/M/K	12.5	7.0	1.91	5.09	12	●
126-P/M/K	12.6	7.0	1.93	5.07	12	●
127-P/M/K	12.7	7.0	1.95	5.05	12	●
128-P/M/K	12.8	7.0	1.97	5.03	12	●
129-P/M/K	12.9	7.0	1.98	5.02	12	●



- SSC: codice misura sede
- Le cuspidi sono da ordinare in base al materiale:
(esempio d'ordine: cuspidi diametro 10.0 mm per acciaio ISO P TCD-100-P TT9080)



Acciaio



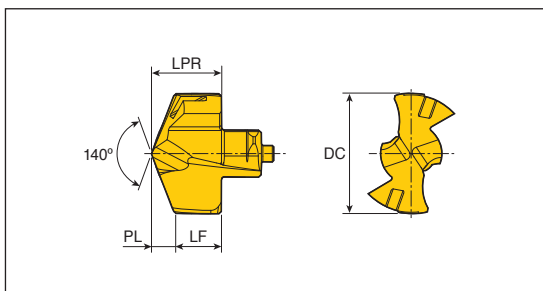
Acciaio inox



Ghisa

●: Standard

Cuspidi



Descrizione	Dimensioni (mm)					Grado TT9080
	DC	LPR	PL	LF	SSC	
TCD - 130-P/M/K	13.0	7.6	1.96	5.64	13	●
131-P/M/K	13.1	7.6	1.98	5.62	13	●
132-P/M/K	13.2	7.6	2.00	5.60	13	●
133-P/M/K	13.3	7.6	2.01	5.59	13	●
134-P/M/K	13.4	7.6	2.03	5.57	13	●
135-P/M/K	13.5	7.6	2.05	5.55	13	●
136-P/M/K	13.6	7.6	2.07	5.53	13	●
137-P/M/K	13.7	7.6	2.09	5.51	13	●
138-P/M/K	13.8	7.6	2.11	5.49	13	●
139-P/M/K	13.9	7.6	2.12	5.48	13	●
140-P/M/K	14.0	8.1	2.12	5.98	14	●
141-P/M/K	14.1	8.1	2.14	5.96	14	●
142-P/M/K	14.2	8.1	2.16	5.94	14	●
143-P/M/K	14.3	8.1	2.17	5.93	14	●
144-P/M/K	14.4	8.1	2.19	5.91	14	●
145-P/M/K	14.5	8.1	2.21	5.89	14	●
146-P/M/K	14.6	8.1	2.23	5.87	14	●
147-P/M/K	14.7	8.1	2.25	5.85	14	●
148-P/M/K	14.8	8.1	2.27	5.83	14	●
149-P/M/K	14.9	8.1	2.28	5.82	14	●
150-P/M/K	15.0	8.7	2.27	6.43	15	●
151-P/M/K	15.1	8.7	2.29	6.41	15	●
152-P/M/K	15.2	8.7	2.31	6.39	15	●
153-P/M/K	15.3	8.7	2.32	6.38	15	●
154-P/M/K	15.4	8.7	2.34	6.36	15	●
155-P/M/K	15.5	8.7	2.36	6.34	15	●
156-P/M/K	15.6	8.7	2.38	6.32	15	●
157-P/M/K	15.7	8.7	2.40	6.30	15	●
158-P/M/K	15.8	8.7	2.42	6.28	15	●
159-P/M/K	15.9	8.7	2.43	6.27	15	●
160-P/M/K	16.0	9.3	2.42	6.88	16	●
161-P/M/K	16.1	9.3	2.44	6.86	16	●
162-P/M/K	16.2	9.3	2.46	6.84	16	●
163-P/M/K	16.3	9.3	2.47	6.83	16	●
164-P/M/K	16.4	9.3	2.49	6.81	16	●



- SSC: codice misura sede
- Le cuspidi sono da ordinare in base al materiale:
(esempio d'ordine: cuspidi diametro 10.0 mm per acciaio ISO P TCD-100-P TT9080)



Acciaio



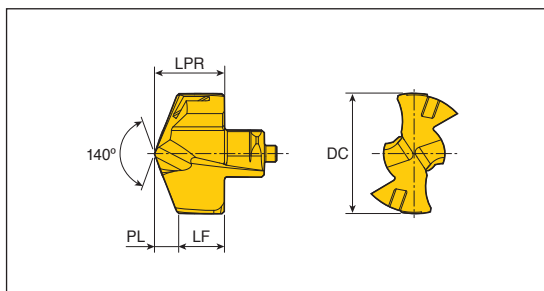
Acciaio inox



Ghisa

●: Standard

Cuspidi



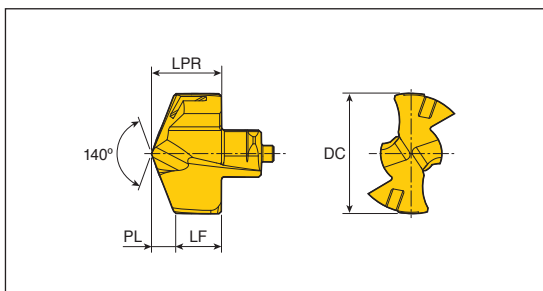
Descrizione	Dimensioni (mm)					Grado TT9080
	DC	LPR	PL	LF	SSC	
TCD - 165-P/M/K	16.5	9.3	2.51	6.79	16	●
166-P/M/K	16.6	9.3	2.53	6.77	16	●
167-P/M/K	16.7	9.3	2.55	6.75	16	●
168-P/M/K	16.8	9.3	2.57	6.73	16	●
169-P/M/K	16.9	9.3	2.58	6.72	16	●
170-P/M/K	17.0	9.9	2.59	7.31	17	●
171-P/M/K	17.1	9.9	2.61	7.29	17	●
172-P/M/K	17.2	9.9	2.63	7.27	17	●
173-P/M/K	17.3	9.9	2.64	7.26	17	●
174-P/M/K	17.4	9.9	2.66	7.24	17	●
175-P/M/K	17.5	9.9	2.68	7.22	17	●
176-P/M/K	17.6	9.9	2.70	7.20	17	●
177-P/M/K	17.7	9.9	2.72	7.18	17	●
178-P/M/K	17.8	9.9	2.74	7.16	17	●
179-P/M/K	17.9	9.9	2.75	7.15	17	●
180-P/M/K	18.0	10.5	2.73	7.77	18	●
181-P/M/K	18.1	10.5	2.75	7.75	18	●
182-P/M/K	18.2	10.5	2.77	7.73	18	●
183-P/M/K	18.3	10.5	2.78	7.72	18	●
184-P/M/K	18.4	10.5	2.80	7.70	18	●
185-P/M/K	18.5	10.5	2.82	7.68	18	●
186-P/M/K	18.6	10.5	2.84	7.66	18	●
187-P/M/K	18.7	10.5	2.86	7.64	18	●
188-P/M/K	18.8	10.5	2.88	7.62	18	●
189-P/M/K	18.9	10.5	2.89	7.61	18	●
190-P/M/K	19.0	11.0	2.88	8.12	19	●
191-P/M/K	19.1	11.0	2.90	8.10	19	●
192-P/M/K	19.2	11.0	2.92	8.08	19	●
193-P/M/K	19.3	11.0	2.93	8.07	19	●
194-P/M/K	19.4	11.0	2.95	8.05	19	●
195-P/M/K	19.5	11.0	2.97	8.03	19	●
196-P/M/K	19.6	11.0	2.99	8.01	19	●
197-P/M/K	19.7	11.0	3.01	7.99	19	●
198-P/M/K	19.8	11.0	3.03	7.97	19	●
199-P/M/K	19.9	11.0	3.04	7.96	19	●



- SSC: codice misura sede
- Le cuspidi sono da ordinare in base al materiale:
(esempio d'ordine: cuspidi diametro 10.0 mm per acciaio ISO P TCD-100-P TT9080)



Cuspidi



Descrizione	Dimensioni (mm)					Grado TT9080
	DC	LPR	PL	LF	SSC	
TCD - 200-P/M/K	20.0	11.6	3.02	8.58	20	●
201-P/M/K	20.1	11.6	3.04	8.56	20	●
202-P/M/K	20.2	11.6	3.06	8.54	20	●
203-P/M/K	20.3	11.6	3.07	8.53	20	●
204-P/M/K	20.4	11.6	3.09	8.51	20	●
205-P/M/K	20.5	11.6	3.11	8.49	20	●
206-P/M/K	20.6	11.6	3.13	8.47	20	●
207-P/M/K	20.7	11.6	3.15	8.45	20	●
208-P/M/K	20.8	11.6	3.17	8.43	20	●
209-P/M/K	20.9	11.6	3.18	8.42	20	●
210-P/M/K	21.0	12.1	3.18	8.92	21	●
211-P/M/K	21.1	12.1	3.20	8.90	21	●
212-P/M/K	21.2	12.1	3.22	8.88	21	●
213-P/M/K	21.3	12.1	3.23	8.87	21	●
214-P/M/K	21.4	12.1	3.25	8.85	21	●
215-P/M/K	21.5	12.1	3.27	8.83	21	●
216-P/M/K	21.6	12.1	3.29	8.81	21	●
217-P/M/K	21.7	12.1	3.31	8.79	21	●
218-P/M/K	21.8	12.1	3.33	8.77	21	●
219-P/M/K	21.9	12.1	3.34	8.76	21	●
220-P/M/K	22.0	12.7	3.24	9.46	22	●
221-P/M/K	22.1	12.7	3.26	9.44	22	●
222-P/M/K	22.2	12.7	3.28	9.42	22	●
223-P/M/K	22.3	12.7	3.29	9.41	22	●
224-P/M/K	22.4	12.7	3.31	9.39	22	●
225-P/M/K	22.5	12.7	3.33	9.37	22	●
226-P/M/K	22.6	12.7	3.35	9.35	22	●
227-P/M/K	22.7	12.7	3.37	9.33	22	●
228-P/M/K	22.8	12.7	3.39	9.31	22	●
229-P/M/K	22.9	12.7	3.40	9.30	22	●
230-P/M/K	23.0	13.3	3.46	9.84	23	●
231-P/M/K	23.1	13.3	3.48	9.82	23	●
232-P/M/K	23.2	13.3	3.50	9.80	23	●
233-P/M/K	23.3	13.3	3.51	9.79	23	●
234-P/M/K	23.4	13.3	3.53	9.77	23	●



- SSC: codice misura sede
- Le cuspidi sono da ordinare in base al materiale:
(esempio d'ordine: cuspidi diametro 10.0 mm per acciaio ISO P TCD-100-P TT9080)



Acciaio



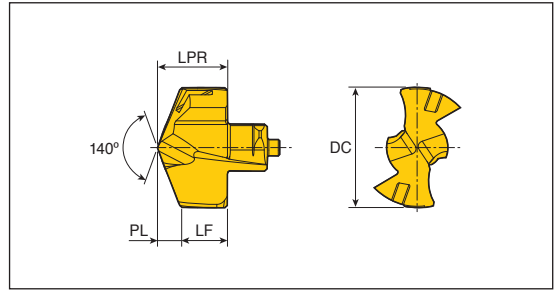
Acciaio inox



Ghisa

●: Standard

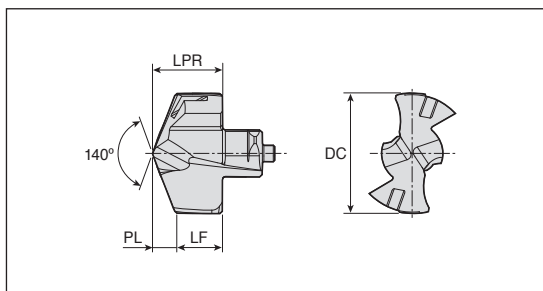
Cuspidi



Descrizione	Dimensioni (mm)					Grado TT9080
	DC	LPR	PL	LF	SSC	
TCD - 235-P/M/K	23.5	13.3	3.55	9.75	23	●
236-P/M/K	23.6	13.3	3.57	9.73	23	●
237-P/M/K	23.7	13.3	3.59	9.71	23	●
238-P/M/K	23.8	13.3	3.61	9.69	23	●
239-P/M/K	23.9	13.3	3.62	9.68	23	●
240-P/M/K	24.0	13.9	3.62	10.28	24	●
241-P/M/K	24.1	13.9	3.64	10.26	24	●
242-P/M/K	24.2	13.9	3.66	10.24	24	●
243-P/M/K	24.3	13.9	3.67	10.23	24	●
244-P/M/K	24.4	13.9	3.69	10.21	24	●
245-P/M/K	24.5	13.9	3.71	10.19	24	●
246-P/M/K	24.6	13.9	3.73	10.17	24	●
247-P/M/K	24.7	13.9	3.75	10.15	24	●
248-P/M/K	24.8	13.9	3.77	10.13	24	●
249-P/M/K	24.9	13.9	3.78	10.12	24	●
250-P/M/K	25.0	14.5	3.80	10.70	25	●
251-P/M/K	25.1	14.5	3.82	10.68	25	●
252-P/M/K	25.2	14.5	3.84	10.66	25	●
253-P/M/K	25.3	14.5	3.85	10.65	25	●
254-P/M/K	25.4	14.5	3.87	10.63	25	●
255-P/M/K	25.5	14.5	3.89	10.61	25	●
256-P/M/K	25.6	14.5	3.91	10.59	25	●
257-P/M/K	25.7	14.5	3.93	10.57	25	●
258-P/M/K	25.8	14.5	3.95	10.55	25	●
259-P/M/K	25.9	14.5	3.96	10.54	25	●



- SSC: codice misura sede
- Le cuspidi sono da ordinare in base al materiale: **P** Acciaio **M** Acciaio inox **K** Ghisa ● Standard
- (esempio d'ordine: cuspidi diametro 10.0 mm per acciaio ISO P TCD-100-P TT9080)



Descrizione	Dimensioni (mm)					Grado	
	DC	LPR	PL	LF	SSC	UF10	
TCD - 060-N	6.0	4.00	0.96	3.04	6	●	
065-N	6.5	4.30	1.18	3.12	6.5	●	
070-N	7.0	4.60	1.01	3.59	7	●	
075-N	7.5	4.60	1.10	3.50	7	●	
080-N	8.0	5.40	1.20	4.20	8	●	
085-N	8.5	5.40	1.29	4.11	8	●	
090-N	9.0	5.80	1.35	4.45	9	●	
095-N	9.5	5.80	1.44	4.36	9	●	
100-N	10.0	6.20	1.50	4.70	10	●	
105-N	10.5	6.20	1.59	4.61	10	●	
110-N	11.0	6.60	1.67	4.93	11	●	
115-N	11.5	6.60	1.76	4.84	11	●	
120-N	12.0	7.00	1.82	5.18	12	●	
125-N	12.5	7.00	1.91	5.09	12	●	
130-N	13.0	7.60	1.96	5.64	13	●	
135-N	13.5	7.60	2.05	5.55	13	●	
140-N	14.0	8.15	2.12	6.03	14	●	
145-N	14.5	8.15	2.21	5.94	14	●	
150-N	15.0	8.73	2.27	6.46	15	●	
155-N	15.5	8.73	2.36	6.37	15	●	
160-N	16.0	9.30	2.42	6.88	16	●	
165-N	16.5	9.30	2.51	6.79	16	●	
170-N	17.0	9.90	2.59	7.31	17	●	
175-N	17.5	9.90	2.68	7.22	17	●	
180-N	18.0	10.50	2.73	7.77	18	●	
185-N	18.5	10.50	2.82	7.68	18	●	
190-N	19.0	11.00	2.88	8.12	19	●	
195-N	19.5	11.00	2.97	8.03	19	●	

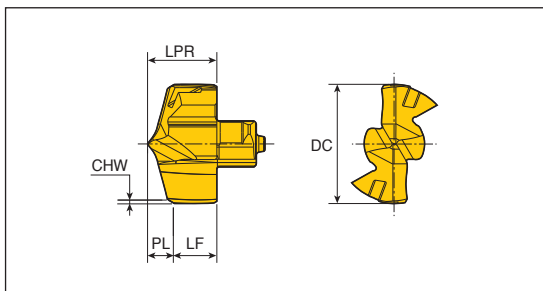


● SSC: codice misura sede

● Standard

Non ferrosi

Cuspidi autocentranti



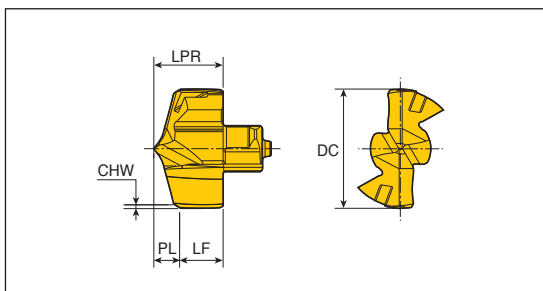
Descrizione	Dimensioni (mm)						Grado TT9080
	DC	LPR	PL	LF	CHW	SSC	
TCD-060-P+	6.0	4.00	1.46	2.54	0.27	6	●
065-P+	6.5	4.30	1.55	2.75	0.27	6.5	●
068-P+	6.8	4.30	1.59	2.71	0.27	6.5	●
070-P+	7.0	4.60	1.64	2.96	0.27	7	●
075-P+	7.5	4.60	1.71	2.89	0.27	7	●
080-P+	8.0	5.40	1.81	3.59	0.27	8	●
085-P+	8.5	5.40	1.88	3.52	0.27	8	●
086-P+	8.6	5.40	1.89	3.51	0.27	8	●
090-P+	9.0	5.80	1.98	3.82	0.27	9	●
095-P+	9.5	5.80	2.05	3.75	0.27	9	●
099-P+	9.9	5.80	2.10	3.70	0.27	9	●
100-P+	10.0	6.20	2.33	3.87	0.38	10	●
102-P+	10.2	6.20	2.36	3.84	0.38	10	●
103-P+	10.3	6.20	2.37	3.83	0.38	10	●
105-P+	10.5	6.20	2.40	3.80	0.38	10	●
107-P+	10.7	6.20	2.42	3.78	0.38	10	●
108-P+	10.8	6.20	2.44	3.76	0.38	10	●
110-P+	11.0	6.60	2.50	4.10	0.38	11	●
111-P+	11.1	6.60	2.51	4.09	0.38	11	●
115-P+	11.5	6.60	2.57	4.03	0.38	11	●
120-P+	12.0	7.00	2.67	4.33	0.38	12	●
123-P+	12.3	7.00	2.71	4.29	0.38	12	●
125-P+	12.5	7.00	2.74	4.26	0.38	12	●
126-P+	12.6	7.00	2.75	4.25	0.38	12	●
127-P+	12.7	7.00	2.76	4.24	0.38	12	●
130-P+	13.0	7.60	2.85	4.75	0.38	13	●
135-P+	13.5	7.60	2.92	4.68	0.38	13	●
140-P+	14.0	8.15	3.02	5.13	0.38	14	●
141-P+	14.1	8.15	3.03	5.12	0.38	14	●
142-P+	14.2	8.15	3.05	5.10	0.38	14	●
143-P+	14.3	8.15	3.06	5.09	0.38	14	●
145-P+	14.5	8.15	3.09	5.06	0.38	14	●
146-P+	14.6	8.15	3.10	5.05	0.38	14	●
150-P+	15.0	8.73	3.19	5.54	0.38	15	●



● SSC: codice misura sede

● Standard

Cuspidi autocentranti



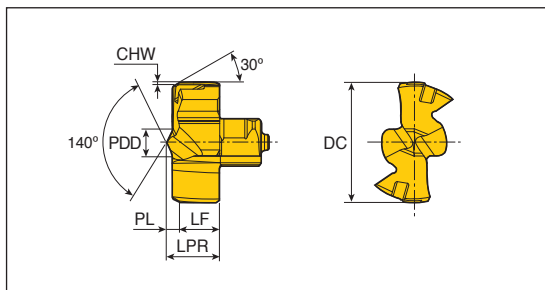
Descrizione	Dimensioni (mm)						Grado TT9080
	DC	LPR	PL	LF	CHW	SSC	
TCD-151-P+	15.1	8.73	3.20	5.53	0.38	15	●
152-P+	15.2	8.73	3.22	5.51	0.38	15	●
155-P+	15.5	8.73	3.26	5.47	0.38	15	●
159-P+	15.9	8.73	3.31	5.42	0.38	15	●
160-P+	16.0	9.30	3.46	5.84	0.44	16	●
161-P+	16.1	9.30	3.47	5.83	0.44	16	●
163-P+	16.3	9.30	3.50	5.80	0.44	16	●
164-P+	16.4	9.30	3.51	5.79	0.44	16	●
165-P+	16.5	9.30	3.53	5.77	0.44	16	●
167-P+	16.7	9.30	3.55	5.75	0.44	16	●
170-P+	17.0	9.90	3.63	6.27	0.44	17	●
173-P+	17.3	9.90	3.67	6.23	0.44	17	●
175-P+	17.5	9.90	3.70	6.20	0.44	17	●
180-P+	18.0	10.50	3.81	6.69	0.44	18	●
185-P+	18.5	10.50	3.88	6.62	0.44	18	●
190-P+	19.0	11.00	3.98	7.02	0.44	19	●
192-P+	19.2	11.00	4.01	6.99	0.44	19	●
193-P+	19.3	11.00	4.02	6.98	0.44	19	●
194-P+	19.4	11.00	4.03	6.97	0.44	19	●
195-P+	19.5	11.00	4.05	6.95	0.44	19	●
200-P+	20.0	11.60	4.15	7.45	0.44	20	●
205-P+	20.5	11.60	4.22	7.38	0.44	20	●
206-P+	20.6	11.60	4.23	7.37	0.44	20	●
210-P+	21.0	12.18	4.32	7.86	0.44	21	●
215-P+	21.5	12.18	4.39	7.79	0.44	21	●
220-P+	22.0	12.76	4.50	8.26	0.44	22	●
222-P+	22.2	12.76	4.53	8.23	0.44	22	●
225-P+	22.5	12.76	4.57	8.19	0.44	22	●
230-P+	23.0	13.33	4.67	8.66	0.44	23	●
235-P+	23.5	13.33	4.74	8.59	0.44	23	●
240-P+	24.0	13.90	4.84	9.06	0.44	24	●
245-P+	24.5	13.90	4.91	8.99	0.44	24	●
250-P+	25.0	14.50	5.01	9.49	0.44	25	●
255-P+	25.5	14.50	5.08	9.42	0.44	25	●
259-P+	25.9	14.50	5.13	9.37	0.44	25	●



● SSC: codice misura sede

● Standard

Cuspidi per foro a fondo piatto



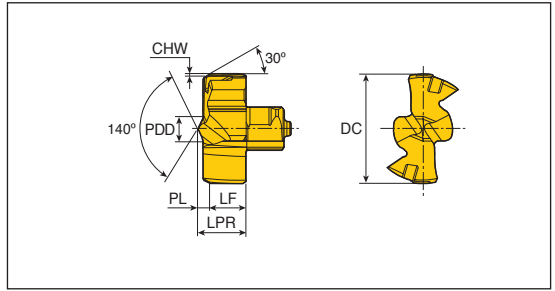
Descrizione	Dimensioni (mm)							Grado TT9080
	DC	PDD	LPR	PL	LF	CHW	SSC	
TCD - 080-F	8.0	1.2	4.4	1.09	3.3	0.7	8	●
085-F	8.5	1.2	4.4	1.09	3.3	0.7	8	●
090-F	9.0	1.21	4.6	1.11	3.5	0.7	9	●
095-F	9.5	1.21	4.6	1.11	3.5	0.7	9	●
100-F	10.0	1.27	4.9	1.17	3.7	0.7	10	●
105-F	10.5	1.27	4.9	1.17	3.7	0.7	10	●
110-F	11.0	1.49	5.1	1.25	3.8	0.7	11	●
115-F	11.5	1.49	5.1	1.25	3.8	0.7	11	●
120-F	12.0	1.5	5.4	1.26	4.1	0.7	12	●
125-F	12.5	1.5	5.4	1.26	4.1	0.7	12	●
130-F	13.0	1.64	5.7	1.30	4.4	0.7	13	●
135-F	13.5	1.64	5.7	1.30	4.4	0.7	13	●
140-F	14.0	1.68	6.1	1.31	4.8	0.7	14	●
145-F	14.5	1.68	6.1	1.31	4.8	0.7	14	●
150-F	15.0	1.78	6.6	1.35	5.23	0.7	15	●
155-F	15.5	1.78	6.6	1.35	5.23	0.7	15	●
160-F	16.0	1.89	7.0	1.39	5.6	0.7	16	●
165-F	16.5	1.89	7.0	1.39	5.6	0.7	16	●
170-F	17.0	1.91	7.3	1.40	5.9	0.7	17	●
175-F	17.5	1.91	7.3	1.40	5.9	0.7	17	●
180-F	18.0	1.97	7.6	1.42	6.18	0.7	18	●
185-F	18.5	1.97	7.6	1.42	6.18	0.7	18	●
190-F	19.0	1.96	7.9	1.44	6.5	0.7	19	●
195-F	19.5	1.96	7.9	1.44	6.5	0.7	19	●
200-F	20.0	3.42	9.3	1.77	7.5	0.7	20	●
205-F	20.5	3.42	9.3	1.77	7.5	0.7	20	●
210-F	21.0	3.6	9.7	1.79	7.9	0.7	21	●
215-F	21.5	3.6	9.7	1.79	7.9	0.7	21	●
220-F	22.0	3.8	10.0	1.81	8.2	0.7	22	●
225-F	22.5	3.8	10.0	1.81	8.2	0.7	22	●
230-F	23.0	3.9	10.4	1.83	8.6	0.7	23	●
235-F	23.5	3.9	10.4	1.83	8.6	0.7	23	●
240-F	24.0	4.1	10.9	1.86	9.0	0.7	24	●
245-F	24.5	4.1	10.9	1.86	9.0	0.7	24	●
250-F	25.0	4.3	11.3	1.89	9.4	0.7	25	●



● SSC: codice misura sede

● Standard

Cuspidi per foro a fondo piatto



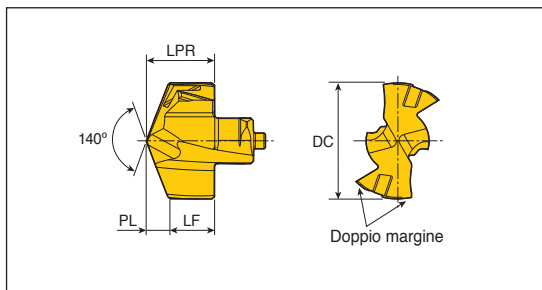
Descrizione	Dimensioni (mm)							Grado	
	DC	PDD	LPR	PL	LF	CHW	SSC	TT9080	
TCD - 254-F	25.4	4.3	11.3	1.89	9.4	0.7	25	•	
255-F	25.5	4.3	11.3	1.89	9.4	0.7	25	•	



• SSC: codice misura sede

•: Standard

Cuspidi a doppio margine



Descrizione	Dimensioni (mm)					Grado
	DC	LPR	PL	LF	SSC	TT9080
TCD - 080-P2	8.0	5.4	1.20	4.20	8	●
085-P2	8.5	5.4	1.29	4.11	8	●
090-P2	9.0	5.8	1.35	4.45	9	●
095-P2	9.5	5.8	1.44	4.36	9	●
100-P2	10.0	6.2	1.50	4.70	10	●
105-P2	10.5	6.2	1.59	4.61	10	●
110-P2	11.0	6.6	1.67	4.93	11	●
115-P2	11.5	6.6	1.76	4.84	11	●
120-P2	12.0	7.0	1.82	5.18	12	●
125-P2	12.5	7.0	1.91	5.09	12	●
130-P2	13.0	7.6	1.96	5.64	13	●
135-P2	13.5	7.6	2.05	5.55	13	●
140-P2	14.0	8.15	2.12	6.03	14	●
145-P2	14.5	8.15	2.21	5.94	14	●
150-P2	15.0	8.73	2.27	6.46	15	●
155-P2	15.5	8.73	2.36	6.37	15	●
160-P2	16.0	9.3	2.42	6.88	16	●
165-P2	16.5	9.3	2.51	6.79	16	●
170-P2	17.0	9.9	2.59	7.31	17	●
175-P2	17.5	9.9	2.68	7.22	17	●
180-P2	18.0	10.5	2.73	7.77	18	●
185-P2	18.5	10.5	2.82	7.68	18	●
190-P2	19.0	11.0	2.88	8.12	19	●
195-P2	19.5	11.0	2.97	8.03	19	●



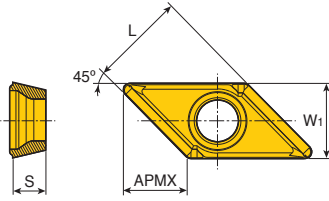
- Ulteriori diametri disponibili su richiesta
- SSC: codice misura sede

●: Standard

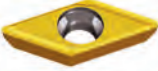
AOMT 060204-C45



Inserti di smussatura per punta di preforo maschiatura



Misura	Dimensioni (mm)			
	W1	L	S	APMX
06	4.5	5.66	1.96	4.0

Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT9030	TT8020	TT6030	TT9300	TT7400		K10
	AOMT 060204-C45	●							

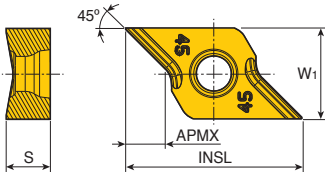


●: Standard


CRNG 0802-45CD



Inserti di smussatura per anello per smussi



Misura	Dimensioni (mm)			
	W1	INSL	S	APMX
08	7.5	14.80	3.65	3.3

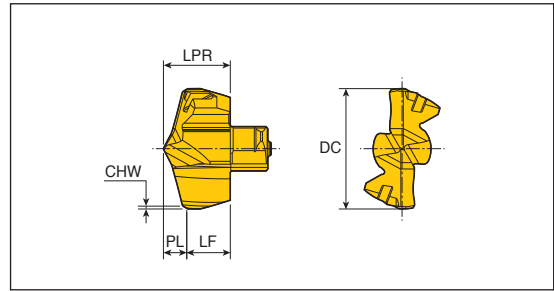
Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT9030	TT8020	TT6030	TT9300	TT7400		K10
	CRNG 0802-45CD	●							



●: Standard

TCD...P-CO+

Cuspidi autocentranti



Descrizione	Dimensioni (mm)						Grado TT9080
	DC	LPR	PL	LF	CHW	SSC	
TCD-159-P-CO+	15.9	8.73	3.17	5.56	0.38	15	●
169-P-CO+	16.9	9.30	3.34	5.96	0.38	16	●
179-P-CO+	17.9	9.90	3.50	6.40	0.38	17	●
189-P-CO+	18.9	10.50	3.66	6.84	0.38	18	●
199-P-CO+	19.9	11.00	3.82	7.18	0.38	19	●
209-P-CO+	20.9	11.60	3.98	7.62	0.38	20	●
219-P-CO+	21.9	12.18	4.15	8.03	0.38	21	●
229-P-CO+	22.9	12.76	4.31	8.45	0.38	22	●
239-P-CO+	23.9	13.33	4.48	8.85	0.38	23	●
249-P-CO+	24.9	13.90	4.64	9.26	0.38	24	●
259-P-CO+	25.9	14.50	4.81	9.69	0.38	25	●

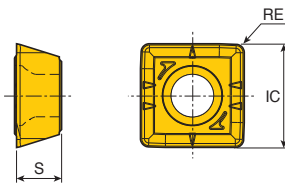


● SSC: codice misura sede

●: Standard

SPGX...DW

Inserti



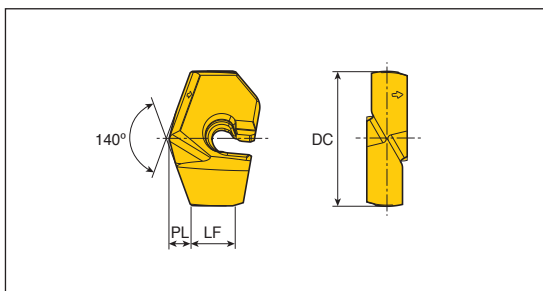
Misura	Dimensioni (mm)			
	IC	S	RE	
06	6.07	2.38	0.4	
07	8.02	3.97	0.8	
09	9.91	4.30	0.8	
11	11.62	4.80	0.8	
14	14.41	5.20	1.2	

Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT8020	TT9900	TT9030	TT6080	TT7400	K10	
	SPGX 060204 DW	●							
	07T308 DW	●							
	090408 DW	●							
	110408 DW	●							
	140512 DW	●							



●: Standard

Cuspidi



Descrizione	Dimensioni (mm)				Grado TT9080
	DC	PL	LF	SSC	
LCD- 200-P	20.0	3.11	6.54	20	●
205-P	20.5	3.20	6.45	20	●
210-P	21.0	3.29	6.36	21	●
215-P	21.5	3.38	6.27	21	●
220-P	22.0	3.42	7.12	22	●
225-P	22.5	3.51	7.03	22	●
230-P	23.0	3.60	6.94	23	●
235-P	23.5	3.69	6.85	23	●
240-P	24.0	3.73	7.03	24	●
245-P	24.5	3.82	6.94	24	●
250-P	25.0	3.91	6.85	25	●
255-P	25.5	4.00	6.76	25	●
260-P	26.0	4.04	7.51	26	●
265-P	26.5	4.13	7.42	26	●
270-P	27.0	4.22	7.33	27	●
275-P	27.5	4.31	7.24	27	●
280-P	28.0	4.35	7.39	28	●
285-P	28.5	4.44	7.30	28	●
290-P	29.0	4.53	7.21	29	●
295-P	29.5	4.62	7.12	29	●
300-P	30.0	4.67	9.47	30	●
305-P	30.5	4.76	9.38	30	●
310-P	31.0	4.85	9.29	31	●
315-P	31.5	4.94	9.20	31	●
320-P	32.0	4.98	9.55	32	●
325-P	32.5	5.07	9.46	32	●
330-P	33.0	5.16	9.37	33	●
335-P	33.5	5.25	9.28	33	●
340-P	34.0	5.34	9.19	34	●
345-P	34.5	5.44	9.10	34	●
350-P	35.0	5.44	11.12	35	●
355-P	35.5	5.53	11.03	35	●
360-P	36.0	5.62	10.94	36	●
365-P	36.5	5.71	10.85	36	●
370-P	37.0	5.80	10.76	37	●

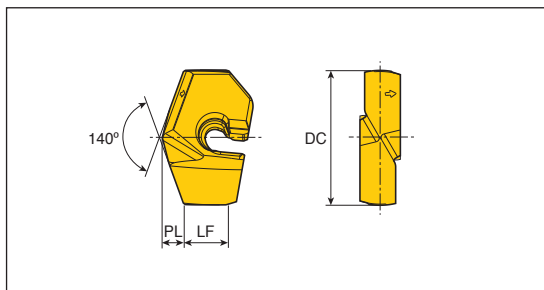


● SSC: codice misura sede

●: Standard

LCD...-P

Cuspidi



Descrizione	Dimensioni (mm)				Grado TT9080
	DC	PL	LF	SSC	
LCD- 375-P	37.5	5.90	10.67	37	●
380-P	38.0	5.91	11.09	38	●
385-P	38.5	6.00	11.00	38	●
390-P	39.0	6.09	10.91	39	●
395-P	39.5	6.18	10.82	39	●
400-P	40.0	6.27	10.73	40	●
405-P	40.5	6.37	10.64	40	●
410-P	41.0	6.46	10.54	40	●

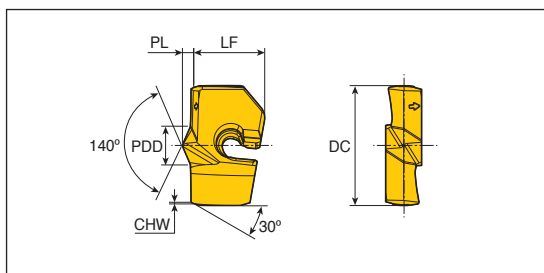


● SSC: codice misura sede

●: Standard

LCD...-F

Cuspidi per foro a fondo piatto



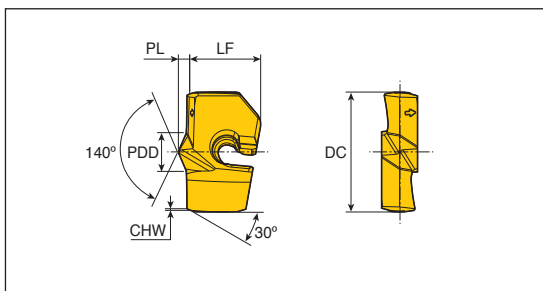
Descrizione	Dimensioni (mm)					Grado TT9080	
	DC	PL	LF	CHW	SSC		
LCD - 200-F	20.0	2.11	11.76	0.30	20	6.0	●
205-F	20.5	2.11	11.76	0.30	20	6.0	●
210-F	21.0	2.11	11.76	0.30	20	6.0	●
215-F	21.5	2.11	11.76	0.30	20	6.0	●
220-F	22.0	2.27	12.76	0.30	22	6.6	●
225-F	22.5	2.27	12.76	0.30	22	6.6	●
230-F	23.0	2.27	12.76	0.30	22	6.6	●



● SSC: codice misura sede

●: Standard

Cuspidi per foro a fondo piatto



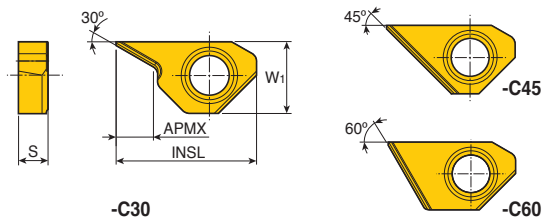
Descrizione	Dimensioni (mm)						Grado
	DC	PL	LF	CHW	SSC	PDD	TT9080
LCD - 235-F	23.5	2.27	12.76	0.30	22	6.6	●
240-F	24.0	2.43	13.26	0.30	24	7.2	●
245-F	24.5	2.43	13.26	0.30	24	7.2	●
250-F	25.0	2.43	13.26	0.30	24	7.2	●
255-F	25.5	2.43	13.26	0.30	24	7.2	●
260-F	26.0	2.50	14.90	0.30	26	7.8	●
265-F	26.5	2.50	14.90	0.30	26	7.8	●
270-F	27.0	2.50	14.90	0.30	26	7.8	●
275-F	27.5	2.50	14.90	0.30	26	7.8	●
280-F	28.0	2.66	15.31	0.30	28	8.4	●
285-F	28.5	2.66	15.31	0.30	28	8.4	●
290-F	29.0	2.66	15.31	0.30	28	8.4	●
295-F	29.5	2.66	15.31	0.30	28	8.4	●
300-F	30.0	2.82	17.76	0.30	30	9.0	●
305-F	30.5	2.82	17.76	0.30	30	9.0	●
310-F	31.0	2.82	17.76	0.30	30	9.0	●
315-F	31.5	2.82	17.76	0.30	30	9.0	●
320-F	32.0	2.98	18.31	0.30	32	9.6	●
325-F	32.5	2.98	18.31	0.30	32	9.6	●
330-F	33.0	2.98	18.31	0.30	32	9.6	●
335-F	33.5	2.98	18.31	0.30	32	9.6	●
340-F	34.0	2.98	18.31	0.30	32	9.6	●
345-F	34.5	2.98	18.31	0.30	32	9.6	●
350-F	35.0	3.21	20.30	0.30	35	10.5	●
355-F	35.5	3.21	20.30	0.30	35	10.5	●
360-F	36.0	3.21	20.30	0.30	35	10.5	●
365-F	36.5	3.21	20.30	0.30	35	10.5	●
370-F	37.0	3.21	20.30	0.30	35	10.5	●
375-F	37.5	3.21	20.30	0.30	35	10.5	●
380-F	38.0	3.44	20.90	0.30	38	11.4	●
385-F	38.5	3.44	20.90	0.30	38	11.4	●
390-F	39.0	3.44	20.90	0.30	38	11.4	●
395-F	39.5	3.44	20.90	0.30	38	11.4	●
400-F	40.0	3.44	20.90	0.30	38	11.4	●
405-F	40.5	3.44	20.90	0.30	38	11.4	●
410-F	41.0	3.44	20.90	0.30	38	11.4	●



● SSC: codice misura sede

● Standard

Inserti di smussatura per utensile T-CHAMFER



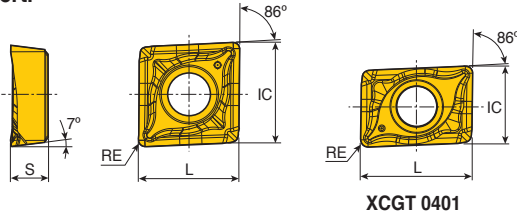
Misura	Dimensioni (mm)			
	W1	INSL	S	APMX
06-C30	6.4	12.3	2.8	3.4
09-C30	8.8	16.0	3.3	4.4
06-C45	6.4	12.3	2.8	5.8
09-C45	8.8	16.0	3.3	8.0
06-C60	6.4	12.3	2.8	3.4
09-C60	8.8	16.0	3.3	4.7

Inserto	Descrizione	Rivestito							Non rivestito	
		TT9080	TT9090	TT8020	TT6030	TT9300	TT7400	TT9050		K10
	XCGT 0603-C30							•		
	0903-C30							•		
	XCGT 0603-C45							•		
	0903-C45							•		
	XCGT 0603-C60							•		
	0903-C60							•		

•: Standard





Inserti



XCGT 0401

Misura	Dimensioni (mm)			
	IC	L	S	RE
04	4.4	6.4	1.70	0.4
05	5.6	5.6	2.10	0.4
06	6.4	6.4	2.38	0.4
07	7.5	7.5	3.18	0.4
08	8.4	8.4	3.18	0.4
10	10.5	10.5	3.97	0.4
13	13.4	13.4	4.76	0.4
17	17.5	17.5	5.56	0.8

• Per leghe di alluminio

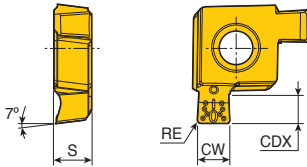
Inserto	Descrizione	Tornitura		Foratura	Rivestito					Non rivestito		
		ap (mm)	Avanzam. (mm/giro)	Avanzam. (mm/giro)	TT9080	TT8020	TT9300	TT9030	TT6030	TT7400	K10	
 In figura destro (XCGT 0401) 	XCGT 040104R TA	0.2-1.8	0.02-0.15	0.02-0.09							●	
	040104L TA	0.2-1.8	0.02-0.15	0.02-0.09							●	
	050204 TA	0.2-2.2	0.03-0.18	0.02-0.11							●	
	060204 TA	0.3-2.5	0.03-0.20	0.03-0.12							●	
	070304 TA	0.4-2.8	0.05-0.22	0.03-0.13							●	
	080304 TA	0.4-3.2	0.06-0.25	0.03-0.13							●	
	10T304 TA	0.5-3.5	0.06-0.30	0.03-0.13							●	
	130404 TA	0.6-4.3	0.08-0.33	0.03-0.13							●	
170508 TA	0.7-5.3	0.10-0.38	0.03-0.13							●		



●: Standard


XCMT..R-GV

Inserti



Misura	Dimensioni (mm)			
	CW	CDX	S	RE
05	2.0	1.8	2.28	0.2
06	2.0	2.0	2.65	0.2
07	2.5	2.0	3.41	0.2
08	2.5	2.5	3.50	0.2
10	3.0	3.0	4.34	0.3
13	3.5	3.5	5.18	0.3
17	4.0	4.0	6.00	0.4

• Per scanalatura

Inserto	Descrizione	Rivestito						Non rivestito	
		TT9080	TT8020	TT9300	TT9030	TT6030	TT7400	K10	
	XCMT 05R-200020GV	●	●						
	06R-200020GV	●	●						
	07R-250020GV	●	●						
	08R-250020GV	●	●						
	10R-300030GV	●	●						
	13R-350030GV	●	●						
17R-400040GV	●	●							



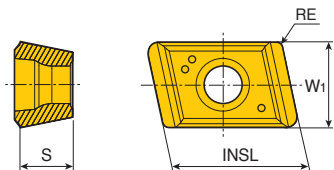
• L'inserto per scanalatura è disponibile solo per utensile destro

●: Standard

NPHT...RG

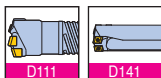


Inserti per TBTA-FB e TRGD



Misura	Dimensioni (mm)			
	W ₁	INSL	S	RE
06	6.0	8.0	3.0	0.8
07	7.5	10.0	4.0	0.8
09	9.0	10.0	4.0	0.8
11	11.0	10.0	4.0	0.8
13	13.0	10.0	4.0	0.8

Inserto	Descrizione	Sede			Rivestito						Non rivestito		
		Centrale	Interna	Esterna	TT9030	TT8125	TT7100	TT3500	TT6020	TT9300	TT7400	K10	
	NPHT 06003RG			●	●				●				
	07504RG			●	●				●				
	09004RG			●	●				●				
	11004RG			●	●				●				
	13004RG			●	●				●				

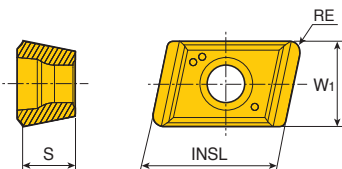


●: Standard

NPMT...LG

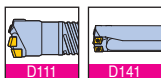


Inserti per TBTA-FB e TRGD



Misura	Dimensioni (mm)			
	W ₁	INSL	S	RE
05	5.5	8	3.0	0.8
06	6.5	10	4.0	0.8
08	8.0	10	4.0	0.8
09	9.5	10	4.0	0.8
12	12.5	10	4.0	0.8

Inserto	Descrizione	Sede			Rivestito						Non rivestito		
		Centrale	Interna	Esterna	TT9030	TT8125	TT7100	TT3500	TT6020	TT9300	TT7400	K10	
	NPMT 05503LG	●			●	●			●				
	06504LG	●			●	●			●				
	08004LG	●			●	●			●				
	09504LG	●			●	●			●				
	12504LG	●			●	●			●				

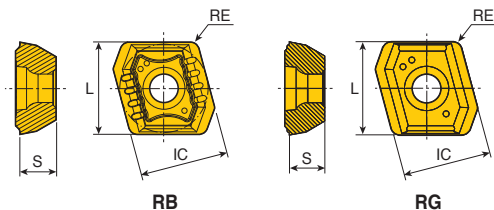


●: Standard

NPMX...RB/RG



Inserti per TBTA...3/5/7/9



Misura	Dimensioni (mm)			
	IC	L	S	RE
08	8.0	8.36	3.18	0.8

Inserto	Descrizione	Sede			Rivestito						Non rivestito		
		Centrale	Interna	Esterna	TT9030	TT8125	TT7100	TT3500	TT6020	TT9300	TT7400	K10	
	NPMX 0803RB	●	●	●	●								
	0803RG	●	●	●	●					●			

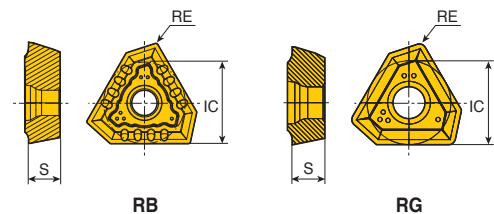


●: Standard

TPMX...RB/RG



Inserti per TBTA...3/5/7/9 e TBTA-R



Misura	Dimensioni (mm)		
	IC	S	RE
1403RB	8.45	3.5	0.4
1403RG	8.45	3.5	0.8
1704RB	10.30	4.0	0.4
1704RG	10.30	4.0	0.8
2405RB	14.20	5.5	0.4
2405RG	14.20	5.5	1.2
2807RB	17.00	7.5	0.8
2807RG	17.00	7.5	1.6

Inserto	Descrizione	Sede			Rivestito						Non rivestito		
		Centrale	Interna	Esterna	TT9030	TT8125	TT7100	TT3500	TT6020	TT9300	TT7400	K10	
	TPMX 1403RB	●	●	●	●	●							
	1403RG	●	●	●	●	●							
	1704RB	●	●	●	●								
	1704RG	●	●	●	●		●	●		●			
	2405RB	●	●	●	●								
	2405RG	●	●	●	●					●			
	2807RB	●	●	●	●								
	2807RG	●	●	●	●					●			

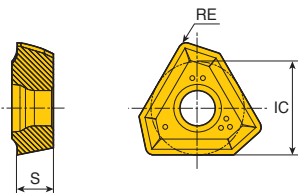


●: Standard

TPMX...LG



Inserti per TBTA-R



Misura	Dimensioni (mm)			
	IC	S	RE	
14	8.45	3.5	0.8	
17	10.30	4.0	0.8	
24	14.20	5.5	1.2	

Inserto	Descrizione	Sede			Rivestito						Non rivestito		
		Centrale	Interna	Esterna	TT9030	TT8125	TT7100	TT3500	TT6020	TT9300	TT7400	K10	
	TPMX 1403LG			●	●								
	1704LG			●	●								
	2405LG			●	●								

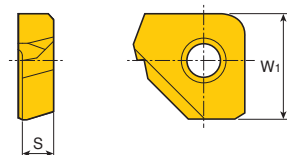


●: Standard

XPMT...-45



Inserti per TBTA-R



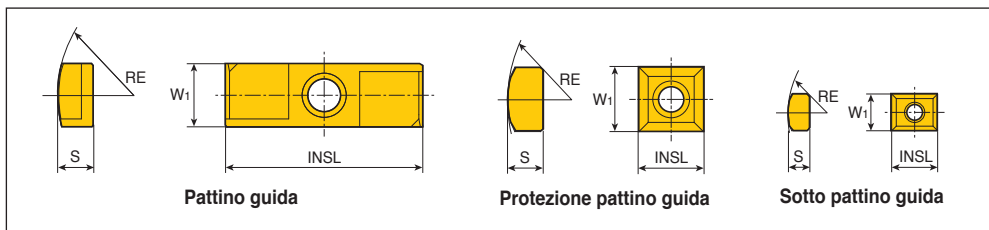
Misura	Dimensioni (mm)			
	W1	S		
16	9.5	2.70		

Insert	Descrizione	Sede			Rivestito						Non rivestito		
		Centrale	Interna	Esterna	TT9030	TT8125	TT7100	TT3500	TT6020	TT9300	TT7400	K10	
	XPMT 16002-45			●	●								



●: Standard

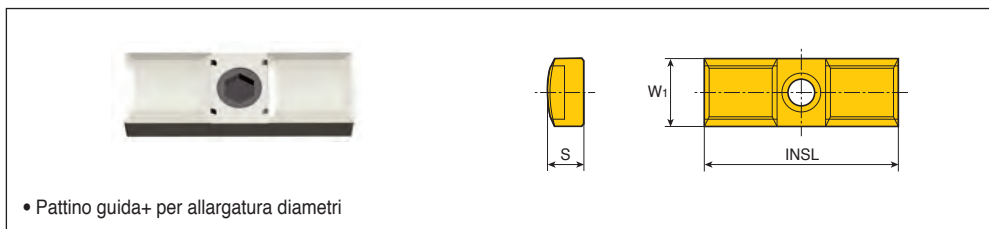
Pattino per TBTA 3.../5.../7.../9...



Descrizione		Dimensioni (mm)				Vite
		W1	S	INSL	RE	
Pattino	PAD - G008CD-SA-FB	8	4.5	25	15.5	CSTB3S
	G008CD-SB-FB	8	4.5	25	15.5	CSTB3S
	GC10-SA	10	6.0	35	20.0	CSTB4S
	GC10-SB	10	6.0	35	20.0	CSTB4S
	GC14-SB	14	7.5	40	25.0	CSTA5S
	GC18-SB	18	9.0	40	30.0	LS1206S
Protezione pattino guida	PAD - P08	8	4.5	8	17.5	CSTB3S
	P10	10	6.0	10	20.0	CSTB4S
	P14	14	7.5	14	25.0	CSTA5S
	P18	18	9.0	18	30.0	LS1206S
	Sotto pattino guida	PAD - S08	8	4.5	10	17.5
	S10	10	5.0	10	29.0	CSTB3S
	S14	14	7.0	20	45.0	CCSTA5S

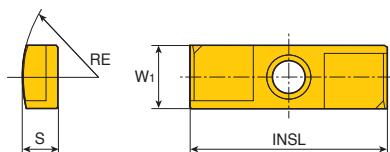


Pattino guida+ per TBTA 3.../5.../7.../9...



Descrizione										
DC	DC+1mm	S	DC+2mm	S	DC+3mm	S	DC+4mm	S	DC+5mm	S
PAD-GC08	PAD-GC08+1	5.0	PAD-GC08+2	5.5	PAD-GC08+3	6.0	-	-	-	-
PAD-GC10	PAD-GC10+1	6.5	PAD-GC10+2	7.0	PAD-GC10+3	7.5	PAD-GC10+4	8.0	-	-
PAD-GC14	PAD-GC14+1	8.0	PAD-GC14+2	8.5	PAD-GC14+3	9.0	PAD-GC14+4	9.5	PAD-GC14+5	10.0
PAD-GC18	PAD-GC18+1	9.5	PAD-GC18+2	10	PAD-GC18+3	10.5	PAD-GC18+4	11.0	PAD-GC18+5	11.5





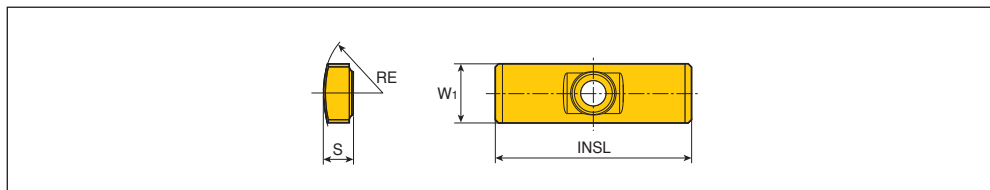
Pattino guida

Descrizione	Dimensioni (mm)				Vite	
	W1	S	INSL	RE		
Pattino guida	PAD - G006CD-SA	6	3.0	20	12.0	CSTB2.2S
	G006CD-SB	6	3.0	20	12.0	CSTB2.2S
	G007CD-SA	7	3.5	20	12.0	CSTB3.0S
	G007CD-SB	7	3.5	20	12.0	CSTB3.0S
	G008CD-SA-FB	8	4.5	25	15.5	CSTB3.5S
	G008CD-SB-FB	8	4.5	25	15.5	CSTB3.5S
	G010CD-SA	10	4.5	30	20.0	CSTB3.5S
	G010CD-SB	10	4.5	30	20.0	CSTB3.5S
	G012CD-SA	12	5.5	35	25.0	CSTB3.5S
	G012CD-SB	12	5.5	35	25.0	CSTB3.5S



Pattino per TBTA-TR e TRGD

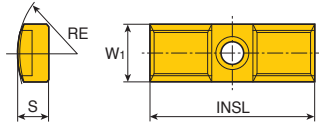
Pattino guida in metallo duro



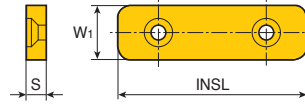
Descrizione	Dimensioni (mm)				Vite	
	W1	S	INSL	RE		
Pattino guida	PAD - G005-060-SB	5	2.5	18	6.0	SR34-508
	G005-075-CD-SA	5	2.5	18	7.5	SR34-508
	G005-075-CD-SB	5	2.5	18	7.5	SR34-508
	G006CD-SA	6	3	20	12.0	CSTB2.2S*
	G006CD-SB	6	3	20	12.0	CSTB2.2S*
	G006-075CD-SA	6	3	20	7.5	CSTB2.2S*
	G006-075CD-SB	6	3	20	7.5	CSTB2.2S*
	G006-085CD-SA	6	3	20	8.5	CSTB2.2S*
	G006-085CD-SB	6	3	20	8.5	CSTB2.2S*
	G006-100CD-SA	6	3	20	10.0	CSTB2.2S*
	G006-100CD-SB	6	3	20	10.0	CSTB2.2S*



- Il pattino guida "SB" è raccomandato per tutte le lavorazioni
"SA" è da utilizzare solo con olio intero



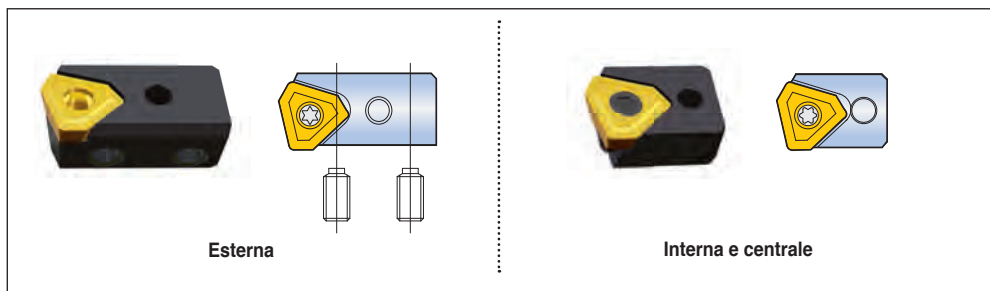
Pattino guida



Pattino guida in resina

Descrizione	Dimensioni (mm)				Vite	
	W1	S	INSL	RE		
Pattino guida	PAD - GC08-120	8	4.4	25	17.5	CSTB3S
	GC08-140	8	3.5	25	17.5	CSTB3S
	G008CD-SA-FB	8	4.5	25	15.5	CSTB3S
	G008CD-SB-FB	8	4.5	25	15.5	CSTB3S
	GC10-SA	10	6.0	35	20.0	CSTB4S
	GC10-SB	10	6.0	35	20.0	CSTB4S
	GC14-SB	14	7.5	40	25.0	CSTA5S
	GC18-SB	18	9.0	40	30.0	LS1206S
Pattino guida in resina	PAD - R10	10	4.0	40	-	LS0902.5-6
	R12	12	5.0	45	-	LS0903-8
	R15	15	5.8	50	-	LS0904-10
	R20	20	7.5	70	-	LS0905-12
	R30	30	12.5	80	-	LS0906-15
	R35	35	15.5	100	-	LS0906-15

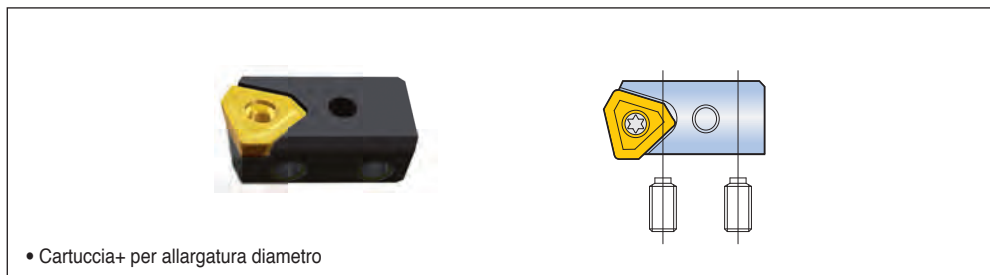




	Descrizione	Vite regolazione	Chiave	Vite bloccaggio	Chiave	Inserto
Esterna	PERC 05R	AS0003-5	H1.5	LS1803RH	H2	NPMX0803..
	402-04	AS0004-8	H2	LS1803.5RH	H2.5	TPMX1403..
	402-32	AS0005-10	H2.5	LS1805RH	H3	TPMX1704..
	402-43	AS0005-15	H2.5	L1806RH	H4	TPMX2405..
	402-63	AS0006-15	H3	L1806RH	H4	TPMX2807..
Interna e centrale	CENC 05R	-	-	CSTB3	T9	NPMX0803..
	402-04	-	-	CSTB3.5	T15	TPMX1403..
	402-32	-	-	CSTA5	T15	TPMX1704..
	402-43	-	-	LS1206	H3	TPMX2405..
	402-63	-	-	LS1206	H3	TPMX2807..



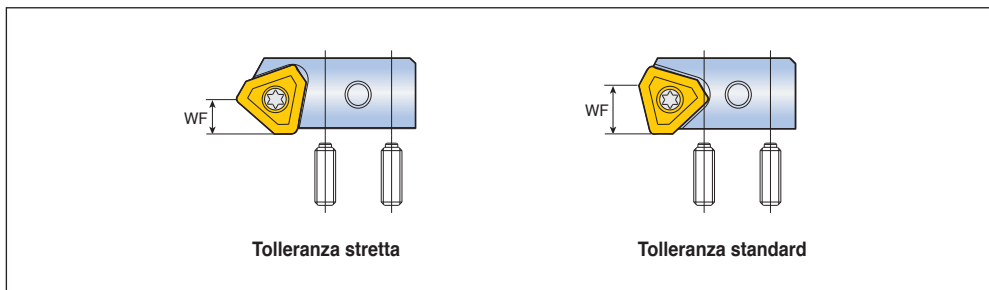
Cartuccia+ per TBTA 3.../5.../7.../9



• Cartuccia+ per allargatura diametro

Descrizione					
DC	DC+1mm	DC+2mm	DC+3mm	DC+4mm	DC+5mm
PERC 05R	PERC 05R+1	PERC 05R+2	-	-	-
PERC 402-04	PERC 402-04+1	PERC 402-04+2	PERC 402-04+3	-	-
PERC 402-32	PERC 402-32+1	PERC 402-32+2	PERC 402-32+3	PERC 402-32+4	-
PERC 402-43	PERC 402-43+1	PERC 402-43+2	PERC 402-43+3	PERC 402-43+4	PERC 402-43+5
PERC 402-63	PERC 402-63+1	PERC 402-63+2	PERC 402-63+3	PERC 402-63+4	PERC 402-63+5



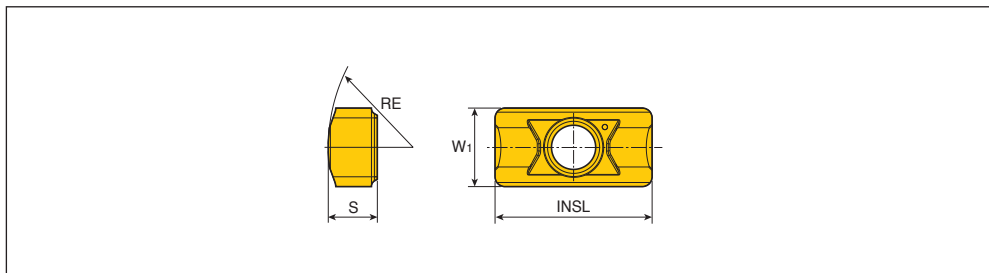


Descrizione		WF (mm)	Vite regolaz.	Chiave	Vite bloccaggio	Chiave	Inserto
Tolleranza stretta	PERC P04R	5	AS0004-8	H2	LS1803.5RH	H2.5	TPMX1403 LG
	P32R	6	AS0005-10	H2.5	LS1805RH	H3	TPMX1704 LG
	P43R	8	AS0005-15	H2.5	LS1806RH	H4	TPMX2405 LG
Tolleranza standard	PERC 402-04	8	AS0004-8	H2	LS1803.5RH	H2.5	TPMX1403 RG
	402-32	9	AS0005-10	H2.5	LS1805RH	H3	TPMX1704 RG
	402-43	13	AS0005-15	H2.5	LS1806RH	H4	TPMX2405 RG



• PERC-P e PERC 402-□□ cartucce intercambiabili nella stessa sede

Pattino guida per TNDH-TP



Descrizione	Dimensioni (mm)				Vite	Grado TT9030
	W1	S	INSL	RE		
PAD-G04-08	4	2.5	8	9	TS 20043I/HG-P	●



• Il pattino guida è venduto separatamente dal corpo punta.

●: Standard

Condizioni di taglio raccomandate

Dati di lavorazione per TOP DRILL 2,3,4xD

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	220-350	
		≥ 0.25% C Ricotto	650	190	2	180-280	
		< 0.55% C Bonificato	850	250	3	140-240	
		≥ 0.55% C Ricotto	750	220	4	140-240	
		Bonificato	1000	300	5	140-240	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	Ricotto	600	200	6	140-240
			930	275	7	100-180	
			1000	300	8	100-180	
			1200	350	9	100-180	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	140-200	
		Bonificato	1100	325	11	100-160	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	150-250	
		Martensitico	820	240	13	150-250	
		Austenitico	600	180	14	150-250	
K	Ghisa grigia (GG)	Ferritico		160	15	160-260	
		Perlitico		250	16	160-260	
	Ghisa nodulare (GGG)	Ferritico		180	17	160-260	
		Perlitico		260	18	160-260	
Ghisa malleabile	Ferritico		130	19	120-220		
	Perlitico		230	20	120-220		
N	Alluminio	Non trattato		60	21	200-350	
		Trattato		100	22	200-350	
	Leghe di alluminio	≤ 12% Si Non trattato		75	23	200-350	
		Trattato		90	24	200-350	
		> 12% Si Alte temperature		130	25	200-350	
	Leghe di rame	> 1% Pb Alta lavorabilità		110	26	150-250	
		Ottone		90	27	150-250	
	Materiali non metallici	Rame elettrolitico		100	28	150-250	
		Materiali plastici, grafite			29	150-250	
	Gomma dura				30	150-250	
Leghe resistenti al calore		Base Fe	Ricotto		200	31	30-60
	Trattato			280	32	30-60	
	Base Ni o Co	Ricotto		250	33	30-60	
		Trattato		350	34	30-60	
		Fuso		320	35	30-60	
Titanio, leghe di titanio		Rm 400		36	50-80		
	Leghe trattate alpha+beta	Rm 1050		37	50-80		
H	Acciaio temprato	Temprato		55HRC	38	30-60	
		Temprato		60HRC	39	30-60	
	Ghisa in conchiglia	Fuso		400	40	30-60	
	Ghisa nodulare	Temprato		55HRC	41	30-60	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per TOP DRILL 2,3,4xD

Avanzamento (mm/giro) in funzione del diametro punta Lunghezza punta 2,3,4xD								
SOMT 04 Ø12 - Ø13.5	SOMT 05 Ø14 - Ø16	SOMT 06 Ø17 - Ø19	SOMT 07 Ø20 - Ø22	SOMT 08 Ø23 - Ø26	SOMT 09 Ø27 - Ø31	SOMT 11 Ø32 - Ø36	SOMT 13 Ø37 - Ø43	SOMT 15 Ø44 - Ø50
0.04-0.06	0.04-0.06	0.04-0.06	0.04-0.08	0.04-0.08	0.06-0.10	0.06-0.10	0.08-0.12	0.08-0.12
0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12	0.08-0.14	0.08-0.14	0.08-0.16	0.10-0.16
0.08-0.12	0.08-0.12	0.08-0.12	0.08-0.16	0.08-0.16	0.10-0.16	0.10-0.16	0.10-0.18	0.10-0.18
0.08-0.12	0.08-0.12	0.08-0.12	0.08-0.16	0.08-0.16	0.10-0.16	0.10-0.16	0.10-0.18	0.10-0.18
0.08-0.12	0.08-0.12	0.08-0.12	0.08-0.16	0.08-0.16	0.10-0.16	0.10-0.16	0.10-0.18	0.10-0.18
0.06-0.16	0.06-0.16	0.06-0.16	0.08-0.20	0.08-0.20	0.08-0.20	0.10-0.22	0.10-0.22	0.10-0.24
0.06-0.16	0.06-0.16	0.06-0.16	0.08-0.20	0.08-0.20	0.08-0.20	0.08-0.22	0.10-0.22	0.10-0.22
0.06-0.16	0.06-0.16	0.06-0.16	0.08-0.20	0.08-0.20	0.08-0.20	0.08-0.22	0.10-0.22	0.10-0.22
0.06-0.16	0.06-0.16	0.06-0.16	0.08-0.20	0.08-0.20	0.08-0.20	0.08-0.22	0.10-0.22	0.10-0.22
0.06-0.12	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.20	0.10-0.20	0.10-0.20
0.06-0.12	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.20	0.10-0.20	0.10-0.20
0.06-0.12	0.06-0.12	0.06-0.12	0.06-0.16	0.06-0.16	0.08-0.18	0.08-0.20	0.10-0.20	0.10-0.20
0.06-0.12	0.06-0.12	0.06-0.12	0.06-0.16	0.06-0.16	0.08-0.18	0.08-0.20	0.10-0.20	0.10-0.20
0.06-0.12	0.06-0.12	0.06-0.12	0.06-0.16	0.06-0.16	0.08-0.18	0.08-0.20	0.10-0.20	0.10-0.20
0.08-0.18	0.08-0.18	0.08-0.18	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.22	0.10-0.22
0.08-0.18	0.08-0.18	0.08-0.18	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.22	0.10-0.22
0.08-0.18	0.08-0.18	0.08-0.18	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.22	0.10-0.22
0.08-0.18	0.08-0.18	0.08-0.18	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.20	0.10-0.22	0.10-0.22
0.08-0.14	0.08-0.14	0.08-0.14	0.10-0.16	0.10-0.16	0.10-0.16	0.10-0.18	0.10-0.18	0.10-0.18
0.08-0.14	0.08-0.14	0.08-0.14	0.10-0.16	0.10-0.16	0.10-0.16	0.10-0.18	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.18	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.18	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.18	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.18	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.18	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.17	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.17	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.18	0.08-0.17	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.10-0.17	0.10-0.17	0.10-0.18	0.10-0.18
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.10-0.17	0.10-0.17	0.10-0.18	0.10-0.18
0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12
0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12
0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12
0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12
0.06-0.09	0.06-0.09	0.06-0.09	0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.10
0.06-0.09	0.06-0.09	0.06-0.09	0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.10
0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10
0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10
0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10
0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10

Condizioni di taglio raccomandate



Dati di lavorazione per TOP DRILL 5xD

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	220-350	
		≥ 0.25% C Ricotto	650	190	2	180-280	
		< 0.55% C Bonificato	850	250	3	140-240	
		≥ 0.55% C Ricotto	750	220	4	140-240	
		Bonificato	1000	300	5	140-240	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	Ricotto	600	200	6	140-240
			930	275	7	100-180	
			1000	300	8	100-180	
			1200	350	9	100-180	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	140-200	
		Bonificato	1100	325	11	100-160	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	150-250	
		Martensitico	820	240	13	150-250	
		Austenitico	600	180	14	150-250	
K	Ghisa grigia (GG)	Ferritico		160	15	160-260	
		Perlitico		250	16	160-260	
	Ghisa nodulare (GGG)	Ferritico		180	17	160-260	
		Perlitico		260	18	160-260	
	Ghisa malleabile	Ferritico		130	19	120-220	
Perlitico			230	20	120-220		
N	Alluminio	Non trattato		60	21	200-350	
		Trattato		100	22	200-350	
	Leghe di alluminio	≤ 12% Si	Non trattato		75	23	200-350
			Trattato		90	24	200-350
		> 12% Si	Alte temperature		130	25	200-350
	Leghe di rame	> 1% Pb	Alta lavorabilità		110	26	150-250
			Ottone		90	27	150-250
			Rame elettrolitico		100	28	150-250
	Materiali non metallici		Materiali plastici, grafite			29	150-250
			Gomma dura			30	150-250
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	30-60
			Trattato		280	32	30-60
		Base Ni o Co	Ricotto		250	33	30-60
			Trattato		350	34	30-60
			Fuso		320	35	30-60
	Titanio, leghe di titanio		Rm 400			36	50-80
		Leghe trattate alpha+beta	Rm 1050			37	50-80
H	Acciaio temprato	Temprato		55HRC	38	30-60	
		Temprato		60HRC	39	30-60	
	Ghisa in conchiglia	Fuso		400	40	30-60	
	Ghisa nodulare	Temprato		55HRC	41	30-60	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per TOP DRILL 5xD

Avanzamento (mm/giro) in funzione del diametro punta Lunghezza punta 5xD								
SOMT 04 Ø12 - Ø13.5	SOMT 05 Ø14 - Ø16	SOMT 06 Ø17 - Ø19	SOMT 07 Ø20 - Ø22	SOMT 08 Ø23 - Ø26	SOMT 09 Ø27 - Ø31	SOMT 11 Ø32 - Ø36	SOMT 13 Ø37 - Ø43	SOMT 15 Ø44 - Ø50
0.04-0.05	0.04-0.05	0.04-0.05	0.04-0.05	0.04-0.06	0.06-0.08	0.06-0.08	0.08-0.10	0.08-0.10
0.06-0.08	0.06-0.08	0.06-0.08	0.06-0.10	0.06-0.10	0.08-0.12	0.08-0.12	0.08-0.14	0.10-0.14
0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12	0.10-0.15	0.10-0.15	0.10-0.17	0.10-0.17
0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12	0.10-0.15	0.10-0.15	0.10-0.17	0.10-0.17
0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12	0.10-0.15	0.10-0.15	0.10-0.17	0.10-0.17
0.06-0.12	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.16	0.08-0.18	0.10-0.20	0.10-0.20	0.10-0.22
0.06-0.12	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.16	0.08-0.18	0.10-0.20	0.10-0.20	0.10-0.22
0.06-0.12	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.16	0.08-0.18	0.10-0.20	0.10-0.20	0.10-0.22
0.06-0.12	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.16	0.08-0.18	0.10-0.20	0.10-0.20	0.10-0.22
0.06-0.10	0.06-0.10	0.06-0.10	0.08-0.12	0.08-0.12	0.08-0.16	0.08-0.18	0.10-0.18	0.10-0.20
0.06-0.10	0.06-0.10	0.06-0.10	0.08-0.12	0.08-0.12	0.08-0.16	0.08-0.18	0.10-0.18	0.10-0.20
0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.18	0.10-0.18	0.10-0.20
0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.18	0.10-0.18	0.10-0.20
0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.12	0.06-0.12	0.08-0.16	0.08-0.18	0.10-0.18	0.10-0.20
0.08-0.14	0.08-0.14	0.08-0.14	0.08-0.16	0.08-0.16	0.10-0.18	0.10-0.18	0.10-0.20	0.10-0.20
0.08-0.14	0.08-0.14	0.08-0.14	0.08-0.16	0.08-0.16	0.10-0.18	0.10-0.18	0.10-0.20	0.10-0.20
0.08-0.14	0.08-0.14	0.08-0.14	0.08-0.16	0.08-0.16	0.10-0.18	0.10-0.18	0.10-0.20	0.10-0.20
0.08-0.14	0.08-0.14	0.08-0.14	0.08-0.16	0.08-0.16	0.10-0.18	0.10-0.18	0.10-0.20	0.10-0.20
0.08-0.12	0.08-0.12	0.08-0.14	0.08-0.16	0.08-0.16	0.10-0.16	0.10-0.16	0.10-0.16	0.10-0.16
0.08-0.12	0.08-0.12	0.08-0.14	0.08-0.16	0.08-0.16	0.10-0.16	0.10-0.16	0.10-0.16	0.10-0.16
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.16	0.08-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.16	0.08-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.16	0.08-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.16	0.08-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.16	0.08-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.15	0.08-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.15	0.08-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.08-0.15	0.08-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.10-0.16	0.10-0.16	0.10-0.17	0.10-0.17
0.06-0.15	0.06-0.15	0.06-0.15	0.08-0.16	0.08-0.16	0.10-0.16	0.10-0.16	0.10-0.17	0.10-0.17
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.06-0.09	0.06-0.09	0.06-0.10	0.06-0.10
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.06-0.09	0.06-0.09	0.06-0.10	0.06-0.10
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.06-0.09	0.06-0.09	0.06-0.10	0.06-0.10
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.06-0.09	0.06-0.09	0.06-0.10	0.06-0.10
0.05-0.08	0.05-0.08	0.05-0.08	0.06-0.09	0.06-0.09	0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.10
0.05-0.08	0.05-0.08	0.05-0.08	0.06-0.09	0.06-0.09	0.06-0.10	0.06-0.10	0.06-0.10	0.06-0.10
0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10
0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10
0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10

Condizioni di taglio raccomandate



Dati di lavorazione per T-DRILL 2,3,4xD

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	250-350	
		≥ 0.25% C Ricotto	650	190	2	180-250	
		< 0.55% C Bonificato	850	250	3	160-220	
		≥ 0.55% C Ricotto	750	220	4	160-220	
		Bonificato	1000	300	5	160-220	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	Ricotto	600	200	6	150-220
			930	275	7	120-160	
			1000	300	8	120-160	
			1200	350	9	120-160	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	140-180	
		Bonificato	1100	325	11	130-180	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	170-240	
		Martensitico	820	240	13	170-240	
		Austenitico	600	180	14	170-240	
K	Ghisa grigia (GG)	Ferritico		160	15	180-250	
		Perlitico		250	16	180-250	
	Ghisa nodulare (GGG)	Ferritico		180	17	180-250	
		Perlitico		260	18	180-250	
Ghisa malleabile	Ferritico		130	19	130-200		
	Perlitico		230	20	130-200		
N	Alluminio	Non trattato		60	21	330-380	
		Trattato		100	22	330-380	
	Leghe di alluminio	≤ 12% Si	Non trattato		75	23	330-380
			Trattato		90	24	330-380
		> 12% Si	Alte temperature		130	25	330-380
	Leghe di rame	> 1% Pb	Alta lavorabilità		110	26	150-230
			Ottone		90	27	150-230
			Rame elettrolitico		100	28	150-230
	Materiali non metallici		Materiali plastici, grafite			29	150-230
			Gomma dura			30	150-230
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	30-60
			Trattato		280	32	30-60
		Base Ni o Co	Ricotto		250	33	30-60
			Trattato		350	34	30-60
			Fuso		320	35	30-60
	Titanio, leghe di titanio		Rm 400			36	30-60
		Leghe trattate alpha+beta	Rm 1050			37	30-60
H	Acciaio temprato	Temprato		55HRC	38	30-60	
		Temprato		60HRC	39	30-60	
	Ghisa in conchiglia	Fuso		400	40	30-60	
	Ghisa nodulare	Temprato		55HRC	41	30-60	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per T-DRILL 2,3,4xD

Avanzamento (mm/giro) in funzione del diametro punta Lunghezza punta 2,3,4xD					
SPMG 05 Ø12.5 - Ø15	SPMG 06 Ø16 - Ø21	SPMG 07 Ø22 - Ø27	SPMG 09 Ø28 - Ø33	SPMG 11 Ø34 - Ø41	SPMG 14 Ø42 - Ø50
0.04-0.06	0.04-0.06	0.04-0.08	0.04-0.08	0.06-0.10	0.06-0.12
0.05-0.08	0.06-0.10	0.06-0.12	0.07-0.13	0.08-0.15	0.08-0.16
0.06-0.12	0.08-0.15	0.10-0.18	0.12-0.22	0.12-0.24	0.13-0.25
0.06-0.12	0.08-0.15	0.10-0.18	0.12-0.22	0.12-0.24	0.13-0.25
0.06-0.12	0.08-0.14	0.10-0.18	0.12-0.20	0.12-0.20	0.13-0.20
0.06-0.15	0.06-0.15	0.08-0.18	0.08-0.18	0.08-0.18	0.08-0.18
0.06-0.15	0.06-0.15	0.08-0.18	0.08-0.18	0.08-0.18	0.08-0.18
0.06-0.15	0.06-0.15	0.08-0.18	0.08-0.18	0.08-0.18	0.08-0.18
0.06-0.10	0.06-0.10	0.08-0.12	0.08-0.14	0.08-0.14	0.08-0.14
0.06-0.10	0.08-0.12	0.10-0.15	0.12-0.15	0.12-0.18	0.13-0.18
0.05-0.10	0.06-0.12	0.08-0.15	0.09-0.16	0.10-0.17	0.11-0.18
0.05-0.10	0.06-0.12	0.08-0.15	0.09-0.16	0.10-0.17	0.11-0.18
0.05-0.10	0.06-0.12	0.08-0.15	0.09-0.16	0.10-0.17	0.11-0.18
0.06-0.12	0.08-0.16	0.12-0.20	0.15-0.25	0.16-0.28	0.18-0.30
0.06-0.12	0.08-0.16	0.12-0.20	0.15-0.25	0.16-0.28	0.18-0.30
0.06-0.12	0.08-0.16	0.12-0.20	0.15-0.25	0.16-0.28	0.18-0.30
0.06-0.12	0.08-0.16	0.12-0.20	0.15-0.25	0.16-0.28	0.18-0.30
0.06-0.10	0.08-0.15	0.10-0.18	0.12-0.20	0.15-0.23	0.16-0.25
0.06-0.10	0.08-0.15	0.10-0.18	0.12-0.20	0.15-0.23	0.16-0.25
0.06-0.14	0.08-0.15	0.10-0.20	0.12-0.22	0.14-0.23	0.15-0.26
0.06-0.14	0.08-0.15	0.10-0.20	0.12-0.22	0.14-0.23	0.15-0.26
0.06-0.14	0.08-0.15	0.10-0.20	0.12-0.22	0.14-0.23	0.15-0.26
0.06-0.14	0.08-0.15	0.10-0.20	0.12-0.22	0.14-0.23	0.15-0.26
0.06-0.14	0.08-0.15	0.10-0.20	0.12-0.22	0.14-0.23	0.15-0.26
0.06-0.13	0.06-0.13	0.08-0.15	0.08-0.15	0.08-0.15	0.08-0.15
0.06-0.13	0.06-0.13	0.08-0.15	0.08-0.15	0.08-0.15	0.08-0.15
0.06-0.13	0.06-0.13	0.08-0.15	0.08-0.15	0.08-0.15	0.08-0.15
0.06-0.13	0.06-0.13	0.08-0.15	0.08-0.15	0.08-0.15	0.08-0.15
0.06-0.13	0.06-0.13	0.08-0.15	0.08-0.15	0.08-0.15	0.08-0.15
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09
0.05-0.10	0.06-0.14	0.08-0.18	0.10-0.22	0.14-0.23	0.15-0.24
0.05-0.10	0.06-0.14	0.08-0.18	0.10-0.22	0.14-0.23	0.15-0.24
0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10
0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10
0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10
0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	0.05-0.10	0.05-0.10

Condizioni di taglio raccomandate



Dati di lavorazione per T-DRILL 5xD

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	250-350	
		≥ 0.25% C Ricotto	650	190	2	180-250	
		< 0.55% C Bonificato	850	250	3	160-220	
		≥ 0.55% C Ricotto	750	220	4	160-220	
		Bonificato	1000	300	5	160-220	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	Ricotto	600	200	6	150-220
			930	275	7	120-160	
			1000	300	8	120-160	
			1200	350	9	120-160	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	140-180	
		Bonificato	1100	325	11	130-180	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	170-240	
		Martensitico	820	240	13	170-240	
		Austenitico	600	180	14	170-240	
K	Ghisa grigia (GG)	Ferritico		160	15	180-250	
		Perlitico		250	16	180-250	
	Ghisa nodulare (GGG)	Ferritico		180	17	180-250	
		Perlitico		260	18	180-250	
Ghisa malleabile	Ferritico		130	19	130-200		
	Perlitico		230	20	130-200		
N	Alluminio	Non trattato		60	21	330-380	
		Trattato		100	22	330-380	
	Leghe di alluminio	≤ 12% Si Non trattato		75	23	330-380	
		Trattato		90	24	330-380	
		> 12% Si Alte temperature		130	25	330-380	
	Leghe di rame	> 1% Pb Alta lavorabilità		110	26	150-230	
		Ottone		90	27	150-230	
	Materiali non metallici	Rame elettrolitico		100	28	150-230	
		Materiali plastici, grafite			29	150-230	
	Gomma dura				30	150-230	
Leghe resistenti al calore		Base Fe	Ricotto		200	31	30-60
	Trattato			280	32	30-60	
	Base Ni o Co	Ricotto		250	33	30-60	
		Trattato		350	34	30-60	
		Fuso		320	35	30-60	
Titanio, leghe di titanio		Rm 400		36	30-60		
	Leghe trattate alpha+beta	Rm 1050		37	30-60		
H	Acciaio temprato	Temprato		55HRC	38	30-60	
		Temprato		60HRC	39	30-60	
	Ghisa in conchiglia	Fuso		400	40	30-60	
	Ghisa nodulare	Temprato		55HRC	41	30-60	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per T-DRILL 5xD

Avanzamento (mm/giro) in funzione del diametro punta Lunghezza punta 5xD					
SPMG 05 Ø12.5 - Ø15	SPMG 06 Ø16 - Ø21	SPMG 07 Ø22 - Ø27	SPMG 09 Ø28 - Ø33	SPMG 11 Ø34 - Ø41	SPMG 14 Ø42 - Ø50
0.04-0.05	0.04-0.05	0.04-0.06	0.04-0.07	0.06-0.08	0.06-0.10
0.06-0.08	0.06-0.08	0.06-0.10	0.07-0.12	0.08-0.13	0.08-0.14
0.06-0.10	0.08-0.13	0.10-0.16	0.12-0.20	0.12-0.22	0.13-0.23
0.06-0.10	0.08-0.13	0.10-0.16	0.12-0.20	0.12-0.22	0.13-0.23
0.06-0.10	0.08-0.12	0.10-0.16	0.12-0.18	0.12-0.18	0.13-0.18
0.06-0.12	0.06-0.13	0.08-0.16	0.08-0.16	0.08-0.17	0.08-0.17
0.06-0.12	0.06-0.13	0.08-0.16	0.08-0.16	0.08-0.17	0.08-0.17
0.06-0.12	0.06-0.13	0.08-0.16	0.08-0.16	0.08-0.17	0.08-0.17
0.06-0.08	0.06-0.08	0.08-0.10	0.08-0.12	0.08-0.12	0.08-0.12
0.06-0.09	0.08-0.10	0.10-0.13	0.12-0.13	0.12-0.15	0.12-0.16
0.05-0.09	0.06-0.10	0.08-0.13	0.09-0.15	0.10-0.15	0.10-0.17
0.05-0.09	0.06-0.10	0.08-0.13	0.09-0.15	0.10-0.15	0.10-0.17
0.05-0.09	0.06-0.10	0.08-0.13	0.09-0.15	0.10-0.15	0.10-0.17
0.06-0.10	0.08-0.15	0.12-0.18	0.15-0.22	0.16-0.25	0.18-0.28
0.06-0.10	0.08-0.15	0.12-0.18	0.15-0.22	0.16-0.25	0.18-0.28
0.06-0.10	0.08-0.15	0.12-0.18	0.15-0.22	0.16-0.25	0.18-0.28
0.06-0.10	0.08-0.15	0.12-0.18	0.15-0.22	0.16-0.25	0.18-0.28
0.06-0.08	0.08-0.12	0.10-0.16	0.12-0.18	0.15-0.22	0.16-0.23
0.06-0.08	0.08-0.12	0.10-0.16	0.12-0.18	0.15-0.22	0.16-0.23
0.06-0.12	0.08-0.15	0.10-0.13	0.12-0.18	0.14-0.20	0.14-0.24
0.06-0.12	0.08-0.15	0.10-0.13	0.12-0.18	0.14-0.20	0.14-0.24
0.06-0.12	0.08-0.15	0.10-0.13	0.12-0.18	0.14-0.20	0.14-0.24
0.06-0.12	0.08-0.15	0.10-0.13	0.12-0.18	0.14-0.20	0.14-0.24
0.06-0.12	0.08-0.15	0.10-0.13	0.12-0.18	0.14-0.20	0.14-0.24
0.06-0.12	0.06-0.12	0.08-0.13	0.08-0.13	0.08-0.14	0.08-0.14
0.06-0.12	0.06-0.12	0.08-0.13	0.08-0.13	0.08-0.14	0.08-0.14
0.06-0.12	0.06-0.12	0.08-0.13	0.08-0.13	0.08-0.14	0.08-0.14
0.06-0.12	0.06-0.12	0.08-0.13	0.08-0.13	0.08-0.14	0.08-0.14
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08
0.05-0.07	0.05-0.07	0.05-0.08	0.05-0.08	0.05-0.08	0.05-0.08
0.05-0.09	0.08-0.13	0.08-0.17	0.10-0.20	0.14-0.22	0.14-0.24
0.05-0.09	0.08-0.13	0.08-0.17	0.10-0.20	0.14-0.22	0.14-0.24
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09
0.05-0.08	0.05-0.08	0.05-0.09	0.05-0.09	0.05-0.09	0.05-0.09

Condizioni di taglio raccomandate



Dati di lavorazione per DRILL SFEED

ISO	Materiale	Condizione	Esempio Materiale (JIS)	Resistenza (N/mm ²)	Durezza HB	Materiale No.	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C	Ricotto	SS41/S10C	420	125	1
		≥ 0.25% C	Ricotto	S25C	650	190	2
		< 0.55% C	Bonificato	S45C	850	250	3
		≥ 0.55% C	Ricotto	S55C	750	220	4
			Bonificato	SK3	1000	300	5
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto		SCM4	600	200	6
				SKS3	930	275	7
		Bonificato			1000	300	8
					1200	350	9
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto		SKD61	680	200	10
		Bonificato		SKH/HSS	1100	325	11
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico		680	200	12	
		Martensitico		820	240	13	
		Austenitico		600	180	14	
K	Ghisa grigia (GG)	Ferritico	FC		160	15	
		Perlitico			250	16	
	Ghisa nodulare (GGG)	Ferritico	FCD		180	17	
		Perlitico			260	18	
Ghisa malleabile	Ferritico	FCMP/AC4A		130	19		
	Perlitico			230	20		
N	Alluminio	Non trattato			60	21	
		Trattato			100	22	
	Leghe di alluminio	≤ 12% Si	Non trattato			75	23
			Trattato			90	24
		> 12% Si	Alte temperature			130	25
	Leghe di rame	> 1% Pb	Alta lavorabilità			110	26
			Ottone			90	27
			Rame elettrolitico			100	28
	Materiali non metallici		Materiali plastici, grafite				29
			Gomma dura				30
S	Leghe resistenti al calore	Base Fe	Ricotto			200	31
			Trattato			280	32
		Base Ni o Co	Ricotto			250	33
			Trattato			350	34
			Fuso			320	35
	Titanio, leghe di titanio				Rm 400		36
		Leghe trattate alpha+beta			Rm 1050		37
H	Acciaio temprato	Temprato			55HRC	38	
		Temprato			60HRC	39	
	Ghisa in conchiglia	Fuso			400	40	
	Ghisa nodulare	Temprato			55HRC	41	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per DRILL RUSH

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	80-140	
		≥ 0.25% C Ricotto	650	190	2	80-130	
		< 0.55% C Bonificato	850	250	3	80-120	
		≥ 0.55% C Ricotto	750	220	4	70-110	
		Bonificato	1000	300	5	50-90	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto	600	200	6	70-120	
		Bonificato	930	275	7	70-110	
			1000	300	8	50-90	
			1200	350	9	40-70	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	50-90	
		Bonificato	1100	325	11	40-80	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	40-70	
		Martensitico	820	240	13	40-70	
		Austenitico	600	180	14	30-70	
K	Ghisa grigia (GG)	Ferritico		160	15	90-160	
		Perlitico		250	16	80-140	
	Ghisa nodulare (GGG)	Ferritico		180	17	90-180	
		Perlitico		260	18	80-140	
	Ghisa malleabile	Ferritico		130	19	90-160	
Perlitico		230	20	80-140			
N	Alluminio	Non trattato		60	21	90-220	
		Trattato		100	22	90-220	
	Leghe di alluminio	≤ 12% Si	Non trattato		75	23	90-220
			Trattato		90	24	90-220
		> 12% Si	Alte temperature		130	25	80-160
	Leghe di rame	> 1% Pb	Alta lavorabilità		110	26	90-220
			Ottone		90	27	90-220
		Rame elettrolitico		100	28	90-220	
	Materiali non metallici	Materiali plastici, grafite				29	
		Gomma dura				30	
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	30-60
			Trattato		280	32	20-50
		Base Ni o Co	Ricotto		250	33	20-50
			Trattato		350	34	20-50
			Fuso		320	35	20-50
	Titanio, leghe di titanio		Rm 400		36	20-50	
Leghe trattate alpha+beta		Rm 1050		37	20-50		
H	Acciaio temprato	Temprato		55HRC	38	20-50	
		Temprato		60HRC	39	20-50	
	Ghisa in conchiglia	Fuso		400	40		
Ghisa nodulare	Temprato			55HRC	41		

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate

Dati di lavorazione per MODU-R-DRILL

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	120-200	
		≥ 0.25% C Ricotto	650	190	2	120-200	
		< 0.55% C Bonificato	850	250	3	130-190	
		≥ 0.55% C Ricotto	750	220	4	130-190	
		Bonificato	1000	300	5	130-190	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	Ricotto	600	200	6	100-200
			930	275	7	100-200	
			1000	300	8	100-200	
			1200	350	9	100-200	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	100-160	
		Bonificato	1100	325	11	100-160	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	80-140	
		Martensitico	820	240	13	80-140	
		Austenitico	600	180	14	80-140	
K	Ghisa grigia (GG)	Ferritico		160	15	100-250	
		Perlitico		250	16	100-250	
	Ghisa nodulare (GGG)	Ferritico		180	17	100-250	
		Perlitico		260	18	100-250	
Ghisa malleabile	Ferritico		130	19	100-250		
	Perlitico		230	20	100-250		
N	Alluminio	Non trattato		60	21	160-260	
		Trattato		100	22	160-260	
	Leghe di alluminio	≤ 12% Si	Non trattato		75	23	160-260
			Trattato		90	24	160-260
		> 12% Si	Alte temperature		130	25	160-260
	Leghe di rame	> 1% Pb	Alta lavorabilità		110	26	160-260
			Ottone		90	27	160-260
			Rame elettrolitico		100	28	160-260
	Materiali non metallici		Materiali plastici, grafite			29	
			Gomma dura			30	
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	30-60
			Trattato		280	32	30-80
		Base Ni o Co	Ricotto		250	33	30-80
			Trattato		350	34	30-80
			Fuso		320	35	30-80
	Titanio, leghe di titanio		Rm 400		36	30-80	
	Leghe trattate alpha+beta	Rm 1050		37	30-80		
H	Acciaio temprato	Temprato		55HRC	38	20-50	
		Temprato		60HRC	39	20-50	
	Ghisa in conchiglia	Fuso		400	40		
Ghisa nodulare	Temprato			55HRC	41		

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate

Dati di lavorazione per MODU-R-DRILL

Avanzamento (mm/giro) in funzione del diametro punta					
SPGX 06 Ø26 - Ø28	SPGX 07 Ø29 - Ø32	SPGX 09 Ø33 - Ø36	SPGX 11 Ø37 - Ø43	SPGX 11 Ø44 - Ø45	SPGX 14 Ø46 - Ø50
0.20-0.35	0.25-0.35	0.2-0.4	0.25-0.4	0.28-0.45	0.28-0.45
0.20-0.35	0.25-0.35	0.2-0.4	0.25-0.4	0.28-0.45	0.28-0.45
0.20-0.35	0.25-0.35	0.2-0.4	0.25-0.4	0.28-0.45	0.28-0.45
0.20-0.35	0.25-0.35	0.2-0.4	0.25-0.4	0.28-0.45	0.28-0.45
0.20-0.35	0.25-0.35	0.2-0.4	0.25-0.4	0.28-0.45	0.28-0.45
0.20-0.33	0.25-0.33	0.25-0.36	0.25-0.36	0.25-0.40	0.25-0.40
0.20-0.33	0.25-0.33	0.25-0.36	0.25-0.36	0.25-0.40	0.25-0.40
0.20-0.33	0.25-0.33	0.25-0.36	0.25-0.36	0.25-0.40	0.25-0.40
0.20-0.33	0.25-0.33	0.25-0.36	0.25-0.36	0.25-0.40	0.25-0.40
0.20-0.33	0.25-0.33	0.25-0.36	0.25-0.36	0.25-0.40	0.25-0.40
0.20-0.33	0.25-0.33	0.25-0.36	0.25-0.36	0.25-0.40	0.25-0.40
0.12-0.24	0.15-0.24	0.16-0.25	0.18-0.28	0.18-0.30	0.18-0.30
0.12-0.24	0.15-0.24	0.16-0.25	0.18-0.28	0.18-0.30	0.18-0.30
0.12-0.24	0.15-0.24	0.16-0.25	0.18-0.28	0.18-0.30	0.18-0.30
0.25-0.45	0.25-0.45	0.3-0.5	0.3-0.5	0.35-0.55	0.35-0.55
0.25-0.45	0.25-0.45	0.3-0.5	0.3-0.5	0.35-0.55	0.35-0.55
0.25-0.45	0.25-0.45	0.3-0.5	0.3-0.5	0.35-0.55	0.35-0.55
0.25-0.45	0.25-0.45	0.3-0.5	0.3-0.5	0.35-0.55	0.35-0.55
0.25-0.45	0.25-0.45	0.3-0.5	0.3-0.5	0.35-0.55	0.35-0.55
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.3-0.5	0.3-0.5	0.35-0.55	0.05-0.55	0.4-0.6	0.4-0.6
0.1-0.16	0.10-0.18	0.15-0.20	0.15-0.22	0.16-0.24	0.16-0.24
0.1-0.16	0.10-0.18	0.15-0.20	0.15-0.22	0.16-0.24	0.16-0.24
0.1-0.16	0.10-0.18	0.15-0.20	0.15-0.22	0.16-0.24	0.16-0.24
0.1-0.16	0.10-0.18	0.15-0.20	0.15-0.22	0.16-0.24	0.16-0.24
0.1-0.16	0.10-0.18	0.15-0.20	0.15-0.22	0.16-0.24	0.16-0.24
0.1-0.16	0.10-0.18	0.15-0.20	0.15-0.22	0.16-0.24	0.16-0.24
0.1-0.16	0.12-0.18	0.14-0.20	0.14-0.20	0.16-0.22	0.16-0.22
0.1-0.16	0.12-0.18	0.14-0.20	0.14-0.20	0.16-0.22	0.16-0.22

Condizioni di taglio raccomandate

Dati di lavorazione per SPADE RUSH

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	80-140	
		≥ 0.25% C Ricotto	650	190	2	80-130	
		< 0.55% C Bonificato	850	250	3	80-120	
		≥ 0.55% C Ricotto	750	220	4	70-110	
		Bonificato	1000	300	5	50-90	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	Ricotto	600	200	6	80-120
			930	275	7	70-110	
			1000	300	8	50-90	
			1200	350	9	40-70	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	50-90	
		Bonificato	1100	325	11	40-80	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	40-70	
		Martensitico	820	240	13	40-70	
		Austenitico	600	180	14	30-70	
K	Ghisa grigia (GG)	Ferritico		160	15	90-180	
		Perlitico		250	16	80-140	
	Ghisa nodulare (GGG)	Ferritico		180	17	90-165	
		Perlitico		260	18	80-140	
	Ghisa malleabile	Ferritico		130	19	90-160	
Perlitico			230	20	80-140		
N	Alluminio	Non trattato		60	21	90-220	
		Trattato		100	22	90-220	
	Leghe di alluminio	≤ 12% Si	Non trattato		75	23	90-220
		Trattato		90	24	90-220	
	Leghe di rame	> 12% Si	Alte temperature		130	25	80-160
		> 1% Pb	Alta lavorabilità		110	26	90-220
	Materiali non metallici	Ottone		90	27	90-220	
		Rame elettrolitico		100	28	90-220	
	S	Leghe resistenti al calore	Materiali plastici, grafite			29	
			Gomma dura			30	
Base Fe			Ricotto		200	31	30-60
			Trattato		280	32	20-50
Base Ni o Co			Ricotto		250	33	20-50
		Trattato		350	34	20-50	
Titanio, leghe di titanio		Fuso		320	35	20-50	
	Leghe trattate alpha+beta	Rm 1050		37	20-50		
H	Acciaio temprato	Temprato		55HRC	38	20-50	
		Temprato		60HRC	39	20-50	
	Ghisa in conchiglia	Fuso		400	40		
Ghisa nodulare	Temprato		55HRC	41			

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per SPADE RUSH

Avanzamento (mm/giro) in funzione del diametro punta			
Ø20 - Ø25.9	Ø26 - Ø29.9	Ø30 - Ø34.9	Ø35 - Ø41
0.30-0.50	0.30-0.50	0.30-0.50	0.35-0.55
0.30-0.50	0.30-0.50	0.30-0.50	0.35-0.55
0.30-0.50	0.30-0.50	0.30-0.50	0.35-0.55
0.30-0.50	0.30-0.50	0.30-0.50	0.35-0.55
0.30-0.50	0.30-0.50	0.30-0.50	0.35-0.55
0.25-0.45	0.25-0.45	0.25-0.45	0.30-0.50
0.25-0.45	0.25-0.45	0.25-0.45	0.30-0.50
0.25-0.45	0.25-0.45	0.25-0.45	0.30-0.50
0.25-0.45	0.25-0.45	0.25-0.45	0.30-0.50
0.25-0.35	0.25-0.35	0.25-0.35	0.30-0.40
0.25-0.35	0.25-0.35	0.25-0.35	0.30-0.40
0.15-0.30	0.15-0.30	0.15-0.30	0.20-0.35
0.15-0.30	0.15-0.30	0.15-0.30	0.20-0.35
0.15-0.30	0.15-0.30	0.15-0.30	0.20-0.35
0.35-0.55	0.35-0.55	0.35-0.55	0.40-0.60
0.35-0.55	0.35-0.55	0.35-0.55	0.40-0.60
0.35-0.55	0.35-0.55	0.35-0.55	0.40-0.60
0.35-0.55	0.35-0.55	0.35-0.55	0.40-0.60
0.35-0.55	0.35-0.55	0.35-0.55	0.40-0.60
0.40-0.60	0.40-0.60	0.40-0.60	0.50-0.70
0.40-0.60	0.40-0.60	0.40-0.60	0.50-0.70
0.40-0.60	0.40-0.60	0.40-0.60	0.50-0.70
0.40-0.60	0.40-0.60	0.40-0.60	0.50-0.70
0.40-0.60	0.40-0.60	0.40-0.60	0.50-0.70
0.40-0.60	0.40-0.60	0.40-0.60	0.50-0.70
0.40-0.60	0.40-0.60	0.40-0.60	0.50-0.70
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25
0.10-0.20	0.10-0.20	0.15-0.25	0.15-0.25

Condizioni di taglio raccomandate



Dati di lavorazione per SOLID-3-DRILL

ISO	Materiale		Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C	Ricotto	420	125	1	80-140	
		≥ 0.25% C	Ricotto	650	190	2	80-130	
		< 0.55% C	Bonificato	850	250	3	80-120	
		≥ 0.55% C	Ricotto	750	220	4	70-110	
			Bonificato	1000	300	5	50-90	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)			Ricotto	600	200	6	80-120
				Bonificato	930	275	7	70-110
					1000	300	8	50-90
					1200	350	9	40-70
	Acciaio alto legato, acciaio da fusione e acciaio da utensili			Ricotto	680	200	10	50-90
				Bonificato	1100	325	11	40-80
M	Acciaio inox e acciaio inox da fusione		Ferritico / martensitico	680	200	12		
			Martensitico	820	240	13		
			Austenitico	600	180	14		
K	Ghisa grigia (GG)		Ferritico		160	15	80-140	
			Perlitico		250	16	70-120	
	Ghisa nodulare (GGG)		Ferritico		180	17	80-120	
			Perlitico		260	18	70-110	
Ghisa malleabile		Ferritico		130	19	80-120		
		Perlitico		230	20	70-110		
N	Alluminio		Non trattato		60	21		
			Trattato		100	22		
	Leghe di alluminio		≤ 12% Si	Non trattato		75	23	
			> 12% Si	Trattato		90	24	
				Alte temperature		130	25	
	Leghe di rame		> 1% Pb	Alta lavorabilità		110	26	
				Ottone		90	27	
				Rame elettrolitico		100	28	
	Materiali non metallici			Materiali plastici, grafite			29	
				Gomma dura			30	
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31		
			Trattato		280	32		
		Base Ni o Co	Ricotto		250	33		
			Trattato		350	34		
			Fuso		320	35		
	Titanio, leghe di titanio			Rm 400		36		
		Leghe trattate alpha+beta	Rm 1050		37			
H	Acciaio temprato		Temprato		55HRC	38		
			Temprato		60HRC	39		
	Ghisa in conchiglia		Fuso		400	40		
	Ghisa nodulare		Temprato		55HRC	41		

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per H-DRILL

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	80-120	
		≥ 0.25% C Ricotto	650	190	2	80-110	
		< 0.55% C Bonificato	850	250	3	70-100	
		≥ 0.55% C Ricotto	750	220	4	70-100	
		Bonificato	1000	300	5	70-100	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	Ricotto	600	200	6	70-90
			930	275	7	70-90	
			1000	300	8	50-80	
			1200	350	9	40-70	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	50-80	
		Bonificato	1100	325	11	40-70	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	30-60	
		Martensitico	820	240	13	30-60	
		Austenitico	600	180	14	30-60	
K	Ghisa grigia (GG)	Ferritico		160	15	65-80	
		Perlitico		250	16	65-80	
	Ghisa nodulare (GGG)	Ferritico		180	17	85-105	
		Perlitico		260	18	75-90	
Ghisa malleabile	Ferritico		130	19	65-80		
	Perlitico		230	20	65-80		
N	Alluminio	Non trattato		60	21	70-200	
		Trattato		100	22	70-200	
	Leghe di alluminio	≤ 12% Si Non trattato		75	23	70-200	
		Trattato		90	24	70-200	
	> 12% Si	Alte temperature		130	25	70-150	
		Alta lavorabilità		110	26	70-200	
	Leghe di rame	Ottone		90	27	70-200	
		Rame elettrolitico		100	28	70-200	
	Materiali non metallici	Materiali plastici, grafite			29		
		Gomma dura			30		
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	15-40
			Trattato		280	32	15-40
		Base Ni o Co	Ricotto		250	33	15-40
			Trattato		350	34	15-40
			Fuso		320	35	15-40
	Titanio, leghe di titanio		Rm 400		36		
Leghe trattate alpha+beta		Rm 1050		37			
H	Acciaio temprato	Temprato		55HRC	38	10-40	
		Temprato		60HRC	39	10-40	
	Ghisa in conchiglia	Fuso		400	40		
Ghisa nodulare	Temprato			55HRC	41		

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per H-DRILL

Avanzamento (mm/giro) in funzione del diametro punta		
Ø3 - Ø5	Ø5.1 - Ø8	Ø8.1 - Ø12
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.08-0.18	0.10-0.20	0.15-0.25
0.08-0.18	0.10-0.20	0.15-0.25
0.06-0.12	0.10-0.15	0.12-0.18
0.06-0.12	0.10-0.15	0.12-0.18
0.06-0.12	0.10-0.15	0.12-0.18
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.20	0.15-0.25	0.20-0.30
0.10-0.25	0.15-0.35	0.25-0.45
0.10-0.25	0.15-0.35	0.25-0.45
0.10-0.25	0.15-0.35	0.25-0.45
0.10-0.25	0.15-0.35	0.25-0.45
0.10-0.25	0.15-0.35	0.25-0.45
0.08-0.18	0.15-0.25	0.20-0.35
0.08-0.18	0.15-0.25	0.20-0.35
0.08-0.18	0.15-0.25	0.20-0.35
0.02-0.08	0.04-0.10	0.06-0.12
0.02-0.08	0.04-0.10	0.06-0.12
0.02-0.08	0.04-0.10	0.06-0.12
0.02-0.08	0.04-0.10	0.06-0.12
0.02-0.08	0.04-0.10	0.06-0.12
0.02-0.08	0.04-0.10	0.06-0.12
0.02-0.08	0.04-0.10	0.06-0.12

Condizioni di taglio raccomandate



Dati di lavorazione per TOP CAP

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	
		≥ 0.25% C Ricotto	650	190	2	
		< 0.55% C Bonificato	850	250	3	
		≥ 0.55% C Ricotto	750	220	4	
		Bonificato	1000	300	5	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto		600	200	6
				930	275	7
		Bonificato		1000	300	8
				1200	350	9
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	
		Bonificato	1100	325	11	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	
		Martensitico	820	240	13	
		Austenitico	600	180	14	
K	Ghisa grigia (GG)	Ferritico		160	15	
		Perlitico		250	16	
	Ghisa nodulare (GGG)	Ferritico		180	17	
		Perlitico		260	18	
Ghisa malleabile	Ferritico		130	19		
	Perlitico		230	20		
N	Alluminio	Non trattato		60	21	
		Trattato		100	22	
	Leghe di alluminio	≤ 12% Si Non trattato		75	23	
		Trattato		90	24	
		> 12% Si Alte temperature		130	25	
	Leghe di rame	> 1% Pb Alta lavorabilità		110	26	
		Ottone		90	27	
	Materiali non metallici	Rame elettrolitico		100	28	
		Materiali plastici, grafite			29	
	S	Leghe resistenti al calore	Base Fe Ricotto		200	31
Trattato					280	32
Base Ni o Co Ricotto				250	33	
			Trattato		350	34
			Fuso		320	35
Titanio, leghe di titanio			Rm 400		36	
	Leghe trattate alpha+beta	Rm 1050		37		
H	Acciaio temprato	Temprato		55HRC	38	
		Temprato		60HRC	39	
	Ghisa in conchiglia	Fuso		400	40	
	Ghisa nodulare	Temprato		55HRC	41	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per TOP CAP

Foratura		Tornitura e barenatura		Scanalatura	
Vt (m/min)	Avanzamento (mm/giro)	Vt (m/min)	Avanzamento (mm/giro)	Vt (m/min)	Avanzamento (mm/giro)
120-260	0.05-0.06	140-280	0.04-0.14	120-250	0.04-0.25
80-190	0.05-0.15	90-200	0.04-0.12	80-180	0.04-0.25
100-280	0.06-0.18	100-200	0.04-0.15	80-180	0.04-0.25
100-280	0.06-0.18	100-200	0.04-0.15	80-180	0.04-0.25
100-280	0.06-0.18	100-200	0.04-0.15	80-180	0.04-0.25
100-280	0.06-0.18	100-200	0.04-0.15	80-180	0.04-0.25
60-180	0.04-0.15	80-180	0.07-0.12	60-160	0.04-0.25
60-180	0.04-0.15	80-180	0.07-0.12	60-160	0.04-0.25
60-180	0.04-0.15	80-180	0.07-0.12	60-160	0.04-0.25
80-190	0.05-0.15	80-200	0.04-0.12	80-160	0.04-0.25
50-150	0.04-0.14	60-150	0.04-0.12	50-120	0.04-0.25
50-210	0.04-0.15	60-230	0.07-0.12	50-200	0.04-0.25
50-210	0.04-0.15	60-230	0.07-0.12	50-200	0.04-0.25
50-210	0.04-0.15	60-230	0.07-0.12	50-200	0.04-0.25
100-300	0.06-0.23	120-230	0.07-0.2	100-200	0.04-0.25
100-300	0.06-0.23	120-230	0.07-0.2	100-200	0.04-0.25
100-300	0.06-0.23	120-230	0.07-0.2	100-200	0.04-0.25
100-300	0.06-0.23	120-230	0.07-0.2	100-200	0.04-0.25
100-200	0.06-0.15	120-230	0.04-0.13	100-200	0.04-0.25
100-200	0.06-0.15	120-230	0.04-0.13	100-200	0.04-0.25
120-500	0.05-0.3	120-700	0.04-0.25	100-700	0.04-0.25
120-500	0.05-0.3	120-700	0.04-0.25	100-700	0.04-0.25
120-500	0.05-0.3	120-700	0.04-0.25	100-700	0.04-0.25
120-500	0.05-0.3	120-700	0.04-0.25	100-700	0.04-0.25
120-500	0.05-0.3	120-700	0.04-0.25	100-700	0.04-0.25
80-380	0.05-0.23	80-500	0.04-0.2	80-350	0.04-0.25
80-380	0.05-0.23	80-500	0.04-0.2	80-350	0.04-0.25
80-380	0.05-0.23	80-500	0.04-0.2	80-350	0.04-0.25
50-140	0.04-0.14	50-160	0.04-0.12	50-140	0.04-0.25
50-140	0.04-0.14	50-160	0.04-0.12	50-140	0.04-0.25
20-50	0.04-0.05	20-80	0.04-0.05	20-50	0.04-0.05
20-50	0.04-0.05	20-80	0.04-0.05	20-50	0.04-0.05
20-50	0.04-0.05	20-80	0.04-0.05	20-50	0.04-0.05
20-50	0.04-0.05	20-80	0.04-0.05	20-50	0.04-0.05
20-50	0.04-0.05	20-80	0.04-0.05	20-50	0.04-0.05
30-60	0.04-0.05	30-100	0.04-0.05	30-80	0.04-0.05
30-60	0.04-0.05	30-100	0.04-0.05	30-80	0.04-0.05
20-40	0.04-0.05	20-70	0.04-0.05	20-50	0.04-0.05
20-40	0.04-0.05	20-70	0.04-0.05	20-50	0.04-0.05
20-40	0.04-0.05	20-70	0.04-0.05	20-50	0.04-0.05
20-40	0.04-0.05	20-70	0.04-0.05	20-50	0.04-0.05

Condizioni di taglio raccomandate



Dati di lavorazione per TBTA 3/5/7/9 e TBTA-R

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	60-120	
		≥ 0.25% C Ricotto	650	190	2	60-120	
		< 0.55% C Bonificato	850	250	3	60-120	
		≥ 0.55% C Ricotto	750	220	4	60-120	
		Bonificato	1000	300	5	50-100	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto		600	200	6	50-100
				930	275	7	50-100
		Bonificato		1000	300	8	50-100
				1200	350	9	50-100
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	60-120	
		Bonificato	1100	325	11	60-120	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	60-110	
		Martensitico	820	240	13	60-110	
		Austenitico	600	180	14	60-110	
K	Ghisa grigia (GG)	Ferritico		160	15	60-100	
		Perlitico		250	16	60-100	
	Ghisa nodulare (GGG)	Ferritico		180	17	60-100	
		Perlitico		260	18	60-100	
	Ghisa malleabile	Ferritico		130	19	60-100	
Perlitico			230	20	60-100		
N	Alluminio	Non trattato		60	21	60-130	
		Trattato		100	22	60-130	
	Leghe di alluminio	≤ 12% Si Non trattato		75	23	60-130	
		Trattato		90	24	60-130	
	Leghe di rame	> 12% Si Alte temperature		130	25	60-130	
		> 1% Pb Alta lavorabilità		110	26	60-130	
	Materiali non metallici	Rame elettrolitico			90	27	60-130
					100	28	60-130
		Materiali plastici, grafite				29	
			Gomma dura			30	
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	20-65
			Trattato		280	32	20-65
		Base Ni o Co	Ricotto		250	33	20-65
			Trattato		350	34	20-65
			Fuso		320	35	20-65
	Titanio, leghe di titanio		Rm 400		36	30-100	
Leghe trattate alpha+beta		Rm 1050		37	30-100		
H	Acciaio temprato	Temprato		55HRC	38		
		Temprato		60HRC	39		
	Ghisa in conchiglia	Fuso		400	40		
	Ghisa nodulare	Temprato		55HRC	41		

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per TBTA-FB

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	70-130	
		≥ 0.25% C Ricotto	650	190	2	70-130	
		< 0.55% C Bonificato	850	250	3	70-130	
		≥ 0.55% C Ricotto	750	220	4	70-130	
		Bonificato	1000	300	5	70-130	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	Ricotto	600	200	6	70-120
			930	275	7	60-120	
			1000	300	8	60-120	
			1200	350	9	60-120	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	70-130	
		Bonificato	1100	325	11	70-130	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	70-130	
		Martensitico	820	240	13	70-130	
		Austenitico	600	180	14	70-130	
K	Ghisa grigia (GG)	Ferritico		160	15	60-110	
		Perlitico		250	16	60-110	
	Ghisa nodulare (GGG)	Ferritico		180	17	50-110	
		Perlitico		260	18	50-110	
Ghisa malleabile	Ferritico		130	19	70-110		
	Perlitico		230	20	70-110		
N	Alluminio	Non trattato		60	21	65-130	
		Trattato		100	22	65-130	
	Leghe di alluminio	≤ 12% Si	Non trattato		75	23	65-130
		Trattato		90	24	65-130	
	Leghe di rame	> 12% Si	Alte temperature		130	25	65-130
		> 1% Pb	Alta lavorabilità		110	26	65-130
	Materiali non metallici		Ottone		90	27	65-130
			Rame elettrolitico		100	28	65-130
			Materiali plastici, grafite			29	
			Gomma dura				30
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	20-50
			Trattato		280	32	20-50
		Base Ni o Co	Ricotto		250	33	20-50
			Trattato		350	34	20-50
			Fuso		320	35	20-50
	Titanio, leghe di titanio		Rm 400		36	30-60	
	Leghe trattate alpha+beta	Rm 1050		37	30-60		
H	Acciaio temprato	Temprato		55HRC	38		
		Temprato		60HRC	39		
	Ghisa in conchiglia	Fuso		400	40		
	Ghisa nodulare	Temprato		55HRC	41		

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per BTA e BTS

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)		
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	70-120		
		≥ 0.25% C Ricotto	650	190	2	70-120		
		< 0.55% C Bonificato	850	250	3	40-70		
		≥ 0.55% C Ricotto	750	220	4	70-120		
		Bonificato	1000	300	5	55-100		
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto		600	200	6	70-100	
				930	275	7	55-100	
		Bonificato		1000	300	8	55-100	
				1200	350	9	55-100	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10	50-85		
		Bonificato	1100	325	11	55-100		
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12	60-100		
		Martensitico	820	240	13	60-100		
		Austenitico	600	180	14	60-100		
K	Ghisa grigia (GG)	Ferritico		160	15	60-100		
		Perlitico		250	16	60-100		
	Ghisa nodulare (GGG)	Ferritico		180	17	80-100		
		Perlitico		260	18	80-100		
Ghisa malleabile	Ferritico		130	19	50-100			
	Perlitico		230	20	50-100			
N	Alluminio	Non trattato		60	21	65-130		
		Trattato		100	22	65-100		
	Leghe di alluminio	≤ 12% Si Non trattato		75	23	65-130		
		Trattato		90	24	65-130		
	Leghe di rame	> 12% Si Alte temperature		130	25	65-130		
		> 1% Pb Alta lavorabilità		110	26	65-130		
	Materiali non metallici	Ottone		90	27	65-130		
		Rame elettrolitico		100	28	65-130		
	S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	10-50
				Trattato		280	32	10-50
Base Ni o Co			Ricotto		250	33	10-50	
			Trattato		350	34	10-50	
			Fuso		320	35	10-50	
Titanio, leghe di titanio			Rm 400		36	30-50		
		Leghe trattate alpha+beta	Rm 1050		37	30-50		
H	Acciaio temprato	Temprato		55HRC	38			
		Temprato		60HRC	39			
	Ghisa in conchiglia	Fuso		400	40			
Ghisa nodulare	Temprato			55HRC	41			

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per TRGD / TRGDL / TBTA-TR

ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.		
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C	Ricotto	420	125	1	
		≥ 0.25% C	Ricotto	650	190	2	
		< 0.55% C	Bonificato	850	250	3	
		≥ 0.55% C	Ricotto	750	220	4	
			Bonificato	1000	300	5	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto		600	200	6	
				930	275	7	
		Bonificato		1000	300	8	
				1200	350	9	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto		680	200	10	
		Bonificato		1100	325	11	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico		680	200	12	
		Martensitico		820	240	13	
		Austenitico		600	180	14	
K	Ghisa grigia (GG)	Ferritico			160	15	
		Perlitico			250	16	
	Ghisa nodulare (GGG)	Ferritico			180	17	
		Perlitico			260	18	
Ghisa malleabile	Ferritico			130	19		
	Perlitico			230	20		
N	Alluminio	Non trattato			60	21	
		Trattato			100	22	
	Leghe di alluminio	≤ 12% Si	Non trattato			75	23
			Trattato			90	24
		> 12% Si	Alte temperature			130	25
	Leghe di rame	> 1% Pb	Alta lavorabilità			110	26
			Ottone			90	27
		Rame elettrolitico			100	28	
	Materiali non metallici	Materiali plastici, grafite					29
		Gomma dura					30
S	Leghe resistenti al calore	Base Fe	Ricotto			200	31
			Trattato			280	32
		Base Ni o Co	Ricotto			250	33
			Trattato			350	34
			Fuso			320	35
	Titanio, leghe di titanio			Rm 400		36	
	Leghe trattate alpha+beta			Rm 1050		37	
H	Acciaio temprato	Temprato			55 HRC	38	
		Temprato			60 HRC	39	
	Ghisa in conchiglia	Fuso			400	40	
	Ghisa nodulare	Temprato			55 HRC	41	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per TRGD / TRGDL / TBTA-TR

Avanzamento (mm/giro) in funzione del diametro punta					
TRGD / TRGDL				TBTA-TR	
Velocità di taglio Vt (m/min)	Ø14.00-Ø15.99	Ø16.00-Ø28.00	Ø28.01-Ø40.00	Velocità di taglio Vt (m/min)	Ø16.00-Ø28.00
80-140	0.05-0.10	0.05-0.10	0.05-0.15	90-130	0.15-0.20
80-140	0.05-0.10	0.05-0.10	0.05-0.15	90-130	0.15-0.20
80-140	0.05-0.16	0.05-0.20	0.05-0.20	90-130	0.15-0.20
80-140	0.05-0.16	0.05-0.20	0.05-0.20	70-130	0.10-0.25
80-140	0.05-0.16	0.05-0.20	0.05-0.20	70-130	0.10-0.25
80-140	0.05-0.10	0.05-0.10	0.05-0.15	70-120	0.10-0.25
80-120	0.05-0.16	0.05-0.20	0.05-0.20	60-120	0.10-0.25
80-120	0.05-0.16	0.05-0.20	0.05-0.20	60-120	0.10-0.25
80-120	0.05-0.16	0.05-0.20	0.05-0.20	60-120	0.10-0.25
80-140	0.05-0.10	0.05-0.10	0.05-0.15	70-130	0.10-0.25
80-120	0.05-0.16	0.05-0.20	0.05-0.20	70-130	0.10-0.25
60-100	0.05-0.10	0.05-0.10	0.05-0.15	80-130	0.06-0.10
60-100	0.05-0.10	0.05-0.10	0.05-0.15	80-130	0.06-0.10
60-100	0.05-0.10	0.05-0.10	0.05-0.15	80-130	0.06-0.10
80-140	0.05-0.25	0.05-0.30	0.05-0.30	50-110	0.10-0.20
80-140	0.05-0.25	0.05-0.30	0.05-0.30	50-110	0.10-0.20
80-140	0.05-0.25	0.05-0.30	0.05-0.30	60-110	0.10-0.20
80-140	0.05-0.25	0.05-0.30	0.05-0.30	60-110	0.10-0.20
80-140	0.05-0.25	0.05-0.30	0.05-0.30	70-110	0.10-0.20
80-140	0.05-0.25	0.05-0.30	0.05-0.30	70-110	0.10-0.20
100-200	0.05-0.20	0.05-0.20	0.05-0.25	65-130	0.08-0.18
100-200	0.05-0.20	0.05-0.20	0.05-0.25	65-130	0.08-0.18
100-200	0.05-0.20	0.05-0.20	0.05-0.25	65-130	0.08-0.18
				65-130	0.08-0.18
				65-130	0.08-0.18
				65-130	0.08-0.18
				65-130	0.08-0.18
				65-130	0.08-0.18
				65-130	0.08-0.18
20-50	0.04-0.08	0.04-0.10	0.04-0.13	20-50	0.08-0.18
20-50	0.04-0.08	0.04-0.10	0.04-0.13	20-50	0.08-0.18
20-50	0.04-0.08	0.04-0.10	0.04-0.13	20-50	0.08-0.18
20-50	0.04-0.08	0.04-0.10	0.04-0.13	20-50	0.08-0.18
20-50	0.04-0.08	0.04-0.10	0.04-0.13	20-50	0.08-0.18
30-60	0.05-0.13	0.05-0.15	0.05-0.18	30-60	0.08-0.18
30-60	0.05-0.13	0.05-0.15	0.05-0.18	30-60	0.08-0.18
50-100	0.04-0.08	0.04-0.10	0.04-0.13		
50-100	0.04-0.08	0.04-0.10	0.04-0.13		
50-100	0.04-0.08	0.04-0.10	0.04-0.13		
50-100	0.04-0.08	0.04-0.10	0.04-0.13		



Utensili per alesatura



Chiave di bloccaggio

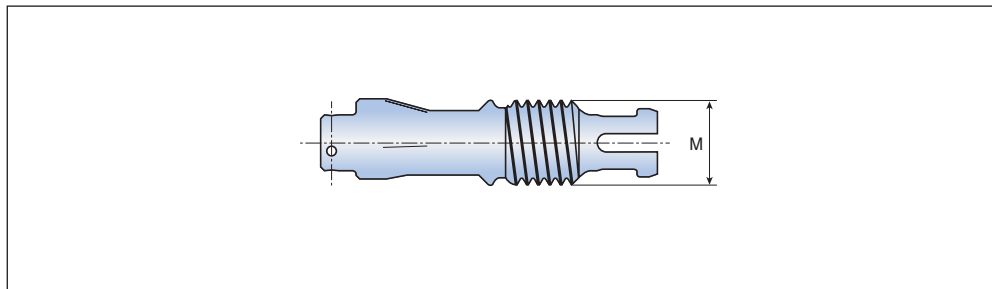


Descrizione	Chiave di bloccaggio	
	Gamma diametri testine (mm)	SSC
TM - B5-KEY	11.501-13.500	B5
B6-KEY	13.501-16.000	B6
B7-KEY	16.001-20.000	B7
B8-KEY	20.001-25.400	B8
B9-KEY	25.401-32.000	B9

• SSC: codice misura sede

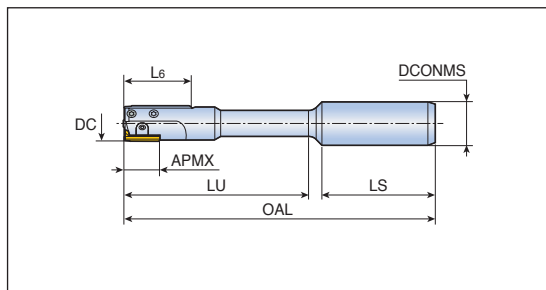
TM...SCR

Vite di bloccaggio



Descrizione	Vite di bloccaggio	
	Gamma diametri testine (mm)	M
TM - B5-SCR	11.501-13.500	M5
B6-SCR	13.501-16.000	M6
B7-SCR	16.001-20.000	M7
B8-SCR	20.001-25.400	M8
B9-SCR	25.401-32.000	M9

Alesatore ad inserto



- Per fori passanti



Descrizione	Dimensioni (mm)							SSC
	DC	APMX	LS	LU	OAL	L6	DCONMS	
TB - T08.000-S-16T0-1B	8	15.5	123.5	75	45	30	16	1
T09.000-S-16T0-1B	9	15.5	123.5	75	45	30	16	1
T10.000-S-16T0-2B	10	15.5	123.5	75	45	30	16	2
T11.000-S-16T0-2B	11	15.5	123.5	75	45	30	16	2
T12.000-S-16T0-3B	12	17.0	135	85	45	30	16	3
T13.000-S-16T0-3B	13	17.0	135	85	45	30	16	3
T14.000-S-16T0-3B	14	17.0	135	85	45	30	16	3
T15.000-S-16T0-3B	15	17.0	135	85	45	30	16	3
T16.000-S-20T0-3B	16	17.0	165	110	50	30	20	3
T17.000-S-20T0-3B	17	17.0	165	110	50	30	20	3
T18.000-S-20T0-3B	18	17.0	165	110	50	30	20	3
T19.000-S-20T0-3B	19	17.0	165	110	50	30	20	3
T20.000-S-25T0-3B	20	17.0	171	110	56	30	25	3
T21.000-S-25T0-3B	21	17.0	171	110	56	30	25	3
T22.000-S-25T0-3B	22	17.0	191	130	56	30	25	3
T23.000-S-25T0-3B	23	17.0	191	130	56	30	25	3
T24.000-S-25T0-3B	24	17.0	191	130	56	30	25	3
T25.000-S-25T0-3B	25	17.0	191	130	56	30	25	3
T26.000-S-25T0-4B	26	22.5	221	160	56	30	25	4
T27.000-S-25T0-4B	27	22.5	221	160	56	30	25	4
T28.000-S-25T0-4B	28	22.5	221	160	56	30	25	4
T29.000-S-25T0-4B	29	22.5	221	160	56	30	25	4
T30.000-S-25T0-4B	30	22.5	221	160	56	30	25	4
T31.000-S-25T0-4B	31	22.5	221	160	56	30	25	4
T32.000-S-25T0-4B	32	22.5	221	160	56	30	25	4



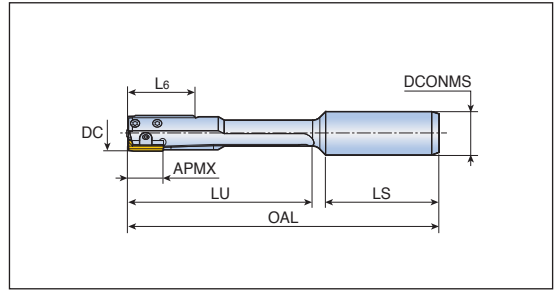
• SSC: codice misura sede

• Disponibile su richiesta

Alesatore ad inserto



- Per fori ciechi



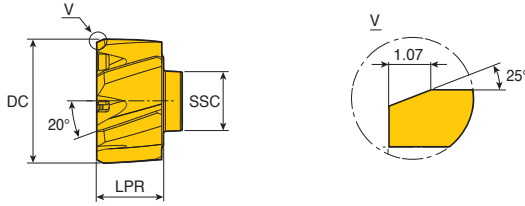
Descrizione	Dimensioni (mm)							SSC
	DC	APMX	LS	LU	OAL	L6	DCONMS	
TB - B08.000-S-16T0-1B	8	15.5	123.5	75	45	30	16	1
B09.000-S-16T0-1B	9	15.5	123.5	75	45	30	16	1
B10.000-S-16T0-2B	10	15.5	123.5	75	45	30	16	2
B11.000-S-16T0-2B	11	15.5	123.5	75	45	30	16	2
B12.000-S-16T0-3B	12	17.0	135	85	45	30	16	3
B13.000-S-16T0-3B	13	17.0	135	85	45	30	16	3
B14.000-S-16T0-3B	14	17.0	135	85	45	30	16	3
B15.000-S-16T0-3B	15	17.0	135	85	45	30	16	3
B16.000-S-20T0-3B	16	17.0	165	110	50	30	20	3
B17.000-S-20T0-3B	17	17.0	165	110	50	30	20	3
B18.000-S-20T0-3B	18	17.0	165	110	50	30	20	3
B19.000-S-20T0-3B	19	17.0	165	110	50	30	20	3
B20.000-S-25T0-3B	20	17.0	171	110	56	30	25	3
B21.000-S-25T0-3B	21	17.0	171	110	56	30	25	3
B22.000-S-25T0-3B	22	17.0	191	130	56	30	25	3
B23.000-S-25T0-3B	23	17.0	191	130	56	30	25	3
B24.000-S-25T0-3B	24	17.0	191	130	56	30	25	3
B25.000-S-25T0-3B	25	17.0	191	130	56	30	25	3
B26.000-S-25T0-4B	26	22.5	221	160	56	30	25	4
B27.000-S-25T0-4B	27	22.5	221	160	56	30	25	4
B28.000-S-25T0-4B	28	22.5	221	160	56	30	25	4
B29.000-S-25T0-4B	29	22.5	221	160	56	30	25	4
B30.000-S-25T0-4B	30	22.5	221	160	56	30	25	4
B31.000-S-25T0-4B	31	22.5	221	160	56	30	25	4
B32.000-S-25T0-4B	32	22.5	221	160	56	30	25	4



• SSC: codice misura sede

• Disponibile su richiesta

Testine intercambiabili per alesatura



- Taglienti sinistri per fori passanti
- Per tolleranza foro H7

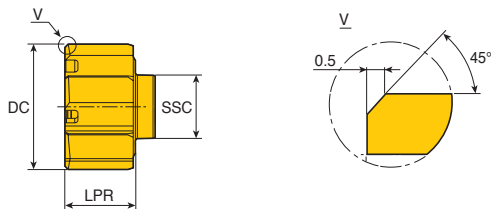
Testina	Descrizione	Dimensioni (mm)		NOF	SSC	Tipo tagliente	Imbocco	Grado TT9030	
		DC	LPR						
	TM - 11.501-BL-B5	11.501	9.5	6	B5	L	B	●	
	12.000-BL-B5	12.000	9.5	6	B5	L	B	●	
	13.000-BL-B5	13.000	9.5	6	B5	L	B	●	
	13.500-BL-B5	13.500	9.5	6	B5	L	B	●	
	13.501-BL-B6	13.501	9.5	6	B6	L	B	●	
	14.000-BL-B6	14.000	9.5	6	B6	L	B	●	
	15.000-BL-B6	15.000	9.5	6	B6	L	B	●	
	16.000-BL-B6	16.000	9.5	6	B6	L	B	●	
	16.001-BL-B7	16.001	10.7	6	B7	L	B	●	
	17.000-BL-B7	17.000	10.7	6	B7	L	B	●	
	18.000-BL-B7	18.000	10.7	6	B7	L	B	●	
	19.000-BL-B7	19.000	10.7	6	B7	L	B	●	
	20.000-BL-B7	20.000	10.7	6	B7	L	B	●	
	20.001-BL-B8	20.001	12.9	8	B8	L	B	●	
	21.000-BL-B8	21.000	12.9	8	B8	L	B	●	
	22.000-BL-B8	22.000	12.9	8	B8	L	B	●	
	23.000-BL-B8	23.000	12.9	8	B8	L	B	●	
	24.000-BL-B8	24.000	12.9	8	B8	L	B	●	
	25.000-BL-B8	25.000	12.9	8	B8	L	B	●	
	26.000-BL-B9	26.000	12.9	8	B9	L	B	●	
	27.000-BL-B9	27.000	12.9	8	B9	L	B	●	
	28.000-BL-B9	28.000	12.9	8	B9	L	B	●	
	29.000-BL-B9	29.000	12.9	8	B9	L	B	●	
	30.000-BL-B9	30.000	12.9	8	B9	L	B	●	
	31.000-BL-B9	31.000	12.9	8	B9	L	B	●	
	32.000-BL-B9	32.000	12.9	8	B9	L	B	●	



- NOF: numero di taglienti
- SSC: codice misura sede

●: Standard

Testine intercambiabili per alesatura



- Taglienti dritti per fori ciechi
- Per tolleranza foro H7

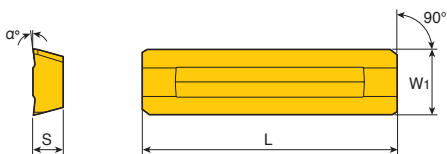
Testina	Descrizione	Dimensioni (mm)		NOF	SSC	Tipo tagliente	Imbocco	Grado TT9030	
		DC	LPR						
	TM- 11.501-AS-B5	11.501	9.5	6	B5	S	A	●	
	12.000-AS-B5	12.000	9.5	6	B5	S	A	●	
	13.000-AS-B5	13.000	9.5	6	B5	S	A	●	
	13.500-AS-B5	13.500	9.5	6	B5	S	A	●	
	13.501-AS-B6	13.501	9.5	6	B6	S	A	●	
	14.000-AS-B6	14.000	9.5	6	B6	S	A	●	
	15.000-AS-B6	15.000	9.5	6	B6	S	A	●	
	16.000-AS-B6	16.000	9.5	6	B6	S	A	●	
	16.001-AS-B7	16.001	10.7	6	B7	S	A	●	
	17.000-AS-B7	17.000	10.7	6	B7	S	A	●	
	18.000-AS-B7	18.000	10.7	6	B7	S	A	●	
	19.000-AS-B7	19.000	10.7	6	B7	S	A	●	
	20.000-AS-B7	20.000	10.7	6	B7	S	A	●	
	20.001-AS-B8	20.001	12.9	8	B8	S	A	●	
	21.000-AS-B8	21.000	12.9	8	B8	S	A	●	
	22.000-AS-B8	22.000	12.9	8	B8	S	A	●	
	23.000-AS-B8	23.000	12.9	8	B8	S	A	●	
	24.000-AS-B8	24.000	12.9	8	B8	S	A	●	
	25.000-AS-B8	25.000	12.9	8	B8	S	A	●	
	26.000-AS-B9	26.000	12.9	8	B9	S	A	●	
	27.000-AS-B9	27.000	12.9	8	B9	S	A	●	
	28.000-AS-B9	28.000	12.9	8	B9	S	A	●	
	29.000-AS-B9	29.000	12.9	8	B9	S	A	●	
	30.000-AS-B9	30.000	12.9	8	B9	S	A	●	
	31.000-AS-B9	31.000	12.9	8	B9	S	A	●	
	32.000-AS-B9	32.000	12.9	8	B9	S	A	●	



- NOF: numero di taglienti
- SSC: codice misura sede

●: Standard

Lame



• Per tolleranza foro H7

Inserto	Descrizione	Dimensioni (mm)				SSC	Imbocco	Grado	
		Spoglia (α°)	L	W ₁	S			TT5030	TT5050
	TB-1B06	6	15.5	2.8	1.5	1	B	●	
	1B12	12	15.5	2.8	1.5	1	B	●	
	1A06	6	15.5	2.8	1.5	1	A		●
	1B06	6	15.5	2.8	1.5	1	B		●
	2B06	6	15.5	3.6	1.5	2	B	●	
	2B12	12	15.5	3.6	1.5	2	B	●	
	2A06	6	15.5	3.6	1.5	2	A		●
	2B06	6	15.5	3.6	1.5	2	B		●
	3B06	6	17.0	4.4	2.0	3	B	●	
	3B12	12	17.0	4.4	2.0	3	B	●	
	3A06	6	17.0	4.4	2.0	3	A		●
	3B06	6	17.0	4.4	2.0	3	B		●
	4B06	6	22.5	6.6	3.0	4	B	●	
	4B12	12	22.5	6.6	3.0	4	B	●	
	4A06	6	22.5	6.6	3.0	4	A		●
	4B06	6	22.5	6.6	3.0	4	B		●



- Gradi per applicazione
- TT5030: rivestito TiAlN per acciaio (P) e acciaio inox (M) -TT5050: rivestito TiCN + TiN per ghisa (K)
- SSC: codice misura sede

●: Standard

Condizioni di taglio raccomandate



Dati di lavorazione per TS-REAM

ISO	Materiale	Condizione	Resist. (N/mm²)	Durezza HB	Materiale No.	Velocità di taglio Vt (m/min)	Avanzamento (mm/giro)	
							Ø3-Ø10	Ø10.1-Ø12
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1	10-20	0.15-0.25	0.20-0.40
		≥ 0.25% C Ricotto	650	190	2	6-15	0.12-0.15	0.15-0.30
		< 0.55% C Bonificato	850	250	3	6-20	0.15-0.25	0.20-0.35
		≥ 0.55% C Ricotto	750	220	4	6-15	0.15-0.25	0.20-0.35
		Bonificato	1000	300	5	6-15	0.15-0.25	0.20-0.35
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto	600	200	6	6-15	0.12-0.20	0.15-0.30
		Bonificato	930	275	7	6-20	0.15-0.25	0.20-0.35
			1000	300	8	6-15	0.15-0.25	0.20-0.35
	Acciaio alto legato, acciaio fusione e acciaio da utensili	Ricotto	680	200	10	6-15	0.12-0.20	0.15-0.30
		Bonificato	1100	325	11	6-15	0.12-0.20	0.15-0.30
	M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12		
Martensitico			820	240	13			
Austenitico			600	180	14			
K	Ghisa grigia (GG)	Ferritico		160	15	10-25	0.20-0.30	0.30-0.45
		Perlitico		250	16	10-25	0.20-0.30	0.30-0.45
	Ghisa nodulare (GGG)	Ferritico		180	17	10-20	0.15-0.25	0.20-0.35
		Perlitico		260	18	10-20	0.15-0.25	0.20-0.35
Ghisa malleabile	Ferritico		130	19	8-15	0.15-0.25	0.20-0.40	
	Perlitico		230	20	8-15	0.15-0.25	0.20-0.40	
N	Alluminio	Non trattato	60	21	10-30	0.20-0.30	0.30-0.50	
		Trattato	100	22	10-30	0.20-0.30	0.30-0.50	
	Leghe di alluminio	≤ 12% Si	Non trattato	75	23	10-30	0.20-0.30	0.30-0.50
		Trattato	90	24	10-30	0.20-0.30	0.30-0.50	
	Leghe di rame	> 12% Si	Alte temperature	130	25	30-60	0.20-0.30	0.30-0.50
		> 1% Pb	Alta lavorabilità	110	26	20-60	0.30-0.60	0.40-0.80
		Ottone	90	27	20-60	0.30-0.60	0.40-0.80	
Materiali non metallici	Rame elettrolitico	100	28	20-60	0.30-0.60	0.40-0.80		
	Materiali plastici, grafite			29	15-30	0.30-0.60	0.40-0.80	
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31		
			Trattato		280	32		
		Base Ni o Co	Ricotto		250	33		
			Trattato		350	34		
			Fuso		320	35		
	Titanio, leghe di titanio		Rm 400		36	6-15	0.12-0.20	0.15-0.30
	Leghe trattate alpha+beta	Rm 1050		37	6-15	0.12-0.20	0.15-0.30	
H	Acciaio temprato	Temprato		55HRC	38			
		Temprato		60HRC	39			
	Ghisa in conchiglia	Fuso		400	40			
	Ghisa nodulare	Temprato		55HRC	41			

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio ■ Acciaio inox ■ Ghisa ■ Non ferrosi ■ Superleghe ■ Temprato

Condizioni di taglio raccomandate



Dati di lavorazione per TM-REAM - foro passante

ISO	Materiale	Condizione	Materiale No.	Foro passante		Foro passante interrotto	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	1	TT9030	BL	TT9030	BL
		≥ 0.25% C Ricotto	2	Vt = 80 - 200		Vt = 60 - 120	
		< 0.55% C Bonificato	3	B4 - B6	fz = 0.08 - 0.21	B4 - B6	fz = 0.08 - 0.21
		≥ 0.55% C Ricotto	4				
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	5	B7 - B9	fz = 0.12 - 0.27	B7 - B9	fz = 0.09 - 0.21
		Ricotto	6	TT9030	BL	TT9030	BL
		Bonificato	7	Vt = 80 - 200		Vt = 60 - 120	
			8	B4 - B6	fz = 0.08 - 0.21	B4 - B6	fz = 0.08 - 0.21
			9	B7 - B9	fz = 0.12 - 0.27	B7 - B9	fz = 0.09 - 0.21
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	10	TT9030	BL	TT9030	BL
		Bonificato	11	Vt = 20 - 60		Vt = 20 - 60	
B4 - B6			fz = 0.05 - 0.13	B4 - B6	fz = 0.04 - 0.11		
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	12	TT9030	BL	TT9030	BL
		Martensitico	13	Vt = 20 - 40		Vt = 20 - 40	
			14	B4 - B6	fz = 0.05 - 0.13	B4 - B6	fz = 0.04 - 0.11
K	Ghisa grigia (GG)	Austenitico	14	B7 - B9	fz = 0.07 - 0.17	B7 - B9	fz = 0.05 - 0.14
		Ferritico	15	TT9030	BL	TT9030	BL
	Ghisa nodulare (GGG)	Perlitico	16	Vt = 120 - 220		Vt = 80 - 200	
		Ferritico	17	B4 - B6	fz = 0.08 - 0.18	B4 - B6	fz = 0.05 - 0.13
	Ghisa malleabile	Perlitico	18	B7 - B9	fz = 0.10 - 0.24	B7 - B9	fz = 0.07 - 0.17
		Ferritico	19	TT9030	AS or BL	TT9030	BL
		Perlitico	20	Vt = 160 - 280		Vt = 150 - 250	
			B4 - B6	fz = 0.11 - 0.20	B4 - B6	fz = 0.06 - 0.15	
		B7 - B9	fz = 0.11 - 0.24	B7 - B9	fz = 0.08 - 0.19		
		Ferritico	19	TT9030	AS or BL	TT9030	BL
		Perlitico	20	Vt = 100 - 220		Vt = 100 - 220	
		B4 - B6	fz = 0.11 - 0.20	B4 - B6	fz = 0.06 - 0.15		
		B7 - B9	fz = 0.11 - 0.24	B7 - B9	fz = 0.08 - 0.20		

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate

Dati di lavorazione per TM-REAM - foro passante

ISO	Materiale	Condizione	Materiale No.	Foro passante		Foro passante interrotto		
N	Alluminio	Non trattato	21	TT9030	BL	TT9030	BL	
		Trattato	22	Vt = 150 - 400		Vt = 150 - 400		
	Leghe di alluminio	≤ 12% Si	Non trattato	23	B4 - B6	fz = 0.08 - 0.16	B4 - B6	fz = 0.08 - 0.16
		Trattato	24					
	> 12% Si	Alte temperature	25	B7 - B9	fz = 0.10 - 0.20	B7 - B9	fz = 0.10 - 0.20	
	Leghe di rame	> 1% Pb	Alta lavorabilità	26	TT9030	BL	TT9030	BL
					Vt = 50 - 200		Vt = 50 - 200	
		Ottone	27	B4 - B6	fz = 0.08 - 0.18	B4 - B6	fz = 0.05 - 0.13	
		Rame elettrolitico	28	B7 - B9	fz = 0.10 - 0.23	B7 - B9	fz = 0.07 - 0.16	
	Materiali non metallici		Materiali plastici, grafite	29	TT9030	AS	TT9030	AS
				Vt = 25 - 80		Vt = 25 - 80		
Gomma dura			30	B4 - B6	fz = 0.05 - 0.10	B4 - B6	fz = 0.05 - 0.10	
				B7 - B9	fz = 0.10 - 0.20	B7 - B9	fz = 0.10 - 0.20	
S	Leghe resistenti al calore	Base Fe	Ricotto	31	TT9030	L *	TT9030	L *
			Trattato	32	Vt = 15 - 50		Vt = 15 - 50	
		Ricotto	33	B4 - B6	fz = 0.04 - 0.10	B4 - B6	fz = 0.03 - 0.08	
	Base Ni o Co	Trattato	34					
		Fuso	35					
	Titanio, leghe di titanio		36	B7 - B9	fz = 0.05 - 0.13	B4 - B6	fz = 0.04 - 0.11	
Leghe trattate Alpha+beta		37						
H	Acciaio temprato	Temprato	38	TT9030	BL	TT9030	BL	
		Temprato	39	Vt = 25 - 50		Vt = 25 - 50		
	Ghisa in conchiglia	Fuso	40	B4 - B6	fz = 0.06 - 0.15	B4 - B6	fz = 0.06 - 0.15	
	Ghisa nodulare	Temprato	41	B7 - B9	fz = 0.10 - 0.20	B7 - B9	fz = 0.10 - 0.20	

* Le geometria standard dei taglienti non è adatta per alesature di titanio e di leghe resistenti al calore.

Al fine di scegliere la geometria più corretta si prega di chiedere le nostre raccomandazioni.

- I dati di taglio indicati si riferiscono agli utensili corti (sporgenza effettiva dell'alesatura 3xD)
- Per gli utensili lunghi la velocità deve essere ridotta proporzionalmente.
- Per larghi angoli di attacco (geometrie di lamatura) l'avanzamento deve essere ridotto fino al 30%
- Tutti i dati di taglio indicati si riferiscono a macchine con mandrino con l'adduzione di refrigerante

Legenda:

Grado	→	TT9030	BL	←	Geometria di taglio
Velocità di taglio (m/min)	→	Vc = 10 - 20			
TM-REAM misura testa	→	B4-B6	fz = 0.04 - 0.15	←	Avanzamento (mm/z)
		B7-B9	fz = 0.05 - 0.20		

Condizioni di taglio raccomandate



Dati di lavorazione per TM-REAM - foro cieco

ISO	Materiale	Condizione	Materiale No.	Foro cieco		Foro cieco interrotto		
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C	Ricotto	1	TT9030	AS	TT9030	AS
		≥ 0.25% C	Ricotto	2	Vt = 60 - 160		Vt = 60 - 120	
		< 0.55% C	Bonificato	3	B4 - B6	fz = 0.06 - 0.18	B4 - B6	fz = 0.05 - 0.15
		≥ 0.55% C	Ricotto	4				
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Bonificato	5	B7 - B9	fz = 0.08 - 0.20	B7 - B9	fz = 0.07 - 0.16	
		Ricotto	6	TT9030	AS	TT9030	AS	
		Bonificato	7	Vt = 60 - 160		Vt = 60 - 120		
			8	B4 - B6	fz = 0.06 - 0.18	B4 - B6	fz = 0.05 - 0.15	
			9	B7 - B9	fz = 0.08 - 0.20	B7 - B9	fz = 0.07 - 0.16	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	10	TT9030	AS	TT9030	AS	
		Bonificato	11	Vt = 20 - 60		Vt = 20 - 60		
B4 - B6			fz = 0.04 - 0.10	B4 - B6	fz = 0.03 - 0.08			
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	12	TT9030	AS	TT9030	AS	
		Martensitico	13	Vt = 20 - 40		Vt = 20 - 40		
			14	B4 - B6	fz = 0.04 - 0.10	B4 - B6	fz = 0.03 - 0.08	
K	Ghisa grigia (GG)	Austenitico	14	B7 - B9	fz = 0.05 - 0.13	B7 - B9	fz = 0.05 - 0.10	
		Ferritico	15	TT9030	AS	TT9030	AS	
			16	Vt = 80 - 200		Vt = 60 - 120		
	Ghisa nodulare (GGG)	Perlitico	16	B4 - B6	fz = 0.06 - 0.18	B4 - B6	fz = 0.05 - 0.13	
		Ferritico	17	B7 - B9	fz = 0.08 - 0.23	B7 - B9	fz = 0.08 - 0.18	
			17	TT9030	AS	TT9030	AS	
		18	Vt = 160 - 280		Vt = 160 - 240			
	Ghisa malleabile	Perlitico	18	B4 - B6	fz = 0.06 - 0.18	B4 - B6	fz = 0.06 - 0.16	
		Ferritico	19	B7 - B9	fz = 0.08 - 0.23	B7 - B9	fz = 0.08 - 0.18	
			19	TT9030	AS	TT9030	AS	
20		Vt = 100 - 220		Vt = 100 - 220				
Perlitico	20	B4 - B6	fz = 0.06 - 0.18	B4 - B6	fz = 0.05 - 0.15			
	20	B7 - B9	fz = 0.08 - 0.23	B7 - B9	fz = 0.08 - 0.20			

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate

Dati di lavorazione per TM-REAM - foro cieco

ISO	Materiale	Condizione	Materiale No.	Foro cieco		Foro cieco interrotto		
N	Alluminio	Non trattato	21	TT9030	AS	TT9030	AS	
		Trattato	22	Vt = 150 - 400		Vt = 150 - 300		
	Leghe di alluminio	≤ 12% Si	Non trattato	23	B4 - B6	fz = 0.08 - 0.16	B4 - B6	fz = 0.07 - 0.15
		Trattato	24					
	> 12% Si	Alte temperature	25	B7 - B9	fz = 0.11 - 0.20	B7 - B9	fz = 0.11 - 0.20	
		Leghe di rame	> 1% Pb	Alta lavorabilità	26	TT9030	AS	TT9030
			Vt = 50 - 200		Vt = 50 - 200			
	Ottone		27	B4 - B6	fz = 0.08 - 0.16	B4 - B6	fz = 0.08 - 0.16	
			Rame elettrolitico	28	B7 - B9	fz = 0.10 - 0.20	B7 - B9	fz = 0.10 - 0.20
	Materiali non metallici	Materiali plastici, grafite		29	TT9030	AS	TT9030	AS
		Vt = 25 - 80		Vt = 25 - 80				
Gomma dura		30	B4 - B6	fz = 0.05 - 0.10	B4 - B6	fz = 0.05 - 0.10		
S	Leghe resistenti al calore	Base Fe	Ricotto	31	TT9030	L *	TT9030	L *
			Trattato	32	Vt = 15 - 50		Vt = 15 - 50	
		Base Ni o Co	Ricotto	33				
	Trattato		34	B4 - B6	fz = 0.03 - 0.08	B4 - B6	fz = 0.03 - 0.08	
	Fuso		35					
	Titanio, leghe di titanio			36	B7 - B9	fz = 0.04 - 0.11	B7 - B9	fz = 0.04 - 0.11
Leghe trattate Alpha+beta		37						
H	Acciaio temprato	Temprato	38	TT9030	AS	TT9030	AS	
		Temprato	39	Vt = 25 - 50		Vt = 25 - 50		
	Ghisa in conchiglia	Fuso	40	B4 - B6	fz = 0.05 - 0.13	B4 - B6	fz = 0.05 - 0.13	
	Ghisa nodulare	Temprato	41	B7 - B9	fz = 0.10 - 0.20	B7 - B9	fz = 0.10 - 0.20	

* Le geometria standard dei taglienti non è adatta per alesature di titanio e di leghe resistenti al calore.

Al fine di scegliere la geometria più corretta, si prega di chiederle nostre raccomandazioni.

- I dati di taglio indicati si riferiscono agli utensili corti (sporgenza effettiva dell'alesatura 3xD)
- Per gli utensili lunghi, la velocità deve essere ridotta proporzionalmente.
- Per larghi angoli di attacco (geometrie di lamatura) l'avanzamento deve essere ridotto fino al 30%
- Tutti i dati di taglio indicati si riferiscono a macchine con mandrino con l'adduzione di refrigerante

Legenda:

Grado	→	TT9030	BL	←	Geometria di taglio
Velocità di taglio (m/min)	→	Vc = 10 - 20			
TM-REAM misura testa	→	B4-B6	fz = 0.04 - 0.15	←	Avanzamento (mm/z)
		B7-B9	fz = 0.05 - 0.20		

Condizioni di taglio raccomandate



Dati di lavorazione per TB-REAM

			Imbocco A (15°/3°) (Sovrametallo: 0.1 ~ 0.3)						
			Avanzam. (mm/giro)	Angolo	Velocità di taglio Vt (m/min)				
ISO	Materiale	Materiale No.			Metallo duro	Metallo duro riv.	Cermet	PCD	CBN
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	1 - 5	0.1-0.4	6°	40-60	60-80	110-160		
	Acciaio basso legato e da fusione (elementi leganti inferiori al 5%)	6 - 9	0.1-0.4	6°	20-40	40-60	110-160		
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	10 - 11	0.1-0.4	6°	20-40	20-60	20-60		
M	Acciaio inox e da fusione	12 - 14	0.1-0.3	12°	20-40	40-60	20-60		
K	Ghisa grigia (GG)	15 - 16	0.1-0.3	0 / 6°	40-60	60-100			Si prega di contattarci
	Ghisa nodulare (GGG)	17 - 18	0.1-0.3	0 / 6°	40-60	60-100			
	Ghisa malleabile	19 - 20	0.1-0.3	0 / 6°	40-60	60-100			
N	Alluminio	21 - 22						Si prega di contattarci	
	Leghe di alluminio	23 - 25							
	Leghe di rame	26 - 28							
	Materiali non metallici	29 - 30							

			Imbocco C (75°) (Sovrametallo: 0.2 ~ 0.4)							
			Avanzam. (mm/giro)	Angolo	Velocità di taglio Vt (m/min)					
ISO	Materiale	Materiale No.			Metallo duro	Metallo duro riv.	Cermet	PCD	CBN	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	1 - 5								
	Acciaio basso legato e da fusione (elementi leganti inferiori al 5%)	6 - 9								
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	10 - 11								
M	Acciaio inox e da fusione	12 - 14								
K	Ghisa grigia (GG)	15 - 16								Si prega di contattarci
	Ghisa nodulare (GGG)	17 - 18								
	Ghisa malleabile	19 - 20								
N	Alluminio	21 - 22	0.15-0.3	12°	150-250			Si prega di contattarci		
	Leghe di alluminio	23 - 25	0.15-0.3	12°	150-250					
	Leghe di rame	26 - 28								
	Materiali non metallici	29 - 30								

• I parametri di taglio nella tabella sopra indicata devono essere utilizzati come partenza per le nuove applicazioni. Le condizioni ottimali per una specifica applicazione devono essere valutate mediante l'esame dei risultati e modificando di conseguenza i parametri di taglio

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio ■ Acciaio inox ■ Ghisa ■ Non ferrosi

Condizioni di taglio raccomandate



Dati di lavorazione per TB-REAM

			Imbocco B (30°/3°) (Sovrametallo: 0.1 ~ 0.3)						
			Avanzam. (mm/giro)	Angolo	Velocità di taglio Vt (m/min)				
ISO	Materiale	Materiale No.			Metallo duro	Metallo duro riv.	Cermet	PCD	CBN
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	1 - 5	0.1-0.4	6°	60-80	80-120	110-160		
	Acciaio basso legato e da fusione (elementi leganti inferiori al 5%)	6 - 9	0.1-0.4	6°	60-80	80-120	110-160		
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	10 - 11	0.1-0.4	6°	40-60	40-80	40-80		
M	Acciaio inox e da fusione	12 - 14	0.1-0.3	12°	40-60	60-80	60-80		
K	Ghisa grigia (GG)	15 - 16	0.1-0.3	0 / 6°	60-80	80-120			Si prega di contattarci
	Ghisa nodulare (GGG)	17 - 18	0.1-0.3	0 / 6°	60-80	80-120			
	Ghisa malleabile	19 - 20	0.1-0.3	0 / 6°	60-80	80-120			
N	Alluminio	21 - 22		12°	160-200			Si prega di contattarci	
	Leghe di alluminio	23 - 25		12°	160-200				
	Leghe di rame	26 - 28		0°	80-100				
	Materiali non metallici	29 - 30		0°	10-70				

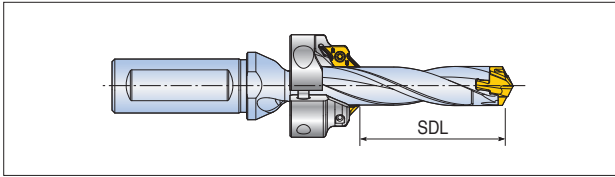
			Imbocco D (30°/3°) (Sovrametallo: 0.1 ~ 0.2)						
			Avanzam. (mm/giro)	Angolo	Velocità di taglio Vt (m/min)				
ISO	Materiale	Materiale No.			Metallo duro	Metallo duro riv.	Cermet	PCD	CBN
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	1 - 5	0.1-0.4	6°	60-80	80-120	110-160		
	Acciaio basso legato e da fusione (elementi leganti inferiori al 5%)	6 - 9	0.1-0.4	6°	60-80	80-120	110-160		
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	10 - 11	0.1-0.4	6°	40-60	40-80	40-80		
M	Acciaio inox e da fusione	12 - 14	0.1-0.3	12°	40-60	60-80	60-80		
K	Ghisa grigia (GG)	15 - 16	0.1-0.3	0 / 6°	60-80	80-120			Si prega di contattarci
	Ghisa nodulare (GGG)	17 - 18	0.1-0.3	0 / 6°	60-80	80-120			
	Ghisa malleabile	19 - 20	0.1-0.3	0 / 6°	60-80	80-120			
N	Alluminio	21 - 22		12°	110-200			Si prega di contattarci	
	Leghe di alluminio	23 - 25		12°	160-200				
	Leghe di rame	26 - 28		0°	80-100				
	Materiali non metallici	29 - 30							

• I parametri di taglio nella tabella sopra indicata devono essere utilizzati come partenza per le nuove applicazioni. Le condizioni ottimali per una specifica applicazione devono essere valutate mediante l'esame dei risultati e modificando di conseguenza i parametri di taglio

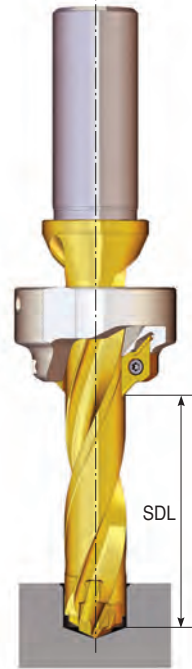
• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio ■ Acciaio inox ■ Ghisa ■ Non ferrosi

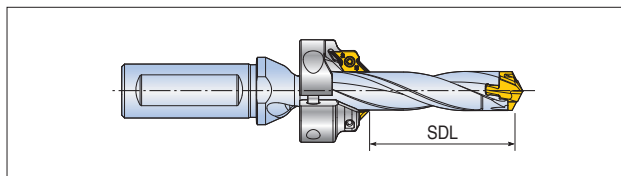
► Anello per smussi - DRILL RUSH



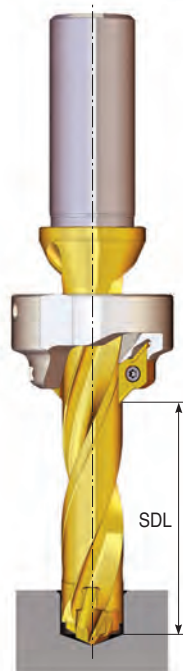
	Descrizione	Descrizione CFR	SDL	
			Min	Max
3D	TCD 130-134-16T3/S0-3D	CFR D130-A45	19	19
	135-139-16T3/S0-3D	CFR D135-A45	19	20
	140-144-16T3/S0-3D	CFR D140-A45	21	22
	145-149-16T3/S0-3D	CFR D145-A45	22	23
	150-159-20T3/S0-3D	CFR D150-A45	23	23
	160-169-20T3/S0-3D	CFR D160-A45	24	25
	170-179-20T3/S0-3D	CFR D170-A45	26	28
	180-189-25T2/S0-3D	CFR D180-A45	27	30
	190-199-25T2/S0-3D	CFR D190-A45	29	33
	200-209-25T2/S0-3D	CFR D200-A45	30	36
	210-219-25T2/S0-3D	CFR D210-A45	32	39
	220-229-25T2/S0-3D	CFR D220-A45	33	42
	230-239-32T2/S0-3D	CFR D230-A45	35	45
240-249-32T2/S0-3D	CFR D240-A45	36	48	
250-259-32T2/S0-3D	CFR D250-A45	38	51	
5D	TCD 100-104-16T3/S0-5D	CFR D100-A45	28	28
	105-109-16T3/S0-5D	CFR D105-A45	29	30
	110-114-16T3/S0-5D	CFR D110-A45	31	33
	115-119-16T3/S0-5D	CFR D115-A45	32	35
	120-124-16T3/S0-5D	CFR D120-A45	33	45
	125-129-16T3/S0-5D	CFR D125-A45	34	40
	130-134-16T3/S0-5D	CFR D130-A45	36	43
	135-139-16T3/S0-5D	CFR D135-A45	37	43
	140-144-16T3/S0-5D	CFR D140-A45	38	48
	145-149-16T3/S0-5D	CFR D145-A45	39	48
	150-159-20T3/S0-5D	CFR D150-A45	41	53
	160-169-20T3/S0-5D	CFR D160-A45	43	58
	170-179-20T3/S0-5D	CFR D170-A45	46	63
	180-189-25T2/S0-5D	CFR D180-A45	48	68
	190-199-25T2/S0-5D	CFR D190-A45	51	73
	200-209-25T2/S0-5D	CFR D200-A45	53	78
	210-219-25T2/S0-5D	CFR D210-A45	56	79
220-229-25T2/S0-5D	CFR D220-A45	58	84	
230-239-32T2/S0-5D	CFR D230-A45	61	89	
240-249-32T2/S0-5D	CFR D240-A45	63	94	
250-259-32T2/S0-5D	CFR D250-A45	66	99	



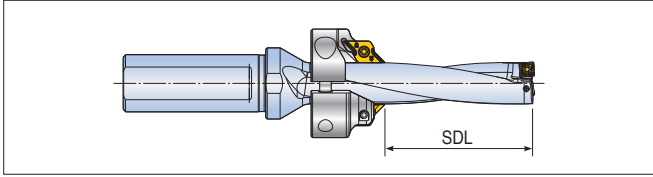
► Anello per smussi - DRILL RUSH



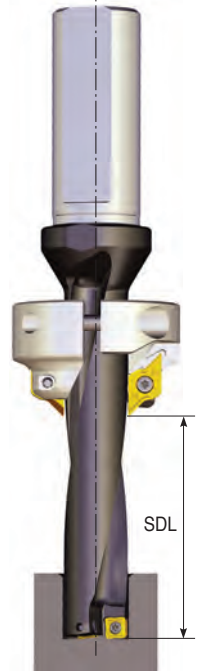
	Descrizione	Descrizione CFR	SDL	
			Min	Max
8D	TCD 100-104-16T3/S0-8D	CFR D100-A45	45	58
	105-109-16T3/S0-8D	CFR D105-A45	49	62
	110-114-16T3/S0-8D	CFR D110-A45	49	66
	115-119-16T3/S0-8D	CFR D115-A45	53	70
	120-124-16T3/S0-8D	CFR D120-A45	53	74
	125-129-16T3/S0-8D	CFR D125-A45	57	78
	130-134-16T3/S0-8D	CFR D130-A45	57	82
	135-139-16T3/S0-8D	CFR D135-A45	61	84
	140-144-16T3/S0-8D	CFR D140-A45	61	88
	145-149-16T3/S0-8D	CFR D145-A45	65	92
	150-159-20T3/S0-8D	CFR D150-A45	65	96
	160-169-20T3/S0-8D	CFR D160-A45	69	103
	170-179-20T3/S0-8D	CFR D170-A45	73	111
	180-189-25T2/S0-8D	CFR D180-A45	77	118
	190-199-25T2/S0-8D	CFR D190-A45	81	126
	200-209-25T2/S0-8D	CFR D200-A45	85	134
	210-219-25T2/S0-8D	CFR D210-A45	89	142
220-229-25T2/S0-8D	CFR D220-A45	93	150	
230-239-32T2/S0-8D	CFR D230-A45	97	158	
240-249-32T2/S0-8D	CFR D240-A45	101	166	
250-259-32T2/S0-8D	CFR D250-A45	105	174	
12D	TCD 120-124-16S0-12D	CFR D120-A45	87	121
	125-129-16S0-12D	CFR D125-A45	90	127
	130-134-16S0-12D	CFR D130-A45	93	133
	135-139-16S0-12D	CFR D135-A45	96	137
	140-144-16S0-12D	CFR D140-A45	99	143
	145-149-16S0-12D	CFR D145-A45	102	149
	150-159-20S0-12D	CFR D150-A45	105	155
	160-169-20S0-12D	CFR D160-A45	111	166
	170-179-20S0-12D	CFR D170-A45	117	178
	180-189-25S0-12D	CFR D180-A45	123	189
	190-199-25S0-12D	CFR D190-A45	129	201
	200-209-25S0-12D	CFR D200-A45	135	213
	210-219-25S0-12D	CFR D210-A45	141	225
220-229-25S0-12D	CFR D220-A45	147	237	



► Anello per smussi - TOP DRILL e T-DRILL



	TOP DRILL	T-DRILL	Descrizione CFR	SDL	
				Min	Max
3D	TOP -	TDR 3125-20T2-05	CFR D125-A45	16	16
	-	3130-20T2-05	CFR D130-A45	16	16
	-	3135-20T2-05	CFR D135-A45	17	18
	3140-20T2-05	3140-20T2-05	CFR D140-A45	17	18
	3145-20T2-05	3145-20T2-05	CFR D145-A45	18	19
	3150-20T2-05	3150-20T2-05	CFR D150-A45	18	19
	3155-20T2-05	3155-25T2-06	CFR D160-A45	19	21
	3160-20T2-05	3160-25T2-06	CFR D160-A45	19	21
	3165-25T2-06	3165-25T2-06	CFR D170-A45	21	24
	3170-25T2-06	3170-25T2-06	CFR D170-A45	22	24
	3175-25T2-06	3175-25T2-06	CFR D180-A45	23	27
	3180-25T2-06	3180-25T2-06	CFR D180-A45	23	26
	3185-25T2-06	3185-25T2-06	CFR D180-A45	24	29
	3190-25T2-06	3190-25T2-06	CFR D190-A45	25	29
	3195-25T2-07	3195-25T2-06	CFR D190-A45	25	32
	3200-25T2-07	3200-25T2-06	CFR D200-A45	26	32
	3205-25T2-07	3205-25T2-06	CFR D200-A45	27	35
	3210-25T2-07	3210-25T2-06	CFR D210-A45	27	35
	3215-25T2-07	3215-25T2-07	CFR D210-A45	28	38
	3220-25T2-07	3220-25T2-07	CFR D220-A45	29	38
	3225-25T2-08	3225-25T2-07	CFR D220-A45	29	41
	3230-25T2-08	3230-25T2-07	CFR D230-A45	30	41
	3235-25T2-08	3235-25T2-07	CFR D230-A45	31	44
	3240-25T2-08	3240-25T2-07	CFR D240-A45	31	44
	3245-25T2-08	3245-25T2-07	CFR D240-A45	32	47
	3250-25T2-08	3250-25T2-07	CFR D250-A45	33	47

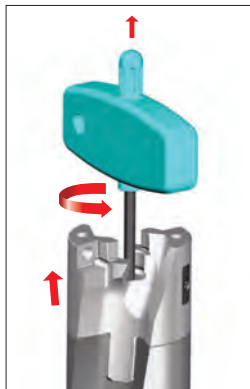


► Istruzioni per la sostituzione della testa modulare

1. Rimuovere entrambi gli inserti esterni, quindi rimuovere la cuspidi centrale. (Durante il serraggio, procedere in ordine inverso)



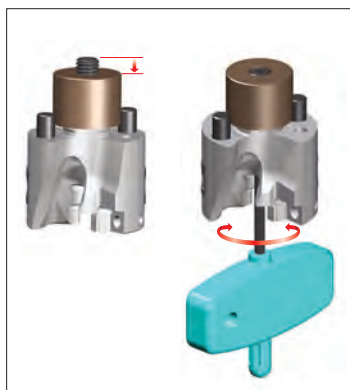
2. Utilizzare la chiave per ruotare la vite in senso antiorario e rimuovere la testa modulare



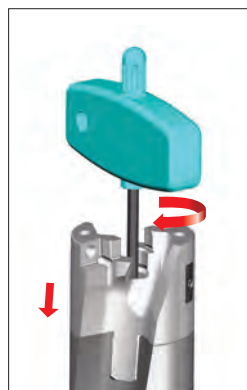
3. Inserire la bussola di settaggio sul fondo della testa modulare smontata



4. Ruotare la vite fino a un perfetto allineamento con la bussola di settaggio



5. Rimuovere la bussola di settaggio e fissare la testa modulare al corpo punta

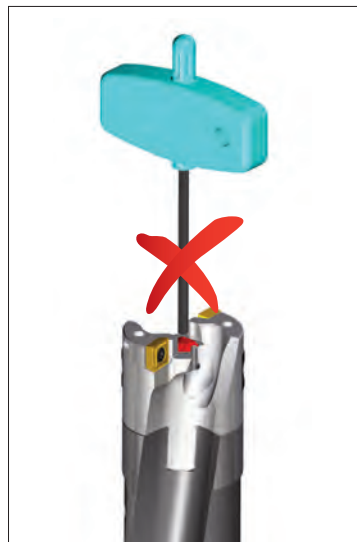


Bussola di settaggio

Diam.	Descrizione
D26-D29	SG TNDH D26-29-TP
D30-D35	SG TNDH D30-35-TP
D36-D39	SG TNDH D36-39-TP
D40-D43	SG TNDH D40-43-TP
D44-D50	SG TNDH D44-50-TP

► Smontaggio della testa modulare in caso di danni al foro centrale

Se la testa modulare non può essere sbloccata a causa di danni al foro centrale, inserire la chiave dalla parte del gambo e ruotare quindi in senso orario per smontare la testa modulare.



Danno al foro centrale



- La chiave di smontaggio e il suo manico sono inclusi con il corpo punta modulare (MDB Dxx/xx...)

Informazioni tecniche

► Tolleranza foro

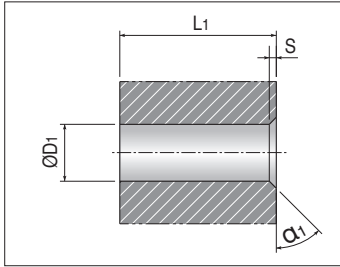
Diametro D (mm)		Tolleranza (µm)															
>D	≤D	B10	C9	C10	D8	D9	D10	E7	E8	E9	F6	F7	F8	G6	G7	H6	H7
-	3	+180 +140	+85 +60	+100 +60	+34 +20	+45 +20	+60 +20	+24 +14	+28 +14	+39 +14	+12 +6	+16 +6	+20 +6	+8 +2	+12 +2	+6 0	+10 0
3	6	+180 +140	+100 +70	+118 +70	+48 +30	+60 +30	+78 +30	+32 +20	+38 +20	+50 +20	+18 +10	+22 +10	+28 +10	+12 +4	+16 +4	+8 0	+12 0
6	10	+208 +150	+116 +80	+138 +80	+62 +40	+76 +40	+98 +40	+40 +25	+47 +25	+61 +25	+22 +13	+28 +13	+35 +13	+14 +5	+20 +5	+9 0	+15 0
10	14	+220 +150	+138 +95	+165 +95	+77 +50	+93 +50	+120 +50	+50 +32	+59 +32	+75 +32	+27 +16	+34 +16	+43 +16	+17 +6	+24 +6	+11 0	+18 0
14	18																
18	24	+244 +160	+162 +110	+194 +110	+98 +65	+117 +65	+149 +65	+61 +40	+73 +40	+92 +40	+33 +20	+41 +20	+53 +20	+20 +7	+28 +7	+13 0	+21 0
24	30																
30	40	+270 +170	+182 +120	+220 +120	+119 +80	+142 +80	+180 +80	+75 +50	+89 +50	+112 +50	+41 +25	+50 +25	+64 +25	+25 +9	+34 +9	+16 0	+25 0
40	50	+280 +180	+192 +130	+230 +130													
50	65	+310 +190	+214 +140	+260 +140	+146 +100	+174 +100	+220 +146	+90 +60	+106 +60	+134 +60	+49 +30	+60 +30	+76 +30	+29 +10	+40 +10	+19 0	+30 0
65	80	+320 +200	+224 +150	+270 +150													

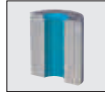
Informazioni tecniche

► Tolleranza foro

Tolleranza (μm)																	
H8	H9	H10	JS6	JS7	K6	K7	M6	M7	N6	N7	P6	P7	R7	S7	T7	U7	X7
+14 0	+25 0	+40 0	± 3	± 5	0 -6	0 -10	-2 -8	-2 -12	-4 -10	-4 -14	-6 -12	-6 -16	-10 -20	-14 -24	-	-18 -28	-20 -30
+18 0	+30 0	+48 0	± 4	± 6	+2 -6	+3 -9	-1 -9	0 -12	-5 -13	-4 -16	-9 -17	-8 -20	-11 -23	-15 -27	-	-19 -31	-24 -36
+22 0	+36 0	+58 0	± 4.5	± 7.5	+2 -7	+5 -10	-3 -12	0 -15	-7 -16	-4 -19	-12 -21	-9 -24	-13 -28	-17 -32	-	-22 -37	-28 -43
+27 0	+43 0	+70 0	± 5.5	± 9	+2 -9	+6 -12	-4 -15	0 -18	-9 -20	-5 -23	-15 -26	-11 -29	-16 -34	-21 -39	-	-26 -44	-33 -51 -38 -56
+33 0	+52 0	+84 0	± 6.5	± 10.5	+2 -11	+6 -15	-4 -17	0 -21	-11 -24	-7 -28	-18 -31	-14 -35	-20 -41	-27 -48	-	-33 -54	-46 -67 -56 -77
+39 0	+62 0	+100 0	± 8	± 12.5	+3 -13	+7 -18	-4 -20	0 -25	-12 -28	-8 -33	-21 -37	-17 -42	-25 -50	-34 -59	-	-39 -64 -45 -70	-51 -76 -61 -86
+46 0	+74 0	+120 0	± 9.5	± 15	+4 -15	+9 -21	-5 -24	0 -30	-14 -33	-9 -39	-26 -45	-21 -51	-30 -60 -32 -62	-42 -72 -48 -78	-55 -85 -64 -94	-76 -106 -91 -121	-

► Dimensioni



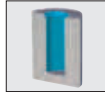


Passante

ØD1 _____

α1 _____

•Tolleranza foro _____



Cieco

L1 _____

S _____

Tipologia Punta

- TOPDRILL _____
- T-DRILL _____

Informazioni tecniche

- Tipo di macchina
- MCT Tornio
- Verticale Orizzontale

Nome macchina _____

Potenza _____ kW

•Adduzione refrigerante

Interna Esterna

Pressione _____ bar

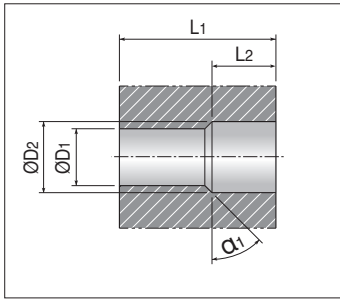
Tipo _____


Pezzo da lavorare

•Componente _____

•Materiale _____

•Durezza _____






Passante

ØD1 _____

L1 _____

α1 _____

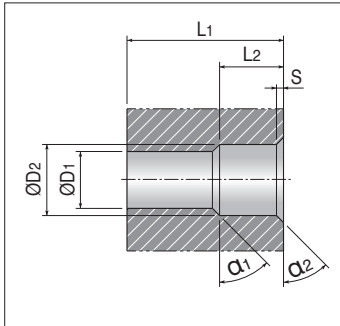
•Tolleranza foro _____




Cieco

ØD2 _____

L2 _____





Passante


ØD1 _____

L1 _____

α1 _____

S _____

•Tolleranza foro _____



Cieco





ØD2 _____

L2 _____

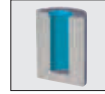
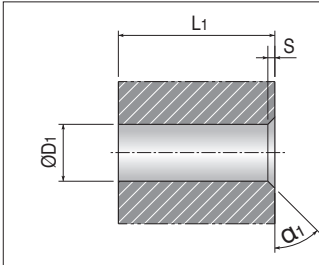
α2 _____

Commenti

Tipologia attacco

-  Attacco cilindrico (ISO 9766)
-  Attacco whistle notch
-  Attacco cilindrico con piano
-  Attacco weldon

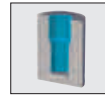
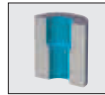
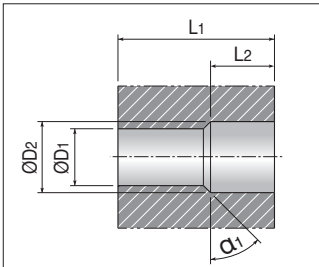
► Dimensioni



Passante Cieco
 ØD1 _____ L1 _____
 α1 _____ S _____
 •Tolleranza foro _____

Informazioni tecniche

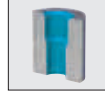
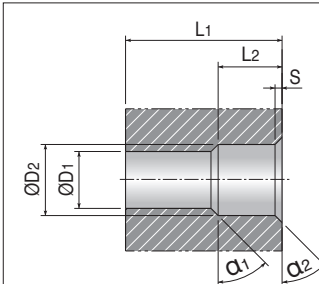
- Tipo di macchina
 MCT Tornio
- Verticale Orizzontale
- Nome macchina _____
- Potenza _____ kW
- Adduzione refrigerante
 Interna Esterna
- Pressione _____ bar
- Tipo _____



Passante Cieco
 ØD1 _____ ØD2 _____
 L1 _____ L2 _____
 α1 _____
 •Tolleranza foro _____

Pezzo da lavorare

- Componente _____
- Materiale _____
- Durezza _____



Passante Cieco
 ØD1 _____ ØD2 _____
 L1 _____ L2 _____
 α1 _____ α2 _____
 S _____
 •Tolleranza foro _____

Tipologia attacco



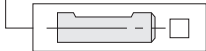
Attacco cilindrico (ISO 9766)



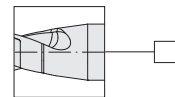
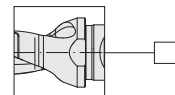
Attacco whistle notch



Attacco cilindrico con piano



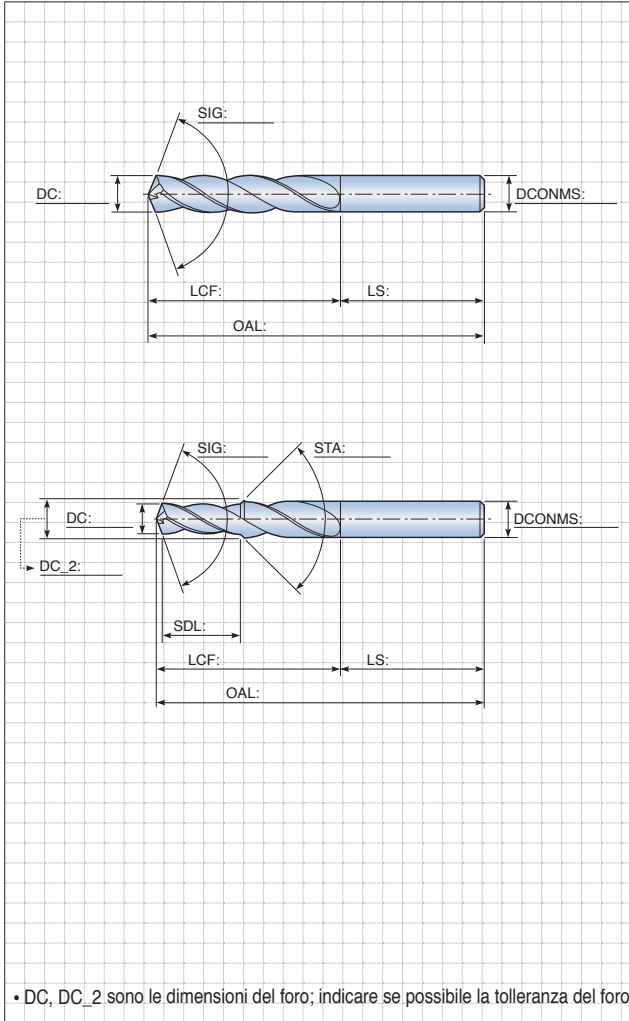
Attacco weldon



- Diametro: _____
- Lunghezza: _____

Commenti

► Dimensioni



Informazioni tecniche

- Tipo di macchina
MCT Tornio
- Verticale Orizzontale
- Nome macchina _____
- Potenza _____ kW
- Adduzione refrigerante
Interna Esterna
- Pressione _____ bar
- Tipo _____

Pezzo da lavorare

- Componente _____
- Materiale _____
- Durezza _____

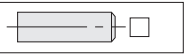
Tipologia foro

- Foro cieco
- Foro passante

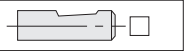
Rivestimento

- TiAIN
- Non rivestito

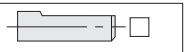
Tipologia attacco



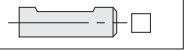
Attacco cilindrico



Attacco whistle notch



Attacco cilindrico con piano



Attacco weldon

Commenti

► Modulo d'ordine foratura profonda

★: Campi obbligatori

Azienda :	N. richiesta :
Indirizzo :	Data richiesta :
Contatto :	N. cliente :

Pezzo da lavorare (Se possibile allegare un disegno)	
Nome prodotto	
Diametro foro (ø)	(mm)
Profondità foro (lungh. foratura)	(mm)
N° di fori	
Tolleranza (del foro)	
Finitura superficiale (Rz,Ra...)	
Deviazione (mm/100)	
Rettilinearità (mm/100)	
Materiale	
Materiale (DIN,AISI,JIS...)	
Durezza (HB,HS,HRC...)	
Condizione★	<input type="checkbox"/> Ricotto <input type="checkbox"/> Bonificato <input type="checkbox"/> Rinvenuto <input type="checkbox"/> Fuso <input type="checkbox"/> <input type="checkbox"/> Altro <input type="checkbox"/>

Macchina	
Nome fornitore macchina	
Tipo di macchina/modello	
Rigidità	<input type="checkbox"/> Buona <input type="checkbox"/> Normale <input type="checkbox"/> Scarsa
Data di costruzione	
Retrofittata	<input type="checkbox"/> Tornio CNC <input type="checkbox"/> M/C <input type="checkbox"/> Altro
Doppia rotazione (TR/WR)	<input type="checkbox"/> Utensile e pezzo da lavorare
Pezzo rotante (WR)	<input type="checkbox"/>
Utensile rotante (TR)	<input type="checkbox"/>
Dispositivi di sicurezza	
Potenza motore	(kW)

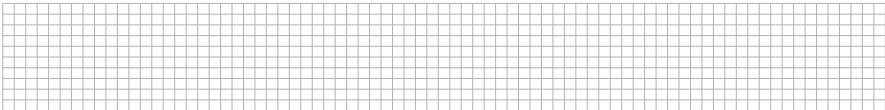
Tipo di refrigerante	
Nome fornitore refrigerante	
Base acqua	<input type="checkbox"/> Solubile <input type="checkbox"/> Emulsione %
Base olio	<input type="checkbox"/>
Pressione refrigerante	(bar)
Volume refrigerante	(L/min)

► Modulo d'ordine foratura profonda

*: Campi obbligatori

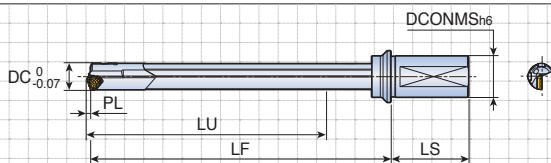
Utensile (Testina)	
Diametro punta (ϕ)	(mm)
Filetto	<input type="checkbox"/> Interno <input type="checkbox"/> Esterno
Brasato	<input type="checkbox"/>
Ad inserto	<input type="checkbox"/> Regolabile <input type="checkbox"/> Montaggio diretto <input type="checkbox"/>
Rivestimento	<input type="checkbox"/> Rivestito <input type="checkbox"/> Non rivestito
Tipo rivestimento	<input type="checkbox"/> TiN <input type="checkbox"/> TiAlN <input type="checkbox"/> Altro
• Foratura dal pieno	<input type="checkbox"/>
• Allargatura	<input type="checkbox"/>
Angolo di taglio *	<input type="checkbox"/> 20° <input type="checkbox"/> 45°
Saldo brasata a inserti	<input type="checkbox"/> Angolo normale <input type="checkbox"/> Angolo positivo
Misura preforo (per lato)	(mm)
Finitura fondo *	<input type="checkbox"/> Sferico R <input type="checkbox"/> Fondo piatto R <input type="checkbox"/> Raggiato R
	<input type="checkbox"/> Misto R (es. piatto + raggiato)
• Carotatura	<input type="checkbox"/>
Misura carota (ϕ)	(mm) <input type="checkbox"/>
Diametro tubo interno (ϕ)	(mm)
Diametro tubo esterno (ϕ)	(mm)
Tubo	
Diametro esterno (ϕ)	(mm)
Lunghezza totale (L)	(mm)
Filetto interno	<input type="checkbox"/>
Filetto esterno	<input type="checkbox"/> 4 principi <input type="checkbox"/> 2 principi <input type="checkbox"/> 1 principi
Filetto tubo	<input type="checkbox"/> 1 estremità <input type="checkbox"/> Entrambe le estremità
Lunghezza tubo interno	(mm)
Imbocco tubo interno	<input type="checkbox"/> 1 estremità <input type="checkbox"/> Entrambe le estremità
Sistema foratura	
Sistema tubo singolo	<input type="checkbox"/> STS
Sistema tubo doppio	<input type="checkbox"/> DTS
Condizioni di barenatura	
Foro passante	<input type="checkbox"/>
Foro cieco	<input type="checkbox"/>
Intersezione di foro *	<input type="checkbox"/>

* Si prega di fare uno schizzo della vostra operazione di foratura



Informazioni generali		Produzione	
Quantità per anno:			
Attuali performance:			
Grado, durata, etc:			
Parametri di taglio:	Vt=	m/min,	N=
	fg=	mm/g,	F=
			g/min
			mm/min

► Modulo d'ordine foratura profonda



Schizzo operazione di foratura

- Nota: Potrebbe essere necessario modificare alcuni dei parametri da voi indicati in base alla nostra esperienza in merito al tipo di lavorazione che dovrete eseguire

Utensile	
Quantità	
Diametro nominale e tolleranza	
- Si prega di indicare le dimensioni nello schizzo sopra riportato	
Codolo	
Codice n.	

- Per i codoli standard, si prega di utilizzare i codici delle pagine successive e per i codoli speciali si prega di allegare schizzo e specifiche.

Pezzo da lavorare (Se possibile si prega di allegare il disegno)	
Descrizione materiale (Numero materiale DIN o altri standard)	
Durezza e proprietà	
Tipo di foro	<input type="checkbox"/> Foro cieco <input type="checkbox"/> Foro passante <input type="checkbox"/> Foratura in un preforo
	<input type="checkbox"/> Ingresso inclinato <input type="checkbox"/> Foratura da pieno <input type="checkbox"/> Barenatura
	<input type="checkbox"/> Uscita inclinata
Profondità di foratura	mm
Tolleranza foro	
Applicazione	Pezzo da lavorare <input type="checkbox"/> Statico <input type="checkbox"/> Rotante
	Utensile <input type="checkbox"/> Statico <input type="checkbox"/> Rotante

Macchina	
Tipo di macchina	
Potenza kW	
Dati di taglio	Velocità di taglio (Vt) m/min
	Numero di giri Nmin : g/min Nmax : g/min
	Avanzamento giro Fmin : mm/giro Fmin : mm/giro
	Avanzamento (VF) mm/min
Refrigerante	<input type="checkbox"/> Olio <input type="checkbox"/> Emulsione <input type="checkbox"/> Altro
	Pressione Bar
	Volume litro/min

► Codoli punta a cannone standard per lavorazioni su centri di lavoro o torni

Codoli

Sono disponibili codoli per macchine dedicate e per CNC con qualsiasi diametro e lunghezza specificati. Le informazioni tecniche e i codici dei codoli sono riportate nella tabella sottostante.

Tipologia codolo	Forma	DCONMS x LS	Codice codolo
Cilindrico DIN1835A DIN6535HA		20x50	10
		25x56	11
		32x60	12
		40x70	13
		.75x2.03"	95
		1.00x2.28"	96
		1.25x2.28"	97
Weldon DIN1835B DIN6535HB		20x50	22
		25x56	23
		32x60	24
		40x70	25
		.75x2.03"	99
		1.00x2.28"	100
Whistle notch DIN1835E		20x50	34
		25x56	35
		32x60	36
		40x70	37

► Codoli standard per foratrici

Tipologia codolo	Forma	DCONMS x LS	Codice codolo
DIN228AK		CM2	46
		CM3	47
		CM4	48
DIN228BK		CM2	50
		CM3	51
		CM4	52
Bloccaggio centrale piano a 15°		.750x2.75"	56
		25x70	57
		1.00x2.75"	58
		1.25x2.75"	59
		1.50x2.75"	60
Bloccaggio frontale piano a 15°		16x50	61
Cilindrico con filetto		25x100 M16x1.5	66
		36x120 M24x1.5	67
Tipo VDI		25x112 M16x1.5	70
		36x135 M24x1.5	71
Bloccaggio centrale esagonale		25x70	72
		32x70	73
Bloccaggio centrale conico		.75x2.75"	76
		20x70	77
Bloccaggio frontale piano a 2°		1.00x2.75"	80
		1.00x3.94"	81
		1.25x2.75"	82
		1.25x3.94"	83
		1.50x2.75"	84
		1.50x3.94"	85
Filetto trapezoidale		28x126 Tr 28x2	88
		36x162 Tr 36x2	89
Minimale		25x50	91
		35x60	92

► Modulo d'ordine alesatore

★ : Campi obbligatori

Data:	Filiale:
Azienda ★ :	Scadenza richiesta:
Contatto:	
Indirizzo:	

Motivo della richiesta	
Nuovo utensile <input type="checkbox"/>	Problema <input type="checkbox"/>
Qualità	
Tempo del ciclo	
Fornitore alternativo	
Altro	

Utensile attuale	
Costruttore	
Tipo di utensile	
Velocità e avanz.	
Durata	
N. di denti	
Tipo di refrigerante	

Macchina	
Modello	
Tipo ★	Verticale <input type="checkbox"/>
	Orizzontale <input type="checkbox"/>
	Multi mandrino <input type="checkbox"/>
Attacco ★	
Giri max	
Potenza	
Precisione mandrino	
Refrigerante	

Pezzo da lavorare																					
Descrizione ★																					
Durezza ★																					
Misura preforo ★	(Tolleranza :)																				
Profondità ★																					
Tipo di foro																					
<table border="1"> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	
Informazioni sul bloccaggio																					

Refrigerante	
Olio	<input type="checkbox"/>
MQL	<input type="checkbox"/>
Emulsione	<input type="checkbox"/>
Rapporto miscela	
Pressione	

Requisiti di qualità	
Tolleranza ★	
Finitura super. (Ra) ★	
Rotondità	
Rettilinearità	
Cilindricità	
Concentricità	

Utensile	
Tipo ★	TM(testina intercambiabile) <input type="checkbox"/> TB(lama singola) <input type="checkbox"/> TS(integrale) <input type="checkbox"/> Altro <input type="checkbox"/> ()
Diametro ★	
Profondità di taglio ★	
Refrigerante ★	Interno <input type="checkbox"/> Esterno <input type="checkbox"/>
Tipo attacco ★	
Tipo di mandrino	Pinza <input type="checkbox"/> Idraulico <input type="checkbox"/> Altro <input type="checkbox"/>
Mandrino regolabile	Si <input type="checkbox"/> No <input type="checkbox"/>

FRESATURA



FRESATURA

INDUSTRY 4.0

Contenuti

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Guida alle icone



➤ Angolo di approccio



➤ Angolo vite



➤ Pagina inserto



➤ Pagina condizioni di taglio



➤ Pagina dati di rampa



➤ Pagina tipo di attacco



➤ Pagina informazioni tecniche



➤ Pagina corpo fresa
























Inserti per fresatura

Sistema di codifica inserti	E222
Inserti	E224
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Condizioni di taglio raccomandate	E287
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Guida alla scelta dell'utensile

Frese a manicotto

						
Serie		4T-TF90	3P TF90	6N TF90	SCRM90TN	TFM90AX 2S-TFM90AP TFM90AP
						
Pagina		E40	E41-E43	E44-E46	E47-E48	E49-E52
Angolo di approccio		90°	90°	90°	90°	90°
Max prof. taglio (mm)		8.3-12.5	4.7-15	4.1-9.2	13-15	5.5-17.9
Diametro (mm)		Ø40-Ø200	Ø32-Ø250	Ø40-Ø250	Ø50-Ø250	Ø32-Ø200
Inserti		LPK(H)U 0904 LPKU 1407	3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	6NKU 0403 6NGU 0604 6NGU 0905	TNMX 1806 TNM(G)X 2207	AXM(C)T 0602 APK(C)T 09T3 APK(C)T 1204 APK(C)T 1705/06 APKT1907
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 	●	●	●	●	●
	Cava 	●	●	●	●	●
	Rampa lineare 	●	●			●
	Interp. elicoidale 	●	●			●
	Parete inclinata e smusso 					
	Scanalatura laterale 					
	Profilatura 					
	Step down 					
	Allargatura 					
Alto avanz. 						

Guida alla scelta dell'utensile



Frese a manicotto

					
2P-TF90	TFM90AN	4N TF90	8D-TF90	TFM90XEV	Per finitura 4W-TF90
					
E53	E54-E55	E56-E57	E58-E59	E60	E61
90°	90°	90°	90°	90°	-
4.7-6.0	11-15	3.5-13.8	5.0-8.5	16-21	0.5
Ø32-Ø80	Ø40-Ø200	Ø32-Ø80	Ø32-Ø160	Ø40-Ø200	Ø50-Ø160
2PKT 0503 2PKT 0704	ANM(H)X 1106 ANM(H)X 1607	4NKT 0402 4NK(H)T 0603 4NK(H)T 0904 4NKT 1106 4NKT 1407	SQKU 0703 SQK(H)U 1206	XEVT 1605 XEVT 2206	4WHU 1207
●	●	●	●	●	●
●	●	●	●	●	
●	●	●	●	●	
●	●	●		●	
●	●	●		●	
		●		●	

● Raccomandata

Guida alla scelta dell'utensile

Frese a manicotto

Serie		CHASE2QUAD	CHASE2QUAD	LIONMILL	LIONMILL	CHASE2QUAD
		Per finitura TFM90SNS	Per finitura TFM90SNS-QC TQ90SNS	LM90TP	LM90SE	TFM90SN TFM88SN
Pagina		E62	E63	E64	E65	E66-E67
Angolo di approccio		90°	90°	90°	90°	90°, 88°
Max prof. taglio (mm)		1.0	1.0	17.6	17.0	12.0
Diametro (mm)		Ø50-Ø250	Ø250-Ø400	Ø80-Ø315	Ø125-Ø315	Ø50-Ø200
Inserti		SNEX 1204 SNET 1205	SNEX 1204 SNET 1205	TPKN 2204	SEKX 2107	SNGX 1306 SNGX 1306 ZN
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 			●	●	●
	Cava 			●		
	Rampa lineare 					
	Interp. elicoidale 					
	Parete inclinata e smusso 					
	Scanalatura laterale 					
	Profilatura 					
	Step down 					
	Allargatura 					
Alto avanz. 						

Guida alla scelta dell'utensile

Frese a manicotto

<i>CHASE2QUAD</i>	<i>LIONMILL</i>	<i>CHASEMILL</i>	<i>CHASE10MILL</i>	<i>LIONMILL</i>	<i>HEXA2MILL</i>
TFM75SN	LM75SP	TFM75AP	TFM65PT	LM60SC	TFM55AHNS
					
E68	E69	E70	E71	E72-E73	E74
75°	75°	75°	65°	60°	55°
9.5	9.5-12.5	3.9	3.3-6.5	13.0-18.0	5.0
Ø50-Ø250	Ø80-Ø315	Ø80-Ø125	Ø40-Ø125	Ø125-Ø500	Ø50-Ø160
SNM(G)X 1306 EN SNMX 1306 XTN	SPKN 1203 SPKN 1504	APKT 1705 PER	PTKU 0503 PTKU 1006	SCKN 2107 SCKN 2708	HNC(M)X 05
●	●	●	●	●	●
●	●		●	●	●

● Raccomandata

Guida alla scelta dell'utensile

Frese a maniccotto

						
Serie		12D-TF45	14D-F45XN	14D-F45XNH	14D-F45XNW 14D-F45XNW-QC	7S-F45
						
Pagina		E75-E76	E77-E78	E79	E80	E81
Angolo di approccio		45°	45°	45°	45°	45°
Max prof. taglio (mm)		3.0-5.0	3.5-5.0	3.5-5.0	5.0	3.2
Diametro (mm)		Ø40-Ø250	Ø50-Ø250	Ø63-Ø125	Ø80-Ø400	Ø32-Ø125
Inseri		HXK(H)U 0605 HXK(H)U 1007	XNM(H)U 0605 XNM(H)U 0906	XNM(H)U 0605 XNM(H)U 0906	XNHU 0906	7EMT 0604
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 					
	Cava 					●
	Rampa lineare 					●
	Interp. elicoidale 					●
	Parete inclinata e smusso 	●	●	●	●	●
	Scanalatura laterale 					
	Profilatura 					
	Step down 					
	Allargatura 					
Alto avanz. 						

Guida alla scelta dell'utensile

















Frese a manicotto

CHASE2QUAD	CHASE2QUAD	CHASE2QUAD	CHASE2QUAD	CHASE2QUAD	CHASE2MILL
TFM45SN	TFM45SN-QC	TFM45SNS	TFM45SNS-CA	TFM45SNW TQ45SNW	TFM45AN
					
E82	E83	E84	E85	E86	E87
45°	45°	45°	45°	45°	45°
7.0	7.0	8.8	8.8	8.8	8.4
Ø40-Ø250	Ø250-Ø400	Ø63-Ø250	Ø125-Ø315	Ø80-Ø355	Ø50-Ø160
SNM(G)X 1306 AN SNMX 1306 XTN	SNM(G)X 1306 AN SNMX 1306 XTN	SNMX 1607 SNHX 1606	SNMX 1607 SNHX 1606	SNHX 1606	ANHX 1607 ANR-M
●	●	●	●	●	●
●	●	●	●	●	

● Raccomandata

Guida alla scelta dell'utensile

Frese a manicotto

Serie		HEXA2MILL	HEXA2MILL	CHASEOCTO	CHASEOCTO	LIONMILL
		TFM45HNS	TFM45HN	TFM430FS	TFM43Z0FW	LM45SD
						
Pagina		E88	E89	E90	E91	E92
Angolo di approccio		45°	45°	43°	43°	45°
Max prof. taglio (mm)		6.1	6.1	3.5	5.0	6.5-8.7
Diametro (mm)		Ø63-Ø250	Ø80-Ø315	Ø32-Ø125	Ø63-Ø200	Ø80-Ø315
Inseri		HNHX 1006	HNHX 1006	OFCW 05T3 OFCT 05T3 OFMT 05T3 RFMT 1404	OFCN 0704 OFCR 0704 OFMR 0704 RFMR 1904	SDKN 1203 SDKN 1504
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 					
	Cava 					
	Rampa lineare 					
	Interp. elicoidale 					
	Parete inclinata e smusso 	●	●			●
	Scanalatura laterale 					
	Profilatura 					
	Step down 					
	Allargatura 					
Alto avanz. 						

Guida alla scelta dell'utensile

















Frese a manicotto

LIONMILL	HEXA2MILL	CHASE2MOLD	CHASEMOLD	CHASEMOLD	CHASESPEED
LM45SE	TFM15HNS	TFMRNS	TFMRX	TFMRY	TFMRN
					
E93	E94	E95-E96	E97-E98	E99-E101	E102
45°	15°	-	-	-	-
6.5-8.7	2.0	5.0-8.0	5.0-10.0	4.0-10.0	6.3
Ø80-Ø250	Ø80-Ø125	Ø32-Ø200	Ø50-Ø160	Ø32-Ø250	Ø50-Ø80
SEKN 1203 SEKN 1504	HNHX 1006 ANTN-M	RNMU 1004 RNMU 1205 RNMU 1606	RXM(H)X 1003 RXM(H)X 12T3 RXMX 1604 RXMX 2006	RYM(H)X 0803 RYM(H)X 1004 RYM(H)X 1205 RYM(H)X 1606 RYMX 2007	RNGN 1207 FL
●	●	●	●	●	●
		●	●	●	●
		●	●	●	●
		●	●	●	●
		●	●	●	●
●					
		●	●	●	●

● Raccomandata





Guida alla scelta dell'utensile

Frese a manicotto

Serie		CHASE SPEED	CERAMIC SPEED	CERAMIC SPEED	CHASE 10 MILL	CHASE 4 FEED
		TFMRP	TFMBN-09CH	TFMBN-12	TFMPT	TFMBL
						
Pagina		E103	E104	E105	E106	E107-E108
Angolo di approccio		-	-	-	-	-
Max prof. taglio (mm)		6.3	1.5	2.5	1.5-3.0	1.0-2.0
Diametro (mm)		Ø50	Ø40-Ø50	Ø50-Ø80	Ø40-Ø200	Ø32-Ø200
Inseri		RPGN 1204 FL	BNGX 0904	BNGX 1207	PTKU 0503 PTKU 1006	BLMP 0603 BLMP 0904 BLMP 1105
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 	●	●	●	●	●
	Cava 	●	●	●	●	●
	Rampa lineare 	●	●	●	●	●
	Interp. elicoidale 	●	●	●	●	●
	Parete inclinata e smusso 					
	Scanalatura laterale 					
	Profilatura 	●	●	●	●	●
	Step down 					
	Allargatura 					
Alto avanz. 		●	●	●	●	

Guida alla scelta dell'utensile

Frese a manicotto

					
TFMBL-13	TFMSB				
					
E109-E110	E111-E112				
-	-				
2.0	1.2-2.0				
Ø40-Ø250	Ø32-Ø250				
BLMP 1306	SBMT 0904 SBMT 1306				
●	●				
●	●				
●	●				
●	●				
●	●				
●					
●	●				

● Raccomandata

Guida alla scelta dell'utensile

Frese cilindriche e modulari

		MILLSPEED	TANGSPEED	MILLRUSH	MILL2RUSH	MILL2RUSH
Serie		2S-TE90CV	4T-TE90	3P-TE90	6N TE90	SCRM90TN
						
Pagina		E113-E114	E115-E116	E117-E122	E123-E124	E125
Angolo di approccio		90°	90°	90°	90°	90°
Max prof. taglio (mm)		5.0	4.6-8.3	3.5-15.0	4.1-9.2	13.0
Diametro (mm)		Ø6-Ø14	Ø10-Ø40	Ø8-Ø50	Ø20-Ø40	Ø35-Ø40
Inseri		CVK(H)T 0502	LPK(H)U 0502 LPK(H)U 0904	3PKT 0402 3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	6NKU 0403 6NGU 0604 6NGU 0905	TNMX 1806
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 	●	●	●	●	●
	Cava 	●	●	●	●	●
	Rampa lineare 	●	●	●		
	Interp. elicoidale 	●	●	●		
	Parete inclinata e smusso 					
	Profilatura 					
	Plunging 					
	Step down 					
	Allargatura 					
	Alto avanz. 					

Guida alla scelta dell'utensile


















Frese cilindriche e modulari

					
MTE90AX-06-L	TE90AX 2S-TE90AP TE90AP	2P-TE90	TE90AN	4N TE90	8D-TE90
					
E126	E127-E135	E136-E138	E139-E140	E141-E146	E147
90°	90°	90°	90°	90°	90°
5.5	5.5-17.9	4.7-6.0	11.0-15.0	3.5-13.8	5.0
Ø8-Ø30	Ø8-Ø42	Ø12-Ø40	Ø25-Ø50	Ø8-Ø40	Ø16-Ø40
AXCT 06-L	AXM(C)T 0602 APK(C)T 09T3 APK(C)T 1204 APK(C)T 1705/06 APKT 1907	2PKT 0503 2PKT 0704	ANM(H)X 1106 ANM(H)X 1607	4NKT 0402 4NK(H)T 0603 4NK(H)T 0904 4NKT 1106 4NKT 1407	SQKU 0703
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
	●	●	●	●	
	●	●	●	●	
				●	

● Raccomandata

Guida alla scelta dell'utensile

Frese cilindriche e modulari

Serie		CHASE ^{ALU}	CHASE ^{ALU}	CHASE ^{QUAD}	CHASE ^{QUAD}	CHASE ^{QUAD}
		TE90XEV-HSK63A	TE90XEV	TSF	TDM	TCF
						
Pagina		E148	E149	E150	E151	E152
Angolo di approccio		90°	90°	90°	90°	45°-75°
Max prof. taglio (mm)		16	16-21	5.6-13.4	12-40	-
Diametro (mm)		Ø25-Ø50	Ø25-Ø40	Ø12-Ø50	Ø12-Ø50	Ø7-Ø25
Inseri		XEVT 1605	XEVT 1605 XEVT 2206	XOMT 0602 SPMG(T) 0904 SPMG(T) 1104 SPMG(T) 1405	XOMT 0602 SPMG(T) 0904 SPMG(T) 1104 SPMG(T) 1405	SPMG(T) 1104
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 	●	●	●	●	
	Cava 	●	●	●	●	
	Rampa lineare 	●	●		●	
	Interp. elicoidale 	●	●		●	
	Parete inclinata e smusso 					●
	Profilatura 					
	Plunging 				●	
	Step down 	●	●		●	
	Allargatura 				●	
	Foratura 				●	
	Alto avanz. 					

Guida alla scelta dell'utensile

Frese cilindriche e modulari

CHASE HEPTA	CHASE 2MOLD	CHASE MOLD	CHASE MOLD	FINE BALL	FINE BALL
7S-E45	TERNS	TERD/TERX	TERY	TNF	TNFR
					
E153	E154-E155	E156-E157	E158-E160	E161-E163	E164-E166
45°	-	-	-	-	-
3.2	5.0-8.0	2.5-10.0	4.0-10.0	-	-
Ø32-Ø50	Ø25-Ø50	Ø8-Ø50	Ø16-Ø50	Ø6-Ø32	Ø6-Ø32
7EMT 0604	RNMU 1004 RNMU 1205 RNMU 1606	RDMX 05/07 RXM(H)X 1003 RXM(H)X 12T3 RXMX 1604 RXMX 2006	RYM(H)X 0803 RYM(H)X 1004 RYM(H)X 1205 RYM(H)X 1606 RYM(H)X 2007	NFB NFR	NFR
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
	●	●	●	●	●
				●	●
				●	●
				●	●
				●	●
				●	●
				●	●
				●	●

● Raccomandata

Guida alla scelta dell'utensile

Frese cilindriche e modulari

Serie		CHASE ^S SPEED	DUET ^B BALL	TRIO ^B BALL	CHASE ² BALL	CHASE ² BALL
		TERP	2F	3F	TDB50X	TDB50X-WT
						
Pagina		E167-E168	E169-E170	E171	E172	E173
Angolo di approccio		-	-	-	-	-
Max prof. taglio (mm)		4.7-6.3	11.8-44.7	39-94	59-69	59-69
Diametro (mm)		Ø20-Ø40	Ø16-Ø32	Ø32-Ø50	Ø50	Ø50
Inseri		RPGN 0903 FL RPGN 1204 FL	2FB APKT 09T3 APKT 1204	3FB CNHX 1311 CNHX 1606	6RBE 50-M 6RBE 50-MR	6RBE 50-M 6RBE 50-MR
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 	●				
	Cava 	●	●	●	●	●
	Rampa lineare 	●	●	●	●	●
	Interp. elicoidale 	●	●	●	●	●
	Parete inclinata e smusso 					
	Profilatura 	●	●	●	●	●
	Plunging 					
	Step down 					
	Allargatura 					
	Foratura 					
Alto avanz. 						

Guida alla scelta dell'utensile

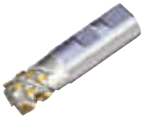








Frese cilindriche e modulari ad alto avanzamento

NANRUSH	CERAMICSPEED	CHASE10MILL	CHASE4FEED	CHASE2FEED	CHASEFEED
THFN	TEBN-09CH	TEPT	TEBL	TEBL-13	TESB
					
E174	E175	E176	E177-E184	E185	E186-E187
-	-	-	-	-	-
0.3-0.5	1.5	1.5-3.0	0.5-2.0	2.0	1.2-2.0
Ø6-Ø8	Ø25-Ø40	Ø20-Ø40	Ø8-Ø42	Ø32-Ø42	Ø25-Ø42
HFN 060 HFN 080	BNGX 0904	PTKU 0503 PTKU 1006	BLMP 0402 BLMP 0603 BLMP 0904 BLMP 1105	BLMP 1306	SBMT 0904 SBMT 1306
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●

● Raccomandata







Guida alla scelta dell'utensile

Frese a riccio

		TANGSFEEED	TANGSFEEED	CHASEVQUAD	MILLRUSH	MILL2RUSH
Serie		4T-TEF 	4T-TES 	4S-TEF 4S-TES 	3P TEF 3P TES 	TEF-TN TES-TN 
Pagina		E188	E189	E190-E191	E192-E193	E194
Angolo di approccio		90°	90°	90°	90°	90°
Max prof. taglio (mm)		15-51	34-56	27-77.9	20-83	48-71
Diametro (mm)		Ø16-Ø40	Ø50-Ø100	Ø32-Ø80	Ø20-Ø100	Ø50-Ø100
Inseriti		LPK(H)U 0502 LPK(H)U 0904	LPKU 1407	SVK(H)T 1145	3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	TNMX 1806
Applicazioni	Spianatura 					
	Parete 	●	●	●	●	●
	Cava 	●	●	●	●	●
	Rampa lineare 					
	Interp. elicoidale 					
	Parete inclinata e smusso 					
	Profilatura 					
	Plunging 					
	Step down 					
	Allargatura 					
	Foratura 					
	Alto avanz. 					



