

TOOLS HEADS

' 2 4



D'ANDREA®
TECHNOLOGY FOR HIGH PRECISION



Golden Compass
award for industrial design

EVOLUTION OF A LONG TRADITION

Made in Italy

The image shows a modern, multi-story building with a facade of light grey panels. A large, three-dimensional logo for 'D'ANDREA' is mounted on the upper part of the building. The logo consists of a red circle with a white dot inside, followed by the name 'D'ANDREA' in bold, grey, sans-serif capital letters. The building has large windows with red frames. In the foreground, there are green trees and bushes. The sky is a clear, bright blue.

D'ANDREA



Golden Compass award
for industrial design



D'ANDREA®

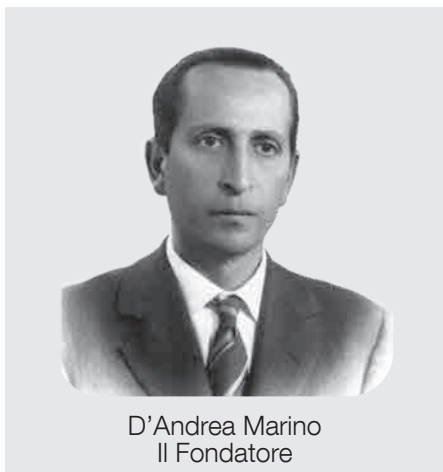
TECHNOLOGY FOR HIGH PRECISION



NEL SEGNO DELLA PRECISIONE

D'ANDREA S.p.A. è un'azienda italiana leader mondiale nella produzione di accessori di alta precisione per macchine utensili, fondata nel 1951 da Marino D'Andrea, che iniziò l'attività con la prima testa a sfacciare e barenare (TA).

Il marchio D'Andrea è un brand internazionalmente riconosciuto, attraverso una rete distributiva presente in oltre 40 Paesi, per la qualità e l'affidabilità dei prodotti.



D'Andrea Marino
Il Fondatore



1951 - La prima Testa
per Alesare e Sfacciare



Nella foto qui sopra Ermanno D'Andrea
con i figli Amedeo, Maria Pina e Marino.

Una tradizione di oltre 70 anni nel settore manifatturiero e una grande passione per la meccanica che oggi è ereditata dalla terza generazione, con l'obiettivo di rispondere alle richieste sempre più esigenti del mondo della meccanica di precisione. Ogni anno vengono investite importanti risorse nella Ricerca e Sviluppo di nuovi prodotti che, grazie a soluzioni tecnologiche avanzate, soddisfano una domanda molto qualificata.





Lainate (Milano)



La **D'Andrea S.p.A** rappresenta la sede principale del gruppo situata a Lainate (MI), alle porte di Milano. Con i suoi 7.000mq complessivi, D'Andrea vanta una struttura funzionale, moderna e produttiva in cui sono presenti diverse tipologie di macchine utensili destinate alla realizzazione di teste e portautensili. In particolare vengono effettuate le operazioni finali di rettifica, controllo e assemblaggio.

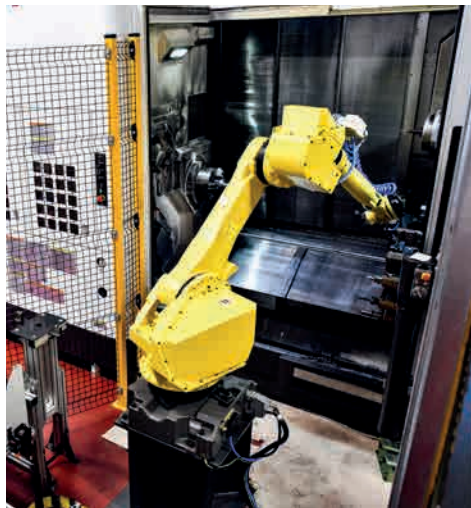




Castel Del Giudice (Isernia)



La **D'Andrea Molise** nasce nel 2001 a Castel Del Giudice (Isernia), luogo d'origine del suo fondatore Marino. In tale impianto produttivo vengono realizzati gran parte dei semilavorati, successivamente finiti, montati e collaudati nella sede principale.



MHD'