Guida alla scelta dell'utensile

Frese a disco

		TOP SLOT	TOP SLOT	TOP SLOT	TOP SLOT	TOP SLOT
		TSM-TS16	TSM-SL	TSM-FD-Z	TSM-FD-ZN	TSM-FD-S/W-ZN
Serie						
Pagina		E200-E201	E202-E203	E204-E205	E206	E207-E209
Angolo di approccio		-	-	-	-	-
Max larg. taglio (mm)		1.2-6.0	3-6.0	3-10	10-20	10-26
Diametro (mm)		Ø32.2-Ø80	Ø25-Ø63	Ø63-Ø250	Ø80-Ø125	Ø100-Ø315
Inseri		TS16	SLOT	ZNHT	ZNHU 080 ZNHU 110	ZNHU 080 ZNHU 110 ZNHU 140
Applicazioni	Spianatura 					
	Parete 					
	Cava 	•	•	•	•	•
	Cava a T 	•	•			
	Cava laterale 	•	•	•	•	•
	Filettatura esterna 					
	Filettatura interna 					

Guida alla scelta dell'utensile










Frese a disco

TOP SLOT	TOP SLOT	TOP SLOT	TSC Cava Cutter	MAXI SLOT	MAXI SLOT
TSM-FF-Z	TSM-FF-ZN	TSM-FF-S/W-ZN	TSC	TR-S	TR-F
					
E210	E211	E212-E214	E215	E216	E217
-	-	-	-	-	-
3-10	10-20	10-26	1.6-4.52	3-10	8-10
Ø80-Ø160	Ø63-Ø125	Ø100-Ø315	Ø75-Ø160	Ø24.7-Ø39.7	Ø24.25-Ø39.25
ZNHT	ZNHU 080 ZNHU 110	ZNHU 080 ZNHU 110 ZNHU 140	TIMC TIMJ TIPV	-	
					●
					●
●	●	●	●		
●	●	●		●	
●	●	●	●	●	

● Raccomandata

















Guida alla scelta dell'utensile

Frese a disco

Serie						
	TR-T-W55 TR-T-M60 					
Pagina	E218					
Angolo di approccio	-					
Max larg. taglio (mm)	7.7-9.5					
Diametro (mm)	Ø24.7-Ø39.7					
Inserti	-					
Applicazioni	Spianatura					
	Parete					
	Cava					
	Cava a T					
	Cava laterale					
	Filettatura esterna		●			
	Filettatura interna		●			

Guida alla scelta dell'utensile









Inseri per fresatura

		MILLSPEED	TANGSPEED	MILLRUSH	MILL2RUSH	MILL2RUSH
Serie		CVK(H)T 0502	LPK(H)U 0502 LPK(H)U 0904 LPKU 1407	3PKT 0402 3PK(H)T 0603 3PK(H)T 1004 3PK(H)T 1505 3PK(H)T 1906	6NKU 0403 6NGU 0604 6NGU 0905	TNMX 1806 TNM(G)X 2207
						
Materiale		P M K S H	P M K S H	P M K N S H	P M K N S H	P M K S H
Pagina		E246	E251	E227-E228	E232-E233	E277
Angolo di approccio		90°	90°	90°	90°	90°
Max prof. taglio (mm)		0.5-5	4.6-12.5	3.5-15	4.1-9.2	13-15
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 	●	●	●	●	●
	Cava 	●	●	●	●	●
	Rampa lineare 	●	●	●		
	Interp. elicoidale 	●	●	●		
	Parete inclinata e smusso 					
	Profilatura 					
	Plunging 				○	
	Step down 				○	
	Allargatura 				○	
	Alto avanz. 	●				

● Raccomandata, ○ Adatta




Guida alla scelta dell'utensile

Inseri per fresatura

Serie		CHASEMILL	CHASEMILL	CHASEMILL	CHASEMILL	CHASE2MILL
		AXCT 0602-L	AXM(C)T 0602 APK(C)T 09T3 APK(C)T 1204 APK(C)T 1705/06 APKT 1907	APCT 12-PCD35	2PKT 0503 2PKT 0704	ANM(H)X 1106 ANM(H)X 1607
						
Materiale		P M S	P M K N S H	N	P M K S H	P M K N S H
Pagina		E241	E236-E242	E238	E225	E235
Angolo di approccio		90°	90°	90°	90°	90°
Max prof. taglio (mm)		5.5	0.5-17.9	3.5	0.5-6.0	11-15
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 	●	●	●	●	●
	Cava 	●	●	●	●	●
	Rampa lineare 		●		●	○
	Interp. elicoidale 		●		●	○
	Parete inclinata e smusso 					
	Profilatura 					
	Plunging 					
	Step down 					
	Allargatura 					
	Alto avanz. 			●		●

Guida alla scelta dell'utensile

















Inseri per fresatura

CHASE 4 MILL	CHASE 2 MILL	CHASE 4 U	CHASE 4 FINISH	CHASE 2 QUAD	LION MILL
4NKT 0402 4NK(H)T 0603 4NK(H)T 0904 4NKT 1106 4NKT 1407	SQKU 0703 SQK(H)U 1206	XEVT 1605 XEVT 2206	4WHU 1207	SNEX 1204 SNET 1205	TPKN 2204
					
P M K N S H	P M K	N	P M K N S H	P K	P M K
E229-E230	E273	E280	E231	E267	E278
90°	90°	90°	90°	90°	90°
0.5-13.8	5.0-8.5	14-21	0.5	1.0	17.6
●	●	●	●	●	●
●	●	●		○	●
●	●	●			●
●		●			
●		●			
		●			○
		○			
●					

● Raccomandata, ○ Adatta







Guida alla scelta dell'utensile

Inseri per fresatura

		LIONMILL	CHASEVQUAD	CHASE2QUAD	CHASE2QUAD	LIONMILL
Serie		SEKX 2107	SVK(H)T 1145	SNGX 1306... SNGX 1306 ZN	SNM(G)X 1306 EN... SNMX 1306 XTN	SPKN 1203 SPKN 1504
						
Materiale		P K	P M K S H	P M K	P M K	P M K
Pagina		E265	E274	E269	E268	E272
Angolo di approccio		90°	90°	90°, 88°	75°	75°
Max prof. taglio (mm)		17	9-10	12	9.5	9.5-12.5
Applicazioni	Spianatura 	●		●	●	●
	Parete 	●	●	●		
	Cava 	○	●	○	○	○
	Rampa lineare 					
	Interp. elicoidale 					
	Parete inclinata e smusso 				●	●
	Profilatura 					
	Plunging 					
	Step down 					
	Allargatura 					
	Alto avanz. 					

Guida alla scelta dell'utensile












Inserti per fresatura

CHASEMILL	CHASE10MILL	LIONMILL	HEXA2MILL	CHASE2MILL	CHASE2HEPTA
APKT 1705	PTKU 0503 PTKU 1006	SCKN 2107 SCKN 2708	HNC(M)X 0504 HNCX 0506 HNCX 05R/L-W	HXK(H)U 0605 HXK(H)U 1007	XNM(H)U 0605 XNM(H)U 0906
					
P M K N S H	P M K	P K	P K	P K	P M K
E239	E257	E264	E248	E250	E281-E282
75°	65°	60°	55°	45°	45°
3.9	3.3-6.5	13-18	5.0	3.0-5.0	1.0-5.0
●	●	●	●	●	●
○		○	○		○
	●	●	●	●	●

● Raccomandata, ○ Adatta







Guida alla scelta dell'utensile

Inseri per fresatura

		CHASE ^{HEPTA}	CHASE ^{2QUAD}	CHASE ^{2QUAD}	CHASE ^{2MILL}	HEXA ^{2MILL}
Serie		7EMT 0604	SNM(G)X 1306 AN... SNMX 1306 XTN	SNMX 1607 SNHX 1606	ANHX 1607	HNHX 1006
Materiale		P M K	P M K N	P M K	P M K N S	P M K
Pagina		E234	E268	E270	E234	E249
Angolo di approccio		45°	45°	45°	45°	45°
Max prof. taglio (mm)		3.2	7	8.8	8.4	6.1
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 					
	Cava 	●	○	○	○	○
	Rampa lineare 	●				
	Interp. elicoidale 	●				
	Parete inclinata e smusso 	●	●	●		●
	Profilatura 	●				
	Plunging 					
	Step down 					
	Allargatura 					
Alto avanz. 						

Guida alla scelta dell'utensile













Inserti per fresatura

CHASE OCTO	CHASE OCTO	LIONMILL	HEXA2MILL	CHASE2MOLD	CHASEMOLD
OFCW 05T3 OFCT 05T3 OFMT 05T3 RFMT 1404	OFCN 0704 OFCR 0704 OFMR 0704 RFMR 1904	SDKN 1203 SDKN 1504 SEKN 1203 SEKN 1504	HNHX1006	RNMU 1004 RNMU 1205 RNMU 1606	RDMX 05/07 RXM(H)X 1003 RXM(H)X 12T3 RXMX 1604 RXMX 2006
					
P M K N	P M K N	P	P K	P M K S H	P M K
E256	E255	E264-E265	E249	E259	E260
43°	43°	45°	15°	-	-
3.5-7.0	5-9.5	6.5-8.7	2	5-8	2.5-10
●	●	●	●	●	●
				●	●
○	○	○		●	●
				●	●
				●	●
		●	●		
				●	●
				○	

● Raccomandata, ○ Adatta







Guida alla scelta dell'utensile

Inseri per fresatura

Serie	CHASE MOLD	CHASE SPEED	CERAMIC SPEED	CERAMIC SPEED	CHASE 10 MILL	
	RYM(H)X 0803 RYM(H)X 1004 RYM(H)X 1205 RYM(H)X 1606 RYMX 2007	RNGN 1204 FL RPGN 0903 FL RPGN 1204 FL	BNGX 0904	BNGX 1207	PTKU 0503 PTKU 1006	
Materiale	P M K S H	P M K S	S	S	P M K	
Pagina	E262	E258	E245	E245	E257	
Angolo di approccio	-	-	-	-	-	
Max prof. taglio (mm)	4-10	4.7-6.3	1.5	2.5	1.5-3.0	
Applicazioni	Spianatura 	●	●	●	●	●
	Parete 	●	●	●	●	●
	Cava 	●	●	●	●	●
	Rampa lineare 	●	●	●	●	●
	Interp. elicoidale 	●	●	●	●	●
	Parete inclinata e smusso 					
	Profilatura 	●	●	●	●	●
	Plunging 					
	Step down 					
	Allargatura 					
	Foratura 					
Alto avanz. 			●	●	●	

Guida alla scelta dell'utensile


















Inseri per fresatura

CHASE4FEED	CHASE2FEED	CHASEFEED	CHASEQUAD	NANRUSH	FINEBALL
BLMP 0402 BLMP 0603 BLMP 0904 BLMP 1105	BLMP 1306	SBMT 0904 SBMT 1306	SPMG(T) 0904 SPMG(T) 1104 SPMG(T) 1405 XOMT 0602	HFN 060 HFN 080	NFB
					
P M K S H	P M K S H	P M K S H	P M K	P M K S H	P M K S H
E243	E244	E263	E271	E247	E252
-	-	-	15°-45°, 90°	-	-
0.5-2.0	2.0	1.2-2.0	-	0.3-0.5	-
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
○	○	○	●	●	●
○	○	○	●	●	●
○	○	○	●	●	●
○	○	○	●	●	●
●	●	●	●	●	●

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile

Inseri per fresatura

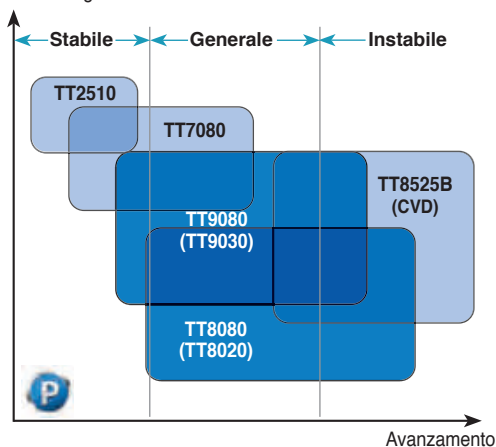
Serie		FINEBALL	DUETBALL	TRIOBALL	MILL2RUSH	TOPSLOT
		NFR	2FB	3FB	6RBE	TS16
						
Materiale		P M K S H	P M K S H	P M K S H	P M K S H	P M K S H
Pagina		E253-E254	E224	E226	E233	E279
Angolo di approccio		-	-	-	-	-
Max prof. taglio (mm)		-	11.8-44.7	39-94	59-69	4.8
Applicazioni	Spianatura 	●	●	●	●	○
	Parete 	●				○
	Cava 	●	●	●	●	●
	Rampa lineare 	●	●	●	●	●
	Interp. elicoidale 	●	●	●	●	
	Cava laterale 					●
	Profilatura 	●	●	●	●	
	Plunging 	●	○	○	○	
	Step down 	●	○	○	○	
	Allargatura 	●	○	○	○	
	Foratura 	●				
	Alto avanz. 					

Gradi

Guida alla scelta dei gradi di fresatura

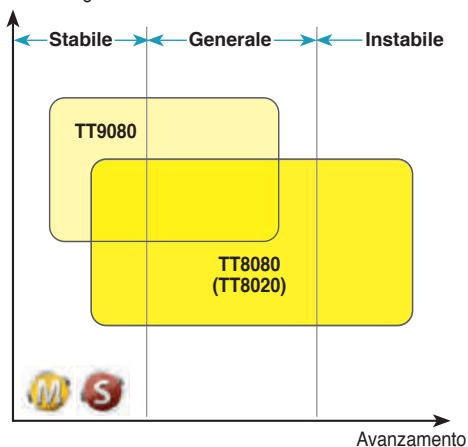
Per acciaio

Velocità di taglio



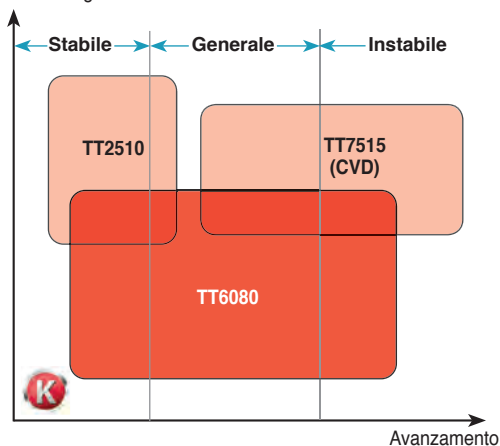
Per acciaio inossidabile e superleghe

Velocità di taglio



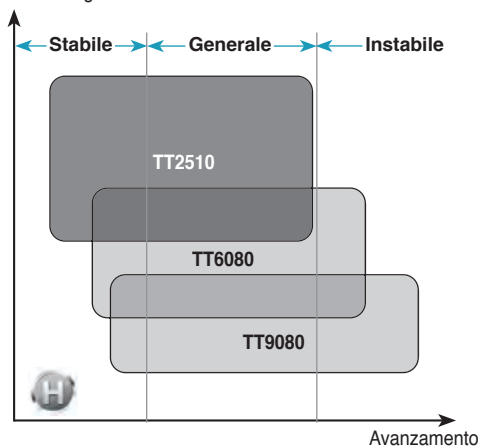
Per ghisa

Velocità di taglio



Per acciaio temprato

Velocità di taglio



Gradi

Fresatura

Gradi	ISO	Caratteristiche e applicazioni
K10 Non rivestito	K05 – K15 N05 – N15 S05 – S15	<ul style="list-style-type: none"> Lavorazione generale di ghisa Lavorazione generale di leghe di alluminio e materiali non ferrosi Lavorazione generale di superleghe
TT2510 Rivestito PVD	P05 – P25 H05 – H25	<ul style="list-style-type: none"> Lavorazione ad alta velocità di acciaio temprato e pretemprato
TT6080 Rivestito PVD	K05 – K25 H05 – H25	<ul style="list-style-type: none"> Lavorazione generale di ghisa grigia e ghisa duttile Lavorazione media e finitura di acciaio temprato
TT7080 Rivestito PVD	P05 – P25 K05 – K25	<ul style="list-style-type: none"> Lavorazione generale di acciaio Lavorazione con taglio fortemente interrotto di ghisa
TT9080 Rivestito PVD	P20 – P40 M20 – M40 S20 – S40	<ul style="list-style-type: none"> Lavorazione generale di acciaio Lavorazione generale di acciaio inossidabile Lavorazione generale di superleghe
TT9030 Rivestito PVD	P20 – P40 M20 – M40 S20 – S40	<ul style="list-style-type: none"> Lavorazione generale di acciaio Lavorazione generale di acciaio inossidabile Lavorazione generale di superleghe
TT8080 Rivestito PVD	P30 – P50 M30 – M50 S30 – S50	<ul style="list-style-type: none"> Lavorazione di sgrossatura e taglio interrotto di acciaio Lavorazione di sgrossatura e taglio interrotto di acciaio inossidabile Lavorazione a basse velocità e taglio interrotto di superleghe
TT8020 Rivestito PVD	P30 – P50 M30 – M50 S30 – S50	<ul style="list-style-type: none"> Lavorazione di sgrossatura e taglio interrotto di acciaio Lavorazione di sgrossatura e taglio interrotto di acciaio inossidabile Lavorazione a basse velocità e taglio interrotto di superleghe
TT5515 Rivestito PVD	P10 – P30 M10 – M30 K10 – K30 S10 – S30 H10 – H30	<ul style="list-style-type: none"> Lavorazione ad alta velocità di acciaio temprato e pretemprato Lavorazione generale di ghisa Lavorazione generale di acciaio inossidabile Lavorazione generale di superleghe
TT5525 Rivestito PVD	P20 – P40 M20 – M40 S20 – S40	<ul style="list-style-type: none"> Lavorazione generale di acciaio Lavorazione generale di acciaio inossidabile Lavorazione generale di superleghe
TT7515 Rivestito CVD	K05 – K25 H05 – H25	<ul style="list-style-type: none"> Lavorazione generale di ghisa grigia e ghisa duttile Lavorazione media e finitura di acciaio temprato
TT8525B Rivestito CVD	P30 – P45 M30 – M45	<ul style="list-style-type: none"> Lavorazione di sgrossatura di acciaio al carbonio e acciaio legato Lavorazione a media velocità di acciaio inossidabile

Gradi

Fresatura

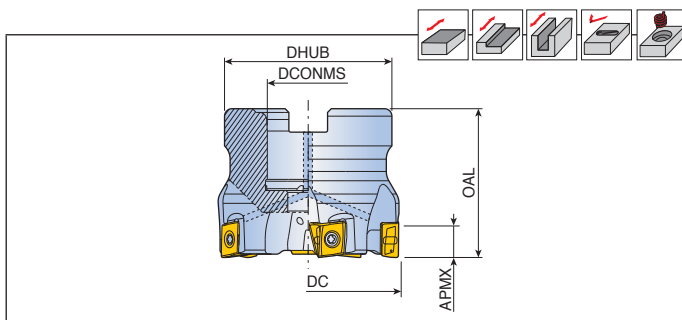
Gradi	ISO	Caratteristiche e applicazioni
CT7000 Cermet	P15 – P25 M15 – M25	<ul style="list-style-type: none"> Lavorazione di finitura di acciaio e acciaio inossidabile
AS10 Ceramica	K20 – K30	<ul style="list-style-type: none"> Lavorazione generale di ghisa
TC3030 Ceramica	S25 – S35	<ul style="list-style-type: none"> Lavorazione ad alta velocità di leghe di nichel Grado di ceramica SiAlON
TB7015 CBN	H25 – H35 K10 – K20	<ul style="list-style-type: none"> Lavorazione ad alta velocità di acciaio temprato Lavorazione ad alta velocità di ghisa

Corpi fresa



4T-TF90-09/14

Fresa a manicotto



Descrizione		Dimensioni (mm)					Fori refriger.	Tipo att.		Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
4T-TF90-640-16R-09	6	40	16	38	40	8.3	●	A	0.3	SH M8x30	LPK(H)U 0904...
550-22R-09	5	50	22	45	40	8.3	●	A	0.4	SH M10x30	
750-22R-09	7	50	22	45	40	8.3	●	A	0.4	SH M10x30	
663-22R-09	6	63	22	47	40	8.3	●	A	0.5	SH M10x30	
1063-22R-09	10	63	22	47	40	8.3	●	A	0.5	SH M10x30	
4T-TF90-440-16R-14	4	40	16	38	40	12.5	●	A	0.3	SH M8x30	LPKU 1407...
450-22R-14	4	50	22	45	40	12.5	●	A	0.3	SH M10x30	
650-22R-14	6	50	22	45	40	12.5	●	A	0.3	SH M10x30	
563-22R-14	5	63	22	47	40	12.5	●	A	0.5	SH M10x30	
863-22R-14	8	63	22	47	40	12.5	●	A	0.5	SH M10x30	
780-27R-14	7	80	27	58	50	12.5	●	A	1.0	SH M12x35	
1080-27R-14	10	80	27	58	50	12.5	●	A	1.2	SH M12x35	
8100-32R-14	8	100	32	85	50	12.5	●	A	2.0	SH M16x35	
12100-32R-14	12	100	32	85	50	12.5	●	A	2.1	SH M16x35	
10125-40R-14	10	125	40	85	63	12.5	●	A	3.1	SH M20x40	
14125-40R-14	14	125	40	85	63	12.5	●	A	3.3	SH M20x40	
12160-40R-14	12	160	40	110	63	12.5	x	C	4.1	-	
16160-40R-14	16	160	40	110	63	12.5	x	C	4.3	-	
14200-60R-14	14	200	60	130	63	12.5	x	C	5.7	-	
18200-60R-14	18	200	60	130	63	12.5	x	C	5.8	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

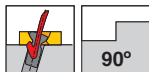
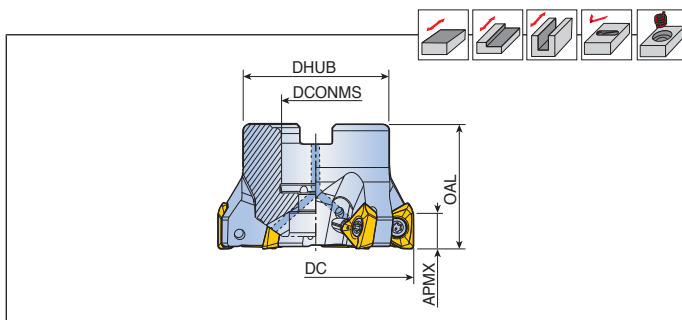
Descrizione	Vite	Chiave	Manico chiave	
4T-TF90-09	TS 30D082-P	TBLD T08P-W4	THND 4W	-
4T-TF90-14	TS 40G110I	TBLD T15-W6	-	SW6-T

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E306-E307
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3P TF90-06/10/15



Fresa a manicotto



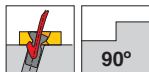
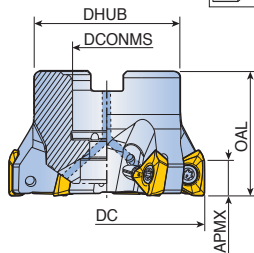
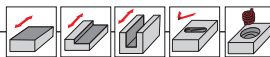
Descrizione		Dimensioni (mm)					Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
3P TF90- 632-16R-06	6	32	16	30	32	4.7	●	A	0.1	SH M8x30	3PK(H)T 0603...
732-16R-06	7	32	16	30	32	4.7	●	A	0.1	SH M8x30	E227
735-16R-06	7	35	16	30	35	4.7	●	A	0.1	SH M8x30	
840-16R-06	8	40	16	38	40	4.7	●	A	0.2	SH M8x30	
840-22R-06	8	40	22	38	40	4.7	●	A	0.2	SH M10x30	
3P TF90- 540-16R-10	5	40	16	38	40	7	●	A	0.3	SH M8x30	3PK(H)T 1004...
640-16R-10	6	40	16	38	40	7	●	A	0.3	SH M8x30	E227
650-22R-10	6	50	22	45	40	7	●	A	0.4	SH M10x30	
750-22R-10	7	50	22	45	40	7	●	A	0.4	SH M10x30	
663-22R-10	6	63	22	45	40	7	●	A	0.5	SH M10x30	
863-22R-10	8	63	22	47	40	7	●	A	0.5	SH M10x30	
963-22R-10	9	63	22	47	40	7	●	A	0.5	SH M10x30	
3P TF90- 450-22R-15	4	50	22	45	40	11	●	A	0.3	SH M10x30	3PK(H)T 1505...
550-22R-15	5	50	22	45	40	11	●	A	0.3	SH M10x30	E227-E228
463-22R-15-B	4	63	22	47	40	11	●	A	0.5	SH M10x30	
663-22R-15	6	63	22	47	40	11	●	A	0.5	SH M10x30	
480-27R-15-B	4	80	27	58	50	11	●	A	1.0	SH M12x35	
780-27R-15	7	80	27	58	50	11	●	A	1.0	SH M12x35	
880-27R-15	8	80	27	58	50	11	●	A	1.0	SH M12x35	
6100-32R-15-B	6	100	32	85	50	11	●	A	1.8	LH M16x35	
8100-32R-15	8	100	32	85	50	11	●	A	1.9	LH M16x35	
10100-32R-15	10	100	32	85	50	11	●	A	1.9	LH M16x35	
7125-40R-15-B	7	125	40	85	63	11	●	A	3.0	SH M20x40	
10125-40R-15	10	125	40	85	63	11	●	A	3.1	SH M20x40	
12125-40R-15	12	125	40	85	63	11	●	A	3.1	SH M20x40	
12160-40R-15	12	160	40	110	63	11	x	C	4.4	-	
15160-40R-15	15	160	40	110	63	11	x	C	4.4	-	
15200-60R-15	15	200	60	130	63	11	x	C	6.0	-	
18200-60R-15	18	200	60	130	63	11	x	C	5.8	-	

<p>Condizioni di taglio</p> <p>E287-E289</p>	<p>Tipo di attacco</p> <p>E290-E291</p>	<p>Dati di rampa</p> <p>E308-E310</p>
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3P TF90-15/19



Fresa a manicotto (foro in pollici)



Descrizione		Dimensioni (mm)					Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
3P TF90-780-25.4R-15	7	80	25.4	70	50	11	●	A	1.0	SH M12x35	3PK(H)T 1505...
880-25.4R-15	8	80	25.4	70	50	11	●	A	1.0	SH M12x35	E227-E228
10100-31.75R-15	8	100	31.75	80	50	11	x	B	1.9	-	-
10100-31.75R-15	10	100	31.75	80	50	11	x	B	1.9	-	-
10125-38.1R-15	10	125	38.1	80	63	11	x	B	3.1	-	-
12125-38.1R-15	12	125	38.1	80	63	11	x	B	3.1	-	-
12160-50.8R-15	12	160	50.8	100	63	11	x	B	4.4	-	-
15160-50.8R-15	15	160	50.8	100	63	11	x	B	4.4	-	-
15200-47.625R-15	15	200	47.625	130	63	11	x	C	6.0	-	-
3P TF90-480-25.4R-19	4	80	25.4	70	50	15	●	A	0.9	SH M12x35	3PK(H)T 1906...
780-25.4R-19	7	80	25.4	70	50	15	●	A	1.0	SH M12x35	E227-E228
6100-31.75R-19	6	100	31.75	80	50	15	x	B	1.8	-	-
8100-31.75R-19	8	100	31.75	80	50	15	x	B	2.6	-	-
8125-38.1R-19	8	125	38.1	80	63	15	x	B	3.0	-	-
10125-38.1R-19	10	125	38.1	80	63	15	x	B	3.1	-	-
8160-50.8R-19	8	160	50.8	100	63	15	x	B	4.2	-	-
12160-50.8R-19	12	160	50.8	100	63	15	x	B	4.3	-	-
10200-47.625R-19	10	200	47.625	130	63	15	x	C	6.0	-	-
14200-47.625R-19	14	200	47.625	130	63	15	x	C	6.0	-	-

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

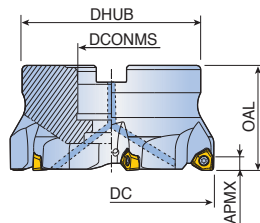
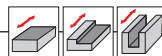
Descrizione	Vite	Chiave			
3P TF90-06	TS 20043I/HG-P	TD 6P	-		
3P TF90-10	TS 25C065I/HG	TD 8	-		
3P TF90-15	TS 40B100I	TD 15	-		
3P TF90-19	TS 45120I	-	T-T20		

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E308-E310
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6N TF90-06/09



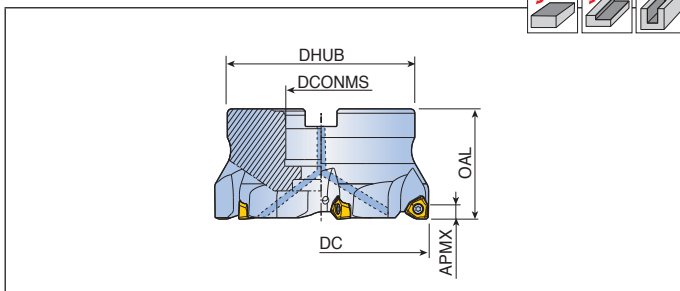
Fresa a manicotto



Descrizione		Dimensioni (mm)					Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
6N TF90-440-16R-06	4	40	16	38	40	6.2	●	A	0.3	SH M8x30	6NGU 0604...
450-22R-06	4	50	22	45	40	6.2	●	A	0.4	LH M10x25	E232
650-22R-06	6	50	22	45	40	6.2	●	A	0.4	LH M10x25	
463-22R-06	4	63	22	47	40	6.2	●	A	0.5	LH M10x25	
663-22R-06	6	63	22	47	40	6.2	●	A	0.5	LH M10x25	
763-22R-06	7	63	22	47	40	6.2	●	A	0.5	LH M10x25	
580-27R-06	5	80	27	58	50	6.2	●	A	1.0	SH M12x35	
780-27R-06	7	80	27	58	50	6.2	●	A	1.0	SH M12x35	
980-27R-06	9	80	27	58	50	6.2	●	A	1.0	SH M12x35	
6100-32R-06	6	100	32	85	50	6.2	●	A	1.9	SH M16x35	
8100-32R-06	8	100	32	85	50	6.2	●	A	1.9	SH M16x35	
11100-32R-06	11	100	32	85	50	6.2	●	A	1.9	SH M16x35	
7125-40R-06	7	125	40	85	63	6.2	●	A	3.2	SH M20x40	
11125-40R-06	11	125	40	85	63	6.2	●	A	3.2	SH M20x40	
14125-40R-06	14	125	40	85	63	6.2	●	A	3.2	SH M20x40	
6N TF90-450-22R-09	4	50	22	45	40	9.2	●	A	0.3	LH M10x25	6NGU 0905...
550-22R-09	5	50	22	45	40	9.2	●	A	0.4	LH M10x25	E232
463-22R-09	4	63	22	47	40	9.2	●	A	0.5	LH M10x25	
663-22R-09	6	63	22	47	40	9.2	●	A	0.5	LH M10x25	
763-22R-09	7	63	22	47	40	9.2	●	A	0.5	LH M10x25	
580-27R-09	5	80	27	58	50	9.2	●	A	1.0	SH M12x35	
780-27R-09	7	80	27	58	50	9.2	●	A	1.1	SH M12x35	
980-27R-09	9	80	27	58	50	9.2	●	A	1.1	SH M12x35	
6100-32R-09	6	100	32	85	50	9.2	●	A	1.9	LH M16x35	
8100-32R-09	8	100	32	85	50	9.2	●	A	1.8	LH M16x35	
11100-32R-09	11	100	32	85	50	9.2	●	A	1.9	LH M16x35	
7125-40R-09	7	125	40	85	63	9.2	●	A	3.1	SH M20x40	
11125-40R-09	11	125	40	85	63	9.2	●	A	3.1	SH M20x40	
14125-40R-09	14	125	40	85	63	9.2	●	A	3.2	SH M20x40	
12160-40R-09	12	160	40	110	63	9.2	x	C	4.3	-	
16160-40R-09	16	160	40	110	63	9.2	x	C	4.3	-	
14200-60R-09	14	200	60	130	63	9.2	x	C	5.9	-	
18200-60R-09	18	200	60	130	63	9.2	x	C	5.9	-	
18250-60R-09	18	250	60	160	63	9.2	x	C	10.7	-	
22250-60R-09	22	250	60	160	63	9.2	x	C	10.8	-	



Fresa a manicotto (foro in pollici)



Descrizione		Dimensioni (mm)					Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
6N TF90-580-25.4R-06	5	80	25.4	70	50	6.2	●	A	1.0	SH M12x35	6NGU 0604...
780-25.4R-06	7	80	25.4	70	50	6.2	●	A	1.0	SH M12x35	
980-25.4R-06	9	80	25.4	70	50	6.2	●	A	1.0	SH M12x35	
6100-31.75R-06	6	100	31.75	80	50	6.2	x	B	1.9	-	
8100-31.75R-06	8	100	31.75	80	50	6.2	x	B	1.9	-	
11100-31.75R-06	11	100	31.75	80	50	6.2	x	B	1.9	-	
7125-38.1R-06	7	125	38.1	80	63	6.2	x	B	3.2	-	
11125-38.1R-06	11	125	38.1	80	63	6.2	x	B	3.2	-	
14125-38.1R-06	14	125	38.1	80	63	6.2	x	B	3.2	-	
6N TF90-580-25.4R-09	5	80	25.4	58	50	9.2	●	A	1.0	SH M12x35	6NGU 0905...
780-25.4R-09	7	80	25.4	58	50	9.2	●	A	1.1	SH M12x35	
980-25.4R-09	9	80	25.4	58	50	9.2	●	A	1.1	SH M12x35	
6100-31.75R-09	6	100	31.75	80	50	9.2	x	B	1.9	-	
8100-31.75R-09	8	100	31.75	80	50	9.2	x	B	1.8	-	
11100-31.75R-09	11	100	31.75	80	50	9.2	x	B	1.9	-	
7125-38.1R-09	7	125	38.1	80	63	9.2	x	B	3.1	-	
11125-38.1R-09	11	125	38.1	80	63	9.2	x	B	3.1	-	
14125-38.1R-09	14	125	38.1	80	63	9.2	x	B	3.2	-	
12160-50.8R-09	12	160	50.8	100	63	9.2	x	B	4.3	-	
16160-50.8R-09	16	160	50.8	100	63	9.2	x	B	4.3	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

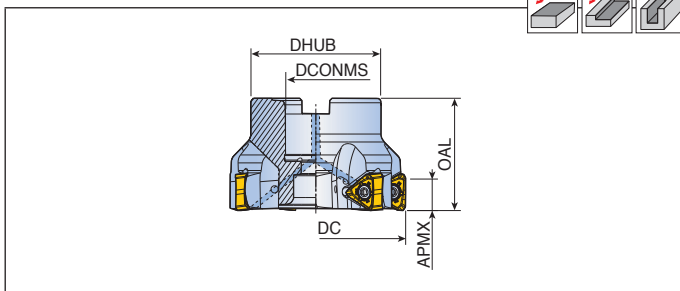
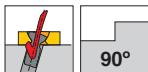
Descrizione	Vite	Chiave			
6N TF90-06	TS 300851/HG	TD 9	-		
6N TF90-09	TS 40B1001	-	T-T15		



SCRM90TN

MILL2RUSH

Fresa a manicotto (foro in pollici)



Descrizione	🌀	Dimensioni (mm)					Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
SCRM90TN 580-25.4R-18	5	80	25.4	70	50	13	●	A	1.1	SH M12x35	TNMX 1806...
780-25.4R-18	7	80	25.4	70	50	13	●	A	1.1	SH M12x35	E277
6100-31.75R-18-B	6	100	31.75	80	50	13	x	B	2.0	-	
8100-31.75R-18	8	100	31.75	80	50	13	x	B	2.0	-	
7125-38.1R-18-B	7	125	38.1	80	63	13	x	B	3.4	-	
10125-38.1R-18	10	125	38.1	80	63	13	x	B	3.3	-	
10160-50.8R-18	10	160	50.8	100	63	13	x	C	4.5	-	
14160-50.8R-18	14	160	50.8	100	63	13	x	C	4.5	-	
16200-47.625R-18	16	200	47.625	130	63	13	x	C	6.2	-	
SCRM90TN 580-25.4R-22	5	80	25.4	70	50	15	●	A	0.9	SH M12x35	TNM(G)X 2207...
6100-31.75R-22	6	100	31.75	80	50	15	x	B	1.8	-	E277
8125-38.1R-22	8	125	38.1	80	63	15	x	B	3.0	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

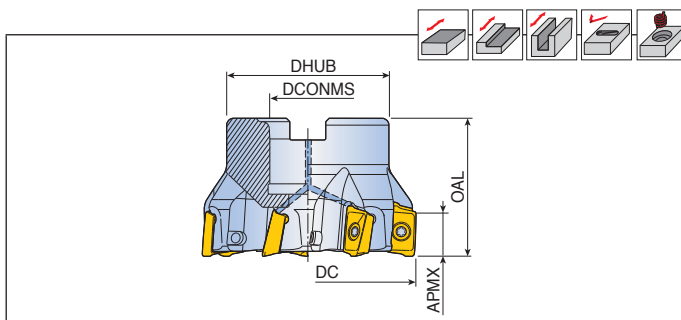
Descrizione	Vite	Chiave			
SCRM90TN-18	TS 40B100I	T-T15			
SCRM90TN-22	TS 45I20I	T-T20			



TFM90AP-12/17



Fresa a manicotto



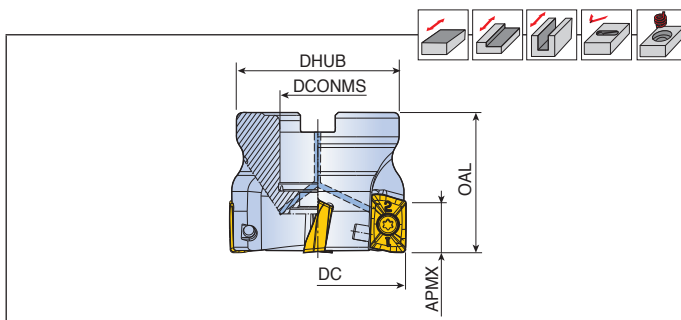
Descrizione		Dimensioni (mm)					Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
TFM90AP 440-16R-12	4	40	16	38	40	12	●	A	0.2 SH M8x25	APK(C)T 1204...	
540-16R-12	5	40	16	38	40	12	●	A	0.2 SH M8x25	E237-E238, E241	
550-22R-12	5	50	22	45	40	12	●	A	0.3 SH M10x30		
650-22R-12	6	50	22	45	40	12	●	A	0.3 SH M10x30		
563-22R-12	5	63	22	47	40	12	●	A	0.5 SH M10x30		
663-22R-12	6	63	22	47	40	12	●	A	0.5 SH M10x30		
763-22R-12	7	63	22	47	40	12	●	A	0.5 SH M10x30		
680-27R-12	6	80	27	58	50	12	●	A	1.0 SH M10x25		
880-27R-12	8	80	27	58	50	12	●	A	1.0 SH M10x25		
TFM90AP 440-16R-17	4	40	16	38	40	16.1	●	A	0.3 SH M8x30	APK(C)T 1705/1706...	
350-22R-17-B	3	50	22	45	40	16.1	●	A	0.4 SH M10x30	E238-E239	
450-22R-17-B	4	50	22	45	40	16.1	●	A	0.3 SH M10x30		
550-22R-17	5	50	22	45	40	16.1	●	A	0.4 SH M10x30		
463-22R-17-B	4	63	22	47	40	16.1	●	A	0.5 SH M10x30		
663-22R-17	6	63	22	47	50	16.1	●	A	0.5 SH M10x30		
480-27R-17-B	4	80	27	58	50	16.1	●	A	0.8 SH M12x35		
680-27R-17	6	80	27	58	50	16.1	●	A	0.9 SH M12x35		
780-27R-17	7	80	27	58	50	16.1	●	A	0.9 SH M12x35		
6100-32R-17-B	6	100	32	85	50	16.1	●	A	1.3 LH M16x35		
8100-32R-17	8	100	32	85	50	16.1	●	A	1.5 LH M16x35		
7125-40R-17-B	7	125	40	85	63	16.1	●	A	2.9 SH M20x40		
8125-40R-17	8	125	40	85	63	16.1	●	A	3.0 SH M20x40		
9125-40R-17	9	125	40	85	63	16.1	●	A	3.1 SH M20x40		
8160-40R-17-B	8	160	40	110	63	16.1	x	C	4.1 -		
10160-40R-17	10	160	40	110	63	16.1	x	C	4.2 -		
12200-60R-17	12	200	60	130	63	16.1	x	C	6.1 -		

<p>Condizioni di taglio</p> <p>E287-E289</p>	<p>Tipo di attacco</p> <p>E290-E291</p>	<p>Dati di rampa</p> <p>E332-E338</p>
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2S-TFM90AP-19



Fresa a manicotto



Descrizione		Dimensioni (mm)					Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
2S-TFM90AP350-22R-19	3	50	22	45	45	17.9	●	A	0.3	LH M10x35	APKT 1907... E240
463-22R-19	4	63	22	47	50	17.9	●	A	0.7	SH M10x30	
463-27R-19	4	63	27	58	50	17.9	●	A	0.7	SH M12x35	
680-27R-19	6	80	27	58	50	17.9	●	A	1.1	SH M12x35	
7100-32R-19	7	100	32	85	50	17.9	●	A	1.9	SH M16x35	
6125-40R-19	6	125	40	85	63	17.9	●	A	3.0	SH M20x40	
8125-40R-19	8	125	40	85	63	17.9	●	A	3.0	SH M20x40	
10160-40R-19	10	160	40	110	63	17.9	x	C	4.2	-	
12200-60R-19	12	200	60	130	63	17.9	x	C	6.0	-	

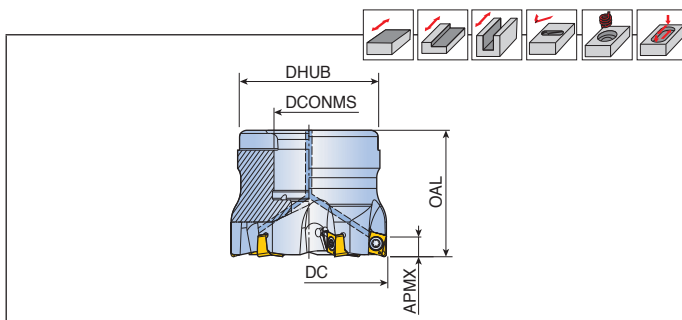
• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave			
2S-TFM90AP-19	TS 50115I	T-T20			

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E332-E338
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Fresa a manicotto



Descrizione		Dimensioni (mm)					Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
4N TF90- 832-16R-04	8	32	16	30	32	3.5	●	A	0.1	SH M8x25	4NKT 0402....
1040-16R-04	10	40	16	38	40	3.5	●	A	0.2	SH M8x25	E229-E230
4N TF90- 432-16R-06	4	32	16	30	32	6.0	●	A	0.1	SH M8x25	4NK(H)T 0603....
532-16R-06	5	32	16	30	32	6.0	●	A	0.1	SH M8x25	E229-E230
540-16R-06	5	40	16	38	40	6.0	●	A	0.3	SH M8x25	
640-16R-06	6	40	16	38	40	6.0	●	A	0.3	SH M8x25	
650-22R-06	6	50	22	45	40	6.0	●	A	0.4	SH M10x30	
750-22R-06	7	50	22	47	40	6.0	●	A	0.4	SH M10x30	
763-22R-06	7	63	22	47	40	6.0	●	A	0.6	SH M10x30	
863-22R-06	8	63	22	47	40	6.0	●	A	0.6	SH M10x30	
4N TF90- 540-16R-09	5	40	16	38	40	8.0	●	A	0.3	SH M8x25	4NK(H)T 0904....
650-22R-09	6	50	22	45	40	8.0	●	A	0.3	LH M10x25	E229-E230
763-22R-09	7	63	22	47	40	8.0	●	A	0.5	LH M10x25	
980-27R-09	9	80	27	58	50	8.0	●	A	1.1	SH M12x35	

- Il corpo fresa per l'inserto '4NKT 040212R-HF' deve essere modificato con il raggio 1.2 mm
- Il corpo fresa per l'inserto '4NKT 060320R-HF' deve essere modificato con il raggio 2.0 mm
- Il corpo fresa per l'inserto '4NKT 090432R-HF' deve essere modificato con il raggio 3.2 mm
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

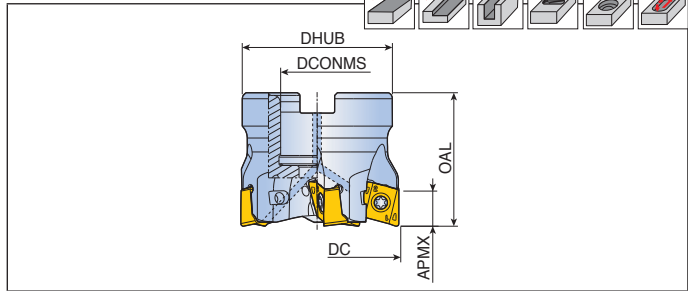
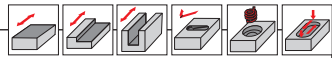
Descrizione	Vite	Chiave		Manico chiave	
4N TF90-04	TS 180411/HG	TD 6P	-	-	
4N TF90-06	TS 30B0681/HG	TD 8	-	-	
4N TF90-09	TS 35A0881/HG	-	TBLD T10P-W6	THND 6W	

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E311-E331
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4N TF90-11/14



Fresa a manicotto



Descrizione	Z	Dimensioni (mm)					Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
4N TF90-440-16R-11	4	40	16	38	40	10.5	●	A	0.2	SH M8x30	4NKT 1106...
450-22R-11	4	50	22	45	40	10.5	●	A	0.3	LH M10x25	E229-E230
550-22R-11	5	50	22	45	40	10.5	●	A	0.3	LH M10x25	
463-22R-11	4	63	22	47	40	10.5	●	A	0.6	LH M10x25	
663-22R-11	6	63	22	47	40	10.5	●	A	0.5	LH M10x25	
480-27R-11	4	80	27	58	50	10.5	●	A	1.1	SH M12x35	
880-27R-11	8	80	27	58	50	10.5	●	A	1.0	SH M12x35	
4N TF90-450-22R-14	4	50	22	45	45	13.8	●	A	0.4	SH M10x25	4NKT 1407...
463-22R-14	4	63	22	47	45	13.8	●	A	0.6	SH M10x25	E229-E230
663-22R-14	6	63	22	47	45	13.8	●	A	0.6	SH M10x25	
580-27R-14	5	80	27	58	50	13.8	●	A	1.0	SH M12x35	
780-27R-14	7	80	27	58	50	13.8	●	A	1.0	SH M12x35	

- Il corpo fresa per l'inserto '4NKT 110640R-HF' deve essere modificato con il raggio 4.0 mm
- Il corpo fresa per l'inserto '4NKT 140750R-HF' deve essere modificato con il raggio 5.0 mm
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave	Manico chiave		
4N TF90-11	TS 400931/HG	TBLD T15-W6	SW6-T		
4N TF90-14	TS 50A1211/HG	TBLD T20-W6	SW6-T		

Condizioni di taglio

E287-E289

Tipo di attacco

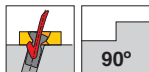
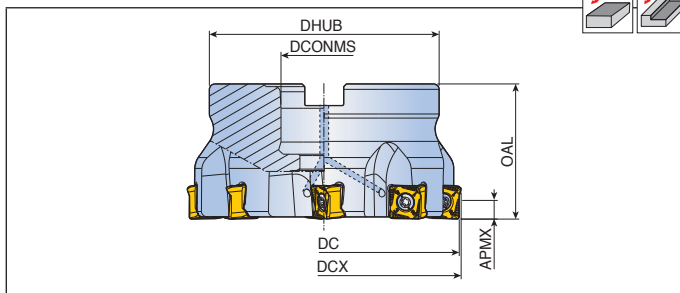
E290-E291

Dati di rampa

E311-E331

8D-TF90-12

Fresa a manicotto



Descrizione	Z	Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
8D-TF90-450-22R-12	4	50	51.3	22	45	40	8.5	●	A	0.3	SH M10x30	SQK(H)U 1206...
650-22R-12	6	50	51.3	22	45	40	8.5	●	A	0.4	SH M10x30	E273
563-22R-12	5	63	64.3	22	47	40	8.5	●	A	0.5	SH M10x30	
863-22R-12	8	63	64.3	22	47	40	8.5	●	A	0.6	SH M10x30	
680-27R-12	6	80	81.3	27	58	50	8.5	●	A	1.1	SH M12x35	
1180-27R-12	11	80	81.3	27	58	50	8.5	●	A	1.2	SH M12x35	
8100-32R-12	8	100	101.3	32	66	50	8.5	●	A	1.6	SH M16x35	
14100-32R-12	14	100	101.3	32	66	50	8.5	●	A	1.7	SH M16x35	
10125-40R-12	10	125	126.3	40	85	63	8.5	●	A	3.4	SH M20x40	
18125-40R-12	18	125	126.3	40	85	63	8.5	●	A	3.5	SH M20x40	
12160-40R-12	12	160	161.3	40	110	63	8.5	x	C	4.7	-	
22160-40R-12	22	160	161.3	40	110	63	8.5	x	C	4.9	-	

- DC: diametro di taglio • DCX: diametro di taglio massimo
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

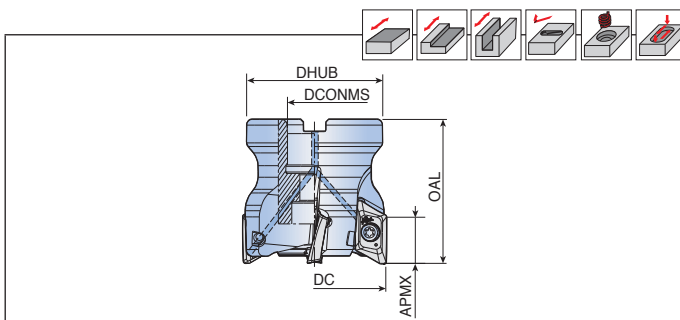
Descrizione	Vite	Chiave	Manico chiave		
8D-TF90-12	TS 40M100/HG	TBLD T15-W6	SW6-T		



TFM90XEV-16/22



Fresa a manicotto



Descrizione		Dimensioni (mm)					Fori refrig.	Tipo att.	Giri MAX		Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX						
TFM90XEV 340-16R-16	3	40	16	38	50	16	●	A	41,200	0.2	SH M8x35-C	XEVT 1605...
450-22R-16	4	50	22	45	50	16	●	A	36,800	0.3	SH M10x30-C	
563-22R-16	5	63	22	47	50	16	●	A	32,700	0.5	SH M10x30-C	
580-27R-16	5	80	27	58	50	16	●	A	29,000	0.9	LH M12x30-C	
680-27R-16	6	80	27	58	50	16	●	A	29,000	0.8	LH M12x30-C	
6100-32R-16	6	100	32	66	63	16	●	A	26,000	1.6	SH M16x35-C	
7125-40R-16	7	125	40	85	63	16	●	A	23,200	2.5	SH M20x40-C	
8160-40R-16	8	160	40	110	63	16	x	C	20,000	3.8	-	
10200-60R-16	10	200	60	130	63	16	x	C	18,300	5.3	-	
TFM90XEV 350-22R-22	3	50	22	45	55	21	●	A	31,400	0.4	SH M10x30-C	
463-22R-22	4	63	22	47	55	21	●	A	28,000	0.6	SH M10x30-C	
580-27R-22	5	80	27	58	55	21	●	A	24,800	1.0	LH M12x30-C	
6100-32R-22	6	100	32	85	63	21	●	A	22,200	2.1	SH M16x35-C	
7125-40R-22	7	125	40	85	63	21	●	A	19,900	2.8	SH M20x40-C	
10200-60R-22	10	200	60	124	63	21	x	C	15,700	5.9	-	

• Il corpo fresa per l'inserto con raggio maggiore di 3.2 mm (XEVT 16) e 3.0 mm (XEVT 22) deve essere modificato come segue: R corpo fresa = R raggio inserto - 0.3 mm

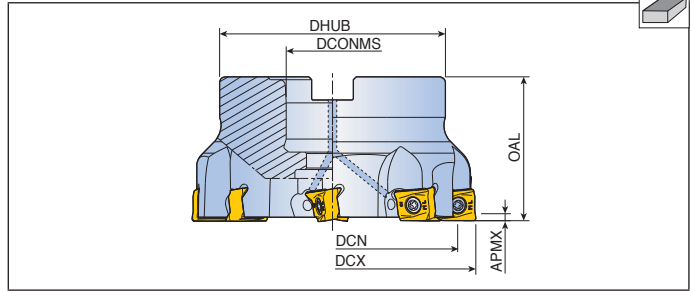
Ricambi

Descrizione	Vite	Chiave			
TFM90XEV-16	TS 400931/HG	T-T15			
TFM90XEV-22	TS 501151	T-T20			

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E343-E347
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4W-TF90-12

Fresa a manicotto per finitura



Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DCN	DCONMS	DHUB	OAL	APMX					
4W-TF90-550-22R-12	5	50	38.9	22	45	40	0.5	●	A	0.4	SH M10x30	4WHU 1207...
663-22R-12	6	63	50.9	22	47	40	0.5	●	A	0.5	SH M10x30	
880-27R-12	8	80	66.9	27	58	50	0.5	●	A	1.1	SH M12x35	E231
8100-32R-12	8	100	86.9	32	66	50	0.5	●	A	1.6	SH M16x35	
10125-40R-12	10	125	110.9	40	85	63	0.5	●	A	3.1	SH M20x40	
10160-40R-12	10	160	145.9	40	110	63	0.5	x	C	4.1	-	

- DCN: diametro di taglio minimo • DCX: diametro di taglio massimo
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave	Manico chiave		
4W-TF90-12	TS 40A115I	TBLD T15-W6	SW6-T		

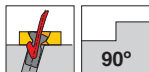
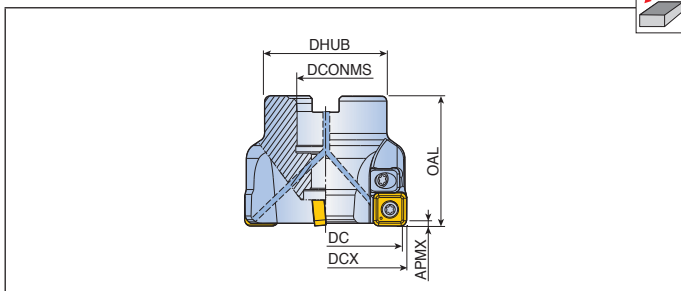
Condizioni di taglio

E287-E289

Tipo di attacco

E290-E291

Fresa a manicotto per finitura



Descrizione	Z	Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFM90SNS 350-22R-12	3	50	43.35	22	45	50	1.0	●	A	0.5	SH M10x40	SNEX 1204... SNET 1205... E267
463-22R-12	4	63	56.35	22	47	50	1.0	●	A	0.7	SH M10x40	
680-27R-12	6	80	73.35	27	58	50	1.0	●	A	1.0	SH M12x35	
8100-32R-12	8	100	93.35	32	66	63	1.0	●	A	2.0	SH M16x30	
12100-32R-12	12	100	93.35	32	66	63	1.0	●	A	2.0	SH M16x30	
10125-40R-12	10	125	118.35	40	85	63	1.0	x	B	2.9	-	
16125-40R-12	16	125	118.35	40	85	63	1.0	x	B	2.9	-	
12160-40R-12	12	160	153.35	40	110	63	1.0	x	C	4.4	-	
20160-40R-12	20	160	153.35	40	110	63	1.0	x	C	4.4	-	
16200-60R-12	16	200	193.35	60	130	63	1.0	x	C	6.0	-	
24200-60R-12	24	200	193.35	60	130	63	1.0	x	C	6.0	-	
30250-60R-12	30	250	243.35	60	160	63	1.0	x	C	10.8	-	

- Raccomandata per condizioni di lavorazione molto stabili di acciaio e ghisa
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Cuneo regolabile	Vite regolabile	Chiave	
TFM90SNS-12	TS 35C110I	AJS 1010R	AWS 0620	T-T15	

Condizioni di taglio
E287-E289

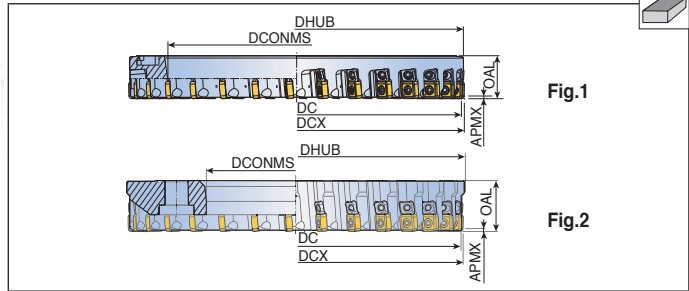
Tipo di attacco
E290-E291

Technical Data
E297-E298

TFM90SNS-12-QC/TQ90SNS-12



Fresa a manicotto con cambio rapido per finitura



Descrizione	🌀	Dimensioni (mm)							Fig.	Kg	Adattatore	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFM90SNS 20250-12-QC	20	250	243.35	190.37	248.59	32	1.0	1	3.6	TQCA D250	SNEX 1204... SNET 1205... E267	
30250-12-QC	30	250	243.35	190.37	248.59	32	1.0	1	3.6	TQCA D250		
24315-12-QC	24	315	308.35	230.33	313	38	1.0	1	8.1	TQCA D315		
36315-12-QC	36	315	308.35	230.33	313	38	1.0	1	8.1	TQCA D315		
28355-12-QC	28	355	348.35	270.33	353	38	1.0	1	9.2	TQCA D355		
42355-12-QC	42	355	348.35	270.33	353	38	1.0	1	9.2	TQCA D355		
32400-12-QC	32	400	393.35	315.33	398	38	1.0	1	10.5	TQCA D400		
48400-12-QC	48	400	393.35	315.33	398	38	1.0	1	10.6	TQCA D400		
TQ90SNS 20250R-12	20	250	243.35	133.35	253	38	1.0	2	7.5	QA 10 K/M		
30250R-12	30	250	243.35	133.35	253	38	1.0	2	7.5	QA 10 K/M		
36315R-12	36	315	308.35	146.05	317	38	1.0	2	14.0	QA 12 K/M		
28355R-12	28	355	348.35	215.9	357	38	1.0	2	12.8	QA 14 K/M		
42355R-12	42	355	348.35	215.9	357	38	1.0	2	12.8	QA 14 K/M		
32400R-12	32	400	393.35	254	402	38	1.0	2	16.0	QA 16 K/M		

• Raccomandata per condizioni di lavorazione molto stabili di acciaio e ghisa

Ricambi

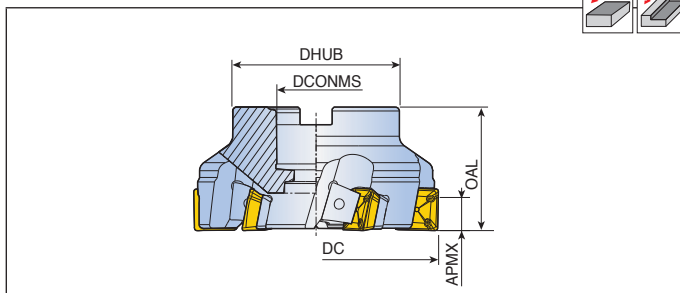
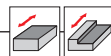
Descrizione	Vite	Cuneo regolabile	Vite regolabile	Chiave	
TFM90SNS-12-QC	TS 35C110I	AJS 1010R	AWS 0620	T-T15	
TQ90SNS-12	TS 35C110I	AJS 1010R	AWS 0620	T-T15	



LM90SE-21



Fresa a manicotto



Descrizione		Dimensioni (mm)					Tipo att.		Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX				
LM90SE 6125-40R-21	6	125	40	85	63	17.0	A	3.4	SH M20x40	SEKX 2107...
8160-40R-21	8	160	40	110	63	17.0	C	5.3	-	E265
10200-60R-21	10	200	60	130	80	17.0	C	9.6	-	
12200-60R-21	12	200	60	130	80	17.0	C	9.5	-	
12250-60R-21	12	250	60	160	80	17.0	C	16.4	-	
14250-60R-21	14	250	60	160	80	17.0	C	16.4	-	
12315-60R-21	12	315	60	220	80	17.0	D	21.0	-	
16315-60R-21	16	315	60	220	80	17.0	D	20.7	-	
LM90SE 6125-38.1R-21	6	125	38.1	85	63	17.0	B	3.4	-	
8160-50.8R-21	8	160	50.8	110	63	17.0	B	5.3	-	
10200-47.625R-21	10	200	47.625	130	80	17.0	C	9.6	-	
12200-47.625R-21	12	200	47.625	130	80	17.0	C	9.5	-	
12250-47.625R-21	12	250	47.625	160	80	17.0	C	16.4	-	
14250-47.625R-21	14	250	47.625	160	80	17.0	C	16.4	-	
12315-47.625R-21	12	315	47.625	220	80	17.0	D	21.0	-	
16315-47.625R-21	16	315	47.625	220	80	17.0	D	20.7	-	

Ricambi

Descrizione	Sottoplacch. 	Vite sottoplac. 	Cuneo 	Vite cuneo 	Chiave cuneo 	Chiave sottoplac.
LM90SE-21	TSSE 21N-ST	TS 50C130/HG	WPA 8-SE16	TS 80160W TS 80200W	T-W 4	T-T20 ⁽¹⁾

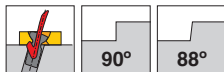
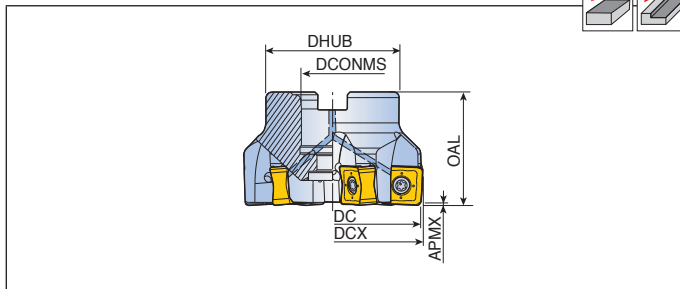
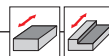


- La chiave per la sottoplacchetta T-T20⁽¹⁾ deve essere ordinata separatamente
- Vite cuneo TS 80160W : diametro 125 – 200 mm
TS 80200W : diametro 250 – 315 mm

TFM90SN/TFM88SN-13

CHASE2QUAD

Fresa a manicotto (Foro in pollici)



Descrizione		Dimensioni (mm)						Fori refig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM90SN 780-25.4R-13	7	80	80.7	25.4	70	50	12.0	●	A	1.2	SH M12x35	SNGX
980-25.4R-13*	9	80	80.7	25.4	70	50	12.0	●	A	1.2	SH M12x35	1306 ...
8100-31.75R-13	8	100	100.8	31.75	80	50	12.0	x	B	1.9	-	
13100-31.75R-13*	13	100	100.8	31.75	80	50	12.0	x	B	1.9	-	
10125-38.1R-13	10	125	125.8	38.1	80	63	12.0	x	B	2.8	-	
TFM88SN 780-25.4R-13	7	80	81.2	25.4	70	50	12.0	●	A	1.2	SH M12x35	SNGX
980-25.4R-13*	9	80	81.2	25.4	70	50	12.0	●	A	1.2	SH M12x35	1306 ZN...
8100-31.75R-13	8	100	101.2	31.75	80	50	12.0	x	B	1.9	-	
11100-31.75R-13*	11	100	101.2	31.75	80	50	12.0	x	B	1.9	-	
10125-38.1R-13	10	125	126.1	38.1	80	63	12.0	x	B	2.8	-	
12160-50.8R-13	12	160	161.1	50.8	100	63	12.0	x	C	4.2	-	
14200-47.625R-13	14	200	201.1	47.625	130	63	12.0	x	C	6.0	-	

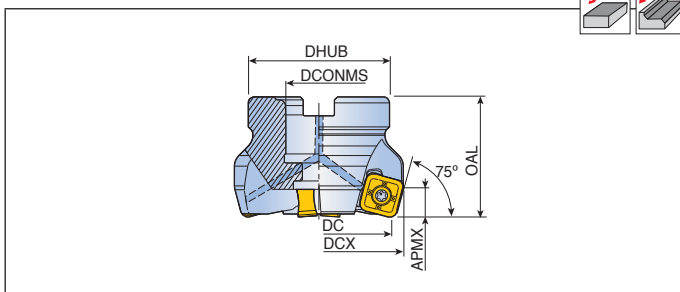
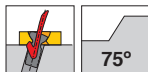
- *: La fresa a passo fine è per ghisa
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave			
TFM90SN	TS 40B100I	T-T15			
TFM88SN	TS 40B100I	T-T15			



Fresa a manicotto



Descrizione	Z	Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM75SN 450-22R-13	4	50	55.4	22	45	40	9.5	●	A	0.4	LH M10x25	SNM(G)X 1306 EN... SNMX 1306 XTN... E268
650-22R-13	6	50	55.4	22	45	40	9.5	●	A	0.4	LH M10x25	
663-22R-13	6	63	68.4	22	47	40	9.5	●	A	0.6	LH M10x25	
863-22R-13	8	63	68.4	22	47	40	9.5	●	A	0.6	LH M10x25	
780-27R-13	7	80	85.4	27	70	50	9.5	●	A	1.3	LH M12x30	
1080-27R-13	10	80	85.4	27	70	50	9.5	●	A	1.3	LH M12x30	
8100-32R-13	8	100	105.4	32	85	50	9.5	●	A	1.9	LH M16x35	
12100-32R-13	12	100	105.4	32	85	50	9.5	●	A	2.0	LH M16x35	
10125-40R-13	10	125	130.3	40	85	63	9.5	●	A	3.2	SH M20x40	
16125-40R-13	16	125	130.4	40	85	63	9.5	●	A	3.3	SH M20x40	
12160-40R-13	12	160	165.3	40	110	63	9.5	x	C	4.7	-	
20160-40R-13	20	160	165.4	40	110	63	9.5	x	C	4.8	-	
16200-60R-13	16	200	205.3	60	130	63	9.5	x	C	6.4	-	
22200-60R-13	22	200	205.4	60	130	63	9.5	x	C	6.4	-	
20250-60R-13	20	250	255.3	60	160	63	9.5	x	C	11.7	-	
TFM75SN 580-25.4R-13B	5	80	85.4	25.4	70	50	9.5	●	A	1.3	LH M12x30	
1080-25.4R-13	10	80	85.4	25.4	70	50	9.5	●	A	1.5	LH M12x30	
6100-31.75R-13B	6	100	105.4	31.75	80	50	9.5	x	B	1.9	-	
8125-38.1R-13B	8	125	130.3	38.1	80	63	9.5	x	B	3.2	-	
12160-50.8R-13B	12	160	165.3	50.8	100	63	9.5	x	B	4.7	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

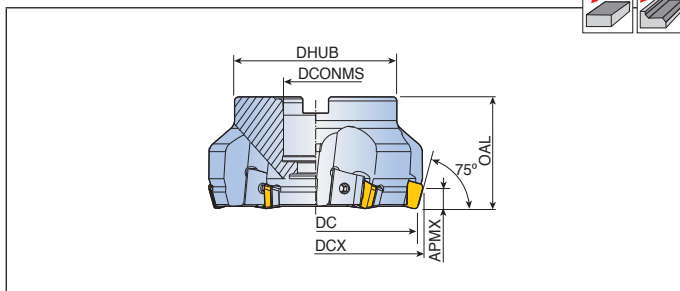
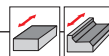
Descrizione	Vite	Chiave			
TFM75SN	TS 40B100I	T-T15			



LM75SP-12/15



Fresa a manicotto (foro in pollici)



Descrizione		Dimensioni (mm)						Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX				
LM75SP580-25.4 R-12	5	80	85.4	25.4	70	50	9.5	A	1.5	SH M12x35	SPKN 1203...
6100-31.75R-12	6	100	105.4	31.75	80	55	9.5	A	2.4	LH M16x35	E272
8125-38.1R-12	8	125	130.4	38.1	80	63	9.5	B	3.2	-	-
10160-50.8R-12	10	160	165.4	50.8	100	63	9.5	B	5.0	-	-
12200-47.625R-12	12	200	205.4	47.625	130	63	9.5	C	7.4	-	-
16250-47.625R-12	16	250	255.4	47.625	160	63	9.5	C	10.8	-	-
20315-47.625R-12	20	315	320.4	47.625	220	63	9.5	D	17.6	-	-
LM75SP580-25.4R-15	5	80	86.97	25.4	70	55	12.5	A	1.5	SH M12x35	SPKN 1504...
5100-31.75R-15	5	100	106.96	31.75	80	55	12.5	A	2.4	LH M16x35	E272
8125-38.1R-15	8	125	131.95	38.1	80	63	12.5	B	3.1	-	-
10160-50.8R-15	10	160	166.94	50.8	100	63	12.5	B	5.0	-	-
12200-47.625R-15	12	200	206.94	47.625	130	63	12.5	C	6.9	-	-
16250-47.625R-15	16	250	256.93	47.625	160	63	12.5	C	10.8	-	-
20315-47.625R-15	20	315	321.93	47.625	220	63	12.5	D	17.4	-	-

• Foro metrico disponibile su richiesta

Ricambi

Descrizione	Sottoplacch.	Cuneo	Vite sottoplac.	Vite cuneo	Chiave	
						(2)
LM75SP-12	TSSP 12N	WPA 8	TS 40B100I	TS 80200W	T-W 4	T-T15
LM75SP-15	TSSP 15N	WPA 8	TS 40B100I	TS 80160W ⁽¹⁾	T-W 4	T-T15

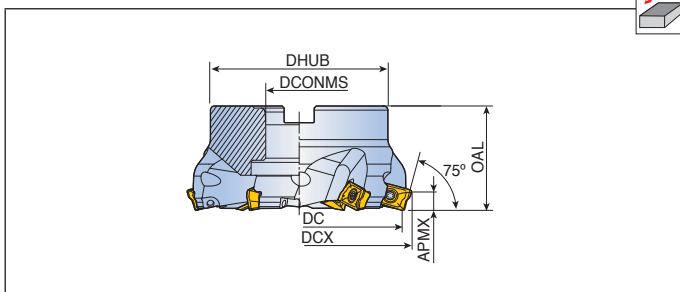


- ⁽¹⁾ TS 80160W è per il corpo fresa D80
- La chiave per la sottoplacchetta T-T15⁽²⁾ deve essere ordinata separatamente

TFM75AP-17



Fresa a manicotto



Descrizione		Dimensioni (mm)							Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	SDHUB	OAL	APMX					
TFM75AP 580-27R-17	5	80	87.82	27	58	50	3.9	A	0.8	SH M12x35	APKT 1705	
6100-32R-17	6	100	107.82	32	85	50	3.9	B	1.3	-	PER-M	
7125-40R-17	7	125	132.82	40	85	63	3.9	B	3.5	-	APKT 1705	
TFM75AP 580-25.4R-17	5	80	87.82	25.4	70	50	3.9	A	0.8	SH M12x35	PER-EM	
6100-31.75R-17	6	100	107.82	31.75	80	50	3.9	B	1.3	-	E239	
7125-38.1R-17	7	125	132.82	38.1	80	63	3.9	B	3.5	-		

• Fresa per il recupero tagliente dell'inserto APKT

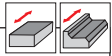
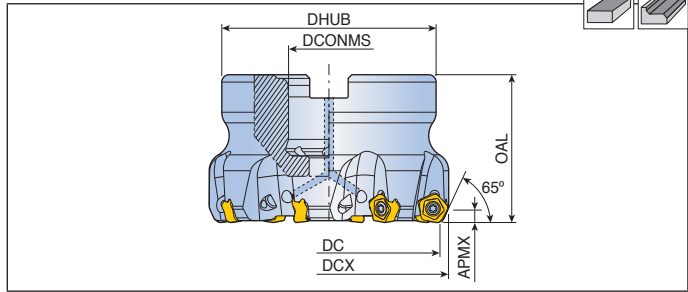
Ricambi

Descrizione	Vite	Chiave			
TFM75AP-17	TS 40120I/HG	T-T15			

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291
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TFM65PT-05/10

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.		Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM65PT 640-16R-05	6	40	43.7	16	38	40	3.3	●	A	0.3	SH M8x25	PTKU 0503...
750-22R-05	7	50	53.7	22	45	40	3.3	●	A	0.4	SH M10x30	E257
863-22R-05	8	63	66.7	22	58	40	3.3	●	A	0.7	SH M10x30	
TFM65PT 680-27R-10	6	80	87.4	27	70	50	6.5	●	A	1.2	LH M12x30	PTKU 1006...
8100-32R-10	8	100	107.4	32	85	50	6.5	●	A	1.9	LH M16x35	E257
9125-40R-10	9	125	132.4	40	85	63	6.5	●	A	3.2	SH M20x40	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

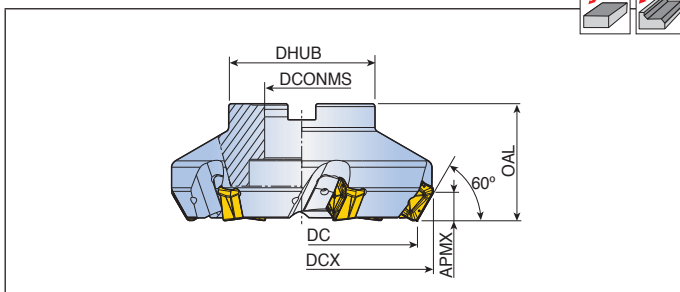
Descrizione	Vite	Chiave		Manico chiave	
TFM65PT-05	TS 25D060/HG-P	TD7P	-		
TFM65PT-10	TS 50D130/HG-P	-	TBLD T20P-W6	SW6-T	



LM60SC-21



Fresa a manicotto



Descrizione		Dimensioni (mm)						Tipo att.	Kg	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX			
LM60SC 5125-40R-21	5	125	141.2	40	85	63	13.0	B	4.1	SCKN 2107... E264
8125-40R-21	8	125	141.2	40	85	63	13.0	B	4.1	
8160-40R-21	8	160	176.1	40	110	63	13.0	C	6.5	
10160-40R-21	10	160	176.1	40	110	63	13.0	C	6.4	
10200-60R-21	10	200	216.1	60	130	80	13.0	C	11.8	
12200-60R-21	12	200	216.1	60	130	80	13.0	C	11.8	
12250-60R-21	12	250	266	60	160	80	13.0	C	19.2	
14250-60R-21	14	250	266	60	160	80	13.0	C	19.1	
16250-60R-21	16	250	266	60	160	80	13.0	C	19.1	
12315-60R-21	12	315	331	60	220	80	13.0	D	25.0	
16315-60R-21	16	315	331	60	220	80	13.0	D	25.0	
18315-60R-21	18	315	331	60	220	80	13.0	D	25.0	
LM60SC 5125-38.1R-21	5	125	141.2	38.1	80	63	13.0	B	4.1	
8160-50.8R-21	8	160	176.1	50.8	100	63	13.0	B	6.5	
10160-50.8R-21	10	160	176.1	50.8	100	63	13.0	B	6.4	
10200-47.625R-21	10	200	216.1	47.625	130	80	13.0	C	11.8	
12200-47.625R-21	12	200	216.1	47.625	130	80	13.0	C	11.8	
12250-47.625R-21	12	250	266	47.625	160	80	13.0	C	19.2	
14250-47.625R-21	14	250	266	47.625	160	80	13.0	C	19.1	
16250-47.625R-21	16	250	266	47.625	160	80	13.0	C	19.1	
12315-47.625R-21	12	315	331	47.625	220	80	13.0	D	25.0	
16315-47.625R-21	16	315	331	47.625	220	80	13.0	D	25.0	
18315-47.625R-21	18	315	331	47.625	220	80	13.0	D	25.0	

Ricambi

Descrizione	Sottoplacch.	Vite sottoplacch.	Cuneo	Vite cuneo	Chiave	
LM60SC-21	TSSC 21R-ST	TS 50C130/HG	WSC 8R-21	TS 80200W	T-W 4	T-T20

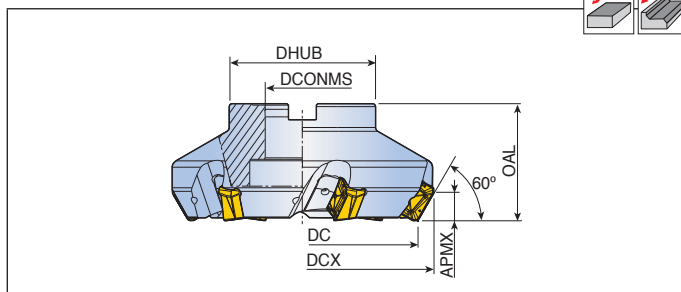


• La chiave per la sottoplacchetta T-T20⁽¹⁾ deve essere ordinata separatamente

LM60SC-27



Fresa a manicotto



Descrizione		Dimensioni (mm)						Tipo att.	Kg	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX			
LM60SC 5125-40R-27	5	125	146	40	85	63	18.0	B	4.6	SCKN 2708... E264
6160-40R-27	6	160	181	40	110	80	18.0	C	8.7	
8160-40R-27	8	160	181	40	110	80	18.0	C	8.4	
8200-60R-27	8	200	220.9	60	130	80	18.0	C	12.4	
10200-60R-27	10	200	220.9	60	130	80	18.0	C	12.3	
10250-60R-27	10	250	270.8	60	160	80	18.0	C	19.9	
12250-60R-27	12	250	270.8	60	160	80	18.0	C	19.8	
12315-60R-27	12	315	335.8	60	220	80	18.0	D	26.0	
15315-60R-27	15	315	335.8	60	220	80	18.0	D	25.9	
15400-60R-27*	15	400	420.9	60	270	80	18.0	D	44.0	
19400-60R-27*	19	400	420.9	60	270	80	18.0	D	43.0	
24500-60R-27*	24	500	520.9	60	270	80	18.0	D	64.0	
LM60SC 5125-38.1R-27	5	125	146	38.1	80	63	18.0	B	4.6	
6160-50.8R-27	6	160	181	50.8	100	80	18.0	B	8.7	
8160-50.8R-27	8	160	181	50.8	100	80	18.0	B	8.4	
8200-47.625R-27	8	200	220.9	47.625	130	80	18.0	C	12.4	
10200-47.625R-27	10	200	220.9	47.625	130	80	18.0	C	12.3	
10250-47.625R-27	10	250	270.8	47.625	160	80	18.0	C	19.9	
12250-47.625R-27	12	250	270.8	47.625	160	80	18.0	C	19.8	
12315-47.625R-27	12	315	335.8	47.625	220	80	18.0	D	26.0	
15315-47.625R-27	15	315	335.8	47.625	220	80	18.0	D	25.9	

• *: Disponibile su richiesta

Ricambi

Descrizione	Sottoplacch.	Vite sottopl.	Cuneo	Vite cuneo	Chiave		Manico chiave
LM60SC-27	TSSC 27R-ST	TS 60A130I	WSC 8R	TS 80200W	T-W 4	BLD T25	M7+SW6-T1

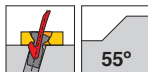
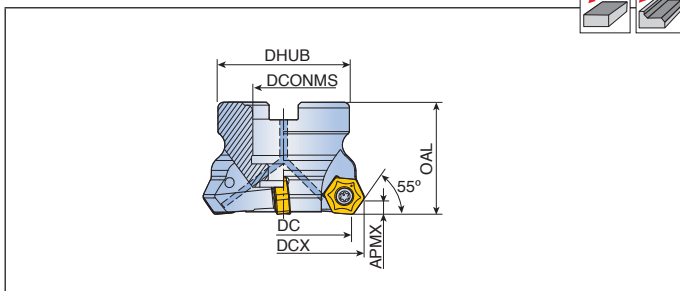
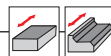


• La chiave per la sottoplacchetta⁽¹⁾ deve essere ordinata separatamente

TFM55AHNS-05



Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM55AHNS 450-22R-05B	4	50	58.2	22	45	40	5.0	●	A	0.4	SH M10x30	HNC(M)X 05... E248
650-22R-05	6	50	58.2	22	45	40	5.0	●	A	0.4	SH M10x30	
563-22R-05B	5	63	71.2	22	47	40	5.0	●	A	0.6	SH M10x30	
863-22R-05	8	63	71.2	22	47	40	5.0	●	A	0.5	SH M10x30	
680-27R-05B	6	80	88.2	27	70	50	5.0	●	A	1.3	SH M12x35	
880-27R-05	8	80	88.2	27	70	50	5.0	●	A	1.2	SH M12x35	
1080-27R-05	10	80	88.2	27	70	50	5.0	●	A	1.2	SH M12x35	
7100-32R-05B	7	100	108.2	32	85	50	5.0	●	A	2.0	SH M16x35	
10100-32R-05	10	100	108.2	32	85	50	5.0	●	A	2.0	SH M16x35	
12100-32R-05	12	100	108.2	32	85	50	5.0	●	A	2.0	SH M16x35	
10125-40R-05B	10	125	133.2	40	85	63	5.0	●	A	3.2	SH M20x40	
12125-40R-05	12	125	133.2	40	85	63	5.0	●	A	3.4	SH M20x40	
16125-40R-05	16	125	133.2	40	85	63	5.0	●	A	3.2	SH M20x40	
12160 -40R-05B	12	160	168.2	40	110	63	5.0	x	C	4.7	-	
TFM55AHNS 680-25.4R-05B	6	80	88.2	25.4	70	50	5.0	●	A	1.3	SH M12x35	
7100-31.75R-05B	7	100	108.2	31.75	80	50	5.0	x	B	2.0	-	
10125-38.1R-05B	10	125	133.2	38.1	80	63	5.0	x	B	3.2	-	
12160 -50.8R-05B	12	160	168.2	50.8	100	63	5.0	x	B	4.7	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

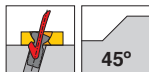
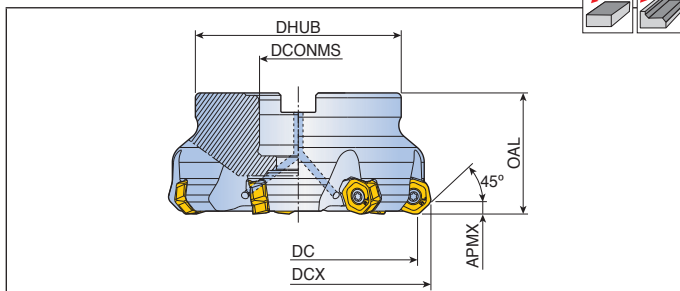
Ricambi

Descrizione	Vite	Chiave			
TFM55AHNS	TS 40B100I	T-T15			



12D-TF45-06

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
12D-TF45-440-16R-06	4	40	50.8	16	38	40	3.0	●	A	0.3	SH M8x25	HXK(H)U 0605...
450-22R-06	4	50	60.8	22	45	40	3.0	●	A	0.5	LH M10x25	
650-22R-06	6	50	60.8	22	45	40	3.0	●	A	0.5	LH M10x25	
563-22R-06	5	63	73.8	22	47	40	3.0	●	A	0.7	LH M10x25	
763-22R-06	7	63	73.8	22	47	40	3.0	●	A	0.7	LH M10x25	
680-27R-06	6	80	90.8	27	70	50	3.0	●	A	1.5	SH M12x35	
1080-27R-06	10	80	90.8	27	70	50	3.0	●	A	1.5	SH M12x35	
7100-32R-06	7	100	110.8	32	85	50	3.0	●	A	2.2	SH M16x35	
12100-32R-06	12	100	110.8	32	85	50	3.0	●	A	2.2	SH M16x35	
10125-40R-06	10	125	135.8	40	85	63	3.0	●	A	3.6	SH M20x40	
16125-40R-06	16	125	135.8	40	85	63	3.0	●	A	3.6	SH M20x40	
12160-40R-06	12	160	170.8	40	110	63	3.0	x	C	4.9	-	
20160-40R-06	20	160	170.8	40	110	63	3.0	x	C	4.9	-	

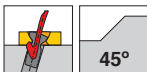
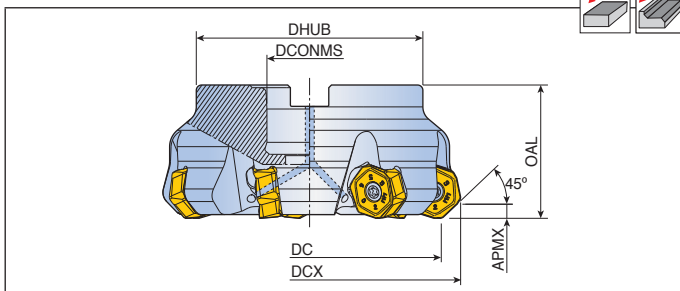
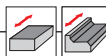
Ricambi

Descrizione	Vite	Chiave	Manico chiave		
12D-TF45-06	TS 40B100I	TBLD T15-W6	SW6-T		



12D-TF45-10

Fresa a manicotto



Descrizione	⊕	Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
12D-TF45-563-22R-10	5	63	77.5	22	47	50	5.0	●	A	0.9	SH M10x30	HXK(H)U 1007... E250
763-22R-10	7	63	77.5	22	47	50	5.0	●	A	0.9	SH M10x30	
680-27R-10	6	80	94.5	27	70	50	5.0	●	A	1.6	SH M12x35	
980-27R-10	9	80	94.5	27	70	50	5.0	●	A	1.6	SH M12x35	
7100-32R-10	7	100	114.5	32	85	50	5.0	●	A	2.4	LH M16x35	
11100-32R-10	11	100	114.5	32	85	50	5.0	●	A	2.4	LH M16x35	
8125-40R-10	8	125	139.5	40	85	63	5.0	●	A	4.1	SH M20x40	
14125-40R-10	14	125	139.5	40	85	63	5.0	●	A	4.0	SH M20x40	
10160-40R-10	10	160	174.5	40	110	63	5.0	x	C	5.6	-	
16160-40R-10	16	160	174.5	40	110	63	5.0	x	C	5.6	-	
14200-60R-10	14	200	214.5	60	130	63	5.0	x	C	7.9	-	
21200-60R-10	21	200	214.5	60	130	63	5.0	x	C	7.9	-	
16250-60R-10	16	250	264.5	60	160	63	5.0	x	C	12.4	-	
26250-60R-10	26	250	264.5	60	160	63	5.0	x	C	12.4	-	

Ricambi

Descrizione	Vite	Chiave	Manico chiave		
12D-TF45-10	TS 50C130/HG	TBLD T20-W6	SW6-T		

Condizioni di taglio

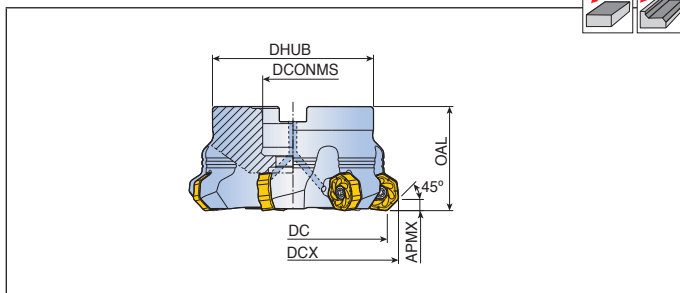
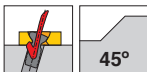
E287-E289

Tipo di attacco

E290-E291

14D-F45XN-06

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
14D-F45XN 550-22R-06	5	50	59.1	22	45	40	3.5	●	A	0.4	LH M10x25	XNM(H)U 0605... E281
563-22R-06	5	63	72.1	22	47	50	3.5	●	A	0.8	SH M10x25	
763-22R-06	7	63	72.1	22	47	50	3.5	●	A	0.8	SH M10x25	
680-27R-06	6	80	89.1	27	70	50	3.5	●	A	1.4	SH M12x35	
980-27R-06	9	80	89.1	27	70	50	3.5	●	A	1.4	SH M12x35	
7100-32R-06	7	100	109.1	32	85	50	3.5	●	A	2.1	SH M16x35	
11100-32R-06	11	100	109.1	32	85	50	3.5	●	A	2.1	SH M16x35	
10125-40R-06	10	125	134.1	40	85	63	3.5	●	A	3.6	SH M20x40	
14125-40R-06	14	125	134.1	40	85	63	3.5	●	A	3.6	SH M20x40	
12160-40R-06	12	160	169.1	40	110	63	3.5	x	C	4.7	-	
16160-40R-06	16	160	169.1	40	110	63	3.5	x	C	4.9	-	
18160-40R-06	18	160	169.1	40	110	63	3.5	x	C	5.0	-	
14D-F45XN 763-25.4R-06	7	63	72.1	25.4	47	50	3.5	●	A	0.8	SH M12x30	
980-25.4R-06	9	80	89.1	25.4	70	50	3.5	●	A	1.4	SH M12x35	
11100-31.75R-06	11	100	109.1	31.75	80	50	3.5	●	A	1.9	LH M16x35	
14125-38.1R-06	14	125	134.1	38.1	80	63	3.5	x	B	3.9	-	
16160-50.8R-06	16	160	169.1	50.8	100	63	3.5	x	B	5.0	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

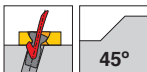
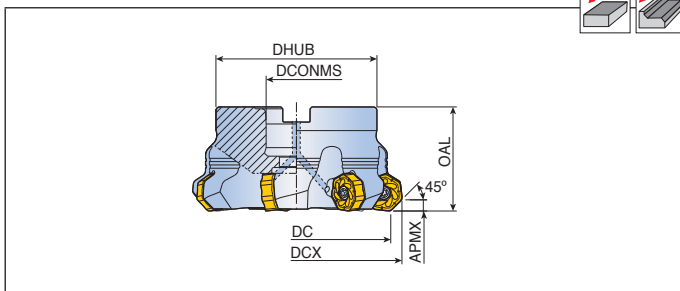
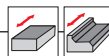
Ricambi

Descrizione	Vite	Chiave			
14D-F45XN-06	TS 40B100I	T-T15			



14D-F45XN-09

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
14D-F45XN 563-22R-09	5	63	74.9	22	47	50	5.0	●	A	0.9	SH M10x25	XNM(H)U 0906... E282
663-22R-09	6	63	74.9	22	47	50	5.0	●	A	0.9	SH M10x25	
680-27R-09	6	80	91.9	27	70	50	5.0	●	A	1.4	SH M12x35	
780-27R-09	7	80	91.9	27	70	50	5.0	●	A	1.5	SH M12x35	
7100-32R-09	7	100	112	32	85	55	5.0	●	A	2.4	SH M16x35	
9100-32R-09	9	100	112	32	85	55	5.0	●	A	2.5	SH M16x35	
8125-40R-09	8	125	137	40	85	63	5.0	●	A	3.5	SH M20x40	
10125-40R-09	10	125	137	40	85	63	5.0	●	A	3.6	SH M20x40	
12125-40R-09	12	125	137	40	85	63	5.0	●	A	3.4	SH M20x40	
10160-40R-09	10	160	172	40	110	63	5.0	x	C	4.8	-	
12160-40R-09	12	160	172	40	110	63	5.0	x	C	4.8	-	
14160-40R-09	14	160	172	40	110	63	5.0	x	C	4.8	-	
12200-60R-09	12	200	212	60	130	63	5.0	x	C	6.8	-	
16200-60R-09	16	200	212	60	130	63	5.0	x	C	6.9	-	
16250-60R-09	16	250	262	60	160	63	5.0	x	C	11.5	-	
20250-60R-09	20	250	262	60	160	63	5.0	x	C	11.5	-	
14D-F45XN 680-25.4R-09	6	80	91.9	25.4	70	50	5.0	●	A	1.4	SH M12x35	
7100-31.75R-09	7	100	112	31.75	80	55	5.0	●	A	2.4	SH M16x35	
8125-38.1R-09	8	125	137	38.1	80	63	5.0	x	B	3.5	-	
10160-50.8R-09	10	160	172	50.8	100	63	5.0	x	B	4.8	-	
12200-47.625R-09	12	200	212	47.625	130	63	5.0	x	C	6.8	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

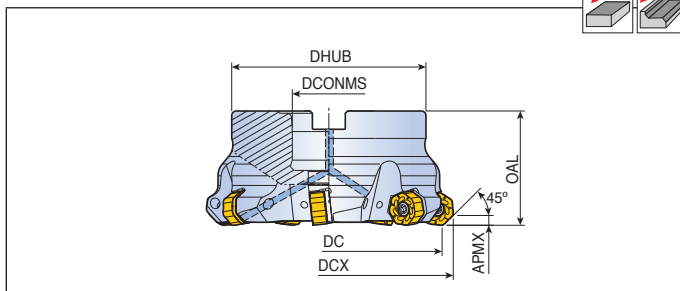
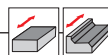
Ricambi

Descrizione	Vite	Chiave			
14D-F45XN-09	TS 50C130I/HG	T-T20			



14D-F45XNH-06/09

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
14D-F45XNH 763-22R-06	7	63	72.2	22	47	40	3.5	●	A	0.7	SH M10x25	XNM(H)U 0605... E281
780-27R-06	7	80	89.2	27	70	50	3.5	●	A	1.5	SH M12x35	
880-27R-06	8	80	89.2	27	70	50	3.5	●	A	1.5	SH M12x35	
7100-32R-06	7	100	109.2	32	85	50	3.5	●	A	2.2	SH M16x35	
8100-32R-06	8	100	109.2	32	85	50	3.5	●	A	2.2	SH M16x35	
11125-40R-06	11	125	134.2	40	85	63	3.5	●	A	3.5	SH M20x40	
14D-F45XNH 563-22R-09	5	63	75.1	22	47	40	5.0	●	A	0.6	SH M10x25	XNM(H)U 0906... E282
680-27R-09	6	80	92.1	27	70	50	5.0	●	A	1.5	SH M12x35	
7100-32R-09	7	100	112.1	32	85	50	5.0	●	A	2.2	SH M16x35	
9125-40R-09	9	125	137.0	40	85	63	5.0	●	A	3.6	SH M20x40	

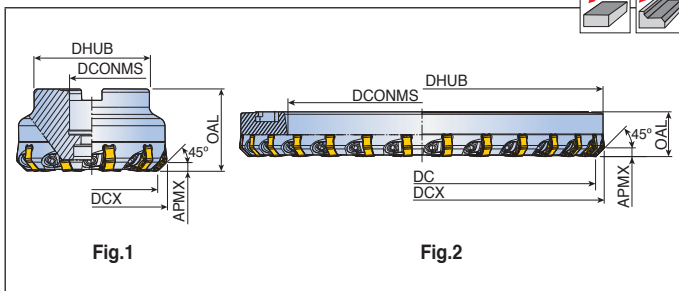
• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Sottopiacchetta	Vite sottoplac.	Chiave	Manico chiave
14D-F45XNH-06	TS 35C110I	TSXN 06N	TS 5035062S-B	TBLD T15-W6	SW6-T
14D-F45XNH-09	TS 50C130I/HG	TSXN 09N	TS 8050088S	TBLD T20-W6	SW6-T



Fresa a manicotto



Descrizione		Dimensioni (mm)						Fig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
14D-F45XNW 1080-27R-09	10	80	91.9	27	70	50	5.0	1	A	1.5	SH M12x35	XNHU 0906... E282
14100-32R-09	14	100	112	32	85	55	5.0	1	A	2.9	SH M16x35	
18125-40R-09	18	125	137	40	85	63	5.0	1	B	3.8	-	
18160-40R-09	18	160	172	40	110	63	5.0	1	C	5.6	-	
22160-40R-09	22	160	172	40	110	63	5.0	1	C	5.6	-	
28200-60R-09	28	200	212	60	130	63	5.0	1	C	7.9	-	
36250-60R-09	36	250	262	60	160	63	5.0	1	C	12.7	-	
44315-60R-09	44	315	327	60	220	63	5.0	1	D	19.9	-	

Descrizione		Dimensioni (mm)						Fig.	Kg	Adattatore	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX				
14D-F45XNW-28250-09R-QC	28	250	262	190.37	258.9	32	5.0	2	4.7	TQCA D250	XNHU 0906... E282
36315-09R-QC	36	315	327	230.33	313	38	5.0	2	9.2	TQCA D315	
42355-09R-QC	42	355	367	270.33	353	38	5.0	2	10.6	TQCA D355	
46400-09R-QC	46	400	412	315.33	398	38	5.0	2	12.1	TQCA D400	

• Raccomandata per condizioni di lavorazione molto stabili di acciaio e ghisa

Ricambi

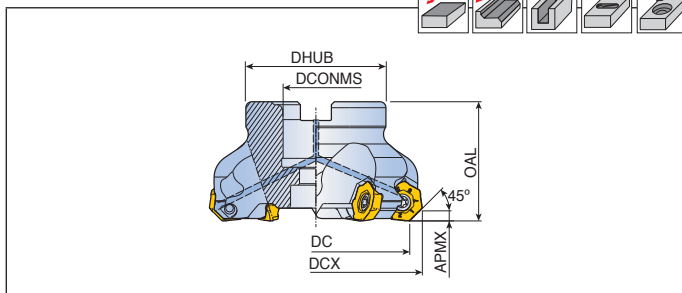
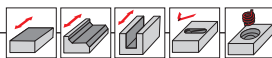
Descrizione	Cuneo	Vite cuneo	Chiave		
14D-F45XNW-09	WFZ 8H	WS 8	T-W 4		
14D-F45XNW-09R-QC	WFZ 8H	WS 8	T-W 4		



7S-F45-06



Fresa a manicotto



Descrizione	Z	Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
7S-F45 332-16R-06	3	32	40.4	16	38	40	3.2	●	E	0.2	KTB 32B	7EMT 0604... E234
440-16R-06	4	40	48.5	16	38	40	3.2	●	A	0.3	SH M8x30	
550-22R-06	5	50	58.5	22	45	40	3.2	●	A	0.4	LH M10x25	
663-22R-06	6	63	71.5	22	47	40	3.2	●	A	0.5	LH M10x25	
780-27R-06	7	80	88.5	27	70	50	3.2	●	A	1.3	LH M12x30	
8100-32R-06	8	100	108.5	32	85	50	3.2	●	A	1.9	LH M16x35	
9125-40R-06	9	125	133.5	40	85	63	3.2	●	A	3.3	SH M20x40	
7S-F45 780-25.4R-06	7	80	88.5	25.4	70	50	3.2	●	A	1.3	LH M12x30	
8100-31.75R-06	8	100	108.5	31.75	80	50	3.2	●	A	1.8	LH M16x35	
9125-38.1R-06	9	125	133.5	38.1	80	63	3.2	x	B	2.8	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M8x1.25x30-C)

Ricambi

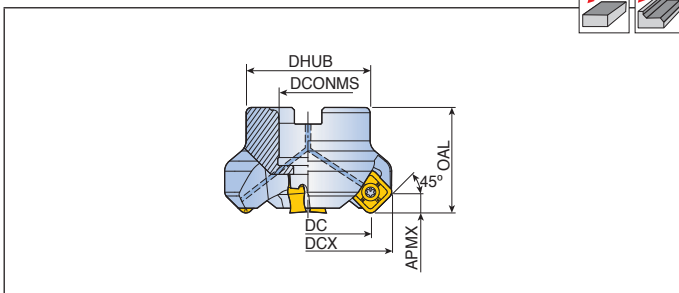
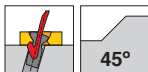
Descrizione	Vite	Chiave			
7S-F45-06	TS 40093I/HG	T-T15			

<p>Condizioni di taglio E287-E289</p>	<p>Tipo di attacco E290-E291</p>	<p>Dati di rampa E348</p>
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TFM45SN-13



Fresa a manicotto



Descrizione	Ø	Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45SN 440-16R-13	4	40	54.7	16	38	40	7.0	●	A	0.3	LH M10x25	SNM(G)X 1306 AN... SNMX 1306 XTN E268
450-22R-13	4	50	64.7	22	45	40	7.0	●	A	0.5	LH M10x25	
650-22R-13	6	50	64.7	22	45	40	7.0	●	A	0.5	LH M10x25	
663-22R-13	6	63	77.7	22	47	40	7.0	●	A	0.7	LH M10x25	
863-22R-13	8	63	77.7	22	47	40	7.0	●	A	0.7	LH M10x25	
480-27R-13B	4	80	94.8	27	70	50	7.0	●	A	1.4	LH M12x30	
780-27R-13	7	80	94.8	27	70	50	7.0	●	A	1.5	LH M12x30	
1080-27R-13	10	80	94.8	27	70	50	7.0	●	A	1.5	LH M12x30	
5100-32R-13B	5	100	114.8	32	85	50	7.0	●	A	2.1	LH M16x35	
8100-32R-13	8	100	114.8	32	85	50	7.0	●	A	2.2	LH M16x35	
12100-32R-13	12	100	114.8	32	85	50	7.0	●	A	2.2	LH M16x35	
6125-40R-13B	6	125	139.8	40	85	63	7.0	●	A	3.8	SH M20x40	
10125-40R-13	10	125	139.8	40	85	63	7.0	●	A	3.8	SH M20x40	
16125-40R-13	16	125	139.6	40	85	63	7.0	●	A	3.8	SH M20x40	
8160-40R-13B	8	160	174.8	40	110	63	7.0	x	C	4.9	-	
12160-40R-13	12	160	174.8	40	110	63	7.0	x	C	4.9	-	
20160-40R-13	20	160	174.5	40	110	63	7.0	x	C	5.0	-	
10200-60R-13B	10	200	214.8	60	130	63	7.0	x	C	6.5	-	
18200-60R-13	18	200	214.8	60	130	63	7.0	x	C	6.6	-	
26200-60R-13	26	200	214.3	60	130	63	7.0	x	C	7.0	-	
20250-60R-13	20	250	264.8	60	160	63	7.0	x	C	12.9	-	
TFM45SN 480-25.4R-13B	4	80	94.8	25.4	70	50	7.0	●	A	1.4	LH M12x30	
5100-31.75R-13B	5	100	114.8	31.75	80	50	7.0	x	B	2.1	-	
6125-38.1R-13B	6	125	139.8	38.1	80	63	7.0	x	B	3.8	-	
10125-38.1R-13	10	125	139.8	38.1	80	63	7.0	x	B	3.4	-	
8160-50.8R-13B	8	160	174.8	50.8	100	63	7.0	x	B	4.9	-	
12160-50.8R-13	12	160	174.8	50.8	100	63	7.0	x	B	5.0	-	
10200-47.625R-13B	10	200	214.8	47.625	130	63	7.0	x	C	6.5	-	
12250-47.625R-13B	12	250	264.8	47.625	160	63	7.0	x	C	12.9	-	

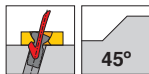
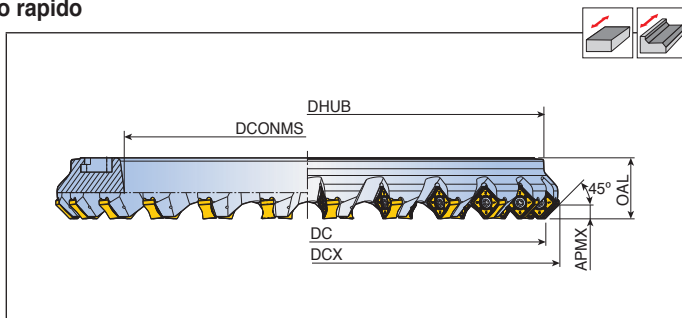


• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

TFM45SN-13-QC



Fresa a manicotto con cambio rapido



Descrizione		Dimensioni (mm)							Adattatore	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX			
TFM45SN 12250-13-QC	12	250	264.8	190.37	248	32	7.0	3.5	TQCA D250	SNM(G)X 1306 AN... SNMX 1306 XTN E268
24250-13-QC	24	250	264.7	190.37	248	32	7.0	3.7	TQCA D250	
14315-13-QC	14	315	329.8	230.33	313	38	7.0	8.1	TQCA D315	
30315-13-QC	30	315	329.7	230.33	313	38	7.0	8.2	TQCA D315	
16355-13-QC	16	355	369.8	270.33	353	38	7.0	9.3	TQCA D355	
34355-13-QC	34	355	369.7	270.33	353	38	7.0	9.4	TQCA D355	
18400-13-QC	18	400	414.8	315.33	398	38	7.0	10.6	TQCA D400	
38400-13-QC	38	400	414.7	315.33	398	38	7.0	10.7	TQCA D400	

• Raccomandata per condizioni di lavorazione molto stabili di acciaio e ghisa

Ricambi

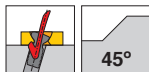
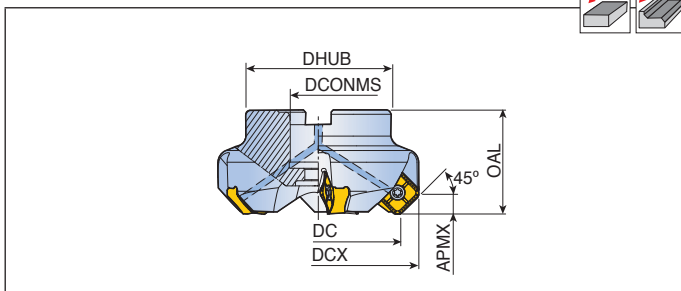
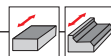
Descrizione	Vite	Chiave			
TFM45SN-13	TS 40B100I	T-T15			
TFM45SN-13-QC	TS 40B100I	T-T15			



TFM45SNS-16



Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45SNS 463-22R-16	4	63	81.1	22	47	50	8.8	●	A	1.0	LH M10x25	SNMX
580-27R-16	5	80	98.2	27	70	50	8.8	●	A	1.5	LH M12x30	1607...
7100-32R-16	7	100	118.2	32	85	50	8.8	●	A	2.3	LH M16x35	SNHX
8125-40R-16	8	125	143.2	40	85	63	8.8	●	A	4.0	SH M20x40	1606...
10125-40R-16	10	125	143.2	40	85	63	8.8	●	A	4.0	SH M20x40	E270
10160-40R-16	10	160	178.2	40	110	63	8.8	x	C	5.4	-	
12160-40R-16	12	160	178.2	40	110	63	8.8	x	C	5.4	-	
12200-60R-16	12	200	218.2	60	130	63	8.8	x	C	7.5	-	
14250-60R-16	14	250	268.2	60	160	63	8.8	x	C	13	-	
TFM45SNS 580-25.4R-16	5	80	98.2	25.4	70	50	8.8	●	A	1.5	LH M12x30	
7100-31.75R-16	7	100	118.2	31.75	80	50	8.8	x	B	2.3	-	
8125-38.1R-16	8	125	143.2	38.1	80	63	8.8	x	B	4.0	-	
10160-50.8R-16	10	160	178.2	50.8	100	63	8.8	x	B	5.4	-	
12200-47.625R-16	12	200	218.2	47.625	130	63	8.8	x	C	7.5	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave			
TFM45SNS-16	TS 45120I	T-T20			

Condizioni di taglio

E287-E289

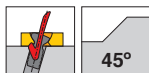
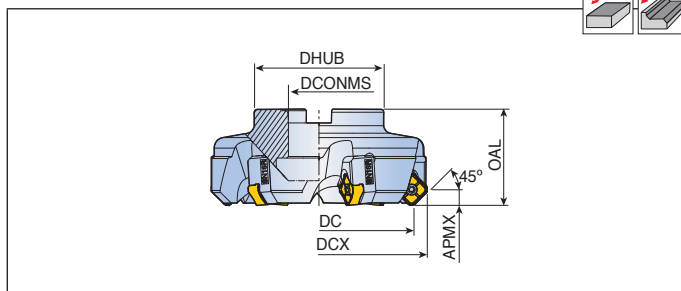
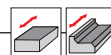
Tipo di attacco

E290-E291

TFM45SNS-16B-CA



Fresa a manicotto



Descrizione		Dimensioni (mm)						Tipo att.	Kg	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX			
TFM45SNS 6125-40R-16B-CA	6	125	143.2	40	85	63	8.8	B	4.0	SNMX 1607... SNHX 1606... E270
8160-40R-16B-CA	8	160	178.2	40	110	63	8.8	C	5.9	
10200-60R-16B-CA	10	200	218.2	60	130	63	8.8	C	8.1	
14250-60R-16-CA	14	250	268.2	60	160	63	8.8	C	13.3	
14315-60R-16B-CA	14	315	333.2	60	220	80	8.8	D	24.0	

Ricambi

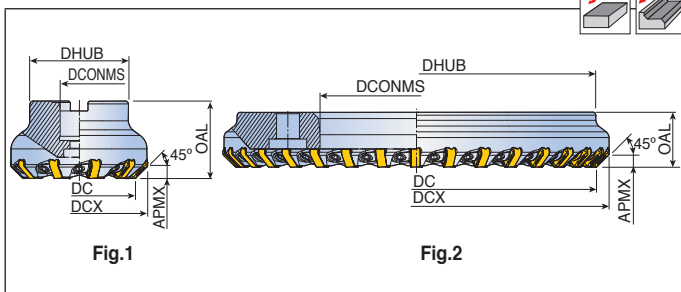
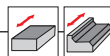
Descrizione	Vite	Cartuccia	Vite cartuccia	Chiave	
TFM45SNS-16B-CA	TS 45120I	TCT23-SN16R	TS 60170I	T-T20	

Condizioni di taglio E287-E289	Tipo di attacco E290-E291
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TFM45SNW-16/TQ45SNW-16



Fresa a manicotto



Descrizione	⌀	Dimensioni (mm)						Fig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45SNW 1080-27R-16	10	80	98.2	27	70	55	8.8	1	A	1.9	LH M12x30	SNHX 1606...
14100-32R-16	14	100	118.2	32	85	63	8.8	1	A	3.2	SH M16x35	E270
18125-40R-16	18	125	143.2	40	85	63	8.8	1	B	3.9	-	
22160-40R-16	22	160	178.2	40	110	63	8.8	1	C	5.7	-	
26200-60R-16	26	200	218.2	60	130	63	8.8	1	C	7.8	-	
32250-60R-16	32	250	268.2	60	160	63	8.8	1	C	13.5	-	

Descrizione	⌀	Dimensioni (mm)						Fig.	Kg	Adattatore	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX				
TQ45SNW 26200R-16	26	200	218.2	63.5	200	38	8.8	2	6.3	QA 08 K/M	SNHX 1606...
34250R-16	34	250	268.2	133.35	248	38	8.8	2	7.9	QA 10 K/M	E270
44315R-16	44	315	333.2	146.05	313	38	8.8	2	13.2	QA 12 K/M	
50355R-16	50	355	373.2	215.90	353	38	8.8	2	13.0	QA 14 K/M	

• Raccomandata per condizioni di lavorazione molto stabili di acciaio e ghisa

Ricambi

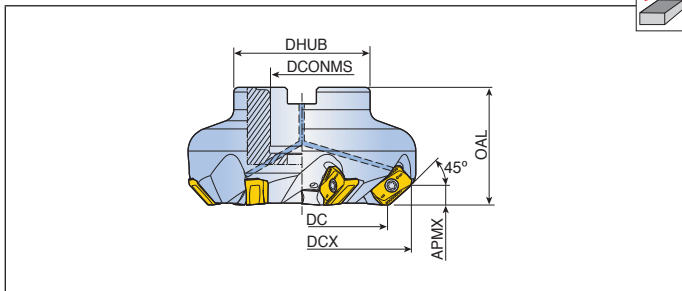
Descrizione	Cuneo	Vite cuneo	Chiave		
TFM45SNW	WFZ 8H-SN	WS 8	T-W 4		
TQ45SNW	WFZ 8H-SN	WS 8	T-W 4		



TFM45AN-16



Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45AN 450-22R-16	4	50	67.8	22	45	40	8.4	●	A	0.6	LH M10x25	ANHX 1607 ANR-M E234
663-22R-16	6	63	80.6	22	47	40	8.4	●	A	0.9	LH M10x25	
780-27R-16	7	80	97.5	27	58	50	8.4	●	A	1.6	SH M12x35	
8100-32R-16	8	100	117.5	32	85	50	8.4	●	A	2.5	LH M16x35	
9125-40R-16	9	125	142.6	40	85	63	8.4	●	A	4.3	SH M20x40	
10160-40R-16	10	160	177.7	40	110	63	8.4	x	C	5.8	-	

- L'inserto a 90° non può essere montato
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

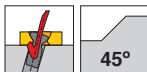
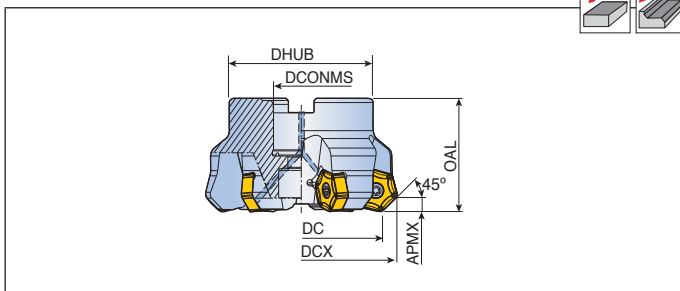
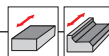
Descrizione	Vite	Chiave			
TFM45AN	TS 40120I	T-T15			



TFM45HNS-10

HEXA2MILL

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.		Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX					
TFM45HNS 563-22R-10	5	63	77	22	47	50	6.1	●	A	0.8	SH M10x25	HNHX 1006... E249
663-22R-10F	6	63	77	22	47	50	6.1	●	A	0.9	SH M10x25	
680-27R-10	6	80	94	27	70	55	6.1	●	A	1.6	SH M12x35	
780-27R-10F	7	80	94	27	70	55	6.1	●	A	1.6	SH M12x35	
7100-32R-10	7	100	114	32	85	63	6.1	●	A	2.7	SH M16x35	
9100-32R-10F	9	100	114	32	85	63	6.1	●	A	2.8	SH M16x35	
8125-40R-10	8	125	139	40	85	63	6.1	x	B	3.4	-	
10125-40R-10	10	125	139	40	85	63	6.1	x	B	3.4	-	
12125-40R-10F	12	125	139	40	85	63	6.1	x	B	3.4	-	
10160-40R-10	10	160	174	40	110	63	6.1	x	C	4.8	-	
12160-40R-10	12	160	174	40	110	63	6.1	x	C	4.8	-	
14160-40R-10F	14	160	174	40	110	63	6.1	x	C	4.9	-	
12200-60R-10	12	200	214	60	130	63	6.1	x	C	6.9	-	
16200-60R-10F	16	200	214	60	130	63	6.1	x	C	7.0	-	
16250-60R-10	16	250	264	60	160	63	6.1	x	C	11.8	-	
20250-60R-10F	20	250	264	60	160	63	6.1	x	C	12.0	-	
TFM45HNS 680-25.4R-10	6	80	94	25.4	70	55	6.1	●	A	1.6	SH M12x35	
7100-31.75R-10	7	100	114	31.75	80	63	6.1	x	B	2.7	-	
9100-31.75R-10F	9	100	114	31.75	80	63	6.1	x	B	2.8	-	
8125-38.1R-10	8	125	139	38.1	80	63	6.1	x	B	3.4	-	
10125-38.1R-10	10	125	139	38.1	80	63	6.1	x	B	3.4	-	
10160-50.8R-10	10	160	174	50.8	100	63	6.1	x	B	4.8	-	
12160-50.8R-10	12	160	174	50.8	100	63	6.1	x	B	4.8	-	
12200-47.625R-10	12	200	214	47.625	130	63	6.1	x	C	6.9	-	
16250-47.625R-10	16	250	264	47.625	160	63	6.1	x	C	11.8	-	

Ricambi

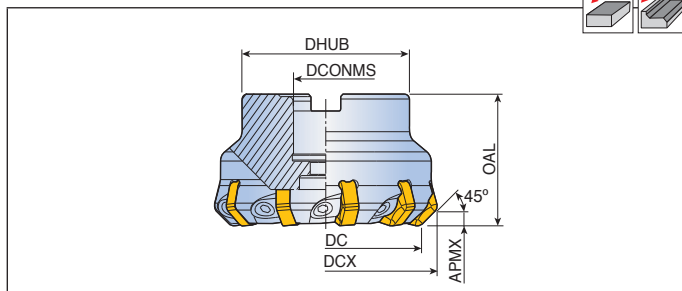
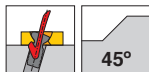
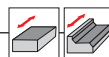
Descrizione	Vite	Chiave			
TFM45HNS	TS 50C130I/HG	T-T20			



TFM45HN-10



Fresa a manicotto



Descrizione		Dimensioni (mm)						Tipo att.		Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX				
TFM45HN 1080-27R-10	10	80	94	27	70	55	6.1	A	1.9	SH M12x35	HNHX 1006... E249
14100-32R-10	14	100	114	32	85	63	6.1	A	3.3	SH M16x35	
18125-40R-10	18	125	139	40	85	63	6.1	B	3.9	-	
22160-40R-10	22	160	174	40	110	63	6.1	C	5.6	-	
28200-60R-10	28	200	214	60	130	63	6.1	C	7.9	-	
36250-60R-10	36	250	264	60	160	63	6.1	C	13.1	-	
44315-60R-10	44	315	329	60	220	63	6.1	D	21.2	-	

Ricambi

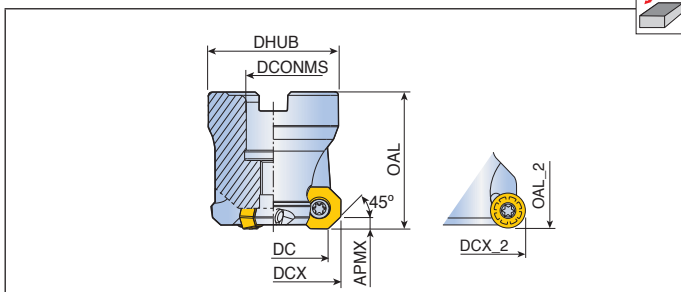
Descrizione	Cuneo	Vite cuneo	Chiave		
TFM45HN	WFZ 8H	WS 8	T-W 4		

Condizioni di taglio
 Tipo di attacco

TFM430FS-05



Fresa a manicotto



Descrizione		Dimensioni (mm)								Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCX_2	DCONMS	DHUB	OAL	OAL_2	APMX				
TFM430FS 332-16R-05	3	32	39.6	40.8	16	30	40	40.6	3.5	E	0.3	KTB32B	OFCW
440-16R-05	4	40	47.5	48.7	16	38	40	40.6	3.5	A	0.4	SH M8x30	05T3..., OFCT
550-22R/L-05	5	50	57.9	59.0	22	45	40	40.6	3.5	A	0.6	SH M10x30	05T3..., OFMT
663-22R-05	6	63	71.0	72.0	22	47	40	40.6	3.5	A	1.0	SH M10x30	05T3..., RFMT
780-27R/L-05	7	80	88.0	89.0	27	70	50	50.6	3.5	A	1.3	SH M12x35	05T3..., RFMT
8100-32R-05	8	100	108.0	109.0	32	85	50	50.6	3.5	A	2.6	LH M16x35	1404..., E256
9125-40R-05	9	125	133.0	134.0	40	85	63	63.6	3.5	B	3.0	-	
TFM430FS 780-25.4R-05	7	80	88.0	89.0	25.4	70	50	50.6	3.5	A	1.3	SH M12x35	
9125-38.1R-05	9	125	133.0	134.0	38.1	80	63	63.6	3.5	B	3.0	-	

Ricambi

Descrizione	Vite	Chiave			
TFM430FS	TS 40093I	T-T15			

Condizioni di taglio

E287-E289

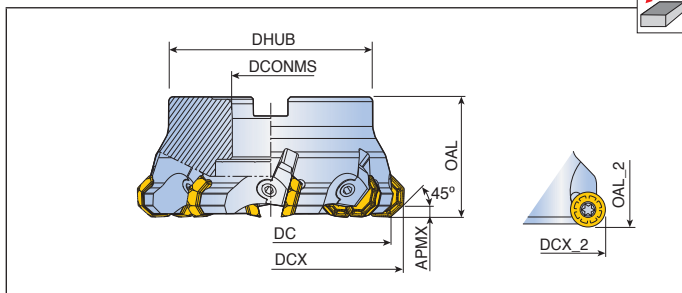
Tipo di attacco

E290-E291

TFM43ZOFW-07



Fresa a manicotto



Descrizione		Dimensioni (mm)									Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCX_2	DCONMS	DHUB	OAL	OAL_2	APMX					
TFM43ZOFW 463-22R-07	4	63	75.1	76.1	22	47	40	40.7	5.0	A	0.5	LH M10x25	OFCN	
580-27R-07	5	80	92.0	93.1	27	70	50	50.7	5.0	A	1.2	SH M12x35	O704...	
6100-32R-07	6	100	112.0	113.1	32	85	50	50.7	5.0	B	1.8	-	OFCR	
8100-32R-07	8	100	112.0	113.1	32	85	50	50.7	5.0	B	1.8	-	O704...	
8125-40R-07	8	125	137.0	138.1	40	85	63	63.7	5.0	B	3.0	-	OFMR	
10125-40R-07	10	125	137.0	138.1	40	85	63	63.7	5.0	B	3.0	-	O704...	
10160-40R-07	10	160	172.0	173.1	40	100	63	63.7	5.0	C	4.7	-	RFMR	
12160-40R-07	12	160	172.0	173.1	40	110	63	63.7	5.0	C	4.7	-	1904...	
12200-60R-07	12	200	212.0	213.1	60	130	63	63.7	5.0	C	7.0	-	E255	
14200-60R-07	14	200	212.0	213.1	60	130	63	63.7	5.0	C	7.0	-		
TFM43ZOFW 6100-31.75R-07	6	100	112.0	113.1	31.75	80	50	50.7	5.0	B	1.8	-		
8125-38.1R-07	8	125	137.0	138.1	38.1	80	63	63.7	5.0	B	3.0	-		
10160-50.8R-07	10	160	172.0	173.1	50.8	100	63	63.7	5.0	B	4.7	-		

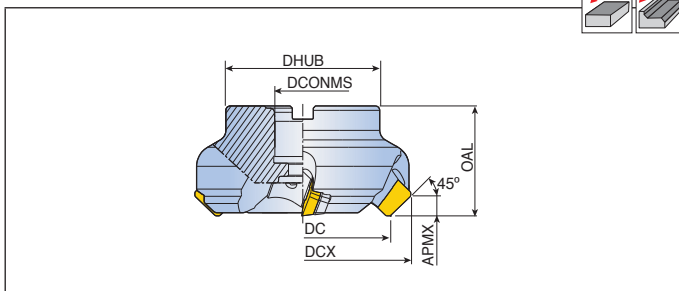
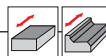
Ricambi

Descrizione	Cuneo	Vite cuneo	Chiave		
TFM43ZOFW	WFO-8Z	WS 8, *WS 8S, WS 8M	T-W 4		



*WS8S: Solo per TFM43ZOFW-463...

Fresa a manicotto (foro in pollici)



Descrizione	H	Dimensioni (mm)						Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX				
LM45SD 480-25.4R-12	4	80	93.8	25.4	70	50	6.5	A	1.6	LH M12x30	SDKN 1203...
5100-31.75R-12	5	100	113.8	31.75	80	60	6.5	A	2.8	LH M16x35	E264
6125-38.1R/L-12	6	125	138.8	38.1	80	63	6.5	B	3.5	-	-
8160-50.8R-12	8	160	173.9	50.8	100	63	6.5	B	5.5	-	-
10200-47.625R/L-12	10	200	213.9	47.625	130	63	6.5	C	7.6	-	-
12250-47.625R/L-12	12	250	263.9	47.625	160	63	6.5	C	12.6	-	-
LM45SD 480-25.4R-15	4	80	93.8	25.4	70	50	8.7	A	1.6	LH M12x30	SDKN 1504...
5100-31.75R-15	5	100	118.6	31.75	80	60	8.7	A	2.8	LH M16x35	E264
6125-38.1R/L-15	6	125	143.6	38.1	80	63	8.7	B	3.5	-	-
8160-50.8R/L-15	8	160	178.6	50.8	100	63	8.7	B	5.5	-	-
10200-47.625R/L-15	10	200	218.6	47.625	130	63	8.7	C	7.6	-	-
12250-47.625R/L-15	12	250	268.6	47.625	160	63	8.7	C	12.6	-	-
14315-47.625R/L-15	14	315	333.54	47.625	220	63	6.7	C	18.7	-	-

• Foro metrico disponibile su richiesta

Ricambi

Descrizione	Sottoplacch.	Cuneo	Vite sottoplac.	Vite cuneo	Chiave	
LM45SD-12	TSSDSE 12N	WPA 8	TS 40B100I	TS 80200W	T-W 4	T-T15
LM45SD-15	TSSDSE 15N	WPA 8	TS 40B100I	TS 80160W ⁽¹⁾	T-W 4	T-T15

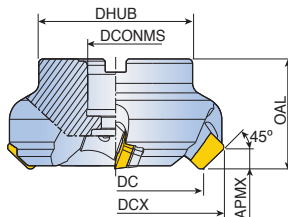
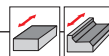


- ⁽¹⁾ TS 80160W è per il corpo fresa D80
- La chiave per la sottoplacchetta T-T15⁽²⁾ deve essere ordinata separatamente

LM45SE-12/15



Fresa a manicotto (foro in pollici)



Descrizione		Dimensioni (mm)						Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCX	DCONMS	DHUB	OAL	APMX				
LM45SE 480-25.4R-12	4	80	93.7	25.4	70	55	6.5	A	1.8	LH M12x30	SEKN 1203...
5100-31.75R-12	5	100	113.6	31.75	80	60	6.5	A	2.8	LH M16x35	E265
6125-38.1R-12	6	125	138.6	38.1	80	63	6.5	B	3.4	-	-
8160-50.8R/L-12	8	160	173.6	50.8	100	63	6.5	B	5	-	-
10200-47.625R/L-12	10	200	213.6	47.625	130	63	6.5	C	7.5	-	-
12250-47.625R-12	12	250	263.6	47.625	160	63	6.5	C	12.2	-	-
LM45SE 480-25.4R-15	4	80	97.8	25.4	70	55	8.7	A	1.8	LH M12x30	SEKN 1504...
5100-31.75R-15	5	100	118	31.75	80	60	8.7	A	2.8	LH M16x35	E265
6125-38.1R-15	6	125	143	38.1	80	63	8.7	B	3.5	-	-
8160-50.8R/L-15	8	160	178	50.8	100	63	8.7	B	5.7	-	-
10200-47.625R/L-15	10	200	218	47.625	130	63	8.7	C	7.8	-	-
12250-47.625R-15	12	250	268	47.625	160	63	8.7	C	12.8	-	-

• Foro metrico disponibile su richiesta

Ricambi

Descrizione	Cuneo	Cuneo	Vite sottoplac.	Vite cuneo	Chiave	
LM45SE-12	TSSDSE 12N	WPA 8	TS 40B100I	TS 80200W	T-W 4	T-T15
LM45SE-15	TSSDSE 15N	WPA 8	TS 40B100I	TS 80160W ⁽¹⁾	T-W 4	T-T15

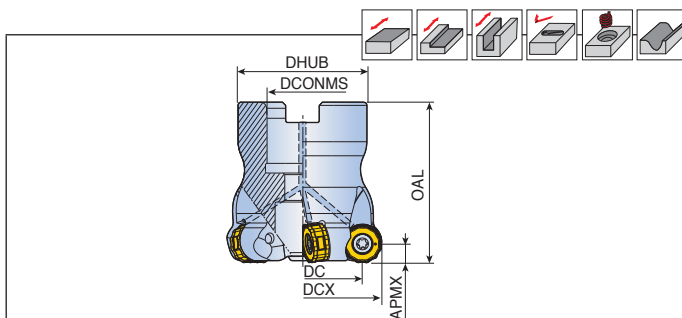


- ⁽¹⁾ TS 80160W è per il corpo fresa D80
- La chiave per la sottoplacchetta T-T15⁽²⁾ deve essere ordinata separatamente

TFMRNS-16

CHASE2MOLD

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRNS 340-16R-16	3	40	24	16	30	55	8.0	●	E	0.3	KTB 32B	RNMU 1606... E259
350-16R-16	3	50	34	16	38	50	8.0	●	A	0.2	SH M8x30	
450-16R-16	4	50	34	16	38	50	8.0	●	A	0.2	SH M8x30	
452-22R-16	4	52	36	22	45	50	8.0	●	A	0.3	SH M10x30	
463-22R-16	4	63	47	22	47	50	8.0	●	A	0.5	SH M10x30	
566-27R-16	5	66	50	27	58	50	8.0	●	A	0.6	LH M12x30	
580-27R-16	5	80	64	27	58	50	8.0	●	A	0.9	LH M12x30	
680-27R-16	6	80	64	27	58	50	8.0	●	A	0.8	LH M12x30	
6100-32R-16	6	100	84	32	66	50	8.0	●	A	1.7	LH M16x35	
7125-40R-16	7	125	109	40	85	63	8.0	●	A	3.0	SH M20x40	
8125-40R-16	8	125	109	40	85	63	8.0	●	A	2.9	SH M20x40	
9160-40R-16	9	160	144	40	110	63	8.0	x	C	3.8	-	
10200-60R-16	10	200	184	60	130	63	8.0	x	C	5.6	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

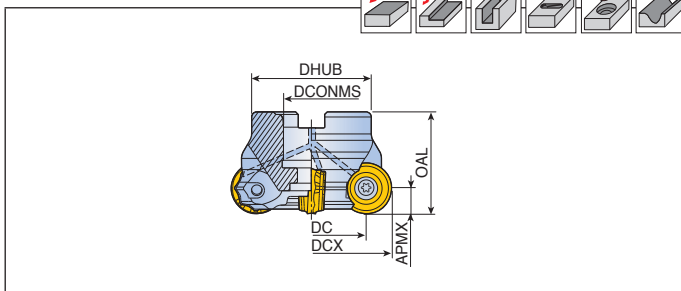
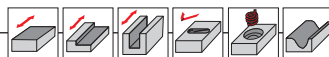
Descrizione	Vite	Chiave			
TFMRNS-10	TS 35085I/HG	T-T15			
TFMRNS-12	TS 40G110I	T-T15			
TFMRNS-16	TS 50A121I/HG	T-T20			

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E359-E360
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TFMRX-16/20

CHASEMOLD

Fresa a manicotto



Descrizione	Z	Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRX 450-16R-16	4	50	34	16	38	40	8.0	●	A	0.2	SH M8x30	RXMX 1604... E260
452-22R-16	4	52	36	22	40	40	8.0	●	A	0.2	SH M10x30	
463-22R-16	4	63	47	22	47	40	8.0	●	A	0.4	LH M10x25	
566-27R-16	5	66	50	27	58	50	8.0	●	A	0.5	SH M12x35	
580-27R-16	5	80	64	27	58	50	8.0	●	A	0.8	SH M12x35	
6100-32R-16	6	100	84	32	66	50	8.0	x	B	1.1	-	
7125-40R-16	7	125	109	40	85	63	8.0	x	B	2.4	-	
8160-40R-16	8	160	144	40	110	63	8.0	x	C	3.6	-	
TFMRX 580-25.4R-16	5	80	64	25.4	58	50	8.0	●	A	1.0	SH M12x35	RXMX 2006... E260
6100-31.75R-16	6	100	84	31.75	80	50	8.0	x	B	1.4	-	
TFMRX 463-22R-20	4	63	43	22	47	40	10.0	●	A	0.3	LH M10x25	
580-27R-20	5	80	60	27	58	50	10.0	●	A	0.8	LH M12x30	
6100-32R-20	6	100	80	32	85	50	10.0	x	B	1.0	-	
7125-40R-20	7	125	105	40	85	63	10.0	x	B	2.5	-	
8160-40R-20	8	160	140	40	110	63	10.0	x	C	3.7	-	

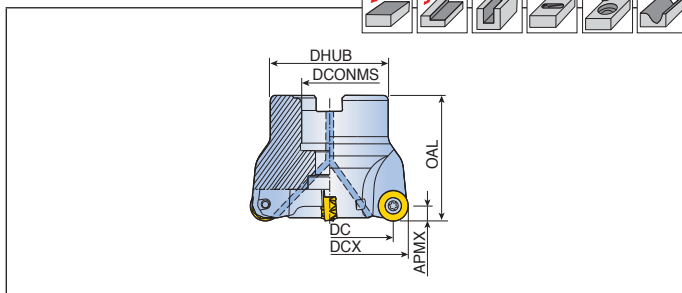
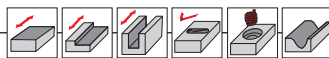
• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave			
TFMRX-10	TS 35070I/HG	T-T15			
TFMRX-12	TS 35085I/HG	T-T15			
TFMRX-16	TS 45A100I/HG	T-T20			
TFMRX-20	TS 50115I	T-T20			



Fresa a manicotto



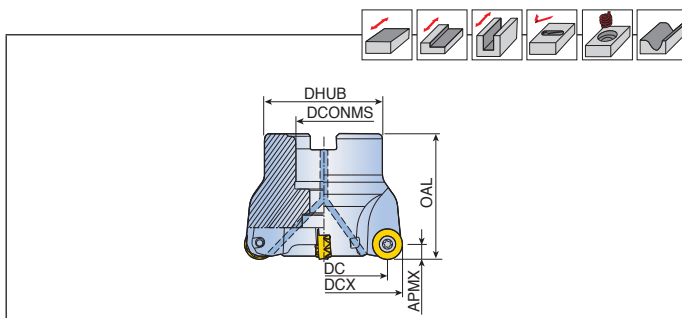
Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRY 532-16R-08	5	32	24	16	30	40	4.0	●	A	0.12	SH M8x30	RYM(H)X 0803...
640-16R-08	6	40	32	16	38	40	4.0	●	A	0.22	SH M8x30	
TFMRY 432-16R-10	4	32	22	16	30	40	5.0	●	A	0.12	SH M8x30	RYM(H)X 1004...
540-16R-10	5	40	30	16	38	40	5.0	●	A	0.22	SH M8x30	
640-16R-10	6	40	30	16	38	40	5.0	●	A	0.23	SH M8x30	RYM(H)X 1205...
650-22R-10	6	50	40	22	45	50	5.0	●	A	0.33	SH M10x30	
652-22R-10	6	52	42	22	45	50	5.0	●	A	0.36	SH M10x30	
763-22R-10	7	63	53	22	47	50	5.0	●	A	0.57	SH M10x30	
766-27R-10	7	66	56	27	58	50	5.0	●	A	0.68	LH M12x30	
TFMRY 332-16R-12	3	32	20	16	30	40	6.0	●	E	0.12	KTB 32B	
440-16R-12	4	40	28	16	38	40	6.0	●	A	0.15	SH M8x30	
442-16R-12	4	42	30	16	38	40	6.0	●	A	0.21	SH M8x30	
450-22R-12	4	50	38	22	45	50	6.0	●	A	0.33	SH M10x30	
550-22R-12	5	50	38	22	45	50	6.0	●	A	0.33	SH M10x30	
552-22R-12	5	52	40	22	45	50	6.0	●	A	0.34	SH M10x30	
463-22R-12	4	63	51	22	47	50	6.0	●	A	0.57	SH M10x30	
563-22R-12	5	63	51	22	47	50	6.0	●	A	0.58	SH M10x30	
663-22R-12	6	63	51	22	47	50	6.0	●	A	0.58	SH M10x30	
763-22R-12	7	63	51	22	47	50	6.0	●	A	0.71	SH M10x30	
666-27R-12	6	66	54	27	58	50	6.0	●	A	0.62	LH M12x30	
766-27R-12	7	66	54	27	58	50	6.0	●	A	0.62	LH M12x30	
680-27R-12	6	80	68	27	58	50	6.0	●	A	0.90	LH M12x30	
780-27R-12	7	80	68	27	58	50	6.0	●	A	0.92	LH M12x30	
880-27R-12	8	80	68	27	58	50	6.0	●	A	0.98	LH M12x30	
7100-32R-12	7	100	88	32	66	50	6.0	●	A	1.29	LH M16x35	
8100-32R-12	8	100	88	32	66	50	6.0	●	A	1.37	LH M16x35	
8125-40R-12	8	125	113	40	85	63	6.0	●	A	3.00	SH M20x40	
9125-40R-12	9	125	113	40	85	63	6.0	●	A	2.99	SH M20x40	

<p>Condizioni di taglio</p> <p>E287-E289</p>	<p>Tipo di attacco</p> <p>E290-E291</p>	<p>Dati di rampa</p> <p>E364-E366</p>
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TFMRY-16

CHASEMOLD

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRY 350-16R-16	3	50	34	16	38	50	8.0	●	A	0.3	SH M8x35	RYM(H)X 1606... E261-E262
450-16R-16	4	50	34	16	38	50	8.0	●	A	0.3	SH M8x35	
450-22R-16	4	50	34	22	45	50	8.0	●	A	0.3	SH M10x30	
452-22R-16	4	52	36	22	45	50	8.0	●	A	0.3	SH M10x30	
463-22R-16	4	63	47	22	47	50	8.0	●	A	0.5	SH M10x30	
463H-22R-16*	4	63	47	22	47	50	8.0	●	A	0.5	SH M10x30	
566-27R-16	5	66	50	27	58	50	8.0	●	A	0.6	LH M12x30	
580-27R-16	5	80	64	27	58	50	8.0	●	A	0.8	LH M12x30	
580H-27R-16*	5	80	64	27	58	50	8.0	●	A	0.8	LH M12x30	
680-27R-16	6	80	64	27	58	50	8.0	●	A	0.8	LH M12x30	
6100-32R-16	6	100	84	32	66	50	8.0	●	A	1.2	LH M16x35	
6100H-32R-16*	6	100	84	32	66	50	8.0	●	A	1.2	LH M16x35	
7125-40R-16	7	125	109	40	85	63	8.0	●	A	2.7	SH M20x40	
7125H-40R-16*	7	125	109	40	85	63	8.0	●	A	2.6	SH M20x40	
8125-40R-16	8	125	109	40	85	63	8.0	●	A	2.7	SH M20x40	
8160H-40R-16*	8	160	144	40	110	63	8.0	x	C	3.3	-	
TFMRY 580-25.4R-16	5	80	64	25.4	70	50	8.0	●	A	1.0	SH M12x35	

- *: Con sottoplacchetta in metallo duro
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

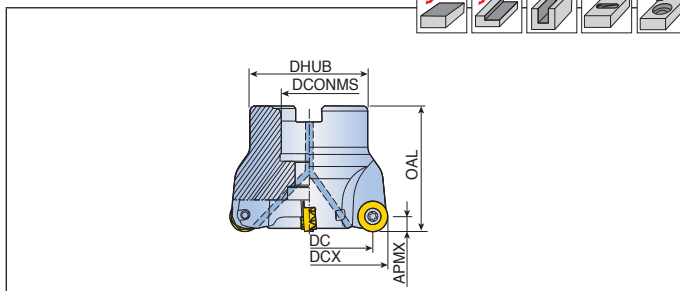
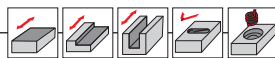
Descrizione	Sottoplacchetta	Vite sottoplac.	Vite	Chiave	
TFMRY-08	-	-	TS 30A60I/HG	TD 9	-
TFMRY-10	-	-	TS 35085/HG	-	T-T15
TFMRY-12	-	-	TS 40093I	-	T-T15
TFMRY-16	-	-	TS 50115I	-	T-T20
TFMRY...H-16	TSRY 16NS	TS 8050088S	TS 50A140I	-	T-T20

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E364-E366
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TFMRY-20



Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRY 463-22R-20	4	63	43	22	47	50	10.0	●	A	0.5	SH M10x30	RYMX 2007...
580-27R-20	5	80	60	27	58	50	10.0	●	A	0.8	LH M12x30	
5100H-32R-20*	5	100	80	32	66	50	10.0	●	A	1.1	LH M16x35	E261-E262
6100-32R-20	6	100	80	32	66	50	10.0	●	A	1.2	LH M16x35	
5125H-40R-20*	5	125	105	40	85	63	10.0	●	A	2.7	SH M20x40	
7125-40R-20	7	125	105	40	85	63	10.0	●	A	2.5	SH M20x40	
6160H-40R-20*	6	160	140	40	110	63	10.0	x	C	2.7	-	
8160-40R-20	8	160	140	40	110	63	10.0	x	C	3.8	-	
8200H-60R-20*	8	200	180	60	130	63	10.0	x	C	5.3	-	
9250H-60R-20*	9	250	230	60	160	63	10.0	x	C	9.3	-	

- *: Con sottoplacchetta in metallo duro
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

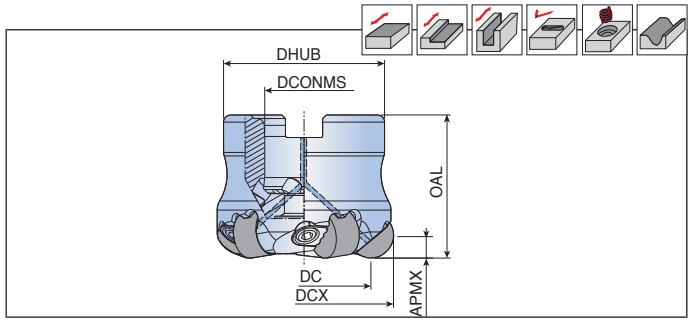
Ricambi

Descrizione	Sottoplacchetta	Vite sottoplac.	Vite	Chiave	Manico chiave
TFMRY-20	-	-	TS 60A130I	BLD T25/M7	SW6-T
TFMRY...H-20	TSTRY 20NS	TS 9060011S	TS 60A165I	BLD T25/M7	SW6-T

Condizioni di taglio E287-E289	Tipo di attacco E290-E291	Dati di rampa E364-E366
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TFMRN-12

Fresa a manicotto



Descrizione		Dimensioni (mm)						Fori refriger ⁽¹⁾	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRN 450-22R-1207	4	50	37.3	22	45	40	6.3	●	A	0.4	SH M10x30	RNGN 1207
550-22R-1207	5	50	37.3	22	45	40	6.3	●	A	0.4	SH M10x30	FL...
463-22R-1207	4	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	E258
663-22R-1207	6	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	
763-22R-1207	7	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	
580-27R-1207	5	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	
780-27R-1207	7	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	
880-27R-1207	8	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	

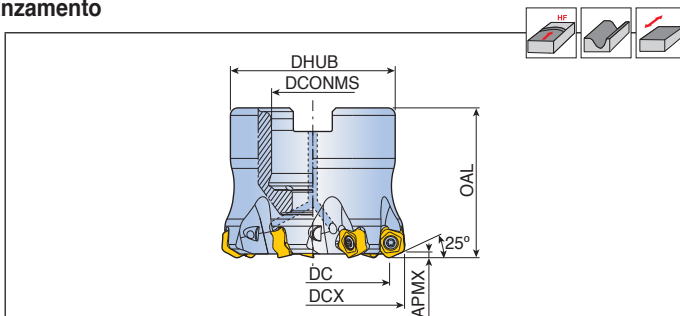
- Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)
- ⁽¹⁾ Utilizzare solo aria (il lubrorefrigerante è proibito)

Ricambi

Descrizione	Cuneo	Vite	Chiave		
TFMRN-12	WFZ 6-C	WS 6	T-W 3		

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291
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Fresa a manicotto ad alto avanzamento



Descrizione	Z	Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMPT 640-16R-05	6	40	31.8	16	38	40	1.5	●	A	0.3	SH M8x25	PTKU 0503... E257
750-22R-05	7	50	41.8	22	45	40	1.5	●	A	0.4	LH M10x25	
752-22R-05	7	52	43.8	22	45	40	1.5	●	A	0.3	LH M10x25	
863-22R-05	8	63	54.8	22	58	50	1.5	●	A	0.8	SH M10x30	
866-27R-05	8	66	57.8	27	58	50	1.5	●	A	0.7	SH M12x35	
TFMPT 450-22R-10	4	50	33.4	22	45	40	3.0	●	E	0.3	TCS10-40	PTKU 1006... E257
563-22R-10	5	63	46.4	22	58	50	3.0	●	A	0.8	SH M10x30	
566-22R-10	5	66	49.4	22	58	50	3.0	●	A	0.8	SH M10x30	
680-27R-10	6	80	63.4	27	70	60	3.0	●	A	1.4	SH M12x30	
8100-32R-10	8	100	83.4	32	85	60	3.0	●	A	2.3	SH M16x35	
9125-32R-10	9	125	108.4	32	85	60	3.0	●	A	3.1	SH M16x35	
10160-40R-10	10	160	143.4	40	110	60	3.0	x	C	4.1	-	
12200-60R-10	12	200	183.4	60	130	60	3.0	x	C	5.7	-	

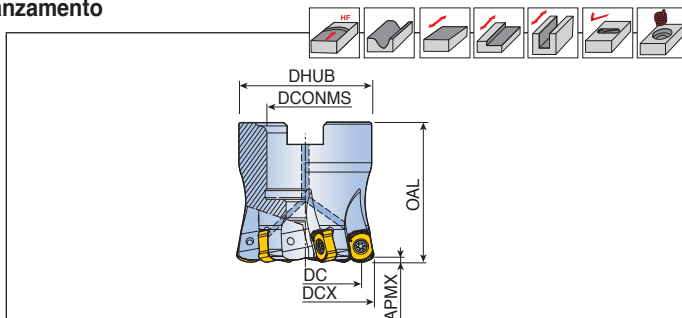
• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave		Manico chiave	
TFMPT-05	TS 25D060/HG-P	TD7P	-	-	
TFMPT-10	TS 50D130/HG-P	-	TBLD T20P-W6	SW6-T	

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E349-E350
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Fresa a manicotto ad alto avanzamento



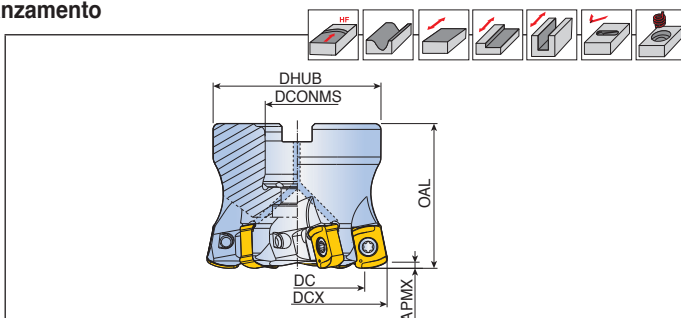
Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	SDHUB	OAL	APMX					
TFMBL 432-16R-06	4	32	24.3	16	30	40	1.0	●	A	0.1	SH M8x25	BLMP 0603...
532-16R-06	5	32	24.3	16	30	40	1.0	●	A	0.1	SH M8x25	
640-16R-06	6	40	32.2	16	38	40	1.0	●	A	0.2	SH M8x25	
640-22R-06	6	40	32.2	22	38	40	1.0	●	A	0.2	SH M10x30	
650-22R-06	6	50	42.2	22	45	50	1.0	●	A	0.4	SH M10x30	
750-22R-06	7	50	42.2	22	45	50	1.0	●	A	0.4	SH M10x30	
850-22R-06	8	50	42.2	22	45	50	1.0	●	A	0.4	SH M10x30	
752-22R-06	7	52	44.2	22	45	40	1.0	●	A	0.4	SH M10x30	
852-22R-06	8	52	44.2	22	45	40	1.0	●	A	0.4	SH M10x30	
763-22R-06	7	63	55.5	22	47	50	1.0	●	A	0.6	SH M10x30	
863-22R-06	8	63	55.5	22	47	50	1.0	●	A	0.6	SH M10x30	
963-22R-06	9	63	55.5	22	47	50	1.0	●	A	0.6	SH M10x30	
966-27R-06	9	66	58.5	27	58	50	1.0	●	A	0.7	SH M12x35	
TFMBL 432-16R-09	4	32	21.6	16	30	40	1.5	●	E	0.1	KTB 32B	BLMP 0904...
440-16R-09	4	40	29.6	16	38	40	1.5	●	A	0.2	SH M8x25	
540-16R-09	5	40	29.6	16	38	40	1.5	●	A	0.2	SH M8x25	
550-22R-09	5	50	39.6	22	45	50	1.5	●	A	0.4	SH M10x30	
650-22R-09	6	50	39.6	22	45	50	1.5	●	A	0.4	SH M10x30	
750-22R-09	7	50	39.6	22	45	50	1.5	●	A	0.4	SH M10x30	
652-22R-09	6	52	41.6	22	45	40	1.5	●	A	0.4	SH M10x30	
752-22R-09	7	52	41.6	22	45	40	1.5	●	A	0.4	SH M10x30	
663-22R-09	6	63	52.6	22	47	50	1.5	●	A	0.6	SH M10x30	
763-22R-09	7	63	52.6	22	47	50	1.5	●	A	0.6	SH M10x30	
863-22R-09	8	63	52.6	22	47	50	1.5	●	A	0.6	SH M10x30	
766-27R-09	7	66	55.6	27	58	50	1.5	●	A	0.7	SH M12x35	
866-27R-09	8	66	55.6	27	58	50	1.5	●	A	0.8	SH M12x35	
780-27R-09	7	80	69.6	27	70	50	1.5	●	A	1.2	SH M12x35	
880-27R-09	8	80	69.6	27	70	50	1.5	●	A	1.2	SH M12x35	
980-27R-09	9	80	69.6	27	70	50	1.5	●	A	1.2	SH M12x35	
1080-27R-09	10	80	69.6	27	70	50	1.5	●	A	1.2	SH M12x35	
8100-32R-09	8	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
9100-32R-09	9	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
10100-32R-09	10	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
11100-32R-09	11	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
12100-32R-09	12	100	89.6	32	85	60	1.5	●	A	2.3	SH M16x35	
12125-40R-09	12	125	114.6	40	85	60	1.5	●	A	2.7	SH M20x40	
14125-40R-09	14	125	114.6	40	85	60	1.5	●	A	2.7	SH M20x40	

Condizioni di taglio E287-E289	Tipo di attacco E290-E291	Dati di rampa E352-E355
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TFMBL-11



Fresa a manicotto ad alto avanzamento



Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBL 440-16R-11	4	40	24.4	16	30	40	2.0	●	E	0.2	KTB 32B	BLMP 1105... E243
450-22R-11	4	50	34.4	22	45	40	2.0	●	A	0.3	LH M10x25	
550-22R-11	5	50	34.4	22	45	40	2.0	●	A	0.3	LH M10x25	
552-22R-11	5	52	36.4	22	45	40	2.0	●	A	0.3	LH M10x25	
563-22R-11	5	63	48.4	22	58	50	2.0	●	A	0.7	SH M10x30	
663-22R-11	6	63	48.4	22	58	50	2.0	●	A	0.7	SH M10x30	
666-22R-11	6	66	50.3	22	58	50	2.0	●	A	0.8	SH M10x30	
666-27R-11	6	66	50.3	27	58	50	2.0	●	A	0.8	SH M10x30	
680-27R-11	6	80	64.3	27	70	60	2.0	●	A	1.4	SH M12x30	
780-27R-11	7	80	64.3	27	70	60	2.0	●	A	1.4	SH M12x30	
6100-32R-11	6	100	84.3	32	85	60	2.0	●	A	2.2	SH M16x35	
7100-32R-11	7	100	84.3	32	85	60	2.0	●	A	2.2	SH M16x35	
8125-32R-11	8	125	109.3	32	85	60	2.0	●	A	2.5	SH M20x40	
10125-40R-11	10	125	109.3	40	85	60	2.0	●	A	2.7	SH M20x40	
10160-40R-11	10	160	144.3	40	110	60	2.0	x	C	3.9	-	
12200-60R-11	12	200	184.3	60	130	60	2.0	x	C	5.8	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

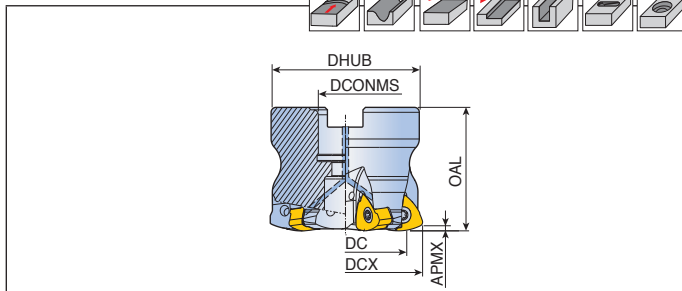
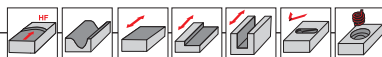
Descrizione	Vite	Chiave		Manico chiave	
TFMBL-06	TS 25064I/HG-P	TD 8P	-	-	
TFMBL-09	TS 35A088I/HG	TD 10P	-	-	
TFMBL-11	TS 50A121I/HG	-	TBLD T20-W6	SW6-T	

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E352-E355
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TFMBL-13



Fresa a manicotto ad alto avanzamento



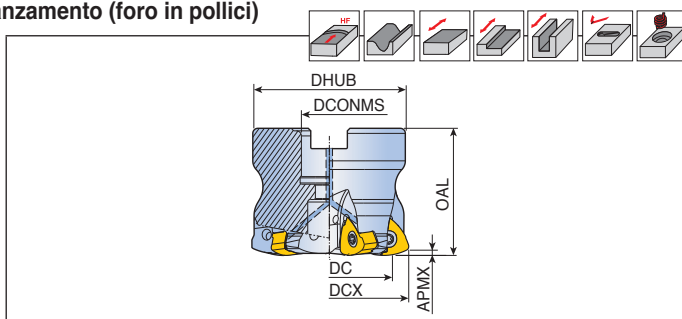
Descrizione	Z	Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBL 340-16R-13	3	40	20.7	16	30	50	2.0	●	A	0.2	KTB 32B	BLMP 1306... E244
350-22R-13	3	50	31.0	22	45	40	2.0	●	A	0.3	LH M10x25	
450-22R-13	4	50	31.0	22	45	40	2.0	●	A	0.3	LH M10x25	
452-22R-13	4	52	32.2	22	45	40	2.0	●	A	0.3	SH M10x30	
463-22R-13	4	63	45.8	22	60	50	2.0	●	A	0.8	SH M10x30	
563-22R-13	5	63	45.8	22	60	50	2.0	●	A	0.8	SH M10x30	
463-27R-13	4	63	45.8	27	58	50	2.0	●	A	0.7	SH M12x30	
466-22R-13	4	66	45.9	22	60	50	2.0	●	A	0.8	SH M10x30	
566-22R-13	5	66	45.9	22	60	50	2.0	●	A	0.8	SH M10x30	
566-27R-13	5	66	45.9	27	58	50	2.0	●	A	0.7	SH M12x30	
580-27R-13	5	80	59.8	27	70	60	2.0	●	A	1.4	SH M12x30	
680-27R-13	6	80	59.8	27	70	60	2.0	●	A	1.4	SH M12x30	
580-32R-13	5	80	59.8	32	76	60	2.0	●	A	1.4	SH M16x35	
5100-32R-13	5	100	79.7	32	76	60	2.0	●	A	1.9	SH M16x35	
6100-32R-13	6	100	79.7	32	76	60	2.0	●	A	2.0	SH M16x35	
7100-32R-13	7	100	79.7	32	76	60	2.0	●	A	2.0	SH M16x35	
6125-32R-13	6	125	104.5	32	85	60	2.0	●	A	3.0	SH M16x35	
7125-40R-13	7	125	104.5	40	85	60	2.0	●	A	2.9	SH M20x35	
7160-40R-13	7	160	139.5	40	110	60	2.0	x	C	3.6	-	
8160-40R-13	8	160	139.5	40	110	60	2.0	x	C	3.6	-	
9160-40R-13	9	160	139.5	40	110	60	2.0	x	C	3.8	-	
8200-60R-13	8	200	179.5	60	130	60	2.0	x	C	5.4	-	
9200-60R-13	9	200	179.5	60	130	60	2.0	x	C	5.3	-	
11200-60R-13	11	200	179.5	60	130	60	2.0	x	C	5.5	-	
9250-60R-13	9	250	229.5	60	160	60	2.0	x	C	10.6	-	
10250-60R-13	10	250	229.5	60	160	60	2.0	x	C	10.6	-	
12250-60R-13	12	250	229.5	60	160	60	2.0	x	C	10.7	-	

<p>Condizioni di taglio E287-E289</p>	<p>Tipo di attacco E290-E291</p>	<p>Dati di rampa E356</p>
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TFMBL-13



Fresa a manicotto ad alto avanzamento (foro in pollici)



Descrizione	Z	Dimensioni (mm)						Fori refig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMBL 580-25.4R-13	5	80	59.8	25.4	70	60	2.0	●	A	1.3	SH M12x30	BLMP 1306...
580-31.75R-13	5	80	59.8	31.75	76	60	2.0	●	A	1.3	SH M16x35	E244
6100-31.75R-13	6	100	79.7	31.75	76	60	2.0	●	A	1.9	SH M16x35	
7125-38.1R-13	7	125	104.5	38.1	80	60	2.0	x	B	3.0	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

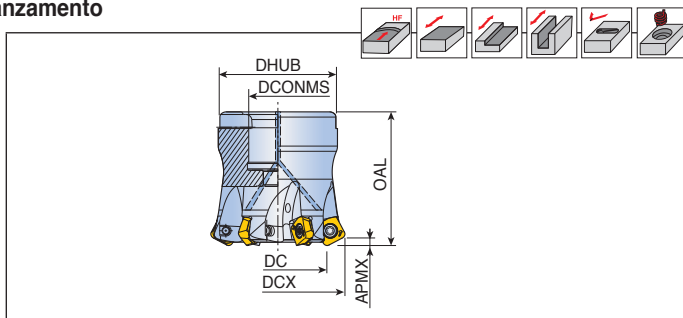
Descrizione	Vite	Chiave			
	TFMBL-13	TS 50B106/HG	T-T20		

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E356
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TFMSB-09



Fresa a manicotto ad alto avanzamento



Descrizione		Dimensioni (mm)						Fori refriger.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMSB 432-16R-09	4	32	17.4	16	30	40	1.2	●	E	0.1	KTB 32B	SBMT 0904... E263
440-16R-09	4	40	25.5	16	38	40	1.2	●	A	0.2	SH M8x25	
540-16R-09	5	40	25.5	16	38	40	1.2	●	A	0.2	SH M8x25	
450-22R-09	4	50	35.5	22	45	50	1.2	●	A	0.4	SH M10x30	
550-22R-09	5	50	35.5	22	45	50	1.2	●	A	0.4	SH M10x30	
650-22R-09	6	50	35.5	22	45	50	1.2	●	A	0.4	SH M10x30	
750-22R-09	7	50	35.5	22	45	50	1.2	●	A	0.4	SH M10x30	
652-22R-09	6	52	37.5	22	45	50	1.2	●	A	0.4	SH M10x30	
752-22R-09	7	52	37.5	22	45	50	1.2	●	A	0.4	SH M10x30	
663-22R-09	6	63	48.4	22	58	50	1.2	●	A	0.8	SH M10x30	
763-22R-09	7	63	48.4	22	58	50	1.2	●	A	0.8	SH M10x30	
763-27R-09	7	63	48.4	27	58	50	1.2	●	A	0.7	SH M12x35	
863-22R-09	8	63	48.4	22	58	50	1.2	●	A	0.8	SH M10x30	
866-22R-09	8	66	51.5	22	58	50	1.2	●	A	0.8	SH M10x30	
780-27R-09	7	80	65.8	27	70	60	1.2	●	A	1.4	SH M12x35	
880-27R-09	8	80	65.8	27	70	60	1.2	●	A	1.4	SH M12x35	

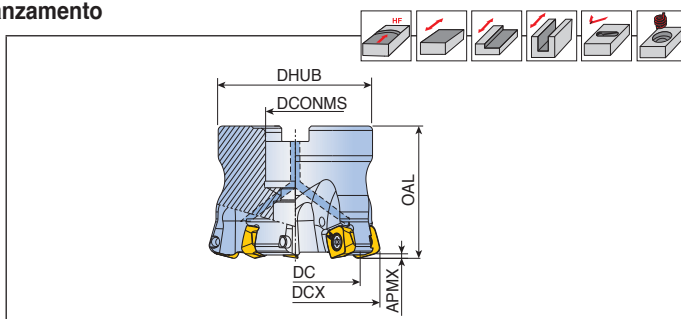
• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M8x1.25x25-C)

Ricambi

Descrizione	Vite	Chiave			
TFMSB-09	TS 35A088I/HG	TD 10P			
TFMSB 750-22R-09	TS 35A070I/HG	TD 10P			
TFMSB 752-22R-09	TS 35A070I/HG	TD 10P			

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Dati di rampa E357
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Fresa a manicotto ad alto avanzamento



Descrizione		Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMSB 350-22R-13	3	50	29.3	22	45	40	2	●	A	0.3	LH M10x25	SBMT 1306... E263
450-22R-13	4	50	29.3	22	45	40	2	●	A	0.2	LH M10x25	
452-22R-13	4	52	31.3	22	45	40	2	●	A	0.3	LH M10x25	
552-22R-13	5	52	31.3	22	45	40	2	●	A	0.2	LH M10x25	
463-22R-13	4	63	42.4	22	58	50	2	●	A	0.6	SH M10x30	
563-22R-13	5	63	42.4	22	58	50	2	●	A	0.5	SH M10x30	
463-27R-13	4	63	42.4	27	58	50	2	●	A	0.5	SH M12x35	
566-27R-13	5	66	45.3	27	58	50	2	●	A	0.6	SH M12x35	
580-27R-13	5	80	59.4	27	70	60	2	●	A	1.3	SH M12x35	
680-27R-13	6	80	59.4	27	70	60	2	●	A	1.3	SH M12x35	
580-32R-13	5	80	59.4	32	76	60	2	●	A	1.3	SH M16x35	
6100-32R-13	6	100	79.4	32	76	60	2	●	A	1.9	SH M16x35	
7125-40R-13	7	125	104.7	40	85	60	2	●	A	2.5	SH M20x40	
8160-40R-13	8	160	139.4	40	110	60	2	x	B	3.5	-	
9200-60R-13	9	200	179.4	60	130	60	2	x	B	5.1	-	
10250-60R-13	10	250	229.4	60	160	60	2	x	B	9.1	-	
TFMSB 463-25.4R-13	4	63	42.4	25.4	58	50	2	●	A	0.5	SH M12x35	
580-25.4R-13	5	80	59.4	25.4	70	60	2	●	A	1.3	SH M12x35	
580-31.75R-13	5	80	59.4	31.75	76	60	2	●	A	1.3	SH M16x35	
7125-38.1R-13	7	125	104.7	38.1	80	60	2	x	B	2.2	-	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave			
TFMSB-13	TS 501151	T-T20			



E287-E289

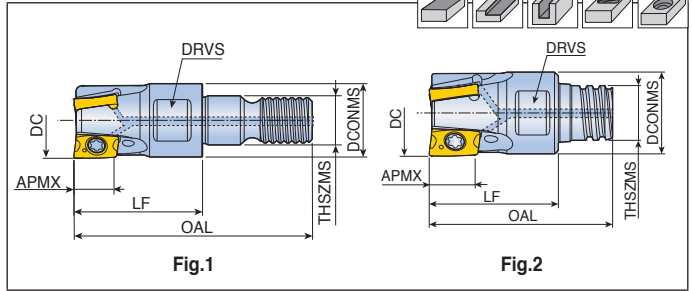
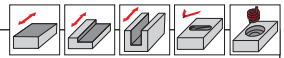
E290-E291

E358

2S-TE90CV-M(S)-05



Fresa modulare



Descrizione		Dimensioni (mm)							Fori refrig.	Fig.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
2S-TE90CV- 310-M06-05	3	10	9.7	17	31.5	M06	5.0	8	●	1	CVK(H)T 0502... E246
412-M06-05	4	12	9.7	17	31.5	M06	5.0	8	●	1	
2S-TE90CV- 310-S06-05	3	10	9.6	15	21.3	S06	5.0	8	●	2	
412-S08-05	4	12	11.5	16	23.5	S08	5.0	10	●	2	

- Il corpo fresa per l'inserto 'HF' deve essere modificato con il raggio 1.8 mm
- Da utilizzare con steli T-FLEXTEC e MAXI-RUSH

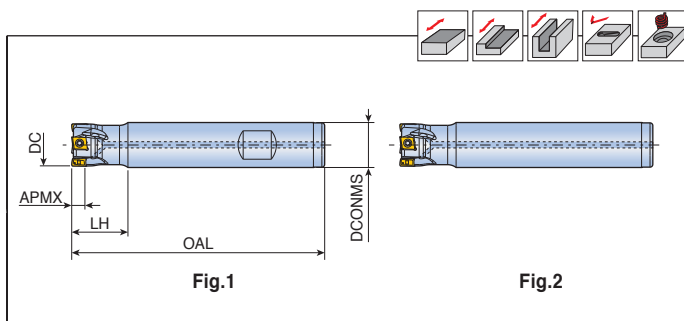
Ricambi

Descrizione	Vite	Chiave			
2S-TE90CV-05	TS 18033/HG-P	TD 6P			

Condizioni di taglio
 Dati di rampa
 E287-E289 E304-E305

4T-TE90-05/09

Fresa cilindrica



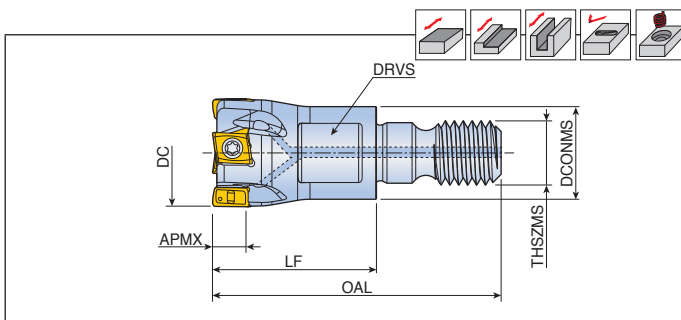
Descrizione	⊕	Dimensioni (mm)					Fori refriger.	Fig.	Inserto
		DC	DCONMS	OAL	LH	APMX			
4T-TE90-210-10-05	2	10	10	80	15	4.6	●	2	LPK(H)U 0502... E251
211-10-05	2	11	10	80	15	4.6	●	2	
212-12-05	2	12	12	80	15	4.6	●	2	
312-12-05	3	12	12	80	15	4.6	●	2	
313-12-05	3	13	12	80	15	4.6	●	2	
316-W16-05	3	16	16	90	20	4.6	●	1	
416-W16-05	4	16	16	90	20	4.6	●	1	
420-W20-05	4	20	20	100	25	4.6	●	1	
520-W20-05	5	20	20	100	25	4.6	●	1	
625-W25-05	6	25	25	110	30	4.6	●	1	
832-W25-05	8	32	25	110	20	4.6	●	1	
4T-TE90-220-W20-09	2	20	20	100	30	8.3	●	1	LPK(H)U 0904... E251
220-20-09-L170	2	20	20	170	30	8.3	●	2	
320-W20-09	3	20	20	100	30	8.3	●	1	
325-W25-09	3	25	25	100	30	8.3	●	1	
325-25-09-L200	3	25	25	200	30	8.3	●	2	
425-W25-09	4	25	25	100	30	8.3	●	1	
425-25-09-L120	4	25	25	120	30	8.3	●	2	
332-W32-09	3	32	32	110	35	8.3	●	1	
332-32-09-L210	3	32	32	210	35	8.3	●	2	
532-W32-09	5	32	32	110	35	8.3	●	1	
532-32-09-L130	5	32	32	130	35	8.3	●	2	
440-W32-09	4	40	32	115	30	8.3	●	1	
440-32-09-L150	4	40	32	150	30	8.3	●	2	
640-W32-09	6	40	32	115	30	8.3	●	1	



4T-TE90-M-05/09



Fresa modulare



Descrizione	⌀	Dimensioni (mm)							Fori refriger.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS		
4T-TE90-210-M06-05	2	10	9.7	17	31.5	M06	4.6	8	●	LPK(H)U 0502... E251
312-M06-05	3	12	11	17	31.5	M06	4.6	8	●	
416-M08-05	4	16	13	23	40.5	M08	4.6	10	●	
520-M10-05	5	20	18	23	43	M10	4.6	15	●	
625-M12-05	6	25	21	27	49	M12	4.6	17	●	
832-M16-05	8	32	29	27	52	M16	4.6	25	●	
4T-TE90-220-M10-09	2	20	18	30	50	M10	8.3	15	●	LPK(H)U 0904... E251
320-M10-09	3	20	18	30	50	M10	8.3	15	●	
425-M12-09	4	25	21	35	57	M12	8.3	17	●	
532-M16-09	5	32	29	43	68	M16	8.3	25	●	
640-M16-09	6	40	29	43	68	M16	8.3	25	●	

• Da utilizzare con steli T-FLEXTEC

Ricambi

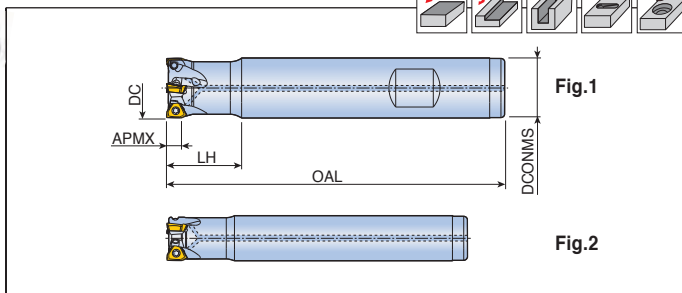
Descrizione	Vite	Chiave		Manico chiave
4T-TE90-05	TS 18041/SG-P	TD 6P	-	-
4T-TE90-09	TS 30D082-P	-	TBLD T08P-W4	THND 4W



3P-TE90-04



Fresa cilindrica



Descrizione	⊗	Dimensioni (mm)					Fori refrig.	Fig.	Inserto	
		DC	DCONMS	OAL	LH	APMX				
3P-TE90-108-08-04	1	8	8	80	17	3.5	●	2	3PKT 0402... E227	
210-10-04	2	10	10	80	17	3.5	●	2		
210-09-04-L	2	10	9	120	10	3.5	●	2		
211-10-04	2	11	10	80	11	3.5	●	2		
212-11-04-L	2	12	11	120	11	3.5	●	2		
212-12-04	2	12	12	80	18	3.5	●	2		
212-12-04-L	2	12	12	120	18	3.5	●	2		
312-12-04	3	12	12	80	18	3.5	●	2		
313-12-04	3	13	12	90	11	3.5	●	2		
314-12-04	3	14	12	90	12	3.5	●	2		
316-16-04	3	16	16	110	20	3.5	●	2		
416-W16-04	4	16	16	90	20	3.5	●	1		

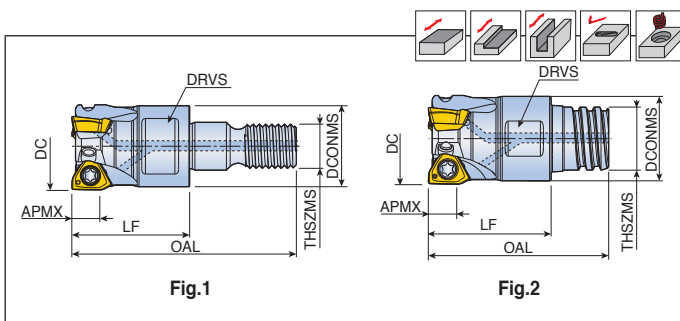
Condizioni di taglio
E287-E289

Dati di rampa
E308-E310

3P-TE90-M(S)-04



Fresa modulare



Descrizione		Dimensioni (mm)							Fori refrig.	Fig.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
3P-TE90-210-M06-04	2	10	9.7	17	31.5	M06	3.5	8	●	1	3PKT 0402... E227
312-M06-04	3	12	11	17	31.5	M06	3.5	8	●	1	
416-M08-04	4	16	13	23	40.5	M08	3.5	10	●	1	
3P-TE90-210-S06-04	2	10	9.6	15	21.3	S06	3.5	8	●	2	
312-S08-04	3	12	11.5	16	23.5	S08	3.5	10	●	2	
416-S10-04	4	16	15.2	20	31.3	S10	3.5	13	●	2	

• Da utilizzare con steli T-FLEXTEC e MAXI-RUSH

Ricambi

Descrizione	Vite	Chiave			
3P-TE90-04 (ø8)	TS 18033/HG-P	TD 6P			
3P-TE90-04 (ø10-)	TS 18041/HG	TD 6P			

Condizioni di taglio
 E287-E289

Dati di rampa
 E308-E310

3P TE90-06



Fresa cilindrica

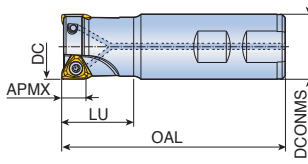
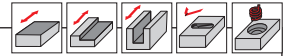


Fig.1

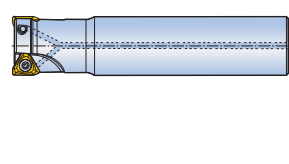


Fig.2



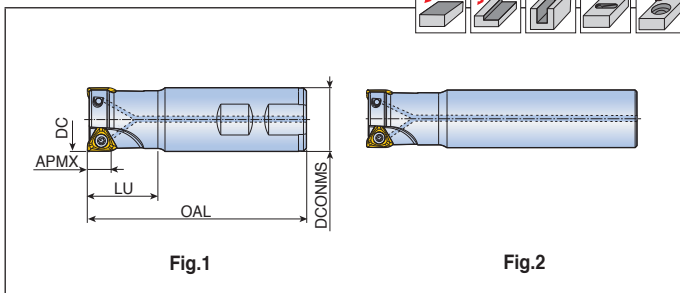
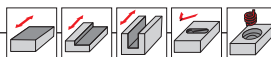
Descrizione	♂	Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LU	APMX			
3P TE90-112-12-06-L80	1	12	12	80	20	4.7	●	2	3PK(H)T 0603... E227
114-12-06-L80	1	14	12	80	20	4.7	●	2	
216-W16-06	2	16	16	90	25	4.7	●	1	
216-16-06-L110	2	16	16	110	25	4.7	●	2	
216-16-06-L150	2	16	16	150	25	4.7	●	2	
317-16-06-L110	3	17	16	110	25	4.7	●	2	
318-W16-06	3	18	16	90	25	4.7	●	1	
318-16-06-L150	3	18	16	150	25	4.7	●	2	
319-16-06-L150	3	19	16	150	25	4.7	●	2	
320-W20-06	3	20	20	105	25	4.7	●	1	
420-W20-06	4	20	20	105	25	4.7	●	1	
320-20-06-L160	3	20	20	160	25	4.7	●	2	
420-19-06-L160	4	20	19	160	25	4.7	●	2	
421-20-06-L160	4	21	20	160	25	4.7	●	2	
422-W20-06	4	22	20	110	25	4.7	●	1	
425-W20-06	4	25	20	115	25	4.7	●	1	
525-W20-06	5	25	20	115	25	4.7	●	1	
525-W25-06	5	25	25	115	25	4.7	●	1	
630-W25-06	6	30	25	130	30	4.7	●	1	
632-W25-06	6	32	25	130	30	4.7	●	1	
732-W25-06	7	32	25	130	30	4.7	●	1	
840-W32-06	8	40	32	130	30	4.7	●	1	



3P TE90-10



Fresa cilindrica

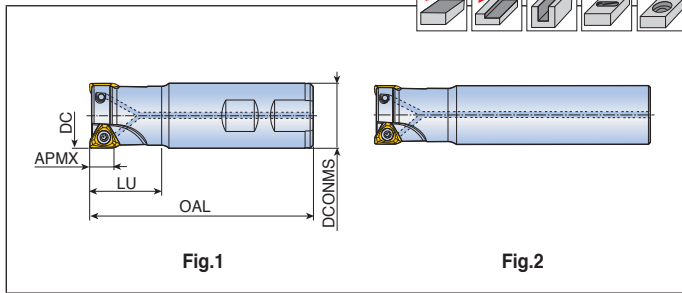
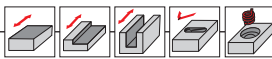
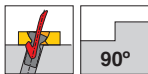


Descrizione	🌀	Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LU	APMX			
3P TE90- 116-W16-10	1	16	16	90	20	7.0	●	1	3PK(H)T 1004... E227
220-W20-10	2	20	20	90	25	7.0	●	1	
220-19-10-L170	2	20	19	170	30	7.0	x	2	
220-20-10-L170	2	20	20	170	40	7.0	x	2	
221-20-10-L200	2	21	20	200	30	7.0	x	2	
222-W20-10	2	22	20	100	25	7.0	●	1	
225-25-10-L210	2	25	25	210	40	7.0	x	2	
325-W20-10	3	25	20	100	30	7.0	●	1	
325-W25-10	3	25	25	100	30	7.0	●	1	
325-24-10-L210	3	25	24	210	35	7.0	x	2	
325-25-10-L210	3	25	25	210	40	7.0	x	2	
226-25-10-L250	2	26	25	250	30	7.0	x	2	
330-W25-10	3	30	25	110	35	7.0	●	1	
232-W25-10	2	32	25	110	35	7.0	●	1	
332-W25-10	3	32	25	110	35	7.0	●	1	
332-32-10-L250	3	32	32	250	60	7.0	x	2	
432-W32-10	4	32	32	110	40	7.0	●	1	
532-W32-10	5	32	32	110	40	7.0	●	1	
333-32-10-L250	3	33	32	250	35	7.0	x	2	
440-32-10-L200	4	40	32	200	40	7.0	x	2	
540-W32-10	5	40	32	115	40	7.0	●	1	
640-W32-10	6	40	32	115	40	7.0.0	●	1	



3P TE90-15/19

Fresa cilindrica



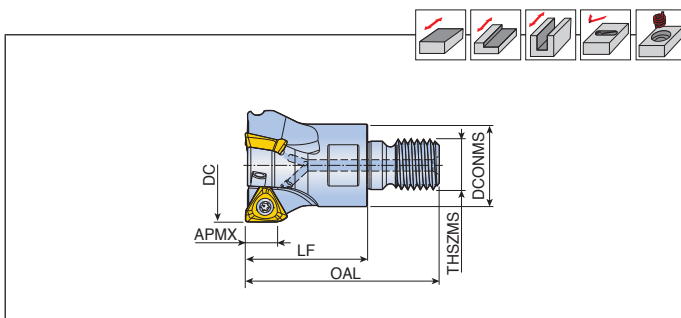
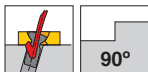
Descrizione		Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LU	APMX			
3P TE90-232-W32-15	2	32	32	110	40	11.0	•	1	3PK(H)T 1505... E227-E228
232-32-15-L250	2	32	32	250	60	11.0	x	2	
332-W25-15	3	32	25	100	40	11.0	•	1	
332-W25-15-L155	3	32	25	155	35	11.0	x	2	
332-W32-15	3	32	32	110	40	11.0	•	1	
332-32-15-L150	3	32	32	150	40	11.0	x	2	
332-32-15-L250	3	32	32	250	60	11.0	x	2	
233-32-15-L200	2	33	32	200	40	11.0	x	2	
233-32-15-L250	2	33	32	250	40	11.0	x	2	
335-W32-15	3	35	32	110	40	11.0	•	1	
340-W32-15	3	40	32	110	40	11.0	•	1	
340-32-15-L200	3	40	32	200	40	11.0	x	2	
440-W32-15	4	40	32	110	40	11.0	•	1	
3P TE90-240-32-19-L250	2	40	32	250	45	15.0	x	2	3PK(H)T 1906... E227-E228
340-W32-19	3	40	32	115	45	15.0	•	1	
340-32-19-L200	3	40	32	200	45	15.0	x	2	
450-W32-19	4	50	32	115	45	15.0	•	1	



3P TE90-M-06/10/15/19



Fresa modulare



Descrizione	🌀	Dimensioni (mm)						Fori refriger.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX		
3P TE90- 216-M08-06	2	16	13	23	40.5	M08	4.7	●	3PK(H)T 0603...
320-M10-06	3	20	18	35	55	M10	4.7	●	🔊 E227
420-M10-06	4	20	18	35	55	M10	4.7	●	
425-M12-06	4	25	21	35	57	M12	4.7	●	
525-M12-06	5	25	21	35	57	M12	4.7	●	
632-M16-06	6	32	29	43	68	M16	4.7	●	
732-M16-06	7	32	29	43	68	M16	4.7	●	
735-M16-06	7	35	29	43	68	M16	4.7	●	
3P TE90- 220-M10-10	2	20	18	35	55	M10	7.0	●	3PK(H)T 1004...
325-M12-10	3	25	21	35	57	M12	7.0	●	🔊 E227
326-M12-10	3	26	21	35	57	M12	7.0	●	
432-M16-10	4	32	29	43	68	M16	7.0	●	
532-M16-10	5	32	29	43	68	M16	7.0	●	
535-M16-10	5	35	29	43	68	M16	7.0	●	
540-M16-10	5	40	29	43	68	M16	7.0	●	
640-M16-10	6	40	29	43	68	M16	7.0	●	
642-M16-10	6	42	29	43	68	M16	7.0	●	
3P TE90- 232-M16-15	2	32	29	43	68	M16	11.0	●	3PK(H)T 1505...
332-M16-15	3	32	29	43	68	M16	11.0	●	🔊 E227-E228
340-M16-15	3	40	29	43	68	M16	11.0	●	
440-M16-15	4	40	29	43	68	M16	11.0	●	
3P TE90- 340-M16-19	3	40	29	43	68	M16	15.0	●	3PK(H)T 1906...
									🔊 E227-E228

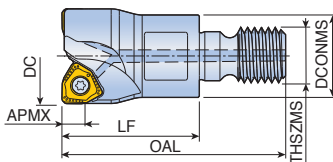
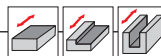
• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			
3P TE90-06	TS 20043I/HG-P	TD 6P	-		
3P TE90-10	TS 25C065I/HG	TD 8	-		
3P TE90-15	TS 40B100I	TD 15	-		
3P TE90-19	TS 45120I	-	T-T20		



Fresa modulare



Descrizione		Dimensioni (mm)						Fori refrig.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX		
6N TE90-320-M10-04	3	20	18	35	55	M10	4.1	●	6N KU 0403...
525-M12-04	5	25	21	35	57	M12	4.1	●	E233
632-M16-04	6	32	29	43	68	M16	4.1	●	
6N TE90-225-M12-06	2	25	21	35	57	M12	6.2	●	6N GU 0604...
332-M16-06	3	32	29	43	68	M16	6.2	●	E232
440-M16-06	4	40	29	43	68	M16	6.2	●	
6N TE90-232-M16-09	2	32	29	43	68	M16	9.2	●	6N GU 0905...
340-M16-09	3	40	29	43	68	M16	9.2	●	E232
440-M16-09	4	40	29	43	68	M16	9.2	●	

• Da utilizzare con steli T-FLEXTEC

Ricambi

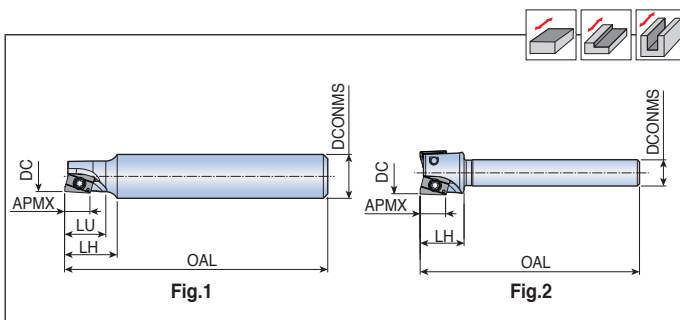
Descrizione	Vite	Chiave			
6N TE90-04	TS 25064I	TD 8			
6N TE90-06	TS 30085I/HG	TD 9			
6N TE90-09	TS 40B100I	TD15			



MTE90AX-06-L



Fresa cilindrica



Descrizione	🌀	Dimensioni (mm)						Fig.	Inserto
		DC	DCONMS	OAL	LU	LH	APMX		
MTE90AX 108-10-06-L60	1	8	10	60	9	12	5.5	1	AXCT 06-L... E241
210-05-06-L40	2	10	5	40	-	10	5.5	2	
210-06-06-L50	2	10	6	50	-	10	5.5	2	
210-07-06-L50	2	10	7	50	-	10	5.5	2	
210-10-06-L50	2	10	10	50	10	12	5.5	1	
212-10-06-L50	2	12	10	50	-	10	5.5	2	
214-10-06-L50	2	14	10	50	-	10	5.5	2	
315-05-06-L40	3	15	5	40	-	10	5.5	2	
316-07-06-L50	3	16	7	50	-	10	5.5	2	
316-10-06-L50	3	16	10	50	-	10	5.5	2	
320-07-06-L50	3	20	7	50	-	10	5.5	2	
320-10-06-L50	3	20	10	50	-	10	5.5	2	
530-10-06-L50	5	30	10	50	-	10	5.5	2	

Ricambi

Descrizione	Vite	Chiave			
MTE90AX-06-L	TS 18041I/HG	TD 6P			



TE90AX-06



Fresa cilindrica

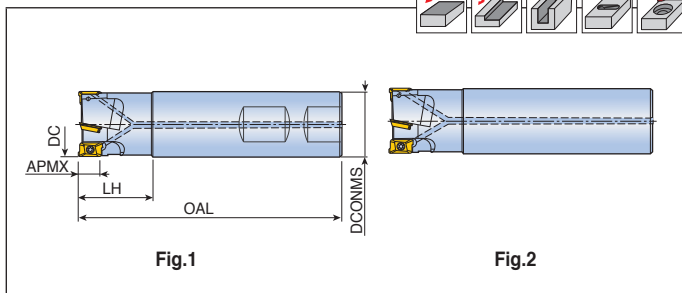
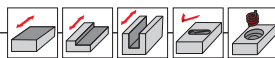


Fig.1

Fig.2

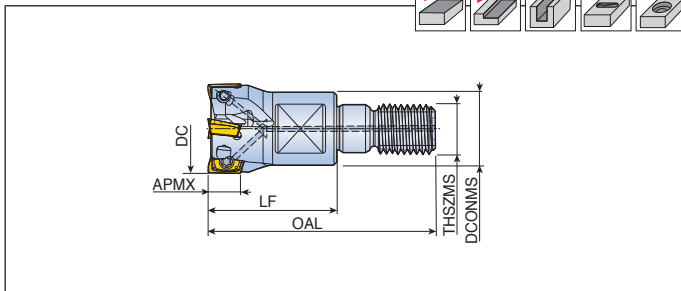
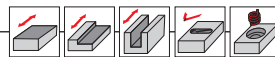
Descrizione	⌀	Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LH	APMX			
TE90AX 108-08-06-C	1	8	8	80	17	5.5	●	2	AXM(C)T 0602 ... E241-E242
210-09-06-L120	2	10	9	120	17	5.5	x	2	
210-10-06	2	10	10	80	17	5.5	x	2	
210-10-06-C	2	10	10	80	17	5.5	●	2	
211-10-06	2	11	10	80	17	5.5	x	2	
212-12-06	2	12	12	80	18	5.5	x	2	
212-12-06-C	2	12	12	80	18	5.5	●	2	
212-12-06-L	2	12	12	130	18	5.5	x	2	
212-11-06-L120	2	12	11	120	20	5.5	x	2	
312-12-06	3	12	12	80	18	5.5	x	2	
312-12-06-C	3	12	12	80	18	5.5	●	2	
313-12-06-C	3	13	12	90	20	5.5	●	2	
314-12-06	3	14	12	80	18	5.5	x	2	
415-12-06	4	15	12	80	18	5.5	x	2	
316-16-06	3	16	16	110	20	5.5	x	2	
316-16-06-C	3	16	16	110	20	5.5	●	2	
316-16-06-L	3	16	16	150	20	5.5	x	2	
416-W16-06	4	16	16	90	20	5.5	x	1	
416-W16-06-C	4	16	16	90	20	5.5	●	1	
417-16-06	4	17	16	90	20	5.5	x	2	
418-W16-06	4	18	16	90	20	5.5	x	1	
418-W16-06-C	4	18	16	90	20	5.5	●	1	
418-16-06-L	4	18	16	150	20	5.5	x	2	
419-W16-06	4	19	16	90	20	5.5	x	1	
420-20-06	4	20	20	160	25	5.5	x	2	
420-W20-06-C	4	20	20	160	25	5.5	●	1	
520-19-06-L	5	20	19	160	25	5.5	x	1	
520-W20-06	5	20	20	105	25	5.5	x	1	
520-W20-06-C	5	20	20	105	25	5.5	●	1	
521-20-06	5	21	20	105	25	5.5	x	2	
725-W20-06	7	25	20	115	25	5.5	x	1	
725-W20-06-C	7	25	20	115	25	5.5	●	1	
725-W25-06	7	25	25	120	30	5.5	x	1	
832-W25-06	8	32	25	130	32	5.5	x	1	
832-W25-06-C	8	32	25	130	32	5.5	●	1	
1040-W32-06	10	40	32	140	40	5.5	x	1	
1040-W32-06-C	10	40	32	140	40	5.5	●	1	



TE90AX-M-06



Fresa modulare



Descrizione		Dimensioni (mm)						Fori refrig.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX		
TE90AX 210-M06-06	2	10	9.7	23	37.5	M06	5.5	●	AXM(C)T 0602...
312-M06-06	3	12	9.7	23	37.5	M06	5.5	●	E241-E242
416-M08-06	4	16	13	23	40.5	M08	5.5	●	
520-M10-06	5	20	18	30	50	M10	5.5	●	
725-M12-06	7	25	21	35	57	M12	5.5	●	
832-M16-06	8	32	29	43	68	M16	5.5	●	
1040-M16-06	10	40	29	43	68	M16	5.5	●	

- Da utilizzare con steli T-FLEXTEC
- Il corpo fresa per l'inserto 'AXMT 06' con raggio maggiore di 1.0 mm deve essere modificato come segue:
R corpo fresa = R raggio inserto - 0.1 mm

Ricambi

Descrizione	Vite	Chiave			
TE90AX-06	TS 18041I/HG	TD 6P			

Condizioni di taglio
 Dati di rampa
[E287-E289](#) [E332-E338](#)

2S-TE90AP-09



Fresa cilindrica

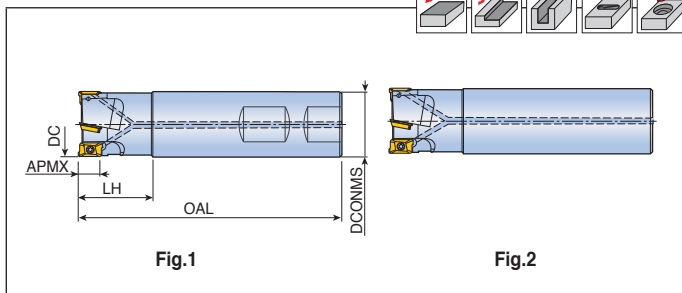
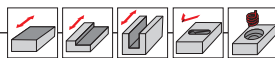


Fig.1

Fig.2

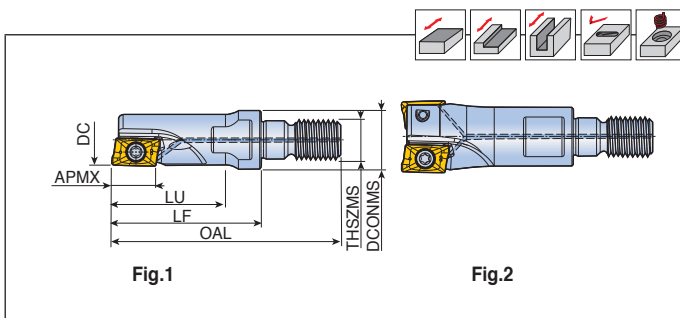
Descrizione		Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LH	APMX			
2S-TE90AP 110-W10-09	1	10	10	80	25	8.8	x	1	APK(C)T 09T3...
110-W10-09-C	1	10	10	80	25	8.8	●	1	E236,E241
112-W12-09	1	12	12	80	25	8.8	x	1	
112-W16-09-C	1	12	16	80	26	8.8	●	1	
114-W12-09	1	14	12	80	25	8.8	x	1	
216-15-09-L	2	16	15	170	30	8.8	x	2	
216-W16-09	2	16	16	90	25	8.8	x	1	
216-W16-09-C	2	16	16	90	25	8.8	●	1	
216-16-09-L	2	16	16	145	30	8.8	x	2	
217-16-09-L	2	17	16	180	25	8.8	x	2	
218-W16-09	2	18	16	90	25	8.8	x	1	
218-W16-09-C	2	18	16	90	25	8.8	●	1	
220-19-09-L	2	20	19	170	25	8.8	x	2	
220-20-09-L	2	20	20	170	40	8.8	x	2	
320-W20-09	3	20	20	110	30	8.8	x	1	
320-W20-09-C	3	20	20	110	30	8.8	●	1	
221-20-09-L	2	21	20	200	25	8.8	x	2	
322-W20-09	3	22	20	110	30	8.8	x	1	
322-W20-09-C	3	22	20	110	30	8.8	●	1	
225-24-09-L	2	25	24	210	28	8.8	x	2	
225-25-09-L	2	25	25	210	40	8.8	x	2	
325-W20-09	3	25	20	110	28	8.8	x	1	
325-W20-09-C	3	25	20	110	30	8.8	●	1	
325-W25-09	3	25	25	110	30	8.8	x	1	
425-W20-09-C	4	25	20	110	30	8.8	●	1	
226-25-09-L	2	26	25	250	40	8.8	x	2	
430-W25-09	4	30	25	130	32	8.8	x	1	
430-W25-09-C	4	30	25	130	32	8.8	●	1	
232-32-09-L	2	32	32	250	65	8.8	x	2	
432-W25-09	4	32	25	130	32	8.8	x	1	
432-W25-09-C	4	32	25	130	32	8.8	●	1	
532-W25-09-C	5	32	25	130	32	8.8	●	1	
333-32-09-L	3	33	32	250	40	8.8	x	2	
240-32-09-L	2	40	32	250	32	8.8	x	2	
540-W32-09	5	40	32	130	32	8.8	x	1	
540-W32-09-C	5	40	32	130	32	8.8	●	1	
640-W32-09	6	40	32	130	32	8.8	x	1	



2S-TE90AP-M-09



Fresa modulare



Descrizione	🌀	Dimensioni (mm)							Fori refrig.	Fig.	Inserto
		DC	DCONMS	LF	OAL	LU	THSZMS	APMX			
2S-TE90AP 110-M06-09	1	10	9.7	33	47.5	19	M06	8.8	●	1	APK(C)T 09T3... E236,E241
112-M08-09	1	12	13	33	50.5	25	M08	8.8	●	1	
216-M08-09	2	16	13	38	50.5	-	M08	8.8	●	2	
320-M10-09	3	20	18	38	58	-	M10	8.8	●	2	
325-M12-09	3	25	21	38	60	-	M12	8.8	●	2	
425-M12-09	4	25	21	38	60	-	M12	8.8	●	2	
432-M16-09	4	32	29	38	63	-	M16	8.8	●	2	
532-M16-09	5	32	29	38	63	-	M16	8.8	●	2	
540-M16-09	5	40	29	43	68	-	M16	8.8	●	2	
640-M16-09	6	40	29	43	68	-	M16	8.8	●	2	

- Da utilizzare con steli T-FLEXTEC
- Il corpo fresa per l'inserto 'APKT09' con raggio maggiore di 2.4 mm deve essere modificato come segue:
R corpo fresa = R raggio inserto - 0.2 mm

Ricambi

Descrizione	Vite	Chiave			
2S-TE90AP-09	TS 25055I/HG	TD 8			

Condizioni di taglio

E287-E289

Dati di rampa

E332-E338

TE90AP-12



Fresa cilindrica

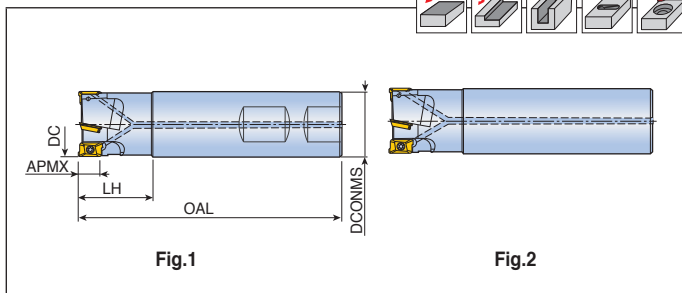
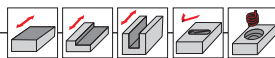


Fig.1

Fig.2

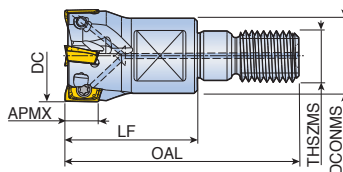
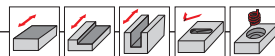
Descrizione	🌀	Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LH	APMX			
TE90AP 116-W16-12-C	1	16	16	85	26	12.0	●	1	APK(C)T 1204.... 🔗 E237-E238,E241
218-W20-12-C	2	18	20	85	26	12.0	●	1	
220-19-12-L	2	20	19	170	30	12.0	●	2	
220-W20-12-C	2	20	20	90	30	12.0	●	1	
220-W20-12-L-C	2	20	20	125	30	12.0	●	1	
220-20-12-L	2	20	20	170	30	12.0	●	2	
220-20-12-L200	2	20	20	200	30	12.0	●	2	
221-20-12-L200	2	21	20	200	30	12.0	●	2	
221-20-12-L250	2	21	20	250	30	12.0	●	2	
225-24-12-L	2	25	24	200	40	12.0	●	2	
225-W25-12-L-C	2	25	25	145	40	12.0	●	1	
225-25-12-L	2	25	25	210	40	12.0	●	2	
225-25-12-L200	2	25	25	200	40	12.0	●	2	
325-W25-12-C	3	25	25	100	40	12.0	●	1	
226-25-12-L200	2	26	25	200	40	12.0	●	2	
226-25-12-L250	2	26	25	250	40	12.0	●	2	
232-25-12-L	2	32	25	250	40	12.0	●	2	
332-W25-12-L-C	3	32	25	155	35	12.0	●	1	
332-W32-12-C	3	32	32	110	40	12.0	●	1	
332-32-12-L	3	32	32	250	40	12.0	●	2	
332-32-12-L150	3	32	32	150	40	12.0	●	2	
432-W25-12-C	4	32	25	100	40	12.0	●	1	
233-32-12-L200	2	33	32	200	40	12.0	●	2	
233-32-12-L250	2	33	32	250	40	12.0	●	2	
333-32-12-L200	3	33	32	200	40	12.0	●	2	
333-32-12-L250	3	33	32	250	40	12.0	●	2	
435-W25-12	4	35	25	100	40	12.0	●	1	
440-W32-12-C	4	40	32	115	45	12.0	●	1	
440-32-12-L	4	40	32	250	40	12.0	●	2	
540-W32-12-C	5	40	32	115	45	12.0	●	1	



TE90AP-M-12



Fresa modulare



Descrizione		Dimensioni (mm)						Fori refriger.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX		
TE90AP 116-M08-12	1	16	13	35	52.5	M08	12.0	●	APK(C)T 1204...
220-M10-12	2	20	18	35	55	M10	12.0	●	E237-E238, E241
325-M12-12	3	25	21	35	57	M12	12.0	●	
432-M16-12	4	32	29	43	68	M16	12.0	●	
540-M16-12	5	40	29	43	68	M16	12.0	●	
542-M16-12	5	42	29	43	68	M16	12.0	●	

- Da utilizzare con steli T-FLEXTEC
- Il corpo fresa per l'inserto 'APKT12' con raggio maggiore di 1.6 mm deve essere modificato come segue:
R corpo fresa = R raggio inserto - 0.5 mm

Ricambi

Descrizione	Vite	Chiave			
TE90AP-12 (Ø16-Ø26)	TS 35A070I/HG	TD 10P			
TE90AP-12 (Ø32-)	TS 35A088I/HG	TD 10P			

 Condizioni di taglio E287-E289	 Dati di rampa E332-E338
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TE90AP-17



Fresa cilindrica

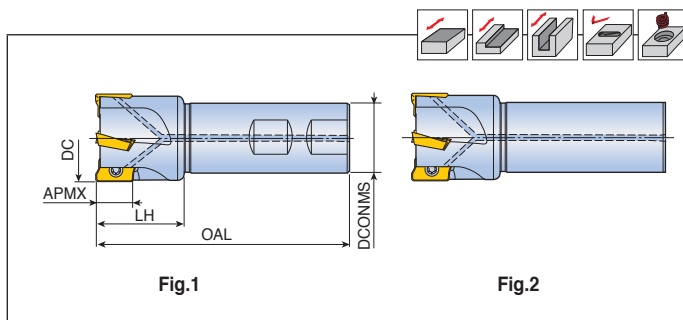


Fig.1

Fig.2

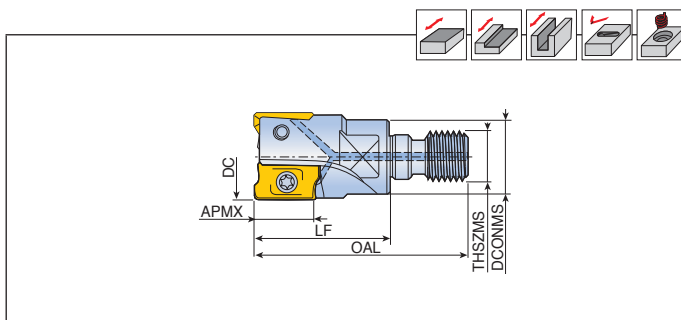
Descrizione	⊕	Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LH	APMX			
TE90AP 120-W20-17	1	20	20	90	32	16.1	x	1	APK(C)T 1705/1706... E238-E239
120-W20-17-C	1	20	20	90	32	16.1	●	1	
225-24-17-L	2	25	24	210	40	16.1	x	2	
225-W25-17	2	25	25	100	39	16.1	x	1	
225-W25-17-C	2	25	25	100	39	16.1	●	1	
225-25-17-L	2	25	25	210	40	16.1	x	2	
226-25-17-L200	2	26	25	200	40	16.1	●	2	
226-25-17-L250	2	26	25	250	40	16.1	●	2	
232-32-17-L	2	32	32	250	65	16.1	x	2	
233-32-17-L250	2	33	32	250	40	16.1	●	2	
233-32-17-L300	2	33	32	300	40	16.1	●	2	
332-W32-17	3	32	32	110	40	16.1	x	1	
332-W32-17-C	3	32	32	110	40	16.1	●	1	
332-32-17-L	3	32	32	200	65	16.1	x	2	
333-32-17-L200	3	33	32	200	55	16.1	●	2	
333-32-17-L250	3	33	32	250	55	16.1	●	2	
240-32-17-L	2	40	32	250	54	16.1	x	2	
340-W32-17	3	40	32	110	40	16.1	x	1	
340-32-17-L	3	40	32	200	54	16.1	x	2	
440-W32-17	4	40	32	115	45	16.1	x	1	
440-W32-17-C	4	40	32	115	45	16.1	●	1	
440-32-17-L	4	40	32	200	57	16.1	x	2	



TE90AP-M-17



Fresa modulare



Descrizione		Dimensioni (mm)						Fori refrig.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX		
TE90AP 120-M10-17	1	20	18	43	63	M10	16.1	●	APK(C)T 1705/1706... E238-E239
225-M12-17	2	25	21	43	65	M12	16.1	●	
232-M16-17	2	32	29	43	68	M16	16.1	●	
332-M16-17	3	32	29	43	68	M16	16.1	●	
340-M16-17	3	40	29	43	68	M16	16.1	●	
440-M16-17	4	40	29	43	68	M16	16.1	●	

- Da utilizzare con steli T-FLEXTEC
- Il corpo fresa per l'inserto 'APKT17' con raggio maggiore di 1.6 mm deve essere modificato come segue:
R corpo fresa = R raggio inserto - 0.8 mm

Ricambi

Descrizione	Vite	Chiave			
TE90AP-17 (Ø20-Ø25)	TS 40085I/HG	TD 15			
TE90AP-17 (Ø26-Ø63)	TS 40093I/HG	TD 15			

Condizioni di taglio

E287-E289

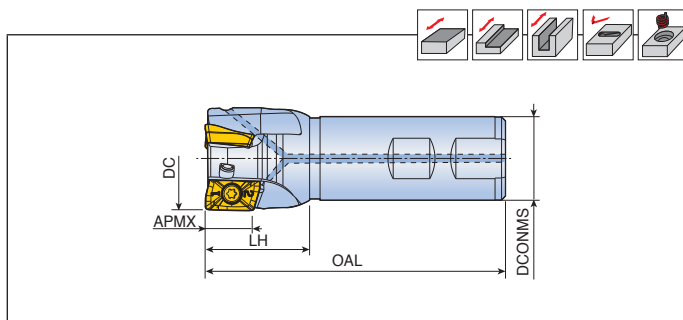
Dati di rampa

E332-E338

2S-TE90AP-19



Fresa cilindrica



Descrizione		Dimensioni (mm)					Fori refriger.	Inserito
		DC	DCONMS	OAL	LH	APMX		
2S-TE90AP 340-W32-19	3	40	32	115	40	17.9	●	APKT 1907... E240

Ricambi

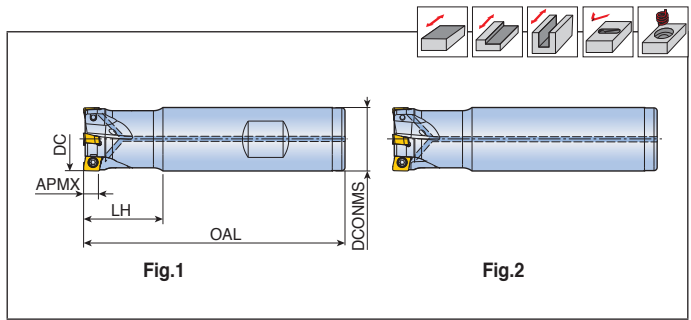
Descrizione	Vite	Chiave			
2S-TE90AP-19	TS 501151	TD 20			



2P-TE90-05



Fresa cilindrica



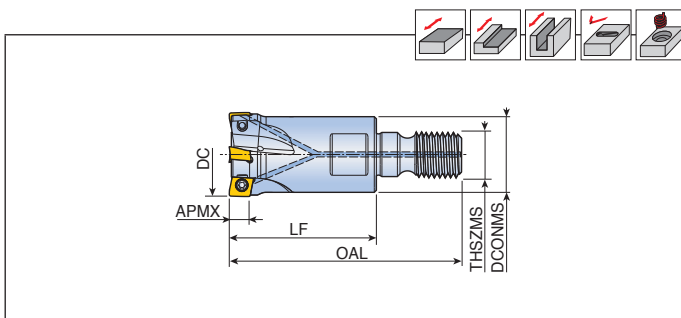
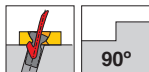
Descrizione		Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LH	APMX			
2P-TE90- 212-12-05	2	12	12	80	20	4.7	●	2	2PKT 0503... E225
212-12-05-L110	2	12	12	110	20	4.7	●	2	
213-12-05	2	13	12	80	20	4.7	●	2	
213-12-05-L110	2	13	12	110	20	4.7	●	2	
214-13-05-L110	2	14	13	110	20	4.7	●	2	
216-16-05-L150	2	16	16	150	25	4.7	●	2	
316-W16-05	3	16	16	90	25	4.7	●	1	
316-16-05-L110	3	16	16	110	25	4.7	●	2	
317-16-05-L110	3	17	16	110	25	4.7	●	2	
317-16-05-L150	3	17	16	150	25	4.7	●	2	
318-16-05-L110	3	18	16	110	25	4.7	●	2	
318-16-05-L150	3	18	16	150	25	4.7	●	2	
320-W20-05	3	20	20	105	25	4.7	●	1	
420-W20-05	4	20	20	105	25	4.7	●	1	
420-W20-05-L160	4	20	20	160	25	4.7	●	1	
421-W20-05	4	21	20	105	25	4.7	●	1	
421-20-05-L160	4	21	20	160	25	4.7	●	2	
421-20-05-L200	4	21	20	200	25	4.7	●	2	
425-W20-05	4	25	20	115	25	4.7	●	1	
425-20-05-L200	4	25	20	200	25	4.7	●	2	
525-W20-05	5	25	20	115	25	4.7	●	1	
525-25-05-L160	5	25	25	160	25	4.7	●	2	
525-25-05-L200	5	25	25	200	25	4.7	●	2	
625-W25-05	6	25	25	115	25	4.7	●	1	
526-25-05-L200	5	26	25	200	25	4.7	●	2	
626-25-05-L160	6	26	25	160	25	4.7	●	2	
632-W25-05	6	32	25	130	30	4.7	●	1	
632-25-05-L200	6	32	25	200	30	4.7	●	2	
732-W25-05	7	32	25	130	30	4.7	●	1	
633-25-05-L200	6	33	25	200	30	4.7	●	2	

<p>Condizioni di taglio</p> <p>E287-E289</p>	<p>Dati di rampa</p> <p>E339-E341</p>
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2P-TE90-M-05/07



Fresa modulare



Descrizione	🌀	Dimensioni (mm)							Fori refriger.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX			
2P-TE90- 212-M06-05	2	12	9.7	23	37.5	M06	4.7	●	2PKT 0503... 🔍 E225	
213-M06-05	2	13	11	23	37.5	M06	4.7	●		
316-M08-05	3	16	13	23	40.5	M08	4.7	●		
317-M08-05	3	17	13	23	40.5	M08	4.7	●		
318-M08-05	3	18	13	23	40.5	M08	4.7	●		
420-M10-05	4	20	18	35	55	M10	4.7	●		
421-M12-05	4	21	21	35	57	M12	4.7	●		
525-M12-05	5	25	21	35	57	M12	4.7	●		
625-M12-05	6	25	21	35	57	M12	4.7	●		
626-M12-05	6	26	21	35	57	M12	4.7	●		
732-M16-05	7	32	29	43	68	M16	4.7	●		
733-M16-05	7	33	29	43	68	M16	4.7	●		
2P-TE90- 216-M08-07	2	16	13	23	40.5	M08	6.0	●	2PKT 0704... 🔍 E225	
320-M10-07	3	20	18	30	50	M10	6.0	●		
425-M12-07	4	25	21	35	57	M12	6.0	●		
532-M16-07	5	32	29	43	68	M16	6.0	●		
640-M16-07	6	40	29	43	68	M16	6.0	●		

• Da utilizzare con steli T-FLEXTEC

Ricambi

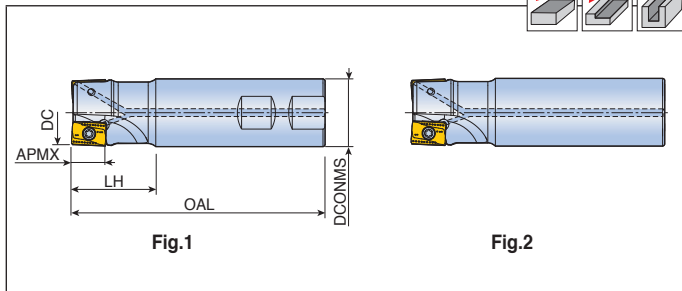
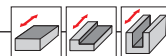
Descrizione	Vite	Chiave		Manico chiave	
2P-TE90-05	TS 20043I/HG-P	TD 6P	-	-	
2P-TE90-07	TS 30B068I/HG	-	TBLD T08-W4	THND 4W	



TE90AN-11/16



Fresa cilindrica



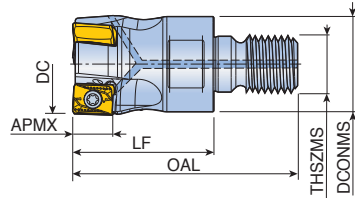
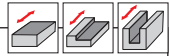
Descrizione		Dimensioni (mm)					Fori refrig.	Fig.	Inserto	
		DC	DCONMS	OAL	LH	APMX				
TE90AN 225-24-11-L	2	25	24	200	40	11.0	●	2	ANM(H)X 1106... E235	
225-W25-11	2	25	25	100	40	11.0	●	1		
225-25-11-L	2	25	25	200	40	11.0	●	2		
226-25-11-L	2	26	25	200	40	11.0	●	2		
332-W32-11	3	32	32	110	40	11.0	●	1		
332-32-11-L	3	32	32	200	40	11.0	●	2		
233-32-11-L	2	33	32	250	40	11.0	●	2		
333-32-11-L	3	33	32	200	40	11.0	●	2		
340-32-11-L	3	40	32	250	40	11.0	●	2		
440-W32-11	4	40	32	115	40	11.0	●	1		
440-32-11-L	4	40	32	200	40	11.0	●	2		
TE90AN 232-W32-16	2	32	32	110	30	15.0	●	1	ANM(H)X 1607... E235	
232-32-16	2	32	32	150	45	15.0	●	2		
232-32-16-L250	2	32	32	250	40	15.0	●	2		
233-32-16-L200	2	33	32	200	55	15.0	●	2		
340-W32-16	3	40	32	115	35	15.0	●	1		
340-32-16	3	40	32	150	45	15.0	●	2		
340-32-16-L250	3	40	32	250	45	15.0	●	2		
450-32-16	4	50	32	150	50	15.0	●	2		



TE90AN-M-11/16



Fresa modulare



Descrizione	✱	Dimensioni (mm)						Fori refriger.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX		
TE90AN 225-M12-11	2	25	21	35	57	M12	11.0	●	ANM(H)X 1106...
332-M16-11	3	32	29	43	68	M16	11.0	●	🌀 E235
440-M16-11	4	40	29	43	68	M16	11.0	●	
TE90AN 232-M16-16	2	32	29	43	68	M16	15.0	●	ANM(H)X 1607...
340-M16-16	3	40	29	43	68	M16	15.0	●	🌀 E235

• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			
TE90AN-11	TS 35A088I/HG	TD 10P			
TE90AN-16	TS 40120I	TD 15			

Condizioni di taglio

E287-E289

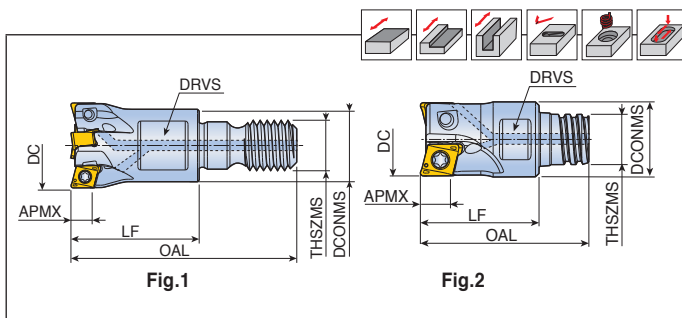
Dati di rampa

E342

4N TE90-M(S)-04



Fresa modulare



Descrizione	🌀	Dimensioni (mm)							Fori refrig.	Fig.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
4N TE90- 210-M06-04	2	10	9.7	17	31.5	M06	3.5	8	●	1	4NKT 0402... E229-E230
211-M06-04	2	11	9.7	17	31.5	M06	3.5	8	●	1	
312-M06-04	3	12	11	17	31.5	M06	3.5	8	●	1	
313-M06-04	3	13	11	17	31.5	M06	3.5	8	●	1	
416-M08-04	4	16	13	23	40.5	M08	3.5	10	●	1	
520-M10-04	5	20	18	23	43	M10	3.5	15	●	1	
725-M12-04	7	25	21	27	49	M12	3.5	17	●	1	
4N TE90- 210-S06-04	2	10	9.6	15	21.3	S06	3.5	8	●	2	
312-S08-04	3	12	11.5	16	23.5	S08	3.5	10	●	2	
416-S10-04	4	16	15.2	20	31.3	S10	3.5	13	●	2	

- Il corpo fresa per l'inserto '4NKT 040212R-HF' deve essere modificato con il raggio 1.2 mm
- Da utilizzare con steli T-FLEXTEC e MAXI-RUSH

Ricambi

Descrizione	Vite	Chiave			
4N TE90-04	TS 18041I/HG	TD 6P			

Condizioni di taglio

E287-E289

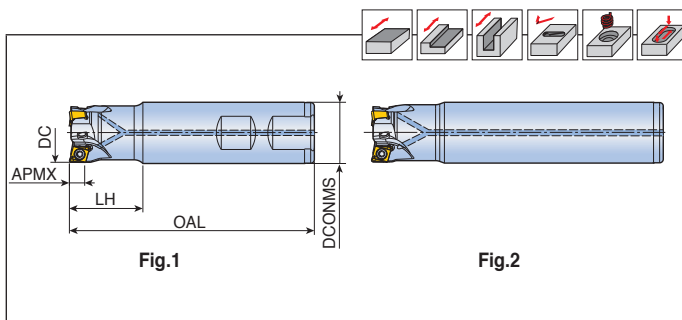
Dati di rampa

E311-E331

4N TE90-06



Fresa cilindrica



Descrizione	⌀	Dimensioni (mm)					Fori refrig.	Fig.	Inserto
		DC	DCONMS	OAL	LH	APMX			
4N TE90-216-15-06-L150	2	16	15	150	25	6.0	●	2	4NK(H)T 0603..... E229-E230
216-W16-06	2	16	16	90	25	6.0	●	1	
216-16-06-L100	2	16	16	100	25	6.0	●	2	
216-16-06-L150	2	16	16	150	25	6.0	●	2	
217-16-06	2	17	16	90	25	6.0	●	2	
217-16-06-L200	2	17	16	200	25	6.0	●	2	
218-W16-06	2	18	16	90	25	6.0	●	1	
218-16-06-L150	2	18	16	150	25	6.0	●	2	
220-19-06-L160	2	20	19	160	25	6.0	●	2	
220-W20-06	2	20	20	90	25	6.0	●	1	
220-20-06-L110	2	20	20	110	25	6.0	●	2	
220-20-06-L160	2	20	20	160	25	6.0	●	2	
320-W20-06	3	20	20	90	25	6.0	●	1	
320-20-06-L110	3	20	20	110	25	6.0	●	2	
221-20-06-L200	2	21	20	200	25	6.0	●	2	
325-W25-06	3	25	25	100	30	6.0	●	1	
325-25-06-L120	3	25	25	120	30	6.0	●	2	
325-25-06-L200	3	25	25	200	30	6.0	●	2	
326-25-06-L200	3	26	25	200	30	6.0	●	2	
425-W25-06	4	25	25	100	30	6.0	●	1	
425-25-06-L120	4	25	25	120	30	6.0	●	2	
432-W32-06	4	32	32	110	35	6.0	●	1	
432-32-06-L130	4	32	32	130	35	6.0	●	2	
432-32-06-L210	4	32	32	210	35	6.0	●	2	
433-32-06-L220	4	33	32	220	35	6.0	●	2	
532-W32-06	5	32	32	110	35	6.0	●	1	
532-32-06-L130	5	32	32	130	35	6.0	●	2	
540-W32-06	5	40	32	110	40	6.0	●	1	
540-32-06-L150	5	40	32	150	40	6.0	●	2	
540-32-06-L250	5	40	32	250	40	6.0	●	2	
640-W32-06	6	40	32	110	35	6.0	●	1	
640-32-06-L150	6	40	32	150	35	6.0	●	2	

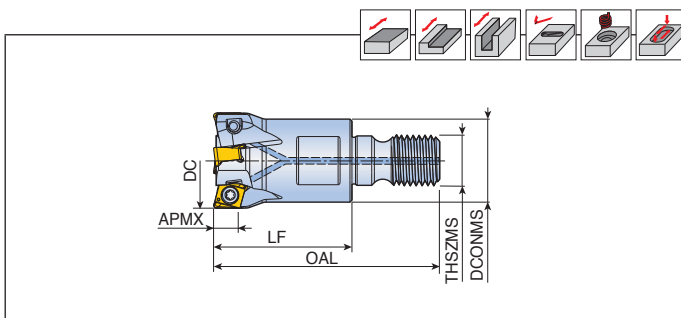


• Il corpo fresa per l'inserto '4NKT 060320R-HF' deve essere modificato con il raggio 2.0 mm

4N TE90-M-06



Fresa modulare



Descrizione		Dimensioni (mm)						Fori refriger.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX		
4N TE90-216-M08-06	2	16	13	23	40.5	M08	6.0	●	4NK(H)T 0603... E229-E230
217-M08-06	2	17	13	23	40.5	M08	6.0	●	
220-M10-06	2	20	18	35	55	M10	6.0	●	
320-M10-06	3	20	18	35	55	M10	6.0	●	
321-M10-06	3	21	18	35	55	M10	6.0	●	
325-M12-06	3	25	21	35	57	M12	6.0	●	
425-M12-06	4	25	21	35	57	M12	6.0	●	
426-M12-06	4	26	21	35	57	M12	6.0	●	
432-M16-06	4	32	29	43	68	M16	6.0	●	
532-M16-06	5	32	29	43	68	M16	6.0	●	
533-M16-06	5	33	29	43	68	M16	6.0	●	
535-M16-06	5	35	29	43	68	M16	6.0	●	
540-M16-06	5	40	29	43	68	M16	6.0	●	
640-M16-06	6	40	29	43	68	M16	6.0	●	

- Il corpo fresa per l'inserto '4NKT 060320R-HF' deve essere modificato con il raggio 2.0 mm
- Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			
4N TE90-06	TS 30B068/HG	TD 8			

Condizioni di taglio

E287-E289

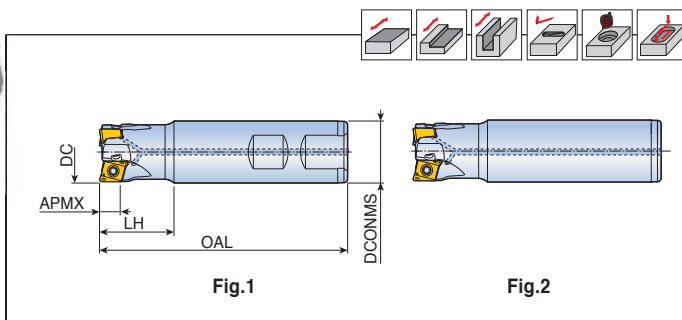
Dati di rampa

E311-E331

4N TE90-09/11/14



Fresa cilindrica



Descrizione	Z	Dimensioni (mm)					Fori refriger.	Fig.	Inserto
		DC	DCONMS	OAL	LH	APMX			
4N TE90-220-W20-09	2	20	20	100	30	8.0	●	1	4NK(H)T 0904.. E229-E230
220-20-09-L170	2	20	20	170	30	8.0	●	2	
225-W25-09	2	25	25	100	30	8.0	●	1	
225-25-09-L200	2	25	25	200	40	8.0	●	2	
325-W25-09	3	25	25	100	30	8.0	●	1	
325-25-09-L210	3	25	25	210	30	8.0	●	2	
332-W32-09	3	32	32	110	40	8.0	●	1	
332-32-09-L250	3	32	32	250	40	8.0	●	2	
432-W25-09	4	32	25	130	35	8.0	●	1	
432-25-09-L200	4	32	25	200	40	8.0	●	2	
432-W32-09	4	32	32	110	40	8.0	●	1	
440-W32-09	4	40	32	115	40	8.0	●	1	
440-32-09-L250	4	40	32	250	40	8.0	●	2	
540-W32-09	5	40	32	115	40	8.0	●	1	
4N TE90-225-W25-11	2	25	25	100	30	10.5	●	1	4NKT 1106.. E229-E230
225-25-11-L200	2	25	25	200	40	10.5	●	2	
332-W32-11	3	32	32	110	40	10.5	●	1	
440-W32-11	4	40	32	115	40	10.5	●	1	
440-32-11-L200	4	40	32	200	40	10.5	●	2	
4N TE90-232-W32-14	2	32	32	110	40	13.8	●	1	4NKT 1407.. E229-E230
232-32-14	2	32	32	150	45	13.8	●	2	
232-32-14-L250	2	32	32	250	40	13.8	●	2	
340-W32-14	3	40	32	115	40	13.8	●	1	
340-32-14	3	40	32	115	40	13.8	●	2	

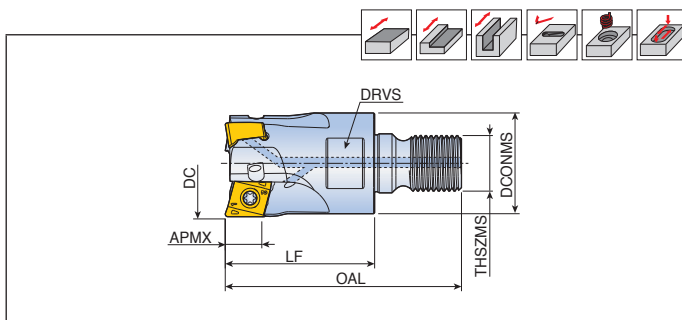


- Il corpo fresa per l'inserto '4NKT 090432R-HF' deve essere modificato con il raggio 3.2 mm
- Il corpo fresa per l'inserto '4NKT 110640R-HF' deve essere modificato con il raggio 4.0 mm
- Il corpo fresa per l'inserto '4NKT 140750R-HF' deve essere modificato con il raggio 5.0 mm

4N TE90-M-09/11/14



Fresa modulare



Descrizione	Z	Dimensioni (mm)							Fori refrig.	Inserto
		DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS		
4N TE90-220-M10-09	2	20	18	30	50	M10	8.0	15	●	4NK(H)T 0904...
325-M12-09	3	25	21	35	57	M12	8.0	17	●	E229-E230
432-M16-09	4	32	29	43	68	M16	8.0	25	●	
540-M16-09	5	40	29	43	68	M16	8.0	25	●	
4N TE90-225-M12-11	2	25	21	35	57	M12	10.5	17	●	4NKT 1106...
332-M16-11	3	32	29	43	68	M16	10.5	25	●	E229-E230
440-M16-11	4	40	29	43	68	M16	10.5	25	●	
4N TE90-232-M16-14	2	32	29	43	68	M16	13.8	25	●	4NKT 1407...
340-M16-14	3	40	29	43	68	M16	13.8	25	●	E229-E230

- Il corpo fresa per l'inserto '4NKT 090432R-HF' deve essere modificato con il raggio 3.2 mm
- Il corpo fresa per l'inserto '4NKT 110640R-HF' deve essere modificato con il raggio 4.0 mm
- Il corpo fresa per l'inserto '4NKT 140750R-HF' deve essere modificato con il raggio 5.0 mm
- Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave	Manico chiave		
4N TE90-09	TS 35A088I/HG	TBLD T10P-W6	THND 6W		
4N TE90-11	TS 40093I/HG	TBLD T15-W6	THND 6W		
4N TE90-14	TS 50A121I/HG	TBLD T20-W6	THND 6W		

Condizioni di taglio

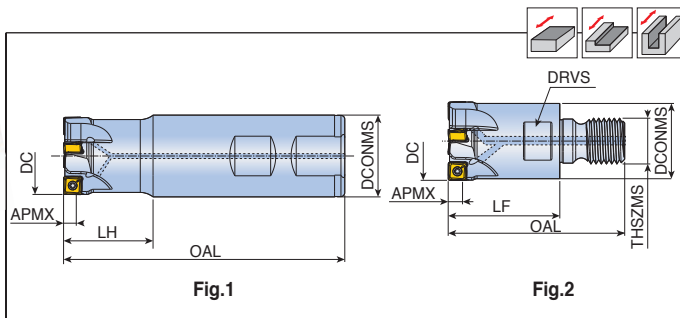
E287-E289

Dati di rampa

E311-E331

8D-TE90-07

Fresa cilindrica e modulare



Descrizione	Z	Dimensioni (mm)								Fori refrig.	Fig.	Inserto
		DC	DCONMS	LF	LH	OAL	THSZMS	APMX	DRVS			
8D-TE90-216-W16-07	2	16	16	-	20	90	-	5.0	-	●	1	SQKU 0703... E273
220-W20-07	2	20	20	-	25	90	-	5.0	-	●	1	
320-W20-07	3	20	20	-	25	90	-	5.0	-	●	1	
325-W25-07	3	25	25	-	30	100	-	5.0	-	●	1	
425-W25-07	4	25	25	-	30	100	-	5.0	-	●	1	
432-W32-07	4	32	32	-	35	110	-	5.0	-	●	1	
632-W32-07	6	32	32	-	35	110	-	5.0	-	●	1	
540-W32-07	5	40	32	-	40	110	-	5.0	-	●	1	
840-W32-07	8	40	32	-	40	110	-	5.0	-	●	1	
8D-TE90-216-M08-07	2	16	14	23	-	40.5	M08	5.0	10	●	2	
320-M10-07	3	20	18	30	-	50	M10	5.0	15	●	2	
325-M12-07	3	25	22	35	-	57	M12	5.0	17	●	2	
432-M16-07	4	32	29	43	-	68	M16	5.0	25	●	2	
540-M16-07	5	40	29	43	-	68	M16	5.0	25	●	2	

• Da utilizzare con steli T-FLEXTEC

Ricambi

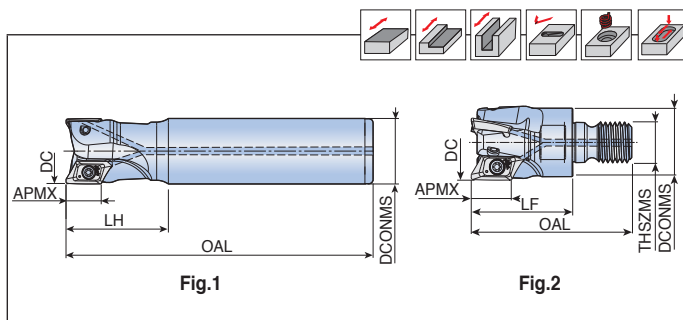
Descrizione	Vite	Chiave			
8D-TE90-07	TS 25D060/HG-P	TD 7P			



TE90XEV-16/22



Fresa cilindrica e modulare



Descrizione	🌀	Dimensioni (mm)							Fori refrig.	Fig.	Giri MAX	Inserto
		DC	DCONMS	OAL	THSZMS	LF	LH	APMX				
TE90XEV 225-25-16	2	25	25	125	-	-	55	16	●	1	52,000	XEVT 1605... E280
225-25-16-L170	2	25	25	170	-	-	70	16	●	1	52,000	
232-32-16	2	32	32	150	-	-	50	16	●	1	46,000	
232-32-16-L200	2	32	32	200	-	-	80	16	●	1	46,000	
332-32-16	3	32	32	150	-	-	50	16	●	1	46,000	
332-32-16-L200	3	32	32	200	-	-	80	16	●	1	46,000	
340-32-16	3	40	32	170	-	-	55	16	●	1	41,200	
340-32-16-L250	3	40	32	250	-	-	55	16	●	1	41,200	
TE90XEV 225-M12-16	2	25	21	65	M12	43	-	16	●	2	52,000	XEVT 2206... E280
232-M16-16	2	32	29	68	M16	43	-	16	●	2	46,000	
332-M16-16	3	32	29	68	M16	43	-	16	●	2	46,000	
340-M16-16	3	40	29	68	M16	43	-	16	●	2	41,200	
TE90XEV 232-32-22	2	32	32	160	-	-	100	21	●	1	37,500	
340-40-22	3	40	40	160	-	-	80	21	●	1	35,100	

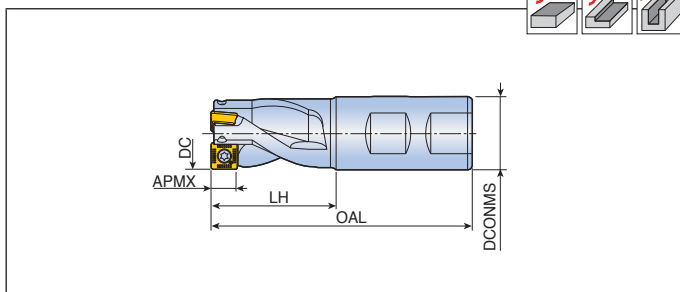
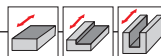
- Da utilizzare con steli T-FLEXTEC
- Il corpo fresa per l'inserto con raggio maggiore di 3.2 mm (XEVT 16) e 3.0 mm (XEVT 22) deve essere modificato come segue: R corpo fresa = R raggio inserto - 0.3 mm

Ricambi

Descrizione	Vite	Chiave			
TE90XEV-16 (-Ø25)	TS 40085I/HG	T-T 15			
TE90XEV-16 (Ø32-)	TS 40093I/HG	T-T 15			
TE90XEV-22 (-Ø32)	TS 50105I	T-T 20			
TE90XEV-22 (Ø40-)	TS 50115I	T-T 20			



Fresa cilindrica



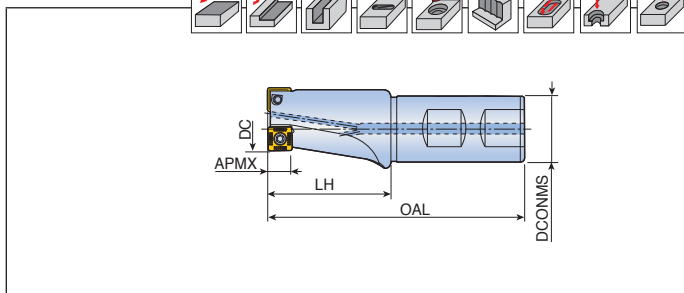
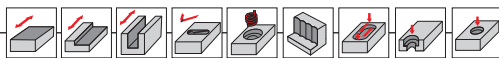
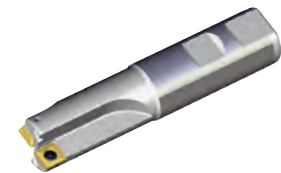
Descrizione	✂	Dimensioni (mm)					Inserto
		DC	DCONMS	OAL	LH	APMX	
TSF 112-W16-06	1	12	16	80	27	5.6	XOMT 0602...
216-W20-06	2	16	20	90	27	5.6	E271
320-W20-06	3	20	20	100	25	5.6	
TSF 222-W25-09	2	22	25	100	40	9.0	SPMG(T) 0904...
225-W25-09	2	25	25	100	40	9.0	E271
TSF 332-W32-11	3	32	32	115	55	10.7	SPMG(T) 1104...
440-W32-11	4	40	32	125	55	10.7	E271
TSF 445-W32-14	4	45	32	130	70	13.4	SPMG(T) 1405...
450-W32-14	4	50	32	140	80	13.4	E271

Ricambi

Descrizione	Vite	Chiave			
TSF (Ø12)	TS 22046I	TD 7			
TSF (Ø16-Ø20)	TS 22052I/HG	TD 7			
TSF (Ø22-Ø25)	TS 35088I	TD 10			
TSF (Ø32-Ø40)	TS 40093I	TD 15			
TSF (Ø45-Ø50)	TS 50A121I/HG	TD 20			



Fresa cilindrica



Descrizione		Dimensioni (mm)					Fori refrig.	Max. prof. foratura (mm)	Inserto
		DC	DCONMS	OAL	LH	APMX			
TDM 112 W16-06	1	12	16	80	20	5.6	●	12	XOMT 0602...
216 W20-06	2	16	20	90	25	5.6	●	16	E271
218 W20-06	2	18	20	90	25	5.6	●	16	
220 W25-06	2	20	25	100	40	5.6	●	20	
222 W25-06	2	22	25	110	47	5.6	●	25	
TDM 225 W25-09	2	25	25	110	50	9.0	●	30	SPMG(T) 0904...-EM
228 W32-09	2	28	32	125	60	9.0	●	38	E271
TDM 232 W32-11	2	32	32	125	60	10.7	●	38	SPMG(T) 1104...-EM
240 W32-11	2	40	32	125	60	10.7	●	38	E271
TDM 245 W32-14	2	45	32	130	66	13.4	●	40	SPMG(T) 1405...-EM
250 W32-14	2	50	32	150	66	13.4	●	40	E271

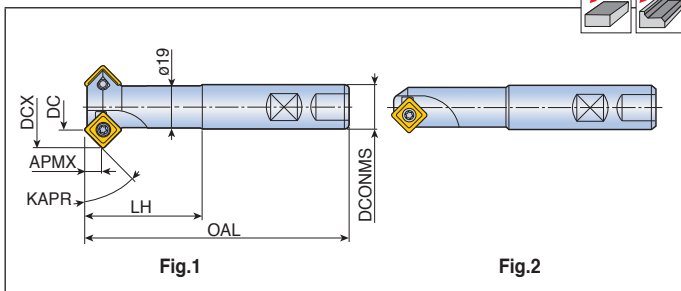
Ricambi

Descrizione	Vite	Chiave			
TDM (Ø12)	TS 22046I	TD 7			
TDM (Ø16-Ø20)	TS 22052I/HG	TD 7			
TDM (Ø22-Ø25)	TS 35088I	TD 10			
TDM (Ø32-Ø40)	TS 40093I	TD 15			
TDM (Ø45-Ø50)	TS 50A121I/HG	TD 20			



TCF-11

Fresa cilindrica



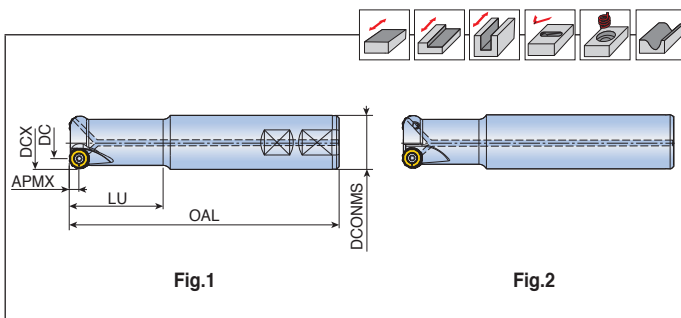
Descrizione		Dimensioni (mm)							Fig.	Campo di applicazione (mm)	Inserto
		KAPR	DCX	DC	DCONMS	OAL	LH	APMX			
TCF 15 D25-11	2	75°	30.5	25	20	120	40	10.1	1	Ø26.3-Ø30.0	SPMT(G) 1104...EM E271
30 D25-11	2	60°	35.5	25	20	120	40	8.9	1	Ø26.3-Ø34.0	
45 D07-11	1	45°	21.5	7	20	120	40	7.2	2	Ø8.3-Ø20.9	
45 D19-11	2	45°	33.4	19	20	120	40	7.2	1	Ø20.3-Ø32.9	
45 D25-11	3	45°	39.4	25	20	120	40	7.2	1	Ø26.3-Ø38.9	

Ricambi

Descrizione	Vite	Chiave			
TCF-11	TS 40093I	TD 15			



Fresa cilindrica



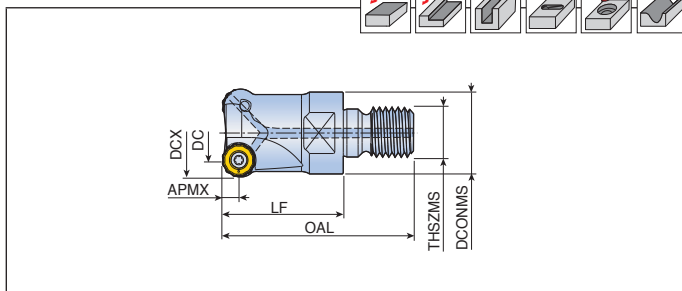
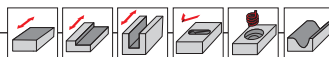
Descrizione		Dimensioni (mm)							Fori refriger.	Fig.	Inserto
		DCX	DC	DCONMS	OAL	LU	APMX				
TERNS 225-25-10-L160	2	25	15	25	160	60	5.0	●	2	RNMU 1004...	
225-32-10-L250	2	25	15	32	250	40	5.0	●	2	E259	
325-25-10-L160	3	25	15	25	160	60	5.0	●	2		
226-25-10-L200	2	26	16	25	200	80	5.0	●	2		
332-32-10-L180	3	32	22	32	180	70	5.0	●	2		
332-32-10-L250	3	32	22	32	250	100	5.0	●	2		
432-32-10-L180	4	32	22	32	180	70	5.0	●	2		
432-32-10-L250	4	32	22	32	250	100	5.0	●	2		
433-32-10-L200	4	33	23	32	200	80	5.0	●	2		
433-32-10-L250	4	33	23	32	250	100	5.0	●	2		
TERNS 232-32-12-L150	2	32	20	32	150	50	6.0	●	2	RNMU 1205...	
232-32-12-L200	2	32	20	32	200	60	6.0	●	2	E259	
232-32-12-L	2	32	20	32	250	50	6.0	●	2		
332-W32-12	3	32	20	32	160	60	6.0	●	1		
332-32-12-L200	3	32	20	32	200	70	6.0	●	2		
332-32-12-L250	3	32	20	32	250	60	6.0	●	2		
233-32-12-L200	2	33	21	32	200	50	6.0	●	2		
233-32-12-L250	2	33	21	32	250	50	6.0	●	2		
333-32-12-L200	3	33	21	32	200	70	6.0	●	2		
333-32-12-L250	3	33	21	32	250	60	6.0	●	2		
340-W32-12	3	40	28	32	160	50	6.0	●	1		
340-32-12-L250	3	40	28	32	250	50	6.0	●	2		
440-W32-12	4	40	28	32	160	50	6.0	●	1		
440-32-12-L250	4	40	28	32	250	60	6.0	●	2		
450-32-12-L200	4	50	38	32	200	70	6.0	●	2		
550-32-12-L250	5	50	38	32	250	60	6.0	●	2		
TERNS 240-W32-16-L160	2	40	24	32	160	50	6.0	●	1	RNMU 1606...	
240-32-16-L180	2	40	24	32	180	70	8.0	●	2	E259	
240-32-16-L250	2	40	24	32	250	100	8.0	●	2		
340-32-16-L180	3	40	24	32	180	70	8.0	●	2		
340-32-16-L250	3	40	24	32	250	100	8.0	●	2		



TERNS-M



Fresa modulare



Descrizione		Dimensioni (mm)							Fori refrig.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TERNS 225-M12-10	2	25	15	21	35	57	M12	5.0	●	RNMU 1004...
325-M12-10	3	25	15	21	35	57	M12	5.0	●	E259
432-M16-10	4	32	22	29	43	68	M16	5.0	●	
542-M16-10	5	42	32	29	43	68	M16	5.0	●	
TERNS 232-M16-12	2	32	20	29	43	68	M16	6.0	●	RNMU 1205...
332-M16-12	3	32	20	29	43	68	M16	6.0	●	E259
233-M16-12	2	33	21	29	43	68	M16	6.0	●	
333-M16-12	3	33	21	29	43	68	M16	6.0	●	
340-M16-12	3	40	28	29	43	68	M16	6.0	●	
440-M16-12	4	40	28	29	43	68	M16	6.0	●	
TERNS 240-M16-16	2	40	24	29	43	68	M16	8.0	●	RNMU 1606...
340-M16-16	3	40	24	29	43	68	M16	8.0	●	E259

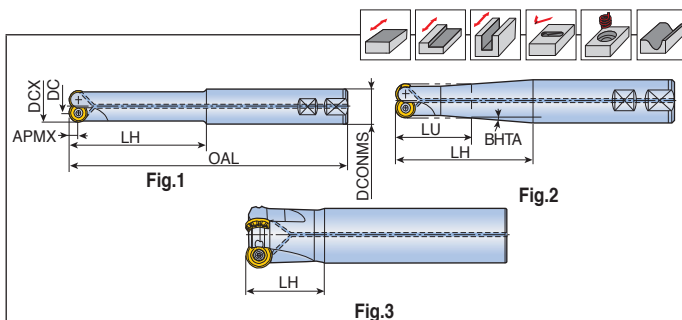
• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			
TERNS-10	TS 35085I/HG	TD 15	-		
TERNS-12	TS 40G110I	-	T-T15		
TERNS-16	TS 50A121I/HG	TD 20	-		



Fresa cilindrica



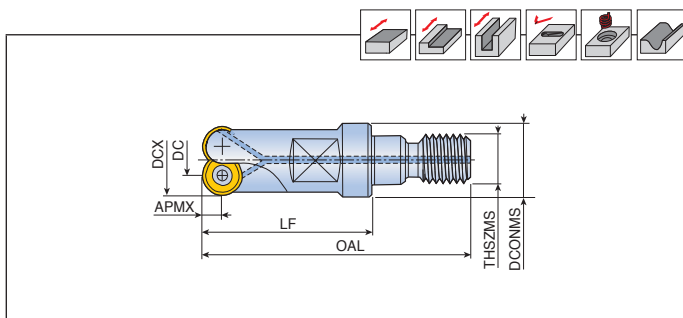
Descrizione	⊕	Dimensioni (mm)								Fori refrig.	Fig.	Inserto
		DCX	DC	DCONMS	OAL	LH	LU	BHTA	APMX			
TERD 108-W10-05	1	8	3	10	80	20	-	-	2.5	●	1	RDMX 0501...
210-W12-05	2	10	5	12	80	30	-	-	2.5	●	1	E260
212-W12-05	2	12	7	12	100	40	-	-	2.5	●	1	
212-16-05-L	2	12	7	16	200	60	34	2.0	2.5	●	2	
215-W20-07	2	15	8	20	140	40	-	-	3.5	●	1	RDMX 0702...
215-20-07-L	2	15	8	20	200	60	34	3.5	3.5	●	2	E260
217-16-07-L160	2	17	10	16	160	25	-	-	3.5	●	3	
217-16-07-L200	2	17	10	16	200	25	-	-	3.5	●	3	
TERX 220-W20-10	2	20	10	20	160	60	-	-	5.0	●	1	RXM(H)X 1003...
220-25-10-L	2	20	10	25	250	80	60	4.0	5.0	●	2	E260
221-20-10-L160	2	21	11	20	160	30	-	-	5.0	●	3	
221-20-10-L200	2	21	11	20	200	30	-	-	5.0	●	3	
225-W25-10	2	25	15	25	160	60	-	-	5.0	●	1	
225-32-10-L	2	25	15	32	250	80	50	6.8	5.0	●	2	
226-25-10-L200	2	26	16	25	200	30	-	-	5.0	●	3	
226-25-10-L250	2	26	16	25	250	30	-	-	5.0	●	3	
226-25-10-L300	2	26	16	25	200	30	-	-	5.0	●	3	
325-W25-10	3	25	15	25	160	60	-	-	5.0	●	1	
432-W32-10	4	32	22	32	160	60	-	-	5.0	●	1	
TERX 225-W25-12	2	25	13	25	160	60	-	-	6.0	●	1	RXM(H)X 12T3...
225-W25-12-S-C	2	25	13	25	100	40	-	-	6.0	●	1	E260
226-25-12-L250	2	26	14	25	250	40	-	-	6.0	●	3	
232-32-12-L	2	32	20	32	250	50	-	-	6.0	●	3	
332-W32-12	3	32	20	32	160	64	-	-	6.0	●	1	
233-32-12-L200	2	33	21	32	200	40	-	-	6.0	●	3	
233-32-12-L250	2	33	21	32	250	40	-	-	6.0	●	3	
233-32-12-L300	2	33	21	32	300	40	-	-	6.0	●	3	
235-32-12-L250	2	35	23	32	250	40	-	-	6.0	●	3	
340-32-12-L250	3	40	28	32	250	40	-	-	6.0	●	3	
440-W32-12	4	40	28	32	160	50	-	-	6.0	●	1	
440-W32-12-S-C	4	40	28	32	105	35	-	-	6.0	●	1	
TERX 240-W32-16	2	40	24	32	160	50	-	-	8.0	●	1	RXMX 1604...
340-32-16-L250	3	40	24	32	250	50	-	-	8.0	●	3	E260
TERX 350-32-20	3	50	30	32	160	50	-	-	10.0	●	3	RXMX 2006...
350-42-20	3	50	30	42	200	60	-	-	10.0	●	3	E260



TERD/TERX-M

CHASEMOLD

Fresa modulare



Descrizione		Dimensioni (mm)								Fori refriger.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX			
TERD 108-M06-05	1	8	3	9.7	28	37.5	M06	2.5	●	RDMX 0501...	
210-M06-05	2	10	5	9.7	28	37.5	M06	2.5	●	E260	
210-M08-05	2	10	5	13	28	45.5	M08	2.5	●	●	
212-M08-05	2	12	7	13	28	45.5	M08	2.5	●	●	
312-M08-05	3	12	7	13	28	45.5	M08	2.5	●	●	
215-M08-07	2	15	8	13	23	40.5	M08	3.5	●	RDMX 0702...	
220-M08-07	2	20	13	13	30	47.5	M08	3.5	●	E260	
320-M08-07	3	20	13	13	30	47.5	M08	3.5	●	●	
TERX 220-M10-10	2	20	10	18	30	50	M10	5.0	●	RXM(H)X 1003...	
225-M12-10	2	25	15	21	35	57	M12	5.0	●	E260	
325-M12-10	3	25	15	21	35	57	M12	5.0	●	●	
430-M16-10	4	30	20	29	43	68	M16	5.0	●	●	
432-M16-10	4	32	22	29	43	68	M16	5.0	●	●	
435-M16-10	4	35	25	29	43	68	M16	5.0	●	●	
542-M16-10	5	42	32	29	43	68	M16	5.0	●	●	
TERX 224-M12-12	2	24	12	21	35	57	M12	6.0	●	RXM(H)X 12T3...	
232-M16-12	2	32	20	29	43	68	M16	6.0	●	E260	
332-M16-12	3	32	20	29	43	68	M16	6.0	●	●	
335-M16-12	3	35	23	29	43	68	M16	6.0	●	●	
340-M16-12	3	40	28	29	43	68	M16	6.0	●	●	
442-M16-12	4	42	30	29	43	68	M16	6.0	●	●	
TERX 232-M16-16	2	32	16	29	43	68	M16	8.0	●	RXXM 1604...	
342-M16-16	3	42	26	29	43	68	M16	8.0	●	E260	

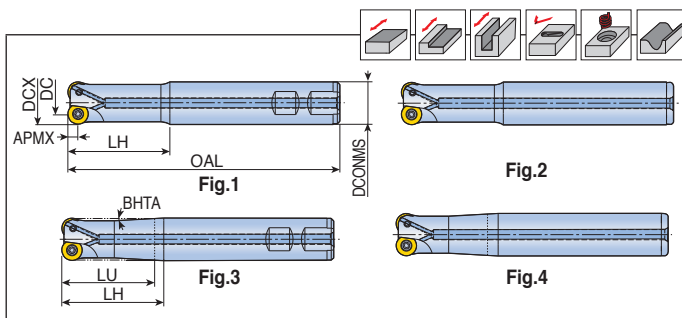
• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			
TERD-05	TS 20038I	TD 6			
TERD-07	SO 25050I	TD 7			
TERX-10	TS 35070I/HG	TD 15			
TERX-12	TS 35085I/HG	TD 15			
TERX-16	TS 45A100I/HG	TD 20			
TERX-20	TS 50115I/HG	TD 20			



Fresa cilindrica

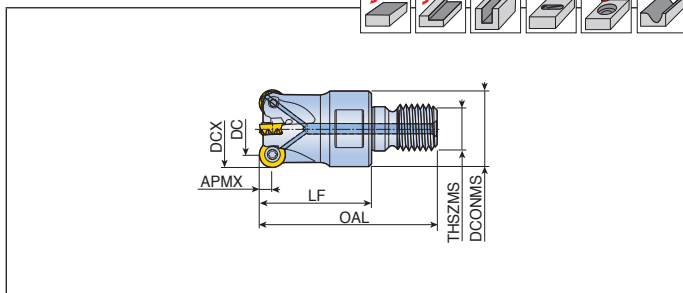
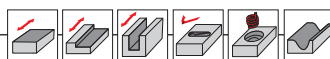


Descrizione		Dimensioni (mm)								Fori refriger.	Fig.	Inserto
		DCX	DC	DCONMS	OAL	LU	LH	BHTA	APMX			
TERY 216-W20-08-L	2	16	8	20	110	45	55	4.1	4.0	●	3	RYM(H)X 0803...
217-16-08-L130	2	17	9	16	130	-	30	-	4.0	●	2	E261-E262
218-16-08-L150	2	18	10	16	150	-	30	-	4.0	●	2	
320-W20-08	3	20	12	20	150	-	43	-	4.0	●	1	
320-20-08-L110	3	20	12	20	110	-	60	-	4.0	●	2	
321-20-08-L150	3	21	13	20	150	-	40	-	4.0	●	2	
425-W25-08	4	25	17	25	150	-	43	-	4.0	●	1	
426-25-08-L150	4	26	18	25	150	-	40	-	4.0	●	2	
532-W32-08	5	32	24	32	160	-	60	-	4.0	●	1	
TERY 220-W20-10	2	20	10	20	160	-	60	-	5.0	●	1	RYM(H)X 1004...
220-25-10-L	2	20	10	25	250	60	80	3.5	5.0	●	4	E261-E262
221-20-10-L200	2	21	11	20	200	-	30	-	5.0	●	2	
225-32-10-L	2	25	15	32	250	53	80	5.0	5.0	●	4	
225-W25-10	2	25	15	25	160	-	60	-	5.0	●	1	
325-W25-10	3	25	15	25	160	-	60	-	5.0	●	1	
226-25-10-L200	2	26	16	25	200	-	30	-	5.0	●	2	
326-25-10-L200	3	26	16	25	200	-	60	-	5.0	●	2	
432-W32-10	4	32	22	32	160	-	60	-	5.0	●	1	
TERY 225-W25-12	2	25	13	25	160	-	60	-	6.0	●	1	RYM(H)X 1205...
226-25-12-L200	2	26	14	25	200	-	60	-	6.0	●	2	E261-E262
232-32-12-L	2	32	20	32	250	-	50	-	6.0	●	2	
332-W32-12	3	32	20	32	160	-	64	-	6.0	●	1	
332-W32-12-S	3	32	20	32	105	-	35	-	6.0	●	1	
233-32-12-L250	2	33	21	32	250	-	40	-	6.0	●	2	
333-32-12-L200	3	33	21	32	200	-	60	-	6.0	●	2	
340-W32-12	3	40	28	32	160	-	50	-	6.0	●	1	
340-W32-12-S	3	40	28	32	105	-	35	-	6.0	●	1	
340-32-12-L250	3	40	28	32	250	-	50	-	6.0	●	2	
440-W32-12	4	40	28	32	150	-	35	-	6.0	●	1	
440-W32-12-S	4	40	28	32	105	-	35	-	6.0	●	1	
TERY 240-W32-16	2	40	24	32	160	-	50	-	8.0	●	1	RYM(H)X 1606...
340-32-16-L250	3	40	24	32	250	-	50	-	8.0	●	2	E261-E262
TERY 350-32-20	3	50	30	32	160	-	50	-	10.0	●	2	RYM(H)X 2007...
350-40-20	3	50	30	40	200	-	60	-	10.0	●	2	E261-E262



TERY-M-08/10

Fresa modulare



Descrizione		Dimensioni (mm)							Fori refrig.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TERY 216-M08-08	2	16	8	13	23	40.5	M08	4.0	●	RYM(H)X 0803...
218-M08-08	2	18	10	13	23	40.5	M08	4.0	●	E261-E262
220-M10-08	2	20	12	18	30	50	M10	4.0	●	
320-M10-08	3	20	12	18	30	50	M10	4.0	●	
425-M12-08	4	25	17	21	35	57	M12	4.0	●	
530-M16-08	5	30	22	29	43	68	M16	4.0	●	
532-M16-08	5	32	24	29	43	68	M16	4.0	●	
540-M16-08	5	40	32	29	43	68	M16	4.0	●	
640-M16-08	6	40	32	29	43	68	M16	4.0	●	
TERY 220-M10-10	2	20	10	18	30	50	M10	5.0	●	RYM(H)X 1004...
225-M12-10	2	25	15	21	35	57	M12	5.0	●	E261-E262
325-M12-10	3	25	15	21	35	57	M12	5.0	●	
430-M16-10	4	30	20	29	43	68	M16	5.0	●	
432-M16-10	4	32	22	29	43	68	M16	5.0	●	
435-M16-10	4	35	25	29	43	68	M16	5.0	●	
542-M16-10	5	42	32	29	43	68	M16	5.0	●	
642-M16-10	6	42	32	29	43	68	M16	5.0	●	

Condizioni di taglio

E287-E289

Dati di rampa

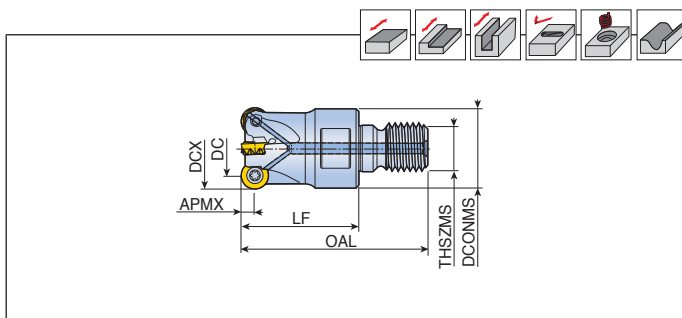
E364-E366

• Da utilizzare con steli T-FLEXTEC

TERY-M-12/16



Fresa modulare



Descrizione		Dimensioni (mm)							Fori refriger.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TERY 225-M12-12	2	25	13	21	35	57	M12	6.0	●	RYM(H)X 1205... E261-E262
232-M16-12	2	32	20	29	43	68	M16	6.0	●	
332-M16-12	3	32	20	29	43	68	M16	6.0	●	
335-M16-12	3	35	23	29	43	68	M16	6.0	●	
340-M16-12	3	40	28	29	43	68	M16	6.0	●	
440-M16-12	4	40	28	29	43	68	M16	6.0	●	
442-M16-12	4	42	30	29	43	68	M16	6.0	●	
TERY 232-M16-16	2	32	16	29	43	68	M16	8.0	●	RYM(H)X 1606... E261-E262
240-M16-16	2	40	24	29	43	68	M16	8.0	●	
342-M16-16	3	42	26	29	43	68	M16	8.0	●	

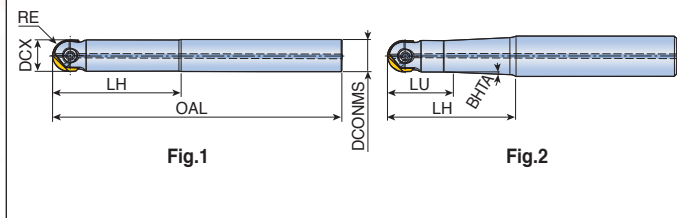
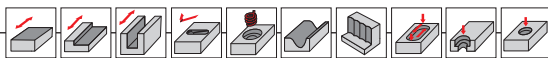
• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave		Manico chiave	
TERY-08	TS 30A060I/HG	TD 9	-		
TERY-10	TS 35070I/HG(UnderD21), TS 35085I/HG	TD 15	-		
TERY-12	TS 40093I	TD 15	-		
TERY-16	TS 50115I	TD 20	-		
TERY-20	TS 60A130I	-	BLD T25/M7	SW6-T	

 Condizioni di taglio E287-E289	 Dati di rampa E364-E366
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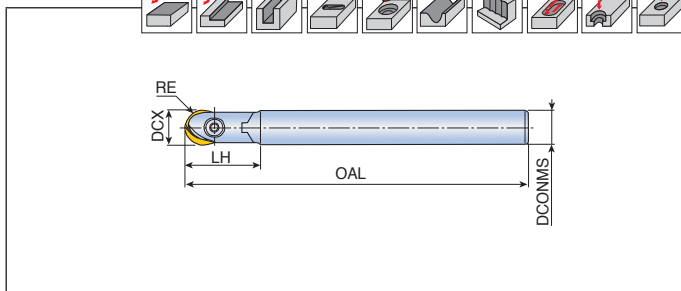
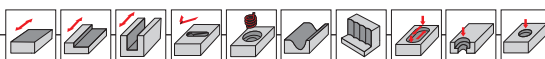
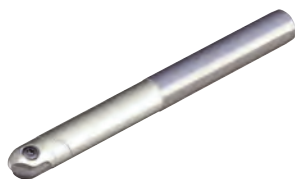
Fresa cilindrica



Descrizione	Dimensioni (mm)							Fori refrig.	Fig.	Inserto
	DCX	RE	DCONMS	OAL	LH	LU	BH-TA			
TNF 060-10M	6	3	10	80	30	15	7.5°	●	2	NFB 060...
060-30-L80	6	3	10	80	30	-	-	●	1	NFR 060A...
080-08S	8	4	8	90	20	-	-	●	1	NFB 080...
080-12S	8	4	12	100	20	10	9.5°	●	2	NFR 080A...
080-12M	8	4	12	130	50	10	3°	●	2	
100-10S	10	5	10	90	30	-	-	●	1	NFB 100...
100-12S	10	5	12	110	25	15	5°	●	2	NFR 100A...
100-16M	10	5	16	130	60	15	3.5°	●	2	NFR 110A...
120-12S	12	6	12	110	30	-	-	●	1	NFB 120...
120-12M	12	6	12	180	60	-	-	●	1	NFR 120A...
120-16M	12	6	16	140	60	25	2.4°	●	2	NFR 130A...
120-20L	12	6	20	180	80	40	5°	●	2	
160-16M	16	8	16	130	40	-	-	●	1	NFB 160...
160-16L	16	8	16	200	100	-	-	●	1	NFR 160A...
160-20M	16	8	20	160	60	25	2.5°	●	2	NFR 170A...
160-25L	16	8	25	220	100	55	5°	●	2	
200-20S	20	10	20	110	40	-	-	●	1	NFB 200...
200-20M	20	10	20	150	50	-	-	●	1	NFR 200A...
200-20L	20	10	20	220	70	-	-	●	1	NFR 210A...
200-25M	20	10	25	180	80	40	2.5°	●	2	
200-25L	20	10	25	220	110	45	1.5°	●	2	
250-25S	25	12.5	25	125	40	-	-	●	1	NFB 250...
250-25M	25	12.5	25	170	70	-	-	●	1	NFR 250A...
250-32M	25	12.5	32	200	90	32	3°	●	2	NFR 260A...
250-32L	25	12.5	32	250	130	40	1.5°	●	2	
300-32S	30	15	32	140	55	-	-	●	1	NFB 300...
300-32M	30	15	32	190	75	-	-	●	1	NFB 320...
300-32L	30	15	32	250	100	65	1°	●	2	NFR 300A...
300-32XL	30	15	32	300	150	-	-	●	1	NFR 320A...
300-32-L220	30	15	32	220	100	55	1°	●	2	
320-32L	32	16	32	250	60	-	-	●	1	NFB 320...
										NFR 320A...
										E252-E254

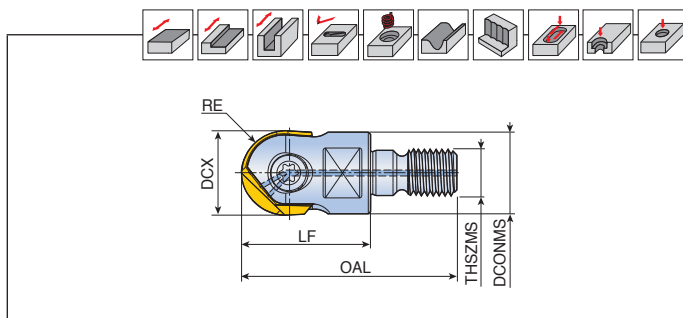


Fresa cilindrica in metallo duro



Descrizione	Dimensioni (mm)					Inserto
	DCX	RE	DCONMS	OAL	LH	
TNF 060-06-CT-L60	6	3	6	60	15	NFB 060... NFR 060A...
060-06-CT-L80	6	3	6	80	20	
060-06-CT-L92	6	3	6	92	35	
060-06-CT-L120	6	3	6	120	65	
060-06-CT-L140	6	3	6	140	25	
080-08-CT-L100	8	4	8	100	30	NFB 080... NFR 080A...
080-10-CT-L140	8	4	10	140	75	
080-08-CT-L160	8	4	8	160	80	
100-10-CT-L100	10	5	10	100	35	NFB 100... NFR 100A...
100-10-CT-L140	10	5	10	140	75	NFR 110A...
100-10-CT-L200	10	5	10	200	70	
100-10-CT-L220	10	5	10	220	140	
120-12-CT-L120	12	6	12	120	50	NFB 120... NFR 120A...
120-12-CT-L160-S	12	6	12	160	30	NFR 130A...
120-12-CT-L160	12	6	12	160	90	
120-12-CT-L200	12	6	12	200	70	
120-12-CT-L220	12	6	12	220	150	
160-16-CT-L120	16	8	16	120	60	NFB 160... NFR 160A...
160-16-CT-L160-S	16	8	16	160	70	NFR 170A...
160-16-CT-L160	16	8	16	160	80	
160-16-CT-L200	16	8	16	200	70	
160-16-CT-L220	16	8	16	220	150	
200-20-CT-L200	20	10	20	200	70	NFB 200... NFR 200A...
200-20-CT-L110	20	10	20	110	40	NFR 210A...
200-20-CT-L220	20	10	20	220	120	
200-20-CT-L300	20	10	20	300	220	
250-25-CT-L200	25	12.5	25	200	70	NFB 250... NFR 250A...
250-25-CT-L220-S	25	12.5	25	220	80	NFR 260A...
250-25-CT-L220	25	12.5	25	220	120	
250-25-CT-L300	25	12.5	25	300	220	
300-32-CT-L200	30	15	32	200	70	NFB 300... NFB 320... NFR 300A...
300-32-CT-L250-S	30	15	32	250	80	NFR 320A...
300-32-CT-L250	30	15	32	250	150	
300-32-CT-L350-S	30	15	32	350	80	E252-E254
300-32-CT-L350	30	15	32	350	230	
320-32-CT-L300	32	16	32	300	220	NFB 320... NFR 320A...

Fresa modulare



Descrizione	Dimensioni (mm)						Fori refriger.	Inserto
	DCX	RE	DCONMS	OAL	LF	THSZMS		
TNF 100-M06	10	5	9.7	34.5	20	M06	●	NFB 100... NFR 100A... NFR 110A...
120-M06	12	6	11.5	37.5	23	M06	●	NFB 120...
120-M08	12	6	13	40.5	23	M08	●	NFR 120A... NFR 130A...
160-M08	16	8	13	47.5	30	M08	●	NFB 160... NFR 160A... NFR 170A...
200-M10	20	10	19	50	30	M10	●	NFB 200... NFR 200A... NFR 210A...
250-M12	25	12.5	24	57	35	M12	●	NFB 250...
250-M16	25	12.5	29	68	43	M16	●	NFR 250A... NFR 260A...
300-M16	30	15	29	68	43	M16	●	NFB 300... NFB 320... NFR 300A... NFR 320A...
320-M16	32	16	29.5	68	43	M16	●	NFB 320... NFR 320A...

• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			Manico chiave
TNF 060	TS 20F060A	TD 6	-	-	-
TNF 080	TS 25F080A	TD 8	-	-	-
TNF 100	TS 30F100A	TD 10	-	-	-
TNF 120	TS 40F120A	TD 15	-	-	-
TNF 160	TS 50F160A	-	T-T20	-	-
TNF 200	TS 60F200A	-	-	BLD T25/M7	SW6-T
TNF 250	TS 70F250A	-	-	BLD T25/M7	SW6-T
TNF 300, TNF 320	TS 80F300A	-	T-T30	-	-



E287-E289

Fresa cilindrica

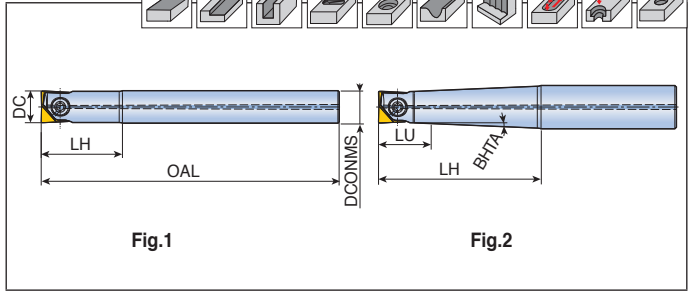
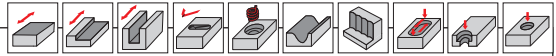


Fig.1

Fig.2

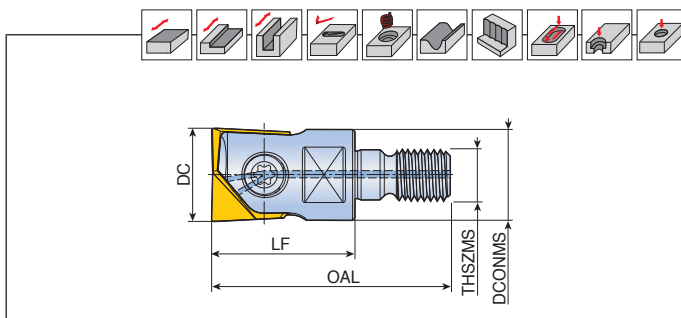
Descrizione	Dimensioni (mm)						Fori refriger.	Fig.	Inserito
	DC	DCONMS	OAL	LH	LU	BHTA			
TNFR 060-10M	6	10	80	30	15	9°	●	2	NFR 060A...
080-12S	8	12	100	22	10	9°	●	2	NFR 080A...
080-12M	8	12	130	50	10	2.8°	●	2	
100-12S	10	12	110	25	15	5°	●	2	NFR 100A...
100-16M	10	16	150	50	15	3.5°	●	2	NFR 110A...
120-12S	12	12	110	30	-	-	●	1	NFR 120A...
120-16M	12	16	160	60	18	2.5°	●	2	NFR 130A...
160-16S	16	16	130	50	-	-	●	1	NFR 160A...
160-16M	16	16	170	70	-	-	●	1	NFR 170A...
160-16L	16	16	200	100	-	-	●	1	
200-20S	20	20	140	60	-	-	●	1	NFR 200A...
200-20M	20	20	180	80	-	-	●	1	NFR 210A...
200-20L	20	20	250	120	-	-	●	1	
250-25S	25	25	150	70	-	-	●	1	NFR 250A...
250-25M	25	25	200	100	-	-	●	1	NFR 260A...
250-25L	25	25	250	120	-	-	●	1	
300-32S	30	32	140	55	-	-	●	1	NFR 300A
300-32M	30	32	190	75	-	-	●	1	NFR 320A
300-32L	30	32	250	100	65	1°	●	2	
320-32L	32	32	250	60	-	-	●	1	NFR 320A
									E253-E254



TNFR-M



Fresa modulare



Descrizione	Dimensioni (mm)					Fori refriger.	Inserto
	DC	DCONMS	LF	OAL	THSZMS		
TNFR 100-M06	10	9.7	20	34.5	M06	●	NFR 100A... NFR 110A...
120-M06	12	11.5	23	37.5	M06	●	NFR 120A...
120-M08	12	13	23	40.5	M08	●	NFR 130A...
160-M08	16	13	30	47.5	M08	●	NFR 160A... NFR 170A...
200-M10	20	19	30	50	M10	●	NFR 200A... NFR 210A...
250-M12	25	24	35	57	M12	●	NFR 250A... NFR 260A...
300-M16	30	29	43	68	M16	●	NFR 300A NFR 320A
320-M16	32	29.5	43	68	M16	●	NFR 320A E253-E254

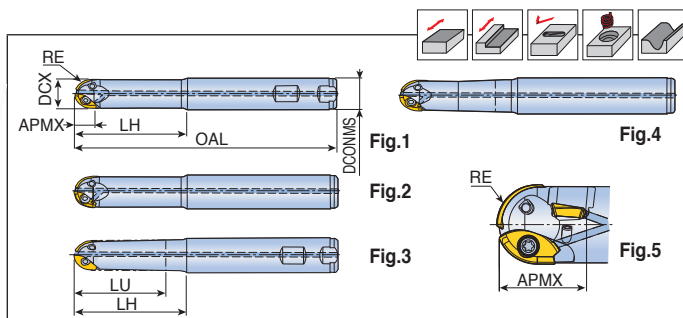
• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			Manico chiave	
TNFR 060	TS 20F060A	TD 6	-	-	-	
TNFR 080	TS 25F080A	TD 8	-	-	-	
TNFR 100	TS 30F100A	TD 10	-	-	-	
TNFR 120	TS 40F120A	TD 15	-	-	-	
TNFR 160	TS 50F160A	-	T-T20	-	-	
TNFR 200	TS 60F200A	-	-	BLD T25/M7	SW6-T	
TNFR 250	TS 70F250A	-	-	BLD T25/M7	SW6-T	
TNFR 300, TNFR 320	TS 80F300A	-	T-T30	-	-	



Fresa cilindrica



Descrizione	Dimensioni (mm)							Fig.	Inserto			
	DCX	RE	DCONMS	OAL	LU	LH	APMX		Sfera	Periferico		
2F 16-11-W20-L120	16	8	20	120	35.5	60	11.8	3	2FB160 E224	2	-	-
16-11-20-L130	16	8	20	130	45.9	60	11.8	4		2	-	-
16-11-20-L200	16	8	20	200	45.9	60	11.8	4		2	-	-
16-20-W20-L120-P	16	8	20	120	41.8	60	20.5	5		2	APKT 09T3	1
16-20-25-L200-P	16	8	25	200	43.4	65	20.5	5		2	E236	1
20-13-W25-L105	20	10	25	105	-	45	13.6	1	2FB200 E224	2	-	-
20-13-W25-L150	20	10	25	150	45.7	65	13.6	3		2	-	-
20-13-20-L220	20	10	20	220	-	70	13.6	2		2	-	-
20-10-25-L160	20	10	25	160	58.4	75	13.6	4		2	-	-
20-13-25-L220	20	10	25	220	65.7	85	13.6	4		2	-	-
20-22-25-L125-P	20	10	25	125	45.7	65	22.3	5	2FB250 E224	2	-	-
20-22-25-L200-P	20	10	25	200	74.3	90	22.3	5		2	APKT 09T3	1
20-22-32-L250-P	20	10	32	250	72.3	100	22.3	5		2	E236	1
25-17-W25-L150	25	12.5	25	150	-	60	17.7	1		2	-	-
25-17-32-L150	25	12.5	32	150	55.7	75	17.7	4		2	-	-
25-17-32-L200	25	12.5	32	200	61.6	85	17.7	4	2FB300 E224	2	-	-
25-17-32-L300	25	12.5	32	300	80	120	17.7	4		2	-	-
25-35-25-L200-P	25	12.5	25	200	-	87.5	35.1	5		2	-	-
25-35-32-L200-P	25	12.5	32	200	-	100	35.1	5		2	APKT 09T3	2
25-35-32-L250-P	25	12.5	32	250	-	110	35.1	5		2	E236	2
25-43-32-L300-P	25	12.5	32	300	-	120	43.7	5	2	-	3	
30-20-W32-L180	30	15	32	180	-	86.1	20.0	1	2FB320 E224	2	-	-
30-20-30-L250	30	15	30	250	-	104.6	20.0	2		2	-	-
30-20-32-L200	30	15	32	200	-	86.1	20.0	2		2	-	-
30-20-32-L300	30	15	32	300	-	126.1	20.0	2		2	-	-
30-43-32-L160-P	30	15	32	160	-	66	43.7	5		2	-	2
30-43-32-L200-P	30	15	32	200	-	85.6	43.7	5	2FB320 E224	2	APKT 1204	2
30-43-32-L250-P	30	15	32	250	-	125.6	43.7	5		2	E237	2
30-51-32-L300-P	30	15	32	300	-	146	55.3	5		2	-	3
32-21-W32-L200	32	16	32	200	-	100	21.4	1		2	-	-
32-21-32-L180	32	16	32	180	-	100	21.4	2		2	-	-
32-21-32-L300	32	16	32	300	-	130	21.4	2	2FB320 E224	2	-	-
32-44-32-L160-P	32	16	32	160	-	66.4	44.7	5		2	-	2
32-44-32-L200-P	32	16	32	200	-	83.7	44.7	5		2	APKT 1204	2
32-44-32-L250-P	32	16	32	250	-	123.7	44.7	5		2	E237	2
32-44-32-L300-P	32	16	32	300	-	143.7	44.7	5		2	-	2

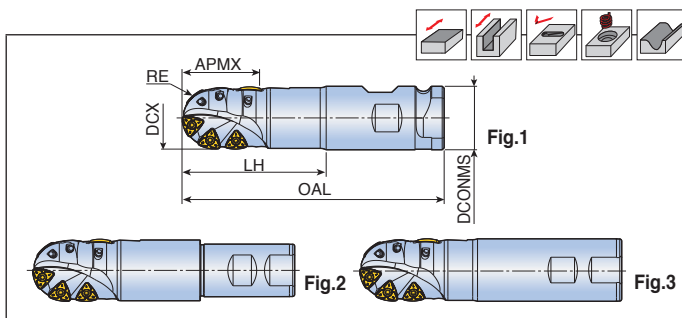


• Con refrigerazione interna

TDB50X-CN/-W



Fresa cilindrica



Descrizione		Dimensioni (mm)						Fig.	Inserto	
		DCX	RE	DCONMS	OAL	LH	APMX			
TDB50X 59-CN50.8-L200	6	50	25	50.8	200	110	59	1	6RBE 50... E233	
69-CN50.8-L250	7	50	25	50.8	250	160	69	1		
TDB50X 59-W40-L200	6	50	25	40	200	128	59	2		
69-W40-L250	7	50	25	40	250	178	69	2		
59-W42-L200	6	50	25	42	200	128	59	2		
69-W42-L250	7	50	25	42	250	178	69	2		
59-W50-L200	6	50	25	50	200	90	59	3		
69-W50-L250	7	50	25	50	250	140	69	3		

Ricambi

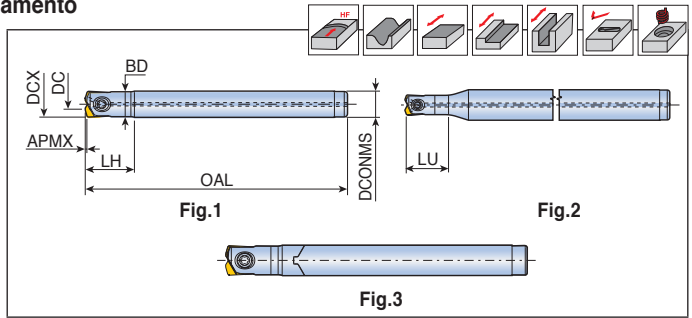
Descrizione	Vite	Chiave			
TDB50X	TS50B106I/HG	T-T20			



THFN/THFN-CT



Fresa cilindrica ad alto avanzamento



Descrizione	♻️	Dimensioni (mm)									Fori refriger.	Fig.	Inserto
		DCX	DC	DCONMS	BD	OAL	LH	LU	APMX				
THFN 060-06-L80	2	6	3	6	5.8	80	13	-	0.3	●	1	HFN 060...	
060-10-L120	2	6	3	10	5.8	120	-	13	0.3	●	2		
080-08-L80	2	8	4	8	7.6	80	18	-	0.5	●	1	HFN 080...	
080-12-L140	2	8	4	12	7.6	140	-	18	0.5	●	2		
THFN 060-06-CT-L80	2	6	3	6	5.8	80	20	-	0.3	x	3	HFN 060...	
060-06-CT-L140	2	6	3	6	5.8	140	25	-	0.3	x	3		
080-08-CT-L80	2	8	4	8	7.6	80	20	-	0.5	x	3	HFN 080...	
080-08-CT-L160	2	8	4	8	7.6	160	30	-	0.5	x	3	🔍 E247	

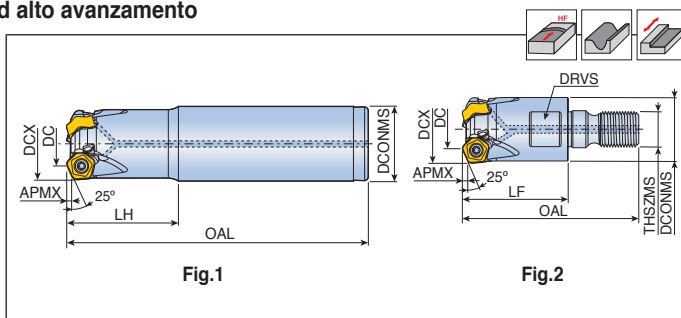
• THFN-CT è con il gambo in metallo duro

Ricambi

Descrizione	Vite	Chiave		Manico chiave	
THFN 060	TS 20F060A	TD 6	-	-	
THFN 080	TS 25F080A	-	TBLD T08-W4	THND 4W	

<p>Condizioni di taglio E287-E289</p>	<p>Dati di rampa E351</p>
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Fresa cilindrica e modulare ad alto avanzamento



Descrizione		Dimensioni (mm)									Fori refrig.	Fig.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	LH	DRVS	APMX			
TEPT 320-20-05-L150	3	20	11.9	20	-	150	-	50	-	1.5	●	1	PTKU 0503...
425-25-05-L150	4	25	16.8	25	-	150	-	50	-	1.5	●	1	
426-25-05-L200	4	26	17.8	25	-	200	-	30	-	1.5	●	1	
532-32-05-L200	5	32	23.8	32	-	200	-	50	-	1.5	●	1	
533-32-05-L200	5	33	24.8	32	-	200	-	30	-	1.5	●	1	
640-32-05-L200	6	40	31.8	32	-	200	-	30	-	1.5	●	1	
TEPT 320-M10-05	3	20	11.9	18	30	50	M10	-	15	1.5	●	2	PTKU 1006...
425-M12-05	4	25	16.8	21	35	57	M12	-	17	1.5	●	2	
532-M16-05	5	32	23.8	29	43	68	M16	-	25	1.5	●	2	
640-M16-05	6	40	31.8	29	43	68	M16	-	25	1.5	●	2	
TEPT 340-32-10-L200	3	40	23.5	32	-	200	-	40	-	3.0	●	1	PTKU 1006...
TEPT 340-M16-10	3	40	23.5	29	43	68	M16	-	25	3.0	●	2	

• Da utilizzare con steli T-FLEXTEC

Ricambi

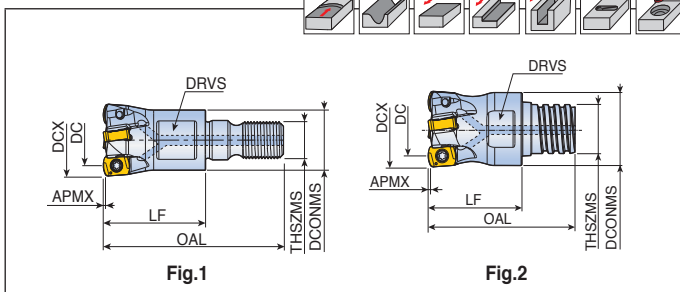
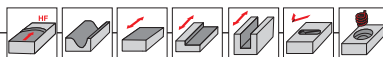
Descrizione	Vite	Chiave		Manico chiave	
TEPT-05	TS 25D060/HG-P	TD 7P	-	-	
TEPT-10	TS 50D130/HG-P	-	TBLD T20P-W6	THND 6W	



TEBL-M(S)-04



Fresa modulare ad alto avanzamento



Descrizione		Dimensioni (mm)								Fori refriger.	Fig.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX	DRVS			
TEBL 210-M06-04	2	10	5.7	9.7	17	31.5	M06	0.5	8	●	1	BLMP 0402... E243
211-M06-04	2	11	6.6	9.7	17	31.5	M06	0.5	8	●	1	
312-M06-04	3	12	7.6	11	17	31.5	M06	0.5	8	●	1	
313-M06-04	3	13	8.6	11	17	31.5	M06	0.5	8	●	1	
416-M08-04	4	16	11.6	13	23	40.5	M08	0.5	10	●	1	
417-M08-04	4	17	12.6	13	23	40.5	M08	0.5	10	●	1	
520-M10-04	5	20	15.5	18	23	43	M10	0.5	15	●	1	
725-M12-04	7	25	20.6	21	27	49	M12	0.5	17	●	1	
832-M16-04	8	32	27.5	29	27	52	M16	0.5	25	●	1	
TEBL 210-S06-04	2	10	5.7	9.6	15	21.3	S06	0.5	8	●	2	
312-S08-04	3	12	7.6	11.5	16	23.5	S08	0.5	10	●	2	
416-S10-04	4	16	11.6	15.2	20	31.3	S10	0.5	13	●	2	

• Da utilizzare con steli T-FLEXTEC e MAXIRUSH

Ricambi

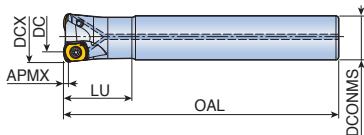
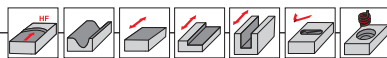
Descrizione	Vite	Chiave			
TEBL-04	TS 18041/HG	TD 6P			



TEBL-06



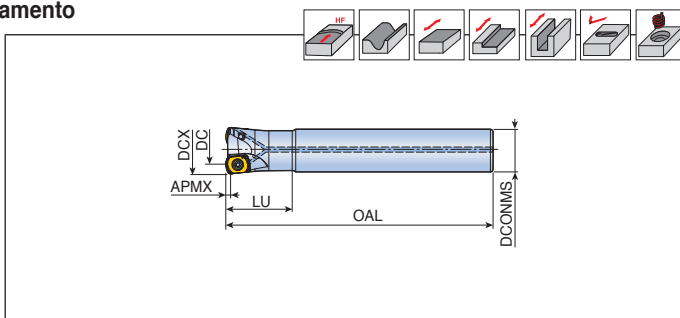
Fresa cilindrica ad alto avanzamento



Descrizione		Dimensioni (mm)						Fori refrig.	Inserto
		DCX	DC	DCONMS	OAL	LU	APMX		
TEBL 216-15-06-L150	2	16	9.4	15	150	40	0.7	●	BLMP 0603... E243
216-16-06	2	16	9.4	16	150	40	0.7	●	
216-16-06-S	2	16	9.4	16	100	30	0.7	●	
217-16-06-S	2	17	10.1	16	100	30	0.7	●	
217-16-06	2	17	10.1	16	150	40	0.7	●	
217-16-06-L200	2	17	10.1	16	200	20	0.7	●	
218-16-06	2	18	11.1	16	150	25	0.7	●	
220-20-06-L200	2	20	12.4	20	200	80	1.0	●	
320-19-06-L180	3	20	12.4	19	180	80	1.0	●	
320-20-06-S	3	20	12.4	20	130	50	1.0	●	
320-20-06	3	20	12.4	20	160	80	1.0	●	
321-20-06-S	3	21	13.4	20	150	20	1.0	●	
321-20-06-L200	3	21	13.4	20	200	20	1.0	●	
325-25-06-L220	3	25	17.3	25	220	50	1.0	●	
425-24-06-L180	4	25	17.3	24	180	60	1.0	●	
425-25-06-S	4	25	17.3	25	140	60	1.0	●	
425-25-06	4	25	17.3	25	180	60	1.0	●	
425-25-06-L250	4	25	17.3	25	250	40	1.0	●	
326-25-06-L200	3	26	18.3	25	200	30	1.0	●	
326-25-06-L250	3	26	18.3	25	250	30	1.0	●	
426-25-06-S	4	26	18.3	25	150	30	1.0	●	
426-25-06-L200	4	26	18.3	25	200	30	1.0	●	
426-25-06-L250	4	26	18.3	25	250	30	1.0	●	
530-32-06-S	5	30	22.3	32	150	70	1.0	●	
530-32-06-L200	5	30	22.3	32	200	120	1.0	●	
432-32-06-S	4	32	24.3	32	150	70	1.0	●	
532-32-06-S	5	32	24.3	32	150	70	1.0	●	
532-32-06-L200	5	32	24.3	32	200	120	1.0	●	
433-32-06-L220	4	33	25.3	32	220	40	1.0	●	
433-32-06-L300	4	33	25.3	32	300	50	1.0	●	
533-32-06-S	5	33	25.3	32	150	30	1.0	●	
533-32-06-L200	5	33	25.3	32	200	40	1.0	●	
533-32-06-L250	5	33	25.3	32	250	40	1.0	●	
435-32-06-L200	4	35	27.3	32	200	50	1.0	●	
435-32-06-L300	4	35	27.3	32	300	50	1.0	●	



Fresa cilindrica ad alto avanzamento



Descrizione		Dimensioni (mm)						Fori refrig.	Inserto
		DCX	DC	DCONMS	OAL	LU	APMX		
TEBL 535-32-06-L200	5	35	27.3	32	200	50	1.0	●	BLMP 0603...
535-32-06-L300	5	35	27.3	32	300	50	1.0	●	E243
540-32-06-L220	5	40	32.2	32	220	40	1.0	●	
640-32-06-S	6	40	32.2	32	150	40	1.0	●	
640-32-06-L220	6	40	32.2	32	220	40	1.0	●	

Ricambi

Descrizione	Vite	Chiave			
TEBL-06	TS 25064I/SG-P	TD 8P			

Condizioni di taglio

E287-E289

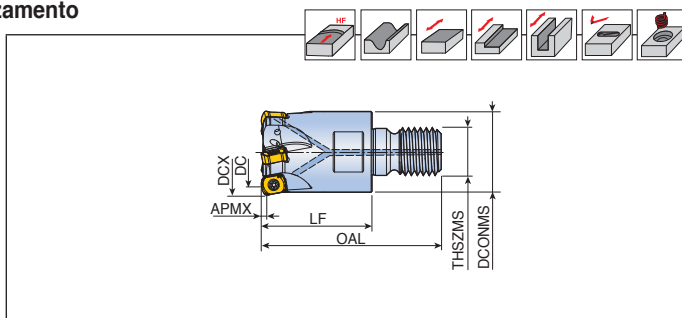
Dati di rampa

E352-E355

TEBL-M-06



Fresa modulare ad alto avanzamento



Descrizione		Dimensioni (mm)								Fori refrig.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX			
TEBL 216-M08-06	2	16	9.4	13	25	42.5	M08	0.7	●	BLMP 0603... E243	
217-M08-06	2	17	10.1	13	25	42.5	M08	0.7	●		
218-M08-06	2	18	11.1	13	25	42.5	M08	0.7	●		
220-M10-06	2	20	12.4	18	30	50	M10	1.0	●		
320-M10-06	3	20	12.4	18	30	50	M10	1.0	●		
321-M10-06	3	21	13.4	18	30	50	M10	1.0	●		
322-M10-06	3	22	14.4	18	30	50	M10	1.0	●		
325-M12-06	3	25	17.3	21	35	57	M12	1.0	●		
425-M12-06	4	25	17.3	21	35	57	M12	1.0	●		
326-M12-06	3	26	18.3	21	35	57	M12	1.0	●		
426-M12-06	4	26	18.3	21	35	57	M12	1.0	●		
530-M16-06	5	30	22.3	29	40	65	M16	1.0	●		
432-M16-06	4	32	24.3	29	40	65	M16	1.0	●		
532-M16-06	5	32	24.3	29	40	65	M16	1.0	●		
433-M16-06	4	33	25.3	29	40	65	M16	1.0	●		
533-M16-06	5	33	25.3	29	40	65	M16	1.0	●		
435-M16-06	4	35	27.3	29	43	68	M16	1.0	●		
535-M16-06	5	35	27.3	29	43	68	M16	1.0	●		
640-M16-06	6	40	32.2	29	43	68	M16	1.0	●		
542-M16-06	5	42	34.2	29	43	68	M16	1.0	●		
642-M16-06	6	42	34.2	29	43	68	M16	1.0	●		

• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			
TEBL-06	TS 250641/SG-P	TD 8P			



Fresa cilindrica ad alto avanzamento

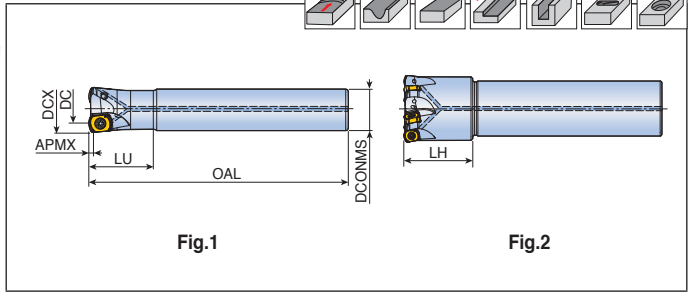
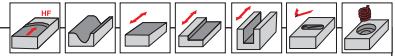


Fig.1

Fig.2

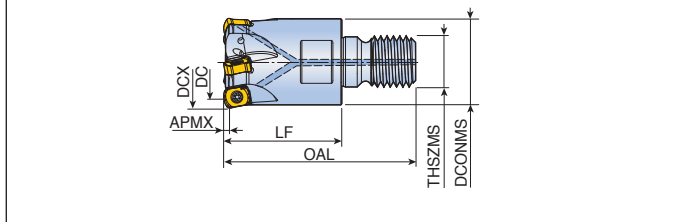
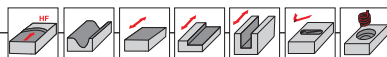
Descrizione	🌀	Dimensioni (mm)							Fori refrig.	Fig.	Inserto
		DCX	DC	DCONMS	OAL	LU	LH	APMX			
TEBL 225-25-09-L150	2	25	14.7	25	150	70	-	1.5	●	1	BLMP 0904... E243
225-25-09-L200	2	25	14.7	25	200	100	-	1.5	●	1	
325-25-09-L150	3	25	14.7	25	150	70	-	1.5	●	1	
325-25-09-L200	3	25	14.7	25	200	110	-	1.5	●	1	
326-25-09-L150	3	26	15.7	25	150	30	-	1.5	●	1	
326-25-09-L220	3	26	15.7	25	220	30	-	1.5	●	1	
330-32-09-L160	3	30	19.6	32	160	70	-	1.5	●	1	
330-32-09-L220	3	30	19.6	32	220	120	-	1.5	●	1	
332-32-09-L160	3	32	21.6	32	160	70	-	1.5	●	1	
332-32-09-L220	3	32	21.6	32	220	120	-	1.5	●	1	
432-32-09-L160	4	32	21.6	32	160	70	-	1.5	●	1	
432-32-09-L220	4	32	21.6	32	220	120	-	1.5	●	1	
433-32-09-L180	4	33	22.6	32	180	30	-	1.5	●	1	
433-32-09-L250	4	33	22.6	32	250	30	-	1.5	●	1	
440-32-09-L180	4	40	29.6	32	180	-	40	1.5	●	2	
440-32-09-L250	4	40	29.6	32	250	-	40	1.5	●	2	
540-32-09-L180	5	40	29.6	32	180	-	40	1.5	●	2	
540-32-09-L250	5	40	29.6	32	250	-	40	1.5	●	2	



TEBL-M-09



Fresa modulare ad alto avanzamento



Descrizione		Dimensioni (mm)							Fori refriger.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TEBL 225-M12-09	2	25	14.7	21	35	57	M12	1.5	●	BLMP 0904... E243
325-M12-09	3	25	14.7	21	35	57	M12	1.5	●	
326-M12-09	3	26	15.7	21	35	57	M12	1.5	●	
330-M16-09	3	30	19.6	29	43	68	M16	1.5	●	
332-M16-09	3	32	21.6	29	43	68	M16	1.5	●	
432-M16-09	4	32	21.6	29	43	68	M16	1.5	●	
433-M16-09	4	33	22.6	29	43	68	M16	1.5	●	
335-M16-09	3	35	24.6	29	43	68	M16	1.5	●	
435-M16-09	4	35	24.6	29	43	68	M16	1.5	●	
440-M16-09	4	40	29.6	29	43	68	M16	1.5	●	
540-M16-09	5	40	29.6	29	43	68	M16	1.5	●	
542-M16-09	5	42	31.6	29	43	68	M16	1.5	●	

• Da utilizzare con steli T-FLEXTEC

Ricambi

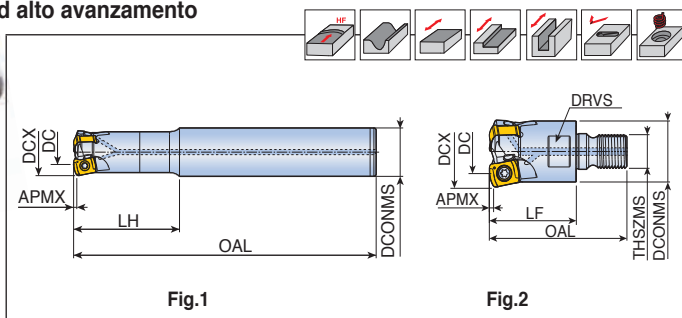
Descrizione	Vite	Chiave			
TEBL-09	TS 35A088/HG	TD 10P			



TEBL-11



Fresa cilindrica e modulare ad alto avanzamento



Descrizione	Z	Dimensioni (mm)									Fori refrig.	Fig.	Inserto
		DCX	DC	DCONMS	OAL	THSZMS	LH	LF	DRVS	APMX			
TEBL 230-32-11-L150	2	30	14.7	32	150	-	70	-	-	2.0	●	1	BLMP 1105... E243
232-32-11-L150	2	32	16.6	32	150	-	70	-	-	2.0	●	1	
232-32-11-L200	2	32	16.6	32	200	-	70	-	-	2.0	●	1	
332-32-11-L200	3	32	16.6	32	200	-	70	-	-	2.0	●	1	
233-32-11-L200	2	33	17.6	32	200	-	40	-	-	2.0	●	1	
233-32-11-L250	2	33	17.6	32	250	-	50	-	-	2.0	●	1	
333-32-11-L250	3	33	17.6	32	250	-	50	-	-	2.0	●	1	
335-32-11-L200	3	35	19.5	32	200	-	40	-	-	2.0	●	1	
340-32-11-L150	3	40	24.4	32	150	-	40	-	-	2.0	●	1	
340-32-11-L200	3	40	24.4	32	200	-	40	-	-	2.0	●	1	
TEBL 230-M16-11	2	30	14.7	29	68	M16	-	43	25	2.0	●	2	
232-M16-11	2	32	16.6	29	68	M16	-	43	25	2.0	●	2	
233-M16-11	2	33	17.6	29	68	M16	-	43	25	2.0	●	2	
335-M16-11	3	35	19.5	29	68	M16	-	43	25	2.0	●	2	
340-M16-11	3	40	24.4	29	68	M16	-	43	25	2.0	●	2	
342-M16-11	3	42	26.4	29	68	M16	-	43	25	2.0	●	2	

• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave	Manico chiave		
TEBL-11	TS 50A1211/HG	TBLD T20-W6	THND 6W		

Condizioni di taglio

E287-E289

Dati di rampa

E352-E355

TEBL-13



Fresa cilindrica e modulare ad alto avanzamento

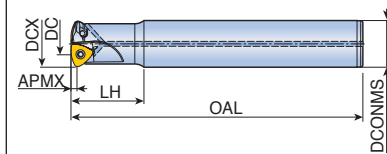
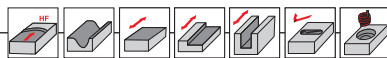


Fig.1

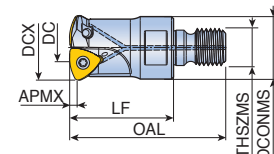


Fig.2

Descrizione		Dimensioni (mm)								Fori refrig.	Fig.	Inserto
		DCX	DC	DCONMS	OAL	THSZMS	LH	LF	APMX			
TEBL 232-32-13-L150	2	32	12.9	32	150	-	50	-	2.0	●	1	BLMP 1306... E244
232-32-13-L200	2	32	12.9	32	200	-	80	-	2.0	●	1	
232-32-13-L	2	32	12.9	32	200	-	120	-	2.0	●	1	
233-32-13-L200	2	33	14.3	32	200	-	50	-	2.0	●	1	
233-32-13-L250	2	33	14.3	32	250	-	50	-	2.0	●	1	
235-32-13-L200	2	35	16.1	32	200	-	30	-	2.0	●	1	
240-42-13-XL	2	40	20.7	42	300	-	120	-	2.0	●	1	
340-32-13-L150	3	40	20.7	32	150	-	40	-	2.0	●	1	
340-32-13-L200	3	40	20.7	32	200	-	70	-	2.0	●	1	
340-42-13-S	3	40	20.7	42	150	-	70	-	2.0	●	1	
TEBL 232-M16-13	2	32	12.9	30	75	M16	-	50	2.0	●	2	
233-M16-13	2	33	14.3	30	75	M16	-	50	2.0	●	2	
235-M16-13	2	35	16.1	30	75	M16	-	50	2.0	●	2	
340-M16-13	3	40	20.7	30	75	M16	-	50	2.0	●	2	
342-M16-13	3	42	22.6	30	75	M16	-	50	2.0	●	2	

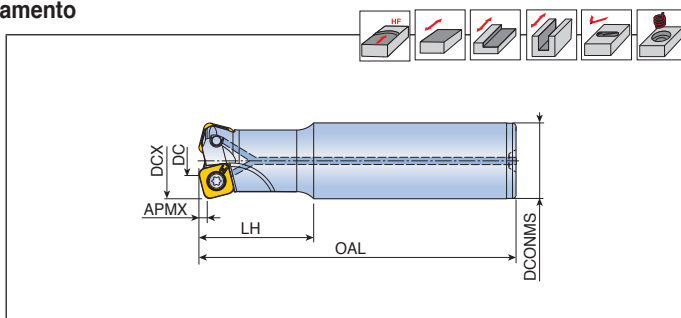
• Da utilizzare con steli T-FLEXTEC

Ricambi

Descrizione	Vite	Chiave			
TEBL-13	TS50B106I/HG	T-T20			



Fresa cilindrica ad alto avanzamento



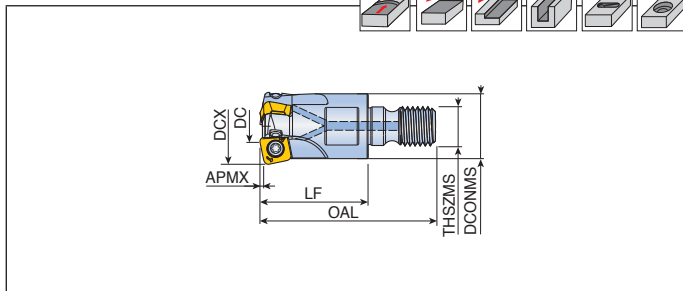
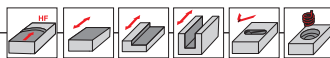
Descrizione		Dimensioni (mm)						Fori refrig.	Inserto
		DCX	DC	DCONMS	OAL	LH	APMX		
TESB 225-25-09-L150	2	25	10.8	25	150	70	1.2	●	SBMT 0904... E263
225-25-09-L200	2	25	10.8	25	200	70	1.2	●	
325-25-09-L150	3	25	10.8	25	150	70	1.2	●	
325-25-09-L200	3	25	10.8	25	200	70	1.2	●	
226-25-09-L200	2	26	11.7	25	200	30	1.2	●	
226-25-09-L250	2	26	11.7	25	250	30	1.2	●	
326-25-09-L150	3	26	11.7	25	150	30	1.2	●	
326-25-09-L200	3	26	11.7	25	200	30	1.2	●	
326-25-09-L250	3	26	11.7	25	250	30	1.2	●	
330-32-09-L200	3	30	15.5	32	200	70	1.2	●	
332-32-09-L160	3	32	17.4	32	160	70	1.2	●	
332-32-09-L200	3	32	17.4	32	200	70	1.2	●	
332-32-09-L300	3	32	17.4	32	300	70	1.2	●	
432-32-09-L160	4	32	17.4	32	160	70	1.2	●	
432-32-09-L220	4	32	17.4	32	220	70	1.2	●	
233-32-09-L250	2	33	18.4	32	250	30	1.2	●	
333-32-09-L250	3	33	18.4	32	250	30	1.2	●	
333-32-09-L300	3	33	18.4	32	300	30	1.2	●	
433-32-09-L180	4	33	18.4	32	180	30	1.2	●	
433-32-09-L250	4	33	18.4	32	250	30	1.2	●	
335-32-09-L250	3	35	20.4	32	250	30	1.2	●	
440-32-09-L250	4	40	25.4	32	250	40	1.2	●	
440-32-09-L300	4	40	25.4	32	300	40	1.2	●	
540-32-09-L180	5	40	25.4	32	180	40	1.2	●	
540-32-09-L250	5	40	25.4	32	250	40	1.2	●	
TESB 232-32-13-L150	2	32	11.6	32	150	50	2.0	●	SBMT 1306... E263
232-32-13-L200	2	32	11.6	32	200	80	2.0	●	
233-32-13-L200	2	33	12.6	32	200	30	2.0	●	
233-32-13-L250	2	33	12.6	32	250	50	2.0	●	
235-32-13-L200	2	35	14.6	32	200	30	2.0	●	
340-32-13-L150	3	40	19.5	32	150	30	2.0	●	
340-32-13-L200	3	40	19.5	32	200	30	2.0	●	
342-32-13-L200	3	42	21.5	32	200	30	2.0	●	



TESB-M-09/13



Fresa modulare ad alto avanzamento



Descrizione		Dimensioni (mm)							Fori refriger.	Inserto
		DCX	DC	DCONMS	LF	OAL	THSZMS	APMX		
TESB 225-M12-09	2	25	10.8	21	35	57	M12	1.2	●	SBMT 0904... E263
325-M12-09	3	25	10.8	21	35	57	M12	1.2	●	
332-M16-09	3	32	17.4	29	43	68	M16	1.2	●	
432-M16-09	4	32	17.4	29	43	68	M16	1.2	●	
435-M16-09	4	35	20.4	29	43	68	M16	1.2	●	
440-M16-09	4	40	25.4	29	43	68	M16	1.2	●	
540-M16-09	5	40	25.4	29	43	68	M16	1.2	●	
542-M16-09	5	42	27.4	29	43	68	M16	1.2	●	
TESB 232-M16-13	2	32	11.6	29	50	75	M16	2.0	●	SBMT 1306... E263
233-M16-13	2	33	12.6	29	50	75	M16	2.0	●	
340-M16-13	3	40	19.5	29	50	75	M16	2.0	●	
342-M16-13	3	42	21.5	29	50	75	M16	2.0	●	

• Da utilizzare con steli T-FLEXTEC

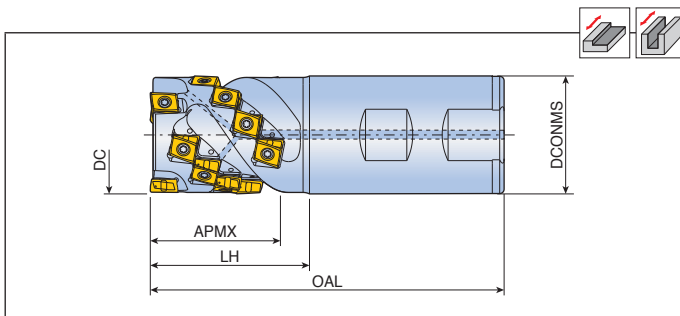
Ricambi

Descrizione	Vite	Chiave			
TESB-09	TS 35A088/HG	TD 10P	-		
TESB-13	TS 50115I	-	T-T20		



4T-TEF-05/09

Fresa cilindrica a riccio



Descrizione		N° di inserti	Dimensioni (mm)					Fori refrig.	Inserto	
			DC	DCONMS	OAL	LH	APMX			
4T-TEF D16-15-W16-05		2	8	16	16	80	28	15	●	LPK(H)U
D20-23-W20-05		3	18	20	20	85	33	23	●	0502...
D25-27-W25-05		4	28	25	25	95	35	27	●	E251
4T-TEF D25-36-W25-09		2	10	25	25	100	43	36	●	LPK(H)U
D32-36-W32-09		3	15	32	32	105	44	36	●	0904...
D32-43-W32-09		3	18	32	32	115	52	43	●	E251
D40-43-W40-09		3	18	40	40	125	54	43	●	
D40-51-W40-09		3	21	40	40	135	64	51	●	

Ricambi

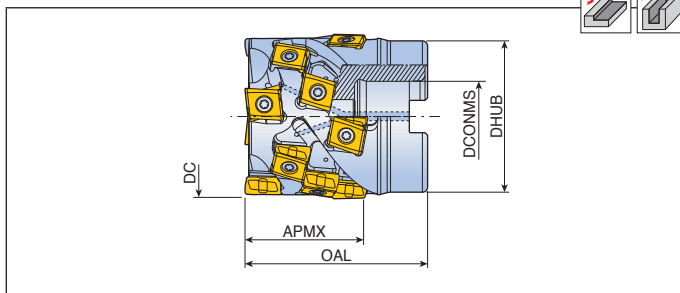
Descrizione	Vite	Chiave		Manico chiave	
4T-TEF-05	TS 180411/SG-P	TD 6P	-	-	
4T-TEF-09	TS 30D082-P	-	TBLD T08P-W4	THND 4W	

Condizioni di taglio

 E287-E289

4T-TES-14

Fresa a manicotto a riccio



Descrizione	N° di inserti	Dimensioni (mm)						Fori refriger.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX					
4T-TES D50-34-22R-14	3	9	50	22	45	55	34	●	0.5	SH M10x40	LPKU 1407... E251
D50-45-22R-14	3	12	50	22	45	65	45	●	0.6	SH M10x50	
D63-45-27R-14	4	16	63	27	58	70	45	●	1.1	SH M12x50	
D63-56-27R-14	4	20	63	27	58	80	56	●	1.3	SH M12x60	
D80-56-32R-14	5	25	80	32	74	85	56	●	2.3	SH M16x60	
D100-56-40R-14	6	30	100	40	94	90	56	●	4.1	SH M20x60	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

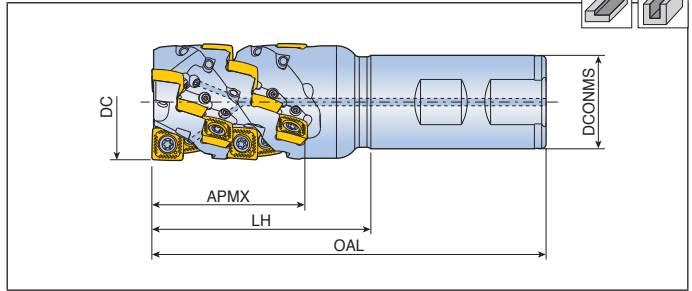
Ricambi

Descrizione	Vite	Chiave	Manico chiave		
4T-TES-14	TS 40G110I	TBLD T15-W6	SW6-T		



4S-TEF-11V

Fresa cilindrica a riccio



Descrizione		N° di inserti	Dimensioni (mm)					Fori refrig.	Inserto	
			DC	DCONMS	OAL	LH	APMX			
4S-TEF- D32-52-W32-11V-2F		2	12	32	32	135	70	52	●	SVK(H)T 1145... E274
D40-52-W32-11V-3F		3	18	40	32	135	75	52	●	
D40-60-W32-11V-3F		3	21	40	32	180	85	60	●	
D50-52-W40-11V-4F		4	24	50	40	145	75	52	●	
D50-77-W40-11V-4F		4	36	50	40	170	100	77.9	●	

Ricambi

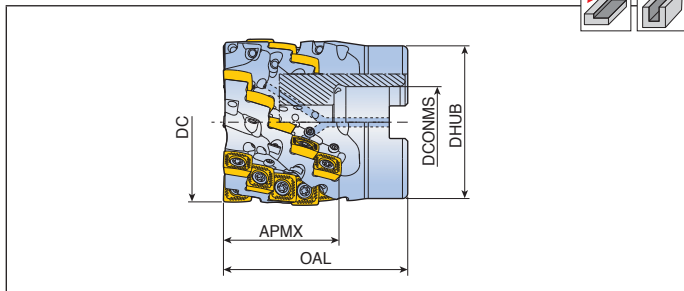
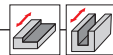
Descrizione	Vite	Chiave	Manico chiave	Grano refrigerante	
4S-TEF-11V	TS 40093I/HG	TBLD T15-W6	THND 6W	SS 3003-06C	



4S-TES-11V



Fresa a manicotto a riccio



Descrizione	N° di inserti	Dimensioni (mm)						Fori refrig.	Tipo att.	Kg	Viti di montaggio	Inserto
		DC	DCONMS	DHUB	OAL	APMX						
4S-TES-D40-27-16R-11V-3F	3	9	40	16	38	55	27	●	A	0.3	SH M8x40	SVK(H)T
D50-43-22R-11V-4F	4	20	50	22	45	65	43	●	A	0.6	SH M10x50	1145...
D50-69-22R-11V-4F	4	32	50	22	45	90	69	●	A	0.8	SH M10x80	
D63-60-27R-11V-5F	5	35	63	27	58	85	60	●	A	1.2	SH M12x60	E274
D63-69-27R-11V-5F	5	40	63	27	58	93	69	●	A	1.4	SH M12x80	
D80-76-32R-11V-6F	6	54	80	32	76	100	76	●	A	2.6	SH M16x80	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave	Manico chiave	Grano refrigerante	
	4S-TES-11V	TS 400931/HG	TBLD T15-W6	SW6-T	SS 3003-06C

Condizioni di taglio

E287-E289

Tipo di attacco

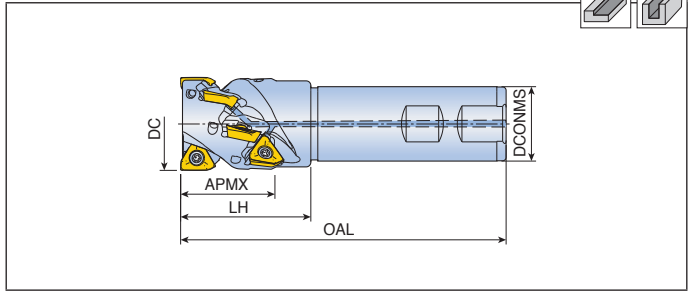
E290-E291



3P TEF-06/10/15/19



Fresa cilindrica a riccio



Descrizione	⊕	N° di inserti	Dimensioni (mm)						Fori refriger.	Inserto
			DC	DCONMS	OAL	LH	APMX			
3P TEF D20-20-W20-06	⊕	2	10	20	20	85	33	20	x	3PK(H)T 0603...
		3	18	25	25	95	39	24	●	
		4	32	32	32	105	43	32	●	
3P TEF D32-42-W32-10	⊕	2	14	32	32	120	56	42	●	3PK(H)T 1004...
		3	21	40	32	130	56	42	●	
3P TEF D40-40-W32-15	⊕	2	8	40	32	140	56	40	●	3PK(H)T 1505...
3P TEF D50-55-W40-19	⊕	2	8	50	40	150	75	55	●	3PK(H)T 1906... E227-E228

Ricambi

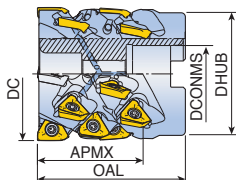
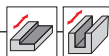
Descrizione	Vite	Chiave			
3P TEF-06	TS 200431/HG-P	TD 6P	-		
3P TEF-10	TS 25C0651/HG	TD 8	-		
3P TEF-15	TS 40B100I	TD 15	-		
3P TEF-19	TS 45120I	-	T-T20		



3P TES-10/15/19



Fresa a manicotto a riccio



Descrizione		N° di inserti	Dimensioni (mm)					Fori refrig.	Kg	Viti di montaggio	Inserto
			DC	DCONMS	DHUB	OAL	APMX				
3P TES D50-48-22R-10	4	32	50	22	45	65	48	●	0.6	SH M10x50	3PK(H)T 1004...
D63-54-27R-10	4	36	63	27	58	75	54	●	1.2	SH M12x50	
3P TES D50-40-22R-15-2F	2	8	50	22	45	65	40	●	0.6	SH M10x50	3PK(H)T 1505...
D50-40-22R-15	3	12	50	22	45	65	40	●	0.6	SH M10x50	
D63-50-27R-15	4	20	63	27	58	70	50	●	1.0	SH M12x50	
D80-60-32R-15	4	24	80	32	77	75	60	●	2.0	SH M16x50	
D100-78-40R-15-4F	4	32	100	40	96	110	78	●	5.0	SH M20x80	
3P TES D63-42-27R-19	3	9	63	27	58	70	42	●	1.0	SH M12x50	3PK(H)T 1906... E227-E228
D63-42-27R-19-4F	4	12	63	27	58	70	42	●	1.0	SH M12x50	
D80-56-32R-19	4	16	80	32	76	75	56	●	1.7	SH M16x50	
D100-83-40R-19-4F	4	24	100	40	96	110	83	●	4.4	SH M20x80	
D100-83-40R-19	5	30	100	40	96	110	83	●	4.5	SH M20x80	
D100-83-40R-19-6F	6	36	100	40	96	110	83	●	4.6	SH M20x80	

• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave			
3P TES-10	TS 25C065I/HG	TD 8	-		
3P TES-15	TS 40B100I	TD 15	-		
3P TES-19	TS 45120I	-	T-T20		

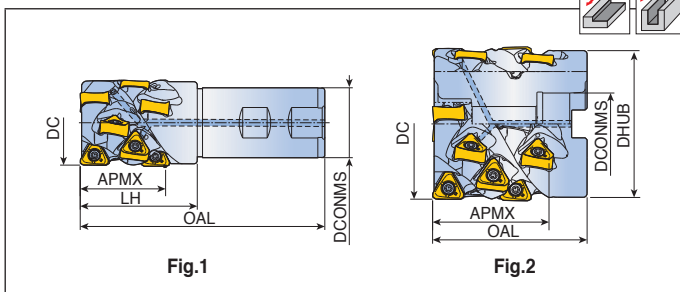
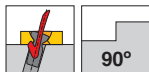
Condizioni di taglio

E287-E289

Tipo di attacco

E290-E291

Fresa a manicotto e cilindrica a riccio



Descrizione		N° di inserti	Dimensioni (mm)					Fori refrig.	Fig.	Inserto
			DC	DCONMS	OAL	LH	APMX			
TEF D50-48-W40-TN18-2F	2	8	50	40	140	67	48	●	1	TNMX
D50-48-W40-TN18	3	12	50	40	140	67	48	●	1	1806... E277

Descrizione		N° di inserti	Dimensioni (mm)					Fori refrig.		Fig.	Viti di montaggio	Inserto
			DC	DCONMS	DHUB	OAL	APMX					
TES D63-48-27R-TN18-2F	2	8	63	27	60	70	48	●	1.2	2	SH M12x50	TNMX
D63-48-27R-TN18	3	12	63	27	60	70	48	●	1.1	2	SH M12x50	1806... E277
D80-60-32R-TN18	4	20	80	32	76	80	60	●	2.2	2	SH M16x60	
D100-71-40R-TN18-4F	4	24	100	40	96	100	71	●	4.5	2	SH M20x70	
D100-71-40R-TN18	5	30	100	40	96	100	71	●	4.4	2	SH M20x70	
D100-71-40R-TN18-6F	6	36	100	40	96	100	71	●	4.4	2	SH M20x70	

Ricambi

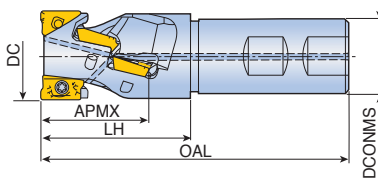
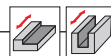
Descrizione	Vite	Chiave			
TEF/TES-TN18	TS 40B100I	T-T15			



TEF-AP(AX)



Fresa cilindrica a riccio



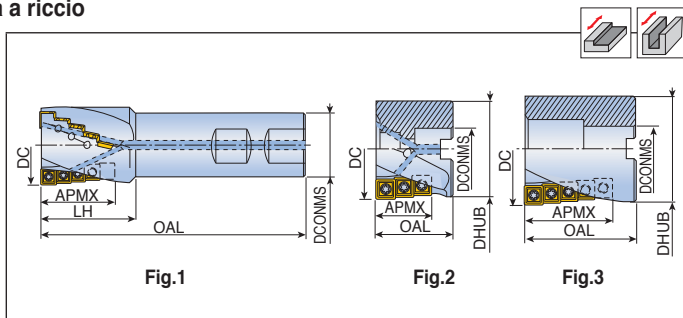
Descrizione	N° di inserti	Dimensioni (mm)							Fori refrig.	Inserto
		DC	DCONMS	OAL	LH	APMX				
TEF D16-16-W16-AX06	2	6	16	16	80	28	16	x	AXM(C)T 0602...	
D20-21-W20-AX06	3	12	20	20	85	33	21	●	E242	
D25-26-W25-AX06	4	20	25	25	95	38	26	●		
2S-TEF D20-25-W20-AP09	1	3	20	20	110	38	26	●	APK(C)T 09T3...	
D25-42-W25-AP09	2	10	25	25	115	48	42	●	E236	
D32-42-W32-AP09	2	10	32	32	120	51	42	●		
TEF D25-34-W25-AP12	2	6	25	25	120	47	34	●	APK(C)T 1204...	
D32-45-W32-AP12	2	8	32	32	120	58	45	●	E237	
D40-45-W32-AP12	3	12	40	32	140	65	45	●		
TEF D32-30-W32-AP17	2	4	32	32	120	50	30	●	APK(C)T 1705/1706...	
D40-44-W32-AP17	2	6	40	32	140	65	44	●	E238-E239	

Ricambi

Descrizione	Vite	Chiave			
TEF-AX06	TS 18041 I/HG	TD 6P			
2S-TEF-AP09	TS 25055I/HG	TD 8			
TEF-AP12(Ø16-Ø25)	TS 35A070I/HG	TD 10P			
TEF-AP12(Ø32-)	TS 35A088I/HG	TD 10P			
TEF-AP17	TS 40093I/HG	TD 15			



Fresa a manicotto e cilindrica a riccio



Descrizione		N° di inserti	Dimensioni (mm)					Fori refriger.	Fig.	Inserto
			DC	DCONMS	OAL	LH	APMX			
TEF D32-23-W32-09		2	32	32	120	40	23.8	●	1	SPMG(T) 090408-EM
D40-38-W32-11		2	40	32	130	60	38.9	●	1	SPMG(T)110408-EM
D50-48-W40-11		3	50	40	140	70	48.4	●	1	
D50-48-W42-11		3	50	42	140	70	48.4	●	1	

Descrizione		N° di inserti	Dimensioni (mm)					Fori refriger.	Fig.	Viti di montaggio	Inserto
			DC	DCONMS	DHUB	OAL	APMX				
TES D50-29-22-11		3	50	22	47.3	52	29.0	●	2	SH M10x30	SPMG(T) 110408-EM
D63-35-27-11		4	63	27	60.5	55	35.0	●	2	SH M12x35	SPMG(T)140508-EM
D80-47-32-14		4	80	32	77.2	65	47.0	●	2	SH M16x40	
D100-60-40-14		5	100	40	97.1	88	60.0	x	3	-	
TES D63-35-25.4-11		4	63	25.4	60.5	55	35.0	●	2	SH M12x35	
D80-47-31.75-14		4	80	31.75	77.2	65	47.0	●	2	SH M16x40	SPMG(T)140508-EM
D100-60-38.1-14		5	100	38.1	97.1	88	60.0	x	3	-	

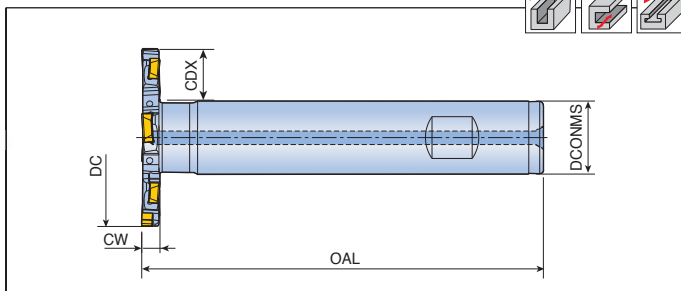
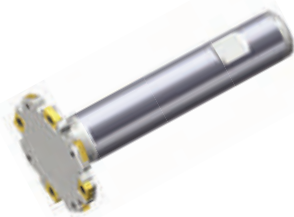
• Viti di montaggio con fori di refrigerazione sono disponibili su richiesta (esempio d'ordine: SH M10x1.5x30-C)

Ricambi

Descrizione	Vite	Chiave			
TEF (Ø32)	TS 35088I	TD 10	-		
TEF (Ø40-Ø50)	TS 40093I	TD 15	-		
TES (Ø50-Ø63)	TS 40093I	TD 15	-		
TES (Ø80-Ø100)	TS 50A121I/HG	-	T-T20		



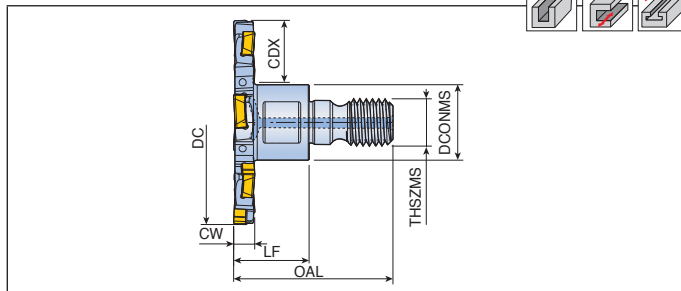
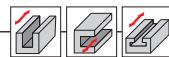
Fresa cilindrica a disco



Descrizione	CW (mm)		Dimensioni (mm)				Fori refrig.	Inserto
			DC	DCONMS	OAL	CDX		
TSM D25-03-W12-SL18	3	1+1	25	12	90	6.5	●	SLOT 018...
D32-03-W16-SL18	3	2+2	32	16	90	8.0	●	E266
D40-03-W16-SL18	3	3+3	40	16	105	12.0	●	
D50-03-W20-SL18	3	4+4	50	20	110	15.0	●	
D63-03-W20-SL18	3	5+5	63	20	110	21.5	●	
TSM D25-04-W12-SL23	4	1+1	25	12	90	6.5	●	SLOT 023...
D32-04-W16-SL23	4	2+2	32	16	90	8.0	●	E266
D40-04-W16-SL23	4	3+3	40	16	105	12.0	●	
D50-04-W20-SL23	4	4+4	50	20	110	15.0	●	
D63-04-W20-SL23	4	5+5	63	20	110	21.5	●	
TSM D25-05-W12-SL28	5	1+1	25	12	90	6.5	●	SLOT 028...
D32-05-W16-SL28	5	2+2	32	16	90	8.0	●	E266
D40-05-W16-SL28	5	3+3	40	16	105	12.0	●	
D50-05-W20-SL28	5	4+4	50	20	110	15.0	●	
D63-05-W20-SL28	5	5+5	63	20	110	21.5	●	
TSM D25-06-W12-SL33	6	1+1	25	12	90	6.5	●	SLOT 033...
D32-06-W16-SL33	6	2+2	32	16	90	8.0	●	E266
D40-06-W16-SL33	6	3+3	40	16	105	12.0	●	
D50-06-W20-SL33	6	4+4	50	20	110	15.0	●	
D63-06-W20-SL33	6	5+5	63	20	110	21.5	●	



Fresa modulare a disco



Descrizione	CW (mm)		Dimensioni (mm)						Fori refriger.	Inserto
			DC	DCONMS	LF	OAL	THSZMS	CDX		
TSM D25-03-M08-SL18	3	1+1	25	13	18	35.5	M08	6	●	SLOT 018...
D32-03-M08-SL18	3	2+2	32	13	18	35.5	M08	9	●	E266
D40-03-M08-SL18	3	3+3	40	13	18	35.5	M08	13	●	
D50-03-M10-SL18	3	4+4	50	18	18	38	M10	15	●	
D63-03-M10-SL18	3	5+5	63	18	18	38	M10	22	●	
TSM D25-04-M08-SL23	4	1+1	25	13	18	35.5	M08	6	●	SLOT 023...
D32-04-M08-SL23	4	2+2	32	13	18	35.5	M08	9	●	E266
D40-04-M08-SL23	4	3+3	40	13	18	35.5	M08	13	●	
D50-04-M10-SL23	4	4+4	50	18	18	38	M10	15	●	
D63-04-M10-SL23	4	5+5	63	18	18	38	M10	22	●	
TSM D25-05-M08-SL28	5	1+1	25	13	18	35.5	M08	6	●	SLOT 028...
D32-05-M08-SL28	5	2+2	32	13	18	35.5	M08	9	●	E266
D40-05-M08-SL28	5	3+3	40	13	18	35.5	M08	13	●	
D50-05-M10-SL28	5	4+4	50	18	18	38	M10	15	●	
D63-05-M10-SL28	5	5+5	63	18	18	38	M10	22	●	
TSM D25-06-M08-SL33	6	1+1	25	13	18	35.5	M08	6	●	SLOT 033...
D32-06-M08-SL33	6	2+2	32	13	18	35.5	M08	9	●	E266
D40-06-M08-SL33	6	3+3	40	13	18	35.5	M08	13	●	
D50-06-M10-SL33	6	4+4	50	18	18	38	M10	15	●	
D63-06-M10-SL33	6	5+5	63	18	18	38	M10	22	●	

• Da utilizzare con steli T-FLEXTEC

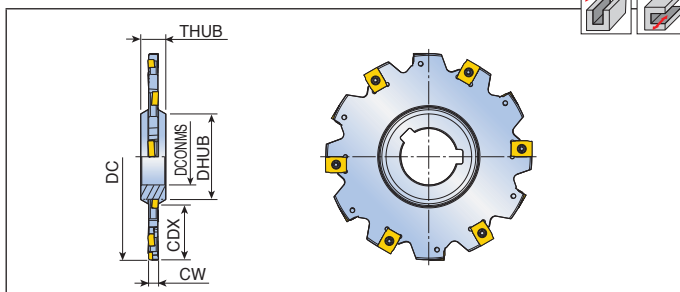
Ricambi

Descrizione	Vite	Chiave			
TSM...-03...-SL18	TS 25B024I/HG	TD 7P	L-T7P		
TSM...-04...-SL23	TS 25B031I/HG	TD 7P	L-T7P		
TSM...-05...-SL28	TS 25B042I/HG	TD 7P	L-T7P		
TSM...-06...-SL33	TS 25B053I/HG	TD 7P	L-T7P		



E287-E289

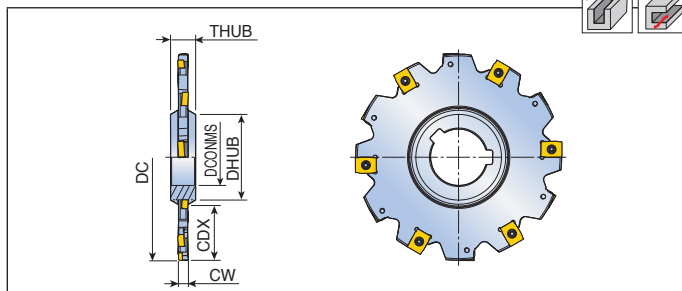
Fresa a disco



Descrizione	CW (mm)	Z	Dimensioni (mm)					Kg	Inserto
			DC	DCONMS	DHUB	THUB	CDX		
TSM 063FD-03-22N-Z018	3	4+4	63	22	34	8	12.0	0.1	ZNHT 018...
080FD-03-22N-Z018	3	5+5	80	22	34	8	20.5	0.1	E283
100FD-03-27N-Z018	3	6+6	100	27	41	12	26.0	0.2	
125FD-03-40N-Z018	3	7+7	125	40	55	12	31.5	0.3	
160FD-03-40N-Z018	3	9+9	160	40	55	12	49.0	0.4	
TSM 063FD-04-22N-Z023	4	4+4	63	22	34	8	12.0	0.1	ZNHT 023...
080FD-04-22N-Z023	4	5+5	80	22	34	8	21.0	0.1	E283
100FD-04-27N-Z023	4	6+6	100	27	41	12	27.0	0.2	
125FD-04-40N-Z023	4	7+7	125	40	55	12	32.0	0.4	
160FD-04-40N-Z023	4	9+9	160	40	55	12	50.0	0.6	
TSM 063FD-05-22N-Z028	5	4+4	63	22	34	8	13.0	0.1	ZNHT 028...
080FD-05-22N-Z028	5	5+5	80	22	34	8	21.0	0.2	E283
100FD-05-27N-Z028	5	6+6	100	27	41	12	27.0	0.3	
125FD-05-40N-Z028	5	7+7	125	40	55	12	33.0	0.4	
160FD-05-40N-Z028	5	9+9	160	40	55	12	50.0	0.7	
TSM 063FD-06-22N-Z033	6	4+4	63	22	34	8	13.0	0.1	ZNHT 033...
080FD-06-22N-Z033	6	5+5	80	22	34	8	21.5	0.2	E283
100FD-06-27N-Z033	6	6+6	100	27	41	12	27.0	0.3	
125FD-06-40N-Z033	6	7+7	125	40	55	12	33.0	0.5	
160FD-06-40N-Z033	6	9+9	160	40	55	12	50.0	0.8	
200FD-06-50N-Z033	6	10+10	200	50	69	12	63.0	1.2	
250FD-06-50N-Z033	6	12+12	250	50	69	12	88.0	2.0	
TSM 080FD-07-22N-Z038	7	4+4	80	22	34	12	20.0	0.2	ZNHT 038...
100FD-07-27N-Z038	7	5+5	100	27	41	12	26.5	0.3	E283
125FD-07-40N-Z038	7	6+6	125	40	55	12	32.0	0.5	
160FD-07-40N-Z038	7	8+8	160	40	55	12	49.5	0.8	
200FD-07-50N-Z038	7	9+9	200	50	69	12	62.5	1.3	
250FD-07-50N-Z038	7	12+12	250	50	69	12	87.5	1.9	



Fresa a disco



Descrizione	CW (mm)		Dimensioni (mm)						Inserto
			DC	DCONMS	DHUB	THUB	CDX		
TSM 080FD-08-22N-Z043	8	4+4	80	22	34	12	20.5	0.2	ZNHT 043...
100FD-08-27N-Z043	8	5+5	100	27	41	12	27.0	0.3	E283
125FD-08-40N-Z043	8	6+6	125	40	55	12	32.5	0.5	
160FD-08-40N-Z043	8	8+8	160	40	55	12	50.0	0.9	
200FD-08-50N-Z043	8	9+9	200	50	69	12	63.0	1.4	
250FD-08-50N-Z043	8	12+12	250	50	69	12	88.0	2.3	
TSM 100FD-09-27N-Z048	9	5+5	100	27	41	12	27.5	0.4	ZNHT 048...
125FD-09-40N-Z048	9	6+6	125	40	55	12	33.0	0.6	E283
160FD-09-40N-Z048	9	8+8	160	40	55	12	50.5	1.0	
200FD-09-50N-Z048	9	9+9	200	50	69	12	63.5	1.6	
250FD-09-50N-Z048	9	12+12	250	50	69	12	88.5	2.6	
TSM 100FD-10-27N-Z053	10	5+5	100	27	41	12	28.0	0.4	ZNHT 053...
125FD-10-40N-Z053	10	6+6	125	40	55	12	33.5	0.6	E283
160FD-10-40N-Z053	10	8+8	160	40	55	12	51.0	1.3	
200FD-10-50N-Z053	10	9+9	200	50	69	12	64.0	2.0	
250FD-10-50N-Z053	10	12+12	250	50	69	12	89.0	3.2	

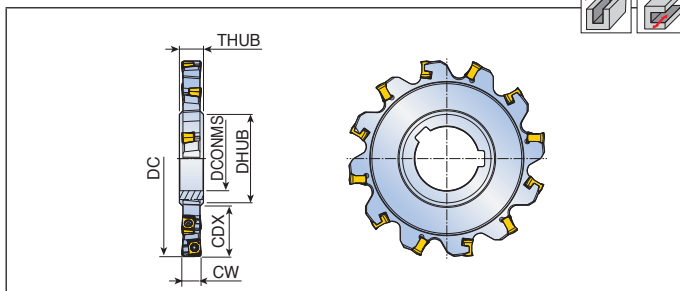
• Mandrino: SCA

Ricambi

Descrizione	Vite	Chiave		Descrizione	Vite	Chiave	
TSM-Z018	TS 25B024I/HG	TD 7P	L-T7P	TSM-Z038	TS 40K0535I	T-T15	L-T15
TSM-Z023	TS 25B031I/HG	TD 7P	L-T7P	TSM-Z043	TS 40K065I	T-T15	L-T15
TSM-Z028	TS 25B042I/HG	TD 7P	L-T7P	TSM-Z048	TS 40K075I	T-T15	L-T15
TSM-Z033	TS 25B053I/HG	TD 7P	L-T7P	TSM-Z053	TS 40K085I	T-T15	L-T15



Fresa a disco



Descrizione	CW (mm)		Dimensioni (mm)						Insero
			DC	DCONMS	DHUB	THUB	CDX		
TSM 080FD-10-27N-ZN08	10.0	4+4	80	27	41	15	15.5	0.3	ZNHU 080... ZNHU 110... E284
100FD-10-27N-ZN08	10.0	5+5	100	27	41	15	25.5	0.5	
125FD-10-40N-ZN08	10.0	6+6	125	40	55	15	31.0	0.7	
080FD-12-27N-ZN08	12.0	4+4	80	27	41	15	16.5	0.3	
100FD-12-27N-ZN08	12.0	5+5	100	27	41	15	26.5	0.5	
125FD-12-40N-ZN08	12.0	6+6	125	40	55	15	32.0	0.8	
TSM 125FD-14-40N-ZN11	14.0	6+6	125	40	55	15	34.5	0.9	
125FD-17-40N-ZN11	17.0	6+6	125	40	55	18	34.5	1.1	
125FD-20-40N-ZN11	20.0	6+6	125	40	55	20	34.5	1.3	

• Mandrino: SCA

Ricambi

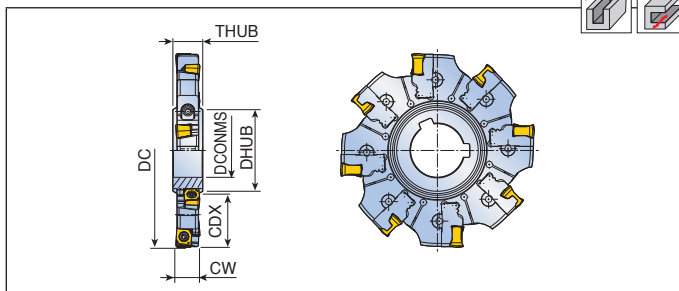
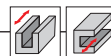
Descrizione	Vite	Chiave			
TSM...FD...-ZN08	TS 30085I/HG	TD 9	-		
TSM...FD...-ZN11	TS 40120I/HG	-	T-T15		



TSM FD-S/W-ZN08



Fresa a disco con sedi regolabili



Descrizione	CW (mm)		Dimensioni (mm)					Kg	Inserto
			DC	DCONMS	DHUB	THUB	CDX		
TSM 100FD-S-27N-ZN08	10-12	4+4	100	27	41	15	26.5	0.4	ZNHU 080...
125FD-S-40N-ZN08	10-12	5+5	125	40	55	15	31.5	0.7	E284
160FD-S-40N-ZN08	10-12	6+6	160	40	55	15	48.5	1.1	
200FD-S-50N-ZN08	10-12	8+8	200	50	69	15	61.5	1.8	
250FD-S-50N-ZN08	10-12	9+9	250	50	69	15	87.5	2.8	
100FD-W-27N-ZN08	12-14	4+4	100	27	41	15	27.0	0.5	
125FD-W-40N-ZN08	12-14	5+5	125	40	55	15	31.5	0.8	
160FD-W-40N-ZN08	12-14	6+6	160	40	55	15	49.5	1.3	
200FD-W-50N-ZN08	12-14	8+8	200	50	69	15	62.5	2.1	
250FD-W-50N-ZN08	12-14	9+9	250	50	69	15	87.5	3.4	

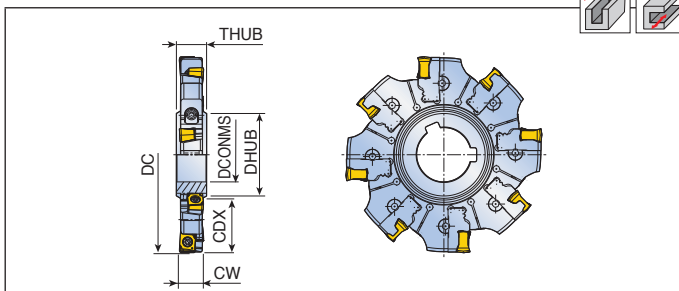
- Le frese sono impostate sulla larghezza minima di taglio a meno che non sia indicata una larghezza specifica in fase d'ordine
- Mandrino: SCA

Ricambi

Descrizione	Cartuccia destra	Cartuccia sinistra	Sottoplacchetta	Vite regolazione	Vite inserto
TSM...FD-S/W...-ZN08					
	TCT-SR-ZN08 TCT-WR-ZN08	TCT-SL-ZN08 TCT-WL-ZN08	WFZ 5	SA M8-6.0	TS 30085I/HG
	Vite sottoplac.	Chiave	Chiave cartuccia	Chiave sottoplac.	
	WS 5	TD 9	L-W 3	F-W 2.5	



Fresa a disco con sedi regolabili



Descrizione	CW (mm)		Dimensioni (mm)						Inserto
			DC	DCONMS	DHUB	THUB	CDX		
TSM 100FD-S-27N-ZN11	14-17	3+3	100	27	41	18	28.0	0.6	ZNHU 110... E284
125FD-S-40N-ZN11	14-17	4+4	125	40	55	18	31.0	1.0	
160FD-S-40N-ZN11	14-17	6+6	160	40	55	18	48.5	1.6	
200FD-S-50N-ZN11	14-17	7+7	200	50	69	18	61.5	2.6	
250FD-S-50N-ZN11	14-17	9+9	250	50	69	18	86.5	4.2	
315FD-S-60N-ZN11	14-17	12+12	315	60	85	18	110.0	6.8	
100FD-W-27N-ZN11	17-20	3+3	100	27	41	22	28.0	0.8	
125FD-W-40N-ZN11	17-20	4+4	125	40	55	22	31.0	1.2	
160FD-W-40N-ZN11	17-20	6+6	160	40	55	22	48.5	2.0	
200FD-W-50N-ZN11	17-20	7+7	200	50	69	22	61.5	3.2	
250FD-W-50N-ZN11	17-20	9+9	250	50	69	22	86.5	5.2	
315FD-W-60N-ZN11	17-20	12+12	315	60	85	22	110.0	8.5	

- Le frese sono impostate sulla larghezza minima di taglio a meno che non sia indicata una larghezza specifica in fase d'ordine
- Mandrino: SCA

Ricambi

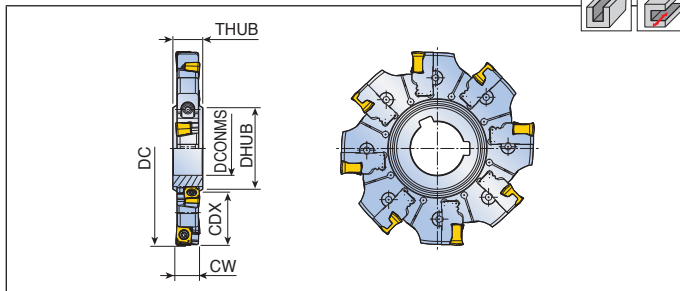
Descrizione	Cartuccia destra	Cartuccia sinistra	Sottoplacchetta	Vite regolazione	Vite inserto
TSM...FD-S/W...-ZN11					
	TCT-SR-ZN11 TCT-WR-ZN11	TCT-SL-ZN11 TCT-WL-ZN11	WFZ 6	SA M8-9.0	TS 40120I/HG
	Vite sottoplac.	Chiave	Chiave cartuccia	Chiave sottoplac.	
	WS 6	T-T15	L-W 4	T-W 3	



TSM FD-S/W-ZN14



Fresa a disco con sedi regolabili



Descrizione	CW (mm)		Dimensioni (mm)						Inserto
			DC	DCONMS	DHUB	THUB	CDX		
TSM 125FD-S-40N-ZN14	20-23	3+3	125	40	55	24.5	32.0	1.4	ZNHU 140...
160FD-S-40N-ZN14	20-23	5+5	160	40	55	24.5	49.0	2.4	E284
200FD-S-50N-ZN14	20-23	6+6	200	50	69	24.5	62.5	3.9	
250FD-S-50N-ZN14	20-23	8+8	250	50	69	24.5	87.0	6.3	
315FD-S-60N-ZN14	20-23	10+10	315	60	85	24.5	111.5	10.2	
125FD-W-40N-ZN14	23-26	3+3	125	40	55	27.5	32.0	1.6	
160FD-W-40N-ZN14	23-26	5+5	160	40	55	27.5	49.0	2.7	
200FD-W-50N-ZN14	23-26	6+6	200	50	69	27.5	62.5	4.3	
250FD-W-50N-ZN14	23-26	8+8	250	50	69	27.5	87.0	7.1	
315FD-W-60N-ZN14	23-26	10+10	315	60	85	27.5	111.5	11.6	

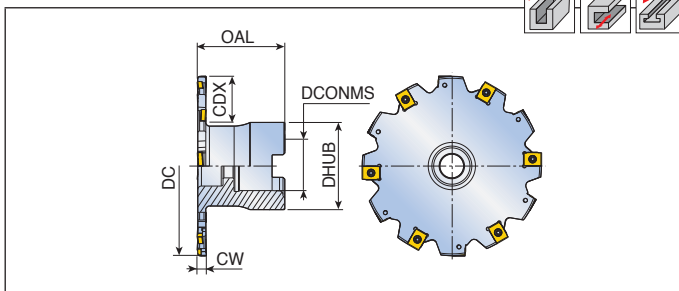
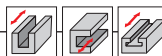
- Le frese sono impostate sulla larghezza minima di taglio a meno che non sia indicata una larghezza specifica in fase d'ordine
- Mandrino: SCA

Ricambi

Descrizione	Cartuccia destra	Cartuccia sinistra	Sottoplacchetta	Vite regolazione	Vite inserto
TSM...FD-S/W...-ZN14	TCT-SR-ZN14	TCT-SL-ZN14	WFZ 6	SA M8-9.0	TS 40120I/HG
	Vite sottoplac.	Chiave	Chiave cartuccia	Chiave sottoplac.	
	WS 6	T-T15	L-W 4	T-W 3	



Fresa a manicotto a disco



Descrizione	CW (mm)		Dimensioni (mm)					Tipo att.	Kg	Viti di serraggio	Inserto
			DC	DCONMS	DHUB	OAL	CDX				
TSM 080FF-03-22R-Z018	3	5+5	80	22	40	50	20.0	A	0.4	SH M10x35	ZNHT 018...
100FF-03-27R-Z018	3	6+6	100	27	48	50	26.0	A	0.6	SH M12x35	
080FF-04-22R-Z023	4	5+5	80	22	40	50	20.0	A	0.4	SH M10x35	ZNHT 023...
100FF-04-27R-Z023	4	6+6	100	27	48	50	26.0	A	0.6	SH M12x35	
080FF-05-22R-Z028	5	5+5	80	22	40	50	20.0	A	0.5	SH M10x35	ZNHT 028...
100FF-05-27R-Z028	5	6+6	100	27	48	50	26.0	A	0.7	SH M12x35	
080FF-06-22R-Z033	6	5+5	80	22	40	50	20.0	A	0.5	SH M10x35	ZNHT 033...
100FF-06-27R-Z033	6	6+6	100	27	48	50	26.0	A	0.7	SH M12x35	E283
125FF-06-40R-Z033	6	7+7	125	40	70	50	25.0	B	1.1	-	
160FF-06-40R-Z033	6	9+9	160	40	70	50	43.0	B	1.4	-	
080FF-07-22R-Z038	7	4+4	80	22	40	50	20.0	A	0.5	SH M10x40	ZNHT 038...
100FF-07-27R-Z038	7	5+5	100	27	48	50	25.5	A	0.7	SH M12x35	E283
125FF-07-40R-Z038	7	6+6	125	40	70	50	24.5	B	1.1	-	
160FF-07-40R-Z038	7	8+8	160	40	70	50	42.0	B	1.4	-	
080FF-08-22R-Z043	8	4+4	80	22	40	50	20.0	A	0.5	SH M10x35	ZNHT 043...
100FF-08-27R-Z043	8	5+5	100	27	48	50	25.5	A	0.8	SH M12x35	E283
125FF-08-40R-Z043	8	6+6	125	40	70	50	24.5	B	1.2	-	
160FF-08-40R-Z043	8	8+8	160	40	70	50	42.0	B	1.5	-	
100FF-09-27R-Z048	9	5+5	100	27	48	50	26.0	A	0.7	SH M12x35	ZNHT 048...
125FF-09-40R-Z048	9	6+6	125	40	70	50	24.5	B	1.2	-	E283
160FF-09-40R-Z048	9	8+8	160	40	70	50	42.0	B	1.6	-	
100FF-10-27R-Z053	10	5+5	100	27	48	50	26.0	A	0.8	SH M12x35	ZNHT 053...
125FF-10-40R-Z053	10	6+6	125	40	70	50	24.5	B	1.4	-	E283
160FF-10-40R-Z053	10	8+8	160	40	70	50	42.0	B	1.7	-	

Ricambi

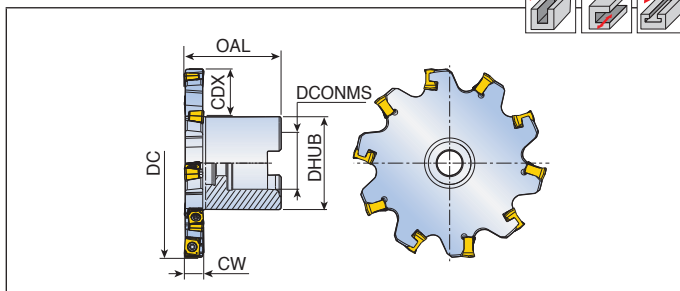
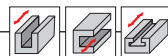
Descrizione	Vite			Chiave			Descrizione	Vite			Chiave		
TSM-Z018	TS 25B024I/HG			TD 7P		L-T7P	TSM-Z038	TS 40K0535I			T-T15		L-T15
TSM-Z023	TS 25B031I/HG			TD 7P		L-T7P	TSM-Z043	TS 40K065I			T-T15		L-T15
TSM-Z028	TS 25B042I/HG			TD 7P		L-T7P	TSM-Z048	TS 40K075I			T-T15		L-T15
TSM-Z033	TS 25B053I/HG			TD 7P		L-T7P	TSM-Z053	TS 40K085I			T-T15		L-T15



TSM FF-ZN08/11



Fresa a manicotto a disco



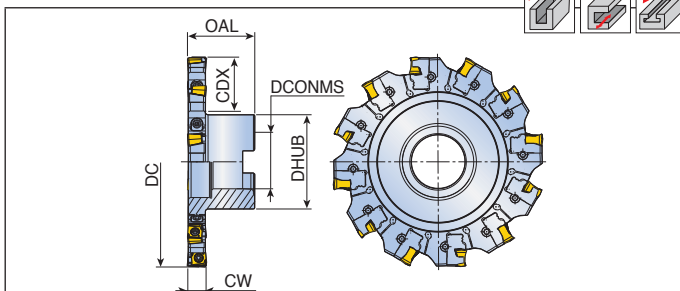
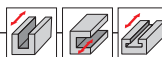
Descrizione	CW (mm)		Dimensioni (mm)					Tipo att.		Kg	Viti di serraggio	Inserto
			DC	DCONMS	DHUB	OAL	CDX					
TSM 063FF-10-22R-ZN08	10.0	3+3	63	22	40	50	15	A	0.4	SH M10x35	ZNHU 080... ZNHU 110... E284	
080FF-10-22R-ZN08	10.0	4+4	80	22	40	50	24	A	0.5	SH M10x35		
100FF-10-27R-ZN08	10.0	5+5	100	27	48	50	26	A	0.8	SH M12x35		
125FF-10-32R-ZN08	10.0	6+6	125	32	58	50	34	B	1.1	-		
063FF-12-22R-ZN08	12.0	3+3	63	22	40	50	15	A	0.4	SH M10x35		
080FF-12-22R-ZN08	12.0	4+4	80	22	40	50	24	A	0.5	SH M10x35		
100FF-12-27R-ZN08	12.0	5+5	100	27	48	50	26	A	0.9	SH M12x35		
125FF-12-32R-ZN08	12.0	6+6	125	32	58	50	34	B	1.2	-		
TSM 063FF-14-22R-ZN11	14.0	3+3	63	22	40	50	15	A	0.4	SH M10x35		
080FF-14-22R-ZN11	14.0	4+4	80	22	40	50	24	A	0.5	SH M10x35		
100FF-14-27R-ZN11	14.0	5+5	100	27	48	50	26	A	1.0	SH M12x35		
125FF-14-32R-ZN11	14.0	6+6	125	32	58	50	34	B	1.3	-		
160FF-14-40R-ZN11	14.0	6+6	160	40	70	50	43	B	2.5	-		
080FF-17-22R-ZN11	17.0	4+4	80	22	40	50	24	A	0.6	SH M10x35		
100FF-17-27R-ZN11	17.0	5+5	100	27	48	50	26	A	1.0	SH M12x35		
125FF-17-32R-ZN11	17.0	6+6	125	32	58	50	34	B	1.5	-		
080FF-20-22R-ZN11	20.0	4+4	80	22	40	50	24	A	0.7	SH M10x35		
100FF-20-27R-ZN11	20.0	5+5	100	27	48	50	26	A	1.1	SH M12x35		
125FF-20-32R-ZN11	20.0	6+6	125	32	58	50	34	B	1.6	-		

Ricambi

Descrizione	Vite	Chiave			
TSM...FF...-ZN08	TS 30085I/HG	TD 9	-		
TSM...FF...-ZN11	TS 40120I/HG	-	T-T15		



Fresa a manicotto a disco con sedi regolabili



Descrizione	CW (mm)		Dimensioni (mm)					Tipo att.	Kg	Viti di montaggio	Inserto
			DC	DCONMS	DHUB	OAL	CDX				
TSM 100FF-S-27R-ZN08	10-12	4+4	100	27	48	50	25	A	0.8	SH M12x35	ZNHU 080...
125FF-S-32R-ZN08	10-12	5+5	125	32	58	50	31.5	B	1.1	-	E284
160FF-S-40R-ZN08	10-12	6+6	160	40	70	50	43	B	1.8	-	
200FF-S-40R-ZN08	10-12	8+8	200	40	90	50	53	C	2.9	-	
100FF-W-27R-ZN08	12-14	4+4	100	27	48	50	25	A	0.9	SH M12x35	
125FF-W-32R-ZN08	12-14	5+5	125	32	58	50	31.5	B	1.2	-	
160FF-W-40R-ZN08	12-14	6+6	160	40	70	50	43	B	2.0	-	
200FF-W-40R-ZN08	12-14	8+8	200	40	90	50	53	C	3.2	-	

• Le frese sono impostate sulla larghezza minima di taglio a meno che non sia indicata una larghezza specifica in fase d'ordine

Ricambi

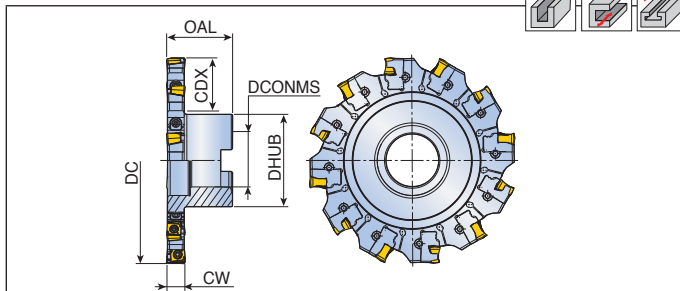
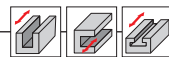
Descrizione	Cartuccia destra	Cartuccia sinistra	Sottoplacchetta	Vite regolazione	Vite inserto
TSM...FF-S/W...-ZN08					
	TCT-SR-ZN08 TCT-WR-ZN08	TCT-SL-ZN08 TCT-WL-ZN08	WFZ 5	SA M8-6.0	TS 30085I/HG
	Vite sottoplac.	Chiave	Chiave cartuccia	Chiave sottoplac.	
	WS 5	TD 9	L-W 3	F-W 2.5	

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Technical Data E299-E301
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TSM FF-S/W-ZN11



Fresa a manicotto a disco con sedi regolabili



Descrizione	CW (mm)		Dimensioni (mm)					Tipo att.	Kg	Viti di montaggio	Inserto
			DC	DCONMS	DHUB	OAL	CDX				
TSM 100FF-S-27R-ZN11	14-17	3+3	100	27	48	50	25.0	A	0.9	SH M12x35	ZNHU 110... E284
125FF-S-32R-ZN11	14-17	4+4	125	32	58	50	31.5	B	1.3	-	
160FF-S-40R-ZN11	14-17	6+6	160	40	70	50	43.0	B	2.2	-	
200FF-S-40R-ZN11	14-17	7+7	200	40	90	50	53.0	C	3.9	-	
250FF-S-60R-ZN11	14-17	9+9	250	60	130	50	55.0	C	6.2	-	
315FF-S-60R-ZN11	14-17	12+12	315	60	130	50	90.0	C	8.9	-	
100FF-W-27R-ZN11	17-20	3+3	100	27	48	50	25.0	A	1.0	SH M12x35	
125FF-W-32R-ZN11	17-20	4+4	125	32	58	50	31.5	B	1.5	-	
160FF-W-40R-ZN11	17-20	6+6	160	40	70	50	43.0	B	2.2	-	
200FF-W-40R-ZN11	17-20	7+7	200	40	90	50	53.0	C	4.1	-	
250FF-W-60R-ZN11	17-20	9+9	250	60	130	50	55.0	C	6.9	-	
315FF-W-60R-ZN11	17-20	12+12	315	60	130	50	90.0	C	10.2	-	

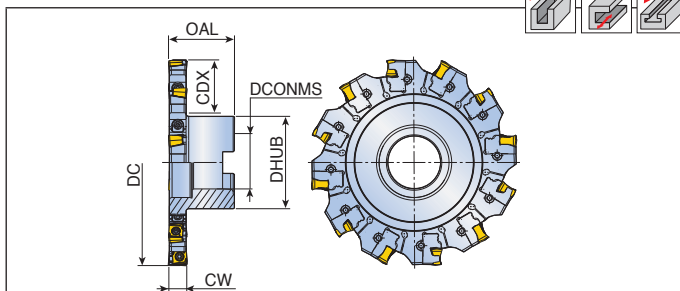
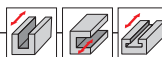
• Le frese sono impostate sulla larghezza minima di taglio a meno che non sia indicata una larghezza specifica in fase d'ordine

Ricambi

Descrizione	Cartuccia destra	Cartuccia sinistra	Sottoplacchetta	Vite regolazione	Vite inserto
TSM...FD-S/W...-ZN11					
	TCT-SR-ZN11 TCT-WR-ZN11	TCT-SL-ZN11 TCT-WL-ZN11	WFZ 6	SA M8-9.0	TS 40120I/HG
	Vite sottoplac.	Chiave	Chiave cartuccia	Chiave sottoplac.	
	WS 6	T-T15	L-W 4	T-W 3	

 Condizioni di taglio E287-E289	 Tipo di attacco E290-E291	 Technical data E299-E301
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Fresa a manicotto a disco con sedi regolabili



Descrizione	CW (mm)		Dimensioni (mm)					Tipo att.		Insero
			DC	DCONMS	DHUB	OAL	CDX			
TSM 125FF-S-32R-ZN14	20-23	3+3	125	32	58	50	32.5	B	2.6	ZNHU 140... E284
160FF-S-40R-ZN14	20-23	5+5	160	40	70	50	43.0	B	2.8	
200FF-S-40R-ZN14	20-23	6+6	200	40	90	50	53.0	C	4.6	
250FF-S-60R-ZN14	20-23	8+8	250	60	130	50	58.0	C	7.2	
315FF-S-60R-ZN14	20-23	10+10	315	60	130	50	90.0	C	11.3	
125FF-W-32R-ZN14	23-26	3+3	125	32	58	50	32.5	B	1.8	
160FF-W-40R-ZN14	23-26	5+5	160	40	70	50	43.0	B	3.0	
200FF-W-40R-ZN14	23-26	6+6	200	40	90	50	53.0	C	5.0	
250FF-W-60R-ZN14	23-26	8+8	250	60	130	50	58.0	C	7.5	
315FF-W-60R-ZN14	23-26	10+10	315	60	130	50	90.0	C	12.2	

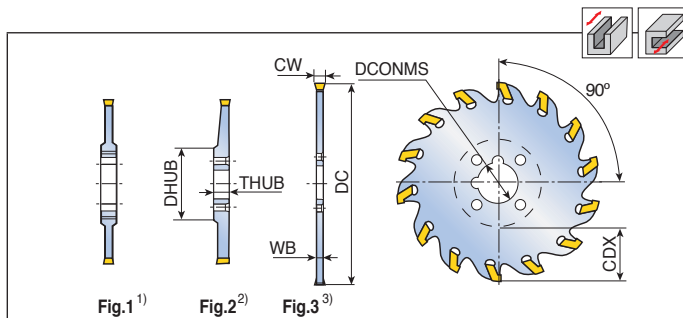
• Le frese sono impostate sulla larghezza minima di taglio a meno che non sia indicata una larghezza specifica in fase d'ordine

Ricambi

Descrizione	Cartuccia destra	Cartuccia sinistra	Sottoplacchetta	Vite regolazione	Vite inserto
TSM...FD-S/W...-ZN14	TCT-SR-ZN14	TCT-SL-ZN14	WFZ 6	SA M8-9.0	TS 40120I/HG
	Vite sottoplac.	Chiave	Chiave cartuccia	Chiave sottoplac.	
	WS 6	T-T15	L-W 4	T-W 3	



Fresa a disco



Descrizione	CW (mm)		Dimensioni (mm)						Fig.	Sede inserto	Inserto
			DC	DCONMS	DHUB	WB	THUB	CDX			
TSC 75 1.6 22A	1.6	8	75	22.0	39	1.24	2.4	18	1	1	TIMC TIMJ TIPV E275-E276
100 1.6 22A	1.6	10	100	22.0	39	1.24	2.4	30	1	1	
125 1.6 27A	1.6	12	125	27.0	64	1.24	2.4	30	1	1	
75 2 22A	2.0-2.3	8	75	22.0	39	1.6	2.4	18	1	2	
100 2 22A	2.0-2.3	10	100	22.0	39	1.6	2.4	30	1	2	
125 2 27A	2.0-2.3	12	125	27.0	64	1.6	2.4	30	1	2	
100 2.4 22K	2.3-2.5	10	100	22.0	46	1.9	2.4	26	2	2	
125 2.4 32K	2.3-2.5	12	125	32.0	55	1.9	2.4	34	2	2	
160 2.4 32K	2.3-2.5	16	160	32.0	55	1.9	2.4	52	2	2	
100 3 22K	2.8-3.58	6	100	22.0	-	2.4	-	26	3	4	
125 3 32K	2.8-3.53	8	125	32.0	-	2.4	-	34	3	4	
160 3 40K	2.8-3.53	10	160	40.0	-	2.4	-	39	3	4	
100 4 22K	3.54-4.52	6	100	22.0	-	3.2	-	27	3	4	
125 4 32K	3.54-4.52	8	125	32.0	-	3.2	-	34	3	4	
160 4 40K	3.54-4.52	10	160	40.0	-	3.2	-	39	3	4	

• ¹⁾Chiave guida, ²⁾Flangia guida, ³⁾Flangia + gambo guida

Ricambi

Descrizione	Set flangia guida	Gambo guida		
TSC-2.4-22K	TR22-46	-		
TSC-2.4-32K	TR32-55	-		
TSC-22K	TR22-46	TW32-40		
TSC-32K	TR32-55	T32-55		
TSC-40K	TR40-80	T40-80		

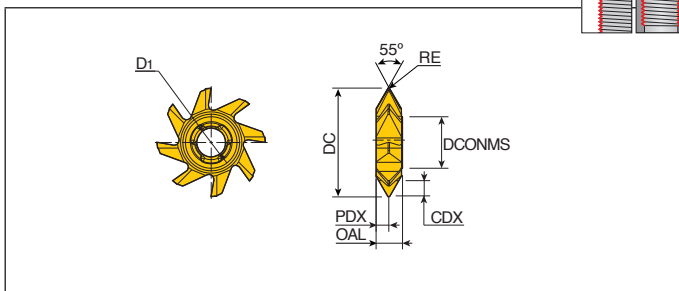


- L'estrattore (ESG 0.5 o ESG 1) è fornito con ogni utensile
- Il set di flange deve essere ordinato separatamente.

TR-T-W55



Testine intercambiabili in metallo duro per filettatura - 55° profilo parziale



Descrizione	TPI	Dimensioni (mm)									Grado TT5525
		DC	DMIN	PDX	RE	D1	CDX	OAL	ZEFP	DCONMS	
TR13-T-24.7-W55-3T	5-3	24.7	36	2.2	0.5	7.5	3.5	7.7	6	13	●
15-T-31.7-W55-4T	6-4	31.7	46	3.7	0.5	8.4	4.7	7.7	8	15	●
17-T-39.7-W55-3T	4-3	39.7	57	4.5	0.8	9.8	6.2	9.5	10	17	●

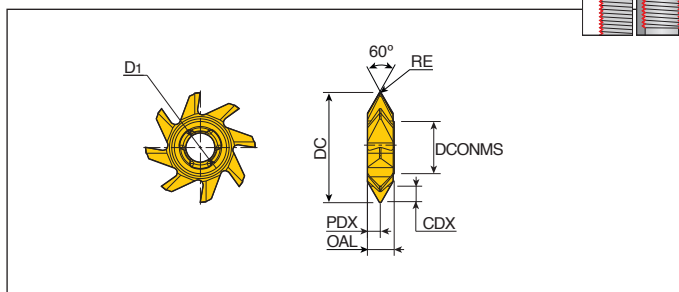
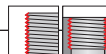
- TPI: filetti per pollice
- ZEFP: taglienti effettivi

●: Standard

TR-T-M60



Testine intercambiabili in metallo duro per filettatura - 60° profilo parziale



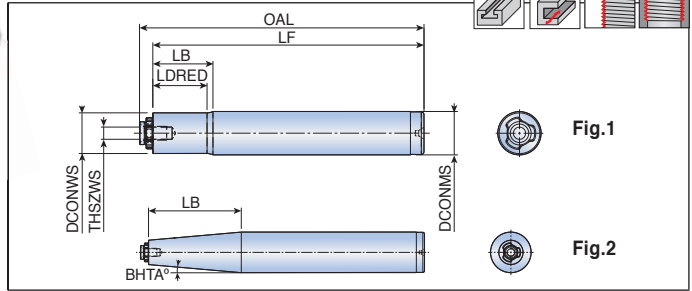
Descrizione	TP (mm)	TPI	Dimensioni (mm)									Grado TT5525
			DC	DMIN	PDX	RE	D1	CDX	OAL	ZEFP	DCONMS	
TR13-T-24.7-M60-5P	3-5	5-3	24.7	36	2.2	0.2	7.5	3.5	7.7	6	13	●
15-T-31.7-M60-6P	4-6	6-4	31.7	46	3.7	0.3	8.4	4.7	7.7	8	15	●
17-T-39.7-M60-8P	6-8	4-3	39.7	57	4.5	0.4	9.8	6.2	9.5	10	17	●

- TP: passo filetto, TPI: filetti per pollice
- ZEFP: taglienti effettivi

●: Standard



Stelo di scanalatura e filettatura



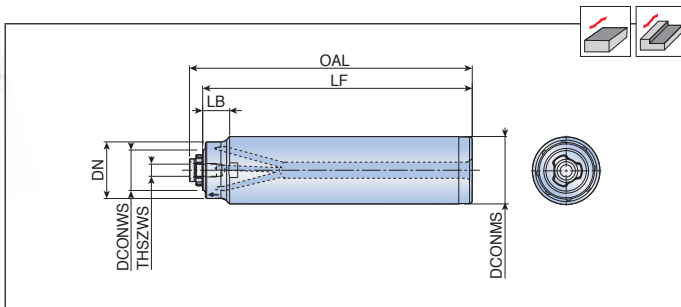
Descrizione	Dimensioni (mm)								Fori refrig.	Fig.	Inserto
	DCONMS	DCONWS	LB	LF	OAL	THSZWS	LDRED	BHTA°			
TR13-16-L100	16	13	16.6	100	104.35	M4x0.5	13.0	-	x	1	TR-S.. TR-T.. E216, E218
15-16-L100	16	15	18.2	100	104.90	M5x0.5	16.0	-	x	1	
15-16-L130	16	15	18.2	130	134.90	M5x0.5	16.0	-	x	1	
17-20-L140	20	17	23.8	140	146.00	M6x0.5	20.2	-	x	1	
15-25-TC170	25	15	57.2	170	174.90	M5x0.5	-	5	x	2	

Ricambi

Descrizione	Vite	Chiave	Manico chiave		
TR13	TS 40T098/HG-P	BLD IP15/S7	SW6-T		
TR15	TS 50T110/HG-P	BLD IP20/S7	SW6-T		
TR17	TS 60T130/HG-P	BLD IP20/S7	SW6-T		

TR-F-C

Stelo di spianatura



Descrizione	Dimensioni (mm)							Fori refriger.	Inserto
	DCONMS	DCONWS	LB	LF	OAL	THSZWS	DN		
TR13-20-L100-F-C	20	13	10	100	104.35	M4x0.5	16	●	TR-F....
13-25-L100-F-C	25	13	12.5	100	104.35	M4x0.5	16	●	E217
15-25-L100-F-C	25	15	10	100	104.90	M5x0.5	21	●	
15-32-L110-F-C	32	15	13.5	110	114.90	M5x0.5	21	●	
17-32-L140-F-C	32	17	10	140	146.00	M6x0.5	28	●	
17-42-L140-F-C	42	17	15	140	146.00	M6x0.5	28	●	

Ricambi

Descrizione	Vite	Chiave	Manico chiave		
TR13	TS 40T098/HG-P	BLD IP15/S7	SW6-T		
TR15	TS 50T110/HG-P	BLD IP20/S7	SW6-T		
TR17	TS 60T130/HG-P	BLD IP20/S7	SW6-T		

Inserti per fresatura



Sistema di codifica inserti



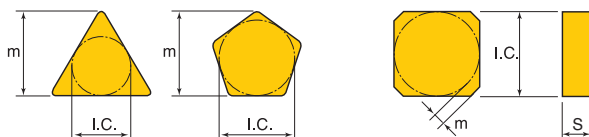
1 Forma

											Speciale
A	B	C	H	L	O	P	R	S	T	W	X

2 Angolo di spoglia

B	C	D	E	F	G	N	P
5°	7°	15°	20°	25°	30°	0°	11°

3 Tolleranza



Classe	Tolleranza (mm)			I.C. Dimensioni (mm)					
	m	S	I.C.	6.35	9.52	12.70	15.87	19.05	25.40
A	±0.005	±0.025	±0.025	•	•	•	•	•	•
E	±0.025	±0.025	±0.025	•	•	•	•	•	•
F	±0.005	±0.025	±0.013	•	•	•	•	•	•
G	±0.025	±0.130	±0.025	•	•	•	•	•	•
H	±0.013	±0.025	±0.013	•	•	•	•	•	•
K	±0.013	±0.025	±0.05	•	•				
			±0.08			•			
			±0.10				•	•	
			±0.13						•
M	±0.130	±0.130	±0.05	•	•				
			±0.08			•			
			±0.10				•	•	
			±0.13						•

4 Tipologia

								Speciale
A	F	G	M	N	R	T	W	X

Sistema di codifica inserti



5 Lunghezza del tagliente

I.C.(mm)	C	R,S	T	H	O
	5.56				
6.35	06	06	11		
7.94	08		13		
9.52	09	09	16		
12.70	12	12	22	05	05
15.87	16	15	27	09	
25.40	25	25			

6 Spessore (mm)

01	1.59
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

7 Raggio (mm)

02R	0.2
04R	0.4
05R	0.5
08R	0.8
10R	1.0
12R	1.2
15R	1.5
16R	1.6
24R	2.4
32R	3.2
40R	4.0

7 Tratto parallelo

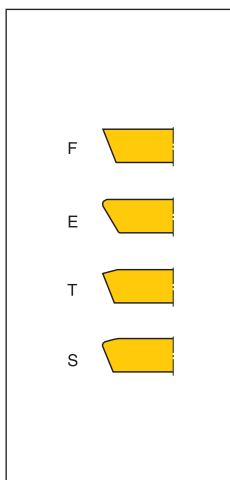
A = 45° D = 60°
E = 75° F = 85°
P = 90° Z = Speciale

Angolo di attacco

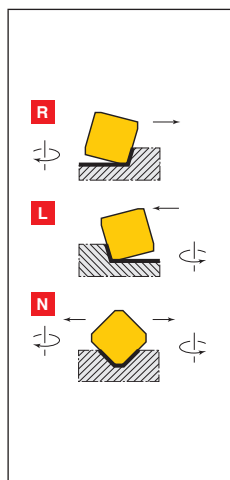
B = 5° F = 25°
C = 7° G = 30°
D = 15° N = 0°
E = 20° P = 11°
Z = Speciale

Angolo di spoglia del wiper

8 Prep. tagliente



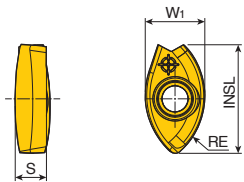
9 Direzione di taglio



10 Opzioni del costruttore

AL	Alluminio
WC	Raschiante
MR	Medio sgross.
M	Medio
L	Leggero
ML	Medio leggero
E□□	Economico

Inserti



Misura	Dimensioni (mm)					
	INSL	W1	S	APMX	RE	
160-M	12.4	6.8	3.7	8.0	8.0	
200-M	14.9	8.2	4.8	10.0	10.0	
250-M	18.9	10.2	5.9	12.5	12.5	
300-M	22.1	11.8	6.9	15.0	15.0	
320-M	23.9	12.8	7.5	16.0	16.0	



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	2FB 160-M	2.0-6.5	0.30-0.07	●		●	●	●						
	200-M	3.0-8.0	0.35-0.08	●		●	●	●				●		
	250-M	3.5-10.0	0.35-0.08	●		●	●					●		
	300-M	4.0-12.5	0.40-0.08	●		●	●					●		
	320-M	4.5-13.0	0.40-0.08	●		●	●					●		
	2FB 160-ML	2.0-6.5	0.28-0.05	●		●	●							
	200-ML	3.0-8.0	0.32-0.07	●		●	●							
	250-ML	3.5-10.0	0.32-0.07	●		●	●							

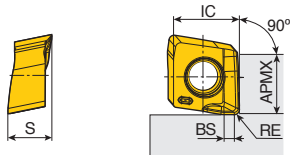
● : Standard



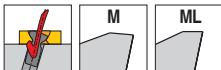
2PKT



Inserti



Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
05	5.17	3.4	4.7	0.4-0.8	0.4-1.6	
07	6.74	4.4	6.0	0.85	0.8	



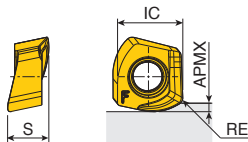
Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510			K10	
	2PKT 050304R-M	0.5-4.2	0.18-0.06	●	●				●	●	●				
	050308R-M	0.5-4.2	0.18-0.06	●	●				●	●	●				
	050316R-M	0.5-4.2	0.18-0.06	●	●				●	●	●				
	070408R-M	0.6-5.4	0.25-0.07	●	●										
	2PKT 050304R-ML	0.5-4.2	0.12-0.02	●	●					●					
	050308R-ML	0.5-4.2	0.18-0.06	●	●				●	●					
	050316R-ML	0.5-4.2	0.18-0.06	●	●				●	●					

● : Standard

2PKT-HF



Inserti ad alto avanzamento



Misura	Dimensioni (mm)					
	IC	S	APMX	RE		
05	5.12	3.2	0.5	0.5		
07	6.78	4.06	0.8	0.85		

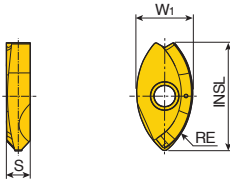


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510			K10	
	2PKT 0503R-HF	0.2-0.5	1.0-0.5	●	●										
	0704R-HF	0.3-0.8	1.2-0.6	●							●				

● : Standard



Inserti



Misura	Dimensioni (mm)					
	INSL	W1	S	APMX	RE	
320C-M	23	12.0	5.2	16	16	
500C-M	36	18.6	7.0	25	25	
320P-M	21	9.9	5.2	16	16	
500P-M	32.9	15.3	7.0	25	25	



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	3FB 320C-M	4.5-13.0	0.15-0.08	●		●						●	
	500C-M	7.5-20.0	0.30-0.15	●		●		●				●	
	3FB 320P-M	4.5-13.0	0.15-0.08	●		●						●	
	500P-M	7.5-20.0	0.30-0.08	●		●						●	

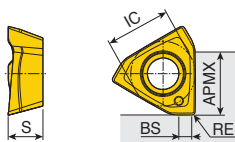
● : Standard



3PK(H)T



Inserti



Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
04	3.9	2.1	3.5	0.5-0.7	0.2-0.4	
06	5.3	2.8	4.7	0.6-1.2	0.2-0.8	
10	6.9	4.0	7.0	0.5-1.3	0.4-1.6	
15	10.7	5.0	11.0	0.5-2.0	0.4-2.4	
19	13.5	6.0	15.0	0.5-2.0	0.4-3.2	



Inserto	Descrizione	Condizioni di taglio raccomandate		Cermet								Rivestito		Non rivestito		
		ap (mm)	Avanz. (mm/z)	CT7000	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10			
	3PKT 040202R-M	0.5-3.0	0.08-0.04		●	●										
	040204R-M	0.5-3.0	0.08-0.04		●	●										
	060302R-M	1.0-4.0	0.10-0.04		●	●	●						●			
	060304R-M	1.0-4.0	0.10-0.04		●	●	●						●	●		
	060308R-M	1.0-4.0	0.10-0.04		●	●	●						●	●		
	100404R-M	2.0-6.0	0.12-0.05		●	●	●		●	●	●	●				
	100408R-M	2.0-6.0	0.12-0.05		●	●	●		●	●	●	●				
	100416R-M	2.0-6.0	0.12-0.05		●									●		
	150508R-M	3.0-9.0	0.17-0.07		●	●	●	●	●	●	●	●				
	150516R-M	3.0-9.0	0.17-0.07		●				●					●		
	150524R-M	3.0-12.0	0.17-0.07		●									●		
	190608R-M	4.5-12.0	0.22-0.09		●	●	●	●	●	●	●	●				
	190616R-M	4.5-12.0	0.22-0.09		●	●	●		●					●		
	190624R-M	4.5-12.0	0.22-0.09		●									●		
190632R-M	4.5-12.0	0.22-0.09		●									●			
	3PHT 100404R-M	2.0-6.0	0.12-0.05	●	●								●			
	100408R-M	2.0-6.0	0.12-0.05	●	●											
	150504R-M	3.0-9.0	0.17-0.07		●											
	150508R-M	3.0-9.0	0.17-0.07	●	●											
	150516R-M	3.0-9.0	0.17-0.07	●	●									●		
	190608R-M	4.5-12.0	0.22-0.09	●	●											
	3PKT 100404R-ML	2.0-6.0	0.10-0.04		●	●	●						●			
	100408R-ML	2.0-6.0	0.10-0.04		●	●	●									
	150508R-ML	3.0-9.0	0.12-0.05		●	●	●						●			
	190608R-ML	4.5-12.0	0.14-0.06		●	●	●						●			
	3PHT 100408R-ML	2.0-6.0	0.10-0.04		●	●										
	150508R-ML	3.0-9.0	0.12-0.05		●	●										
	3PHT 060304R-AL	1.0-4.0	0.22-0.07												●	
	100404R-AL	2.0-6.0	0.40-0.10												●	
	100408R-AL	2.0-6.0	0.40-0.10												●	
	150504R-AL	3.0-9.0	0.50-0.10												●	
	150508R-AL	3.0-9.0	0.50-0.10												●	
	190604R-AL	4.5-12.0	0.50-0.15												●	
190608R-AL	4.5-12.0	0.50-0.15												●		

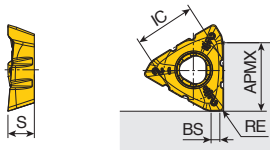
●: Standard



3PKT-SM



Inserti splitter



Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
15	10.7	5.0	11.0	1.6	0.8	
19	13.5	6.0	15.0	2.0	0.8	



Inserto	Descrizione	Condizioni di taglio raccomandate		Cermet							Rivestito		Non rivestito	
		ap (mm)	Avanz. (mm/z)	CT7000	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	3PKT 150508-SM2	3.0-9.0	0.17-0.07		●	●		●					●	
	190608-SM2	4.5-12.0	0.22-0.09		●	●		●					●	
	3PKT 150508-SM3	3.0-9.0	0.17-0.07		●	●		●					●	
	190608-SM3	4.5-12.0	0.22-0.09		●	●		●					●	

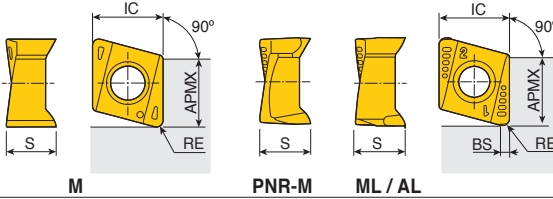
● : Standard



4NK(H)T



Inserti



Misura	Dimensioni (mm)				
	IC	S	APMX	BS	RE
04	4.0	3.1	3.5	-	0.2-0.8
06	6.6	4.2-5.0	5.8-6.2	0.6-1.0	0.4-2.0
09	8.6	5.7-6.3	8.0	0.8-1.2	0.4-1.6
11	10.7	8.1	10.5	1.0	0.8
14	14.0	9.2-9.4	13.5-13.8	1.25	0.8



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	4NKT 040202R-M	0.5-3.0	0.08-0.04	●	●								
	4NKT 040204R-M	1.0-3.0	0.12-0.06	●	●					●			
	4NKT 040208R-M	1.0-3.0	0.12-0.06	●	●								
	4NKT 060304R-M	0.5-5.0	0.15-0.07	●	●					●			
	4NKT 060308R-M	1.0-5.0	0.15-0.07	●	●				●	●	●		
	4NKT 060312R-M	1.0-5.0	0.15-0.07	●	●								
	4NKT 060316R-M	2.0-4.5	0.15-0.07	●	●				●	●	●		
	4NKT 060320R-M	2.0-4.5	0.15-0.07	●	●								
	4NKT 090408R-M	2.5-7.0	0.15-0.07	●	●				●	●	●		
	4NKT 090416R-M	2.5-7.0	0.15-0.07	●	●					●			
	4NKT 110608R-M	3.5-10.0	0.18-0.09	●	●					●			
4NKT 140708R-M	4.0-12.0	0.18-0.09	●	●		●	●		●				
	4NKT 110608 PNR-M	3.5-10.0	0.18-0.09	●	●		●						
	4NKT 140708 PNR-M	4.0-12.0	0.18-0.09	●	●		●						
	4NKT 060304R-ML	0.5-5.0	0.10-0.05	●	●					●			
	4NKT 060308R-ML	1.0-5.0	0.10-0.05	●	●				●	●			
	4NKT 060312R-ML	1.0-5.0	0.10-0.05	●	●					●			
	4NKT 060316R-ML	2.0-4.5	0.10-0.05	●	●				●	●			
	4NKT 060320R-ML	2.0-4.5	0.12-0.05	●	●					●			
	4NHT 060304R-ML	0.5-5.0	0.13-0.05	●									
	4NHT 060308R-ML	1.0-5.0	0.13-0.05	●	●								
	4NHT 090404R-ML	2.5-7.0	0.10-0.04	●									
	4NHT 090408R-ML	2.5-7.0	0.10-0.04	●	●								
	4NHT 060304R-AL	1.0-5.0	0.40-0.10									●	
	4NHT 060308R-AL	1.0-5.0	0.40-0.10									●	
	4NHT 090404R-AL	2.5-7.0	0.50-0.10									●	
	4NHT 090408R-AL	2.5-7.0	0.50-0.10									●	

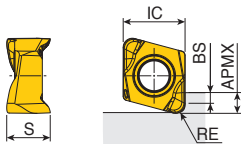
●: Standard



4NHT 06-F



Inserti



Misura	Dimensioni (mm)				
	IC	S	APMX	BS	RE
05R	6.6	4.9	2.3	1.8	0.5
10R	6.6	4.7	2.1	1.1	1.0
15R	6.6	4.5	3.3	1.8	1.5
20R	6.6	4.3	3.0	1.1	2.0



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510		K10
	4NHT 060305R-F	0.2-2.0	1.15-0.07	●							●		
	060310R-F	0.2-1.8	1.15-0.07	●							●		
	060315R-F	0.2-3.0	1.15-0.07	●							●		
	060320R-F	0.2-2.7	1.15-0.07	●							●		

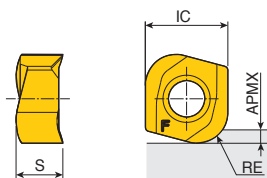
● : Standard



4NKT-HF



Inserti ad alto avanzamento



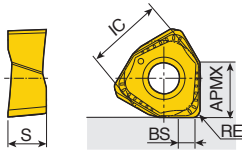
Misura	Dimensioni (mm)			
	IC	S	APMX	RE
04-HF	4.0	2.65	0.5	1.2
06-HF	6.6	3.85	1.0	2.0
09-HF	8.6	4.76	1.5	3.2
11-HF	10.7	6.56	2.0	4.0
14-HF	14.0	7.34	3.0	5.0

Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito	
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8525B	TT7515	TT7080	TT6080	TT2510		K10
	4NKT 040212R-HF	0.2-0.4	0.60-0.10	●							●	
	060320R-HF	0.2-0.6	0.80-0.20	●	●						●	
	090432R-HF	0.3-0.8	1.00-0.20	●								
	110640R-HF	0.3-1.2	1.20-0.30	●								
	140750R-HF	0.3-1.5	1.50-0.30	●								

● : Standard



Inserti



Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
06	9.26	4.76	6.2	1.2-2.4	0.4-1.6	
09	13.05	6.70	9.2	1.2-2.2	0.4-1.6	



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito	
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510		K10
	6NGU 060404R-M	1.5-5.0	0.15-0.08	●	●			●		●	●		
	060405R-M	1.5-5.0	0.15-0.08	●							●		
	060408R-M	1.5-5.0	0.15-0.08	●	●	●	●	●		●	●		
	060410R-M	1.5-5.0	0.15-0.08	●						●	●		
	060416R-M	1.5-5.0	0.15-0.08	●	●			●		●	●		
	090504R-M	2.5-7.5	0.20-0.10	●	●			●		●	●		
	090508R-M	2.5-7.5	0.20-0.10	●	●	●	●	●	●	●	●		
	090516R-M	2.5-7.5	0.20-0.10	●	●			●	●	●	●		
	6NGU 060404R-ML	1.5-5.0	0.10-0.05	●	●					●			
	060405R-ML	1.5-5.0	0.10-0.05	●									
	060408R-ML	1.5-5.0	0.10-0.05	●	●	●		●		●			
	060416R-ML	1.5-5.0	0.10-0.05	●	●					●			
	090504R-ML	2.5-7.5	0.10-0.05	●	●					●			
	090508R-ML	2.5-7.5	0.10-0.05	●	●	●		●		●			
	090516R-ML	2.5-7.5	0.10-0.05	●	●					●			
		6NGU 060404R-AL	1.5-5.0	0.40-0.10									
060408R-AL		1.5-5.0	0.40-0.10										●
090504R-AL		2.5-7.5	0.40-0.10										●
090508R-AL		2.5-7.5	0.40-0.10										●

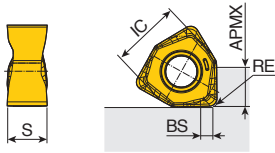
● : Standard



6NKU 04




Inserti



Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
04	7	3.9	4.1	0.85-1.25	0.4-0.8	



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	6NKU 040304R-M	1.0-3.0	0.10-0.05	●	●					●	●		
	040308R-M	1.0-3.0	0.10-0.05	●	●					●	●		

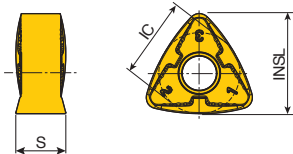
● : Standard



6RBE




Inserti



Misura	Dimensioni (mm)			
	IC	S	INSL	
6RBE 50	13	8	16	

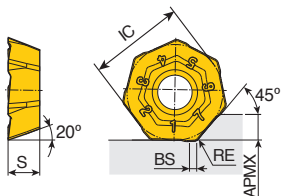


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	6RBE 50-M	1.0-5.0	0.80-0.10	●		●	●	●			●	●	
	50-MR	1.0-5.0	0.80-0.10	●							●		

● : Standard



Inserti



Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
06	12.8	4.2	3.2	1.0	0.8	



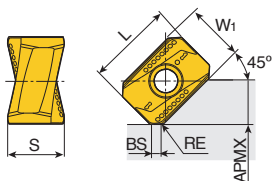
Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito						Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	7EMT 0604 AETR-M	2.5	0.15-0.06	●	●			●		●			
	7EMT 0604 AETR-ML	2.5	0.15-0.06	●	●					●			



● : Standard

ANHX 1607 ANR-M

Inserti



Misura	Dimensioni (mm)					
	L	W1	S	APMX	BS	RE
16	16	11	10.4	8.4	1.6	1.0



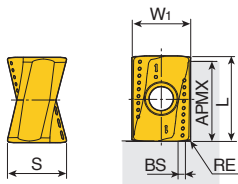
Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito						Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	ANHX 1607 ANR-M	2.5-7.0	0.30-0.15	●		●		●	●	●		



• Solo per frese a 45°

● : Standard

Inserti



Misura	Dimensioni (mm)					
	L	W1	S	APMX	BS	RE
11	12	9.2	8.5	11	0.7-1.5	0.4-1.6
16	16	11.0	10.4-10.9	15	0.6-1.7	0.4-2.4

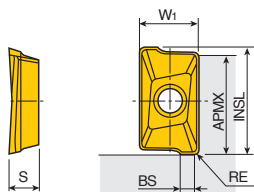


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	ANMX 110608R-M	3.0-9.0	0.20-0.10	●		●								
	160708R-M	4.5-12.0	0.20-0.10	●		●								
	ANHX 110604R-M	3.0-9.0	0.15-0.08	●		●					●	●		
	110608R-M	3.0-9.0	0.15-0.08	●		●	●	●	●	●	●	●		
	110616R-M	3.0-9.0	0.15-0.08	●		●						●		
	160704R-M	4.5-12.0	0.20-0.10	●	●	●			●	●	●	●		
	160708R-M	4.5-12.0	0.20-0.10	●	●	●	●	●	●	●	●	●		
	160716R-M	4.5-12.0	0.20-0.10	●		●			●	●	●	●		
	160724R-M	4.5-12.0	0.20-0.10	●		●			●	●	●	●		
	ANHX 160708R-ML	4.5-12.0	0.12-0.06				●	●	●					
	ANHX 160708R-MR	4.5-12.0	0.25-0.13				●	●			●			
	ANHX 110604R-AL	3.0-9.0	0.40-0.10										●	
	110608R-AL	3.0-9.0	0.40-0.10										●	
	160704R-AL	4.5-12.0	0.40-0.10										●	
	160708R-AL	4.5-12.0	0.40-0.10										●	
	ANHX 110608R-SM	3.0-9.0	0.15-0.08	●		●		●			●			
	160708R-SM	4.5-12.0	0.20-0.10	●		●		●		●	●			
	ANHX 110608R-SML	3.0-9.5	0.15-0.06	●		●								
	160708R-SML	4.5-13.5	0.20-0.06	●		●					●			

●: Standard



Inserti

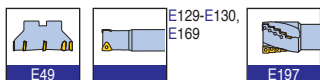


Misura	Dimensioni (mm)					
	INSL	W1	S	APMX	BS	RE
09	9.7-10.6	6.20	3.8	8.8	0.5-1.79	0.4-3.2
09T3 PER	10.5	6.20	3.8	8.8	0.5-1.79	0.4



Inserto	Descrizione	Condizioni di taglio raccomandate		Cermet									Rivestito		Non riv.	
		ap (mm)	Avanz. (mm/z)	CT7000	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10		
	APKT 09T3 PER-EM	2.5-7.5	0.10-0.05	●	●	●	●	●	●	●	●	●	●	●	●	
	09T305R-EM	2.5-7.5	0.10-0.05					●								
	09T308R-EM	2.5-7.5	0.10-0.05		●	●	●	●		●	●	●	●			
	09T316R-EM	2.5-7.5	0.10-0.05		●	●	●			●		●	●			
	09T320R-EM	2.5-7.5	0.10-0.05		●		●			●			●			
	09T332R-EM	2.5-7.5	0.10-0.05		●		●							●		
	09T3 PER-M	2.5-7.5	0.10-0.05					●		●		●	●			
	APCT 09T3 PER-ML	3.0-7.5	0.10-0.05	●	●		●	●		●		●				
	APCT 09T3 PER-AL	2.5-7.5	0.35-0.05												●	

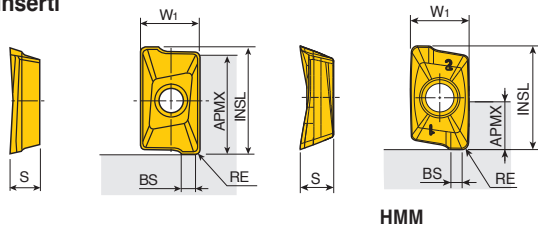
● : Standard



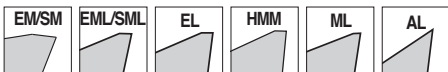
APK(C)T 12



Inserti

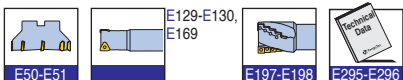


Misura	Dimensioni (mm)					
	INSL	W1	S	APMX	BS	RE
12	13.0-14.6	8.3	4.5-4.9	11.8-12.5	0.9-2.1	0.4-0.0
1204 PER	13.4-14.6	8.3	4.5-4.9	11.8-12.5	0.9-2.1	0.8
1204-HMM	14.6	8.3	4.7	6.5	1.6	0.8



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito	
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	APKT 1204 PER-EM	3.5-10.0	0.14-0.07	●	●	●	●	●	●	●	●		
	120404R-EM	3.5-10.0	0.14-0.07		●		●		●		●		
	120416R-EM	3.5-10.0	0.14-0.07	●	●	●	●	●	●		●	●	
	120424R-EM	3.5-10.0	0.14-0.07		●	●	●				●		
	120430R-EM	3.5-10.0	0.14-0.07	●	●	●	●	●		●	●		
	120432R-EM	3.5-10.0	0.14-0.07		●		●				●	●	
	120440R-EM	3.5-10.0	0.14-0.07	●		●						●	
	APKT 1204 PER-SM	3.5-10.0	0.14-0.07	●		●		●		●			
	APKT 1204 PER-SML	3.5-10.5	0.14-0.06	●		●							
	APKT 1204 PER-EML	3.5-10.0	0.08-0.04	●		●							
	APKT 1204 PER-EL	3.5-10.0	0.05-0.03	●	●	●	●						
	120430R-EL	3.5-10.0	0.06-0.03	●		●							
	APKT 1204 PER-HMM	3.5-6.5	0.12-0.05	●									
	APCT 120430R-ML	3.5-10.0	0.08-0.04	●		●							
	120432R-ML	3.5-10.0	0.08-0.04	●		●							
	120440R-ML	3.5-9.5	0.08-0.04	●		●							
	APCT 1204 PER-AL	3.5-10.0	0.50-0.10										●
	120404R-AL	3.5-10.0	0.50-0.10										●
	120416R-AL	3.5-10.0	0.50-0.10										●

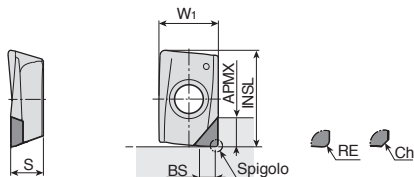
●: Standard



APCT 12-PCD35



Inserti PCD



Misura	Dimensioni (mm)						
	INSL	W1	S	APMX	BS	RE	Ch
12	13.3	8.2	4.5	3.5	2	0.4	-
12...C	13.3	8.2	4.5	3.5	2.1	-	0.25

Inserto	Descrizione	Condizioni di taglio raccomandate		PCD							
		ap (mm)	Avanz. (mm/z)	TD830	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	Non rivestito
	APCT 120404R-PCD35	0.2-3.0	0.30-0.05	●							K10
	1204C025-PCD35	0.2-3.0	0.30-0.05	●							

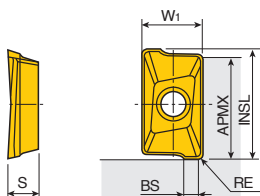
● : Standard



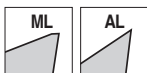
APCT 17



Inserti



Misura	Dimensioni (mm)					
	INSL	W1	S	APMX	BS	RE
17-ML	18.5	10.8	5.55	16.1	2.07	0.8
17-AL	18.3-18.5	10.8	5.62	16.1	1.55-2.56	0.8-3.0

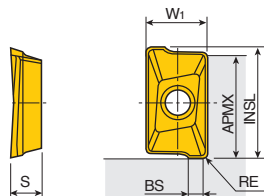


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	APCT 1705 PER-ML	4.5-13.0	0.12-0.06	●		●							
	APCT 1705 PER-AL	4.5-13.0	0.50-0.10									●	
	170530R-AL	4.5-13.0	0.50-0.10									●	

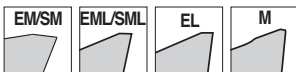
● : Standard



Inserti



Misura	Dimensioni (mm)					
	INSL	W1	S	APMX	BS	RE
17	16.8-18.5	10.7	5.56	16.1	0.9-3.17	0.4-6.4
17(AL)	17.6	10.7	5.27	16.1	3.15	0.8
1705 PER	18.5-18.9	10.7	5.56-6.5	16-16.4	0.9-3.17	0.8



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	APKT 1705 PER-EM	4.5-13.0	0.18-0.09	●	●	●	●	●	●	●	●	●	●	●
	170504R-EM	4.5-13.0	0.18-0.09	●		●	●		●		●	●		
	170510R-EM	4.5-13.0	0.17-0.09	●	●	●			●	●	●	●		
	170516R-EM	4.5-13.0	0.17-0.09	●	●	●	●		●		●	●		
	170524R-EM	4.5-13.0	0.17-0.09	●	●	●	●	●		●	●	●		
	170530R-EM	4.5-13.0	0.17-0.09	●	●	●	●		●			●		
	170532R-EM	4.5-13.0	0.17-0.09	●	●	●	●	●		●	●	●		
	170535R-EM	4.5-13.0	0.17-0.09	●	●	●	●			●	●			
	170540R-EM	4.5-13.0	0.20-0.10	●	●		●					●		
	170548R-EM	4.5-13.0	0.17-0.09	●	●	●	●	●	●	●	●	●		
	170550R-EM	4.5-13.0	0.20-0.10	●	●		●					●		
170564R-EM	4.5-13.0	0.18-0.09	●	●	●	●		●		●	●			
	APKT 1706 PER-EM	4.5-13.0	0.18-0.09	●	●	●	●	●	●	●	●	●	●	●
	APKT 1705 PER-M	4.5-13.0	0.18-0.09						●		●	●		●
	170516R-M	4.5-13.0	0.30-0.15				●							
	170532R-M	4.5-13.0	0.20-0.10				●		●		●	●		
	170548R-M	4.5-13.0	0.20-0.10				●							
	APKT 1705 PER-SM	4.5-13.0	0.17-0.09	●		●		●		●				
	APKT 1705 PER-SML	4.5-14.5	0.17-0.06	●		●								
	APKT 1705 PER-EML	4.5-13.0	0.14-0.07	●		●			●					
	APKT 1705 PER-EL	4.5-13.0	0.10-0.05	●	●	●	●	●						

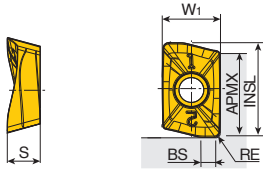
●: Standard



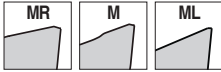
APKT 19



Inserti



Misura	Dimensioni (mm)					
	INSL	W1	S	APMX	BS	RE
19	21	13	7.35	17.9	2.0	1.2



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	APKT 190712R-M	5.0-15.0	0.20-0.07	●		●		●	●	●	●			
	APKT 190712R-MR	5.0-15.0	0.25-0.10	●		●		●		●	●			
	APKT 190712R-ML	5.0-15.0	0.20-0.08	●		●				●				

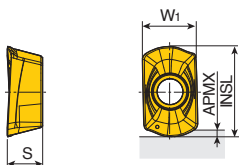
● : Standard



APKT/AXMT-HF



Inserti ad alto avanzamento



Misura	Dimensioni (mm)				
	INSL	W ₁	S	APMX	
06	6.7	4.04	2.6	0.5	
09	10.7	5.94	3.9	1.0	
12	14.2	8.0	5.0	1.2	

Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	AXMT 0602R-HF	0.2-0.5	0.70-0.30	●		●								
	APKT 09T3R-HF	0.1-1.0	0.80-0.30	●		●						●		
	1204R-HF	0.2-1.0	0.80-0.10	●		●						●		

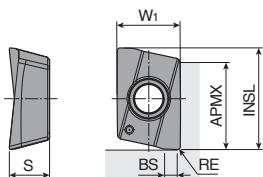
● : Standard



AXCT 06-L



Inserti



Misura	Dimensioni (mm)					
	INSL	W ₁	S	APMX	BS	RE
06	6.5	4.2	2.6	5.5	0.6-1.0	0-0.4



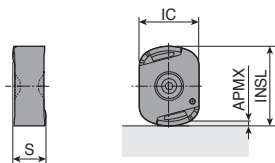
Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT5525	K10	
	AXCT 060200R-L	0.1-5.0	0.08-0.03											
	060202R-L	0.2-5.0	0.10-0.03									●		
	060204R-L	0.3-5.0	0.10-0.03									●		

● : Standard



BNGX 09

Inserti ad alto avanzamento



Misura	Dimensioni (mm)					
	INSL	IC	S	APMX		
09	12	9	5	1.5		

Inserto	Descrizione	Condizioni di taglio raccomandate		Ceramica		Rivestito						Non rivestito			
		ap (mm)	Avanz. (mm/z)	TC3030	TC3020	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080		TT7515	TT6080	K10
	BNGX 0904 CH-E04	0.5-1.0	0.35-0.15	●											

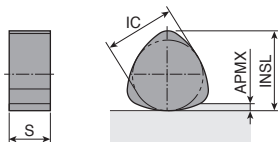


• E04: onatura 0.04-0.05 mm

●: Standard

BNGX 12

Inserti ad alto avanzamento



Misura	Dimensioni (mm)					
	INSL	IC	S	APMX		
12	13.6	12	7	2.5		

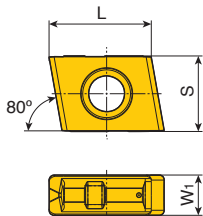
Inserto	Descrizione	Condizioni di taglio raccomandate		Ceramica		Rivestito						Non rivestito			
		ap (mm)	Avanz. (mm/z)	TC3030	TC3020	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080		TT7515	TT6080	K10
	BNGX 1207-E04	1.0-2.0	0.35-0.15	●											



• E04: onatura 0.04-0.05 mm

●: Standard

Inserti



Misura	Dimensioni (mm)				
	L	S	W ₁		
131108T	12.7	11	5.4		
160608T	16.0	12	6.4		

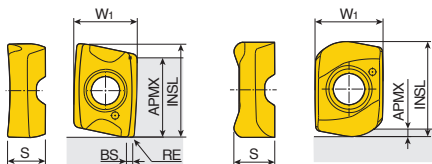
Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito						Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	CNHX 131108T	1.2-5.5	0.55-0.17					●					
	160608T	1.2-5.5	0.60-0.20					●					

● : Standard



CVK(H)T

Inserti



M / L

HF (alto avanzamento)

Misura	Dimensioni (mm)					
	INSL	W ₁	S	APMX	BS	RE
05-M/L	6.3	4.2	2.6	5.0	0.35	0.2
05-HF	5.5	4.2	2.5	0.5	-	-

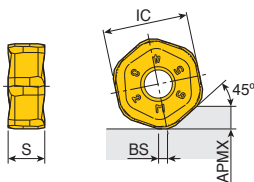


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non riv.			
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT5525	TT2510	K10	
	CVKT 0502PNR-M	0.5-4.0	0.08-0.04	●		●									
	CVHT 0502PNR-L	0.5-4.0	0.07-0.03	●		●					●				
	CVKT 0502R-HF	0.2-0.4	0.70-0.30	●		●							●		

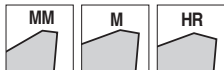
● : Standard



Inserti



Misura	Dimensioni (mm)						
	IC	S	APMX	BS			
06-MM	14	6.8	3	1.3			
06-M	14	6.8	3	1.0			
10-MM	19.05	8.3	5	1.6			
10-M/HR	19.05	8.3	5	1.0			

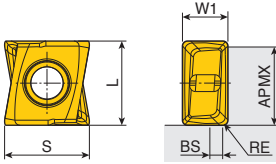


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	HXHU 0605 ANR-MM	1.0-3.0	0.35-0.10	●									
	1007 ANR-MM	2.0-5.0	0.45-0.10								●		
	HXKU 0605 ANR-M	1.0-3.0	0.25-0.10	●				●					
	1007 ANR-M	2.0-5.0	0.30-0.10	●				●					
	HXKU 1007 ANR-HR	2.0-5.0	0.60-0.10					●					
		2.0-5.0	0.70-0.10							●			

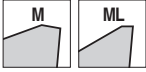
● : Standard



Inserti



Misura	Dimensioni (mm)					
	L	W1	S	APMX	BS	RE
05	5	2.7	5.0	4.6	-	0.4
09	9	4.5	8.6	8.3	0.6	0.4
14	13.5	6.7	13.5	12.5	0.9	0.8

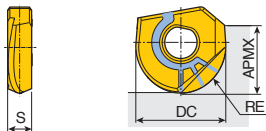


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito	
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	LPKU 050204 PNR-M	1.0-3.5	0.08-0.04	●		●					●	
	LPKU 090404 PNR-M	2.5-6.0	0.15-0.06	●		●		●			●	
	LPKU 140708 PNR-M	3.5-10.0	0.20-0.10	●		●		●			●	
	LPHU 050204 PNR-ML	1.0-3.5	0.08-0.04			●					●	
	LPHU 090404 PNR-M	2.5-6.0	0.15-0.06			●					●	

●: Standard



Inserti

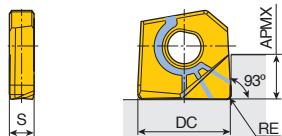


Misura	Dimensioni (mm)				
	DC	S	APMX	RE	
060	6	2.0	4.5-4.8	3.0	
080	8	2.2	6.6-6.9	4.0	
100	10	2.7	8.0-8.2	5.0	
120	12	3.2	9.6-9.7	6.0	
160	16	4.2	12.3-12.7	8.0	
200	20	5.2	14.4-14.7	10.0	
250	25	6.2	16.8-17.4	12.5	
300	30	7.2	18.6-19.2	15.0	
320	32	7.2	18.4-19.2	16.0	

Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8525B	TT7080	TT7515	TT6080	TT5525	TT5515	TT2510	K10
 Tagliante dritto	NFB 060-FM	0.05-0.2	0.15-0.05										
	080-FM	0.05-0.3	0.20-0.05							●			
	100-FM	0.05-0.3	0.20-0.05							●	●		
	120-FM	0.05-0.5	0.30-0.08							●	●		
	160-FM	0.05-0.5	0.30-0.08							●	●		
	200-FM	0.10-1.0	0.30-0.08							●	●		
	250-FM	0.15-1.0	0.40-0.08							●	●		
	300-FM	0.15-1.0	0.40-0.08							●	●		
 Tagliante elicoidale	NFB 060-SM	0.80-2.5	0.20-0.05								●	●	
	080-SM	1.20-3.2	0.25-0.05							●	●	●	
	100-SM	1.50-4.0	0.25-0.05							●	●	●	
	120-SM	1.80-4.8	0.35-0.08							●	●	●	
	160-SM	2.40-6.4	0.35-0.08							●	●	●	
	200-SM	3.00-8.0	0.35-0.08							●	●	●	
	250-SM	3.75-10.0	0.45-0.08							●	●	●	
	300-SM	4.50-12.0	0.45-0.08							●	●	●	
	320-SM	4.80-12.8	0.45-0.08							●	●	●	

● : Standard





Misura	Dimensioni (mm)				
	DC	S	APMX	RE	
060	6	2.0	2.5	0.3-1.0	
080	8	2.2	3.4	0.3-1.0	
100	10	2.7	4.0	0.3-2.0	
110	11	2.7	4.4	0.3-2.0	
120	12	3.2	5.0	0.3-2.0	
130	13	3.2	5.4	0.3-2.0	
160	16	4.2	6.9	0.3-3.0	
170	17	4.2	7.4	1.0-2.0	

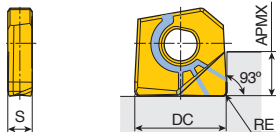
Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8525B	TT7080	TT7515	TT6080	TT5525	TT5515	TT2510	K10	
	NFR 060A-R03	0.05-0.15	0.10-0.05											
	060A-R05	0.10-0.15	0.10-0.05											
	060A-R10	0.10-0.15	0.10-0.05											
	080A-R03	0.05-0.2	0.12-0.05											
	080A-R05	0.05-0.2	0.12-0.05											
	080A-R06	0.05-0.2	0.12-0.05											
	080A-R10	0.05-0.2	0.12-0.05											
	100A-R03	0.05-0.3	0.12-0.05											
	100A-R05	0.05-0.3	0.12-0.05											
	100A-R08	0.05-0.3	0.12-0.05											
	100A-R10	0.05-0.3	0.12-0.05											
	100A-R15	0.05-0.3	0.12-0.05											
	100A-R20	0.05-0.3	0.12-0.05											
	110A-R10	0.05-0.3	0.12-0.05											
	110A-R20	0.05-0.3	0.12-0.05											
	120A-R03	0.07-0.3	0.15-0.08											
	120A-R05	0.07-0.3	0.15-0.08											
	120A-R10	0.07-0.3	0.15-0.08											
	120A-R15	0.07-0.3	0.15-0.08											
	120A-R20	0.07-0.3	0.15-0.08											
130A-R10	0.07-0.3	0.15-0.08												
130A-R20	0.07-0.3	0.15-0.08												
160A-R03	0.08-0.5	0.15-0.08												
160A-R05	0.08-0.5	0.15-0.08												
160A-R10	0.08-0.5	0.15-0.08												
160A-R13	0.08-0.5	0.15-0.08												
160A-R15	0.08-0.5	0.15-0.08												
160A-R20	0.08-0.5	0.15-0.08												
160A-R30	0.08-0.5	0.15-0.08												
170A-R10	0.08-0.5	0.15-0.08												
170A-R20	0.08-0.5	0.15-0.08												

●: Standard



E161-E166

Inserti



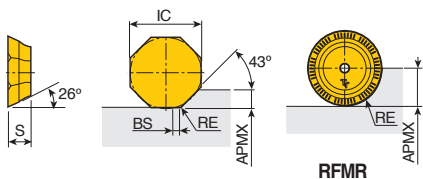
Misura	Dimensioni (mm)				
	DC	S	APMX	RE	
200	20	5.2	8.7-9.2	0.3-3.0	
210	21	5.2	9.2	1.0-2.0	
250	25	6.2	10.6	0.3-3.0	
260	26	6.2	11	1.0-2.0	
300	30	7.1	12.7	1.0-2.0	
320	32	7.1	13.6	1.0-2.0	

Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT8080	TT8525B	TT7080	TT7515	TT6080	TT5525	TT5515	TT2510	K10	
	NFR 200A-R03	0.1-0.7	0.15-0.08							●	●	●		
	200A-R05	0.1-0.7	0.15-0.08							●	●	●		
	200A-R10	0.1-0.7	0.15-0.08							●	●	●		
	200A-R15	0.1-0.7	0.15-0.08							●	●	●		
	200A-R16	0.1-0.7	0.15-0.08							●	●	●		
	200A-R20	0.1-0.7	0.15-0.08							●	●	●		
	200A-R30	0.1-0.7	0.15-0.08							●	●	●		
	210A-R10	0.1-0.7	0.15-0.08							●	●	●		
	210A-R20	0.1-0.7	0.15-0.08							●	●	●		
	250A-R03	0.1-1.0	0.15-0.08							●	●	●		
	250A-R05	0.1-1.0	0.15-0.08							●	●	●		
	250A-R10	0.1-1.0	0.15-0.08							●	●	●		
	250A-R15	0.1-1.0	0.15-0.08							●	●	●		
	250A-R20	0.1-1.0	0.15-0.08							●	●	●		
	250A-R30	0.1-1.0	0.15-0.08							●	●	●		
	260A-R10	0.1-1.0	0.15-0.08							●	●	●		
	260A-R20	0.1-1.0	0.15-0.08							●	●	●		
	300A-R05	0.1-1.0	0.20-0.08							●	●	●		
	300A-R10	0.1-1.0	0.20-0.08								●	●		
	300A-R20	0.1-1.0	0.20-0.08								●	●		
320A-R10	0.1-1.0	0.20-0.08							●	●	●			
320A-R20	0.1-1.0	0.20-0.08								●	●			

● : Standard



Inserti



Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
OF... 07	17.94	5.0-5.1	5.0	1.3-2.2	0.8	
RFMR 19	19.00	5.3	9.5	-	9.5	



Inserto	Descrizione	Condizioni di taglio raccomandate		Cermet	Rivestito								Non rivestito	
		ap (mm)	Avanz. (mm/z)		CT7000	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515		TT6080
	OFCN 0704 TN-MR	1.5-4.0	0.20-0.08	●										
	OFCN 0704 TN-EMR	1.5-4.0	0.15-0.08		●		●	●	●	●		●		
	OFMR 0704 AER-M	1.5-4.0	0.19-0.10		●	●	●	●	●	●		●		
	OFMR 0704 TN-AL	1.5-4.0	0.15-0.08										●	
	OFCR 0704 TN-ML	1.5-4.0	0.15-0.05					●		●		●	●	
	OFCR 0704 TN-EML	1.5-4.0	0.15-0.08		●	●	●	●	●	●		●		
	RFMR 1904-M	2.5-8.0	0.14-0.107		●	●		●		●		●		

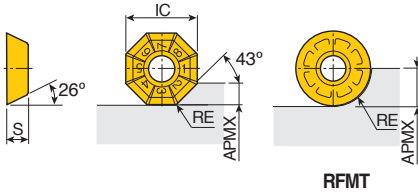
●: Standard



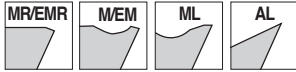
OFCW(T) 05/OFMT 05/RFMT 14



Inserti



Misura	Dimensioni (mm)				
	IC	S	APMX	RE	
OF... 05	12.7	3.76-3.86	3.5	0.5-0.8	
RFMT 14	14.0	4.53	7.0	7.0	

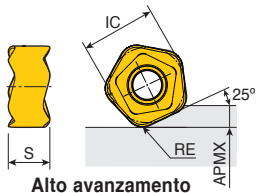


Inserto	Descrizione	Condizioni di taglio raccomandate		Cementati / Rivestiti								Non rivestito		
		ap (mm)	Avanz. (mm/z)	CT7000	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	OFCW 05T3 TN-MR	1.0-3.0	0.08-0.04		•					•		•		
	05T3 TN-EMR	1.0-3.0	0.15-0.08		•	•		•		•		•		
	OFCT 05T3 TN-M	1.0-3.0	0.15-0.08		•					•		•	•	
	05T3 TN-EM	1.0-3.0	0.10-0.05		•	•		•		•		•		
	OFCT 05T3 TN-AL	1.0-3.0	0.50-0.10											•
	OFMT 05T3 TN-ML	1.0-3.0	0.12-0.06		•	•	•	•	•	•		•	•	
	RFMT 1404-ML	2.0-6.0	0.27-0.14		•			•		•		•		

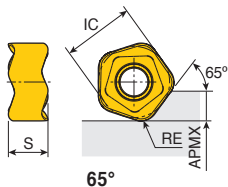
• : Standard



Inserti



Alto avanzamento



65°

Misura	Dimensioni (mm)			
	IC	S	APMX	RE
05(HF)	7.1	3.8	1.5	1.5
05(65°)	7.1	3.8	3.3	1.5
10(HF)	14.2	7.7	3.0	3.0
10(65°)	14.2	7.7	6.5	3.0

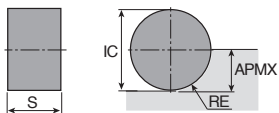


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito	
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	PTKU 0503R-M (Alto avanz.)	0.2-1.5	1.20-0.20	●		●							
	1006R-M (Alto avanz.)	0.3-2.0	2.00-0.30	●		●							
	PTKU 0503R-M (65°)	1.0-3.0	0.20-0.07	●		●							
	1006R-M (65°)	1.5-5.0	0.25-0.10	●		●							

● : Standard



Inserti



Misura	Dimensioni (mm)						
	RE	IC	S	APMX			
12	6.35	12.7	7.94	6.3			

Inserto	Descrizione	Condizioni di taglio raccomandate		Ceram.							Rivestito		Non rivestito	
		ap (mm)	Avanz. (mm/z)	TC3020	TC3030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	RNGN 1207 FL-E	0.5-3.0	0.25-0.10	●	●									
	1207 FL-E04	0.5-3.0	0.25-0.10	●	●									
	1207 FL-T6	0.5-3.0	0.25-0.10	●	●									

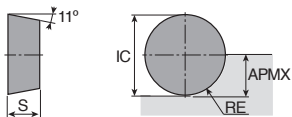


- E: onatura 0.02-0.03 mm
- E04: onatura 0.04-0.05 mm
- T6: smusso 0.1 mm x 20°

● : Standard

RPGN 09/12-FL

Inserti



Misura	Dimensioni (mm)						
	RE	IC	S	APMX			
09	4.76	9.525	3.18	4.7			
12	6.35	12.7	4.76	6.3			

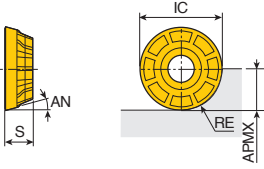
Inserto	Descrizione	Condizioni di taglio raccomandate		Ceram.							Rivestito		Non rivestito	
		ap (mm)	Avanz. (mm/z)	TC3020	TC3030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	RPGN 0903 FL-E04	0.5-1.5	0.15-0.07	●	●									
	1204 FL-E	0.5-2.0	0.20-0.07	●	●									
	1204 FL-E04	0.5-2.0	0.20-0.07	●	●									
	1204 FL-T6	0.5-2.0	0.20-0.07	●	●									



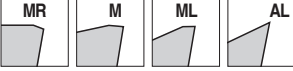
- E: onatura 0.02-0.03 mm
- E04: onatura 0.04-0.05 mm
- T6: smusso 0.1 mm x 20°

● : Standard

Inserti



Misura	Dimensioni (mm)				
	RE	IC	S	APMX	AN
05	2.5	5	1.5	2.5	15°
07	3.5	7	2.38	3.5	15°
10	5.0	10	3.18	5.0	15°
12	6.0	12	3.97	6.0	15°
16	8.0	16	4.76	8.0	15°
20	10.0	20	6.35	10.0	11°

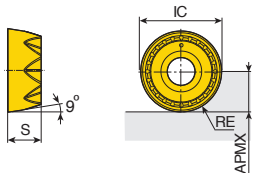


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito	
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	RDMX0501-M	0.5-2.0	0.25-0.04	●	●	●	●		●		●		
	0702-M	1.0-3.0	0.25-0.05	●	●	●	●		●		●		
	RXMX 1003-M	1.5-4.0	0.30-0.10	●		●	●		●		●		
	12T3-M	1.8-5.0	0.50-0.10	●	●	●	●		●		●		
	1604-M	2.0-6.5	0.50-0.10	●	●	●	●		●		●		
	2006-M	3.0-8.0	0.50-0.10	●	●	●	●	●					
	RXMX 1003-ML	1.5-4.0	0.30-0.05	●	●	●	●						
	12T3-ML	1.5-5.0	0.45-0.05	●	●		●	●					
	1604-ML	2.0-6.5	0.45-0.10	●	●		●						
	RXMX 1003-MR	1.5-4.0	0.30-0.05	●	●	●			●				
	12T3-MR	1.5-5.0	0.35-0.05	●	●		●		●		●		
	1604-MR	2.0-6.5	0.40-0.10	●	●		●		●				
	2006-MR	3.0-8.0	0.40-0.10	●	●		●						
	RXHX 1003-MR	1.5-4.0	0.30-0.05	●									
	12T3-MR	1.5-5.0	0.35-0.05	●			●		●				
	RXHX 1003-AL	1.5-4.0	0.80-0.10									●	
	12T3-AL	1.5-5.0	0.80-0.10									●	

● : Standard



Inserti



Misura	Dimensioni (mm)			
	RE	IC	S	APMX
08	4	8	3.2	4
10	5	10	4.0	5
12	6	12	4.8	6
16	8	16	6.1	8
20	10	20	7.0	10

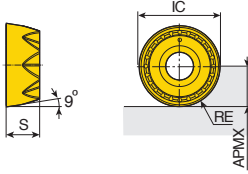


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10	
	RYMX 0803-M	1.0-3.5	0.25-0.05	●		●			●		●	●		
	1004-M	1.5-4.0	0.30-0.10	●		●	●	●	●		●	●		
	1205-M	1.5-5.0	0.50-0.10	●		●	●	●	●		●	●		
	1205-6M	1.5-5.0	0.50-0.10	●								●		
	1606-M	2.0-6.5	0.50-0.10	●		●	●	●	●		●	●		
	1606-7M	2.0-6.5	0.50-0.10	●					●			●		
	2007-M	3.0-8.0	0.50-0.10	●		●	●	●	●		●	●		
	RYMX 0803-MM	1.0-3.5	0.30-0.07	●		●	●							
	1004-MM	1.5-4.0	0.35-0.07	●		●	●							
	1205-MM	1.5-5.0	0.40-0.10	●		●	●	●						
	1205-6MM	1.5-5.0	0.40-0.10	●								●		
	1606-MM	2.0-6.5	0.45-0.10	●		●	●					●		
	1606-7MM	2.0-6.5	0.45-0.10	●		●	●					●		
	RYHX 1205-MM	3.0-8.0	0.40-0.10	●			●							
	RYMX 0803-ML	1.0-3.5	0.25-0.05	●		●	●	●						
	1004-ML	1.5-4.0	0.30-0.05	●		●	●	●						
	1205-ML	1.5-5.0	0.35-0.05	●		●	●	●						
	1205-6ML	1.5-5.0	0.35-0.05	●		●								
	1606-ML	2.0-6.5	0.40-0.05	●		●	●	●						
	1606-7ML	2.0-6.5	0.40-0.05	●										
	2007-ML	3.0-8.0	0.50-0.10	●		●	●	●	●					
	RYHX 0803-ML	1.0-3.5	0.25-0.05	●		●	●							
	1004-ML	1.5-4.0	0.30-0.05	●		●	●							
	1205-ML	1.5-5.0	0.35-0.05	●		●	●							
	RYMX 0803-MLL	1.0-3.5	0.25-0.05			●	●							
	1004-MLL	1.5-4.0	0.30-0.05	●		●	●							
	1205-MLL	1.5-5.0	0.35-0.05	●		●	●							
	RYHX 0803-MLL	1.0-3.5	0.25-0.05			●	●							
	1004-MLL	1.5-4.0	0.30-0.05			●								
	1205-MLL	1.5-5.0	0.35-0.05	●		●	●							

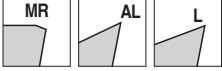
● : Standard



Inserti



Misura	Dimensioni (mm)						
	RE	IC	S	APMX			
08	4	8	3.2	4			
10	5	10	4.0	5			
12	6	12	4.8	6			
16	8	16	6.1	8			
20	10	20	7.0	10			



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
				TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
		ap (mm)	Avanz. (mm/z)										
	RYMX 0803-MR	1.0-3.5	0.30-0.05	●				●	●	●	●		
	1004-MR	1.5-4.0	0.35-0.05	●		●			●	●	●		
	1205-MR	1.5-5.0	0.35-0.05	●		●			●	●	●		
	1606-MR	2.0-6.5	0.40-0.05	●				●	●	●	●		
	2007-MR	1.0-3.5	0.45-0.10	●				●		●	●		
	RYHX 0803-MR	1.5-4.0	0.30-0.05	●							●		
	1004-MR	1.5-5.0	0.35-0.05	●						●	●		
	1205-MR	2.0-6.5	0.35-0.05	●						●	●		
	RYHX 0803-AL	1.0-3.5	0.80-0.10									●	
	1004-AL	1.5-4.0	0.80-0.10									●	
	1205-AL	1.5-5.0	0.80-0.10									●	
	1606-AL	2.0-6.5	0.80-0.10									●	
	RYHX 0803-L	1.0-3.5	0.25-0.05			●							
	1004-L	1.5-4.0	0.30-0.05	●		●	●						
	1205-L	1.5-5.0	0.35-0.05	●		●	●						

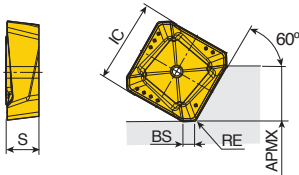
● : Standard



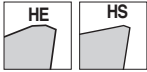
SCKN 21/27



Inserti



Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
21-HE	20.8	7	13	2	1.5	
21-HS	21	6.95	13	2	1.5	
27-HE	26.8	8.95	18	2	2	
27-HS	27	8.9	18	2	2	



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito						Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	SCKN 2107 DDTR-HE	3.5-10.5	0.25-0.13					●	●	●			
	2708 DDTR-HE	5.0-14.5	0.30-0.15					●	●				
	SCKN 2107 DDTR-HS	3.5-10.5	0.25-0.13					●					
	2708 DDTR-HS	5.0-14.5	0.25-0.13					●					

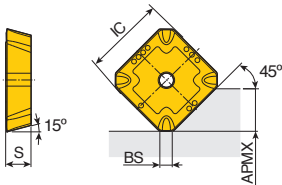
● : Standard



SDKN 12/15



Inserti



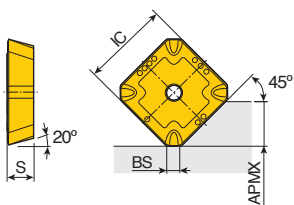
Misura	Dimensioni (mm)					
	IC	S	APMX	BS		
12	12.7	3.18	6.5	2.00		
15	15.875	4.76	8.7	1.89		

Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito						Non rivestito			
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	SDKN 1203 MT-HPN	1.5-6.0	0.25-0.10					●					
	1504 MT-HPN	1.5-8.0	0.25-0.10					●					
	SDKN 1203 MT-GPN	1.5-6.0	0.25-0.10					●					

● : Standard



Inserti



Misura	Dimensioni (mm)				
	IC	S	APMX	BS	
12	12.7	3.18	6.5	2.08	
15	15.875	4.76	8.7	2.06	

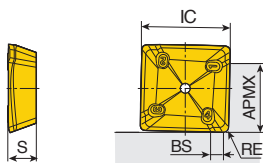
Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	SEKN 1203 AFTN-HPN	1.5-6.0	0.25-0.10						●				
	1504 AFTN-HPN	1.5-8.0	0.25-0.10						●				



● : Standard

SEKX 21

Inserti



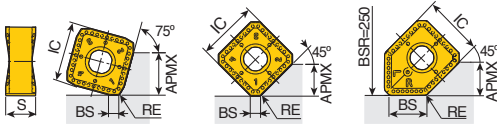
Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
21 PETR-M	21.85	7	17	2	1.2	

Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito	
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10
	SEKX 2107 PETR-M	5.5-13.0	0.22-0.10					●		●		



● : Standard

Inserti



ENTN / XTN

AN(T)N / XTN

W

Misura	Dimensioni (mm)					
	IC	S	APMX	BS	RE	
13 ENTN-M	13.5	7.0	9.5	2.2	0.4	
13 ANTN-M/ML/AL	13.5	6.8	7.0	2.2	0.4	
13 ANTR-MP	13.5	6.8	6.0	2.2	0.4	
13 ANTN-W	13.5	6.8	7.0	7.5	1.2	
13 XTN(75°)	13.5	6.8	9.6	1.4	0.4	
13 XTN(45°)	13.5	6.8	6.35	1.4	0.4	



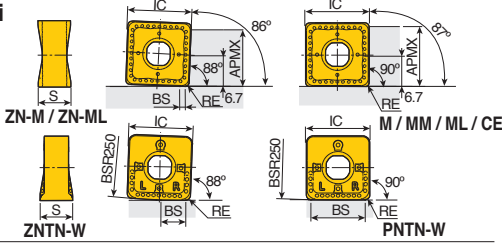
Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	SNGX 1306 ENTN-M	2.5-8.0	0.20-0.10	●		●		●	●	●			
	SNMX 1306 ENTN-M	2.5-8.0	0.20-0.10	●		●		●	●	●			
	SNGX 1306 ANTN-M	2.0-6.0	0.20-0.10	●		●		●	●	●			
	1306 ANTN-ML	2.0-6.0	0.25-0.13	●		●				●			
	SNMX 1306 ANTN-M	2.0-6.0	0.20-0.10	●		●		●	●	●	●		
	SNGX 1306 ANN-AL	2.0-6.0	0.35-0.10									●	
	SNMX 1306 ANTR-MP	2.0-6.0	0.20-0.10	●		●		●		●			
	SNMX 1306 XTN	2.5-6.5	0.20-0.10	●	●			●	●	●	●		
	SNGX 1306 ANTN-W	0.2-1.0	0.20-0.10	●							●		

● : Standard



SNGX 13

Inserti



Misura	Dimensioni (mm)				
	IC	S	APMX	BS	RE
13	13.5	6.8-7.0	10-12	1.2-5.3	0.4-1.6
13-W	13.5	6.8	10-12	11.5	1.0

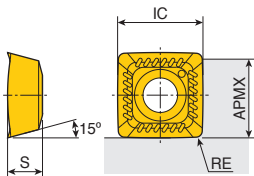


Inserto	Descrizione	Condizioni di taglio raccomandate		Ceram.									
		ap (mm)	Avanz. (mm/z)	AS10	TT9080	TT9030	TT8080	TT8525B	TT7080	TT7515	TT6080	TT2510	K10
	SNGX 1306 ZN-M	3.5-10.0	0.20-0.10		●		●		●	●	●		
	SNGX 1306 ZN-ML	3.5-10.0	0.25-0.13		●		●						
	1306C08 ZN-M	3.5-10.0	0.20-0.10		●				●	●	●		
	130608-MM	3.5-10.0	0.15-0.08				●						
	130612-MM	3.5-10.0	0.15-0.08						●				
	130616-MM	3.5-10.0	0.15-0.08				●		●				
	130608-ML	3.5-10.0	0.25-0.13							●	●		
	130612-ML	3.5-10.0	0.25-0.13							●			
	SNGX 130608-M	3.5-10.0	0.20-0.10		●				●	●	●	●	
	130612-M	3.5-10.0	0.20-0.10		●				●	●	●		
	130616-M	3.5-10.0	0.20-0.10		●		●	●	●	●	●		
	130620-M	3.5-10.0	0.20-0.10		●				●	●	●		
	SNGX 130608-CE	3.5-10.0	0.25-0.13	●									
	SNGX 1306 ZNTN-W	0.2-1.0	0.20-0.10		●						●		
	1306 PNTN-W	0.2-1.0	0.20-0.10		●						●		

●: Standard



Inserti



Misura	Dimensioni (mm)				
	IC	S	APMX	RE	
114508	11	4.5	10	0.8	
114516	11	4.5	9	1.6	

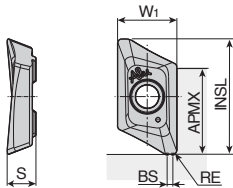


Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080		K10	
	SVKT 114508-ML	10.0	0.15-0.04	●		●								
	114516-ML	9.0	0.15-0.04	●		●								
	SVKT 114508-L	10.0	0.12-0.03	●		●								
	SVHT 114508-L	10.0	0.12-0.03	●		●								

● : Standard



Inserti



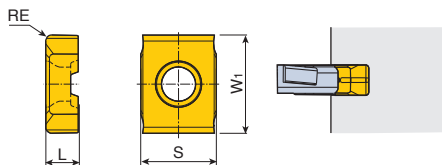
Misura	Dimensioni (mm)					
	INSL	W1	S	APMX	BS	RE
16	18.3-22.2	11.2	5.1-5.5	14-16	0.6-1.5	0.4-5.0
22	22.4-28	13.6	6.8-7.4	18.5-21	1.2-1.7	0.5-6.4

Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito							Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	K10	
	XEVT 160504R-AL	3.5-12.0	0.4-0.1									●	
	160508R-AL	3.5-12.0	0.4-0.1									●	
	160512R-AL	3.5-12.0	0.4-0.1									●	
	160516R-AL	3.5-12.0	0.4-0.1									●	
	160520R-AL	3.5-12.0	0.4-0.1									●	
	160524R-AL	3.5-12.0	0.4-0.1									●	
	160530R-AL	3.5-12.0	0.4-0.1									●	
	160532R-AL	3.5-12.0	0.4-0.1									●	
	160540R-AL	3.5-12.0	0.4-0.1									●	
	160550R-AL	3.5-12.0	0.4-0.1									●	
	220605R-AL	3.5-18.0	0.6-0.1									●	
	220608R-AL	3.5-18.0	0.6-0.1									●	
	220616R-AL	3.5-18.0	0.6-0.1									●	
	220620R-AL	3.5-18.0	0.6-0.1									●	
	220630R-AL	3.5-18.0	0.6-0.1									●	
	220632R-AL	3.5-18.0	0.6-0.1									●	
	220640R-AL	3.5-18.0	0.6-0.1									●	
	220650R-AL	3.5-18.0	0.6-0.1									●	
	220664R-AL	3.5-18.0	0.6-0.1									●	

● : Standard



Inserti



Misura	Dimensioni (mm)				
	W ₁	S	L	RE	
018	10	7.5	1.8	0.2-0.8	
023	10	7.5	2.3	0.2-0.8	
028	10	7.5	2.8	0.2-0.8	
033	10	7.5	3.3	0.2-0.8	
038	13	10	3.8	0.4-0.8	
043	13	10	4.3	0.4-0.8	
048	13	10	4.8	0.4-0.8	
053	13	10	5.3	0.4-0.8	



Inserto	Descrizione	Condizioni di taglio raccomandate		Rivestito								Non rivestito		
		ap (mm)	Avanz. (mm/z)	TT9080	TT9030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080		K10	
	ZNHT 018-04	-	0.08-0.05	●		●		●	●	●				
	018-08	-	0.08-0.05	●		●								
	023-04	-	0.08-0.05	●		●		●	●	●				
	023-08	-	0.08-0.05	●		●								
	028-04	-	0.10-0.15	●		●		●	●	●				
	028-08	-	0.10-0.15	●		●								
	033-04	-	0.12-0.05	●		●		●	●	●				
	033-08	-	0.12-0.05	●		●		●						
	038-04	-	0.12-0.05	●		●		●		●				
	038-08	-	0.12-0.05	●		●		●	●	●				
	043-04	-	0.15-0.05	●		●		●		●				
	043-08	-	0.15-0.05	●		●		●	●	●				
	048-04	-	0.15-0.05	●		●		●		●				
	048-08	-	0.15-0.05	●		●		●	●	●				
	053-04	-	0.15-0.05	●		●		●		●				
053-08	-	0.15-0.05	●		●		●	●	●					
	ZNHT 018-04-ML	-	0.08-0.05			●				●				
	023-04-ML	-	0.08-0.05			●				●				
	028-04-ML	-	0.08-0.05			●				●				
	033-04-ML	-	0.12-0.05			●				●				
	038-04-ML	-	0.12-0.05			●				●				
	043-04-ML	-	0.12-0.05			●				●				
	048-04-ML	-	0.12-0.05			●				●				
	053-04-ML	-	0.12-0.05			●				●				
	ZNHT 018-02-AL	-	0.35-0.10										●	
	023-02-AL	-	0.35-0.10										●	
	028-02-AL	-	0.35-0.10										●	
	033-02-AL	-	0.35-0.10										●	
	038-04-AL	-	0.35-0.10										●	
	043-04-AL	-	0.35-0.10										●	
	048-04-AL	-	0.35-0.10										●	
	053-04-AL	-	0.35-0.10										●	
	053-08-AL	-	0.35-0.10										●	




● : Standard




Inserti per frese speciali

Inserti tangenziali



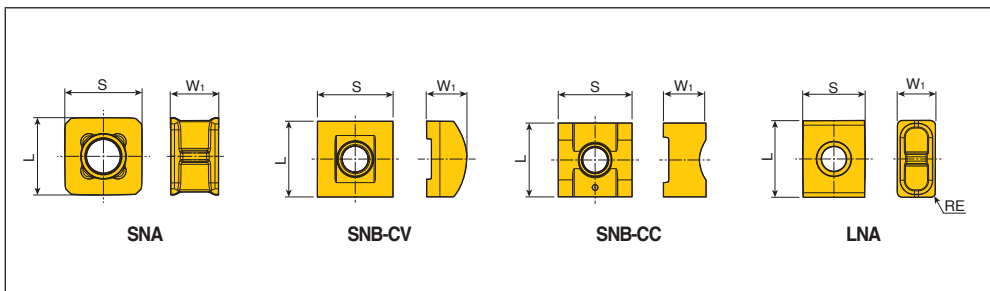
Inserto	Descrizione	Dimensioni (mm)			
		L	S	W ₁	RE
	LNC 1060-C	10.0	11.5	6.0	Smusso
	LNC 137020-L	13.6	11.6	6.7	2.0
	LNCX 136508 PNR-ML	13.0	10.6	6.5	0.8







Inserto	Descrizione	Dimensioni (mm)			
		L	S	W ₁	RE
	PMIN 120905-M	12.0	9.7	5.4	2.0
	PMIN 130907-M	13.5	9.7	7.0	2.0
	PMIN 150907-M	15.0	9.9	7.0	2.0
	PMIN 180907-M	18.0	9.7	7.0	2.0

Inserti per frese speciali

Inserti tangenziali



Inserto	Descrizione	Dimensioni (mm)			
		L	S	W ₁	RE
	SNA 1065-M	10.5	10.5	6.5	-
	SNA 1370-M	13.0	13.0	7.0	-
	SNA 1680-M	16.0	16.0	8.0	-
	SNB 1375-CV	13.0	13.0	7.5	-
	SNB 1685-CV	16.0	16.0	8.5	-
	SNB 1375-CC	13.0	13.0	7.5	-
	SNB 1685-CC	16.0	16.0	8.5	-
	LNA 137008-M	13.5	10.0	6.7	0.8
	LNA 168008-M	16.5	14.0	8.0	0.8

- CV: convesso, CC: concavo
- Vari raggi sono disponibili per l'inserto SNB



TRMT
(Fresa a profilo)



Condizioni di taglio raccomandate

Dati di lavorazione per MAXI-SLOT

ISO	Materiale		Durezza HB	Vt (m/min)	Avanzamento (mm/z)		
	Materiale	AISI/SAE/ASTM			TR13	TR15	TR17
P	Acciaio non legato	1020	130-180	120-200	0.04-0.12	0.05-0.15	0.06-0.15
	Acciaio basso legato	4030	260-300	200-300	0.04-0.12	0.05-0.15	0.06-0.15
	Acciaio basso legato	3135	HRC 35-40	80-120	0.02-0.06	0.03-0.12	0.04-0.12
	Acciaio alto legato	H13	200-220	100-150	0.03-0.07	0.04-0.12	0.04-0.12
M	Acciaio inox martensitico	420	200	100-150	0.02-0.06	0.04-0.12	0.04-0.12
	Acciaio inox austenitico	304L	200	80-120	0.02-0.06	0.03-0.10	0.03-0.12
K	Ghisa grigia	Class 40	250	150-200	0.04-0.12	0.05-0.20	0.05-0.20
	Ghisa malleabile	Class 65 45 12	200	130-180	0.04-0.10	0.05-0.18	0.05-0.18
S	Leghe resistenti al calore	Inconel 718	HRC 36-40	20-30	0.015-0.10	0.02-0.12	0.02-0.12
		AMS R56400	HRC40-45	30-40	0.015-0.06	0.02-0.12	0.02-0.12

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Dati di lavorazione per CBN

ISO	Materiale	Profondità di taglio (mm)	Grado		
			TB7015		
			Velocità di taglio Vt (m/min)	Avanzamento (mm/z)	Tagliente
P	Acciaio da cuscinetti	< 2	180 - 220	0.05 - 0.25	Smusso
	Acciaio sinterizzato	< 2	150 - 300	0.1 - 0.15	Smusso
K	Ghisa grigia HB 200 - 280	< 0.5	500 - 1500	0.1 - 0.3	Smusso e onatura
		0.5 - 2.0	500 - 1100	0.1 - 0.25	Smusso
	Ghisa grafite compatta (CGI)	< 0.5	400 - 600	0.1 - 0.2	Onatura
S	Base Co > 35 HRC	0.5 - 2.0	150 - 200	0.05 - 0.15	Smusso
	Base Ni > 35 HRC		120 - 150	0.05 - 0.15	Smusso
	Base Fe > 35 HRC		60 - 120	0.05 - 0.15	Smusso
	Base Cr > 35 HRC		50 - 75	0.05 - 0.15	Smusso
H	Acciaio temprato > 45 HRC	< 0.5	80 - 180	0.1 - 0.25	Smusso
	Ghisa temprata	< 2	80 - 200	0.1 - 0.15	Smusso

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate

Dati di lavorazione per fresatura

Velocità di taglio: Vt (m/min)

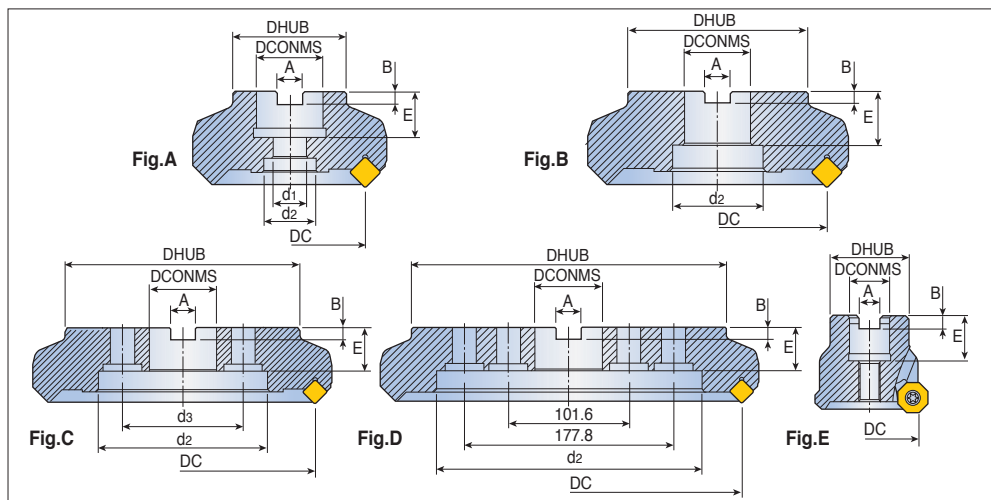
ISO	Materiale	Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	Non rivestito		
						K10	P30	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C Ricotto	420	125	1		60-170	
		≥ 0.25% C Ricotto	650	190	2		60-130	
		< 0.55% C Bonificato	850	250	3		60-100	
		≥ 0.55% C Ricotto	750	220	4		60-120	
		Bonificato	1000	300	5		50-100	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)	Ricotto		600	200	6		60-130
				930	275	7		60-100
		Bonificato		1000	300	8		50-100
				1200	350	9		40-90
	Acciaio alto legato, acciaio da fusione e acciaio da utensili	Ricotto	680	200	10		60-130	
		Bonificato	1100	325	11		50-100	
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico	680	200	12			
		Martensitico	820	240	13			
		Austenitico	600	180	14			
K	Ghisa grigia (GG)	Ferritico		160	15	70-130		
		Perlitico		250	16	50-110		
	Ghisa nodulare (GGG)	Ferritico		180	17	45-90		
		Perlitico		260	18	40-85		
Ghisa malleabile	Ferritico		130	19	70-140			
	Perlitico		230	20	55-115			
N	Alluminio	Non trattato		60	21	550-700		
		Trattato		100	22	600-750		
	Leghe di alluminio	≤ 12% Si	Non trattato		75	23	800-900	
			Trattato		90	24	650-800	
		> 12% Si	Alte temperature		130	25	250-320	
	Leghe di rame	> 1% Pb	Alta lavorabilità		110	26	300-400	
			Ottone		90	27	300-400	
			Rame elettrolitico		100	28	210-280	
	Materiali non metallici	Materiali plastici, grafite				29		
		Gomma dura				30		
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	50-70	
			Trattato		280	32	40-50	
		Base Ni o Co	Ricotto		250	33	50-70	
			Trattato		350	34	35-40	
			Fuso		320	35	45-50	
	Titanio, leghe di titanio		Rm 400		36	120-145		
Leghe trattate alpha+beta		Rm 1050		37	35-45			
H	Acciaio temprato	Temprato		55HRC	38			
		Temprato		60HRC	39			
	Ghisa in conchiglia	Fuso		400	40			
	Ghisa nodulare	Temprato		55HRC	41			

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Indicazioni di montaggio

Manicotto



Dimensioni (mm)										Fig.	Attacco
DC	DCONMS	A	B	E	DHUB		d1	d2	d3		
					Per stampo	Generali					
32	16	8.4	5.6	20	30	-	-	-	-	E	SEM16
32	16	8.4	5.6	20	30	-	9	13.5	-	A	SEM16
40	16	8.4	5.6	20	38	-	9	13.5	-	A	SEM16
40	22	10.4	6.3	22	38	-	11	17	-	A	SEM22
50	22	10.4	6.3	22	40	45	11	17	-	A	SEM22
63	22	10.4	6.3	22	47	-	11	17	-	A	SEM22
80	25.4	9.526	6	26	-	70	13	20	-	A	FMA25.4
80	27	12.4	7	28	58	70	13	22	-	A	SEM27
100	31.75	12.7	8	32	-	80	18	26	-	A	FMA31.75
100	31.75	12.7	8	32	-	80	-	46	-	B	FMA31.75
100	32	14.4	8	26	66	85	18	26	-	A	SEM32
100	32	14.4	8	26	66	85	-	46	-	B	SEM32
125	38.1	15.875	10	38	80	-	-	56	-	B	FMA38.1
125	40	16.4	9	32	85	-	22	32	-	A	SEM40
125	40	16.4	9	32	85	-	-	56	-	B	SEM40
160	40	16.4	9	32	110	-	-	90	66.7	C	FM40
160	50.8	19.05	11	38	100	-	-	72	-	B	FMA50.8
200	47.625	25.4	14	38	130	-	-	132	101.6	C	FMA47.625
200	60	25.7	14	40	130	-	-	132	101.6	C	FM60
250	47.625	25.4	14	38	160	-	-	150	101.6	C	FMA47.625
250	60	25.7	14	40	160	-	-	150	101.6	C	FM60
315	47.625	25.4	14	38	220	-	-	224	-	D	-
315	60	25.7	14	40	220	-	-	220	-	D	-

• Per i mandrini a manicotto fare riferimento alla sezione dei mandrini (parte G)

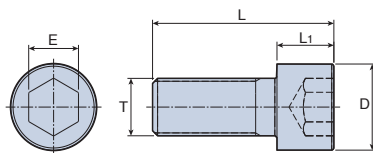
Indicazioni di montaggio

Viti di montaggio

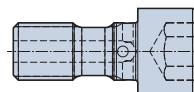
Tipo SH

Descrizione	Dimensioni (mm)					Dimensioni fresa
	D	L	L ₁	T	E	
SH M8x1.25x25(-C)	13	33	8	8	6	32,40
SH M8x1.25x30(-C)	13	38	8	8	6	32,40
SH M8x1.25x35(-C)	13	43	8	8	6	32,40
SH M10x1.5x25(-C)	16	35	10	10	8	50, 63
SH M10x1.5x30(-C)	16	40	10	10	8	50, 63
SH M10x1.5x40(-C)	16	50	10	10	8	50, 63
SH M12x1.75x30(-C)	18	42	12	12	10	80
SH M12x1.75x35(-C)	18	47	12	12	10	80
SH M16x2x30(-C)	24	46	16	16	14	100
SH M16x2x35(-C)	24	51	16	16	14	100
SH M20x2.5x40(-C)	30	60	20	20	17	125

- "-C": vite con foro per refrigerazione interna



SH

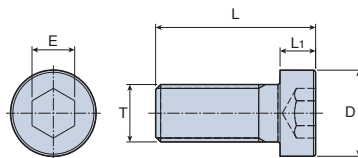


SH-C

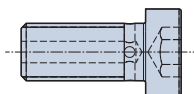
Tipo LH

Descrizione	Dimensioni (mm)					Dimensioni fresa
	D	L	L ₁	T	E	
LH M10x1.5x25(-C)	16	31.5	6.5	10	8	50, 63
LH M10x1.5x35(-C)	16	41.5	6.5	10	8	50, 63
LH M12x1.75x30(-C)	18	36.9	6.9	12	8	80
LH M16x2x35(-C)	24	45	10	16	12	100

- "-C": vite con foro per refrigerazione interna



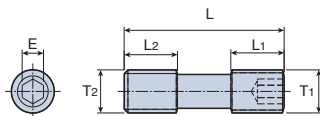
LH



LH-C

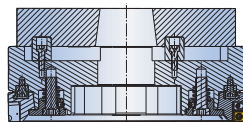
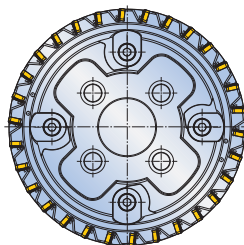
Tipo KTB, TCS

Descrizione	Dimensioni (mm)					
	L	L ₁	L ₂	T ₁	T ₂	E
KTB 32B	30	10	10	M8X1.0	M8X1.25	4
TCS10-40	40	10	15	M10X1.25	M10X1.5	5



KTB, TSC

► Nuovo sistema a cambio rapido



■ Corpo fresa leggero

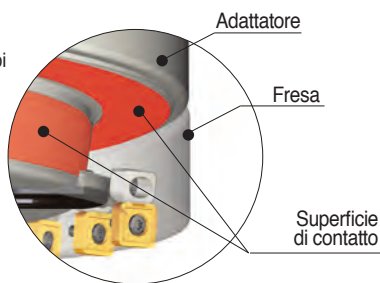
Il peso ridotto del corpo fresa, quasi la metà di quelli convenzionali, consente migliore maneggevolezza e sicurezza

■ Sistema facile e veloce

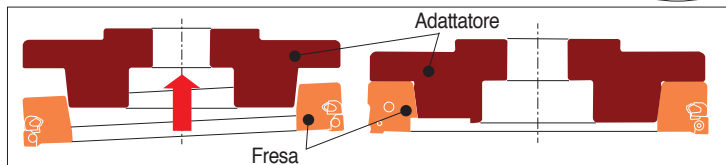
Sistema semplice e veloce con design ottimizzato per ridurre i tempi di cambio utensile

■ Doppia contatto

Eccellente ripetibilità, rigidità e precisione.