ATTACCHI PR-RD-RAV-BMD

8-10

DIN 69871



MAS403BT



PSC



HSK

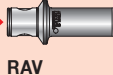


11-12

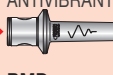
PR
PROLUNGHE



RD
RIDUZIONI



RAV
ANTIVIBRANTI



BMD
METALLO DURO



14-15

TS TESTE DI SGROSSATURA

16-22

TRM-TRE TESTAROSSA 2 µm

23

TRC TESTAROSSA 10 µm

MHD' 16

TS 16/16
Ø 18 - 22



MHD' 20

TS 20/20
Ø 22 - 28



MHD' 25

TS 25/25
Ø 28 - 38



MHD' 32

TS 32/32
Ø 35.5 - 50



MHD' 40

TS 40/40
Ø 50 - 68



MHD' 50

TS 50/50 - 50/63
Ø 68 - 90 Ø 90-120



TRM 16
Ø 18 - 23



TRM 20
Ø 22 - 29



TRM 25
Ø 28 - 38



TRM 32
Ø 35.5 - 51.5



TRM 40
Ø 48 - 63



TRM 50 Ø 2.5 - 140



TRC 16
Ø 18 - 24



TRC 20
Ø 22 - 30



TRC 25
Ø 28 - 40



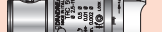
TRC 32
Ø 35.5 - 53.5



TRC 40
Ø 48 - 66



TRC 50 Ø 2.5 - 140



PSC

ATTACCHI PR-RD

28

DIN 69871



MAS403BT



HSK



29

PR
PROLUNGHE



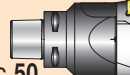
RD
RIDUZIONI



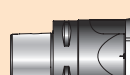
TS TESTE DI SGROSSATURA

30-31

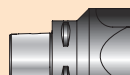
PSC50 - TS50
Ø 68 - 90



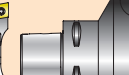
PSC63 - TS50
Ø 68 - 90



PSC63 - TS63
Ø 90 - 120



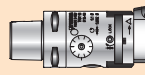
PSC63 - TS80
Ø 120 - 200



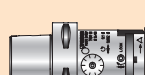
TRM TESTAROSSA 2µm

33-37

PSC50 - TRM50
Ø 2.5 - 140



PSC63 - TRM50
Ø 2.5 - 140



PSC63 - TRM63
Ø 2.5 - 155



PSC63 - TRM80
Ø 2.5 - 220



MONOforce **50-51**

PORTAUTENSILI DI PRECISIONE A FORTE SERRAGGIO Ø 12 / 20 / 32

DIN 69871



MAS BT



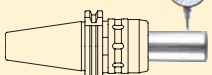
PSC



HSK-A



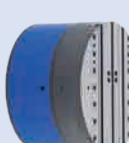
5 µm



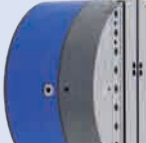
U-TRONIC STANDARD

TESTE CN **58-65**

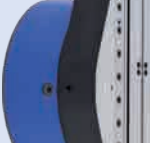
UT 3-360
Ø max 800



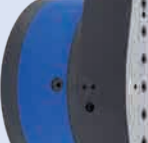
UT 5-500
Ø max 1000



UT 5-630
Ø max 1250



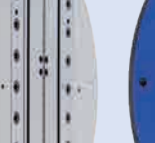
UT 5-800
Ø max 1600



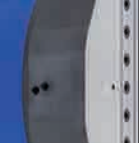
UT 8-800
Ø max 1600



UT 8-1000
Ø max 2000



UT 8-1250
Ø max 2500



UT 8-1600
Ø max 3200



ALESATRICI-FRESATRICI MEDIE E GRANDI DIMENSIONI

TA-CENTER 2

TESTE CN **66-71**

TA-C2.110
Ø max 200

TA-C2.170
Ø max 320

U-DRIVE

ATTACCO HT



CENTRI DI LAVORO

TA-TRONIC 2

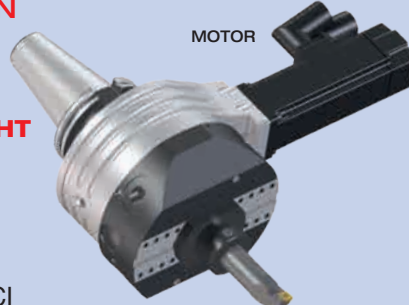
TESTE CN **72-73**

TA-T2.110
Ø max 200

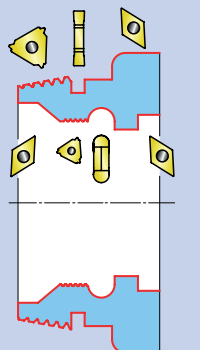
TA-T2.170
Ø max 320

MOTOR

ATTACCO HT



FRESATRICI



SOTTOSQUADRA

24



INSERTI

44-45



DATI TECNICI

46-49

MHD' 63

MHD' 80

FRESATURA FORATURA

25

PE PORTAPINZE ELASTICHE



FORCE FORTE SERRAGGIO



AW WELDON WHISTLE NOTCH



PF PORTAFRESE



BHT BARRE MODULARI 39-43

ALESATURA - TORNITURA

BHT 250 BHT 500 BHT 750
 Ø 250 ~ 500 Ø 500 ~ 750 Ø 750 ~ 1000

Speciali Ø superiori 1000 mm

SGROSSATURA

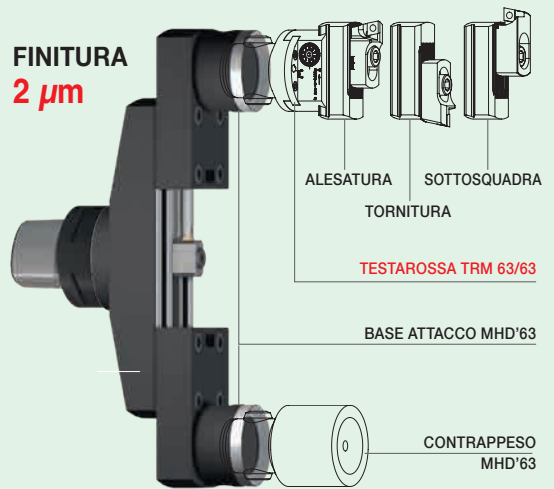


PATENTED

ATTACCO HT

DIN - BT - PSC - HSK - CAT - MHD'