■ Facilità di montaggio grazie all'accoppiamento conico

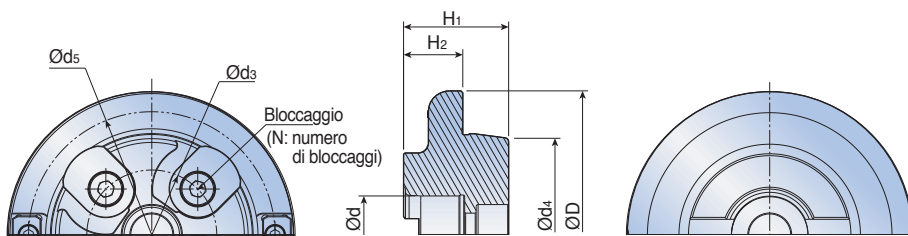


► Procedura di montaggio

■ Facilità di montaggio e posizionamento mediante l'accoppiamento conico

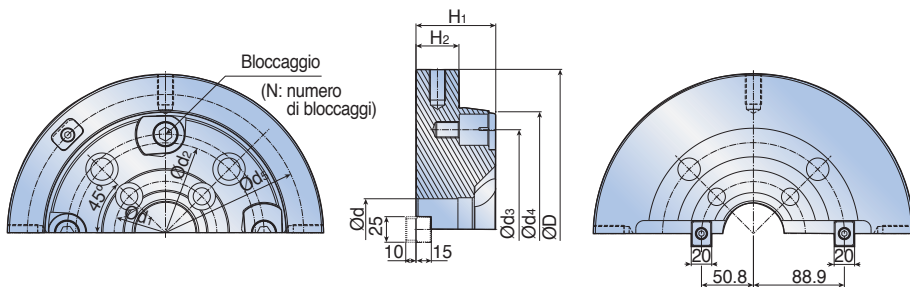


► Adattatore cambio rapido per mandrino



Descrizione	Dimensioni (mm)										Peso (kg)
	D	d	d1	d2	d3	d4	d5	N	H1	H2	
TQCA D160-FM40	150	40	-	-	68	100.37	129	4	55	31	3.9
TQCA D200-FM60	190	60	-	-	108	140.37	169	4	55	31	5.8
TQCA D250-FM60	240	60	-	-	158	190.37	219	4	55	31	10.4

► Adattatore cambio rapido per attacco macchina



Descrizione	Dimensione (mm)										Peso (kg)
	D	d	d1	d2	d3	d4	d5	N	H1	H2	
TQCA D250	248	60	101.6	-	158	190.37	219	4	72	42	17.9
TQCA D315	313	60	101.6	177.8	195	230.33	273.5	4	77	42	29.8
TQCA D355	353	60	101.6	177.8	235	270.33	313.5	8	77	42	38.3
TQCA D400	398	60	101.6	177.8	280	315.33	358.5	8	77	42	49.6

► Adattatore cambio rapido fresa

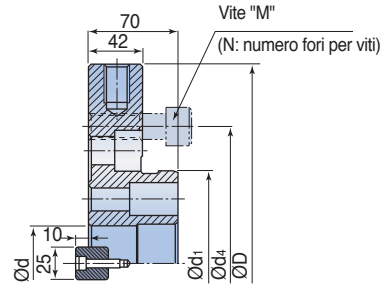
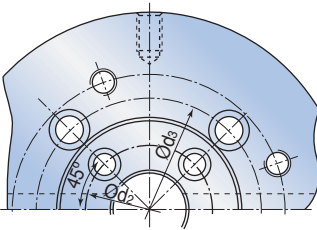
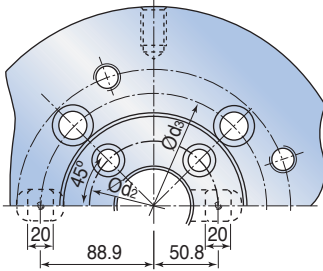


Fig.1

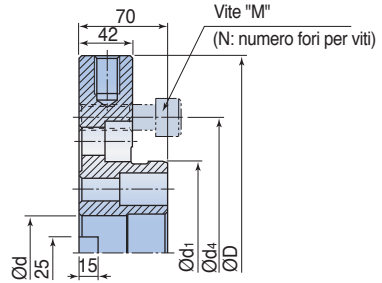


Fig.2

Descrizione	Dimensioni (mm)								Peso (Kg)
	D	d	d ₁	d ₂	d ₃	d ₄	M	N	
QA 08 K/M	198	47.625	63.5	101.6	-	114.3	M16x40	4	10
QA 10 K/M	248	60	133.35	101.6	-	177.8	M16x50	4	15
QA 12 K/M	313	60	146.05	101.6	177.8	215.9	M20x50	4	19.7
QA 14 K/M	353	60	215.9	101.6	177.8	260.4	M20x50	6	24
QA 16 K/M	398	60	254.0	101.6	177.8	304.8	M20x50	6	29

- K: adattatore con chiave (Fig.1)
- M: adattatore senza chiave (Fig.2)

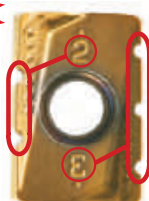
► Come utilizzare lo splitter

- 3 rompitruciolo su un tagliante e 2 rompitruciolo sul lato opposto



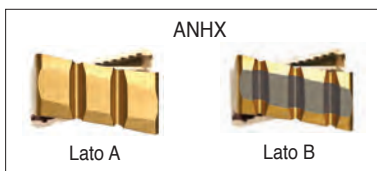
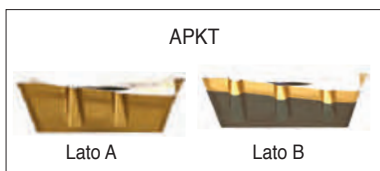
APKT

Non sono necessari 2 differenti tipi di inserto!



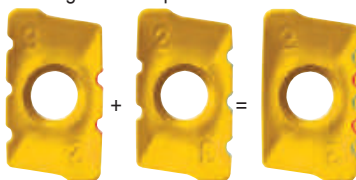
ANHX

- Per semplificare il montaggio gli inserti hanno un differente colore sul fianco in base al tipo di rompitruciolo

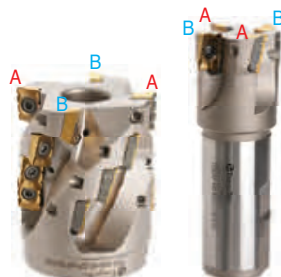
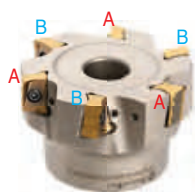
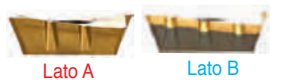
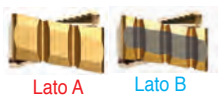


Nota: durante il montaggio degli inserti assicurarsi che siano montati in maniera sfalsata: es. 1° dente - lato con 2 rompitrucioli ; 2° dente - lato con 3 rompitruciolo e con la stessa alternanza per i restanti denti

- Entrambi i taglianti suddividono il truciolo in piccoli pezzi per una riduzione della potenza di taglio, ma sovrapposti creano un tagliante completo

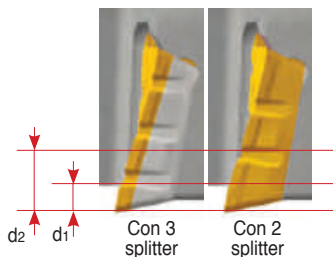


- Per ottimizzare la lavorazione si consiglia di utilizzare frese con numero di denti pari

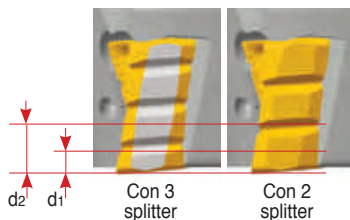


Applicabile anche su frese con numero di denti dispari

- Per un'efficace rottura del truciolo la profondità di taglio deve essere $\geq d_1$



Prof. di taglio	APKT 17	APKT 12
d ₁	3mm	2.4mm
d ₂	6.5mm	5.2mm



Prof. di taglio	ANHX 16
d ₁	2.5mm
d ₂	6mm

► Istruzioni di montaggio

Comparatore

Inserto

Vite inserto

Cuneo regolabile

Vite cuneo

Chiave a T



1 Posizionare il cuneo nella posizione più bassa ruotando la vite in senso orario.



* Si prega di evitare di usare troppa forza.

2 Montare il nuovo tagliente dell'inserto. Assicurarsi che sede sia accuratamente pulita prima di montare l'inserto.



* Si prega di fissare completamente la vite inserto poiché non è prevista una nuova regolazione.

3 Misurare il runout assiale quando tutti gli inserti sono montati e selezionare l'inserto più alto come riferimento.



* Assicurarsi che gli inserti non si danneggino durante il settaggio. Utilizzare solo una pressione ottimale.

4 Settare l'altezza dell'inserto di riferimento ruotando la vite del cuneo in senso anti orario



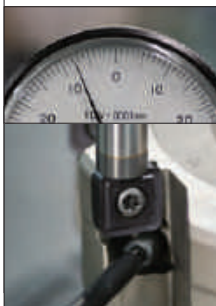
* Incrementare l'altezza di almeno 0,1 mm partendo dall'inserto più alto

5 Regolare il runout assiale degli inserti rimanenti con stesso processo utilizzato per l'inserto di riferimento.



* Si noti che l'altezza di regolazione massima non deve superare 0,1 mm

5 Regolare il runout assiale nell'intervallo di 0,005 mm ruotando la chiave gradualmente.



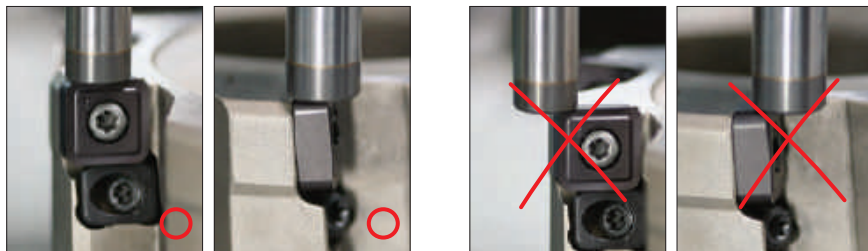
5 Se è oltre l'intervallo accettabile, ripristinalo con l'ordine **1 - 2 - 5**



6 La regolazione del runout assiale è completata (non è necessario bloccare di nuovo la vite dell'inserto).

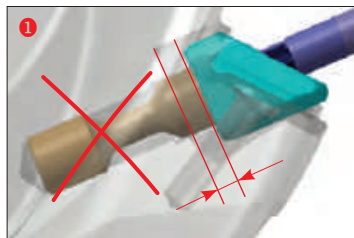


► Utilizzo del comparatore

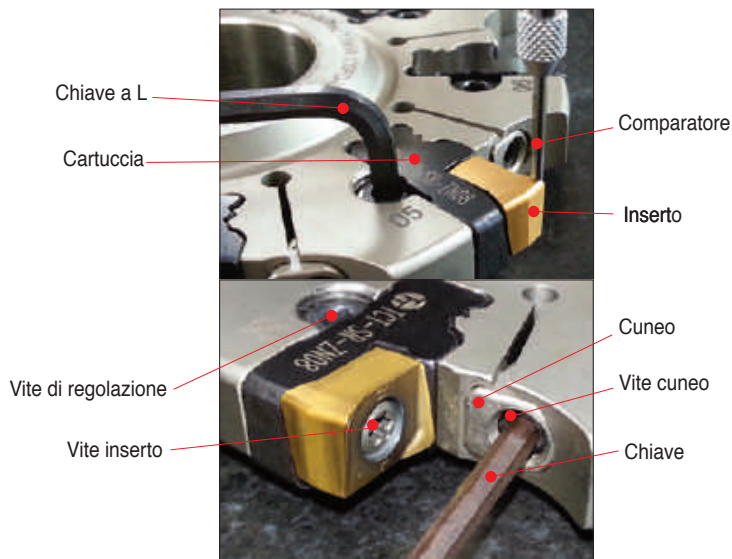


► Precauzioni speciali

- Durante il montaggio di un nuovo tagliente dell'inserto, assicurarsi che il cuneo di regolazione sia nella posizione più in bassa. Abbassare completamente il cuneo di regolazione prima di sbloccare l'inserto
- Pulire accuratamente l'inserto e la sede prima di montare un nuovo inserto o tagliente.
- Durante il montaggio della vite di regolazione del cuneo sul corpo, assicurarsi che sia serrata fino a raggiungere il fondo

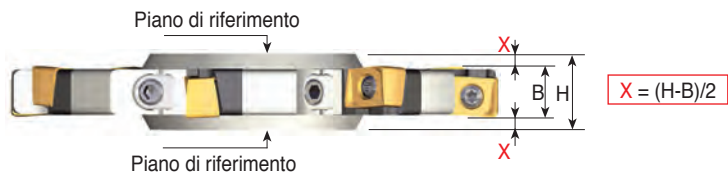


► TOP SLOT nomenclatura componenti

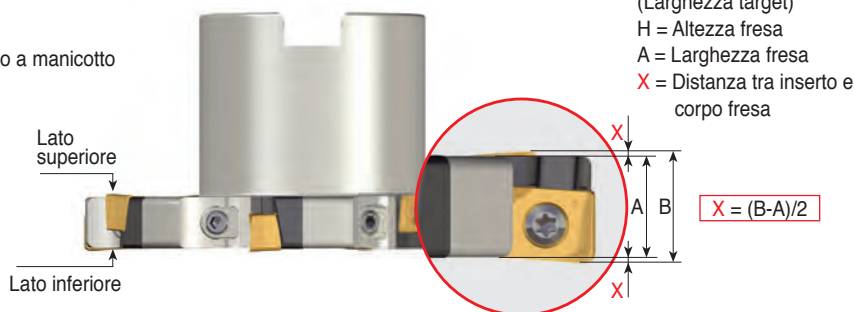


► TOP SLOT istruzioni di settaggio

■ Tipo a disco



■ Tipo a manicotto



► Procedura di settaggio

■ Tipo a disco

- 1 Fissare il nuovo inserto sulla cartuccia



- 4 Seguire lo stesso metodo per le altre cartucce. (anche sul lato opposto)

- 2 Svitare la vite del cuneo di un giro in senso antiorario.



- 5 Dopo aver impostato tutte le cartucce, fissare in sequenza il 100% dei cunei per due o tre volte.

- 3 Portare il tagliente dell'inserto alla quota "X" desiderata rispetto al piano di riferimento ruotando la vite di regolazione.



Quando si regola la cartuccia sul valore "X", impostare la posizione su un valore superiore, quindi abbassarsi al valore "X".

Ruotare la vite di regolazione in senso orario per far scendere la cartuccia

Ruotare la vite di regolazione in senso anti orario per far salire la cartuccia

■ Fresa a manicotto

- 1 Per gli inserti sul lato inferiore, ripetere i passi da 1 a 4 descritti nel "Tipo a disco" (il riferimento e il piano inferiore della fresa a manicotto)



- 4 Portare il tagliente dell'inserto alla quota "A + X" ruotando la vite di regolazione.



- 2 Per il settaggio del lato superiore, utilizzare un piano di riferimento su cui azzerare il comparatore



- 5 Seguire lo stesso metodo per le altre cartucce.

- 3 Posizionare la fresa con il lato inferiore sul piano di riferimento e svitare la vite del cuneo di un giro in senso antiorario.



- 6 Dopo aver impostato tutte le cartucce, fissare in sequenza il 100% dei cunei per due o tre volte.

Quando si regola la cartuccia sul valore "X", impostare la posizione su un valore superiore, quindi abbassarsi al valore "X".

Ruotare la vite di regolazione in senso orario per far scendere la cartuccia

Ruotare la vite di regolazione in senso anti orario per far salire la cartuccia

► Note per il settaggio

■ Importanti punti per il settaggio

- Tutte le regolazioni devono essere eseguite su una superficie piana
- Per migliorare la precisione pulire gli inserti e le loro sedi prima del bloccaggio
- Durante le operazioni di riassettaggio dei cunei e delle viti di regolazione è necessario applicare lubrificante sulla superficie di attrito. (Fig.1)
- Il valore "X" deve essere uguale per entrambe le facce superiore e inferiore quando si regola la larghezza della cava (Fig.2)
- La larghezza del taglio deve essere regolata entro il valore marcato a laser sulla fresa. (Fig.3)
Es) WIDTH 12-13 / WIDTH 20-23
- Quando si regola la cartuccia sul valore "X", impostare la posizione su un valore superiore, quindi abbassarsi al valore "X".

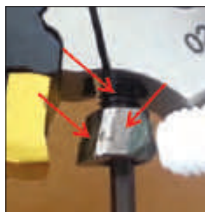


Fig.1 Lubrificante

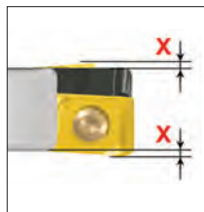


Fig.2 "X" settaggio



Fig.3 Larghezza

► Fresa a Disco per cave di piccole dimensioni

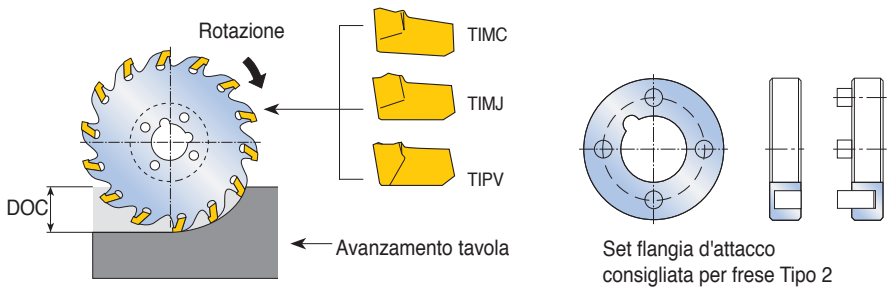


- Diametri di taglio: 75 mm, 100 mm, 125 mm, 160 mm, 250 mm
- Gamma di larghezza di taglio: 1.6 mm - 6.35 mm
- Geometria: angolo di spoglia positivo
- Applicazioni: scanalatura e taglio
- Materiali: acciaio al carbonio, acciai legati, acciai inox, ghisa, alluminio e superleghe

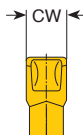
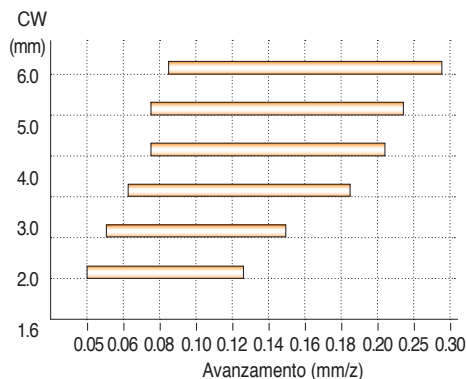
■ Caratteristiche / vantaggi delle frese a disco:

- Lavorazioni di piccole cave da 1.6 mm
- Montaggio semplice degli inserti
- L'inserto autobloccante rende il posizionamento preciso e sicuro
- Montaggio flangia d'attacco per extra stabilità
- Minimo run-out radiale
- Efficiente evacuazione del truciolo
- Ridotte forze di taglio
- Maggiore durata utensile
- Economicità

► Gamma avanzamenti consigliati per frese per scanalatura TSC



► Gamma avanzamenti consigliati (in funzione della larghezza inserto)



Avanzamento per impegno radiale
 D.O.C. $\geq 1/4$ del diametro.
 Per impegni radiali DOC $< 1/4$ del diametro
 incrementare avanzamento delle seguente %

DOC / Diametro	1/4	1/6	1/8	1/10	1/20
Incremento avanz.	0%	15%	30%	45%	45%

■ Entrata della fresa

La fresatura in concordanza entra nel pezzo con un truciolo spesso ed esce con un truciolo sottile. Si raccomanda l'utilizzo di inserti onati.

La fresatura in discordanza entra nel pezzo con un truciolo sottile ed esce con un truciolo spesso. Si raccomanda l'utilizzo di inserti affilati

La fresatura in concordanza deve essere utilizzata dove possibile, soprattutto quando si sostituiscono le frese per scanalature in HSS.

Anche su macchine con il recupero di gioco è raccomandata la lavorazione in concordanza.

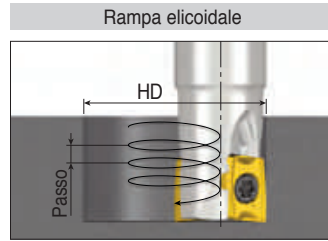
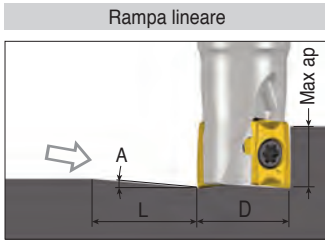
■ Montaggio della fresa

Si consiglia l'uso del set di flange d'attacco per prevenire ammaccature delle sedi per le chiavette di trascinamento, per fornire ulteriore stabilità e incrementare il volume di truciolo.

■ Montaggio dell'inserto

Posizionare manualmente l'inserto nella sua sede utilizzando un martello di legno o di plastica. L'inserto autobloccante assicura la ripetibilità e un minimo run-out radiale.

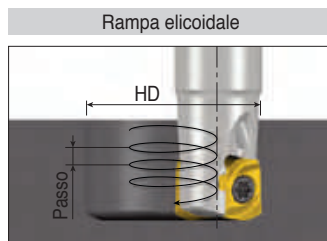
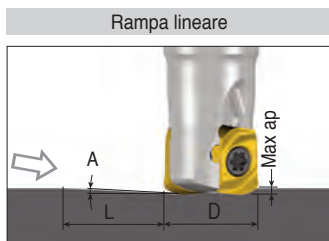
Le sedi devono essere pulite e libere da detriti prima dell'installazione.



CVK(H)T 05: R0.2

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungth. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø6	2.5°	5.0	112	6.5		0.1
					12	0.7
Ø8	2.1°	5.0	136	10.5		0.2
					16	0.8
Ø9	1.7°	5.0	164	12.5		0.3
					18	0.7
Ø10	1.7°	5.0	169	14.5		0.4
					20	0.8
Ø11	1.3°	5.0	212	16.5		0.3
					22	0.7
Ø12	1.3°	5.0	220	18.5		0.4
					24	0.7
Ø13	1.1°	5.0	249	20.5		0.4
					26	0.7
Ø14	1.0°	5.0	273	22.5		0.4
					28	0.7

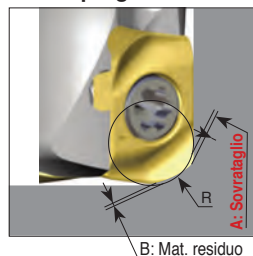


CVKT 05-HF

(Unità: mm)

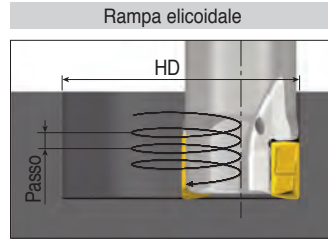
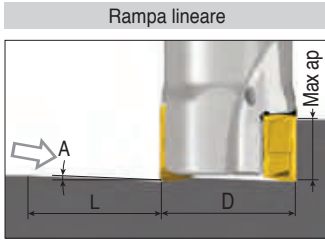
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø6	0.20°	0.5	143	6.5		0.0
					12	0.1
Ø8	0.45°	0.5	64	10.5		0.1
					16	0.2
Ø9	0.55°	0.5	52	12.5		0.1
					18	0.2
Ø10	0.30°	0.5	96	14.5		0.1
					20	0.1
Ø11	0.35°	0.5	82	16.5		0.1
					22	0.2
Ø12	0.70°	0.5	41	18.5		0.2
					24	0.4
Ø13	0.75°	0.5	38	20.5		0.3
					26	0.5
Ø14	0.85°	0.5	34	22.5		0.3
					28	0.5

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
CVKT 05-HF	0.8	0	0.21
	0.9	0	0.18
	1.0	0.02	0.14

 : 'R' di programmazione raccomandato



LPK(H)U 05

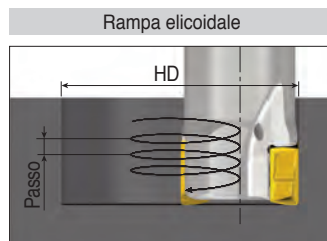
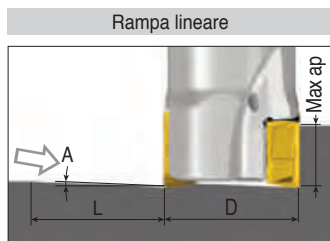
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø10	1.8°	4.6	142	16.8		0.6
					20	0.9
Ø11	1.6°	4.6	160	18.8		0.6
					22	0.8
Ø12	1.5°	4.6	176	20.8		0.6
					24	0.8
Ø13	1.3°	4.6	195	22.8		0.6
					26	0.8
Ø16	1.0°	4.6	251	28.8		0.6
					32	0.8
Ø20	0.8°	4.6	330	36.8		0.6
					40	0.7
Ø25	0.6°	4.6	439	46.8		0.6
					50	0.7
Ø32	0.4°	4.6	586	60.8		0.6
					64	0.7

LPK(H)U 09

(Unità: mm)

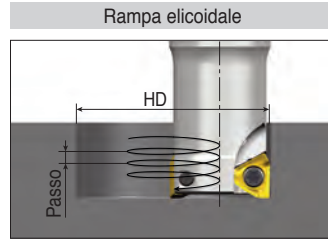
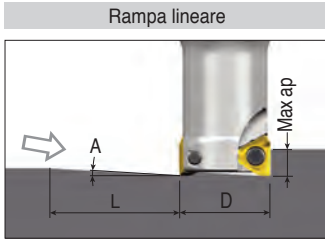
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø20	1.4°	8.3	328	33		1.0
					40	1.5
Ø25	1.1°	8.3	432	43		1.0
					50	1.5
Ø32	0.8°	8.3	594	57		1.1
					64	1.4
Ø40	0.6°	8.3	793	73		1.0
					80	1.3
Ø50	0.4°	8.3	1057	93		1.0
					100	1.2
Ø63	0.3°	8.3	1359	119		1.0
					126	1.2



LPKU 14

(Unità: mm)

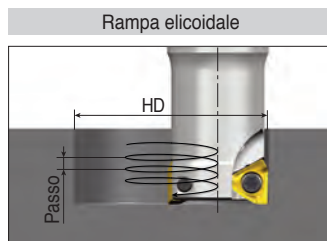
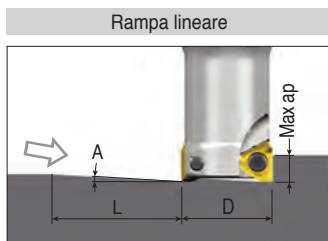
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø40	0.9°	12.5	754	69		1.5
					80	2.0
Ø50	0.7°	12.5	1023	89		1.5
					100	1.9
Ø63	0.5°	12.5	1302	115		1.5
					126	1.9
Ø80	0.4°	12.5	1790	149		1.5
					160	1.7
Ø100	0.3°	12.5	2387	189		1.4
					200	1.6
Ø125	0.2°	12.5	2865	239		1.5
					250	1.7
Ø160	0.2°	12.5	3581	309		1.6
					320	1.7
Ø200	0.1°	12.5	4775	389		1.5
					400	1.6



3PKT 04

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø8	2.1°	3.5	95	13.2		0.6
					16	0.9
Ø10	2.2°	3.5	91	17.2		0.8
					20	1.2
Ø11	3.6°	3.5	56	19.2		1.6
					22	2.1
Ø12	3.3°	3.5	61	21.2		1.6
					24	2.1
Ø13	2.5°	3.5	80	23.2		1.4
					26	1.7
Ø14	2.2°	3.5	91	25.2		1.3
					28	1.6
Ø16	1.6°	3.5	125	29.2		1.1
					32	1.4



3PK(H)T 06

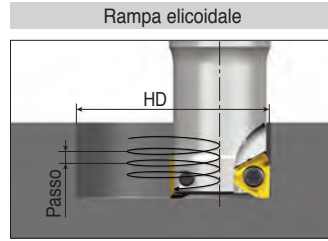
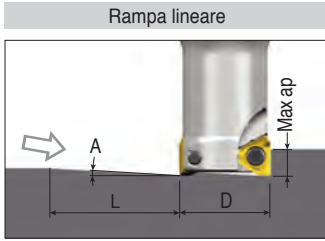
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø12	3.7°	4.7	73	19.5	24	1.3
						2.1
Ø14	2.8°	4.7	96	23.5	28	1.2
						1.8
Ø16	2.3°	4.7	117	27.5	32	1.2
						1.7
Ø17	2.0°	4.7	135	29.5	34	1.2
						1.6
Ø18	2.0°	4.7	135	31.5	36	1.3
						1.7
Ø20	1.6°	4.7	168	35.5	40	1.2
						1.5
Ø21	1.5°	4.7	180	37.5	42	1.2
						1.5
Ø22	1.5°	4.7	180	39.5	44	1.2
						1.5
Ø25	1.5°	4.7	180	45.5	50	1.4
						1.7
Ø30	1.2°	4.7	224	55.5	60	1.4
						1.7
Ø32	1.2°	4.7	224	59.5	64	1.5
						1.8
Ø35	1.0°	4.7	269	65.5	70	1.4
						1.6
Ø40	0.7°	4.7	385	75.5	80	1.2
						1.3

3PK(H)T 10

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø16	7.0°	7.0	57	24.7	32	2.8
						5.2
Ø20	3.3°	7.0	121	33.9	40	2.1
						3.1
Ø21	3.2°	7.0	125	35.9	42	2.2
						3.1
Ø22	3.2°	7.0	125	37.9	44	2.4
						3.3
Ø25	2.8°	7.0	143	43.5	50	2.4
						3.3
Ø26	2.6°	7.0	154	45.9	52	2.4
						3.1
Ø30	2.0°	7.0	201	53.9	60	2.2
						2.8
Ø32	1.8°	7.0	223	57.5	64	2.1
						2.7
Ø33	1.7°	7.0	236	59.9	66	2.1
						2.6
Ø40	1.3°	7.0	309	73.7	80	2.0
						2.4
Ø50	1.0°	7.0	401	93.7	100	2.0
						2.3
Ø63	0.8°	7.0	502	119.7	126	2.1
						2.3



3PK(H)T 15

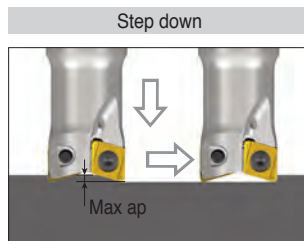
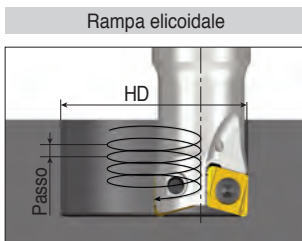
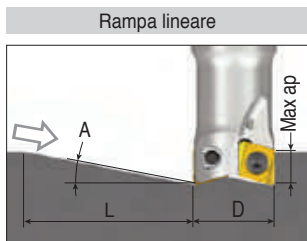
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø32	3.2°	11.0	197	53.5		3.2
					64	4.8
Ø33	3.1°	11.0	203	55.5		3.3
					66	4.8
Ø35	3.1°	11.0	203	59.5		3.5
					70	5.1
Ø40	2.0°	11.0	315	70.1		2.8
					80	3.7
Ø50	1.5°	11.0	420	90.1		2.8
					100	3.5
Ø63	1.1°	11.0	573	116.1		2.7
					126	3.2
Ø80	0.8°	11.0	788	150.3		2.6
					160	3.0
Ø100	0.6°	11.0	1051	190.5		2.5
					200	2.8
Ø125	0.5°	11.0	1261	240.3		2.7
					250	2.9
Ø160	0.3°	11.0	2102	310.3		2.1
					320	2.2
Ø200	0.2°	11.0	3153	390.3		1.8
					400	1.9

3PK(H)T 19

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø40	3.6°	15.0	239	66.7		4.5
					80	6.7
Ø50	2.2°	15.0	391	87.9		3.9
					100	5.1
Ø63	1.7°	15.0	506	113.9		4
					126	5
Ø80	1.3°	15.0	661	147.9		4.1
					160	4.8
Ø100	1.0°	15.0	860	187.9		4.1
					200	4.7
Ø125	0.8°	15.0	1075	237.9		4.2
					250	4.7
Ø160	0.6°	15.0	1433	307.9		4.1
					320	4.5
Ø200	0.4°	15.0	2150	387.9		3.5
					400	3.7
Ø250	0.3°	15.0	2866	487.9		3.3
					500	3.5



4NKT 04: R0.2

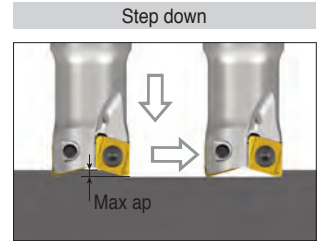
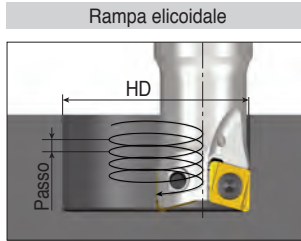
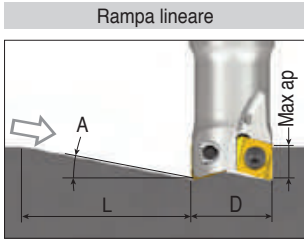
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø8	4.2°	3.5	48	9.9		0.4	0.4
					16	3.1	
Ø10	4.6°	3.5	44	13.9		0.8	0.6
					20	2.1	
Ø11	5.2°	3.5	38	15.9		1.2	0.7
					22	2.7	
Ø12	4.8°	3.5	42	17.9		1.3	0.7
					24	2.7	
Ø13	5.1°	3.5	39	19.9		1.6	0.7
					26	3.1	
Ø16	4.4°	3.5	46	25.9		2.0	0.7
					32	3.3	
Ø20	3.3°	3.5	61	33.9		2.1	0.6
					40	3.1	
Ø25	2.5°	3.5	80	43.9		2.2	0.6
					50	2.9	
Ø32	1.9°	3.5	106	57.9		2.3	0.6
					64	2.8	
Ø40	1.4°	3.5	138	73.9		2.3	0.6
					80	2.7	

4NKT 04: R0.2

(Unità: mm)

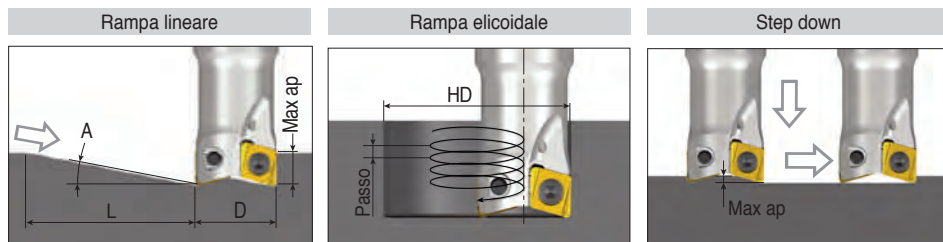
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø8	3.7°	3.5	54	9.9		0.3	0.4
					16	2.8	
Ø10	4.2°	3.5	48	13.9		0.8	0.5
					20	2.0	
Ø11	4.8°	3.5	42	15.9		1.1	0.6
					22	2.5	
Ø12	4.5°	3.5	44	17.9		1.2	0.6
					24	2.5	
Ø13	4.7°	3.5	43	19.9		1.5	0.6
					26	2.9	
Ø16	4.1°	3.5	49	25.9		1.9	0.6
					32	3.1	
Ø20	3.1°	3.5	65	33.9		2.0	0.5
					40	2.9	
Ø25	2.3°	3.5	85	43.9		2.1	0.5
					50	2.7	
Ø32	1.7°	3.5	115	57.9		2.1	0.5
					64	2.6	
Ø40	1.3°	3.5	149	73.9		2.1	0.5
					80	2.5	



4NKT 04: R0.8

(Unità: mm)

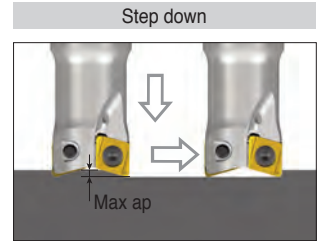
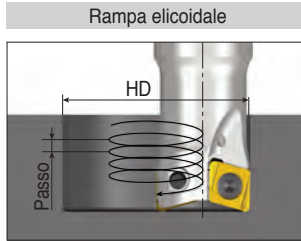
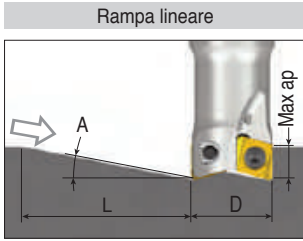
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø8	2.2°	3.5	91	9.9		0.2	0.2
					16	1.6	
Ø10	3.0°	3.5	67	13.9		0.5	0.4
					20	1.4	
Ø11	3.7°	3.5	54	15.9		0.8	0.4
					22	1.9	
Ø12	3.5°	3.5	57	17.9		1.0	0.4
					24	2.0	
Ø13	3.9°	3.5	51	19.9		1.3	0.4
					26	2.4	
Ø16	3.5°	3.5	57	25.9		1.6	0.4
					32	2.6	
Ø20	2.6°	3.5	77	33.9		1.7	0.3
					40	2.4	
Ø25	1.9°	3.5	103	43.9		1.7	0.3
					50	2.3	
Ø32	1.5°	3.5	134	57.9		1.8	0.3
					64	2.2	
Ø40	1.1°	3.5	174	73.9		1.8	0.3
					80	2.1	



4NKT 06: R0.4

(Unità: mm)

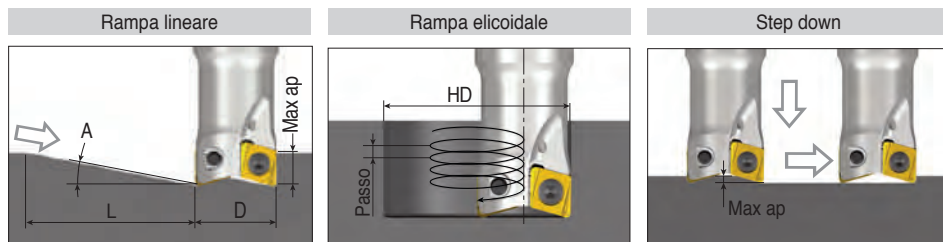
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø16	4.3°	6.0	80	21.5		1.1	0.65
					32	3.2	
Ø17	4.3°	6.0	80	23.5		1.3	0.65
					34	3.4	
Ø18	4.7°	6.0	73	25.5		1.6	0.65
					36	3.9	
Ø20	4.9°	6.0	70	29.5		2.2	0.65
					40	4.6	
Ø21	5.0°	6.0	69	31.5		2.5	0.65
					42	4.9	
Ø25	4.9°	6.0	70	39.5		3.3	0.65
					50	5.7	
Ø26	4.6°	6.0	75	41.5		3.3	0.65
					52	5.6	
Ø32	3.5°	6.0	98	53.5		3.5	0.65
					64	5.2	
Ø33	3.4°	6.0	101	55.5		3.6	0.65
					66	5.2	
Ø35	3.1°	6.0	111	59.5		3.5	0.65
					70	5.1	
Ø36	3.0°	6.0	115	61.5		3.6	0.65
					72	5.0	
Ø38	2.8°	6.0	123	65.5		3.6	0.65
					76	5.0	
Ø40	2.6°	6.0	130	69.5		3.6	0.65
					80	4.9	
Ø43	2.4°	6.0	143	75.5		3.6	0.65
					86	4.8	
Ø50	2.0°	6.0	168	89.5		3.8	0.65
					100	4.8	
Ø63	1.6°	6.0	215	115.5		3.9	0.65
					126	4.7	



4NKT 06: R0.8

(Unità: mm)

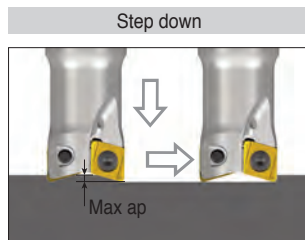
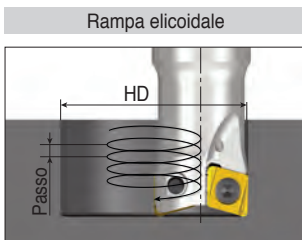
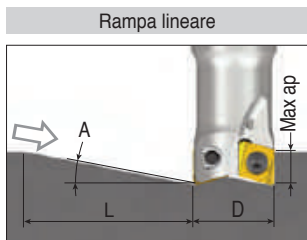
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø16	3.7°	6.0	93	21.5		0.9	0.55
					32	2.8	
Ø17	3.8°	6.0	90	23.5		1.2	0.55
					34	3.0	
Ø18	4.2°	6.0	82	25.5		1.5	0.55
					36	3.5	
Ø20	4.4°	6.0	78	29.5		2.0	0.55
					40	4.1	
Ø21	4.6°	6.0	75	31.5		2.3	0.55
					42	4.5	
Ø25	4.6°	6.0	75	39.5		3.1	0.55
					50	5.4	
Ø26	4.3°	6.0	80	41.5		3.1	0.55
					52	5.2	
Ø32	3.2°	6.0	107	53.5		3.2	0.55
					64	4.8	
Ø33	3.1°	6.0	111	55.5		3.3	0.55
					66	4.8	
Ø35	2.8°	6.0	121	59.5		3.3	0.55
					70	4.6	
Ø36	2.7°	6.0	125	61.5		3.3	0.55
					72	4.6	
Ø38	2.5°	6.0	135	65.5		3.3	0.55
					76	4.5	
Ø40	2.4°	6.0	140	69.5		3.4	0.55
					80	4.6	
Ø43	2.2°	6.0	153	75.5		3.4	0.55
					86	4.5	
Ø50	1.9°	6.0	181	89.5		3.5	0.55
					100	4.4	
Ø63	1.4°	6.0	237	115.5		3.5	0.55
					126	4.3	



4NKT 06: R1.2

(Unità: mm)

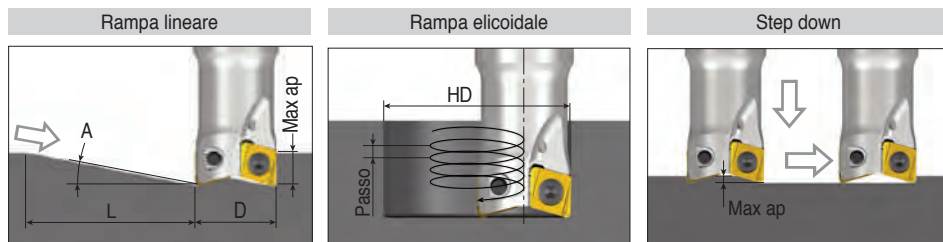
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø16	3.0°	6.0	115	21.5	0.8	0.4	
				32	2.2		
Ø17	3.2°	6.0	107	23.5	1.0	0.4	
				34	2.5		
Ø18	3.6°	6.0	95	25.5	1.3	0.4	
				36	3.0		
Ø20	3.9°	6.0	88	29.5	1.7	0.4	
				40	3.6		
Ø21	4.1°	6.0	84	31.5	2.0	0.4	
				42	4.0		
Ø25	4.2°	6.0	82	39.5	2.8	0.4	
				50	4.9		
Ø26	3.9°	6.0	88	41.5	2.8	0.4	
				52	4.7		
Ø32	2.9°	6.0	119	53.5	2.9	0.4	
				64	4.3		
Ø33	2.8°	6.0	123	55.5	2.9	0.4	
				66	4.3		
Ø35	2.6°	6.0	132	59.5	3.0	0.4	
				70	4.2		
Ø36	2.5°	6.0	137	61.5	3.0	0.4	
				72	4.2		
Ø38	2.3°	6.0	146	65.5	3.0	0.4	
				76	4.2		
Ø40	2.2°	6.0	156	69.5	3.0	0.4	
				80	4.1		
Ø43	2.0°	6.0	168	75.5	3.1	0.4	
				86	4.1		
Ø50	1.7°	6.0	202	89.5	3.1	0.4	
				100	4.0		
Ø63	1.3°	6.0	265	115.5	3.2	0.4	
				126	3.8		



4NKT 06: R1.6

(Unità: mm)

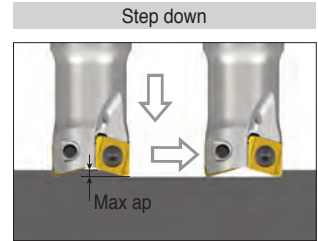
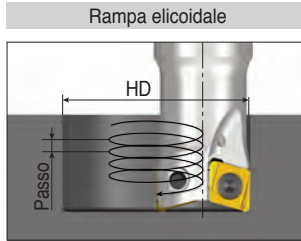
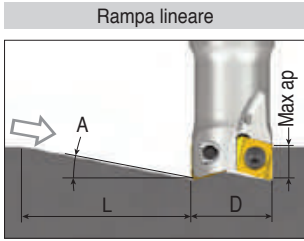
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø16	2.2°	6.0	156	21.5		0.6	0.2
					32	1.6	
Ø17	2.4°	6.0	143	23.5		0.7	0.2
					34	1.9	
Ø18	2.8°	6.0	123	25.5		1.0	0.2
					36	2.3	
Ø20	3.2°	6.0	107	29.5		1.4	0.2
					40	3.0	
Ø21	3.4°	6.0	101	31.5		1.7	0.2
					42	3.3	
Ø25	3.7°	6.0	93	39.5		2.5	0.2
					50	4.3	
Ø26	3.4°	6.0	101	41.5		2.5	0.2
					52	4.1	
Ø32	2.5°	6.0	135	53.5		2.6	0.2
					64	3.8	
Ø33	2.4°	6.0	140	55.5		2.6	0.2
					66	3.8	
Ø35	2.3°	6.0	149	59.5		2.6	0.2
					70	3.8	
Ø36	2.2°	6.0	156	61.5		2.6	0.2
					72	3.7	
Ø38	2.0°	6.0	168	65.5		2.6	0.2
					76	3.6	
Ø40	1.9°	6.0	176	69.5		2.7	0.2
					80	3.6	
Ø43	1.8°	6.0	191	75.5		2.7	0.2
					86	3.6	
Ø50	1.5°	6.0	229	89.5		2.8	0.2
					100	3.5	
Ø63	1.1°	6.0	299	115.5		2.8	0.2
					126	3.4	



4NKT 06: R2.0

(Unità: mm)

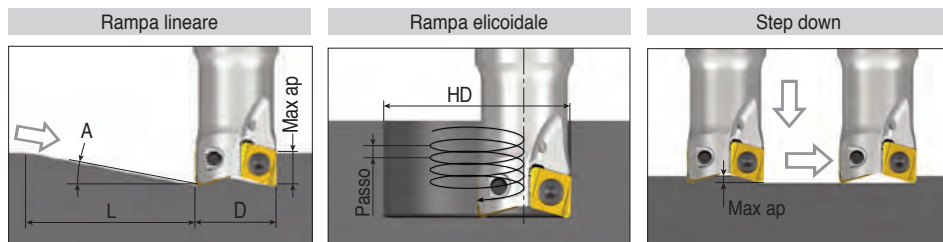
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø16	1.6°	6.0	215	21.5		0.4	0.05
					32	1.2	
Ø17	1.8°	6.0	191	23.5		0.5	0.05
					34	1.4	
Ø18	2.3°	6.0	149	25.5		0.8	0.05
					36	1.9	
Ø20	2.7°	6.0	125	29.5		1.2	0.05
					40	2.6	
Ø21	3.0°	6.0	115	31.5		1.5	0.05
					42	2.9	
Ø25	3.3°	6.0	104	39.5		2.2	0.05
					50	3.8	
Ø26	3.1°	6.0	111	41.5		2.2	0.05
					52	3.8	
Ø32	2.3°	6.0	149	53.5		2.3	0.05
					64	3.4	
Ø33	2.2°	6.0	156	55.5		2.3	0.05
					66	3.4	
Ø35	2.0°	6.0	168	59.5		2.3	0.05
					70	3.3	
Ø36	2.0°	6.0	172	61.5		2.4	0.05
					72	3.4	
Ø38	1.8°	6.0	186	65.5		2.4	0.05
					76	3.3	
Ø40	1.7°	6.0	196	69.5		2.4	0.05
					80	3.3	
Ø43	1.3°	6.0	265	75.5		2.0	0.05
					86	2.6	
Ø50	1.3°	6.0	255	89.5		2.5	0.05
					100	3.1	
Ø63	1.0°	6.0	328	115.5		2.6	0.05
					126	3.1	



4NHT 06: R0.4

(Unità: mm)

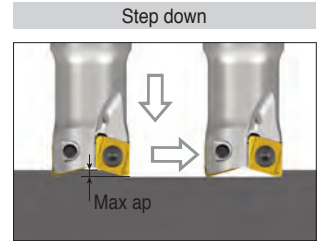
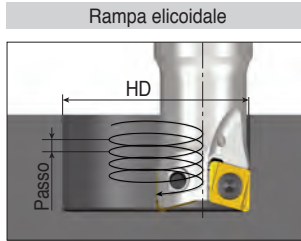
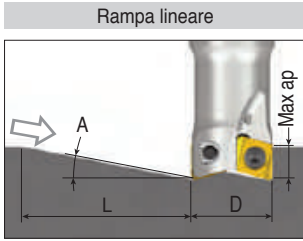
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø16	2.9°	6.0	119	21.5		0.7	0.35
					32	2.2	
Ø17	3.0°	6.0	115	23.5		0.9	0.35
					34	2.4	
Ø18	3.4°	6.0	101	25.5		1.2	0.35
					36	2.9	
Ø20	3.8°	6.0	90	29.5		1.7	0.35
					40	3.5	
Ø21	4.0°	6.0	86	31.5		2.0	0.35
					42	3.9	
Ø25	4.1°	6.0	84	39.5		2.8	0.35
					50	4.8	
Ø26	3.8°	6.0	90	41.5		2.7	0.35
					52	4.6	
Ø32	2.8°	6.0	123	53.5		2.8	0.35
					64	4.2	
Ø33	2.7°	6.0	127	55.5		2.8	0.35
					66	4.2	
Ø35	2.5°	6.0	135	59.5		2.9	0.35
					70	4.2	
Ø36	2.4°	6.0	140	61.5		2.9	0.35
					72	4.1	
Ø38	2.3°	6.0	149	65.5		2.9	0.35
					76	4.1	
Ø40	2.1°	6.0	160	69.5		3.0	0.35
					80	4.0	
Ø43	1.9°	6.0	176	75.5		3.0	0.35
					86	3.9	
Ø50	1.6°	6.0	208	89.5		3.0	0.35
					100	3.8	
Ø63	1.2°	6.0	275	115.5		3.1	0.35
					126	3.7	



4NHT 06: R0.8

(Unità: mm)

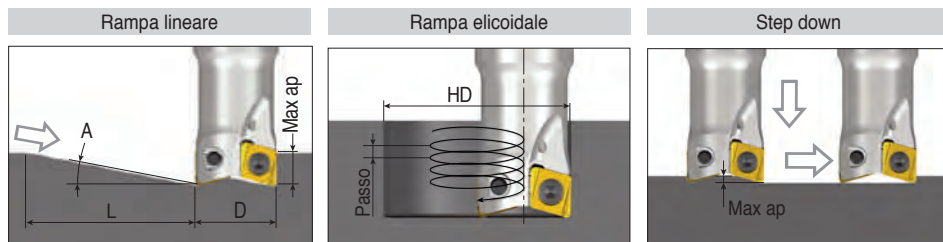
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø16	2.9°	6.0	119	21.5		0.7	0.35
					32	2.2	
Ø17	3.0°	6.0	115	23.5		0.9	0.35
					34	2.4	
Ø18	3.5°	6.0	98	25.5		1.2	0.35
					36	2.9	
Ø20	3.8°	6.0	90	29.5		1.7	0.35
					40	3.5	
Ø21	4.0°	6.0	86	31.5		2.0	0.35
					42	3.9	
Ø25	4.1°	6.0	84	39.5		2.8	0.35
					50	4.8	
Ø26	3.8°	6.0	90	41.5		2.7	0.35
					52	4.6	
Ø32	2.8°	6.0	123	53.5		2.8	0.35
					64	4.2	
Ø33	2.7°	6.0	127	55.5		2.8	0.35
					66	4.2	
Ø35	2.5°	6.0	135	59.5		2.9	0.35
					70	4.2	
Ø36	2.4°	6.0	140	61.5		2.9	0.35
					72	4.1	
Ø38	2.3°	6.0	149	65.5		2.9	0.35
					76	4.1	
Ø40	2.1°	6.0	160	69.5		3.0	0.35
					80	4.0	
Ø43	1.9°	6.0	176	75.5		3.0	0.35
					86	3.9	
Ø50	1.6°	6.0	208	89.5		3.0	0.35
					100	3.8	
Ø63	1.25°	6.0	275	115.5		3.1	0.35
					126	3.7	



4NHT 06: R0.5-F

(Unità: mm)

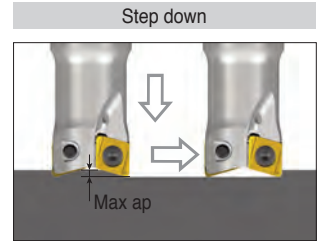
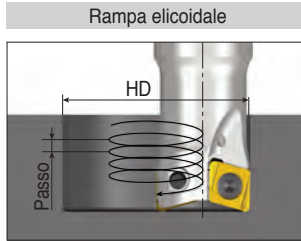
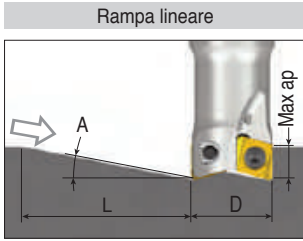
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø16	3.5°	2.3	38	21.5	32	0.9	0.65
						2.6	
Ø17	3.6°	2.3	37	23.5	34	1.1	0.65
						2.9	
Ø18	4.0°	2.3	33	25.5	36	1.4	0.65
						3.4	
Ø20	4.3°	2.3	31	29.5	40	1.9	0.65
						4.0	
Ø21	4.4°	2.3	30	31.5	42	2.2	0.65
						4.3	
Ø25	4.9°	2.3	27	39.5	50	3.3	0.65
						5.7	
Ø26	4.6°	2.3	29	41.5	52	3.3	0.65
						5.6	
Ø32	3.5°	2.3	38	53.5	64	3.5	0.65
						5.2	
Ø33	3.3°	2.3	40	55.5	66	3.5	0.65
						5.1	
Ø35	3.1°	2.3	42	59.5	70	3.5	0.65
						5.1	
Ø36	3.0°	2.3	44	61.5	72	3.6	0.65
						5.0	
Ø38	2.8°	2.3	47	65.5	76	3.6	0.65
						5.0	
Ø40	2.6°	2.3	51	69.5	80	3.6	0.65
						4.8	
Ø43	2.4°	2.3	55	75.5	86	3.6	0.65
						4.8	
Ø50	2.0°	2.3	64	89.5	100	3.8	0.65
						4.8	
Ø63	1.7°	2.3	78	115.5	126	4.2	0.65
						5.0	



4NHT 06: R0.8-F

(Unità: mm)

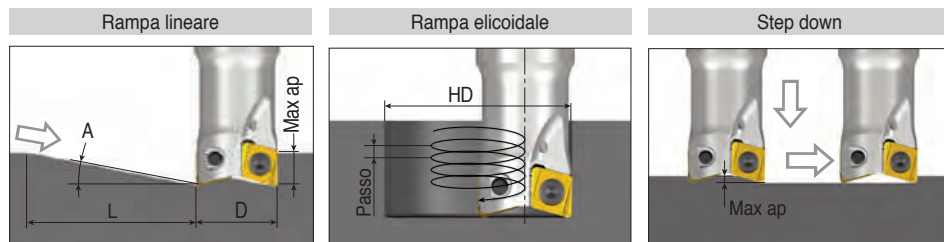
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø16	3.1°	1.9	35	21.5		0.8	0.55
					32	2.3	
Ø17	3.2°	1.9	34	23.5		1.0	0.55
					34	2.5	
Ø18	3.6°	1.9	30	25.5		1.3	0.55
					36	3.0	
Ø20	3.9°	1.9	28	29.5		1.7	0.55
					40	3.6	
Ø21	4.1°	1.9	27	31.5		2.0	0.55
					42	4.0	
Ø25	4.6°	1.9	24	39.5		3.1	0.55
					50	5.4	
Ø26	4.4°	1.9	25	41.5		3.2	0.55
					52	5.3	
Ø32	3.3°	1.9	33	53.5		3.3	0.55
					64	4.9	
Ø33	3.1°	1.9	35	55.5		3.3	0.55
					66	4.8	
Ø35	2.9°	1.9	38	59.5		3.3	0.55
					70	4.7	
Ø36	2.8°	1.9	39	61.5		3.3	0.55
					72	4.7	
Ø38	2.6°	1.9	41	65.5		3.4	0.55
					76	4.7	
Ø40	2.4°	1.9	44	69.5		3.4	0.55
					80	4.6	
Ø43	2.2°	1.9	48	75.5		3.4	0.55
					86	4.5	
Ø50	1.9°	1.9	57	89.5		3.5	0.55
					100	4.4	
Ø63	1.4°	1.9	75	115.5		3.5	0.55
					126	4.3	



4NHT 06: R1.0-F

(Unità: mm)

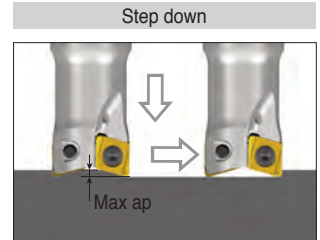
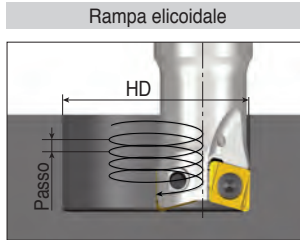
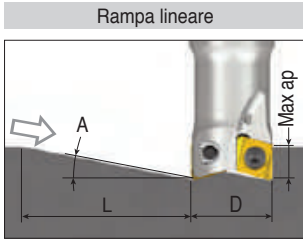
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø16	2.7°	2.1	44	21.5	0.7	2.1	0.45
				32	0.9		
Ø17	2.9°	2.1	41	23.5	0.9	2.3	0.45
				34	1.2		
Ø18	3.3°	2.1	36	25.5	1.2	2.8	0.45
				36	1.6		
Ø20	3.6°	2.1	33	29.5	1.6	3.4	0.45
				40	1.9		
Ø21	3.8°	2.1	32	31.5	1.9	3.7	0.45
				42	3.0		
Ø25	4.4°	2.1	27	39.5	3.0	5.1	0.45
				50	3.0		
Ø26	4.2°	2.1	29	41.5	3.0	5.1	0.45
				52	3.1		
Ø32	3.1°	2.1	39	53.5	3.1	4.6	0.45
				64	3.1		
Ø33	3.0°	2.1	40	55.5	3.1	4.6	0.45
				66	3.2		
Ø35	2.8°	2.1	43	59.5	3.2	4.6	0.45
				70	3.1		
Ø36	2.6°	2.1	45	61.5	3.1	4.4	0.45
				72	3.2		
Ø38	2.5°	2.1	48	65.5	3.2	4.4	0.45
				76	3.2		
Ø40	2.3°	2.1	51	69.5	3.2	4.4	0.45
				80	3.3		
Ø43	2.1°	2.1	56	75.5	3.3	4.3	0.45
				86	3.3		
Ø50	1.8°	2.1	67	89.5	3.3	4.2	0.45
				100	3.4		
Ø63	1.4°	2.1	86	115.5	3.4	4.1	0.45
				126	3.4		



4NHT 06: R1.5-F

(Unità: mm)

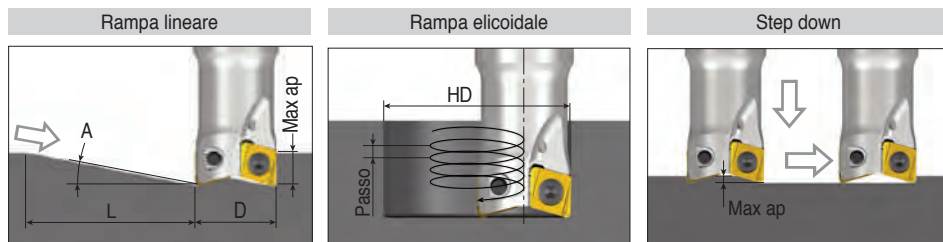
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø16	1.9°	3.3	97	21.5		0.5	0.25
					32	1.5	
Ø17	2.1°	3.3	88	23.5		0.7	0.25
					34	1.7	
Ø18	2.6°	3.3	73	25.5		0.9	0.25
					36	2.2	
Ø20	3.0°	3.3	63	29.5		1.3	0.25
					40	2.8	
Ø21	3.2°	3.3	59	31.5		1.6	0.25
					42	3.1	
Ø25	3.9°	3.3	48	39.5		2.6	0.25
					50	4.5	
Ø26	3.7°	3.3	51	41.5		2.7	0.25
					52	4.5	
Ø32	2.7°	3.3	70	53.5		2.7	0.25
					64	4.0	
Ø33	2.6°	3.3	71	55.5		2.8	0.25
					66	4.1	
Ø35	2.4°	3.3	77	59.5		2.8	0.25
					70	4.0	
Ø36	2.3°	3.3	80	61.5		2.8	0.25
					72	3.9	
Ø38	2.2°	3.3	86	65.5		2.8	0.25
					76	3.9	
Ø40	2.1°	3.3	90	69.5		2.9	0.25
					80	3.9	
Ø43	1.9°	3.3	100	75.5		2.9	0.25
					86	3.8	
Ø50	1.6°	3.3	118	89.5		2.9	0.25
					100	3.7	
Ø63	1.2°	3.3	151	115.5		3.1	0.25
					126	3.7	



4NHT 06: R2.0-F

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø16	0.8°	2.1	142	21.5	0.2	0.05	
				32	0.6		
Ø17	1.1°	2.1	109	23.5	0.3	0.05	
				34	0.9		
Ø18	1.6°	2.1	75	25.5	0.6	0.05	
				36	1.3		
Ø20	2.1°	2.1	57	29.5	0.9	0.05	
				40	2.0		
Ø21	2.3°	2.1	51	31.5	1.1	0.05	
				42	2.3		
Ø25	3.2°	2.1	38	39.5	2.2	0.05	
				50	3.7		
Ø26	3.0°	2.1	40	41.5	2.2	0.05	
				52	3.6		
Ø32	2.2°	2.1	53	53.5	2.3	0.05	
				64	3.4		
Ø33	2.1°	2.1	56	55.5	2.3	0.05	
				66	3.3		
Ø35	2.0°	2.1	60	59.5	2.3	0.05	
				70	3.3		
Ø36	1.9°	2.1	62	61.5	2.3	0.05	
				72	3.3		
Ø38	1.8°	2.1	67	65.5	2.3	0.05	
				76	3.2		
Ø40	1.7°	2.1	71	69.5	2.3	0.05	
				80	3.2		
Ø43	1.5°	2.1	78	75.5	2.3	0.05	
				86	3.1		
Ø50	1.3°	2.1	93	89.5	2.4	0.05	
				100	3.0		
Ø63	1.0°	2.1	120	115.5	2.4	0.05	
				126	2.9		



4NKT 09: R0.8

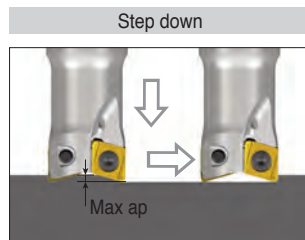
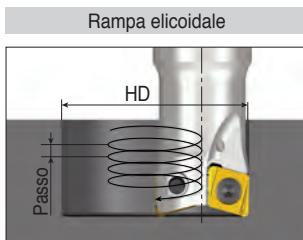
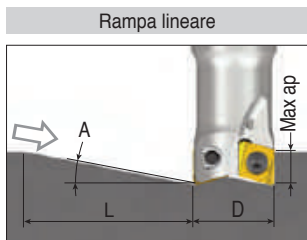
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø20	3.7°	8.0	124	25.5		0.9	0.9
					40	3.5	
Ø25	4.9°	8.0	93	35.5		2.4	0.9
					50	5.7	
Ø32	4.9°	8.0	93	49.5		4.0	0.9
					64	7.3	
Ø40	3.6°	8.0	127	65.5		4.3	0.9
					80	6.7	
Ø50	2.7°	8.0	170	85.5		4.5	0.9
					100	6.3	
Ø63	2.0°	8.0	224	111.5		4.6	0.9
					126	6.0	
Ø80	1.5°	8.0	296	145.5		4.7	0.9
					160	5.8	

4NKT 09: R1.6

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø20	2.7°	8.0	167	25.5		0.7	0.6
					40	2.6	
Ø25	4.1°	8.0	112	35.5		2.0	0.6
					50	4.8	
Ø32	4.4°	8.0	104	49.5		3.6	0.6
					64	6.6	
Ø40	3.1°	8.0	148	65.5		3.7	0.6
					80	5.8	
Ø50	2.3°	8.0	195	85.5		3.9	0.6
					100	5.5	
Ø63	1.8°	8.0	255	111.5		4.1	0.6
					126	5.3	
Ø80	1.3°	8.0	340	145.5		4.1	0.6
					160	5.0	



4NHT 09: R0.4

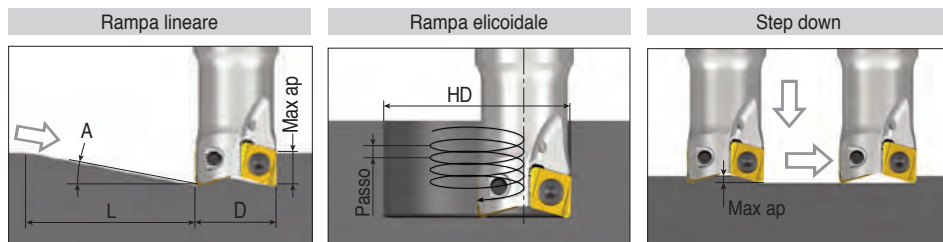
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø20	2.9°	8.0	155	25.5	40	0.8	0.9
						2.7	
Ø25	4.3°	8.0	106	35.5	50	2.1	0.9
						5.0	
Ø32	4.5°	8.0	102	49.5	64	3.7	0.9
						6.7	
Ø40	3.2°	8.0	143	65.5	80	3.8	0.9
						6.0	
Ø50	2.4°	8.0	191	85.5	100	4.0	0.9
						5.6	
Ø63	1.8°	8.0	255	111.5	126	4.1	0.9
						5.3	
Ø80	1.3°	8.0	340	145.5	160	4.1	0.9
						5.0	

4NHT 09: R0.8

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø20	2.9°	8.0	155	25.5	40	0.8	0.6
						2.7	
Ø25	4.3°	8.0	106	35.5	50	2.1	0.6
						5.0	
Ø32	4.5°	8.0	102	49.5	64	3.7	0.6
						6.7	
Ø40	3.2°	8.0	143	65.5	80	3.8	0.6
						6.0	
Ø50	2.4°	8.0	191	85.5	100	4.0	0.6
						5.6	
Ø63	1.8°	8.0	255	111.5	126	4.1	0.6
						5.3	
Ø80	1.3°	8.0	340	145.5	160	4.1	0.6
						5.0	



4NKT 11: R0.8

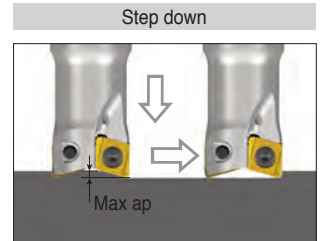
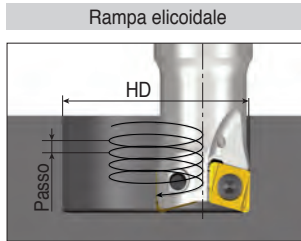
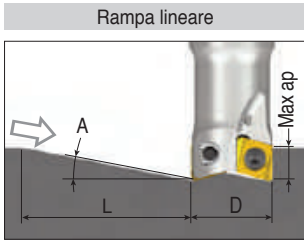
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø25	5.1°	10.3	115	31.5		1.5	1.4
					50	6.0	
Ø32	5.3°	10.3	111	45.5		3.3	1.3
					64	7.9	
Ø40	5.0°	10.3	118	61.5		5.0	1.2
					80	9.3	
Ø50	3.7°	10.3	159	81.5		5.4	1.2
					100	8.6	
Ø63	2.7°	10.3	219	107.5		5.6	1.2
					126	7.9	
Ø80	2.0°	10.3	288	141.5		5.9	1.2
					160	7.6	

4NKT 14: R0.8

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø32	5.2°	13.5	148	39.5		1.8	1.5
					64	7.8	
Ø40	5.2°	13.5	148	55.5		3.8	1.3
					80	9.7	
Ø50	5.5°	13.5	140	75.5		6.6	1.3
					100	12.8	
Ø63	4.0°	13.5	193	101.5		7.2	1.3
					126	11.8	
Ø80	2.9°	13.5	267	135.5		7.5	1.3
					160	10.8	



4NKT 11 PNR: R0.8

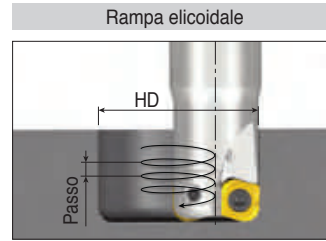
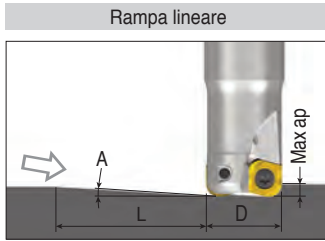
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø25	4.0°	10.3	147	31.5	1.2	4.7	1.1
				50	2.7		
Ø32	4.3°	10.3	135	45.5	6.5	6.5	1.0
				64	2.7		
Ø40	4.5°	10.3	131	61.5	8.4	8.4	0.9
				80	4.5		
Ø50	3.2°	10.3	184	81.5	7.5	7.5	0.9
				100	4.7		
Ø63	2.4°	10.3	246	107.5	7.0	7.0	0.9
				126	5.0		
Ø80	1.8°	10.3	328	141.5	6.7	6.7	0.9
				160	5.2		

4NKT 14 PNR: R0.8

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø32	4.1°	13.5	188	39.5	1.4	6.1	1.1
				64	3.1		
Ø40	4.3°	13.5	180	55.5	8.0	8.0	0.9
				80	3.1		
Ø50	4.7°	13.5	163	75.5	11.1	11.1	0.9
				100	5.7		
Ø63	3.5°	13.5	221	101.5	10.3	10.3	0.9
				126	6.3		
Ø80	2.6°	13.5	297	135.5	9.7	9.7	0.9
				160	6.7		



4NKT 04-HF: R1.2

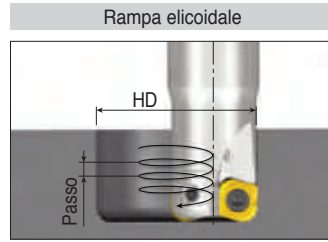
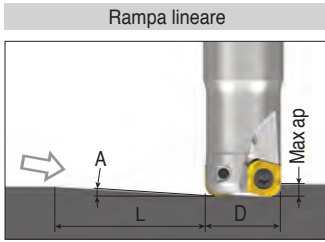
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø8	0.1°	0.5	191	9.9		0.0
					16	0.1
Ø10	0.8°	0.5	34	13.9		0.2
					20	0.4
Ø11	1.6°	0.5	18	15.9		0.4
					22	0.5
Ø12	1.6°	0.5	18	17.9		0.4
					24	0.5
Ø13	2.0°	0.5	14	19.9		0.5
					26	0.5
Ø16	1.9°	0.5	15	25.9		0.5
					32	0.5
Ø20	2.3°	0.5	12	33.9		0.5
					40	0.5
Ø25	1.7°	0.5	16	43.9		0.5
					50	0.5
Ø32	1.3°	0.5	22	57.9		0.5
					64	0.5
Ø40	1.0°	0.5	29	73.9		0.5
					80	0.5

4NKT 06-HF: R2.0

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø16	0.6°	1.0	88	21.4		0.2
					32	0.5
Ø17	0.7°	1.0	76	23.4		0.2
					34	0.6
Ø18	1.1°	1.0	50	25.4		0.4
					36	1.0
Ø20	1.7°	1.0	34	29.4		0.7
					40	1.0
Ø21	1.9°	1.0	29	31.4		0.9
					42	1.0
Ø25	2.3°	1.0	24	39.4		1.0
					50	1.0
Ø26	3.2°	1.0	18	41.4		1.0
					52	1.0
Ø32	2.4°	1.0	24	53.4		1.0
					64	1.0
Ø40	1.8°	1.0	32	69.4		1.0
					80	1.0
Ø50	1.4°	1.0	41	89.4		1.0
					100	1.0
Ø63	1.1°	1.0	52	115.4		1.0
					126	1.0



4NKT 09-HF: R3.2

(Unità: mm)

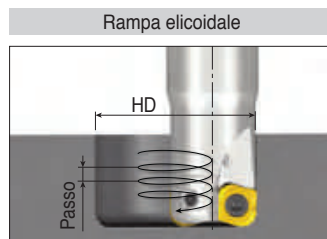
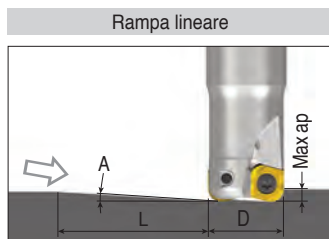
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø20	0.3°	1.5	287	25		0.1
					40	0.3
Ø25	1.2°	1.5	69	35		0.6
					50	1.5
Ø32	2.4°	1.5	35	49		1.5
					64	1.5
Ø40	2.3°	1.5	37	65		1.5
					80	1.5
Ø50	1.7°	1.5	49	85		1.5
					100	1.5
Ø63	1.3°	1.5	66	111		1.5
					126	1.5
Ø80	1.0°	1.5	86	145		1.5
					160	1.5

4NKT 11-HF: R4.0

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø25	0.8°	2.0	143	31		0.2
					50	0.9
Ø32	2.0°	2.0	57	45		1.2
					64	2.0
Ø40	3.4°	2.0	34	61		2.0
					80	2.0
Ø50	2.4°	2.0	48	81		2.0
					100	2.0
Ø63	1.8°	2.0	64	107		2.0
					126	2.0
Ø80	1.3°	2.0	85	141		2.0
					160	2.0

Dati di rampa

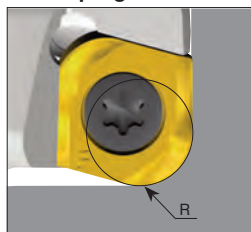


4NKT 14-HF: R5.0

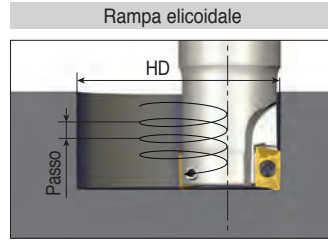
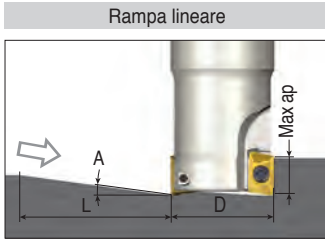
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø32	1.0°	3.0	172	39		0.3
					64	1.5
Ø40	1.8°	3.0	96	55		1.3
					80	3.0
Ø50	3.9°	3.0	44	75		3.0
					100	3.0
Ø63	2.7°	3.0	64	101		3.0
					126	3.0
Ø80	1.9°	3.0	88	135		3.0
					160	3.0

Dati di programmazione



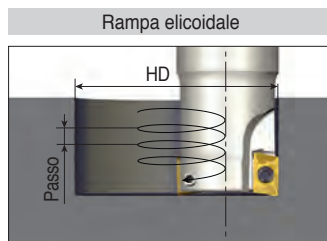
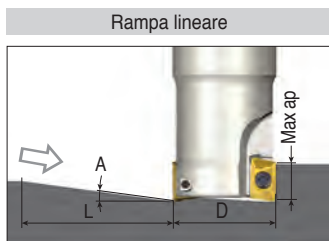
	R programmazione	A sovrataglio	B materiale residuo
4NKT 040212R-HF	1.2	0	0
4NKT 060320R-HF	2.0	0	0
4NKT 090432R-HF	3.2	0	0
4NKT 110640R-HF	4.0	0	0
4NKT 140750R-HF	5.0	0	0



AXMT 06

(Unità: mm)

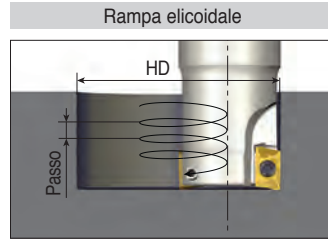
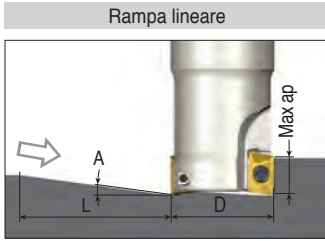
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø8	1.0°	5.0	287	9		0.0
					16	0.4
Ø10	8.0°	5.0	36	13		1.1
					20	3.7
Ø11	6.0°	5.0	48	15		1.1
					22	3.1
Ø12	6.0°	5.0	48	17		1.4
					24	3.4
Ø13	5.5°	5.0	52	19		1.5
					26	3.3
Ø14	4.8°	5.0	60	21		1.6
					28	3.1
Ø15	4.3°	5.0	67	23		1.6
					30	3.0
Ø16	4.0°	5.0	72	25		1.7
					32	3.0
Ø17	3.5°	5.0	82	27		1.6
					34	2.8
Ø18	5.0°	5.0	57	29		2.6
					36	4.2
Ø19	4.8°	5.0	60	31		2.7
					38	4.3
Ø20	4.0°	5.0	72	33		2.4
					40	3.7
Ø21	3.5°	5.0	82	35		2.3
					42	3.4
Ø25	3.0°	5.0	95	43		2.5
					50	3.5
Ø32	2.0°	5.0	143	57		2.3
					64	3.0
Ø40	1.5°	5.0	191	73		2.3
					80	2.8



APKT 09

(Unità: mm)

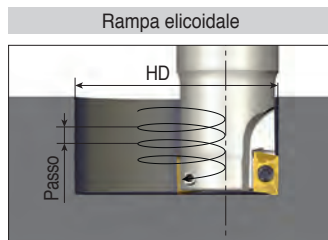
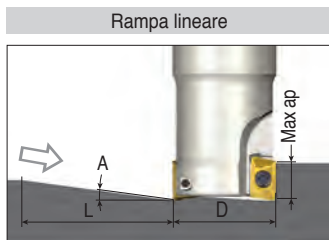
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø10	7.5°	9.0	68	14	20	1.4
						3.5
Ø12	7.3°	9.0	70	16	24	1.4
						4.1
Ø14	6.0°	9.0	86	18	28	1.1
						3.9
Ø16	4.9°	9.0	105	21.08	32	1.2
						3.7
Ø17	4.4°	9.0	117	23.08	34	1.2
						3.5
Ø18	4.0°	9.0	129	25.08	36	1.3
						3.4
Ø20	3.4°	9.0	152	29.08	40	1.4
						3.2
Ø21	3.1°	9.0	166	31.08	42	1.5
						3.0
Ø22	2.8°	9.0	184	33.08	44	1.4
						2.9
Ø25	1.8°	9.0	287	39.08	50	1.2
						2.1
Ø26	2.0°	9.0	258	41.08	52	1.4
						2.4
Ø30	2.2°	9.0	234	49.08	60	2.0
						3.1
Ø32	2.0°	9.0	258	53.08	64	2.0
						3.0
Ø33	1.7°	9.0	303	55.08	66	1.7
						2.6
Ø40	1.5°	9.0	344	69.08	80	2.0
						2.8
Ø50	1.1°	9.0	469	89.08	100	2.0
						2.6
Ø63	0.8°	9.0	645	115.08	126	1.9
						2.3
Ø80	0.5°	9.0	1032	149.08	160	1.6
						1.9



APKT 12

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø16	12.5°	12.0	54	17.5		0.5
					32	9.5
Ø18	9.7°	12.0	70	20.9		1.3
					36	8.2
Ø20	6.8°	12.0	101	24.9		1.6
					40	6.4
Ø21	6.2°	12.0	111	26.9		1.7
					42	6.1
Ø25	8.0°	12.0	85	34.9		3.7
					50	9.4
Ø26	7.5°	12.0	91	36.9		3.8
					52	9.1
Ø32	5.0°	12.0	137	48.9		3.9
					64	7.5
Ø33	4.6°	12.0	149	50.9		3.8
					66	7.1
Ø40	3.5°	12.0	196	64.9		4.1
					80	6.5
Ø50	2.5°	12.0	275	84.9		4.8
					100	5.8
Ø63	1.7°	12.0	405	110.9		4.5
					126	5.0
Ø80	1.3°	12.0	529	144.9		4.6
					160	4.8



APKT 17

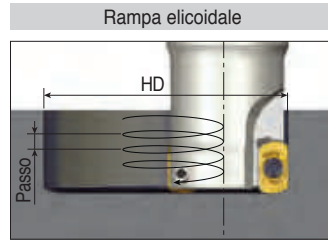
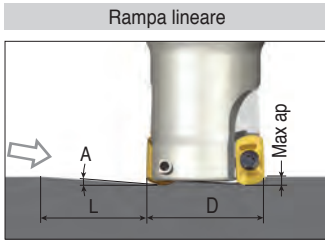
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø20	8.0°	16.1	115	22	40	0.7
						7.5
Ø25	5.0°	16.1	184	30.6	50	1.3
						5.8
Ø26	4.0°	16.1	230	32.6	52	1.2
						4.9
Ø32	9.0°	16.1	102	44.6	64	5.3
						13.5
Ø33	9.0°	16.1	102	46.6	66	5.7
						13.9
Ø40	5.0°	16.1	184	60.6	80	4.8
						9.3
Ø50	4.4°	16.1	209	80.6	100	6.3
						10.3
Ø63	3.2°	16.1	288	106.6	126	6.5
						9.4
Ø80	2.3°	16.1	401	140.6	160	6.5
						8.6
Ø100	1.8°	16.1	513	180.6	200	6.8
						8.4
Ø125	1.4°	16.1	659	230.6	250	6.9
						8.1
Ø160	1.0°	16.1	923	300.6	320	6.5
						7.5
Ø200	0.7°	16.1	1318	380.6	400	5.9
						6.5

APKT 19

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø40	6.0°	17.5	167	56	80	4.5
						11.2
Ø50	4.0°	17.5	250	76	100	4.9
						9.3
Ø63	2.9°	17.5	346	102	126	5.3
						8.5
Ø80	2.1°	17.5	477	136	160	5.5
						7.8
Ø100	1.6°	17.5	627	176	200	5.7
						7.5
Ø125	1.2°	17.5	736	226	250	5.6
						7.0
Ø160	0.9°	17.5	1115	296	320	5.7
						6.7
Ø200	0.7°	17.5	1433	376	400	5.7
						6.5

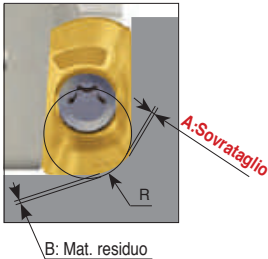


AXMT 0602R-HF

(Unità: mm)

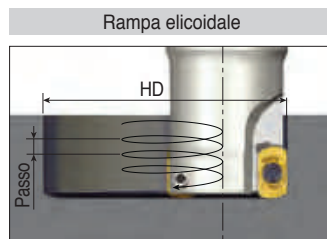
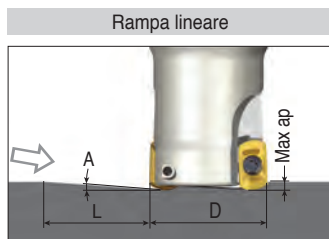
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø8	0.3°	0.5	96	14	16	0.1
				14		0.1
Ø10	0.5°	0.5	57	14	20	0.2
				18		0.3
Ø11	1.0°	0.5	29	18	22	0.5
				18		0.5
Ø12	2.3°	0.5	12	18	24	0.5
				18		0.5
Ø13	4.5°	0.5	6	18	26	0.5
				18		0.5
Ø14	3.5°	0.5	8	18	28	0.5
				26		0.5
Ø15	3.0°	0.5	10	26	30	0.5
				26		0.5
Ø16	2.8°	0.5	10	26	32	0.5
				26		0.5
Ø17	2.5°	0.5	11	26	34	0.5
				26		0.5
Ø18	2.3°	0.5	12	26	36	0.5
				26		0.5
Ø19	2.2°	0.5	13	26	38	0.5
				34		0.5
Ø20	1.9°	0.5	15	34	40	0.5
				34		0.5
Ø21	1.7°	0.5	17	34	42	0.5
				44		0.5
Ø25	1.4°	0.5	20	44	50	0.5
				58		0.5
Ø32	1.0°	0.5	29	58	64	0.5
				74		0.5
Ø40	0.7°	0.5	41	74	80	0.5
				80		0.5

Dati di programmazione



	R program.	A sovrataglio	B materiale residuo
AXMT 0602R-HF	0.9	0	0.22
	1.0	0.01	0.19
	1.5	0.16	0.05
	2.0	0.35	0
APKT 09T3R-HF	1.5	0	0.47
	1.7	0	0.29
	2.0	0.04	0.3
	2.5	0.18	0.15
APKT 1204R-HF	3.0	0.36	0.04
	2	0	0.57
	2.5	0.07	0.42
	3	0.21	0.28
	3.5	0.39	0.15
	4	0.58	0.06

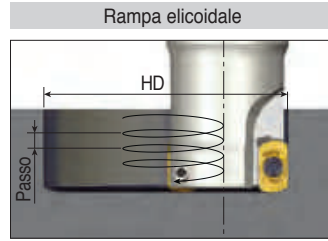
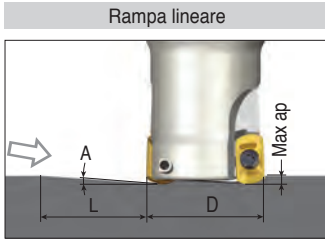
■ : 'R' di programmazione raccomandato



APKT 09T3R-HF

(Unità: mm)

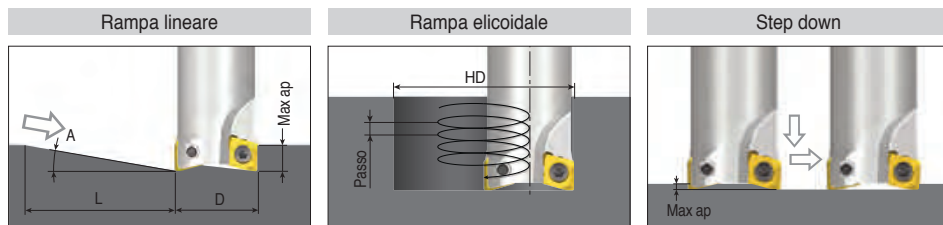
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø16	3.8°	1.0	15	22		1.0
					32	1.0
Ø17	3.5°	1.0	16	24		1.0
					34	1.0
Ø18	3.4°	1.0	17	26		1.0
					36	1.0
Ø20	3.0°	1.0	19	30		1.0
					40	1.0
Ø21	2.3°	1.0	25	32		1.0
					42	1.0
Ø22	2.0°	1.0	29	34		1.0
					44	1.0
Ø25	2.1°	1.0	27	40		1.0
					50	1.0
Ø26	2.0°	1.0	29	42		1.0
					52	1.0
Ø30	1.8°	1.0	32	50		1.0
					60	1.0
Ø32	1.6°	1.0	36	54		1.0
					64	1.0
Ø33	1.5°	1.0	38	56		1.0
					66	1.0
Ø40	1.2°	1.0	48	70		1.0
					80	1.0
Ø50	0.9°	1.0	64	90		1.0
					100	1.0
Ø63	0.5°	1.0	115	116		1.0
					126	1.0
Ø80	0.4°	1.0	143	150		1.0
					160	1.0



APKT 1204R-HF

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø16	3.8°	1.2	18	21		0.8
					32	1.2
Ø18	4.0°	1.2	17	24		1.1
					36	1.2
Ø20	4.0°	1.2	17	27		1.2
					40	1.2
Ø21	3.5°	1.2	20	29		1.2
					42	1.2
Ø25	2.5°	1.2	27	37		1.2
					50	1.2
Ø26	2.3°	1.2	30	39		1.2
					52	1.2
Ø32	1.7°	1.2	40	51		1.2
					64	1.2
Ø33	1.7°	1.2	40	53		1.2
					66	1.2
Ø40	1.5°	1.2	46	67		1.2
					80	1.2
Ø50	1.1°	1.2	63	86		1.2
					100	1.2
Ø63	1.0°	1.2	69	112		1.2
					126	1.2
Ø80	0.8°	1.2	86	146		1.2
					160	1.2



2PKT 05: 0.4R

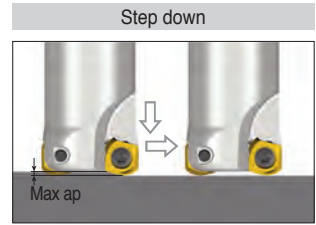
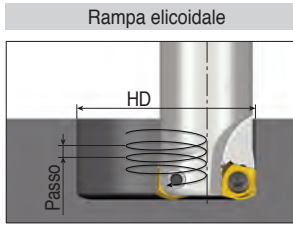
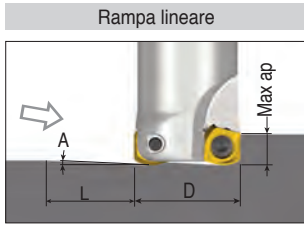
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø12	7.4°	4.7	36	15.9	14	1.4	0.8
					24	4.2	
Ø13	6.4°	4.7	42	17.9	15	1.5	0.8
					26	3.9	
Ø14	5.5°	4.7	49	19.9	1.5	1.5	0.8
					28	3.6	
Ø16	4.2°	4.7	64	23.9	1.5	1.5	0.8
					32	3.1	
Ø17	3.8°	4.7	71	25.9	1.6	1.6	0.8
					34	3	
Ø18	3.5°	4.7	77	27.9	1.6	1.6	0.8
					36	2.9	
Ø20	2.9°	4.7	93	31.9	1.6	1.6	0.75
					40	2.7	
Ø21	2.7°	4.7	100	33.9	1.6	1.6	0.75
					42	2.6	
Ø25	2.1°	4.7	128	41.9	1.7	1.7	0.75
					50	2.4	
Ø26	1.9°	4.7	138	43.9	1.6	1.6	0.75
					52	2.4	
Ø32	1.5°	4.7	180	55.9	1.7	1.7	0.75
					64	2.2	
Ø33	1.4°	4.7	186	57.9	1.7	1.7	0.75
					66	2.2	
Ø40	1.1°	4.7	234	71.9	1.7	1.7	0.75
					80	2.1	

2PKT 05: 0.8R

(Unità: mm)

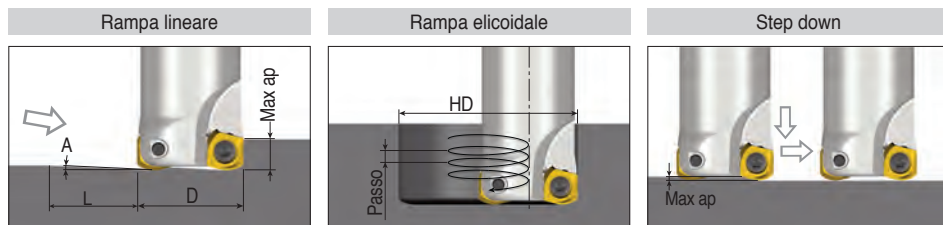
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø16	8.6°	6.0	40	21.5	2.2	2.2	1.3
					32	6.5	1.3
Ø20	6.2°	6.0	55	29.5	2.8	2.8	1.3
					40	5.8	1.3
Ø25	4.3°	6.0	80	39.5	2.9	2.9	1.3
					50	5.0	1.3
Ø32	2.9°	6.0	119	53.5	2.9	2.9	1.3
					64	4.3	1.3
Ø40	2.2°	6.0	156	69.5	3.0	3.0	1.3
					80	4.1	1.3
Ø50	1.6°	6.0	208	89.5	3.0	3.0	1.3
					100	3.8	1.3
Ø63	1.2°	6.0	275	115.5	3.1	3.1	1.3
					126	3.7	1.3
Ø80	0.9°	6.0	362	149.5	3.1	3.1	1.3
					160	3.5	1.3



2PKT 0503R-HF

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø12	4.9°	0.5	6	20.5	24	0.5	0.4
						0.5	
Ø13	4.4°	0.5	6	22.5	26	0.5	0.4
						0.5	
Ø14	3.8°	0.5	7	24.5	28	0.5	0.4
						0.5	
Ø16	2.7°	0.5	10	28.5	32	0.5	0.4
						0.5	
Ø17	2.6°	0.5	11	30.5	34	0.5	0.4
						0.5	
Ø18	2.2°	0.5	13	32.5	36	0.5	0.4
						0.5	
Ø20	1.8°	0.5	16	36.5	40	0.5	0.4
						0.5	
Ø21	1.8°	0.5	16	38.5	42	0.5	0.4
						0.5	
Ø25	1.2°	0.5	23	46.5	50	0.5	0.4
						0.5	
Ø26	1.3°	0.5	22	48.5	52	0.5	0.4
						0.5	
Ø32	0.9°	0.5	32	60.5	64	0.5	0.4
						0.5	
Ø33	0.9°	0.5	30	62.5	66	0.5	0.4
						0.5	
Ø40	0.6°	0.5	44	76.5	80	0.5	0.4
						0.5	

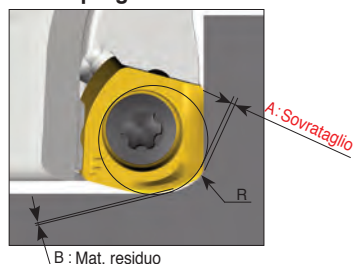


2PKT 0704R-HF

(Unità: mm)

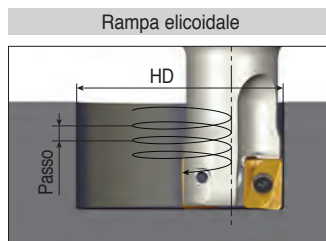
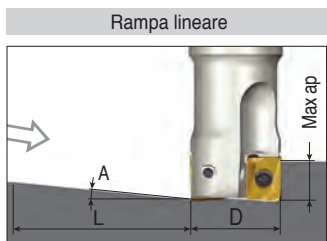
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø16	4.3°	0.8	11	26.2		0.8	0.5
					32	0.8	
Ø20	3.6°	0.8	13	34.2		0.8	0.6
					40	0.8	
Ø25	2.4°	0.8	19	44.2		0.8	0.6
					50	0.8	
Ø32	1.7°	0.8	27	58.2		0.8	0.6
					64	0.8	
Ø40	1.2°	0.8	37	74.2		0.8	0.6
					80	0.8	
Ø50	0.9°	0.8	48	94.2		0.8	0.6
					100	0.8	

Dati di programmazione



	R program.	A sovrataglio	B materiale residuo
2PKT 0503R-HF	0.9	0	0.260
	1.0	0.008	0.231
	1.5	0.157	0.104
	2.0	0.350	0.018
2PKT 0704R-HF	1.5	0	0.358
	2.0	0.103	0.210
	2.5	0.278	0.089
	3.0	0.470	0.019

■ : 'R' di programmazione raccomandato



ANH(M)X 11

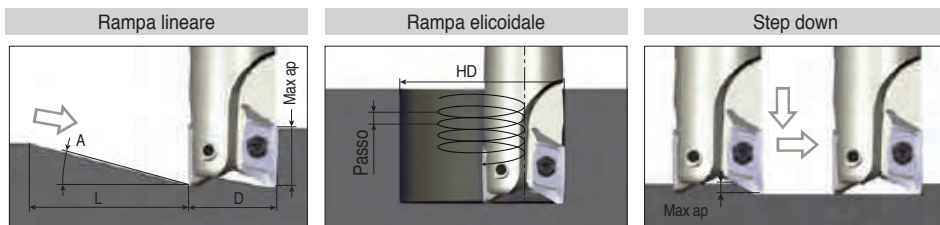
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø25	1.5°	11.0	420	30		0.3
					50	1.7
Ø26	1.4°	11.0	450	32		0.4
					52	1.7
Ø32	1.1°	11.0	573	44		0.6
					64	1.6
Ø33	1.0°	11.0	631	46		0.6
					66	1.5
Ø40	0.8°	11.0	788	60		0.7
					80	1.5
Ø50	0.6°	11.0	1051	80		0.8
					100	1.4
Ø63	0.4°	11.0	1576	106		0.8
					126	1.2
Ø80	0.3°	11.0	2102	140		0.8
					160	1.1
Ø100	0.2°	11.0	3153	180		0.7
					200	0.9
Ø125	0.2°	11.0	3153	230		1.0
					250	1.2

ANH(M)X 16

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø32	1.2°	15.0	716	44		0.7
					64	1.8
Ø33	1.0°	15.0	560	46		0.6
					66	1.5
Ø40	0.9°	15.0	955	60		0.8
					80	1.7
Ø50	0.8°	15.0	1075	80		1.1
					100	1.9
Ø63	0.6°	15.0	1433	106		1.2
					126	1.8
Ø80	0.45°	15.0	1911	140		1.3
					160	1.7
Ø100	0.35°	15.0	2457	180		1.3
					200	1.6
Ø125	0.25°	15.0	3439	230		1.2
					250	1.5
Ø160	0.15°	15.0	5732	300		1.0
					320	1.1
Ø200	0.1°	15.0	8599	380		0.8
					400	0.9



XEVT 16: 0.4R-1.6R

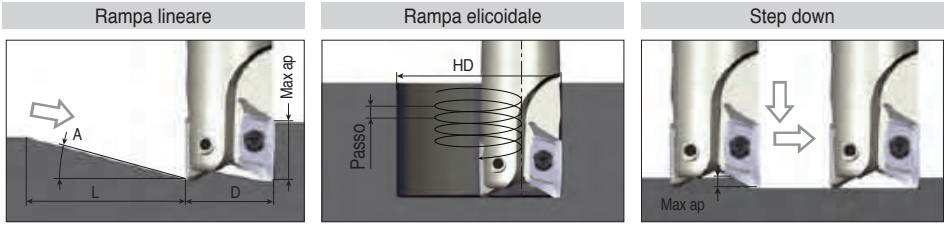
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø25	23.5°	16	37	29.1	50	4.8	4
						13.6	4
Ø32	14.5°	16	62	43.1	64	7.7	4
						13.6	4
Ø40	10.0°	16	91	59.1	80	9.0	4
						13.6	4
Ø50	7.5°	16	122	79.1	100	10.2	4
						13.6	4
Ø63	5.5°	16	166	105.1	126	10.8	4
						13.6	4
Ø80	4.5°	16	203	139.1	160	12.4	4
						13.6	4
Ø100	3.3°	16	278	179.1	200	12.2	4
						13.6	4
Ø125	2.5°	16	367	229.1	250	12.1	4
						13.6	4
Ø160	1.5°	16	611	299.1	320	9.7	4
						11.2	4
Ø200	1.0°	16	917	379.1	400	8.3	4
						9.3	4

XEVT 16: 2.0R

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø25	23.5°	15.5	36	29.1	50	4.8	3.5
						13.2	3.5
Ø32	14.5°	15.5	60	43.1	64	7.7	3.5
						13.2	3.5
Ø40	10.0°	15.5	88	59.1	80	9.0	3.5
						13.2	3.5
Ø50	7.5°	15.5	118	79.1	100	10.2	3.5
						13.2	3.5
Ø63	5.5°	15.5	161	105.1	126	10.8	3.5
						13.2	3.5
Ø80	4.5°	15.5	197	139.1	160	12.4	3.5
						13.2	3.5
Ø100	3.3°	15.5	269	179.1	200	12.2	3.5
						13.2	3.5
Ø125	2.5°	15.5	355	229.1	250	12.1	3.5
						13.2	3.5
Ø160	1.5°	15.5	592	299.1	320	9.7	3.5
						11.2	3.5
Ø200	1.0°	15.5	888	379.1	400	8.3	3.5
						9.3	3.5



XEVT 16: 3.0R-3.2R

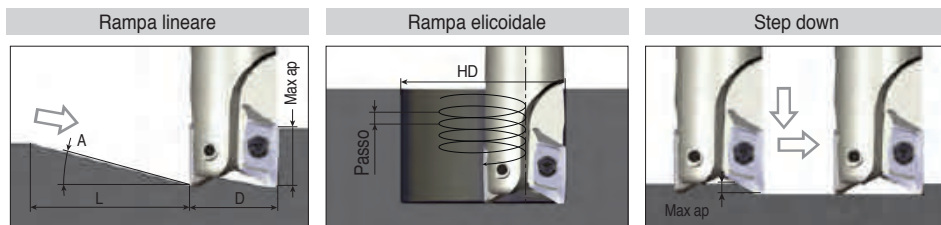
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø25	22.5°	14.5	35	29.1	50	4.5	2.8
						12.3	2.8
Ø32	13.5°	14.5	60	43.1	64	7.1	2.8
						12.3	2.8
Ø40	9.0°	14.5	92	59.1	80	8.1	2.8
						12.3	2.8
Ø50	6.5°	14.5	127	79.1	100	8.8	2.8
						12.3	2.8
Ø63	5.0°	14.5	166	105.1	126	9.8	2.8
						12.3	2.8
Ø80	4.0°	14.5	207	139.1	160	11.0	2.8
						12.3	2.8
Ø100	3.0°	14.5	277	179.1	200	11.1	2.8
						12.3	2.8
Ø125	2.0°	14.5	415	229.1	250	9.7	2.8
						11.6	2.8
Ø160	1.1°	14.5	756	299.1	320	7.1	2.8
						8.2	2.8
Ø200	0.8°	14.5	1039	379.1	400	6.7	2.8
						7.4	2.8

XEVT 16: 4.0R-5.0R

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro	Max ap
Ø25	20.0°	14.5	40	29.1	50	4.0	2.4
						12.3	2.4
Ø32	12.0°	14.5	68	43.1	64	6.3	2.4
						12.3	2.4
Ø40	7.5°	14.5	110	59.1	80	6.7	2.4
						12.3	2.4
Ø50	5.5°	14.5	151	79.1	100	7.5	2.4
						12.3	2.4
Ø63	4.5°	14.5	184	105.1	126	8.8	2.4
						12.3	2.4
Ø80	3.5°	14.5	237	139.1	160	9.6	2.4
						12.3	2.4
Ø100	3.0°	14.5	277	179.1	200	11.1	2.4
						12.3	2.4
Ø125	2.0°	14.5	415	229.1	250	9.7	2.4
						11.6	2.4
Ø160	1.0°	14.5	831	299.1	320	6.5	2.4
						7.5	2.4
Ø200	0.7°	14.5	1187	379.1	400	5.8	2.4
						6.5	2.4



XEVT 22: 0.5R-0.8R

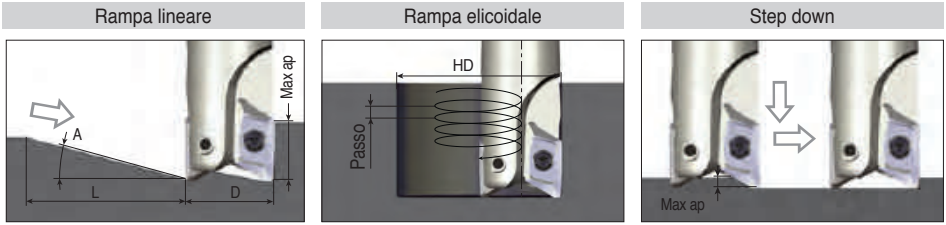
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø32	20.0°	21	58	38.5	63	6.3	4.7
				64	17.9	4.7	
Ø40	14.0°	21	84	54.5	9.6	4.7	
				80	17.9	4.7	
Ø50	9.5°	21	126	74.5	10.9	4.7	
				100	17.9	4.7	
Ø63	7.0°	21	171	100.5	12.3	4.7	
				126	17.9	4.7	
Ø80	5.0°	21	240	134.5	12.7	4.7	
				160	17.9	4.7	
Ø100	3.7°	21	325	174.5	12.9	4.7	
				200	17.3	4.7	
Ø125	2.6°	21	463	224.5	12.1	4.7	
				250	15.1	4.7	
Ø200	1.6°	21	752	374.5	13.0	4.7	
				400	14.9	4.7	

XEVT 22: 1.6R-2.0R

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø32	19.5°	20.3	57	38.5	61	6.1	4.2
				64	17.3	4.2	
Ø40	13.5°	20.3	85	54.5	9.3	4.2	
				80	17.3	4.2	
Ø50	9.5°	20.3	121	74.5	10.9	4.2	
				100	17.3	4.2	
Ø63	6.7°	20.3	173	100.5	11.8	4.2	
				126	17.3	4.2	
Ø80	4.7°	20.3	247	134.5	12.0	4.2	
				160	17.3	4.2	
Ø100	3.5°	20.3	332	174.5	12.2	4.2	
				200	16.3	4.2	
Ø125	2.5°	20.3	465	224.5	11.6	4.2	
				250	14.6	4.2	
Ø200	1.5°	20.3	776	374.5	12.2	4.2	
				400	14.0	4.2	



XEVT 22: 3.0R-4.0R

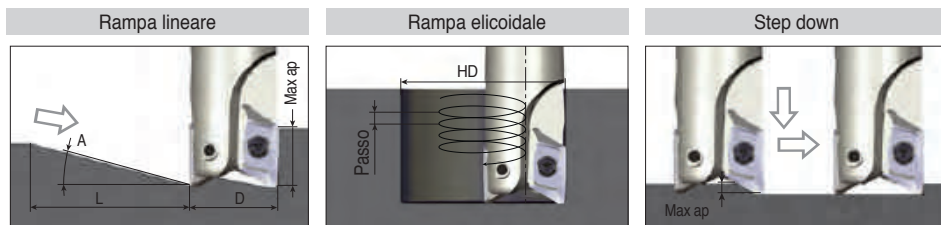
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø32	18.5°	19.5	58	38.5	5.8	3.3	3.3
				64	16.6	3.3	3.3
Ø40	12.5°	19.5	88	54.5	8.6	3.3	3.3
				80	16.6	3.3	3.3
Ø50	8.5°	19.5	131	74.5	9.8	3.3	3.3
				100	16.6	3.3	3.3
Ø63	5.5°	19.5	203	100.5	9.6	3.3	3.3
				126	16.2	3.3	3.3
Ø80	4.0°	19.5	279	134.5	10.2	3.3	3.3
				160	14.9	3.3	3.3
Ø100	3.0°	19.5	372	174.5	10.4	3.3	3.3
				200	14.0	3.3	3.3
Ø125	2.0°	19.5	559	224.5	9.3	3.3	3.3
				250	11.6	3.3	3.3
Ø200	1.0°	19.5	1118	374.5	8.1	3.3	3.3
				400	9.3	3.3	3.3

XEVT 22: 5.0R

(Unità: mm)

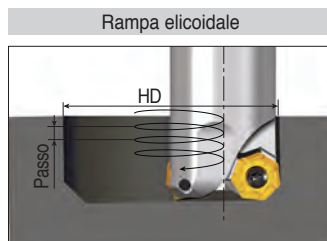
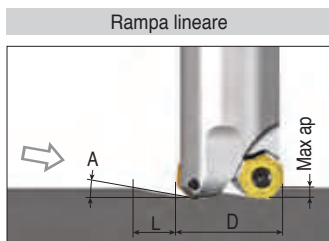
Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø32	17.5°	19	60	38.5	5.5	2.8	2.8
				64	16.2	2.8	2.8
Ø40	11.5°	19	93	54.5	7.9	2.8	2.8
				80	16.2	2.8	2.8
Ø50	7.5°	19	144	74.5	8.6	2.8	2.8
				100	16.2	2.8	2.8
Ø63	5.0°	19	217	100.5	8.8	2.8	2.8
				126	14.7	2.8	2.8
Ø80	3.5°	19	311	134.5	8.9	2.8	2.8
				160	13.1	2.8	2.8
Ø100	2.5°	19	435	174.5	8.7	2.8	2.8
				200	11.6	2.8	2.8
Ø125	1.7°	19	641	224.5	7.9	2.8	2.8
				250	9.9	2.8	2.8
Ø200	0.8°	19	1361	374.5	6.5	2.8	2.8
				400	7.4	2.8	2.8



XEVT 22: 6.4R

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale			Step down
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro	Max ap
Ø32	16°	18.2	64	38.5		5.0	2.1
					64	15.5	2.1
Ø40	10°	18.2	103	54.5		6.8	2.1
					80	15.5	2.1
Ø50	6.5°	18.2	160	74.5		7.4	2.1
					100	15.2	2.1
Ø63	4.5°	18.2	231	100.5		7.9	2.1
					126	13.2	2.1
Ø80	3.0°	18.2	347	134.5		7.6	2.1
					160	11.2	2.1
Ø100	2.0°	18.2	521	174.5		6.9	2.1
					200	9.3	2.1
Ø125	1.5°	18.2	695	224.5		7.0	2.1
					250	8.7	2.1
Ø200	0.7°	18.2	1490	374.5		5.7	2.1
					400	6.5	2.1

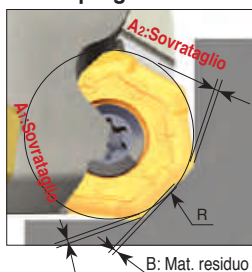


7EMT 06

(Unità: mm)

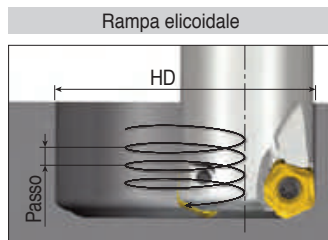
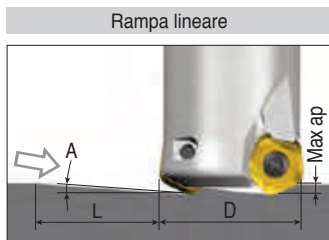
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro
Ø32	29°	3.2	6	45.5		3.2
					64	3.2
Ø40	15.5°	3.2	12	61.5		3.2
					80	3.2
Ø50	9.5°	3.2	19	81.5		3.2
					100	3.2
Ø63	5.5°	3.2	33	107.5		3.2
					126	3.2
Ø80	4.0°	3.2	46	141.5		3.2
					160	3.2
Ø100	3.0°	3.2	61	181.5		3.2
					200	3.2
Ø125	2.0°	2.3	66	231.5		3.2
					250	3.2

Dati di programmazione



	R program.	A sovrataglio		B materiale residuo	
		A1	A2	B	
7EMT 06	3	0	0	1.77	
	4.5	0	0	1.51	
	5	0.03	0.02	0.94	
	6	0.21	0.19	0.53	

4.5 : 'R' di programmazione raccomandato

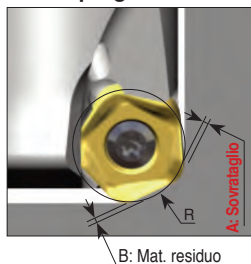


PTKU05

(Unità: mm)

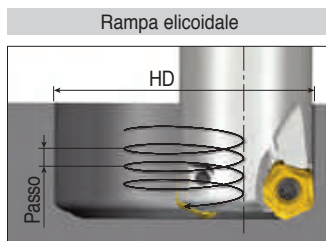
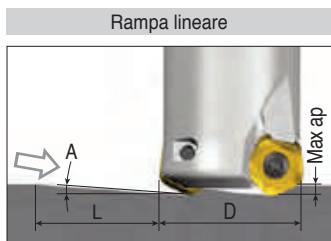
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø20	1.3°	1.5	66	33		0.7
					40	0.9
Ø25	1.1°	1.5	78	43		0.8
					50	1.0
Ø26	1.0°	1.5	86	45		0.8
					52	0.9
Ø32	1.0°	1.5	86	57		1.0
					64	1.1
Ø33	1.0°	1.5	86	59		1.0
					66	1.2
Ø40	0.8°	1.5	101	73		1.1
					80	1.2
Ø50	0.7°	1.5	123	93		1.1
					100	1.2
Ø52	0.7°	1.5	123	97		1.2
					104	1.3
Ø63	0.6°	1.5	132	119		1.3
					126	1.4
Ø66	0.6°	1.5	143	125		1.3
					132	1.4

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
PTKU 05	2.5	0.00	0.83
	2.7	0.00	0.76
	3.0	0.04	0.66

: 'R' di programmazione raccomandato

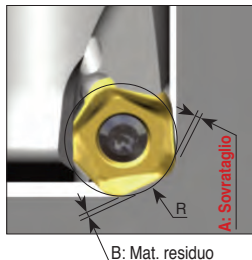


PTKU 10

(Unità: mm)

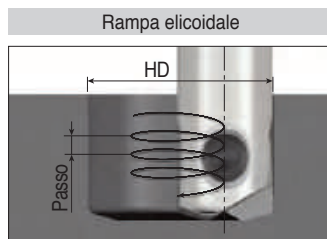
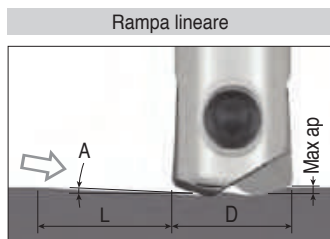
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø40	1.5°	3.0	111	63		1.7
					80	2.2
Ø50	1.9°	3.0	88	83		2.8
					100	3.0
Ø63	1.7°	3.0	101	109		3.0
					126	3.0
Ø66	2.2°	3.0	78	115		3.0
					132	3.0
Ø80	1.5°	3.0	115	143		3.0
					160	3.0
Ø100	1.1°	3.0	150	183		3.0
					200	3.0
Ø125	0.8°	3.0	202	233		3.0
					250	3.0
Ø160	0.6°	3.0	265	303		3.0
					320	3.0
Ø200	0.5°	3.0	344	383		3.0
					400	3.0

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
PTKU 10	5.5	0.00	1.45
	6.0	0.09	1.28
	6.5	0.21	1.11

■: 'R' di programmazione raccomandato

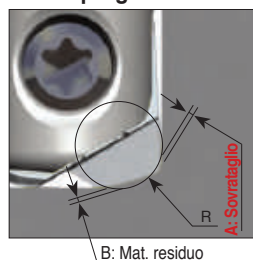


HFN

(Unità: mm)

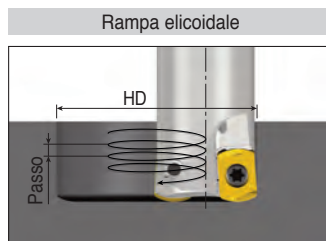
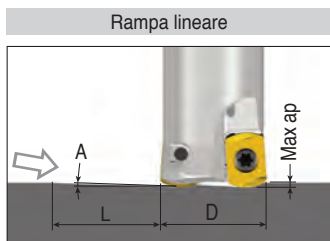
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø6	2.0°	0.3	9	9.6		0.3
					11	0.3
Ø8	2.5°	0.5	11	12		0.5
					15	0.5

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
HFN 060	0.8	0.00	0.21
	1.0	0.03	0.16
HFN 080	0.8	0.00	0.38
	1.0	0.00	0.32
	1.2	0.02	0.27

■: 'R' di programmazione raccomandato

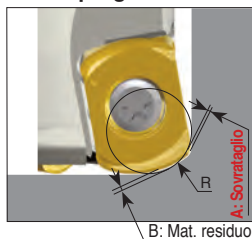


BLMP 04

(Unità: mm)

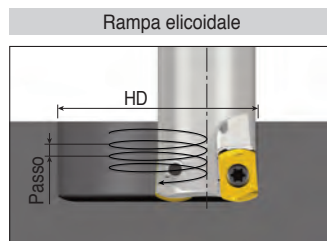
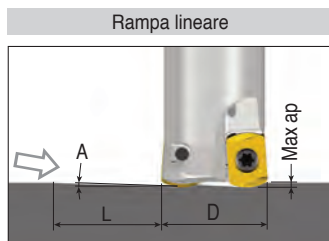
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø8	0.4°	0.5	72	12.6		0.1
					16	0.1
Ø10	0.6°	0.5	44	16.6		0.2
					20	0.2
Ø11	0.7°	0.5	38	18.6		0.2
					22	0.3
Ø12	1.0°	0.5	29	20.6		0.4
					24	0.4
Ø13	1.1°	0.5	25	22.6		0.5
					26	0.5
Ø16	1.0°	0.5	29	28.6		0.5
					32	0.5
Ø17	1.1°	0.5	26	30.6		0.5
					34	0.5
Ø20	1.0°	0.5	27	36.6		0.5
					40	0.5
Ø21	0.7°	0.5	38	38.6		0.5
					42	0.5
Ø25	0.7°	0.5	38	46.6		0.5
					50	0.5
Ø32	0.6°	0.5	48	60.6		0.5
					64	0.5

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
BLMP 04	0.8	0.00	0.28
	0.9	0.00	0.25
	1.0	0.08	0.22

■: 'R' di programmazione raccomandato

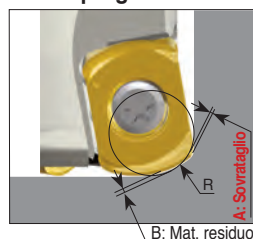


BLMP 06

(Unità: mm)

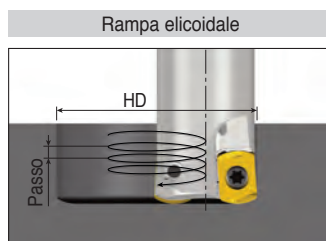
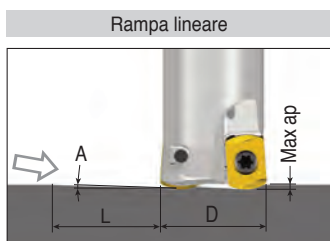
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro
Ø16	2.0°	0.7	13	23		0.7
					32	0.7
Ø17	2.0°	0.7	15	25		0.7
					34	0.7
Ø18	2.3°	0.7	16	27		0.7
					36	0.7
Ø20	1.5°	1.0	38	31		0.8
					40	1.0
Ø21	1.5°	1.0	38	33		0.8
					42	1.0
Ø22	1.5°	1.0	38	35		1.0
					44	1.0
Ø25	1.3°	1.0	41	41		1.0
					50	1.0
Ø26	1.2°	1.0	44	43		1.0
					52	1.0
Ø30	1.0°	1.0	52	51		1.0
					60	1.0
Ø32	0.9°	1.0	57	55		1.0
					64	1.0
Ø33	0.9°	1.0	57	57		1.0
					66	1.0
Ø35	0.8°	1.0	57	61		1.0
					70	1.0
Ø40	0.7°	1.0	64	71		1.0
					80	1.0
Ø42	0.7°	1.0	72	75		1.0
					84	1.0
Ø50	0.6°	1.0	96	91		1.0
					100	1.0
Ø52	0.6°	1.0	96	95		1.0
					104	1.0
Ø63	0.5°	1.0	115	117		1.0
					126	1.0
Ø66	0.5°	1.0	115	123		1.0
					132	1.0

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
BLMP 06 (Ø16, Ø17, Ø18)	1.5	0	0.35
	2.0	0.1	0.22
	2.5	0.27	0.1
BLMP 06 (Ø20-)	2.0	0	0.42
	2.5	0.12	0.26
	3.0	0.29	0.17

■ 'R' di programmazione raccomandato

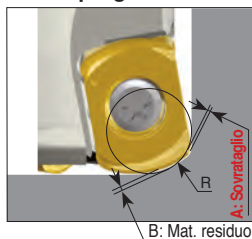


BLMP 09

(Unità: mm)

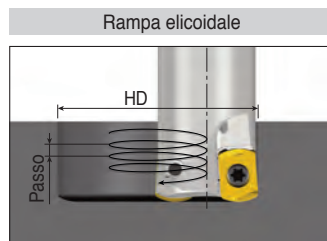
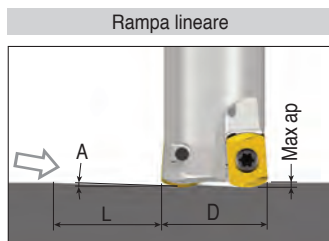
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø25	2.2°	1.5	39	42	50	1.5
						1.5
Ø26	2.2°	1.5	39	44	52	1.5
						1.5
Ø30	2.0°	1.5	43	52	60	1.5
						1.5
Ø32	2.0°	1.5	43	56	64	1.5
						1.5
Ø33	2.0°	1.5	43	58	66	1.5
						1.5
Ø35	2.0°	1.5	43	60	70	1.5
						1.5
Ø40	1.5°	1.5	57	72	80	1.5
						1.5
Ø42	1.5°	1.5	57	76	84	1.5
						1.5
Ø50	1.0°	1.5	86	92	100	1.5
						1.5
Ø52	1.0°	1.5	86	96	104	1.5
						1.5
Ø63	0.9°	1.5	96	118	126	1.5
						1.5
Ø66	0.9°	1.5	96	124	132	1.5
						1.5
Ø80	0.8°	1.5	107	152	160	1.5
						1.5
Ø100	0.7°	1.5	123	192	200	1.5
						1.5
Ø125	0.4°	1.5	215	240	250	1.5
						1.5

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
BLMP 09	2.5	0	0.61
	3.0	0.09	0.45
	3.5	0.24	0.30
	4.0	0.41	0.17
	3.0	0.36	0.04

■: 'R' di programmazione raccomandato

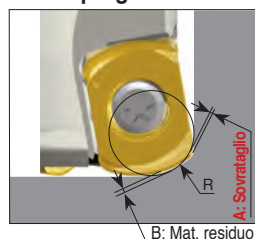


BLMP 11

(Unità: mm)

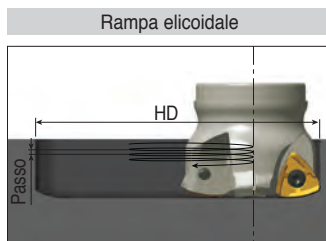
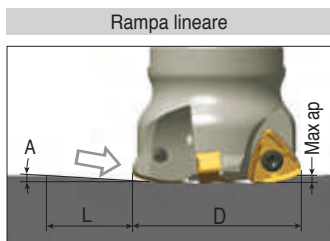
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø30	0.50°	2.0	229	41	60	0.3
						0.7
Ø32	0.50°	2.0	229	45	64	0.3
						0.7
Ø33	0.45°	2.0	255	47	66	0.3
						0.7
Ø35	0.50°	2.0	229	51	70	0.4
						0.8
Ø40	0.55°	2.0	208	61	80	0.5
						1.0
Ø42	0.50°	2.0	229	65	84	0.5
						1.0
Ø50	0.50°	2.0	229	81	100	0.7
						1.2
Ø52	0.45°	2.0	255	85	104	0.7
						1.1
Ø63	0.45°	2.0	255	107	126	0.9
						1.3
Ø66	0.40°	2.0	287	113	132	0.9
						1.2
Ø80	0.35°	2.0	328	141	160	1.0
						1.3
Ø100	0.30°	2.0	382	181	200	1.1
						1.4
Ø125	0.25°	2.0	459	231	250	1.2
						1.5
Ø160	0.20°	2.0	573	301	320	1.3
						1.5
Ø200	0.15°	2.0	764	381	400	1.3
						1.4

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
BLMP 11	2.4	0.00	1.09
	3.0	0.00	0.90
	3.2	0.18	0.85

■: 'R' di programmazione raccomandato

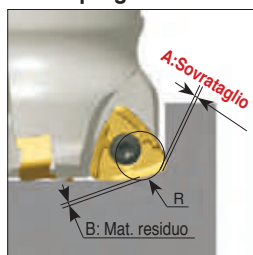


BLMP 13

(Unità: mm)

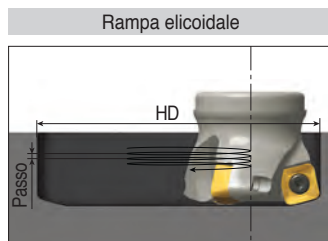
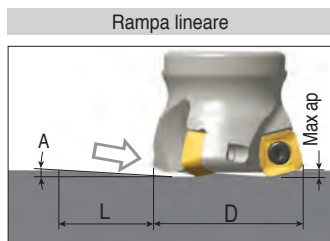
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro
Ø32	0.8°	2.0	143	50		0.7
					64	0.9
Ø33	1.1°	2.0	104	52		1.0
					66	1.3
Ø35	1.1°	2.0	104	56		1.1
					70	1.3
Ø40	1.2°	2.0	96	66		1.4
					80	1.7
Ø42	1.1°	2.0	104	70		1.3
					84	1.6
Ø50	0.8°	2.0	143	86		1.2
					100	1.4
Ø52	0.8°	2.0	143	90		1.3
					104	1.5
Ø63	0.6°	2.0	191	112		1.2
					126	1.3
Ø66	0.6°	2.0	191	118		1.2
					132	1.4
Ø80	0.5°	2.0	229	146		1.3
					160	1.4
Ø100	0.4°	2.0	287	186		1.3
					200	1.4
Ø125	0.3°	2.0	382	236		1.2
					250	1.3
Ø160	0.3°	2.0	382	306		1.6
					320	1.7
Ø200	0.2°	2.0	573	386		1.3
					400	1.4
Ø250	0.2°	2.0	573	486		1.7
					500	1.7

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
BLMP 13	3.0	0	1.31
	3.5	0	1.17
	4.0	0.04	1.03
	4.5	0.15	0.89
	5.0	0.3	0.76

■ : 'R' di programmazione raccomandato

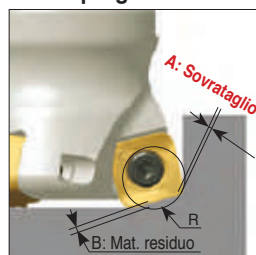


SBMT 09

(Unità: mm)

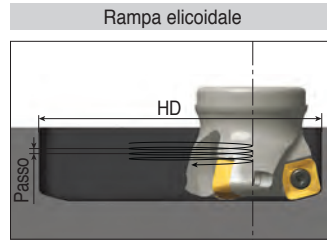
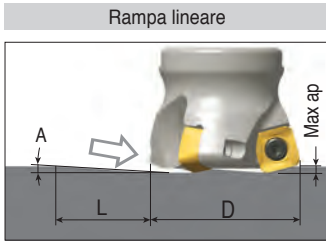
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø25	1.6°	1.2	43	36	50	1
						1.2
Ø26	1.7°	1.2	40	38	52	1.1
						1.2
Ø30	3.1°	1.2	22	46	60	1.2
						1.2
Ø32	3.9°	1.2	18	50	64	1.2
						1.2
Ø33	3.7°	1.2	19	52	66	1.2
						1.2
Ø35	3.4°	1.2	18	56	70	1.2
						1.2
Ø40	2.8°	1.2	25	66	80	1.2
						1.2
Ø42	2.6°	1.2	26	70	84	1.2
						1.2
Ø50	2°	1.2	34	86	100	1.2
						1.2
Ø52	1.9°	1.2	38	90	104	1.2
						1.2
Ø63	1.5°	1.2	43	112	126	1.2
						1.2
Ø66	1.1°	1.2	63	118	132	1.2
						1.2
Ø80	1.2°	1.2	63	146	160	1.2
						1.2

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
SBMT 09	2	0	1.1
	2.5	0	0.98
	3	0	0.9
	3.5	0.1	0.81

■ 'R' di programmazione raccomandato

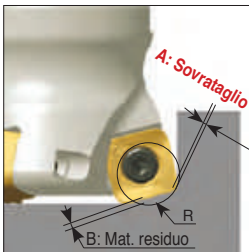


SBMT 13

(Unità: mm)

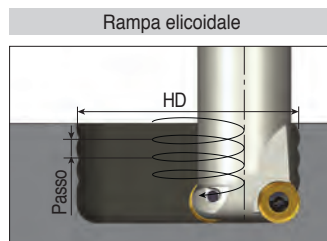
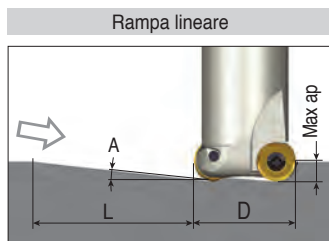
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø32	7.0°	2.0	16	47	64	2.0
						2.0
Ø33	6.9°	2.0	17	49	66	2.0
						2.0
Ø35	6.4°	2.0	18	53	70	2.0
						2.0
Ø40	5.3°	2.0	22	63	80	2.0
						2.0
Ø42	4.4°	2.0	26	67	84	2.0
						2.0
Ø50	4.3°	2.0	27	83	100	2.0
						2.0
Ø52	4.0°	2.0	29	87	104	2.0
						2.0
Ø63	2.9°	2.0	40	109	126	2.0
						2.0
Ø80	2.0°	2.0	57	143	160	2.0
						2.0
Ø100	1.5°	2.0	76	183	200	2.0
						2.0
Ø125	1.1°	2.0	104	233	250	2.0
						2.0
Ø160	0.8°	2.0	104	303	320	2.0
						2.0
Ø200	0.6°	2.0	127	383	400	2.0
						2.0
Ø250	0.5°	2.0	164	483	500	2.0
						2.0

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
SBMT 13	4.0	0	1.62
	4.5	0	1.51
	5.0	0.04	1.4
	5.5	0.14	1.29
	6.0	0.28	1.18

■ : 'R' di programmazione raccomandato



RNMU 10

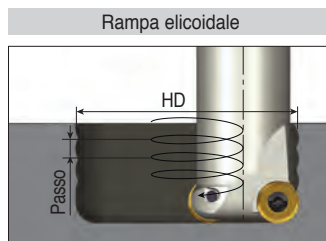
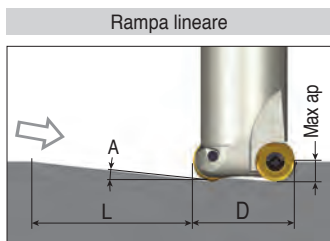
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø25	1.1°	5.0	261	33		0.4
					50	1.3
Ø26	1.1°	5.0	261	35		0.5
					52	1.3
Ø32	0.9°	5.0	318	47		0.6
					64	1.3
Ø33	0.9°	5.0	318	49		0.7
					66	1.4
Ø40	0.9°	5.0	318	63		1.0
					80	1.7
Ø42	0.9°	5.0	318	67		1.0
					84	1.8
Ø50	0.7°	5.0	409	83		1.1
					100	1.6
Ø52	0.8°	5.0	358	87		1.3
					104	1.9

RNMU 12

(Unità: mm)

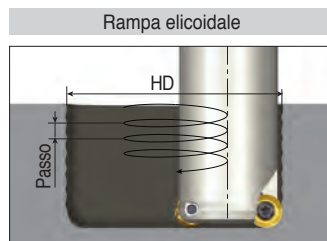
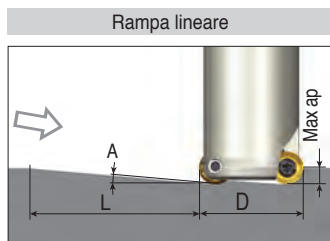
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø32	1.4°	6.0	246	42		0.7
					64	2.1
Ø33	1.4°	6.0	246	44		0.7
					66	2.2
Ø40	1.3°	6.0	265	58		1.1
					80	2.4
Ø50	1.0°	6.0	344	78		1.3
					100	2.3
Ø52	1.0°	6.0	344	82		1.4
					104	2.4
Ø63	1.0°	6.0	344	104		1.9
					126	2.9
Ø66	1.0°	6.0	344	110		2.0
					132	3.1
Ø80	0.9°	6.0	382	138		2.4
					160	3.4
Ø100	0.7°	6.0	491	178		2.5
					200	3.3



RNMU 16

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lung. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø40	1.4°	8.0	328	52		0.8
					80	2.6
Ø42	1.4°	8.0	328	56		0.9
					84	2.7
Ø50	1.3°	8.0	353	72		1.3
					100	3.0
Ø52	1.0°	8.0	459	76		1.1
					104	2.4
Ø63	1.0°	8.0	459	98		1.6
					126	2.9
Ø66	1.0°	8.0	459	104		1.8
					132	3.1
Ø80	1.0°	8.0	459	132		2.4
					160	3.7
Ø100	0.9°	8.0	510	172		3.0
					200	4.2
Ø125	0.9°	8.0	510	222		4.1
					250	5.2



RDMX 05

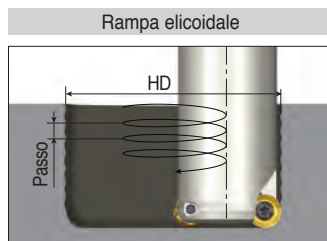
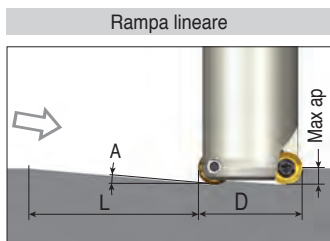
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø8	7°	2.5	20	8.5	16	0.2
						2.1
Ø10	14°	2.5	10	12	20	1.3
						2.1
Ø12	9°	2.5	16	16	24	1.7
						2.1

RDMX 07

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø15	17°	3.5	11	18	30	2.4
						3.0
Ø16	15°	3.5	13	20	32	2.9
						3.0
Ø17	14.5°	3.5	14	22	34	1.6
						3.4
Ø20	14°	3.5	14	28	40	3.0
						3.0
Ø25	8°	3.5	25	38	50	3.0
						3.0
Ø30	5°	3.5	40	48	60	3.0
						3.0
Ø32	5°	3.5	40	52	64	3.0
						3.0



RXM(H)X 10

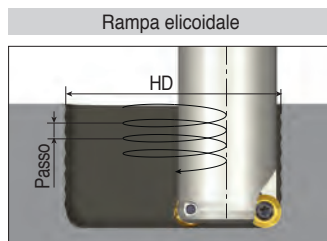
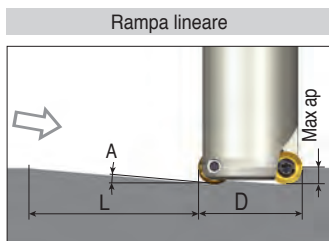
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø20	20°	5.0	14	22		1.9
					40	4.3
Ø25	15°	5.0	19	32		5.0
					50	4.3
Ø32	12°	5.0	24	46		1.6
					64	4.3
Ø42	8°	5.0	36	66		4.3
					84	4.3
Ø50	6.5°	5.0	44	82		4.3
					100	4.3
Ø52	6°	5.0	48	86		4.3
					104	4.3

RXM(H)X 12

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø25	20°	6.0	16	28		2.9
					50	5.1
Ø32	15°	6.0	22	42		5.1
					64	5.1
Ø35	8°	6.0	43	48		4.9
					70	5.1
Ø40	15°	6.0	22	58		5.1
					80	5.1
Ø42	7.5°	6.0	46	62		5.1
					84	5.1
Ø50	7.5°	6.0	46	78		5.1
					100	5.1
Ø52	6°	6.0	57	82		5.1
					104	5.1
Ø63	5°	6.0	69	104		5.1
					126	5.1
Ø66	5°	6.0	69	110		5.1
					132	5.1
Ø80	4°	6.0	86	138		5.1
					160	5.1
Ø100	2°	6.0	172	178		5.1
					200	5.1
Ø125	2°	6.0	172	228		5.1
					250	5.1



RXMX 16

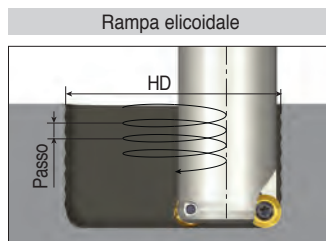
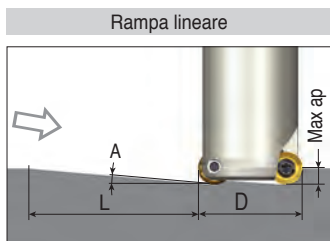
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø32	20°	8.0	22	34		1.9
					64	6.8
Ø40	15°	8.0	30	50		7.1
					80	6.8
Ø42	14°	8.0	32	54		8.0
					84	6.8
Ø50	13°	8.0	35	70		6.8
					100	6.8
Ø52	10°	8.0	45	74		6.8
					104	6.8
Ø80	6°	8.0	76	130		6.8
					160	6.8
Ø100	4°	8.0	114	170		6.8
					200	6.8
Ø125	3.5°	8.0	131	220		6.8
					250	6.8

RXMX 20

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø50	16°	10.0	35	62		9.2
					100	8.5
Ø63	11.5°	10.0	49	88		8.5
					126	8.5
Ø80	9°	10.0	63	122		8.5
					160	8.5
Ø100	7.5°	10.0	76	162		8.5
					200	8.5
Ø125	5.5°	10.0	104	212		8.5
					250	8.5
Ø160	4°	10.0	143	282		8.5
					320	8.5



RYM(H)X 08

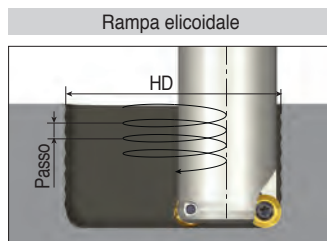
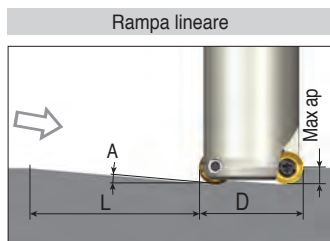
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø16	2.5°	4.0	92	18		0.2
					32	1.9
Ø17	2.5°	4.0	92	20		0.3
					34	2.0
Ø18	2.5°	4.0	92	22		0.5
					36	2.1
Ø20	4.0°	4.0	57	26		1.1
					40	3.4
Ø21	4.0°	4.0	57	28		1.3
					42	3.4
Ø25	4.0°	4.0	57	36		2.1
					50	3.4
Ø26	4.0°	4.0	57	38		2.2
					52	3.4
Ø32	4.0°	4.0	57	50		3.4
					64	3.4
Ø40	7.0°	4.0	33	66		3.4
					80	3.4

RYMX 10

(Unità: mm)

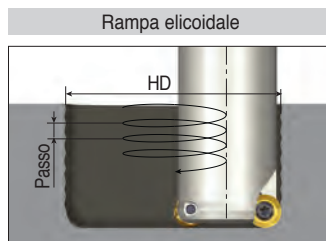
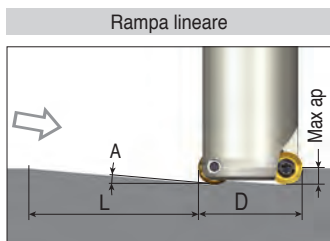
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø20	4.5°	5.0	64	22		0.4
					40	4.2
Ø21	4.5°	5.0	64	24		0.6
					42	4.4
Ø25	5.0°	5.0	57	32		1.6
					50	4.3
Ø26	5.0°	5.0	57	34		1.9
					52	4.3
Ø32	5.0°	5.0	57	46		3.3
					64	4.3
Ø35	5.0°	5.0	57	52		4.0
					70	4.3
Ø40	5.0°	5.0	57	62		4.3
					80	4.3
Ø42	5.0°	5.0	57	66		4.3
					84	4.3
Ø50	6.5°	5.0	44	82		4.3
					100	4.3
Ø52	6.0°	5.0	48	86		4.3
					104	4.3
Ø66	4.5°	5.0	64	114		4.3
					132	4.3



RYM(H)X 12

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø25	6.0°	6.0	57	28		0.8
					50	5.1
Ø26	6.0°	6.0	57	30		1.1
					52	5.1
Ø32	12.0°	6.0	28	42		5.1
					64	5.1
Ø33	12.0°	6.0	28	44		5.1
					66	5.1
Ø35	12.0°	6.0	28	48		5.1
					70	5.1
Ø40	10.0°	6.0	34	58		5.1
					80	5.1
Ø42	12.0°	6.0	28	62		5.1
					84	5.1
Ø50	9.0°	6.0	38	78		5.1
					100	5.1
Ø52	8.0°	6.0	43	82		5.1
					104	5.1
Ø55	8.0°	6.0	43	88		5.1
					110	5.1
Ø63	7.0°	6.0	49	104		5.1
					126	5.1
Ø66	6.5°	6.0	53	110		5.1
					132	5.1
Ø80	4.5°	6.0	76	138		5.1
					160	5.1
Ø100	3.5°	6.0	98	178		5.1
					200	5.1
Ø125	2.5°	6.0	137	228		5.1
					250	5.1



RYMX 16

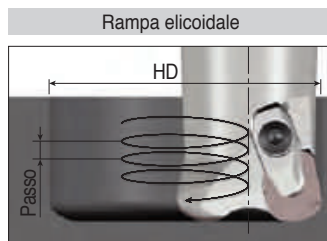
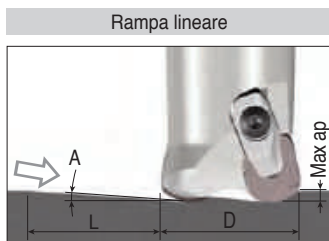
(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø32	8.0°	8.0	57	34		0.7
					64	6.8
Ø40	9.5°	8.0	48	50		4.5
					80	6.8
Ø42	9.0°	8.0	51	54		5.1
					84	6.8
Ø50	9.0°	8.0	51	70		6.8
					100	6.8
Ø52	9.0°	8.0	51	74		6.8
					104	6.8
Ø63	8.5°	8.0	54	96		6.8
					126	6.8
Ø66	8.5°	8.0	54	102		6.8
					132	6.8
Ø80	6.0°	8.0	76	130		6.8
					160	6.8
Ø100	5.0°	8.0	91	170		6.8
					200	6.8
Ø125	3.5°	8.0	131	220		6.8
					250	6.8
Ø160	3.5°	8.0	131	290		6.8
					320	6.8

RYMX 20

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø50	8.0°	10.0	71	62		4.5
					100	8.5
Ø63	12.5°	10.0	45	88		8.5
					126	8.5
Ø80	8.5°	10.0	67	122		8.5
					160	8.5
Ø100	6.5°	10.0	88	162		8.5
					200	8.5
Ø125	4.5°	10.0	127	212		8.5
					250	8.5
Ø160	4.0°	10.0	143	282		8.5
					320	8.5
Ø200	2.5°	10.0	229	362		8.5
					400	8.5
Ø250	2.4°	10.0	239	462		8.5
					500	8.5

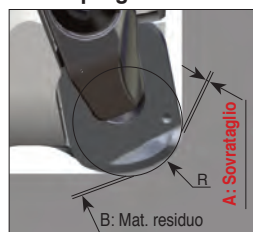


BNGX 09

(Unità: mm)

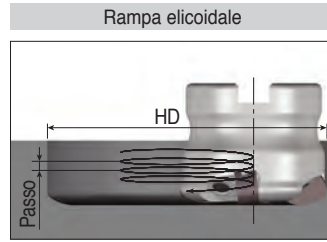
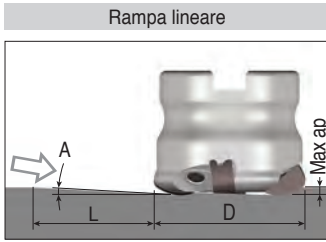
Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia.(HD)	Max dia.(HD)	Max passo/giro
Ø25	1.2°	1.5	55	39		0.9
					50	1.1
Ø32	0.6°	1.5	132	53		0.6
					64	0.7
Ø40	0.6°	1.5	143	69		0.7
					80	0.8
Ø50	0.5°	1.5	156	89		0.9
					100	1.0

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
BNGX 09	3.0	0.00	0.61
	3.4	0.00	0.46
	3.5	0.01	0.43
	4.0	0.12	0.26

Yellow background: 'R' di programmazione raccomandato

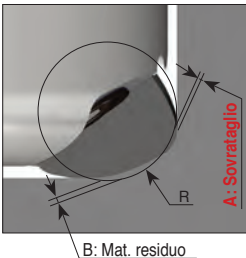


BNGX 12

(Unità: mm)

Diametro fresa (D)	Rampa lineare			Rampa elicoidale		
	Max rampa (A)	Max ap	Min lungh. (L)	Min dia. (HD)	Max dia. (HD)	Max passo/giro
Ø50	0.6°	2.5	239	84		1.1
					100	1.0
Ø63	0.5°	2.5	287	110		1.1
					126	1.1
Ø80	0.4°	2.5	318	144		1.3
					160	1.3

Dati di programmazione



	R programmazione	A sovrataglio	B materiale residuo
BNGX 12	4.0	0.00	1.18
	4.5	0.00	1.00
	5.0	0.03	0.84

■ : 'R' di programmazione raccomandato

FRESE INTEGRALI



Guida alle icone



➤ Taglienti



➤ Angolo d'elica



➤ Pagina condizioni di taglio



➤ Sferica



➤ Torica



➤ Tagliente wave



➤ Pagina testina



Frese integrali













Guida alla scelta dell'utensile	F34
Gradi	F41
Sistema di codifica frese	F42
Frese	
HARD-MILL (HSC e acciaio temprato)	F44
APEX-MILL (applicazioni generiche)	F80
STAR-MILL (materiali di difficile lavorabilità - acciaio inossidabile, titanio, superleghe, acciaio)	F105
ALU-MILL (alluminio e materiali non ferrosi)	F113
CERAMIC-SFEED (alta velocità e superleghe)	F122
DIA-MILL (grafite e materiali compositi)	F124
Condizioni di taglio raccomandate	F129













MAXI-RUSH



Guida alla scelta dell'utensile

Testine di fresatura modulari in metallo duro

	MXEE-03	MXEE(D)-04	MXEE-03	MXEE-104	MXEE-R	MXEE-C04																																																																								
Serie																																																																														
Tipo	Piana	Torica	Torica	Smussata/torica	Piana smussata	Piana smussata																																																																								
Taglienti																																																																														
Grado	TT5523	TT5523	TT5523	TT5523	TT5523	TT5523																																																																								
Materiale	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○
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Diametro	Ø8 - Ø12	Ø6 - Ø20	Ø7.7 - Ø19.7	Ø8 - Ø25	Ø8 - Ø25	Ø8 - Ø25																																																																								
Pagina	F10	F11	F12	F12	F13	F13																																																																								

	MXEE-A02	MXEE-A03	MXEE(D)-	06MXED-08/10	MXRB-02	MXRD-06																																																																								
Serie																																																																														
Tipo	Torica	Torica	Torica	Torica	Torica	Torica																																																																								
Taglienti																																																																														
Grado	UF10	UF10	TT5523	TT5523	TT5523	TT5523																																																																								
Materiale	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td></td><td></td><td></td><td>●</td><td></td><td></td></tr></table>	P	M	K	N	S	H				●			<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td></td><td></td><td></td><td>●</td><td></td><td></td></tr></table>	P	M	K	N	S	H				●			<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>●</td><td></td><td></td></tr></table>	P	M	K	N	S	H	○	○	○	●			<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>●</td><td></td><td></td></tr></table>	P	M	K	N	S	H	○	○	○	●			<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>●</td></tr></table>	P	M	K	N	S	H	○	○	○	○	○	●
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Diametro	Ø10 - Ø12	Ø8 - Ø20	Ø8 - Ø12	Ø16 - Ø25	Ø20	Ø8 - Ø16																																																																								
Pagina	F14	F14	F15	F15	F16	F16																																																																								

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile











Testine di fresatura modulari in metallo duro

	MXFX-02	MXBD-BG-02	MXBD(E)-BG-04	MXBB-SG-02	MXBE-BGA02	MXCP-02
Serie						
Tipo	Sferica	Sferica	Sferica	Sferiche 240°	Sferica	Per smussi
Taglienti	2	2	4	2	2	2
Grado	TT5523	TT5523	TT5523	TT5523	UF10	TT5523
Materiale	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○
Diametro	Ø10 - Ø16	Ø8 - Ø16	Ø6 - Ø25	Ø12	Ø8 - Ø20	Ø8 - Ø16.5
Pagina	F17	F17	F18	F18	F19	F19

	MXDP-02	MXGC-02	MXCA-04/06	MXCW-02	MXCR-02	
Serie						
Tipo	Punta da centro	Allargatura	Per smussi	Per smussi	Per raggatura	
Taglienti	2	2	4,6	2	2	
Grado	TT5523	TT5523	TT5523	TT5523	TT5523	
Materiale	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	P M K N S H ● ○ ● ○	
Diametro	Ø3.28 - Ø6.46	Ø8 - Ø16	Ø10 - Ø20	Ø11.8	Ø8 - Ø20	
Pagina	F20	F20	F21	F21	F22	







● Raccomandata, ○ Adatta

Testine di scanalatura modulari in metallo duro



	TST-3	TST-4/6	TST-A45	TTB-C15	TTB-06																																																													
Serie																																																																		
Tipo	Per scanalatura	Per scanalatura	Per scanalatura	Per scanalatura	Per scanalatura																																																													
Taglienti																																																																		
Grado	TT5543	TT5543	TT5543	TT5543	TT5543																																																													
Materiale	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	○	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	○	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	○	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	○	○	○	○	
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P	M	K	N	S	H																																																													
●	○	○	○	○	○																																																													
Diametro	Ø15.7 - Ø17.7	Ø21.7 - Ø27.7	Ø17.7 - Ø21.7	Ø13.5	Ø13.5 - Ø25																																																													
Larghezza	1.5-3.17	0.76-10.0	3.4-5.5	2	3-8																																																													
Pagina	F23	F24	F25	F25	F26																																																													

● Raccomandata, ○ Adatta

Steli per testine MAXI-RUSH

	MXSSD	MXSSD-W-A	MXTSD	MXTSD-W-A	MXSC	MXSTD
Serie						
Tipo stelo	Cilindrico e scaricato	Cilindrico e scaricato	Cilindrico e conico	Cilindrico e conico	Cilindrico	Cilindrico
Materiale stelo	Acciaio/carburo	Tungsteno	Acciaio/carburo	Tungsteno	Carburo	Acciaio
Refrigerazione int.	X	●	X	●	●	X
Dimensione attacco	S05 - S15	S06 - S12	S05 - S15	S05 - S15	S06	S06 - S08
Diametro stelo	Ø8 - Ø25	Ø10 - Ø20	Ø12 - Ø32	Ø12 - Ø32	Ø12 - Ø16	Ø10 - Ø12
Pagina	F27	F28	F29	F30	F30	F31

Adattatori per testine MAXI-RUSH

	MXAD-M	MXER				
Serie						
Tipo stelo	Modulare	Adattatore ER				
Materiale stelo	Acciaio	Acciaio				
Refrigerazione int.	X	X				
Dimensione attacco	S08 / M8 - M12	S06 - S12				
Diametro stelo	-	-				
Pagina	F31	F32				

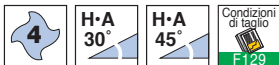
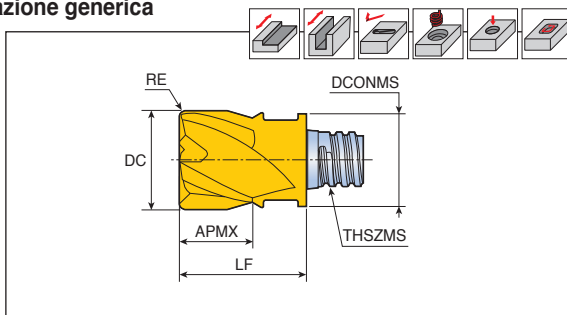
MAXI-RUSH

Gradi	ISO	Caratteristiche e applicazioni
<p>TT5523 Rivestito PVD</p>	<p>P20 – P40 M20 – M40 S20 – S40</p>	<ul style="list-style-type: none"> • Lavorazione ad alta velocità di acciaio, acciaio inossidabile e superleghe
<p>TT5543 Rivestito PVD</p>	<p>P30 – P50 M30 – M50 S30 – S50</p>	<ul style="list-style-type: none"> • Lavorazione di sgrossatura e taglio interrotto di acciaio • Lavorazione di sgrossatura e taglio interrotto di acciaio inossidabile • Lavorazione di sgrossatura e taglio interrotto di superleghe
<p>UF10 Non rivestito</p>	<p>P25 – P35 M25 – M35 N25 – N35</p>	<ul style="list-style-type: none"> • Lavorazione generale di acciaio • Lavorazione generale di leghe di alluminio e materiali non ferrosi • Substrato submicron

MXEE(D)-04



Fresa plana e torica 4 taglienti per lavorazione generica



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5523
		DC	RE	FHA	APMX	THSZMS	DCONMS	LF	
MXEE 060L05R00-04S05	0.025-0.060	6	-	45	5	S05	8.0	10	●
MXEE 080L05R00-04S05	0.030-0.080	8	-	45	5	S05	7.7	10	●
MXED 080L05R05-04S05	0.030-0.080	8	0.5	30	5	S05	7.7	10	●
MXED 080L05R10-04S05	0.030-0.080	8	1.0	30	5	S05	7.7	10	●
MXED 080L05R15-04S05	0.030-0.080	8	1.5	30	5	S05	7.7	10	●
MXEE 100L07R00-04S06	0.035-0.090	10	-	45	7	S06	9.7	13	●
MXED 100L07R05-04S06	0.035-0.090	10	0.5	30	7	S06	9.7	13	●
MXEE 100L07R05-04S06	0.035-0.090	10	0.5	45	7	S06	9.7	13	●
MXED 100L07R10-04S06	0.035-0.090	10	1.0	30	7	S06	9.7	13	●
MXEE 100L07R10-04S06	0.035-0.090	10	1.0	45	7	S06	9.7	13	●
MXEE 120L09R00-04S08	0.035-0.110	12	-	45	9	S08	11.7	16.5	●
MXED 120L09R05-04S08	0.035-0.110	12	0.5	30	9	S08	11.7	16.5	●
MXEE 120L09R05-04S08	0.035-0.110	12	0.5	45	9	S08	11.7	16.5	●
MXED 120L09R10-04S08	0.035-0.110	12	1.0	30	9	S08	11.7	16.5	●
MXEE 120L09R10-04S08	0.035-0.110	12	1.0	45	9	S08	11.7	16.5	●
MXEE 160L12R00-04S10	0.040-0.130	16	-	45	12	S10	15.3	20.5	●
MXED 160L12R05-04S10	0.040-0.130	16	0.5	30	12	S10	15.3	20.5	●
MXEE 160L12R05-04S10	0.040-0.130	16	0.5	45	12	S10	15.3	20.5	●
MXED 160L12R10-04S10	0.040-0.130	16	1.0	30	12	S10	15.3	20.5	●
MXEE 160L12R10-04S10	0.040-0.130	16	1.0	45	12	S10	15.3	20.5	●
MXED 160L12R15-04S10	0.040-0.130	16	1.5	30	12	S10	15.3	20.5	●
MXEE 160L12R15-04S10	0.040-0.130	16	1.5	45	12	S10	15.3	20.5	●
MXED 160L12R20-04S10	0.040-0.130	16	2.0	30	12	S10	15.3	20.5	●
MXEE 160L12R20-04S10	0.040-0.130	16	2.0	45	12	S10	15.3	20.5	●
MXEE 160L12R30-04S10	0.040-0.130	16	3.0	45	12	S10	15.3	20.5	●
MXEE 160L12R40-04S10	0.040-0.130	16	4.0	45	12	S10	15.3	20.5	●
MXEE 200L15R00-04S12	0.050-0.150	20	-	45	15	S12	18.3	25.5	●
MXED 200L15R05-04S12	0.050-0.150	20	0.5	30	15	S12	18.3	25.5	●
MXED 200L15R10-04S12	0.050-0.150	20	1.0	30	15	S12	18.3	25.5	●
MXED 200L15R20-04S12	0.050-0.150	20	2.0	30	15	S12	18.3	25.5	●
MXED 200L15R30-04S12	0.050-0.150	20	3.0	30	15	S12	18.3	25.5	●

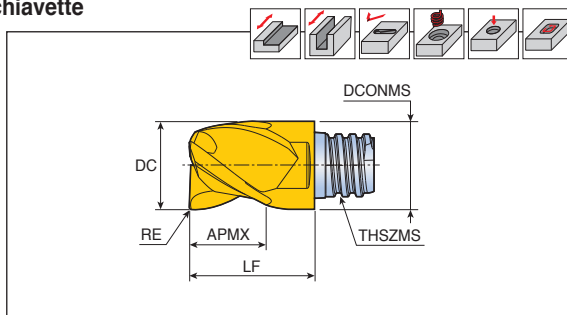
• FHA: angolo d'elica

●: Standard

MXEE-03



Fresa torica 3 taglienti per sgrossatura chivavette



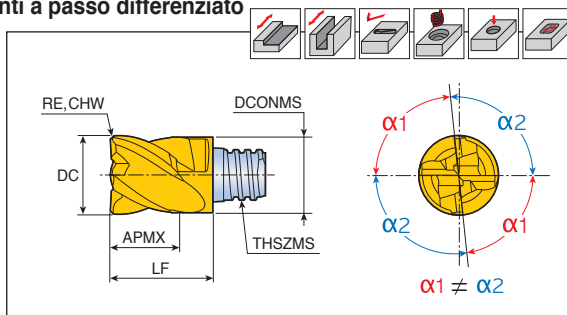
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5523
		DC	RE	APMX	THSZMS	DCONMS	LF	
MXEE 077L04R02-03S05	0.030-0.080	7.7	0.2	4	S05	7.7	10	●
097L05R03-03S06	0.035-0.090	9.7	0.3	5	S06	9.7	13	●
117L07R03-03S08	0.035-0.110	11.7	0.3	7	S08	11.7	16.5	●
157L08R03-03S10	0.040-0.130	15.7	0.3	8	S10	15.3	20.5	●
197L12R04-03S12	0.050-0.150	19.7	0.4	12	S12	18.3	25.5	●

●: Standard

MXEE-I04



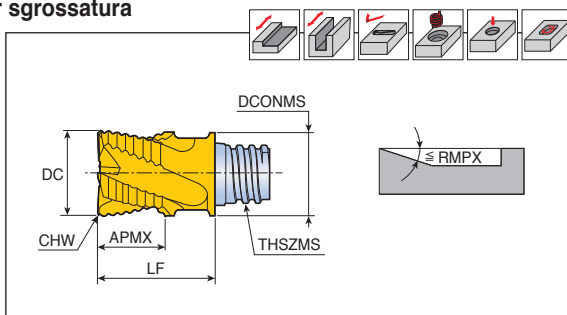
Fresa piana con smusso e torica 4 taglienti a passo differenziato



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5523
		DC	RE	CHW	APMX	THSZMS	DCONMS	LF	
MXEE 080L05C30I04S05	0.030-0.080	8	-	0.3	5	S05	7.7	10	●
100L07C40I04S06	0.035-0.090	10	-	0.4	7	S06	9.7	13	●
120L09C50I04S08	0.035-0.110	12	-	0.5	9	S08	11.7	16.5	●
160L12C60I04S10	0.040-0.130	16	-	0.6	12	S10	15.3	20.5	●
200L15C60I04S12	0.050-0.150	20	-	0.6	15	S12	18.3	25.5	●
250L22C60I04S15	0.060-0.170	25	-	0.6	22	S15	23.9	37	●
250L22R00I04S15	0.060-0.170	25	-	-	22	S15	23.9	37	●
250L22R05I04S15	0.060-0.170	25	0.5	-	22	S15	23.9	37	●
250L22R10I04S15	0.060-0.170	25	1.0	-	22	S15	23.9	37	●
250L22R20I04S15	0.060-0.170	25	2.0	-	22	S15	23.9	37	●
250L22R30I04S15	0.060-0.170	25	3.0	-	22	S15	23.9	37	●

●: Standard

Fresa piana con smusso 4-6 taglienti per sgrossatura



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)									Grado TT5523
		DC	NOF	APMX	CHW	THSZMS	DCONMS	LF	RMPX		
MXEE 080L05C25R04S05	0.030-0.080	8	4	5	0.25	S05	7.7	10	90	●	
100L07C30R04S06	0.035-0.090	10	4	7	0.30	S06	9.7	13	90	●	
120L09C35R04S08	0.035-0.110	12	4	9	0.35	S08	11.7	16.5	90	●	
160L12C40R05S10	0.040-0.130	16	5	12	0.40	S10	15.3	20.5	7	●	
200L15C40R06S12	0.050-0.150	20	6	15	0.40	S12	18.3	25.5	3	●	
250L22C50R06S15	0.060-0.170	25	6	22	0.50	S15	23.9	37	3	●	

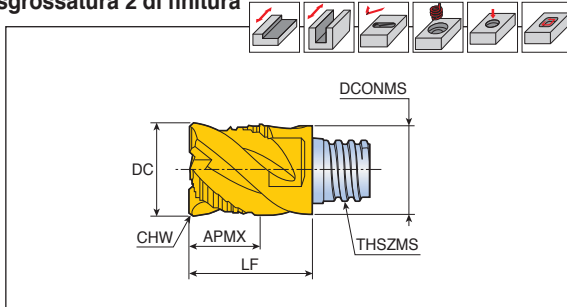
• NOF: numero di taglienti

●: Standard

• RMPX: massimo angolo di rampa

MXEE-C04

Fresa piana con smusso 4 taglienti, 2 di sgrossatura 2 di finitura



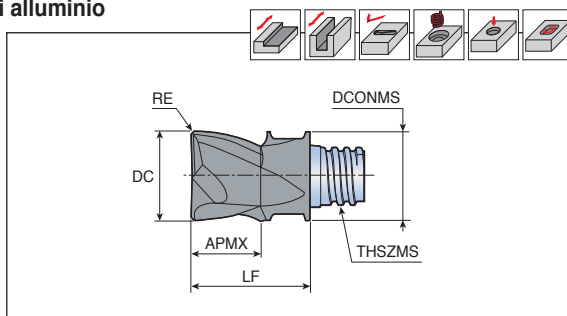
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5523
		DC	APMX	CHW	THSZMS	DCONMS	LF	
MXEE 080L05C30C04S05	0.030-0.080	8	5	0.3	S05	7.7	10	●
100L07C30C04S06	0.035-0.090	10	7	0.3	S06	9.7	13	●
120L09C40C04S08	0.035-0.110	12	9	0.4	S08	11.7	16.5	●
160L12C60C04S10	0.040-0.130	16	12	0.6	S10	15.3	20.5	●
200L15C60C04S12	0.050-0.150	20	15	0.6	S12	18.3	25.5	●
250L22C60C04S15	0.060-0.170	25	22	0.6	S15	23.9	37	●

●: Standard

MXEE-A02



Fresa torica 2 taglienti per lavorazione di alluminio



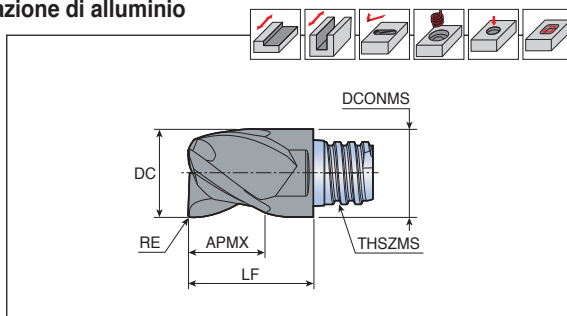
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado UF10
		DC	RE	APMX	THSZMS	DCONMS	LF		
MXEE 100L07R05A02S06	0.035-0.090	10	0.5	7	S06	9.7	13	●	
100L07R10A02S06	0.035-0.090	10	1.0	7	S06	9.7	13	●	
120L09R05A02S08	0.035-0.110	12	0.5	9	S08	11.7	16.5	●	

●: Standard

MXEE-A03



Fresa piana e torica 3 taglienti per lavorazione di alluminio



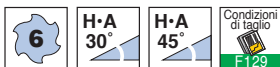
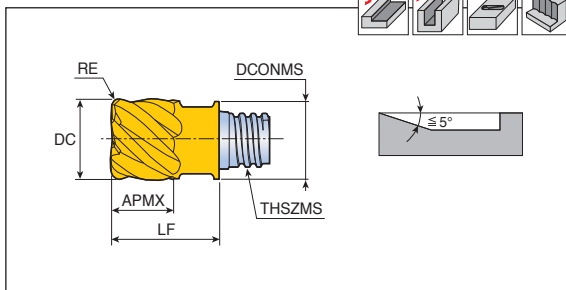
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado UF10
		DC	RE	APMX	THSZMS	DCONMS	LF		
MXEE 080L05R05A03S05	0.030-0.080	8	0.5	5	S05	7.7	10	●	
100L06R05A03S06	0.035-0.090	10	0.5	6	S06	9.7	13	●	
100L06R10A03S06	0.035-0.090	10	1.0	6	S06	9.7	13	●	
120L08R05A03S08	0.035-0.110	12	0.5	8	S08	11.7	16.5	●	
120L08R10A03S08	0.035-0.110	12	1.0	8	S08	11.7	16.5	●	
160L10R00A03S10	0.040-0.130	16	-	10	S10	15.3	20.5	●	
160L10R10A03S10	0.040-0.130	16	1.0	10	S10	15.3	20.5	●	
160L10R20A03S10	0.040-0.130	16	2.0	10	S10	15.3	20.5	●	
200L12R05A03S12	0.050-0.150	20	0.5	12	S12	18.3	25.5	●	
200L12R10A03S12	0.050-0.150	20	1.0	12	S12	18.3	25.5	●	
200L12R20A03S12	0.050-0.150	20	2.0	12	S12	18.3	25.5	●	

●: Standard

MXEE(D)-06



Fresa piana e torica 6 taglienti per materiali difficili senza taglio al centro



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5523
		DC	RE	FHA	APMX	THSZMS	DCONMS	LF	
MXEE 080L05R05-06S05	0.030-0.080	8	0.5	45	5	S05	7.7	10	●
MXEE 080L05R10-06S05	0.030-0.080	8	1.0	45	5	S05	7.7	10	●
MXED 100L07R05-06S06	0.035-0.090	10	0.5	30	7	S06	9.7	13	●
MXED 100L07R10-06S06	0.035-0.090	10	1.0	30	7	S06	9.7	13	●
MXEE 100L07R05-06S06	0.035-0.090	10	0.5	45	7	S06	9.7	13	●
MXEE 100L07R10-06S06	0.035-0.090	10	1.0	45	7	S06	9.7	13	●
MXEE 100L07R15-06S06	0.035-0.090	10	1.5	45	7	S06	9.7	13	●
MXED 120L09R05-06S08	0.035-0.110	12	0.5	30	9	S08	11.7	16.5	●
MXEE 120L09R00-06S08	0.035-0.110	12	-	45	9	S08	11.7	16.5	●
MXEE 120L09R10-06S08	0.035-0.110	12	1.0	45	9	S08	11.7	16.5	●
MXEE 120L09R15-06S08	0.035-0.110	12	1.5	45	9	S08	11.7	16.5	●

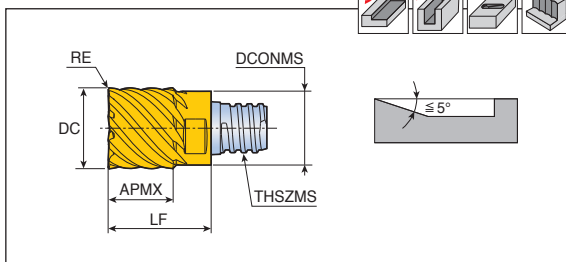
• FHA : angolo d'elica

● : Standard

MXED-08/10



Fresa piana e torica 8-10 taglienti per materiali difficili senza taglio al centro



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5523
		DC	NOF	RE	APMX	THSZMS	DCONMS	LF	
MXED 160L12R05-08S10	0.040-0.130	16	8	0.5	12	S10	15.3	20.5	●
160L12R10-08S10	0.040-0.130	16	8	1.0	12	S10	15.3	20.5	●
160L12R20-08S10	0.040-0.130	16	8	2.0	12	S10	15.3	20.5	●
200L15R10-10S12	0.050-0.150	20	10	1.0	15	S12	18.3	25.5	●
200L15R20-10S12	0.050-0.150	20	10	2.0	15	S12	18.3	25.5	●
250L22R10-10S15	0.060-0.170	25	10	1.0	22	S15	23.9	37	●
250L22R20-10S15	0.060-0.170	25	10	2.0	22	S15	23.9	37	●

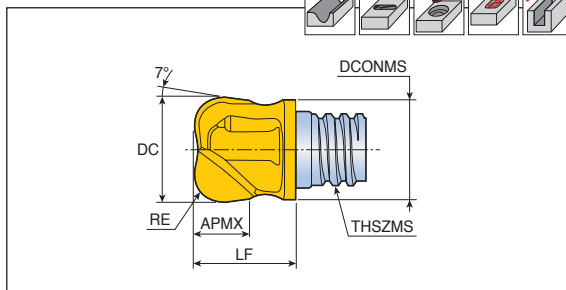
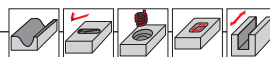
• NOF: numero di taglienti

● : Standard

MXRB-02



Fresa torica 2 taglienti con sforno a 7°



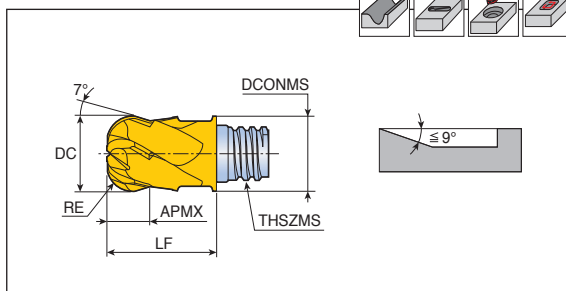
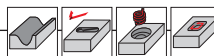
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5523
		DC	RE	APMX	THSZMS	DCONMS	LF	
MXRB 200L11R50-02S12	0.05-0.150	20	5	11.3	S12	18.3	17.3	●

●: Standard

MXRD-06



Fresa torica 6 taglienti con sforno a 7°



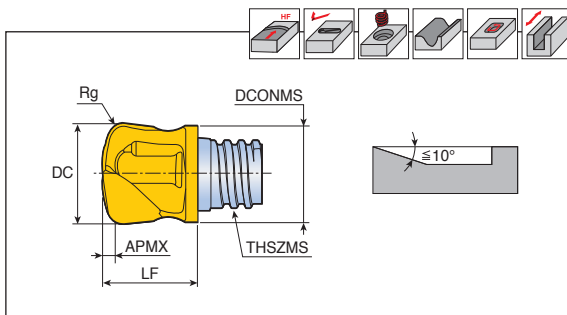
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5523
		DC	RE	APMX	THSZMS	DCONMS	LF	
MXRD 080L04R20-06S05	0.030-0.080	8	2	4	S05	7.7	10	●
100L05R30-06S06	0.035-0.090	10	3	5	S06	9.7	13	●
120L07R40-06S08	0.035-0.110	12	4	7	S08	11.7	16.5	●
160L09R50-06S10	0.040-0.130	16	5	9	S10	15.3	20.5	●

●: Standard

MXFX-02



Fresa ad alto avanzamento 2 taglienti



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5523
		DC	Rg	APMX	THSZMS	DCONMS	LF	
MXFX 100L0.6R20-02S06	0.035-0.090	10	2.0	0.6	S06	9.6	12.5	●
120L01R25-02S08	0.035-0.110	12	2.5	1.0	S08	11.5	11.1	●
160L1.1R30-02S10	0.040-0.130	16	3.0	1.1	S10	15.2	20	●

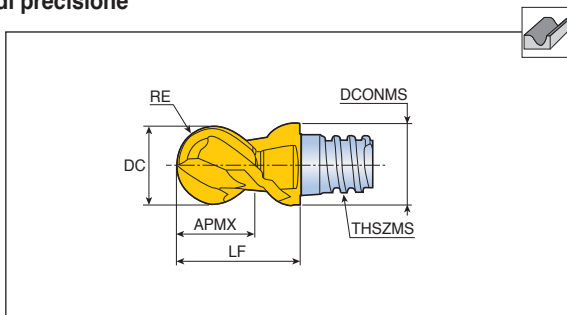
• Rg: raggio teorico di programmazione

●: Standard

MXBD-BG-02



Fresa sferica 2 taglienti per lavorazione di precisione



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5523
		DC	RE	APMX	THSZMS	DCONMS	LF	
MXBD 080L05-BG-02S05	0.030-0.080	8	3.982 ⁽¹⁾	5	S05	7.7	10	●
100L07-BG-02S06	0.035-0.090	10	4.982 ⁽¹⁾	7	S06	9.7	13	●
120L09-BG-02S08	0.035-0.110	12	5.978 ⁽²⁾	9	S08	11.7	16.5	●
160L09-BG-02S10	0.040-0.130	16	7.978 ⁽²⁾	9	S10	15.3	20.5	●

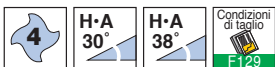
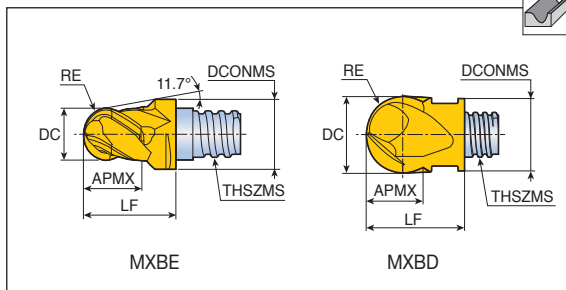
• RE tolleranza: ⁽¹⁾ ± 0.01, ⁽²⁾ ± 0.012

●: Standard

MXBD(E)-BG-04



Fresa sferica 4 taglienti per lavorazione di precisione



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5523
		DC	RE	FHA	APMX	THSZMS	DCONMS	LF	
MXBE 06L05-BG-04S05	0.025-0.060	6	2.987 ⁽¹⁾	38	5.5	S05	8.0	10	●
MXBD 08L05-BG-04S05	0.030-0.080	8	3.982 ⁽¹⁾	30	5	S05	7.7	10	●
100L07-BG-04S06	0.035-0.090	10	4.982 ⁽¹⁾	30	7	S06	9.7	13	●
120L09-BG-04S08	0.035-0.110	12	5.978 ⁽²⁾	30	9	S08	11.7	16.5	●
160L12-BG-04S10	0.040-0.130	16	7.978 ⁽²⁾	30	12	S10	15.3	20.5	●
200L15-BG-04S12	0.050-0.150	20	9.972 ⁽²⁾	30	15	S12	18.3	25.5	●
250L22-BG-04S15	0.060-0.170	25	12.470 ⁽³⁾	30	22	S15	23.9	37	●

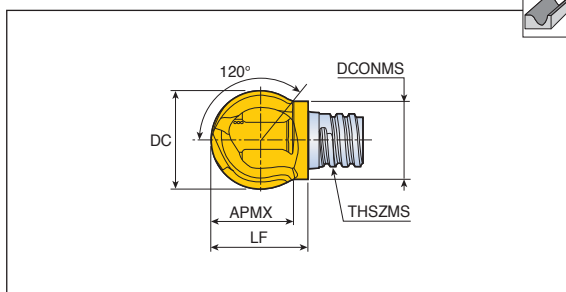
- RE tolleranza: ⁽¹⁾ ± 0.01, ⁽²⁾ ± 0.012, ⁽³⁾ ± 0.02
- FHA: angolo d'elica

●: Standard

MXBB-SG-02



Fresa sferica 2 taglienti a 240°



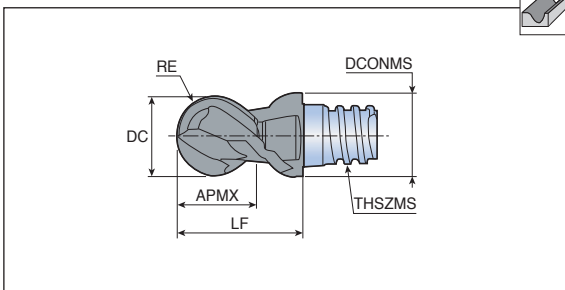
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT5523
		DC	APMX	THSZMS	DCONMS	LF	
MXBB 120L09-SG-02S06	0.035-0.110	12	9.0	S06	9.5	11.6	●

●: Standard

MXBE-BGA02



Fresa sferica 2 taglienti per lavorazione di alluminio



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado UF10
		DC	RE	APMX	THSZMS	DCONMS	LF	
MXBE 080L05-BGA02S05	0.030-0.080	8	3.982 ⁽¹⁾	5	S05	7.7	10	●
100L07-BGA02S06	0.035-0.090	10	4.982 ⁽¹⁾	7	S06	9.7	13	●
120L09-BGA02S08	0.035-0.110	12	5.987 ⁽²⁾	9	S08	11.7	16.5	●
160L12-BGA02S10	0.040-0.130	16	7.978 ⁽²⁾	12	S10	15.3	20.5	●
200L15-BGA02S12	0.050-0.150	20	9.972 ⁽²⁾	15	S12	18.3	25.5	●

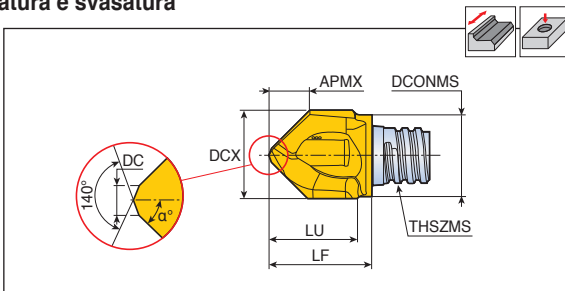
• RE tolleranza: ⁽¹⁾ ± 0.01, ⁽²⁾ ± 0.012

●: Standard

MXCP-02



Fresa 2 taglienti per centratura, smussatura e svasatura

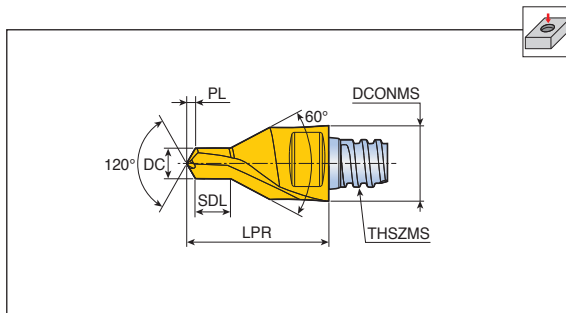


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)								Grado TT5523
		DCX	DC	APMX	THSZMS	DCONMS	LU	LF	α°	
MXCP 100L09A30-02S06	0.035-0.090	10	1.5	7.5	S06	9.5	8.5	11.75	30	●
120L12A30-02S08	0.035-0.110	12	1.5	9.2	S08	11.5	11	15.4	30	●
160L15A30-02S10	0.040-0.130	16	2.5	12	S10	15.2	16	20.2	30	●
080L07A45-02S05	0.030-0.080	8	1.0	3.7	S05	7.6	7.5	9.75	45	●
083L07A45-02S05	0.030-0.080	8.3	1.0	3.8	S05	7.6	7.5	10	45	●
100L09A45-02S06	0.035-0.090	10	1.5	4.4	S06	9.5	9.5	11.75	45	●
104L09A45-02S06	0.035-0.090	10.4	1.5	4.6	S06	9.5	9.5	11.75	45	●
120L12A45-02S08	0.035-0.110	12	1.5	5.4	S08	11.5	11.5	15.4	45	●
124L12A45-02S08	0.035-0.110	12.4	1.5	5.6	S08	11.5	11.5	15.4	45	●
160L15A45-02S10	0.040-0.130	16	1.5	7.1	S10	15.2	15	18.8	45	●
165L15A45-02S10	0.040-0.130	16.5	1.5	7.1	S10	15.2	15	18.8	45	●
100L09A60-02S06	0.035-0.090	10	1.5	2.7	S06	9.5	9.5	12.7	60	●
120L12A60-02S08	0.035-0.110	12	1.5	3.3	S08	11.5	11.5	15.2	60	●
160L15A60-02S10	0.040-0.130	16	1.5	4.4	S10	15.2	16	19.9	60	●

●: Standard



Punta da centro 2 taglienti



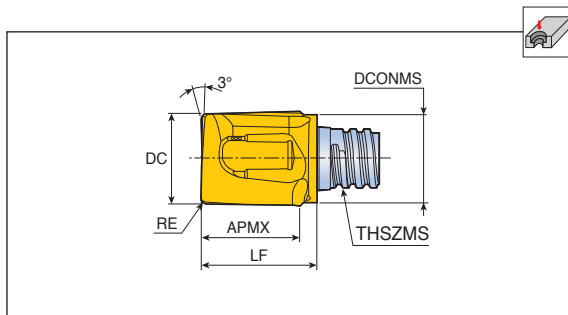
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5523
		DC	PL	SDL	THSZMS	DCONMS	LPR	
MXDP 328L04A30-02S05	0.04-0.08	3.28	0.85	3.75	S05	8	15	●
412L05A30-02S06	0.05-0.10	4.12	1.07	4.83	S06	10	19	●
513L07A30-02S08	0.05-0.12	5.13	1.32	5.88	S08	12	23	●
646L08A30-02S10	0.06-0.15	6.46	1.65	7.25	S10	16	28	●

• SDL: profondità centrino

●: Standard

MXGC-02

Fresa torica 2 taglienti per allargatura



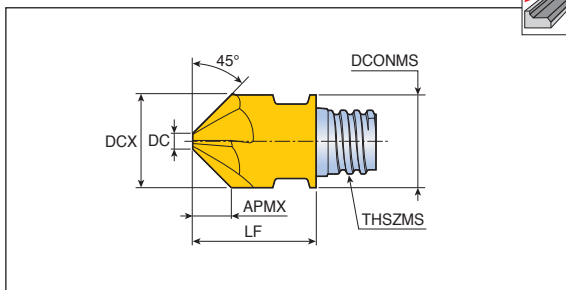
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5523
		DC	RE	APMX	THSZMS	DCONMS	LF	
MXGC 080L08R04-02S05	0.030-0.080	8	0.4	7.7	S05	7.6	10	●
080L08R10-02S05	0.030-0.080	8	1.0	7.7	S05	7.6	10	●
100L09R04-02S06	0.035-0.090	10	0.4	9.0	S06	9.5	12.4	●
100L09R20-02S06	0.035-0.090	10	2.0	9.0	S06	9.5	12.4	●
120L10R04-02S08	0.035-0.110	12	0.4	10	S08	11.5	14.2	●
120L10R10-02S08	0.035-0.110	12	1.0	10	S08	11.5	14.2	●
120L10R20-02S08	0.035-0.110	12	2.0	10	S08	11.5	14.2	●
160L15R04-02S10	0.040-0.130	16	0.4	14.9	S10	15.2	19	●

●: Standard

MXCA-04/06



Fresa 4-6 Taglienti per smussatura e svasatura senza taglio al centro



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)								Grado TT5523
		DCX	DC	NOF	APMX	THSZMS	DCONMS	LF		
MXCA 100L04A45-04S06	0.035-0.090	10	1.95	4	4.0	S06	10	13	●	
120L05A45-04S08	0.035-0.110	12	1.95	4	5.0	S08	12	16.5	●	
127L05A45-04S08	0.035-0.110	12.7	1.98	4	5.3	S08	12.7	16.5	●	
160L06A45-06S10	0.040-0.130	16	3.0	6	6.5	S10	16	20.3	●	
200L07A45-06S12	0.050-0.150	20	5.0	6	7.5	S12	20	25.5	●	

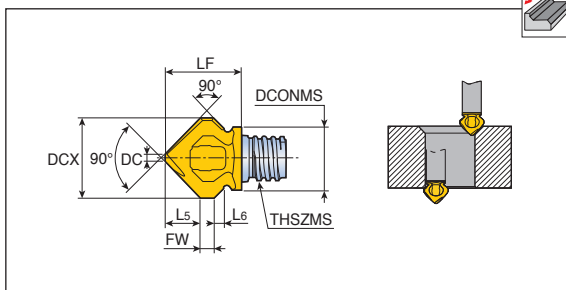
• NOF: numero di taglienti

●: Standard

MXCW-02



Fresa 2 taglienti per doppia smussatura



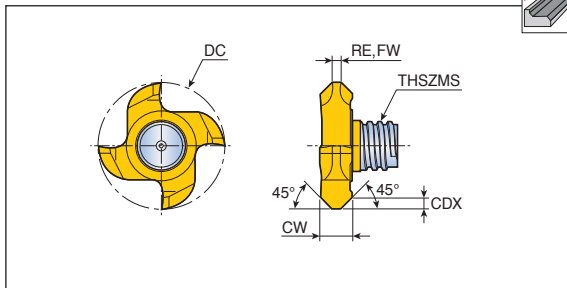
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)								Grado TT5523
		DCX	DC	L5	L6	FW	THSZMS	DCONMS	LF	
MXCW 118L05A45-02S06	0.035-0.110	11.8	1.2	5	1.2	2	S06	9.3	11.2	●

●: Standard

TST-A45



Fresa 3-4 taglienti per scanalatura con smusso a 45°



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5543
		DC	NOF	CW	CDX	RE	FW	THSZMS	
TST 177L01.40A45-3S06	0.025-0.150	17.7	3	3.4	1.4	0.1	-	S06	●
217L01.70A45-4S08	0.025-0.170	21.7	4	5.5	1.7	-	1.5	S08	●

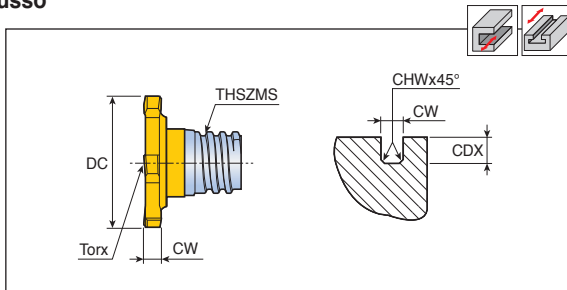
- NOF: numero di taglienti
- FW: larghezza piano

●: Standard

TTB-C15



Fresa 6 taglienti per scanalatura con smusso

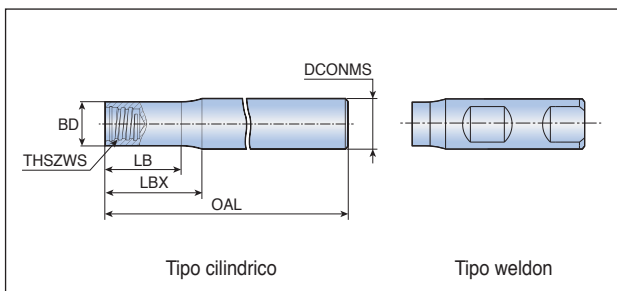


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Torx	Grado TT5543
		DC	CW	CDX	CHW	THSZMS		
TTB 135W2.0C15-06S05	0.025-0.120	13.5	2	2.65	0.15	S05	T20	●

- CHW: larghezza di smussatura

●: Standard

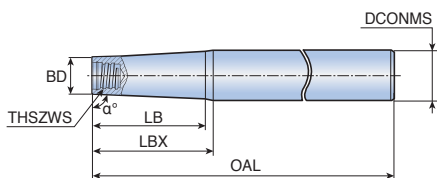
Stelo cilindrico con scarico



Descrizione	Dimensioni (mm)						Tipo stelo	Materiale stelo
	THSZWS	DCONMS	BD	OAL	LB	LBX		
MXSSD 08L060S05-S	S05	8	7.6	60	12.8	15	Cilindrico	Acciaio
08L070S05-C	S05	8	7.6	70	19	20	Cilindrico	Carburo
08L090S05-C	S05	8	7.6	90	39	40	Cilindrico	Carburo
08L110S05-C	S05	8	7.6	110	59	60	Cilindrico	Carburo
10L070S06-C	S06	10	9.6	70	18.5	20	Cilindrico	Carburo
10L075S06-S	S06	10	9.6	75	17.7	20	Cilindrico	Acciaio
10L090S06-C	S06	10	9.6	90	38.5	40	Cilindrico	Carburo
10L110S06-C	S06	10	9.6	110	58.5	60	Cilindrico	Carburo
10L150S06-C	S06	10	9.6	150	98.5	100	Cilindrico	Carburo
12L055W05-S	S05	12	7.6	55	-	3.8	Weldon	Acciaio
12L070S08-C	S08	12	11.5	70	17	20	Cilindrico	Carburo
12L090S08-C	S08	12	11.5	90	37	40	Cilindrico	Carburo
12L090S08-S	S08	12	11.5	90	13.6	16	Cilindrico	Acciaio
12L110S08-C	S08	12	11.5	110	57	60	Cilindrico	Carburo
12L130S08-C	S08	12	11.5	130	77	80	Cilindrico	Carburo
16L065W06-S	S06	16	9.6	65	-	6	Weldon	Acciaio
16L065W08-S	S08	16	11.5	65	-	4	Weldon	Acciaio
16L090S10-C	S10	16	15.2	90	38	40	Cilindrico	Carburo
16L100S10-S	S10	16	15.2	100	18	20	Cilindrico	Acciaio
16L110S10-C	S10	16	15.2	110	58	60	Cilindrico	Carburo
16L130S10-C	S10	16	15.2	130	78	80	Cilindrico	Carburo
16L150S10-C	S10	16	15.2	150	98	100	Cilindrico	Carburo
20L070W10-S	S10	20	15.2	70	-	4	Weldon	Acciaio
20L090S12-C	S12	20	18.3	90	37	40	Cilindrico	Carburo
20L120S12-S	S12	20	18.3	120	20.5	25	Cilindrico	Acciaio
20L130S12-C	S12	20	18.3	130	77	80	Cilindrico	Carburo
20L200S12-C	S12	20	18.3	200	117	120	Cilindrico	Carburo
25L075W12-S	S12	25	18.3	75	-	6	Weldon	Acciaio
25L120S15-C	S15	25	23.9	120	58	60	Cilindrico	Carburo
25L135S15-S	S15	25	23.9	135	33	35	Cilindrico	Acciaio
25L170S15-C	S15	25	23.9	170	98	100	Cilindrico	Carburo
25L250S15-C	S15	25	23.9	250	148	150	Cilindrico	Carburo

• THSZWS: dimensione del filetto di attacco

Stelo cilindrico con scarico conico



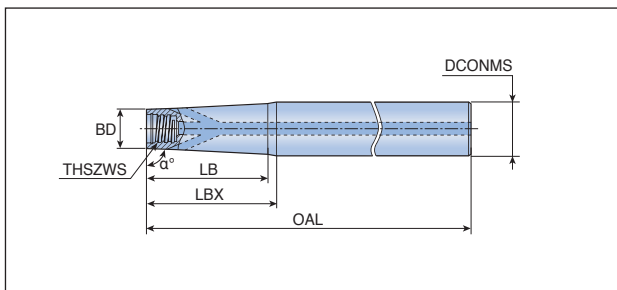
Descrizione	Dimensioni (mm)							Materiale stelo
	α°	THSZWS	DCONMS	BD	OAL	LB	LBX	
MXTSD 12L080S05-S	85	S05	12	7.6	80	-	25	Acciaio
12L100S05-S	89	S05	12	7.6	100	31.0	35	Acciaio
12L110S05-C	89	S05	12	7.6	110	58.0	60	Carburo
12L130S05-C	89	S05	12	7.6	130	79.0	80	Carburo
16L125S06-S	85	S06	16	9.6	125	31.6	34	Acciaio
16L130S08-C	89	S08	16	11.5	130	78.8	80	Carburo
16L140S08-S	85	S08	16	11.5	140	19.3	22	Acciaio
16L150S05-C	89	S05	16	7.6	150	96.0	100	Carburo
16L150S06-C	89	S06	16	9.6	150	98.0	100	Carburo
16L150S08-C	89	S08	16	11.5	150	-	100	Carburo
16L160S06-S	89	S06	16	9.6	160	45.9	55	Acciaio
16L170S06-C	89	S06	16	9.6	170	119.0	120	Carburo
20L140S10-S	85	S10	20	15.2	140	-	27.5	Acciaio
20L170S08-C	89	S08	20	11.5	170	117.0	120	Carburo
20L170S08-S	89	S08	20	11.5	170	68.6	80	Acciaio
20L170S10-C	89	S10	20	15.2	170	-	120	Carburo
20L190S10-C	89	S10	20	15.2	190	-	140	Carburo
20L190S10-S	89	S10	20	15.2	190	73.0	80	Acciaio
20L210S10-C	89	S10	20	15.2	210	-	160	Carburo
25L160S12-S	85	S12	25	18.3	160	-	40	Acciaio
25L170S10-S	85	S10	25	15.2	170	-	56	Acciaio
25L180S12-C	89	S12	25	18.3	180	-	120	Carburo
25L210S12-S	89	S12	25	18.3	210	91.0	100	Acciaio
25L250S12-C	89	S12	25	18.3	250	-	140	Carburo
32L155S15-S	85	S15	32	23.9	155	40.0	45	Acciaio
32L190S12-S	85	S12	32	18.3	190	-	80	Acciaio
32L220S15-S	85	S15	32	23.9	220	-	100	Acciaio
32L250S15-C	89	S15	32	23.9	250	-	150	Carburo
32L300S15-C	89	S15	32	23.9	300	-	200	Carburo

• THSZWS: dimensione del filetto di attacco

MXTSD-W-A



Stelo cilindrico con scarico conico e fori di refrigerazione interna



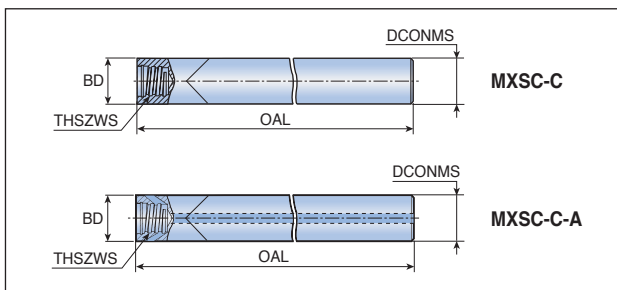
Descrizione	Dimensioni (mm)							Materiale stelo
	α°	THSZWS	DCONMS	BD	OAL	LB	LBX	
MXTSD 12L110S06-W-A	89	S06	12	9.6	110	59	60	Tungsteno
16L170S06-W-A	89	S06	16	9.6	170	116	120	Tungsteno

• THSZWS: dimensione del filetto di attacco

MXSC



Stelo cilindrico in metallo duro per testine di scanalatura tipo TST



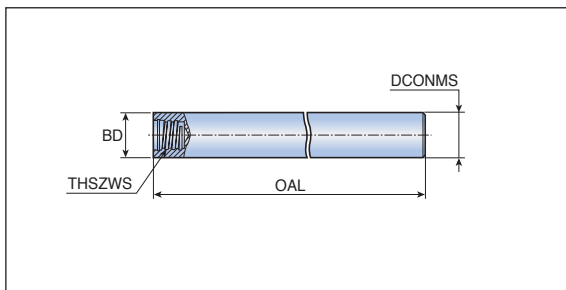
Descrizione	Dimensioni (mm)				Fori refrigerazione	Materiale stelo
	THSZWS	DCONMS	BD	OAL		
MXSC 100L100S06-C	S06	10	10	100	X	Carburo
120L100S08-C-A	S08	12	12	100	●	Carburo

• THSZWS: dimensione del filetto di attacco

Nota:

• Per lo stelo MXSC è consigliato l'uso esclusivo della testina di scanalatura TST. Se si utilizzano altre testine sul gambo MXSC, la profondità di taglio max deve essere diminuita. Il gambo MXSC non è scaricato, quindi può interferire con il pezzo in lavorazione

Stelo cilindrico per testine di scanalatura tipo TTB



Descrizione	Dimensioni (mm)				Materiale stelo
	THSZWS	DCONMS	BD	OAL	
MXSTD 08L070S05-S	S05	8	8	70	Acciaio
10L080S06-S	S06	10	10	80	Acciaio
12L090S08-S	S08	12	12	90	Acciaio
16L100S10-S	S10	16	16	100	Acciaio

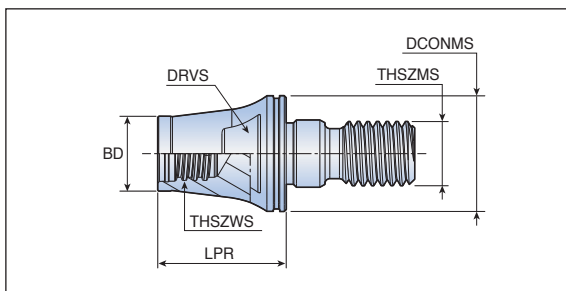
• THSZWS: dimensione del filetto di attacco

Nota:

• Per lo stelo MXSTD è consigliato l'uso esclusivo della testina di scanalatura TTB. Se si utilizzano altre testine sul gambo MXSC, la profondità di taglio max deve essere diminuita. Il gambo MXSTD non è scaricato, quindi può interferire con il pezzo in lavorazione.

MXAD-M

Adattatore modulare T-FLEXTEC per testina MAXI-RUSH



Descrizione	Dimensioni (mm)						Materiale adattatore
	THSZWS	THSZMS	DCONMS	BD	LPR	DRVS	
MXAD 130L016S08-S-M8	S08	M8	13	11.7	16	11	Acciaio
130L025S08-S-M8	S08	M8	13	11.7	25	11	Acciaio
180L020S08-S-M10	S08	M10	18	11.7	20	13	Acciaio
180L025S08-S-M10	S08	M10	18	11.7	25	11	Acciaio
210L020S08-S-M12	S08	M12	21	11.7	20	12.75	Acciaio
210L025S08-S-M12	S08	M12	21	11.7	25	12.75	Acciaio

• THSZWS: dimensione del filetto di attacco







• DRVS: dimensione della chiave di serraggio




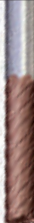


Frese integrali



Guida alla scelta dell'utensile

Frese integrali

Serie	HARDMILL																																																																													
	HSB 2	HSB 2...S6	HSB 2...S/M	HSB 4...M	HSF 2	HSF 2...M																																																																								
																																																																														
Tipo	Sferica	Sferica	Sferica	Sferica	Piana	Piana																																																																								
Taglienti	2	2	2	4	2	2																																																																								
Lunghezza	Scaricata	Scaricata	Corta/media	Media	Scaricata	Media																																																																								
Grado	TT5505	TT5505	TT5505	TT5505	TT5505	TT5505																																																																								
Applicazione	* H.S.M	H.S.M	H.S.M	H.S.M	H.S.M	H.S.M																																																																								
Materiale	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>●</td></tr></table>	P	M	K	N	S	H	○	○	○	○	○	●	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>●</td></tr></table>	P	M	K	N	S	H	○	○	○	○	○	●	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>●</td></tr></table>	P	M	K	N	S	H	○	○	○	○	○	●	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>●</td></tr></table>	P	M	K	N	S	H	○	○	○	○	○	●	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>●</td></tr></table>	P	M	K	N	S	H	○	○	○	○	○	●	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>●</td></tr></table>	P	M	K	N	S	H	○	○	○	○	○	●
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Diametro	Ø0.3 - Ø12.0	Ø0.6 - Ø2.0	Ø0.3 - Ø12.0	Ø4.0 - Ø12.0	Ø0.3 - Ø12.0	Ø0.3 - Ø12.0																																																																								
Pagina	F44 - F47	F48	F49 - F50	F51	F52 - F55	F56 - F57																																																																								















Serie	HARDMILL																																																																													
	HSF 4	HSF 4...M	HSF 6...M	HSF 6...XLT	HSR 2	HSR 2...M																																																																								
																																																																														
Tipo	Piana	Piana	Piana	Piana	Torica	Torica																																																																								
Taglienti	4	4	6	6	2	2																																																																								
Lunghezza	Scaricata	Media	Media	Extra lunga	Scaricata	Media																																																																								
Grado	TT5505	TT5505	TT5505	TT5505	TT5505	TT5505																																																																								
Applicazione	H.S.M	H.S.M	Finitura	Finitura	H.S.M	H.S.M																																																																								
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Diametro	Ø1.0 - Ø12.0	Ø1.0 - Ø12.0	Ø3.0 - Ø12.0	Ø5.0 - Ø12.0	Ø0.3 - Ø12.0	Ø0.3 - Ø12.0																																																																								
Pagina	F58 - F59	F60	F61	F61	F62 - F68	F69 - F71																																																																								















* H.S.M : High Speed Machining

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile

Frese integrali

HARDMILL					APEX MILL	
HSR 4	HSR 4...M	HSR 6	HSR 6...M	HSB 2CBN	SBE 2...S	SBE 2/SBE 2...T
						
Torica	Torica	Torica	Torica	Sferica in CBN	Sferica	Sferica
						
Scaricata	Media	Scaricata	Media	Scaricata	Corta	Media
TT5505	TT5505	TT5505	TT5505	TB7015	TT5515	UF10N, TT5515
* H.S.M	H.S.M	Finitura	Finitura	Finitura	Generale	Generale
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
○ ○ ● ○	○ ○ ● ○	○ ○ ● ○	○ ○ ● ○	○ ○ ● ○	● ○ ● ○	● ○ ● ○
Ø1.0 - Ø12.0	Ø1.0 - Ø12.0	Ø6.0 - Ø12.0	Ø6.0 - Ø12.0	Ø0.4 - Ø4.0	Ø2.0 - Ø20.0	Ø1.0 - Ø20.0
F72 - F75	F76 - F77	F78	F78	F79	F80	F81 - F82













APEX MILL						
SBE 2...LT/L	SBE 4/SBE 4...T	REB ...L	SBO 2...T	BES 2...T	BES 4...T	TSE 2...M
						
Sferica	Sferica	Sferica	Sferica (refr.int.)	Sferica	Sferica	Piana
						
Lunga	Media	Lunga	Media	Media	Media	Media
TT5515, UF10N	UF10N, TT5515	TT5515	TT5525	TT5515	TT5515	TT5515, TT5525, UF10
Generale	Generale	Sgrossatura	Generale	Generale	Generale	Generale
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
● ○ ● ● ○	● ○ ● ● ○	● ○ ○ ○ ●	● ○ ○ ○ ○	● ○ ○ ○ ○	● ○ ○ ○ ○	● ○ ● ● ○
Ø2.0 - Ø16.0	Ø1.0 - Ø20.0	Ø6.0 - Ø20.0	Ø6.0 - Ø14.0	Ø3.0 - Ø16.0	Ø3.0 - Ø16.0	Ø1.0 - Ø25.0
F83	F84 - F85	F86	F86	F87	F87	F88 - F89













* H.S.M : High Speed Machining

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Guida alla scelta dell'utensile

Frese integrali

Serie	APEX MILL																																																																													
	TSE 4...M	HES 2...LT	HES 4...LT	HES 2...XLT	HES 4...XLT	HES 2...T-R																																																																								
																																																																														
Tipo	Piana	Piana	Piana	Piana	Piana	Torica																																																																								
Taglienti																																																																														
Lunghezza	Media	Lunga	Lunga	Extra lunga	Extra lunga	Media																																																																								
Grado	TT5515, TT5525, UF10	TT5525	TT5525	TT5515, TT5525	TT5515, TT5525	TT5515, TT5525																																																																								
Applicazione	Generale	Generale	Generale	Generale	Generale	Generale																																																																								
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Diametro	Ø1.0 - Ø25.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0	Ø3.0 - Ø20.0																																																																								
Pagina	F90 - F91	F92	F93	F94	F95	F96																																																																								

Serie	APEX MILL																																																																													
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Tipo	Torica	Torica	Torica	Alto avanz.	Alto avanz.	Piana smussata																																																																								
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Lunghezza	Lunga	Media	Lunga	Media	Media	Media																																																																								
Grado	TT5515, TT5525	TT5515, TT5525	TT5515, TT5525	TT5515	TT5515	TT5525																																																																								
Applicazione	Generale	Generale	Generale	* H.F.M	* H.F.M	Generale																																																																								
Materiale	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	○	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	○	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>●</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	●	○	○	○	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td></tr></table>	P	M	K	N	S	H	●	○	○	○	○	○
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P	M	K	N	S	H																																																																									
●	○	●	○	○	○																																																																									
P	M	K	N	S	H																																																																									
●	○	●	○	○	○																																																																									
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P	M	K	N	S	H																																																																									
●	○	●	○	○	○																																																																									
P	M	K	N	S	H																																																																									
●	○	○	○	○	○																																																																									
Diametro	Ø3.0 - Ø12.0	Ø3.0 - Ø20.0	Ø3.0 - Ø12.0	Ø4.0 - Ø12.0	Ø6.0 - Ø12.0	Ø6.0 - Ø25.0																																																																								
Pagina	F97	F98	F99	F100	F100	F101																																																																								













* H.F.M : High Feed Machining

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile













Frese integrali

APEX MILL

REL ...L	FSM 4...M	CEM 2...-C60	CEM 2	CEM 2...-C120	ECEM 2
					
Piana smussata	Piana smussata	Per smussi a 60°	Per smussi a 90°	Per smussi a 120°	Per smussi a 90°
					
Lunga	Media	Lunga	Lunga	Lunga	Media
TT5515	TT5525	UF10	UF10	UF10	UF10
Sgrossatura	Sgrossatura + finitura	Generale	Generale	Generale	Generale
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
● ○ ○ ○ ●	● ○ ○ ○ ○	● ○ ○ ● ○	● ○ ○ ● ○	● ○ ○ ● ○	● ○ ○ ● ○
Ø6.0 - Ø20.0	Ø6.0 - Ø25.0	Ø4.0 - Ø20.0	Ø4.0 - Ø20.0	Ø4.0 - Ø20.0	Ø2.0 - Ø16.0
F101	F102	F102	F103	F103	F104

APEX MILL













STAR MILL













ECEM 4	SBT 3...U	SBT 4...U	SED 4...U	SED 4...UL	SED 4...U-R
					
Per smussi a 90°	Sferica	Sferica	Piana	Piana	Torica
					
Media	Media	Media	Media	Lunga	Media
UF10	TT5515	TT5515	TT5515	TT5515	TT5515
Generale	Materiali difficili	Materiali difficili	Materiali difficili	Materiali difficili	Materiali difficili
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
● ○ ○ ● ○	○ ● ○ ○ ●	○ ● ○ ○ ●	○ ● ○ ○ ●	○ ● ○ ○ ●	○ ● ○ ○ ●
Ø6.0 - Ø12.0	Ø4.0 - Ø12.0	Ø4.0 - Ø12.0	Ø3.0 - Ø20.0	Ø3.0 - Ø12.0	Ø2.0 - Ø16.0
F104	F105	F105	F106	F106	F107

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile

Frese integrali

Serie	STAR MILL																																																																													
	SED 4...U-C	SED 7	SER	REH ...S	REH ...M	REH ...L																																																																								
																																																																														
Tipo	Piana smussata	Torica	Piana splitter	Piana smussata	Piana smussata	Piana smussata																																																																								
Taglienti																																																																														
Lunghezza	Media	Media	Media	Corta	Media	Lunga																																																																								
Grado	TT5515	TT5515	TT5525	TT5525	TT5525	TT5525																																																																								
Applicazione	Materiali difficili	Materiali difficili	Materiali difficili	Sgrossatura	Sgrossatura	Sgrossatura																																																																								
Materiale	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>●</td><td></td><td></td><td>●</td><td></td></tr></table>	P	M	K	N	S	H	○	●			●		<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>●</td><td>●</td><td></td><td></td><td></td><td></td></tr></table>	P	M	K	N	S	H	●	●					<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>●</td><td></td><td></td><td>●</td><td></td></tr></table>	P	M	K	N	S	H	○	●			●		<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>●</td><td></td><td>○</td><td></td></tr></table>	P	M	K	N	S	H	○	○	●		○		<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>●</td><td></td><td>○</td><td></td></tr></table>	P	M	K	N	S	H	○	○	●		○		<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td>○</td><td>○</td><td>●</td><td></td><td>○</td><td></td></tr></table>	P	M	K	N	S	H	○	○	●		○	
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Diametro	Ø4.0 - Ø12.0	Ø6.0 - Ø20.0	Ø3.0 - Ø20.0	Ø6.0 - Ø20.0	Ø4.0 - Ø25.0	Ø6.0 - Ø20.0																																																																								
Pagina	F108	F108	F109	F110	F111	F112																																																																								













Serie	ALUMILL																																																																													
	AES 2	AES 2...XL	AES 3	AES 3...ML	AES 3...XL	AES 2...-R																																																																								
																																																																														
Tipo	Piana	Piana	Piana	Piana	Piana	Torica																																																																								
Taglienti																																																																														
Lunghezza	Media	Extra lunga	Media	Lunga	Extra lunga	Media																																																																								
Grado	UF10	UF10	UF10	UF10	UF10	UF10																																																																								
Applicazione	Alluminio	Alluminio	Alluminio	Alluminio	Alluminio	Alluminio																																																																								
Materiale	<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td></td><td></td><td>●</td><td></td><td></td><td></td></tr></table>	P	M	K	N	S	H			●				<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td></td><td></td><td>●</td><td></td><td></td><td></td></tr></table>	P	M	K	N	S	H			●				<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td></td><td></td><td>●</td><td></td><td></td><td></td></tr></table>	P	M	K	N	S	H			●				<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td></td><td></td><td>●</td><td></td><td></td><td></td></tr></table>	P	M	K	N	S	H			●				<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td></td><td></td><td>●</td><td></td><td></td><td></td></tr></table>	P	M	K	N	S	H			●				<table border="1"><tr><td>P</td><td>M</td><td>K</td><td>N</td><td>S</td><td>H</td></tr><tr><td></td><td></td><td>●</td><td></td><td></td><td></td></tr></table>	P	M	K	N	S	H			●			
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Diametro	Ø1.0 - Ø20.0	Ø2.0 - Ø20.0	Ø2.0 - Ø25.0	Ø3.0 - Ø20.0	Ø6.0 - Ø20.0	Ø6.0 - Ø16.0																																																																								
Pagina	F113	F114	F115	F116	F117	F118																																																																								

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile













Frese integrali

ALUMILL

AES 3...-R	REMA 3/3...C	REA 3...L	AWE 3	AWE 3...ML	AWE 3...ML-R
					
Torica	Torica	Piana smussata	Piana wave	Piana wave	Torica wave
					
Media	Scaricata	Lunga	Media	Lunga	Lunga
UF10	UF10	UF10	UF10	UF10	UF10
Alluminio	Sgrossatura allum.	Sgrossatura allum.	Alluminio	Alluminio	Alluminio
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
●	●	●	●	●	●
Ø6.0 - Ø16.0	Ø6.0 - Ø20.0	Ø6.0 - Ø20.0	Ø6.0 - Ø20.0	Ø6.0 - Ø20.0	Ø6.0 - Ø12.0
F119	F120	F120	F121	F121	F122

CERAMICFEED

DIAMILL

CRF 4	CRF 6	CRH 4	DMB 2	DEB 2...S	DEB 2...L
					
Torica	Torica	Torica	Sferica	Sferica	Sferica
					
Media	Media	Media	Scaricata	Corta	Lunga
TC3030	TC3030	TC3030	TT6050	TT6050	TT6050
* H.S.M	* H.S.M	* H.F.M	Grafite	Grafite	Grafite
P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H	P M K N S H
●	●	●	●	●	●
Ø6.0 - Ø16.0	Ø6.0 - Ø16.0	Ø6.0 - Ø16.0	Ø0.6 - Ø2.0	Ø3.0 - Ø12.0	Ø3.0 - Ø12.0
F122	F123	F123	F124	F124	F125

* H.S.M : High Speed Machining

* H.F.M : High Feed Machining

● Raccomandata, ○ Adatta

Guida alla scelta dell'utensile

Frese integrali

Serie	DIAMILL				
	DMR 2	DER 3...S	DER 3...L	RRFE	RCFE
					
Tipo	Torica	Torica	Torica	Piana	Piana
Taglienti					
Lunghezza	Scaricata	Corta	Lunga		
Grado	TT6050	TT6050	TT6050	TTD610	TTD610
Applicazione	Grafite	Grafite	Grafite	Sgrossatura	Sgrossatura
Materiale	Grafite	Grafite	Grafite	Materiali compositi	Materiali compositi
Diametro	Ø0.6 - Ø2.0	Ø3.0 - Ø12.0	Ø4.0 - Ø12.0	Ø4.0 - Ø12.0	Ø4.0 - Ø12.0
Pagina	F125	F126	F126	F127	F127

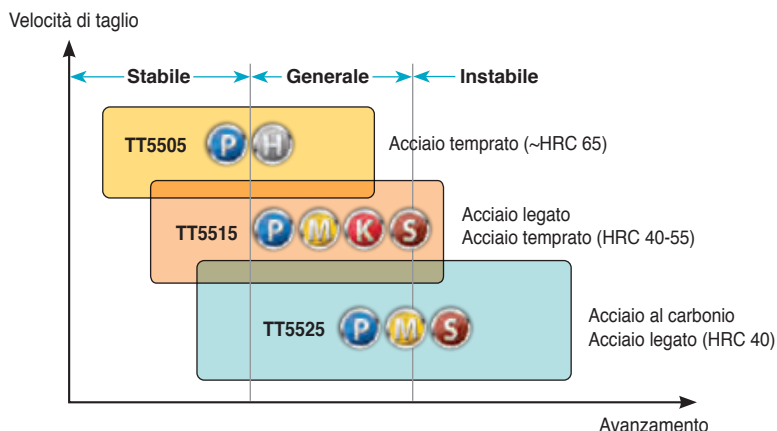
Serie	DIAMILL				
	RCOM	RDCF 4			
					
Tipo	Piana	Piana			
Taglienti					
Lunghezza					
Grado	TTD610	TTD610			
Applicazione	Finitura	Finitura			
Materiale	Materiali compositi	Materiali compositi			
Diametro	Ø6.0 - Ø12.0	Ø4.0 - Ø12.0			
Pagina	F128	F128			

Gradi

Frese integrali

Gradi	ISO	Caratteristiche e applicazioni
TT5505 Rivestito PVD	P05 – P25 H05 – H25	<ul style="list-style-type: none"> Lavorazione di acciaio temprato e pretemprato (durezza fino a 65 HRC) Elevata resistenza all'usura e all'ossidazione Alte velocità di taglio (HSC)
TT5515 Rivestito PVD	P10 – P30 M15 – M30 K10 – K30 S10 – S30 H10 – H30	<ul style="list-style-type: none"> Lavorazione generale di acciaio, acciaio inossidabile e superleghe Alta resistenza all'usura Da medie ad alte velocità di taglio
TT5525 Rivestito PVD	P20 – P40 M20 – M40 S20 – S40	<ul style="list-style-type: none"> Lavorazione generale di acciaio, acciaio inossidabile e superleghe Ottimo bilanciamento tra resistenza all'usura e alla scheggiatura Da basse a medie velocità di taglio
TT6050 Rivestito diamante	Grafite	<ul style="list-style-type: none"> Lavorazione di grafite Alta durezza e eccellente resistenza all'usura
TTD610 Rivestito diamante	Materiali compositi	<ul style="list-style-type: none"> Lavorazione di materiali compositi Il nano rivestimento avanzato in diamante offre una maggiore durata dell'utensile e una migliore stabilità della lavorazione Eccellente resistenza all'usura abrasiva (durezza superiore ai Hv 8000)
UF10N UF10 Non rivestito	P25 – P35 M25 – M35 N25 – N35	<ul style="list-style-type: none"> Lavorazione generale di acciaio Lavorazione generale di leghe di alluminio e materiali non ferrosi Substrato submicron
TC3030 Ceramica	S25 – S35	<ul style="list-style-type: none"> Lavorazione ad alta velocità di leghe di nichel Grado di ceramica SiAlON

Guida alla scelta dei gradi delle frese integrali

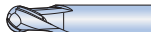




Sistema di codifica frese




HARDMILL

HSB 2 010 M 010 030
1 2 3 4 5/5* 6



1 Tipo di fresa

HSB Sferica	
HSF Piana	
HSR Torica	

2 No. di taglienti

2 2 taglienti	
4 4 taglienti	
6 6 taglienti	


3 Diametro fresa

010 1.0 mm	
100 10.0 mm	


4 Lunghezza

-(niente)	Scaricata
S	Corta
M	Media
L	Lunga
XLT	Extra lunga

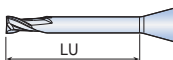
5 Lunghezza di taglio

Tipo HSB / HSF	
010 1.0 mm	APMX
120 12.0 mm	APMX

5* Raggio torica

Tipo HSR	
005 R0.05 mm	RE
020 R0.2 mm	

6 Lunghezza di scarico

030 3.0 mm	
200 20.0 mm	
-(niente) No scarico	

Sistema di codifica frese

APEX MILL

STAR MILL

ALUMILL

DIAMILL

SBE

1

2

2

010

3

S -




4

5

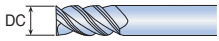
1 Tipo di fresa

SBE/SBT/AEB/DEB	Sferica	
TSE/SED/AES	Piana	
AMR/DER	Torica	





2 No. di taglienti

2 2 taglienti	
4 4 taglienti	
6 6 taglienti	

3 Diametro fresa

010	1.0 mm	
100	10.0 mm	

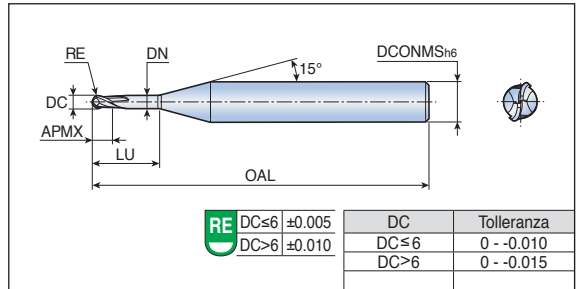
4 Lunghezza

S	Corta	
M	Media	
L	Lunga	
XL	Extra lunga	

5 Altro

-□	Diametro gambo
-R□□	Raggio torico

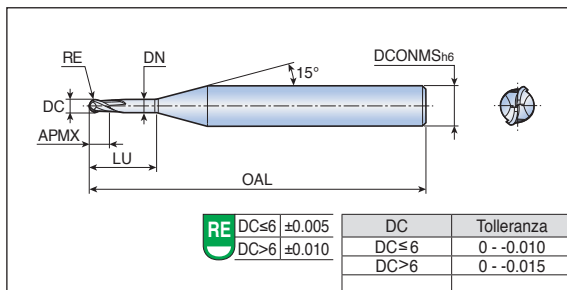
Fresa sferica 2 taglienti scaricata



Descrizione	Dimensioni (mm)							Grado TT5505
	DC	RE	OAL	APMX	LU	DN	DCONMS	
HSB 2003 003 010	0.3	0.15	45	0.3	1.0	0.27	4.0	●
2003 003 020	0.3	0.15	45	0.3	2.0	0.27	4.0	●
2003 003 030	0.3	0.15	45	0.3	3.0	0.27	4.0	●
2004 004 010	0.4	0.2	45	0.4	1.0	0.36	4.0	●
2004 004 015	0.4	0.2	45	0.4	1.5	0.36	4.0	●
2004 004 020	0.4	0.2	45	0.4	2.0	0.36	4.0	●
2004 004 025	0.4	0.2	45	0.4	2.5	0.36	4.0	●
2004 004 030	0.4	0.2	45	0.4	3.0	0.36	4.0	●
2004 004 040	0.4	0.2	45	0.4	4.0	0.36	4.0	●
2005 005 010	0.5	0.25	45	0.5	1.0	0.45	4.0	●
2005 005 015	0.5	0.25	45	0.5	1.5	0.45	4.0	●
2005 005 020	0.5	0.25	45	0.5	2.0	0.45	4.0	●
2005 005 025	0.5	0.25	45	0.5	2.5	0.45	4.0	●
2005 005 030	0.5	0.25	45	0.5	3.0	0.45	4.0	●
2005 005 040	0.5	0.25	45	0.5	4.0	0.45	4.0	●
2005 005 050	0.5	0.25	45	0.5	5.0	0.45	4.0	●
2005 005 060	0.5	0.25	45	0.5	6.0	0.45	4.0	●
2005 005 080	0.5	0.25	45	0.5	8.0	0.45	4.0	●
2006 006 020	0.6	0.3	45	0.6	2.0	0.55	4.0	●
2006 006 030	0.6	0.3	45	0.6	3.0	0.55	4.0	●
2006 006 040	0.6	0.3	45	0.6	4.0	0.55	4.0	●
2006 006 050	0.6	0.3	45	0.6	5.0	0.55	4.0	●
2006 006 060	0.6	0.3	45	0.6	6.0	0.55	4.0	●
2006 006 080	0.6	0.3	45	0.6	8.0	0.55	4.0	●
2006 006 100	0.6	0.3	45	0.6	10.0	0.55	4.0	●
2008 008 020	0.8	0.4	45	0.8	2.0	0.75	4.0	●
2008 008 030	0.8	0.4	45	0.8	3.0	0.75	4.0	●
2008 008 040	0.8	0.4	45	0.8	4.0	0.75	4.0	●
2008 008 050	0.8	0.4	45	0.8	5.0	0.75	4.0	●
2008 008 060	0.8	0.4	45	0.8	6.0	0.75	4.0	●
2008 008 080	0.8	0.4	45	0.8	8.0	0.75	4.0	●
2008 008 100	0.8	0.4	45	0.8	10.0	0.75	4.0	●
2008 008 120	0.8	0.4	45	0.8	12.0	0.75	4.0	●

●: Standard

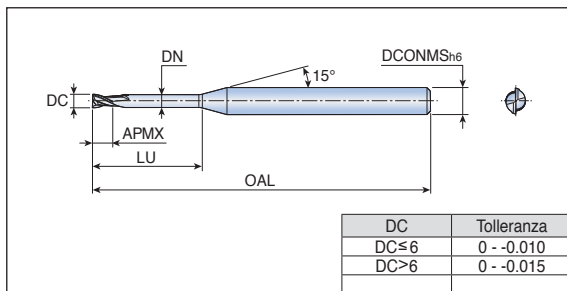
Fresa sferica 2 taglienti scaricata



Descrizione	Dimensioni (mm)							Grado TT5505
	DC	RE	OAL	APMX	LU	DN	DCONMS	
HSB 2010 010 030	1.0	0.5	50	1.0	3	0.97	4.0	●
2010 010 040	1.0	0.5	50	1.0	4	0.97	4.0	●
2010 010 050	1.0	0.5	50	1.0	5	0.97	4.0	●
2010 010 060	1.0	0.5	50	1.0	6	0.97	4.0	●
2010 010 070	1.0	0.5	50	1.0	7	0.97	4.0	●
2010 010 080	1.0	0.5	50	1.0	8	0.95	4.0	●
2010 010 090	1.0	0.5	50	1.0	9	0.95	4.0	●
2010 010 100	1.0	0.5	50	1.0	10	0.95	4.0	●
2010 010 120	1.0	0.5	50	1.0	12	0.93	4.0	●
2010 010 140	1.0	0.5	50	1.0	14	0.93	4.0	●
2010 010 160	1.0	0.5	50	1.0	16	0.93	4.0	●
2010 010 180	1.0	0.5	55	1.0	18	0.93	4.0	●
2010 010 200	1.0	0.5	55	1.0	20	0.93	4.0	●
2012 012 040	1.2	0.6	50	1.2	4	1.15	4.0	●
2012 012 060	1.2	0.6	50	1.2	6	1.15	4.0	●
2012 012 080	1.2	0.6	50	1.2	8	1.15	4.0	●
2012 012 100	1.2	0.6	50	1.2	10	1.15	4.0	●
2012 012 120	1.2	0.6	50	1.2	12	1.13	4.0	●
2015 015 040	1.5	0.75	50	1.5	4	1.45	4.0	●
2015 015 060	1.5	0.75	50	1.5	6	1.45	4.0	●
2015 015 080	1.5	0.75	50	1.5	8	1.45	4.0	●
2015 015 100	1.5	0.75	50	1.5	10	1.45	4.0	●
2015 015 120	1.5	0.75	50	1.5	12	1.43	4.0	●
2015 015 140	1.5	0.75	50	1.5	14	1.43	4.0	●
2015 015 160	1.5	0.75	50	1.5	16	1.41	4.0	●
2015 015 180	1.5	0.75	55	1.5	18	1.41	4.0	●
2015 015 200	1.5	0.75	55	1.5	20	1.39	4.0	●
2020 030 060	2.0	1.0	50	3.0	6	1.95	4.0	●
2020 030 080	2.0	1.0	50	3.0	8	1.95	4.0	●
2020 030 100	2.0	1.0	50	3.0	10	1.95	4.0	●
2020 030 120	2.0	1.0	50	3.0	12	1.93	4.0	●
2020 030 140	2.0	1.0	50	3.0	14	1.93	4.0	●
2020 030 160	2.0	1.0	50	3.0	16	1.93	4.0	●
2020 030 180	2.0	1.0	55	3.0	18	1.93	4.0	●
2020 030 200	2.0	1.0	55	3.0	20	1.93	4.0	●

●: Standard

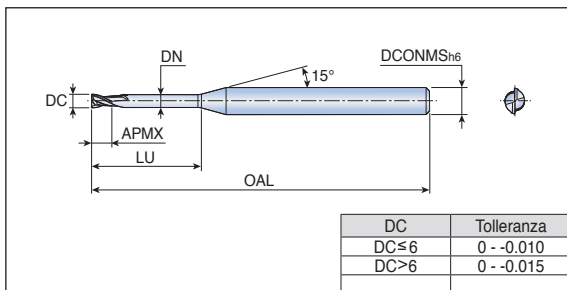
Fresa piana 2 taglienti scaricata



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5505
		DC	OAL	APMX	LU	DN	DCONMS	
HSF 2003 004 010	0.006-0.010	0.3	45	0.4	1.0	0.27	4.0	●
2003 004 015	0.006-0.010	0.3	45	0.4	1.5	0.27	4.0	●
2003 004 020	0.006-0.010	0.3	45	0.4	2.0	0.27	4.0	●
2003 004 025	0.006-0.010	0.3	45	0.4	2.5	0.27	4.0	●
2003 004 030	0.006-0.010	0.3	45	0.4	3.0	0.27	4.0	●
2003 004 040	0.005-0.008	0.3	45	0.4	4.0	0.27	4.0	●
2003 004 050	0.005-0.008	0.3	45	0.4	5.0	0.27	4.0	●
2004 006 010	0.006-0.010	0.4	45	0.6	1.0	0.37	4.0	●
2004 006 015	0.006-0.010	0.4	45	0.6	1.5	0.37	4.0	●
2004 006 020	0.006-0.010	0.4	45	0.6	2.0	0.37	4.0	●
2004 006 025	0.006-0.010	0.4	45	0.6	2.5	0.37	4.0	●
2004 006 030	0.006-0.010	0.4	45	0.6	3.0	0.37	4.0	●
2004 006 040	0.006-0.010	0.4	45	0.6	4.0	0.37	4.0	●
2004 006 050	0.005-0.008	0.4	45	0.6	5.0	0.37	4.0	●
2004 006 060	0.005-0.008	0.4	45	0.6	6.0	0.37	4.0	●
2005 007 010	0.006-0.010	0.5	45	0.7	1.0	0.45	4.0	●
2005 007 015	0.006-0.010	0.5	45	0.7	1.5	0.45	4.0	●
2005 007 020	0.006-0.010	0.5	45	0.7	2.0	0.45	4.0	●
2005 007 025	0.006-0.009	0.5	45	0.7	2.5	0.45	4.0	●
2005 007 030	0.006-0.009	0.5	45	0.7	3.0	0.45	4.0	●
2005 007 040	0.006-0.008	0.5	45	0.7	4.0	0.45	4.0	●
2005 007 050	0.006-0.008	0.5	45	0.7	5.0	0.45	4.0	●
2005 007 060	0.005-0.007	0.5	45	0.7	6.0	0.45	4.0	●
2005 007 080	0.005-0.007	0.5	45	0.7	8.0	0.45	4.0	●
2006 009 020	0.008-0.013	0.6	45	0.9	2.0	0.55	4.0	●
2006 009 030	0.008-0.013	0.6	45	0.9	3.0	0.55	4.0	●
2006 009 040	0.008-0.013	0.6	45	0.9	4.0	0.55	4.0	●
2006 009 050	0.008-0.013	0.6	45	0.9	5.0	0.55	4.0	●
2006 009 060	0.008-0.013	0.6	45	0.9	6.0	0.55	4.0	●
2006 009 080	0.006-0.010	0.6	45	0.9	8.0	0.55	4.0	●
2006 009 100	0.006-0.010	0.6	45	0.9	10.0	0.55	4.0	●
2007 012 020	0.008-0.013	0.7	45	1.2	2.0	0.65	4.0	●
2007 012 040	0.008-0.013	0.7	45	1.2	4.0	0.65	4.0	●
2007 012 060	0.008-0.013	0.7	45	1.2	6.0	0.65	4.0	●
2007 012 080	0.008-0.013	0.7	45	1.2	8.0	0.65	4.0	●
2007 012 100	0.006-0.010	0.7	45	1.2	10.0	0.65	4.0	●

●: Standard

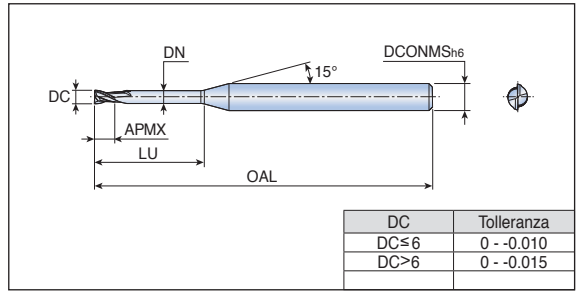
Fresa piana 2 taglienti scaricata



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5505
		DC	OAL	APMX	LU	DN	DCONMS	
HSF 2007 012 120	0.006-0.010	0.7	45	1.2	12.0	0.65	4.0	●
2008 012 020	0.007-0.015	0.8	45	1.2	2.0	0.75	4.0	●
2008 012 030	0.007-0.015	0.8	45	1.2	3.0	0.75	4.0	●
2008 012 040	0.007-0.015	0.8	45	1.2	4.0	0.75	4.0	●
2008 012 050	0.007-0.015	0.8	45	1.2	5.0	0.75	4.0	●
2008 012 060	0.007-0.015	0.8	45	1.2	6.0	0.75	4.0	●
2008 012 080	0.007-0.013	0.8	45	1.2	8.0	0.73	4.0	●
2008 012 100	0.007-0.012	0.8	45	1.2	10.0	0.73	4.0	●
2008 012 120	0.007-0.012	0.8	45	1.2	12.0	0.73	4.0	●
2010 015 030	0.009-0.020	1.0	50	1.5	3.0	0.97	4.0	●
2010 015 040	0.009-0.020	1.0	50	1.5	4.0	0.97	4.0	●
2010 015 050	0.009-0.018	1.0	50	1.5	5.0	0.97	4.0	●
2010 015 060	0.009-0.018	1.0	50	1.5	6.0	0.97	4.0	●
2010 015 070	0.009-0.018	1.0	50	1.5	7.0	0.97	4.0	●
2010 015 080	0.009-0.018	1.0	50	1.5	8.0	0.95	4.0	●
2010 015 100	0.009-0.016	1.0	50	1.5	10.0	0.95	4.0	●
2010 015 120	0.008-0.014	1.0	50	1.5	12.0	0.93	4.0	●
2010 015 140	0.008-0.014	1.0	50	1.5	14.0	0.93	4.0	●
2010 015 160	0.008-0.014	1.0	50	1.5	16.0	0.91	4.0	●
2010 015 180	0.008-0.012	1.0	55	1.5	18.0	0.91	4.0	●
2010 015 200	0.008-0.012	1.0	55	1.5	20.0	0.85	4.0	●
2012 018 040	0.010-0.020	1.2	50	1.8	4.0	1.17	4.0	●
2012 018 060	0.010-0.020	1.2	50	1.8	6.0	1.17	4.0	●
2012 018 080	0.010-0.020	1.2	50	1.8	8.0	1.15	4.0	●
2012 018 100	0.010-0.019	1.2	50	1.8	10.0	1.15	4.0	●
2012 018 120	0.010-0.018	1.2	50	1.8	12.0	1.15	4.0	●
2012 018 160	0.010-0.018	1.2	50	1.8	16.0	1.13	4.0	●
2015 023 040	0.015-0.025	1.5	50	2.3	4.0	1.47	4.0	●
2015 023 060	0.015-0.025	1.5	50	2.3	6.0	1.47	4.0	●
2015 023 080	0.015-0.025	1.5	50	2.3	8.0	1.45	4.0	●
2015 023 100	0.015-0.025	1.5	50	2.3	10.0	1.45	4.0	●
2015 023 120	0.013-0.025	1.5	50	2.3	12.0	1.43	4.0	●
2015 023 140	0.013-0.025	1.5	50	2.3	14.0	1.43	4.0	●
2015 023 160	0.011-0.015	1.5	50	2.3	16.0	1.41	4.0	●
2015 023 180	0.011-0.015	1.5	55	2.3	18.0	1.41	4.0	●
2015 023 200	0.011-0.015	1.5	55	2.3	20.0	1.41	4.0	●

●: Standard

Fresa piana 2 taglienti scaricata



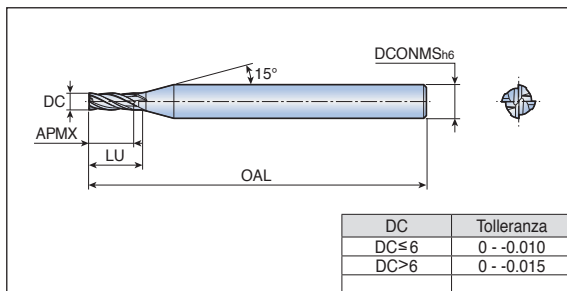
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5505
		DC	OAL	APMX	LU	DN	DCONMS	
HSF 2020 030 040	0.018-0.040	2.0	50	3.0	4	1.95	4.0	●
2020 030 060	0.018-0.040	2.0	50	3.0	6	1.95	4.0	●
2020 030 080	0.018-0.040	2.0	50	3.0	8	1.95	4.0	●
2020 030 100	0.018-0.040	2.0	50	3.0	10	1.95	4.0	●
2020 030 120	0.016-0.025	2.0	50	3.0	12	1.93	4.0	●
2020 030 140	0.016-0.025	2.0	50	3.0	14	1.93	4.0	●
2020 030 160	0.015-0.022	2.0	50	3.0	16	1.91	4.0	●
2020 030 180	0.015-0.022	2.0	55	3.0	18	1.91	4.0	●
2020 030 200	0.013-0.019	2.0	55	3.0	20	1.91	4.0	●
2020 030 250	0.013-0.019	2.0	60	3.0	25	1.91	4.0	●
2020 030 300	0.010-0.015	2.0	70	3.0	30	1.91	4.0	●
2025 040 080	0.019-0.045	2.5	50	4.0	8	2.4	4.0	●
2025 040 100	0.019-0.045	2.5	50	4.0	10	2.4	4.0	●
2025 040 120	0.017-0.040	2.5	50	4.0	12	2.4	4.0	●
2025 040 160	0.015-0.030	2.5	50	4.0	16	2.4	4.0	●
2025 040 200	0.013-0.020	2.5	55	4.0	20	2.4	4.0	●
2030 045 080	0.021-0.060	3.0	55	4.5	8	2.85	6.0	●
2030 045 100	0.021-0.060	3.0	55	4.5	10	2.85	6.0	●
2030 045 120	0.018-0.050	3.0	55	4.5	12	2.85	6.0	●
2030 045 140	0.018-0.045	3.0	55	4.5	14	2.85	6.0	●
2030 045 160	0.018-0.045	3.0	55	4.5	16	2.85	6.0	●
2030 045 180	0.015-0.040	3.0	60	4.5	18	2.85	6.0	●
2030 045 200	0.015-0.040	3.0	60	4.5	20	2.85	6.0	●
2030 045 250	0.015-0.040	3.0	60	4.5	25	2.85	6.0	●
2030 045 300	0.015-0.038	3.0	70	4.5	30	2.85	6.0	●
2030 045 350	0.015-0.038	3.0	75	4.5	35	2.85	6.0	●
2030 045 400	0.015-0.030	3.0	80	4.5	40	2.85	6.0	●
2040 060 100	0.030-0.075	4.0	55	6.0	10	3.9	6.0	●
2040 060 120	0.030-0.075	4.0	55	6.0	12	3.9	6.0	●
2040 060 160	0.030-0.075	4.0	55	6.0	16	3.9	6.0	●
2040 060 200	0.030-0.070	4.0	60	6.0	20	3.9	6.0	●
2040 060 250	0.030-0.070	4.0	60	6.0	25	3.9	6.0	●
2040 060 300	0.030-0.070	4.0	70	6.0	30	3.9	6.0	●
2040 060 350	0.030-0.068	4.0	75	6.0	35	3.9	6.0	●
2040 060 400	0.030-0.068	4.0	80	6.0	40	3.9	6.0	●

●: Standard

HSF 4...M

HARDMILL

Fresa piana 4 taglienti media



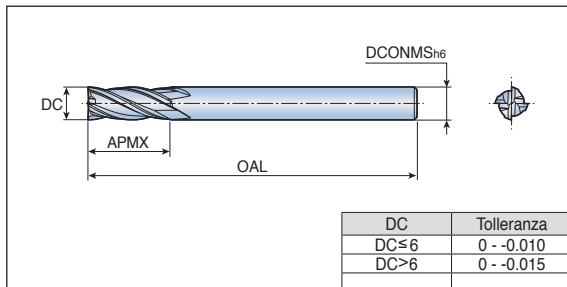
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT5505
		DC	OAL	APMX	LU	DCONMS	
HSF 4010M 025	0.009-0.020	1.0	50	2.5	3	6.0	●
4012M 030	0.010-0.020	1.2	50	3.0	4	6.0	●
4015M 040	0.015-0.025	1.5	50	4.0	5	6.0	●
4020M 060	0.018-0.040	2.0	50	6.0	7	6.0	●
4025M 070	0.019-0.045	2.5	50	7.0	8.5	6.0	●
4030M 080	0.021-0.060	3.0	60	8.0	9.5	6.0	●
4035M 090	0.026-0.068	3.5	60	9.0	11	6.0	●
4040M 100	0.030-0.075	4.0	60	10.0	12	6.0	●
4050M 130	0.056-0.090	5.0	60	13.0	15.5	6.0	●
4070M 180	0.079-0.110	7.0	65	18.0	22	8.0	●
4090M 220	0.104-0.125	9.0	70	22.0	25	10.0	●
4110M 280	0.122-0.149	11.0	80	28.0	33	12.0	●

●: Standard

HSF 4...M

HARDMILL

Fresa piana 4 taglienti media



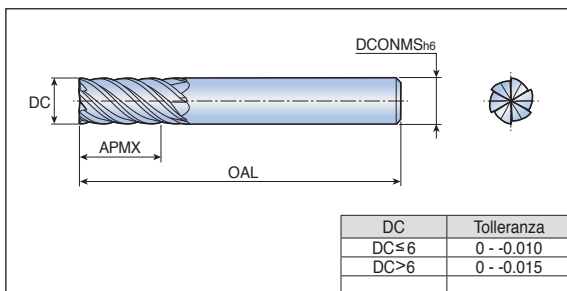
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado TT5505
		DC	OAL	APMX	DCONMS	
HSF 4060M 150	0.067-0.100	6.0	60	15.0	6.0	●
4080M 200	0.090-0.120	8.0	65	20.0	8.0	●
4100M 250	0.117-0.130	10.0	70	25.0	10.0	●
4120M 300	0.126-0.168	12.0	80	30.0	12.0	●

●: Standard

HSF 6...M

HARDMILL

Fresa piana 6 taglienti media



• Finitura



DC	Tolleranza
DC ≤ 6	0 - -0.010
DC > 6	0 - -0.015

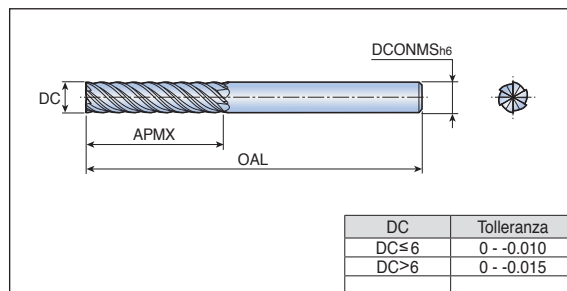
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado
		DC	OAL	APMX	DCONMS	TT5505
HSF 6030M 080	0.010-0.030	3.0	50	8	6.0	●
6040M 100	0.010-0.050	4.0	60	10	6.0	●
6050M 150	0.020-0.050	5.0	60	15	6.0	●
6060M 150	0.038-0.050	6.0	60	15	6.0	●
6080M 200	0.045-0.060	8.0	65	20	8.0	●
6100M 220	0.045-0.060	10.0	70	22	10.0	●
6120M 260	0.053-0.070	12.0	80	26	12.0	●

●: Standard

HSF 6...XLT

HARDMILL

Fresa piana 6 taglienti extra lunga



• Finitura

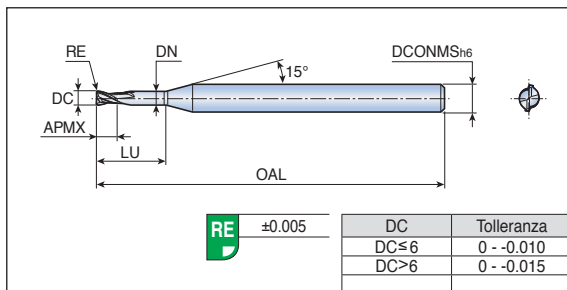


DC	Tolleranza
DC ≤ 6	0 - -0.010
DC > 6	0 - -0.015

Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado
		DC	OAL	APMX	DCONMS	TT5505
HSF 6050XLT 250	0.03-0.05	5.0	80	25	6.0	●
6060XLT 250	0.03-0.05	6.0	80	25	6.0	●
6080XLT 350	0.04-0.06	8.0	90	35	8.0	●
6100XLT 450	0.04-0.06	10.0	100	45	10.0	●
6120XLT 550	0.05-0.07	12.0	110	55	12.0	●

●: Standard

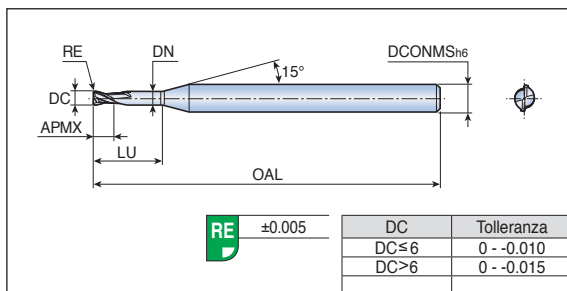
Fresa torica 2 taglienti scaricata



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5505
		DC	RE	OAL	APMX	LU	DN	DCONMS	
HSR 2003 005 010	0.006-0.010	0.3	0.05	45	0.4	1.0	0.27	4.0	●
2003 005 020	0.006-0.010	0.3	0.05	45	0.4	2.0	0.27	4.0	●
2003 005 030	0.006-0.010	0.3	0.05	45	0.4	3.0	0.27	4.0	●
2004 005 010	0.006-0.010	0.4	0.05	45	0.6	1.0	0.37	4.0	●
2004 005 015	0.006-0.010	0.4	0.05	45	0.6	1.5	0.37	4.0	●
2004 005 025	0.006-0.010	0.4	0.05	45	0.6	2.5	0.37	4.0	●
2004 005 030	0.006-0.010	0.4	0.05	45	0.6	3.0	0.37	4.0	●
2004 005 040	0.006-0.010	0.4	0.05	45	0.6	4.0	0.37	4.0	●
2005 005 010	0.006-0.010	0.5	0.05	45	0.7	1.0	0.45	4.0	●
2005 005 015	0.006-0.010	0.5	0.05	45	0.7	1.5	0.45	4.0	●
2005 005 025	0.006-0.009	0.5	0.05	45	0.7	2.5	0.45	4.0	●
2005 005 030	0.006-0.009	0.5	0.05	45	0.7	3.0	0.45	4.0	●
2005 005 040	0.006-0.008	0.5	0.05	45	0.7	4.0	0.45	4.0	●
2006 005 020	0.008-0.013	0.6	0.05	45	0.9	2.0	0.55	4.0	●
2006 005 040	0.008-0.013	0.6	0.05	45	0.9	4.0	0.55	4.0	●
2006 005 060	0.008-0.013	0.6	0.05	45	0.9	6.0	0.55	4.0	●
2006 010 020	0.008-0.013	0.6	0.10	45	0.9	2.0	0.55	4.0	●
2006 010 040	0.008-0.013	0.6	0.10	45	0.9	4.0	0.55	4.0	●
2006 010 060	0.008-0.013	0.6	0.10	45	0.9	6.0	0.55	4.0	●
2006 020 020	0.008-0.013	0.6	0.20	45	0.9	2.0	0.55	4.0	●
2006 020 040	0.008-0.013	0.6	0.20	45	0.9	4.0	0.55	4.0	●
2006 020 060	0.008-0.013	0.6	0.20	45	0.9	6.0	0.55	4.0	●
2008 005 020	0.007-0.015	0.8	0.05	45	1.2	2.0	0.75	4.0	●
2008 005 040	0.007-0.015	0.8	0.05	45	1.2	4.0	0.75	4.0	●
2008 005 060	0.007-0.015	0.8	0.05	45	1.2	6.0	0.75	4.0	●
2008 005 080	0.007-0.013	0.8	0.05	45	1.2	8.0	0.73	4.0	●
2008 010 020	0.007-0.015	0.8	0.10	45	1.2	2.0	0.75	4.0	●
2008 010 040	0.007-0.015	0.8	0.10	45	1.2	4.0	0.75	4.0	●
2008 010 060	0.007-0.015	0.8	0.10	45	1.2	6.0	0.75	4.0	●
2008 010 080	0.007-0.013	0.8	0.10	45	1.2	8.0	0.73	4.0	●
2008 020 020	0.007-0.015	0.8	0.20	45	1.2	2.0	0.75	4.0	●
2008 020 040	0.007-0.015	0.8	0.20	45	1.2	4.0	0.75	4.0	●
2008 020 060	0.007-0.015	0.8	0.20	45	1.2	6.0	0.75	4.0	●
2008 020 080	0.007-0.013	0.8	0.20	45	1.2	8.0	0.73	4.0	●

●: Standard

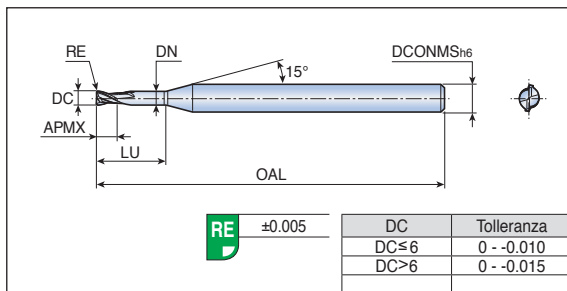
Fresa torica 2 taglienti scaricata



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5505
		DC	RE	OAL	APMX	LU	DN	DCONMS	
HSR 2010 005 030	0.009-0.020	1.0	0.05	50	2.0	3	0.97	4.0	●
2010 005 040	0.009-0.020	1.0	0.05	50	2.0	4	0.97	4.0	●
2010 005 060	0.009-0.018	1.0	0.05	50	2.0	6	0.97	4.0	●
2010 005 080	0.009-0.018	1.0	0.05	50	2.0	8	0.95	4.0	●
2010 005 100	0.009-0.016	1.0	0.05	50	2.0	10	0.95	4.0	●
2010 010 030	0.009-0.020	1.0	0.10	50	2.0	3	0.97	4.0	●
2010 010 040	0.009-0.020	1.0	0.10	50	2.0	4	0.97	4.0	●
2010 010 060	0.009-0.018	1.0	0.10	50	2.0	6	0.97	4.0	●
2010 010 080	0.009-0.018	1.0	0.10	50	2.0	8	0.95	4.0	●
2010 010 100	0.009-0.016	1.0	0.10	50	2.0	10	0.95	4.0	●
2010 020 030	0.009-0.020	1.0	0.20	50	2.0	3	0.97	4.0	●
2010 020 040	0.009-0.020	1.0	0.20	50	2.0	4	0.97	4.0	●
2010 020 060	0.009-0.018	1.0	0.20	50	2.0	6	0.97	4.0	●
2010 020 080	0.009-0.018	1.0	0.20	50	2.0	8	0.95	4.0	●
2010 020 100	0.009-0.016	1.0	0.20	50	2.0	10	0.95	4.0	●
2010 030 030	0.009-0.020	1.0	0.30	50	2.0	3	0.97	4.0	●
2010 030 040	0.009-0.020	1.0	0.30	50	2.0	4	0.97	4.0	●
2010 030 060	0.009-0.018	1.0	0.30	50	2.0	6	0.97	4.0	●
2010 030 080	0.009-0.018	1.0	0.30	50	2.0	8	0.95	4.0	●
2010 030 100	0.009-0.016	1.0	0.30	50	2.0	10	0.95	4.0	●
2012 010 040	0.010-0.020	1.2	0.10	50	2.2	4	1.17	4.0	●
2012 010 060	0.010-0.020	1.2	0.10	50	2.2	6	1.17	4.0	●
2012 010 080	0.010-0.020	1.2	0.10	50	2.2	8	1.15	4.0	●
2012 010 100	0.010-0.019	1.2	0.10	50	2.2	10	1.15	4.0	●
2012 020 040	0.010-0.020	1.2	0.20	50	2.2	4	1.17	4.0	●
2012 020 060	0.010-0.020	1.2	0.20	50	2.2	6	1.17	4.0	●
2012 020 080	0.010-0.020	1.2	0.20	50	2.2	8	1.15	4.0	●
2012 020 100	0.010-0.019	1.2	0.20	50	2.2	10	1.15	4.0	●
2012 030 040	0.010-0.020	1.2	0.30	50	2.2	4	1.17	4.0	●
2012 030 060	0.010-0.020	1.2	0.30	50	2.2	6	1.17	4.0	●
2012 030 080	0.010-0.020	1.2	0.30	50	2.2	8	1.15	4.0	●
2012 030 100	0.010-0.019	1.2	0.30	50	2.2	10	1.15	4.0	●

●: Standard

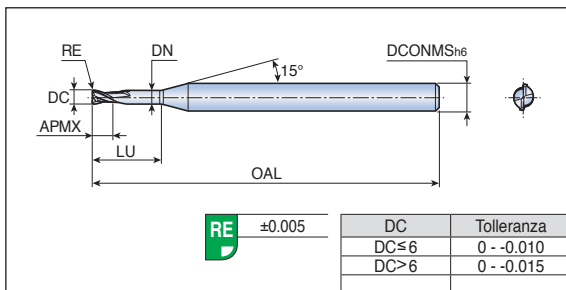
Fresa torica 2 taglienti scaricata



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado
		DC	RE	OAL	APMX	LU	DN	DCONMS	
HSR 2015 005 040	0.015-0.025	1.5	0.05	50	2.5	4	1.47	4.0	●
2015 005 060	0.015-0.025	1.5	0.05	50	2.5	6	1.47	4.0	●
2015 005 080	0.015-0.025	1.5	0.05	50	2.5	8	1.45	4.0	●
2015 005 100	0.015-0.025	1.5	0.05	50	2.5	10	1.45	4.0	●
2015 005 120	0.013-0.025	1.5	0.05	50	2.5	12	1.43	4.0	●
2015 010 040	0.015-0.025	1.5	0.10	50	2.5	4	1.47	4.0	●
2015 010 060	0.015-0.025	1.5	0.10	50	2.5	6	1.47	4.0	●
2015 010 080	0.015-0.025	1.5	0.10	50	2.5	8	1.45	4.0	●
2015 010 100	0.015-0.025	1.5	0.10	50	2.5	10	1.45	4.0	●
2015 010 120	0.013-0.025	1.5	0.10	50	2.5	12	1.43	4.0	●
2015 020 040	0.015-0.025	1.5	0.20	50	2.5	4	1.47	4.0	●
2015 020 060	0.015-0.025	1.5	0.20	50	2.5	6	1.47	4.0	●
2015 020 080	0.015-0.025	1.5	0.20	50	2.5	8	1.45	4.0	●
2015 020 100	0.015-0.025	1.5	0.20	50	2.5	10	1.45	4.0	●
2015 020 120	0.013-0.025	1.5	0.20	50	2.5	12	1.43	4.0	●
2015 030 040	0.015-0.025	1.5	0.30	50	2.5	4	1.47	4.0	●
2015 030 060	0.015-0.025	1.5	0.30	50	2.5	6	1.47	4.0	●
2015 030 080	0.015-0.025	1.5	0.30	50	2.5	8	1.45	4.0	●
2015 030 100	0.015-0.025	1.5	0.30	50	2.5	10	1.45	4.0	●
2015 030 120	0.013-0.025	1.5	0.30	50	2.5	12	1.43	4.0	●
2015 050 040	0.015-0.025	1.5	0.50	50	2.5	4	1.47	4.0	●
2015 050 060	0.015-0.025	1.5	0.50	50	2.5	6	1.47	4.0	●
2015 050 080	0.015-0.025	1.5	0.50	50	2.5	8	1.45	4.0	●
2015 050 100	0.015-0.025	1.5	0.50	50	2.5	10	1.45	4.0	●
2015 050 120	0.013-0.025	1.5	0.50	50	2.5	12	1.43	4.0	●
2020 010 060	0.018-0.040	2.0	0.10	50	3.0	6	1.95	4.0	●
2020 010 080	0.018-0.040	2.0	0.10	50	3.0	8	1.95	4.0	●
2020 010 100	0.018-0.040	2.0	0.10	50	3.0	10	1.95	4.0	●
2020 010 120	0.016-0.025	2.0	0.10	50	3.0	12	1.93	4.0	●
2020 010 160	0.015-0.022	2.0	0.10	50	3.0	16	1.91	4.0	●
2020 010 200	0.013-0.019	2.0	0.10	50	3.0	20	1.91	4.0	●

●: Standard

Fresa torica 2 taglienti scaricata



2

H·A
30°

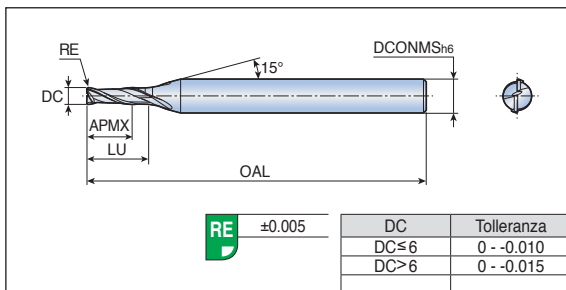
Condizioni di taglio

 F130

Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5505
		DC	RE	OAL	APMX	LU	DN	DCONMS	
HSR 2020 020 060	0.018-0.040	2.0	0.2	50	3.0	6	1.95	4.0	●
2020 020 080	0.018-0.040	2.0	0.2	50	3.0	8	1.95	4.0	●
2020 020 100	0.018-0.040	2.0	0.2	50	3.0	10	1.95	4.0	●
2020 020 120	0.016-0.025	2.0	0.2	50	3.0	12	1.93	4.0	●
2020 020 160	0.015-0.022	2.0	0.2	50	3.0	16	1.91	4.0	●
2020 020 200	0.013-0.019	2.0	0.2	50	3.0	20	1.91	4.0	●
2020 030 060	0.018-0.040	2.0	0.3	50	3.0	6	1.95	4.0	●
2020 030 080	0.018-0.040	2.0	0.3	50	3.0	8	1.95	4.0	●
2020 030 100	0.018-0.040	2.0	0.3	50	3.0	10	1.95	4.0	●
2020 030 120	0.016-0.025	2.0	0.3	50	3.0	12	1.93	4.0	●
2020 030 160	0.015-0.022	2.0	0.3	50	3.0	16	1.91	4.0	●
2020 030 200	0.013-0.019	2.0	0.3	50	3.0	20	1.91	4.0	●
2020 050 060	0.018-0.040	2.0	0.5	50	3.0	6	1.95	4.0	●
2020 050 080	0.018-0.040	2.0	0.5	50	3.0	8	1.95	4.0	●
2020 050 100	0.018-0.040	2.0	0.5	50	3.0	10	1.95	4.0	●
2020 050 120	0.016-0.025	2.0	0.5	50	3.0	12	1.93	4.0	●
2020 050 160	0.015-0.022	2.0	0.5	50	3.0	16	1.91	4.0	●
2020 050 200	0.013-0.019	2.0	0.5	50	3.0	20	1.91	4.0	●
2025 020 080	0.019-0.045	2.5	0.2	55	3.5	8	2.4	4.0	●
2025 020 100	0.019-0.045	2.5	0.2	55	3.5	10	2.4	4.0	●
2025 020 120	0.017-0.040	2.5	0.2	55	3.5	12	2.4	4.0	●
2025 020 160	0.015-0.030	2.5	0.2	55	3.5	16	2.4	4.0	●
2025 030 080	0.019-0.045	2.5	0.3	55	3.5	8	2.4	4.0	●
2025 030 100	0.019-0.045	2.5	0.3	55	3.5	10	2.4	4.0	●
2025 030 120	0.017-0.040	2.5	0.3	55	3.5	12	2.4	4.0	●
2025 030 160	0.015-0.030	2.5	0.3	55	3.5	16	2.4	4.0	●
2025 050 080	0.019-0.045	2.5	0.5	55	3.5	8	2.4	4.0	●
2025 050 100	0.019-0.045	2.5	0.5	55	3.5	10	2.4	4.0	●
2025 050 120	0.017-0.040	2.5	0.5	55	3.5	12	2.4	4.0	●
2025 050 160	0.015-0.030	2.5	0.5	55	3.5	16	2.4	4.0	●

●: Standard

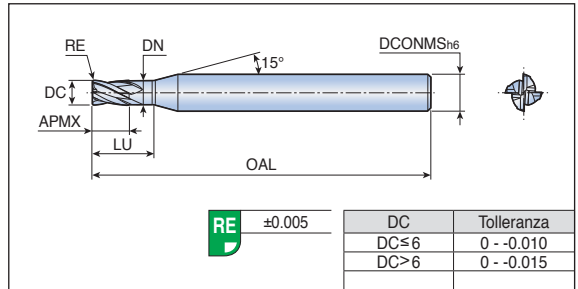
Fresa torica 2 taglienti media



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5505
		DC	RE	OAL	APMX	LU	DCONMS	
HSR 2003M 002	0.006-0.010	0.3	0.02	45	0.6	0.9	4.0	●
2003M 005	0.006-0.010	0.3	0.05	45	0.6	0.9	4.0	●
2004M 005	0.006-0.010	0.4	0.05	45	0.8	1.1	4.0	●
2004M 010	0.006-0.010	0.4	0.10	45	0.8	1.1	4.0	●
2005M 005	0.006-0.010	0.5	0.05	45	1.0	1.3	4.0	●
2005M 010	0.006-0.010	0.5	0.10	45	1.0	1.3	4.0	●
2006M 005	0.008-0.013	0.6	0.05	45	1.2	1.5	4.0	●
2006M 010	0.008-0.013	0.6	0.10	45	1.2	1.5	4.0	●
2006M 020	0.008-0.013	0.6	0.20	45	1.2	1.5	4.0	●
2008M 005	0.007-0.015	0.8	0.05	45	1.6	2	4.0	●
2008M 010	0.007-0.015	0.8	0.10	45	1.6	2	4.0	●
2008M 020	0.007-0.015	0.8	0.20	45	1.6	2	4.0	●
2010M 005	0.009-0.020	1.0	0.05	50	2.0	3.5	6.0	●
2010M 010	0.009-0.020	1.0	0.10	50	2.0	3.5	6.0	●
2010M 020	0.009-0.020	1.0	0.20	50	2.0	3.5	6.0	●
2010M 030	0.009-0.020	1.0	0.30	50	2.0	3.5	6.0	●
2012M 005	0.010-0.020	1.2	0.05	50	2.5	4	6.0	●
2012M 010	0.010-0.020	1.2	0.10	50	2.5	4	6.0	●
2012M 020	0.010-0.020	1.2	0.20	50	2.5	4	6.0	●
2012M 030	0.010-0.020	1.2	0.30	50	2.5	4	6.0	●
2015M 005	0.015-0.025	1.5	0.05	50	3.0	5	6.0	●
2015M 010	0.015-0.025	1.5	0.10	50	3.0	5	6.0	●
2015M 020	0.015-0.025	1.5	0.20	50	3.0	5	6.0	●
2015M 030	0.015-0.025	1.5	0.30	50	3.0	5	6.0	●
2015M 050	0.015-0.025	1.5	0.50	50	3.0	5	6.0	●
2020M 010	0.018-0.040	2.0	0.10	50	5.0	7	6.0	●
2020M 020	0.018-0.040	2.0	0.20	50	5.0	7	6.0	●
2020M 030	0.018-0.040	2.0	0.30	50	5.0	7	6.0	●
2020M 040	0.018-0.040	2.0	0.40	50	5.0	7	6.0	●
2020M 050	0.018-0.040	2.0	0.50	50	5.0	7	6.0	●
2025M 010	0.019-0.045	2.5	0.10	60	7.0	9	6.0	●
2025M 020	0.019-0.045	2.5	0.20	60	7.0	9	6.0	●
2025M 030	0.019-0.045	2.5	0.30	60	7.0	9	6.0	●
2025M 050	0.019-0.045	2.5	0.50	60	7.0	9	6.0	●

●: Standard

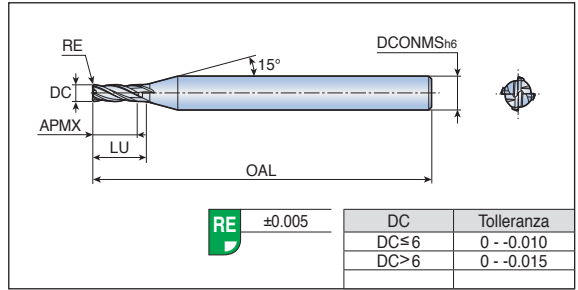
Fresa torica 4 taglienti scaricata



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5505
		DC	RE	OAL	APMX	LU	DN	DCONMS	
HSR 4010 010 030	0.009-0.020	1.0	0.1	50	2.0	3	0.97	4.0	●
4010 010 040	0.009-0.020	1.0	0.1	50	2.0	4	0.97	4.0	●
4010 010 060	0.009-0.018	1.0	0.1	50	2.0	6	0.97	4.0	●
4010 020 030	0.009-0.020	1.0	0.2	50	2.0	3	0.97	4.0	●
4010 020 040	0.009-0.020	1.0	0.2	50	2.0	4	0.97	4.0	●
4010 020 060	0.009-0.018	1.0	0.2	50	2.0	6	0.97	4.0	●
4010 030 030	0.009-0.020	1.0	0.3	50	2.0	3	0.97	4.0	●
4010 030 040	0.009-0.020	1.0	0.3	50	2.0	4	0.97	4.0	●
4010 030 060	0.009-0.018	1.0	0.3	50	2.0	6	0.97	4.0	●
4015 010 040	0.015-0.025	1.5	0.1	50	2.5	4	1.45	4.0	●
4015 010 060	0.015-0.025	1.5	0.1	50	2.5	6	1.45	4.0	●
4015 020 040	0.015-0.025	1.5	0.2	50	2.5	4	1.45	4.0	●
4015 020 060	0.015-0.025	1.5	0.2	50	2.5	6	1.45	4.0	●
4015 030 040	0.015-0.025	1.5	0.3	50	2.5	4	1.45	4.0	●
4015 030 060	0.015-0.025	1.5	0.3	50	2.5	6	1.45	4.0	●
4020 010 060	0.018-0.040	2.0	0.1	50	3.0	6	1.95	4.0	●
4020 010 080	0.018-0.040	2.0	0.1	50	3.0	8	1.95	4.0	●
4020 010 100	0.018-0.040	2.0	0.1	50	3.0	10	1.95	4.0	●
4020 010 120	0.016-0.025	2.0	0.1	50	3.0	12	1.95	4.0	●
4020 010 160	0.015-0.022	2.0	0.1	50	3.0	16	1.95	4.0	●
4020 020 060	0.018-0.040	2.0	0.2	50	3.0	6	1.95	4.0	●
4020 020 080	0.018-0.040	2.0	0.2	50	3.0	8	1.95	4.0	●
4020 020 100	0.018-0.040	2.0	0.2	50	3.0	10	1.95	4.0	●
4020 020 120	0.016-0.025	2.0	0.2	50	3.0	12	1.95	4.0	●
4020 020 160	0.015-0.022	2.0	0.2	50	3.0	16	1.95	4.0	●
4020 030 060	0.018-0.040	2.0	0.3	50	3.0	6	1.95	4.0	●
4020 030 080	0.018-0.040	2.0	0.3	50	3.0	8	1.95	4.0	●
4020 030 100	0.018-0.040	2.0	0.3	50	3.0	10	1.95	4.0	●
4020 030 120	0.016-0.025	2.0	0.3	50	3.0	12	1.95	4.0	●
4020 030 160	0.015-0.022	2.0	0.3	50	3.0	16	1.95	4.0	●
4020 050 060	0.018-0.040	2.0	0.5	50	3.0	6	1.95	4.0	●
4020 050 080	0.018-0.040	2.0	0.5	50	3.0	8	1.95	4.0	●
4020 050 100	0.018-0.040	2.0	0.5	50	3.0	10	1.95	4.0	●
4020 050 120	0.016-0.025	2.0	0.5	50	3.0	12	1.95	4.0	●
4020 050 160	0.015-0.022	2.0	0.5	50	3.0	16	1.95	4.0	●

●: Standard

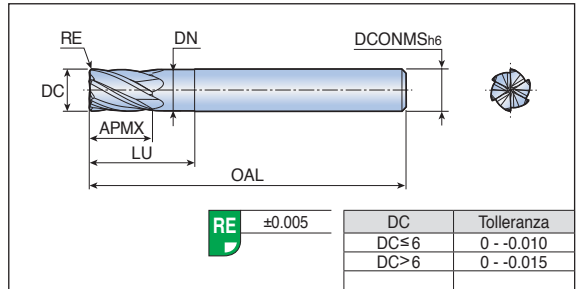
Fresa torica 4 taglienti media



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5505
		DC	RE	OAL	APMX	LU	DCONMS	
HSR 4010M 005	0.009-0.020	1.0	0.05	50	2.0	2.5	6.0	●
4010M 010	0.009-0.020	1.0	0.1	50	2.0	2.5	6.0	●
4010M 020	0.009-0.020	1.0	0.2	50	2.0	2.5	6.0	●
4010M 030	0.009-0.020	1.0	0.3	50	2.0	2.5	6.0	●
4012M 005	0.010-0.020	1.2	0.05	50	2.5	3	6.0	●
4012M 010	0.010-0.020	1.2	0.1	50	2.5	3	6.0	●
4012M 020	0.010-0.020	1.2	0.2	50	2.5	3	6.0	●
4012M 030	0.010-0.020	1.2	0.3	50	2.5	3	6.0	●
4015M 005	0.015-0.025	1.5	0.05	50	3.0	3.5	6.0	●
4015M 010	0.015-0.025	1.5	0.1	50	3.0	3.5	6.0	●
4015M 020	0.015-0.025	1.5	0.2	50	3.0	3.5	6.0	●
4015M 050	0.015-0.025	1.5	0.5	50	3.0	3.5	6.0	●
4020M 010	0.018-0.040	2.0	0.1	50	5.0	6	6.0	●
4020M 020	0.018-0.040	2.0	0.2	50	5.0	6	6.0	●
4020M 030	0.018-0.040	2.0	0.3	50	5.0	6	6.0	●
4020M 050	0.018-0.040	2.0	0.5	50	5.0	6	6.0	●
4025M 010	0.019-0.045	2.5	0.1	60	7.0	8	6.0	●
4025M 020	0.019-0.045	2.5	0.2	60	7.0	8	6.0	●
4025M 030	0.019-0.045	2.5	0.3	60	7.0	8	6.0	●
4025M 050	0.019-0.045	2.5	0.5	60	7.0	8	6.0	●
4030M 010	0.021-0.060	3.0	0.1	60	8.0	9.5	6.0	●
4030M 020	0.021-0.060	3.0	0.2	60	8.0	9.5	6.0	●
4030M 030	0.021-0.060	3.0	0.3	60	8.0	9.5	6.0	●
4030M 050	0.021-0.060	3.0	0.5	60	8.0	9.5	6.0	●
4030M 100	0.021-0.060	3.0	1.0	60	8.0	9.5	6.0	●
4040M 010	0.030-0.075	4.0	0.1	70	10.0	12	6.0	●
4040M 020	0.030-0.075	4.0	0.2	70	10.0	12	6.0	●
4040M 030	0.030-0.075	4.0	0.3	70	10.0	12	6.0	●
4040M 050	0.030-0.075	4.0	0.5	70	10.0	12	6.0	●
4040M 100	0.030-0.075	4.0	1.0	70	10.0	12	6.0	●

●: Standard

Fresa torica 6 taglienti scaricata



• Finitura

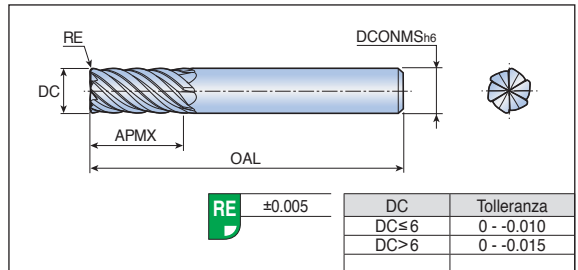


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT5505
		DC	RE	OAL	APMX	LU	DN	DCONMS	
HSR 6060 050 150	0.038-0.050	6.0	0.5	60	9	15	5.8	6.0	●
6060 100 150	0.038-0.050	6.0	1.0	60	9	15	5.8	6.0	●
6080 050 200	0.045-0.060	8.0	0.5	70	12	20	7.8	8.0	●
6080 100 200	0.045-0.060	8.0	1.0	70	12	20	7.8	8.0	●
6100 050 250	0.045-0.060	10.0	0.5	75	15	25	9.8	10.0	●
6100 100 250	0.045-0.060	10.0	1.0	75	15	25	9.8	10.0	●
6120 050 300	0.053-0.070	12.0	0.5	85	18	30	11.6	12.0	●
6120 100 300	0.053-0.070	12.0	1.0	85	18	30	11.6	12.0	●

●: Standard

HSR 6...M

Fresa torica 6 taglienti media



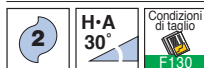
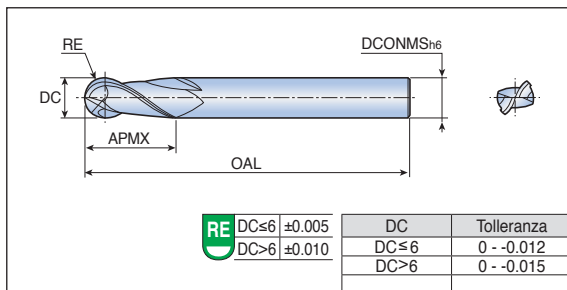
• Finitura



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT5505
		DC	RE	OAL	APMX	DCONMS	
HSR 6060M 050	0.038-0.050	6.0	0.5	60	15	6.0	●
6060M 100	0.038-0.050	6.0	1.0	60	15	6.0	●
6080M 050	0.045-0.060	8.0	0.5	65	20	8.0	●
6080M 100	0.045-0.060	8.0	1.0	65	20	8.0	●
6100M 050	0.045-0.060	10.0	0.5	70	22	10.0	●
6100M 100	0.045-0.060	10.0	1.0	70	22	10.0	●
6100M 150	0.045-0.060	10.0	1.5	70	22	10.0	●
6120M 050	0.053-0.070	12.0	0.5	80	26	12.0	●
6120M 100	0.053-0.070	12.0	1.0	80	26	12.0	●
6120M 150	0.053-0.070	12.0	1.5	80	26	12.0	●

●: Standard

Fresa sferica 2 taglienti media

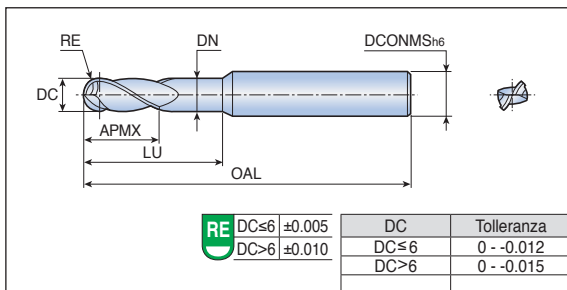


Descrizione	Dimensioni (mm)					Grado
	DC	RE	OAL	APMX	DCONMS	TT5515
SBE 2010T	1.0	0.5	50	1.5	4	●
2010T-6	1.0	0.5	50	1.5	6	●
2012T	1.2	0.6	50	1.8	4	●
2015T	1.5	0.75	50	2.3	4	●
2015T-5X70	1.5	0.75	70	5.0	6	●
2015T-6	1.5	0.75	50	2.3	6	●
2016T	1.6	0.8	50	2.4	4	●
2020T	2.0	1.0	50	3.0	4	●
2020T-6	2.0	1.0	50	3.0	6	●
2020T-7X70	2.0	1.0	70	7.0	6	●
2025T	2.5	1.25	50	3.8	4	●
2025T-6	2.5	1.25	50	3.8	6	●
2030T	3.0	1.5	70	8.0	6	●
2030T-10X70	3.0	1.5	70	10.0	6	●
2035T	3.5	1.75	70	8.0	6	●
2040T	4.0	2.0	70	8.0	6	●
2040T-12X70	4.0	2.0	70	12.0	6	●
2045T	4.5	2.25	80	8.0	6	●
2050T	5.0	2.5	80	12.0	6	●
2050T-15X80	5.0	2.5	80	15.0	6	●
2060T	6.0	3.0	80	12.0	6	●
2060T-15X80	6.0	3.0	80	15.0	6	●
2065T	6.5	3.25	90	12.0	8	●
2070T	7.0	3.5	90	15.0	8	●
2080T	8.0	4.0	90	15.0	8	●
2080T-20X90	8.0	4.0	90	20.0	8	●
2090T	9.0	4.5	100	20.0	10	●
2100T	10.0	5.0	100	20.0	10	●
2100T-25X100	10.0	5.0	100	25.0	10	●
2110T	11.0	5.5	110	25.0	12	●
2120T	12.0	6.0	110	25.0	12	●
2120T-30X100	12.0	6.0	100	30.0	12	●
2140T	14.0	7.0	120	30.0	12	●
2150T	15.0	7.5	125	35.0	16	●
2160T	16.0	8.0	125	35.0	16	●
2180T	18.0	9.0	150	40.0	20	●
2200T	20.0	10.0	150	40.0	20	●

• Attacco weldon disponibile su richiesta (esempio d'ordine: SBEW 2...T)

●: Standard

Fresa sferica 2 taglienti lunga



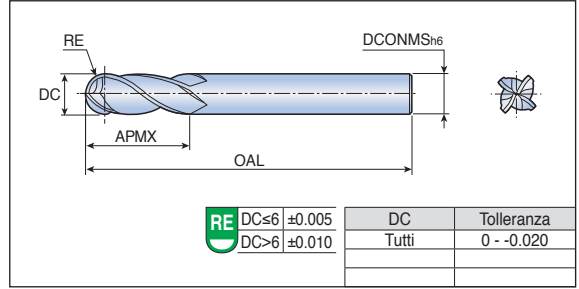
2	H•A 30°	Condizioni di taglio F130
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Descrizione	Dimensioni (mm)							Grado	
	DC	RE	OAL	APMX	LU	DN	DCONMS	TT5515	UF10N*
SBE 2020LT	2	1.0	100	4	20	1.85	6	●	
2030LT	3	1.5	100	4	35	2.85	6	●	●
2040LT	4	2.0	100	6	35	3.85	6	●	●
2050LT	5	2.5	115	7	40	4.8	8	●	●
2060LT	6	3.0	115	8	45	5.8	8	●	●
2060LT-6D	6	3.0	115	8	45	5.8	6	●	●
2060LT-6D WU	6	3.0	115	8	-	-	6	●	
2070LT	7	3.5	125	10	45	6.8	10	●	●
2080LT	8	4.0	125	12	55	7.8	10	●	●
2080LT-8D	8	4.0	125	12	55	7.8	8	●	●
2080LT-8D WU	8	4.0	125	12	-	-	8	●	
2090LT	9	4.5	140	15	65	8.8	10	●	●
2100LT	10	5.0	140	15	65	9.8	10	●	●
2100LT-WU	10	5.0	140	15	-	-	10	●	
2120LT	12	6.0	150	18	75	11.8	12	●	●
2120LT-WU	12	6.0	150	18	-	-	12	●	
2140LT	14	7.0	155	23	75	13.6	16	●	●
2160LT	16	8.0	155	30	75	15.6	16	●	●
2160LT-WU	16	8.0	155	30	-	-	16	●	

• *: SBE 2...L è in grado UF10N (senza T)
• WU: senza ribasso

●: Standard

Fresa sferica 4 taglienti media

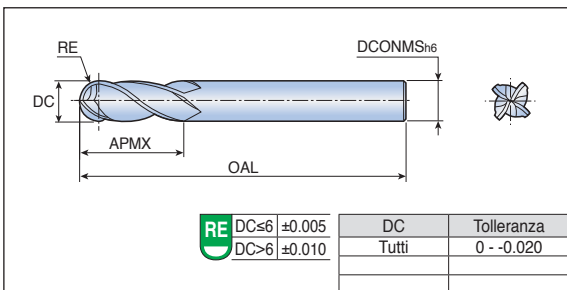


Descrizione	Dimensioni (mm)					Grado
	DC	RE	OAL	APMX	DCONMS	UF10N
SBE 4060	6	3	80	12	6	•
4100	10	5	100	20	10	•
4120	12	6	110	25	12	•
4160	16	8	125	35	16	•
4200	20	10	150	40	20	•

• Attacco weldon disponibile su richiesta (esempio d'ordine: SBEW 4...)

•: Standard

Fresa sferica 4 taglienti media



4 **H·A**
30°

Condizioni di taglio
F130

RE	DC ≤ 6	±0.005
	DC > 6	±0.010

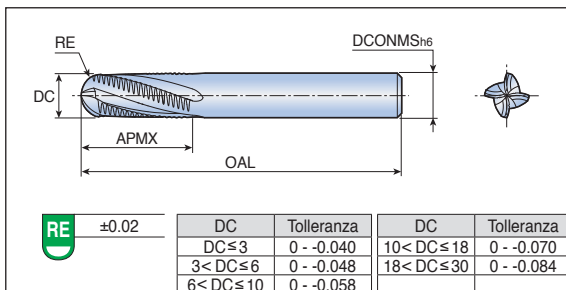
DC	Tolleranza
Tutti	0 - -0.020

Descrizione	Dimensioni (mm)					Grado TT5515
	DC	RE	OAL	APMX	DCONMS	
SBE 4010T-6	1.0	0.5	50	2.5	6	●
4015T	1.5	0.75	50	4.0	4	●
4020T	2.0	1.0	50	5.0	6	●
4030T	3.0	1.5	57	8.0	6	●
4040T	4.0	2.0	70	8.0	6	●
4050T	5.0	2.5	80	12.0	6	●
4060T	6.0	3.0	80	12.0	6	●
4070T	7.0	3.5	90	15.0	8	●
4080T	8.0	4.0	90	15.0	8	●
4090T	9.0	4.5	100	20.0	10	●
4100T	10.0	5.0	100	20.0	10	●
4120T	12.0	6.0	110	25.0	12	●
4160T	16.0	8.0	125	35.0	16	●
4180T	18.0	9.0	150	40.0	20	●
4200T	20.0	10.0	150	40.0	20	●

• Attacco weldon disponibile su richiesta (esempio d'ordine: SBEW 4...T)

●: Standard

Fresa sferica 3-4 taglienti lunga per sgrossatura



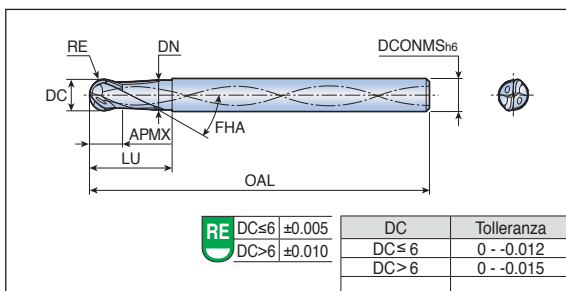
Descrizione	Dimensioni (mm)						Grado TT5515
	DC	NOF	RE	OAL	APMX	DCONMS	
REB 3060L	6	3	3	57	16	6	●
3080L	8	3	4	63	16	8	●
4100L	10	4	5	72	22	10	●
4120L	12	4	6	83	26	12	●
4140L-14	14	4	7	83	26	14	●
4160L	16	4	8	92	32	16	●
4180L-18	18	4	9	92	32	18	●
4200L	20	4	10	104	38	20	●

- Attacco weldon disponibile su richiesta (esempio d'ordine: REBW ...L)
- NOF: numero di taglienti

●: Standard

SBO 2...T

Fresa sferica 2 taglienti con fori di refrigerazione interna



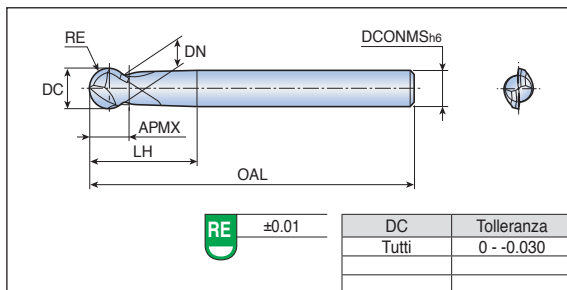
Descrizione	Dimensioni (mm)								Grado TT5525
	DC	RE	OAL	APMX	LU	DN	FHA	DCONMS	
SBO 2060T	6	3	91	6	15	5	23.4	8	●
2080T	8	4	91	8	20	7	30	8	●
2100T	10	5	103	10	25	9	30	10	●
2120T	12	6	118	12	30	11	30	12	●
2140T	14	7	124	14	30	13	34	12	●

- FHA: angolo d'elica

●: Standard

BES 2...T

Fresa sferica 2 taglienti tipo lollipop



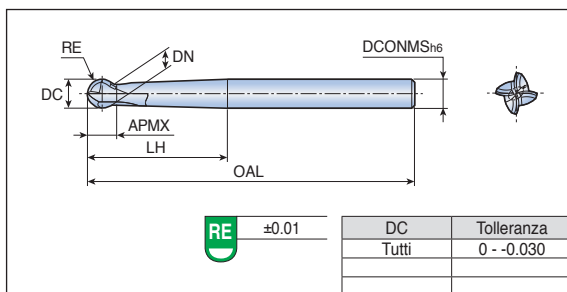
2	H·A 30°	Condizioni di taglio F130
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Descrizione	Dimensioni (mm)							Grado TT5515
	DC	RE	OAL	APMX	LH	DN	DCONMS	
BES 2030T	3	1.5	80	3.3	28.5	2.52	6	●
2040T	4	2.0	80	4.1	28.5	3.35	6	●
2050T	5	2.5	80	5.4	38.0	4.19	6	●
2060T	6	3.0	100	6.1	28.0	5.03	6	●
2080T	8	4.0	100	8.2	33.0	6.71	8	●
2100T	10	5.0	100	9.7	40.0	8.39	10	●
2120T	12	6.0	110	12.3	49.0	10.06	12	●
2160T	16	8.0	155	15.4	58.0	13.42	16	●

●: Standard

BES 4...T

Fresa sferica 4 taglienti tipo lollipop

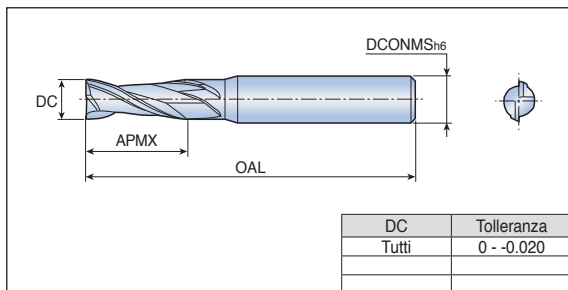


4	H·A 30°	Condizioni di taglio F130
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Descrizione	Dimensioni (mm)							Grado TT5515
	DC	RE	OAL	APMX	LH	DN	DCONMS	
BES 4030T	3	1.5	80	3.3	28.5	2.52	6	●
4040T	4	2.0	80	4.1	28.5	3.35	6	●
4050T	5	2.5	80	5.4	38.0	4.19	6	●
4060T	6	3.0	100	6.1	28.0	5.03	6	●
4080T	8	4.0	100	8.2	33.0	6.71	8	●
4100T	10	5.0	100	9.7	40.0	8.39	10	●
4120T	12	6.0	110	12.3	49.0	10.06	12	●
4160T	16	8.0	155	15.4	58.0	13.42	16	●

●: Standard

Fresa piana 2 taglienti media



DC	Tolleranza
Tutti	0 - -0.020

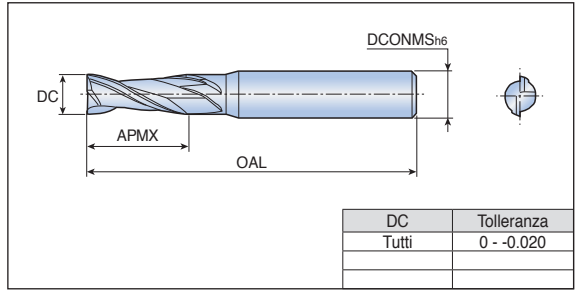
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado		
		DC	OAL	APMX	DCONMS	TT5515	TT5525	UF10
TSE 2010M-4	0.008-0.030	1.0	40	3	4	●	●	●
2010M	0.008-0.030	1.0	42	3	6	●	●	●
2012M	0.008-0.030	1.2	42	3	6	●	●	●
2015M-4	0.008-0.030	1.5	40	4	4	●	●	●
2015M	0.008-0.030	1.5	42	4	6	●	●	●
2020M-4	0.010-0.030	2.0	40	6	4	●	●	●
2020M	0.010-0.030	2.0	42	6	6	●	●	●
2025M-4	0.010-0.030	2.5	40	8	4	●	●	●
2025M	0.010-0.030	2.5	42	8	6	●	●	●
2030M	0.010-0.030	3.0	57	10	6	●	●	●
2035M-4	0.010-0.030	3.5	50	12	4	●	●	●
2035M	0.010-0.030	3.5	47	10	6	●	●	●
2040M-4	0.010-0.050	4.0	50	12	4	●	●	●
2040M	0.010-0.050	4.0	57	12	6	●	●	●
2045M	0.010-0.050	4.5	57	14	6	●	●	●
2050M-5	0.015-0.060	5.0	50	14	5	●	●	●
2050M	0.015-0.060	5.0	57	14	6	●	●	●
2055M	0.015-0.060	5.5	57	16	6	●	●	●
2060M	0.020-0.060	6.0	57	16	6	●	●	●
2065M-7	0.020-0.060	6.5	60	20	7	●	●	●
2065M	0.020-0.060	6.5	60	20	8	●	●	●
2070M	0.030-0.070	7.0	60	20	8	●	●	●
2075M	0.030-0.070	7.5	63	20	8	●	●	●
2080M	0.030-0.100	8.0	63	20	8	●	●	●
2085M	0.030-0.100	8.5	72	22	10	●	●	●
2090M	0.030-0.100	9.0	68	25	10	●	●	●
2095M	0.030-0.100	9.5	72	24	10	●	●	●
2100M(25X68)	0.030-0.120	10.0	72	22	10	●	●	●
2100M	0.030-0.120	10.0	72	22	10	●	●	●
2105M	0.030-0.120	10.5	76	26	12	●	●	●
2110M	0.030-0.120	11.0	76	30	12	●	●	●
2115M	0.030-0.120	11.5	83	30	12	●	●	●
2120M(30X76)	0.030-0.120	12.0	76	30	12	●	●	●
2120M	0.030-0.120	12.0	83	25	12	●	●	●
2130M	0.030-0.132	13.0	85	35	14	●	●	●

* Attacco weldon disponibile su richiesta (esempio d'ordine: TSEW 2...M)

●: Standard

TSE 2...M

Fresa piana 2 taglienti media



2

H·A
30°

Condizioni di taglio
F130

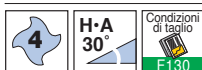
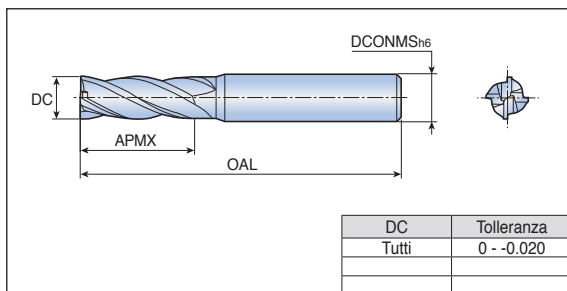
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado		
		DC	OAL	APMX	DCONMS	TT5515	TT5525	UF10
TSE 2140M-14	0.030-0.132	14.0	83	25	14	●	●	●
2140M	0.030-0.132	14.0	85	35	16		●	
2150M	0.040-0.140	15.0	92	32	16	●	●	●
2160M	0.040-0.140	16.0	92	32	16	●	●	●
2180M-18	0.040-0.140	18.0	92	32	18	●	●	●
2180M(45X110)	0.040-0.140	18.0	110	45	20	●		
2200M	0.040-0.140	20.0	104	38	20	●	●	●
2250M	0.050-0.146	25.0	120	50	25	●	●	

• Attacco weldon disponibile su richiesta (esempio d'ordine: TSEW 2...M) ●: Standard

TSE 4...M



Fresa piana 4 taglienti media



DC	Tolleranza
Tutti	0 - -0.020

Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado		
		DC	OAL	APMX	DCONMS	TT5515	TT5525	UF10
TSE 4010M	0.005-0.010	1.0	42	2.5	6	●	●	
4015M	0.005-0.012	1.5	42	4	6	●	●	
4020M	0.008-0.017	2.0	42	6	6	●	●	●
4025M-4	0.008-0.017	2.5	40	8	4	●	●	●
4025M	0.008-0.017	2.5	42	8	6	●	●	●
4030M	0.009-0.020	3.0	57	10	6	●	●	●
4035M-4	0.010-0.028	3.5	50	12	4	●		●
4035M	0.010-0.028	3.5	47	10	6	●	●	●
4040M-4	0.010-0.042	4.0	50	12	4	●	●	●
4040M	0.010-0.042	4.0	57	12	6	●	●	●
4045M	0.010-0.042	4.5	57	12	6	●		
4050M	0.020-0.059	5.0	57	14	6	●	●	●
4055M	0.020-0.059	5.5	57	14	6	●	●	
4060M	0.020-0.075	6.0	57	16	6	●	●	●
4065M	0.020-0.075	6.5	60	20	8	●	●	
4070M	0.020-0.075	7.0	60	20	8	●	●	●
4075M	0.020-0.075	7.5	60	20	8	●	●	
4080M	0.030-0.100	8.0	63	20	8	●	●	●
4085M	0.030-0.100	8.5	68	25	10	●	●	
4090M	0.030-0.100	9.0	68	25	10	●	●	●
4095M	0.030-0.100	9.5	68	25	10	●	●	
4100M(25X68)	0.030-0.120	10.0	68	25	10	●	●	●
4100M	0.030-0.120	10.0	72	22	10	●	●	●
4105M	0.030-0.120	10.5	76	30	12	●	●	
4110M	0.030-0.120	11.0	76	30	12	●	●	●
4115M	0.030-0.120	11.5	76	30	12	●	●	
4120M(30X76)	0.030-0.136	12.0	76	30	12	●	●	
4120M	0.030-0.136	12.0	83	25	12	●	●	●
4130M	0.030-0.136	13.0	85	35	14	●	●	●
4140M-14	0.030-0.136	14.0	83	25	14	●	●	●
4140M	0.030-0.136	14.0	85	35	16		●	
4140M(35X85)	0.030-0.136	14.0	85	35	16	●	●	
4150M	0.040-0.140	15.0	92	32	16	●	●	●
4160M(40X90)	0.040-0.146	16.0	90	40	16	●	●	●
4160M	0.040-0.146	16.0	92	32	16	●	●	●

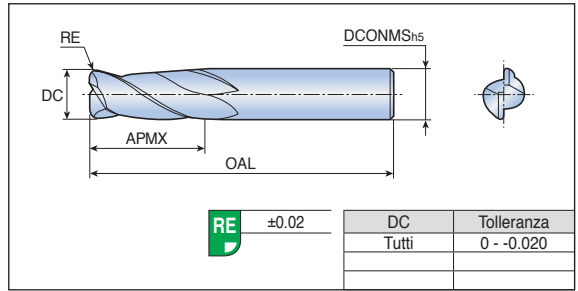
* Attacco weldon disponibile su richiesta (esempio d'ordine: TSEW 4...M)

●: Standard

HES 2...T-R



Fresa torica 2 taglienti media



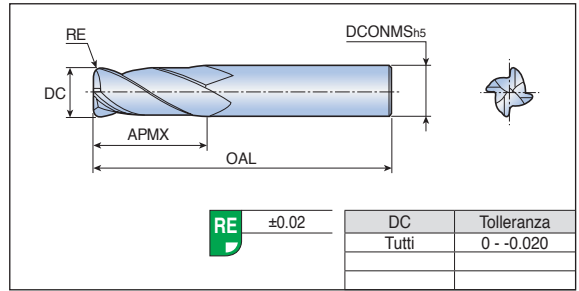
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado	
		DC	RE	OAL	APMX	DCONMS	TT5515	TT5525
HES 2030T-R0.5	0.010-0.030	3	0.5	47	10	6	●	●
2040T-R0.5	0.010-0.050	4	0.5	47	12	6	●	●
2050T-R0.5	0.020-0.060	5	0.5	52	15	6	●	●
2060T-R0.5	0.020-0.060	6	0.5	52	15	6	●	●
2060T-R1.0	0.020-0.060	6	1.0	52	15	6	●	●
2080T-R0.5	0.030-0.100	8	0.5	60	20	8	●	●
2080T-R1.0	0.030-0.100	8	1.0	60	20	8	●	●
2080T-R1.5	0.030-0.100	8	1.5	60	20	8	●	●
2080T-R2.0	0.030-0.100	8	2.0	60	20	8	●	●
2100T-R0.5	0.030-0.120	10	0.5	68	25	10	●	●
2100T-R1.0	0.030-0.120	10	1.0	68	25	10	●	●
2100T-R1.5	0.030-0.120	10	1.5	68	25	10	●	●
2100T-R2.0	0.030-0.120	10	2.0	68	25	10	●	●
2100T-R2.5	0.030-0.120	10	2.5	68	25	10	●	●
2100T-R3.0	0.030-0.120	10	3.0	68	25	10	●	●
2120T-R0.5	0.030-0.120	12	0.5	76	30	12	●	●
2120T-R1.0	0.030-0.120	12	1.0	76	30	12	●	●
2120T-R1.5	0.030-0.120	12	1.5	76	30	12	●	●
2120T-R2.0	0.030-0.120	12	2.0	76	30	12	●	●
2120T-R2.5	0.030-0.120	12	2.5	76	30	12	●	●
2120T-R3.0	0.030-0.120	12	3.0	76	30	12	●	●
2160T-R0.5	0.040-0.142	16	0.5	90	40	16	●	●
2160T-R1.0	0.040-0.142	16	1.0	90	40	16	●	●
2160T-R1.5	0.040-0.142	16	1.5	90	40	16	●	●
2160T-R2.0	0.040-0.142	16	2.0	90	40	16	●	●
2160T-R3.0	0.040-0.142	16	3.0	90	40	16	●	●
2200T-R0.5	0.040-0.142	20	0.5	110	45	20	●	●
2200T-R1.0	0.040-0.142	20	1.0	110	45	20	●	●
2200T-R1.5	0.040-0.142	20	1.5	110	45	20	●	●
2200T-R2.0	0.040-0.142	20	2.0	110	45	20	●	●
2200T-R3.0	0.040-0.142	20	3.0	110	45	20	●	●

●: Standard

HES 4...T-R



Fresa torica 4 taglienti media



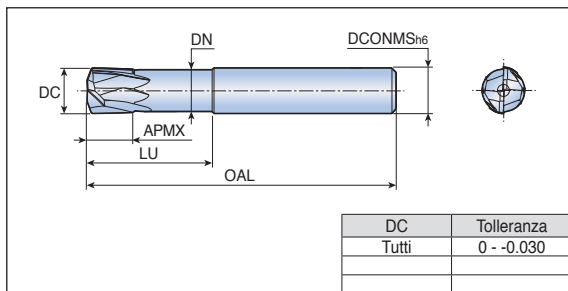
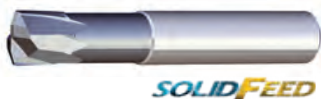
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado	
		DC	RE	OAL	APMX	DCONMS	TT5515	TT5525
HES 4030T-R0.3	0.01-0.04	3	0.3	47	10	6	●	●
4040T-R0.3	0.02-0.05	4	0.3	47	12	6	●	●
4050T-R0.3	0.02-0.06	5	0.3	52	15	6	●	●
4060T-R0.5	0.03-0.07	6	0.5	52	15	6	●	●
4060T-R1.0	0.03-0.07	6	1.0	52	15	6	●	●
4080T-R0.5	0.03-0.09	8	0.5	60	20	8	●	●
4080T-R1.0	0.03-0.09	8	1.0	60	20	8	●	●
4080T-R1.5	0.03-0.09	8	1.5	60	20	8	●	●
4080T-R2.0	0.03-0.09	8	2.0	60	20	8	●	●
4100T-R0.5	0.03-0.10	10	0.5	68	25	10	●	●
4100T-R1.0	0.03-0.10	10	1.0	68	25	10	●	●
4100T-R1.5	0.03-0.10	10	1.5	68	25	10	●	●
4100T-R2.0	0.03-0.10	10	2.0	68	25	10	●	●
4100T-R2.5	0.03-0.10	10	2.5	68	25	10	●	●
4100T-R3.0	0.03-0.10	10	3.0	68	25	10	●	●
4120T-R0.5	0.04-0.11	12	0.5	76	30	12	●	●
4120T-R1.0	0.04-0.11	12	1.0	76	30	12	●	●
4120T-R1.5	0.04-0.11	12	1.5	76	30	12	●	●
4120T-R2.0	0.04-0.11	12	2.0	76	30	12	●	●
4120T-R2.5	0.04-0.11	12	2.5	76	30	12	●	●
4120T-R3.0	0.04-0.11	12	3.0	76	30	12	●	●
4160T-R0.5	0.05-0.13	16	0.5	90	40	16	●	●
4160T-R1.0	0.05-0.13	16	1.0	90	40	16	●	●
4160T-R1.5	0.05-0.13	16	1.5	90	40	16	●	●
4160T-R2.0	0.05-0.13	16	2.0	90	40	16	●	●
4160T-R3.0	0.05-0.13	16	3.0	90	40	16	●	●
4200T-R0.5	0.05-0.13	20	0.5	110	45	20	●	●
4200T-R1.0	0.05-0.13	20	1.0	110	45	20	●	●
4200T-R1.5	0.05-0.13	20	1.5	110	45	20	●	●
4200T-R2.0	0.05-0.13	20	2.0	110	45	20	●	●
4200T-R3.0	0.05-0.13	20	3.0	110	45	20	●	●

●: Standard

HFM 2

APEXMILL

Fresa ad alto avanzamento 2 taglienti



• High Feed Machining (H.F.M)



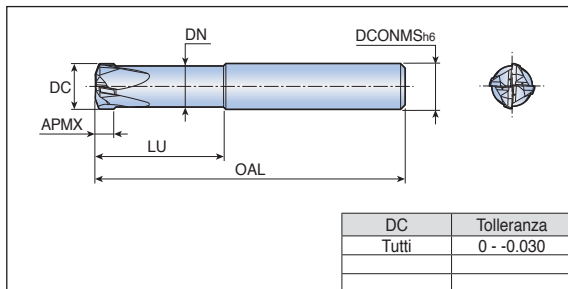
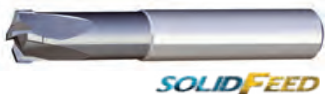
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5515
		DC	OAL	APMX	LU	DN	DCONMS	
HFM 2040	0.2-0.4	4	47	4	10	3.9	6	●
2060	0.3-0.6	6	52	6	16	5.5	6	●
2080	0.4-0.7	8	60	8	22	7.3	8	●
2100	0.5-0.9	10	68	10	28	9.2	10	●
2120	0.5-1.0	12	76	12	33	11.0	12	●

●: Standard

HFM 4

APEXMILL

Fresa ad alto avanzamento 4 taglienti



• High Feed Machining (H.F.M)



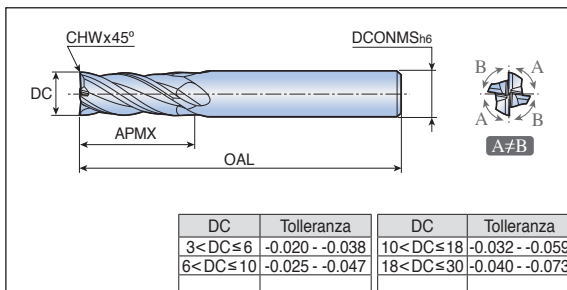
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5515
		DC	OAL	APMX	LU	DN	DCONMS	
HFM 4060	0.3-0.5	6	52	2.5	16	5.4	6	●
4080	0.3-0.6	8	60	3.5	24	7.2	8	●
4100	0.4-0.8	10	68	4.0	28	9.2	10	●
4120	0.4-1.0	12	76	5.0	33	11.0	12	●

●: Standard

CFM 4...M



Fresa piana smussata 4 taglienti



• Senza vibrazioni



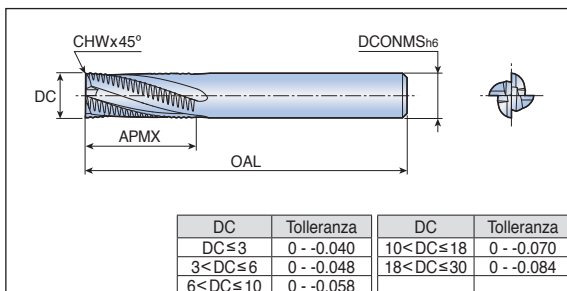
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT5525
		DC	CHW	OAL	APMX	DCONMS	
CFM 4060M	0.03-0.07	6	0.25	57	14	6	●
4080M	0.03-0.08	8	0.3	63	18	8	●
4100M	0.03-0.10	10	0.4	72	22	10	●
4120M	0.04-0.11	12	0.5	83	26	12	●
4160M	0.05-0.13	16	0.6	100	34	16	●
4200M	0.05-0.17	20	0.6	110	42	20	●
4250M	0.06-0.20	25	0.6	121	52	25	●

●: Standard

REL ...L



Fresa piana smussata 3-4 taglienti lunga per sgrossatura



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5515
		DC	NOF	CHW	OAL	APMX	DCONMS	
REL 3060L	0.03-0.06	6	3	0.38	57	16	6	●
3080L	0.03-0.08	8	3	0.38	63	16	8	●
4100L	0.03-0.09	10	4	0.61	72	22	10	●
4120L	0.04-0.10	12	4	0.61	83	26	12	●
4140L-14	0.05-0.11	14	4	0.61	83	26	14	●
4160L	0.05-0.11	16	4	0.61	92	32	16	●
4200L	0.05-0.11	20	4	0.61	104	38	20	●

• Attacco weldon disponibile su richiesta (esempio d'ordine: RELWL)

• NOF: numero di taglienti

●: Standard

FSM 4...M

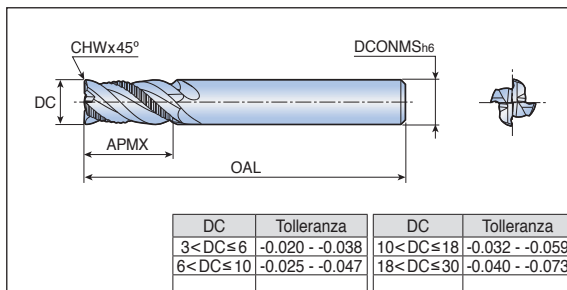
APEX MILL

Fresa piana smussata 4 taglienti media



MULTIMILL

- MULTIMILL (sgrossatura + finitura)



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado
		DC	CHW	OAL	APMX	DCONMS	TT5525
FSM 4060M	0.03-0.06	6	0.25	57	14	6	●
4080M	0.03-0.08	8	0.3	63	18	8	●
4100M	0.03-0.09	10	0.3	72	22	10	●
4120M	0.04-0.11	12	0.4	83	26	12	●
4140M	0.04-0.11	14	0.4	83	30	14	●
4160M	0.05-0.11	16	0.6	92	34	16	●
4200M	0.05-0.11	20	0.6	104	42	20	●
4250M	0.06-0.11	25	0.6	121	52	25	●

●: Standard

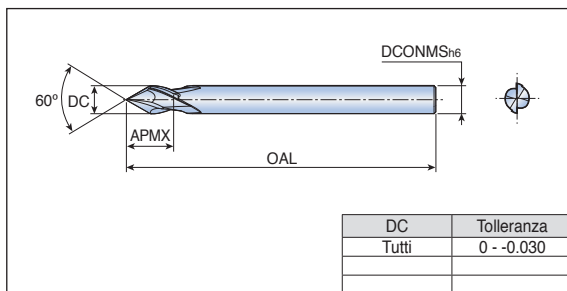
CEM 2...-C60

APEX MILL

Fresa per smussi 2 taglienti a 60°



- Multi-funzione
- Smusso in foratura e in fresatura



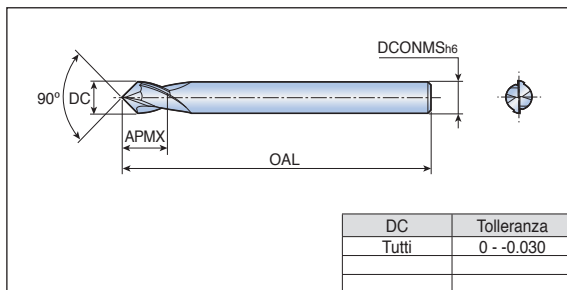
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado
		DC	OAL	APMX	DCONMS	UF10
CEM 2040-C60	0.02-0.04	4	70	7.5	6	●
2060-C60	0.02-0.04	6	80	11.2	6	●
2080-C60	0.03-0.06	8	90	14.9	8	●
2100-C60	0.03-0.08	10	100	18.7	10	●
2120-C60	0.04-0.09	12	110	22.4	12	●
2160-C60	0.05-0.10	16	125	29.9	16	●
2200-C60	0.05-0.10	20	150	37.3	20	●

●: Standard

CEM 2



Fresa per smussi 2 taglienti a 90°



- Multi-funzione
- Smusso in foratura e in fresatura
- *centrinatura e incisione



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado UF10
		DC	OAL	APMX	DCONMS	
CEM 2040	0.02-0.05	4	70	6	6	●
2060	0.02-0.05	6	80	9	6	●
2080	0.03-0.07	8	90	12	8	●
2100	0.03-0.10	10	100	15	10	●
2120	0.04-0.10	12	110	18	12	●
2160	0.05-0.10	16	125	24	16	●
2200	0.05-0.10	20	150	30	20	●

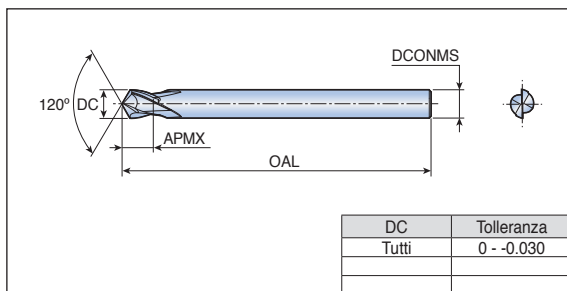
• *Il centrino a 90° è possibile solo su ghisa e materiali non ferrosi

●: Standard

CEM 2...-C120



Fresa per smussi 2 taglienti a 120°



- Multi-funzione
- Smusso in foratura e in fresatura
- centrinatura, incisione e foratura



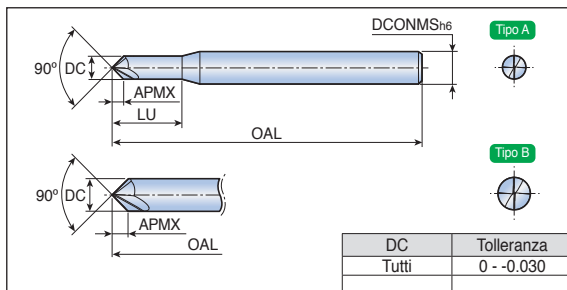
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado UF10
		DC	OAL	APMX	DCONMS	
CEM 2040-C1204	0.02-0.05	4	70	5.2	6	●
2060-C120	0.02-0.05	6	80	7.7	6	●
2080-C120	0.03-0.07	8	90	10.3	8	●
2100-C120	0.03-0.10	10	100	12.9	10	●
2120-C120	0.04-0.10	12	110	15.5	12	●
2160-C120	0.05-0.10	16	125	20.6	16	●
2200-C120	0.05-0.10	20	150	25.8	20	●

●: Standard

Fresa per smussi 2 taglienti a 90° tipo economico



- Multi-funzione
- Smusso in foratura e in fresatura e incisione



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Tipo	Grado UF10
		DC	OAL	APMX	LU	DCONMS			
ECEM 2020	0.01-0.03	2	57	1.0	6	6	A	●	
2030	0.01-0.04	3	57	1.5	9	6	A	●	
2040	0.02-0.05	4	57	2.0	12	6	A	●	
2060	0.02-0.05	6	57	2.9	-	6	B	●	
2080	0.03-0.07	8	63	3.8	-	8	B	●	
2100	0.03-0.10	10	72	4.9	-	10	B	●	
2120	0.04-0.10	12	83	5.9	-	12	B	●	
2160	0.05-0.10	16	92	7.9	-	16	B	●	

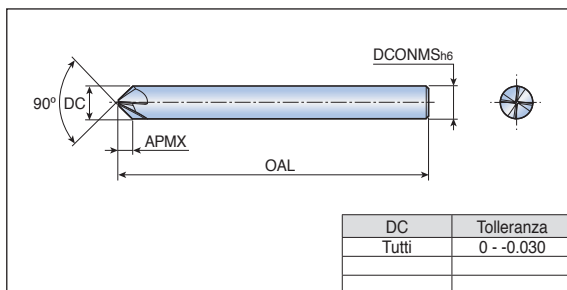
●: Standard

ECEM 4

Fresa per smussi 4 taglienti a 90° tipo economico



- Smusso in fresatura



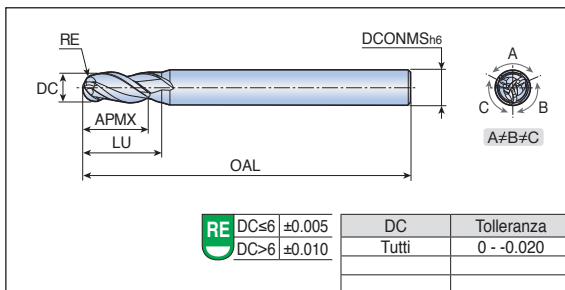
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado UF10
		DC	OAL	APMX	DCONMS	
ECEM 4060	0.02-0.04	6	57	2.5	6	●
4080	0.02-0.05	8	63	3.4	8	●
4100	0.03-0.08	10	72	4.4	10	●
4120	0.03-0.08	12	83	5.1	12	●

●: Standard

SBT 3...U



Fresa sferica 3 taglienti media



• Eccellente riduzione vibrazioni grazie al passo differenziato



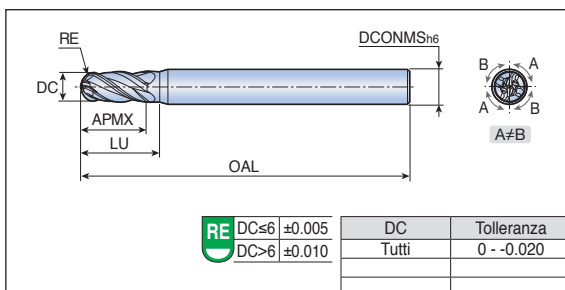
Descrizione	Dimensioni (mm)						Grado TT5515
	DC	RE	OAL	APMX	LU	DCONMS	
SBT 3040U	4	2	70	8	10	6	●
3060U	6	3	80	12	-	6	●
3080U	8	4	90	16	-	8	●
3100U	10	5	100	20	-	10	●
3120U	12	6	110	25	-	12	●

●: Standard

SBT 4...U



Fresa sferica 4 taglienti media



• Eccellente riduzione vibrazioni grazie al passo differenziato



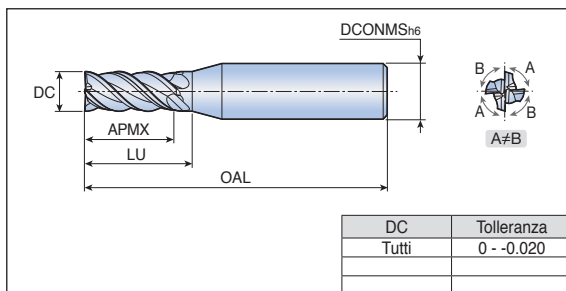
Descrizione	Dimensioni (mm)						Grado TT5515
	DC	RE	OAL	APMX	LU	DCONMS	
SBT 4040U	4	2	70	8	10	6	●
4060U	6	3	80	12	-	6	●
4080U	8	4	90	16	-	8	●
4100U	10	5	100	20	-	10	●
4120U	12	6	110	25	-	12	●

●: Standard

Fresa piana 4 taglienti media



- Eccellente riduzione vibrazioni grazie al passo differenziato



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT5515
		DC	OAL	APMX	LU	DCONMS	
SED 4030U	0.015-0.030	3	57	10	12	6	●
4040U	0.020-0.040	4	57	12	14	6	●
4050U	0.020-0.040	5	57	15	16	6	●
4060U	0.025-0.070	6	57	15	-	6	●
4080U	0.030-0.090	8	70	25	-	8	●
4100U	0.030-0.100	10	72	25	-	10	●
4120U	0.035-0.110	12	83	30	-	12	●
4160U	0.050-0.130	16	100	42	-	16	●
4200U	0.050-0.170	20	104	48	-	20	●

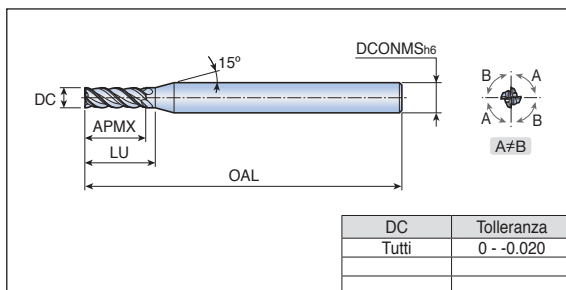
●: Standard

SED 4...UL

Fresa piana 4 taglienti lunga



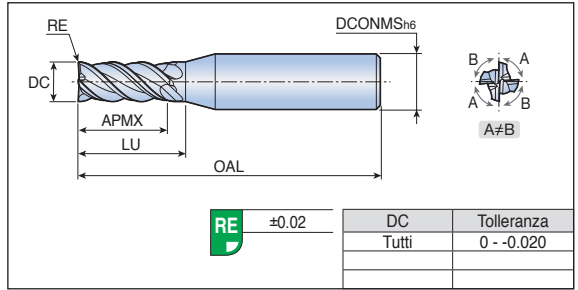
- Eccellente riduzione vibrazioni grazie al passo differenziato



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT5515
		DC	OAL	APMX	LU	DCONMS	
SED 4030UL	0.015-0.030	3	63	10	12	6	●
4040UL	0.020-0.040	4	63	12	14	6	●
4060UL	0.025-0.070	6	65	20	-	6	●
4080UL	0.030-0.090	8	83	30	-	8	●
4100UL	0.030-0.100	10	83	35	-	10	●
4120UL	0.035-0.110	12	92	40	-	12	●

●: Standard

Fresa torica 4 taglianti media



• Eccellente riduzione vibrazioni grazie al passo differenziato



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5515
		DC	RE	OAL	APMX	LU	DCONMS	
SED 4020U-R0.1	0.010-0.020	2	0.1	42	6	8	6	●
4030U-R0.2	0.015-0.030	3	0.2	57	10	12	6	●
4040U-R0.1	0.020-0.040	4	0.1	57	12	14	6	●
4040U-R0.2	0.020-0.040	4	0.2	57	12	14	6	●
4040U-R0.5	0.020-0.040	4	0.5	57	12	14	6	●
4050U-R0.15	0.020-0.040	5	0.15	57	15	16	6	●
4050U-R0.2	0.020-0.040	5	0.2	57	15	16	6	●
4060U-R0.2	0.025-0.070	6	0.2	57	15	-	6	●
4060U-R0.3	0.025-0.070	6	0.3	57	15	-	6	●
4060U-R0.5	0.025-0.070	6	0.5	57	15	-	6	●
4080U-R0.2	0.030-0.090	8	0.2	70	25	-	8	●
4080U-R0.3	0.030-0.090	8	0.3	70	25	-	8	●
4080U-R0.5	0.030-0.090	8	0.5	70	25	-	8	●
4100U-R0.2	0.030-0.100	10	0.2	72	25	-	10	●
4100U-R0.3	0.030-0.100	10	0.3	72	25	-	10	●
4100U-R0.5	0.030-0.100	10	0.5	72	25	-	10	●
4100U-R1.0	0.030-0.100	10	1.0	72	25	-	10	●
4120U-R0.3	0.035-0.110	12	0.3	83	30	-	12	●
4120U-R0.5	0.035-0.110	12	0.5	83	30	-	12	●
4120U-R1.0	0.035-0.110	12	1.0	83	30	-	12	●
4160U-R0.5	0.050-0.130	16	0.5	100	42	-	16	●
4160U-R1.0	0.050-0.130	16	1.0	100	42	-	16	●
4160U-R2.0	0.050-0.130	16	2.0	100	42	-	16	●
4160U-R3.0	0.050-0.130	16	3.0	100	42	-	16	●

●: Standard

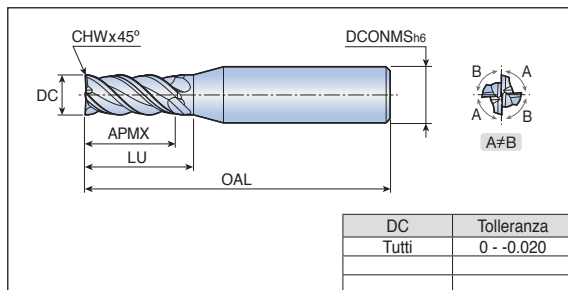
SED 4...U-C

STAR MILL

Fresa piana smussata 4 taglienti media



- Eccellente riduzione vibrazioni grazie al passo differenziato



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5515
		DC	CHW	OAL	APMX	LU	DCONMS	
SED 4040U-C0.1	0.020-0.040	4	0.1	57	12	14	6	●
4060U-C0.2	0.030-0.060	6	0.2	57	15	-	6	●
4080U-C0.3	0.030-0.090	8	0.3	70	25	-	8	●
4100U-C0.3	0.030-0.100	10	0.3	72	25	-	10	●
4120U-C0.4	0.035-0.110	12	0.4	83	30	-	12	●

●: Standard

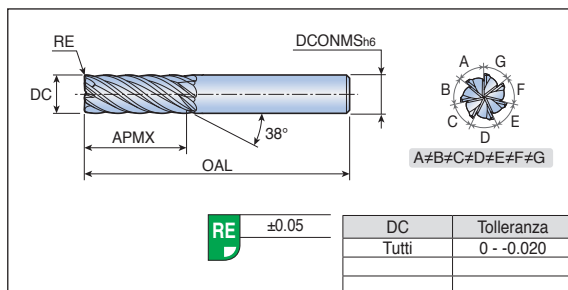
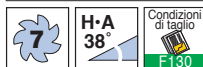
SED 7

STAR MILL

Fresa torica 7 taglienti media



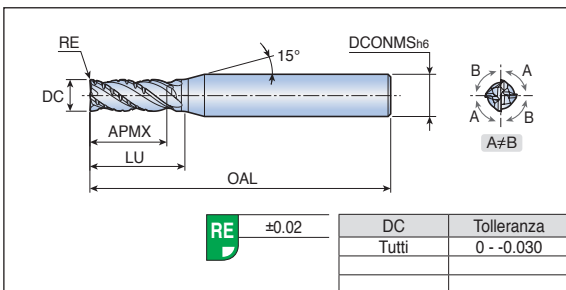
- Eccellente riduzione vibrazioni grazie al passo differenziato



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT5515
		DC	RE	OAL	APMX	DCONMS	
SED 7060	0.02-0.04	6	0.5	57	15	6	●
7080	0.02-0.05	8	0.5	70	25	8	●
7100	0.03-0.07	10	0.5	72	25	10	●
7120	0.03-0.09	12	0.5	83	30	12	●
7160	0.04-0.11	16	0.5	100	42	16	●
7200	0.05-0.12	20	0.5	104	48	20	●

●: Standard

Fresa torica 3-5 taglianti con chip splitter



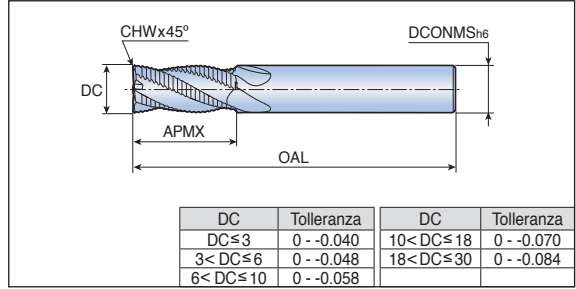
• Eccellente riduzione vibrazioni grazie al passo differenziato



Descrizione	Avanzamento (mm/z)	♣	Dimensioni (mm)						Grado TT5525
			DC	RE	OAL	APMX	LU	DCONMS	
SER 3030M 020	0.010-0.030	3	3	0.2	52	8	10	6	•
3040M 020	0.020-0.040	3	4	0.2	52	10	12	6	•
4050M 020	0.020-0.040	4	5	0.2	57	13	18	6	•
4060M 020	0.025-0.070	4	6	0.2	57	13	-	6	•
4060M 050	0.025-0.070	4	6	0.5	57	13	-	6	•
4070M 020	0.025-0.070	4	7	0.2	63	18	25	8	•
4080M 020	0.030-0.090	4	8	0.2	63	19	-	8	•
4080M 100	0.030-0.090	4	8	1.0	63	19	-	8	•
4090M 030	0.030-0.090	4	9	0.3	72	20	30	10	•
4100M 030	0.030-0.100	4	10	0.3	72	22	-	10	•
4100M 100	0.030-0.100	4	10	1.0	72	22	-	10	•
4110M 030	0.030-0.100	4	11	0.3	83	25	35	12	•
4120M 030	0.035-0.110	4	12	0.3	83	26	-	12	•
4120M 100	0.035-0.110	4	12	1.0	83	26	-	12	•
5140M 050	0.035-0.110	5	14	0.5	92	28	40	16	•
5160M 050	0.050-0.130	5	16	0.5	92	32	-	16	•
5160M 150	0.050-0.130	5	16	1.5	92	32	-	16	•
5180M 050	0.050-0.130	5	18	0.5	110	38	55	20	•
5180M 200	0.050-0.130	5	18	2.0	110	38	55	20	•
5200M 050	0.050-0.170	5	20	0.5	110	38	-	20	•
5200M 200	0.050-0.170	5	20	2.0	110	38	-	20	•

•: Standard

Fresa piana smussata 4-6 taglienti corta per sgrossatura



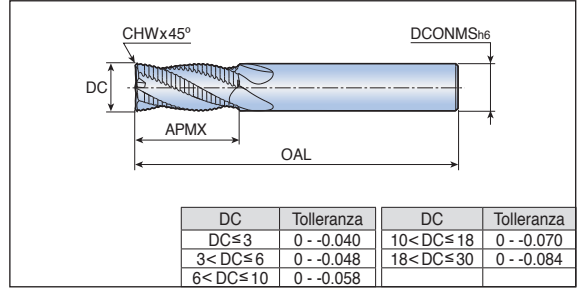
	H·A 45°	Condizioni di taglio F130
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Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT525
		DC	NOF	CHW	OAL	APMX	DCONMS	
REH 4060S	0.04-0.12	6	4	0.25	54	7	6	●
4080S	0.05-0.16	8	4	0.30	58	9	8	●
4100S	0.06-0.18	10	4	0.36	66	14	10	●
4120S	0.06-0.20	12	4	0.36	73	16	12	●
5160S	0.08-0.22	16	5	0.36	82	22	16	●
6200S	0.08-0.22	20	6	0.36	92	26	20	●

- Attacco weldon disponibile su richiesta (esempio d'ordine: REHWS) ●: Standard
- NOF: numero di taglienti

REH ...M

Fresa piana smussata 3-6 taglienti media per sgrossatura

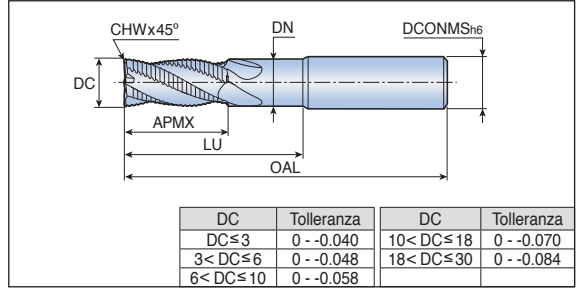


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TT5525
		DC	NOF	CHW	OAL	APMX	DCONMS	
REH 3040M	0.02-0.05	4	3	0.15	57	11	6	●
4050M	0.02-0.05	5	4	0.20	57	13	6	●
4060M	0.04-0.12	6	4	0.25	57	16	6	●
4070M	0.05-0.16	7	4	0.28	63	16	8	●
4080M	0.05-0.16	8	4	0.30	63	16	8	●
4090M	0.06-0.18	9	4	0.33	72	19	10	●
4100M	0.06-0.18	10	4	0.36	72	22	10	●
4120M	0.06-0.20	12	4	0.36	83	26	12	●
5140M-14	0.08-0.22	14	5	0.36	83	26	14	●
5160M	0.08-0.22	16	5	0.36	92	32	16	●
6200M	0.08-0.22	20	6	0.36	104	38	20	●
6250M	0.08-0.22	25	6	0.36	121	45	25	●

• Attacco weldon disponibile su richiesta (esempio d'ordine: REHWM)

●: Standard

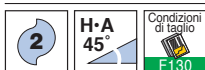
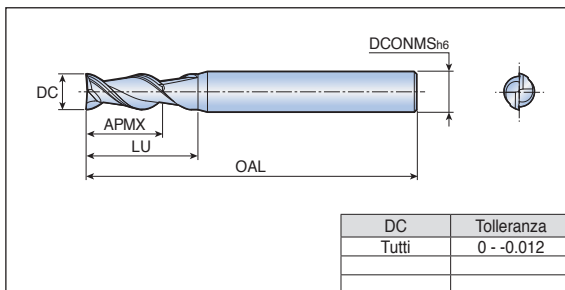
Fresa piana smussata 4-6 taglienti scaricata per sgrossatura



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)								Grado
		DC	NOF	CHW	OAL	APMX	LU	DN	DCONMS	
REH 4060L	0.04-0.12	6	4	0.25	57	16	20	5.5	6	●
4080L	0.05-0.16	8	4	0.30	63	16	26	7.5	8	●
4100L	0.06-0.18	10	4	0.36	72	22	31	9.5	10	●
4120L	0.06-0.20	12	4	0.36	83	26	37	11.5	12	●
5160L	0.08-0.22	16	5	0.36	100	32	51	15.5	16	●
6200L	0.08-0.22	20	6	0.36	110	38	59	19.2	20	●

• Attacco weldon disponibile su richiesta (esempio d'ordine: REHW ...L) ●: Standard
• NOF: numero di taglienti

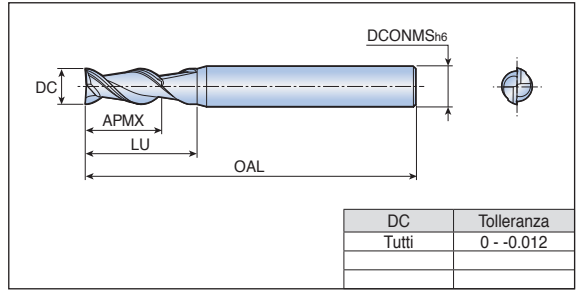
Fresa piana 2 taglienti media per alluminio



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado UF10
		DC	OAL	APMX	LU	DCONMS	
AES 2010	0.02-0.04	1.0	40	3	5	4	●
2010-6	0.02-0.04	1.0	47	3	5	6	●
2015-6	0.02-0.04	1.5	47	3	5	6	●
2020	0.02-0.04	2.0	40	6	8	4	●
2020-6	0.02-0.04	2.0	47	6	8	6	●
2025	0.02-0.05	2.5	40	8	10	4	●
2025-6	0.02-0.05	2.5	47	8	10	6	●
2030	0.02-0.05	3.0	47	10	13	6	●
2035	0.02-0.05	3.5	47	10	13	6	●
2040	0.02-0.05	4.0	47	12	15	6	●
2050	0.02-0.06	5.0	52	15	20	6	●
2060	0.03-0.07	6.0	52	15	-	6	●
2070	0.03-0.09	7.0	60	20	26	8	●
2080	0.03-0.09	8.0	60	20	-	8	●
2090	0.03-0.10	9.0	68	25	31	10	●
2100	0.03-0.10	10.0	68	25	31	10	●
2110	0.03-0.12	11.0	76	30	37	12	●
2120	0.03-0.12	12.0	76	30	-	12	●
2130	0.03-0.12	13.0	85	35	40	14	●
2140	0.05-0.14	14.0	85	35	40	14	●
2150	0.05-0.14	15.0	90	40	50	16	●
2160	0.05-0.14	16.0	90	40	-	16	●
2170	0.05-0.15	17.0	110	45	55	18	●
2180	0.05-0.15	18.0	110	45	55	18	●
2190	0.05-0.15	19.0	110	45	55	20	●
2200	0.05-0.15	20.0	110	45	-	20	●

●: Standard

Fresa plana 2 taglienti extra lunga per alluminio



	H·A 45°	Condizioni di taglio F130
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DC	Tolleranza
Tutti	0 - -0.012

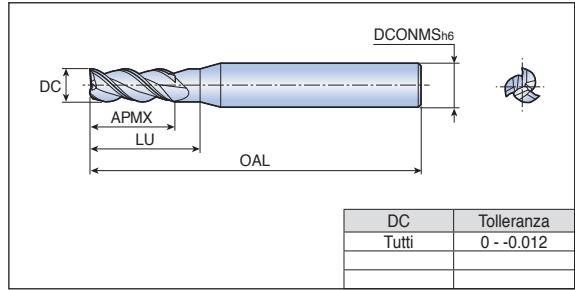
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado UF10
		DC	OAL	APMX	LU	DCONMS	
AES 2020XL	0.02-0.04	2	60	12	15	4	●
2030XL	0.02-0.04	3	70	20	23	6	●
2040XL	0.02-0.04	4	70	25	28	6	●
2050XL	0.02-0.06	5	80	30	35	6	●
2060XL	0.03-0.07	6	80	30	-	6	●
2080XL	0.03-0.09	8	90	40	-	8	●
2100XL	0.03-0.10	10	100	50	-	10	●
2120XL	0.03-0.12	12	110	55	-	12	●
2160XL	0.05-0.14	16	125	70	-	16	●
2200XL	0.05-0.15	20	150	75	-	20	●

●: Standard

AES 3



Fresa piana 3 taglienti media per alluminio

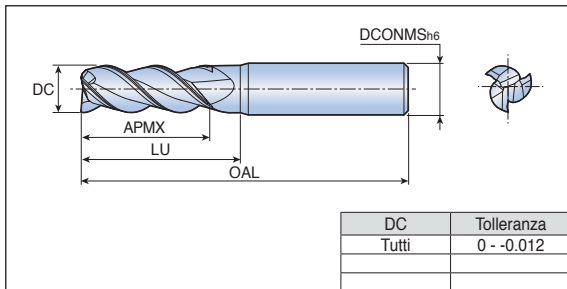


DC	Tolleranza
Tutti	0 - -0.012

Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado
		DC	OAL	APMX	LU	DCONMS	UF10
AES 3020-6	0.02-0.04	2	47	6	8	6	●
3030	0.02-0.05	3	47	10	13	6	●
3040	0.02-0.05	4	47	12	15	6	●
3050	0.02-0.06	5	52	15	20	6	●
3060	0.03-0.07	6	52	15	-	6	●
3070	0.03-0.09	7	60	20	26	8	●
3080	0.03-0.09	8	60	20	-	8	●
3090	0.03-0.10	9	68	25	31	10	●
3100	0.03-0.10	10	68	25	-	10	●
3110	0.03-0.12	11	76	30	37	12	●
3120	0.03-0.12	12	76	30	-	12	●
3130	0.03-0.12	13	85	35	40	14	●
3140	0.05-0.14	14	85	35	40	14	●
3150	0.05-0.14	15	90	40	50	16	●
3160	0.05-0.14	16	90	40	-	16	●
3180	0.05-0.15	18	110	45	55	18	●
3200	0.05-0.15	20	110	45	-	20	●
3250	0.05-0.15	25	140	65	-	25	●

●: Standard

Fresa piana 3 taglienti lunga per alluminio

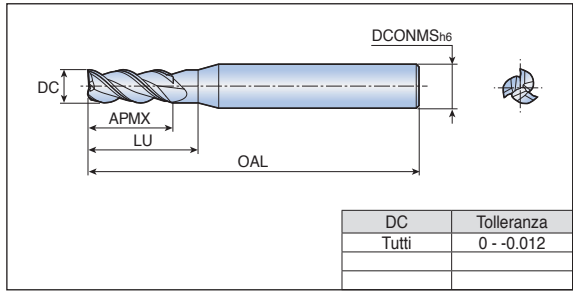


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado UF10
		DC	OAL	APMX	LU	DCONMS	
AES 3030ML	0.02-0.05	3	60	15	18	6	●
3040ML	0.02-0.05	4	60	20	25	6	●
3050ML	0.02-0.06	5	65	25	30	6	●
3060ML	0.03-0.07	6	65	25	-	6	●
3070ML	0.03-0.09	7	75	30	35	8	●
3080ML	0.03-0.09	8	75	30	-	8	●
3090ML	0.03-0.10	9	80	35	40	10	●
3100ML	0.03-0.10	10	80	35	-	10	●
3120ML	0.03-0.12	12	95	40	-	12	●
3140ML	0.05-0.14	14	110	55	62	16	●
3160ML	0.05-0.14	16	110	55	-	16	●
3180ML	0.05-0.15	18	125	60	70	20	●
3200ML	0.05-0.15	20	125	60	-	20	●

●: Standard

AES 3...XL

Fresa plana 3 taglienti extra lunga per alluminio



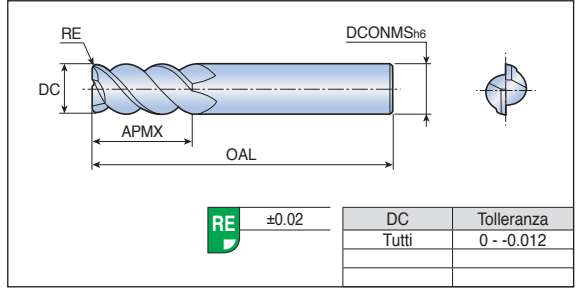
3	H·A 45°	Condizioni di taglio F 130
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Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado UF10
		DC	OAL	APMX	LU	DCONMS	
AES 3060XL	0.03-0.07	6	80	30	-	6	●
3080XL	0.03-0.09	8	90	40	-	8	●
3100XL	0.03-0.10	10	100	50	-	10	●
3120XL	0.03-0.12	12	110	55	-	12	●
3160XL	0.05-0.14	16	125	70	-	16	●
3180XL	0.05-0.15	18	150	75	85	20	●
3180XL(80x150)	0.05-0.15	18	150	80	90	20	●
3200XL	0.05-0.15	20	150	75	-	20	●
3200XL(80x150)	0.05-0.15	20	150	80	-	20	●

●: Standard

AES 2...R

Fresa torica 2 taglienti media per alluminio



2

H·A
45°

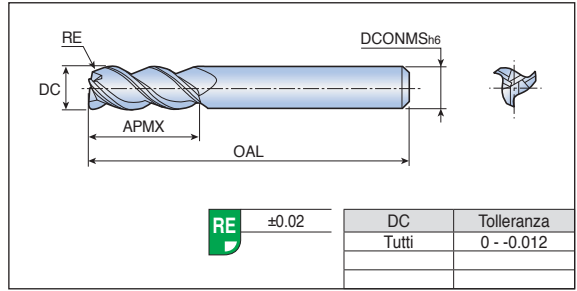
Condizioni
di taglio
F130

Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado
		DC	RE	OAL	APMX	DCONMS	UF10
AES 2060-R0.5	0.03-0.07	6	0.5	52	15	6	●
2060-R1.0	0.03-0.07	6	1.0	52	15	6	●
2060-R2.0	0.03-0.07	6	2.0	52	15	6	●
2080-R0.5	0.03-0.09	8	0.5	60	20	8	●
2080-R1.0	0.03-0.09	8	1.0	60	20	8	●
2080-R2.0	0.03-0.09	8	2.0	60	20	8	●
2080-R3.0	0.03-0.09	8	3.0	60	20	8	●
2100-R1.0	0.03-0.10	10	1.0	68	25	10	●
2100-R1.5	0.03-0.10	10	1.5	68	25	10	●
2100-R2.0	0.03-0.10	10	2.0	68	25	10	●
2100-R3.0	0.03-0.10	10	3.0	68	25	10	●
2100-R4.0	0.03-0.10	10	4.0	68	25	10	●
2120-R1.0	0.03-0.12	12	1.0	76	30	12	●
2120-R2.0	0.03-0.12	12	2.0	76	30	12	●
2120-R3.0	0.03-0.12	12	3.0	76	30	12	●
2120-R4.0	0.03-0.12	12	4.0	76	30	12	●
2140-R1.0	0.05-0.14	14	1.0	85	35	14	●
2140-R2.0	0.05-0.14	14	2.0	85	35	14	●
2140-R3.0	0.05-0.14	14	3.0	85	35	14	●
2140-R4.0	0.05-0.14	14	4.0	85	35	14	●
2140-R5.0	0.05-0.14	14	5.0	85	35	14	●
2160-R1.0	0.05-0.14	16	1.0	90	40	16	●
2160-R2.0	0.05-0.14	16	2.0	90	40	16	●
2160-R3.0	0.05-0.14	16	3.0	90	40	16	●
2160-R4.0	0.05-0.14	16	4.0	90	40	16	●
2160-R5.0	0.05-0.14	16	5.0	90	40	16	●

●: Standard

AES 3...R

Fresa torica 3 taglienti media per alluminio



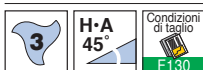
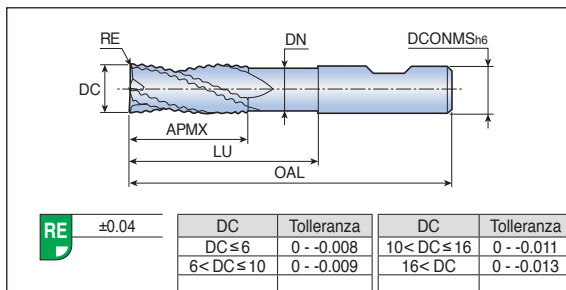
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado UF10
		DC	RE	OAL	APMX	DCONMS	
AES 3060-R0.5	0.03-0.07	6	0.5	52	15	6	●
3060-R1.0	0.03-0.07	6	1.0	52	15	6	●
3060-R2.0	0.03-0.07	6	2.0	52	15	6	●
3080-R0.5	0.03-0.09	8	0.5	60	20	8	●
3080-R1.0	0.03-0.09	8	1.0	60	20	8	●
3080-R2.0	0.03-0.09	8	2.0	60	20	8	●
3100-R1.0	0.03-0.10	10	1.0	68	25	10	●
3100-R1.5	0.03-0.10	10	1.5	68	25	10	●
3100-R2.0	0.03-0.10	10	2.0	68	25	10	●
3100-R3.0	0.03-0.10	10	3.0	68	25	10	●
3100-R4.0	0.03-0.10	10	4.0	68	25	10	●
3120-R1.0	0.03-0.12	12	1.0	76	30	12	●
3120-R2.0	0.03-0.12	12	2.0	76	30	12	●
3120-R3.0	0.03-0.12	12	3.0	76	30	12	●
3120-R4.0	0.03-0.12	12	4.0	76	30	12	●
3160-R1.0	0.05-0.14	16	1.0	90	40	16	●
3160-R2.0	0.05-0.14	16	2.0	90	40	16	●
3160-R3.0	0.05-0.14	16	3.0	90	40	16	●

●: Standard

REMA 3/ 3...C



Fresa torica 3 taglienti scaricata per sgrossatura per alluminio



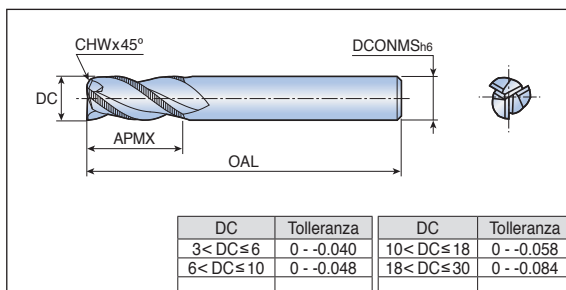
Descrizione		Avanzamento (mm/z)	Dimensioni (mm)							Grado UF10
Gambo cilindrico	Weldon		DC	RE	OAL	APMX	LU	DN	DCONMS	
REMA 3060C	REMA 3060	0.03-0.07	6	0.2	57	9	21	5.5	6	●
3080C	3080	0.03-0.11	8	0.2	63	12	27	7.2	8	●
3100C	3100	0.05-0.14	10	0.2	72	12	31	9.0	10	●
3120C	3120	0.07-0.16	12	0.2	83	12	37	11.0	12	●
3160C	3160	0.07-0.18	16	0.2	92	14	43	15.0	16	●
3200C	3200	0.07-0.20	20	0.2	104	17	53	18.8	20	●

●: Standard

REA 3...L



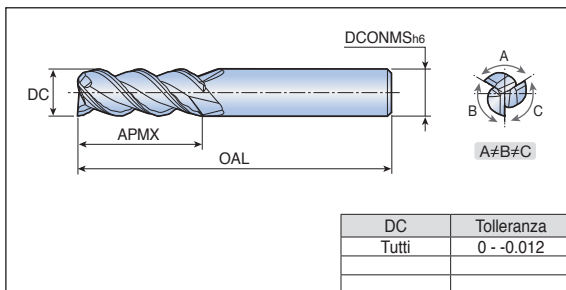
Fresa piana smussata 3 taglienti per sgrossatura per alluminio



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado UF10
		DC	CHW	OAL	APMX	DCONMS	
REA 3060L	0.03-0.07	6	0.61	57	16	6	●
3080L	0.03-0.15	8	0.61	63	16	8	●
3100L	0.05-0.20	10	0.61	72	22	10	●
3120L	0.07-0.22	12	0.66	83	26	12	●
3140L-14	0.07-0.22	14	0.99	83	26	14	●
3160L	0.07-0.25	16	0.99	92	32	16	●
3200L	0.07-0.25	20	0.99	104	38	20	●

●: Standard

Fresa piana 3 taglienti wave per alluminio



• Tagliente wave

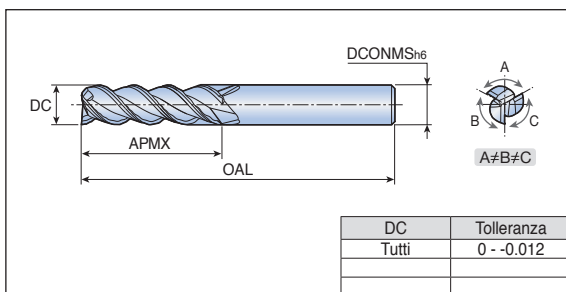


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado UF10
		DC	OAL	APMX	DCONMS	
AWE 3060	0.03-0.07	6	52	14	6	●
3080	0.03-0.09	8	60	14	8	●
3100	0.03-0.10	10	68	19	10	●
3120	0.03-0.12	12	76	22	12	●
3140	0.05-0.14	14	85	24	14	●
3160	0.05-0.14	16	90	30	16	●
3180	0.05-0.15	18	110	34	18	●
3200	0.05-0.15	20	110	38	20	●

●: Standard

AWE 3...ML

Fresa piana 3 taglienti wave lunga per alluminio



• Tagliente wave



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado UF10
		DC	OAL	APMX	DCONMS	
AWE 3060ML	0.03-0.07	6	65	20	6	●
3080ML	0.03-0.09	8	75	20	8	●
3100ML	0.03-0.10	10	80	25	10	●
3120ML	0.03-0.12	12	95	30	12	●
3140ML	0.03-0.12	14	110	35	14	●
3160ML	0.05-0.14	16	110	40	16	●
3180ML	0.05-0.15	18	125	45	18	●
3200ML	0.05-0.15	20	125	45	20	●

●: Standard

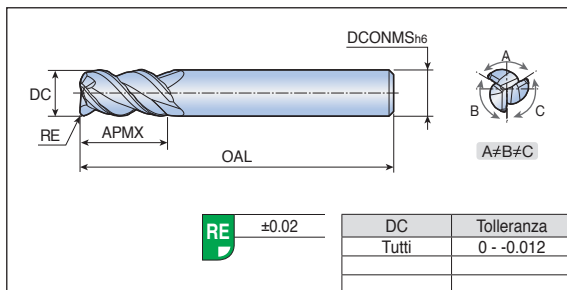
AWE 3...ML-R

ALUMILL

Fresa torica 3 taglienti wave lunga per alluminio



• Tagliente wave



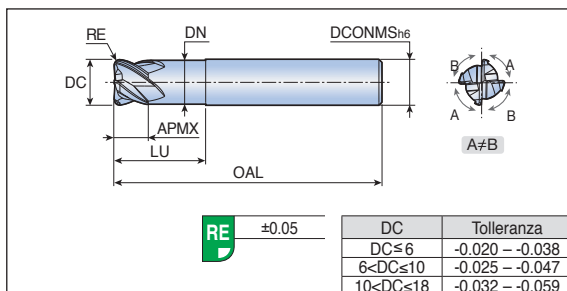
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado UF-10
		DC	OAL	APMX	DCONMS	
AWE 3060ML-R0.5	0.03-0.07	6	65	20	6	●
3080ML-R0.5	0.03-0.09	8	75	20	8	●
3100ML-R1.0	0.03-0.10	10	80	25	10	●
3120ML-R1.0	0.03-0.12	12	95	30	12	●

●: Standard

CRF 4

CERAMICSPEED

Fresa torica 4 taglienti in ceramica

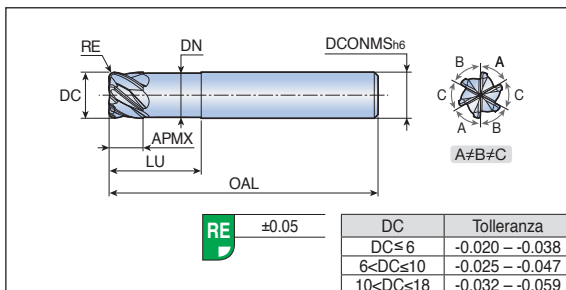


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TC3030	
		DC	RE	OAL	APMX	LU	DN		DCONMS
CRF 4060 050 120	0.02-0.03	6	0.5	50	4.5	12	5.8	6	●
4080 100 160	0.02-0.03	8	1.0	57	6.0	16	7.7	8	●
4100 100 200	0.02-0.04	10	1.0	63	7.5	20	9.6	10	●
4120 150 240	0.03-0.05	12	1.5	70	9.0	24	11.5	12	●
4160 200 320	0.03-0.05	16	2.0	83	12.0	32	15.5	16	●

●: Standard

CRF 6

Fresa torica 6 taglienti in ceramica

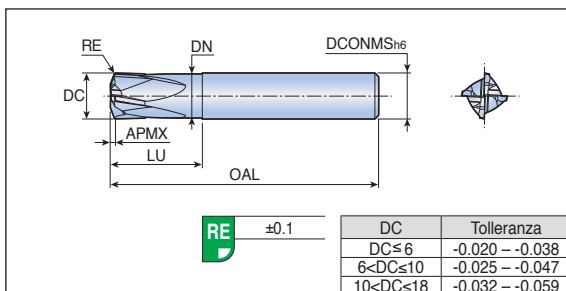


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TC3030
		DC	RE	OAL	APMX	LU	DN	DCONMS	
CRF 6060 050 120	0.02-0.03	6	0.5	50	4.5	12	5.8	6	●
6080 100 160	0.02-0.03	8	1.0	57	6.0	16	7.7	8	●
6100 100 200	0.02-0.04	10	1.0	63	7.5	20	9.6	10	●
6120 150 240	0.03-0.05	12	1.5	70	9.0	24	11.5	12	●
6160 200 320	0.03-0.05	16	2.0	83	12.0	32	15.5	16	●

●: Standard

CRH 4

Fresa ad alto avanzamento 4 taglienti in ceramica

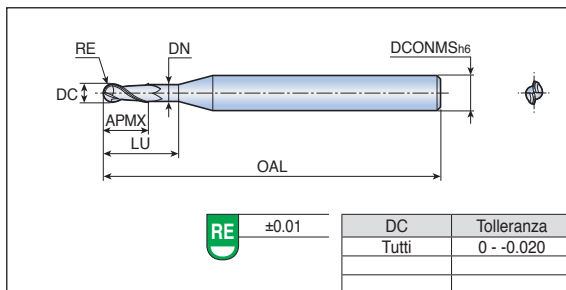


Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TC3030
		DC	RE	OAL	APMX	LU	DN	DCONMS	
CRH 4060	0.1-0.15	6	0.7	50	0.60	12	5.8	6	●
4080	0.1-0.2	8	0.9	57	0.75	16	7.7	8	●
4100	0.1-0.2	10	1.0	63	0.85	20	9.6	10	●
4120	0.1-0.3	12	1.4	70	1.15	24	11.5	12	●
4160	0.1-0.3	16	1.8	83	1.55	32	15.5	16	●

● RE: raggio di programmazione

●: Standard

Fresa sferica 2 taglienti scaricata per grafite

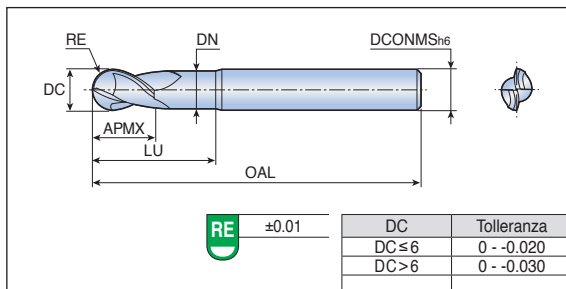


Descrizione	Dimensioni (mm)							Grado TT6050
	DC	RE	OAL	APMX	LU	DN	DCONMS	
DMB 2006-0.6x3.0	0.6	0.3	40	0.6	3.0	0.55	3	●
2010-1.0x5.0	1.0	0.5	40	1.0	5.0	0.95	3	●
2010-1.0x8.5	1.0	0.5	40	1.0	8.5	0.95	3	●
2015-1.5x7.5	1.5	0.75	50	1.5	7.5	1.4	3	●
2015-1.5x12.0	1.5	0.75	50	1.5	12.0	1.4	3	●
2020-2.2x10.0	2.0	1.0	60	2.2	10.0	1.9	3	●
2020-2.2x16.0	2.0	1.0	60	2.2	16.0	1.9	3	●

●: Standard

DEB 2...S

Fresa sferica 2 taglienti corta per grafite

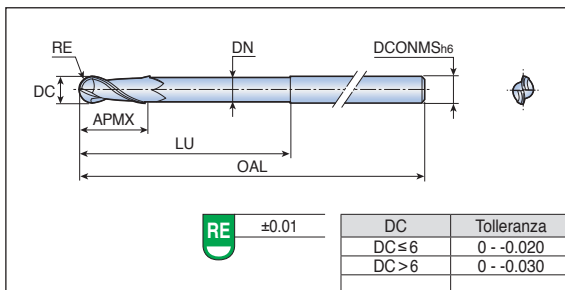


Descrizione	Dimensioni (mm)							Grado TT6050
	DC	RE	OAL	APMX	LU	DN	DCONMS	
DEB 2030S	3	1.5	60	4.5	6.5	2.8	6	●
2040S	4	2.0	65	6.0	8.0	3.7	6	●
2060S	6	3.0	75	9.0	12.0	5.6	6	●
2120S	12	6.0	90	18.0	36.0	11.4	12	●

●: Standard

DEB 2...L

Fresa sferica 2 taglienti lunga per grafite

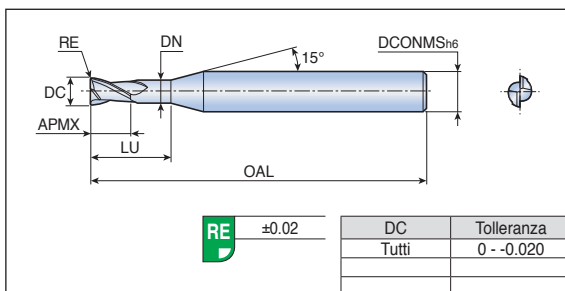


Descrizione	Dimensioni (mm)							Grado TT6050
	DC	RE	OAL	APMX	LU	DN	DCONMS	
DEB 2030L-4	3	1.5	80	15	25	2.9	4	●
2040L-4	4	2.0	80	20	30	3.9	4	●
2050L	5	2.5	100	30	50	4.9	6	●
2060L	6	3.0	100	30	50	5.5	6	●
2080L	8	4.0	110	40	60	7.5	8	●
2100L	10	5.0	120	50	70	9.5	10	●
2120L	12	6.0	130	55	75	11.5	12	●

●: Standard

DMR 2

Fresa torica 2 taglienti scaricata per grafite



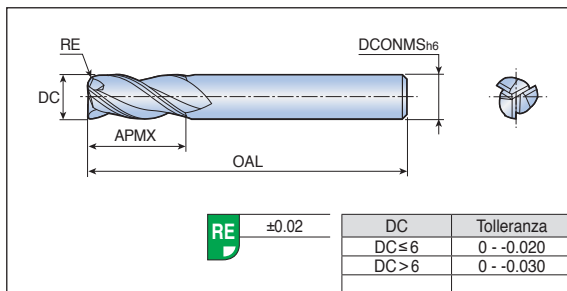
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)							Grado TT6050
		DC	RE	OAL	APMX	LU	DN	DCONMS	
DMR 2006-0.9x3.0	0.006-0.010	0.6	0.05	40	0.9	3.0	0.55	3	●
2008-1.2x4.0	0.008-0.015	0.8	0.05	40	1.2	4.0	0.75	3	●
2010-1.5x5.0	0.010-0.020	1.0	0.1	40	1.5	5.0	0.95	3	●
2010-1.5x8.5	0.010-0.020	1.0	0.1	40	1.5	8.5	0.95	3	●
2012-1.8x6.0	0.010-0.025	1.2	0.1	50	1.8	6.0	1.15	3	●
2015-2.2x7.5	0.015-0.035	1.5	0.15	50	2.2	7.5	1.4	3	●
2015-2.2x12.0	0.015-0.030	1.5	0.15	50	2.2	12.0	1.4	3	●
2020-2.2x10.0	0.015-0.040	2.0	0.15	60	2.2	10.0	1.9	3	●
2020-2.2x16.0	0.015-0.035	2.0	0.15	60	2.2	16.0	1.9	3	●

●: Standard

DER 3...S



Fresa torica 3 taglienti corta per grafite



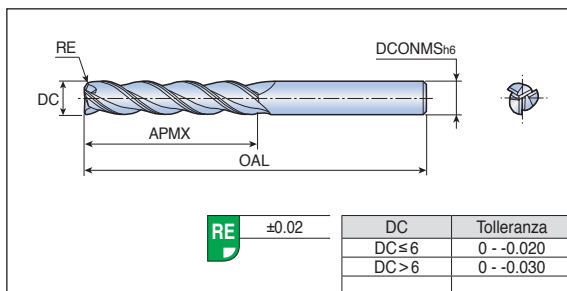
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT6050
		DC	RE	OAL	APMX	DCONMS	
DER 3030S-3	0.025-0.050	3	0.15	40	12	3	●
3040S-4	0.040-0.060	4	0.2	50	14	4	●
3050S-5	0.050-0.080	5	0.3	50	16	5	●
3060S	0.060-0.090	6	0.3	65	20	6	●
3080S	0.070-0.100	8	0.5	65	20	8	●
3100S	0.080-0.130	10	0.5	75	25	10	●
3120S	0.100-0.150	12	0.5	75	25	12	●

●: Standard

DER 3...L



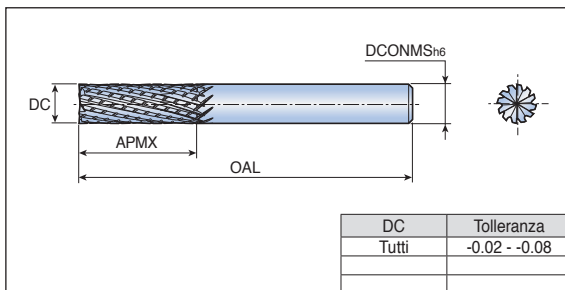
Fresa torica 3 taglienti lunga per grafite



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TT6050
		DC	RE	OAL	APMX	DCONMS	
DER 3040L-4	0.03-0.05	4	0.2	60	30	4	●
3050L-5	0.04-0.07	5	0.3	70	35	5	●
3060L	0.05-0.08	6	0.3	100	40	6	●
3080L	0.06-0.09	8	0.5	100	40	8	●
3100L	0.07-0.12	10	0.5	100	40	10	●
3120L	0.09-0.14	12	0.5	100	45	12	●

●: Standard

Fresa piana 6-12 taglienti per sgrossatura di materiali compositi



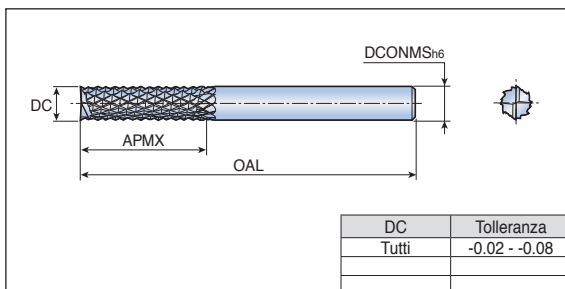
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)					Grado TTD610
		DC	NOF	OAL	APMX	DCONMS	
RRFE 040	0.01-0.02	4	6	50	12	4	●
060	0.01-0.02	6	8	65	18	6	●
080	0.01-0.03	8	10	75	24	8	●
100	0.02-0.04	10	12	85	30	10	●
120	0.02-0.05	12	12	100	36	12	●

• NOF: numero di taglienti

●: Standard

RCFE

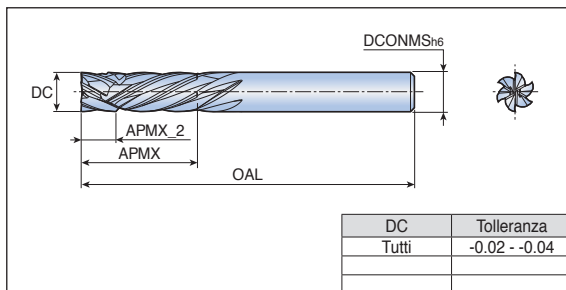
Fresa piana forante per sgrossatura di materiali compositi



Descrizione	Avanzamento (mm/g)	Dimensioni (mm)				Grado TTD610
		DC	OAL	APMX	DCONMS	
RCFE 040	0.03-0.06	4	50	12	4	●
060	0.07-0.15	6	65	18	6	●
080	0.10-0.20	8	75	24	8	●
100	0.15-0.30	10	85	30	10	●
120	0.20-0.40	12	100	36	12	●

●: Standard

Fresa piana 4-6 taglienti per finitura di materiali compositi



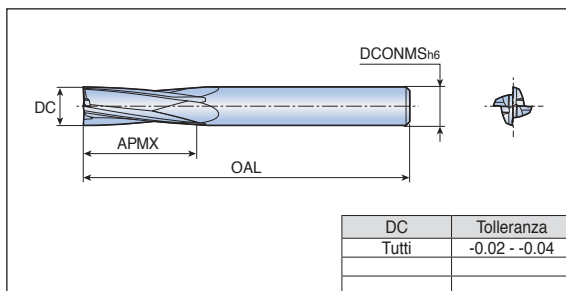
Descrizione	Avanzamento (mm/z)	Dimensioni (mm)						Grado TTD610
		DC	NOF	OAL	APMX	APMX_2	DCONMS	
RCOM 4060	0.02-0.04	6	4	65	18	3	6	●
4080	0.02-0.05	8	4	75	24	4	8	●
6100	0.03-0.06	10	6	85	30	5	10	●
6120	0.04-0.08	12	6	100	36	6	12	●

• NOF: numero di taglienti

●: Standard

RDCF 4

Fresa piana 4 taglienti per finitura di materiali compositi



Descrizione	Avanzamento (mm/z)	Dimensioni (mm)				Grado TTD610
		DC	OAL	APMX	DCONMS	
RDCF 4040	0.01-0.03	4	50	12	4	●
4060	0.02-0.04	6	65	18	6	●
4080	0.03-0.05	8	75	24	8	●
4100	0.04-0.06	10	85	30	10	●
4120	0.04-0.08	12	100	36	12	●

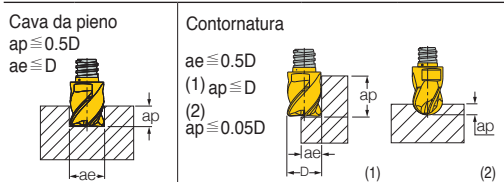
●: Standard

Condizioni di taglio raccomandate



Dati di lavorazione per MAXI-RUSH

Fz testine piane, toriche e sferiche (mm/z)



D (mm)	Fz (mm/z)	D (mm)	Fz (mm/z)
6	0.027-0.05	6	0.027-0.06
8	0.032-0.07	8	0.032-0.08
10	0.034-0.08	10	0.034-0.09
12	0.036-0.10	12	0.036-0.11
16	0.050-0.12	16	0.05 - 0.13
20	0.052-0.14	20	0.052-0.15
25	0.062-0.15	25	0.062-0.17

Fz testine di scanalatura (mm/z)

ISO		
P	0.025-0.12	0.035-0.15
M	0.025-0.10	0.025-0.12
K	0.025-0.15	0.035-0.17
Dimensione attacco	Chiave	Coppia di serraggio (N.m)
S05	MX KEY-S05	7
S06	MX KEY-S06	10
S08	MX KEY-S08	15
S10	MX KEY-S10	28
S12	MX KEY-S12	28
S15	MX KEY-S15	40

Velocità di taglio raccomandate Vt (m/min)

ISO	Materiale No.	Durezza HB	Vt m/min
P	1	125	220-240
	2	190	170-200
	3-6	200	140-160
	7-8	300	110-130
	9-11	200	100-130
M	12-13	240	90-150
	14	180	70-100
K	15	180	70-240
	16	260	110-220
	17	170	130-250
	19	130	130-230
	20	230	100-200
N	21-24	90	600-700
S	33-35	350	10-20
	36-37	-	30-50
H	38	HRC55	30-40
	39	HRC60	25-30

Frese ad alto avanzamento - solo MXFX

ISO	Materiale No.	Profondità di taglio (ap)	Largh. di taglio (ae)	Fz (mm/z) in base al diametro D (mm)					
				Ø8	Ø10	Ø12	Ø16	Ø20	Ø25
P	1	0.045xD	0.7xD	0.50	0.60	0.70	0.80	0.95	1.05
	2	0.045xD	0.7xD	0.50	0.60	0.70	0.80	0.95	1.05
	3	0.045xD	0.7xD	0.50	0.60	0.70	0.80	0.95	1.05
	4	0.045xD	0.7xD	0.50	0.60	0.70	0.80	0.95	1.05
	5	0.045xD	0.7xD	0.45	0.55	0.60	0.70	0.80	0.90
	6	0.045xD	0.7xD	0.35	0.45	0.50	0.60	0.70	0.80
	7	0.045xD	0.7xD	0.35	0.45	0.50	0.60	0.70	0.80
	8	0.045xD	0.7xD	0.35	0.40	0.45	0.55	0.65	0.75
	9	0.045xD	0.7xD	0.35	0.40	0.45	0.55	0.65	0.75
	10	0.04xD	0.6xD	0.30	0.35	0.40	0.50	0.6	0.70
	11	0.04xD	0.6xD	0.30	0.35	0.40	0.45	0.55	0.65
M	12-14	0.04xD	0.6xD	0.35	0.40	0.45	0.55	0.65	0.75
K	15-16	Ap max	0.7xD	0.50	0.55	0.65	0.75	0.85	0.95
	17-20	Ap max	0.7xD	0.40	0.50	0.55	0.65	0.75	0.85
H	38.1	0.035xD	0.45xD	0.25	0.30	0.35	0.45	0.50	0.60
	38.2	0.03xD	0.3xD	0.20	0.25	0.35	0.40	0.50	0.55
	39	0.02xD	0.25xD	0.15	0.20	0.20	0.25	0.25	0.30

Condizioni di taglio raccomandate

Dati di lavorazione per frese integrali

ISO	Materiale		Condizione	Resistenza (N/mm ²)	Durezza HB	Materiale No.	
P	Acciaio non legato, acciaio da fusione, acciaio ad alta lavorabilità	< 0.25% C	Ricotto	420	125	1	
		≥ 0.25% C	Ricotto	650	190	2	
		< 0.55% C	Bonificato	850	250	3	
		≥ 0.55% C	Ricotto	750	220	4	
			Bonificato	1000	300	5	
	Acciaio basso legato e acciaio da fusione (elementi leganti inferiori al 5%)		Ricotto	600	200	6	
		Bonificato		930	275	7	
				1000	300	8	
				1200	350	9	
	Acciaio alto legato, acciaio da fusione e acciaio da utensili		Ricotto	680	200	10	
		Bonificato	1100	325	11		
M	Acciaio inox e acciaio inox da fusione	Ferritico / martensitico		680	200	12	
		Martensitico		820	240	13	
		Austenitico		600	180	14	
K	Ghisa grigia (GG)	Ferritico			160	15	
		Perlitico			250	16	
	Ghisa nodulare (GGG)	Ferritico			180	17	
		Perlitico			260	18	
	Ghisa malleabile	Ferritico			130	19	
		Perlitico			230	20	
N	Alluminio	Non trattato			60	21	
		Trattato			100	22	
	Leghe di alluminio	≤ 12% Si	Non trattato			75	23
			Trattato			90	24
		> 12% Si	Alte temperature			130	25
	Leghe di rame	> 1% Pb	Alta lavorabilità			110	26
			Ottone			90	27
			Rame elettrolitico			100	28
	Materiali non metallici	Materiali plastici, grafite				29	
		Gomma dura				30	
S	Leghe resistenti al calore	Base Fe	Ricotto		200	31	
			Trattato		280	32	
		Base Ni o Co	Ricotto		250	33	
			Trattato		350	34	
	Titanio, leghe di titanio	Fuso			320	35	
			Leghe trattate alpha+beta	Rm 1050		36	
H	Acciaio temprato	Temprato			55HRC	38	
		Temprato			60HRC	39	
	Ghisa in conchiglia	Fuso			400	40	
	Ghisa nodulare	Temprato			55HRC	41	

• Per maggior informazioni consultare la "Tabella conversione materiali" nella sezione materiali e gradi.

■ Acciaio
 ■ Acciaio inox
 ■ Ghisa
 ■ Non ferrosi
 ■ Superleghe
 ■ Temprato

Condizioni di taglio raccomandate

Dati di lavorazione per frese integrali

Velocità di taglio Vt (m/min)							
CBN	Rivestito					Non rivestito	Ceramica
TB7015	TT5505	TT5515	TT5525/TT5523	TT5543	TT6050	UF10N/UF10	TC3030
	260-300	260-280	210-220	170-200		180-200	
	200-250	200-230	160-180	140-170		140-160	
	160-230	160-220	130-180	120-150		110-150	
	160-230	160-220	130-180	100-140		110-150	
	140-200	140-180	110-140	90-130		100-130	
	160-230	160-220	130-180	100-150		110-150	
	120-200	120-180	100-140	90-130		80-130	
	140-200	130-180	100-140	90-130		90-130	
	140-200	140-180	110-140	90-130		100-130	
	140-200	130-180	100-140	90-130		90-130	
	80-150	70-120	60-100	50-90		50-80	
		80-160	60-130	50-110		60-110	
		60-150	50-120	40-100		40-100	
		60-120	50-100	40-80		40-80	
	100-300	80-260	60-210	50-180		60-180	
	130-280	130-140	100-190	100-170		90-170	
	150-280	150-270	120-220	110-200		100-200	
	90-280	90-270	70-220	110-200		60-200	
	150-280	150-270	120-220	110-200		100-200	
	140-250	140-240	110-190	100-180		100-170	
						800-900	
						700-800	
						800-900	
						750-850	
					400-550	400-450	
						500-550	
						500-550	
						350-380	
					300-500		
	20-40	20-40	20-30	20-30		10-20	
	20-30	20-40	20-30	20-30		10-20	
	20-30	20-50	20-30	20-30		20-50	700-1200
	20-30	20-70	20-30	20-30		20-50	700-1200
	30-80	30-70	20-60	20-60		20-50	700-1200
		30-70	20-60	20-60		20-30	
		30-70	20-60	20-60		20-30	
100-210	30-60					40-60	
90-200	30-40					20-30	
120-200	70-90	60-80				65-75	
120-200	30-60	30-50				40-45	

Dati di lavorazione per frese in ceramica

CRF 4 e 6 taglienti

(Unità: mm)

Diametro	Velocità di taglio (m/min)	Avanzamento (mm/z)	Contornatura, profilatura		Cava da pieno
			ap	ae	ae
Ø6	300-1000	0.02-0.03	-0.6xD	-0.1xD	-0.05xD
Ø8	300-1000	0.02-0.03	-0.6xD	-0.1xD	-0.05xD
Ø10	300-1000	0.02-0.04	-0.6xD	-0.1xD	-0.05xD
Ø12	300-1000	0.03-0.05	-0.6xD	-0.1xD	-0.05xD
Ø16	300-1000	0.03-0.05	-0.6xD	-0.1xD	-0.05xD

- Ae non deve superare un millimetro
- Ridurre del 30% l'avanzamento in cava da pieno e in rampa (minore di 2.5°)

ap: assiale DOC ae: radiale DOC

CRH 4 taglienti

(Unità: mm)

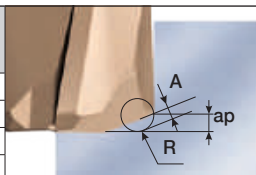
Diametro	Velocità di taglio (m/min)	Avanzamento (mm/z)	Contornatura, profilatura	
			ap	ae
Ø6	300-1000	0.1-0.15	-0.05xD	-0.6xD
Ø8	300-1000	0.1-0.2	-0.05xD	-0.6xD
Ø10	300-1000	0.1-0.2	-0.05xD	-0.6xD
Ø12	300-1000	0.1-0.3	-0.05xD	-0.6xD
Ø16	300-1000	0.1-0.3	-0.05xD	-0.6xD

- Ridurre del 30% l'avanzamento in cava da pieno e in rampa (minore di 2.5°)

ap: assiale DOC ae: radiale DOC

Suggerimenti per la programmazione

Diametro (CRH 4 taglienti)	R programmazione	A spessore max materiale residuo
Ø6	0.7	0.35
Ø8	0.9	0.47
Ø10	1.0	0.50
Ø12	1.4	0.70
Ø16	1.8	0.95



Chiavi

Foto	Descrizione	Dimensione attacco	Coppia (N.m)	Testina
	MX KEY-S05	S05	7	Piana Sferica Torica Centrino Allargatura Smussatura
	MX KEY-S05	S06	10	
	MX KEY-S08	S08	15	
	MX KEY-S10	S10	28	
	MX KEY-S12	S12	28	
	MX KEY-S15	S15	40	
	MX SKEY-S06	S06	10	Scanalatura tipo TST
	MX SKEY-S08	S08	15	
	MX SKEY-T40L	S08	15	Scanalatura tipo TST, TTB
		S10	28	
	MX SKEY-T20	S05	7	
		S06	10	
	MX SKEY-T25	S06	10	
	MX SKEY-T30L	S08	15	
	MX SKEY-T50L	S08	15	
		S10	28	

• La chiave è da ordinare separatamente

Chiavi dinamometriche

Foto	Descrizione	Attacco	Descrizione testina	Coppia (N.m)
Manico	TORQUE WRENCH 5-50Nm 9X12	-	-	-
Chiave per teste cilindriche	MX WRENCH 6-05	S05	MXED, MXEE	7
	MX WRENCH 8-06	S06	MXEE-I, MXEE-R	10
	MX WRENCH 10-08	S08	MXEE-C, MXEE-A	15
	MX WRENCH 13-10	S10	MXRD, MXBD-BG	28
	MX WRENCH 16-12	S12	MXBE-BGA	28
	MX WRENCH 20-15	S15	MXDP, MXCA	40
Chiave per teste a 2 taglienti	MX WRENCH 4E-05	S05	MXRB, MXRC	7
	MX WRENCH 5E-06	S06	MXFX, MXBB-BM	10
	MX WRENCH 7E-08	S08	MXBB-BG	15
	MX WRENCH 8E-10	S10	MXCP, MXGC	28
MX WRENCH 9E-12	S12	MXCW, MXCR	28	
Adattatore a 90° per chiave torx	INSERT TOOL 9X12mm	-	-	-
Chiave torx	BIT SOCKET T20 DRIVE	S05, S06	TTB135 TTB160W2.00 TTB165W2.00	7, 10
	BIT SOCKET T25 DRIVE	S06	TTB160W3.00 TTB160W4.00	10
	BIT SOCKET T30 DRIVE	S08	TTB165W3.00	15
	BIT SOCKET T40 DRIVE	S08, S10	TTB165W4.00 TTB195	15, 28
	BIT SOCKET T50 DRIVE	S08, S10	TST277 TTB225 TTB250	15, 28

• La chiave è da ordinare separatamente

MANDRINI



MANDRINI

INDUSTRY 4.0

Contenuti

Guida alla scelta dell'utensile	G4
DIN69871	G8
HSK	G33
BT MAS	G62
DIN2080	G89
C-ADAPTER	G100
Gambo cilindrico e cono morse	G113
Typhoon	G131
Pinze	G137
Accessori	G165
Informazioni tecniche	G179

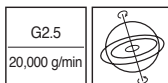
Guida alle icone



➤ Concentricità



➤ Durezza superficiale



➤ Bilanciatura



➤ Grado di precisione cono



➤ Grado di finitura superficiale



➤ Pagina informazioni tecniche



➤ Pagina pinza ER



➤ Pagina pinza TSK



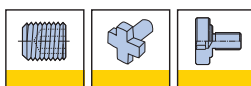
➤ Pagina pinza ST / THC



➤ Pagina tirante



➤ Pagina vite di presettaggio



➤ Pagina vite di bloccaggio



➤ Pagina ER 32 SRF



➤ Pagina ghiera



➤ Pagina adattatore maschi



➤ Pagina tubo di refrigerazione



➤ Pagina chiave tubo



➤ Pagina chiave



➤ Pagina anello di trascinamento



➤ Pagina unità di calettamento ad induzione



➤ Pagina unità di calettamento

* Per materiale non in stock: le condizioni di fornitura sono soggette a disponibilità.
Se non disponibile in magazzino sarà applicata una MOQ (quantità minima ordine).



Guida alla scelta dell'utensile

Mandrini

Mandrino a forte serraggio

- DIN69871 G17
- HSK G42
- BT MAS-403 G71
- DIN2080 G92



Pinza CSR G155



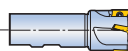
Gambo ST G114-G118



Pinza ER G139-G149



Pinza GTIN G162-G163



Mandrino a pinza ER

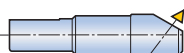
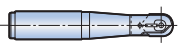
- DIN69871 G11-G13
- HSK G36-G41
- BT MAS-403 G65-G67
- DIN2080 G91
- C-ADAPTER G102-G103
- ST G114-G118
- MT G128



Pinza ER G139-G149



Pinza GTIN G162-G163



Mandrino a pinza TSK

- DIN69871 G14
- HSK G41
- BT MAS-403 G68



Pinza TSK G150-G152



TSHRINK

- DIN69871 G21
- HSK G45-G47
- BT MAS-403 G75
- C-ADAPTER G110



- DIN69871 G22
- HSK G48-G50
- BT MAS-403 G76
- ST G125



THYCHUCK

- DIN69871 G23
- HSK G51-G52
- BT MAS-403 G77-G78



Pinza THC G153-G154



Guida alla scelta dell'utensile

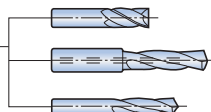
Mandrini

TBALANCE

- DIN69871 G10
- HSK G35
- BT MAS-403 G64

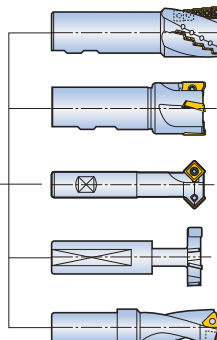


Pinza ER G139-G149



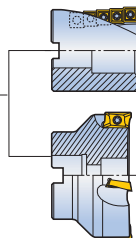
Mandrino weldon

- DIN69871 G18-G20
- HSK G43-G44
- BT MAS-403 G72-G74
- DIN2080 G93
- C-ADAPTER G104-G106



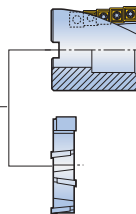
Mandrino portafrese a manicotto

- DIN69871 G24-G25, G27
- HSK G53-G55, G57
- BT MAS-403 G80-G82, G84
- DIN2080 G94-G95
- C-ADAPTER G107, G109



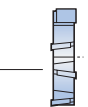
Mandrino portafrese a manicotto combinato

- DIN69871 G26
- HSK G56
- BT MAS-403 G83
- DIN2080 G96
- C-ADAPTER G108



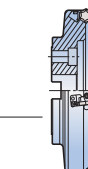
Mandrino per frese a disco

- DIN69871 G28
- BT MAS-403 G79



Mandrino di centraggio

- DIN2080 G99

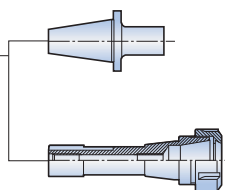


Guida alla scelta dell'utensile

Mandrini

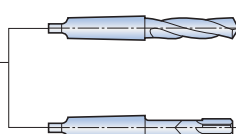
Riduzione

- DIN69871 G31
- BT MAS-403 G86



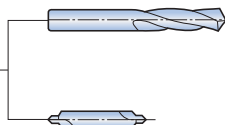
Mandrino con morse

- DIN69871 G29-G30
- HSK G58
- BT MAS-403 G85-G86
- DIN2080 G97-G98



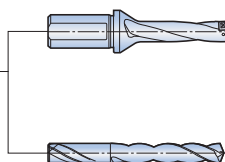
Mandrino per portapunte

- DIN69871 G31
- BT MAS-403 G87
- DIN2080 G99



FITBORE

- DIN69871 G15
- HSK G42
- BT MAS-403 G69



Mandrino portamaschi (GTI)

- DIN69871 G16
- BT MAS-403 G70



Pinza ER G139-G149

- GTI ER G126



- DIN69871 G16
- BT MAS-403 G70
- MTA G128



Portamaschi G164

Guida alla scelta dell'utensile

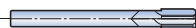
Mandrini

GFI mandrino flottante per alesatori (GFI)

- ST G127



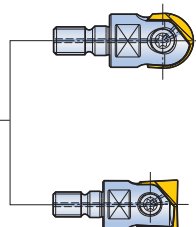
Pinza ER G139-G149



- DIN69871 G32
- HSK G59-G60
- BT MAS-403 G88
- C-ADAPTER G111
- ST G119-G121



Riduzione G122-G124



Grezzo

- HSK G61
- C-ADAPTER G112

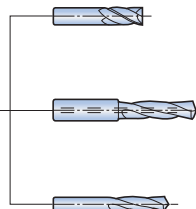


GYRO per allineamento asse

- ST G129-G130



Pinza ER G139-G149



- ER attacco G132
- BT MAS-403 G133
- HSK G134
- C-ADAPTER G135
- ST G136



Pinza ER11 SPR EX..AA
G140, G145

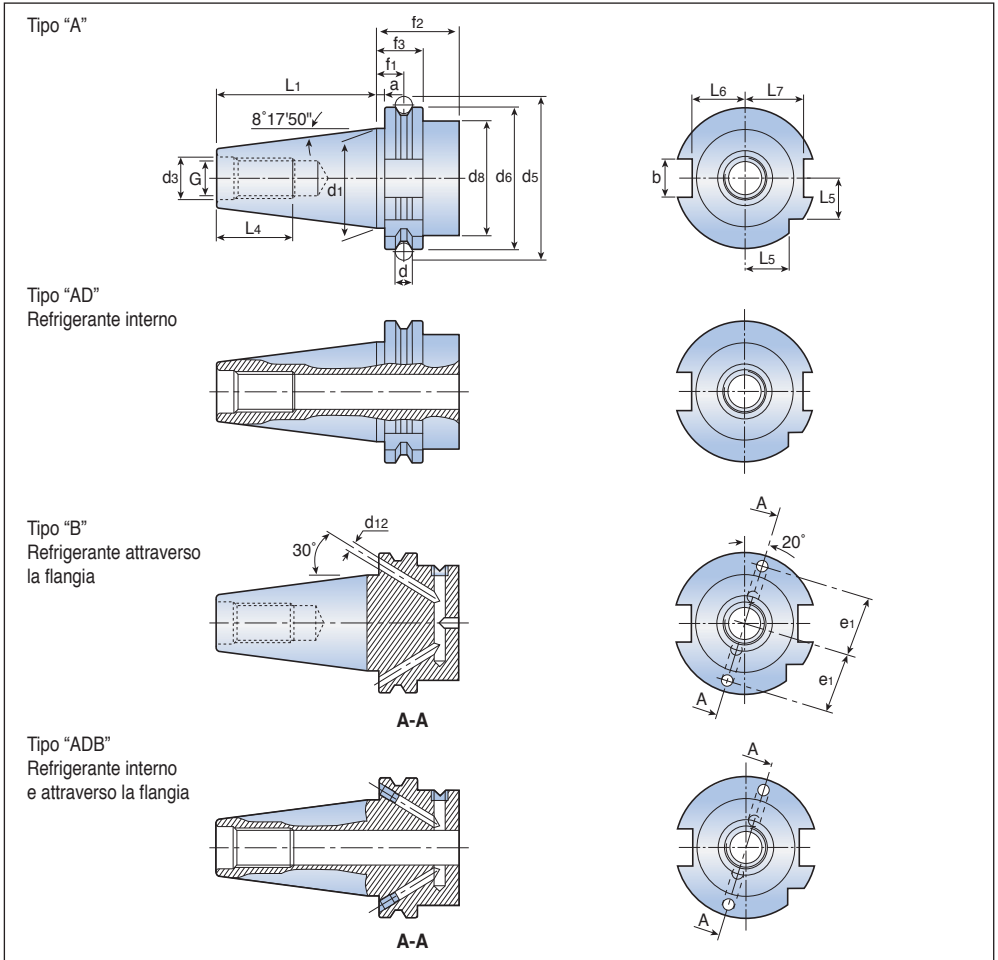


DIN69871



DIN69871 Tipo A/AD/B/ADB

Attacco standard



Attacco	a ±0.1	b (H12)	d	d1	G	d3 (H7)	d5 ±0.05	d6	d8max	f1 ±0.1
30	3.2	16.1	7	31.75	M12	13	59.30	50.00	45	11.1
40	3.2	16.1	7	44.45	M16	17	72.30	63.55	50	11.1
50	3.2	25.7	7	69.85	M24	25	107.25	97.50	80	11.1

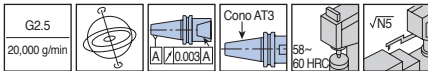
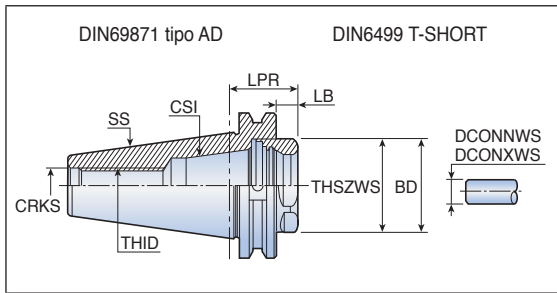
Attacco	f2min	f3 -0.1	L1 -0.3	L4min	L5 -0.3	L6 -0.4	L7 -0.4	e1 ±0.1	d12	Cono AT3
30	35	19.1	47.80	24	15.0	16.4	19.0	21	4	0.002
40	35	19.1	68.40	32	18.5	22.8	25.0	27	4	0.003
50	35	19.1	101.75	47	30.0	35.5	37.7	42	6	0.004

* Per materiale non in stock: le condizioni di fornitura sono soggette a disponibilità.
Se non disponibile in magazzino sarà applicata una MOQ (quantità minima ordine)..

DIN69871-ER-SHORT



Mandrino a pinza ER corto

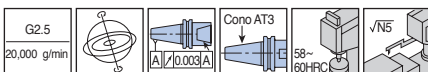
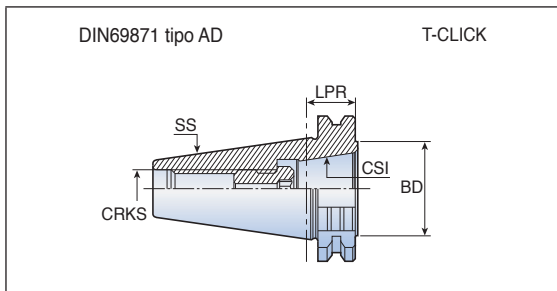


Descrizione	Dimensioni (mm)									
	SS	CSI	DCONNWS	DCONXWS	BD	LPR	LB	CRKS	THSZWS	THID
DIN69871 40 ER32 SHORT	40	ER32	2.0	20.0	40	25.1	6.0	M16	M40x1.5	-
DIN69871 50 ER32 SHORT	50	ER32	2.0	20.0	40	28.6	9.5	M24	M40x1.5	M22x1.5
ER40 SHORT	50	ER40	3.0	26.0	50	28.6	9.5	M24	M50x1.5	M28x1.5

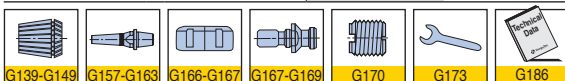
DIN69871-ER-CLICK-IN



Mandrino a pinza ER a cambio rapido



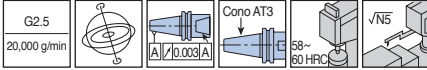
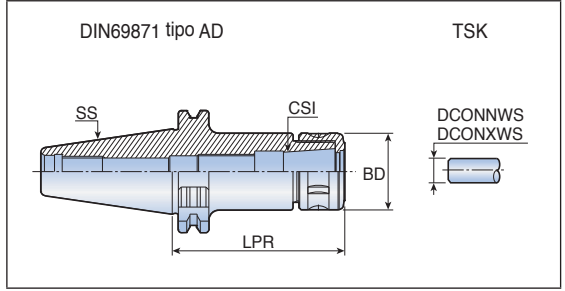
Descrizione	Dimensioni (mm)				
	SS	CSI	BD	LPR	CRKS
DIN69871 40 ER32 CLICK-IN	40	32 SRF	41	20.1	M16
DIN69871 50 ER32 CLICK-IN	50	32 SRF	41	20.1	M24



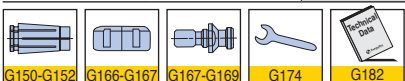
• Coppia di serraggio: 24 kg x m

DIN69871-TSK

Mandrino a pinza TSK



Descrizione	Dimensioni (mm)					
	SS	CSI	DCONNWS	DCONXWS	BD	LPR
DIN69871 40						
TSK 6-90	40	TSK6	1.5	6.0	19.5	90
TSK 6-120	40	TSK6	1.5	6.0	19.5	120
TSK 10-90	40	TSK10	1.5	10.0	27.5	90
TSK 10-120	40	TSK10	1.5	10.0	27.5	120
TSK 16-90	40	TSK16	2.5	16.0	40.0	90
TSK 16-120	40	TSK25	2.5	16.0	40.0	120
TSK 25-90	40	TSK25	15.5	25.4	55.0	90
TSK 25-120	40	TSK6	15.5	25.4	55.0	120
DIN69871 50						
TSK 6-120⁽¹⁾	50	TSK6	1.5	6.0	19.5	120
TSK 6-165⁽¹⁾	50	TSK6	1.5	6.0	19.5	165
TSK 6-195⁽¹⁾	50	TSK6	1.5	6.0	19.5	195
TSK 10-120⁽¹⁾	50	TSK10	1.5	10.0	27.5	120
TSK 10-165⁽¹⁾	50	TSK10	1.5	10.0	27.5	165
TSK 10-195⁽¹⁾	50	TSK10	1.5	10.0	27.5	195
TSK 16-120⁽¹⁾	50	TSK16	2.5	16.0	40.0	120
TSK 16-165⁽¹⁾	50	TSK16	2.5	16.0	40.0	165
TSK 16-195⁽¹⁾	50	TSK16	2.5	16.0	40.0	195
TSK 25-120⁽¹⁾	50	TSK25	15.5	25.4	55.0	120
TSK 25-165⁽¹⁾	50	TSK25	15.5	25.4	55.0	165
TSK 25-195⁽¹⁾	50	TSK25	15.5	25.4	55.0	195

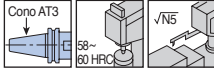
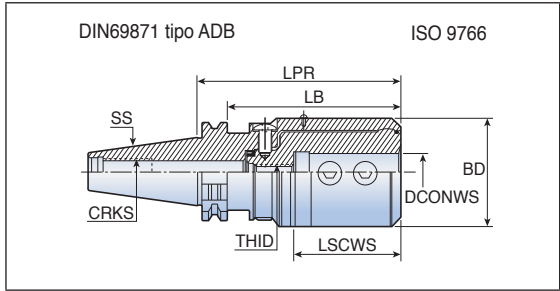


- Aggiungere B per il passaggio del refrigerante attraverso la flangia
- ⁽¹⁾ Bilanciato G6.3 a 12,000 g/min

FITBORE SKA-EM ADB



Mandrino per la regolazione del diametro di foratura



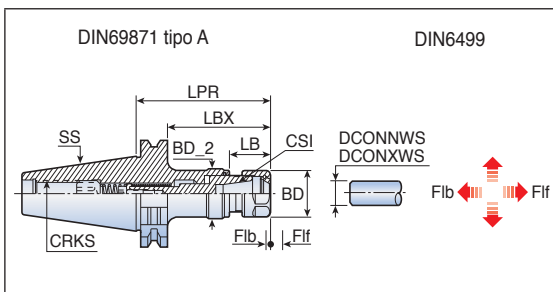
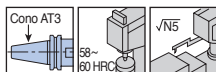
Descrizione	Dimensioni (mm)							
	SS	DCONWS	BD	LPR	LB	LSCWS	CRKS	THID
FITBORE SKA 40 EM 16 ADB	40	16	72	135.6	116.5	71	M16	M10
EM 20 ADB	40	20	72	135.6	116.5	71	M16	M10
EM 25 ADB	40	25	72	135.6	116.5	71	M16	M10
EM 32 ADB	40	32	72	135.6	116.5	71	M16	M10
EM 40 ADB	40	40	72	135.6	116.5	71	M16	M10
FITBORE SKA 50 EM 16 ADB	50	16	72	115.6	96.5	71	M24	M10
EM 20 ADB	50	20	72	115.6	96.5	71	M24	M10
EM 25 ADB	50	25	72	115.6	96.5	71	M24	M10
EM 32 ADB	50	32	72	115.6	96.5	71	M24	M10
EM 40 ADB	50	40	72	115.6	96.5	71	M24	M10



• Aggiungere B per il passaggio del refrigerante attraverso la flangia

GTI DIN69871-ER

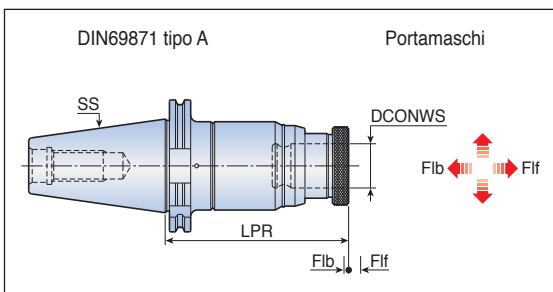
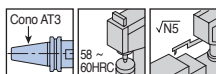
Mandrino portamaschi GTI



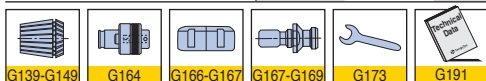
Descrizione	Dimensioni (mm)													
	SS	CSI	Min	Max	DCONNWS	DCONXWS	BD_2	BD	LPR	LBX	LB	Fib	FIf	CRKS
GTI DIN69871 40 ER 16	40	ER16	M3	M10	0.5	10.0	29.5	28	81.2	62.1	24.6	3	8	M16
ER 32	40	ER32	M6	M20	2.0	20.0	56.5	50	112.6	93.5	33.0	4	9	M16
ER 40	40	ER40	M6	M28	3.0	26.0	56.5	63	130.6	111.5	51.0	4	9	M16
GTI DIN69871 50 ER 16	50	ER16	M3	M10	0.5	10.0	29.5	28	106.8	87.7	24.6	3	8	M24
ER 32	50	ER32	M6	M20	2.0	20.0	56.5	50	115.3	96.2	33.0	4	9	M24
ER 40	50	ER40	M6	M28	3.0	26.0	56.5	63	133.3	114.2	51.0	4	9	M24

DIN69871-TC

Mandrino portamaschi



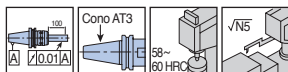
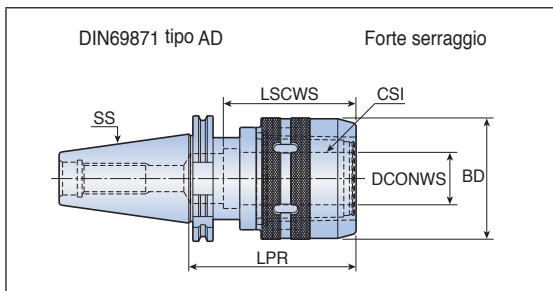
Descrizione	Dimensioni (mm)							
	SS	Min	Max	DCONWS	LPR	Fib	FIf	Portamaschi
DIN69871 40 TC 12-90	40	M3	M12	19	90	6.5	12	TA1
TC 22-142	40	M6	M24	31	142	14.5	13	TA2
DIN69871 50 TC 12-130	50	M3	M12	19	130	6.5	12	TA1
TC 22-142	50	M6	M24	31	142	14.5	13	TA2
TC 38-190	50	M18	M38	48	190	20.0	20	TA3



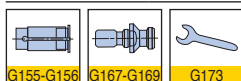
• Sistema di controllo della torsione

DIN69871-TMC

Mandrino a forte serraggio

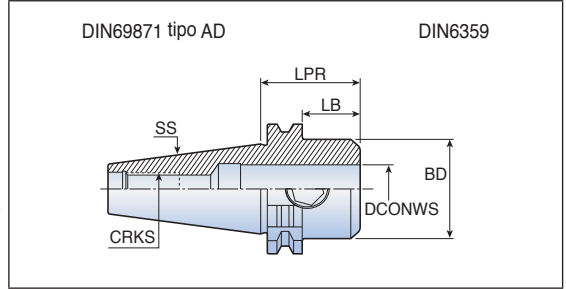
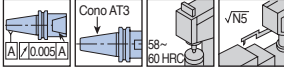


Descrizione	Dimensioni (mm)					
	SS	CSI	DCONWS	BD	LPR	LSCWS
DIN69871 30 TMC 20-80	30	20	20	54.0	80	60
TMC 25-80	30	25	25	62.5	80	70
DIN69871 40 TMC 20-80	40	20	20	54.0	80	60
TMC 20-90	40	20	20	54.0	90	60
TMC 20-105	40	20	20	54.0	105	60
TMC 25-90	40	25	25	62.5	90	70
TMC 25-105	40	25	25	62.5	105	70
TMC 32-90	40	32	32	74.0	90	80
TMC 32-105	40	32	32	74.0	105	80
TMC 32-135	40	32	32	74.0	135	80
DIN69871 50 TMC 20-80	50	20	20	54.0	80	60
TMC 20-105	50	20	20	54.0	105	60
TMC 25-90	50	25	25	62.5	90	70
TMC 25-105	50	25	25	62.5	105	70
TMC 32-90	50	32	32	74.0	90	80
TMC 32-105	50	32	32	74.0	105	80
TMC 32-135	50	32	32	74.0	135	80
TMC 32-165	50	32	32	74.0	165	80
TMC 42-115	50	42	42	92.0	115	90
TMC 42-135	50	42	42	92.0	135	90
TMC 42-165	50	42	42	92.0	165	90

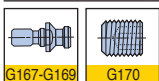


DIN69871-EM

Mandrino weldon corto



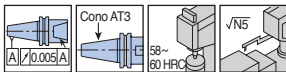
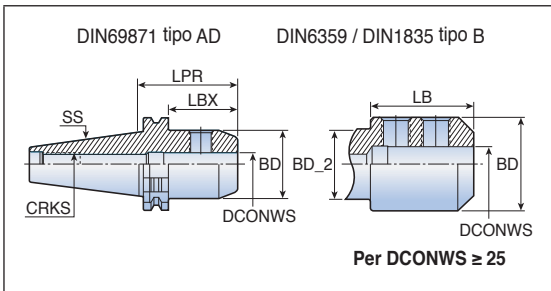
Descrizione	Dimensioni (mm)					
	SS	DCONWS	BD	LPR	LB	CRKS
DIN69871 40 EM 10x45	40	10	35	45	25.9	M16
EM 12x45	40	12	42	45	25.9	M16
EM 14x45	40	14	44	45	25.9	M16
EM 16x45	40	16	48	45	25.9	M16
EM 18x45	40	18	49	45	25.9	M16
EM 20x45	40	20	49	45	25.9	M16
EM 25x45	40	25	49	45	25.9	M16



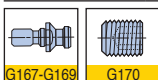
• Aggiungere B per il passaggio del refrigerante attraverso la flangia

DIN69871-EM

Mandrino weldon



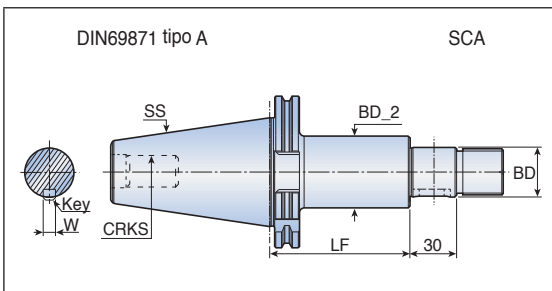
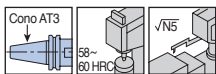
Descrizione	Dimensioni (mm)							
	SS	DCONWS	BD	BD_2	LPR	LBX	LB	CRKS
DIN69871 30 EM 6x50	30	6	25	-	50	30.9	-	M12
EM 8x50	30	8	28	-	50	30.9	-	M12
EM 10x50	30	10	35	-	50	30.9	-	M12
EM 14x63	30	14	44	-	63	43.9	-	M12
EM 16x63	30	16	48	-	63	43.9	-	M12
EM 18x72	30	18	50	-	72	52.9	-	M12
EM 20x72	30	20	52	-	72	52.9	-	M12
DIN69871 40 EM 6x50	40	6	25	-	50	30.9	-	M16
EM 8x50	40	8	28	-	50	30.9	-	M16
EM 10x50	40	10	35	-	50	30.9	-	M16
EM 12x50	40	12	42	-	50	30.9	-	M16
EM 14x63	40	14	44	-	63	43.9	-	M16
EM 16x63	40	16	48	-	63	43.9	-	M16
EM 18x63	40	18	50	-	63	43.9	-	M16
EM 20x63	40	20	52	-	63	43.9	-	M16
EM 25x100	40	25	65	49.0	100	80.9	65	M16
EM 32x100	40	32	71	49.0	100	80.9	65	M16
DIN69871 50 EM 6x63	50	6	25	-	63	43.9	-	M24
EM 8x63	50	8	28	-	63	43.9	-	M24
EM 10x63	50	10	35	-	63	43.9	-	M24
EM 12x63	50	12	42	-	63	43.9	-	M24
EM 14x63	50	14	44	-	63	43.9	-	M24
EM 16x63	50	16	48	-	63	43.9	-	M24
EM 18x63	50	18	50	-	63	43.9	-	M24
EM 20x63	50	20	52	-	63	43.9	-	M24
EM 25x80	50	25	65	-	80	60.9	-	M24
EM 32x100	50	32	72	-	100	80.9	-	M24
EM 40x100	50	40	90	79.9	100	80.9	43	M24
EM 50x125	50	50	98	79.9	125	105.9	90	M24



• Aggiungere B per il passaggio del refrigerante attraverso la flangia ad eccezione del DIN69871 30

DIN69871-SCA

Mandrino per frese a disco



Descrizione	Dimensioni (mm)					
	SS	BD	BD_2	LF	W	CRKS
DIN69871 40 SCA-22-75	40	22	34	75	6	M16
SCA-22-120	40	22	34	120	6	M16
SCA-27-75	40	27	40	75	7	M16
SCA-27-120	40	27	40	120	7	M16
SCA-32-90	40	32	46	90	8	M16
DIN69871 50 SCA-22-90	50	22	34	90	6	M24
SCA-22-135	50	22	34	135	6	M24
SCA-27-90	50	27	40	90	7	M24
SCA-27-135	50	27	40	135	7	M24
SCA-32-90	50	32	46	90	8	M24
SCA-32-135	50	32	46	135	8	M24
SCA-40-90	50	40	55	90	10	M24
SCA-40-135	50	40	55	135	10	M24
SCA-50-90	50	50	68	90	12	M24

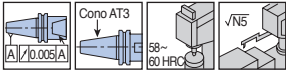
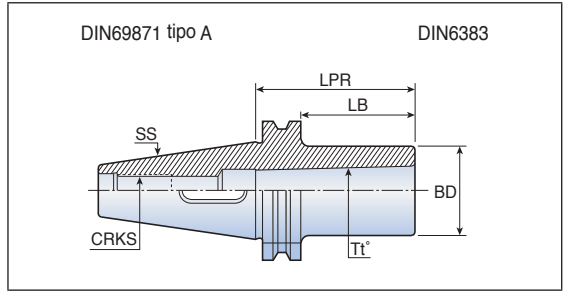


• Chiave e rondelle incluse (3,5,7,8,10,12 mm)

G167-G169

DIN69871-MT

Mandrino cono morse

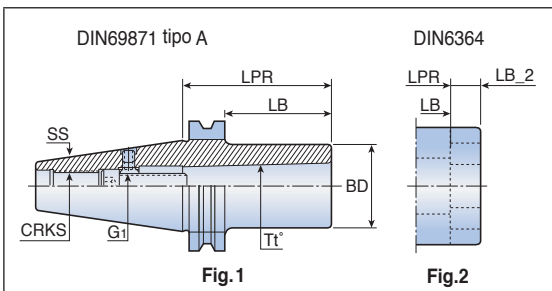
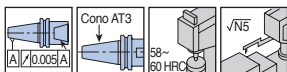


Descrizione	Dimensioni (mm)					
	SS	MT n°	BD	LPR	LB	CRKS
DIN69871 30 MT 3x75	30	MT3	40	75	55.9	M12
DIN69871 40 MT 1x50	40	MT1	25	50	30.9	M16
MT 2x50	40	MT2	32	50	30.9	M16
MT 3x70	40	MT3	40	70	50.9	M16
MT 4x95	40	MT4	48	95	75.9	M16
DIN69871 50 MT 1x45	50	MT1	25	45	25.9	M24
MT 2x60	50	MT2	32	60	40.9	M24
MT 3x65	50	MT3	40	65	45.9	M24
MT 4x95	50	MT4	48	95	75.9	M24
MT 5x105	50	MT5	63	105	85.9	M24



DIN69871-MT-DRW

Mandrino con morse con filetto



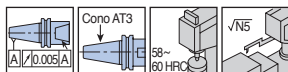
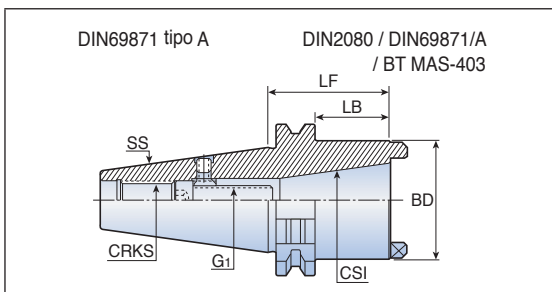
Descrizione	Dimensioni (mm)									Fig.
	SS	MT n°	BD	LPR	LB	LB_2	CRKS	G1		
DIN69871 40	MT1 DRW	40	MT1	25	50	30.9	-	M16	M6	1
	MT2 DRW	40	MT2	32	50	30.9	-	M16	M10	1
	MT3 DRW	40	MT3	40	70	50.9	-	M16	M12	1
	MT4 DRW⁽¹⁾	40	MT4	63	110	90.9	15	M16	M16	2
DIN69871 50	MT1 DRW	50	MT1	25	45	25.9	-	M24	M6	1
	MT2 DRW	50	MT2	32	60	40.9	-	M24	M10	1
	MT3 DRW	50	MT3	40	65	45.9	-	M24	M12	1
	MT4 DRW⁽¹⁾	50	MT4	63	85	65.9	15	M24	M16	2
	MT5 DRW⁽¹⁾	50	MT5	78	118	98.9	18	M24	M20	2

⁽¹⁾ DIN2201



DIN69871-AD

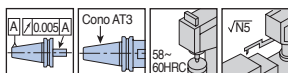
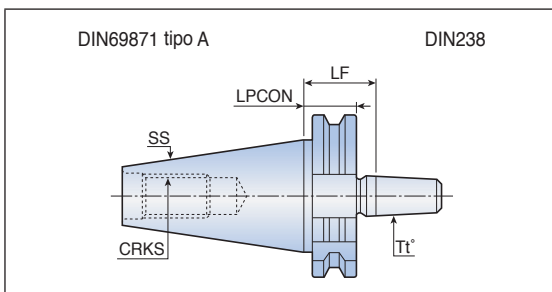
Riduzione



Descrizione	Dimensioni (mm)						
	SS	CSI	BD	LF	LB	CRKS	G1
DIN69871 40 AD DIN2080 30	40	DIN2080 30	50	50	30.9	M16	M12
DIN69871 50 AD BT/SK 40	50	BT/SK 40	66	70	50.9	M24	M16

DIN69871-DC

Mandrino per portapunte



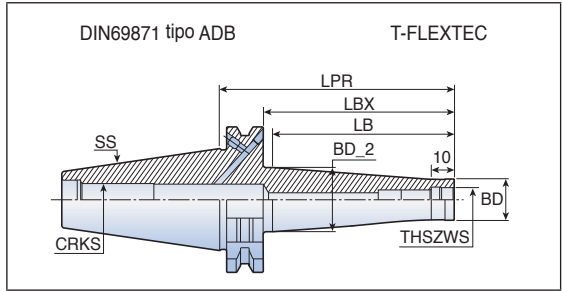
Descrizione	Dimensioni (mm)				
	SS	B n°	LF	LPCON	CRKS
DIN69871 30 DC B12x26	30	B12	26	19.1	M12
DIN69871 40 DC B12x26	40	B12	26	19.1	M16
DC B16x26	40	B16	26	19.1	M16
DC B18x26	40	B18	26	19.1	M16
DIN69871 50 DC B16x26	50	B16	26	19.1	M24
DC B18x26	50	B16	26	19.1	M24



• Portapunte non incluso

G167-G169

T-FLEXTEC mandrino modulare



G2.5 20,000 g/min			Cono AT3		
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Descrizione	Dimensioni (mm)							
	SS	THSZWS	BD	BD_2	LPR	LBX	LB	CRKS
DIN69871 40 ODP 6x58	40	M06	9.8	13.0	58	38.9	32	M16
ODP 6x98	40	M06	9.8	23.0	98	78.9	74	M16
ODP 8x58	40	M08	13.1	15.0	58	38.9	32	M16
ODP 8x98	40	M08	13.1	23.0	98	78.9	74	M16
ODP 10x58	40	M10	18.0	20.0	58	38.9	32	M16
ODP 10x98	40	M10	18.0	28.0	98	78.9	74	M16
ODP 12x58	40	M12	21.0	24.0	58	38.9	32	M16
ODP 12x98	40	M12	21.0	31.0	98	78.9	74	M16
ODP 16x58	40	M16	29.0	28.6	58	38.9	32	M16
ODP 16x98	40	M16	29.0	34.0	98	78.9	74	M16
DIN69871 50 ODP 12x78⁽¹⁾	50	M12	23.0	30.0	78	58.9	50	M24
ODP 12x128⁽¹⁾	50	M12	23.0	40.0	128	108.9	100	M24
ODP 12x178⁽¹⁾	50	M12	23.0	40.0	178	158.9	150	M24
ODP 12x228⁽¹⁾	50	M12	23.0	46.0	228	208.9	200	M24
ODP 16x78⁽¹⁾	50	M16	29.0	34.0	78	58.9	50	M24
ODP 16x128⁽¹⁾	50	M16	29.0	40.0	128	108.9	100	M24
ODP 16x178⁽¹⁾	50	M16	29.0	55.0	178	158.9	150	M24
ODP 16x228⁽¹⁾	50	M16	29.0	55.0	228	208.9	200	M24



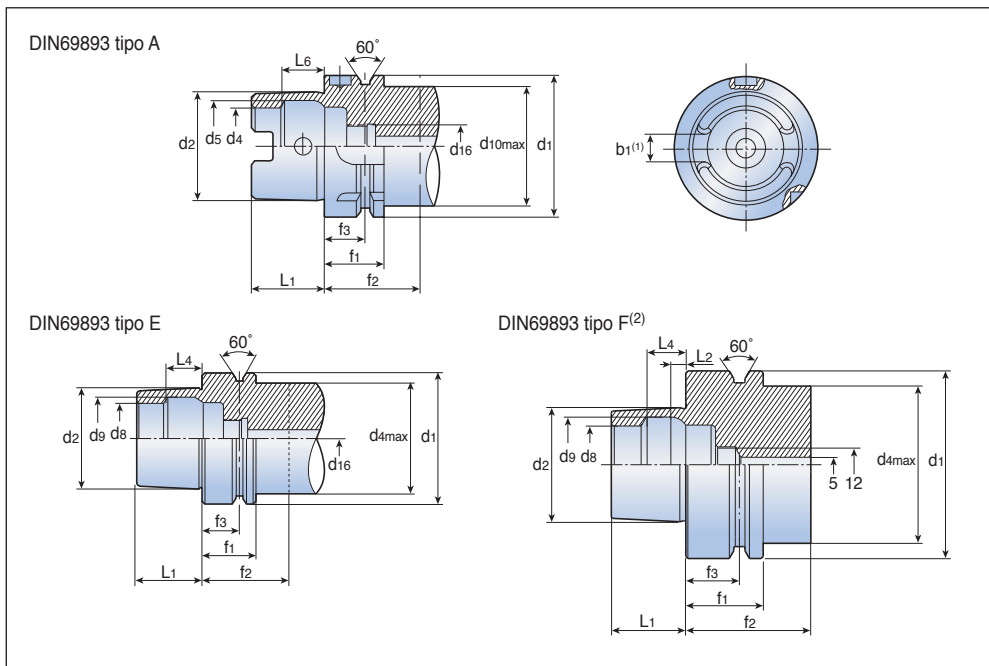
- Se è richiesto il "tipo B" rimuovere i tappi a vite dai fori di lubrificazione sulla flangia (usare una chiave esagonale da 2 mm)
- ⁽¹⁾ Bilanciato G6.3 a 12,000 g/min

HSK



DIN69893 Tipo A/E/F

Attacco standard



DIN69893 tipo A

HSK-A	d1 h10	d2	d4 H10	d5 H11	d10max	d16	L1 -0.2	L6 JS10	b1 ±0.04 ⁽¹⁾	f1 -0.1	f2min	f3 ±0.1
40	40	30	21	25.5	34	M12x1	20	11.42	8.05	20	35	16
50	50	38	26	32.0	42	M16x1	25	14.13	10.54	26	42	18
63	63	48	34	40.0	53	M18x1	32	18.13	12.54(12.42)	26	42	18
80	80	60	42	50.0	67	M20x1.5	40	22.85	16.04	26	42	18
100	100	75	53	63.0	85	M24x1.5	50	28.56	20.02 (19.9)	29	45	20

• ⁽¹⁾ Le dimensioni tra parentesi della colonna b1 si riferiscono solo agli attacchi HSK A...WH.

Questi mandrini presentano delle chiavette con diverse tolleranze per un più preciso posizionamento del tagliente nell'utilizzo su torni (secondo lo standard giapponese ICTM e standard ISO 12164/3)

DIN69893 tipo E

HSK-E	d1 h10	d2	d4max	d8 H10	d9 H11	d16	L1 -0.2	L4 JS10	f1 -0.1	f2min	f3 ±0.1
32	32	24	26	17	19.0	M10x1	16	8.92	20	35	16
40	40	30	34	21	25.5	M12x1	20	11.42	20	35	16
50	50	38	42	26	32.0	M16x1	25	14.13	26	42	18
63	63	48	53	34	40.0	M18x1	32	18.13	26	42	18

DIN69893 tipo F⁽²⁾

HSK-F	d1 h10	d2	d4max	d8 H10	d9 H11	L1 -0.2	L2	L4 JS10	f1 -0.1	f2min	f3 ±0.1
63	63	38	53	26	32	25	5.0	14.13	26	42	18

• ⁽²⁾ Senza foro

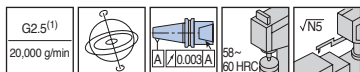
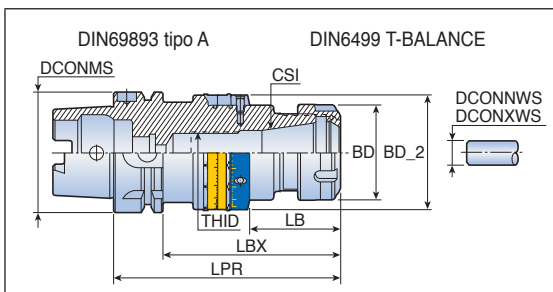
* Per materiale non in stock: le condizioni di fornitura sono soggette a disponibilità.

Se non disponibile in magazzino sarà applicata MOQ (quantità minima ordine).

HSK A-ER-BIN



Mandrino a pinza ER bilanciabile



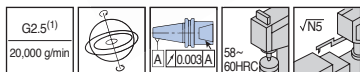
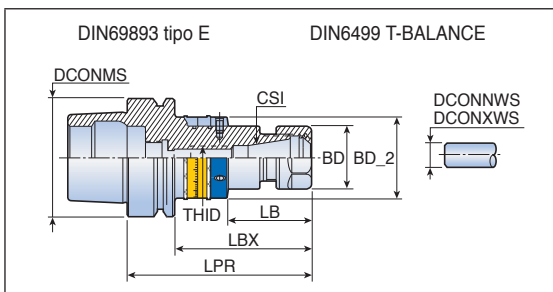
Descrizione	Dimensioni (mm)									
	DCONMS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	THID
HSK A 63 ER 16x100 BIN	63	ER16	0.5	10.0	28	44	100	74	45.0	M10
ER 16x160 BIN	63	ER16	0.5	10.0	28	44	160	134	75.0	M10
ER 20x100 BIN	63	ER20	1.0	13.0	34	44	100	74	45.1	M12
ER 20x160 BIN	63	ER20	1.0	13.0	34	44	160	134	86.1	M12
ER 25x100 BIN	63	ER25	1.0	16.0	42	44	100	74	45.2	M16
ER 25x160 BIN	63	ER25	1.0	16.0	42	44	160	134	86.2	M16
ER 32x120 BIN	63	ER32	2.0	20.0	50	60	120	94	48.0	M22x1.5
ER 32x160 BIN	63	ER32	2.0	20.0	50	60	160	134	85.0	M22x1.5

• (1) Valore di bilanciatura preimpostata

HSK E-ER-BIN



Mandrino a pinza ER bilanciabile



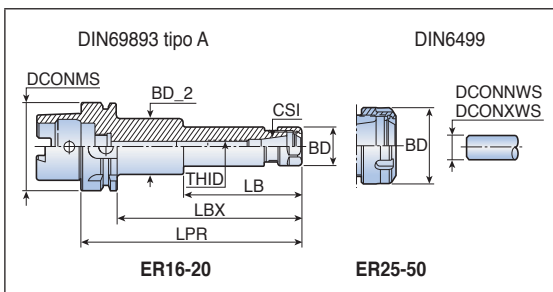
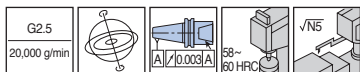
Descrizione	Dimensioni (mm)									
	DCONMS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	THID
HSK E 63 ER 16x100 BIN	63	ER16	0.5	10.0	28	44	100	74	45.0	M10
ER 20x100 BIN	63	ER20	1.0	13.0	34	44	100	74	45.1	M12
ER 25x100 BIN	63	ER25	1.0	13.0	42	44	100	74	45.2	M16
ER 32x120 BIN	63	ER32	2.0	20.0	50	60	120	94	48.0	M22x1.5



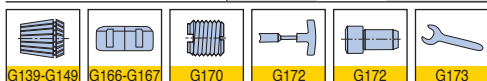
• (1) Valore di bilanciatura preimpostata

HSK A-ER

Mandrino a pinza ER

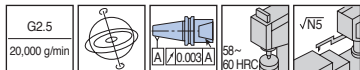
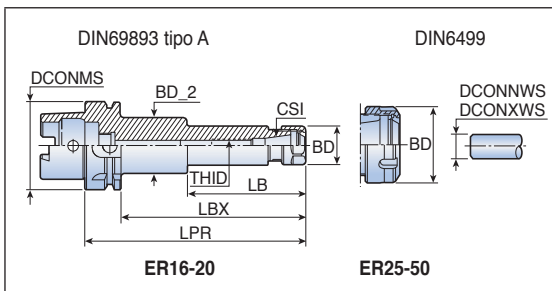


Descrizione	Dimensioni (mm)										
	DCONMS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	THID	
HSK A 40 ER 16x60	40	ER16	0.5	10.0	28	-	60	40	-	-	
ER 16x80	40	ER16	0.5	10.0	28	-	80	60	-	M10	
ER 16x100	40	ER16	0.5	10.0	28	-	100	80	-	M10	
ER 25x60	40	ER25	1.0	16.0	42	32.4	60	40	28.0	-	
ER 25x80	40	ER25	1.0	16.0	42	32.4	80	60	28.0	M18x1.5	
ER 25x100	40	ER25	1.0	16.0	42	32.4	100	80	28.0	M16	
ER 32x100	40	ER32	2.0	20.0	50	40.4	100	80	31.0	M22x1.5	
HSK A 50 ER 16x100	50	ER16	0.5	10.0	28	-	100	74	-	M10	
ER 16x120	50	ER16	0.5	10.0	28	-	120	94	-	M10	
ER 20x100	50	ER20	1.0	13.0	34	-	100	74	-	M12	
ER 20x120	50	ER20	1.0	13.0	34	-	120	94	-	M12	
ER 25x80	50	ER25	1.0	16.0	42	32.4	80	54	28.0	M8	
ER 25x100	50	ER25	1.0	16.0	42	41.8	100	74	28.5	M16	
ER 32x100	50	ER32	2.0	20.0	50	40.4	100	74	31.0	M22x1.5	
ER 32x120	50	ER32	2.0	20.0	50	41.8	120	94	35.0	M22x1.5	
HSK A 63 ER 16x100	63	ER16	0.5	10.0	28	-	100	74	-	M10	
ER 16x120	63	ER16	0.5	10.0	28	-	120	94	-	M10	
ER 16x160	63	ER16	0.5	10.0	28	40.0	160	134	85.6	M10	
ER 20x100	63	ER20	1.0	13.0	34	-	100	74	-	M12	
ER 20x120	63	ER20	1.0	13.0	34	-	120	94	-	M12	
ER 20x160	63	ER20	1.0	13.0	34	45.0	160	134	85.0	M12	
ER 25x80	63	ER25	1.0	16.0	42	-	80	54	-	M8	
ER 25x100	63	ER25	1.0	16.0	42	-	100	74	-	M16	
ER 25x120	63	ER25	1.0	16.0	42	-	120	94	-	M16	
ER 25x160	63	ER25	1.0	16.0	42	-	160	134	-	M16	
ER 32x80	63	ER32	2.0	20.0	50	40.4	80	54	31.0	-	
ER 32x100	63	ER32	2.0	20.0	50	-	100	74	-	M22x1.5	
ER 32x120	63	ER32	2.0	20.0	50	-	120	94	-	M22x1.5	
ER 32x160	63	ER32	2.0	20.0	50	-	160	134	-	M22x1.5	
ER 40x80	63	ER40	3.0	26.0	63	50.4	80	54	34.0	-	
ER 40x100	63	ER40	3.0	26.0	63	50.4	100	74	34.0	M28x1.5	
ER 40x120	63	ER40	3.0	26.0	63	50.4	120	94	34.0	M28x1.5	

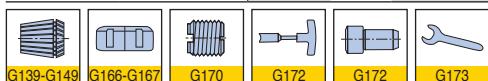


HSK A-ER

Mandrino a pinza ER



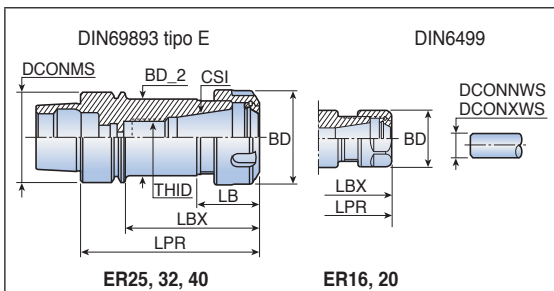
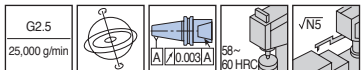
Descrizione	Dimensioni (mm)									
	DCONMS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	THID
HSK A 100 ER 16x100⁽¹⁾	100	ER16	0.5	10.0	28	-	100	71	-	M10
ER 16x160⁽¹⁾	100	ER16	0.5	10.0	28	40	160	131	85	M10
ER 20x100⁽¹⁾	100	ER20	1.0	13.0	34	-	100	71	-	M12
ER 20x160⁽¹⁾	100	ER20	1.0	13.0	34	50	160	131	85	M12
ER 25x100⁽¹⁾	100	ER25	1.0	16.0	42	-	100	71	-	M16
ER 25x120⁽¹⁾	100	ER25	1.0	16.0	42	-	120	91	-	M16
ER 25x160⁽¹⁾	100	ER25	1.0	16.0	42	-	160	134	-	M16
ER 32x100⁽¹⁾	100	ER32	2.0	20.0	50	-	100	71	-	M22x1.5
ER 32x120⁽¹⁾	100	ER32	2.0	20.0	50	-	120	91	-	M22x1.5
ER 32x160⁽¹⁾	100	ER32	2.0	20.0	50	-	160	131	-	M22x1.5
ER 40x100⁽¹⁾	100	ER40	3.0	26.0	63	-	100	71	-	M28x1.5
ER 40x120⁽¹⁾	100	ER40	3.0	26.0	63	-	120	91	-	M28x1.5
ER 40x160⁽¹⁾	100	ER40	3.0	26.0	63	-	160	131	-	M28x1.5
ER 50x100⁽¹⁾	100	ER50	10.0	34.0	78	-	100	71	-	M22x1.5



• ⁽¹⁾ Bilanciato G6.3 a 12,000 g/min

HSK E-ER

Mandrino a pinza ER



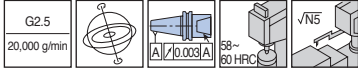
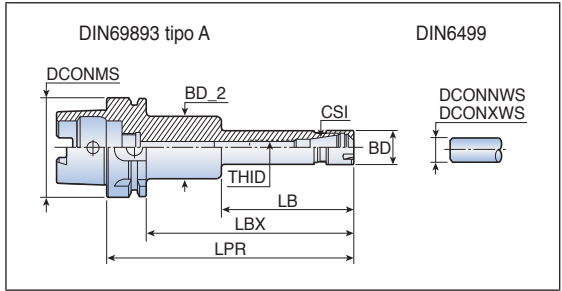
Descrizione	Dimensioni (mm)									
	DCONMS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	THID
HSK E 32 ER 16x60	32	ER16	0.5	10.0	28	22.4	60	40	21.5	-
ER 20x60	32	ER20	1.0	13.0	34	25.4	60	40	26.0	-
ER 25x65	32	ER25	1.0	16.0	42	25.8	65	45	30.0	-
HSK E 40 ER 16x60	40	ER16	0.5	10.0	28	-	60	40	-	-
ER 16x80	40	ER16	0.5	10.0	28	-	80	60	-	M10
ER 20x80	40	ER20	1.0	13.0	34	-	80	60	-	M12
ER 25x80	40	ER25	1.0	16.0	42	34.0	80	60	28.0	M18x1.5
ER 32x80	40	ER32	2.0	20.0	50	40.1	-	60	31.0	M22x1.5
HSK E 50 ER 16x80	50	ER16	0.5	10.0	28	-	80	54	-	M10
ER 16x100	50	ER16	0.5	10.0	28	-	100	74	-	M10
ER 16x100 M⁽¹⁾	50	ER16	0.5	10.0	22	-	100	74	-	M10
ER 20x80	50	ER20	1.0	13.0	34	-	80	54	-	M12
ER 25x80	50	ER25	1.0	16.0	42	32.4	80	54	28.0	M16
ER 32x80	50	ER32	2.0	20.0	50	40.4	80	54	31.0	-
ER 32x100	50	ER32	2.0	20.0	50	40.4	100	74	31.0	M22x1.5
HSK E 63 ER 16x80	63	ER16	0.5	10.0	28	-	80	54	-	M10
ER 16x100	63	ER16	0.5	10.0	28	-	100	74	-	M10
ER 20x75	63	ER20	1.0	13.0	34	-	75	49	-	-
ER 32x80	63	ER32	2.0	20.0	50	40.4	80	54	31.0	-
ER 32x100	63	ER32	2.0	20.0	50	-	100	75	-	M22x1.5
ER 40x80	63	ER40	3.0	26.0	63	-	80	54	34.0	-

⁽¹⁾ Equipaggiato con ghiera ER16 MINI

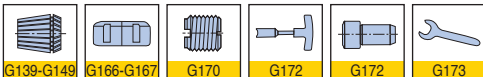


HSK A-ER-M

Mandrino a pinza ER mini



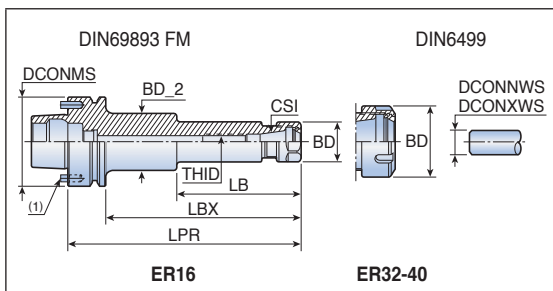
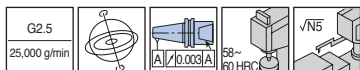
Descrizione	Dimensioni (mm)										
	DCONMS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	THID	
HSK A 50	ER 16x100 M	50	ER16	0.5	10.0	22	-	100	74	-	M10
	ER 16x120 M	50	ER16	0.5	10.0	22	-	120	94	-	M10
	ER 20x100 M	50	ER20	1.0	13.0	28	-	100	74	-	M12
	ER 20x120 M	50	ER20	1.0	13.0	28	-	120	94	-	M12
HSK A 63	ER 16x100 M	63	ER16	0.5	10.0	22	-	100	74	-	M10
	ER 16x120 M	63	ER16	0.5	10.0	22	40	120	94	78	M10
	ER 16x160 M	63	ER16	0.5	10.0	22	40	160	134	85	M10
	ER 20x100 M	63	ER20	1.0	13.0	28	-	100	74	-	M12
	ER 20x120 M	63	ER20	1.0	13.0	28	-	120	94	-	M12
	ER 20x160 M	63	ER20	1.0	13.0	28	45	160	134	85	M12
	HSK A 100	ER 16x100 M⁽¹⁾	100	ER16	0.5	10.0	22	-	100	71	-
	ER 16x160 M⁽¹⁾	100	ER16	0.5	10.0	22	40	160	131	85	M10
	ER 20x100 M⁽¹⁾	100	ER20	1.0	13.0	28	-	100	71	-	M12
	ER 20x160 M⁽¹⁾	100	ER20	1.0	13.0	28	45	160	131	85	M12



• ⁽¹⁾ Bilanciato G6.3 a 12,000 g/min

HSK FM-ER

Mandrino a pinza ER

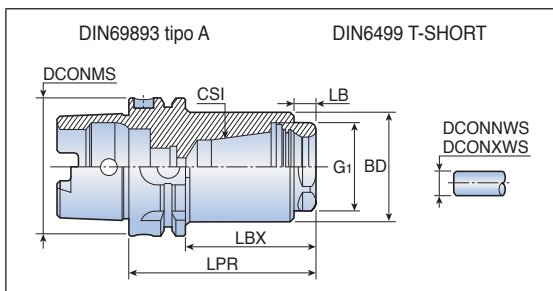
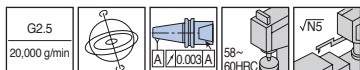


Descrizione	Dimensioni (mm)									
	DCONMS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	THID
HSK FM 63 ER 16x80	63	ER16	0.5	10.0	28	-	80	54	-	M10
ER 16x100	63	ER16	0.5	10.0	28	-	100	74	-	M10
ER 16x120	63	ER16	0.5	10.0	28	-	120	94	-	M10
ER 16x160	63	ER16	0.5	10.0	28	40	160	134	85.6	M10
ER 32x80	63	ER32	2.0	20.0	50	-	80	54	-	-
ER 32x100	63	ER32	2.0	20.0	50	-	100	74	-	M22x1.5
ER 40x80	63	ER40	3.0	26.0	63	50	80	54	32.0	-
ER 40x100	63	ER40	3.0	26.0	63	50	100	74	32.0	M28x1.5

• ⁽¹⁾ I perni di guida possono essere rimossi per trasformare il mandrino in HSK F63 standard

HSK A-ER-SHORT

Mandrino a pinza ER corto



Descrizione	Dimensioni (mm)									
	DCONMS	CSI	DCONNWS	DCONXWS	BD	LPR	LBX	LB	G1	
HSK A 63 ER 32 SHORT	63	ER32	2.0	10.0	50	81.0	55.0	9.5	M40x1.5	
HSK A 100 ER 32 SHORT	100	ER32	2.0	10.0	50	89.5	60.5	9.5	M40x1.5	
ER 40 SHORT	100	ER40	3.0	26.0	70	104.5	75.5	9.5	M50x1.5	

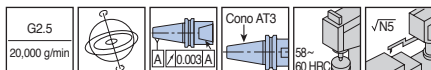
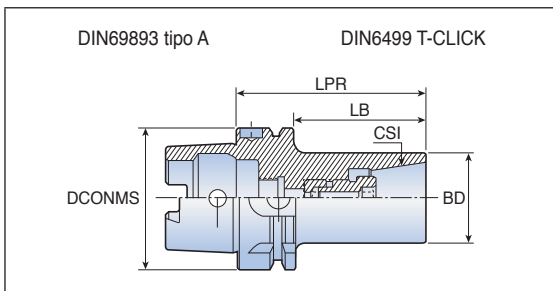


• ⁽¹⁾ Equipaggiato con ghiera ER16 MINI

HSK A-ER-CLICK-IN



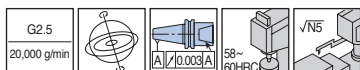
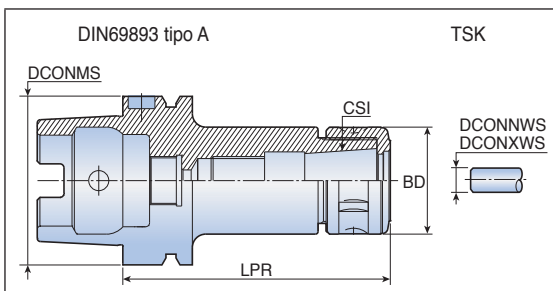
Mandrino a pinza ER a cambio rapido



Descrizione	Dimensioni (mm)				
	DCONMS	CSI	BD	LPR	LB
HSK A 63 ER32 CLICK-IN	63	32 SRF	41	85	59

HSK A-TSK

Mandrino a pinza TSK



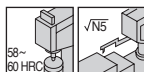
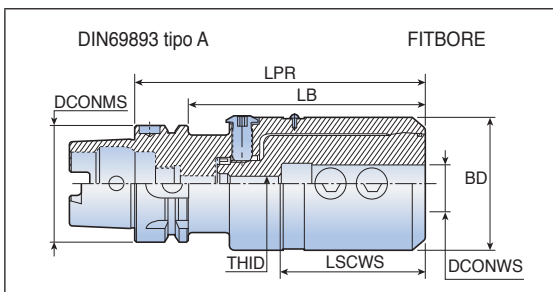
Descrizione	Dimensioni (mm)					
	DCONMS	CSI	DCONNWS	DCONXWS	BD	LPR
HSK A 50 TSK 6-80	50	TSK6	1.5	6.0	19.5	80
TSK 10-90	50	TSK10	1.5	10.0	27.5	90
TSK 16-100	50	TSK16	2.5	16.0	40.0	100
HSK A 63 TSK 6-80	63	TSK6	1.5	6.0	19.5	80
TSK 10-90	63	TSK10	1.5	10.0	27.5	90
TSK 16-100	63	TSK16	2.5	16.0	40.0	100
TSK 25-120	63	TSK20	15.5	25.4	55.0	120
HSK A 100 TSK 6-80	100	TSK6	1.5	6.0	19.5	80
TSK 10-90	100	TSK10	1.5	10.0	27.5	90
TSK 16-100	100	TSK16	2.5	16.0	40.0	100
TSK 25-120	100	TSK25	15.5	25.4	55.0	120



FITBORE HSK A-EM



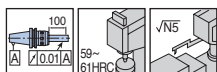
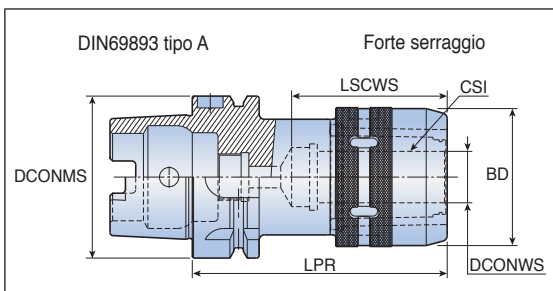
Mandrino per la regolazione del diametro di foratura



Descrizione	Dimensioni (mm)						
	DCONMS	DCONWS	BD	LPR	LB	LSCWS	THID
FITBORE HSK A 63 EM 25	63	25	72	142	116	71	M10
EM 32	63	32	72	142	116	71	M10
EM 40	63	40	72	142	116	71	M10

HSK A-TMC

Mandrino a forte serraggio

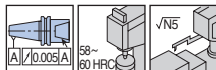
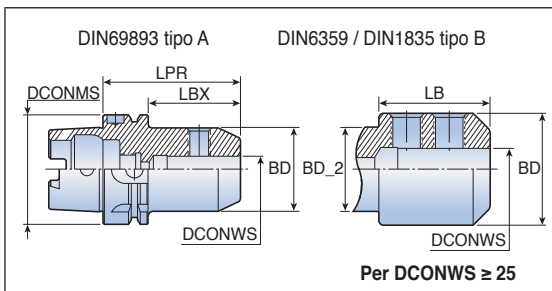


Descrizione	Dimensioni (mm)					
	DCONMS	CSI	DCONWS	BD	LPR	LSCWS
HSK A 63 TMC 20-105	63	20	20	54	105	70
TMC 25-120	63	25	25	62	120	80
TMC 32-130	63	32	32	72	130	100
HSK A 100 TMC 20-110	100	20	20	54	110	70
TMC 25-130	100	25	25	62	130	80
TMC 32-135	100	32	32	72	135	100
TMC 42-135	100	42	42	92	135	100



HSK A-EM

Mandrino weldon

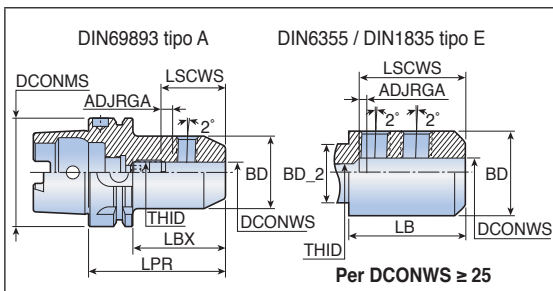
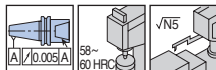


Descrizione	Dimensioni (mm)							
	DCONMS	DCONWS	BD	BD_2	LPR	LBX	LB	
HSK A 50	EM 6x65	50	6	25	-	65	39	-
	EM 8x65	50	8	28	-	65	39	-
	EM 10x65	50	10	35	-	65	39	-
	EM 14x80	50	14	44	-	80	54	-
	EM 16x80	50	16	48	-	80	54	-
	EM 18x80	50	18	50	-	80	54	-
	EM 20x80	50	20	52	-	80	54	-
HSK A 63	EM 6x65	63	6	25	-	65	39	-
	EM 8x65	63	8	28	-	65	39	-
	EM 10x65	63	10	35	-	65	39	-
	EM 12x80	63	12	42	-	80	54	-
	EM 14x80	63	14	44	-	80	54	-
	EM 16x80	63	16	48	-	80	54	-
	EM 18x80	63	18	50	-	80	54	-
	EM 20x80	63	20	52	-	80	54	-
	EM 25x110	63	25	65	52	110	84	65.5
	EM 32x110	63	32	72	52	110	84	65.5
HSK A 100	EM 8x80	100	8	28	-	80	51	-
	EM 10x80	100	10	35	-	80	51	-
	EM 12x80	100	12	42	-	80	51	-
	EM 14x80	100	14	44	-	80	51	-
	EM 16x100	100	16	48	-	100	71	-
	EM 18x100	100	18	50	-	100	71	-
	EM 20x100	100	20	52	-	100	71	-
	EM 25x100	100	25	65	-	100	71	-
	EM 32x100	100	32	72	-	100	71	-
	EM 40x110	100	40	85	-	110	81	-



HSK A-EM-E

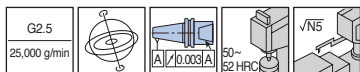
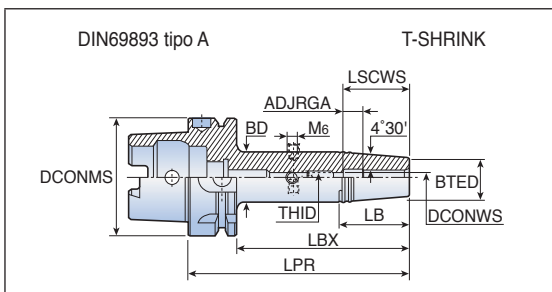
Mandrino whistle notch



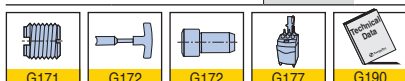
Descrizione	Dimensioni (mm)										
	DCONMS	DCONWS	BD	BD_2	LPR	LBX	LB	ADJRGA	LSCWS	THID	
HSK A 50	EM 6x80 E	50	6	25	-	80	54	-	8	38	M5
	EM 8x80 E	50	8	28	-	80	54	-	5	40	M6
	EM 10x80 E	50	10	35	-	80	54	-	5	44	M8
	EM 12x90 E	50	12	42	-	90	64	-	5	49	M10
	EM 14x90 E	50	14	44	-	90	64	-	5	49	M10
	EM 16x90 E	50	16	48	-	90	64	-	5	52	M12
	EM 18x90 E	50	18	50	-	90	64	-	5	52	M12
	EM 20x100 E	50	20	52	-	100	74	-	5	54	M16
HSK A 63	EM 6x80 E	63	6	25	-	80	54	-	8	40	M5
	EM 8x80 E	63	8	28	-	80	54	-	5	40	M6
	EM 10x80 E	63	10	35	-	80	54	-	5	44	M8
	EM 12x90 E	63	12	42	-	90	64	-	5	49	M10
	EM 14x90 E	63	14	44	-	90	64	-	5	49	M10
	EM 16x100 E	63	16	48	-	100	74	-	5	52	M12
	EM 18x100 E	63	18	50	-	100	74	-	8	55	M12
	EM 20x100 E	63	20	52	-	100	74	-	5	54	M16
HSK A 100	EM 25x110 E	63	25	65	52	110	84	65.5	7	61	M16
	EM 32x110 E	63	32	72	52	110	84	65.5	5	63	M20x1.5
	EM 6x90 E	100	6	25	-	90	61	-	5	40	M5
	EM 8x90 E	100	8	28	-	90	61	-	5	40	M6
	EM 10x90 E	100	10	35	-	90	61	-	5	44	M8
	EM 12x100 E	100	12	42	-	100	71	-	10	54	M10
	EM 14x100 E	100	14	44	-	100	71	-	10	54	M10
	EM 16x100 E	100	16	48	-	100	71	-	5	52	M12
EM 18x100 E	100	18	50	-	100	71	-	5	52	M12	
EM 20x110 E	100	20	52	-	110	81	-	5	54	M16	
EM 25x120 E	100	25	65	-	120	91	-	7	61	M20x1.5	
EM 32x120 E	100	32	72	-	120	91	-	5	63	M20x1.5	



Mandrino a calettamento



Descrizione	Dimensioni (mm)										
	DCONMS	DCONWS	BTED	BD	LPR	LBX	LB	ADJRGGA	LSCWS	THID	Chiave
HSK A 50 SRKIN 6x80	50	6	21	27	80	54	38	11	36	M5	2.5
SRKIN 8x80	50	8	21	27	80	54	38	11	36	M6	3.0
SRKIN 10x85	50	10	24	32	85	59	51	11	42	M8	4.0
SRKIN 12x90	50	12	24	32	90	64	51	11	47	M10	5.0
SRKIN 14x90	50	14	27	34	90	64	45	11	47	M10	5.0
SRKIN 16x95	50	16	27	34	95	69	45	11	50	M10	5.0
HSK A 63 SRKIN 6x80	63	6	21	27	80	54	38	11	36	M5	2.5
SRKIN 6x120	63	6	21	27	120	94	38	11	36	M5	2.5
SRKIN 6x160	63	6	21	27	160	134	38	11	36	M5	2.5
SRKIN 8x80	63	8	21	27	80	54	38	11	36	M6	3.0
SRKIN 8x120	63	8	21	27	120	94	38	11	36	M6	3.0
SRKIN 8x160	63	8	21	27	160	134	38	11	36	M6	3.0
SRKIN 10x85	63	10	24	32	85	54	51	11	42	M8	4.0
SRKIN 10x120	63	10	24	32	120	94	51	11	42	M8	4.0
SRKIN 10x160	63	10	24	32	160	134	51	11	42	M8	4.0
SRKIN 12x90	63	12	24	32	90	64	51	6	42	M8	4.0
SRKIN 12x120	63	12	24	32	120	94	51	11	47	M10	5.0
SRKIN 12x160	63	12	24	32	160	134	51	11	47	M10	5.0
SRKIN 14x90	63	14	27	34	90	64	45	11	47	M10	5.0
SRKIN 14x120	63	14	27	34	120	94	45	11	47	M10	5.0
SRKIN 14x160	63	14	27	34	160	134	45	11	47	M10	5.0
SRKIN 16x75	63	16	27	34	75	49	-	11	50	-	-
SRKIN 16x95	63	16	27	34	95	69	44	11	50	M12	6.0
SRKIN 16x120	63	16	27	34	120	94	44	11	50	M12	6.0
SRKIN 16x160	63	16	27	34	160	134	44	11	50	M12	6.0
SRKIN 18x95	63	18	33	42	95	69	57	11	50	M12	6.0
SRKIN 18x120	63	18	33	42	120	94	57	11	50	M12	6.0
SRKIN 18x160	63	18	33	42	160	134	57	11	50	M12	6.0
SRKIN 20x75	63	20	33	41	75	49	-	9	50	-	-
SRKIN 20x100	63	20	33	42	100	74	57	11	52	M16	8.0
SRKIN 20x120	63	20	33	42	120	94	57	11	52	M16	8.0
SRKIN 20x160	63	20	33	42	160	134	57	11	52	M16	8.0
SRKIN 25x85	63	25	44	53	85	59	-	11	58	-	-

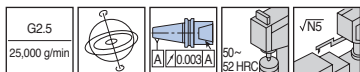
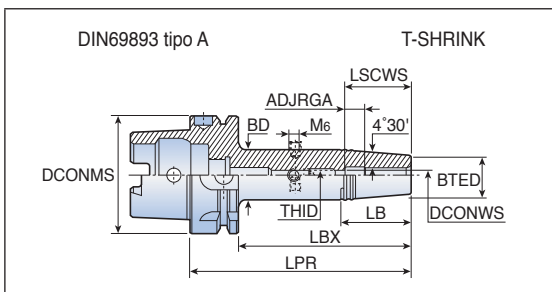


• Per i mandrini T-SHRINK usare solo il calettamento a induzione

HSK A-SRKIN

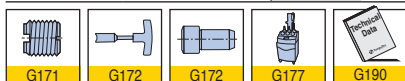


Mandrino a calettamento

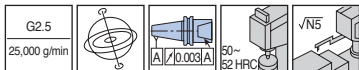
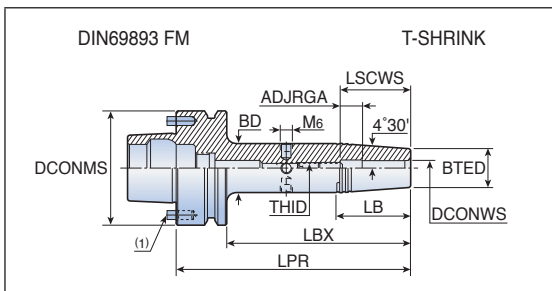


Descrizione	Dimensioni (mm)										
	DCONMS	DCONWS	BTED	BD	LPR	LBX	LB	ADJRG A	LSCWS	THID	Chiave
HSK A 63 SRKIN 25x115	63	25	44	53	115	89	55	11	58	M16	8.0
SRKIN 32x85	63	32	44	53	85	59	-	11	58	-	-
SRKIN 32x120	63	32	44	53	120	94	55	11	58	M16	8.0
HSK A 100 SRKIN 6x85	100	6	21	27	85	56	38	11	36	M5	2.5
SRKIN 6x120	100	6	21	27	120	91	38	11	36	M5	2.5
SRKIN 6x160	100	6	21	27	160	131	38	11	36	M6	3.0
SRKIN 8x85	100	8	21	27	85	56	38	11	36	M6	3.0
SRKIN 8x120	100	8	21	27	120	91	38	11	36	M6	3.0
SRKIN 8x160	100	8	21	27	160	131	38	11	36	M6	3.0
SRKIN 10x90	100	10	24	32	90	61	51	11	42	M8	4.0
SRKIN 10x120	100	10	24	32	120	91	51	11	42	M8	4.0
SRKIN 10x160	100	10	24	32	160	131	51	11	42	M8	4.0
SRKIN 12x95	100	12	24	32	95	66	51	11	47	M10	5.0
SRKIN 12x120	100	12	24	32	120	91	51	11	47	M10	5.0
SRKIN 12x160	100	12	24	32	160	131	51	11	47	M10	5.0
SRKIN 14x95	100	14	27	34	95	66	45	11	47	M10	5.0
SRKIN 14x120	100	14	27	34	120	91	45	11	47	M10	5.0
SRKIN 14x160	100	14	27	34	160	131	45	11	47	M10	5.0
SRKIN 16x100	100	16	27	34	100	71	45	11	50	M12	6.0
SRKIN 16x120	100	16	27	34	120	91	45	11	50	M12	6.0
SRKIN 16x160	100	16	27	34	160	131	45	11	50	M12	6.0
SRKIN 18x100	100	18	33	42	100	71	57	11	50	M12	6.0
SRKIN 18x160	100	18	33	42	160	131	57	11	50	M12	6.0
SRKIN 20x105	100	20	33	42	105	76	57	11	52	M16	8.0
SRKIN 20x160	100	20	33	42	160	131	57	11	52	M16	8.0
SRKIN 25x115	100	25	44	53	115	86	57	11	58	M16	8.0
SRKIN 32x120	100	32	44	53	120	91	57	11	58	M16	8.0

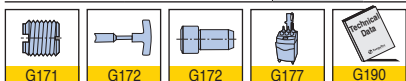
• Per i mandrini T-SHRINK usare solo il calettamento a induzione



Mandrino a calettamento

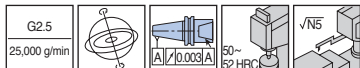
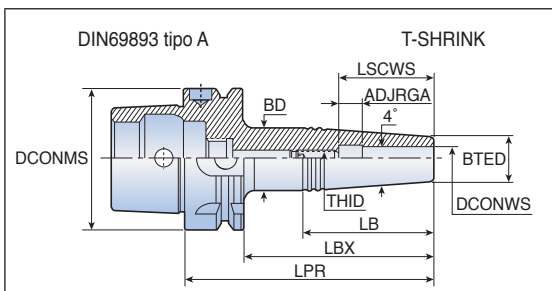


Descrizione	Dimensioni (mm)										
	DCONMS	DCONWS	BTED	BD	LPR	LBX	LB	ADJRGA	LSCWS	THID	Chiave
HSK FM 63 SRKIN 6x80	63	6	21	27.0	80	54	38.0	11	36	M5	2.5
SRKIN 8x80	63	8	21	37.0	80	54	38.0	11	36	M6	3.0
SRKIN 10x85	63	10	24	32.0	85	59	50.5	11	42	M8	4.0
SRKIN 12x90	63	12	24	32.0	90	64	50.5	11	47	M10	5.0
SRKIN 14x90	63	14	27	34.0	90	64	44.5	11	47	M10	5.0
SRKIN 16x95	63	16	27	34.0	95	69	44.5	11	50	M12	6.0
SRKIN 18x95	63	18	33	42.0	95	69	57.0	11	50	M12	6.0
SRKIN 20x100	63	20	33	42.0	100	74	57.0	11	52	M16	8.0
SRKIN 25x115	63	25	44	52.7	115	89	55.0	11	58	M16	8.0
SRKIN 32x120	63	32	44	52.7	120	94	55.0	11	58	M16	8.0



•⁽¹⁾ I perni di guida possono essere rimossi per trasformare il mandrino in HSK F63 standard

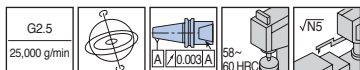
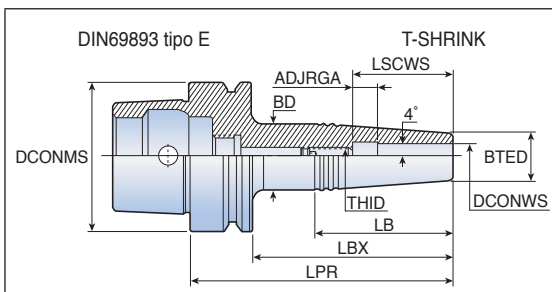
Mandrino a calettamento



Descrizione	Dimensioni (mm)										
	DCONMS	DCONWS	BTED	BD	LPR	LBX	LB	ADJRGA	LSCWS	THID	Chiave
HSK A 63 SRK 3x50	63	3	10	17	76	50	-	6	16	M6	3.0
SRK 3x85	63	3	10	21	111	85	79	6	16	M6	3.0
SRK 4x50	63	4	10	17	76	50	-	6	18	M6	3.0
SRK 4x85	63	4	10	21	111	85	79	6	18	M6	3.0
SRK 5x50	63	5	10	17	76	50	-	6	21	M6	3.0
SRK 5x85	63	5	10	21	111	85	79	6	21	M6	3.0
SRK 6x50	63	6	11	18	76	50	-	6	24	M8	4.0
SRK 6x85	63	6	11	22	111	85	79	6	24	M8	4.0
SRK 8x50	63	8	14	20	76	50	43	11	36	M6	3.0
SRK 8x85	63	8	14	23	111	85	64	11	36	M6	3.0
SRK 10x50	63	10	16	23	76	50	-	11	41	M8	4.0
SRK 10x85	63	10	16	26	111	85	72	11	41	M8	4.0
SRK 12x50	63	12	20	27	76	50	-	11	43	M8	4.0
SRK 12x85	63	12	20	30	111	85	72	11	43	M8	4.0



Mandrino a calettamento



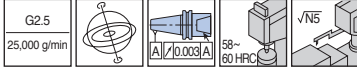
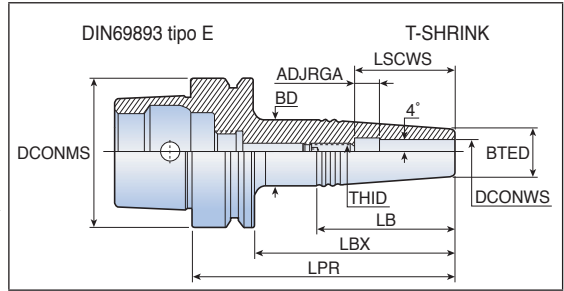
Descrizione	Dimensioni (mm)										
	DCONMS	DCONWS	BTED	BD	LPR	LBX	LB	ADJRGA	LSCWS	THID	Chiave
HSK E 32 SRK 3x45	32	3	10	13	65	45	30.0	6	16	M4	2.0
SRK 4x45	32	4	10	15	65	45	35.0	6	18	M4	2.0
SRK 5x45	32	5	10	15	65	45	35.0	10	25	M4	2.0
SRK 6x45	32	6	11	16	65	45	35.0	10	28	M4	2.0
SRK 8x45	32	8	14	20	65	45	42.0	10	35	M4	2.0
SRK 10x45	32	12	16	22	65	45	42.0	10	40	M4	2.0
SRK 12x45	32	12	20	25	65	45	35.6	8	40	M4	2.0
HSK E 40 SRK 3x45	40	3	10	13	65	45	30.0	6	16	M5	2.5
SRK 3x80	40	3	10	19	100	80	64.0	6	16	M5	2.5
SRK 4x45	40	4	10	15	65	45	35.0	6	18	M5	2.5
SRK 4x80	40	4	10	19	100	80	64.0	6	18	M5	2.5
SRK 5x45	40	5	10	15	65	45	35.0	10	25	M4	2.0
SRK 5x80	40	5	10	19	100	80	64.0	10	25	M4	2.0
SRK 6x45	40	6	11	16	65	45	35.0	10	28	M5	2.5
SRK 6x80	40	6	11	20	100	80	64.0	10	28	M5	2.5
SRK 8x45	40	8	14	20	65	45	42.0	10	35	M5	2.5
SRK 8x80	40	8	14	23	100	80	64.0	10	35	M6	3.0
SRK 10x45	40	10	16	22	65	45	42.0	10	40	M5	2.5
SRK 10x80	40	10	16	24	100	80	60.0	10	40	M8	4.0
SRK 12x45	40	12	20	26	65	45	42.0	10	42	M5	2.5
SRK 12x80	40	12	20	28	100	80	56.0	10	42	M10	5.0
HSK E 50 SRK 3x45	50	3	10	15	71	45	36.0	6	16	M5	2.5
SRK 3x80	50	3	10	19	106	80	64.0	6	16	M5	2.5
SRK 4x45	50	4	10	15	71	45	36.0	6	18	M5	2.5
SRK 4x80	50	4	10	19	106	80	64.0	6	18	M5	2.5
SRK 5x45	50	5	10	15	71	45	36.0	6	21	M6	3.0
SRK 5x80	50	5	10	15	106	80	64.0	6	21	M6	3.0
SRK 6x45	50	6	11	16	71	45	36.0	10	28	M5	2.5
SRK 6x80	50	6	11	20	106	80	64.0	10	28	M5	2.5
SRK 8x45	50	8	14	20	71	45	43.0	10	35	M6	3.0
SRK 8x80	50	8	14	23	106	80	64.0	10	35	M6	3.0
SRK 10x45	50	10	16	22	71	45	42.0	7	37	M6	3.0
SRK 10x80	50	10	16	24	106	80	60.0	10	40	M8	4.0
SRK 12x45	50	12	20	26	71	45	42.0	7	39	M6	3.0
SRK 12x80	50	12	20	28	106	80	57.0	10	42	M10	5.0



HSK E-SRK



Mandrino a calettamento



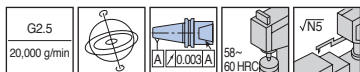
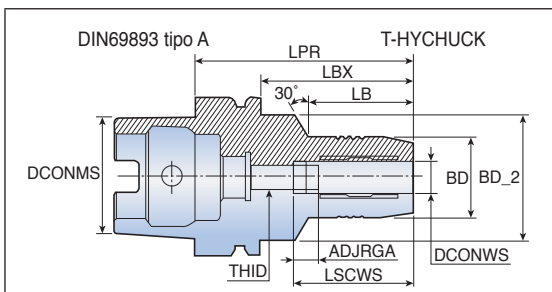
Descrizione	Dimensioni (mm)											
	DCONMS	DCONWS	BTED	BD	LPR	LBX	LB	ADJRGA	LSCWS	THID	Chiave	
HSK E 63 SRK 3x50	63	3	10	17	76	50	48	6	16	M6	3.0	
SRK 3x80	63	3	10	19	106	80	64	6	16	M6	3.0	
SRK 4x50	63	4	10	17	76	50	48	6	18	M6	3.0	
SRK 4x80	63	4	10	19	106	80	64	6	18	M6	3.0	
SRK 5x50	63	5	10	15	71	50	47	6	21	M6	3.0	
SRK 5x80	63	5	10	19	106	80	64	6	21	M6	3.0	
SRK 6x50	63	6	11	18	76	50	48	6	24	M8	4.0	
SRK 6x80	63	6	11	20	106	80	64	6	24	M8	4.0	
SRK 8x50	63	8	14	21	76	50	48	10	35	M6	3.0	
SRK 8x80	63	8	14	23	106	80	64	10	35	M6	3.0	
SRK 10x50	63	10	16	23	76	50	48	10	40	M8	4.0	
SRK 10x80	63	10	16	24	106	80	60	10	40	M8	4.0	
SRK 12x50	63	12	20	27	76	50	48	10	42	M8	4.0	
SRK 12x80	63	12	20	28	106	80	57	10	42	M10	5.0	
SRK 12x90	63	12	20	28	116	90	57	11	43	M8	4.0	



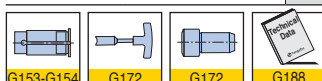
HSK A-THC



Mandrino idraulico



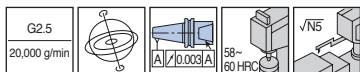
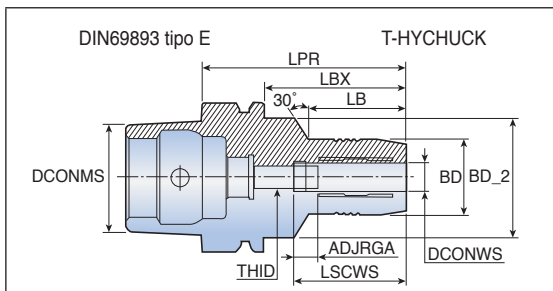
Descrizione	Dimensioni (mm)										
	DCONMS	DCONWS	BD	BD_2	LPR	LBX	LB	ADJRGA	LSCWS	THID	
HSK A 40	THC 6-70	40	6	28	34	70	50	28	10	37.5	M5
	THC 8-70	40	8	30	34	70	50	28	10	37.5	M6
	THC 10-75	40	10	32	34	75	55	34	10	42.5	M6
	THC 12-85	40	12	34	34	85	60	60	10	47.5	M6
HSK A 50	THC 6-70	50	6	28	40	70	44	28	10	37.5	M5
	THC 8-70	50	8	30	40	70	44	28	10	37.5	M6
	THC 10-75	50	10	32	40	75	49	34	10	42.5	M8x1
	THC 12-80	50	12	34	40	85	59	39	10	47.5	M10x1
	THC 16-90	50	16	38	53	90	64	30	10	52.5	M10x1
	THC 20-90	50	20	43	60	90	64	29	10	52.5	M10x1
	THC 25-120	50	25	48	60	120	94	59	10	61.0	M16x1
HSK A 63	THC 6-70	63	6	28	50	70	44	24	10	37.5	M5
	THC 8-70	63	8	30	50	70	44	24	10	37.5	M6
	THC 10-80	63	10	32	50	80	54	35	10	42.5	M8x1
	THC 12-85	63	12	34	50	85	59	40	10	47.5	M10x1
	THC 14-85	63	14	36	50	85	59	40	10	47.5	M10x1
	THC 16-90	63	16	38	50	90	64	46	10	52.5	M10x1
	THC 20-90	63	20	43	50	90	64	48	10	52.5	M10x1
	THC 25-120	63	25	48	63	120	94	59	10	61.0	M16x1
	THC 32-125	63	32	53	75	125	99	63	10	65.0	M16x1
	HSK A 100	THC 6-80⁽¹⁾	100	6	28	50	80	46	29	10	37.5
THC 8-75⁽¹⁾		100	8	30	54	75	46	26	10	37.5	M6
THC 10-90⁽¹⁾		100	10	32	50	90	61	42	10	42.5	M8x1
THC 12-95⁽¹⁾		100	12	34	50	95	66	47	10	47.5	M10x1
THC 16-100⁽¹⁾		100	16	38	50	100	71	53	10	52.5	M10x1
THC 18-100⁽¹⁾		100	18	41	50	100	71	53	10	52.5	M10x1
THC 20-105⁽¹⁾		100	20	43	50	105	76	59	10	52.5	M10x1
THC 25-110⁽¹⁾		100	25	48	63	110	81	62	10	61.0	M16x1
THC 32-110⁽¹⁾		100	32	53	75	110	81	62	10	65.0	M16x1



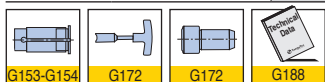
• ⁽¹⁾ Bilanciato G2.5 a 15,000 g/min

HSK E-THC

Mandrino idraulico

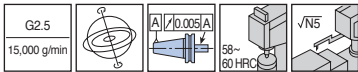
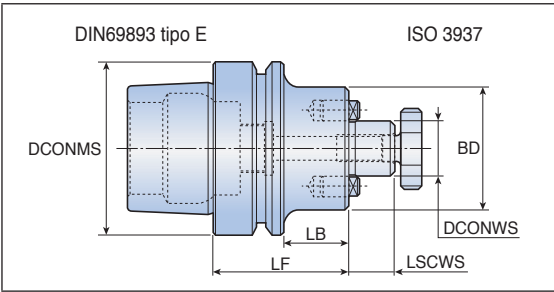


Descrizione	Dimensioni (mm)									
	DCONMS	DCONWS	BD	BD_2	LPR	LBX	LB	ADJRGA	LSCWS	THID
HSK E 40 THC 6-70	40	6	28	34	70	50	28	10	37.5	M5
THC 8-70	40	8	30	34	70	50	28	10	37.5	M6
THC 10-75	40	10	32	34	75	55	34	10	42.5	M6
THC 12-80	40	12	34	34	80	60	-	10	47.5	M6
HSK E 50 THC 6-70	50	6	28	40	70	44	28	10	37.5	M5
THC 8-70	50	8	30	40	70	44	28	10	37.5	M6
THC 10-75	50	10	32	40	75	49	34	10	42.5	M8x1
THC 12-85	50	12	34	40	85	59	44	10	47.5	M10x1
THC 16-90	50	16	38	53	90	64	30	10	52.5	M10x1
THC 20-90	50	20	43	60	90	64	29	10	52.5	M10x1

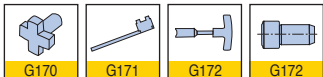


HSK E-SEM

Mandrino portafrese a manicotto

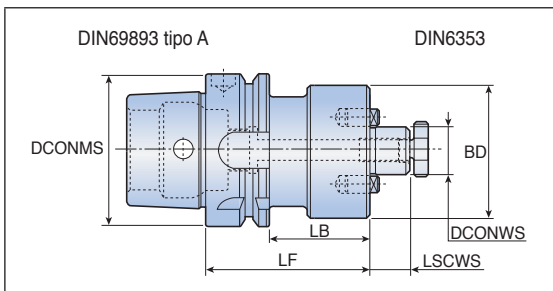
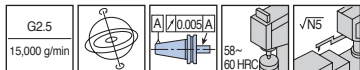


Descrizione	Dimensioni (mm)					
	DCONMS	DCONWS	BD	LF	LB	LSCWS
HSK E 40 SEM 16x50	40	16	38	50	30	17
SEM 22x50	40	22	47	50	30	19
HSK E 50 SEM 22x60	50	22	47	60	34	19
HSK E 63 SEM 16x50	63	16	38	50	24	17
SEM 22x50	63	22	47	50	24	19

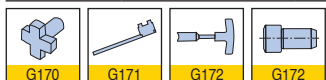


HSK A-SEM

Mandrino portafrese a manicotto



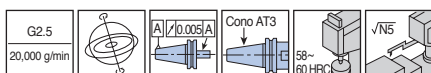
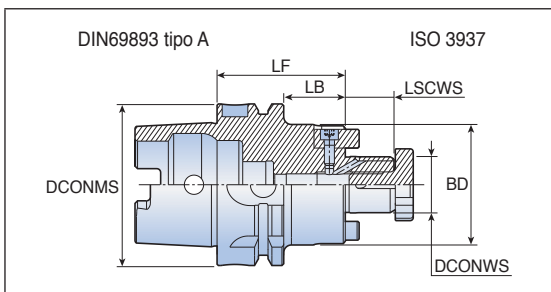
Descrizione	Dimensioni (mm)					
	DCONMS	DCONWS	BD	LF	LB	LSCWS
HSK A 40 SEM 22	40	22	47	50	30	19
SEM 27	40	27	58	55	35	21
HSK A 50 SEM 16x50	50	16	38	50	24	17
SEM 22x60	50	22	47	60	34	19
SEM 27x60	50	27	58	60	34	21
HSK A 63 SEM 16x50	63	16	38	50	24	17
SEM 22x50	63	22	47	50	24	19
SEM 27x60	63	27	58	60	34	21
SEM 32x60	63	32	66	60	34	24
SEM 40x60	63	40	82	60	24	27
HSK A 100 SEM 22x50⁽¹⁾	100	22	47	50	21	19
SEM 27x50⁽¹⁾	100	27	58	50	21	21
SEM 32x50⁽¹⁾	100	32	66	50	21	24
SEM 40x60⁽¹⁾	100	40	82	60	31	27
SEM 50x70⁽¹⁾	100	50	95	70	41	30



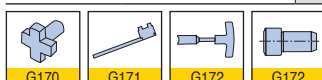
- Chiave non inclusa
- ⁽¹⁾ Bilanciato G6.3 a 12,000 g/min

HSK A-SEM-C

Mandrino portafresa a manicotto con refrigerazione interna



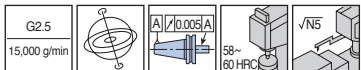
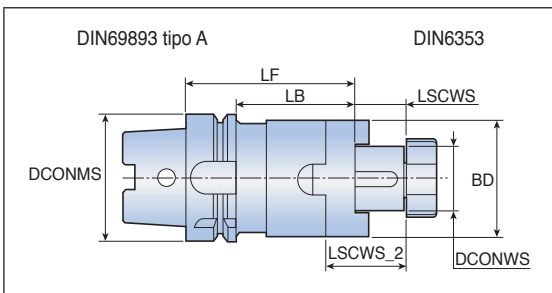
Descrizione	Dimensioni (mm)					
	DCONMS	DCONWS	BD	LF	LB	LSCWS
HSK A 63 SEM 16x50 C	63	16	38	50	24	17
SEM 16x100 C	63	16	38	100	74	17
SEM 22x50 C	63	22	47	50	24	19
SEM 22x100 C	63	22	47	100	74	19
SEM 27x60 C	63	27	58	60	34	21
SEM 27x100 C	63	27	58	100	74	21
SEM 32x60 C	63	32	66	60	34	24
HSK A 100 SEM 16x50 C⁽¹⁾	100	16	38	50	21	17
SEM 16x100 C⁽¹⁾	100	16	38	100	71	17
SEM 22x50 C⁽¹⁾	100	22	47	50	21	19
SEM 22x100 C⁽¹⁾	100	22	47	100	71	19
SEM 27x50 C⁽¹⁾	100	27	58	50	21	21
SEM 27x100 C⁽¹⁾	100	27	58	100	71	21
SEM 32x50 C⁽¹⁾	100	32	66	50	21	24
SEM 32x100 C⁽¹⁾	100	32	66	100	71	24



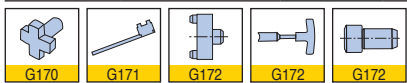
⁽¹⁾ Bilanciato G2.5 a 15,000 g/min

HSK A-SEMC

Mandrino portafrese a manicotto combinato



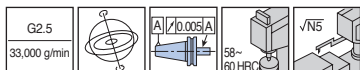
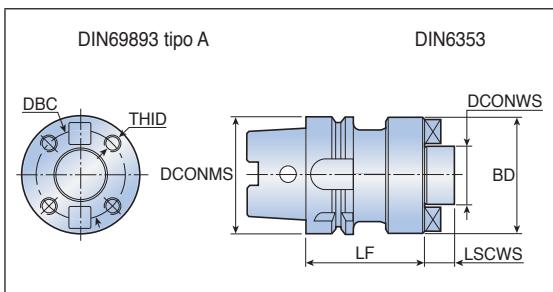
Descrizione	Dimensioni (mm)							
	DCONMS	DCONWS	BD	LF	LB	LSCWS	LSCWS_2	
HSK A 50 SEMC 16x50	50	16	32	50	24	17	27	
SEMC 27x65	50	27	48	65	39	21	33	
HSK A 63 SEMC 16x60	63	16	32	60	34	17	21	
SEMC 22x60	63	22	40	60	34	19	31	
SEMC 27x60	63	27	48	60	34	21	33	
SEMC 32x60	63	32	58	60	34	24	38	
SEMC 40x70	63	40	70	70	44	27	41	
HSK A 100 SEMC 16x60	100	16	32	60	31	17	27	
SEMC 22x60	100	22	40	60	31	19	31	
SEMC 27x60	100	27	48	60	31	21	33	
SEMC 32x60	100	32	58	60	31	24	38	
SEMC 40x70	100	40	70	70	41	27	41	
SEMC 50x80	100	50	90	80	51	30	46	



• Chiave non inclusa

HSK A FM

Mandrino portafrese a manicotto

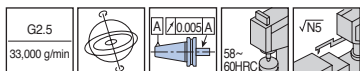
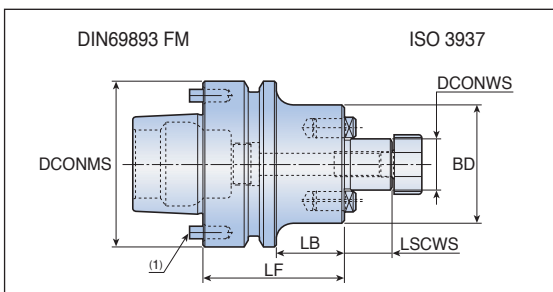


Descrizione	Dimensioni (mm)						
	DCONMS	DCONWS	BD	DBC	LF	LSCWS	THID
HSK A 100 FM 60x70	100	60	128	101.6	70	40	M16

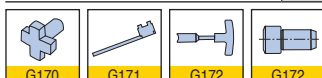
- Chiave non inclusa

HSK FM-SEM

Mandrino portafrese a manicotto ad elevata coppia



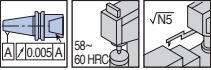
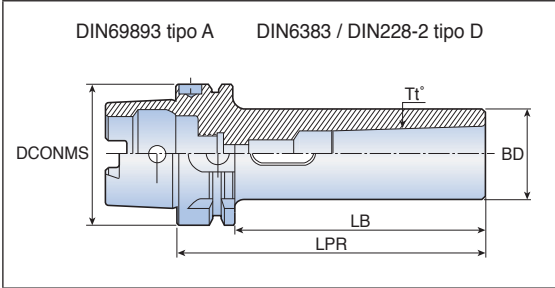
Descrizione	Dimensioni (mm)					
	DCONMS	DCONWS	BD	LF	LB	LSCWS
HSK FM 63 SEM 22x60	63	22	47	60	34	19
SEM 27x60	63	27	58	60	34	21
SEM 32x60	63	32	66	60	34	24



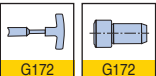
- ⁽¹⁾ I perni di guida possono essere rimossi per trasformare il mandrino in HSK F63 standard

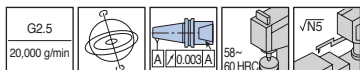
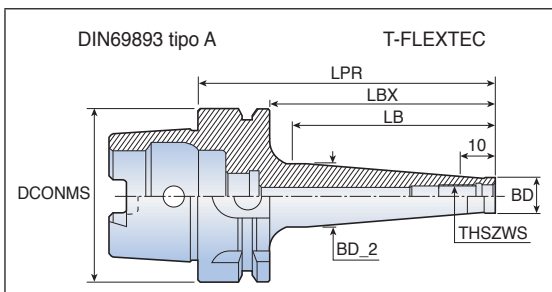
HSK A-MT

Mandrino con morse

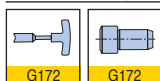


Descrizione	Dimensioni (mm)				
	DCONMS	MT n°	BD	LPR	LB
HSK A 50 MT 1x100	50	MT1	25	100	74
MT 2x120	50	MT2	32	120	94
MT 3x140	50	MT3	40	140	114
HSK A 63 MT 1x110	63	MT1	25	110	84
MT 2x120	63	MT2	32	120	94
MT 3x140	63	MT3	40	140	114
MT 4x160	63	MT4	48	160	134
HSK A 100 MT 1x110	100	MT1	25	110	81
MT 2x120	100	MT2	32	120	91
MT 3x150	100	MT3	40	150	121
MT 4x170	100	MT4	48	170	141
MT 5x200	100	MT5	63	200	171





Descrizione	Dimensioni (mm)						
	DCONMS	THSZWS	BD	BD_2	LPR	LBX	LB
HSK A 63 ODP 6x59	63	M06	9.8	11.5	59	33	25
ODP 6x109	63	M06	9.8	23.0	109	83	75
ODP 8x59	63	M08	13.1	15.0	59	33	25
ODP 8x109	63	M08	13.1	23.0	109	83	75
ODP 10x59	63	M10	18.0	20.0	59	33	25
ODP 10x109	63	M10	18.0	28.0	109	83	75
ODP 12x59	63	M12	21.0	24.0	59	33	25
ODP 12x109	63	M12	21.0	31.0	109	83	75
ODP 16x59	63	M16	29.0	34.0	59	33	25
ODP 16x109	63	M16	29.0	34.0	109	83	75
HSK A 100 ODP 12x87⁽¹⁾	100	M12	23.0	30.0	87	58	50
ODP 12x137⁽¹⁾	100	M12	23.0	30.0	137	108	100
ODP 12x187⁽¹⁾	100	M12	23.0	40.0	187	158	150
ODP 12x237⁽¹⁾	100	M12	23.0	46.0	237	208	200
ODP 16x87⁽¹⁾	100	M16	29.0	31.5	87	58	50
ODP 16x137⁽¹⁾	100	M16	29.0	41.5	137	108	100
ODP 16x187⁽¹⁾	100	M16	29.0	55.0	187	158	150
ODP 16x237⁽¹⁾	100	M16	29.0	55.0	237	208	200

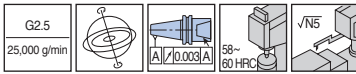
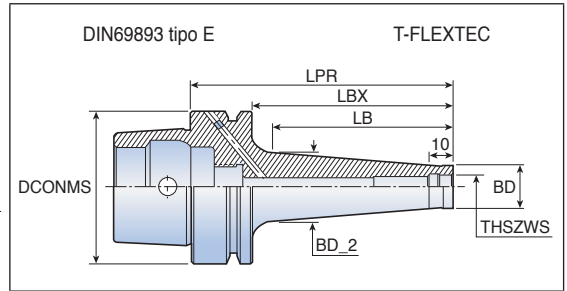


⁽¹⁾ Bilanciato G6.3 a 12,000 g/min

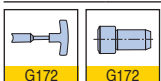
HSK E-ODP



T-FLEXTEC mandrino modulare

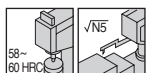
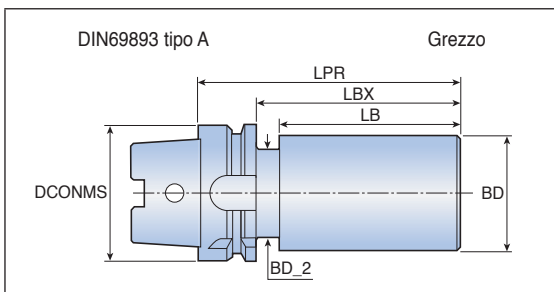


Descrizione	Dimensioni (mm)						
	DCONMS	THSZWS	BD	BD_2	LPR	LBX	LB
HSK E 40 ODP 10x53	40	M10	18	20	53	33	25
ODP 10x103	40	M10	18	28	103	83	75
ODP 12x53	40	M12	21	24	53	33	25
ODP 12x103	40	M12	21	31	103	83	75
HSK E 50 ODP 10x59	50	M10	18	20	59	33	25
ODP 10x109	50	M10	18	28	109	83	75
ODP 12x59	50	M12	21	24	59	33	25
ODP 12x109	50	M12	21	31	109	83	75
ODP 16x59	50	M16	29	34	59	33	25
ODP 16x109	50	M16	29	34	109	83	75
HSK E 63 ODP 10x59	63	M10	18	20	59	33	25
ODP 10x109	63	M10	18	28	109	83	75
ODP 12x59	63	M12	21	24	59	33	25
ODP 12x109	63	M12	21	31	109	83	75
ODP 16x59	63	M16	29	34	59	33	25
ODP 16x109	63	M16	29	34	109	83	75

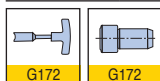


HSK A-B16MN

HSK grezzo



Descrizione	Dimensioni (mm)					
	DCONMS	BD	BD_2	LPR	LBX	LB
HSK A 50 B16MN 100	50	53	41.8	100	74	58.0
B16MN 200	50	53	41.8	200	174	158.0
HSK A 63 B16MN 100	63	63	52.8	100	74	55.5
B16MN 200	63	63	52.8	200	174	155.5
HSK A 100 B16MN 100	100	102	85.0	100	71	54.8
B16MN 200	100	102	85.0	200	171	154.8



- Materiale: acciaio legato temprato
- durezza attacco 58 HRC minimo
- durezza parte frontale 35-37 HRC

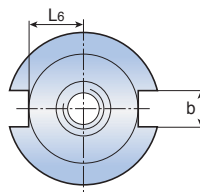
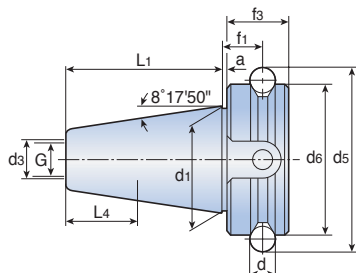
BT MAS



BT MAS 403 Tipo A/AD/B/ADB

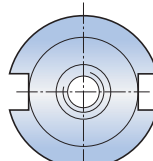
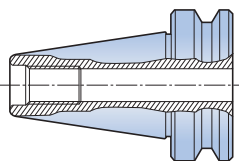
Attacco standard

Tipo "A"



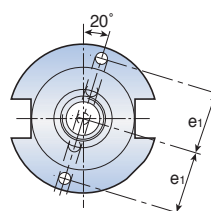
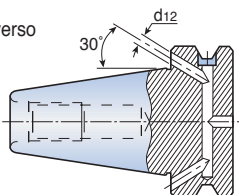
Tipo "AD"

Refrigerante interno



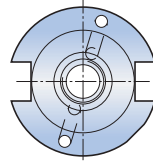
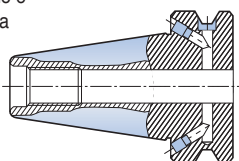
Tipo "B"

Refrigerante attraverso la flangia



Tipo "ADB"

Refrigerante interno e attraverso la flangia

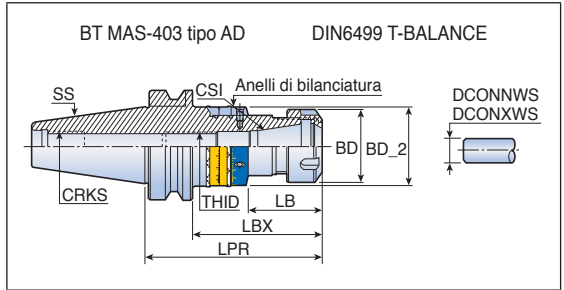


Attacco	a ±0.1	b (H12)	d	d1	G	d3 (H8)	d5	d6 (H8)
30	2	16.1	8	31.75	M12	12.5	56.144	46
40	2	16.1	10	44.45	M16	17.0	75.679	63
50	3	25.7	15	69.85	M24	25.0	119.020	100

Attacco	f1 ±0.1	f3	L1 ±0.2	L4min	L6 -0.2	e1 ±0.1	d12	Cono AT3
30	13.6	20	48.4	24	16.3	21	4	0.002
40	16.6	25	65.4	30	22.6	27	4	0.003
50	23.2	35	101.8	45	35.4	42	6	0.004

* Per materiale non in stock: le condizioni di fornitura sono soggette a disponibilità.
Se non disponibile in magazzino sarà applicata una MOQ (quantità minima ordine).

Mandrino a pinza ER bilanciabile



G2.5 ⁽¹⁾			Cono AT3		$\sqrt{N5}$	
20.000 g/min		A/0.003A		S8-80 HRC		

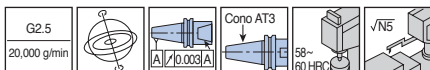
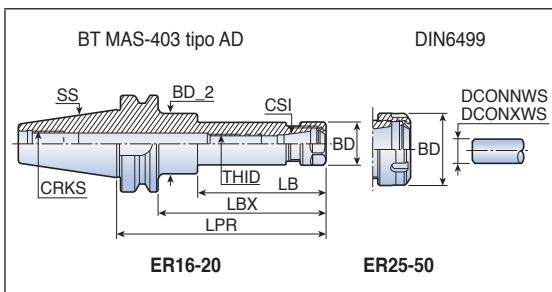
Descrizione	Dimensioni (mm)										
	SS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	CRKS	THID
BT40 ER 16x100 BIN	40	ER16	0.5	10.0	28	44	100	73	44.0	M16	M10
ER 16x150 BIN	40	ER16	0.5	10.0	28	44	150	123	78.7	M16	M10
ER 20x100 BIN	40	ER20	1.0	13.0	34	44	100	73	44.6	M16	M12
ER 20x150 BIN	40	ER20	1.0	13.0	34	44	150	123	79.6	M16	M12
ER 25x100 BIN	40	ER25	1.0	16.0	42	44	100	73	43.0	M16	M16
ER 25x150 BIN	40	ER25	1.0	16.0	42	44	150	123	79.0	M16	M16
ER 32x100 BIN	40	ER32	2.0	20.0	50	60	100	73	44.0	M16	M22x1.5
ER 32x150 BIN	40	ER32	2.0	20.0	50	60	150	123	94.0	M16	M22x1.5
ER 40x100 BIN	40	ER40	3.0	26.0	63	60	100	73	44.0	M16	M28x1.5

G139-G149	G166-G167	G167-G169	G170	G173	G187

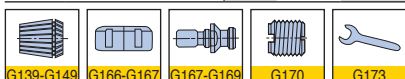
•⁽¹⁾ Valore di bilanciatura preimpostata

BT-ER

Mandrino a pinza ER



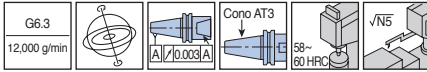
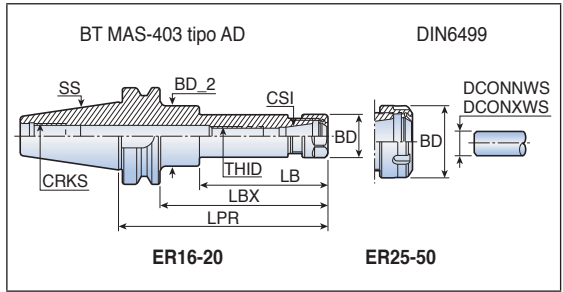
Descrizione	Dimensioni (mm)										
	SS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	CRKS	THID
BT30 ER 16x70 ⁽¹⁾	30	ER16	0.5	10.0	28	-	70	48	-	M12	M10
ER 16x100 ⁽¹⁾	30	ER16	0.5	10.0	28	-	100	73	-	M12	M10
ER 20x70 ⁽¹⁾	30	ER20	1.0	13.0	34	-	70	48	-	M12	M12
ER 25x60 ⁽¹⁾	30	ER25	1.0	16.0	42	-	60	38	-	M12	M16
ER 32x60 ⁽¹⁾	30	ER32	2.0	20.0	50	-	60	38	-	M12	M18x1.5
BT40 ER 16x70	40	ER16	0.5	10.0	28	-	70	43	-	M16	M12
ER 16x100	40	ER16	0.5	10.0	28	-	100	73	-	M16	M12
ER 16x150 ⁽¹⁾	40	ER16	0.5	10.0	28	40	150	123	85	M16	M12
ER 16x200 ⁽¹⁾	40	ER16	0.5	10.0	28	40	200	173	85	M16	M10
ER 20x70	40	ER20	1.0	13.0	34	-	70	43	-	M16	M12
ER 20x100	40	ER20	1.0	13.0	34	-	100	73	-	M16	M12
ER 20x120	40	ER20	1.0	13.0	34	-	120	93	-	M16	M12
ER 20x150 ⁽¹⁾	40	ER20	1.0	13.0	34	-	150	123	-	M16	M12
ER 25x60	40	ER25	1.0	13.0	42	-	60	33	-	M16	M16
ER 25x100	40	ER25	1.0	16.0	42	-	100	73	-	M16	M16
ER 25x150 ⁽¹⁾	40	ER25	1.0	16.0	42	-	150	123	-	M16	M16
ER 32x60	40	ER32	2.0	20.0	50	-	60	33	-	M16	M22x1.5
ER 32x100	40	ER32	2.0	20.0	50	-	100	73	-	M16	M22x1.5
ER 32x150 ⁽¹⁾	40	ER32	2.0	20.0	50	-	150	123	-	M16	M22x1.5
ER 32x200 ⁽¹⁾	40	ER32	2.0	20.0	50	-	200	162	-	M17	M22x1.6
ER 40x80	40	ER40	3.0	26.0	63	-	80	53	-	M16	M28x1.5
ER 40x100	40	ER40	3.0	26.0	63	-	100	73	-	M16	M28x1.5
ER 40x150 ⁽¹⁾	40	ER40	3.0	26.0	63	-	150	123	-	M16	M28x1.5
ER 50x90	40	ER50	10.0	34.0	78	-	90	63	-	M16	M28x1.5
BT50 ER 16x100 ⁽¹⁾	50	ER16	0.5	10.0	28	-	100	62	-	M24	M12
ER 16x125 ⁽¹⁾	50	ER16	0.5	10.0	28	-	125	87	-	M24	M12
ER 16x150 ⁽¹⁾	50	ER16	0.5	10.0	28	-	150	112	-	M24	M12
ER 16x200 ⁽¹⁾	50	ER16	0.5	10.0	28	40	200	162	85	M24	M10
ER 20x100 ⁽¹⁾	50	ER20	1.0	10.0	34	-	100	62	-	M24	M12
ER 20x125 ⁽¹⁾	50	ER20	1.0	13.0	34	-	125	87	-	M24	M12
ER 20x150 ⁽¹⁾	50	ER20	1.0	13.0	34	-	150	112	-	M24	M12
ER 20x200 ⁽¹⁾	50	ER20	1.0	13.0	34	50	200	162	85	M24	M12



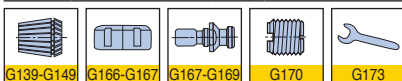
- Aggiungere B per il passaggio del refrigerante attraverso la flangia
- ⁽¹⁾ Bilanciato G6.3 a 12,000 g/min

BT-ER

Mandrino a pinza ER



Descrizione	Dimensioni (mm)											
	SS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	CRKS	THID	
BT50 ER 25x100	50	ER25	1.0	16.0	42	-	100	62	-	M24	M16	
ER 25x150	50	ER25	1.0	16.0	42	-	150	112	-	M24	M16	
ER 25x200	50	ER25	1.0	16.0	42	55	200	162	87	M24	M16	
ER 32x100	50	ER32	2.0	20.0	50	-	100	62	-	M24	M22x1.5	
ER 32x125	50	ER32	2.0	20.0	50	-	125	87	-	M24	M22x1.5	
ER 32x150	50	ER32	2.0	20.0	50	-	150	112	-	M24	M22x1.5	
ER 32x200	50	ER32	2.0	20.0	50	63	200	162	88	M24	M22x1.5	
ER 40x100	50	ER40	3.0	26.0	63	-	100	62	-	M24	M28x1.5	
ER 40x150	50	ER40	3.0	26.0	63	-	150	112	-	M24	M28x1.5	
ER 40x200	50	ER40	3.0	26.0	63	-	200	162	-	M24	M28x1.5	
ER 50x100	50	ER50	3.0	26.0	78	-	100	62	-	M24	M36x1.5	
ER 50x150	50	ER50	10.0	34.0	78	-	150	112	-	M24	M36x1.5	

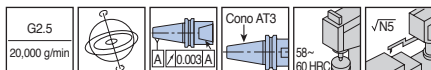
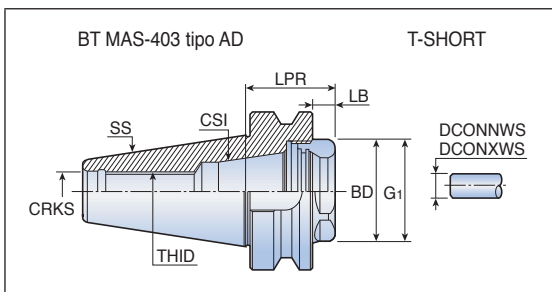


• Aggiungere B per il passaggio del refrigerante attraverso la flangia

BT-ER-SHORT

TSHORT

Mandrino a pinza ER corto



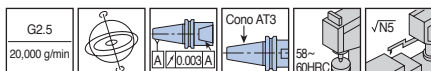
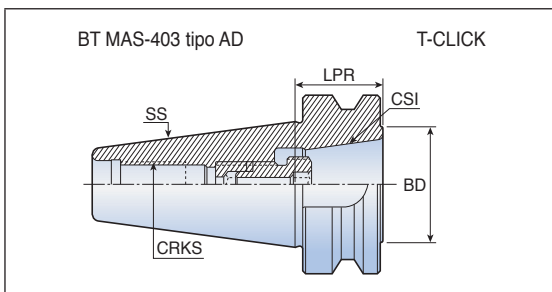
Descrizione	Dimensioni (mm)									
	SS	CSI	DCONWS	DCONXWS	BD	LPR	LB	CRKS	G1	THID
BT30 ER 20 SHORT	30	ER20	1.0	13.0	25	27.2	5.2	M12	M25x1.5	M12
BT40 ER 32 SHORT	40	ER32	2.0	20.0	40	36.5	9.5	M16	M40x1.5	M16
ER 40 SHORT	40	ER40	3.0	26.0	50	46.5	9.5	M16	M50x1.5	M16
BT50 ER 32 SHORT	50	ER32	2.0	20.0	40	47.5	9.5	M24	M40x1.5	M22x1.5
ER 40 SHORT	50	ER40	3.0	26.0	50	47.5	9.5	M24	M50x1.5	M28x1.5

• Aggiungere B per il passaggio del refrigerante attraverso la flangia

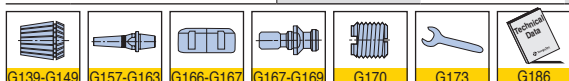
BT-ER-CLICK-IN

TCLICK

Mandrino a pinza ER a cambio rapido



Descrizione	Dimensioni (mm)				
	SS	CSI	BD	LPR	CRKS
BT40 ER32 CLICK-IN	40	32 SRF	41	28	M16
BT50 ER32 CLICK-IN	50	32 SRF	41	29	M24

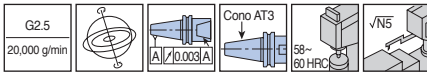
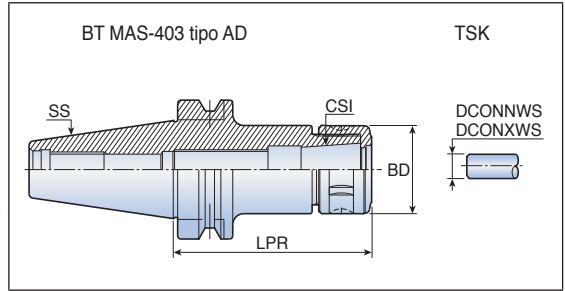


• Coppia di serraggio: 24 kg × m

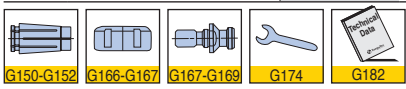
G139-G149 G157-G163 G166-G167 G167-G169 G170 G173 G186

BT-TSK

Mandrino a pinza TSK



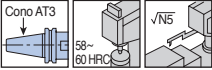
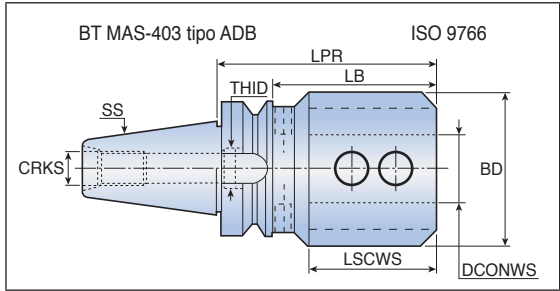
Descrizione	Dimensioni (mm)					
	SS	CSI	DCONNWS	DCONXWS	BD	LPR
BT30 TSK 6-90⁽¹⁾	30	TSK6	1.0	6.0	19.5	90
TSK 10-90⁽¹⁾	30	TSK10	2.0	10.0	27.5	90
BT40 TSK 6-90	40	TSK6	1.0	6.0	19.5	90
TSK 6-120	40	TSK6	1.0	6.0	19.5	120
TSK 10-90	40	TSK10	2.0	10.0	27.5	90
TSK 10-120	40	TSK10	2.0	10.0	27.5	120
TSK 16-90	40	TSK16	3.0	16.0	40.0	90
TSK 16-120	40	TSK16	3.0	16.0	40.0	120
TSK 25-90	40	TSK25	8.0	25.4	55.0	90
TSK 25-120	40	TSK25	8.0	25.4	55.0	120
BT50 TSK 6-120⁽¹⁾	50	TSK6	1.0	6.0	19.5	120
TSK 6-165⁽¹⁾	50	TSK6	1.0	6.0	19.5	165
TSK 6-195⁽¹⁾	50	TSK6	1.0	6.0	19.5	195
TSK 10-120⁽¹⁾	50	TSK10	2.0	10.0	27.5	120
TSK 10-165⁽¹⁾	50	TSK10	2.0	10.0	27.5	165
TSK 10-195⁽¹⁾	50	TSK10	2.0	10.0	27.5	195
TSK 16-120⁽¹⁾	50	TSK16	3.0	16.0	40.0	120
TSK 16-165⁽¹⁾	50	TSK16	3.0	16.0	40.0	165
TSK 16-195⁽¹⁾	50	TSK16	3.0	16.0	40.0	195
TSK 25-120⁽¹⁾	50	TSK25	8.0	25.4	55.0	120
TSK 25-165⁽¹⁾	50	TSK25	8.0	25.4	55.0	165
TSK 25-195⁽¹⁾	50	TSK25	8.0	25.4	55.0	195



- Aggiungere B per il passaggio del refrigerante attraverso la flangia
- ⁽¹⁾ Bilanciato G6.3 a 20,000 g/min

FITBORE BT-EM ADB

Mandrino per la regolazione del diametro di foratura



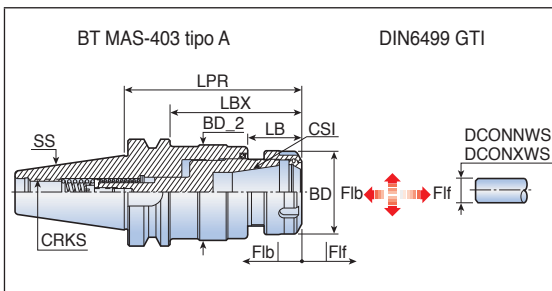
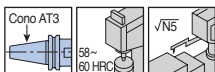
Descrizione	Dimensioni (mm)								
	SS	DCONWS	BD	LPR	LB	LSCWS	CRKS	THID	
FITBORE BT40									
EM16 ADB	40	16	72	123.5	96.5	71	M16	M10	
EM20 ADB	40	20	72	123.5	96.5	71	M16	M10	
EM25 ADB	40	25	72	123.5	96.5	71	M16	M10	
EM32 ADB	40	32	72	123.5	96.5	71	M16	M10	
EM40 ADB	40	40	72	123.5	96.5	71	M16	M10	
FITBORE BT50									
EM20 ADB	50	20	72	134.5	96.5	71	M24	M10	
EM25 ADB	50	25	72	134.5	96.5	71	M24	M10	
EM32 ADB	50	32	72	134.5	96.5	71	M24	M10	
EM40 ADB	50	40	72	134.5	96.5	71	M24	M10	



• Aggiungere B per il passaggio del refrigerante attraverso la flangia

GTI BT-ER

Mandrino portamaschi GTI

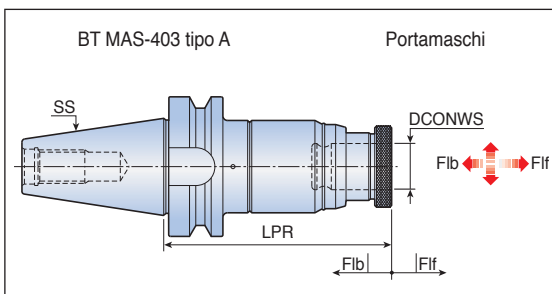
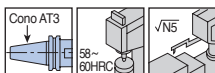


Descrizione	Dimensioni (mm)													
	SS	CSI	Min	Max	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	Fif	Fib	CRKS
GTI BT40 ER16	40	ER16	M3	M10	0.5	10.0	28	29.5	84.2	52.7	24.6	8	3	M16
	40	ER32	M6	M20	2.0	20.0	50	56.5	106.8	79.8	33.0	9	4	M16
	40	ER40	M6	M28	3.0	26.0	63	56.5	124.8	97.8	51.0	9	4	M16
GTI BT50 ER16	50	ER16	M3	M10	0.5	10.0	28	29.5	106.8	68.8	24.6	8	3	M24
	50	ER32	M6	M20	2.0	20.0	50	56.5	114.2	77.2	33.0	9	4	M24
	50	ER40	M6	M28	3.0	26.0	63	56.5	133.2	95.2	51.0	9	4	M24

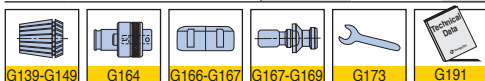
• Nessun refrigerante deve essere introdotto nel mandrino per evitare il malfunzionamento del meccanismo

BT-TC

Mandrino portamaschi

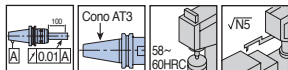
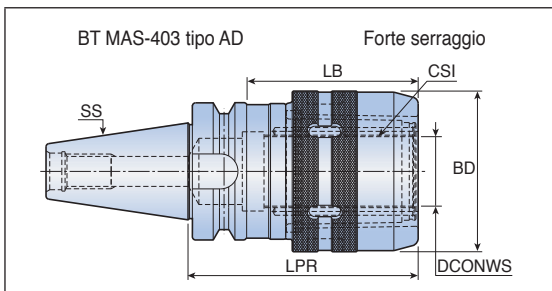


Descrizione	Dimensioni (mm)							
	SS	Min	Max	DCONWS	LPR	Ffib	Ffif	Portamaschi
BT30 TC 12-105	30	M3	M12	19	105	6.5	12	TA1
BT40 TC 12-95	40	M3	M12	19	95	6.5	12	TA1
	40	M3	M12	19	110	6.5	12	TA1
	40	M6	M24	31	127	14.5	13	TA2
BT50 TC 12-125	50	M6	M12	19	125	6.5	12	TA1
	50	M6	M24	31	142	14.5	13	TA2
	50	M18	M38	48	195	20.0	20	TA3

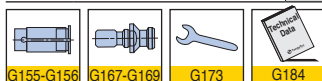


BT-TMC

Mandrino a forte serraggio



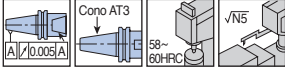
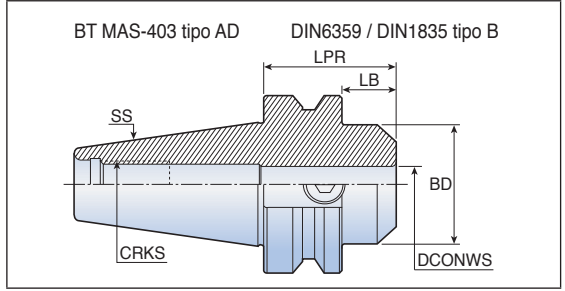
Descrizione	Dimensioni (mm)					
	SS	CSI	DCONWS	BD	LPR	LB
BT30						
TMC 20-75	30	20	20	54.0	75	53
TMC 25-80	30	25	25	62.5	80	58
BT40						
TMC 20-80	40	20	20	54.0	80	53
TMC 20-105	40	20	20	54.0	105	78
TMC 25-90	40	25	25	62.5	90	63
TMC 25-105	40	25	25	62.5	105	78
TMC 32-90	40	32	32	74.0	90	63
TMC 32-105	40	32	32	74.0	105	78
TMC 32-135	40	32	32	74.0	135	108
BT50						
TMC 20-105	50	20	20	54.0	105	67
TMC 20-135	50	20	20	54.0	135	97
TMC 20-165	50	20	20	54.0	165	127
TMC 25-105	50	25	25	62.5	105	67
TMC 25-135	50	25	25	62.5	135	97
TMC 25-165	50	25	25	62.5	165	127
TMC 32-105	50	32	32	74.0	105	67
TMC 32-115	50	32	32	74.0	115	77
TMC 32-135	50	32	32	74.0	135	97
TMC 32-165	50	32	32	74.0	165	127
TMC 42-115	50	42	42	92.0	115	77
TMC 42-135	50	42	42	92.0	135	97
TMC 42-165	50	42	42	92.0	165	127



• Chiave non inclusa

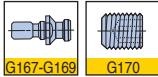
BT-EM

Mandrino weldon corto



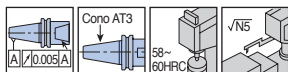
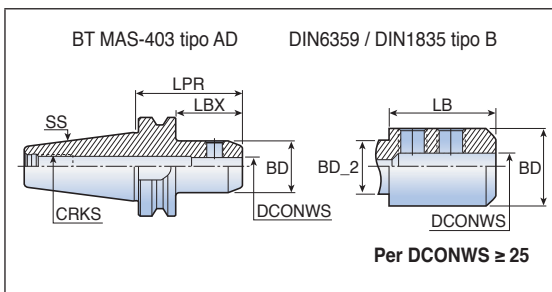
Descrizione	Dimensioni (mm)					
	SS	DCONWS	BD	LPR	LB	CRKS
BT40 EM 10x45	40	10	35	45	18	M16
EM 12x45	40	12	42	45	18	M16
EM 14x45	40	14	44	45	18	M16
EM 16x45	40	16	48	45	18	M16
EM 18x45	40	18	50	45	18	M16
EM 20x45	40	20	52	45	18	M16
EM 25x45	40	25	63	45	-	M16

• Aggiungere B per il passaggio del refrigerante attraverso la flangia

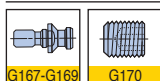


BT-EM

Mandrino weldon



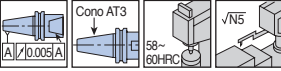
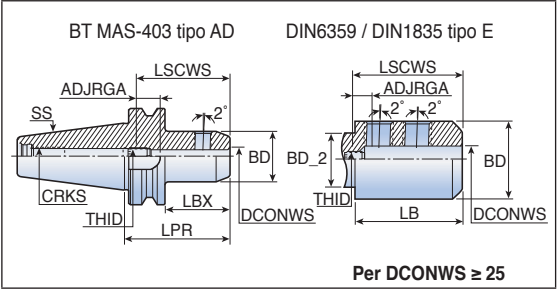
Descrizione	Dimensioni (mm)							
	SS	DCONWS	BD	BD_2	LPR	LBX	LB	CRKS
BT30 EM 6x50	30	6	25	-	50	28	-	M12
EM 8x60	30	8	28	-	60	38	-	M12
EM 10x60	30	10	35	-	60	38	-	M12
EM 12x60	30	12	42	-	60	38	-	M12
EM 14x60	30	14	44	-	60	38	-	M12
EM 16x60	30	16	46	-	60	38	-	M12
EM 18x60	30	18	50	-	60	38	-	M12
EM 20x80	30	20	52	-	80	58	-	M12
BT40 EM 6x50	40	6	25	-	50	23	-	M16
EM 8x50	40	8	28	-	50	23	-	M16
EM 10x65	40	10	35	-	65	38	-	M16
EM 12x65	40	12	42	-	65	38	-	M16
EM 14x65	40	14	44	-	65	38	-	M16
EM 16x65	40	16	48	-	65	38	-	M16
EM 18x65	40	18	50	-	65	38	-	M16
EM 20x75	40	20	52	-	75	48	-	M16
EM 25x105	40	25	65	61	105	78	68	M16
EM 32x110	40	32	72	61	110	83	73	M16
BT50 EM 6x70	50	6	25	-	70	32	-	M24
EM 8x70	50	8	28	-	70	32	-	M24
EM 10x70	50	10	35	-	70	32	-	M24
EM 12x100	50	12	42	-	100	62	-	M24
EM 14x100	50	14	44	-	100	62	-	M24
EM 16x100	50	16	48	-	100	62	-	M24
EM 18x100	50	18	50	-	100	62	-	M24
EM 20x100	50	20	52	-	100	62	-	M24
EM 25x115	50	25	65	-	115	77	-	M24
EM 32x115	50	32	72	-	115	77	-	M24
EM 40x115	50	40	90	-	115	77	-	M24
EM 50x125	50	50	100	-	125	87	-	M24



• Aggiungere B per il passaggio del refrigerante attraverso la flangia

BT-EM-E

Mandrino whistle notch

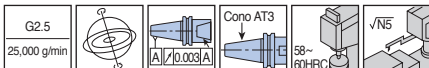
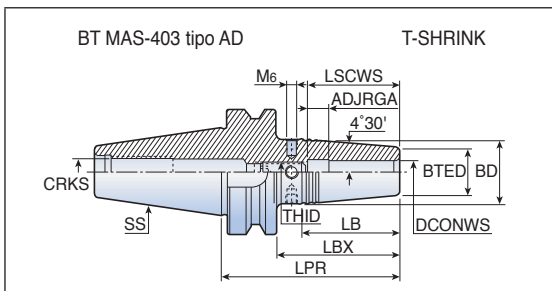


Descrizione	Dimensioni (mm)											
	SS	DCONWS	BD	BD_2	LPR	LBX	LB	ADJRGA	LSCWS	CRKS	THID	Chiave
BT40 EM 6x50E	40	6	25	-	50	23	-	10	45	M16	M5	2.5
EM 10x65E	40	10	35	-	65	38	-	10	49	M16	M8	4.0
EM 12x65E	40	12	42	-	65	38	-	10	54	M16	M10	5.0
EM 14x65E	40	14	44	-	65	38	-	10	54	M16	M10	5.0
EM 16x65E	40	16	48	-	65	38	-	10	57	M16	M12	6.0
EM 18x65E	40	18	50	-	65	38	-	10	57	M16	M12	6.0
EM 20x75E	40	20	52	-	75	48	-	10	59	M16	M16	8.0
EM 25x105E	40	25	65	61	105	78	68	10	64	M16	M20x1.5	10.0
EM 32x110E	40	32	72	61	110	83	73	10	68	M16	M20x1.5	10.0
BT50 EM 6x70E	50	6	25	-	70	32	-	10	45	M24	M5	2.5
EM 10x70E	50	10	35	-	70	32	-	10	49	M24	M8	4.0
EM 12x100E	50	12	42	-	100	62	-	10	54	M24	M10	5.0
EM 14x100E	50	14	44	-	100	62	-	10	54	M24	M10	5.0
EM 16x100E	50	16	48	-	100	62	-	10	57	M24	M12	6.0
EM 18x100E	50	18	50	-	100	62	-	10	57	M24	M12	6.0
EM 20x100E	50	20	52	-	100	62	-	10	59	M24	M16	8.0
EM 25x115E	50	25	65	-	115	77	-	10	64	M24	M20x1.5	10.0
EM 32x115E	50	32	72	-	115	77	-	10	68	M24	M20x1.5	10.0
EM 40x115E	50	40	90	-	115	77	-	10	78	M24	M20x1.5	10.0
EM 50x125E	50	50	98	-	125	67	-	10	88	M24	M20x1.5	10.0

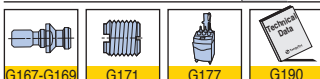


• Aggiungere B per il passaggio del refrigerante attraverso la flangia

Mandrino a calettamento

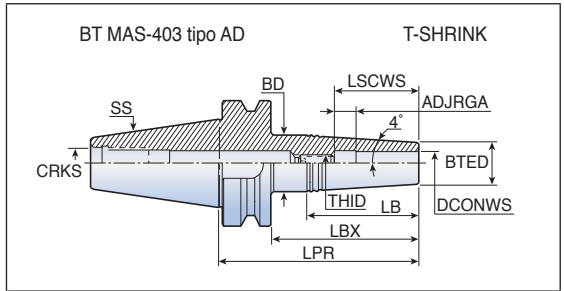


Descrizione	Dimensioni (mm)											
	SS	DCONWS	BTED	BD	LPR	LBX	LB	ADJRGA	LSCWS	CRKS	THID	Chiave
BT40 SRKIN 6x90	40	6	21	27	90	63	38.0	10	36	M16	M5	2.5
SRKIN 8x90	40	8	21	27	90	63	38.0	10	36	M16	M6	3.0
SRKIN 10x90	40	10	24	32	90	63	50.5	10	42	M16	M8	4.0
SRKIN 12x90	40	12	24	32	90	63	50.5	10	47	M16	M10	5.0
SRKIN 14x90	40	14	27	34	90	63	44.5	10	47	M16	M10	5.0
SRKIN 16x90	40	16	27	34	90	63	44.5	10	50	M16	M12	6.0
SRKIN 18x90	40	18	33	42	90	63	57.0	10	50	M16	M12	6.0
SRKIN 20x90	40	20	33	42	90	63	57.0	10	52	M16	M16	8.0
SRKIN 25x110	40	25	44	53	110	83	57.0	10	58	M16	M16	8.0
BT50 SRKIN 6x100⁽¹⁾	50	6	21	26	100	62	32.0	10	36	M24	M5	2.5
SRKIN 8x100⁽¹⁾	50	8	21	27	100	62	38.0	10	36	M24	M6	3.0
SRKIN 10x100⁽¹⁾	50	10	24	32	100	62	51.0	10	42	M24	M8	4.0
SRKIN 12x100⁽¹⁾	50	12	24	32	100	62	51.0	10	47	M24	M10	5.0
SRKIN 14x100⁽¹⁾	50	14	27	34	100	62	44.5	10	47	M24	M10	5.0
SRKIN 16x100⁽¹⁾	50	16	27	34	100	62	44.5	10	50	M24	M12	6.0
SRKIN 18x100⁽¹⁾	50	18	33	42	100	62	57.0	10	50	M24	M12	6.0
SRKIN 20x100⁽¹⁾	50	20	33	42	100	62	57.0	10	52	M24	M16	8.0
SRKIN 25x120⁽¹⁾	50	25	44	53	120	82	57.0	10	58	M24	M16	8.0
SRKIN 32x120⁽¹⁾	50	32	44	53	120	82	57.0	10	58	M24	M16	8.0



• ⁽¹⁾ Bilanciato G2.5 a 20,000 g/min

Mandrino a calettamento

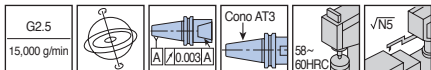
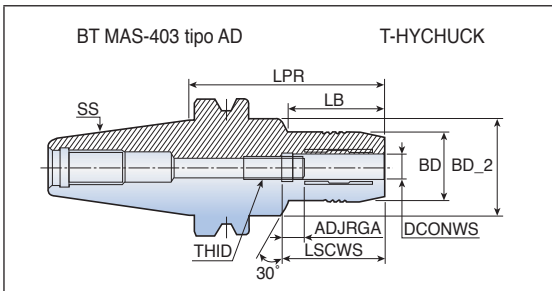


G2.5 25,000 g/min			Cono AT3	58-60HRC	
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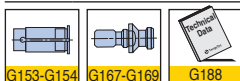
Descrizione	Dimensioni (mm)											
	SS	DCONWS	BD	BTED	LPR	LBX	LB	ADJRGA	LSCWS	CRKS	THID	Chiave
BT40 SRK 3x50	40	3	15.0	10	77	50	35.5	6	16	M16	M6	3.0
SRK 3x85	40	3	19.0	10	112	85	64.1	6	16	M16	M6	3.0
SRK 4x50	40	4	15.0	10	77	50	35.5	6	18	M16	M6	3.0
SRK 4x85	40	4	19.0	10	112	85	64.1	6	18	M16	M6	3.0
SRK 5x50	40	5	15.0	10	77	50	35.5	6	21	M16	M6	3.0
SRK 5x85	40	5	19.0	10	112	85	64.1	6	21	M16	M6	3.0
SRK 6x50	40	6	16.0	11	77	50	35.5	6	24	M16	M8	4.0
SRK 6x85	40	6	20.0	11	112	85	64.1	6	24	M16	M8	4.0
SRK 8x50	40	8	20.0	14	77	50	42.5	6	31	M16	M10	5.0
SRK 8x85	40	8	23.0	14	112	85	63.9	6	31	M16	M10	5.0
SRK 10x50	40	10	22.0	16	77	50	42.4	6	36	M16	M12	6.0
SRK 10x85	40	10	24.5	16	112	85	60.2	6	36	M16	M12	6.0
SRK 12x50	40	12	26.0	20	77	50	42.3	10	42	M16	M10	5.0
SRK 12x85	40	12	28.0	20	112	85	56.6	10	42	M16	M10	5.0

G167-G169	G177	G178	G190

Mandrino idraulico

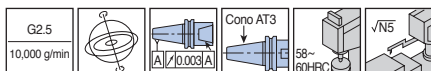
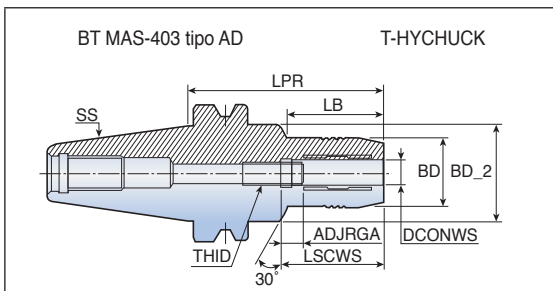


Descrizione	Dimensioni (mm)								
	SS	DCONWS	BD	BD_2	LPR	LB	ADJRGA	LSCWS	THID
BT30 THC 6-70 ⁽¹⁾	30	6	28	45	70	28.0	10	37.5	M5
THC 8-70 ⁽¹⁾	30	8	30	45	70	28.0	10	37.5	M6
THC 10-75 ⁽¹⁾	30	10	32	45	75	38.0	10	42.5	M8x1
THC 12-85 ⁽¹⁾	30	12	34	45	85	44.0	10	47.5	M10x1
THC 14-85 ⁽¹⁾	30	14	36	45	85	44.0	10	47.5	M10x1
THC 16-90 ⁽¹⁾	30	16	38	45	90	46.0	10	52.5	M10x1
THC 20-85 ⁽¹⁾	30	20	43	45	85	63.0	10	52.5	M10x1
THC 20-90 ⁽¹⁾	30	20	41	45	90	68.0	10	52.5	M10x1
BT40 THC 6-65	40	6	28	50	65	23.0	10	37.5	M5
THC 6-95	40	6	28	50	65	43.0	10	37.5	M5
THC 8-95	40	8	30	50	95	44.0	10	37.5	M6
THC 10-95	40	10	32	50	95	44.0	10	42.5	M8x1
THC 12-95	40	12	34	50	95	44.0	10	47.5	M10x1
THC 14-95	40	14	36	50	95	44.0	10	47.5	M10x1
THC 16-95	40	16	38	50	95	46.0	10	52.5	M10x1
THC 16-140	40	16	38	50	140	47.5	10	52.5	M10x1
THC 20-95	40	20	43	50	95	48.0	10	52.5	M10x1
THC 25-100	40	25	57	-	100	73.0	10	61.0	M16x1
THC 25-135	40	25	57	-	135	108.0	10	61.0	M16x1
THC 32-105	40	32	63	-	105	78.0	10	61.0	M16x1

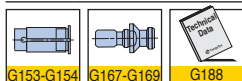


⁽¹⁾ Bilanciato G2.5 a 20,000 g/min

Mandrino idraulico

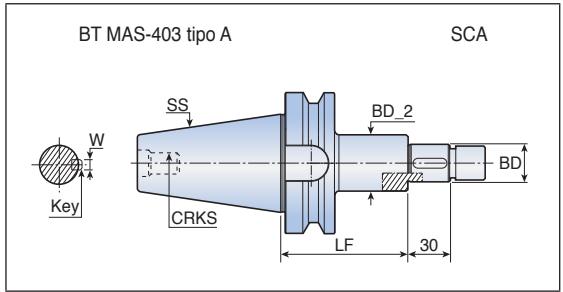
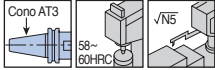


Descrizione	Dimensioni (mm)									
	SS	DCONWS	BD	BD_2	LPR	LB	ADJRGA	LSCWS	THID	
BT50 THC 6-90	50	6	28	50	90	32	10	37.5	M5	
THC 6-120	50	6	28	50	120	38	10	37.5	M5	
THC 10-90	50	10	32	50	90	32	10	42.5	M8x1	
THC 10-120	50	10	32	50	120	42	10	42.5	M8x1	
THC 12-90	50	12	34	50	90	32	10	47.5	M8x1	
THC 12-120	50	12	34	50	120	44	10	47.5	M8x1	
THC 14-90	50	14	36	50	90	32	10	47.5	M10x1	
THC 16-90	50	16	38	50	90	32	10	52.5	M10x1	
THC 20-90	50	20	43	50	90	32	10	52.5	M10x1	
THC 20-120	50	20	43	50	120	48	10	52.5	M10x1	
THC 20-140	50	20	43	50	140	48	10	52.5	M10x1	
THC 25-105	50	25	57	-	105	67	10	61.0	M16x1	
THC 25-150	50	25	57	-	150	112	10	61.0	M16x1	
THC 32-90	50	32	63	-	90	52	10	65.0	M16x1	
THC 32-115	50	32	63	-	115	77	10	65.0	M16x1	
THC 32-135	50	32	63	-	135	97	10	65.0	M16x1	
THC 32-150	50	32	63	-	150	112	10	65.0	M16x1	



BT-SCA

Mandrino per frese a disco



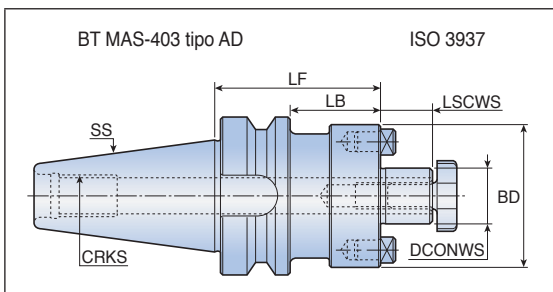
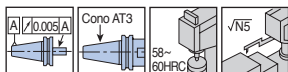
Descrizione	Dimensioni (mm)					
	SS	BD	BD_2	LF	W	CRKS
BT40 - SCA-22(22.225)-75	40	22(22.225)	34	75	6(3.18)	M16
SCA-22-120	40	22	34	120	6(3.18)	M16
SCA-27(25.4)-75	40	27(25.4)	40	75	7(6.35)	M16
SCA-27-120	40	27	40	120	7(6.35)	M16
SCA-32(31.75)-90	40	32(31.75)	46	90	8(7.92)	M16
SCA-22(22.225)-90	40	22(22.225)	34	90	6(3.18)	M24
BT50 - SCA-22-135	50	22	34	135	6(3.18)	M24
SCA-27(25.4)-90	50	27(25.4)	40	90	7(6.35)	M24
SCA-27-135	50	27	40	135	7(6.35)	M24
SCA-32(31.75)-90	50	32(31.75)	46	90	8(7.92)	M24
SCA-40(38.1)-90	50	40(38.1)	55	90	10(9.52)	M24
SCA-50-90	50	50	68	90	12	M24



- Chiave e rondelle incluse (3,5,7,8,10,12 mm)

BT-SEM

Mandrino portafrese a manicotto



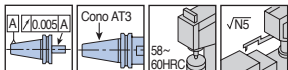
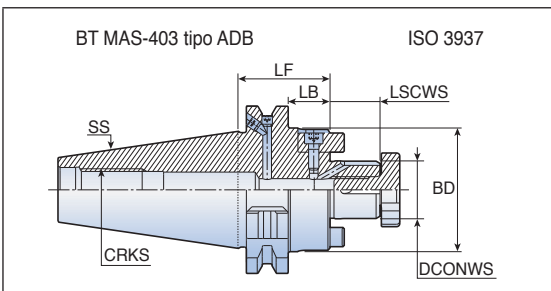
Descrizione	Dimensioni (mm)						
	SS	DCONWS	BD	LF	LB	LSCWS	CRKS
BT30 SEM 16x50	30	16	38	50	28	17	M12
SEM 22x50	30	22	47	50	28	19	M12
SEM 27x50	30	27	58	50	18	21	M12
BT40 SEM 16x60	40	16	38	60	33	17	M16
SEM 16x120	40	16	38	120	93	17	M16
SEM 22x60	40	22	47	60	33	19	M16
SEM 22x120	40	22	47	120	93	19	M16
SEM 27x45	40	27	58	45	18	21	M16
SEM 27x105	40	27	58	105	78	21	M16
SEM 32x60	40	32	65	60	23	24	M16
SEM 32x75	40	32	65	75	36	24	M16
SEM 40x60	40	40	82	60	23	27	M16
SEM 40x75	40	40	82	75	38	27	M16
BT50 SEM 16x75	50	16	38	75	37	17	M24
SEM 16x120	50	16	38	120	82	17	M24
SEM 22x50x220	50	22	50	220	182	19	M24
SEM 22x64x320	50	22	64	320	282	19	M24
SEM 22x75	50	22	47	75	37	19	M24
SEM 22x120	50	22	47	120	82	19	M24
SEM 27x60	50	27	58	60	22	21	M24
SEM 27x105	50	27	58	105	67	21	M24
SEM 32x48	50	32	66	48	10	24	M24
SEM 32x75	50	32	66	75	37	24	M24
SEM 40x48	50	40	82	48	10	27	M24
SEM 40x75	50	40	82	75	37	27	M24

• Chiave non inclusa

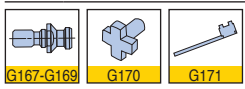


BT-SEM-C

Mandrino portafresa a manicotto con refrigerazione interna



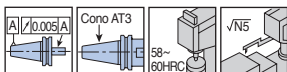
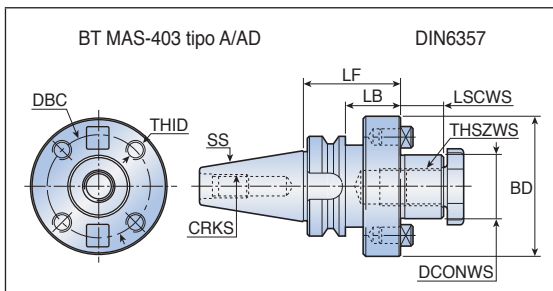
Descrizione	Dimensioni (mm)						
	SS	DCONWS	BD	LF	LB	LSCWS	CRKS
BT40SEM 16x60C	40	16	38	60	17	33	M16
SEM 16x100C	40	16	38	100	17	73	M16
SEM 22x60C	40	22	47	60	19	33	M16
SEM 22x100C	40	22	47	100	19	73	M16
SEM 27x45C	40	27	58	45	21	18	M16
SEM 27x100C	40	27	58	100	21	73	M16
SEM 32x60C	40	32	66	60	24	33	M16
BT50SEM 16x75C	50	16	38	75	17	37	M24
SEM 16x100C	50	16	38	100	17	62	M24
SEM 22x75C	50	22	47	75	19	37	M24
SEM 22x100C	50	22	47	100	19	62	M24
SEM 27x60C	50	27	58	60	21	22	M24
SEM 27x100C	50	27	58	100	21	62	M24
SEM 32x75C	50	32	66	75	24	37	M24
SEM 32x100C	50	32	66	100	24	62	M24
BT50SEM 22x48x220C	50	22	48	220	182	19	M24
SEM 22x61x320C	50	22	61	320	282	19	M24
SEM 27x61x320C	50	27	61	320	282	21	M24
SEM 32x78x390C	50	32	78	390	352	24	M24



- Se è richiesto il "tipo B" rimuovere i tappi a vite dai fori di lubrificazione sulla flangia (usare una chiave esagonale da 2 mm)
- Chiave non inclusa

BT-FM

Mandrino portafrese a manicotto



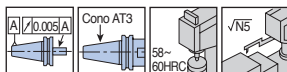
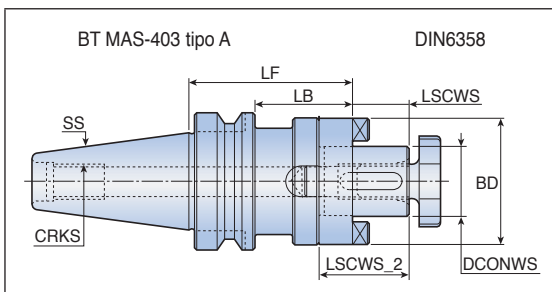
Descrizione	Dimensioni (mm)									
	SS	DCONWS	BD	DBC	LF	LB	LSCWS	CRKS	THID	THSZWS
BT40 FM 40⁽¹⁾	40	40	88	66.7	60	22	27	M16	M12	M20
BT50 FM 40⁽¹⁾	50	40	88	66.7	50	12	27	M24	M12	M20
FM 60⁽²⁾	50	60	128	101.6	88	40	38	M24	M16	-



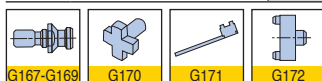
- Chiave non inclusa
- ⁽¹⁾ Tipo AD
- ⁽²⁾ Tipo A

BT-SEMC

Mandrino portafrese a manicotto combinato



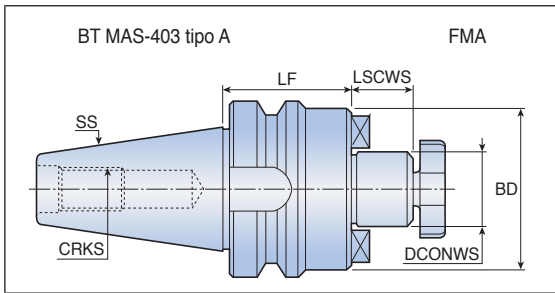
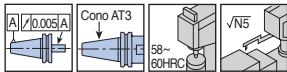
Descrizione	Dimensioni (mm)								
	SS	DCONWS	BD	LF	LB	LSCWS	LSCWS_2	CRKS	
BT40 SEMC 16x50	40	16	32	50	23	17	27	M16	
SEMC 16x100	40	16	32	100	73	17	27	M16	
SEMC 22x53	40	22	40	53	26	19	31	M16	
SEMC 22x100	40	22	40	100	73	19	31	M16	
SEMC 27x55	40	27	48	55	28	21	33	M16	
SEMC 27x100	40	27	48	100	73	21	33	M16	
SEMC 32x60	40	32	58	60	33	24	38	M16	
SEMC 32x100	40	32	58	100	73	24	38	M16	
SEMC 40x80	40	40	70	80	53	27	41	M16	
BT50 SEMC 16x100	50	16	32	100	62	17	27	M24	
SEMC 16x150	50	16	32	150	112	17	27	M24	
SEMC 22x68	50	22	40	68	30	19	31	M24	
SEMC 22x100	50	22	40	100	62	19	31	M24	
SEMC 22x150	50	22	40	150	112	19	31	M24	
SEMC 27x78	50	27	48	78	40	21	33	M24	
SEMC 27x100	50	27	48	100	62	21	33	M24	
SEMC 27x150	50	27	48	150	112	21	33	M24	
SEMC 32x78	50	32	58	78	40	24	38	M24	
SEMC 32x100	50	32	58	100	62	24	38	M24	
SEMC 32x150	50	32	58	150	112	24	38	M24	
SEMC 40x78	50	40	70	78	40	27	41	M24	
SEMC 40x100	50	40	70	100	62	27	41	M24	
SEMC 40x150	50	40	70	150	112	27	41	M24	
SEMC 50x79	50	50	90	79	41	30	46	M24	
SEMC 50x150	50	50	90	150	112	30	46	M24	



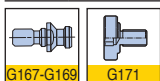
• Chiave non inclusa

BT-FMA

Mandrino portafrese a manicotto

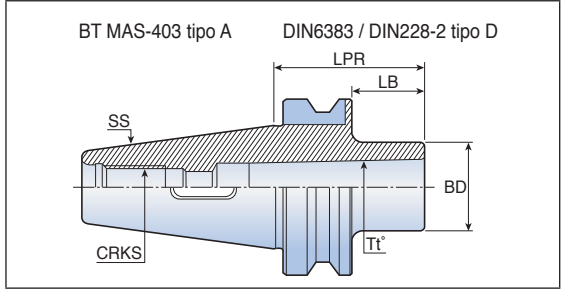
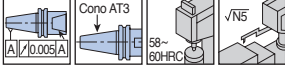


Descrizione	Dimensioni (mm)						
	SS	DCONWS	BD	LF	LSCWS	CRKS	Vite di montaggio
BT30 FMA 25.4-45L	30	25.400	50.00	45	22	M12	MBA M12
BT40 FMA 25.4-45L	40	25.400	50.00	45	22	M16	MBA M12
FMA 25.4-90L	40	25.400	50.00	90	22	M16	MBA M12
FMA 31.75-45L	40	31.750	60.00	45	30	M16	MBA M16
FMA 31.75-75L	40	31.750	60.00	75	30	M16	MBA M16
FMA 38.1-60L	40	38.100	78.00	60	34	M16	MBA M20
BT50 FMA 25.4-45L	50	25.400	50.00	45	22	M24	MBA M12
FMA 25.4-90L	50	25.400	50.00	90	22	M24	MBA M12
FMA 25.4-150L	50	25.400	50.00	150	22	M24	MBA M12
FMA 31.75-45L	50	31.750	60.00	45	30	M24	MBA M16
FMA 31.75-75L	50	31.750	60.00	75	30	M24	MBA M16
FMA 31.75-105L	50	31.750	60.00	105	30	M24	MBA M16
FMA 38.1-45L	50	38.100	80.00	45	34	M24	MBA M20
FMA 38.1-75L	50	38.100	80.00	75	34	M24	MBA M20
FMA 50.8-45L	50	50.800	98.00	45	36	M24	MBA M24
FMA 50.8-75L	50	50.800	98.00	75	36	M24	MBA M24
FMA 47.625-75L	50	47.625	128.57	75	38	M24	SH M16x2x40



BT-MT

Mandrino cono morse



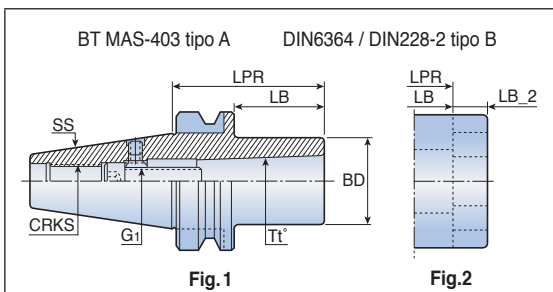
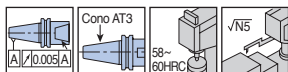
Descrizione	Dimensioni (mm)					
	SS	MT n°	BD	LPR	LB	CRKS
BT30 MT 1x45	30	MT1	25	45	23	M12
MT 2x60	30	MT2	32	60	38	M12
BT40 MT 1x45	40	MT1	25	45	25	M16
MT 1x120	40	MT1	25	120	25	M16
MT 2x60	40	MT2	32	60	32	M16
MT 2x120	40	MT2	32	120	32	M16
MT 3x75	40	MT3	40	75	40	M16
MT 3x139	40	MT3	40	139	40	M16
MT 4x95	40	MT4	50	95	50	M16
BT50 MT 1x45	50	MT1	25	45	7	M24
MT 1x120	50	MT1	25	120	82	M24
MT 2x45	50	MT2	32	45	7	M24
MT 2x135	50	MT2	32	135	97	M24
MT 2x180	50	MT2	32	180	142	M24
MT 3x45	50	MT3	40	45	7	M24
MT 3x150	50	MT3	40	150	112	M24
MT 3x180	50	MT3	40	180	142	M24
MT 4x75	50	MT4	50	75	37	M24
MT 4x180	50	MT4	50	180	142	M24
MT 5x105	50	MT5	70	105	67	M24



G167-G169

BT-MT-DRW

Mandrino con morse con filetto

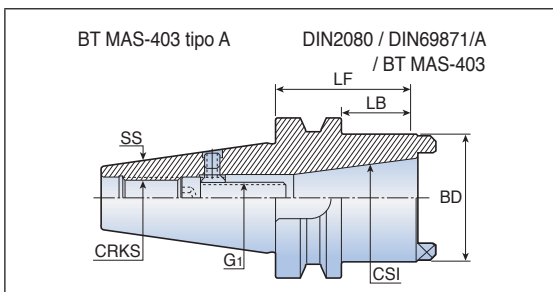
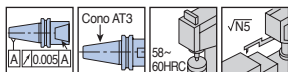


Descrizione	Dimensioni (mm)								Fig.
	SS	MT n°	BD	LPR	LB	LB_2	CRKS	G1	
BT40 MT1 DRW	40	MT1	25	50	23	-	M16	M6	1
MT2 DRW	40	MT2	32	50	23	-	M16	M10	1
MT3 DRW	40	MT3	40	70	43	-	M16	M12	1
MT4 DRW⁽¹⁾	40	MT4	63	95	68	15	M16	M16	2
BT50 MT1 DRW	50	MT1	25	45	7	-	M24	M6	1
MT2 DRW	50	MT2	32	60	22	-	M24	M10	1
MT3 DRW	50	MT3	40	65	27	-	M24	M12	1
MT4 DRW⁽¹⁾	50	MT4	63	70	32	15	M24	M16	2
MT5 DRW⁽¹⁾	50	MT5	78	100	62	18	M24	M20	2

• ⁽¹⁾ DIN2201

BT-AD

Riduzione

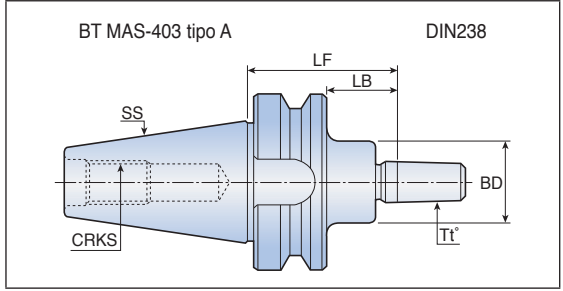
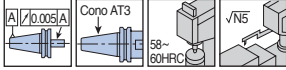


Descrizione	Dimensioni (mm)						
	SS	CSI	BD	LF	LB	CRKS	G1
BT50 AD 40	50	DIN 2080	63	75	32	M24	M16
AD BT/SK 40	50	DIN 69871/A, BT MAS	66	75	37	M24	M16



BT-DC

Mandrino per portapunte



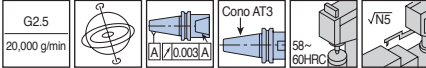
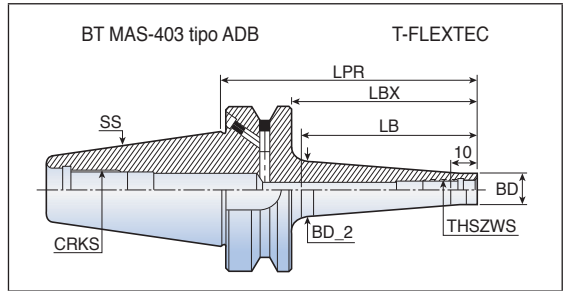
Descrizione	Dimensioni (mm)					
	SS	B n°	BD	LF	LB	CRKS
BT30 DC B12x30	30	B12	-	30	8.0	M12
DC B16x30	30	B16	-	30	8.0	M12
BT40 DC B12x45	40	B12	24	45	18.0	M16
DC B12x90	40	B12	24	90	63.0	M16
DC B16x45	40	B16	30	45	18.0	M16
DC B16x90	40	B16	30	90	63.0	M16
DC B18x45	40	B18	30	45	18.0	M16
DC B18x90	40	B18	30	90	63.0	M16
BT50 DC B12x45	50	B12	-	45	6.7	M24
DC B12x105	50	B12	24	105	67.0	M24
DC B16x45	50	B16	-	45	7.0	M24
DC B16x105	50	B16	50	105	67.0	M24
DC B18x45	50	B18	-	45	7.0	M24
DC B18x105	50	B18	30	105	67.0	M24

• Portapunte non incluso



G167-G169

T-FLEXTEC mandrino modulare



Descrizione	Dimensioni (mm)							
	SS	THSZWS	BD	BD_2	LPR	LBX	LB	CRKS
BT40 ODP 6x66	40	M06	9.8	13.0	66	39	30	M16
ODP 6x106	40	M06	9.8	23.0	106	79	70	M16
ODP 8x66	40	M08	13.0	15.0	66	39	30	M16
ODP 8x106	40	M08	13.0	23.0	106	79	70	M16
ODP 10x66	40	M10	18.0	20.0	66	39	30	M16
ODP 10x106	40	M10	18.0	28.0	106	79	70	M16
ODP 12x66	40	M12	21.0	24.0	66	39	30	M16
ODP 12x106	40	M12	21.0	31.0	106	79	70	M16
ODP 16x66	40	M16	29.0	28.6	66	39	35	M16
ODP 16x106	40	M16	29.0	34.0	106	79	70	M16
BT50 ODP 12x94⁽¹⁾	50	M12	23.0	30.0	94	56	50	M24
ODP 12x144⁽¹⁾	50	M12	23.0	40.0	144	106	100	M24
ODP 12x194⁽¹⁾	50	M12	23.0	40.0	194	156	150	M24
ODP 12x244⁽¹⁾	50	M12	23.0	46.0	244	206	200	M24
ODP 16x94⁽¹⁾	50	M16	29.0	34.0	94	56	50	M24
ODP 16x144⁽¹⁾	50	M16	29.0	40.0	144	106	100	M24
ODP 16x194⁽¹⁾	50	M16	29.0	55.0	194	156	150	M24
ODP 16x244⁽¹⁾	50	M16	29.0	55.0	244	206	200	M24



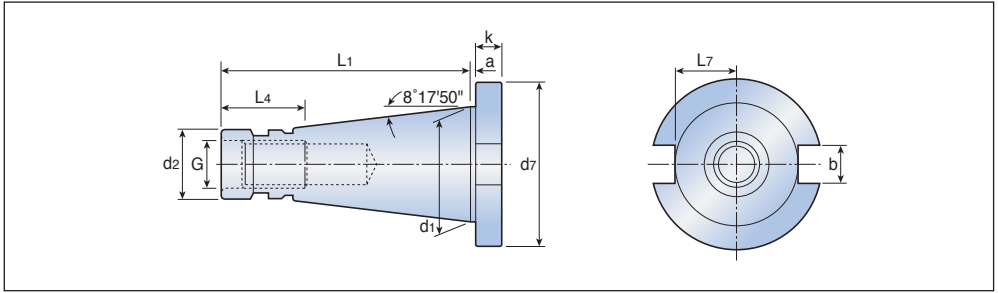
- Se è richiesto il "tipo B" rimuovere i tappi a vite dai fori di lubrificazione sulla flangia (usare una chiave esagonale da 2 mm)
- ⁽¹⁾ Bilanciato G6.3 a 12,000 g/min

DIN2080



DIN2080

Attacco standard

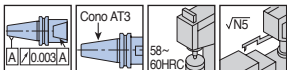
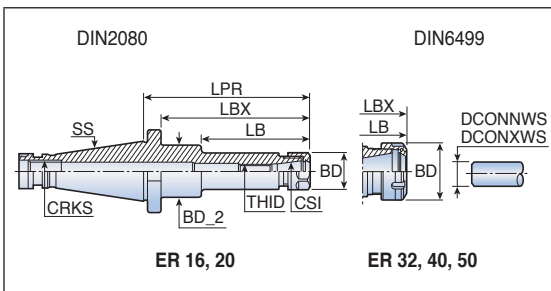


Attacco	a ± 0.2	b (H12)	d1	d2	G	d7	K ± 0.15	L1	L4	L7max	Cono AT3
30	1.6	16.1	31.75	17.4	M12	50.0	8	68.4	24	16.2	0.002
40	1.6	16.1	44.45	25.3	M16	63.0	10	93.4	32	22.5	0.003
50	3.2	25.7	69.85	39.6	M24	97.5	12	126.8	47	35.3	0.004

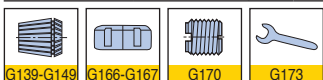
* Per materiale non in stock: le condizioni di fornitura sono soggette a disponibilità.
 Se non disponibile in magazzino sarà applicata una MOQ (quantità minima ordine).

DIN2080-ER

Mandrino a pinza ER

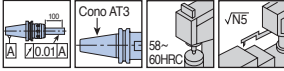
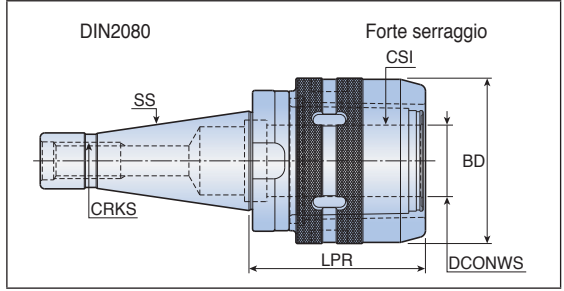


Descrizione	Dimensioni (mm)											
	SS	CSI	DCONNWS	DCONXWS	BD	BD_2	LPR	LBX	LB	CRKS	THID	
DIN2080 30	ER 16x75	30	ER16	0.5	10.0	28	-	75	65.4	-	M12	M10
	ER 32x55	30	ER32	2.0	20.0	50	-	55	45.4	-	M12	M18x1.5
	ER 40x83	30	ER40	3.0	26.0	63	-	83	69.4	-	M12	M22x1.5
DIN2080 40	ER 16x63	40	ER16	0.5	10.0	28	-	63	51.4	-	M16	M12
	ER 16x100	40	ER16	0.5	10.0	28	-	100	88.4	-	M16	M12
	ER 20x63	40	ER20	1.0	13.0	34	-	63	51.4	-	M16	M12
	ER 20x100	40	ER20	1.0	13.0	34	-	100	88.4	-	M16	M12
	ER 25x50	40	ER25	1.0	16.0	42	-	50	38.4	-	M16	M16x1.5
	ER 32x50	40	ER32	2.0	20.0	50	-	50	38.4	-	M16	M22x1.5
	ER 40x55	40	ER40	3.0	26.0	63	-	55	43.4	-	M16	M22x1.5
	ER 50x80	40	ER50	10.0	34.0	78	-	80	68.4	-	M24	M22x1.5
DIN2080 50	ER 16x100	50	ER16	0.5	10.0	28	-	100	84.8	-	M24	M12
	ER 16x160	50	ER16	0.5	10.0	28	40	160	144.8	95	M24	M12
	ER 20x100	50	ER20	1.0	13.0	34	-	100	84.8	-	M24	M16
	ER 20x160	50	ER20	1.0	13.0	34	-	160	144.8	-	M24	M12
	ER 40x58	50	ER40	3.0	26.0	63	-	58	42.8	-	M24	M28x1.5
	ER 50x63	50	ER50	10.0	34.0	78	-	63	47.8	-	M24	M36x1.5



DIN2080-TMC

Mandrino a forte serraggio

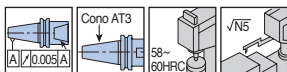
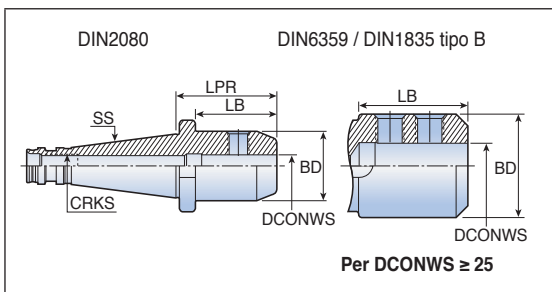


Descrizione	Dimensioni (mm)					
	SS	CSI	DCONWS	BD	LPR	CRKS
DIN2080 30 TMC 20-67	30	20	20	54	67	M12
DIN2080 40 TMC 25-78	40	25	25	74	78	M16
TMC 32-78	40	32	32	74	78	M16
DIN2080 50 TMC 32-85	50	32	32	74	85	M24
TMC 42-102	50	42	42	92	102	M24



DIN2080-EM

Mandrino weldon



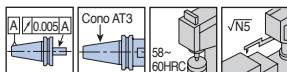
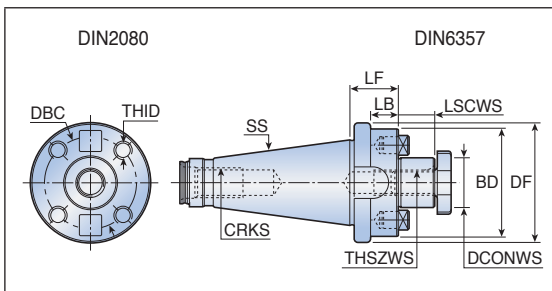
Descrizione	Dimensioni (mm)						
	SS	DCONWS	BD	LPR	LB	CRKS	
DIN2080 30	EM 6x40	30	6	25	40	30.4	M12
	EM 8x40	30	8	28	40	30.4	M12
	EM 10x40	30	10	35	40	30.4	M12
	EM 16x50	30	16	48	50	40.4	M12
	EM 20x63	30	20	52	63	53.4	M12
DIN2080 40	EM 6x50	40	6	25	50	38.4	M16
	EM 8x50	40	8	28	50	38.4	M16
	EM 10x50	40	10	35	50	38.4	M16
	EM 12x50	40	12	42	50	38.4	M16
	EM 16x63	40	16	48	63	51.4	M16
	EM 20x63	40	20	52	63	51.4	M16
	EM 25x80	40	25	65	80	68.4	M16
	EM 32x80	40	32	72	80	68.4	M16
DIN2080 50	EM 6x63	50	6	25	63	47.8	M24
	EM 8x63	50	8	28	63	47.8	M24
	EM 10x63	50	10	35	63	47.8	M24
	EM 12x63	50	12	42	63	47.8	M24
	EM 16x63	50	16	48	63	47.8	M24
	EM 20x63	50	20	52	63	47.8	M24
	EM 25x80	50	25	65	80	64.8	M24
	EM 32x80	50	32	72	80	64.8	M24
	EM 40x90	50	40	90	90	74.8	M24
	EM 50x100	50	50	100	100	84.8	M24



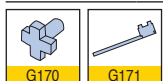
G170

DIN2080-FM

Mandrino portafrese a manicotto



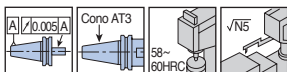
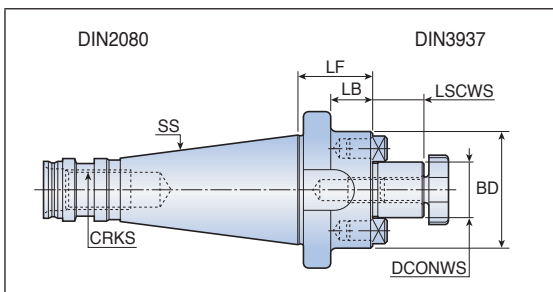
Descrizione	Dimensioni (mm)										
	SS	DCONWS	DF	BD	DBC	LF	LB	LSCWS	CRKS	THSZWS	THID
DIN2080 40 FM40	40	40	88.0	-	66.7	20.0	-	27	M16	M20	M12
DIN2080 50 FM40	50	40	97.3	88	66.7	36.0	20.8	27	M24	M20	M12
FM60	50	60	128.0	-	101.6	35.8	-	40	M24	-	M16



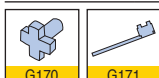
• Chiave non inclusa

DIN2080-SEM

Mandrino portafrese a manicotto



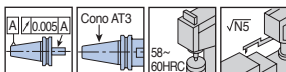
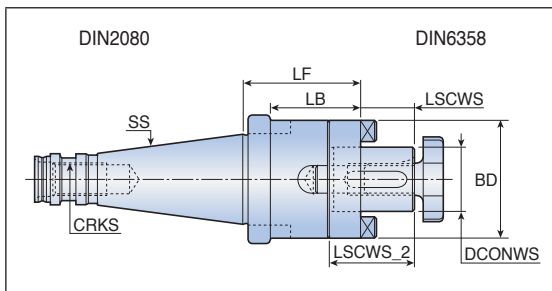
Descrizione	Dimensioni (mm)						
	SS	DCONWS	BD	LF	LB	LSCWS	CRKS
DIN2080 30 SEM 16x28	30	16	38	28	18.4	17	M12
SEM 22x28	30	22	47	28	18.4	19	M12
SEM 27x32	30	27	58	32	22.4	21	M12
SEM 32x32	30	32	66	32	22.4	24	M12
DIN2080 40 SEM 16x28	40	16	38	28	16.4	17	M16
SEM 22x27	40	22	47	27	15.4	19	M16
SEM 27x26	40	27	58	26	14.4	21	M16
SEM 32x23	40	32	66	23	11.4	24	M16
SEM 40x34	40	40	82	34	22.4	27	M16
DIN2080 50 SEM 16x38	50	16	38	38	22.8	17	M24
SEM 22x38	50	22	47	38	22.8	19	M24
SEM 27x38	50	27	58	38	22.8	21	M24
SEM 32x36	50	32	66	36	20.8	24	M24
SEM 40x40	50	40	82	40	24.8	27	M24



• Chiave non inclusa

DIN2080-SEMC

Mandrino portafrese a manicotto combinato



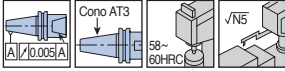
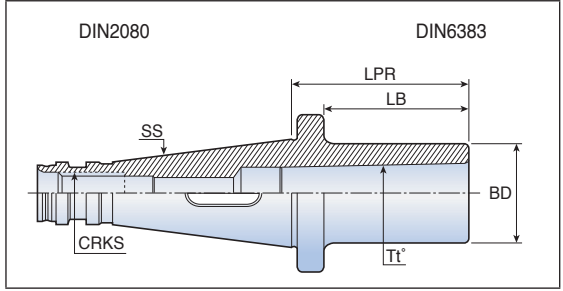
Descrizione	Dimensioni (mm)								
	SS	DCONWS	BD	LF	LB	LSCWS	LSCWS_2	CRKS	
DIN2080 30 SEMC 16x35	30	16	32	35	25.4	17	27	M12	
SEMC 22x35	30	22	40	35	25.4	19	31	M12	
SEMC 27x35	30	27	48	35	25.4	21	33	M12	
SEMC 32x50	30	32	58	50	40.4	24	38	M12	
DIN2080 40 SEMC 22x52	40	22	40	52	40.4	19	31	M16	
SEMC 27x52	40	27	48	52	40.4	21	33	M16	
SEMC 32x52	40	32	58	52	40.4	24	38	M16	
SEMC 40x52	40	40	70	52	40.4	27	41	M16	
DIN2080 50 SEMC 16x55	50	16	32	55	39.8	17	27	M24	
SEMC 22x55	50	22	40	55	39.8	19	31	M24	
SEMC 27x55	50	27	48	55	39.8	21	33	M24	
SEMC 32x55	50	32	58	55	39.8	24	38	M24	
SEMC 40x55	50	40	70	55	39.8	27	41	M24	
SEMC 50x55	50	50	90	55	39.8	30	46	M24	

• Chiave non inclusa



DIN2080-MT

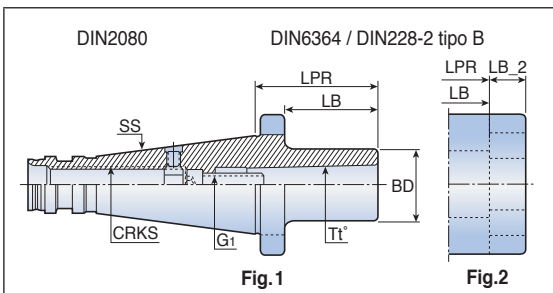
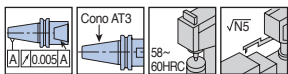
Mandrino cono morse



Descrizione	Dimensioni (mm)					
	SS	MT n°	BD	LPR	LB	CRKS
DIN2080 30						
MT 1x50	30	MT1	25	50	40.4	M12
MT 2x50	30	MT2	32	50	40.4	M12
MT 3x70	30	MT3	40	50	60.4	M12
DIN2080 40						
MT 1x50	40	MT1	25	50	38.4	M16
MT 2x50	40	MT2	32	50	38.4	M16
MT 3x65	40	MT3	40	65	53.4	M16
MT 4x95	40	MT4	48	95	83.4	M16
DIN2080 50						
MT 1x45	50	MT1	25	45	29.8	M24
MT 2x60	50	MT2	32	60	44.8	M24
MT 3x65	50	MT3	40	65	49.8	M24
MT 4x70	50	MT4	48	70	54.8	M24
MT 5x105	50	MT5	63	105	89.2	M24

DIN2080-MT-DRW

Mandrino con morse con filetto

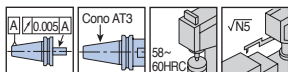
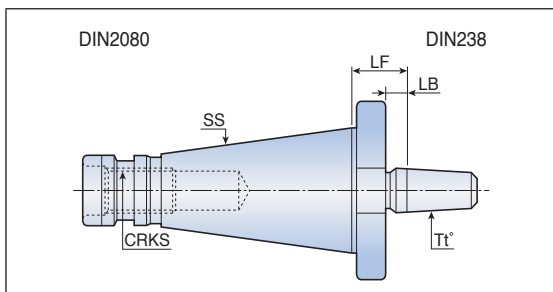


Descrizione	Dimensioni (mm)								Fig.
	SS	MT n°	BD	LPR	LB	LB_2	G1	CRKS	
DIN2080 40 MT1 DRW	40	MT1	25	50	38.4	-	M6	M16	1
MT2 DRW	40	MT2	32	50	38.4	-	M10	M16	1
MT3 DRW	40	MT3	40	65	53.4	-	M12	M16	1
MT4 DRW	40	MT4	63	110	-	15	M16	M16	2
DIN2080 50 MT1 DRW	50	MT1	25	60	44.8	-	M6	M24	1
MT2 DRW	50	MT2	32	60	44.8	-	M10	M24	1
MT3 DRW	50	MT3	40	65	49.8	-	M12	M24	1
MT4 DRW	50	MT4	63	80	49.8	15	M16	M24	2
MT5 DRW	50	MT5	78	100	84.4	18	M20	M24	2

• MT4 & MT5: DIN2201

DIN2080-DC

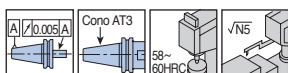
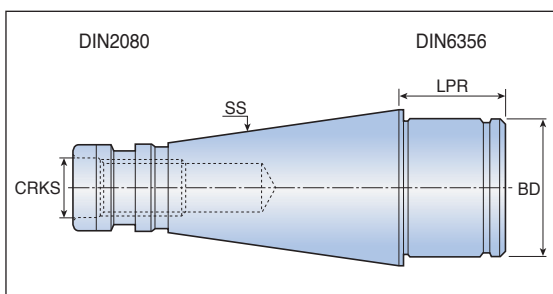
Mandrino per portapunte



Descrizione	Dimensioni (mm)				
	SS	B n°	LF	LB	CRKS
DIN2080 30 DC B16x20	30	B16	20	5.4	M12
DIN2080 40 DC B16x22	40	B16	22	10.4	M16
DC B18x25	40	B18	25	13.4	M16
DIN2080 50 DC B16x25	50	B16	25	9.8	M24
DC B18x25	50	B18	25	9.8	M24

DIN2080-CP

Mandrino di centraggio



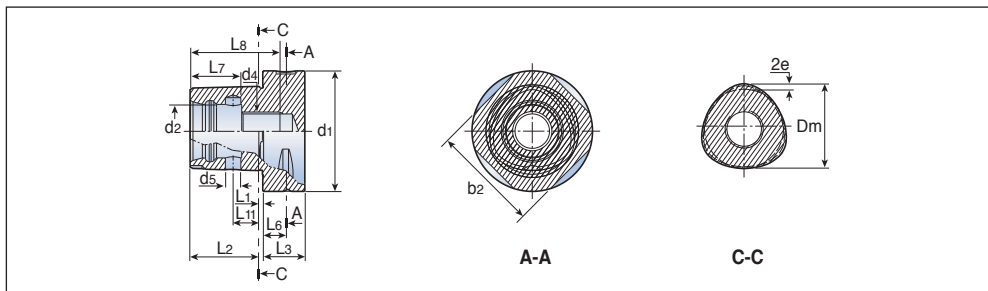
Descrizione	Dimensioni (mm)			
	SS	BD	LPR	CRKS
DIN2080 40 CP 40	40	40	29	M16
DIN2080 50 CP 60	50	60	39	M24

CADAPTER



C-ADAPTER ISO 26623-1

Attacco standard



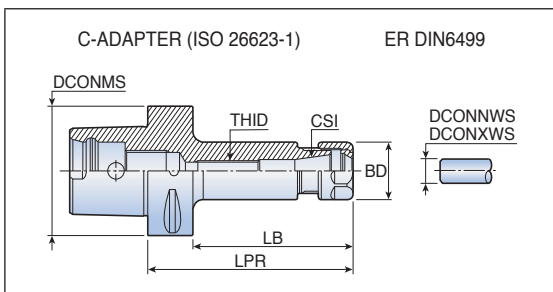
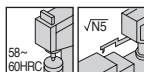
C-ADAPTER	b2	d1 ±0.1	d2	d4	d5 ±0.1	Dm	e
C3	28.3	32	15	M12x1.5	3.6	22	0.70
C4	35.3	40	18	M14x1.5	4.6	28	0.90
C5	44.4	50	21	M16x1.5	6.1	35	1.12
C6	55.8	63	28	M20x2	8.1	44	1.40
C8	71.1	80	32	M20x2	9.1	55	2.00

C-ADAPTER	L1	L2 ±0.1	L3min	L6 ±0.15	L7 ±0.15	L8min	L11 ±0.1
C3	2.5	19	15	6	13	25	8.0
C4	2.5	24	20	8	15	30	11.5
C5	3.0	30	20	10	20	37	14.0
C6	3.0	38	22	12	27	47	15.5
C8	3.0	48	30	12	28	48	25.0

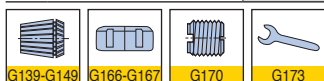
* Per materiale non in stock: le condizioni di fornitura sono soggette a disponibilità. Se non disponibile in magazzino sarà applicata una MOQ (quantità minima ordine).

C-ER

Mandrino a pinza ER



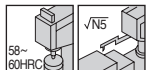
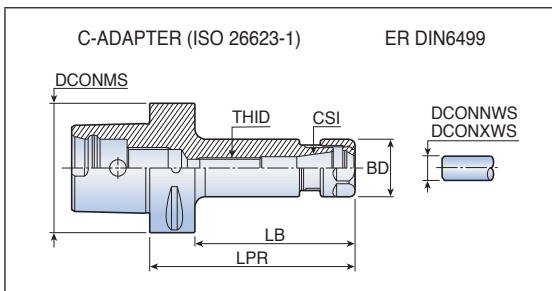
Descrizione	Dimensioni (mm)							
	DCONMS	CSI	DCONWS	DCONXWS	BD	LPR	LB	THID
C4 ER 16x70	40	ER16	1.0	10.0	28	70	50	M10
ER 20x35⁽¹⁾	40	ER20	1.0	13.0	34	35	27	-
ER 20x52	40	ER20	1.0	13.0	34	52	32	-
ER 25x38⁽¹⁾	40	ER25	1.0	16.0	42	38	30	-
ER 25x52	40	ER25	1.0	16.0	42	52	32	-
ER 32x54	40	ER32	2.0	20.0	50	54	34	-
C5 ER 16x100	50	ER16	1.0	10.0	28	100	80	M10
ER 16x130	50	ER16	1.0	10.0	28	130	110	M10
ER 20x055	50	ER20	1.0	13.0	34	55	35	-
ER 20x100	50	ER20	1.0	13.0	34	100	80	M12
ER 20x130	50	ER20	1.0	13.0	34	130	110	M12
ER 25x055	50	ER25	1.0	16.0	42	55	35	-
ER 25x100	50	ER25	1.0	16.0	42	100	80	M16
ER 32x057	50	ER32	2.0	20.0	50	57	36	-
ER 32x100	50	ER32	2.0	20.0	50	100	80	M22x1.5
C6 ER 16x100	63	ER16	1.0	10.0	28	100	78	M10
ER 16x130	63	ER16	1.0	10.0	28	130	108	M10
ER 16x160	63	ER16	1.0	10.0	28	160	138	M10
ER 20x060	63	ER20	1.0	13.0	34	60	38	-
ER 20x100	63	ER20	1.0	13.0	34	100	78	M12
ER 20x130	63	ER20	1.0	13.0	34	130	108	M12
ER 20x160	63	ER20	1.0	13.0	34	160	138	M12
ER 25x060	63	ER25	1.0	16.0	42	60	38	-
ER 25x100	63	ER25	1.0	16.0	42	100	78	M16
ER 25x130	63	ER25	1.0	16.0	42	130	108	M16
ER 25x160	63	ER25	1.0	16.0	42	160	138	M16
ER 32x060	63	ER32	2.0	20.0	50	60	36	-
ER 32x100	63	ER32	2.0	20.0	50	100	78	M22x1.5
ER 32x130	63	ER32	2.0	20.0	50	130	108	M22x1.5
ER 32x160	63	ER32	2.0	20.0	50	160	138	M22x1.5
ER 40x065	63	ER40	3.0	26.0	63	65	37	-
ER 40x100	63	ER40	3.0	26.0	63	100	78	M28x1.5
ER 40x130	63	ER40	3.0	26.0	63	130	108	M28x1.5



• ⁽¹⁾ Senza scanalature a V, solo per uso manuale

C-ER

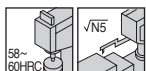
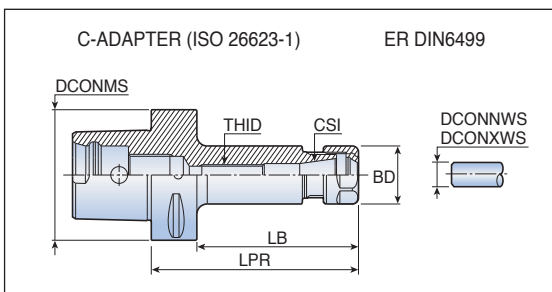
Mandrino a pinza ER



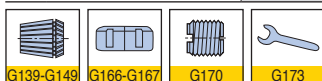
Descrizione	Dimensioni (mm)							
	DCONMS	CSI	DCONNWS	DCONXWS	BD	LPR	LB	THID
C8 ER 32x70	80	ER32	2.0	20.0	50	70	40	-
ER 32x100	80	ER32	2.0	20.0	50	100	70	M22x1.5
ER 32x160	80	ER32	2.0	20.0	50	160	130	M22x1.5
ER 40x70	80	ER40	3.0	26.0	63	70	40	-
ER 40x100	80	ER40	3.0	26.0	63	100	70	M28x1.5
ER 40x160	80	ER40	3.0	26.0	63	160	130	M28x1.5

C-ER-M

Mandrino a pinza ER mini



Descrizione	Dimensioni (mm)							
	DCONMS	CSI	DCONNWS	DCONXWS	BD	LPR	LB	THID
C4 ER 16x70 M	40	ER16	0.5	10.0	22	70	50	M10
C5 ER 16x100 M	50	ER16	0.5	10.0	22	100	80	M10
ER 16x130 M	50	ER16	0.5	10.0	22	130	120	M10
C6 ER 16x100 M	63	ER16	0.5	10.0	22	100	78	M10
ER 16x130 M	63	ER16	0.5	10.0	22	130	108	M10
ER 16x160 M	63	ER16	0.5	10.0	22	160	138	M10



G139-G149

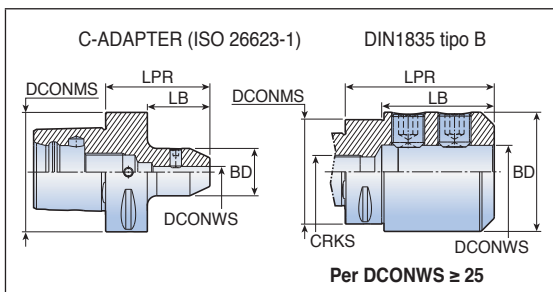
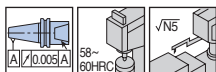
G166-G167

G170

G173

C-EM

Mandrino weldon

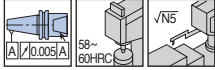
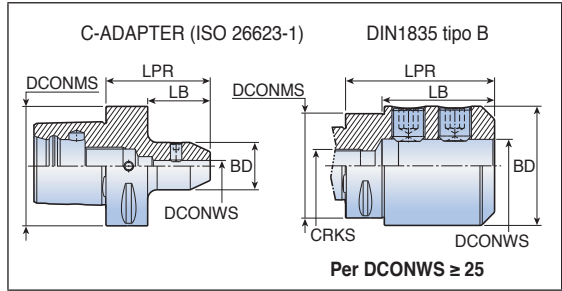


Descrizione	Dimensioni (mm)					
	DCONMS	DCONWS	BD	LPR	LB	CRKS
C4 EM 6x50	40	6	25	50	30	M14
EM 8x50	40	8	28	50	30	M14
EM 10x50	40	10	35	50	30	M14
EM 12x55	40	12	42	55	35	M14
EM 14x55	40	14	44	55	35	M14
EM 16x60	40	16	48	60	40	M14
C5 EM 6x50	50	6	25	50	30	M16
EM 8x50	50	8	28	50	30	M16
EM 10x55	50	10	35	55	35	M16
EM 12x60	50	12	42	60	40	M16
EM 14x60	50	14	44	60	40	M16
EM 16x60	50	16	48	60	40	M16
EM 18x60	50	18	50	60	40	M16
EM 20x60	50	20	52	60	40	M16
EM 25x85	50	25	65	85	65	M16
C6 EM 6x55	63	6	25	55	33	M20
EM 8x55	63	8	28	55	33	M20
EM 10x60	63	10	35	60	38	M20
EM 12x60	63	12	42	60	38	M20
EM 14x60	63	14	44	60	38	M20
EM 16x65	63	16	48	65	43	M20
EM 18x65	63	18	50	65	43	M20
EM 20x65	63	20	52	65	43	M20
EM 25x80	63	25	65	80	58	M20
EM 32x90	63	32	72	90	68	M20
EM 40x100	63	40	90	100	78	M20



C-EM

Mandrino weldon

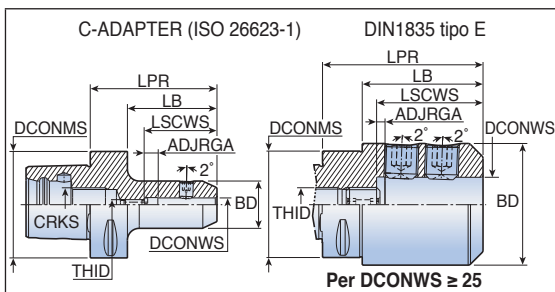
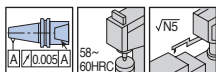


Descrizione	Dimensioni (mm)					
	DCONMS	DCONWS	BD	LPR	LB	CRKS
C8 EM 6x70	80	6	25	70	40	M20
EM 8x70	80	8	28	70	40	M20
EM 10x70	80	10	35	70	40	M20
EM 12x70	80	12	42	70	40	M20
EM 14x70	80	14	44	70	40	M20
EM 16x70	80	16	48	70	40	M20
EM 18x70	80	18	50	70	40	M20
EM 20x70	80	20	52	70	40	M20
EM 25x90	80	25	65	90	60	M20
EM 32x95	80	32	72	95	65	M20
EM 40x110	80	40	90	110	80	M20
EM 50x120	80	50	98	120	90	M20



C-EM-E

Mandrino whistle notch



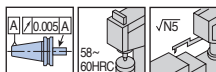
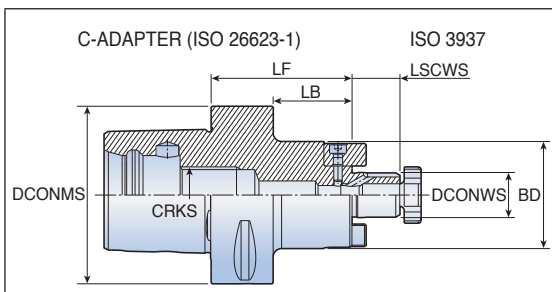
Descrizione	Dimensioni (mm)								
	DCONMS	DCONWS	BD	LPR	LB	ADJRGA	LSCWS	CRKS	THID
C4 EM 6x70 E	40	6	25	70	50	5	35	M14	M5
EM 8x70 E	40	8	28	70	50	8	43	M14	M6
EM 10x70 E	40	10	35	70	50	6	45	M14	M8
EM 12x75 E	40	12	42	75	55	5	49	M14	M10
EM 14x75 E	40	14	44	75	55	5	49	M14	M10
C5 EM 6x70 E	50	6	25	70	50	5	35	M16	M5
EM 8x70 E	50	8	28	70	50	8	43	M16	M6
EM 10x70 E	50	10	35	70	50	6	45	M16	M8
EM 12x75 E	50	12	42	75	55	5	49	M16	M10
EM 14x75 E	50	14	44	75	55	5	49	M16	M10
EM 16x80 E	50	16	48	80	60	5	52	M16	M12
EM 18x80 E	50	18	50	80	60	5	52	M16	M12
EM 20x85 E	50	20	52	85	65	6	55	M16	M16
C6 EM 6x75 E	63	6	25	75	53	6	36	M20	M5
EM 8x75 E	63	8	28	75	53	8	43	M20	M6
EM 10x75 E	63	10	35	75	53	7	46	M20	M8
EM 12x80 E	63	12	42	80	58	5	49	M20	M10
EM 14x80 E	63	14	44	80	58	5	49	M20	M10
EM 16x85 E	63	16	48	85	63	5	52	M20	M12
EM 18x85 E	63	18	50	85	63	5	52	M20	M12
EM 20x85 E	63	20	52	85	63	6	55	M20	M16
EM 25x90 E	63	25	65	90	68	6	60	M20	M20
EM 32x95 E	63	32	72	95	73	5	63	M20	M20
C8 EM 6x65 E	80	6	25	65	35	6	36	M20	M5
EM 8x65 E	80	8	28	65	35	8	43	M20	M6
EM 10x65 E	80	10	35	65	35	7	46	M20	M8
EM 12x70 E	80	12	42	70	40	5	49	M20	M10
EM 14x70 E	80	14	44	70	40	5	49	M20	M10
EM 16x75 E	80	16	48	75	45	5	52	M20	M12
EM 18x75 E	80	18	50	75	45	5	52	M20	M12
EM 20x80 E	80	20	52	80	50	8	57	M20	M16
EM 25x90 E	80	25	65	90	60	6	60	M20	M20
EM 32x95 E	80	32	72	95	65	6	64	M20	M20



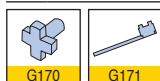
G170

C-SEM-C

Mandrino portafrese a manicotto

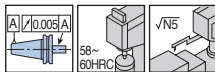
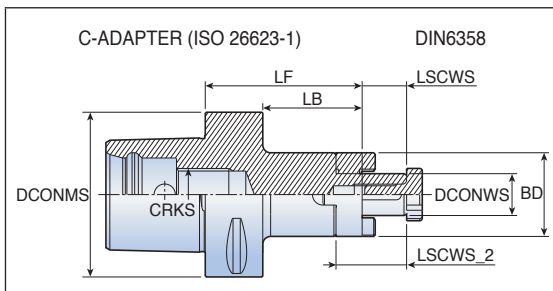


Descrizione	Dimensioni (mm)						
	DCONMS	DCONWS	BD	LF	LB	LSCWS	CRKS
C4 SEM 16x32 C	40	16	38	32	12	17	M14
SEM 16x55 C	40	16	38	55	35	17	M14
SEM 22x40 C	40	22	47	40	20	19	M14
SEM 22x55 C	40	22	47	55	35	19	M14
C5 SEM 16x35 C	50	16	38	35	15	17	M16
SEM 16x70 C	50	16	38	70	50	17	M16
SEM 22x35 C	50	22	47	35	15	19	M16
SEM 22x70 C	50	22	47	70	50	19	M16
SEM 27x40 C	50	27	58	40	20	21	M16
SEM 32x40 C	50	32	63	40	20	24	M16
C6 SEM 16x50 C	63	16	38	50	28	17	M20
SEM 16x100 C	63	16	38	100	78	17	M20
SEM 22x50 C	63	22	47	50	28	19	M20
SEM 22x100 C	63	22	47	100	78	19	M20
SEM 27x60 C	63	27	58	60	38	21	M20
SEM 27x100 C	63	27	58	100	78	21	M20
SEM 32x60 C	63	32	66	60	38	24	M20
SEM 40x60 C	63	40	82	60	38	27	M20
C8 SEM 16x50 C	80	16	38	50	20	17	M20
SEM 16x100 C	80	16	38	100	70	17	M20
SEM 22x50 C	80	22	47	50	20	19	M20
SEM 22x100 C	80	22	47	100	70	19	M20
SEM 27x50 C	80	27	58	50	20	21	M20
SEM 27x100 C	80	27	58	100	70	21	M20
SEM 32x50 C	80	32	66	50	20	24	M20
SEM 32x100 C	80	32	66	100	70	24	M20
SEM 40x60 C	80	40	82	60	30	27	M20



C-SEMC

Mandrino portafrese a manicotto combinato

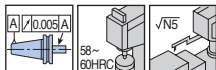
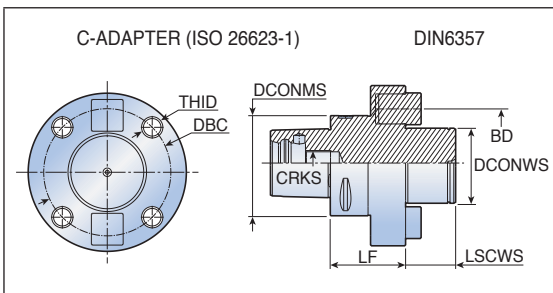


Descrizione	Dimensioni (mm)							
	DCONMS	DCONWS	BD	LF	LB	LSCWS	LSCWS_2	CRKS
C4 SEMC 16x45	40	16	32	45	25	17	27	M14
SEMC 22x45	40	22	40	45	25	19	31	M14
SEMC 27x50	40	27	48	50	30	21	33	M14
C5 SEMC 16x55	50	16	32	55	35	17	27	M16
SEMC 16x85	50	16	32	85	65	17	27	M16
SEMC 22x65	50	22	40	65	45	19	31	M16
SEMC 27x85	50	27	48	85	65	21	33	M16
C6 SEMC 16x60	63	16	32	60	38	17	27	M20
SEMC 16x100	63	16	32	100	78	17	27	M20
SEMC 22x60	63	22	40	60	38	19	31	M20
SEMC 22x100	63	22	40	100	78	19	31	M20
SEMC 27x60	63	27	48	60	38	21	33	M20
SEMC 27x100	63	27	48	100	78	21	33	M20
SEMC 32x60	63	32	58	60	38	24	38	M20
SEMC 40x70	63	40	70	70	48	27	41	M20



C-FM

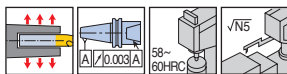
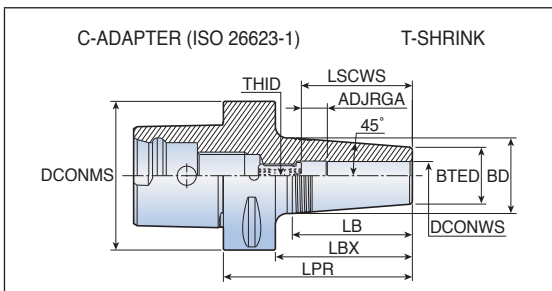
Mandrino portafrese a manicotto



Descrizione	Dimensioni (mm)								
	DCONMS	DCONWS	BD	DBC	LF	LSCWS	CRKS	THID	
C8 FM 60x60	80	60	128	101.6	20	40	M20	M16	



Mandrino a calettamento



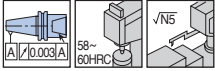
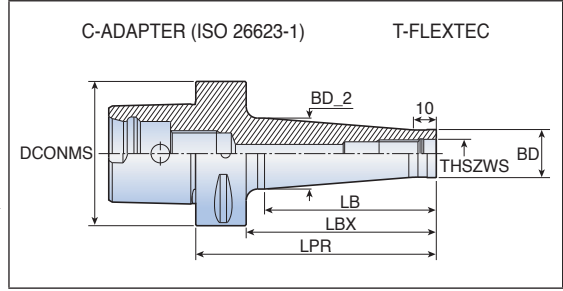
Descrizione	Dimensioni (mm)										
	DCONMS	DCONWS	BTED	BD	LPR	LBX	LB	ADJRGA	LSCWS	THID	Chiave
C4 SRKIN 6x75	40	6	21	27	75	55	38.1	11	36	M5	2.5
SRKIN 8x75	40	8	21	27	75	55	38.1	11	36	M6	3.0
SRKIN 10x75	40	10	24	32	75	55	50.8	11	42	M8	4.0
SRKIN 12x75	40	12	24	32	75	55	50.8	11	47	M10	5.0
SRKIN 14x80	40	14	27	34	80	60	44.5	11	47	M10	5.0
SRKIN 16x80	40	16	27	34	80	60	44.5	11	50	M12	6.0
SRKIN 18x80	40	18	33	42	80	60	57.2	11	50	M12	6.0
SRKIN 20x85	40	20	33	42	85	65	57.2	11	52	M16	8.0
C5 SRKIN 6x75	50	6	21	27	75	55	38.1	11	36	M5	2.5
SRKIN 8x75	50	8	21	27	75	55	38.1	11	36	M6	3.0
SRKIN 10x75	50	10	24	32	75	55	50.8	11	42	M8	4.0
SRKIN 12x75	50	12	24	32	75	55	50.8	11	47	M10	5.0
SRKIN 14x80	50	14	27	34	80	60	44.5	11	47	M10	5.0
SRKIN 16x80	50	16	27	34	80	60	44.5	11	50	M12	6.0
SRKIN 18x80	50	18	33	42	80	60	57.2	11	50	M12	6.0
SRKIN 20x85	50	20	33	42	85	65	57.2	11	52	M16	8.0
SRKIN 25x90	50	25	44	53	90	70	57.2	11	58	M16	8.0
C6 SRKIN 6x80	63	6	21	27	80	58	38.1	11	36	M5	2.5
SRKIN 8x80	63	8	21	27	80	58	38.1	11	36	M6	3.0
SRKIN 10x80	63	10	24	32	80	58	50.8	11	42	M8	4.0
SRKIN 12x80	63	12	24	32	80	58	50.8	11	47	M10	5.0
SRKIN 14x85	63	14	27	34	85	63	44.5	11	47	M10	5.0
SRKIN 16x85	63	16	27	34	85	63	44.5	11	50	M12	6.0
SRKIN 18x85	63	18	33	42	85	63	57.2	11	50	M12	6.0
SRKIN 20x85	63	20	33	42	85	63	57.2	11	52	M16	8.0
SRKIN 25x90	63	25	44	53	90	68	57.2	11	58	M16	8.0
SRKIN 32x95	63	32	44	53	95	73	57.2	11	58	M16	8.0



C-ODP



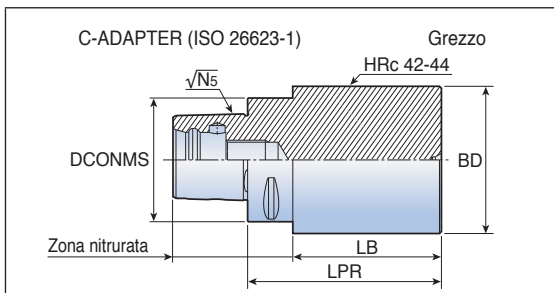
T-FLEXTEC mandrino modulare



Descrizione	Dimensioni (mm)						
	DCONMS	THSZWS	BD	BD_2	LPR	LBX	LB
C4 ODP 10x53	40	M10	18	23.0	53	33	23
ODP 12x53	40	M12	21	26.0	53	33	23
ODP 16x53	40	M16	29	34.0	53	33	23
C5 ODP 10x53	50	M10	18	19.5	53	33	25
ODP 10x103	50	M10	18	28.0	103	83	75
ODP 12x53	50	M12	21	23.5	53	33	25
ODP 12x103	50	M12	21	31.0	103	83	75
ODP 16x53	50	M16	29	29.5	53	33	25
ODP 16x103	50	M16	29	36.0	103	83	75
C6 ODP 10x55	63	M10	18	19.5	55	33	25
ODP 10x105	63	M10	18	28.0	105	83	75
ODP 10x130	63	M10	18	32.0	130	108	100
ODP 12x55	63	M12	21	23.5	55	33	25
ODP 12x105	63	M12	21	31.0	105	83	75
ODP 12x130	63	M12	21	36.0	130	108	100
ODP 16x55	63	M16	29	34.0	55	33	25
ODP 16x105	63	M16	29	34.0	105	83	75
ODP 16x130	63	M16	29	41.0	130	108	100

C-B4340

C-ADAPTER grezzo



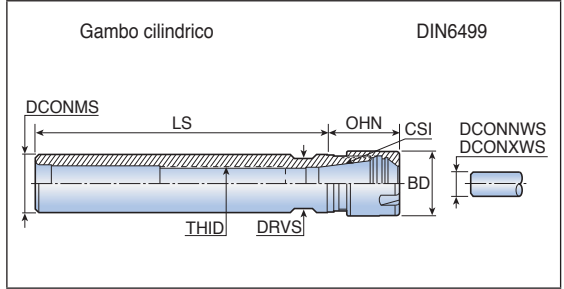
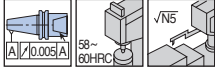
Descrizione	Dimensioni (mm)			
	DCONWS	BD	LPR	LB
C4 B4340 040095	40	40	95	75
B4340 060165	40	60	165	144
B4340 080075	40	80	75	54
B4340 100085	40	100	85	64
C5 B4340 050125	50	50	125	105
B4340 075175	50	75	175	154
B4340 090080	50	90	80	59
B4340 110090	50	110	90	69
C6 B4340 075195	63	75	195	172
B4340 110085	63	110	85	62
B4340 130095	63	130	95	72
B4340 120180	63	120	180	157
C8 B4340 080200	80	80	200	170
B4340 120160	80	120	160	129
B4340 130090	80	130	90	59
B4340 145200	80	145	200	169

Gambo cilindrico e cono morse

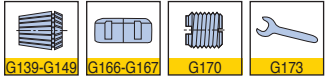


ST-ER-M

Mandrino a gambo cilindrico a pinza ER mini

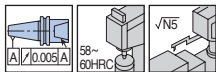
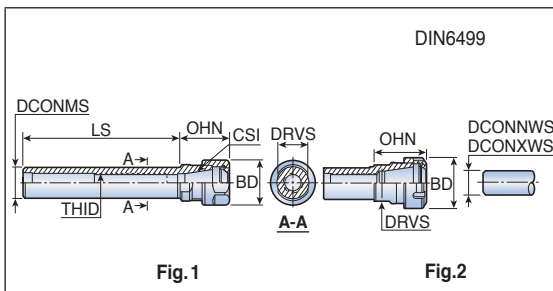


Descrizione	Dimensioni (mm)								
	DCONMS	CSI	DCONNWS	DCONXWS	BD	OHN	LS	THID	DRVS
ST 12x80 ER11 M	12	ER11	0.5	7.0	16	26.5	80	-	11
16x100 ER11 M	16	ER11	0.5	7.0	16	18.5	100	M8	13
16x150 ER11 M	16	ER11	0.5	7.0	16	18.5	150	M8	13
12x80 ER16 M	12	ER16	0.5	10.0	22	36.5	80	-	17
20x100 ER16 M	20	ER16	0.5	10.0	22	25.0	100	M12	17
20x150 ER16 M	20	ER16	0.5	10.0	22	25.0	150	M12	17
20x100 ER20 M	20	ER20	1.0	13.0	28	40.0	100	M12	21
20x150 ER20 M	20	ER20	1.0	13.0	28	40.0	150	M12	21

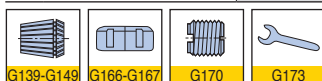


ST-ER-F

Mandrino a gambo cilindrico a pinza ER



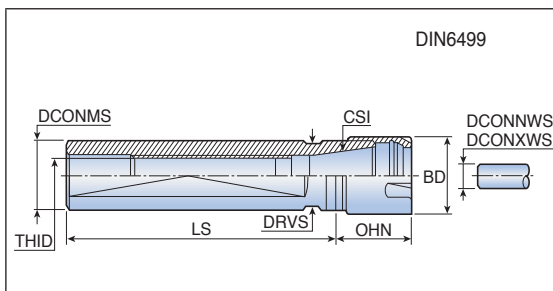
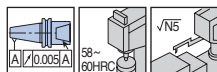
Descrizione	Dimensioni (mm)									Fig.
	DCONMS	CSI	DCONNWS	DCONXWS	BD	OHB	LS	THID	CRVS	
ST 16x50 ER11 F	16	ER11	0.5	7.0	19	18.5	50	M8	13	1
20x50 ER11 F	20	ER11	0.5	7.0	19	18.5	50	M10	17	1
20x100 ER11	20	ER11	0.5	7.0	19	18.5	100	M10	17	1
20x100 ER11 F	20	ER11	0.5	7.0	19	18.5	100	M10	17	1
20x150 ER11	20	ER11	0.5	7.0	19	18.5	150	M10	17	1
20x50 ER16 F	20	ER16	0.5	10.0	28	32.3	50	M12	19	1
20x100 ER16	20	ER16	0.5	10.0	28	30.0	100	M12	19	1
20x100 ER16 F	20	ER16	0.5	10.0	28	30.0	100	M12	19	1
20x150 ER16	20	ER16	0.5	10.0	28	30.0	150	M12	19	1
20x50 ER20 F	20	ER20	1.0	13.0	34	42.5	50	M12	22	1
25x100 ER20	25	ER20	1.0	13.0	34	36.0	100	M16	22	1
25x150 ER20	25	ER20	1.0	13.0	34	36.0	150	M16	22	1
20x50 ER25 F	20	ER25	1.0	16.0	42	46.0	50	M12	28	2
20x100 ER25	20	ER25	1.0	16.0	42	46.0	100	M12	28	2
20x100 ER25 F	20	ER25	1.0	16.0	42	46.0	100	M12	28	2
25x50 ER25 F	25	ER25	1.0	16.0	42	46.0	50	M16	28	2
25x100 ER25	25	ER25	1.0	16.0	42	46.0	100	M16	28	2
20x50 ER32 F	20	ER32	2.0	20.0	50	54.0	50	M12	36	2
20x100 ER32	20	ER32	2.0	20.0	50	54.0	100	M12	36	2
20x100 ER32 F	20	ER32	2.0	20.0	50	54.0	100	M12	36	2
25x50 ER32 F	25	ER32	2.0	20.0	50	52.0	50	M16x2	36	2
30x50 ER32 F	30	ER32	2.0	20.0	50	52.0	50	M18x1.5	36	2
32x50 ER32 F	32	ER32	2.0	20.0	50	52.0	50	M18x1.5	36	2
32x150 ER32	32	ER32	2.0	20.0	50	52.0	150	M18x1.5	36	2
40x75 ER32 F	40	ER32	2.0	20.0	50	46.0	75	M22x1.5	44	2
25x50 ER40 F	25	ER40	3.0	26.0	63	60.0	50	M16x2	45	2
30x50 ER40 F	32	ER40	3.0	26.0	63	60.0	50	M18x1.5	45	2
32x50 ER40 F	32	ER40	3.0	26.0	63	60.0	50	M18x1.5	45	2
40x75 ER40 F	40	ER40	3.0	26.0	63	55.0	75	M22x1.5	45	2
50x80 ER40 F	50	ER40	3.0	26.0	63	60.0	80	M28x1.5	54	2
50x80 ER50 F	50	ER50	10.0	34.0	78	77.0	80	M36x1.5	58	2



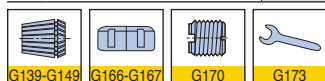
• F: piano sul gambo

ST-ER-MF

Mandrino a gambo cilindrico a pinza ER mini



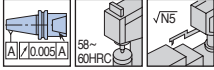
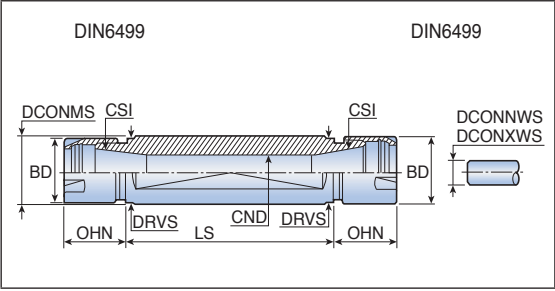
Descrizione	Dimensioni (mm)									
	DCONMS	CSI	DCONNWS	DCONXWS	BD	OHN	LS	THID	DRVS	
ST 16x38 ER11 MF	16	ER11	0.5	7.0	16	18.5	38	M8x1	14	
16x50 ER11 MF	16	ER11	0.5	7.0	16	18.5	50	M8x1	13	
16x140 ER11 MF	16	ER11	0.5	7.0	16	18.5	140	M8x1	14	
16x35 ER16 MF	16	ER16	0.5	10.0	22	36.0	35	M8x1	17	
20x50 ER16 MF	20	ER16	0.5	10.0	22	26.0	50	M12x1	17	
20x70 ER16 MF	20	ER16	0.5	10.0	22	26.0	70	M12x1	17	
20x120 ER16 MF	20	ER16	0.5	10.0	22	26.0	120	M12x1	17	
20x140 ER16 MF	20	ER16	0.5	10.0	22	26.0	140	M12x1	17	
22x38 ER16 MF	22	ER16	0.5	10.0	22	26.0	38	M12x1	19	
22x70 ER16 MF	22	ER16	0.5	10.0	22	26.0	70	M12x1	19	
22x100 ER16 MF	22	ER16	0.5	10.0	22	28.0	100	M12x1	19	
25x65 ER16 MF	25	ER16	0.5	10.0	22	28.0	65	M14x1	22	
22x80 ER20 MF	22	ER20	1.0	13.0	28	39.0	80	M12x1	21	
25x100 ER20 MF	25	ER20	1.0	13.0	28	28.0	100	M14x1	22	
25x154 ER20 MF	25	ER20	1.0	13.0	28	28.0	154	M14x1	22	
22x70 ER25 MF	22	ER25	1.0	16.0	35	47.0	70	M12x1	27	
25x75 ER25 MF	25	ER25	1.0	16.0	35	48.0	75	M14x1	27	
25x145 ER25 MF	25	ER25	1.0	16.0	35	36.0	145	M14x1	27	
32x70 ER25 MF	32	ER25	1.0	16.0	35	30.0	70	M18x1	27	



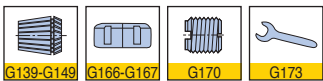
• MF: mini con piano sul gambo

ST-ER-MF D

Mandrino a gambo cilindrico a pinza ER mini doppio



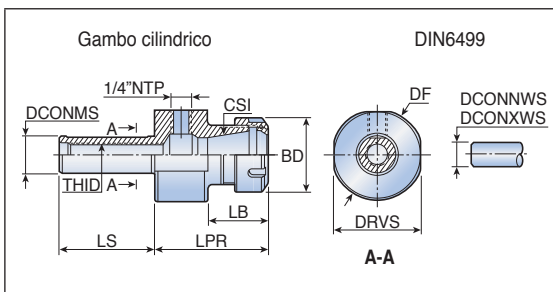
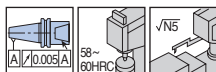
Descrizione	Dimensioni (mm)								
	DCONMS	CSI	DCONNWS	DCONXWS	CND	BD	OHN	LS	DRVS
ST 16x50 ER11 MF D	16	ER11	0.5	7.0	7.5	16	18.5	50	14
20x30 ER11 MF D	20	ER11	0.5	7.0	7.5	16	18.5	30	17
20x50 ER11 MF D	20	ER11	0.5	7.0	7.5	16	18.5	50	17
20x55 ER16 MF D	20	ER16	0.5	10.0	10.5	22	25.0	55	17
22x55 ER16 MF D	22	ER16	0.5	10.0	10.5	22	28.0	55	19
22x75 ER16 MF D	22	ER16	0.5	10.0	10.5	22	28.0	75	19
25x62 ER16 MF D	25	ER16	0.5	10.0	10.5	22	28.0	62	22
32x55 ER20 MF D	32	ER20	1.0	13.0	13.5	28	28.0	55	27
32x75 ER20 MF D	32	ER20	1.0	13.0	13.5	28	28.0	75	27



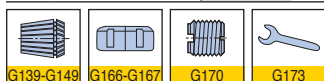
• MF D: mini con piano sul gambo, doppio

ST-ER-S

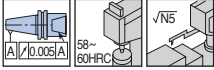
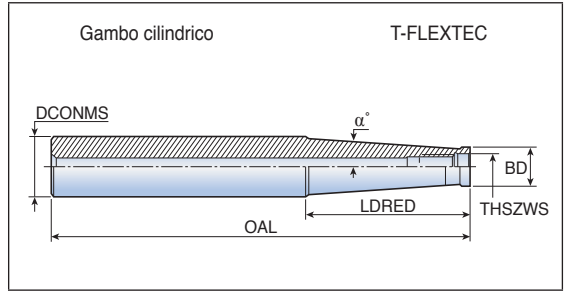
Mandrino a gambo cilindrico a pinza ER con adduttore refrigerante



Descrizione	Dimensioni (mm)										
	DCONMS	CSI	DCONNWS	DCONXWS	DF	BD	LPR	LB	LS	THID	CRVS
ST 20x65 ER16 S	20	ER16	0.5	10.0	40	28	54	29.6	65	M12	34
20x65 ER20 S	20	ER20	1.0	13.0	40	34	63	31.0	65	M12	34
20x65 ER25 S	20	ER25	1.0	16.0	54	42	72	32.0	65	M12	51
20x65 ER32 S	20	ER32	2.0	20.0	63	50	77	41.0	65	M12	59
25x65 ER25 S	25	ER25	1.0	16.0	54	42	72	32.0	65	M12	50
25x65 ER32 S	25	ER32	2.0	20.0	63	50	77	41.0	65	M16	59
32x65 ER32 S	32	ER32	2.0	20.0	63	50	77	41.0	65	M18x1.5	59
40x75 ER32 S	40	ER32	2.0	20.0	63	50	77	41.0	75	M22x1.5	59



T-FLEXTEC mandrino a gambo cilindrico modulare



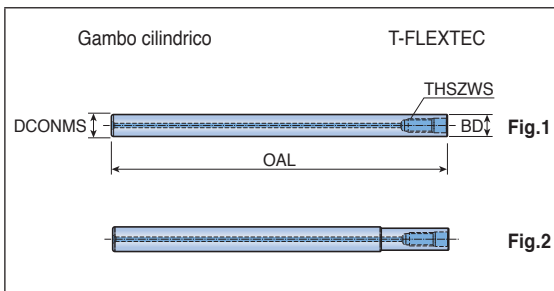
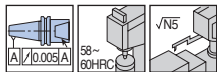
Descrizione	Dimensioni (mm)						Tipo gambo
	THSZWS	DCONMS	BD	OAL	LDRED	α°	
S M06 - L60 C10	M06	10	9.7	60	20.0	-	C
L105-C12	M06	12	9.7	105	60.0	1.2	C
L125-C16	M06	16	9.7	125	60.0	3.3	C
S M08 - L73 C16	M08	16	13.0	73	25.0	-	C
L128-C 16	M08	16	13.0	128	80.0	0.9	C
L170-C20	M08	20	13.0	170	66.8	3.3	C
S M10 - L80 C20	M10	20	18.0	80	30.0	-	C
L130-C20	M10	20	18.0	130	80.0	0.6	C
L200-C25	M10	25	19.0	200	57.2	3.3	C
S M12 - L86-C25	M12	25	21.0	86	30.0	5.1	C
L200-C32	M12	32	21.0	200	78.0	4.4	C
S M16 - L95-C32	M16	32	29.0	95	35.0	1.7	C
L230-C32	M16	32	29.0	230	50.0	1.8	C

• Tutti i mandrini hanno la refrigerazione interna

S M06-CT



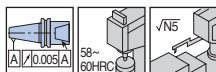
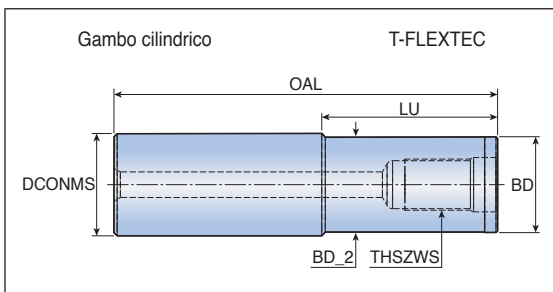
T-FLEXTEC mandrino a gambo cilindrico modulare in metallo duro



Descrizione	Dimensioni (mm)				Fig.
	THSZWS	DCONMS	BD	OAL	
S M06 - CT10-L100	M06	10	10	100	1
CT10-L150	M06	10	10	150	1
CT12-L100	M06	12	12	100	1
CT12-L150	M06	12	12	150	1

- Tutti i mandrini hanno la refrigerazione interna
- Fig.2 può essere fornita come speciale

T-FLEXTEC mandrino a gambo cilindrico modulare in metallo duro scaricata



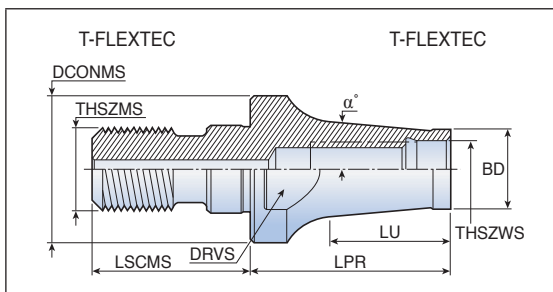
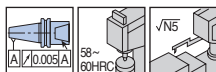
Descrizione	Dimensioni (mm)					
	THSZWS	DCONMS	BD	BD_2	OAL	LU
S M08-CT16 - 20-L80	M08	16	15.3	15.3	80	20
40-L100	M08	16	15.3	15.3	100	40
80-L150	M08	16	15.3	15.3	150	80
100-L200	M08	16	13.0	12.5	200	100
140-L200	M08	16	13.0	12.5	200	140
180-L250	M08	16	13.0	12.5	250	180
S M10-CT20 - 20-L80	M10	20	18.0	17.5	80	20
40-L100	M10	20	18.0	17.5	100	40
80-L150	M10	20	18.5	18.5	150	80
100-L200	M10	20	18.0	17.5	200	100
140-L200	M10	20	18.0	17.5	200	140
130-L250	M10	20	18.0	17.5	250	130
180-L250	M10	20	18.0	17.5	250	180
180-L300	M10	20	18.0	17.5	300	180
230-L300	M10	20	18.0	17.5	300	230
S M12-CT25 - 40-L100	M12	25	21.0	20.5	100	40
80-L150	M12	25	21.0	20.5	150	80
100-L200	M12	25	21.0	20.5	200	100
140-L200	M12	25	21.0	20.5	200	140
130-L250	M12	25	21.0	20.5	250	130
180-L250	M12	25	21.0	20.5	250	180
180-L300	M12	25	21.0	20.5	300	180
230-L300	M12	25	21.0	20.5	300	230
S M16-CT32 - 40-L100	M16	32	29.0	28.0	100	40
80-L150	M16	32	29.0	28.0	150	80
100-L200	M16	32	29.0	28.0	200	100
140-L200	M16	32	29.0	28.0	200	140
130-L250	M16	32	29.0	28.0	250	130
180-L250	M16	32	29.0	28.0	250	180
180-L300	M16	32	29.0	28.0	300	180
230-L300	M16	32	29.0	28.0	300	230
230-L350	M16	32	29.0	28.0	350	230
280-L350	M16	32	29.0	28.0	350	280

• Tutti i mandrini hanno la refrigerazione interna

CAB M-M



Riduzione modulare



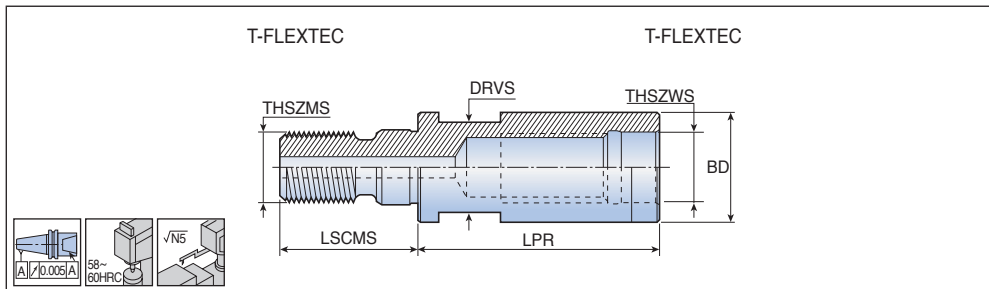
Descrizione	Dimensioni (mm)								
	THSZWS	THSZMS	BD	DCONMS	LPR	LSCMS	LU	DRVS	α°
CAB M06M08	M06	M08	9.7	13	30	17.5	24.8	9.5	5.7
M08M10	M08	M10	13.0	18	40	20.0	33.4	15.0	5.2
M10M12	M10	M12	18.0	21	45	22.0	36.4	17.0	2.5
M12M16	M12	M16	21.0	29	50	25.0	42.5	25.0	6.3

- Con foro di refrigerazione

CAB M-M-C



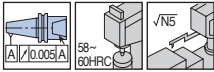
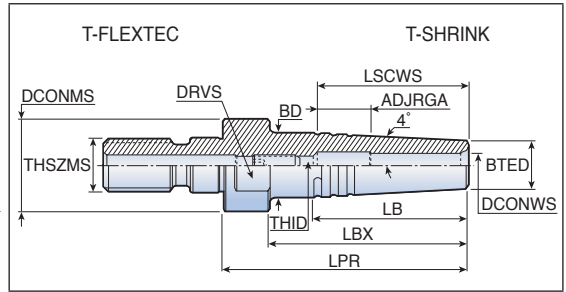
Prolunga modulare



Descrizione	Dimensioni (mm)					
	THSZWS	THSZMS	BD	LPR	LSCMS	DRVS
CAB M08M08-C	M08	M08	13	30	17.5	9.6
M10M10-C	M10	M10	18	35	20.0	15.0
M12M12-C	M12	M12	21	40	22.0	17.0
M16M16-C	M16	M16	29	40	25.0	25.0

- Con foro di refrigerazione

Adattatore modulare per calettamento SRK T-SHRINK



Descrizione	Dimensioni (mm)												
	THSZMS	DCONWS	BTED	BD	DCONMS	LPR	LBX	LB	ADJRGA	LSCWS	THID	DRVS	Chiave
CDP M10 SRK 3x40	M10	3	10	14	18	40	31.5	28.4	6	16	M4	15	2.0
SRK 4x40	M10	4	10	14	18	40	31.5	28.4	7	19	M4	15	2.0
SRK 5x40	M10	5	10	14	18	40	31.5	28.4	10	25	M4	15	2.0
CDP M12 SRK 3x45	M12	3	10	14	21	45	36.5	28.8	6	16	M5	18	2.5
SRK 4x45	M12	4	10	14	21	45	36.5	28.8	6	18	M5	18	2.5
SRK 5x45	M12	5	10	14	21	45	36.5	28.8	10	25	M5	18	2.5
SRK 6x45	M12	6	11	15	21	45	36.5	28.4	10	28	M5	18	2.5
SRK 8x45	M12	8	14	18	21	45	36.5	28.8	10	35	M5	18	2.5
SRK 10x45	M12	10	16	21	21	45	-	35.6	10	40	M5	18	2.5
SRK 12x45	M12	12	20	25	21	45	-	36.0	10	42	M5	18	2.5

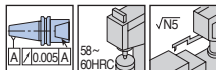
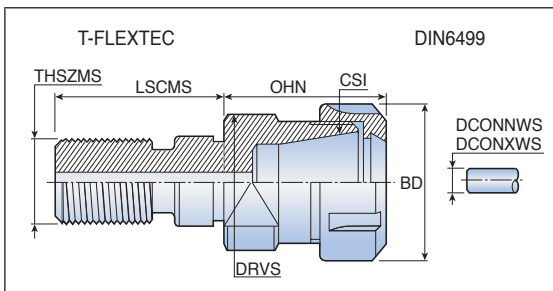


• Con foro di refrigerazione

CDP ER-M



Adattatore modulare per pinze ER



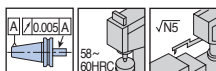
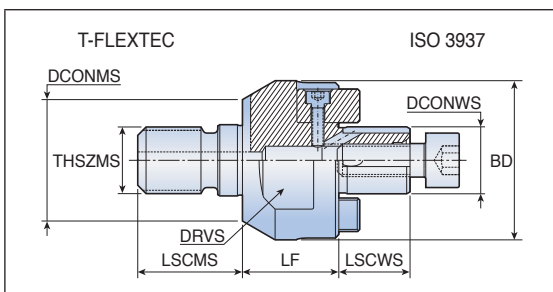
Descrizione	Dimensioni (mm)							
	CSI	THSZMS	DCONNWS	DCONXWS	BD	OHN	LSCMS	DRVS
CDP ER11 M10 M	ER11	M10	0.5	7.0	16	27.0	20	15
ER11 M12 M	ER11	M12	0.5	7.0	16	27.0	22	17
ER16 M10 M	ER16	M10	0.5	10.0	22	38.1	20	17
ER16 M12 M	ER16	M12	0.5	10.0	22	37.1	22	17
ER16 M16	ER16	M16	0.5	10.0	28	36.6	25	25
ER20 M16	ER20	M16	1.0	13.0	34	45.5	25	25
ER25 M16	ER25	M16	1.0	16.0	42	44.5	25	28

- Con foro di refrigerazione

CAB M-SEM-C

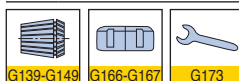


Adattatore modulare per frese a manicotto

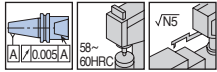
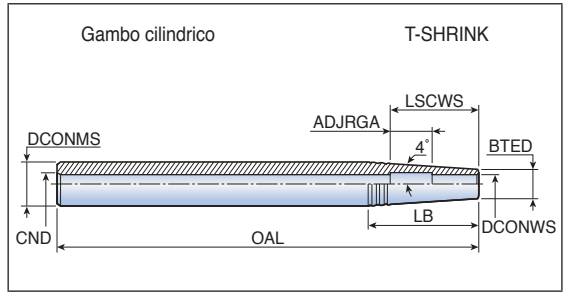


Descrizione	Dimensioni (mm)							
	THSZMS	DCONWS	DCONMS	BD	LF	LSCWS	LSCMS	DRVS
CAB M16 SEM 16C	M16	16	29	38	23	17	25	32

- Con foro di refrigerazione



Mandrino a gambo cilindrico a calettamento

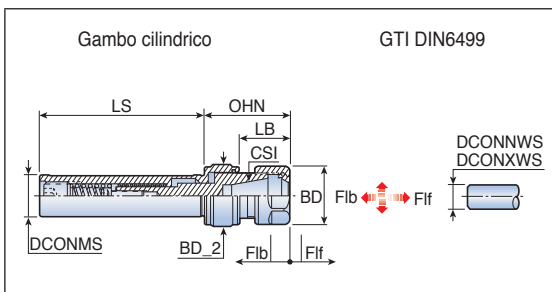
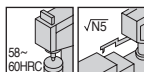


Descrizione	Dimensioni (mm)							
	DCONMS	DCONWS	CND	BTED	OAL	LB	ADJRGA	LSCWS
ST 12x160 SRK3	12	3	4	10	160	14.3	-	10
12x160 SRK4	12	4	4	10	160	14.3	-	27
16x160 SRK3	16	3	6	10	160	43.0	-	10
16x160 SRK4	16	4	6	10	160	43.0	-	12
16x160 SRK5	16	5	6	10	160	43.0	-	15
16x160 SRK6	16	6	6	11	160	35.5	17	35
20x200 SRK5	20	5	6	10	200	71.5	-	15
20x200 SRK6	20	6	6	11	200	64.5	22	40
20x200 SRK8	20	8	6	14	200	43.0	15	40
25x200 SRK6	25	6	8	11	200	100.0	17	35
25x200 SRK8	25	8	8	14	200	78.6	15	40
25x200 SRK10	25	10	8	16	200	64.3	20	50
25x200 SRK12	25	12	8	20	200	35.7	20	52



GTI ER-ST

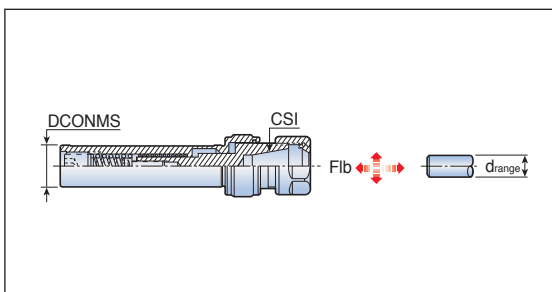
Mandrino a gambo cilindrico portamaschi GTI



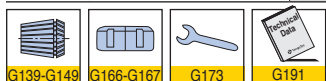
Descrizione	Dimensioni (mm)												
	DCONMS	CSI	Min	Max	DCONNWS	DCONXWS	BD	BD_2	OHN	LB	LS	Flb	Flf
GTI ER11 ST16x150 M	16	ER11	M2	M7	0.5	7.0	16	-	-	19.0	150	6	3
ER16 ST20x80	20	ER16	M3	M10	0.5	10.0	28	29.5	41.6	24.6	80	8	3
ER20 ST20x80	20	ER20	M4	M14	1.0	13.0	34	33.5	49.0	28.0	80	8	3
ER25 ST25x80	25	ER25	M5	M16	1.0	16.0	42	40.5	53.0	32.0	80	9	4
ER32 ST25x80	25	ER32	M6	M20	1.0	16.0	50	56.5	77.2	32.0	80	9	4
ER40 ST32x80	32	ER40	M6	M27	2.0	20.0	63	56.5	95.2	51.0	80	9	4

KIT GTI ER-ST

KIT Mandrino a gambo cilindrico portamaschi GTI



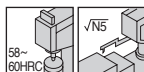
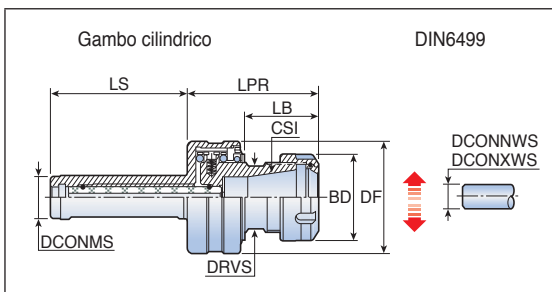
Descrizione	Dimensioni (mm)		
	DCONMS	CSI	drange
KIT GTI ER11 ST16x150 4M	16	ER11	3, 4, 5, 6
ER16 ST20x80 4	20	ER16	4, 5, 6, 7
ER20 ST20x80 4	20	ER20	5, 6, 8, 9
ER25 ST25x80 5	25	ER25	6, 7, 9, 11, 12
ER32 ST25x80 6	25	ER32	6, 7, 9, 11, 12, 16
ER40 ST32x80 6	32	ER40	9, 11, 14, 16, 18, 20



• Il KIT include: GTI, pinze e chiavi

GFI ST-ER

Mandrino a gambo cilindrico flottante GFI con pinze ER per alesatori

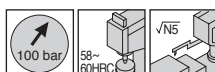
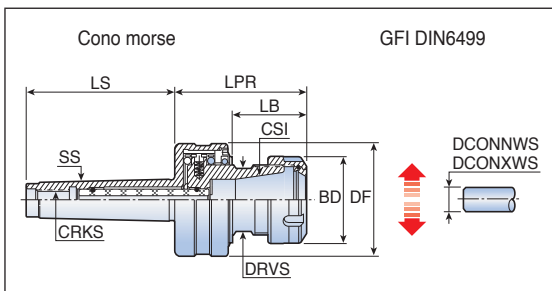


Descrizione	Dimensioni (mm)										
	DCONMS	CSI	DCONNWS	DCONXWS	DF	BD	LPR	LB	LS	Spost. rad.	DRVS
GFI ST20 ER20	20	ER20	1.0	13.0	50	34	55.5	34.5	65	1.0	22
ST25 ER32	25	ER32	2.0	20.0	65	50	76.9	45.9	80	1.6	36

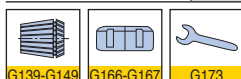
• Max 2,000 g/min

GFI MT-ER

Mandrino cono morse flottante GFI con pinze ER per alesatori



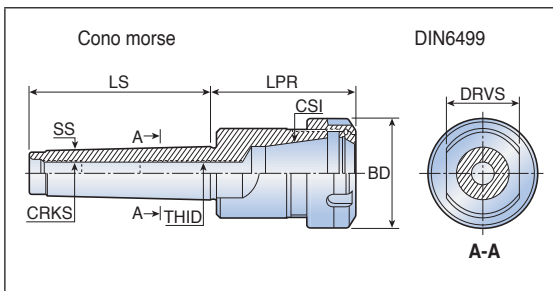
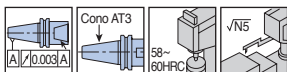
Descrizione	Dimensioni (mm)											
	SS	CSI	DCONNWS	DCONXWS	DF	BD	LPR	LB	LS	CRKS	Spost. rad.	DRVS
GFI MT2 ER20	2	ER20	1.0	13.0	50	34	60.5	34.5	64	M10	1.0	22
MT3 ER32	3	ER32	2.0	20.0	65	50	81.9	45.9	81	M12	1.6	36



• Max 2,000 g/min

MT-ER

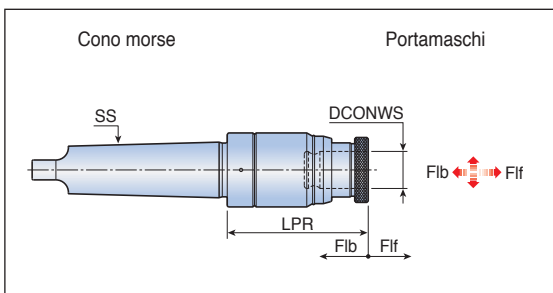
Mandrino con morse a pinze ER



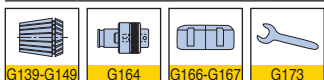
Descrizione	Dimensioni (mm)									
	SS	CSI	DCONWS	DCONXWS	BD	LPR	LS	CRKS	THID	DRVS
MT2 ER 20x48.5	2	ER20	1.0	13.0	34	48.5	64.0	M10	M10	22
ER 25x52	2	ER25	1.0	16.0	42	52.0	64.0	M10	M10	28
MT3 ER 32x69	3	ER32	2.0	20.0	50	69.0	81.0	M12	M12	24
ER 40x79	3	ER40	3.0	26.0	63	79.0	81.0	M12	M12	24
MT4 ER 32x61	4	ER32	2.0	20.0	50	60.5	102.5	M16	M16	32
ER 40x82	4	ER40	3.0	26.0	63	81.5	102.5	M16	M16	32
ER 50x108	4	ER50	10.0	34.0	78	107.5	102.5	M16	M16	32
MT5 ER 40x82	5	ER40	3.0	26.0	63	82.0	129.5	M20	M28x1.5	45
ER 50x85	5	ER50	10.0	34.0	78	85.0	129.5	M20	M28x1.5	45

MTA-TC

Mandrino con morse portamaschi - MTA

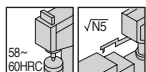
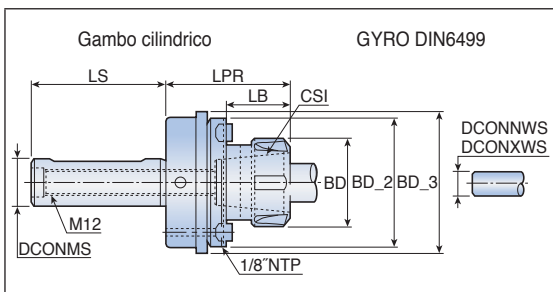


Descrizione	Dimensioni (mm)							
	SS	Min	Max	DCONWS	LPR	Flb	Flf	Portamaschi
MTA3 TC12-90	12	M3	M12	19	90	6.5	12	TA1
TC22-115	22	M6	M24	31	115	14.5	13	TA2
MTA4 TC12-105	12	M3	M12	19	105	6.5	12	TA1
TC22-115	22	M6	M24	31	115	14.5	13	TA2
MTA5 TC12-145	12	M3	M12	19	145	6.5	12	TA1
TC22-175	22	M6	M24	31	175	14.5	13	TA2



GYRO ST-ER

Mandrino a gambo cilindrico GYRO per allineamento assi a pinze ER

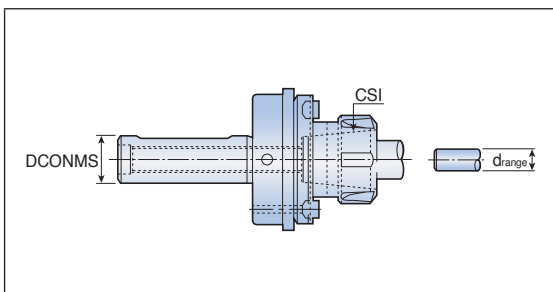


Descrizione	Dimensioni (mm)									
	SS	CSI	DCONNWS	DCONXWS	BD	BD_2	BD_3	LPR	LB	LS
GYRO ST20 ER20	20	ER20	1.0	13.0	34	57	63	58.80	28.5	80
ST25 ER25	25	ER25	1.0	16.0	42	74	79	65.65	35.5	80
ST25 ER32	25	ER32	2.0	20.0	50	74	79	66.65	36.5	80
ST32 ER32	32	ER32	2.0	20.0	50	74	79	66.65	36.5	80
ST40 ER32	40	ER32	2.0	20.0	50	74	79	66.65	36.5	80

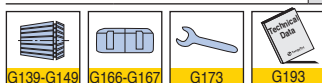
- Con il primo mandrino è raccomandato l'acquisto di un kit GYRO per eseguire la procedura di allineamento

KIT GYRO ST-ER

KIT mandrino a gambo cilindrico GYRO per allineamento assi a pinze ER



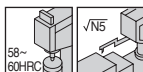
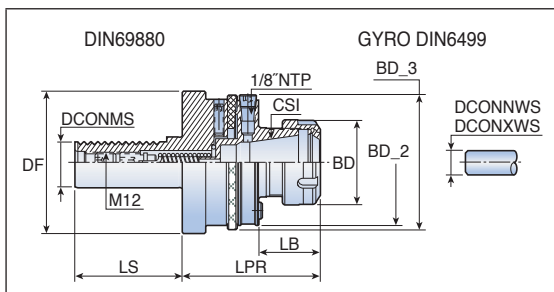
Descrizione	Dimensioni (mm)		
	DCONMS	CSI	drange
KIT GYRO ST20 ER20	20	ER20	1-13
ST25 ER25	25	ER25	1-16
ST25 ER32	25	ER32	2-20
ST32 ER32	32	ER32	2-20
ST40 ER32	40	ER32	2-20



- Il KIT include: GYRO, barra test e bussola

GYRO DIN69880-ER

Mandrino DIN69880 GYRO per allineamento assi a pinze ER

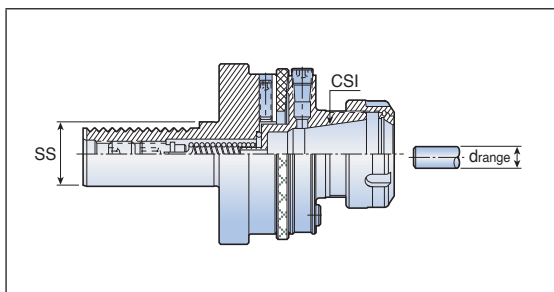


Descrizione	Dimensioni (mm)											
	DCONMS	CSI	DCONNWS	DCONXWS	BD	BD_2	BD_3	DF	LPR	LB	LS	
GYRO DIN69880 30 ER32	30	ER32	2.0	20.0	50	74	79	68.0	81.65	36.5	55	
40 ER32	40	ER32	2.0	20.0	50	74	79	83.2	81.65	36.5	63	
50 ER32	50	ER32	2.0	20.0	50	74	79	98.0	81.65	36.5	78	

- Con il primo mandrino è raccomandato l'acquisto di un kit GYRO per eseguire la procedura di allineamento

KIT GYRO DIN69880-ER

KIT mandrino DIN69880 GYRO per allineamento assi a pinze ER



Descrizione	Dimensioni (mm)		
	SS	CSI	drange
KIT GYRO 40 DIN69880 ER32	VDI40	ER32	2-20
50 DIN69880 ER32	VDI50	ER32	2-20



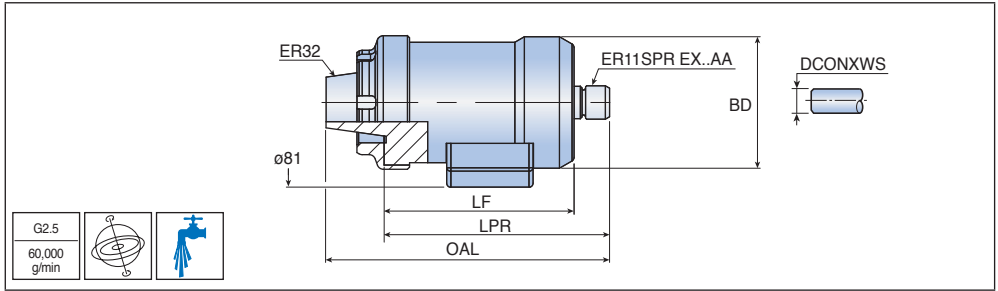
- Il KIT include: GYRO, barra test e bussola

TYPHOON GREEN



TJS GJET ER

Mandrino compatto ad alta velocità con funzionamento a refrigerante e attacco ER32



Descrizione	Dimensioni (mm)					Kg
	DCONXWS	LF	LPR	OAL	BD	
TJS GJET ER32	7.0	92.0	109.0	136.0	63.0	1.3

- Pressione minima 20 bar e portata minima 12 l/min
- Il mandrino fornisce solo un forte getto di lubrificante intorno all'utensile
- DCONXWS: diametro gambo utensile massimo

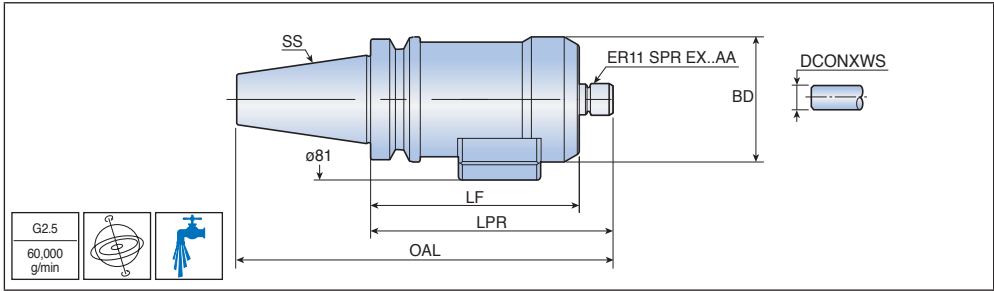
Ricambi

Descrizione	Mini ghiera ER	Chiave ER	Chiave	Chiave di bloccaggio	Display*
TJS-GJET-ER32	NUT ER11 GHS	WRENCH ER11 SMS	HW 2.0	TJS SHAFT LOCK KEY GJET	TJS TSD DISPLAY

* Opzionale, venduto separatamente

TJS GJET BT

Mandrino compatto ad alta velocità con funzionamento a refrigerante e attacco BT



Descrizione	Dimensioni (mm)						Kg
	SS	DCONXWS	LF	LPR	BD	OAL	
TJS GJET BT30	30	7.0	124.0	141.0	63.0	189.4	1.6
GJET BT40	40	7.0	107.0	124.0	63.0	189.5	1.8

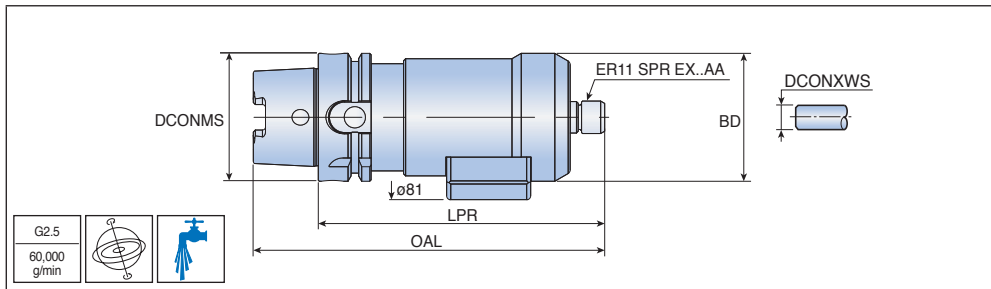
- Pressione minima 20 bar e portata minima 12 l/min
- Il mandrino fornisce solo un forte getto di lubrificante intorno all'utensile
- DCONXWS: diametro gambo utensile massimo

Ricambi

Descrizione	Mini ghiera ER	Chiave ER	Chiave	Chiave di bloccaggio	Display*
TJS-GJET-BT	NUT ER11 GHS	WRENCH ER11 SMS	HW 2.0	TJS SHAFT LOCK KEY GJET	TJS TSD DISPLAY

* Opzionale, venduto separatamente

Mandrino compatto ad alta velocità con funzionamento a refrigerante e attacco HSK



Descrizione	Dimensioni (mm)					Kg
	DCONMS	DCONXWS	LPR	OAL	BD	
TJS GJET HSK A63	63.0	7.0	141.0	173.0	63.0	1.8

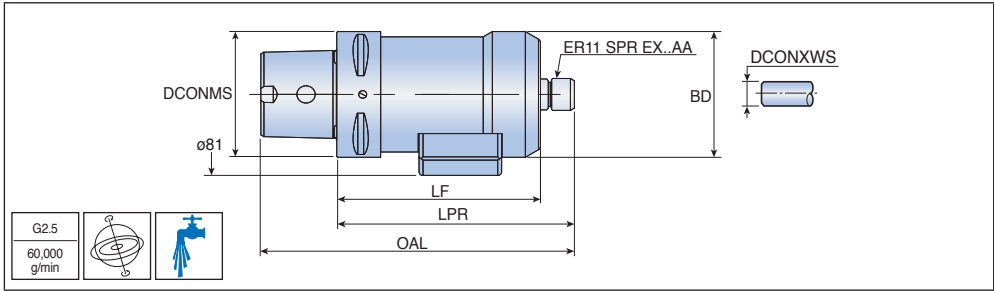
- Pressione minima 20 bar e portata minima 12 l/min
- Il mandrino fornisce solo un forte getto di lubrificante intorno all'utensile
- DCONXWS: diametro gambo utensile massimo

Ricambi

Descrizione	Mini ghiera ER	Chiave ER	Chiave	Chiave di bloccaggio	Display*
TJS-GJET-HSK A63	NUT ER11 GHS	WRENCH ER11 SMS	HW 2.0	TJS SHAFT LOCK KEY GJET	TJS TSD DISPLAY

* Opzionale, venduto separatamente

Mandrino compatto ad alta velocità con funzionamento a refrigerante e attacco C-ADAPTER



Descrizione	Dimensioni (mm)						
	DCONMS	DCONXWS	LF	LPR	OAL	BD	
TJS GJET C5	50.0	7.0	112.0	129.0	129.0	63.0	1.5
GJET C6	63.0	7.0	102.0	119.0	119.0	63.0	1.6

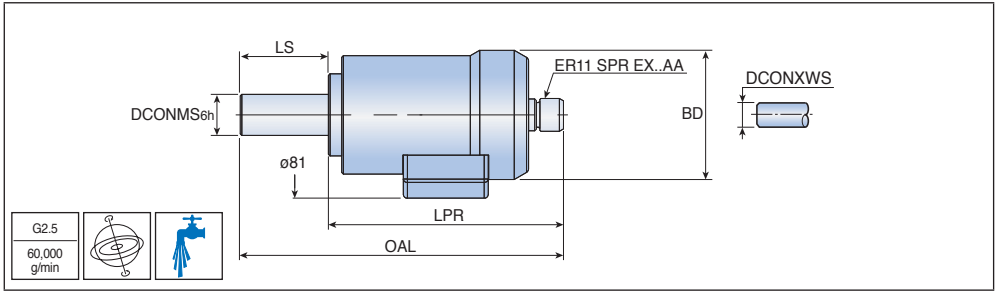
- Pressione minima 20 bar e portata minima 12 l/min
- Il mandrino fornisce solo un forte getto di lubrificante intorno all'utensile
- DCONXWS: diametro gambo utensile massimo

Ricambi

Descrizione	Mini ghiera ER	Chiave ER	Chiave	Chiave di bloccaggio	Display*
TJS-GJET-C	NUT ER11 GHS	WRENCH ER11 SMS	HW 2.0	TJS SHAFT LOCK KEY GJET	TJS TSD DISPLAY

* Opzionale, venduto separatamente

Mandrino compatto ad alta velocità con funzionamento a refrigerante e attacco cilindrico



Descrizione	Dimensioni (mm)						Kg
	DCONMS	DCONXWS	LS	LPR	OAL	BD	
TJS GJET ST20	20.0	7.0	43.0	115.0	158.0	63.0	1.2

- Pressione minima 20 bar e portata minima 12 l/min
- Il mandrino fornisce solo un forte getto di lubrificante intorno all'utensile
- DCONXWS: diametro gambo utensile massimo

Ricambi

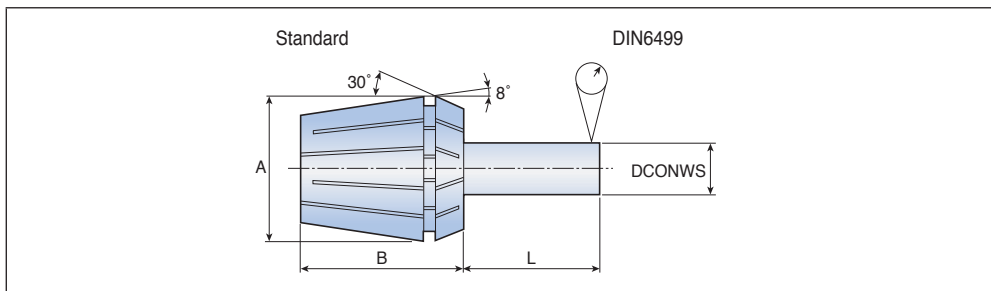
Descrizione	Mini ghiera ER	Chiave ER	Chiave	Chiave di bloccaggio	Display*
TJS-GJET-ST	NUT ER11 GHS	WRENCH ER11 SMS	HW 2.0	TJS SHAFT LOCK KEY GJET	TJS TSD DISPLAY

* Opzionale, venduto separatamente

Pinze



Pinze



Precisione

(mm)

DCONWS	L	Concentricità		
		Standard	Ultra precisa	DIN6499
1.0-1.6	6	0.01	0.005	-
1.6-3.0	10	0.01	0.005	0.015
3.0-6.0	16	0.01	0.005	0.015
6.0-10.0	25	0.01	0.005	0.015
10.0-18.0	40	0.01	0.005	0.020
18.0-26.0	50	0.01	0.005	0.020
26.0-34	60	-	-	0.025

Dimensioni

(mm)

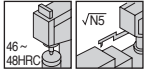
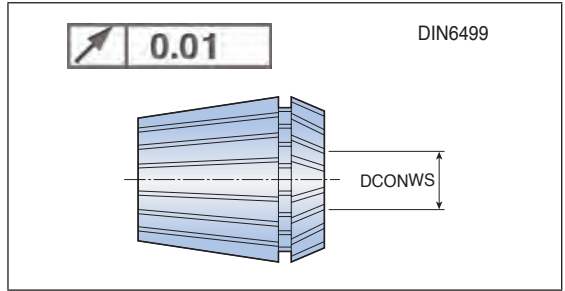
Tipo	A	B
ER11	11.5	18
ER16	17.0	27
ER20	21.0	31
ER25	26.0	35
ER32	33.0	40
ER40	41.0	46
ER50	52.0	60



G179-G181

ER-SPR

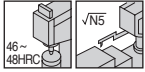
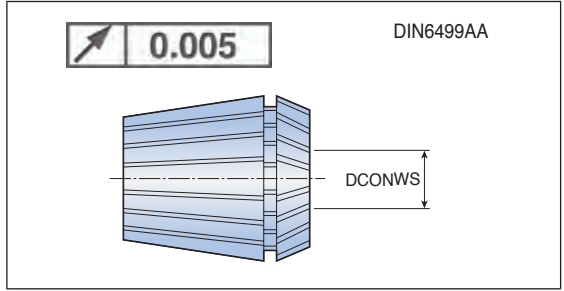
Pinza ER



DCONWS	ER11	ER16	ER20	ER25	ER32	ER40	ER50
0.5-1	ER11 SPR 0.5-1	ER16 SPR 0.5-1					
1-2	1-2	1-2	ER20 SPR 1-2	ER25 SPR 1-2			
2-3	2-3	2-3	2-3	2-3	ER32 SPR 2-3		
3-4	3-4	3-4	3-4	3-4	3-4	ER40 SPR 3-4	
4-5	4-5	4-5	4-5	4-5	4-5	4-5	4-5
5-6	5-6	5-6	5-6	5-6	5-6	5-6	5-6
6-7	6-7	6-7	6-7	6-7	6-7	6-7	6-7
7-8		7-8	7-8	7-8	7-8	7-8	7-8
8-9		8-9	8-9	8-9	8-9	8-9	8-9
9-10		9-10	9-10	9-10	9-10	9-10	9-10
10-11			10-11	10-11	10-11	10-11	ER50 SPR 10-12
11-12			11-12	11-12	11-12	11-12	ER50 SPR 10-12
12-13			12-13	12-13	12-13	12-13	12-14
13-14				13-14	13-14	13-14	12-14
14-15				14-15	14-15	14-15	14-16
15-16				15-16	15-16	15-16	14-16
16-17					16-17	16-17	16-18
17-18					17-18	17-18	16-18
18-19					18-19	18-19	18-20
19-20					19-20	19-20	18-20
20-21						20-21	20-22
21-22						21-22	20-22
22-23						22-23	22-24
23-24						23-24	22-24
24-25						24-25	24-26
25-26						25-26	24-26
26-28							26-28
28-30							28-30
30-32							30-32
32-34							32-34

ER-SPR-AA

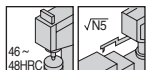
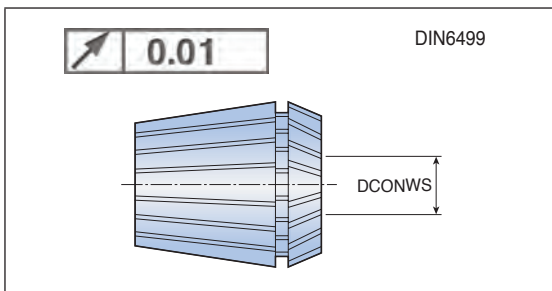
Pinza ER ultra precisa



DCONWS	ER11	ER16	ER20	ER25	ER32	ER40
0.5-1	ER11 SPR 0.5-1AA	ER16 SPR 0.5-1AA				
1-2	1-2AA	1-2AA	ER20 SPR 1-2AA	ER25 SPR 1-2AA		
2-3	2-3AA	2-3AA	2-3AA	2-3AA	ER32 SPR 2-3AA	
3-4	3-4AA	3-4AA	3-4AA	3-4AA	3-4AA	ER40 SPR 3-4AA
4-5	4-5AA	4-5AA	4-5AA	4-5AA	4-5AA	4-5AA
5-6	5-6AA	5-6AA	5-6AA	5-6AA	5-6AA	5-6AA
6-7	6-7AA	6-7AA	6-7AA	6-7AA	6-7AA	6-7AA
7-8		7-8AA	7-8AA	7-8AA	7-8AA	7-8AA
8-9		8-9AA	8-9AA	8-9AA	8-9AA	8-9AA
9-10		9-10AA	9-10AA	9-10AA	9-10AA	9-10AA
10-11			10-11AA	10-11AA	10-11AA	10-11AA
11-12			11-12AA	11-12AA	11-12AA	11-12AA
12-13			12-13AA	12-13AA	12-13AA	12-13AA
13-14				13-14AA	13-14AA	13-14AA
14-15				14-15AA	14-15AA	14-15AA
15-16				15-16AA	15-16AA	15-16AA
16-17					16-17AA	16-17AA
17-18					17-18AA	17-18AA
18-19					18-19AA	18-19AA
19-20					19-20AA	19-20AA
20-21						20-21AA
21-22						21-22AA
22-23						22-23AA
23-24						23-24AA
24-25						24-25AA
25-26						25-26AA

ER-SEAL

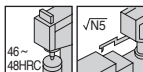
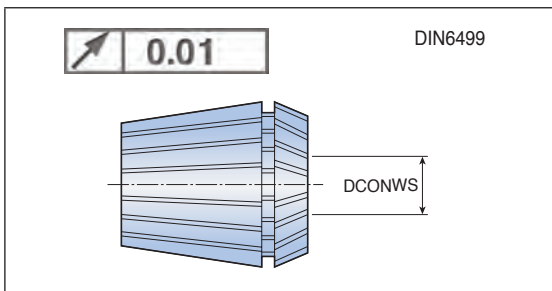
Taegutec precisione standard - pinza ER a tenuta stagna Jet (refrigerazione interna)



DCONWS	ER16	ER20	ER25	ER32	ER40
3-4	ER16 SEAL 3-4	ER20 SEAL 3-4	ER25 SEAL 3-4	ER32 SEAL 3-4	ER40 SEAL 3-4
4-5	4-5	4-5	4-5	4-5	4-5
5-6	5-6	5-6	5-6	5-6	5-6
6-7	6-7	6-7	6-7	6-7	6-7
7-8	7-8	7-8	7-8	7-8	7-8
8-9	8-9	8-9	8-9	8-9	8-9
9-10	9-10	9-10	9-10	9-10	9-10
10-11		10-11	10-11	10-11	10-11
11-12		11-12	11-12	11-12	11-12
12-13		12-13	12-13	12-13	12-13
13-14			13-14	13-14	13-14
14-15			14-15	14-15	14-15
15-16			15-16	15-16	15-16
16-17				16-17	16-17
17-18				17-18	17-18
18-19				18-19	18-19
19-20				19-20	19-20
20-21					20-21
21-22					21-22
22-23					22-23
23-24					23-24
24-25					24-25
25-26					25-26

ER-SEAL-JET2

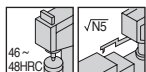
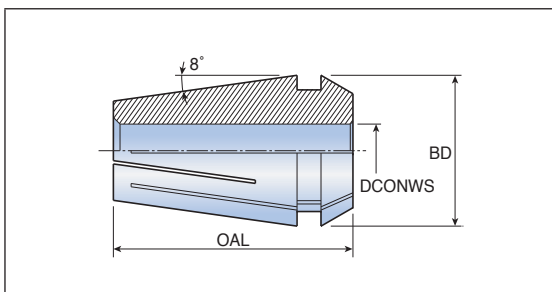
Taegutec precisione standard - pinza ER a tenuta stagna Jet2 (refrigerazione sul gambo)



DCONWS	ER16	ER20	ER25	ER32	ER40
3-4	ER16 SEAL 3-4JET2	ER20 SEAL 3-4JET2	ER25 SEAL 3-4JET2	ER32 SEAL 3-4JET2	ER40 SEAL 3-4JET2
4-5		4-5JET2	4-5JET2	4-5JET2	4-5JET2
5-6		5-6JET2	5-6JET2	5-6JET2	5-6JET2
6-7		6-7JET2	6-7JET2	6-7JET2	6-7JET2
7-8		7-8JET2	7-8JET2	7-8JET2	7-8JET2
8-9		8-9JET2	8-9JET2	8-9JET2	8-9JET2
9-10		9-10JET2	9-10JET2	9-10JET2	9-10JET2
10-11			10-11JET2	10-11JET2	10-11JET2
11-12			11-12JET2	11-12JET2	11-12JET2
12-13			12-13JET2	12-13JET2	12-13JET2
13-14			13-14JET2	13-14JET2	13-14JET2
14-15			14-15JET2	14-15JET2	14-15JET2
15-16			15-16JET2	15-16JET2	15-16JET2
16-17				16-17JET2	16-17JET2
17-18				17-18JET2	17-18JET2
18-19				18-19JET2	18-19JET2
19-20				19-20JET2	19-20JET2
20-21					20-21JET2
21-22					21-22JET2
22-23					22-23JET2
23-24					23-24JET2
24-25					24-25JET2
25-26					25-26JET2

EROH

Pinza ER per refrigerazione interna

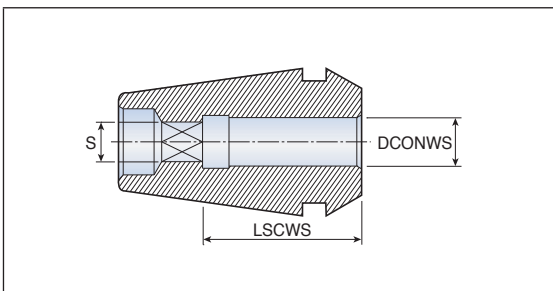


Descrizione	Dimensioni (mm)		
	DCONWS _{range}	BD	OAL
EROH 16	4.0-10.0	17	27.5
EROH 20	6.0-13.0	21	31.5
EROH 25	6.0-16.0	26	34.0
EROH 32	8.0-20.0	33	40.0
EROH 40	10.0-26.0	41	46.0

DCONWS	ER16	ER20	ER25	ER32	ER40
4	EROH 16-4				
5	EROH 16-5				
6	EROH 16-6	EROH 20-6	EROH 25-6		
7	EROH 16-7	EROH 20-7	EROH 25-7		
8	EROH 16-8	EROH 20-8	EROH 25-8	EROH 32-8	
9	EROH 16-9	EROH 20-9	EROH 25-9	EROH 32-9	
10	EROH 16-10	EROH 20-10	EROH 25-10	EROH 32-10	EROH 40-10
11		EROH 20-11	EROH 25-11	EROH 32-11	EROH 40-11
12		EROH 20-12	EROH 25-12	EROH 32-12	EROH 40-12
13		EROH 20-13	EROH 25-13	EROH 32-13	EROH 40-13
14			EROH 25-14	EROH 32-14	EROH 40-14
15			EROH 25-15	EROH 32-15	EROH 40-15
16			EROH 25-16	EROH 32-16	EROH 40-16
17				EROH 32-17	EROH 40-17
18				EROH 32-18	EROH 40-18
19				EROH 32-19	EROH 40-19
20				EROH 32-20	EROH 40-20
21					EROH 40-21
22					EROH 40-22
23					EROH 40-23
24					EROH 40-24
25					EROH 40-25
26					EROH 40-26

ER TAP

Pinza ER per maschi

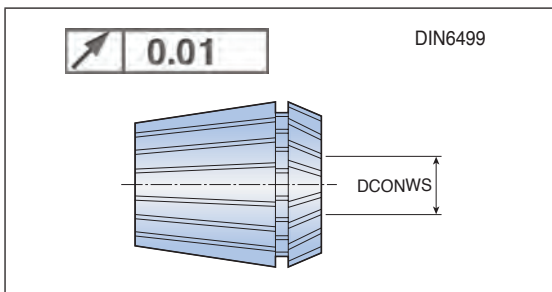
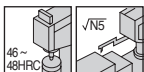


Maschi	Dimensioni (mm)			ER TAP 16	ER TAP 20	ER TAP 25	ER TAP 32	ER TAP 40
	LSCWS	DCONWS	S					
M4	15	5.0	4.0	ER TAP 16-M4	ER TAP 20-M4	ER TAP 25-M4	ER TAP 32-M4	
M5	15	5.5	4.5	ER TAP 16-M5	ER TAP 20-M5	ER TAP 25-M5	ER TAP 32-M5	
M6	15	6.0	4.5	ER TAP 16-M6	ER TAP 20-M6	ER TAP 25-M6	ER TAP 32-M6	
M8	20	6.2	5.0	ER TAP 16-M8	ER TAP 20-M8	ER TAP 25-M8	ER TAP 32-M8	
M10	20	7.0	5.5	ER TAP 16-M10	ER TAP 20-M10	ER TAP 25-M10	ER TAP 32-M10	ER TAP 40-M10
M12	20	8.5	6.5		ER TAP 20-M12	ER TAP 25-M12	ER TAP 32-M12	ER TAP 40-M12
M14	25	10.5	8.0			ER TAP 25-M14	ER TAP 32-M14	ER TAP 40-M14
M16	25	12.5	10.0			ER TAP 25-M16	ER TAP 32-M16	ER TAP 40-M16
M18	30	14.0	11.0				ER TAP 32-M18	ER TAP 40-M18
M20	30	15.0	12.0				ER TAP 32-M20	ER TAP 40-M20
M22	30	17.0	13.0					ER TAP 40-M22
M24	35	19.0	15.0					ER TAP 40-M24
M27	35	20.0	15.0					ER TAP 40-M27

• La specifica è basata su JIS (DIN o ISO sono speciali su richiesta)

SET ER-SPR

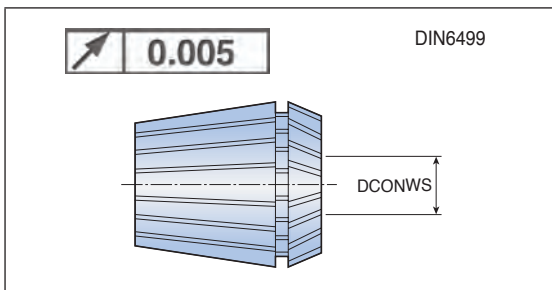
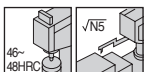
SET Pinze ER - Taegutec precisione standard



Descrizione	Pezzi / set	DCONWS
SET ER11 SPR 7	7	0.5-7
ER16 SPR 10	10	0.5-10
ER20 SPR 12	12	1-13
ER25 SPR 15	15	1-16
ER32 SPR 18	18	2-20
ER40 SPR 23	23	3-26
ER50 SPR 12	12	10-34

SET ER-SPR-AA

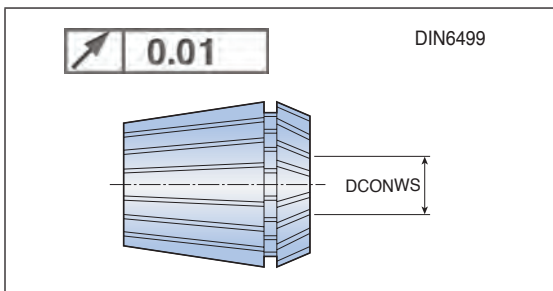
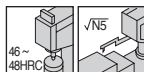
SET Pinze ER - Taegutec precisione ultra precise



Descrizione	Pezzi / set	DCONWS
SET ER11 SPR 7AA	7	0.5-7
ER16 SPR 10AA	10	0.5-10
ER20 SPR 12AA	12	1-13
ER25 SPR 15AA	15	1-16
ER32 SPR 18AA	18	2-20
ER40 SPR 23AA	23	3-26

SET ER-SEAL

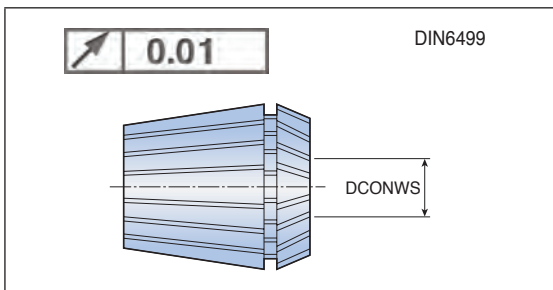
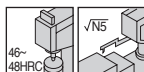
SET Pinze ER a tenuta stagna JET - Taegutec precisione standard



Descrizione	Pezzi / set	DCONWS
SET ER16 SEAL 7	7	3-10
ER20 SEAL 10	10	3-13
ER25 SEAL 13	13	3-16
ER32 SEAL 17	17	3-20
ER40 SEAL 23	23	3-26

SET ER-SEAL-JET2

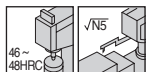
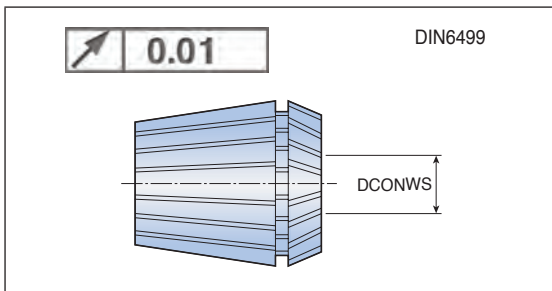
SET Pinze ER a tenuta stagna JET2 - Taegutec precisione standard



Descrizione	Pezzi / set	DCONWS
SET ER16 SEAL 7JET2	7	3-10
ER20 SEAL 10JET2	10	3-13
ER25 SEAL 13JET2	13	3-16
ER32 SEAL 17JET2	17	3-20
ER40 SEAL 23JET2	23	3-26

SET ER-SPR-EM

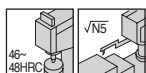
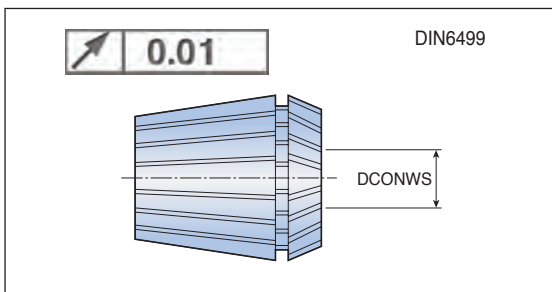
START SET Pinze ER - Taegutec precisione standard



Descrizione	Pezzi / set	DCONWS
SET ER16 SPR 8 EM	8	3, 4, 5, 6, 7, 8, 9, 10
ER20 SPR 5 EM	5	4, 6, 8, 10, 12
ER25 SPR 6 EM	6	4, 6, 8, 10, 12, 16
ER32 SPR 6 EM	6	6, 8, 10, 12, 16, 20
ER40 SPR 7 EM	7	6, 8, 10, 12, 16, 20, 25

SET ER-SEAL-EM

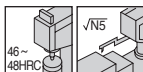
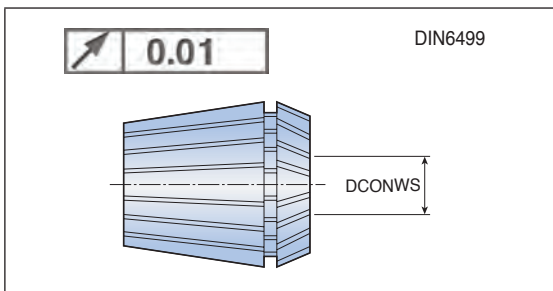
START SET Pinze ER a tenuta stagna JET - Taegutec precisione standard



Descrizione	Pezzi / set	DCONWS
SET ER16 SEAL 5 EM	5	4, 5, 6, 8, 10
ER20 SEAL 5 EM	5	4, 6, 8, 10, 12
ER25 SEAL 6 EM	6	4, 6, 8, 10, 12, 16
ER32 SEAL 6 EM	6	6, 8, 10, 12, 16, 20
ER40 SEAL 7 EM	7	6, 8, 10, 12, 16, 20, 25

SET ER-SEAL-EM JET2

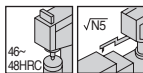
START SET Pinze ER a tenuta stagna JET2 - Taegutec precisione standard



Descrizione	Pezzi / set	DCONWS
SET ER25 SEAL 6 EM JET2	6	4, 6, 8, 10, 12, 16
ER32 SEAL 6 EM JET2	6	6, 8, 10, 12, 16, 20
ER40 SEAL 7 EM JET2	7	6, 8, 10, 12, 16, 20, 25

KIT-ER

SET pinze ER - mandrino conico



Descrizione	Pezzi / set	DCONWS
KIT DIN2080 30 18 ER32	18	2-20
DIN2080 40 18 ER32	18	2-20
DIN2080 40 23 ER40	23	3-26
DIN2080 50 23 ER40	23	3-26
MT3 18 ER32	18	2-20

• Ogni kit contiene: un mandrino, un set completo di pinze ER e una chiave

KIT ST-ER M

SET pinze ER - mandrino a gambo cilindrico



DIN6499

Descrizione	Pezzi / set	DCONWS
KIT ST 12x80 7 ER11 M	7	0.5-7
ST 16x50 7 ER11 MF	7	0.5-7
ST 16x100 7 ER11 M	7	0.5-7
ST 16x150 7 ER11 M	7	0.5-7
ST 12x80 10 ER16 M	10	0.5-10
ST 20x100 10 ER16 M	10	0.5-10
ST 20x150 10 ER16 M	10	0.5-10
ST 20x100 12 ER20 M	12	1-12
ST 20x150 12 ER20 M	12	1-12

- Ogni kit contiene: un mandrino, un set completo di pinze ER e una chiave

KIT ST-ER

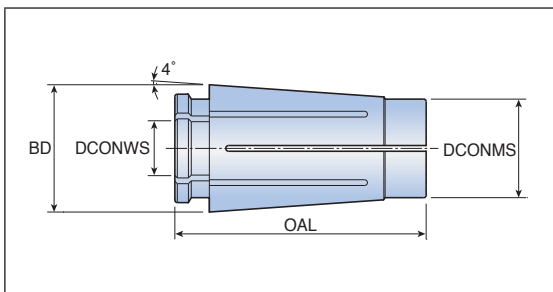
SET pinze ER - mandrino a gambo cilindrico



DIN6499

Descrizione	Pezzi / set	DCONWS
KIT ST 16x50 7 ER11 F	7	0.5-7
ST 20x50 7 ER11 F	7	0.5-7
ST 20x100 7 ER11	7	0.5-7
ST 20x150 7 ER11	10	0.5-10
ST 20x50 10 ER16 F	10	0.5-10
ST 20x100 10 ER16	10	0.5-10
ST 20x150 10 ER16	12	1-12
ST 20x50 12 ER20 F	12	1-12

- Ogni kit contiene: un mandrino, un set completo di pinze ER e una chiave

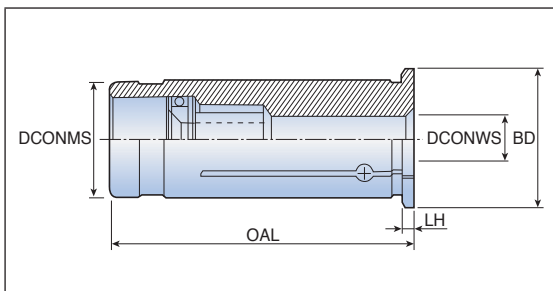


Descrizione	Dimensioni (mm)		
	BD	DCONMS	OAL
TSK 06	10.4	7.5	25.0
TSK 10	15.5	12.0	30.6
TSK 16	24.6	18.8	45.0
TSK 25	35.7	28.8	57.0

DCONWS	TSK 06	TSK 10	TSK 16	TSK 25
1.5-2.0	TSK 06-2.0	TSK 10-2.0		
2.0-2.5	TSK 06-2.5	TSK 10-2.5		
2.5-3.0	TSK 06-3.0	TSK 10-3.0	TSK 16-3.0	
3.0-3.5	TSK 06-3.5	TSK 10-3.5	TSK 16-3.5	
3.5-4.0	TSK 06-4.0	TSK 10-4.0	TSK 16-4.0	
4.0-4.5	TSK 06-4.5	TSK 10-4.5	TSK 16-4.5	
4.5-5.0	TSK 06-5.0	TSK 10-5.0	TSK 16-5.0	
5.0-5.5	TSK 06-5.5	TSK 10-5.5	TSK 16-5.5	
5.5-6.0	TSK 06-6.0	TSK 10-6.0	TSK 16-6.0	
6.0-6.5		TSK 10-6.5	TSK 16-6.5	
6.5-7.0		TSK 10-7.0	TSK 16-7.0	
7.0-7.5		TSK 10-7.5	TSK 16-7.5	
7.5-8.0		TSK 10-8.0	TSK 16-8.0	
8.0-8.5		TSK 10-8.5	TSK 16-8.5	
8.5-9.0		TSK 10-9.0	TSK 16-9.0	
9.0-9.5		TSK 10-9.5	TSK 16-9.5	
9.5-10.0		TSK 10-10.0	TSK 16-10.0	
10.0-10.5			TSK 16-10.5	
10.5-11.0			TSK 16-11.0	
11.0-11.5			TSK 16-11.5	
11.5-12.0			TSK 16-12.0	
12.0-12.5			TSK 16-12.5	
12.5-13.0			TSK 16-13.0	
13.0-13.5			TSK 16-13.5	
13.5-14.0			TSK 16-14.0	
14.0-14.5			TSK 16-14.5	
14.5-15.0			TSK 16-15.0	
15.0-15.5			TSK 16-15.5	
15.5-16.0			TSK 16-16.0	TSK 25-16.0
16.0-16.5				TSK 25-16.5
16.5-17.0				TSK 25-17.0

THC

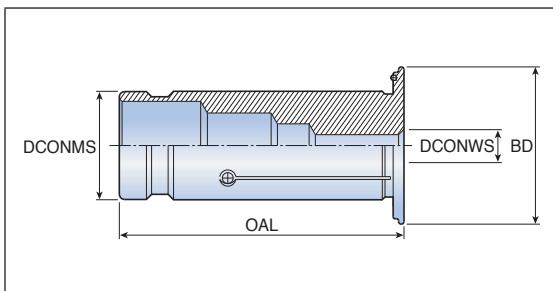
Pinza cilindrica per mandrino idraulico



Descrizione	Dimensioni (mm)				
	DCONMS	DCONWS	BD	OAL	LH
THC 12-3	12	3	16	46.5	2
12-4	12	4	16	46.5	2
12-5	12	5	16	46.5	2
12-6	12	6	16	46.5	2
12-7	12	7	16	46.5	2
12-8	12	8	16	46.5	2
12-9	12	9	16	46.5	2
20-3	20	3	24	50.5	2
20-4	20	4	24	50.5	2
20-5	20	5	24	50.5	2
20-6	20	6	24	50.5	2
20-7	20	7	24	50.5	2
20-8	20	8	24	50.5	2
20-9	20	9	24	50.5	2
20-10	20	10	24	50.5	2
20-11	20	11	24	50.5	2
20-12	20	12	24	50.5	2
20-13	20	13	24	50.5	2
20-14	20	14	24	50.5	2
20-15	20	15	24	50.5	2
20-16	20	16	24	50.5	2
20-17	20	17	24	50.5	2
32-6	32	6	36	60.5	3
32-8	32	8	36	60.5	3
32-10	32	10	36	60.5	3
32-12	32	12	36	60.5	3
32-14	32	14	36	60.5	3
32-16	32	16	36	60.5	3
32-18	32	18	36	60.5	3
32-20	32	20	36	60.5	3
32-25	32	25	36	60.5	3

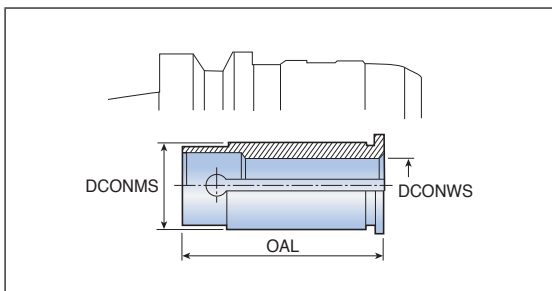
THC C

Pinza cilindrica per mandrino idraulico per refrigerazione interna



Descrizione	Dimensioni (mm)			
	DCONMS	DCONWS	BD	OAL
THC C12-3	12	3	19	47.0
C12-4	12	4	19	47.0
C12-5	12	5	19	47.0
C12-6	12	6	19	47.0
C12-7	12	7	19	47.0
C12-8	12	8	19	47.0
C20-3	20	3	29	52.5
C20-4	20	4	29	52.5
C20-5	20	5	29	52.5
C20-6	20	6	29	52.5
C20-7	20	7	29	52.5
C20-8	20	8	29	52.5
C20-9	20	9	29	52.5
C20-10	20	10	29	52.5
C20-11	20	11	29	52.5
C20-12	20	12	29	52.5
C20-13	20	13	29	52.5
C20-14	20	14	29	52.5
C20-15	20	15	29	52.5
C20-16	20	16	29	52.5
C20-17	20	17	29	52.5
C32-6	32	6	39	63.5
C32-8	32	8	39	63.5
C32-10	32	10	39	63.5
C32-12	32	12	39	63.5
C32-14	32	14	39	63.5
C32-16	32	16	39	63.5
C32-18	32	18	39	63.5
C32-20	32	20	39	63.5
C32-25	32	25	39	63.5

Pinza cilindrica per mandrino a forte serraggio



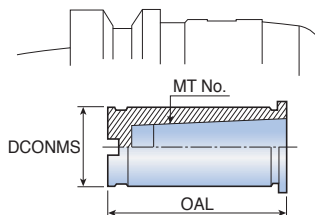
Descrizione	Dimensioni (mm)		
	DCONMS	DCONWS	OAL
CSR 20-4	20	4	50
20-6	20	6	50
20-8	20	8	50
20-10	20	10	50
20-12	20	12	50
20-16	20	16	50
25-4	25	4	60
25-6	25	6	60
25-8	25	8	60
25-10	25	10	60
25-12	25	12	60
25-16	25	16	60
25-20	25	20	60
32-4	32	4	65
32-6	32	6	65
32-8	32	8	65
32-10	32	10	65
32-12	32	12	65
32-16	32	16	65
32-20	32	20	65
32-25	32	25	65
42-4	42	4	75
42-6	42	6	75
42-8	42	8	75
42-10	42	10	75
42-12	42	12	75
42-16	42	16	75
42-20	42	20	75
42-25	42	25	75
42-32	42	32	75

CMR

Pinza cilindrica adattatore con morse per mandrino a forte serraggio



Tipo CMR



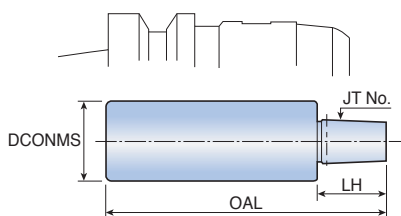
Descrizione	MT n°	Dimensioni (mm)		Da utilizzare con mandrino
		DCONMS	OAL	
CMR 32-1	1	32	58	TMC 32
32-2	2	32	71	TMC 32
32-3	3	32	89	TMC 32
42-1	1	42	58	TMC 42
42-2	2	42	71	TMC 42
42-3	3	42	89	TMC 42
42-4	4	42	111	TMC 42

CJA

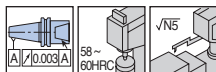
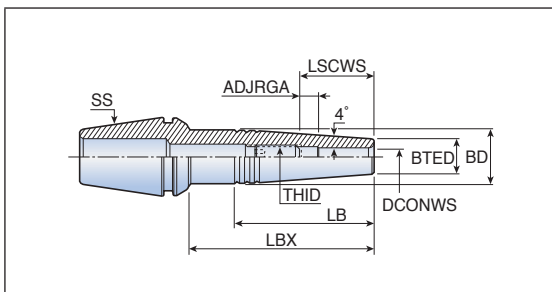
Pinza cilindrica adattatore cono Jacob per mandrino a forte serraggio



Tipo CJA

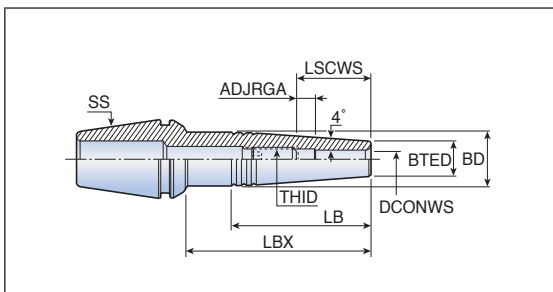
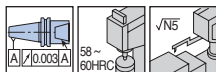


Descrizione	JT No.	Dimensioni (mm)			Da utilizzare con mandrino
		DCONMS	OAL	LH	
CJA 32-6	6	32	118	28	TMC 32
42-6	6	42	128	28	TMC 42



Descrizione	Dimensioni (mm)									
	SS	DCONWS	BTED	BD	LBX	LB	ADJRGA	LSCWS	THID	Chiave
ER11 SRK 3x10⁽¹⁾	ER11	3	7.6	8.5	10	-	-	10	-	-
SRK 3x25⁽¹⁾	ER11	3	7.6	8.5	25	-	-	10	-	-
SRK 4x10⁽¹⁾	ER11	4	7.6	8.5	10	-	-	12	-	-
SRK 4x25⁽¹⁾	ER11	4	7.6	8.5	25	-	-	12	-	-
ER20 SRK 3x35	ER20	3	10	13.5	35	24.5	6	16	M6	3.0
SRK 3x60	ER20	3	10	13.5	60	24.5	6	16	M6	3.0
SRK 4x35	ER20	4	10	13.5	35	24.5	6	18	M6	3.0
SRK 4x60	ER20	4	10	13.5	60	24.5	6	18	M6	3.0
SRK 5x35	ER20	5	10	13.5	35	24.5	6	21	M6	3.0
SRK 5x60	ER20	5	10	13.5	60	24.5	6	21	M6	3.0
SRK 6x35	ER20	6	11	13.5	35	25.5	6	24	M8	4.0
SRK 6x60	ER20	6	11	13.5	60	29.5	6	24	M8	4.0
ER25 SRK 3x35	ER25	3	10	13.5	35	24.5	6	16	M6	3.0
SRK 3x60	ER25	3	10	16.3	60	44.5	6	16	M6	3.0
SRK 4x35	ER25	4	10	13.5	35	24.5	6	18	M6	3.0
SRK 4x60	ER25	4	10	16.3	60	44.5	6	18	M6	3.0
SRK 5x35	ER25	5	10	13.5	35	24.5	6	21	M6	3.0
SRK 5x60	ER25	5	10	16.3	60	44.5	6	21	M6	3.0
SRK 6x35	ER25	6	11	14.7	35	26.0	6	24	M8	4.0
SRK 6x60	ER25	6	11	17.3	60	44.5	6	24	M8	4.0
SRK 8x35	ER25	8	14	17.8	35	26.5	5	30	M10	5.0
SRK 8x60	ER25	8	14	17.9	60	39.5	6	31	M10	5.0

• ⁽¹⁾ Da utilizzare solo con i mandrini TYPHOON

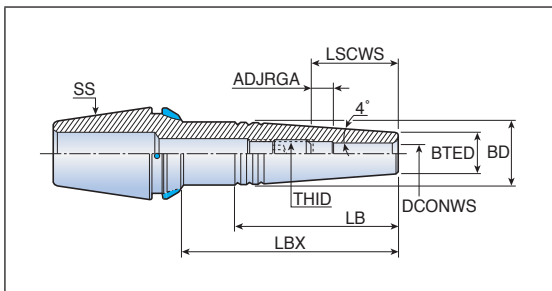


Descrizione	Dimensioni (mm)									
	SS	DCONWS	BTED	BD	LBX	LB	ADJRGA	LSCWS	THID	Chiave
ER32 SRK 3x35	ER32	3	10	13.5	35	22.5	6	16	M6	3.0
SRK 3x60	ER32	3	10	16.3	60	44.5	6	16	M6	3.0
SRK 3x85	ER32	3	10	19.8	85	70.0	6	16	M6	3.0
SRK 4x35	ER32	4	10	13.5	35	23.5	6	18	M6	3.0
SRK 4x60	ER32	4	10	16.3	60	44.5	6	18	M6	3.0
SRK 4x85	ER32	4	10	19.8	85	70.0	6	18	M6	3.0
SRK 5x35	ER32	5	10	13.5	35	24.5	6	21	M6	3.0
SRK 5x60	ER32	5	10	16.3	60	44.5	6	21	M6	3.0
SRK 5x85	ER32	5	10	19.8	85	70.0	6	21	M6	3.0
SRK 6x35	ER32	6	11	14.7	35	25.5	6	24	M8	4.0
SRK 6x60	ER32	6	11	17.3	60	45.0	6	24	M8	4.0
SRK 6x85	ER32	6	11	20.8	85	69.5	8	26	M8	4.0
SRK 8x35	ER32	8	14	18.9	35	33.0	6	31	M10	5.0
SRK 8x60	ER32	8	14	20.4	60	45.0	6	31	M10	5.0
SRK 8x85	ER32	8	14	23.2	85	65.0	6	31	M10	5.0
SRK 10x35	ER32	10	16	20.8	35	34.0	5	35	M12	6.0
SRK 10x60	ER32	10	16	22.4	60	44.5	6	36	M12	6.0
SRK 10x85	ER32	10	16	23.0	85	49.5	6	36	M12	6.0
SRK 12x35	ER32	12	20	24.0	35	28.0	-	-	-	-
SRK 12x60	ER32	12	20	24.0	60	28.0	6	38	M14	6.0
SRK 12x85	ER32	12	20	24.0	85	28.0	6	38	M14	6.0

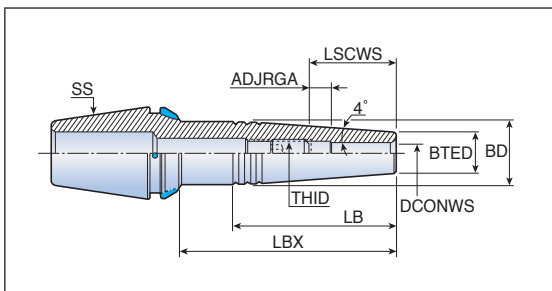
ER-SRK-JET2



T-SHRINK pinza ER DIN6499 con refrigerazione sul gambo

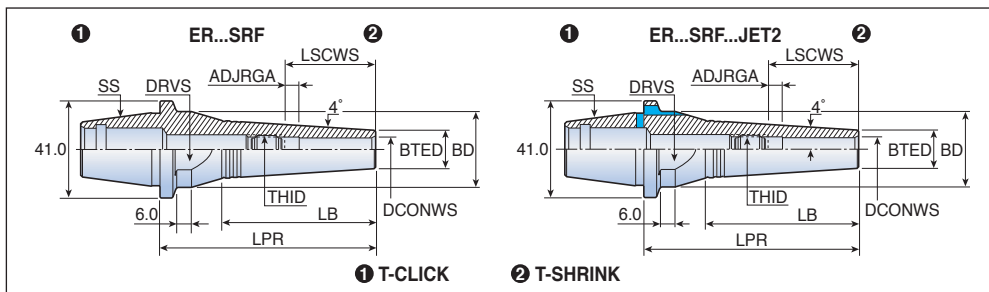


Descrizione	Dimensioni (mm)									
	SS	DCONWS	BTED	BD	LBX	LB	ADJRG	LSCWS	THID	Chiave
ER20 SRK 3x35 JET2	ER20	3	10	13.5	35	24.5	6	16	M6	3.0
SRK 4x35 JET2	ER20	4	10	13.5	35	24.5	6	18	M6	3.0
SRK 5x35 JET2	ER20	5	10	13.5	35	24.5	6	21	M6	3.0
SRK 6x35 JET2	ER20	6	11	13.5	35	25.5	6	24	M8	4.0
SRK 6x60 JET2	ER20	6	11	13.5	60	29.5	6	24	M8	4.0
ER25 SRK 3x35 JET2	ER25	3	10	13.5	35	24.5	6	16	M6	3.0
SRK 3x60 JET2	ER25	3	10	16.3	60	44.5	6	16	M6	3.0
SRK 4x35 JET2	ER25	4	10	13.5	35	24.5	6	18	M6	3.0
SRK 4x60 JET2	ER25	4	10	16.3	60	44.5	6	18	M6	3.0
SRK 5x35 JET2	ER25	5	10	13.5	35	24.5	6	21	M6	3.0
SRK 5x60 JET2	ER25	5	10	16.3	60	44.5	6	21	M6	3.0
SRK 6x35 JET2	ER25	6	11	14.7	35	26.0	6	24	M8	4.0
SRK 6x60 JET2	ER25	6	11	17.3	60	44.5	6	24	M8	4.0
SRK 8x35 JET2	ER25	8	14	17.8	35	26.5	5	30	M10	5.0
SRK 8x60 JET2	ER25	8	14	17.9	60	39.5	6	31	M10	5.0



Descrizione	Dimensioni (mm)									
	SS	DCONWS	BTED	BD	LBX	LB	ADJRGA	LSCWS	THID	Chiave
ER32 SRK 3x35 JET2	ER32	3	10	13.5	35	22.5	6	16	M6	3.0
SRK 3x60 JET2	ER32	3	10	16.3	60	44.5	6	16	M6	3.0
SRK 3x85 JET2	ER32	3	10	19.8	85	70.0	6	16	M6	3.0
SRK 4x35 JET2	ER32	4	10	13.5	35	23.5	6	18	M6	3.0
SRK 4x60 JET2	ER32	4	10	16.3	60	44.5	6	18	M6	3.0
SRK 4x85 JET2	ER32	4	10	19.8	85	70.0	6	18	M6	3.0
SRK 5x35 JET2	ER32	5	10	13.5	35	24.5	6	21	M6	3.0
SRK 5x60 JET2	ER32	5	10	16.3	60	44.5	6	21	M6	3.0
SRK 5x85 JET2	ER32	5	10	19.8	85	70.0	6	21	M6	3.0
SRK 6x35 JET2	ER32	6	11	14.7	35	25.5	6	24	M8	4.0
SRK 6x60 JET2	ER32	6	11	17.3	60	45.0	6	24	M8	4.0
SRK 6x85 JET2	ER32	6	11	20.8	85	69.5	8	26	M8	4.0
SRK 8x35 JET2	ER32	8	14	18.8	35	33.0	6	31	M10	5.0
SRK 8x60 JET2	ER32	8	14	20.4	60	45.0	6	31	M10	5.0
SRK 8x85 JET2	ER32	8	14	23.2	85	65.0	6	31	M10	5.0
SRK 10x35 JET2	ER32	10	16	20.8	35	34.0	5	35	M12	6.0
SRK 10x60 JET2	ER32	10	16	22.4	60	44.5	6	36	M12	6.0
SRK 10x85 JET2	ER32	10	16	23.0	85	49.5	6	36	M12	6.0
SRK 12x35 JET2	ER32	12	20	24.0	35	28.0	-	-	-	-
SRK 12x60 JET2	ER32	12	20	24.0	60	28.0	6	38	M14	6.0
SRK 12x85 JET2	ER32	12	20	24.0	85	28.0	6	38	M14	6.0

T-SHRINK Pinza ER per cambio rapido con e senza refrigerazione sul gambo

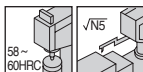
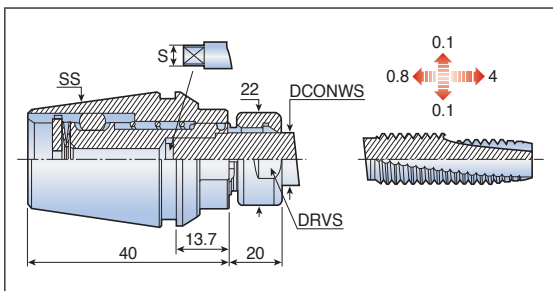


Descrizione	Dimensioni (mm)										
	SS	DCONWS	BTED	BD	LPR	LB	ADJTRA	LSCWS	THID	DRVS	
ER32 SRF 3x50	32 SRF	3	10	32	50	31.0	6	16	M6	27	
SRF 3x85	32 SRF	3	10	32	85	60.5	6	16	M6	27	
SRF 4x50	32 SRF	4	10	32	50	31.0	6	18	M6	27	
SRF 4x85	32 SRF	4	10	32	85	60.5	6	18	M6	27	
SRF 5x50	32 SRF	5	10	32	50	31.0	6	21	M6	27	
SRF 5x85	32 SRF	5	10	32	85	60.5	6	21	M6	27	
SRF 6x50	32 SRF	6	11	32	50	31.0	6	24	M8	27	
SRF 6x85	32 SRF	6	11	32	85	60.5	6	24	M8	27	
SRF 8x50	32 SRF	8	14	32	50	33.0	6	31	M10	27	
SRF 8x85	32 SRF	8	14	32	85	60.5	6	31	M10	27	
SRF 10x50	32 SRF	10	16	32	50	35.0	5	35	M12	27	
SRF 10x85	32 SRF	10	16	32	85	60.5	6	36	M12	27	
SRF 12x50	32 SRF	12	20	32	50	35.0	5	37	M14	27	
SRF 12x85	32 SRF	12	20	32	85	50.0	6	38	M14	27	
ER32 SRF 3x50 JET2	32 SRF	3	10	32	50	31.0	6	16	M6	27	
SRF 3x85 JET2	32 SRF	3	10	32	85	60.5	6	16	M6	27	
SRF 4x50 JET2	32 SRF	4	10	32	50	31.0	6	18	M6	27	
SRF 4x85 JET2	32 SRF	4	10	32	85	60.5	6	18	M6	27	
SRF 5x85 JET2	32 SRF	5	10	32	85	60.5	6	21	M6	27	
SRF 6x50 JET2	32 SRF	6	11	32	50	31.0	6	24	M8	27	
SRF 6x85 JET2	32 SRF	6	11	32	85	60.5	6	24	M8	27	
SRF 8x50 JET2	32 SRF	8	14	32	50	33.0	6	31	M10	27	
SRF 8x85 JET2	32 SRF	8	14	32	85	60.5	6	31	M10	27	
SRF 10x50 JET2	32 SRF	10	16	32	50	35.0	5	35	M12	27	
SRF 10x85 JET2	32 SRF	10	16	32	85	60.5	6	36	M12	27	
SRF 12x50 JET2	32 SRF	12	20	32	50	35.0	5	37	M14	27	
SRF 12x85 JET2	32 SRF	12	20	32	85	50.0	6	38	M14	27	

• Coppia di serraggio: 24 kg x m

GTIN ER

Pinza portamaschi GTIN ER



GTIN ER 32 - DIN 371 / 352

Descrizione	Dimensioni (mm)					
	SS	DCONWS	Min	Max	S	DRVS
GTIN ER32 DIN 2.50x2.10	ER32	2.5	M1	M1.8	2.1	20
DIN 2.80x2.10	ER32	2.8	M2	M4	2.1	20
DIN 3.50x2.70	ER32	3.5	M3	M5	2.7	20
DIN 4.00x3.00	ER32	4.0	M3.5	M3.5	3.0	20
DIN 4.50x3.40	ER32	4.5	M4	M6	3.4	20
DIN 6.00x4.90	ER32	6.0	M5	M8	4.9	20
DIN 7.00x5.50	ER32	7.0	M7	M10	5.5	20
DIN 8.00x6.20	ER32	8.0	M8	M8	6.2	20
DIN 9.00x7.00	ER32	9.0	M12	M12	7.0	20
DIN 10.00x8.00	ER32	10.0	M10	M10	8.0	20
DIN 11.00x9.00	ER32	11.0	M14	M14	9.0	20
DIN 12.00x9.00	ER32	12.0	M16	M16	9.0	20

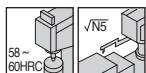
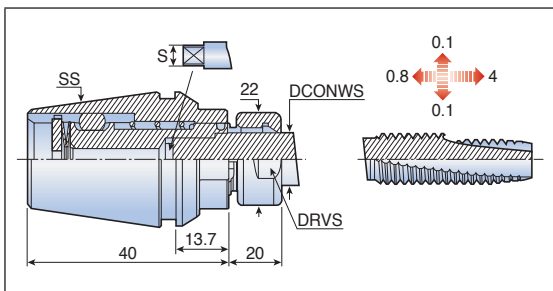
GTIN ER 32 - JIS

Descrizione	Dimensioni (mm)					
	SS	DCONWS	Min	Max	S	DRVS
GTIN ER32 JIS 3.00x2.50	ER32	3.0	M1	M2.6	2.5	20
JIS 4.00x3.20	ER32	4.0	M3	M3.5	3.2	20
JIS 5.00x4.00	ER32	5.0	M4	M4	4.0	20
JIS 6.00x4.50	ER32	6.0	M6	M6	4.5	20
JIS 6.20x5.00	ER32	6.2	M8	M8	5.0	20
JIS 7.00x5.50	ER32	7.0	M10	M10	5.5	20
JIS 8.50x6.50	ER32	8.5	M12	M12	6.5	20
JIS 10.50x8.00	ER32	10.5	M14	M14	8.0	20
JIS 12.50x10.00	ER32	12.5	M16	M16	10.0	20

• Nessun refrigerante deve essere introdotto nel mandrino per evitare il malfunzionamento del meccanismo

GTIN ER

Pinza portamaschi GTIN ER



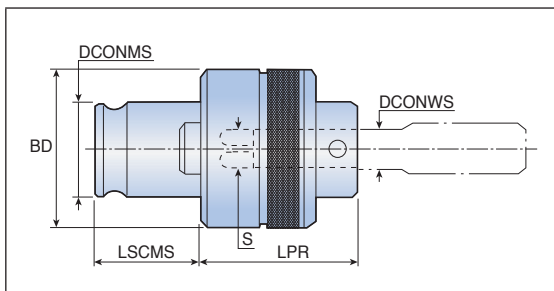
GTIN ER32 - ISO metrica ISO 529/2283

Descrizione	Dimensioni (mm)					
	SS	DCONWS	Min	Max	S	DRVS
GTIN ER32 ISO 2.24x1.80	ER32	2.24	M3	M3	1.80	20
ISO 2.50x2.00	ER32	2.50	M3.5	M3.5	2.00	20
ISO 2.80x2.24	ER32	2.80	M2.2	M2.5	2.24	20
ISO 3.15x2.50	ER32	3.15	M3	M4	2.50	20
ISO 3.55x2.80	ER32	3.55	M3.5	M4.5	2.80	20
ISO 4.00x3.15	ER32	4.00	M4	M5	3.15	20
ISO 4.50x3.55	ER32	4.50	M6	M6	3.55	20
ISO 5.00x4.00	ER32	5.00	M5	M5	4.00	20
ISO 5.60x4.50	ER32	5.60	UNC#12-24	UNC (ONLY)	4.50	20
ISO 6.30x5.00	ER32	6.30	M6	M8	5.00	20
ISO 7.10x5.60	ER32	7.10	UNC#3/8-16	UNC (ONLY)	5.60	20
ISO 8.00x6.30	ER32	8.00	M8	M10	6.30	20
ISO 9.00x7.10	ER32	9.00	M12	M12	7.10	20
ISO 10.00x8.00	ER32	10.00	M10	M10	8.00	20
ISO 11.20x9.00	ER32	11.20	M14	M14	9.00	20
ISO 12.50x10.00	ER32	12.50	M16	M16	10.00	20

• Nessun refrigerante deve essere introdotto nel mandrino per evitare il malfunzionamento del meccanismo

TA

Bussola porta maschi con frizione



Descrizione	Dimensioni (mm)					
	DCONMS	DCONWS	BD	LPR	LSCMS	S
TA 1-M3	19	4.0	32	25	21.5	3.2
1-M4	19	5.0	32	25	21.5	4.0
1-M5	19	5.5	32	25	21.5	4.5
1-M6	19	6.0	32	25	21.5	4.5
1-M8	19	6.2	32	25	21.5	5.0
1-M10	19	7.0	32	25	21.5	5.5
1-M12	19	8.5	32	25	21.5	6.5
2-M6	31	6.0	50	33	35.5	4.5
2-M8	31	6.2	50	33	35.5	5.0
2-M10	31	7.0	50	33	35.5	5.5
2-M12	31	8.5	50	33	35.5	6.5
2-M14	31	10.5	50	33	35.5	8.0
2-M16	31	12.5	50	33	35.5	10.0
2-M18	31	14.0	50	33	35.5	11.0
2-M20	31	15.0	50	33	35.5	12.0
2-M22	31	17.0	50	33	35.5	13.0
2-M24	31	19.0	50	33	35.5	15.0
3-M18	48	14.0	72	45	55.5	11.0
3-M20	48	15.0	72	45	55.5	12.0
3-M22	48	17.0	72	45	55.5	13.0
3-M24	48	19.0	72	45	55.5	15.0
3-M27	48	20.0	72	45	55.5	15.0
3-M30	48	23.0	72	45	55.5	17.0
3-M33	48	25.0	72	45	55.5	19.0
3-M36	48	28.0	72	45	55.5	19.0
3-M38	48	28.0	72	45	55.5	21.0

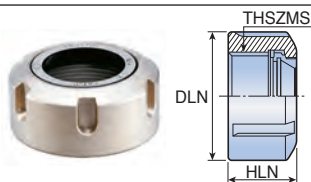
• Basato su specifiche JIS standard

Accessori



NUT ER TOP

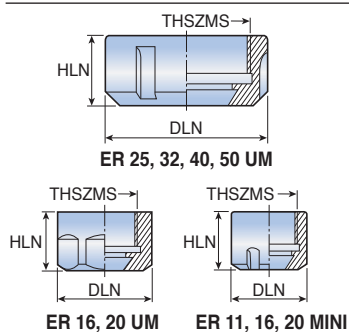
Ghiera ER - Top™



Descrizione	Dimensioni (mm)		
	DLN	HLN	THSZMS
NUT ER16 TOP	28	17	M22x1.5
ER20 TOP	34	19	M25x1.5
ER25 TOP	42	20	M32x1.5
ER32 TOP	50	22	M40x1.5
ER40 TOP	63	25	M50x1.5

NUT ER MINI/UM

Ghiera ER

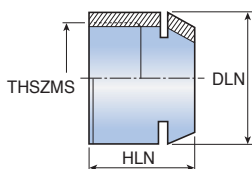


Descrizione	Dimensioni (mm)		
	DLN	HLN	THSZMS
NUT ER11 MINI	16	10.8	M13x0.75
ER11 UM	19	11.3	M14x0.75
ER16 MINI	22	18.0	M19x1.0
ER16 UM	28	17.0	M22x1.5
ER20 MINI	28	19.0	M24x1.0
ER20 UM	34	19.0	M25x1.5
ER25 MINI	35	20.0	M30x1.5
ER25 UM	42	20.0	M32x1.5
ER32 UM	50	22.0	M40x1.5
ER40 UM	63	25.0	M50x1.5
ER50 UM	78	55.0	M64x2.0

NUT ER11 GHS



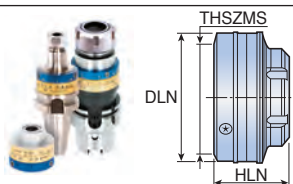
Ghiera Typhoon



Descrizione	Dimensioni (mm)			
	DLN	HLN	THSZMS	Chiave
NUT ER11 GHS	16	11.5	M13x0.75	WRENCH ER11 SMS

NUT ER TOP BIN

Ghiera bilanciabile ER top



Descrizione	Dimensioni (mm)		
	DLN	HLN	THSZMS
NUT ER16 TOP BIN	44	36.0	M22x1.5
ER20 TOP BIN	50	37.0	M25x1.5
ER25 TOP BIN	58	37.5	M32x1.5

NUT ER SHORT

Ghiera T-SHORT

	Descrizione	Dimensioni (mm)		
		DRVS	HLN	THSZMS
	NUT ER20 SHORT	22	10.7	M25x1.5
	ER32 SHORT	36	15.0	M40x1.5
ER40 SHORT	46	16.0	M50x1.5	

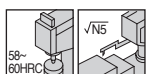
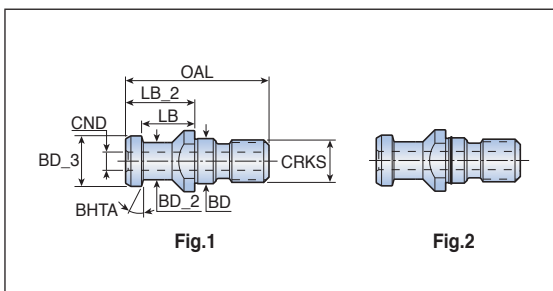
TSKN

Ghiera TSK

	Descrizione	Dimensioni (mm)		Fig.
		DLN	THSZMS	
	TSKN 6	20	M15x1.0	1
	10	28	M21.5x1.0	1
16	40	M32x1.5	2	
25	55	M45x1.5	2	

PS SK-DIN

Tirante metrico DIN69872

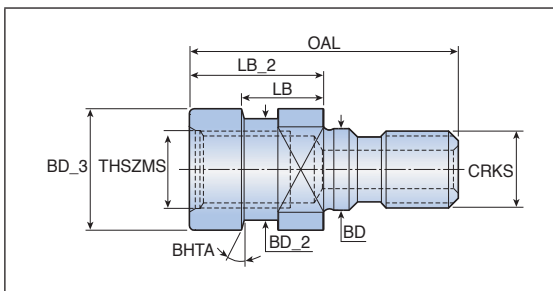


Descrizione	Dimensioni (mm)									Fig.
	CRKS	BD	BD_2	BD_3	CND	LB	LB_2	OAL	BHTA	
PS SK30 15° M12 DIN	M12	13	9.0	13.00	-	19.00	24.00	44.0	15	1
PS SK40 15° M16 DIN	M16	17	14.0	19.00	-	20.00	26.00	54.0	15	1
15° M16 DIN O	M16	17	14.0	19.00	-	20.00	26.00	54.0	15	2
15° M16 DIN B	M16	17	14.0	19.00	7.00	20.00	26.00	54.0	15	1
15° M16 DIN OB	M16	17	14.0	19.00	7.00	20.00	26.00	54.0	15	2
PS SK50 15° M24 DIN	M24	25	21.0	28.00	-	25.00	34.00	74.0	15	1
15° M24 DIN O	M24	25	21.0	28.00	-	25.00	34.00	74.0	15	2
15° M24 DIN B	M24	25	21.0	28.00	11.50	25.00	34.00	74.0	15	1

- Foro refrigerante solo negli articoli con suffisso "B"
- Fig. 2: con guarnizione esterna

PS OTT BT/SK

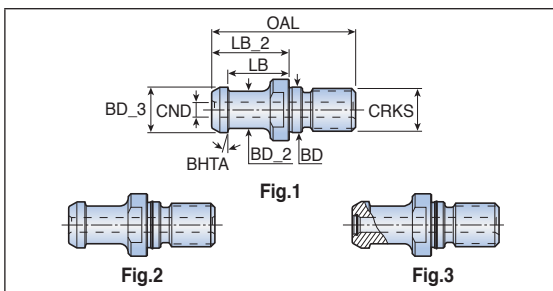
Tirante sistema OTT



Descrizione	Dimensioni (mm)									
	CRKS	THSZMS	BD	BD_2	BD_3	LB	LB_2	OAL	BHTA	
PS OTT BT40 M16	M16	M16	17	21.1	25.0	16.60	28	56	15	
BT50 M24	M24	M24	24	32.0	39.3	13.35	25	65	15	
SK40 M16	M16	M16	17	21.1	25.0	13.60	25	53	15	

PS BT-JIS/MAZAK

Tirante BT-JIS 63398 / ANSI-metrico per macchine MAZAK

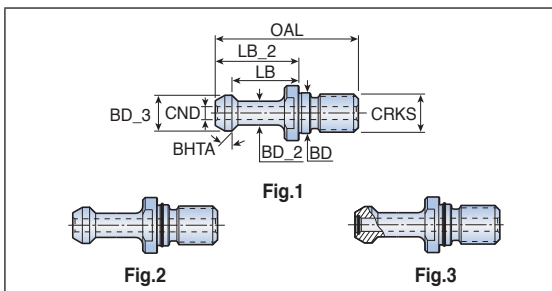


Descrizione	Dimensioni (mm)										Fig.
	CRKS	BD	BD_2	BD_3	CND	LB	LB_2	OAL	BHTA		
PS BT30 15° M12 JIS B	M12	13	8.00	12.00	4.0	18.40	23.4	43.0	15	1	
BT40 15° M16 JIS B	M16	17	14.00	19.00	5.5	23.00	29.0	54.0	15	1	
BT40 15° M16 JIS O B	M16	17	14.00	19.00	5.5	23.00	29.0	54.0	15	2	
BT40 15° M16 JIS O B O	M16	17	14.00	19.00	5.5	23.00	29.0	54.0	15	3	
BT50 15° M24 JIS B	M24	25	21.00	28.00	8.0	25.00	34.0	74.0	15	1	
BT50 15° M24 JIS O B	M24	25	21.00	28.00	8.0	25.00	34.0	74.0	15	2	
BT50 15° M24 JIS O B O	M24	25	21.00	28.00	8.0	25.00	34.0	74.0	15	3	
BT40 45° M16 MAZAK B	M16	17	12.45	18.79	7.0	14.02	19.1	44.1	45	1	
BT50 45° M24 MAZAK B	M24	25	20.83	28.95	8.0	17.58	25.2	65.2	45	1	

- Foro refrigerante solo negli articoli con suffisso "B"
- Fig. 2: con guarnizione esterna e foro refrigerante
- Fig. 3: con guarnizione interna e esterna e foro refrigerante

PS BT-MAS

Tirante BT-MAS-metrico

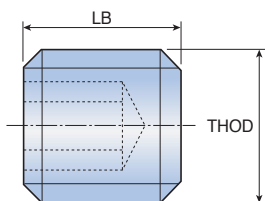


Descrizione	Dimensioni (mm)									Fig.
	CRKS	BD	BD_2	BD_3	CND	LB	LB_2	OAL	BHTA	
PS BT30 45 M12 MAS1	M12	12.5	7	11	-	18	23	43	45	1
45 M12 MAS1 B	M12	12.5	7	11	3.0	18	23	43	45	1
60 M12 MAS2	M12	12.5	7	11	-	18	23	43	30	1
PS BT40 45 M16 MAS1	M16	17.0	10	15	-	28	35	60	45	1
45 M16 MAS1 B	M16	17.0	10	15	5.5	28	35	60	45	1
60 M16 MAS2	M16	17.0	10	15	-	28	35	60	30	1
60 M16 MAS2 B	M16	17.0	10	15	5.5	28	35	60	30	1
90 M16 MAS3	M16	17.0	10	15	-	28	35	60	90	1
90 M16 MAS3 B	M16	17.0	10	15	5.5	28	35	60	90	1
PS BT50 45 M24 MAS1	M24	25.0	17	23	-	35	45	85	45	1
45 M24 MAS1 B	M24	25.0	17	23	6.0	35	45	85	45	1
45 M24 MAS1 O B	M24	25.0	17	23	6.0	35	45	85	45	2
45 M24 MAS1 O B O	M24	25.0	17	23	6.0	35	45	85	45	3
60 M24 MAS2	M24	25.0	17	23	-	35	45	85	30	1
60 M24 MAS2 B	M24	25.0	17	23	6.0	35	45	85	30	1
90 M24 MAS3	M24	25.0	17	23	-	35	45	85	90	1
90 M24 MAS3 B	M24	25.0	17	23	6.0	35	45	85	90	1

- Foro refrigerante solo negli articoli con suffisso "B"
- Fig. 2: con guarnizione esterna e foro refrigerante
- Fig. 3: con guarnizione interna e esterna e foro refrigerante

SR-DIN

Vite bloccaggio DIN1835 B/E per mandrino weldon



Descrizione	Dimensioni (mm)		
	THOD	LB	Per gambo
SR M6x10 DIN 1835-B	M6	10	6
M8x10 DIN 1835-B	M8	10	8
M10x12 DIN 1835-B	M10	12	10
M12x16 DIN 1835-B	M12	16	12, 14
M14x16 DIN 1835-B	M14	16	16
M16x16 DIN 1835-B	M16	16	20
M18x2x20 DIN 1835-B	M18x2	20	25
M20x2x20 DIN 1835-B	M20x2	20	32, 40
M24x2x25 DIN 1835-B	M24x2	25	50

PRESET ER-JET

Vite di presettaggio con fori di refrigerazione per pinze ER

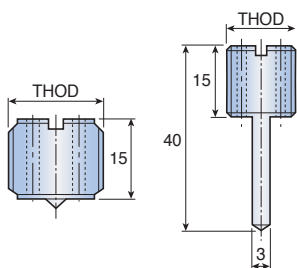


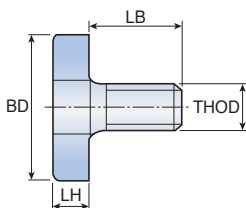
Fig.1

Fig.2

Descrizione	Dimensioni (mm)	Fig.
	THOD	
PRESET ER-JET 8x1.25	M8x1.25	1
10x1.5	M10x1.5	1
12x1.75	M12x1.75	1
12x1.75L	M12x1.75	2
16x2	M16x2	1
16x2L	M16x2	2
18x1.5	M18x1.5	1
18x1.5L	M18x1.5	2
22x1.5	M22x1.5	1
22x1.5L	M22x1.5	2
28x1.5	M28x1.5	1

M-CLAMP SCREW SEM

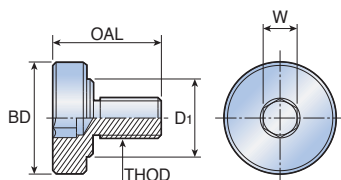
Vite di bloccaggio DIN6367 per mandrino portafresa a manicotto



Descrizione	Dimensioni (mm)				
	S.M.C	THOD	BD	LH	LB
M8 CLAMP SCREW SEM 16	16	M8	20	6	16
M10 CLAMP SCREW SEM 22	22	M10	28	7	18
M12 CLAMP SCREW SEM 27	27	M12	35	8	22
M16 CLAMP SCREW SEM 32	32	M16	42	9	26
M20 CLAMP SCREW SEM 40	40	M20	52	10	30
M24 CLAMP SCREW SEM 50	50	M24	63	12	36

MBA M

Vite di bloccaggio per FMA

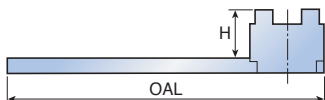


Descrizione	Dimensioni (mm)				
	THOD	BD	D ₁	OAL	W
MBA M8	M8x1.25	20	15	24	6
M10	M10x1.5	28	18	28	8
M12	M12x1.75	33	23	32	10
M16	M16x2.0	40	23	40	14
M20	M20x2.5	50	27	50	17
M24	M24x3.0	65	37	60	19

• Chiave per vite MBA: L-W

WRENCH M-SEMC

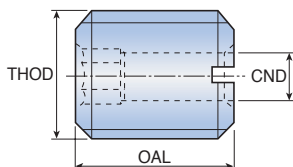
Chiave DIN6368 per mandrino portafresa a manicotto combinato



Descrizione	Dimensioni (mm)		
	S.M.C	H	OAL
WRENCH M8 SEMC 16	16	20	180
M10 SEMC 22	22	25	200
M12 SEMC 27	27	32	225
M16 SEMC 32	32	36	250
M20 SEMC 40	40	40	280
M24 SEMC 50	50	50	315

PRESET SCREW

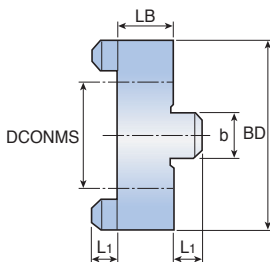
Vite di preasettaggio per mandrino a calettamento SRKIN



Descrizione	Dimensioni (mm)				
	THOD	OAL	DND	Utilizzare con	Chiave
PRESET SCREW M5x20 B	M5	20	2.1	EM E / SRKIN	2.5
M6x20 B	M6	20	2.5	EM E / SRKIN	3.0
M8x20 B	M8	20	3.5	EM E / SRKIN	4.0
M10x18 B	M10	18	4.5	EM E / SRKIN	5.0
M12x18 B	M12	18	5.5	EM E / SRKIN	6.0
M16x20 B	M16	20	7.5	EM E / SRKIN	6.0
M16x25 B	M16	25	7.5	SRKIN	6.0
M20x20 B	M20	20	6.0	EM E	6.0

D-RING SEMC

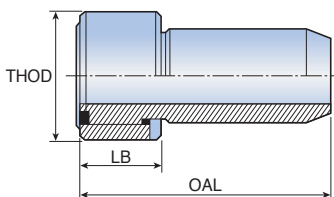
Anello di trascinamento DIN6366/1 per mandrino portafresa a manicotto combinato



Descrizione	Dimensioni (mm)				
	DCONMS	BD	LB	b	L1
16 D - RING SEMC	16	32	10	8	5.0
22 D - RING SEMC	22	40	12	10	5.6
27 D - RING SEMC	27	48	12	12	6.3
32 D - RING SEMC	32	58	14	14	7.0
40 D - RING SEMC	40	70	14	16	8.0
50 D - RING SEMC	50	90	16	18	9.0

COOLING TUBE HSK A

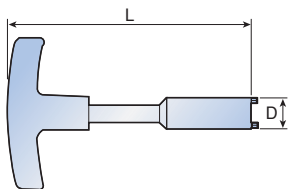
Tubo refrigerazione HSK A



Descrizione	Dimensioni (mm)		
	OAL	LB	THOD
COOLING TUBE HSK A 50	33.0	9.5	M16x1
HSK A 63	36.5	11.5	M18x1
HSK A 80	40.0	13.5	M20x1.5
HSK A 100	44.0	15.5	M24x1.5

WRENCH COOL TUBE HSK A

Chiave per tubo di refrigerazione HSK A

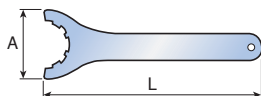


Descrizione	Dimensioni (mm)	
	D	L
WRENCH COOL TUBE HSK A 50	15.0	120
HSK A 63	17.0	122
HSK A 83	18.5	186
HSK A 100	22.0	141

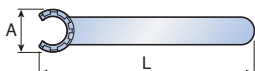
WRENCH ER-MINI/SHORT/CLICKIN

Chiave ER

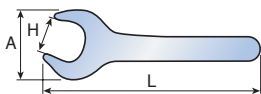
DIN6499



Chiave ER 25, 32, 40, 50



Chiave ER 11, 16, 20, 25 MINI



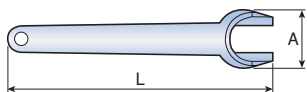
Chiave ER 11, 16, 20, SHORT, CLICKIN

Descrizione	Dimensioni (mm)		
	A	H	L
WRENCH ER11 MINI	16.8	-	95
ER11	32.0	17	95
ER16 MINI	22.5	-	117
ER16	42.8	25	143
ER20 MINI	28.0	-	128
ER20	53.5	30	172
ER25 MINI	29.0	-	120
ER25	70.0	-	207
ER32	78.0	-	255
ER40	95.0	-	285
ER50	110.0	-	350
ER32 SHORT	75.0	36	303
ER40 SHORT	94.0	46	378
ER32 CLICKIN 27	57.0	27	239
ER32 CLICKIN 32	67.0	32	273

WRENCH ER11 SMS



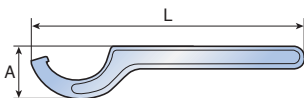
Chiave ER11 per Typhoon



Descrizione	Dimensioni (mm)	
	A	L
WRENCH ER11 SMS	22	100

SPANNER TMC

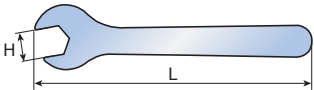
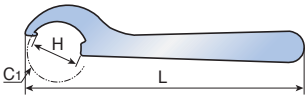
Chiave per mandrino tipo TMC



Descrizione	Dimensioni (mm)	
	L	A
SPANNER TMC 20	84.1	15.8
TMC 25	94.3	18.1
TMC 32	109.1	21.7
TMC 42	108.0	23.2

TSKS

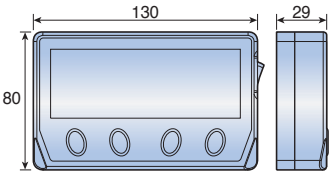
Chiave per mandrino TSK

 Fig.1	Descrizione	Dimensioni (mm)			Fig.
		H	L	C1	
 Fig.2	TSKS - 6	18.0	174	-	1
	10	25.4	177	-	1
	16	39.0	225	40	2
	25	52.0	228	55	2

TJS TSD DISPLAY



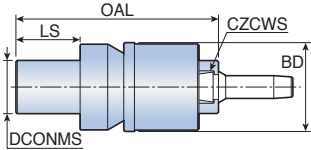
Display numero di giri per mandrino ad alta velocità TYPHOON

	Descrizione	Mandrino
		TJS TSD DISPLAY

IND ER11 TOOL ADAPTER

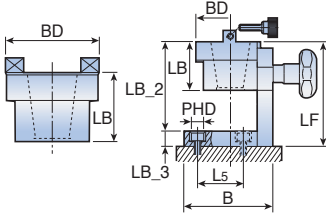


Adattatore ER 11 per calettamento su macchina da induzione

	Descrizione	Dimensioni (mm)				
		CZCWS	BD	DCONMS	OAL	LS
	IND ER11 TOOL ADAPTER	ER11	33.2	19.9	75.7	24

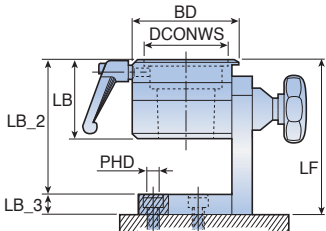
TOOL CLAMP-ROTARY/FIX

Smontaconi fisso e mobile - ISO, DIN69871, BT MAS-403

	Descrizione	Dimensioni (mm)								
		CSI	B	BD	PHD	LB	LB_2	LB_3	L5	LF
 <p>Fisso Mobile</p>	TOOL CLAMP 30 ROTARY	ROTARY	104	70	12.5	56	109	19	40	128
	40 ROTARY	ROTARY	104	82	12.5	56	109	19	40	128
	50 ROTARY	ROTARY	104	103	12.5	71	151	19	85	170
	30 FIX	FIX	-	82	-	58	-	-	-	-
	40 FIX	FIX	-	82	-	58	-	-	-	-
	50 FIX	FIX	-	103	-	71	-	-	-	-

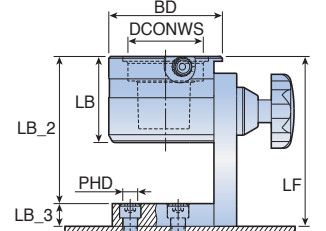
MULTI CLAMP-E/F, A/C

Smontaconi mobile - HSK

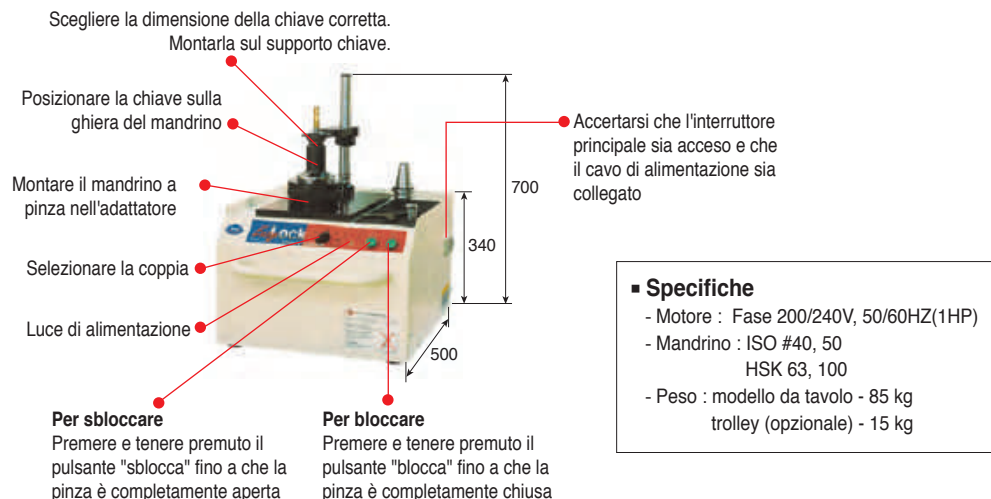
	Descrizione	Dimensioni (mm)									
		CSI	B	DCONWS	BD	PHD	LB	LB_2	LB_3	L5	LF
	MULTI CLAMP 40E/F	40	144	40	113.2	12.5	40	114	19	40	133
	50E/F	50	144	50	113.2	12.5	40	114	19	40	133
	63E/F	63	144	63	113.2	12.5	40	114	19	40	133
	50 A/C	50	104	50	82.0	12.5	40	123	19	40	142
	63 A/C	63	104	63	95.0	12.5	40	123	19	40	142
	100 A/C	100	144	100	130.0	12.5	85	159	19	85	178

MULTI CLAMP C

Smontaconi mobile - C-ADAPTER

	Descrizione	Dimensioni (mm)									
		SS	B	DCONWS	BD	PHD	LB	LB_2	LB_3	L5	LF
	MULTI CLAMP C6	63	104	63	95	12.5	72	123	19	40	142

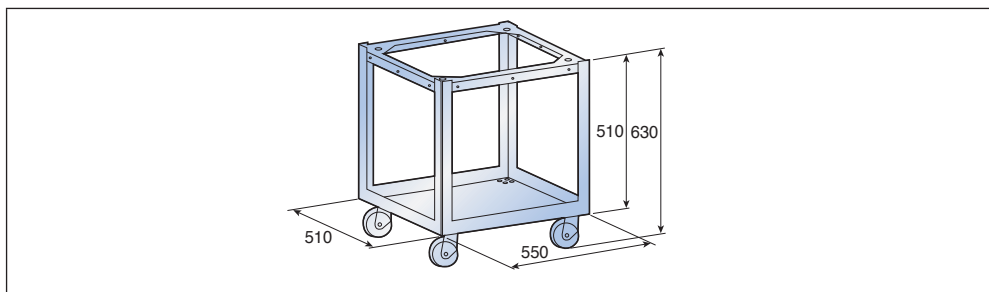
EASYLOCK T.C EU



Nota: assemblare la pinza e l'utensile e a mano posizionare la ghiera sul mandrino

Descrizione	TaeguTec No.	Accessori	
		Standard	Opzionali
EASYLOCK T.C EU	4651108	TP50 AD 40 EASY	EASY LOCK TROLLEY
		WRENCH ER16 EASY LOCK	TP40 AD 30 EASY
		WRENCH ER20 EASY LOCK	TP50 AD HSK 63 EASY
		WRENCH ER25 EASY LOCK	TP50 AD HSK 100 EASY
		WRENCH ER32 EASY LOCK	WRENCH ER50 EASY LOCK
		WRENCH ER40 EASY LOCK	WRENCH TG100 OPEN EASY

EASYLOCK TROLLEY

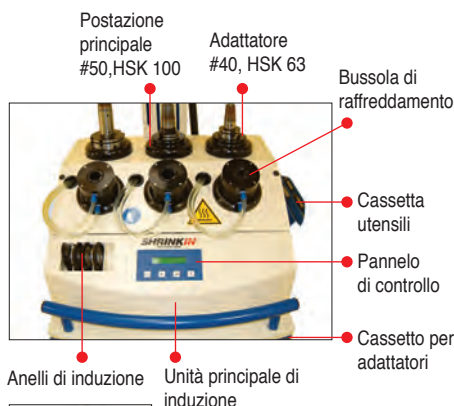


Descrizione	TaeguTec No.
EASYLOCK TROLLEY	4651109

Unità di calettamento ad induzione



Specifiche tecniche	
Gamma di bloccaggio	3-32mm gambo in metallo duro
Gamma di bloccaggio	6-32mm
Alimentazione	3x380 - 500V 50/60Hz
Potenza nominale	13kW
Corrente nominale	16 AMP
Alimentazione unità raffredd.	220V 50Hz
Potenza nominale	0.5kW
Max. lunghezza utensile	440mm (dalla battuta)
Max. diametro di bloccaggio	52mm
Lunghezza di induzione eff.	45mm
Tempo di espansione	5-12 secondi
Tempo di raffreddamento	50-90 secondi
Peso	150kg
Dimensioni	170x73x60 cm



TaeguTec No.	Descrizione	Include
4652264	IND SHRINKIN UNIT EUR	Unità di induzione, unità di raffreddamento, trolley, 3 adattatori

Bussole di raffreddamento	Utilizzato per
IND COOLING COLLET 6-8	SRKIN
10-12	SRKIN
14-16	SRKIN
18-20	SRKIN
ER 3-5	SRK
ER 6	SRK
ER 8	SRK
ER 10	SRK
ER 12	SRK

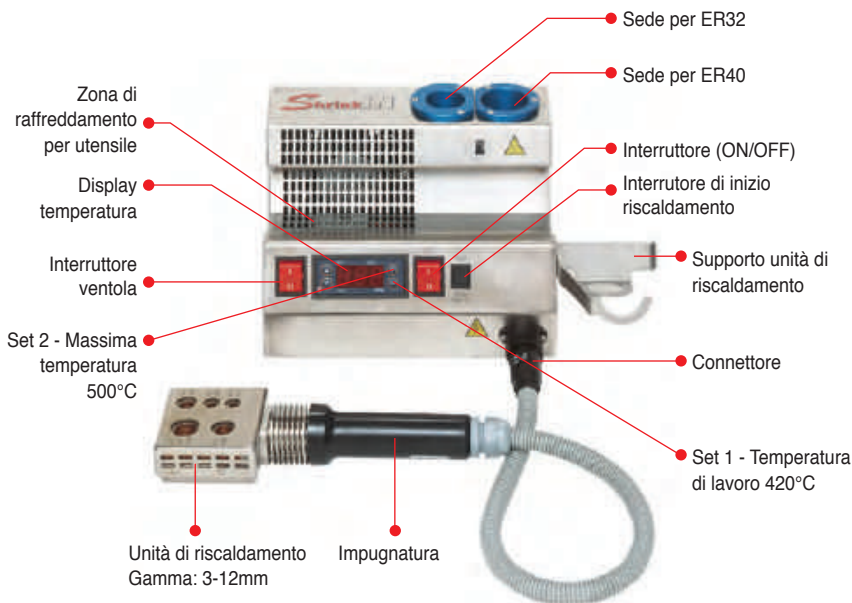
Opzionali adattatori mandrino per HSK
IND 32 HSK TOOL ADAPTER
40 HSK TOOL ADAPTER
50 HSK TOOL ADAPTER⁽¹⁾
63 HSK TOOL ADAPTER
80 HSK TOOL ADAPTER



INDUZIONE starter unit
4654106 IND SHRINK START UNIT EUR

- Una postazione senza unità di raffreddamento

• ⁽¹⁾ Per cono #30



■ T-SHRINK Unità termica elettrica

TaeguTec No.	Descrizione
4651950	SHRINKIN UNIT V2 EUR

220V 50/60 HZ

- Include l'unità di riscaldamento 220V V2.0
- Disponibile per pinze ER...SRK, ER...SRF

■ Unità di riscaldamento

TaeguTec No.	Descrizione
4651952	HEATING HANDLE 220V V2

▶ T-SHRINK / Set di pinze ER32

■ ER32 T-SHRINK set 6 pinze (4-12)

Descrizione	Dimensione pinze
SET ER32 SRK S 6 EUR	4, 5, 6, 8, 10, 12
SRK M 6 EUR	4, 5, 6, 8, 10, 12
SRK L 6 EUR	4, 5, 6, 8, 10, 12



■ T-SHRINK Kit unità termica elettrica con T-SHRINK Set 6 pinze ER32 (4-12)

Descrizione	Alimentazione	Dimensione pinze
KIT SHRINKINS V2 EUR	220V 50/60 HZ	4, 5, 6, 8, 10, 12
M V2 EUR	220V 50/60 HZ	4, 5, 6, 8, 10, 12



Informazioni tecniche

► Pinze a tenuta stagna

■ Applicazioni

Le pinze ER a tenuta stagna sono utilizzate per applicazioni che richiedono liquido refrigerante attraverso l'utensile come punte, frese, maschi e utensili speciali. Esse forniscono una soluzione efficace per un accurato controllo del flusso di refrigerazione. Le pinze con guarnizioni frontali di tenuta sono disponibili per macchine ad alta velocità con refrigerazione attraverso il mandrino o la torretta. Esse forniscono prestazioni eccellenti, elevate velocità di taglio, maggiore durata ed elevata qualità della finitura superficiale.

■ Caratteristiche

- Pinze a tenuta stagna rivoluzionarie ad alta precisione con 1 mm di regolazione
- Maggiore efficienza di lavorazione
- Maggiore durata dell'utensile
- Elevata coppia di bloccaggio e serraggio concentrico
- La tenuta frontale assicura la protezione da contaminazioni
- Asportazione rapida del truciolo

■ Vantaggi

- Alta pressione del refrigerazione fino a 100 bar
- Elimina le interferenze del flusso del refrigerante

■ Note

- Per la massima sicurezza e forza di bloccaggio, l'attacco dell'utensile deve essere inserito nella pinza ad una profondità minima di due volte il diametro del gambo
- Nella pinza a tenuta JET2 l'ugello deve essere regolato direttamente sul tagliante dell'utensile
- Adatte per tutti gli steli standard

► Pinza a tenuta stagna ER Taegutec

■ Due tipologie:

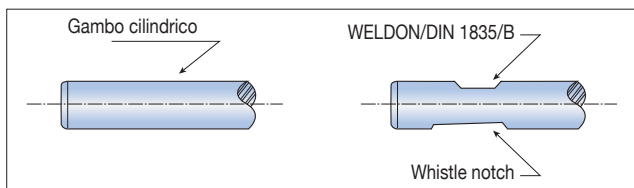


Pinza a tenuta stagna JET
Per utensili con gambo cilindrico e con fori di refrigerazione interna



Pinza a tenuta stagna JET 2
Con doppi ugelli direzionabili.
Il refrigerante è direzionato direttamente sul tagliante.
Per utensili con gambo cilindrico senza fori di refrigerazione interna

► Gambo standard



Informazioni tecniche

► Ghiera di bloccaggio ER - Top DIN6499

■ Descrizione

La ghiera ER Top è una ghiera di bloccaggio per pinze ER con un esclusivo meccanismo antiattrito. Il particolare sistema antiattrito è costituito da due parti che consentono di combinare i movimenti autocentranti radiali e angolari.

■ Caratteristiche

- Esclusivo sistema antiattrito in due parti.
- Migliore concentricità grazie al meccanismo autocentrante.
- Potenza di serraggio molto più elevata rispetto alle ghiera standard, fino al 50-100% in più, grazie al meccanismo antiattrito.
- Perfetto bilanciamento per macchine ad alta velocità grazie alla nuova concezione dei due denti di estrazione.
- Design compatto: la dimensioni e la gamma sono le stesse delle ghiera standard.

■ Operazione

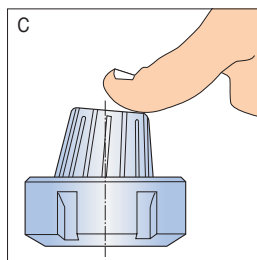
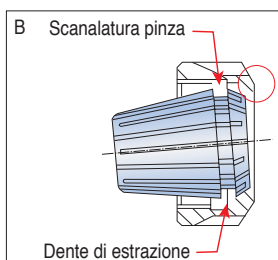
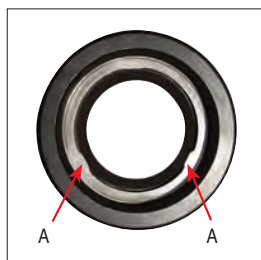
Montare sempre prima la pinza nella ghiera e poi fissarla nel mandrino.

■ Procedura di inserimento

Inserire la pinza tenendola inclinata, agganciando i denti di estrazione della ghiera (A) nella scanalatura della pinza (B).

Posizionare le due parti su un piano pulito.

Premere con il pollice sulla parte posteriore (C).



■ Importante

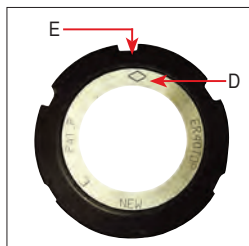
Non inserire mai la pinza parallelamente alla ghiera. Questa operazione potrebbe causare la rottura del dente di estrazione. Quando si smonta la ghiera la pinza si sgancerà automaticamente dal mandrino grazie ai denti di estrazione.

Informazioni tecniche

► Ghiera di bloccaggio ER - Top DIN6499

■ Procedura di estrazione

- 1 Allineare il logo a forma di diamante inciso sull'anello di argento (D) ad una qualsiasi delle scanalature della ghiera (E).
- 2 Posizionare la ghiera con la pinza a faccia in giù su una superficie piana e pulita.
- 3 Inserire un cacciavite in verticale nella fessura tra la ghiera e l'anello (D).
- 4 Inclinare il cacciavite verso l'esterno mentre si spinge con il dito nella direzione opposta per aiutare l'estrazione (F).



Note:

Per ottenere migliori risultati si consiglia di pulire e oleare sempre il filetto della ghiera e il cono della pinza prima dell'utilizzo.

Forza di bloccaggio consigliata per pinze ER standard e ghiera di bloccaggio ER-Top

Tipo ghiera	Kg × m
ER-11	5
ER-11M	3
ER-16	7
ER-16M	4
ER-20	12
ER-20M	8
ER-25	20
ER-32	22
ER-40	25
ER-50	35

Importante:

La coppia viene calcolata in base al diametro massimo dell'utensile ammesso per ogni tipo di pinza e dovrà essere gradualmente ridotta per l'utilizzo con dimensioni inferiori

Informazioni tecniche

► Pinza per mandrino TSK

■ Caratteristiche e vantaggi

- Eccellente precisione e ottima forza di bloccaggio grazie alla bassa conicità delle pinze (pinza ER: 8°, pinza TSK : 4°)
- Design sottile per lavorazioni in cavità profonde
- Adatta per lavorazioni ad alta velocità
- Grande varietà di pinze TSK (normali e per refrigerazione interna)
- Per tutti gli utilizzi con punte e frese

■ Applicazioni

- Per tutti gli utilizzi con punte e frese
- Lavorazioni ad alta velocità per l'industria dello stampo
- Alta precisione nelle lavorazioni di alesatura e fresatura

■ Come assemblare la pinza con la ghiera



A. Dispositivo di assemblaggio
(fornito con il set)



B. Ghiera



C. Pinza

❶ Inserire la parte posteriore della pinza (C) nel dispositivo di assemblaggio (A)

❷ Inserire la parte combinata (A+C) nella ghiera (B)

❸ Disassemblare il dispositivo (A) dalla resto (B+C)



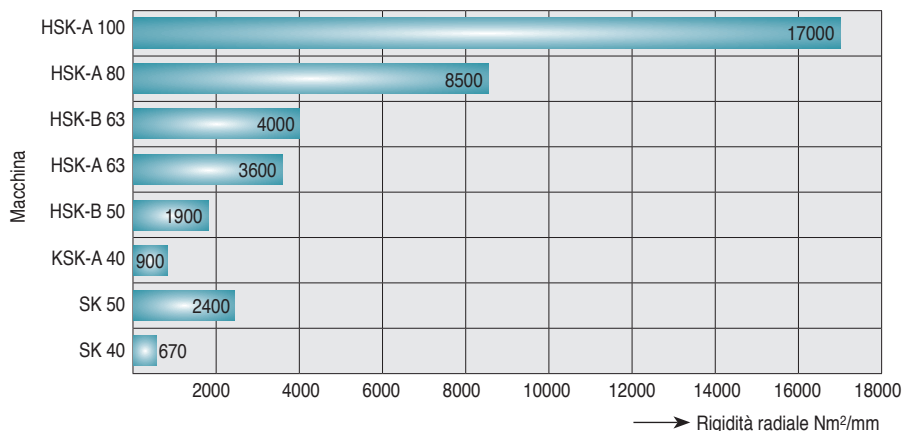
Informazioni tecniche

► Sistema HSK (DIN69893)

■ Caratteristiche

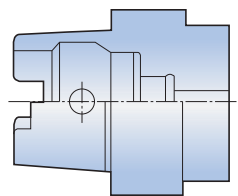
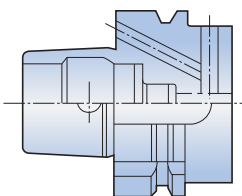
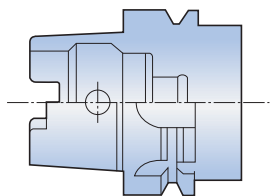
- DIN standard
- Per lavorazioni in alta velocità
- Dimensioni: #32, 40, 50, 63, 100
- Per macchina con A.T.C. (cambio automatico dell'utensile) e manuale
- Doppio contatto
- Alta rigidità

► Rigidità radiale delle diverse interfacce macchina utensile



► Tipo

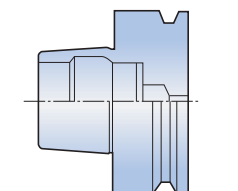
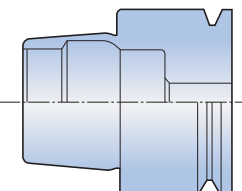
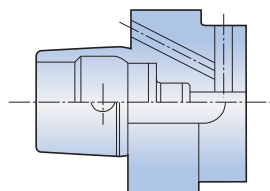
- Tipo A: cambio utensile automatico
- Tipo B: refrigerante attraverso flangia
- Tipo C: cambio manuale



- Tipo D: refrigerante attraverso flangia

- Tipo E: super high speed

- Tipo F: ultra high speed



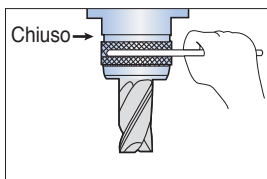
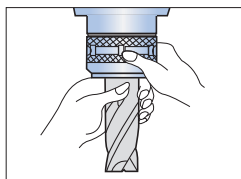
Informazioni tecniche

► Mandrino a forte serraggio

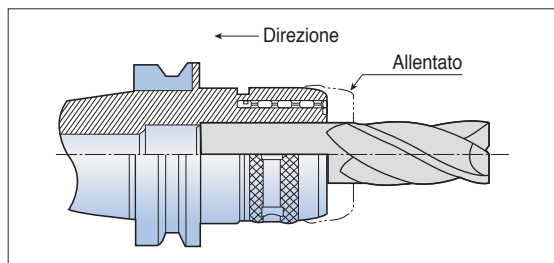
- **Eccezionale forza di serraggio con una semplice operazione**

- Coppia

Tipo	Coppia (kgf•m)
TMC 25	160
TMC 32	300
TMC 42	500

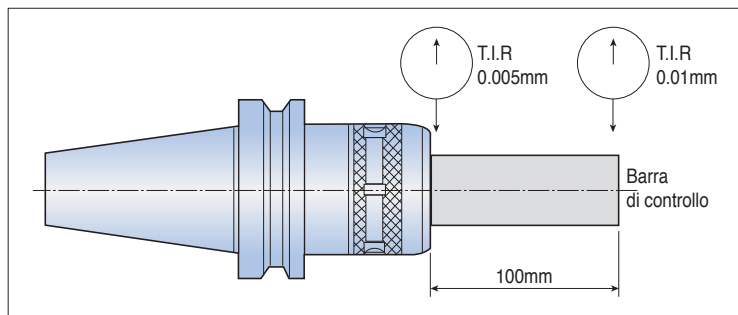


Stringere fino a quando la ghiera è vicino al corpo
(evitare di martellare)



- **Migliore precisione e incremento della durata dell'utensile**

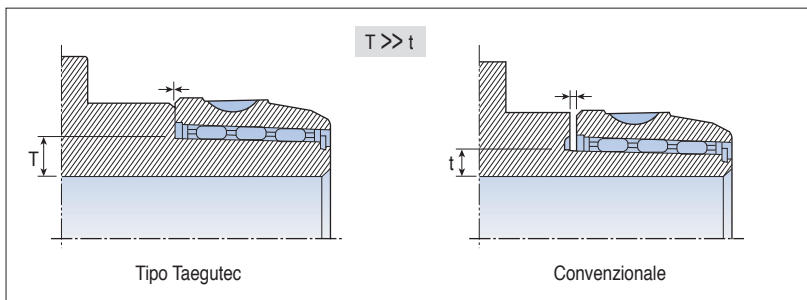
La precisione e il runout ridotto sono stati raggiunti utilizzando una rettificazione precisa e un taglio laser dei intagli per evitare danni e distorsione dell' utensile.



Informazioni tecniche

■ Maggiore rigidità

L'incremento della rigidità del mandrino è ottenuta grazie all'aumento dello spessore del corpo, ottenuta anche grazie alla lavorazione degli intagli tramite laser.

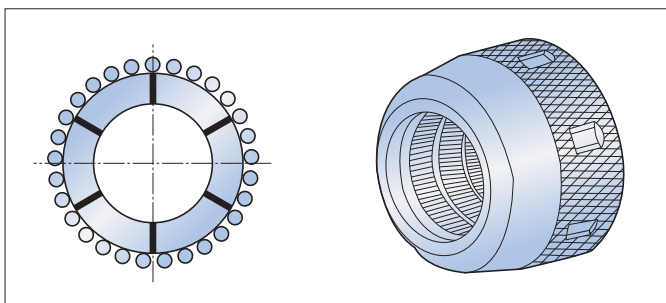


■ Eccellente durata

Eccellente durata grazie alla distribuzione della pressione superficiale in modo uniforme massimizzando il numero di rulli

Tipo	Taegutec	A Co.	B Co.
Ø32	60	55	60
Ø42	75	72	72

< Numero di rulli in una riga >



► Sistema a cambio rapido

- DIN 69871
- HSK
- BT MAS 403

■ T-CLICK vantaggi

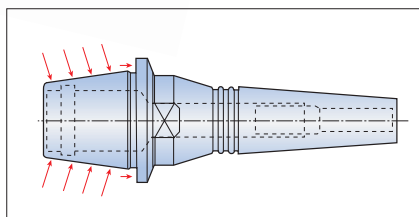
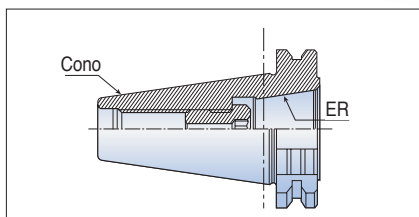
- Doppio contatto sul cono e sul piano
- Ideale per lavorazioni ad alta velocità
- Elevata precisione: basso run-out
- Eccellente rigidità
- Serraggio facile e veloce

■ Vantaggi del sistema a cambio rapido

- Cambio rapido utensile: Il porta fresa si inserisce nel mandrino con una semplice rotazione di mezzo giro
- Nessuno shock termico sul cono del mandrino
- Ampia gamma di diametri e lunghezze
- Elimina l'utilizzo di prolunghe
- Non sono necessari ricambi
- Sono disponibili grezzi T-CLICK per la produzione di utensili speciali
- Calettamento a caldo per utensili in metallo duro
- coppia di serraggio: 235 N•m



G2.5
20,000 RPM



► Mandrino con pinza bilanciabile

- Anelli di precisione di facile lettura per un alto grado di bilanciamento
- Semplice procedura su tutti i tipi di macchine equilibratrici
- Bilanciamento statico e dinamico

DIN 69871
HSK
BT MAS 403



■ Istruzioni per l'uso

La seguente procedura deve essere adattata in base al tipo specifico di equilibratrice utilizzata.

- 1 Allentare le 3 viti di bloccaggio sull'anello di riferimento angolare (blu).
Allineare i due anelli di bilanciamento (color oro) alla posizione "0" sull'anello di riferimento angolare.
Dopo aver allineato gli anelli serrare le 3 viti di bloccaggio.
- 2 Inserire la pinza nel mandrino e serrare usando la ghiera.
Inserire l'utensile nel mandrino, regolare la sporgenza desiderata e bloccarlo.
- 3 Immettere i parametri richiesti sull'equilibratrice: grado di equilibratura (G ..), g/min, ecc.
- 4 Eseguire un test con il mandrino assemblato sulla macchina equilibratrice.
Leggere i risultati per l'orientamento dell'angolo di squilibrio e il valore di squilibrio gr x mm
- 5 Allentare le 3 viti di bloccaggio sull'anello di riferimento angolare e allineare i due anelli di bilanciamento con il valore di squilibrio misurato. Ruotare entrambi gli anelli di bilanciamento sull'angolo di squilibrio sull'anello di riferimento angolare (o sul segno laser sulle macchine di bilanciamento con un indicatore laser). Stringere le viti di bloccaggio.
- 6 Eseguire un secondo test con il mandrino assemblato e leggere i risultati.

- Nota: la lettura deve essere entro tolleranza o molto vicina.

- Se è stata raggiunta la necessaria bilanciatura sulla macchina, l'utensile è pronto per il funzionamento

Se la bilanciatura non è in tolleranza, è necessario eseguire una delle seguenti procedure:

- Prima opzione

- a) **SE** lo squilibrio è compreso tra 0-3 gr x mm ed entro $\pm 20^\circ$ dall'angolo originale,
ALLORA aumentare il valore originale di gr x mm sugli anelli di bilanciamento secondo la lettura sulla macchina, senza modificare la posizione dell'angolo originale.

- Seconda opzione

- a) **SE** lo squilibrio è compreso tra 0-3 gr x mm con un angolo di circa 180° rispetto all'angolo originale,
ALLORA diminuire il valore originale di gr x mm sugli anelli di bilanciamento secondo la lettura sulla macchina senza modificare la posizione dell'angolo originale.

- Terza opzione

- a) **SE** lo squilibrio è inferiore a 1 gr x mm con un angolo compreso tra 20° e 90° rispetto all'angolo originale,
ALLORA ruotare entrambi gli anelli di bilanciamento di circa 5° nella direzione indicata.

- Quarta opzione

- a) Su alcune macchine equilibratrici è possibile regolare lo sbilanciamento ruotando il punto di picco contrassegnato sugli anelli di bilanciamento nella posizione angolare richiesta.

"0" posizione di bilanciatura G2.5 20K



Punto di picco

► Mandrino idraulico

■ Caratteristiche e vantaggi

- Grande forza di bloccaggio
- Eccellente precisione (run-out entro i 5 μm)
- Semplice cambio utensile usando solo una vite di bloccaggio
- Possibile utilizzare le pinze cilindriche THC (normali e per refrigerazione interna)

■ Applicazioni

- Lavorazioni precise
- a) Fresatura di finitura, alesatura, barenatura di precisione
- Foratura con punte di piccolo diametro in metallo duro
- a) per alluminio e ghisa

■ Operazioni

- Montaggio utensile
Inserire il codolo dell'utensile tra L_{max} e L_{min} (Fig 1) e poi ruotare la vite di bloccaggio in senso orario fino al suo completo serraggio
- Smontaggio utensile
Per smontare l'utensile dal mandrino idraulico ruotare in senso antiorario la vite di bloccaggio per 5 o 6 giri e rimuovere l'utensile

- Note

- a) **Eliminare grasso, olio lubrificante e ogni altro tipo di sporco** dal foro interno del mandrino idraulico e dal gambo dell'utensile prima del montaggio
- b) **Assicurarsi che il gambo utensile sia inserito nel mandrino rispettando la lunghezza minima** (L_{min} - vedi fig 1 e tabella 1)
- c) Gambo cilindrico con **tolleranza h6** (tabella 2.) e **Ra min =0.3 μm**
e attacchi weldon solo se utilizzati con le pinze
- d) Se non viene utilizzato per lunghi periodi di tempo rimuovere l'utensile dal mandrino idraulico
- e) Non ruotare la vite di bloccaggio prima di aver inserito l'utensile nel mandrino idraulico

* Fare riferimento alla tabella informativa.

Figura 1. Struttura del mandrino

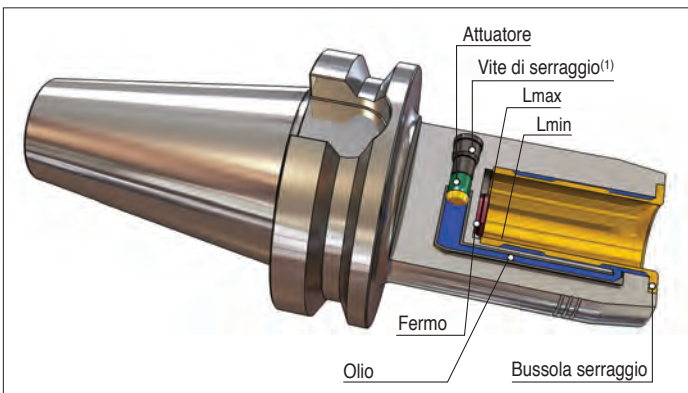


Tabella 1. Lunghezza minima e massima di inserimento gambo utensile raccomandata (L)

Diametro foro Ø (mm)	Lmin (mm)	Lmax (mm)
6	27.5	37.5
8	27.5	37.5
10	32.5	42.5
12	37.5	47.5
14	37.5	47.5
16	42.5	52.5
20	42.5	52.5
25	51.0	61.0
32	55.0	65.0

Tabella 2. h6 gamma di tolleranze

Dimensione gambo Ø (mm)		h6 gamma di tolleranza (µm)
	3	0
		-6
3	6	0
		-8
6	10	0
		-9
10	18	0
		-11
18	30	0
		-13
30	50	0
		-16

Tabella 3. Coppia di serraggio

Diametro foro Ø (mm)	Coppia di serraggio (N•m)
6	10
8	25
10	40
12	65
14	90
16	120
20	240
25	260
32	450

► T-SHRINK sistema di calettamento termico



► T-SHRINK sistema di calettamento

Il sistema di mandrini a calettamento termico T-SHRINK con attacco portapinzze ER è un'ampliamento del già esistente sistema ER. I mandrini T-SHRINK utilizzano il calettamento termico per un migliore fissaggio degli utensili in metallo duro. Con questo nuovo sistema si ottiene una maggiore forza di serraggio e una migliore ripetibilità. T-SHRINK, con il suo sottile design e un'ampia gamma di lunghezze, permette di effettuare operazioni di fresatura in cave strette e profonde. Taegutec offre un sistema completo per i mandrini T-SHRINK tra cui un'unità portatile di calettamento termico. Questa unità è fornita di un sistema ad alta tecnologia di controllo della temperatura per un facile e pratico utilizzo.



■ Solo per utensili in metallo duro



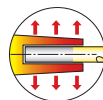
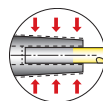
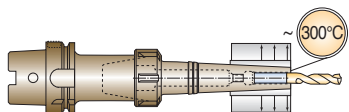
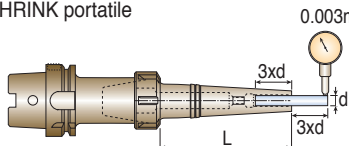
L(mm)	Max. T.I.R
35	7 μm
60	9 μm
85	10 μm

■ Caratteristiche

- Design snello con varie lunghezze
- Utilizzabili su mandrini portapinzza ER standard
- Elevato trasferimento di torsione
- Bloccaggio rigido dell'utensile
- Alta precisione: basso runout
- Perfetta ripetibilità
- Eliminazione di ogni vibrazione
- Disponibile con refrigerazione interna JET2
- Design simmetrico per lavorazioni ad alta velocità
- Cambio facile e veloce degli utensili
- Esclusiva unità di calettamento T-SHRINK portatile



Tempo di serraggio
15-45 sec



► Maschiatore GTI

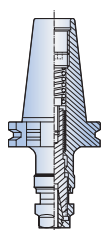
■ Descrizione

Maschiatore corto per pinze ER

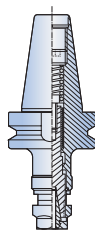


■ Applicazioni

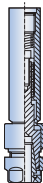
Tipo di fluttuazione assiale/tensione/compressione per fresatrici a CNC e torni con inversione di rotazione e maschiatura rigida



DIN 69871



BT MAS-403



Gambo cilindrico

■ Caratteristiche

- Compensa l'avanzamento macchina e la variazione del passo del maschio
- Il meccanismo di fluttuazione compensa il cattivo allineamento fra maschio e pezzo
- Maschiatura destra e sinistra

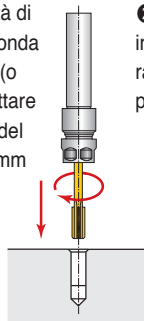
■ Vantaggi

- Pratico ed efficiente sistema di bloccaggio del maschio con pinze elastiche ER
- Design compatto per le applicazioni senza interferenza
- Design robusto per trasmettere una coppia elevata ed assicurare la precisione di maschiatura

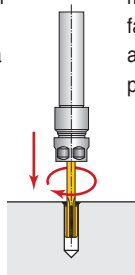
■ Operazioni

Per filettatura di fori passanti e ciechi:

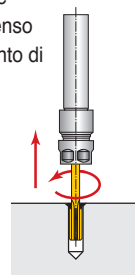
① Inserire la velocità di avanzamento a seconda del passo del filetto (o inferiore 1-2%) e settare il punto di partenza del mandrino con 0.08 mm di spazio.



② Far girare il mandrino in senso orario fino al raggiungimento della profondità desiderata



③ Fermare l'avanzamento e la rotazione facendo girare in senso antiorario fino al punto di partenza.



► Mandrino per la regolazione del diametro di foratura

■ Applicazioni

Per utilizzo su centri di lavoro e foratrici

■ Caratteristiche

- Gamma regolazione diametro da -0.30 mm fino a +1.30 mm
- Garantisce una tolleranza del foro di ± 0.02 mm
- Refrigerante interno assiale o attraverso la flangia
- Pressione del refrigerante fino a 70 bar

■ Operazioni

I migliori risultati si ottengono su una macchina con presetting o un dispositivo simile.

1. Regolare con le viti A o B. Presettare il diametro di meno 0.3 mm della misura richiesta
2. Stringere le viti di fissaggio A e B
3. Eseguire un foro di prova in macchina, misurarlo e regolare in base al diametro richiesto
4. La regolazione del diametro può essere effettuata in macchina con un comparatore o su un presetting



► GYRO - mandrino per allineamento radiale e angolare

■ Vantaggi

- Facile regolazione per correggere disallineamenti tra mandrino e asse della torretta (utensile e pezzo)
- Preciso ed efficace bloccaggio utensile con le pinze ER e le pinze a tenuta stagna ER JET
- Regolazione rapida effettuabile in macchina utilizzando il calibro e il kit di regolazione

■ Funzionamento

Le istruzioni per l'uso sono fornite con il mandrino

■ Note

- La pressione del liquido refrigerante deve essere almeno di 10 bar e al massimo di 80 bar per pinze di piccolo diametro che vanno da 3~20mm. (la normale pressione della macchina di 4 bar è insufficiente)
- Il filtraggio del refrigerante è importante per evitare che i trucioli blocchino i fori di refrigerazione della punta
- Per assicurare le massime prestazioni del GYRO, il gioco della torretta e il meccanismo di sostegno dell'asse dovrebbero essere controllati e sistemati.



► GYRO - mandrino con allineamento radiale e angolare

Mandrino regolabile per una facile correzione del disallineamento radiale e angolare

■ Applicazioni

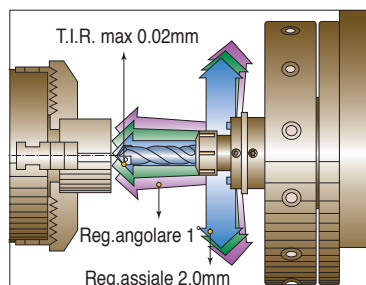
Gyro è un mandrino robusto e regolabile adatto a risolvere problemi di foratura, maschiatura e alesatura su CNC e torni. Il suo design esclusivo consente di regolare facilmente il disallineamento radiale e angolare fra mandrino e torretta.

Gyro riduce il tempo totale di lavorazione, rendendo possibile portare a termine la lavorazione di fori in un solo passaggio ottenendo tolleranze più vicine a 0.01 mm ed eliminando così noiose e successive operazioni di alesatura.

- Un passo avanti nella tecnologia di foratura per torni CNC
- Aumenta notevolmente le prestazioni dell' utensile riducendo i costi

■ Caratteristiche

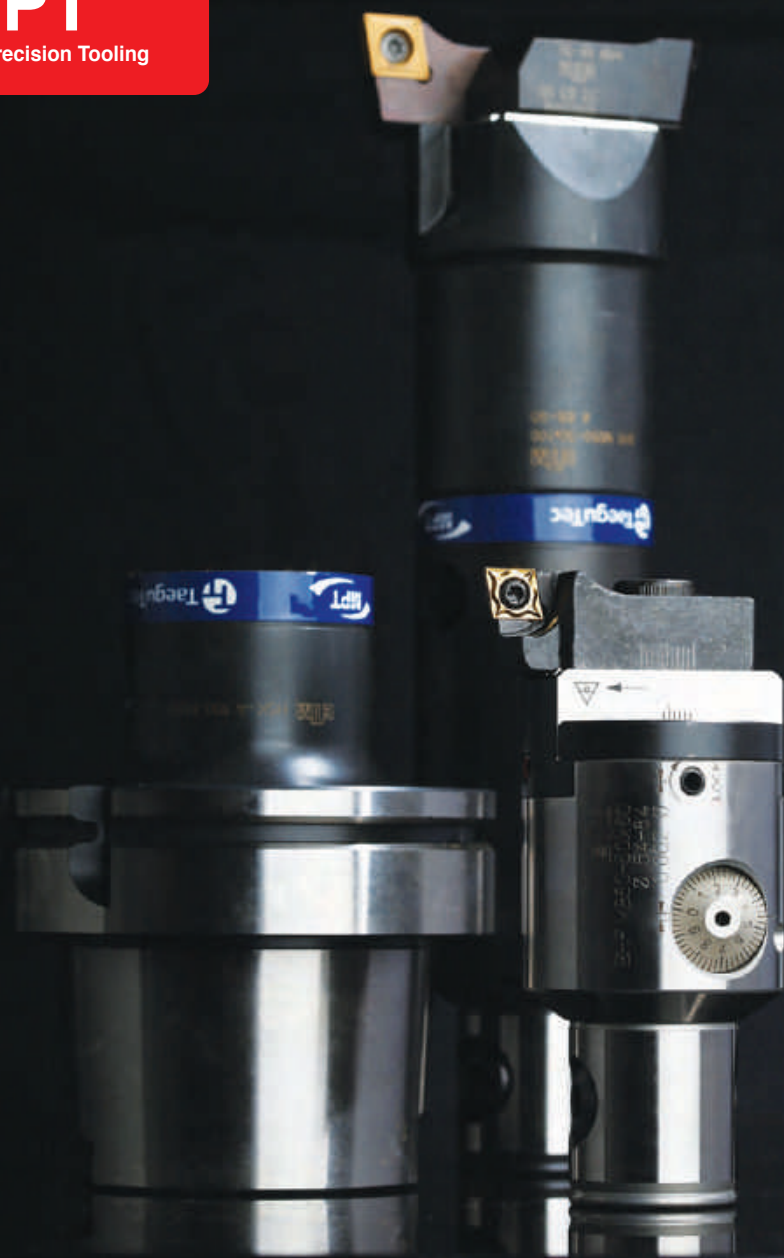
- Consente la foratura ad alta precisione con una tolleranza di 0.01mm, utilizzabile anche per operazioni di barenatura (finitura) su torni CNC
- Riduce i tempi di lavorazione completando il foro in un solo passaggio di foratura eliminando l'operazione secondaria di barenatura.
- Prolunga la durata dell'utensile di 10 volte, soprattutto quando si utilizzano utensili in HSS, punte saldo brasate, maschi e alesatori
- Permette di incrementare velocità e avanzamenti fino al 300%
- Refrigerante interno attraverso l'utensile





MPT

Modular Precision Tooling

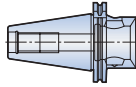



Guida alla scelta dell'utensile

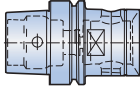
MPT

Attacchi

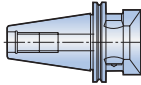
SKA/SKB
 H6-H7



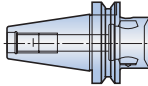
HSK
 H9-H10



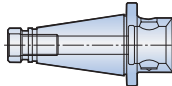
CATM
 H8



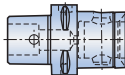
BT/BTB
 H12



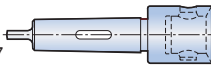
ISOM/ISO
 H13




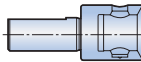
C MB
 H11



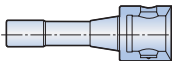
MTT
 H17



ST
 H14-H15



R8
 H17

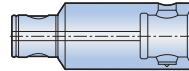


DIN2079
 H18

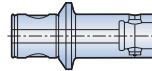


Prolunghe e riduzioni

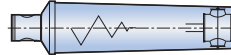
EX  H19



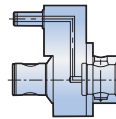
RE  H20



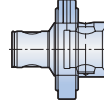
RE AVI  H21



CHS  H21



CHR  H21

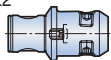


Guida alla scelta dell'utensile

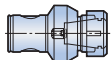
MPT

Portautensili

EMH  H22



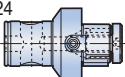
CC  H23



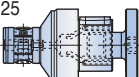
DC  H23



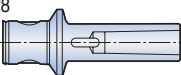
SMH  H24



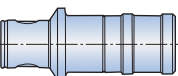
STUB  H25



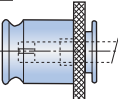
AMT  H28



TP  H25



TCS/TCC  H26-H27



BLANK  H29

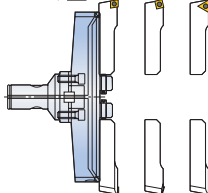


Testine per barenatura di grossatura

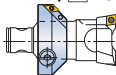
BHR  H30



TCH  H31

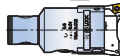


CHA  H34



Testine per barenatura combi

BHC  H36

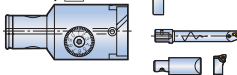


Testine per barenatura di finitura

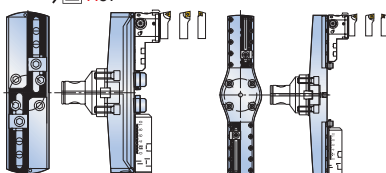
BHE  H38-H39



BHF  H43-45

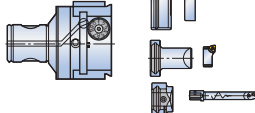


TCH  H57

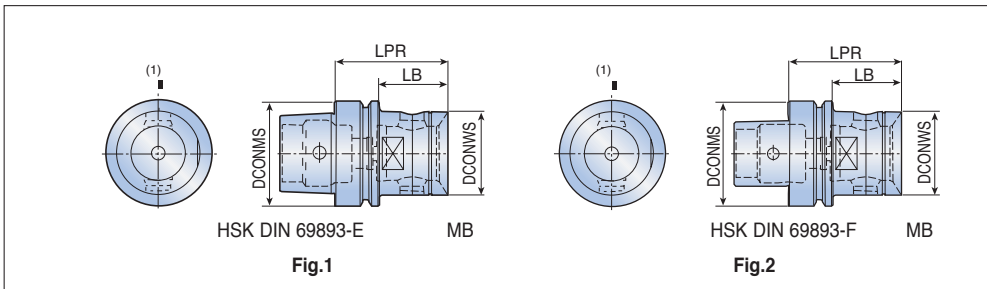



BHF 50,63,80

 H45



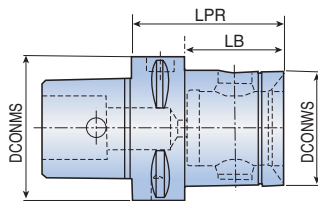
Attacco HSK-E con connessione MB



Descrizione	Dimensioni (mm)				 Kg	Fig.
	DCONMS	DCONWS	LPR	LB		
HSK E 40 MB32	40	MB32	42	22	0.5	1
50 MB50	50	MB50	66	40	0.6	1
HSK F 63 MB50	63	MB50	66	40	0.8	2

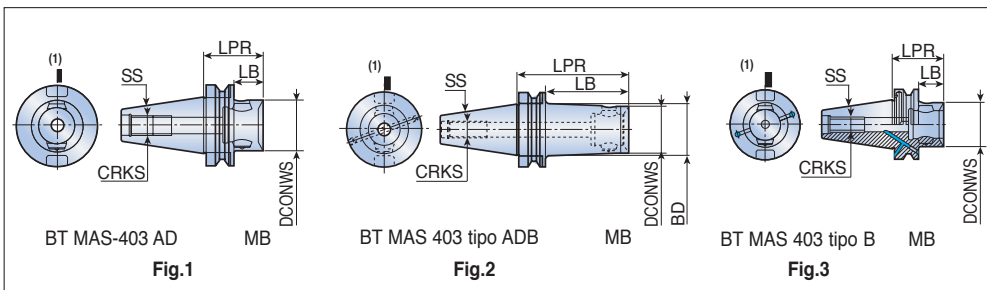
• (1) Posizione tagliente

Attacco C con connessione MB



Descrizione	Dimensioni (mm)				Kg
	DCONMS	DCONWS	LPR	LB	
C6 MB50x67	63	MB50	67	45	1.1
MB63x77	63	MB63	77	-	1.8
C8 MB63x70	80	MB63	70	39	2.3

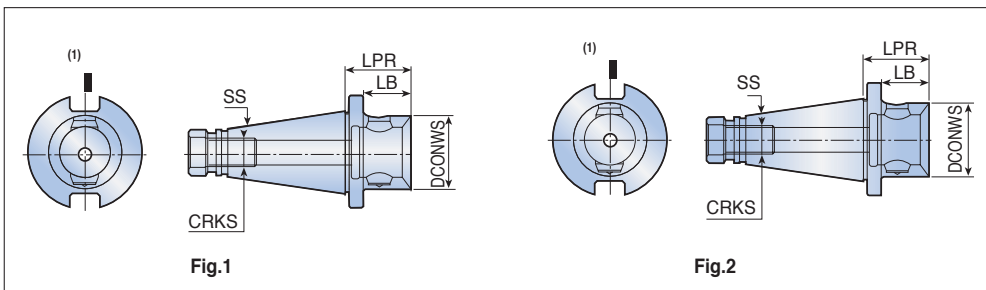
Attacco BT con connessione MB



Descrizione	Dimensioni (mm)					CRKS	Kg	Fig.
	SS	DCONWS	LPR	LB	BD			
BT 30-MB32	30	MB32	32	10.6	-	M12	0.5	1
30-MB50	30	MB50	60	38.6	-	M12	0.7	1
35-MB50	35	MB50	60	36	-	M12	0.8	1
40-MB40	40	MB40	45	18	-	M16	0.6	1
40-MB50	40	MB50	48	21	-	M16	0.9	1
40-MB63	40	MB63	66	39	-	M16	1.2	1
45-MB50	45	MB50	62	29	-	M20	1.7	1
45-MB63	45	MB63	70	37	-	M20	2.3	1
45-MB80	45	MB80	70	37	-	M20	2.7	1
50-MB50	50	MB50	66	28	-	M24	3.5	1
50-MB63	50	MB63	75	37	-	M24	3.7	1
50-MB80	50	MB80	75	37	-	M24	4.0	1
40-MB40x120 A/B	40	MB40	120	93	44.5	M16	0.9	2
40-MB50x120 A/B	40	MB50	120	93	-	M16	1.9	2
50-MB50x120 A/B	50	MB50	120	82	60	M24	4.2	2
50-MB63x150 A/B	50	MB63	150	112	70	M24	5.8	2
50-MB80x180 A/B	50	MB80	180	142	-	M24	7.5	2
50-MB110x140	50	MB110	140	102	-	M24	6.8	2
60-MB110x110	60	MB110	110	63	-	M30	11.5	2
60-MB110x200	60	MB110	200	152	-	M30	18.1	2
BTB 40-MB50	40	MB50	48	21	-	M16	0.9	3
40-MB63	40	MB63	66	39	-	M16	1.2	3
50-MB50x66	50	MB50	66	28	-	M24	3.5	3
50-MB63x75	50	MB63	75	37	-	M24	3.7	3
50-MB80	50	MB80	75	37	-	M24	4.0	3

• ⁽¹⁾Posizione tagliente

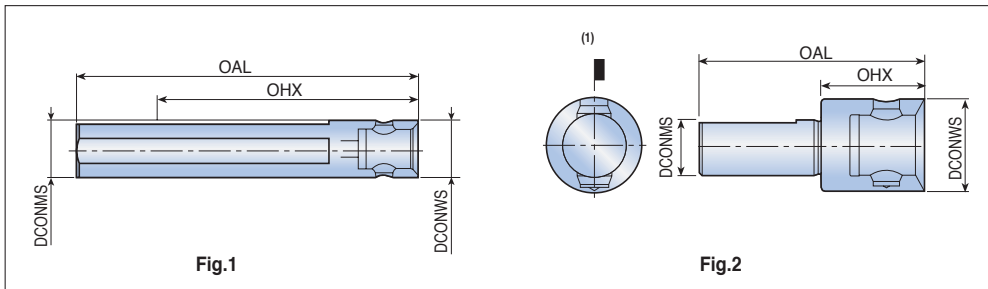
Attacco ISOM con connessione MB



Descrizione	Dimensioni (mm)				CRKS	Kg	Fig.
	SS	DCONWS	LPR	LB			
ISOM 30-MB50	30	MB50	58	-	M12	0.6	1
40-MB50	40	MB50	48	36	M16	0.9	1
40-MB63	40	MB63	60	-	M16	1.2	1
45-MB50	45	MB50	48	33	M20	1.6	1
45-MB63	45	MB63	60	45	M20	1.9	1
45-MB80	45	MB80	66	-	M20	2.2	1
50-MB50	50	MB50	48	33	M24	2.6	1
50-MB63	50	MB63	56	41	M24	2.7	1
50-MB80	50	MB80	60	45	M24	3.2	1
ISO 40-MB50	40	MB50	48	36	UNC 5/8"-11	0.9	2
40-MB63	40	MB63	60	-	UNC 5/8"-11	1.2	2
50-MB50	50	MB50	48	33	UNC 1"-8	2.6	2
50-MB63	50	MB63	56	41	UNC 1"-8	2.7	2
50-MB80	50	MB80	60	45	UNC 1"-8	3.2	2

• (1) Posizione tagliente

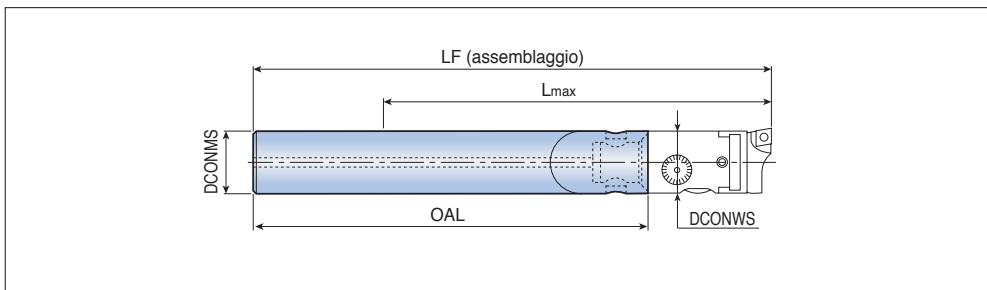
Attacco cilindrico con connessione MB



Descrizione	Dimensioni (mm)				Kg	Fig.
	DCONMS	DCONWS	OAL	OHX		
ST 16-MB16	16	MB16	100	66	0.2	1
20-MB20	20	MB20	125	85	0.3	1
25-MB32	25	MB32	100	35	0.7	2
32-MB50	32	MB50	140	60	1.0	2

• (1) Posizione tagliente

Attacco cilindrico in metallo duro con connessione MB

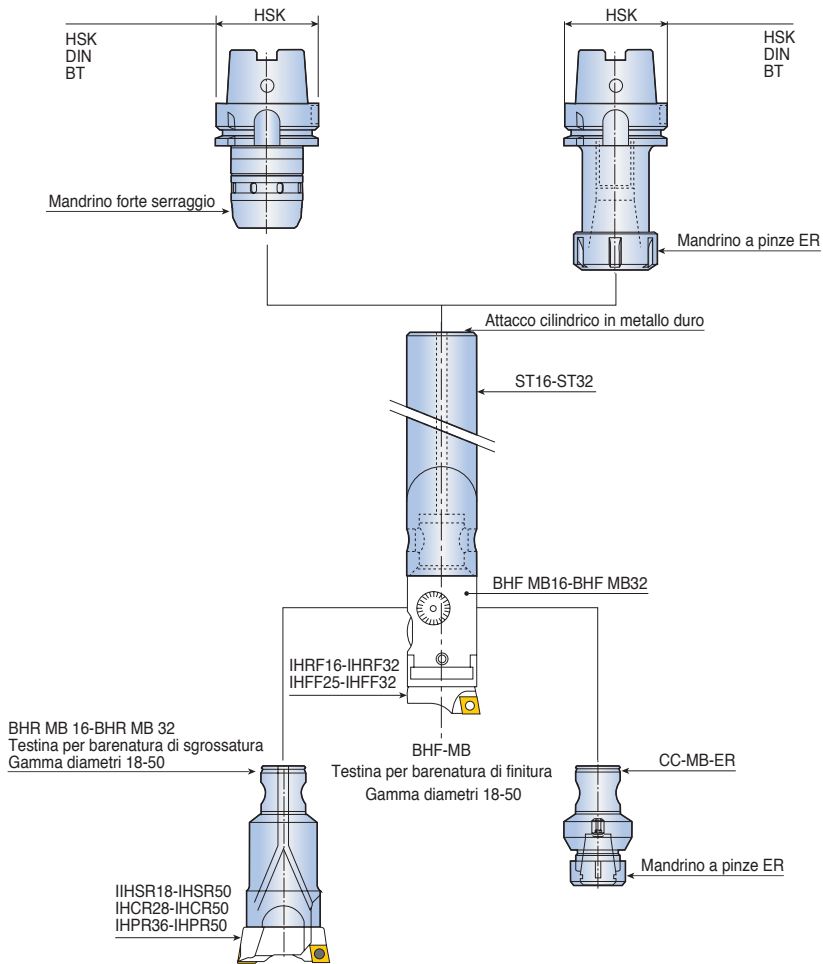


Descrizione	Dimensioni (mm)					Kg
	DCONMS	DCONWS	OAL	LF	Lmax	
ST16 MB16x110E	16	MB16	110	144	100	0.3
MB16x140E	16	MB16	140	174	125	0.4
MB16x170E	16	MB16	170	204	160	0.5
ST20 MB20x135E	20	MB20	135	175	125	0.6
MB20x170E	20	MB20	170	210	160	0.8
MB20x210E	20	MB20	210	250	200	0.9
ST25 MB25x160E	25	MB25	160	210	160	1.0
MB25x205E	25	MB25	205	255	200	1.3
MB25x255E	25	MB25	255	305	250	1.6
ST32 MB32x195E	32	MB32	195	258	200	2.1
MB32x250E	32	MB32	250	313	250	2.8
MB32x315E	32	MB32	315	378	320	3.5

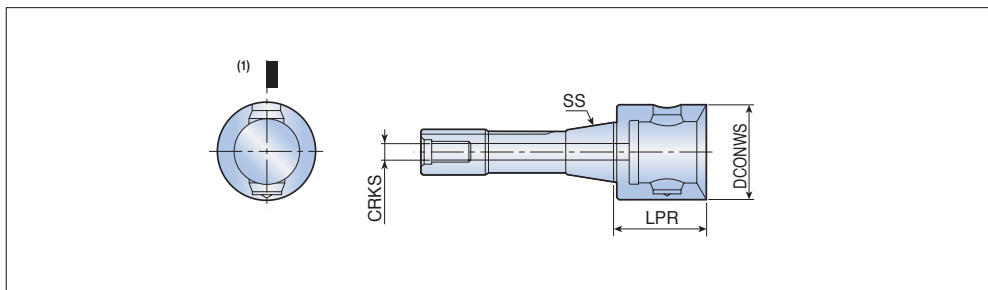
Opzioni di assemblaggio per attacchi cilindrici in metallo duro con connessione MB

ST16-ST32 MB16-MB32

Gamma diametri: 18-50 mm



Attacco R8 Bridgeport con connessione MB

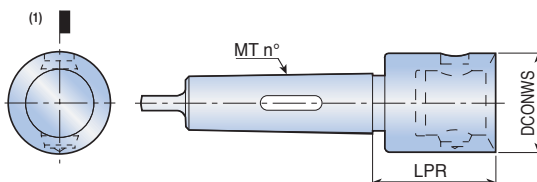


Descrizione	Dimensioni (mm)			CRKS	Kg
	SS	DCONWS	LPR		
R8 MB50	R8	MB50	50	UNF 7/16-20	0.8

• (1) Posizione tagliente

MTT 5-MB63

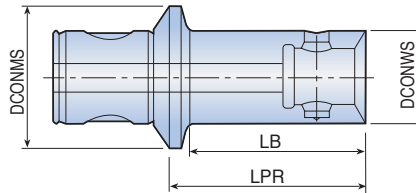
Attacco con morse con connessione MB



Descrizione	Dimensioni (mm)			Kg
	MT n°	DCONWS	LPR	
MTT 5- MB63	MT5	MB63	65	2.1

• (1) Posizione tagliente

Riduzione per connessione MB

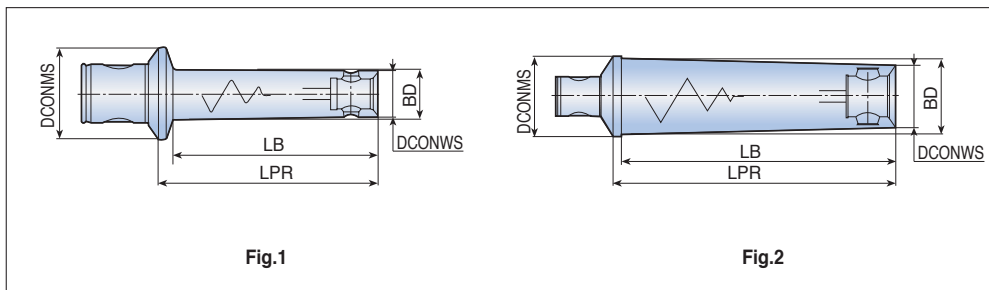


Descrizione	Dimensioni (mm)				Kg
	DCONMS	DCONWS	LPR	LB	
RE MB16-MB14x24	MB16	MB14	24	19.5	0.3
MB20-MB14x19	MB20	MB14	19	13.5	0.4
MB20-MB16x20	MB20	MB16	20	16	0.5
MB25-MB14x19	MB25	MB14	19	13.5	0.6
MB25-MB16x20	MB25	MB16	20	15	0.8
MB25-MB20x25	MB25	MB20	25	20	0.9
MB32-MB14x25	MB32	MB14	25	17	1.0
MB32-MB16x24	MB32	MB16	24	18	1.3
MB32-MB20x25	MB32	MB20	25	20	1.6
MB32-MB25x28	MB32	MB25	28	23	2.1
MB40-MB14x23	MB40	MB14	23	16	2.8
MB40-MB16x24	MB40	MB16	24	17	3.5
MB40-MB20x26	MB40	MB20	26	20	0.4
MB40-MB25x28	MB40	MB25	28	22	0.5
MB40-MB32x32	MB40	MB32	32	27	0.6
MB50-MB14x23	MB50	MB14	23	14.5	0.8
MB50-MB14x39	MB50	MB14	39	30.5	0.9
MB50-MB16x24	MB50	MB16	24	15	1.0
MB50-MB16x40	MB50	MB16	40	31	1.3
MB50-MB16x74	MB50	MB16	74	65	1.6
MB50-MB20x26	MB50	MB20	26	18	3.5
MB50-MB20x70	MB50	MB20	70	62	0.4
MB50-MB20x93	MB50	MB20	93	85	0.5
MB50-MB25x28	MB50	MB25	28	21	0.6
MB50-MB25x87	MB50	MB25	87	80	0.8
MB50-MB25x117	MB50	MB25	117	110	3.5
MB50-MB32x32	MB50	MB32	32	25	0.4
MB50-MB32x87	MB50	MB32	87	80	0.5
MB50-MB32x144	MB50	MB32	144	137	0.6
MB50-MB40x36	MB50	MB40	36	30	0.8
MB50-MB40x87	MB50	MB40	87	80	0.9
MB50-MB40x176	MB50	MB40	176	170	1.0
MB63-MB50x40	MB63	MB50	40	34	1.3
MB80-MB50x45	MB80	MB50	45	36	1.6
MB80-MB63x60	MB80	MB63	60	52	1.6
MB110-MB80x70	MB110	MB80	70	52	6.0

RE MB-AVI

Prolunghe e riduzioni

Riduzione antivibrante per connessione MB

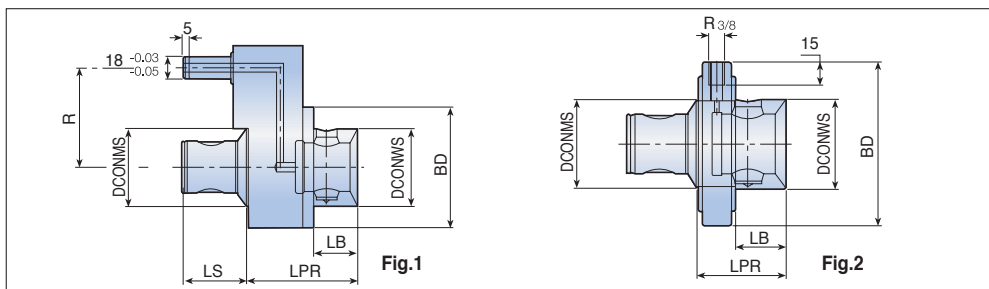


Descrizione	Dimensioni (mm)					Kg	Fig.
	DCONMS	DCONWS	BD	LPR	LB		
RE MB50-MB16x74-AVI	MB50	MB16	17.5	74	65	0.4	1
MB50-MB20x93-AVI	MB50	MB20	21.5	93	85	0.5	1
MB50-MB25x117-AVI	MB50	MB25	27	117	110	0.8	1
MB50-MB32x144-AVI	MB50	MB32	35	144	138	1.4	1
MB50-MB40x176-AVI	MB50	MB40	47	176	170	2.5	1
MB63-MB50x220-AVI	MB63	MB50	60	220	214	5.6	1
MB80-MB63x280-AVI	MB80	MB63	77	280	272	10.6	2

CHS MB-R/CHR MB

Prolunghe e riduzioni

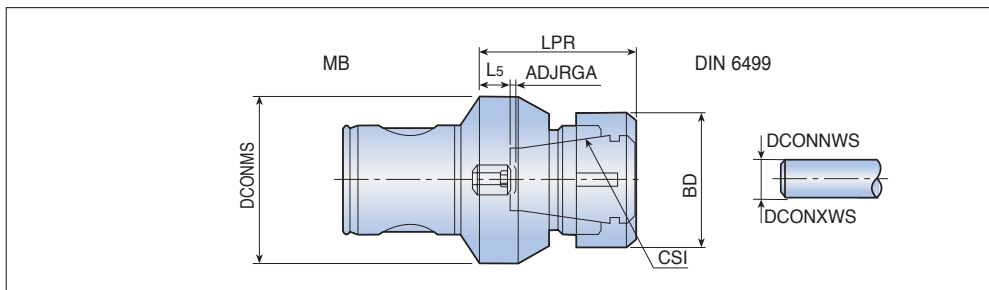
Attuttore refrigerante per connessione MB



Descrizione	Dimensioni (mm)										Kg	Fig.
	DCONMS	DCONWS	R	BD	LPR	LB	LS	Giri Max	Bar			
CHS MB50-R65	MB50	MB50	65	80	72	28.5	43	7000	10	1.9	1	
MB50-R80	MB50	MB50	80	80	72	28.5	43	7000	10	2.5	1	
MB63-R80	MB63	MB63	80	100	88	37.0	51	5600	10	5.0	1	
CHR MB63	MB63	MB63	-	115	63	35	-	3500	10	5.0	2	

- Importante: far partire il flusso del refrigerante prima di far girare il mandrino per non danneggiare le guarnizioni.
- Utilizzare un blocco di fermo (non incluso)

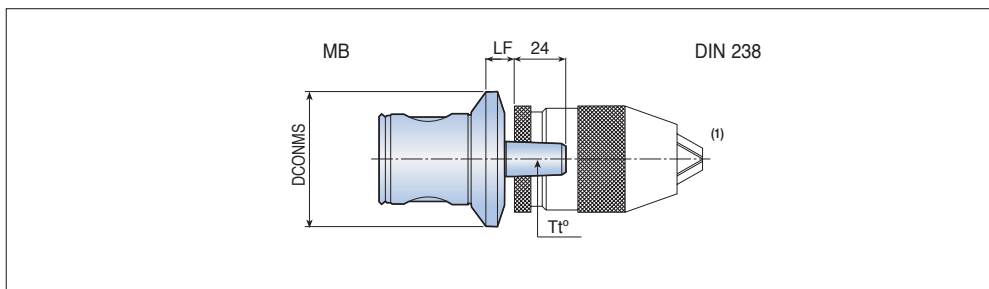
Mandrino ER con connessione MB



Descrizione	Dimensioni (mm)							Kg
	DCONMS	CSI	DCONWS	IDCONXWS	BD	LPR	ADJRGA	
CC MB16 ER11M	MB16	ER11	0.5	7.0	16	25	2.5	0.03
MB20 ER16M	MB20	ER16	0.5	10.0	22	32	1.0	0.06
MB25 ER20M	MB25	ER20	1.0	13.0	28	40	2.5	0.15
MB32 ER25M	MB32	ER25	1.0	16.0	35	42	1.5	0.25
MB40 ER25	MB40	ER25	1.0	16.0	42	45	5.0	0.25
MB50 ER25	MB50	ER25	1.0	16.0	42	48	7.0	0.70
MB50 ER32	MB50	ER32	2.0	20.0	50	59	7.0	1.00
MB63 ER32	MB63	ER32	2.0	20.0	50	59	12	1.30
MB63 ER40	MB63	ER40	3.0	26.0	63	64	12	1.50

DC MB

Mandrino per portapunte con connessione MB



Descrizione	Dimensioni (mm)			Kg
	DCONMS	Tt°	LF	
DC MB50 B16	MB50	B16	10.0	0.4
MB63 B16	MB63	B16	13.5	0.8



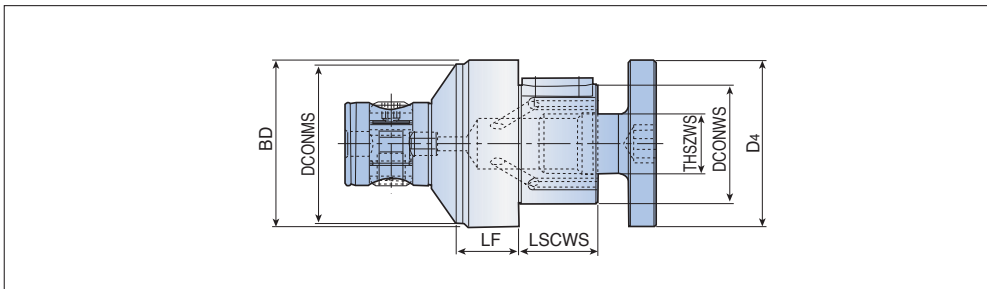
• (1) Senza portapunte

H71-H83

STUB MB80-60

Portautensili

Mandrino STUB con connessione MB80

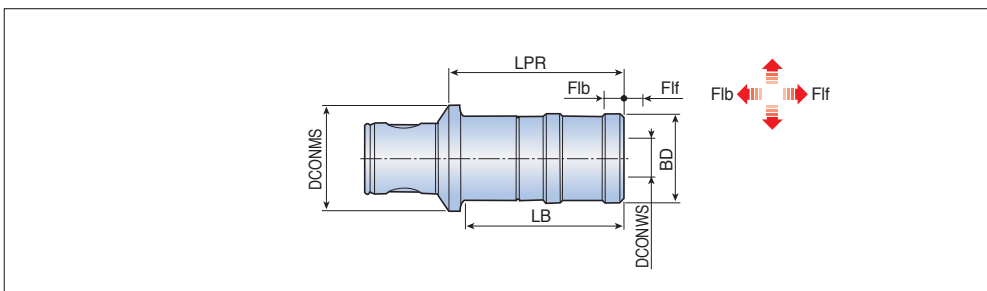


Descrizione	Dimensioni (mm)							
	DCONMS	DCONWS	BD	D4	THSZWS	LF	LSCWS	
STUB MB80-60	MB80	60	84	84	M30	31.5	40	6.3

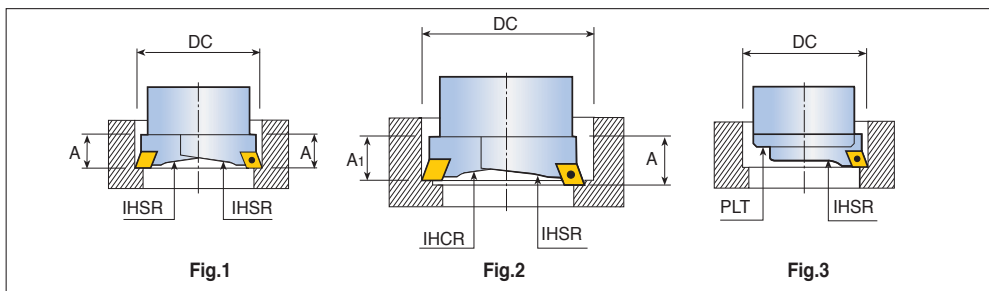
TP MB-M

Portautensili

Mandrino portamaschi con connessione MB



Descrizione	Dimensioni (mm)									
	DCONMS	Min	Max	LB	LPR	BD	DCONWS	Flf	Flb	
TP MB50-M 3-12	MB50	M1	M14	60	72	36	19	7.5	7.5	0.8
MB50-M 8-20	MB50	M4.5	M20	-	106	53	31	12.5	12.5	1.6
MB63-M 3-12	MB63	M1	M14	58	70	36	19	7.5	7.5	1.2
MB63-M 8-20	MB63	M4.5	M20	93	104	53	31	12.5	12.5	1.9

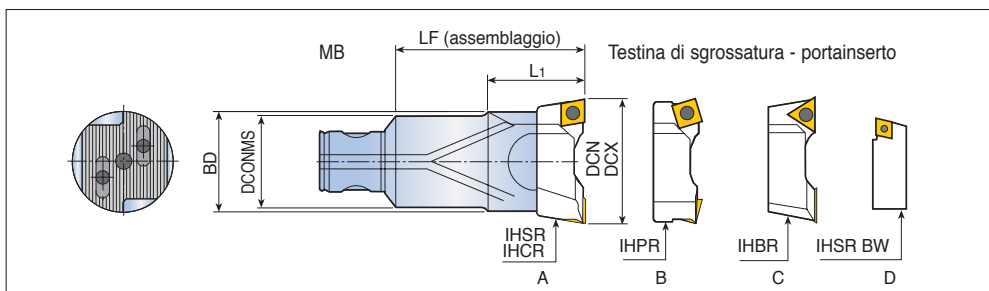


- Nell'utilizzo del sistema MPT è fortemente consigliato l'uso di un presetting per la regolazione dei taglienti radiali. La testina per barenatura equipaggiata con due portainseri è per operazioni di grossatura e con elevati sovrametalli.
- I barenati sono utilizzabili in 3 tipi di lavorazioni:
 - Con i due portainseri IHSR sullo stesso piano e i due taglienti sulla stessa distanza radiale per lavorazioni di sgrossatura ad elevato avanzamento (Fig. 1).
 - Con i due portainseri IHCR e IHSR su piani differenti e i due taglienti su differenti distanze radiali per lavorazioni di sgrossatura con passata radiale elevata (Fig. 2).
 - Se la testina monta un singolo portainsero sono consentite lavorazioni di sgrossatura e finitura con normale asportazione di truciolo. In questa situazione si consiglia di utilizzare la piastrina di protezione (PLT) del millerighe (Fig. 3).

BHR MB

Testine per barenatura di grossatura

Testina per barenatura di grossatura da 18-200 mm con connessione MB



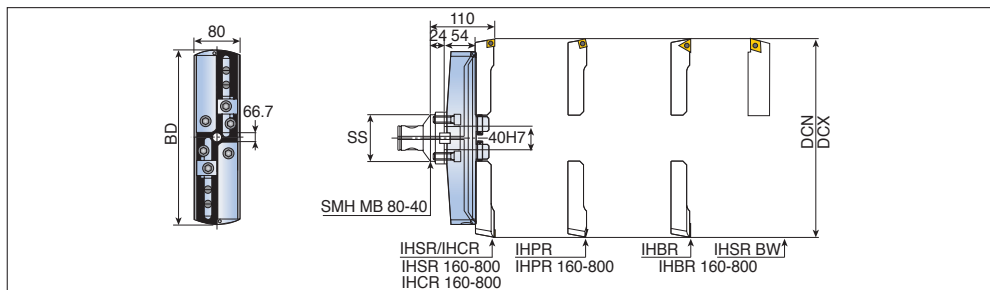
Descrizione	Dimensioni (mm)						Portainsero				Kg	
	DCONMS	DCN	DCX	BD	LF	L1	Portainsero	A	B	C		D
BHR MB16-16x34	MB16	18	22	16	34	-	IH...18-22	●			●	0.05
MB20-20x40	MB20	22	28	20	40	-	IH...22-28	●			●	0.09
MB25-25x50	MB25	28	38	25	50	-	IH...28-38	●			●	0.20
MB32-32x63	MB32	36	50	32	63	-	IH...36-50	●	●		●	0.35
MB40-40x80	MB40	50	68	40	80	-	IH...50-68	●	●		●	0.70
MB50-50x100	MB50	68	90	55	100	50	IH...68-90	●	●		●	1.50
MB50-63x80	MB50	90	120	72	80	60	IH...90-120	●	●	●	●	2.00
MB63-63x125	MB63	90	120	72	125	63	IH...90-120	●	●	●	●	3.00
MB80-80x140	MB80	120	200	95	140	75	IH...120-800	●	●	●	●	5.30



TCH

Testine per barenatura di sgrossatura

Testina per barenatura di sgrossatura da 200-500 mm con corpo in alluminio e connessione MB

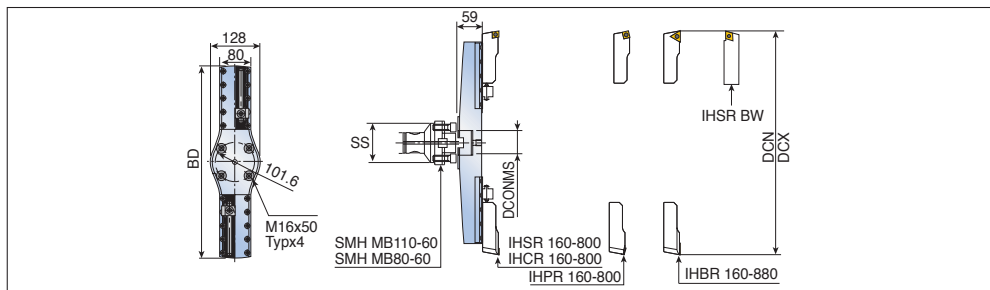


Descrizione	Dimensioni (mm)					Kg
	SS	DCN	DCX	BD	IH...160-800	
TCH 200	80	200	300	194	IHSR 160-800 IHCR 160-800	3.4
300	80	300	400	298	IHSR 160-800 IHCR 160-800	4.3
400	80	400	500	398	IHSR 160-800 IHCR 160-800	6.7

TCH A.L

Testine per barenatura di sgrossatura

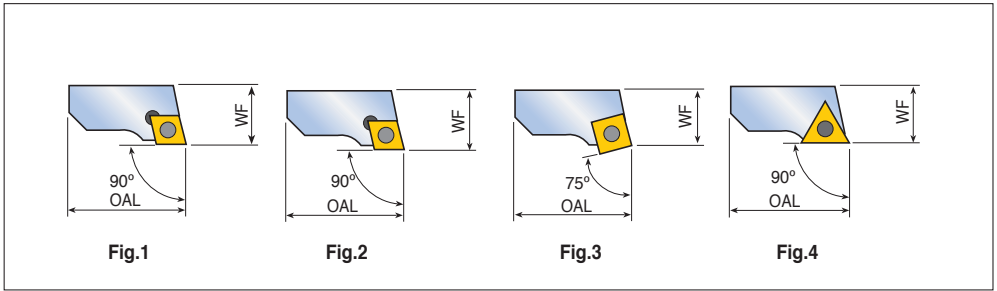
Testina per barenatura di sgrossatura da 500-800 mm con corpo in alluminio e connessione MB



Descrizione	Dimensioni (mm)					Kg
	SS	DCN	DCX	BD	DCONMS	
TCH A.L 500	80,110	500	600	494	60	8.7
600	80,110	600	700	594	60	8.34
700	80,110	700	800	694	60	8.34



- Corpo in alluminio con millerighe in acciaio



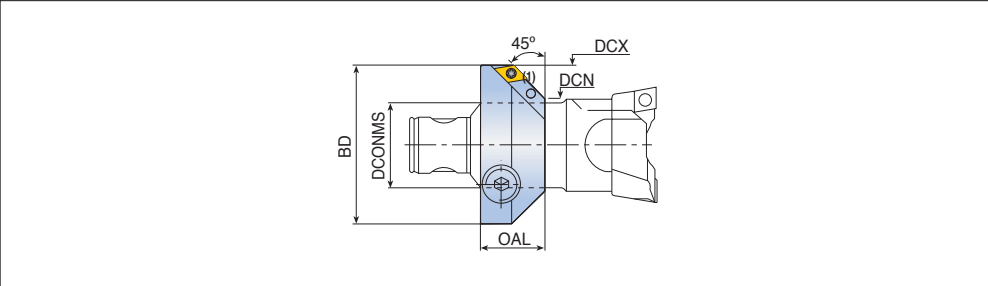
Descrizione	Dimensioni (mm)				Ricambi			Fig.
	DCN	DCX	WF	OAL	Inserto	Vite	Chiave	
IHSR 18-22	18	22	8.0	15.0	CCMT 0602...	SR 14-548	T7/5	1
22-28	22	28	9.5	19.0	CCMT 0602...	SR 14-548	T7/5	1
28-38	28	38	12.5	23.0	CCMT 0602...	SR 14-548	T7/5	1
36-50	36	50	15.0	32.0	CCMT 0602...	SR 14-548	T7/5	1
50-68	50	68	19.0	40.0	CCMT 09T3...	TS 400971	T15/5	1
50-68-12	50	68	19.0	40.0	CCMT 1204..	SR 16-212	T20/5	1
68-90	68	90	22.0	54.0	CCMT 1204..	SR 16-212	T20/5	1
90-120	90	120	27.0	70.5	CCMT 1204...	SR 16-212	T20/5	1
120-160	120	160	32.0	94.5	CCMT 1204..	SR 16-212	T20/5	1
160-800	160	800	32.0	130.0	CCMT 1204..	SR 16-212	T20/5	1
IHCR 28-38	28	38	12.3	23.0	CCMT 0602..	SR 14-548	T7/5	2
36-50	36	50	14.8	32.0	CCMT 0602...	SR 14-548	T7/5	2
36-50-09	36	50	14.8	32.0	CCMT 09T3..	TS 400971	T15/5	2
50-68	50	68	18.7	40.0	CCMT 09T3..	TS 400971	T15/5	2
50-68-12	50	68	18.7	40.0	CCMT 1204..	SR 16-212	T20/5	2
68-90	68	90	21.7	54.0	CCMT 1204..	SR 16-212	T20/5	2
90-120	90	120	26.7	70.5	CCMT 1204..	SR 16-212	T20/5	2
120-160	120	160	31.7	94.5	CCMT 1204..	SR 16-212	T20/5	2
160-800	160	800	31.7	130.0	CCMT 1204..	SR 16-212	T20/5	2
IHPR 36-50	36	50	15	32.0	SCMT 09T3..	TS 400971	T15/5	3
50-68	50	68	19	40.0	SCMT 09T3...	TS 400971	T15/5	3
68-90	68	90	22	54.0	SCMT 1204..	SR 16-212	T20/5	3
90-120	90	120	27	70.5	SCMT 1204..	SR 16-212	T20/5	3
120-160	120	160	32	94.5	SCMT 1204..	SR 16-212	T20/5	3
160-800	160	800	32	130.0	SCMT 1204..	SR 16-212	T20/5	3
IHBR 90-120	90	120	27	70.5	TCMT 2205..	SR 16-212	T20/5	4
120-160	120	160	32	94.5	TCMT 2205..	SR 16-212	T20/5	4
160-800	160	800	32	130.0	TCMT 2205..	SR 16-212	T20/5	4



CHA-45°

Portainseriti per barenì di grossatura

Portainserito di smussatura

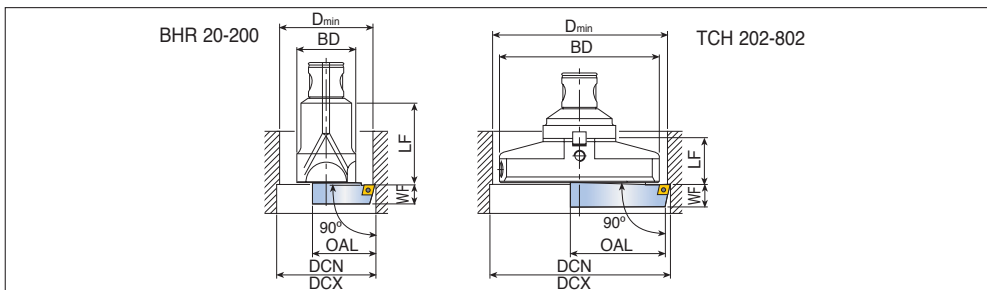


Descrizione	Dimensioni (mm)					Ricambi			Kg
	DCN	DCX	DCONMS	BD	OAL	Inserto	Vite	Chiave	
CHA 16-45	18	28	16	28	13	DCMT 0702..	SR 14-548	T7/5	0.035
20-45	22	32	20	32	15	DCMT 0702..	SR 14-548	T7/5	0.045
25-45	28	43	25	43	18	DCMT 0702..	SR 14-548	T7/5	0.10
32-45	35	54	32	54	22	DCMT 0702..	SR 14-548	T7/5	0.20
40-45	46	72	40	72	30	DCMT 11T3..	SR 16-236P	T15/5	0.50
50-45	56	95	50	95	38	DCMT 11T3..	SR 16-236P	T15/5	1.10



- Per minimizzare il testimone, utilizzare un inserto con raggio di 0.2 mm.
- ⁽¹⁾Solo un inserto alla volta può essere montato su una delle due sedi.

Portainserito di retrolamatura per bareno di sgrossatura BHR e TCH

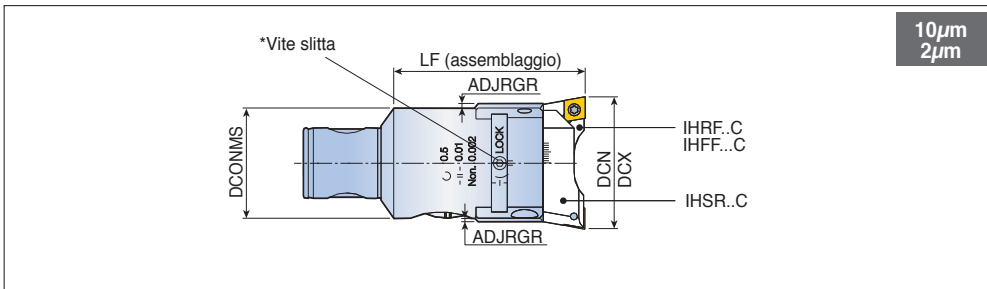


Descrizione	Dimensioni (mm)							Ricambi		
	SS	DCN	DCX	BD	LF	WF	OAL	Inserto	Vite	Chiave
IHSR 20-24 BW	BHR MB16-16	20.0	24	16	27.5	8.0	16.0	CCMT 0602..	SR 14-548	T7/5
23.5-30 BW	BHR MB20-20	23.5	30	20	32.5	9.5	19.5	CCMT 0602..	SR 14-548	T7/5
29.5-40 BW	BHR MB25-20	29.5	40	25	39.0	12.0	24.0	CCMT 0602..	SR 14-548	T7/5
39-52 BW	BHR MB32-32	39	52	32	50.0	14.0	32.0	CCMT 09T3..	TS 400971	T15/5
51-70 BW	BHR MB40-40	51	70	40	63.5	17.5	42.0	CCMT 1204..	SR 16-212	T20/5
69-92 BW	BHR MB50-50	69	92	55	80.5	21.0	57.0	CCMT 1204..	SR 16-212	T20/5
91-122 BW	BHR MB63-63	91	122	72	100.5	25.0	76.0	CCMT 1204..	SR 16-212	T20/5
121-162 BW	BHR MB80-80	121	162	95	110.5	28.0	101.0	CCMT 1204..	SR 16-212	T20/5
161-802 BW	BHR MB80-80	161	200	95	110.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH200	202	302	198	56.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH300	302	402	298	56.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH400	402	502	398	61.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH500	502	602	494	61.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH600	602	702	594	61.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH700	702	802	694	61.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5



- DCX= Dimensioni del bareno in uso
- D_{min}= (diametro foro min)= (DCN+BD+1)/2

Testina per barenatura combi di sgrossatura e finitura



Descrizione	Dimensioni (mm)					IH	Kg
	DCONMS	DCN	DCX	LF	ADJRGR		
BHC MB25-25-57	MB25	28	36	56.5	0.5	IH.. C	0.20
MB32-32-71	MB32	36	46	71.0	0.5	IH.. C	0.35
MB40-40-90	MB40	46	60	90.0	1.0	IH.. C	0.70
MB50-50-87	MB50	60	75	87.0	1.0	IH.. C	1.50
MB63-63-109	MB63	78	100	109.0	2.0	IH.. C	2.70
MB80-80-130	MB80	95	120	130.0	2.0	IH.. C	4.80



- Il portainserto di sgrossatura precede quello di finitura di 0.2 mm. Ognuno può essere regolato indipendentemente
- Il portainserto di finitura può essere regolato radialmente entro i 5 micron.
- Gli inserti di sgrossatura e finitura devono avere lo stesso raggio.
- Importante: allentare la vite della slitta* prima di ogni regolazione.

Portainsero per bareno combi BHC

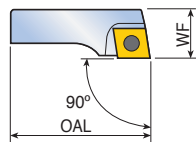


Fig.1

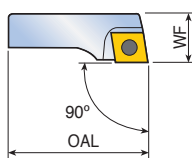


Fig.2

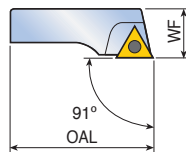


Fig.3

Descrizione	Dimensioni (mm)				Ricambi			Fig.
	DCN	DCX	WF	OAL	Inserto	Vite	Chiave	
IHRF 28-36 C⁽¹⁾	28	36	9.8	24.0	CCGT 0602..	SR 14-548	T7/5	1
36-46 C⁽¹⁾	36	46	11.3	30.0	CCGT 0602..	SR 14-548	T7/5	1
46-60 C⁽¹⁾	46	60	13.8	40.0	CCGT 09T3...	TS 40097I	T15/5	1
60-75 C⁽¹⁾	60	75	18.8	54.0	CCGT 09T3...	TS 40097I	T15/5	1
75-95 C⁽¹⁾	75	95	24.3	68.0	CCGT 09T3...	TS 40097I	T15/5	1
95-120 C⁽¹⁾	95	120	29.3	87.0	CCGT 09T3...	TS 40097I	T15/5	1
IHSR 28-36 C⁽²⁾	28	36	10.0	24.0	CCMT 0602..	SR 14-548	T7/5	2
36-46 C⁽²⁾	36	46	11.5	30.0	CCMT 0602..	SR 14-548	T7/5	2
46-60 C⁽²⁾	46	60	14.0	40.0	CCMT 09T3...	TS 40097I	T15/5	2
60-75 C⁽²⁾	60	75	19.0	54.0	CCMT 09T3...	TS 40097I	T15/5	2
75-95 C⁽²⁾	75	95	24.5	68.0	CCMT 09T3...	TS 40097I	T15/5	2
95-120 C⁽²⁾	95	120	29.5	87.0	CCMT 09T3...	TS 40097I	T15/5	2
IHFF 28-36 C⁽¹⁾	28	36	9.8	24.0	TPGX 0902...	SO 25061I	T8/5	3
36-46 C⁽¹⁾	36	46	11.3	30.0	TPGX 0902...	SO 25061I	T8/5	3
46-60 C⁽¹⁾	46	60	13.8	40.0	TPGX 1103...	SO 30081I	T8/5	3
60-75 C⁽¹⁾	60	75	18.8	54.0	TPGX 1103...	SO 30081I	T8/5	3
75-95 C⁽¹⁾	75	95	24.3	68.0	TPGX 1103...	SO 30081I	T8/5	3
95-120 C⁽¹⁾	95	120	29.3	87.0	TPGX 1103...	SO 30081I	T8/5	3

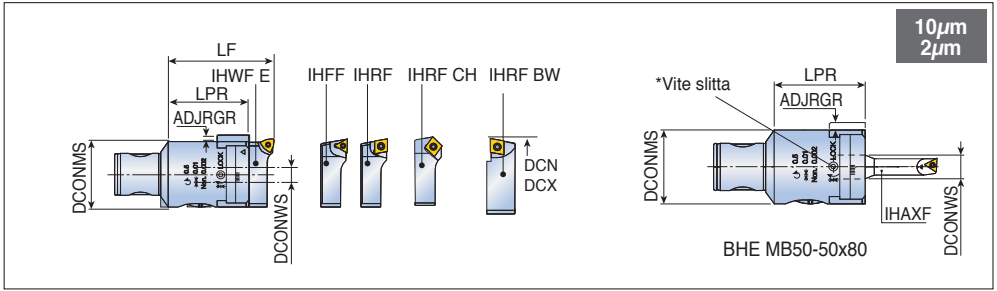
• ⁽¹⁾Per finitura, ⁽²⁾ Per sgrossatura




BHE MB

Testine per barenatura di finitura

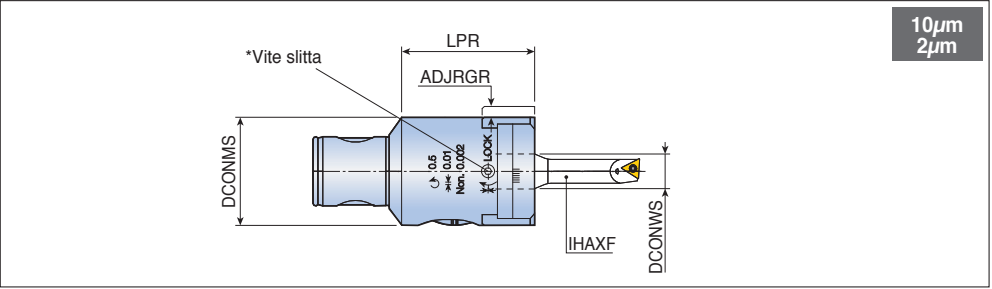
Regolazione diretta del diametro di 10µm e con la scala del nonio di 2µm



Descrizione	Dimensioni (mm)							 Kg
	DCONMS	DCN	DCX	LF	LPR	ADJRGR	DCONWS	
BHE MB14-14-30	MB14	14.5	18	30.0	22.0	1.0	-	0.09
MB16-16-34	MB16	18	24	34.0	26.0	2.0	-	0.10
MB20-20-40	MB20	22	30	40.0	31.5	3.0	-	0.15
MB25-25-50	MB25	28	40	50.0	40.0	3.0	-	0.23
MB32-32-63	MB32	35	53	63.0	51.5	4.0	-	0.42
MB40-40-80	MB40	48	66	80.0	66.0	5.0	-	0.83
MB50-50-80	MB50	6.0	110	80.0	61.0	5.0	16.0	1.15
MB63-63-89	MB63	6.0	125	89.0	69.5	10.0	-	2.13
MB80-80-104	MB80	6.0	200	104.0	85.0	12.0	-	3.83



Testina per barenatura di finitura ad elevate velocità



Descrizione	Dimensioni (mm)							Kg
	DCONMS	DCN	DCX	DCONWS	LPR	ADJRGR	RPMX	
BHE MB32-32-53H	MB32	2.5	18	8	53	0.5	12,000	0.35
MB50-50-60H	MB50	2.5	22	16	60	1.0	12,000	1.50

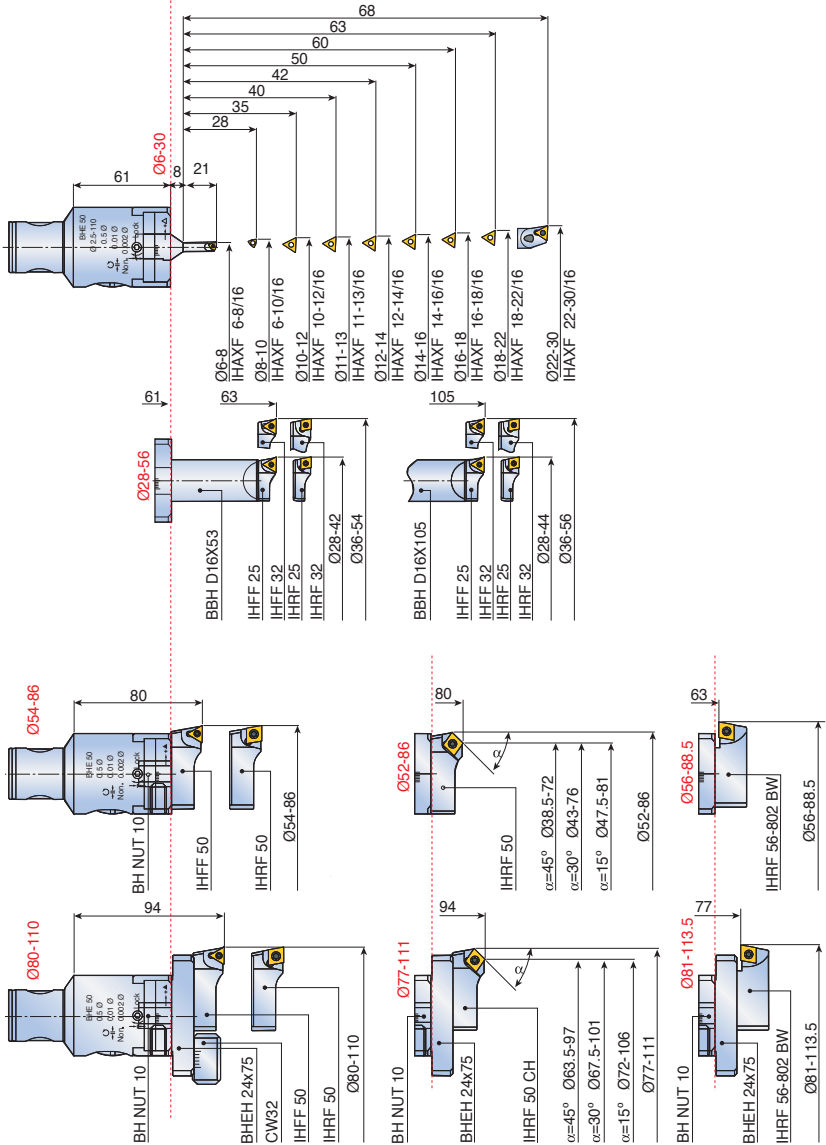
• Importante: allentare la vite della slitta* prima di ogni regolazione.

Gamma di barenatura di finitura

Testine per barenatura di finitura: regolazione diretta del diametro di 10µm e con nonio di 2µm

10µm
2µm

BHE MB50-50x80
Ø6-113.5

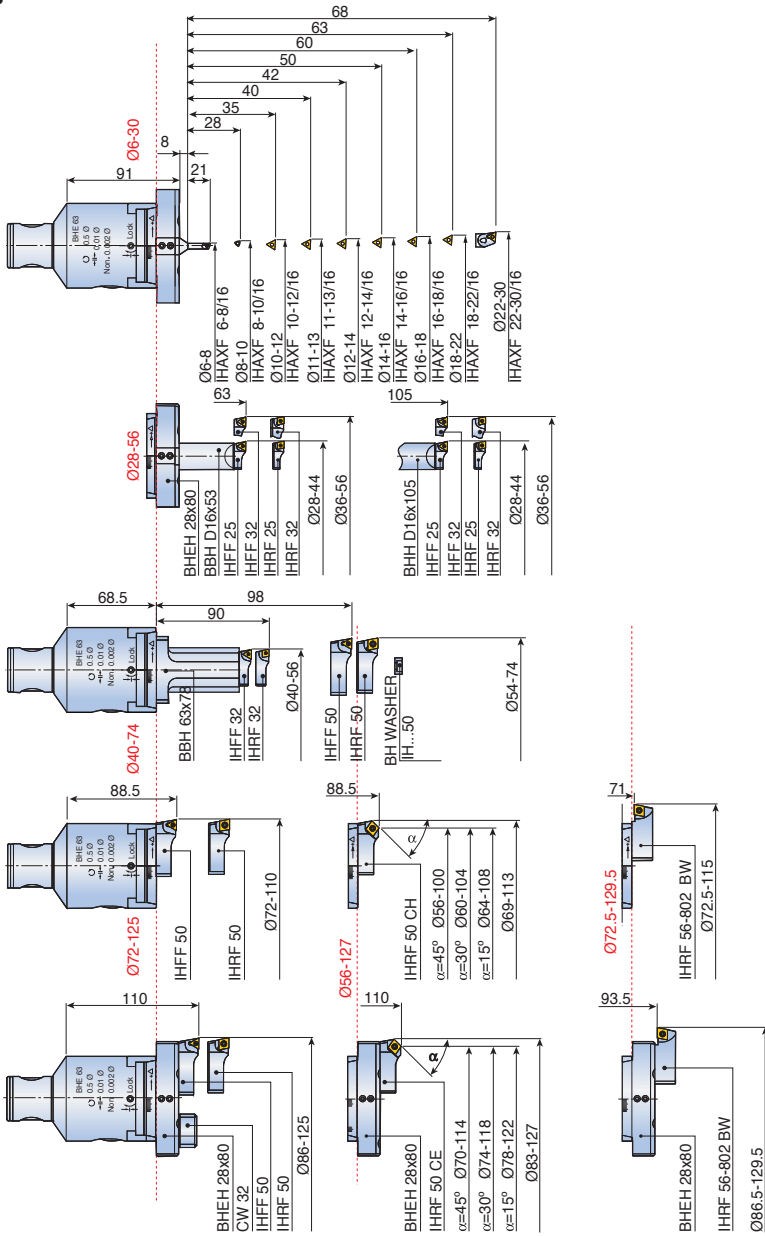


Gamma di barenatura di finitura

Testine per barenatura di finitura: regolazione diretta del diametro di 10µm e con nonio di 2µm

BHE MB63-63x89
ø6-129.5

10µm
 2µm

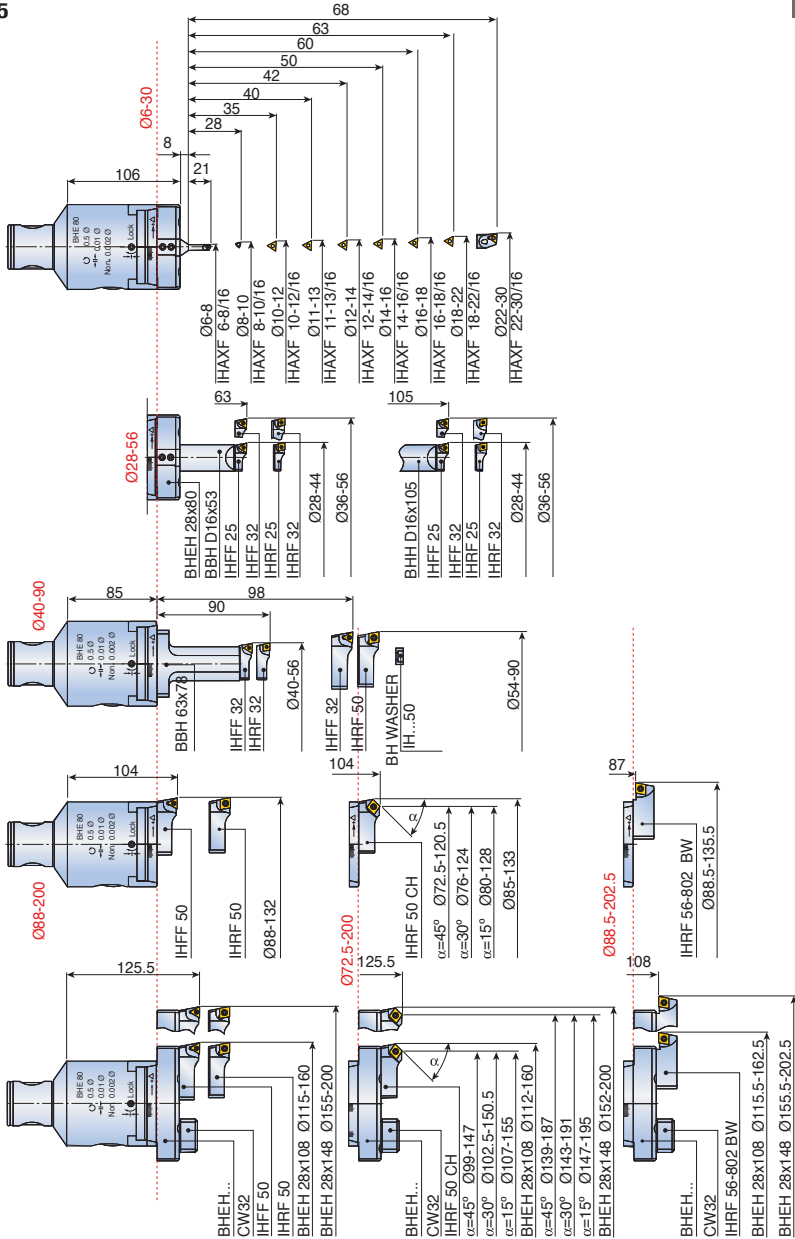


Gamma di barenatura di finitura

Testine per barenatura di finitura: regolazione diretta del diametro di 10μm e con nonio di 2μm

10μm
2μm

BHE MB80-80x104
ø 6-202.5



Gamma di barenatura di finitura

BHF testine per barenatura di finitura

Le testine di barenatura BHF permettono micro regolazioni di 0.002 mm per lavorazioni di alta precisione con tolleranze strettissime e con una finitura superficiale eccellente.

2µm

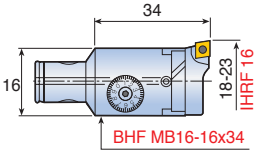


BHF MB16-MB40

Gamma diametri: 18-63

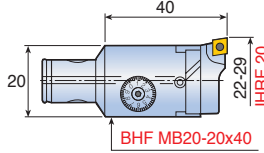
BHF MB16-16x34 RV

18-23



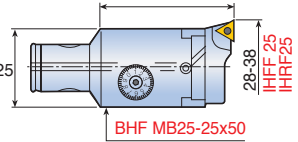
BHF MB20-20x40 RV

22-29



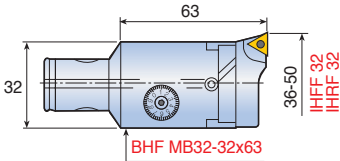
BHF MB25-25x50

28-38



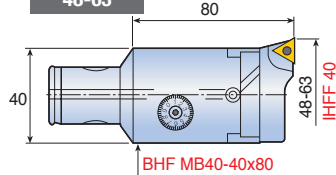
BHF MB32-32x63

36-50



BHF MB40-40x80

48-63



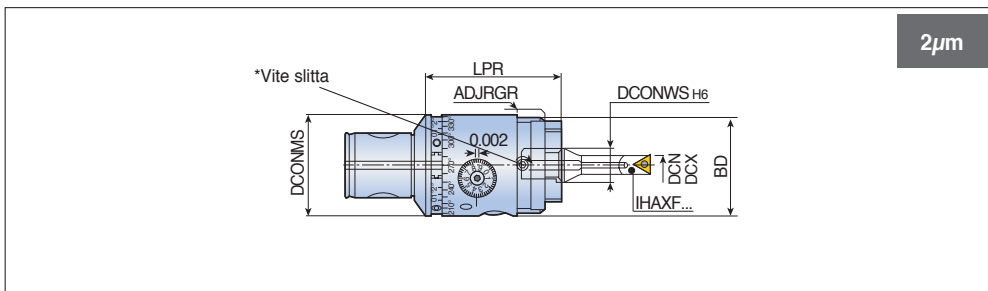
Gamma dei diametri delle testine per barenatura di finitura

	0	10	20	30	40	50	60	70	80	90	100	110	120	130	150	180	280	400	600	700	800	
BHF MB 50-32x60 BL			2,5-12																			
50-50x68 BL				2,5-20																		
50-50x60												2,5-84										
50-63x87																	2,5-160					
80-80x94																		2,5-220				
16-16x34 RV				18-23																		
20-20x40 RV					22-29																	
25-25x50						28-38																
32-32x63							36-50															
40-40x80								48-63														
80-125x114																						36-500
TCH 200																						200-300
300																						300-400
400																						400-500
A.L 500																						500-600
A.L 600																						600-700
A.L 700																						700-800

BHF MB-BL

Testine per barenatura di finitura

Testina per barenatura di finitura con anello di bilanciatura

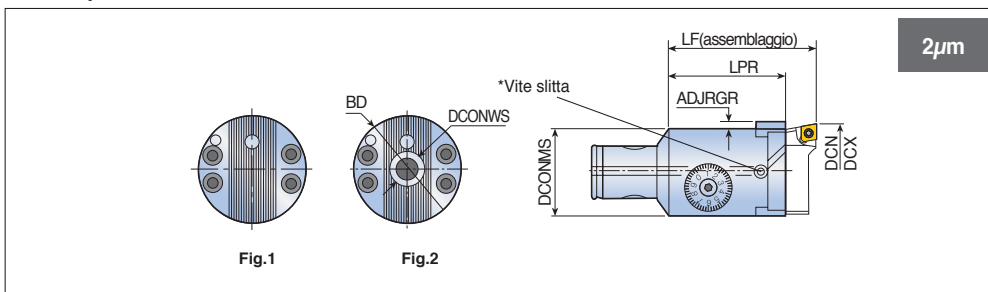


Descrizione	Dimensioni (mm)							Kg
	DCONMS	DCN	DCX	DCONWS	BD	LPR	ADJRGR	
BHF MB50-32x60 BL	MB50	2.5	12.0	8	32	60.0	3	0.8
MB50-50x68 BL	MB50	6.0	22.0	16	50	68.5	4	1.1

BHF MB16-MB50, Dia.6-108

Testine per barenatura di finitura

Testina per barenatura di finitura da 6-108 mm



Descrizione	Dimensioni (mm)								Porta inserto	Kg	Fig
	DCONMS	DCN	DCX	BD	LPR	LF	ADJRGA	DCONWS			
BHF MB16-16x34 RV	MB16	18	23	16	26.0	34	1	-	IH..16	0.05	1
MB20-20x40 RV	MB20	22	29	20	32.5	40	2	-	IH..20	0.1	1
MB25-25x50	MB25	28	38	25	40.0	50	2	-	IH..25	0.2	1
MB32-32x63	MB32	36	50	32	51.5	63	3	-	IH..32	0.35	1
MB40-40x80	MB40	48	63	40	66.0	80	4	-	IH..40	0.7	1
MB50-50x60	MB50	2.5	108	50	60.0	79	4	16	IH..50	1.0	2

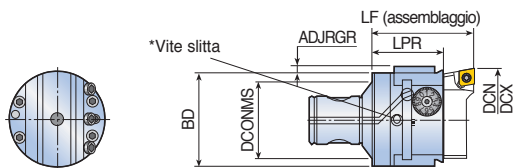


• Importante: allentare la vite della slitta* prima di ogni regolazione.

BHF MB50-MB80, Dia. 77-500 Testine per barenatura di finitura

Testina per barenatura di finitura da 77-500 mm

2μm



Descrizione	Dimensioni (mm)							Kg
	DCONMS	DCN	DCX	BD	LPR	LF	ADJRGR	
BHF MB50-63x87	MB50	77	125	63	49	87	5	1.8
MB50-80x94	MB50	95	160	80	58	94	5	2.1
MB63-63x87	MB63	77	125	63	49	87	5	1.6
MB80-80x94	MB80	95	160	80	58	94	5	2.6
MB80-125x114	MB80	135	500	125	63	114	5	5.8

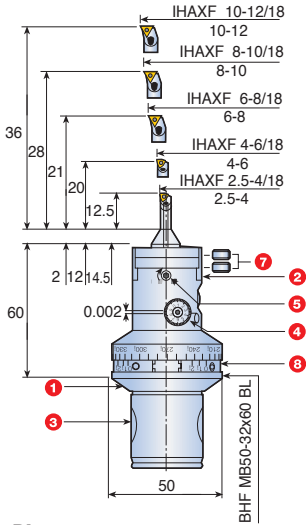
• Importante: allentare la vite della slitta* prima di ogni regolazione.

Gamma di barenatura di finitura

Testine per barenatura di finitura con bilanciatura: regolazione diretta del diametro di 2 μ m

2 μ m

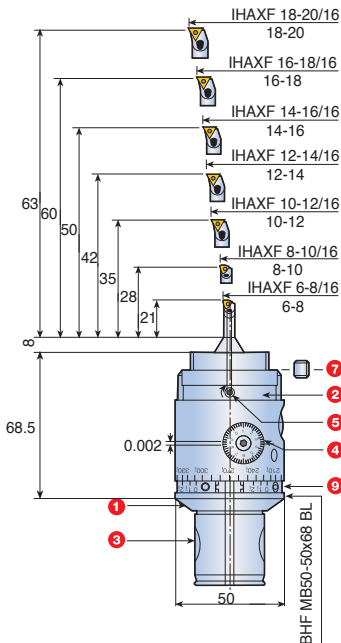
BHF MB50-32x60 BL \varnothing 2.5-12



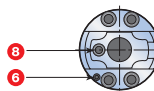
- 1 Corpo
- 2 Slitta
- 3 Perno
- 4 Regolatore diametro
- 5 Vite di bloccaggio slitta
- 6 Refrigerante
- 7 Vite di bloccaggio
- 8 Anelli di bilanciatura



BHF MB50-50x68 BL \varnothing 6-20



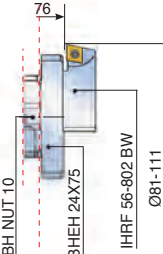
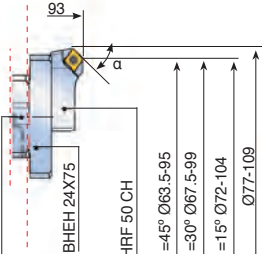
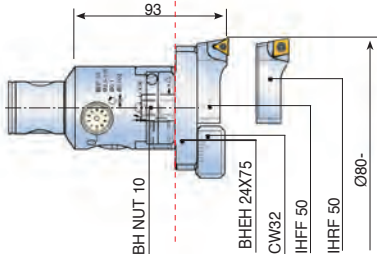
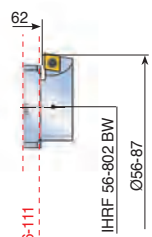
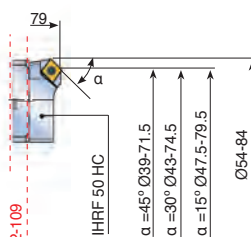
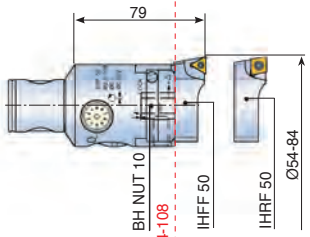
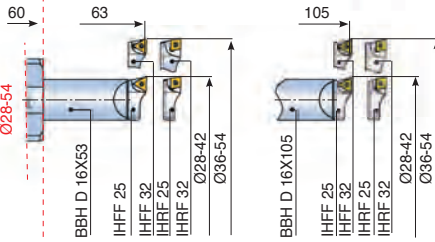
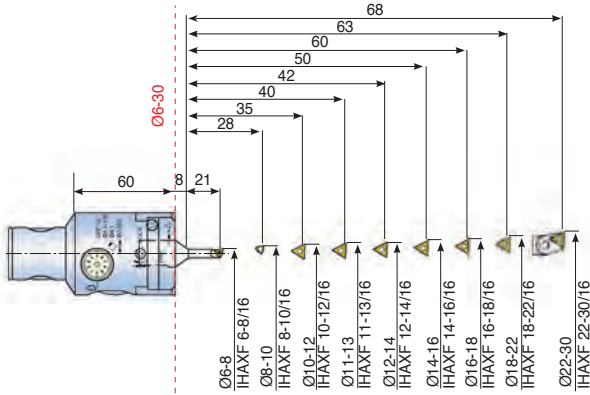
- 1 Corpo
- 2 Slitta
- 3 Perno
- 4 Regolatore diametro
- 5 Vite di bloccaggio slitta
- 6 Refrigerante
- 7 Vite di bloccaggio
- 8 Ugello di oliatura
- 9 Anelli di bilanciatura



Testine per barenatura di finitura: regolazione diretta del diametro di $2\mu\text{m}$

$2\mu\text{m}$

BHF MB50-50x60
 \varnothing 6-111

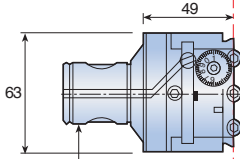


Gamma di barenatura di finitura

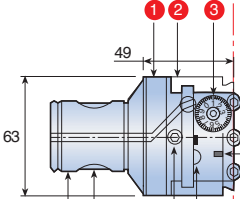
Testine per barenatura di finitura: regolazione diretta del diametro di 2µm

2µm

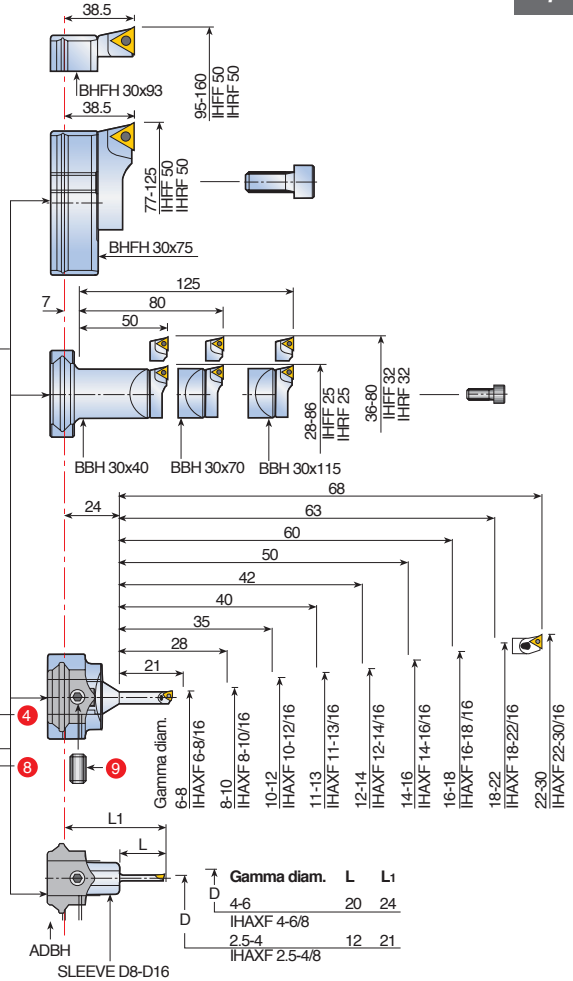
BHF MB50-63x87
BHF MB63-63x87
ø 2.5-160



BHF MB50-63x87



BHF MB63-63x87



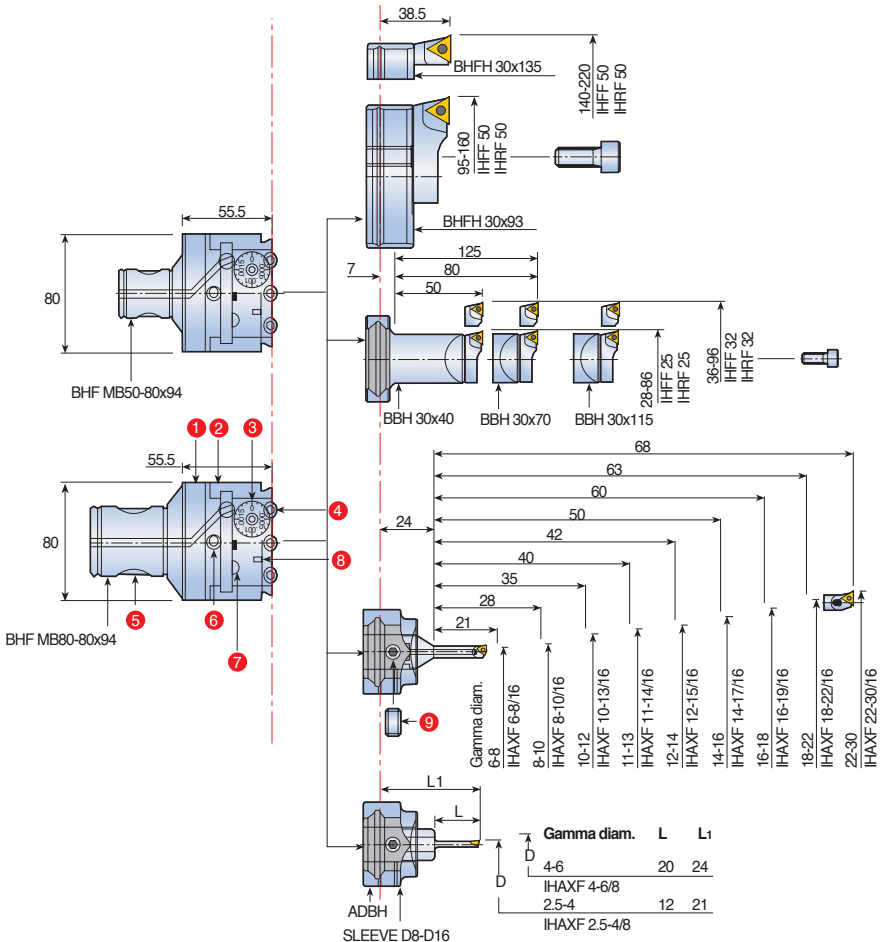
- 1 Corpo
- 2 Slitta
- 3 Regolatore diametro
- 4 Vite di bloccaggio
- 5 Perno
- 6 Vite di bloccaggio slitta
- 7 Refrigerante
- 8 Ugello di oliatura
- 9 Vite di bloccaggio utensile

Gamma di barenatura di finitura

Testine per barenatura di finitura: regolazione diretta del diametro di $2\mu\text{m}$

BHF MB50-80x94
BHF MB80-80x94
 \varnothing 2.5-220

$2\mu\text{m}$



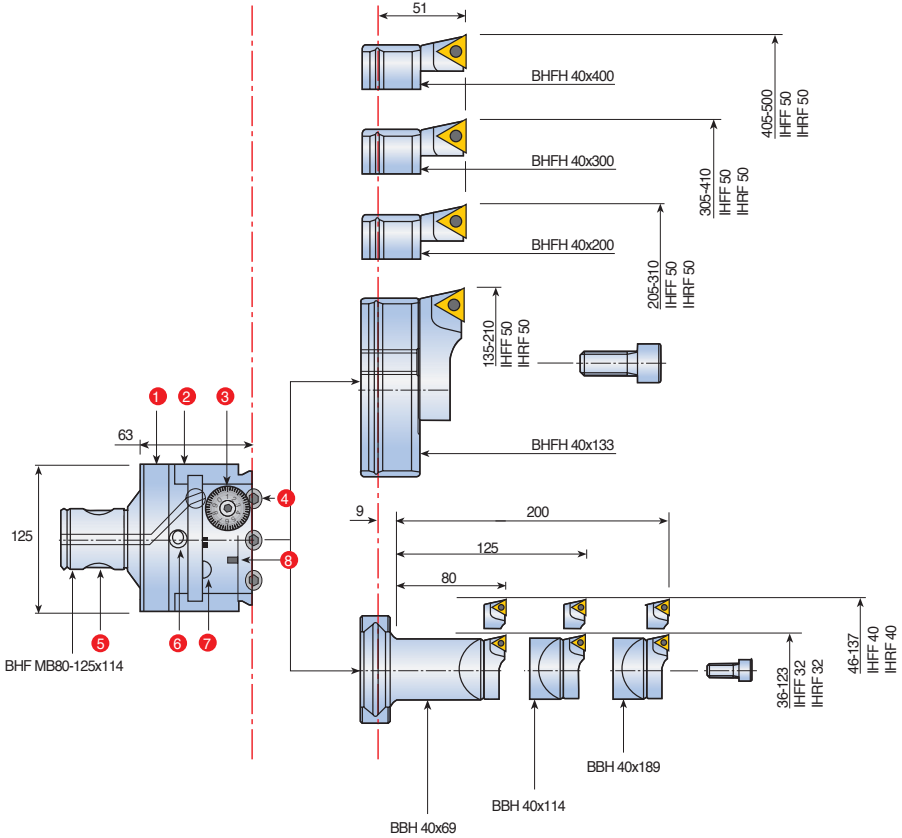
- 1 Corpo
- 2 Slitta
- 3 Regolatore diametro
- 4 Vite di bloccaggio
- 5 Perno
- 6 Vite di bloccaggio slitta
- 7 Refrigerante
- 8 Ugello di oliatura
- 9 Vite di bloccaggio utensile

Gamma di barenatura di finitura

Testine per barenatura di finitura: regolazione diretta del diametro di 2 μ m

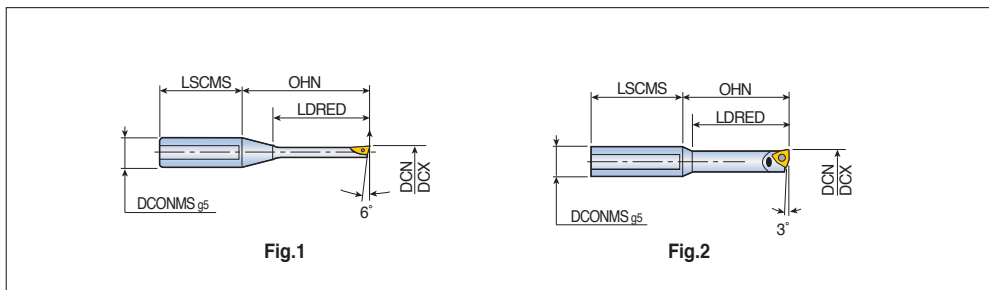
2 μ m

BHF MB80-125x114
Ø 36-500



- ❶ Corpo
- ❷ Slitta
- ❸ Regolatore diametro
- ❹ Vite di bloccaggio
- ❺ Perno
- ❻ Vite di bloccaggio slitta
- ❼ Refrigerante
- ❽ Ugello di oliatura

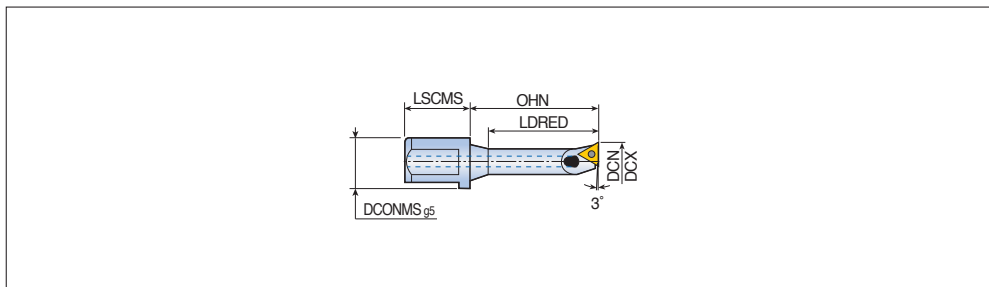
Utensile gambo 8 mm per barenatura da 2.5-12 mm



Descrizione	Dimensioni (mm)						Ricambi			Fig.
	DCN	DCX	LDRED	OHN	LSCMS	DCONMS	Inserto	Vite	Chiave	
IHAXF 2.5-4/8⁽¹⁾	2.5	4	12.5	21	22	8	Integrale	-	-	1
4-6/8⁽¹⁾	4	6	20.0	24	24	8	Integrale	-	-	1
6-8/8	6	8	21.0	24	16	8	WCGT 0201	SR 14-299	T-6/5	2
8-10/8	8	10	-	28	16	8	WCGT 0201	SR 14-299	T-6/5	2
10-12/8	10	12	-	36	16	8	TPGX 0902	SR 14-299	T-6/5	2

• ⁽¹⁾ Saldobrasato

Utensile gambo 16 mm per barenatura da 6-30 mm



Descrizione	Dimensioni (mm)						Ricambi		
	DCN	DCX	LDRED	OHN	LSCMS	DCONMS	Inserto	Vite	Chiave
IHAXF 6-8/16	6	8	21.0	29	22	16	WCGT 0201	SR 14-299	T-6/5
8-10/16	8	10	28.0	36	22	16	WCGT 0201	SR 14-299	T-6/5
10-12/16	10	12	35.0	43	22	16	TPGX 0902	SO 250611	T-8/5
11-13/16	11	13	40.0	48	22	16	TPGX 0902	SO 250611	T-8/5
12-14/16	12	14	42.0	48	22	16	TPGX 0902	SO 250611	T-8/5
14-16/16	14	16	50.0	52	22	16	TPGX 0902	SO 250611	T-8/5
16-18/16	16	18	50.0	58	22	16	TPGX 0902	SO 250611	T-8/5
18-22/16	18	22	60.0	63	22	16	TPGX 0902	SO 250611	T-8/5
22-30/16	22	30	60.0	68	22	16	TPGX 0902	SO 250611	T-8/5



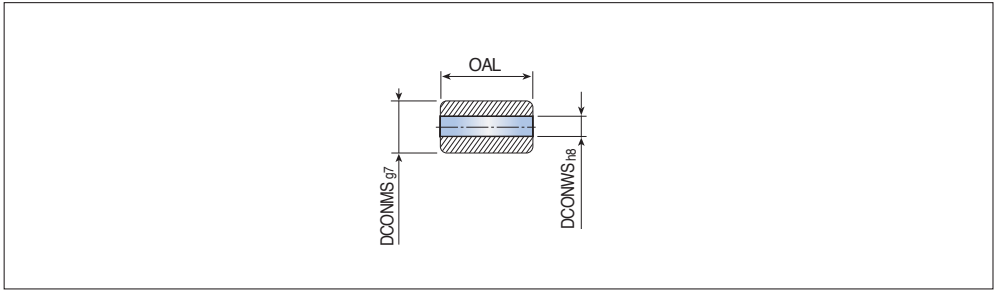
H61-H64

Condizioni di taglio
H84-H91

SLEEVE

Utensili di barenatura

Riduzione per barenatura di finitura

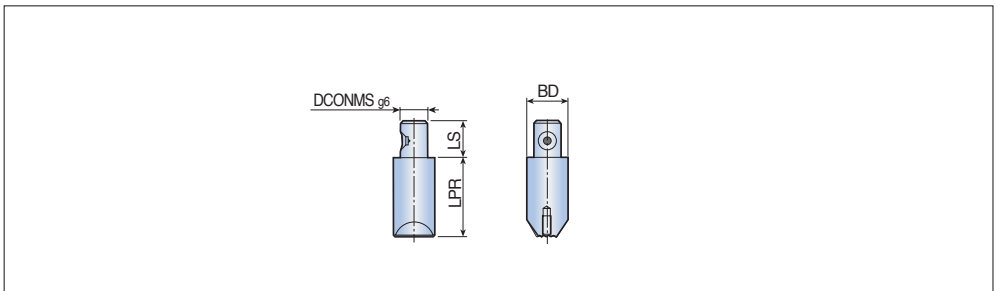


Descrizione	Dimensioni (mm)		
	DCONMS	DCONWS	OAL
SLEEVE D8-D16	16	8	23

BBH D16

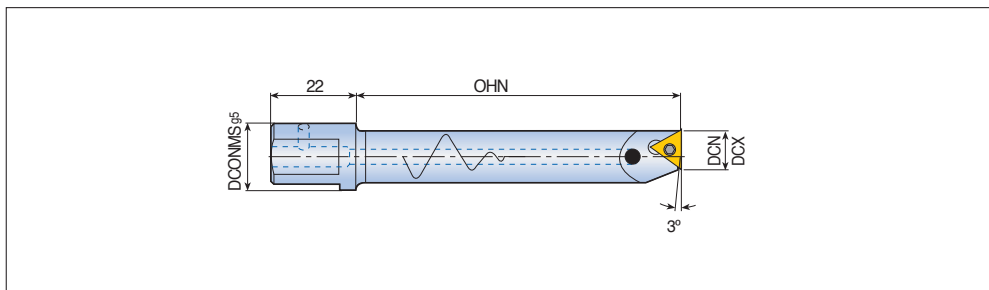
Utensili di barenatura

Prolunga per barenatura BHF 50x50x63



Descrizione	Dimensioni (mm)				Kg
	BD	LPR	DCONMS	LS	
BBH D16x53	25	53	16	21.5	0.3

Utensile antivibrante per barenatura di finitura in metallo pesante

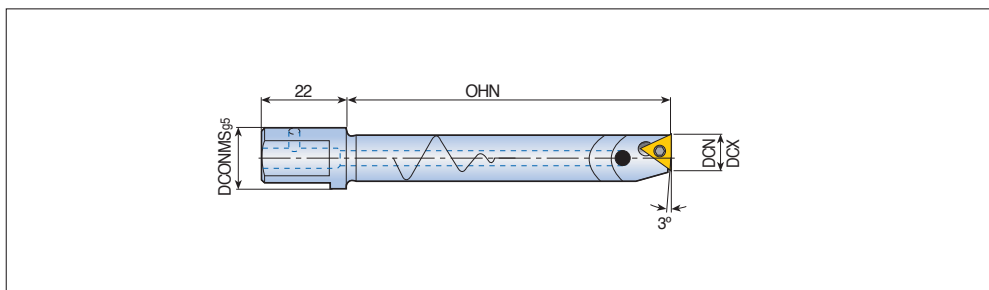


Descrizione	Dimensioni (mm)				Ricambi		
	DCN	DCX	OHN	DCONMS	Inserto	Vite	Chiave
IHAXF 6-8-AVI	6	8	36	16	WCGT 0201..	SR 14-299	T-6/5
8-10-AVI	8	10	48	16	WCGT 0201..	SR 14-299	T-6/5
10-12-AVI	10	12	60	16	TPGX 0902..	SO 25061I	T-8/5
12-14-AVI	12	14	72	16	TPGX 0902..	SO 25061I	T-8/5
14-16-AVI	14	16	84	16	TPGX 0902..	SO 25061I	T-8/5
16-18-AVI	16	18	96	16	TPGX 0902..	SO 25061I	T-8/5

• Nota: non è raccomandato l'utilizzo sulle testine per barenatura bilanciate BHF-BL

IHAXF-E

Utensile antivibrante per barenatura di finitura in metallo duro

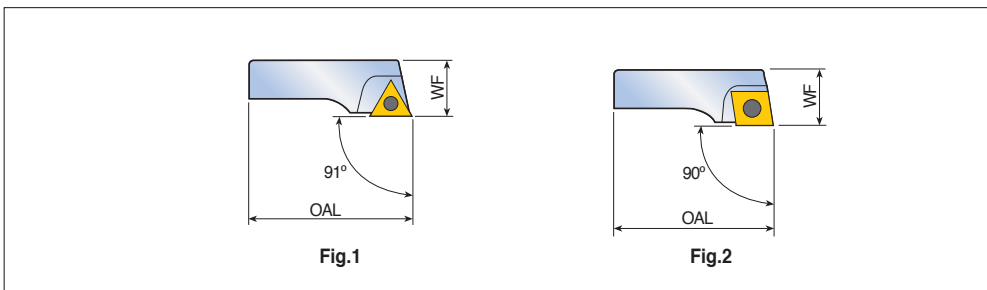


Descrizione	Dimensioni (mm)				Ricambi		
	DCN	DCX	OHN	DCONMS	Inserto	Vite	Chiave
IHAXF 6-8-E	6	8	45	16	WCGT 0201..	SR 14-299	T-6/5
8-10-E	8	10	60	16	WCGT 0201..	SR 14-299	T-6/5
10-12-E	10	12	75	16	TPGX 0902..	SO 25061I	T-8/5
12-14-E	12	14	90	16	TPGX 0902..	SO 25061I	T-8/5
14-16-E	14	16	105	16	TPGX 0902..	SO 25061I	T-8/5
16-18-E	16	18	120	16	TPGX 0902..	SO 25061I	T-8/5

• Nota: non è raccomandato l'utilizzo sulle testine per barenatura bilanciate BHF-BL



Portainsero per baren di finitura MB

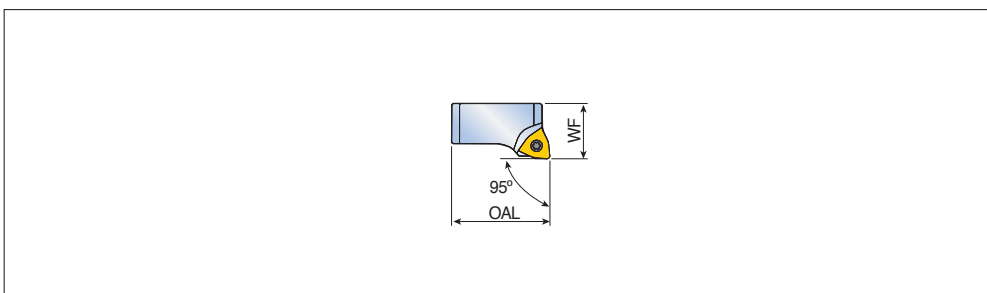


Descrizione	Dimensioni (mm)				Ricambi			Fig.
	DCN	DCX	WF	OAL	Inserto	Vite	Chiave	
IHFF 25	28	40	10.0	26.5	TPGX 0902...	SO 250611	T8/5	1
32	35	53	11.5	34.5	TPGX 0902...	SO 250611	T8/5	1
40	48	66	14.0	44.0	TPGX 1103...	SO 300811	T8/5	1
50	54	86	19.0	52.0	TPGX 1103...	SO 300811	T8/5	1
IHRF 16	18	24	8.0	17	CCGT 0602..	SR 14-548	T-7/5	2
20	22	30	8.5	21.0	CCGT 0602..	SR 14-548	T-7/5	2
25	28	40	10.0	26.5	CCGT 0602..	SR 14-548	T-7/5	2
32	35	53	11.5	34.5	CCGT 0602..	TS 400971	T-7/5	2
40	48	66	14.0	44.0	CCGT 09T3...	TS 400971	T-15/5	2
50	54	86	19.0	52.0	CCGT 09T3...	TS 400971	T-15/5	2

IHWF

Portainseri per baren di finitura

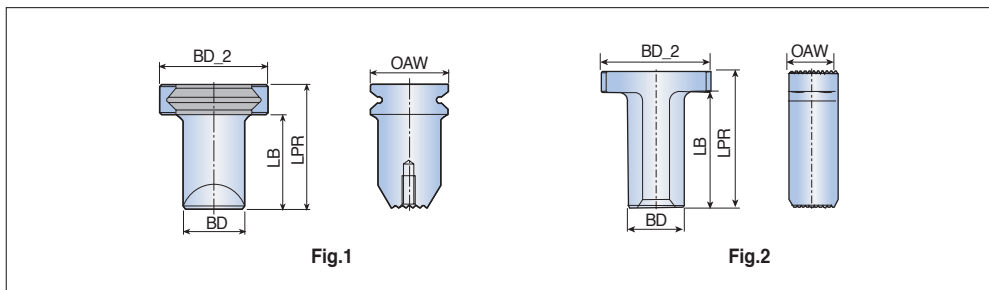
Portainsero per baren di finitura MB



Descrizione	Dimensioni (mm)				Ricambi		
	DCN	DCX	WF	OAL	Inserto	Vite	Chiave
IHWF 14E	14.5	18	8.0	14.0	WCGT 0201...	SR 14-299	T6/5

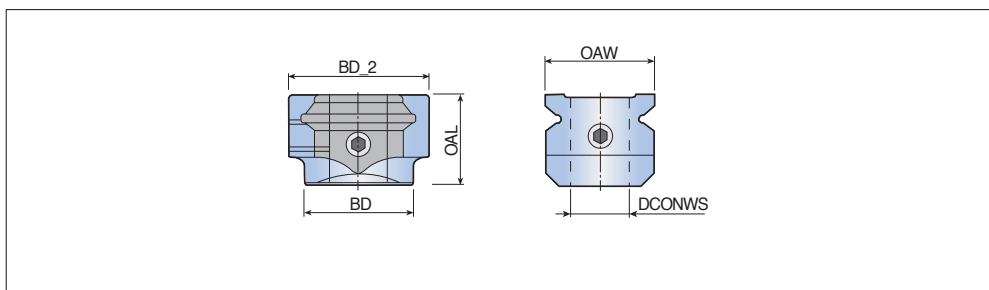


Estensione slitta per barenì di finitura



Descrizione	Dimensioni (mm)					Kg	Fig.
	BD	LB	LPR	BD_2	OAW		
BBH 30x40	25	40	52.5	43	30.5	0.3	1
30x70	25	70	82.5	43	30.5	0.4	1
30x115	27	115	127.5	43	30.5	0.7	1
40x69	32	69	86	56	40	0.7	1
40x114	32	114	131	56	40	1.0	1
40x189	38	189	206	56	40	2.0	1
63x78	32	66	78	63	28	0.7	2

Slitta per barenì di finitura

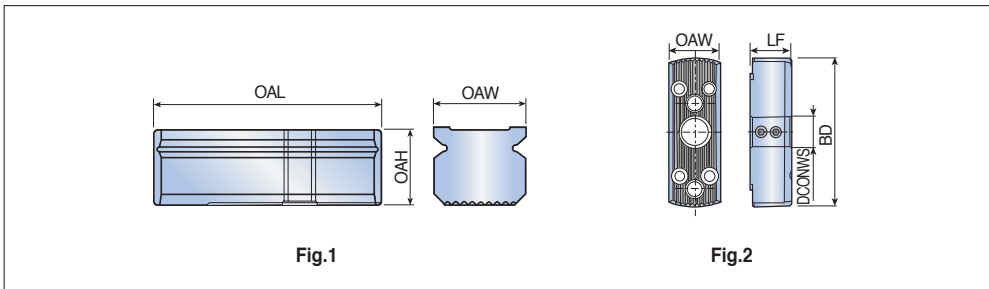


Descrizione	Dimensioni (mm)					Kg
	BD	BD_2	OAL	OAW	DCONWS	
ADBH 30xD16	30	39	25	30.5	16	0.2

BHFH/BHEH

Portainseri per bareni di finitura

Slitta per barenno di finitura BHF e BHE

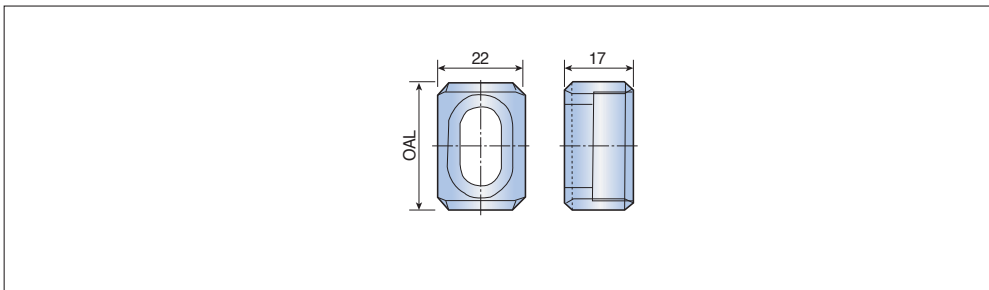


Descrizione	Dimensioni (mm)						Kg	Fig.
	OAH	OAL	OAW	BD	LF	DCONWS		
BHFH 30x75	25	75	30.5	-	-	-	0.4	1
30x93	25	93	30.5	-	-	-	0.5	1
30x135	25	135	30.5	-	-	-	0.7	1
40x133	40	133	40	-	-	-	1.5	1
40x200	40	200	40	-	-	-	2.4	1
40x300	40	300	40	-	-	-	3.5	1
40x400	40	400	40	-	-	-	4.6	1
BHEH 24x75	-	-	24	75	14.5	-	0.2	2
28x80	-	-	28	80	22.5	16	0.3	2
28x108	-	-	28	108	22.5	-	0.5	2
28x148	-	-	28	148	22.5	-	0.6	2

CW32

Portainseri per bareni di finitura

Contrappeso di bilanciatura

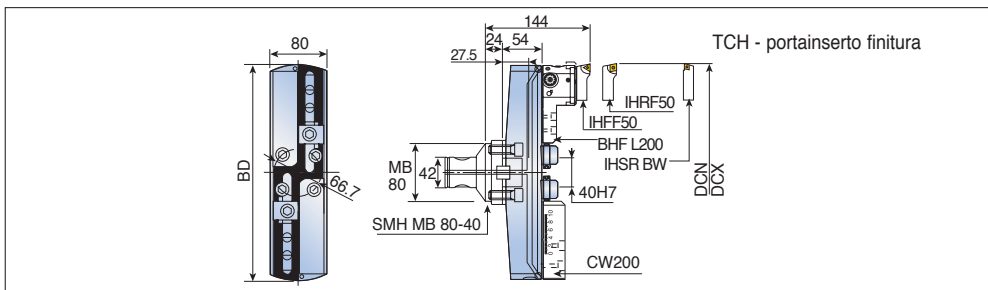


Descrizione	Dimensioni (mm)	Kg
	OAL	
CW 32	31.5	0.5

TCH

Testine per barenatura di finitura

Testina per barenatura di finitura da 200-500 mm con corpo in alluminio e connessione MB

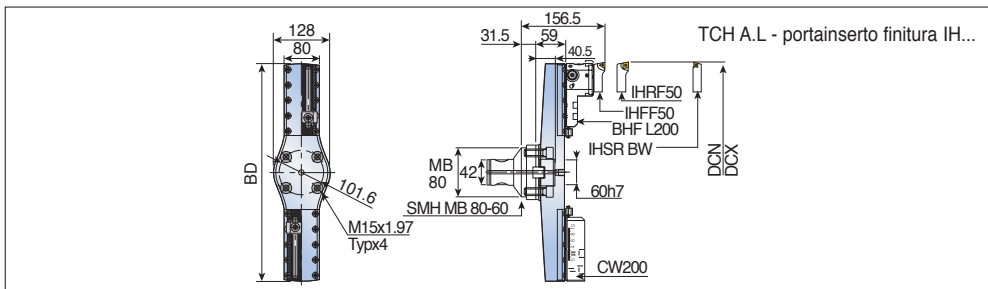


Descrizione	Dimensioni (mm)			Kg
	DCN	DCX	BD	
TCH 200	200	300	198	2.6
300	300	400	298	3.5
400	400	500	398	4.1

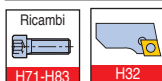
TCH A.L

Testine per barenatura di finitura

Testina per barenatura di finitura da 500-800 mm con corpo in alluminio e connessione MB



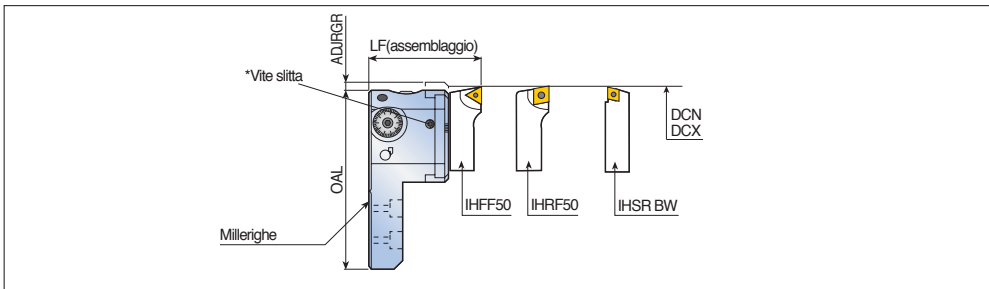
Descrizione	Dimensioni (mm)			Kg
	DCN	DCX	BD	
TCH A.L 500	500	600	494	7.5
600	600	700	594	9.0
700	700	800	694	10.5



BHF L200

Portainseri per bareni di finitura

Slitta per barenno di finitura TCH da 200-800 mm

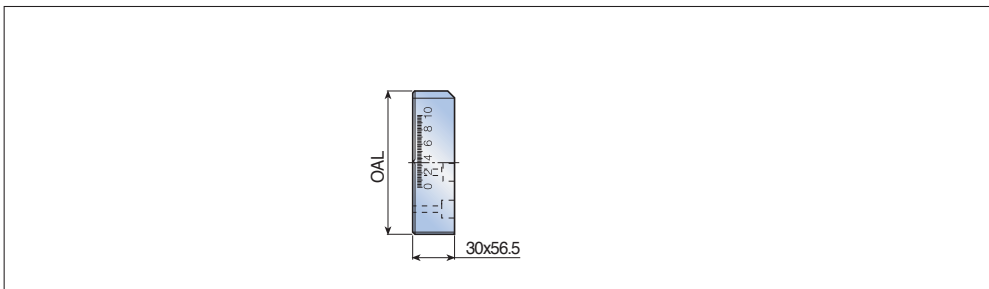


Descrizione	Dimensioni (mm)					Kg
	DCN	DCX	OAL	LF	ADJRGR	
BHFL200	200	800	110	67	5	1.3

CW200

Portainseri per bareni di finitura

Contrappeso di bilanciatura per barenno di finitura TCH

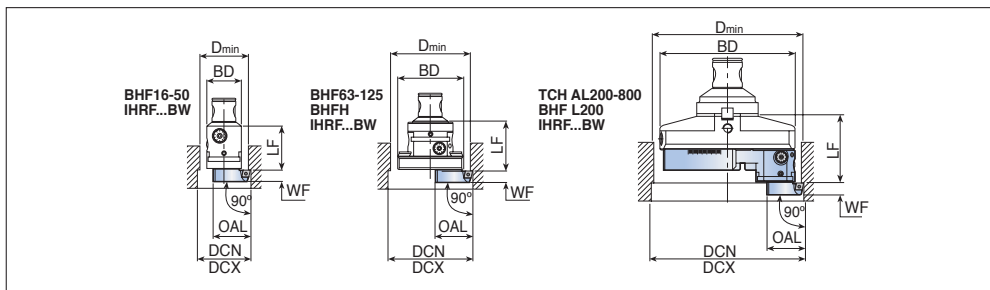


Descrizione	Dimensioni (mm)		Kg
	OAL		
CW 200	105		1.3



• Importante: allentare la vite della slitta* prima di ogni regolazione.

Portainserito di retrolamatura per barenò di finitura BHF e TCH



Descrizione	Dimensioni (mm)						Testina di barenatura	Ricambi			
	DCN	DCX	BD	LF	WF	OAL		Inserto	Vite	Chiave	
IHRF 20-25 BW	20	25	16	27.5	8.0	18.0	BHF MB16-16x34	CCGT 0602..	SR 14-548	T7/5	
24.5-32 BW	24.5	32	20	33.5	8.5	22.5	BHF MB20-20x40	CCGT 0602..	SR 14-548	T7/5	
31.5-41.5 BW	31.5	41.5	25	41.5	9.5	28.5	BHF MB25-25x50	CCGT 0602..	SR 14-548	T7/5	
38.5-51.5 BW	38.5	51.5	32	53.0	11.0	35.5	BHF MB32-32x63	CCGT 0602..	SR 14-548	T7/5	
50.5-65 BW	50.5	65	40	68.0	13.5	46.0	BHF40-40	CCGT 09T3..	TS 40097I	T15/5	
56-802 BW	56	86	50	62.0	17.5	53.0	BHF50-50	CCGT 09T3..	TS 40097I	T15/5	
	82	120	75	70.2	17.5	53.0	BHF63+BHFH30x75	CCGT 09T3..	TS 40097I	T15/5	
	100	142	93	79.5	17.5	53.0	BHF80+BHFH30x93	CCGT 09T3..	TS 40097I	T15/5	
	140	240	135	98.0	17.5	53.0	BHF125+BHFH40x133	CCGT 09T3..	TS 40097I	T15/5	
	202	302	198	103.0	17.5	53.0	TCH200+BHF L200	CCGT 09T3..	TS 40097I	T15/5	
	302	402	298	103.0	17.5	53.0	TCH300+BHF L200	CCGT 09T3..	TS 40097I	T15/5	
	402	502	398	103.0	17.5	53.0	TCH400+BHF L200	CCGT 09T3..	TS 40097I	T15/5	
	502	602	494	108.0	17.5	53.0	TCH500+BHF L200	CCGT 09T3..	TS 40097I	T15/5	
	602	702	594	108.0	17.5	53.0	TCH600+BHF L200	CCGT 09T3..	TS 40097I	T15/5	
	702	802	694	108.0	17.5	53.0	TCH700+BHF L200	CCGT 09T3..	TS 40097I	T15/5	

H61-H64

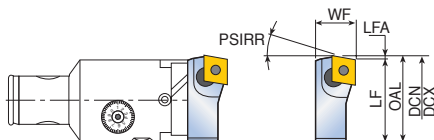
H54

H84-H91

Condizioni di taglio

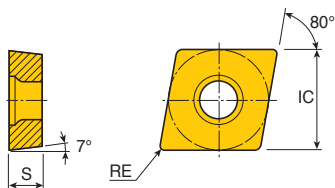
- DCX= Dimensioni del barenò in uso
- D_{min}= (diametro foro min)= (DCN+BD+1)/2

Portainsero di smussatura per barenno di finitura BHF



Descrizione	Dimensioni (mm)							Ricambi
	DCN	DCX	PSIRR	LF	OAL	WF	LFA	Inserto
IHRF 25 CH15 28-38	28	38	15°	24.00	25.7	10.4	1.7	CCGT 0602...
25 CH30 28-38	28	38	30°	22.60	25.6	10.4	3.2	CCGT 0602...
25 CH45 28-38	28	38	45°	21.40	25.9	10.4	4.4	CCGT 0602...
32 CH15 35-53	35	53	15°	32.00	33.7	12.6	1.7	CCGT 0602...
32 CH30 35-53	35	53	30°	30.50	33.7	12.1	3.2	CCGT 0602...
32 CH20 36-50	36	50	20°	32.50	34.8	13.5	2.2	CCGT 0602...
32 CH45 36-50	36	50	45°	29.20	33.7	12.1	4.6	CCGT 0602...
32 CH60 36-50	36	50	60°	29.30	34.8	12.0	5.6	CCGT 0602...
40 CH60 48-63	48	63	60°	39.10	47.5	16.5	8.4	CCGT 09T3...
40 CH15 48-66	48	66	15°	44.90	47.4	17.5	2.5	CCGT 09T3...
40 CH30 48-66	48	66	30°	38.20	42.9	14.4	4.7	CCGT 09T3...
40 CH45 48-66	48	66	45°	36.40	43.0	14.4	6.7	CCGT 09T3...
50 CH15 54-800	54	800	15°	48.10	50.6	19.4	2.5	CCGT 09T3...
50 CH20 54-800	54	800	20°	52.20	55.5	18.0	3.3	CCGT 09T3...
50 CH30 54-800	54	800	30°	49.95	50.8	19.4	4.7	CCGT 09T3...

Inserti rombici positivi a 80° con spoglia a 7°

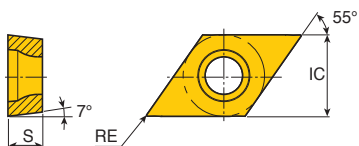


Misura	Dimensioni (mm)		
	IC	S	RE
06	6.35	2.38	0.1-0.8
09	9.52	3.97	0.1-0.8
12	12.7	4.76	0.2-1.2

Inserto	Descrizione	Cermet		Rivestito CVD										Rivestito PVD				Non rivestito			
		PV3010	CT3000	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	CCMT 060204 MT	●	●	●	●		●	●	●		●	●	●	●	●				●		
	060208 MT	●	●	●	●			●	●	●			●	●	●			●			
	09T304 MT	●	●	●	●	●		●	●	●		●	●	●	●	●					
	09T308 MT		●	●	●	●		●	●	●	●	●	●	●	●	●					
	120404 MT	●	●	●	●			●	●				●		●						
	120408 MT		●	●	●	●		●	●	●		●	●	●	●	●					
	120412 MT			●				●	●				●								
	CCGT 060201 SA													●		●					
	060202 SA													●		●					
	060204 SA													●		●					
	09T301 SA													●		●					
	09T302 SA													●		●					
	09T304 SA													●		●	●				
	09T308 SA													●		●					
	CCGT 060202 FL																			●	
	060204 FL																			●	
	09T302 FL																			●	
	09T304 FL																			●	
	09T308 FL																			●	
	120402 FL																			●	
	120404 FL																			●	
	120408 FL																			●	

● : Standard

Inserti rombici positivi a 55° con spoglia a 7°



Misura	Dimensioni (mm)		
	IC	S	RE
07	6.35	2.38	0.4-0.8
11	9.52	3.97	0.4-1.2

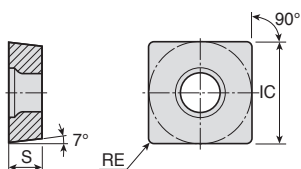
Inserto	Descrizione	Cermet		Rivestito CVD								Rivestito PVD				Non rivestito				
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10
	DCMT 070204 PC		●					●	●	●	●						●			
	070208 PC		●					●	●	●	●						●			
	11T304 PC		●			●	●	●	●	●	●						●			
	11T308 PC		●			●	●	●	●	●	●						●			
	11T312 PC		●				●	●	●	●	●						●			

● : Standard

SCGT

Inserti di barenatura

Inserti quadrati positivi con spoglia a 7° per alluminio

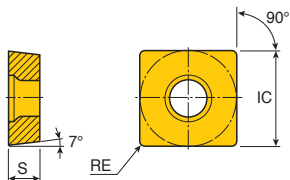


Misura	Dimensioni (mm)		
	IC	S	RE
09	9.52	3.97	0.8
12	12.7	4.76	0.2-0.8

Inserto	Descrizione	Cermet		Rivestito CVD								Rivestito PVD				Non rivestito					
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	SCGT 09T308 FL																		●		
	120402 FL																		●		
	120404 FL																		●		
	120408 FL																		●		

● : Standard

Inserti quadri positivi con spoglia a 7°

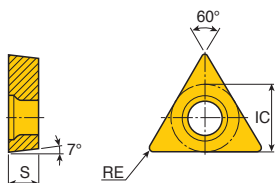


Misura	Dimensioni (mm)		
	IC	S	RE
09	9.52	3.97	0.4-0.8
12	12.7	4.76	0.4-1.2

Inserto	Descrizione	Cermet		Rivestito CVD										Rivestito PVD			Non rivestito					
		PV3010	CT3000	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	K10	K20	
	SCMT 09T304 FG																					
	09T308 FG	●						●	●		●		●			●	●					
	SCMT 09T304 MT	●	●	●	●		●	●	●		●		●			●						
	09T308 MT		●	●	●	●		●	●	●		●	●	●	●	●	●					
	120404 MT		●	●	●			●	●				●									
	120408 MT		●	●	●	●		●	●	●		●	●	●		●	●					
	120412 MT			●	●		●		●	●						●						

● : Standard

Inserti triangolari positivi con spoglia a 7°



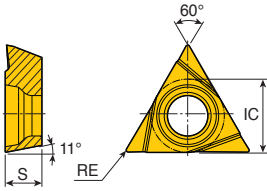
Misura	Dimensioni (mm)		
	IC	S	RE
22	12.7	4.76	0.8

Inserto	Descrizione	Cermet		Rivestito CVD										Rivestito PVD				Non rivestito				
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P30	K10	K20	
	TCMT 220508-19																		●			


● : Standard

TPGX

Inserti triangolari positivi con spoglia a 11°



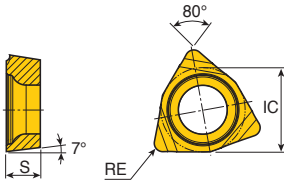
Misura	Dimensioni (mm)		
	IC	S	RE
09	5.56	2.38	0.2-0.4
11	6.35	3.18	0.2-0.4

Inserto	Descrizione	Cermet		Rivestito CVD								Rivest. PVD		Non rivestito								
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	P30	K10	K20	
 Sinistro	TPGX 090202 L		●																			
	090204 L		●																		●	
	110302 L		●																			●
	110304 L		●																			●


● : Standard

WCGT

Inserti trigoni positivi a 80° con spoglia a 7°



Misura	Dimensioni (mm)		
	IC	S	RE
02	3.97	1.59	0.2-0.4

Inserto	Descrizione	Cermet		Rivestito CVD								Rivest. PVD		Non rivestito									
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9030	TT9080	P20	K10	K20		
	WCGT 020102L																						
	020104L																					●	
																							●

● : Standard

KIT BHE MB50-50x80

Kit

Kit di barenatura BHE MB50-50 (ø6-110mm) con testina di finitura

10µm
2µm

Technical drawings showing dimensions and part numbers for the BHE MB50-50x80 kit. The drawings include:

- Ø6-30**: Dimensions 8, 21, 28, 40, 68. Part numbers: Ø6-8, IHAXF 6-8/16, Ø8-12, IHAXF 8-10/16, Ø11-17, IHAXF 11-13/16, Ø16-23, IHAXF 16-18/16, Ø22-30, IHAXF 22-30/16.
- Ø28-56**: Dimensions 81, 63. Part numbers: BH NUT 10, IHFF 50, Ø28-44, IHFF 25, Ø36-56, IHFF 32.
- Ø54-86**: Dimensions 80. Part number: IHFF 50, Ø54-86.
- Ø80-110**: Dimensions 94. Part numbers: BHEH 24x75, IHFF 50, Ø80-110.
- Ø92-110**: Dimensions 94. Part numbers: CW 32, BHEH 24x75, IHFF 50, Ø92-110.

Parts list:

- 1 BHE MB50-50x80
- 1 IHFF 25
- 1 IHFF 32
- 1 IHFF 50
- 1 IHAXF 6-8/16
- 1 IHAXF 8-10/16
- 1 IHAXF 11-13/16
- 1 IHAXF 16-18/16
- 1 IHAXF 22-30/16
- 1 IHAXF 16-18/16
- 1 IHAXF 22-30/16
- 1 BH NUT 10
- 1 CW 32
- 1 BHEH 24x75
- 1 BHEH 24x75
- 1 BH WASHER IH..50

Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHE MB50-50x80	MB50	6-110

• Regolazione diretta del diametro di 10µm e con la scala del nonio di 2µm

KIT BHE MB63-63x89

Kit

Kit di barenatura BHE MB63-63 (ø6-125mm) con testina di finitura

10µm
2µm

Technical drawings showing dimensions and part numbers for the BHE MB63-63x89 kit. The drawings include:

- Ø6-30**: Dimensions 106, 8, 21, 28, 40, 68. Part numbers: BHEH 28x80, Ø6-8, IHAXF 6-8/16, Ø8-10, IHAXF 8-10/16, Ø11-13, IHAXF 11-13/16, Ø16-18, IHAXF 16-18/16, Ø22-30, IHAXF 22-30/16.
- Ø40-90**: Dimensions 85, 98, 90. Part numbers: BH NUT 10, BHH 63x78, Ø40-56, Ø54-74, IHFF 32, IHFF 50.
- Ø88-132**: Dimensions 104. Part numbers: SFTP 50, Ø88-132.
- Ø115-200**: Dimensions 125.5. Part numbers: BHEH..., CW 32, SFTP 50, Ø115-160 BHEH 28x108, Ø155-200 BHEH 28x148.

Parts list:

- 1 BHE MB63-63x89
- 1 IHFF 32
- 1 IHFF 50
- 1 IHFF 6-8/16
- 1 IHAXF 8-10/16
- 1 IHAXF 11-13/16
- 1 IHAXF 16-18/16
- 1 IHAXF 22-30/16
- 1 IHAXF 16-18/16
- 1 IHAXF 22-30/16
- 1 BH NUT 10
- 1 CW 32
- 1 BHEH 28x80
- 1 BHEH 28x80
- 1 BH WASHER IH..50

Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHE MB63-63x89	MB63	6-125

KIT BHE MB80-80x104

Kit

Kit di barenatura BHE MB80-80 (ø6-200mm) con testina di finitura

10µm
2µm

Ø6-30
 BHEH 28x80
 Ø6-8
 IHAXF 6-8/16
 Ø8-10
 IHAXF 8-10/16
 Ø11-13
 IHAXF 11-13/16
 Ø16-18
 IHAXF 16-18/16
 Ø22-30
 IHAXF 22-30/16

Ø40-90
 BHH 63x78
 Ø40-56
 IHFF 32
 Ø54-74
 IHFF 50

Ø88-132
 SFTP 50
 Ø88-132
 BHEH...
 CW 32
 SFTP 50

Ø115-200
 Ø115-160 BHEH 28x106
 Ø155-200 BHEH 28x148

1 BHE MB80-80x104
 1 IHFF 32
 1 IHAXF 6-8/16
 1 IHAXF 8-10/16
 1 IHAXF 11-13/16
 1 IHAXF 16-18/16

1 BHH 63x78
 1 BHEH 28x80
 1 BHEH 28x108
 1 BHEH 28x148
 1 BH WASHER IH..50
 1 CW 32

Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHE MB80-80x104	MB80	6-200

KIT BHE MB32-32x53 H

Kit

Kit di barenatura BHE MB32-32x53 H (ø2.5-12mm) con testina di finitura

10µm
2µm

Ø10-12
 IHAXF 10-12H
 Ø8-10
 IHAXF 8-10H
 Ø6-8
 IHAXF 6-8H
 Ø4-6
 IHAXF 4-6H
 Ø2.5-4
 IHAXF 2.5-4H

12.5
 16.5
 20
 12
 2
 21
 28
 36
 53
 Ø32

Utensili di barenatura:
 1 BHF MB32-32x53 H
 1 IHAXF 2.5-4/8
 1 IHAXF 4-6/8
 1 IHAXF 6-8/8
 1 IHAXF 8-10/8
 1 IHAXF 10-12/8

Inseri:
 5 TPGX 090202L
 2 WCGT 020102L

G2.5
 12,000 g/min

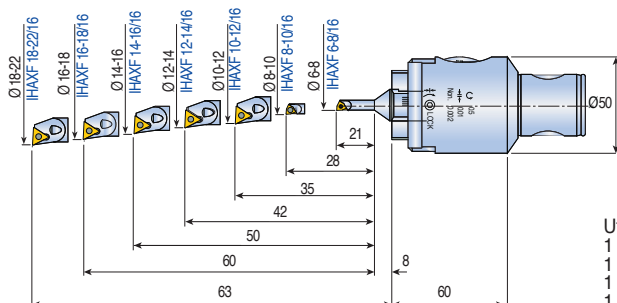
Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHE MB32-32x53 H	MB32	2.5-12

KIT BHE MB50-50x60 H

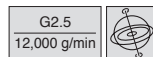
Kit

Kit di barenatura BHE MB50-50x60 H (ø6-22mm) con testina di finitura

10µm
2µm



- Utensili di barenatura: 1 BHE MB50-50x60 H
 1 IHAXF 6-8/16
 1 IHAXF 8-10/16
 1 IHAXF 10-12/16
 1 IHAXF 12-14/16
 1 IHAXF 14-16/16
 1 IHAXF 16-18/16
 1 IHAXF 18-22/16
- Inseri: 5 TPGX 090202L
 2 WCGT 020102L



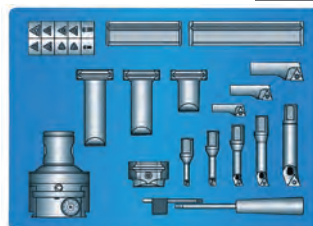
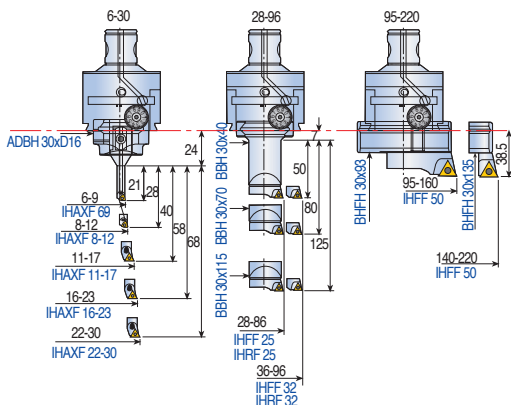
Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHE MB50-50x60 H	MB50	6-22

KIT BHF MB50-80/80-80

Kit

Kit di barenatura BHF MB50-80 / BHF MB80-80 (ø6-220mm) con testina di finitura

2µm



- 1 BHF MB.-80x94
 1 IHAXF 6-8/16
 1 IHAXF 8-10/16
 1 IHAXF 11-13/16
 1 IHAXF 16-18/16
 1 IHAXF 22-30/16
 1 ADBH 30xD16
 1 BBH 30x40
 1 BBH 30x70
 1 BBH 30x115
- 1 BHFH 30x93
 1 BHFH 30x135
 1 IHFF 25
 1 IHFF 32
 1 IHFF 50
 5 TPGX 090202L
 1 TPGX 110302L
 2 WCGT 020102L
 T-8/5
 T-6/5

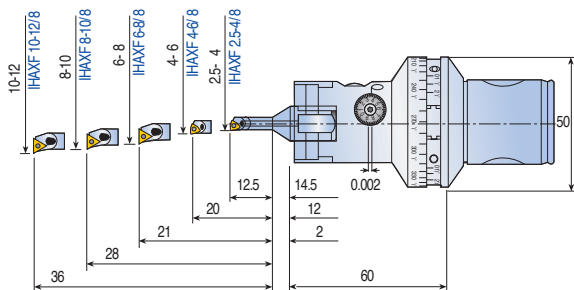
Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHF MB50-80	MB50	6-220
MB80-80	MB80	6-220

KIT BHF MB 50-32 BL

Kit

Kit di barenatura BHF MB 50-32 BL ($\phi 2.5-12\text{mm}$) con testina di finitura bilanciabile

2 μm



- 1 BHF MB50-32X60 BL
- 1 IHAXF 2.5-4/8
- 1 IHAXF 4-6/8
- 1 IHAXF 6-8/8
- 1 IHAXF 8-10/8
- 1 IHAXF 10-12/8
- 5 TPGX 090202L
- 2 WCGT 020102L

G2.5
20,000 g/min



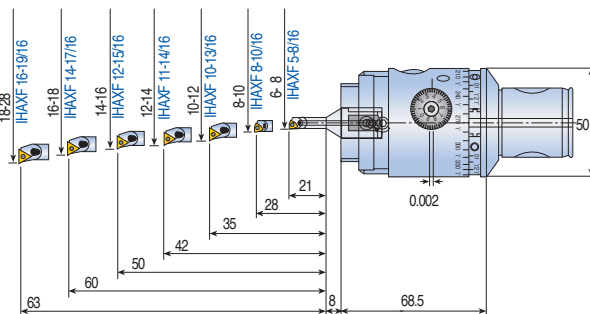
Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHF MB50-32 BL	MB50	2.5-12

KIT BHF MB50-50 BL

Kit

Kit di barenatura BHF MB50-50 BL ($\phi 6-20\text{mm}$) con testina di finitura bilanciabile

2 μm



- 1 BHF MB50-50X68 BL
- 1 IHAXF 6-8/16
- 1 IHAXF 8-10/16
- 1 IHAXF 10-12/16
- 1 IHAXF 12-14/16
- 1 IHAXF 14-16/16
- 1 IHAXF 16-18/16
- 1 IHAXF 18-22/16
- 5 TPGX 090202L
- 2 WCGT 020102L

Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHF MB50-50 BL	MB50	6-20

KIT BHF MB50-50 6-108

Kit

Kit di barenatura BHF MB50-50 6-108 (ø6-108mm) con testina di finitura

2µm

Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHF MB50-50 6-108	MB50	6-108

KIT BHF MB50-63/MB63-63

Kit

Kit di barenatura BHF MB50-63 / BHF MB63-63 (ø6-125mm) con testina di finitura

2µm

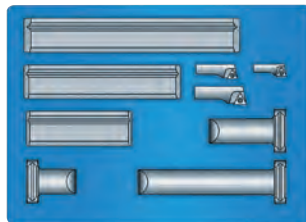
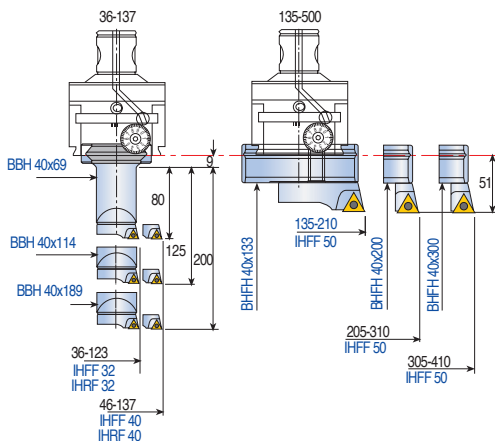
Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHF MB50-63	MB50	6-125
MB63-63	MB63	6-125

KIT BHFH MB80-125

Kit

Kit di portainseri (36-410mm) per testine per barenatura di finitura BHF MB80-125x114

2µm



- 1 BBH 40x69
- 1 BBH 40x114
- 1 BBH 40x189
- 1 BHFH 40x133
- 1 BHFH 40x200
- 1 BHFH 40x300
- 1 IHFF 25
- 1 IHFF 40
- 1 IHFF 50

Descrizione	Dimensioni (mm)	
	SS	Gamma di barenatura
KIT BHFH MB80-125	MB50	36-410

KIT IHAXF 6-30

Kit

Kit di portainseri (ø6-30mm)

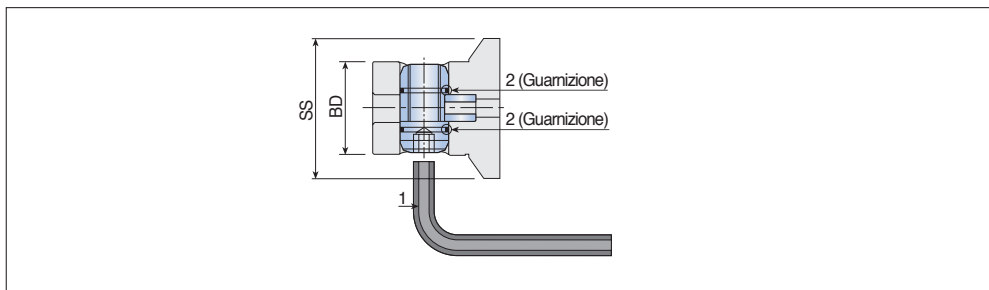
2µm

- 1 IHAXF 6-8/16
- 1 IHAXF 8-10/16
- 1 IHAXF 11-13/16
- 1 IHAXF 16-18/16
- 1 IHAXF 22-30/16
- 5 TPGX 090202L
- 3 WCGT 020102L
- T-8/5
- T-6/5



Descrizione	Dimensioni (mm)	
	Gamma di barenatura	
KIT IHAXF 6-30	6-30	

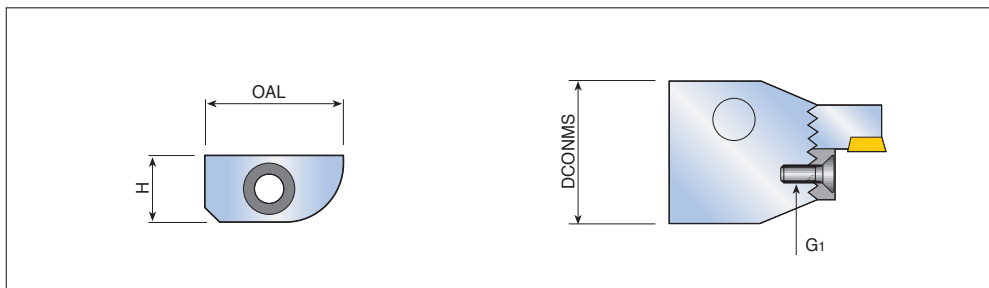
Set di serraggio per connessione MB



Descrizione	Dimensioni (mm)			
	SS	BD	1	2
MB CLAMP 16	MB16	10	2.5	-
20	MB20	13	3	-
25	MB25	16	3	-
32	MB32	20	4	ORM 0100-10
40	MB40	25	5	ORM 0130-10
50	MB50	32	6	ORM 0140-10
63-80	MB63-80	42	8	OR 2075

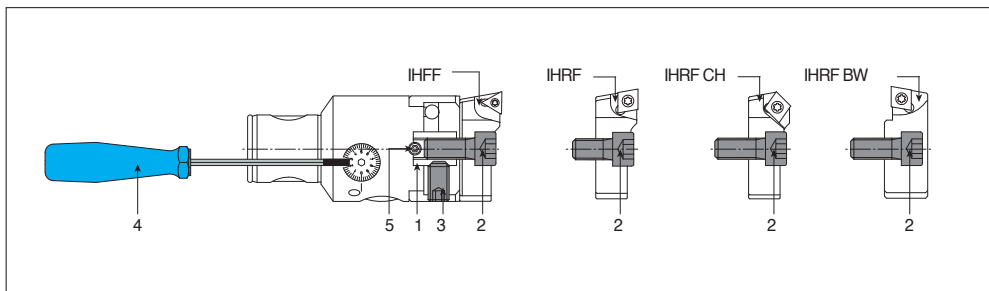
PLT

Piastrina di protezione

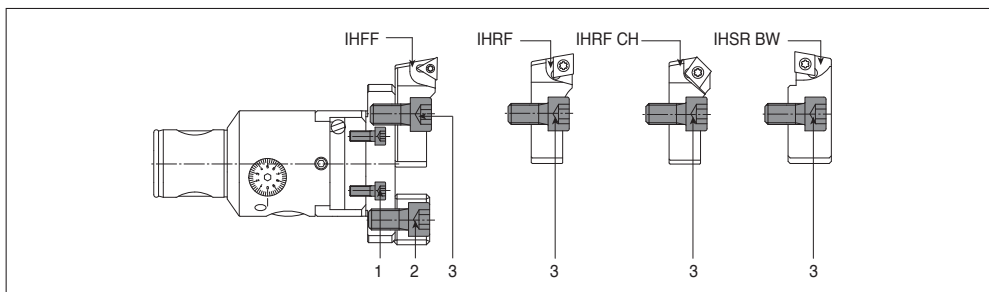


Descrizione	Dimensioni (mm)			
	DCONMS	H	OAL	G1
PLT 16	16	7	14	M 3x8
20	20	8.5	17	M 4x10
25	25	10.2	21	M 4x16
32	32	13.9	28	M 5x20
40	40	17.4	35	M 6x25
50	50	21.4	47.5	M 8x25
63	63	26.4	62	M 10x30
80	80	33.9	82.5	M 12x35

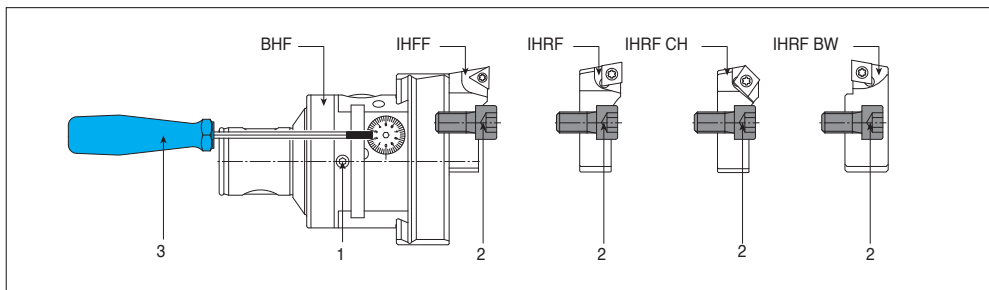
• Proteggere il millerighe quando si utilizza una cartuccia singola.



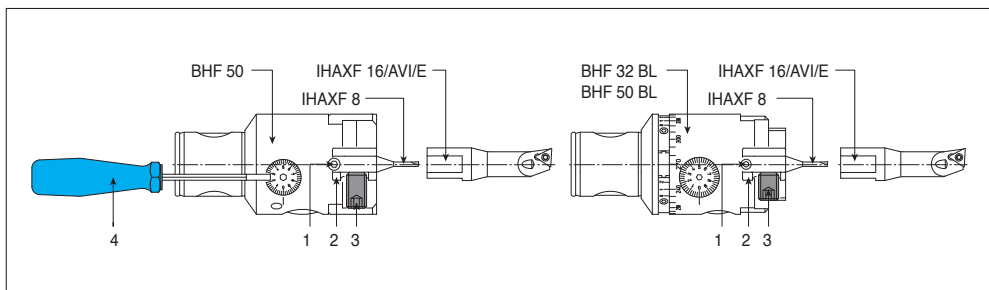
Descrizione	1	2	3	4	5
BHF...- 16...	-	SR M3x6 DIN 912	-	BH SR 1.5 HANDLE	SR M3x4.5 DIN 913
20...	-	SR M4x8 DIN 912	-	BH SR 1.5 HANDLE	SR M3x4.5 DIN 913
25...	-	SR M5x10 DIN 912	-	BH SR 2.0 HANDLE	SR M4x4 DIN 913
32...	-	SR M6x12 DIN 912	-	BH SR 2.0 HANDLE	SR M4x5 DIN 913
40...	-	SR M8x14 DIN 912	-	BH SR 2.5 HANDLE	SR M5x6 DIN 913 SR
50-60	BH NUT 10	SR M10x25 DIN 912	SR M10x16 DIN 913	BH SR 2.5 HANDLE	SR M5x8 DIN 913



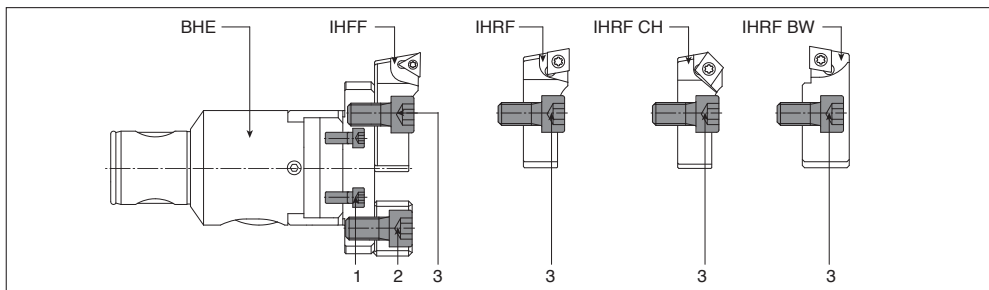
Descrizione	1	2	3
BHF...- 50...	SR M5x10 DIN 912	SR M10x20 DIN 912	SR M10x25 DIN 912



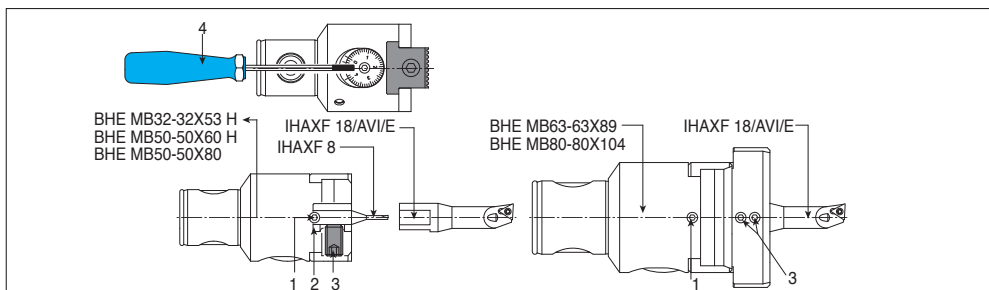
Descrizione	1	2	3
BHF...- 63...	SR M6x10 DIN 915	SR M10x25 DIN 912	BH SR 3.0 HANDLE
80...	SR M6x14 DIN 915	SR M10x25 DIN 912	BH SR 3.0 HANDLE
125...	SR M6x22 DIN 915	SR M10x25 DIN 912	BH SR 3.0 HANDLE



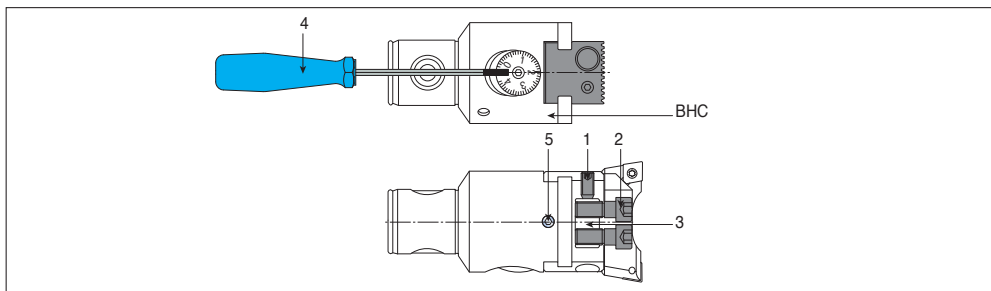
Descrizione	1	2	3	4
BHF...- 50...	SR M5x8 DIN 913	SLEEVE D 8-D16	SR M10x10 DIN 912	BH SR 2.5 HANDLE
32... BL	SR M4x5 DIN 913	-	SR M5x8 DIN 913 SR M5x12 DIN 913	BH SR 2.0 HANDLE
50... BL	SR M5x8 DIN 913	SLEEVE D 8-D16	SR M10x10 DIN 913 SR	BH SR 2.5 HANDLE



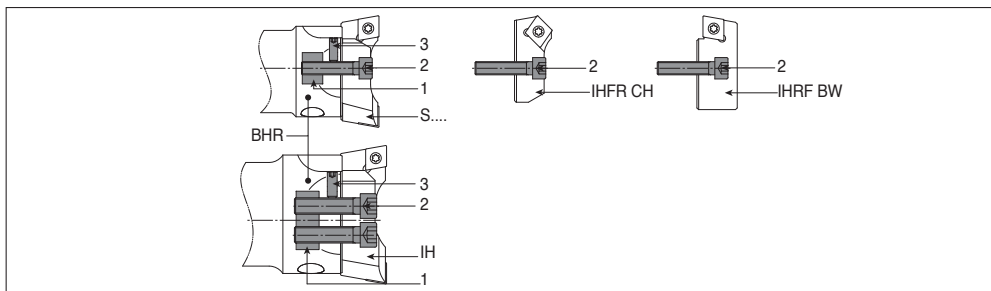
Descrizione	1	2	3
BHE MB50-50x80	SR M5x12 DIN 912	SR M10x20 DIN 912	SR M10x25 DIN 912
MB63-63x89	SR M5x25 DIN 912	SR M10x20 DIN 912	SR M10x25 DIN 912
MB80-80x104	SR M5x25 DIN 912	SR M10x20 DIN 912	SR M10x25 DIN 912



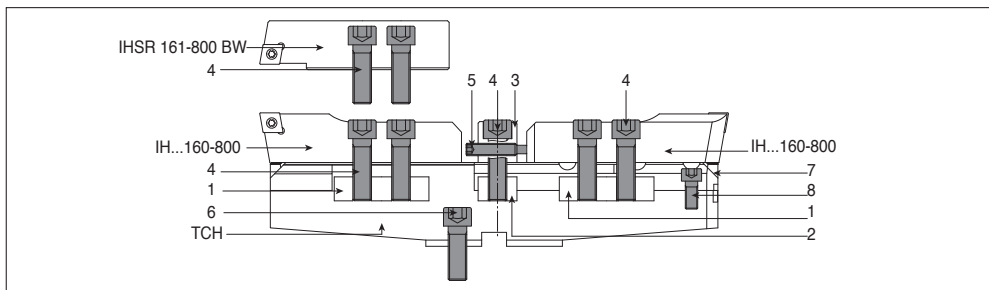
Descrizione	1	2	3	4
BHE MB32-32x53 H	SR M5x5 DIN 913	-	SR M5x8 DIN 913	BH SR 2.5 HANDLE
	SR M5x5 DIN 913	-	SR M5x12 DIN 913	BH SR 2.5 HANDLE
MB50-50x60 H	SR M6x8 DIN 913	SLEEVE D 8-D16	SR M10x10 DIN 913	BH SR 3.0 HANDLE
MB50-50x8	SR M6x8 DIN 913	-	SR M10x10 DIN 913	BH SR 3.0 HANDLE
MB63-63x89	SR M6x8 DIN 913	-	SR M6x6 DIN 913	BH SR 3.0 HANDLE
MB80-80x104	SR M6x12 DIN 913	-	SR M6x6 DIN 913	BH SR 3.0 HANDLE



Descrizione	1	2	3	4	5
BHC MB25-25x57	SR M4x8 DIN 913	BH SR M4x11 DIN 912 PT	BH NUT-BHC MB25	BH SR 2.0 HANDLE	SR M4x5 DIN 913
MB32-32x71	SR M5x10 DIN 913	BH SR M5x12.5 DIN 912 PT	BH NUT-BHC MB32	BH SR 2.5 HANDLE	SR M5x5 DIN 913
MB40-40x90	SR M6x12 DIN 913	BH SR M6x16 DIN 912 PT	BH NUT-BHC MB40	BH SR 3.0 HANDLE	SR M6x6 DIN 913
MB50-50x87	SR M6x14 DIN 913	BH SR M8x20 DIN 912 PT	BH NUT-BHC MB50	BH SR 3.0 HANDLE	SR M6x8 DIN 913
MB63-63x109	SR M6x16 DIN 913	BH SR M10x26 DIN 912 PT	BH NUT-BHC MB63	BH SR 3.0 HANDLE	SR M6x8 DIN 913
MB80-80x130	SR M6x20 DIN 913	BH SR M12x30 DIN 912 PT	BH NUT-BHC MB80	BH SR 3.0 HANDLE	SR M6x12 DIN 913



Descrizione	1	2	3
BHR MB16...16	BH NUT BHR MB16	SR M3x14 DIN 912	SR M3x4 DIN 913
MB20...20	BH NUT BHR MB20	SR M4x15 DIN 912	SR M3x5 DIN 913
MB25...25	BH NUT BHR MB25	SR M4x20 DIN 912	SR M3x8 DIN 913
MB32...32	BH NUT BHR MB32	SR M5x25 DIN 912	SR M4x12 DIN 913
MB40...50	BH NUT BHR MB40	SR M6x30 DIN 912	SR M5x14 DIN 913
MB50...50	BH NUT BHR MB50	SR M8x35 DIN 912	SR M5x12 DIN 913
MB50...63	BH NUT BHR MB63	SR M10x40 DIN 912	SR M6x16 DIN 913
MB63...63	BH NUT BHR MB63	SR M10x40 DIN 912	SR M6x16 DIN 913
MB80...80	BH NUT BHR MB80	SR M12x45 DIN 912	SR M8x25 DIN 913

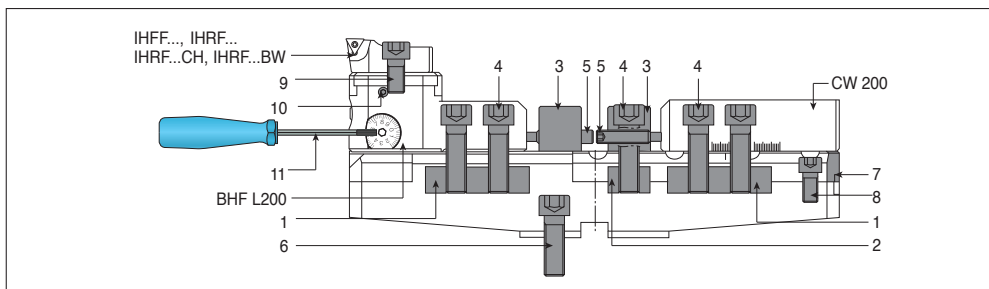


Descrizione	1	2	3	4
TCH 200-300-400	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12x40 DIN 912
500-600-700	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12x40 DIN 912

Descrizione	5	6	7	8
TCH 200-300	SR M8x40 DIN 915	SR M12x35 DIN 912	BH SERRATED PLATE 200-300	SR M8x25 DIN 912
400	SR M8x40 DIN 915	SR M12x35 DIN 912	BH SERRATED PLATE 400-700	SR M8x20 DIN 912
500-600-700	SR M8x40 DIN 915	SR M16x50 DIN 912	BH SERRATED PLATE 400-700	SR M8x25 DIN 912

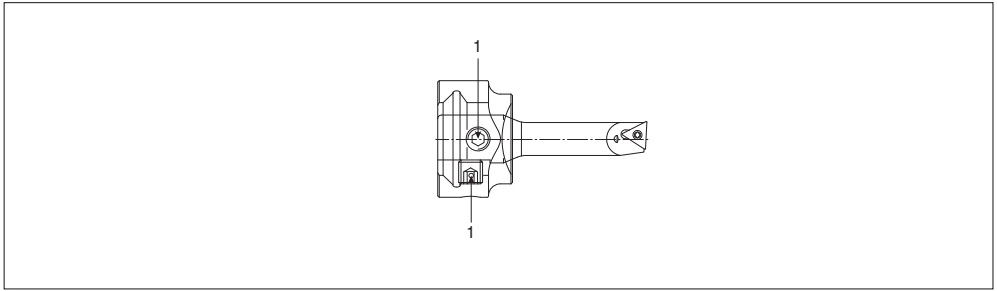
TCH

Ricambi



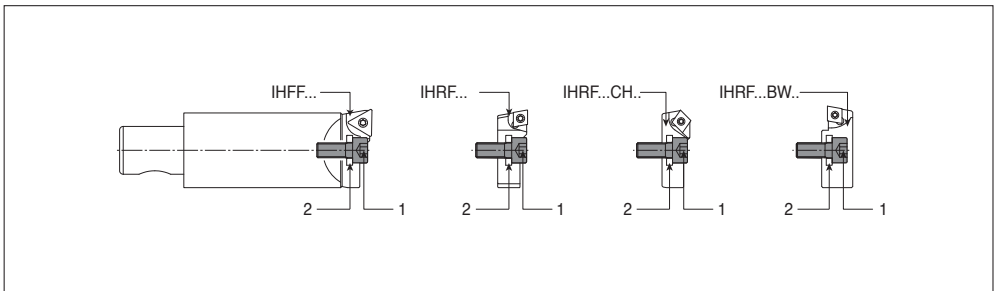
Descrizione	1	2	3	4	5
TCH 200-300-400	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12x40 DIN 912	SR M8x40 DIN 915
500-600-700	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12x40 DIN 912	SR M8x40 DIN 915

Descrizione	6	7	8	9	10	11
TCH 200-300	SR M12x35 DIN912	BH SERRATED PLATE 200-300	SR M8x25 DIN912	SR M10x20 DIN912	SR M6x8 DIN915	BH SR 3.0 HANDLE
400	SR M12x35 DIN912	BH SERRATED PLATE 400-700	SR M8x20 DIN912	SR M10x20 DIN912	SR M6x8 DIN915	BH SR 3.0 HANDLE
500-600-700	SR M16x50 DIN912	BH SERRATED PLATE 400-700	SR M8x25 DIN912	SR M10x20 DIN912	SR M6x8 DIN915	BH SR 3.0 HANDLE

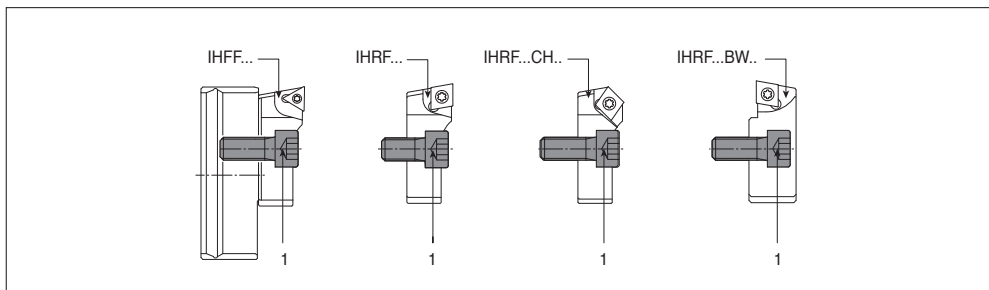


Descrizione	1
ADBH 30xD16	SR M45x8 DIN 913

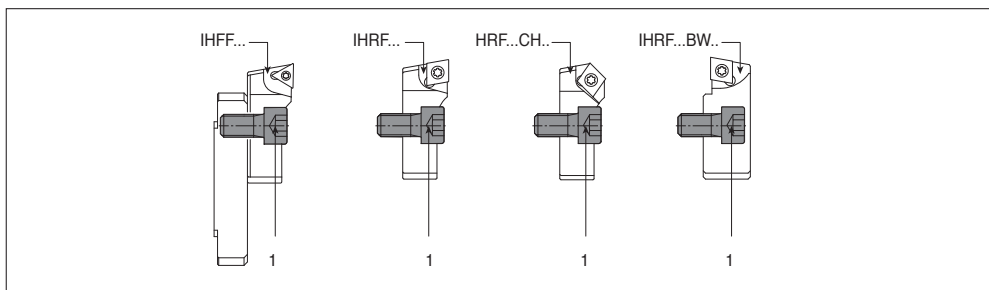
BBH-D



Descrizione	1	2
BBH D16x63	SR M5x12 DIN 912	WASHER DIN 125A M5
D16x105	SR M5x12 DIN 912	WASHER DIN 125A M5

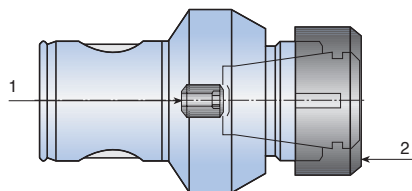


Descrizione	1
BHFH 30x75	SR M10x18 DIN 912
40x133	SR M10x18 DIN 912
30x93	SR M10x18 DIN 912
40x200	SR M10x25 DIN 912
30x135	SR M10x25 DIN 912
40x300	SR M10x25 DIN 912
40x400	SR M10x25 DIN 912



Descrizione	1
BHEH 24x75	SR M10x20 DIN 912
28x80	SR M10x25 DIN 912
28x108	SR M10x25 DIN 912
28x148	SR M10x25 DIN 912

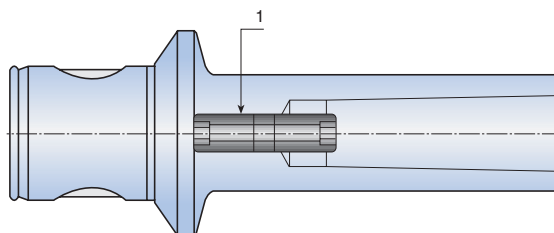
Componenti per CC



Descrizione	1	2	Chiave
CC MB16-ER11M	CC MB16 SCREW	NUT ER11 MINI	WRENCH ER11 MINI
MB20-ER16M	CC MB20 SCREW	NUT ER16 MINI	WRENCH ER16 MINI
MB25-ER20M	CC MB25 SCREW	NUT ER20 MINI	WRENCH ER20 MINI
MB32-ER25M	CC MB32 SCREW	NUT ER25 MINI	WRENCH ER25 MINI
MB40-ER25	CC MB40 SCREW	NUT ER25 TOP	WRENCH ER25
MB50-ER25	CC MB50 SCREW	NUT ER25 TOP	WRENCH ER25
MB50-ER32	CC MB50 SCREW	NUT ER32 TOP	WRENCH ER32
MB63-ER32	CC MB63 SCREW	NUT ER32 TOP	WRENCH ER32
MB63-ER40	CC MB63 SCREW	NUT ER40 TOP	WRENCH ER40

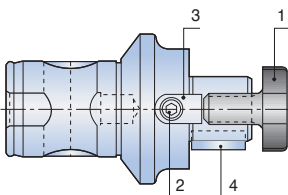
AMT MB...-MT

Vite per attacchi con morse AMT



Descrizione	1
AMT MB50-MT2	AMT MT2-SCREW
MB50-MT3	AMT MT3-SCREW
MB63-MT3	AMT MT3-SCREW
MB63-MT4	AMT MT4-SCREW

Viti per mandrino a manicotto SMH

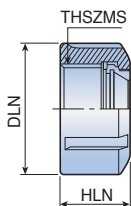


Descrizione	1	2	3	4
SMH MB40-22	M10 CLAMP SCREW SEM 22	DOG DRIVE SMH 22	KEY SMH 22	M4x10 SMH KEY SCREW
MB50-16	M 8 CLAMP SCREW SEM 16	DOG DRIVE SMH 16	KEY SMH 16	M3x 8 SMH KEY SCREW
MB50-22	M10 CLAMP SCREW SEM 22	DOG DRIVE SMH 22	KEY SMH 22	M4x10 SMH KEY SCREW
MB50-27	M12 CLAMP SCREW SEM 27	DOG DRIVE SMH 27	KEY SMH 27	M5x12 SMH KEY SCREW
MB50-32	M16 CLAMP SCREW SEM 32	DOG DRIVE SMH 32	KEY SMH 32	M6x16 SMH KEY SCREW
MB63-27	M12 CLAMP SCREW SEM 27	DOG DRIVE SMH 27	KEY SMH 27	M5x12 SMH KEY SCREW
MB63-32	M16 CLAMP SCREW SEM 32	DOG DRIVE SMH 32	KEY SMH 32	M6x16 SMH KEY SCREW
MB80-32	M16 CLAMP SCREW SEM 32	DOG DRIVE SMH 32	KEY SMH 32	M6x16 SMH KEY SCREW
MB80-40	M20 CLAMP SCREW SEM 40	DOG DRIVE SMH 40	KEY SMH 40	M6x18 SMH KEY SCREW

NUT ER ... TOP

Ghiera ER - Top™

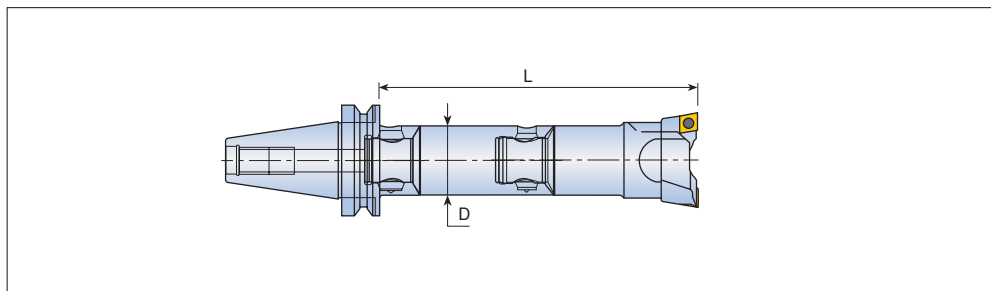
DIN 6499



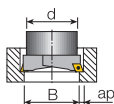
Descrizione	Dimensioni (mm)		
	DLN	HLN	THSZMS
NUT ER16 TOP	28	17	M22x1.5
ER20 TOP	34	19	M25x1.5
ER25 TOP	42	20	M32x1.5
ER32 TOP	50	22	M40x1.5
ER40 TOP	63	25	M50x1.5

Condizioni di taglio raccomandate

BHR testina per barenatura di sgrossatura



Profondità di taglio



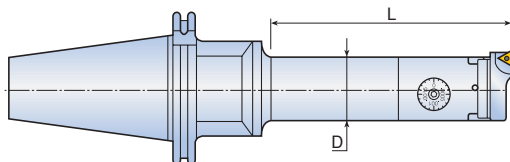
è consigliato partire con un diametro $B \geq$ diametro bareno

B Campo di lavorazione	ap (mm) Acciaio	ap (mm) Ghisa, alluminio
18-28	1.5-2	2-2.5
28-50	2-3	2.5-3.5
50-68	3-4	3.5-5
68-200	4-5	5-7
200-500	5-6	6-8

- In caso di utilizzo di un singolo tagliente applicare solo metà dell'avanzamento.

Condizioni di taglio raccomandate

Testina per barenatura di finitura



Stabilità *** – Buona
 ** – Normale
 * – Scarsa

Material	L/D	Stabilità	Velocità di taglio (Vt=m/min)	Avanzamento fg=mm/giro		Prof. di taglio (ap)
				Raggio inserto		
				R=0.2	R=0.4	
Acciaio al carbonio HB≤200	L/D=2.5	***	200-300	0.05-0.08	0.08-0.10	
	L/D=4	**	160-250	0.05-0.08	0.08-0.10	
	L/D=6.3	*	70-100	0.05-0.08	-	
Acciaio al carbonio HB>200	L/D=2.5	***	160-250	0.05-0.08	0.08-0.10	
	L/D=4	**	150-200	0.05-0.08	0.08-0.10	
	L/D=6.3	*	70-100	0.05-0.08	-	
Acciaio inox	L/D=2.5	***	150-200	0.05-0.08	0.08-0.10	
	L/D=4	**	120-180	0.08-0.10	0.08-0.10	
	L/D=6.3	*	70-80	0.05-0.08	0.08-0.10	
Acciaio legato HB 480-550	L/D=2.5	***	120-160	0.05-0.08	0.08-0.10	
	L/D=4	**	100-140	0.05-0.08	0.08-0.10	
	L/D=6.3	*	70-100	0.05-0.08	-	
Ghisa	L/D=2.5	***	120-160	0.05-0.08	0.08-0.10	
	L/D=4	**	100-140	0.05-0.08	0.08-0.10	
	L/D=6.3	*	70-100	0.05-0.08	-	
Alluminio	L/D=2.5	***	300-400	0.05-0.08	0.08-0.10	
	L/D=4	**	250-350	0.05-0.08	0.08-0.10	
	L/D=6.3	*	100-150	0.05-0.08	-	

Condizioni di taglio raccomandate

Stabilità ••• – Buona
•• – Normale
• – Scarsa

Operazioni di barenatura con barenò combi BHC di sgrossatura e finitura

Materiale	L/D	Stabilità	Velocità di taglio (Vt=m/min)	Avanzamento fg=mm/giro		Prof. di taglio (mm)			
				Raggio inserto					
				R=0.2	R=0.4				
Acciaio al carbonio HB<200	L/D=2.5	•••	160-250	0.1-0.2	0.1-0.2	0.15-0.3	1.5	2	2.5
	L/D=4	••	120-180	0.1-0.2	0.1-0.2				
	L/D=6.3	•	70-100	* 0.1-0.15	0.1-0.2				
Acciaio al carbonio HB>200	L/D=2.5	•••	140-200	0.1-0.2	0.1-0.2	0.15-0.3	1.5	2	2.5
	L/D=4	••	100-160	0.1-0.2	0.1-0.2				
	L/D=6.3	•	70-100	* 0.1-0.15	0.1-0.2				
Acciaio inox AISI 304-316	L/D=2.5	•••	100-140	0.1-0.2	0.1-0.2	0.15-0.3	1.5	2	2.5
	L/D=4	••	80-110	0.1-0.2	0.1-0.2				
	L/D=6.3	•	60-90	* 0.1-0.15	0.1-0.2				
Ghisa	L/D=2.5	•••	120-160	0.1-0.2	0.1-0.2	0.15-0.3	2	2.5	3
	L/D=4	••	90-120	0.1-0.2	0.1-0.2				
	L/D=6.3	•	60-90	* 0.1-0.15	0.1-0.2				
Alluminio	L/D=2.5	•••	250-350	0.1-0.2	0.1-0.2	0.15-0.3	2	2.5	3
	L/D=4	••	160-250	0.1-0.2	0.1-0.2				
	L/D=6.3	•	100-150	* 0.1-0.15	0.1-0.2				

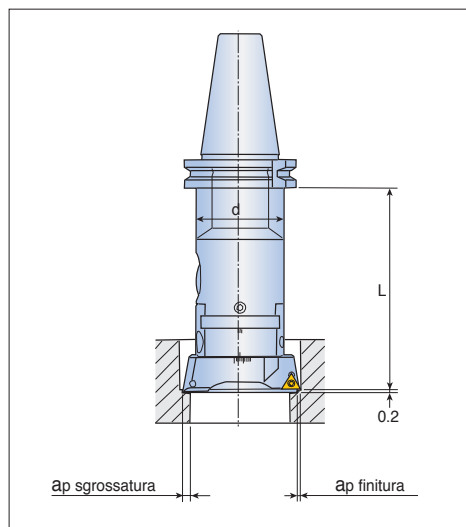
- *Solo per inserti di finitura
- Utilizzare inserti di sgrossatura e finitura con lo stesso raggio.

Vt Velocità di taglio (m/min)
D Diametro del pezzo (m/min)
n Numero di giri al minuto (g/min)
Va Avanzamento (mm/min)
Fg Avanzamento al giro (mm/giro)
π 3.14

$$Vt = \frac{\pi \cdot D \cdot n}{1000}$$

$$n = \frac{VC \ 1000}{\pi \cdot D}$$

$$Va = n \cdot fg$$



Condizioni di taglio raccomandate

Stabilità *** – Buona
** – Normale
* – Scarsa

BHR condizioni di barenatura di sgrossatura

ap(mm), R(mm), Vt(m/min), fg(mm/giro)

ISO	Materiale	Durezza HB	Sporgenza L/D	Gamma di barenatura D18-28		Gamma di barenatura D28-50		Gamma di barenatura D50-68		
				ap (mm)	0.5-1.2	1.2-2.5	0.8-1.5	1.5-2.5	0.8-1.5	1.5-3.0
				R (mm)	0.2	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
P	Acciaio al carbonio	HB<200	2.5 ***	Vt	150-180	120-150	160-200	140-170	160-200	140-180
				fg	0.1-0.2	0.08-0.2	0.15-0.2	0.1-0.175	0.15-0.25	0.08-0.2
			4 ***	Vt	140-160	100-140	160-180	120-150	160-180	120-150
				fg	0.1-0.18	0.08-0.15	0.1-0.12	0.08-0.1	0.1-0.12	0.08-0.1
			6.3 ***	Vt	60-80	40-60	60-90	50-60	70-90	50-70
				fg	0.06-0.12	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.1	0.06-0.1
	Acciaio al carbonio	HB>200	2.5 ***	Vt	130-160	100-130	140-180	120-160	140-180	120-160
				fg	0.08-0.15	0.08-0.12	0.08-0.2	0.06-0.12	0.08-0.25	0.08-0.18
			4 ***	Vt	110-140	80-110	100-140	80-120	100-140	80-120
				fg	0.08-0.12	0.08-0.1	0.08-0.15	0.06-0.15	0.08-0.2	0.06-0.15
			6.3 ***	Vt	70-90	60-70	80-100	60-80	80-100	60-80
				fg	0.08-0.1	0.06-0.08	0.06-0.1	0.06-0.08	0.08-0.15	0.06-0.1

ISO	Materiale	Durezza HB	Sporgenza L/D	Gamma di barenatura D68-120		Gamma di barenatura D120-200		Gamma di barenatura D200-500		
				ap (mm)	0.8-1.5	1.5-3.5	0.8-2.0	2.0-3.5	0.8-1.5	2.0-4.0
				R (mm)	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
P	Acciaio al carbonio	HB<200	2.5 ***	Vt	160-220	150-180	180-250	160-200	220-280	200-220
				fg	0.15-0.25	0.08-0.2	0.15-0.3	0.1-0.2	0.15-0.3	0.1-0.15
			4 ***	Vt	140-180	120-150	160-200	140-180	N.R.	N.R.
				fg	0.08-0.2	0.08-0.15	0.1-0.2	0.08-0.15		
			6.3 ***	Vt	70-100	50-70	N.R.	N.R.	N.R.	N.R.
				fg	0.06-0.1	0.06-0.1				
	Acciaio al carbonio	HB>200	2.5 ***	Vt	140-180	120-160	150-170	100-140	100-140	80-120
				fg	0.15-0.3	0.12-0.2	0.15-0.25	0.1-0.2	0.15-0.3	0.1-0.2
			4 ***	Vt	120-150	100-140	100-130	80-110	N.R.	N.R.
				fg	0.1-0.2	0.1-0.18	0.08-0.2	0.08-0.12		
			6.3 ***	Vt	80-100	60-80	N.R.	N.R.	N.R.	N.R.
				fg	0.08-0.12	0.08-0.12				

- N.R. = non raccomandato
- Nel caso di una configurazione con cartuccia singola o a gradino applicare solo metà dell'avanzamento

Condizioni di taglio raccomandate

Stabilità *** – Buona
** – Normale
* – Scarsa

BHR condizioni di barenatura di sgrossatura

ap(mm), R(mm), Vt(m/min), fg(mm/giro)

ISO	Materiale	Durezza HB	Sporgenza L/D	Gamma di barenatura D18-28		Gamma di barenatura D28-50		Gamma di barenatura D50-68		
				ap (mm)	0.5-1.0	1.0-1.8	0.5-1.0	1.0-1.8	0.5-1.2	1.2-2.0
				R (mm)	0.2	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
P	Acciaio legato	HB<200	2.5 ***	Vt	140-160	90-120	150-180	100-130	160-200	140-180
				fg	0.08-0.18	0.08-0.15	0.08-0.2	0.08-0.18	0.1-0.25	0.1-0.15
			4 **	Vt	100-130	70-100	110-150	90-120	140-180	100-130
				fg	0.08-0.15	0.06-0.12	0.08-0.18	0.08-0.15	0.8-0.18	0.08-0.12
			6.3 *	Vt	80-100	60-90	80-100	70-90	100-140	80-120
				fg	0.08-0.15	0.06-0.1	0.06-0.12	0.06-0.12	0.6-0.15	0.08-0.1
	Acciaio legato	HB>200	2.5 ***	Vt	130-150	120-140	130-150	120-140	140-170	120-150
				fg	0.08-0.18	0.06-0.15	0.08-0.18	0.06-0.15	0.08-0.2	0.08-0.18
			4 **	Vt	100-130	100-120	100-130	100-120	120-150	100-120
				fg	0.08-0.15	0.06-0.13	0.08-0.15	0.06-0.13	0.08-0.18	0.08-0.15
			6.3 *	Vt	80-100	70-90	80-100	70-90	100-120	70-90
				fg	0.08-0.12	0.06-0.11	0.08-0.12	0.06-0.11	0.08-0.12	0.06-0.11
ISO	Materiale	Durezza HB	Sporgenza L/D	Gamma di barenatura D68-120		Gamma di barenatura D120-200		Gamma di barenatura D200-500		
				ap (mm)	0.8	2.5	0.8-2.0	2.0-3.5	0.8-2.0	2.0-4.0
				R (mm)	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
P	Acciaio legato	HB<200	2.5 ***	Vt	160-220	140-180	160-220	140-180	160-220	140-180
				fg	0.1-0.3	0.1-0.25	0.1-0.3	0.1-0.25	0.1-0.35	0.1-0.3
			4 **	Vt	150-200	120-160	120-160	120-160	N.R.	N.R.
				fg	0.1-0.2	0.08-0.18	0.1-0.2	0.08-0.18		
			6.3 *	Vt	100-140	100-140	N.R.	N.R.	N.R.	N.R.
				fg	0.08-0.18	0.08-0.15				
	Acciaio legato	HB>200	2.5 ***	Vt	160-200	140-180	140-200	140-180	140-200	140-180
				fg	0.1-0.3	0.01-0.25	0.01-0.35	0.01-0.3	0.01-0.35	0.01-0.3
			4 **	Vt	140-160	120-140	150-180	120-140	N.R.	N.R.
				fg	0.08-0.2	0.08-0.15	0.08-0.12	0.08-0.12		
			6.3 *	Vt	100-120	70-90	N.R.	N.R.	N.R.	N.R.
				fg	0.08-0.16	0.08-0.12				

- N.R. = non raccomandato
- Nel caso di una configurazione con cartuccia singola o a gradino applicare solo metà dell'avanzamento

Condizioni di taglio raccomandate

Stabilità *** – Buona
** – Normale
• – Scarsa

BHR condizioni di barenatura di sgrossatura

ap(mm), R(mm), Vt(m/min), fg(mm/giro)

ISO	Materiale	Durezza HB	Sporgenza L/D			Gamma di barenatura D18-28		Gamma di barenatura D28-50		Gamma di barenatura D50-68	
				ap (mm)	R (mm)	0.5-1.0	1.0-1.8	0.5-1.0	1.0-1.8	0.5-1.2	1.2-2.0
				R (mm)	0.2	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8	
M	Acciaio inox	Ferritico e martensitico	2.5 ***	Vt	100-150	110-130	120-160	100-150	120-160	110-160	
				fg	0.08-0.15	0.06-0.12	0.08-0.18	0.06-0.12	0.08-0.25	0.08-0.18	
			4 **	Vt	90-130	90-120	100-140	90-140	100-150	80-120	
				fg	0.08-0.12	0.06-0.1	0.08-0.12	0.06-0.1	0.08-0.18	0.08-0.12	
			6.3 •	Vt	60-90	50-70	60-90	50-70	70-100	50-70	
				fg	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.08-0.1	
	Acciaio inox	Austenitico	2.5 ***	Vt	110-130	100-130	120-150	110-140	110-160	100-150	
				fg	0.08-0.15	0.06-0.12	0.08-0.18	0.06-0.12	0.08-0.25	0.06-0.12	
			4 **	Vt	80-110	80-110	90-130	90-120	100-150	90-130	
				fg	0.08-0.12	0.06-0.1	0.08-0.12	0.06-0.1	0.08-0.18	0.06-0.1	
			6.3 •	Vt	60-90	50-70	60-90	50-70	70-100	50-70	
				fg	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1	
	Acciaio inox fusione	Ferritico e martensitico	2.5 ***	Vt	90-130	100-130	120-150	110-140	120-160	100-150	
				fg	0.08-0.15	0.06-0.12	0.08-0.18	0.06-0.12	0.08-0.25	0.06-0.12	
			4 **	Vt	70-110	80-110	90-130	90-120	100-150	90-130	
				fg	0.08-0.12	0.06-0.1	0.08-0.12	0.06-0.1	0.08-0.18	0.06-0.1	
			6.3 •	Vt	60-90	50-70	60-90	50-70	70-100	50-70	
				fg	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1	
	Acciaio inox fusione	Austenitico	2.5 ***	Vt	80-120	70-110	100-150	90-140	110-150	100-150	
				fg	0.08-0.15	0.06-0.12	0.08-0.18	0.06-0.12	0.08-0.25	0.06-0.12	
			4 **	Vt	70-100	70-100	80-130	70-120	90-140	90-130	
				fg	0.08-0.12	0.06-0.1	0.08-0.12	0.06-0.1	0.08-0.18	0.06-0.1	
			6.3 •	Vt	60-90	50-70	60-90	50-70	70-100	50-70	
				fg	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1	
M	Acciaio inox	Ferritico e martensitico	2.5 ***	Vt	130-220	120-200	140-220	120-180	150-220	120-200	
				fg	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	
			4 **	Vt	100-160	90-140	120-180	90-140	N.R.	N.R.	
				fg	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18			
			6.3 •	Vt	70-100	50-70	N.R.	N.R.	N.R.	N.R.	
				fg	0.08-0.2	0.08-0.15					
		Acciaio inox	Austenitico	2.5 ***	Vt	120-200	100-160	120-200	100-160	120-200	100-180
					fg	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25
				4 **	Vt	100-150	90-140	100-160	90-140	N.R.	N.R.
					fg	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18	0.08-0.18	0.06-0.1
				6.3 •	Vt	70-100	50-70	N.R.	N.R.	N.R.	N.R.
					fg	0.08-0.2	0.08-0.15				
	Acciaio inox fusione	Ferritico e martensitico	2.5 ***	Vt	130-200	120-180	140-200	120-160	140-200	120-180	
				fg	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	
			4 **	Vt	110-150	90-150	100-160	90-140	N.R.	N.R.	
				fg	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18			
			6.3 •	Vt	70-100	50-70	N.R.	N.R.	N.R.	N.R.	
				fg	0.08-0.2	0.08-0.15					
	Acciaio inox fusione	Austenitico	2.5 ***	Vt	130-180	120-180	120-200	100-160	120-200	100-180	
				fg	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	
			4 **	Vt	100-140	90-140	100-160	90-140	N.R.	N.R.	
				fg	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18			
			6.3 •	Vt	70-190	50-70	N.R.	N.R.	N.R.	N.R.	
				fg	0.08-0.2	0.08-0.15					

• N.R. = non raccomandato

• Nel caso di una configurazione con cartuccia singola o a gradino applicare solo metà dell'avanzamento

Condizioni di taglio raccomandate

Stabilità ••• – Buona
•• – Normale
• – Scarsa

BHR condizioni di barenatura di sgrossatura

ap(mm), R(mm), Vt(m/min), fg(mm/giro)

ISO	Materiale	Durezza HB	Sporgenza L/D			Gamma di barenatura D18-28		Gamma di barenatura D28-50		Gamma di barenatura D50-68	
				ap (mm)	0.5-1.0	1.0-1.8	0.5-1.0	1.0-1.8	0.5-1.2	1.2-2.0	
				R (mm)	0.2-0.4	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8	
K	Ghisa grigia GG 10-25	HB<200	2.5 •••	Vc	120-160	100-140	120-180	110-150	120-180	110-150	
				f	0.06-0.15	0.06-0.18	0.06-0.15	0.06-0.12	0.08-0.2	0.08-0.12	
			4 ••	Vc	100-140	80-120	100-150	80-120	100-150	80-120	
				f	0.06-0.12	0.06-0.1	0.06-0.12	0.06-0.1	0.08-0.12	0.08-0.1	
			6.3 •	Vc	70-100	60-90	70-100	60-90	70-100	60-90	
				f	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.08-0.1	0.08-0.1	
	Ghisa grigia GG 25-40		2.5 •••	Vc	140-200	140-200	140-220	160-250	180-220	200-280	
				f	0.06-0.15	0.06-0.18	0.06-0.15	0.06-0.18	0.08-0.2	0.1-0.25	
			4 ••	Vc	120-160	120-160	120-180	140-200	140-180	180-220	
				f	0.06-0.12	0.06-0.14	0.06-0.12	0.06-0.14	0.08-0.12	0.08-0.2	
			6.3 •	Vc	70-100	60-90	70-100	60-90	60-100	60-120	
				f	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.08-0.1	0.08-0.1	
Ghisa GGG	Sferoidale e grafite	2.5 •••	Vc	120-180	120-180	120-200	140-220	180-220	180-240		
			f	0.06-0.15	0.06-0.18	0.06-0.15	0.06-0.18	0.08-0.18	0.1-0.2		
		4 ••	Vc	120-160	120-160	120-180	140-200	140-200	160-220		
			f	0.06-0.12	0.06-0.14	0.06-0.12	0.06-0.14	0.08-0.12	0.08-0.18		
		6.3 •	Vc	60-100	60-90	60-100	60-90	60-90	60-100		
			f	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.08-0.1	0.08-0.1		

ISO	Materiale	Durezza HB	Sporgenza L/D			Gamma di barenatura D18-28		Gamma di barenatura D28-50		Gamma di barenatura D50-68	
				ap (mm)	0.8-1.8	1.8-2.5	0.8-2.0	2.0-3.0	0.8-2.0	2.0-3.5	
				R (mm)	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	
K	Ghisa grigia GG 10-25	HB<200	2.5 •••	Vt	120-200	110-150	150-250	180-280	150-250	180-280	
				fg	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.35	0.08-0.25	0.08-0.35	
			4 ••	Vt	100-150	80-120	120-170	120-170	N.R.	N.R.	
				fg	0.08-0.18	0.08-0.2	0.08-0.18	0.08-0.25	N.R.	N.R.	
			6.3 •	Vt	70-100	60-90	N.R.	N.R.	N.R.	N.R.	
				fg	0.08-0.15	0.08-0.12	N.R.	N.R.	N.R.	N.R.	
	Ghisa grigia GG 25-40		2.5 •••	Vt	50-300	250-350	250-350	250-350	250-350	250-350	
				fg	0.12-0.35	0.12-0.35	0.15-0.3	0.15-0.4	0.15-0.3	0.15-0.4	
			4 ••	Vt	200-270	230-300	200-300	200-270	N.R.	N.R.	
				fg	0.1-0.25	0.12-0.3	0.15-0.3	0.15-0.35	N.R.	N.R.	
			6.3 •	Vt	70-150	60-120	N.R.	N.R.	N.R.	N.R.	
				fg	0.1-0.15	0.12-0.25	N.R.	N.R.	N.R.	N.R.	
Ghisa GGG	Sferoidale e grafite	2.5 •••	Vt	200-240	200-280	200-280	220-300	220-300	220-300		
			fg	0.12-0.3	0.12-0.3	0.15-0.3	0.15-0.35	0.15-0.3	0.15-0.35		
		4 ••	Vt	160-220	180-240	180-250	200-270	N.R.	N.R.		
			fg	0.1-0.2	0.12-0.25	0.15-0.25	0.15-0.35	N.R.	N.R.		
		6.3 •	Vt	60-100	60-100	N.R.	N.R.	N.R.	N.R.		
			fg	0.1-0.15	0.12-0.2	N.R.	N.R.	N.R.	N.R.		

• N.R. = non raccomandato

• Nel caso di una configurazione con cartuccia singola o a gradino applicare solo metà dell'avanzamento

Condizioni di taglio raccomandate

Stabilità *** – Buona
 ** – Normale
 * – Scarsa

BHR condizioni di barenatura di sgrossatura

ap(mm), R(mm), Vt(m/min), fg(mm/giro)

ISO	Materiale	Durezza HB	Sporgenza L/D	Gamma di barenatura D18-28		Gamma di barenatura D28-50		Gamma di barenatura D50-68		
				ap (mm)	0.5-1.5	1.5-2.5	0.5-1.5	1.5-2.5	0.5-2.0	1.2-3.0
				R (mm)	0.2-0.4	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
N	Alluminio fusione	>12Si	2.5 ***	Vt	200-300	240-350	200-300	240-350	200-300	240-350
				fg	0.06-0.2	0.06-0.25	0.06-0.2	0.06-0.25	0.06-0.25	0.06-0.3
			4 **	Vt	150-220	150-220	150-220	150-220	150-220	150-220
				fg	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2
			6.3 *	Vt	60-100	60-100	60-100	60-100	60-100	60-100
				fg	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1
	Alluminio fusione	<12Si	2.5 ***	Vt	180-250	220-280	180-250	220-280	180-250	220-280
				fg	0.06-0.2	0.06-0.25	0.06-0.25	0.06-0.25	0.06-0.25	0.06-0.3
			4 **	Vt	120-220	120-220	120-220	120-220	120-220	120-220
				fg	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.25
			6.3 *	Vt	60-100	60-100	60-100	60-100	60-100	60-100
				fg	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1

ISO	Materiale	Durezza HB	Sporgenza L/D	Gamma di barenatura D68-120		Gamma di barenatura D120-200		Gamma di barenatura D200-500		
				ap (mm)	0.8-3.0	1.8-4.0	0.8-3.0	2.0-4.0	0.8-3.0	2.0-4.5
				R (mm)	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
N	Alluminio fusione	>12Si	2.5 ***	Vt	200-300	240-350	200-300	240-350	200-300	240-350
				fg	0.06-0.25	0.06-0.3	0.06-0.25	0.06-0.4	0.06-0.25	0.06-0.4
			4 **	Vt	150-220	150-220	150-220	150-220	N.R.	N.R.
				fg	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2		
			6.3 *	Vt	60-100	60-100	N.R.	N.R.	N.R.	N.R.
				fg	0.06-0.1	0.06-0.1				
	Alluminio fusione	<12Si	2.5 ***	Vt	180-250	220-280	180-250	220-280	180-250	220-280
				fg	0.06-0.25	0.06-0.3	0.06-0.3	0.06-0.4	0.06-0.3	0.06-0.4
			4 **	Vt	120-220	120-220	120-220	120-220	N.R.	N.R.
				fg	0.06-0.2	0.06-0.25	0.06-0.2	0.06-0.25		
			6.3 *	Vt	60-100	60-100	N.R.	N.R.	N.R.	N.R.
				fg	0.06-0.1	0.06-0.1				

- N.R. = non raccomandato
- Nel caso di una configurazione con cartuccia singola o a gradino applicare solo metà dell'avanzamento

Informazioni tecniche

► Istruzioni di utilizzo per bareni di finitura BHF 16-50 e BHE

■ Assemblaggio

- Nel montaggio della testina di barenatura BHF il perno deve essere ben fermo all'interno della parte cilindrica
- Inserire la testina BHF nell'attacco
- Stringere il perno ② ruotando in senso orario

Le coppie di serraggio raccomandate sono le seguenti:

Coppia raccomandata	(N·m)
BHF MB16 - 16 x 34	2.0 - 2.5
BHF MB20 - 20 x 40	4.0 - 4.5
BHF MB25 - 25 x 50	6.5 - 7.5
BHF MB32 - 32 x 63	7.0 - 8.0
BHF MB40 - 40 x 80	16.0 - 18.0
BHF MB50 - 50 x 60	30.0 - 35.0

- Inserire la vite ⑤ fino al completo inserimento nel foro della ghiera o nel bareno

■ Smontaggio

- Allentare il perno ② ruotando in senso antiorario

■ Posizionamento

- Allentare la vite ① prima di iniziare qualsiasi regolazione della slitta
- Ruotare la ghiera graduata ⑥ in senso antiorario
- Regolare la posizione della slitta utensile ⑦ nei 4 mm disponibili
- Bloccare la slitta utensile con la vite dedicata ④ nella posizione desiderata
- Stringere la vite ④
- Prima di qualsiasi aggiustamento della slitta allentare la vite ④

■ Manutenzione

Settimanalmente:

- Lubrificare attraverso l'ugello di oliatura ③ con olio ISO UN G220

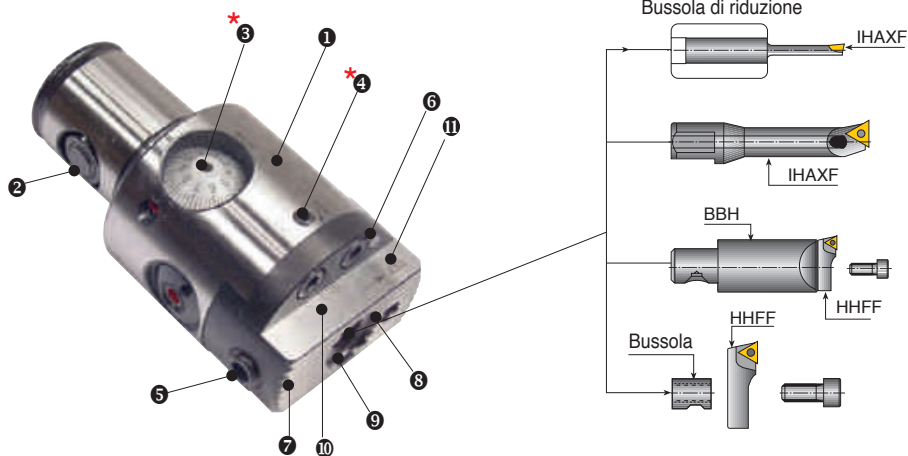
Periodicamente:

- Pulire e lubrificare la superficie cilindrica e conica di accoppiamento
- Lubrificare il perno ② con lubrificante antifrizione
- Pulire e lubrificare la slitta guida dell'utensile

■ Note importanti:

- Il portautensili deve essere sempre saldamente fissato sulla slitta

* A causa del fenomeno di gioco di ritorno (back-lash) se si sorpassa il valore richiesto ruotare la ghiera graduata ⑥ in senso opposto di minimo un giro e quindi regolare di nuovo il valore.



- | | | | |
|--------------------|---------------------------------|----------------------|--|
| ① Corpo | *④ Vite bloccaggio slitta | ⑦ Slitta | ⑩ Campo di regolazione
Non superare il campo indicato!! |
| ② Perno | ⑤ Vite bloccaggio portautensili | ⑧ Ugello di oliatura | |
| *③ Ghiera graduata | ⑥ Refrigerante | ⑨ Foro utensile H7 | ⑪ Indicazione posizione tagliente |

Informazioni tecniche

► Istruzioni di utilizzo per bareni di finitura BHF 63-125

■ Assemblaggio

- Nel montaggio della testina di barenatura BHF il perno deve essere ben fermo all'interno della parte cilindrica
- Inserire la testina BHF nell'attacco
- Stringere il perno ② ruotando in senso orario

Le coppie di serraggio raccomandate sono le seguenti:

Coppia raccomandata	(N·m)
BHF MB50 - 63 x 87	30 - 35
BHF MB50 - 80 x 94	30 - 35
BHF MB63 - 63 x 87	80 - 90
BHF MB80 - 80 x 94	80 - 90
BHF MB80 - 125 x 94	80 - 90
BHF MB50 - 50 x 60	30.0 - 35.0

- Inserire la vite ⑤ fino al completo inserimento nel foro della ghiera o nel barenò

■ Smontaggio

- Allentare il perno ② ruotando in senso antiorario

■ Posizionamento

- Allentare la vite ① prima di iniziare qualsiasi regolazione della slitta
- Ruotare la ghiera graduata ⑥ in senso antiorario
- Regolare la posizione della slitta utensile ⑦ nei 4 mm disponibili
- Bloccare la slitta utensile con la vite dedicata ④ nella posizione desiderata
- Stringere la vite ④
- Prima di qualsiasi aggiustamento della slitta allentare la vite ④

■ Manutenzione

Settimanalmente:

- Lubrificare attraverso l'ugello di oliatura ③ con olio ISO UN G220

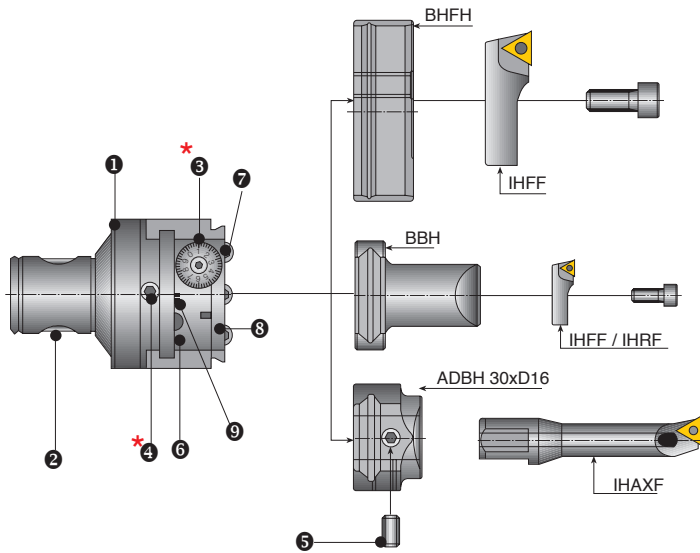
Periodicamente:

- Pulire e lubrificare la superficie cilindrica e conica di accoppiamento
- Lubrificare il perno ② con lubrificante antifrizione
- Pulire e lubrificare la slitta guida dell'utensile

■ Note importanti:

- Il portautensili deve essere sempre saldamente fissato sulla slitta

* A causa del fenomeno di gioco di ritorno (back-lash) se si sorpassa il valore richiesto ruotare la ghiera graduata ⑥ in senso opposto di minimo un giro e quindi regolare di nuovo il valore.



- | | | |
|--------------------|---------------------------------|--|
| ① Corpo | *④ Vite bloccaggio slitta | ⑦ Slitta |
| ② Perno | ⑤ Vite bloccaggio portautensili | ⑧ Ugello di oliatura |
| *③ Ghiera graduata | ⑥ Refrigerante | ⑨ Campo di regolazione
Non superare il campo indicato!! |



MATERIALI E GRADI



Tabella comparazione gradi

► Gradi per fresatura

ISO	TaeguTec	Sandvik	Walter	Seco	Kennametal	MMC	Sumitomo	Tungaloy	Kyocera	Korloy	Iscar
P	TT2510 TT7080	GC4330 GC1010 GC4220 GC4230	WKP25S WKP25 WAM10 WAM20	MP1500 MP2500 T250M		MP6120 MP6130	ACP100	T3130 AH3035 AH710		PC3525 PC3530 NC5330 NC5340	IC5400 IC380 IC950 IC520M
	TT9080 TT9030	GC4340 GC1130 GC1030 GC4240	WKP25S WAM30	F25M F30M MP3000	KC522M KC635M	MP9120 MP9130 VP15TF VP20RT	ACP3000 ACU2500 ACP200	AH110 AH725 AH730 GH330 AH120	PR830 PR1225 PR1230 PR9925	PC3700 PC3500 PC3600 PC5300 PC3535	IC808 IC908
	TT8080 TT8020 TT8525B	GC4240 GC1040	WKP35G WKP35S WKP45S WSM45X WSP45S	F40M T350M T60M	KC725M KC735M KC935M KCPM20 KCPM40	VP30RT FH7020 F7030	ACP300 ACZ350	AH140 T3130 AH130 AH3135 AH9030	PR1525	PC3600 PC5400 NC5350 NCM535	IC830 IC330 IC845 IC928 IC300
MS	TT9080 TT9030	GC1010 GC1130 GC1030 GC2030 S30T GC1025	WAM30 WXM35	MS2050 MP3000 MP2500 F25M F30M	KC635M	MP9120 MP9130 VP15TF VP20RT	ACU2500 ACK300 ACP300 ACM100 ACM200	AH110 T3130 AH8015 AH725 AH120 AH4035	PR830 PR1210 PR1025 PR1225 PR905	PC5300 PC9530	IC808 IC90
	TT8080 TT8020	GC2040 GC1040 S40T	WSM30 WSM35 WSM35S WSP45S WSM45X	F40M MS2500 MM4500	KC725M KCPM40	MP9140 MP7130 MP7140 VP30RT MV1020	ACM200 ACM300	AH130 AH140 SH730 AH3135	PR1225 PR905	PC5400 NC5350	IC840 IC830 IC330 IC328
K	TT7515	GC1010 GC3220 GC3330 GC4220	WAK15	MK1500 MP1500 MH1000	KC915M KCK15	MC5020	ACK3000 ACU2500 ACK200	T1115		PC8110	IC5100 IC4100 DT7150 IC4050
	TT6080	GC1020 GC4230 GC3040 GC4240	WKP25S WKP35G WKP35S WKK25S	MK2000 MK3000 MK2050	KCK15 KC520M	MP8010 VP15TF VP20RT F5010	ACK300 ACZ310	AH110 AH725 AH120 AH8015	PR905 PR1210 PR1510	PC6510 NC5330 NC5340 NCM535	IC810 IC910
H	TT2510 TT9080	GC1010 GC1130 GC1030	WHH15	F15M MH1000 MP1500 MP3000	KC510M KC522M KC635M	MP8010 VP15TF MP9130		AH710 AH750		PC2005 PC2010 PC2015 PC2510 PC2505 PC210F	IC903 IC900

Tabella comparazione gradi

► Gradi cermet

ISO	TaeguTec	Sandvik	Kennametal	Sumitomo	Kyocera	Tungaloy	Mitsubishi	Korloy	Seco	NTK	Ceramtec
P01	PV3010		KT315	T110A T1000A T1500Z	PV30 TN30 PV710 PV720	GT720 NS710	AP25N VP25N NX2525	CC1500		T3N	SC35
P10	CT3000	CT5005 CT5015 CT525 GC1525	KT5020 KT125 KT150	T1500A T1200A T2000Z	PV7025 PV60 TN60 TN610 TN620	GT730 GT530 AT9530 GT9530 NS520 NS720	MP3025 UP35N	CC2500 CN1500 CN2000 CC125	TP1030 CMP CM	T15 C30 Q50	SC15 SC8015 SC7035 SC40
P20	CT7000	CT530	KT1120 KT175	T3000Z T130Z	TN100M TC60M PV90	NS730 NS530 NS9530	VP45N NX99 NX3035	CN2500 CN20 CN30	TP1020 C15M	N20 Z15 C50 C7X	SC7015 SC60
P30				T250A T130A T4500A		NS740	MX3030 NX4545			Q50 N40	
M01	PV3010		KT315		PV30 TN30 PV7010	GT720 NS710	AP25N NX2525	CC105 CC115 CN1000		T3N	SC35
M10	CT3000	CT5005 CT5015 CT525 GC1525	KT5020 KT125 KT150	T1500A	PV7020 PV60 TN6010 TN6020 TN60	GT730 GT530 NS520 NS720	MP3025 UP35N	CN2000 CC125	TP1030 CMP CM	T15 C30 Q50	SC15 SC8015 SC7035 SC40
M20	CT7000	CT530	KT1120 KT175	T250A	TN100M TC60M PV90	NS730 NS530	VP45N NX99 NX3035	CN20 CN30	TP1020 C15M	N20 Z15 C50 C7X	SC7015 SC60
M30				T4500A		NS740	MX3030 NX4545			Q50 N40	
K01			KT315	T1000A	PV30 PV7005 PV7020 PV60	NS710 GT720 NS720 NS520	AP25N NX2525	CN1000	CM	T3N Q15	SC8015
K10	CT3000	CT5015	KT125		TN60 TN6020	GT730 NS730 NS530		CN2000	C15M	T15 Z15 C7Z	SC7015

Tabella comparazione gradi

► Gradi ceramici

ISO	Composizione	TaeguTec	Sandvik	Kennametal	Ceramtec	NTK	Kyocera	Sumitomo	Tungaloy
K	Al ₂ O ₃ , ZrO ₂	AW120	CC620		SN60 SN80	HC1 HW2	KA30		
	Al ₂ O ₃ , TiC	AB30	CC650	KY1615	SH2 SH4	HC2 HC5 HC6	A65	NB90S NB90M	LX21
	Si ₃ N ₄ , Al ₂ O ₃ , Y ₂ O ₃ , AlN	AS500		KY1310 KY3000	SL506 SL508 SL606 SL608	SX9			
	Si ₃ N ₄ , ZrO ₂ , Al ₂ O ₃ , Y ₂ O ₃	AS10	CC6090 CC6190	KY1320 KY3500 KYK10	SL500 SL808	SX1 SX6 SX8	KS6000 KS6050	SN2000K SN2100K NS260	FX105 CX710
	Rivestito CVD	SC10	CC1690	KY3400 KYK25	SL550C SL554C SL654C SL658C SL854C SL858C	SP2 SP9	CS7050	NS260C	
H	Al ₂ O ₃ , TiCN	AB20			SH2 SH4	HC2 HC5 HC7			LX10
	Rivestito PVD	AB2010	CC6050	KY4400		ZC4 ZC7	A66N PT600M	NB100C	LX11
S	Al ₂ O ₃ , SiC whisker	TC430	CC670	KY4300		WA1 WA5		WX2000	
	Si ₃ N ₄ , TiN	TC3020 AS20 TC3030	CC6060 CC6065	KY2100 KY1540 KYS30 KYS25 KYS30P		SX5 SX7 SX9	KS6030 KS6040	SN1000S SN2000S	

Tabella comparazione gradi

► Gradi CBN

ISO	TaeguTec	Iscar	Tungaloy	Sumitomo	Sandvik	Kennametal	Mitsubishi	Kyocera	Seco
H	TB610	IB10H IB50	BX310	BN1000 BNX1	CB7105 CB7015	KB1610	MBC010	KBN510	CBN10
		IB10HC		BNC80 BNC100 BNC2010		KB5610 KB9610	MB8025 BC8105	KBN10M KBN10C KBN25C	CBN050C
	TB2015 TB650	IB20H IB55	BX330 BX530	BN250 BN2000 BNX20	CB7115 CB7025	KB1625	MB810	KBN525	CBN100
		IB25HA	BXM10	BNC160 BNC2020		KB5625	MB820 BC8110	KBN05M KBN25M	CBN160C
	TB670	IB25HC	BX360 BX380	BNX25 BN350	CB7125 CB7135 CB50		MB825 MB8025 BC8120		CBN150 CBN170
			BXM20 BXA20	BNC200 BNC300			MB835 BC8020 BC8130	KBN30M	CBN060K CBN100P
K	TB7015 TB730	IB90	BX930 BX850 BX950	BN500 BN7500 BN7000	CB50	KB1630 KB1345	MB4020 MB710	KBN60M KBN65B	CBN200
		IB05S IB10S	BX470 BX480	BN700 BNC500	CB7050	KB5630 KB9640	MB730	KBN65M KBN70M	CBN400C
	KB90A TB7020		BX90S BXC90	BNS800			MBS140	KBN900	CBN300 CBN350

Tabella comparazione gradi

► Gradi PCD

ISO	TaeguTec	Iscar	Tungaloy	Sumitomo	Sandvik	Kennametal	Mitsubishi	Kyocera	Seco	NTK
N01-N10	TD810 KP500	ID8	DX180 DX160	DA90		KD1405	MD203	KPD230	PCD30M PCD30	
N05-N20	KP300	ID5	DX140	DA150	CD10	KD1400	MD220	KPD010	PCD20	PD1
N15-N30	KP100 TD830		DX120 DX110	DA2200 DA1000		KD1425	MD205	KPD001	PCD10 PCD05	PD2

► Gradi per fresatura SFEED-RUSH

I gradi SFEED-RUSH hanno migliorato la tenacità e la resistenza alle scheggiature attraverso uno speciale processo di trattamento post-rivestimento dei gradi CVD. Attraverso il processo di trattamento post-rivestimento gli inserti monocolori sono stati trasformati in due colori diversi: uno sul lato e l'altro sulla parte superiore (vedere le illustrazioni qui sotto).



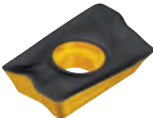
ISO	Grado	ISO	Colore inserto
P	TT8525B	P30-P45	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Colore giallo</p> </div> <div style="text-align: center;">  </div> <div style="text-align: center;">  <p>Grado migliorato SFEED-RUSH</p> <p>Due colori: giallo e nero</p> </div> </div>



Tabella conversione durezza

Vickers 50kg HV	Brinell HB sfera 10 mm carico 3000kgf		Rockwell				Shore HS	Resistenza N/mm ² (kgf/mm ²)
	Sfera standard	Sfera in metallo duro	Scala A 60kgf cono di diamante HRA	Scala B 100kgf sfera 1/16 HRB	Scala C 150kgf cono di diamante HRC	Scala D 100kgf cono di diamante HRD		
1900			93.1		80.5			
1800			92.6		79.2			
1700			91.9		77.9			
1600			91.3		76.6			
1500			90.5		75.3			
1450			90.1		74.6			
1400			89.6		74.0			
1350			89.1		73.4			
1300			88.7		72.7			
1250			88.3		72.1			
1200			87.9		71.5			
1150			87.5		70.9			
1100			87.1		70.3			
1050			86.6		69.6			
1000			86.2		68.9			
940			85.6		68.0	76.9	97	
920			85.3		67.5	76.5	96	
900			85.0		67.0	76.1	95	
880		(767)	84.7		66.4	75.7	93	
860		(757)	84.4		65.9	75.3	92	
840		(745)	84.1		65.3	74.8	91	
820		(733)	83.8		64.7	74.3	90	
800		(722)	83.4		64.0	74.8	88	
780		(710)	83.0		63.3	73.3	87	
760		(698)	82.6		62.5	72.6	86	
740		(684)	82.2		61.8	72.1	84	
720		(670)	81.8		61.0	71.5	83	
700		(656)	81.3		60.1	70.8	81	
690		(647)	81.1		59.7	70.5		
680		(638)	80.8		59.2	70.1	80	
670		630	80.6		58.8	69.8		
660		620	80.3		58.3	69.4	79	
650		611	80.0		57.8	69.0		
640		601	79.8		57.3	68.7	77	2205(210)
630		591	79.5		56.8	68.3		2020(206)
620		582	79.2		56.3	67.9	75	1985(202)
610		573	78.9		55.7	67.5		1950(199)
600		564	78.6		55.2	67.0	74	1905(194)
590		554	78.4		54.7	66.7		1860(190)
580		545	78.0		54.1	66.2	72	1825(186)
570		535	77.8		53.6	65.8		1795(183)
560		525	77.4		53.0	65.4	71	1750(179)
550	(505)	517	77.0		52.3	64.8		1750(174)
540	(496)	507	76.7		51.7	64.4	69	1660(169)
530	(488)	497	76.4		51.1	64.0		1620(165)
520	(480)	488	76.1		50.5	63.5	67	1570(160)
510	(473)	479	75.7		49.8	62.9		1530(156)
500	(465)	471	75.3		49.1	62.2	66	1459(153)
490	(456)	460	74.9		48.4	61.6		1460(149)
480	488	452	74.5		47.7	61.3	64	1410(144)





• Nota: il testo grigio viene dalla tabella ASTM E 140 (calcolata da SAE-ASM-ASTM insieme)

Vickers 50kg HV	Brinell HB sfera 10 mm carico 3000kgf		Rockwell				Shore HS	Resistenza N/mm ² (kgf/mm ²)
	Sfera standard	Sfera in metallo duro	Scala A 60kgf cono di diamante HRA	Scala B 100kgf sfera 1/16 HRB	Scala C 150kgf cono di diamante HRC	Scala D 100kgf cono di diamante HRD		
470	441	442	74.1		46.9	60.7		1570(160)
460	433	433	73.6		46.1	60.1	62	1530(156)
450	425	425	73.3		45.3	59.4		1459(153)
440	415	415	72.8		44.5	58.8	59	1460(149)
430	405	405	72.3		43.6	58.2		1410(144)
420	397	397	71.8		42.7	57.5	57	1370(140)
410	388	388	71.4		41.8	56.8		1330(136)
400	379	379	70.8		40.8	56.0	55	1290(131)
390	369	369	70.3		39.8	55.2		1240(127)
380	360	360	69.8	(110.0)	38.8	54.4	52	1250(123)
370	350	350	69.2		37.7	53.6		1170(120)
360	341	341	68.7	(109.0)	36.6	52.8	50	1130(115)
350	331	331	68.1		35.5	51.9		1095(112)
340	322	322	67.6	(108.0)	34.4	51.1	47	1070(109)
330	313	313	67.0		33.3	50.2		1035(105)
320	303	303	66.4	(107.0)	32.2	49.4	45	1005(103)
310	294	294	65.8		31.0	48.4		980(100)
300	284	284	65.2	(105.5)	29.8	47.5	42	950(97)
295	280	280	64.8		29.2	47.1		935(96)
290	275	275	64.5	(104.5)	28.5	46.5	41	915(94)
285	270	270	64.2		27.8	46.0		905(92)
280	265	265	63.8	(103.5)	27.1	45.3	40	890(91)
275	261	261	63.5		26.4	44.9		875(89)
270	256	256	63.1	(102.0)	25.6	44.3	38	855(87)
265	252	252	62.7		24.8	43.7		840(86)
260	247	247	62.4	(101.0)	24.0	43.1	37	825(84)
255	243	243	62.0		23.1	42.2		805(82)
250	238	238	61.6	99.5	22.2	41.7	36	795(81)
245	233	233	61.2		21.3	41.1		780(79)
240	228	228	60.7	98.1	20.3	40.3	34	765(78)
230	219	219		96.7	(18.0)		33	730(75)
220	209	209		95.0	(15.7)		32	695(71)
210	200	200		93.4	(13.4)		30	670(68)
200	190	190		91.5	(11.0)		29	635(65)
190	181	181		89.5	(8.5)		28	605(62)
180	171	171		87.1	(6.0)		26	580(59)
170	162	162		85.0	(3.0)		25	545(56)
160	152	152		81.7	(0.0)		24	515(53)
150	143	143		78.7			22	490(50)
140	133	133		75.0			21	455(45)
130	124	124		71.2			20	425(44)
127	121			69.8			19	(42)
122	116			67.6			18	(41)
117	111			65.7			15	(39)

• Nota: il testo grigio viene dalla tabella ASTM E 140 (calcolata da SAE-ASM-ASTM insieme)

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
1	A 366 (1012) 1008	0.0030	C10	040 A 10 045 M 10 1449 10 CS		AF 34 C 10 XC 10
1		1.0028	Ust 34-2 (S250G1T)			A 34-2
1		1.0034	RSt 34-2 (S250G2T)	1449 34/20 HR, HS, CR, CS		A 34-2 NE
1		1.0035	St185 (Fe 310-0) St 33	Fe 310-0 1449 15 HR, HS		A 33
1	A 570 Gr. 33,36	1.0036	S235JRG1 (Fe 360 B) Ust 37-2	Fe 360 B 4360-40 B		
1		1.0037	S235JR (Fe 360 B) St 37-2	Fe 360 B 4360-40 B		E 24-2
1	1115	1.0038	GS-CK16	030A04	1A	
1	A 570 Gr. 40	1.0044	S275JR (Fe 430 B) St44-2	Fe 430 B FN 1449 43/25 HR, HS 4360-43 B		E 28-2
1		1.0045	S355JR	4360-50 B		E 36-2
1	A 570 Gr.50 A 572 Gr.50	1.0050	E295 (Fe 490-2) St 50-2	Fe 490-2 FN 4360-50 B		A 50-2
1	A 572 Gr. 65	1.0060	E335 (Fe 590-2) St 60-2	Fe 60-2 4360-55 E; 55 C		A 60-2
1		1.0060	St 60-2			
1		1.0070	E360 (Fe 690-2) St 70-2	Fe 690-2 FN		A 70-2
1		1.0112	P235S	1501-164-360B LT20		A37AP
1		1.0114	S235JU;St 37-3 U	4360-40C		E 24-3
1	A 284 Gr.D A 573 Gr.58 A 570 Gr 36;C A 611 Gr. C	1.0116	S235J2G3 (Fe 360 D 1) St 37-3	Fe 360 D1 FF 1449 37/23 CR 4360-40 D		E 24-3 E 24-4
1		1.0130	P265S	1501-164-400B LT 20		A 42 AP
1		1.0143	S275J0; St 44-3 U	4360-43C		E 28-3













					
SS	UNI	UNE	JIS	KS	GOST
	C 10 1 C 10	F.1511 F.151A	S 10C	SM 10C	10
	Fe 330, Fe 330 B FU		SS 330	SS 330	
	Fe 330 B FU				St2sp
1300	Fe 320	Fe 310-0			St0
1311	FE37BFU	AE 235 B			16D, 18Kp
1312		Fe 360 B			St3Kp
1311	Fe 360 B 1449 37/23 HR	AE 235 B Fe 360 B	STKM 12A;C	STKM 12A;C	
1325	Fe 330, Fe 330 B FU		SS 330	SS 330	
1412	Fe 430 B Fe 430 B FN	AE 275 B Fe 430 B FN	SM 400 A;B;C	SM 400 A;B;C	St4ps; sp
2172	Fe 510 B	AE 355 B			
1550	Fe 490	a 490-2	SS 490	SS 490	ST5ps; sp
2172		Fe 490-2 FN			
1650	Fe 60-2 Fe 590	A 590-2 Fe 590-2 FN	SM 570	SM 570	St6ps; sp
	Fe 60-2				
1655	Fe 70-2 Fe 690	A 690-2 Fe 690-2 FN			
	Fe 360 C	AE 235 C			
	Fe 360 C	AE 235 C			
1312	Fe 360 D1 FF				
1313	Fe 360 C FN Fe 360 D FF Fe 37-2	AE 235 D Fe 360 D1 FF			St3kp; ps; sp 16D
		SPH 265			
1414-01	Fe 430 D	AE 275 D			

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo	 AISI/SAE	 N°	 DIN	 BS	 EN	 AFNOR
1	A 573 Gr. 70 A 611 Gr.D	1.0144	S275J2G3 (Fe 430 D 1) St 44-3	Fe 430 D1 FF 4360-43 C; 43 D		E 28-3 E 28-4
1		1.0149	S275JOH; RoSt 44-2	4360-43C		
1		1.0226	DX51D; St 02 Z	Z2		GC
1	M 1010	1.0301	C10	040 A 10 045 M 10 1449 10 CS		AF 34 C 10 XC 10
1	A 621 (1008)	1.0330	DC 01 St 2; St 12	1449 4 CR 1449 3 CS		TE
1	A 619 (1008)	1.0333	Ust 3 (DC03G1) Ust 13	1449 2 CR;3 CR		E
1	A 621 (1008)	1.0334	UStW 23 (DD12G1)			SC
1	A 622 (1008)	1.0335	DD13; StW 24	1449 1 HR		3C
1	A 620 (1008)	1.0338	DC04 St4; St 14	1449 1 CR;2 CR		ES
1	A 516 Gr. 65; 55 A 515 Gr. 65;55 A 414 Gr. C A 442 Gr.55	1.0345	P235GH HI	1501 Gr. 141-360 1501 Gr. 161-360; 151-360 1501 Gr. 161-400; 154-360 1501 Gr. 164-360; 161-360		A 37 CP;AP
1	(M) 1020 M 1023	1.0402	C22	055 M 15, 070 M 20 2C/2D 1499 22 HS, CS		AF 42 C 20; XC 25;1 C 22
1	1020	1.0402	C22	050A20	2C/2D	CC20
1	1020;1023	1.0402	C22	055 M 15, 070 M 20 2C		AF 42 C 20; XC 25;1 C 22
1		1.0425	P265GH H II	1501 Gr. 161-400;151-400 1501 Gr. 164-360; 161-400 1501 Gr. 164-400;154-400		A 42 CP; AP
1	A27 65-35	1.0443	GS-45	A1		E 23-45 M
1		1.0539	S355NH;StE 335			TSE 355-4
1		1.0545	S355N; StE 355	4360-50E		E 355 R
1		1.0546	S355NL;TSIE 355	4360-50EE		E 355 FP
1		1.0547	S355JOH	4360-50C		TSE 355-3
1		1.0549	S355 NLH;TSIE 355			
1		1.0553	S355JO;St 52-3U	4360-50C		E 36-3













					
SS	UNI	UNE	JIS	KS	GOST
1411, 1412 1414	Fe 430 B, Fe 430 C (FN) Fe 430 D (FF)	AE 275 D Fe 430 D1 FF	SM 400 A;B;C	SM 400 A;B;C	St4kp> ps; sp
1412-04	Fe 430 C	Fe 430 C			
1151 10	FeP 02 G	FeP 02 G			
	C 10 1 C 10	F.1511 F.151.A	S 10C	SM 10C	10
1142	FeP 00 FeP 01 FeP 02	AP 11 AP 02	SPHD SPCD	SPHD SPCD	15kp
	FeP 12 FeP 13	AP 12 AP 13	SPHE SPHE	SPHE SPHE	10kp 08kp
1147	FeP 04	AP 04	SPCE	SPCE	08jU; JUA
1331 1330	FeE235, Fe 360 1 KW;KG Fe 360 2 KW;KG	A 37 RC I RA II	SGV 410, SGV 450, SGV 48, SPV 450;SPV 480	SGV 410, SGV 450, SGV 480, SPPV 450;SPPV 480	
1450	C 20 C 21, C 25	1 C 22 F.112	S20C	SM 20C	20
1450	C20, C21	F.112	S22C	SM 22C	20
1450	C 20; C 21;C 25	1 C 22F.112	S 20 C;S 22 C	SM 20 C;SM 22C	
1431 1430 1432 1305	Fe 410 1 KW; KG; KT Fe 410 2 KW; KG	A 42 RC I A 42 RC II	SPV 315; SPV 355 SG 295; SGV 410 SGV 450; SGV 480	SPPV 315; SPPV 355 SG 295; SGV 410 SGV 450; SGV 480	16K 20K
2134-04	Fe 510 B	Fe 355 KGN			
2334-01	FeE 355 KG	AE 355 KG			
2135-01	FeE 355 KT	AE 355 KT			
2172-04	Fe 510 C	Fe 510 C			
2135	Fe 510 D Fe 510 C	FeE 355 KTM			

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo	 AISI/SAE	 N°	 DIN	 BS	 EN	 AFNOR
1	A 633 Gr.C A 588	1.0562	P355N StE 355	1501	Gr.225-490A LT 20	FeE 355 KG N E 355 R/FP; A 510 AP
1		1.0565	P355NH; WStE 355	1501-225-490B	LT 20	A 510 AP
1		1.0566	P355NL1; TStE 355	1501-225-490A	LT 50	A 510 FP
1	1	1.0570	S355J2G3 St 52-3	Fe 510 D1 FF 1449 50/35 HR>HS 4360-50 D		E 36-3 E 36-4
1	1213	1.0715	9 SMn 28 (1SMn30)	230 M 07		S 250
1	1213	1.0715	9 SMn 28	230 M 07		S 250
1	12 L 13	1.0718	9 SMnPb 28 (11SMnPb30)			S 250 Pb
1	1108 1109	1.0721	10 S 20	(210 M 15)		10S20 10F 2
1	11 L 08	1.0722	10 SPb 20			10PbF 2
1	11 L 08	1.0722	10 SPb 20			10PbF 2
1	1215	1.0736	9 SMn 36 11SMn37)			S 300
1	12 L 14	1.0737	9 SMnPb 36 (11SMnPb37)			
1		1.0972	S315MC; QStE 300 TM	1501-40F30		E 315 D
1		1.0976	S355MC; QStE 360 TM	1501-43F35		E 355 D
1		1.0982	S460MC; QStE 460 TM	1501-50F45		
1		1.0984	S500MC; QStE 500 TM			E 490 D
1		1.0986	S500MC; QStE 500 TM	1501 - 60F55		E 560 D
1	1010	1.1121	CK 10 (C10E)	040 A 10		XC 10
1		1.1121	St 37-1	4360 40 A		
1	1015	1.1141	CK 15 (C15E)	040 A 15 080 M 15	32C	XC 12 XC 15 XC 18
1	1020 1023	1.1151	C22E CK 22	055 M 15 (070 M 20)		2 C 22 XC 18 XC 25
1	D 3	1.2080	X 210 Cr 12	BD 3		Z 200 C 12









					
SS	UNI	UNE	JIS	KS	GOST
2106	FeE 355 KG;KW	AEE 355 KG;DD	SM 490 A;B;C; YA;YB	SM 490 A;B;C; YA;YB	15GF
2106	FeE 355-2				
2107-01	FeE 355-3				
2132, 2133	17GS	AE 355 D	SM 490 A;B;C; YA;YB	SM 490 A;B;C; YA;YB	17GS
2134,	17G1S	Fe 510, D1 FF			17G1S
2174					
1912	CF SMn 28	F.2111 - 11 SMn 28	SUM 22	SUM 22	
1912	CF 9 SMn 28	11 SMn 28	SUM 22	SUM 22	
1914	CF 9 SMnPb 28	F.2112-11 SMnPb 28	SUM 22 L SUM 23 L, SUM 24 L	SUM 22 L SUM 23 L, SUM 24 L	
	CF 10 S 20	F. 2121 - 10 S 20			
	CF 10 SPb 20	F.2122-10 SPb 20			
	CF 10 SPb 20	10 SPb 20			
	CF 9 Mn 36	F.2113 - 12 SMn 35	SUM25	SUM25	
2642	FeE 355TM				
2662	FeE 490 TM FeE 560 TM				
1265	C 10, 2 C 10 2 C 15	F-1510-C 10 K	S 9 CK S 10 C	S 9 CK S 10 C	08;10
1300					
1370	C 15	C 16 F.1110-C 15 F.1511-C 16 K	S 15 S 15 CK	SM 15C SM 15CK	15
1450	C 20	C 25 F.1120-C 25 K	S 20 C, S 20 CK S 22 C	SM 20 C, SM20 CK SM22 C	20
2642					

Tabella conversione materiali

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Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
1	A36		St 44-2	4360 43 A		NFA 35-501 E 28
1			StE 320-3Z	1 501 160		
1	A572-60	1.8900	StE 380	4360 55 E		
2	(M) 1025	1.0406	C 25	070 M 26		1 C 25
2		1.0416	GS-38			20-400 M
2	A 537 Cl.1 A 414 Gr. G A 612	1.0473	P355GH	19 Mn 6		A 52 CP
2	1035	1.0501	C 35	080 A 32, 080 A 35 080 M 36, 1449 40 CS		1 C 35 AF 55 C 35 XC 38
2	1045	1.0503	CF 45 (C45G)	060 A 47 080 M 46		XC 42 H 1 TS
2	1040	1.0511	C 40	080 M 40		1 C 40 AF 60 C 40
2		1.0540	C 50			
2	A27 70-36	1.0551	GS-52	A2		280-480 M
2	A148 80-40	1.0553	GS-60	A3		320-560 M
2	A738	1.0577	S355J2G4 (Fe 510 D 2)	Fe 510 D2 FF 1501 Gr.224-460 1501 Gr. 224-490		A 52 FP
2	1140	1.0726	35 S 20	212 M 36	8M	35MF 6
2	1146	1.0727	45 S 20 (46S20)			45 MF 4
2	1035 1041	1.1157	40Mn4	150 M 36	15	35 M 5 40 M 5
2	1025	1.1158	C25E CK 25	(070 M 25)		2 C 25 XC 25
2	1536	1.1166	34Mn5			
2	1330	1.1170	28Mn6	(150 M 28), (150 M 18)		20 M 5, 28 Mn 6
2	1330	1.1170	28Mn6	150 M 5		20 M 5
2	1330	1.1170	28Mn6		14A	20 M 5
2		1.1178	C30E; CK 30	080M30		XC 32











 SS	 UNI	 UNE	 JIS	 KS	 GOST
1411					
1421					
2145	FeE390KG		S 25C	SM 25C	
	C 25 1 C 25				
1306					
2101	Fe E 355-2	A 52 RC I RA II	SGV 410	SGV 410	
2102			SGV 450	SGV 450	
			SGV 480	SGV 480	
1572	C 35	F.113	S35C	SM35C	35
1550	1 C 35				
1672	C 43		S 45 C	SM 45 C	45
	C 46				
	C 40	1 C 40	S 40 C	SM 40 C	
1674	C 50	1 C 50			
1505					
1606					
2107		A 52 RB II AE 355 D			
1957		F.210.G			
1973			S 09CK	SMn 433	
C 25	F.1120 - C 25 K	S 25 C S 28 C	S 25 C	SM 25 C	
	TO.B	SMn 433 H			
1421	C 28 Mn	28 Mn 6	SCMn 1	SCMn 1	30G
2145					
	C 28 Mn		SCMn 1	SCMn 1	
	C 30	2 C 30			

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo				
	AISI/SAE	N° DIN	BS EN	AFNOR
2	1035	1.1180 C35R Cm 35	080 A 35	3 C 35 XC 32
2	1035 1038	1.1181 C35E CK 35	080 A 35 (080 M 36)	2 C 35, XC 32 XC 38 H 1
2	1035	1.1181 C35E CK 35	080 A 35 (080 M 36)	
2	1042	1.1191 GS- Ck 45	080 A 46	XC 45
2	1049 1050	1.1206 C50E CK 50	080 M 50	2 C 50 XC 48 H 1; XC 50 H 1
2	1050 1055	1.1213 Cf 53 (C53G)	070 M 55	XC 48 H TS
2	4520	1.5423 22Mo4	1503-245-420	
3		1.0050 St50-2		
3	A 516 Gr.70 A 515 Gr. 70 A 414 Gr.F; G	1.0481 P295GH 17 Mn 4	1501 Gr. 224	a 48 Cp;AP
3	1043	1.0503 C35	060 A 47 080 M 46 1449 50 HS, CS	1 C 45 AF 65 C 45
3	1074	1.0614 C 76 D; D 75-2		XC 75
3	1086	1.0616 C 86 D; D 85-2		XC 80
3	1095	1.0618 C 92 D;D 95-2		XC 90
3	1036 1330	1.1165 30Mn5	120 M 36 (150 M 28)	35 M 5
3	1335	1.1167 30Mn5	150 M 36	40 M 5
3	1040	1.1186 C40E CK 40	060 A 40, 080 A 40 080 M 40	2 C 40 XC 42 H 1
3	1045	1.1191 C45E CK 45	080 M 46 060 A 47	2 C 45 XC 42 H 1 XC 45 XC 48 H 1











 SS	 UNI	 UNE	 JIS	 KS	 GOST
1572		F.1130-C 35 K-1			
1550	C35	F.1130-C 35 K	S 35 C	SM 35 C	35
1572					
1572	C36		S 35 C	SM 35 C	
1660	C45	F-1140			
1674	C 50				50
1674	C 53		S 50 C	SM 50 C	50
	16 Mo 5 KG; KW	F.2602- 16 Mo 5	SB 450 M	SB 450 M	SB 480 M
	FE50				
	Fe 510 KG;KT;KW Fe 510-2 KG;KT;KW FeE 295	A 47 RC I RA II	SG 365, SGV 410 SGV 450 SGV 480	SG 365, SGV 410 SGV 450 SGV 480	14G2
1672	C 45	F.114	S 45 C	SM 45 C	45
1650	1 C 45				
C 85					
		F.8211-30 Mn 5 f.8311-AM 30 Mn 5	SMn 433 H SCMn 2	SMn 433 H SCMn 2	27ChGSNMDTL 30GSL
2120		F. 1203-36 Mn 6 F. 8212-36 Mn 5	SMn 438 (H) SCMn 3	SMn 438 (H) SCMn 3	35G2 35GL
	C 40		S 40 C	SM 40 C	
1672	C 45 C 46	F.1140-C 45 K F.1142-C48 K	S 45 C S 48 C	S 45 C S 48 C	45

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo				
	AISI/SAE	N° DIN	BS EN	AFNOR
3	1049	1.1201 C45R Cm 45	080 M 46	3 C 45 XC 42 H 1 XC 48 H 1
3		1.7242 18 CrMo 4		
3	A 387 Gr. 12 Cl	1.7337 16 CrMo 4 4		
3	A 387 Gr. 12 Cl	1.7337 16 CrMo 4 4		
3		1.7362 12 CrMo 19 5	3606-625	Z 10 CD 5.05
3	A572-60	17 MnV 6	436055 E	NFA 35-501 E 36
4	1055	1.0535 C55	070 M 55	1 C 55 AF 70 C 55
4	1060	1.0601 C60	060 A 62 1449 HS,CS	43D 1 C 60 AF 70 C 55
4	1070	1.0603 C67	080 A 67 1449 70HS	XC65
4	1074 1075	1.0605 C75	1449 80 HS	
4	1055	1.1203 C55E CK 55	060 A 57 070 M 55	2 C 5 XC 55 H 1
4	1055	1.1209 C55R Cm 55	070 M 55	3 C 55 XC 55 H 1
4	1060 1064	1.1221 C60E CK 60	060 A 62 43D	2 C 60 XC 60 H 1
4	1070	1.1231 CK 67 (C67E)	060 A 67	XC 68
4	1074 1075 1078	1.1248 CK 75 (C75E)	060 A 78	XC 75
4	1086	1.1269 CK 85 (C85E)		XC 90
4	1095	1.1274 Ck 101 (C101E)		XC 100
4	W 112	1.1663 C 125 W		Y2 120
4				
5		1.0070 St70-2		
5		1.7238 49 CrMo 4		
5		1.7701 51 CrMoV 4		











					
SS	UNI	UNE	JIS	KS	GOST
1660	C 45	F.1145-C 45K-1 F.1147C 48 K-1	S 50 C	SM 50 C	
18 CrMo 4	A 18 CrMo 4 5 KW A 18 CrMo 4 5 KW 16 CrMo 20 5				
2142					
1655	C 55 1 C 55		S 55 C	SM 55 C	55
	C 60 1 C 60		S 58 C	SM 58 C	60(G)
	C 67				
	C 75				75
1655	C 55	F.1150-C 55 K	S 55 C	SM 55 C	55
	C 55	F.1155-C 55 K-1			
1655	C 60		S 58 C	SM 58 C	60
1678					60G, 60GA
1770	C 70				65GA 68GA , 70
774	C 75				75(A)
	C 90				85(A)
	C 100	F-5117	SUP 4	SPS 4	
1870					
2223					
	FE70-2				
	51 CrMoV 4				

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
6	A573-81 65	1.0116	St 37-3	4360 40 B		E 24-U
6	A515 65	1.0345	H1	1 501 161		A 37 CP
6	5120	1.0841	St 52-3	150 M 19		20 MC 5
6	9255	1.0904	55 Si 7	250A53	45	55S7
6	9254	1.0904	55 Si 7	250 A 53		55 S 7
6	9262	1.0961	60SiCr7	1 501 161		60SC6
6	L3	1.2067	100Cr6	BL3		Y100C6
6	L1	1.2108	90 CrSi 5			
6	L2	1.2210	115CrV3			100C3
6		1.2241	51CrV4			
6		1.2311	40 CrMnMo 7			
6	4135	1.2330	35 CrMo 4	708 A 37		34 CD 4
6		1.2419	105WCr6	BO1		105WC13
6	0 1	1.2510	100 MnCrW 4	BS1		8 MO 8
6	S1	1.2542	45 WCrV7			
6	S1	1.255	60WCrV7			55WC20
6	L6	1.2713	55NiCrMoV6			55NCDV7
6	L6	1.2721	50NiCr13			55 NCV 6
6	O2	1.2842	90MnCrV8	BO2		90 MV8
6	E 50100	1.3501	100 Cr 2			55WC20
6	52100	1.3505	100Cr6	2 S 135 535 A 99	31	100 C 6
6		1.5024	46Si7			45 S 7; Y 46 7;46 SI 7
6	9255	1.5025	51Si7			51 S 7 51 Si 7
6	9255	1.5026	55Si7	251 a 58		55 S 7
6	9260	1.5027	60Si7	251 A 60 251 H 60		60 S 7
6	9260 H	1.5028	65Si7			60 S 7
6		1.5120	38 MnSi 4			











					
SS	UNI	UNE	JIS	KS	GOST
1312	Fe37-3				
1330					
2172	Fe 52	F-431			
2085	55Si8	56Si7			
2090		F-431			
60SiCr8	60SiCr8				
	100Cr6				
2092	105WCR 5				
	107CrV3KU				
	35 cRmO 8 KU				
2234	35CrMo4	34CrMo4	SCM435TK	SCM435TK	
2140	10WCr6	105WCr5			
2140	10WCr6	105WCr5	SKS 31	STS 31	
2710	45 WCrV8 KU	45WCrSi8			
2710	58WCr9KU				
		F.520.S	SKT 4	STF 4	
2550		f-528			
2258	100Cr6	F.1310 - 100 Cr 6	SUJ2	STB 2	SchCh 15
		F. 1451 - 46 Si 7			
2090	48 Si 7	F.1450-50 Si 7			
	50 Si 7				
2085 2090	55 Si 7	F.1440 - 56 Si 7			55S2
	60 Si 7	F. 1441 - 60 Si 7			60S2
			50 P 7 SUP 6	SPS 6	

Tabella conversione materiali

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Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
6	A 204 Gr.A 4017	1.5415	16Mo3 15 Mo 3	1503-243 B		15 D 3
6	4419	1.5419	20Mo4	1503-243-430		
6	A 350-LF 5	1.5622	14Ni6			16N6
6	3415	1.5732	1 Ni1Cr10			14 NC 11
6	3310; 3314	1.5752	14Ni1Cr14	655M13	36A	12NC15
6		1.6587	17CrNiMo6	820A16		18NCD6
6		1.6657	14NiCrMo134			
6	5515	1.7015	15 Cr 3	523 M 15		12 C 3
6	5132	1.7033	34Cr4	530A32	18B	32C4
6	5140	1.7035	41C r4	530M40	18	42C4
6	5140	1.7045	42Cr41	530 A 40		42 C 4 TS
6	5115	1.7131	16MnCr5	527 M 17		16 MC 5
6		1.7139	16MnCr5			
6	5515	1.7176	55Cr3	527 A 60	48	55 C 3
6	4135; 4137	1.7220	34CrMo4	708 Aa 37		35 CD 4
6	4142	1.7223	41CrMo4			
6	4140	1.7225	42CrMo4	708 M 0		42 CD 4
6		1.7228	55NiCrMoV6G	823M30	33	
6		1.7262	15CrMo5			12 CD 4
6		1.7321	20 mOcR 4			
6	ASTM A182 F-12	1.7335	13CrMo4 4	1501-620Gr27		
6	A 182-F11;12	1.7335	13 CrMo 4 4	1 501 620 Gr. 27		15 CD 4.5
6	ASTM A 182 F.22	1.7380	10CrMo9 10	1501-622gr31; 45		
6	A182 F-22	1.7380	10 CrMo 9 10	1501-622		12 CD 9.10
6		1.7715	14MoV6 3	1503-660-440		
6	A355A	1.8509	41CrAlMo 7	905 M 39	41B	40 CAD 6.12
7	A570.36	1.0038	S235JRG2 (Fe 360 B) RSt 37-2	Fe 360 B FU 1449 27/23 CR 4360-40 B		E 24-2NE
7	3135	1.5710	36NiCr6	640A35		35NC6







					
SS	UNI	UNE	JIS	KS	GOST
2912	16Mo3(KG;KW)	F. 2601 - 16 Mo 3			
-2512	G 20 Mo 5 G 22 Mo5		SCPH 11	SCPH 11	
14 Ni 6 KG;KT	F.2641 - 15 Ni 6				
16NiCr11	15NiCr11	SNC415(H) SNC815(H)			
	14NiCrMo13				
	14NiCrMo131				
	34Cr4(KB)	35Cr4	SCr415(H) SCr430(H)	SCr415(H) SCr430(H)	
	41Cr4	42Cr4	SCr440(H)	SCr440(H)	
2245	41Cr4	42Cr4	SCr440	SCr440	
2511	16MnCr5	16MnCr5			
2127					
2253			SUP9(A)	SPS 9(A)	
2234					
	41CrMo4	42CrMo4	SNB 22-1	SNB 22-1	
2244					
2512	653M31				
2216		12CrMo4			
2625					
	14CrMo4 5	14CrMo45			
2216		12CrMo4	SCM415(H)	SCM415(H)	
2218	12CrMo9,10	TU.H 13MoCrV6			
2940	41CrAlMo7	41CrAlMo7			
1312	Fe 360 B FN	AE 235 B FN;FU Fe 360 B FN; FU			St3ps; sp

Tabella conversione materiali

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Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
7		1.5755	31 NiCr 14	653 M 31		18 NC 13
7	8620	1.6523	2 NiCrMo2	805M20	362	20 NCD 2
7	8740	1.6546	40 NiCrMo 22	311-Tyre 7		
7	4130	1.7218	25CrMo4	CDS 110		25 CD 4
7		1.7733	24 CrMoV 5 5			20 CDV 6
7		1.7755	GS-45 CrMOV 10 4			
7		1.8070	21 CrMoV 5 11			
8	4142	1.2332	47 CrMo 4	708 M 40	19A	42 CD 4
8	A128 (A)	1.3401	G-X120 Mn 12			Z 120 M 12
8	3435	1.5736	36 NiCr 10			30 NC 11
8	9840	1.6511	36CrNiMo4	816M40	110	40NCD3
8	4340	1.6582	35CrNiM 6	817 M 40	24	35 NCD 6
8		1.7361	32 CeMo12	722 M 24	40B	30 CD 12
8	6150	1.8159	50 CrV 4	735 A 50	47	50CrV4
8		1.8161	58 CrV 4			
8		1.8515	32 CrMo 12	722 M 24	40B	30 CD 12
8		1.8523	39CrMoV13 9	897M39	40C	
9		1.4882	X 50 CrMnNiNbN 21 9			Z 50 CMNNb 21.09
9	3135	1.5710	36NiCr6	640A35	111A	35NC6
9		1.5864	35 niCr 18			
9			31 NiCrMo 13 4	830 m 31		
10	A573-81	1.0144	ST 44-3	4360 43 C		E 28-3
10	A 619	1.0347	DCO3 RSt;RRSt 13	1449 3 CR 1449 2 CR		E
10	M 1015	1.0401	C15	080 M 15		AF 37 C12
	M 1016			080 M 15		XC 18
	M 1017			1449 17 CS		
10		1.0570	ST 52-3	4360 50 B		E 36-3
10	12L13	1.0718	9SMnPb28			S250Pb
10	(12L13)	1.0718	9 SMnPb 28			S 250 Pb











					
SS	UNI	UNE	JIS	KS	GOST
2506	20NiCrMo2	20NiCrMo2	SNCM220(H)	SNCM220(H)	
	40NiCrMo2(KB)	40NiCrMo2	SNCM240	SNCM240	
2225	25CrMo4(KB)	55Cr3	SCM420/430	SCM420/430	
	21 CrMoV 5 11				
	35 NiCr 9				
2244	42CrMo4	42CrMo4	SCM (440)	SCM (440)	
2183	GX120Mn12	F. 8251-AM-X120Mn12	SCMnH 1, SCMn H 11	SCMnH 1, SCMn H 11	110G13L
	36NiCrMo4(KB)	35NiCrMo4	SUP 10	SPS 10	
2541	35NiCrMo6(KB)		SNCM 447	SNCM 447	
2240	30CrMo12	F.124.A			
2230	50CrV4	51CrV4			
2240	32CrMo12	F.124.A			
	36CrMoV12				
			SNC236	SNC236	
2534		f-1270			
1412			SM 400A;B;C	SM 400A;B;C	
	Fep 02	AP 02			08JU
1350	C15				
	C16	F.111	S 15 C	SM 15 C	
	1 C 15				
2132	Fe52BFN/Fe52CFN		SM490A;B;C;YA;YB	SM490A;B;C;YA;YB	
1914	CF9SMnPb28	11SMnPb28			
1914	CF 9 SMnPb 28	11 SMnPb 28	SUM 22L	SUM 22L	

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
10		1.0723	15 S 22 15 S 20	210 A 15 210 M 15		
10		1.2083				
10	H 11	1.2343	x 38 CrMoV 5 1	BH 11		Z 38 CDV 5
10	H 13	1.2344	X 40 CrMoV 5 1	BH 13		Z 40 CDV 5
10	A 2	1.2363	X100 CrMoV 5 1	BA 2		Z 100 CDV 5
10	D 2	1.2379	X 155 CrVMo 12 1	BD2		Z 160 CDV 12
10	HNV3	1.2379	X210Cr12G	BD2		Z160CDV12
10	D 4 (D 6)	1.2436	X 210 CrW 12	BD6		Z 200 CD 12
10	H 21	1.2581	X 30 WCvV 9 3	BH 21		Z 30 WCV 9
10		1.2601	X 165 CrMoV 12			
10	H 12	1.2606	X 37 CrMoW 5 1	BH 12		Z 35 CWDV 5
10	D3	1.3343	S 6-5-2	BM2		Z200C12
10	N08028	1.4563				Z1NCDU31-27-03
10	ASTM A353	1.5662	X8Ni9	1501-509;510		
10	ASM A353	1.5662	X8Ni9	502-650		9 Ni
10	2517	1.5680	12Ni19	12Ni19		Z18N5
10	2515	1.5680	12 Ni 19			Z 18 N 5
11		1.3202	S 12-1-4-5	BT 15		
11		1.3207	S 10-4-3-10	BT 42		Z130WKCDV
11	T15	1.3243	S 6-5-2-5			KCV 06-05-05-04-02
11		1.3246	S 7-4-2-5			Z110 WKCDV 07-05-04
11		1.3247	S 2-10-1-8	BM 42		Z110 DKCWW 09-08-04
11	M 42	1.3249	S 2-9-2-8	BM 34		
11	T 4	1.3255	S 18-1-2-5	BT 4		Z 80 WKCV 18-05-04-0
11	M 2	1.3343	S6-5-2	BM2		Z 85 WDCV
11	M 7	1.3348	S2-9-2			Z 100 DCWV 09-04-02-











 SS	 UNI	 UNE	 JIS	 KS	 GOST
1922		F.210.F	SUM 32	SUM 32	
2314	X 37 CrMoV 5 1 KU				
2242	X40CrMoV511KU	F-5318	SKD61	STD61	
2260	X100CrMoV51KU	F-5227	SKD12	STD12	
2310	X165CrMoW12KU	X160CrMoW12KU			
2736					
2312	X215CrW 12 1 KU	F-5213			
	X30WCrV 9 3 KU	F-526	SKD5	STD5	
2310					
	X 35 CrMoW 05 KU	F.537			
2715	X210Cr13KU	X210Cr12	SUH3	STR3	
2584					
	14 Ni 6 KG;KT	XBNiO9			
	X10Ni9	F-2645	SL9N60(53)	SL9N590(520)	
	HS 12-1-5-5	12-1-5-5			
2723	HS 6-5-2-5	6-5-2-5	SKH55	SKH55	
7-4-2-5	HS 7-4-2-5	M 35			
2-10-1-8	HS 2-9-1-8 2-9-2-8	M 41			
2722	HS 652	F-5604	SKH 51	SKH 51	
2782	HS 292	F-5607			

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo				
	AISI/SAE	N° DIN	BS EN	AFNOR
11	T 1	1.3355 S 18-0-1	BT 1	Z 80 WCV 18-4-01
11	630	1.4548		Z7CNU17-04
11	HNV 3	1.4718 X45CrSi 9 3	401S45 52	Z45CS9
11	422	1.4935 x20 CrMoWV 12 1		
12	403	1.4000 X6Cr13	403 S 17	Z 6 C 13
12		1.4001 X6Cr14		
12	(410S)	1.4001 X7 Cr 13	(403 S 7)	Z 8 C 13
12	405	1.4002 X6CrA12	405S17	Z8CA12
12	405	1.4002 X6 CrAl 13	405 S 17	Z6CA13
12	416	1.4005 X12CrS 13	416 S 21	Z11 CF 13
12	410; CA-15	1.4006 (G-)X10 Cr 13	410S21 56A	Z10 C 13
12	430	1.4016 X8Cr17	Z8C17	430S15
12	430	1.4016 X6 Cr 17	430 S 15 60	Z 8 C 17
12		1.4027 G-X20Cr14	420 C 29	Z20 C 13M
12		1.4027 G-X 20 Cr 14	420 C 29	Z 20 C 13M
12	420	1.4028 X30 Cr 13	420 S 45	Z 30 C 13
12		1.4086 G-X120Cr29	452C11	
12	430 F	1.4104 X12CrMoS17	420 S 37	Z 10 CF 17
12	440B	1.4112 X90 CrMoV 18		
12	434	1.4113 X6CrMo 17	434 S 17	Z 8 CD 17.01
12		1.4340 G-X40CrNi27 4		
12	S31500	1.4417 X2CrNiMoSi19 5		
12	S31500	1.4417 X2 CrNoMoSi 18 5 3		
12		1.4418 X4 CrNiMo16 5		Z6CND16-04-01
12	XM 8	1.4510		Z 4 CT 17
	430 Ti			
	439			
12	430tl	1.4510 X6 CrTi 17		Z 4 CT 17
12		1.4511 X 6 CrNb 17(X 6 CrNb 17		Z 4 CNb 17
12	409	1.4512 X 6 CrTi 12 (X2CrTi12)	LW 19 409 S 19	Z 3 CT 12
12		1.4720 X20CrMo13		









					
SS	UNI	UNE	JIS	KS	GOST
	X45CrSi8	F322	SUH1	STR1	
2301	X6Cr13	F.3110 F8401	SUS403	STS 403	
2301	X6CrAl13				
2302	X6CrAl13				
2380	X12 CrSC13	F-3411	SUS 416	SUS 416	
2302	X12Cr13	F.3401	SUS 410	SUS 410	
2320	X8Cr17	F.3113			
2320	X8Cr17	F.3113	SUS 430	SUS 430	
2304					
2383	X10CrS17	F.3117	SUS430F	STS 430F	
2325	X8CrMo17		SUS434	STS 434	
2376					
2376					
2387	X 6 CrTi 17	F.3115-X 5 CrTi 17	SUS 430 LK	STS 430 LX	08 Ch17T
	X 6 CrNb 17	F.3122-X 5 CrNb 17	SUS 430 LK	STS 430 LX	
	X 6 CrTi 17		SUH 409	STR 409	

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
12	405	1.4724	X10CrA113	403S17		Z10C13
12	430	1.4742	X10CrA118	439S15	60	Z10CAS18
12	HNV6	1.4747	X80CrNiSi20	443S65	59	Z80CSN20.02
12	446	1.4749	x18 cRn 28			
12	446	1.4762	X10CrA124			Z10CAS24
12	EV 8	1.4871	X 53 CrMnNiN 21 9	349 S 54		Z 52 CMN 21.09
12	302		x12 CrNi 18 9	302 S 31		Z 10 CN 18-09
12	429		X10 CrNi 15			
13	420	1.4021	X20Cr13	420S37		Z 20 C 13
13	420	1.4031	X40 Cr 13			Z 40 C 14
13		1.4034	X46Cr13	420 S 45		Z40 C 14
13	431	1.4057	X20CrNi172	431 S 29	57	Z 15 CN 16.02
13		1.4125	X 105 CrMo 17			Z 100 CD 17
13	CA6-NM	1.4313	G-X4 CrNi 13 4	425 C 11		Z 4 CND 13-04 M
13	630	1.4542	X 5 CrNiCuNb 17 4 (X5CrNiCuNb 16-4)			
13		1.4544		S. 524 S. 526		
13	348	1.4546	X5CrNiNb 18-10	347 S 31 2 S. 130 2 S. 143/144/145 S.525/527		
13		1.4922	x20cRmV12-1			
13		1.4923	X22 CrMoV12 1			
14	304	1.4301	X 5 CrNi 18 9	304 S 15		Z 5 CN 18.09
14	303	1.4305	X10 CrNiS 18 9	303 S 21	58M	Z 8 CNF 18-09
14	304L	1.4306	X2CrNi18 9	304S12		Z2CrNi18 10
14	304L	1.4306	X2 CrNi 18 10	304 S 11		Z 3 CN 19-11
14	CF-8	1.4308	X6 CrNi 18 9	304 C 15	58E	Z 6 CN 18-10 M
14	301	1.4310	X12CrN i17 7	301 S 21		Z 12 CN 17.07











 SS	 UNI	 UNE	 JIS	 KS	 GOST
	X10CrA112	F.311			
	X8Cr17	F.3113	SUS430	STS430	
	X80CrSiNi20	F.320B	SUH4	STR4	
2322	X16Cr26		SUH446	STR446	
	X53CrMnNiN21 9		SUH35,SUH36	STR35,STR36	
2330					
2303	14210				
-2304					
	X40Cr14	F.3405	SUS420J2	STS420J2	
2321	X16CrNi16	F.3427	SUS431	STS431	
	X 105 CrMo 17				
2385	(G)X6CrNi304		SCS5	SSC5	
	X 6 CrNiTi 18 11				08Ch 18N12T
	X 6 CrNiNb 18 11				
2317	x20cRmOnl 12 01				
2332;2333					
2346	X10CrNiS18.09	F.3508	SUS303	STS303	
2352	x2cRnI18 11	F.3503	SCS19	SSC19	
2352	X2CrNi18 11				
2333			SUS304L	STS304L	
2331	X2CrNi18 07	F.3517			

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo				
	AISI/SAE	N° DIN	BS EN	AFNOR
14	304 LN	1.4311 X2 CrNiN 18 10	304 S 62	Z 2 CN18.10
14		1.4312 G-X10CrNi18 8	302C25	Z10CN18.9M
14	305	1.4312 X8 CrNi 18 12	305 S 19	
14		1.4332 X2 CrNi 18-8		
14	304	1.4350 X5CrNi18 9	304S15	58E Z6CN18.09
14	S32304	1.4362 X2 CrNiN 23 4		Z 2 CN 23-04 AZ
14	202	1.4371 X3 CrMnNiN 188 8 7	284 S 16	Z 8 CMN 18- 08-05
14	316	1.4401 X 5 CrNiMo 17 12 2 (X4 CrNiMo 17 -12-2)	316 S 13 316 S 17 316 S 19 316 S 31 316 S 33	Z 3 CND 17 -11-01 Z 6 CND 17-11 Z 6 CND 17-11-02 Z 7 CND 17-11-02 Z 7 CND 17-12-02
14	316L	1.4404 X2 CrNiMo 17 13 2 (X2 CrNiMo 17-12-2) GX 2 CrNiMoN 18-10	316 S 11, 316 S 13 316 S 14, 316 S 31; 316 S 42, S.537,316 C 12, T.75, S. 161	Z 2 CND 17-12 Z 2 CND 18-13 Z 3 CND 17-11-02 Z 3 CND 17-12-02 FF Z 3 CND 18-12-03 Z 3 CND 19.10 M
14	316LN	1.4406 X2 CrNiMoN 17 12 2 (X2CrNiMoN 18-10)	316 S 61 316 S 63	Z2 CND 17-12 AZ
14	CF-8M	1.4408 GX 5 CrNiMoN 7 12 2 G-X 6 CrNiMo 18 10	316 C 16 (LT 196) ANC 4 B	
14		1.4410 G-X10CrNiMo18 9		Z5CNaD20.12M
14	316 Ln	1.4429 X2 CrNiMo 17 -13-3	316 S 62	Z 2 CND 17-13 Az
14	316L	1.4435 X2 CrNiMo18 14 3	316 S 11;316 S 13 316 S 14;316 S 31 LW 22 LWCF 22	Z 3 CND 17-12-03 Z 3 CND 18-14-03
14	316	1.4436 X 5 CrNiMo 17 13 3 (X4CRNIMO 17-13-3)	316 S 19; 316 S 31 316 S 33 LW 23 LWCF 23	Z 6 CND 18-12-03 Z 7 CND 18-12-03






					
SS	UNI	UNE	JIS	KS	GOST
2371	X2CrNi18 10		SUS304LN	STS304LN	
2332	X5CrNi18 10	F.3551	SUS304	STS304	
2347	X 5 CrNiMo 17 12	F.3534-X 5 CrNiMo 17 12 2	SUS 316	STS 316	
2348	X 2 CrNiMo 17 12	F.3533 - X 2 CrNiMo 17 13 2			
	G-X 2 CrNiMo 19 11	F.3537 - X 2 CrNiMo 17 13 3	SUS 316 L	STS 316 L	
	X 2 CrNiMoN 17 12	F.3542-X 2 CrNiMoN 17 12 2	SUS316LN	STS316LN	
2343		F.8414-AM-X 7 CrNiMo 20 10	SCS 14	SSC 14	07 Ch 18N10G2S2MSL
2328					
2375	X 2 CrNiMoN 17 13	F.3543-X 2 CrNiMoN 17 13 3	SUS 316 LN	STS 316 LN	
2375	X 2 CrNiMoN 17 13	F.3533-X 2 CrNiMo 17 13 2	SUS 316 L	STS 316 L	O3 Ch 17N14M3
2343	X 5 CrNiMo 117 13 X 8 cRnImO 17 13	F.3543-X 5 CrNiMo 17 12 2 F.3538-X 5 CrNiMo 17 13	SUS 316	STS 316	

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo				
	AISI/SAE	N° DIN	BS EN	AFNOR
14	317L	1.4438 X2 CrNiMo 18 16 4 (X2CrNiMo 18-15-4)	317 S 12	Z 2 CND 19-15-04 z 3 cnd 19-15-04
14	(s31726)	1.4439 X2 CrNiMoN 17 13 5		Z 3 CND 18-14-06 AZ
14		1.4440 X 2 CrNiMo 18 13		
14	317	1.4449 X5 CrNiMo 17 13 3	317 S 16	
14	329	1.4449 X 4 CrNiMo 27 5 2 1.4460 (X3CrNiMo27-5-2)		(Z 3 CND 25-07 Az) Z 5 CND 27-05 Az
14	329	1.4460 X8CrNiMo27 5		
14		1.4462 X2CrNiMoN22 5 3	318 S 13	Z 3 CND 22-05 Az (Z 2 CND 24 -08 Az) (Z 3 CND 25-06-03 Az)
14		1.4500 G-X7NiCrMoCuNb25 20		Z3NCDU25.20M
14	17-7PH	1.4504	316S111	
14	443 444	1.4521 X2CrMoTi18-2	317 S 16	
14	UNS N 08904	1.4539 X1NiCrMoCuN25-20-5		Z 2 NCDU 25-20
14	CN-7M	1.4539 (G-)X1 NiCrMoCu 25 20 5		Z1 NCDU 25-02 M
14	321	1.4541 Z 6 CrNiTi 18-10	321 S 31 321 S 51 (1010;1105) LW 24 LWCF 24	Z 6 CNT 18-10
14	630	1.4542 X5 CrNiCuNb 17 4 (X5 CrNiChNb 16-4)		Z 7 CNU 15-05 Z 7 CNU 17-04
14	17-4PH	1.4542		Z7CNU17-04
14	S31254	1.4547 X1 CrNiMoN 20 18 7		
14	17-4PH	1.4548		Z7CNU17-04
14	347	1.4550 X6 CrNiNb 18 10	347 S 17	58F Z 6 CNNb 18.10
14		1.4552 G-X7CrNiNb18 9		Z4CNNb19.10M
14	17-7PH	1.4568	316S111	
14	316Ti	1.4571 X6 CrNiMoTi 17 12 2	320 S 31	Z 6 CNDT 17-12002
14		1.4581 G-X 5 CrNiMoNb	318 C 17	Z 4 CNDNb 18.12 M
14	318	1.4583 X 10CrNiMoNb 18 12	303 S 21	Z15CNS20.12








 SS	 UNI	 UNE	 JIS	 KS	 GOST
2367	X2CrNiMo18 16	f.3539-x 2 cRnlmO 18 16 4	SUS317L	STS317L	
	X 5 CrNiMo 18 15		SUS 317	STS 317	
2324		F.3309-X 8 CrNiMo 17 12 2 F.3552-X 8 CrNiMo 18 16 4	SUS 329 J 1	STS 329 J 1	
2377			SUS 329 J3L	STS 329 J3L	
	Z8CNA17-07	X2CrNiMo1712			
2326		F.3123-X 2 CrMoTiNb 18 2	SUS 444	STS 444	
2562					
2564					
2337	X 6 CrNiTi 18 11	F.3523 - X 6 CrNiTi 18 10	SUS 321	STS 321	06Ch18N10T 08Ch18N10T 09Ch18N10T 12Ch18N10T
			SCS 24 SUS 630	SSC 24 STS 630	
2378					
2338	X6CrNiNb18 11	F.3552	SUS347	STS347	
	Z8CNA17-07	X2CrNiMo1712			
2350					
	x15cRnlsl2 12				

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo				
	AISI/SAE	N° DIN	BS EN	AFNOR
14		1.4585 G-X7CrNiMoCuNb18 18		
14		1.4821 X20CrNiSi25 4		Z20CNS25.04
14		1.4823 G-X40CrNiSi27 4		
14	309	1.4828 X15CrNiSi20 12	309 S 24	58C Z15CNS20.12
14	309S	1.4833 X6 CrNi 22 13	309 S 13	Z 15 CN 24-13
14	310 S	1.4845 X12 CrNi 25 21	310S24	Z 12 CN 25-20
14	321	1.4878 X6 CrNiTi 18 9	32 1 S 20	58B Z 6 CNT 18-12 (B)
14	Ss30415	1.4891 X5 CrNiNb 18 10		Z20CNS25.04
14	S30815	1.4893 X8 CrNiNb 11		
14	304H	1.4948 X6 CrNi 18 11	304 S 51	Z 5 CN 18-09
14	660	1.498 X5 NiCrTi 25 15		Zz 8 nctv 25-15 b ff
14		X5 NiCrN 35 25		
14	S31753	X2 CrNiMoN 18 13 4		
14		X2 CrNiMoN 25 22 7		
15	CLASS20	0.6010 GG10		Ft10D
15	A48-20B	0.6010 GG-10		Ft 10 D
15	NO 25 B	0.6015 GG 15	Grade 150	Ft 15 D
15	CLASS25	0.6015 GG 15	Grade 150	Ft 15D
15	A48 25 B	0.6015 GG 15	Grade 150	Ft 15 D
15	A48-30B	0.6020 GG-20	Grade 220	Ft 20 D
15	NO 30 B	0.6020 GG 20	Grade 220	Ft 20 D
15	A436 Type 2	0.6660 GGL-NiCr202	L-NiCuCr202	L-NC 202
15	60-40-18	0.7040 GGG 40	SNG 420/12	FCS 400-12
15	No 20 B	GG 10		Ft 10 D
16	CLASS30	0.6020 GG 20	Grade 220	Ft 20D
16	CLASS45	0.6030 GG 30	Grade 300	Ft 30D
16	A48-45 B	0.6030	Grade 350	Ft 30D
16	A48-50	0.6035 GG-35	Grade 350	Ft 35 D
16	A48-60 B	0.6040 GG40	Grade 400	Ft 40 D
16	100/70/03	0.7070 GGG-70	SNG700/2	FGS 700-2











					
SS	UNI	UNE	JIS	KS	GOST
	X6CrNiMoTi17 12				
		F.8414	SCS17	SSC17	
2361	X6CrNi25 20	F.331	SUH310	STR310	
2337	X6CrNiTi18 11	F.3553	SUS321	STS321	
2372					
2368					
2333					
2570					
110	G 10				
0110-00					
0115-00	G 15	FG 15	FC150	GC150	
115	G 15	FG 15			
01 15-00	G 14	FG 15			
0120-00					
120	G 20		FC200	GC200	
0523-00					
0717-02	GS 370-17	FGE 38-17	FCD400	GCD400-18,15	
110			FC100	GC100	
120	G 20	FG 20			
130	G 30	FG 30	FC300	GC300	
01 30-00					
135	G 35	FG 35	FC350	GC350	
140					
07 37-01	GGG 70	GGG 70	FCD700	GCD700-2	

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
16		1.4829	X 12 CrNi 22 12			
17		0.7033	GGG35.3			
17		0.7033	GGG-35.3	350/22 L 40		FGS 370/17
17	60-40-18	0.7040	GGG-40	SNG 420/12		FGS 400-12
17	60/40/18	0.7043	GGG-40.3	370/7		FGS 370/17
17	80-55-06	0.7050	GGG50	SNG500/7		FGS 500/7
17	65-45-12	0.7050	GGG-50	SNG 500/7		FGS 500-7
17		0.7652	GGG-NiMn 13 7	S-NiMn 137		S-Mn 137
17	A43D2	0.7660	GGG-NiCr 20 2	Grade S6		S-NC 202
17			GGG 40.3	SNG 370/17		FGS 370-17
18	A48-40 B	0.6025	GG25	Grade260		Ft 25 D
18		0.7060	GGG60	SNG600/3		FGS600-3
18	80/55/06	0.7060	GGG-60	600/3		FGS 600/3
18	A48 40 B					
19		0.8055	GTW55			
19	32510	0.8135	GTS-35-10	B 340/12		MN35-10
19	A47-32510	0.8135	GTS-35-10	B 340/2		Mn 35-10
19	A220-40010	0.8145	GTS-45-06	P 440/7		Mn 450-6
19			GTS-35	B 340/12		
19				8 290/6		MN 32-8
19	32510		GTS-35	B340/12		MN 35-10
20		0.8035	GTM-35	W340/3		MB35-7
20		0.8040	GTW-40	W410/4		MB40-10
20		0.8045				
20		0.8065	GTMW-65			
20	A220-50005	0.8155	GTS-55-04	P 510/4		Mn 550-4
20	50005	0.8155	GTS-55-04	P 510/4		MP 50-5
20	70003	0.8165	GTS-65-02	P 570/3		Mn 650-3
20	90001	0.8170	GTS-70-02	P 690/2		Mn 700-2
20	A220-90001	0.8170	GTS-70-02			Mn 700-2











					
SS	UNI	UNE	JIS	KS	GOST
0717-15					
0717-15					
0717-02					
0717-15					
0727-02	GGG 50				
	0727-02		FCD 500	GCD 500-7	
0772-00					
0776-00					
0717-12					
125	G 25	FG 25	FC250	GC250	
07 32-03	GGG 60	GGG 60			
0727-03			FCD600	GCD600-3	
		GTW 55			
810		GTS 35			
0815-00					
	0852-00	GMN 45			FCMW370
0810-00					
814			AC4A	AC4A	
08 15			FCMW330	FCMW330	
852		GTM 35			
	GTB40	GTM 40			
	GMB45	GTM 45			
		GTM 65			
0854-00					
0854-00	GMN 55		FCMP490	PMC 490	
0856-00	GMN 65		FCMP590	PMC 590	

Tabella conversione materiali

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Gruppo				
	AISI/SAE	N° DIN	BS EN	AFNOR
20		0.8170 GTS-70-02	IP 70-2	
20	1022			
	1518	1.1133 20Mn5	120 M 19	20 M 5
20	1035	1.1183 Cf 35 (C35G)	080 A 35	XC 38 H 1 TS
20	400 10	GTS-45	P440/7	
20	70003	GTS-65	P 570/3	MP 60-3
21	Al99	3.0205		
21	1000	3.0255 Al99.5	L31/34/36	A59050C
21		3.3315 AlMg1		
22		3.1325 AlCuMg 1		
22		3.1655 AlCuSiPb		
22		3.2315 AlMgSi1		
21	7050	3.4345 AlZnMgCuO,5	L 86	AZ 4 GU/9051
23		3.2381 G-AlSi 10 Mg		
23		3.2382 GD-AlSi10Mg		
23		3.2581 G-AlSi12		
23		3.3561 G-ALMg 5		
23	ZE 41	3.5101 G-MgZn4sE1Zr1	MAG 5	
23	EZ 33	3.5103 MgSE3Zn27r1	MAG 6	G-TR3Z2
23	AZ 81	3.5812 G-MgAl8Zn1	NMAG 1	
23	AZ 91	3.5912 G-MgAl9Zn1	MAG 7	
24		2.1871 G-AlCu 4 TiMg		
24		3.1754 G-AlCu5Ni1,5		
24		3.2163 G-AlSi9Cu3		
24	4218 B	3.2371 G-AlSi 7 Mg		
24	SC64D	3.2373 G-AlSi9MGWA		A-S7G
24		3.2373 G-AlSi 9 Mg		
24	QE 22	3.5106 G-MgAg3SE2Zr1	mag 12	
24	GD-AISI12	G-ALMG5	LM5	A-SU12
23-24	A360.2	3.2383 G-AlSi0Mg(Cu)	LM9	






 SS	 UNI	 UNE	 JIS	 KS	 GOST
0862-00	GMN 70		FCMP690	PMC 690	
0864-00					
2132	G 22 Mn 3				
	20 Mn 7	F.1515-20 Mn 6	SMnC 420	SMnC 420	
1572	C 36; C 38		S 35 C	SM 35 C	35
08 52					
858			FCMP540	PMC 540	
811-04					
4231			C4BS	C4BS	
4252					
4253					

Tabella conversione materiali

► Secondo gli standard VDI 3323













Gruppo	 AISI/SAE	 N°	 DIN	 BS	 EN	 AFNOR
23-24	A356-72			2789;1973		NF A32-201
23-24	356.1			LM25		
23-24	A413.2		G-ALSi12	LM6		
23-24	A413.1		G-ALSi 12 (Cu)	LM20		
23-24	A413.0		GD-ALSi12			
23-24	A380.1		GD-ALSi8Cu3	LM24		
26	C93200	2.1090	G-CuSn 7 5 pb			U-E 7 Z 5 pb 4
26	C83600	2.1096	G-CuSn5ZnPb	LG 2		
26	C83600	2.1098	G-CuSn 2 Znpb			
26	C23000	2.1182	G-CuPb15Sn	LB1		U-pb 15 E 8
26	C93800	2.1182	G-CuPb15Sn			Uu-PB 15e 8
27		2.0240	CuZn 15			
27	C27200	2.0321	CuZn 37	cz 108		CuZn 36, CuZn 37
27	C27700	2.0321	CuZn 37	cz 108		CuZn 36, CuZn 37
27		2.0590	G-CuZn40Fe			
27	C 86500	2.0592	G-CuZn 35 Al 1	U-Z 36 N 3		HTB 1
27	C 86200	2.0596	G-CuZn 34 Al 2	HTB 1		U-Z 36 N 3
27	C 18200	2.1293	CuCrZr	CC 102		U-Cr 0.8 Zr
28		2.0060	E-Cu57			
28		2.0375	CuZn36Pb3			
28	C 94100	2.0596	G-CuZn 34 Al 2	HTB 1		U-Z 36 N 3
28	C 63000	2.0966	CuAl 10 Ni 5 Fe 4	Ca 104		U-A 10 N
28	B-148-52	2.0975	G-CuAl 10 Ni			
28	C 90700	2.105	G-CuSn 10	CT1		
28	C 90800	2.1052	G-CuSn 12	pb 2		UE 12 P
28	C 81500	2.1292	G-CuCrF 35	CC1-FF		
28		2.4764	CoCr20W15Ni			
31	N 08800	1.4558	X 2 NiCrAlTi 32 20	NA 15		
31	N 08031	1.4562	X 1 NiCrMoCu 32 28 7			

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo	 AISI/SAE	 N°	 DIN	 BS	 EN	 AFNOR
31	N 08028	1.4563	X 1 NiCrMoCuN 32 27 4			
31	N 08330	1.4564	X 12 NiCrSi 36 16	NA 17		Z 12 NCS 35.16
31	330	1.4564	X12 NiCrSi 36 16	NA 17		Z 12 NCS 37.18
31		1.4865	G-X40NiCrSi38 18	330 C 40		
31		1.4958	X 5 NiCrAlTi 31 20			
31	AMS 5544	LW2.4668	NiCr19NbMo			NC20K14
32		1.4977	X 40 CoCrNi 20 20			Z 42 CNKDOWNb
33	Monel 400	2.4360	NiCu30Fe	NA 13		NU 30
33	5390A	2.4603				NC22FeD
33	Hastelloy C-4	2.4610	NiMo16cR16Ti			
33	Nimonic 75	2.4630	NiCr20Ti	HR 5,203-4		NC 20 T
33		2.4630	NiCr20Ti	HR5,203-4		NC20T
33	Inconel 690	2.4642	NiCr29Fe			Nnc 30 Fe
33	Inconel 625	2.4856	NiCr22Mo9Nb	NA 21		NC 22 FeDNb
33	5666	2.4856	NiCr22Mo9Nb			Inconel 625
33	Incoloy 825	2.4858	NiCr21Mo	NA 16		NC 21 Fe DU
34	Monel k-500	2.4375	NiCu30 Al	NA 18		NU 30 AT
34	4676	2.4375	NiCu30Al	3072-76		
34		2.4631	NiCr20TiAl	Hr40;601		NC20TA
34	Inconel 718	2.4668	NiCr19FeNbMo			NC 19 Fe Nb
34	Inconel	2.4694	NiCr16fE7TiAl			
34		2.4955	NiFe25Cr20NbTi			
34	5383	LM2.4668	NiCr19Fe19NbMo	HR8		NC19eNB
34	5391	LW2 4670	S-NiCr13A16MoNb	3146-3		NC12AD
34	5660	LW2.4662	NiFe35Cr14MoTi			ZSNCDT42
34	5537C	LW2.4964	CoCr20W15Ni			KC20WN
34	AMS 5772		C0Cr22W14Ni			KC22WN
35	Inconel X-750	2.4669	NiCr15Fe7TiAl			NC 15 TNb A
35	Hastelloy B	2.4685	G-NiMo28			
35	Hastelloy C	2.4810	G-NiMo30			
















 SS	 UNI	 UNE	 JIS	 KS	 GOST
2584					
			SUH330	STR 330	
	XG50NiCr39 19		SCH15	HRSC 15	

Tabella conversione materiali

► Secondo gli standard VDI 3323

Gruppo						
	AISI/SAE	N°	DIN	BS	EN	AFNOR
35	AMS 5399	2.4973	NiCr19Co11MoTi			NC19KDT
35		3.7115	TiAl5Sn2			
36	R 50250	3.7025	Ti 1	2 TA 1		
36	R 52250	3.7225	Ti 1 pd	TP 1		
36	AMS 5397	LW2 4674	NiCo15Cr10MoAlTi			
37		3.7124	TiCu2	2 TA 21-24		
37	R 54620	3.7145	TiAl6Sn2Zr4Mo2Si			
37		3.7165	TiAl6V4	TA 10-13;TA 28		T-A 6 V
37		3.7185	TiAl4Mo4Sn2	TA 45-51; TA 57		
37		3.7195	TiAl 3 V 2.5			
37			TiAl4Mo4Sn4Si0.5			
37	AMS R54520		TiAl5Sn2.5	TA14/17		T-A5E
37	AMS R56400		TiAl6V4	TA10-13/TA28		T-A6V
37	AMS R56401		TiAl6V4ELI	TA11		
38	W 1	1.1545	C105W1	BW 1A		Y1105
38	W210	1.1545	C105W1	BW2		Y120
38		1.2762	75 CrMoNiW 6 7			
38	440C	1.4125	X105 CrMo 17			Z 100 CD 17
38		1.6746	32 nlcRmO 14 5	832 M 31		35 NCD 14
40	Ni- Hard 2	0.9620	G-X 260 NiCr 4 2	Grade 2 A		
40	Ni- Hard 1	0.9625	G-X 330 Ni Cr 4 2	Grade 2 B		
40	Ni- Hard 4	0.9630	G-X 300 CrNiSi 9 5 2			
40		0.9640	G-X 300 CrMoNi 15 2 1			
40	A 532 III A 25% Cr	0.9650	G-X 260 Cr 27	Grade 3 D		
40	A 532 III A 25% Cr	0.9655	G-X 300 CrNMo 27 1	Grade 3 E		
40		1.2419	105 WCr 6	105WC 13		
40	310	1.4841	X15 CrNiSi 25 20	314 S31		Z 15 CNS 25-20
41		0.9635	G-X 300 CrMo 15 3			
41		0.9645	G-X 260 CrMoNi 20 2 1			
41		0.9655	G-X 300 CrNMo 27 1			

					
SS	UNI	UNE	JIS	KS	GOST
1880	C100KU	F-5118	SK3	STC 105(STC3)	
2900	C120KU	CF.515	SUP4	SPS 4	
	0512-00				
	0513-00				
	0466-00				
		107 WCr 5 KU			

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12D-TF45	E75-E76	6NGU	E232
14D-F45XN	E77-E78	6NKU	E233
14D-F45XNH	E79	6RBE	E233
14D-F45XNW	E80	7EMT	E234
14D-F45XNW-QC	E80	7S-E45	E153
2F	E169-E170	7S-F45	E81
2FB	E224	8D-TE90	E147
2P-TE90	E136-E138	8D-TF90	E58-E59
2P-TF90	E53		
2PKT	E225	A	
2S-TE90AP	E129-E130,E135	ADBH 30XD16	H55
2S-TE90CV	E113-E114	AEB 2	F113
2S-TEF-AP	E197	AES 2-R	F118
2S-TFM90AP	E49,E52	AES 2-XL	F114
3ED-P+	D149	AES 3	F115
3ED-T0-3D	D50	AES 3-ML	F116
3ED-T0-5D	D50	AES 3-R	F119
3ED-T3/T2-3D	D49	AES 3-XL	F117
3ED-T3/T2-5D	D49	AMT MB-MT	H28
3F	E171	ANHX	E235
3FB	E226	ANHX-ANR-M	E234
3HD-PI3	D69	ANMX	E235
3HD-PI5	D70	AOMT-C45	D162
3P TE90	E117-E122	APCT	E236-E238
3P TEF	E192	APKT	E236-E237,E239-E241
3P TES	E193	AWE 3	F121
3P TF90	E41-E43	AWE 3-ML	F121
3PHT	E227	AWE 3-ML-R	F122
3PKT	E227-E228	AXCT	E242
4N TE90	E141-E146	AXCT-L	E241
4N TF90	E56-E57	AXMT	E241-E242
4NHT	E229-E230		
4NKT	E229-E230	B	
4S-TEF	E190	BBH	H55
4S-TES	E191	BBH D16x53	H52
4T-TE90	E115-E116	BES 2-T	F87
4T-TEF	E188	BES 4-T	F87
4T-TES	E189	BHC MB	H36
4T-TF90	E40	BHE MB	H38
4W-TF90	E61	BHE MB-H	H39
4WHU	E231	BHEH	H56
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6N TF90	E44-E46		

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BHF MB-BL	H44			
BHF MB-RV	H44			
BHFH	H56		C-B4340	G112
BHR MB	H30		C-EM	G104-G105
BLANK MB	H29		C-EM-E	G106
BLMP	E243		C-ER	G102-G103
BLMP-13	E244		C-ER-M	G103
BNGX	E245		C-FM	G109
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BT-DC	G87		C-ODP	G111
BT-EM	G72-G73		C-SEM-C	G107
BT-EM-E	G74		C-SEMC	G108
BT-ER	G65-G66		C-SRKIN	G110
BT-ER-BIN	G64		CAB M-M	G122
BT-ER-CLICK-IN	G67		CAB M-M-C	G122
BT-ER-SHORT	G67		CAB M-SEM-C	G124
BT-FM	G82		CATM-MB	H8
BT-FMA	G84	CC MB-ER	H23	
BT-MB	H12	CCGT-FL	H61	
BT-MT	G85	CCGT-SA	H61	
BT-MT-DRW	G86	CCMT-MT	H61	
BT-ODP	G88	CDF	D86	
BT-SCA	G79	CDP ER-M	G124	
BT-SEM	G80	CDP M-SRK	G123	
BT-SEMC	G81	CEM 2	F103	
BT-SRK	G83	CEM 2-C120	F103	
BT-SRKIN	G76	CEM 2-C60	F102	
BT-TC	G70	CENC	D178	
BT-THC	G77-G78	CFM 4-M	F101	
BT-TMC	G71	CFR-A45	D61	
BT-TSK	G68	CHA-45	H34	
BTA-DE4	D128	CHR MB	H21	
BTA-SE2/SE4	D126-D127	CHS MB-R	H21	
BTB-MB	H12	CJA	G156	
BTDI	D134	CMR	G156	
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BTSI	D130-D131	CRF 6	F123	
		CRH 4	F123	

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CVKT	E246	DIN69871-TMC	G17
CW200	H58	DIN69871-TSK	G14
CW32	H56	DMB 2	F124
D		DMR 2	F125
DC MB	H23	DTC-R	D137
DCMT-PC	H62	DTC-RF	D138
DEB 2-L	F125	DTC-S	D137
DEB 2-S	F124	E	
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DIN2080-CP	G99	ECEM 4	F104
DIN2080-DC	G99	EMH MB	H22
DIN2080-EM	G93	ER TAP	G144
DIN2080-ER	G91	ER-SEAL	G141
DIN2080-FM	G94	ER-SEAL-JET2	G142
DIN2080-MT	G97	ER-SPR	G139
DIN2080-MT-DRW	G98	ER-SPR-AA	G140
DIN2080-SEM	G95	ER-SRF	G161
DIN2080-SEMC	G96	ER-SRK	G157-G158
DIN2080-TMC	G92	ER-SRK-JET2	G159-G160
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DIN69871-EM-E	G20	FITBORE BT-EM-ADB	G69
DIN69871-ER	G11-G12	FITBORE HSK A-EM	G42
DIN69871-ER-BIN	G10	FITBORE SKA-EM-ADB	G15
DIN69871-ER-CLICK-IN	G13	FSM 4-M	F102
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DIN69871-FM	G27	GFI MT-ER	G127
DIN69871-MT	G29	GFI ST-ER	G127
DIN69871-MT-DRW	G30	GTI BT-ER	G70
DIN69871-ODP	G32	GTI DIN69871-ER	G16
DIN69871-SCA	G28	GTI ER-ST	G126
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GYRO ST-ER	G129	HSK A-SEM	G54
H		HSK A-SEM-C	G55
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HES 4-LT-R	F99	HSK E-ER	G38
HES 4-T-R	F98	HSK E-ER-BIN	G35
HES 4-XLT	F95	HSK E-MB	H10
HFM 2	F100	HSK E-ODP	G60
HFM 4	F100	HSK E-SEM	G53
HFN	E247	HSK E-SRK	G49-G50
HNCX	E248	HSK E-THC	G52
HNHX	E249	HSK F-MB	H10
HNMX	E248	HSK FM-ER	G40
HSB 2	F44-F47	HSK FM-SEM	G57
HSB 2-M	F50	HSK FM-SRKIN	G47
HSB 2-S	F49	HSR 2	F62-F68
HSB 2-S6	F48	HSR 2-M	F69-F71
HSB 2CBN	F79	HSR 4	F72-F75
HSB 4-M	F51	HSR 4-M	F76-F77
HSF 2	F52-F55	HSR 6	F78
HSF 2-M	F56-F57	HSR 6-M	F78
HSF 4	F58-F59	HXHU	E250
HSF 4-M	F60	HXKU	E250
HSF 6-M	F61	I	
HSF 6-XLT	F61	IHAXF	H51
HSK A-B16MN	G61	IHAXF-AVI	H53
HSK A-EM	G43	IHAXF-E	H53
HSK A-EM-E	G44	IHBR	H32
HSK A-ER	G36-G37	IHCR	H32
HSK A-ER-BIN	G35	IHFF	H54
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IHSR-BW	H35	LM45SE	E93
IHSR-C	H37	LM60SC	E72-E73
IHSR-CH	H33	LM75SP	E69
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IND SHRINKIN UNIT	G177	LNC	E285
IND-HSK	G177	LNCX	E285
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ISOM-MB	H13	LPKU	E251
K		M	
KIT BHE MB32-32x53 H	H66	M-CLAMP SCREW	G170
KIT BHE MB50-50x60 H	H67	MB CLAMP	H71
KIT BHE MB50-50x80	H65	MBA M	G171
KIT BHE MB63-63x89	H65	MDB-T2-3	D64
KIT BHE MB80-80x104	H66	MDB-T2-5	D65
KIT BHF MB50-32 BL	H68	MT-ER	G128
KIT BHF MB50-50 6-108	H69	MTA-TC	G128
KIT BHF MB50-50 BL	H68	MTE D-1	C31
KIT BHF MB50-63	H69	MTE D-1-C	C32
KIT BHF MB50-80	H67	MTE D-2	C33
KIT BHF MB63-63	H69	MTE90AX	E126
KIT BHF MB80-80	H67	MTEC E-ISO	C16
KIT BHFH MB80-125	H70	MTEC E-UN	C22
KIT GTI ER-ST	G126	MTEC-BSPT	C27
KIT GYRO ST-ER	G129	MTEC-ISO	C15
KIT GYRO-DIN69880 ER	G130	MTEC-NPT	C26
KIT IHAXF 6-30	H70	MTEC-NPTF	C26
KIT SHRINKIN	G178	MTEC-UN	C21
KIT ST-ER	G149	MTEC-W	C25
KIT ST-ER-M	G149	MTECB-BSPT	C27
KIT-ER	G148	MTECB-ISO	C13
L		MTECB-NPT	C26
LCD-F	D165-D166	MTECB-UN	C20
LCD-P	D164-D165	MTECB-W	C25
		MTECI-A60	C29
		MTECQ-ISO	C16

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MTECS-UNJ	C28	MXTSD	F29
MTECSH-ISO	C19	MXTSD-W-A	F30
MTECSH-UN	C24		
MTECZ-BSPT	C27	N	
MTECZ-ISO	C14	NFB	E252
MTECZ-NPTF	C26	NFR	E253-E254
MTECZ-UN	C22	NHD-PE3	D71-D73
MTECZ-W	C25	NHD-PE5	D74-D76
MTF D	C35	NHD-PI3	D77-D79
MTFLE D	C36	NHD-PI5	D80-D82
MTT 5-MB63	H17	NPHT-RG	D170
MULTI CLAMP	G175	NPMT-LG	D170
MXAD-S-M	F31	NPMT-RG	D171
MXBB-SG-02	F18	NPMX-RB/RG	D172
MXBD-BG-02	F17	NUT ER-BIN	G166
MXBD-BG-04	F18	NUT ER-MINI	G166, H83
MXBE-BG-04	F18	NUT ER-SHORT	G167
MXBE-BGA02	F19	NUT ER-TOP	G166, H82
MXCA-04/06	F21	NUT ER-UM	G166, H83
MXCP-02	F19		
MXCR-02	F22	O	
MXCW-02	F21	OFCN	E255
MXDP-02	F20	OFCD	E255
MXED-04	F11	OFCT	E256
MXED-06	F15	OFCW	E256
MXED-08/10	F15	OFMR	E255
MXEE-03	F10, F12	OFMT	E256
MXEE-04	F11		
MXEE-06	F15	P	
MXEE-A02	F14	PAD	D175-D177, D179
MXEE-A03	F14	PERC	D178-D179
MXEE-C04	F13	PLT	H71
MXEE-I04	F12	PMIN	E285
MXEE-R	F13	PRESET ER-JET	G170
MXER	F32	PRESET SCREW-B	G171
MXFX-02	F17	PS BT-JIS	G168
MXGC-02	F20	PS BT-MAS	G169
MXRB-02	F16		
MXRD-06	F16		
MXSC	F30		

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PS OTT	G168	SBE 4	F84
PS SK-DIN	G167	SBE 4-T	F85
PTKU	E257	SBMT	E263
R		SBO 2-T	F86
R8 MB50	H17	SBT 3-U	F105
RCFE	F127	SBT 4-U	F105
RCOM	F128	SCGT-FL	H62
RDCF 4	F128	SCKN	E264
RDMX	E260	SCMT-FG	H63
RE MB-AVI	H21	SCMT-MT	H63
RE MB-MB	H20	SCRM90TN	E47-E48
REA 3-L	F120	SCRM90TN-M16	E125
REB-L	F86	SCRM90TN-W32	E125
REH-L	F112	SDKN	E264
REH-M	F111	SEALING SLEEVE 4	D138
REH-S	F110	SED 4-U	F106
REL-L	F101	SED 4-U-C	F108
REMA 3	F120	SED 4-U-R	F107
REMA 3-C	F120	SED 4-UL	F106
RFMR	E255	SED 7	F108
RFMT	E256	SEKN	E265
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