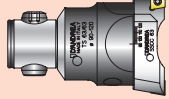
FINITURA 2 µm



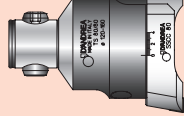
ALESATRICI-FRESATRICI MEDIE E GRANDI DIMENSIONI

T
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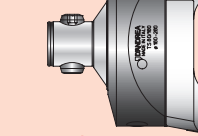
TS 63/63
 Ø 90 - 120



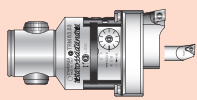
TS 80/80
 Ø 120 - 200



TS 80/90
 Ø 160 - 250



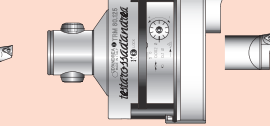
TRM 50/63 - 63/63
 Ø 2.5 - 155



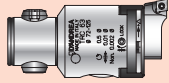
TRM 50/80 - 80/80
 Ø 2.5 - 220



TRM 80/125
 Ø 36 - 500



TRC 63
 Ø 72 - 110

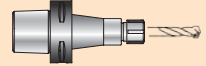


TRC 80
 Ø 88 - 132

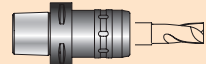


FRESATURA FORATURA 32

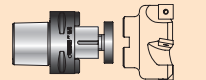
ER PORTAPINZE ELASTICHE



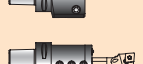
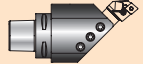
FORCE FORTE SERRAGGIO



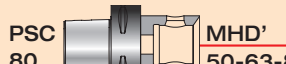
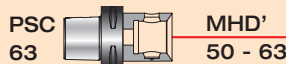
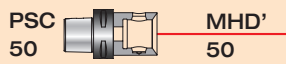
PF PORTAFRESE



TCD' 38 TORNITURA



RIDUZIONI A MHD' 29



MONOd' 52

PORTAUTENSILI PORTAPINZE ELASTICHE ER 16 / 25 / 32



PROLUNGATE

ANGOLARI

RIDUTTORE

HOLE

DOPPIA SLITTA

ALTA VELOCITÀ (BILANCIATE)



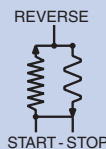
SPECIALI

AR 125 AR 160 Ø max 320 Ø max 400 TESTE AUTOMATICHE PER SFACCIARE

74-75

ATTACCO MHD'

CENTRI DI LAVORO FRESATRICI



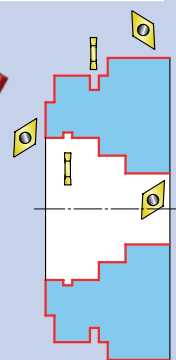
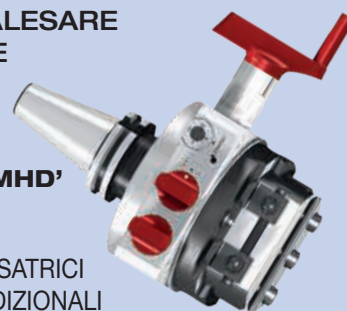
TA-SENSITIV 2 TESTE PER ALESARE E SFACCIARE

76-77

ATTACCO MHD'

FRESATRICI-ALESATRICI MACCHINE TRADIZIONALI

TA-S2.120 TA-S2.170
 Ø max 250 Ø max 400



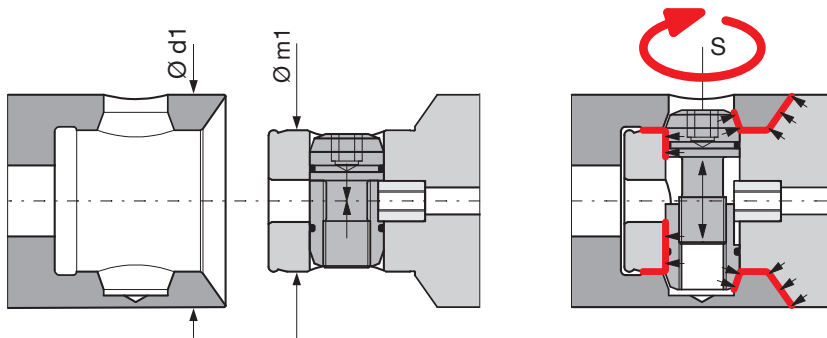
H
E
A
D
S

È una linea di portautensili modulari di alta precisione che consente di eseguire con estrema flessibilità e rigidità operazioni di alesatura, fresatura, foratura.

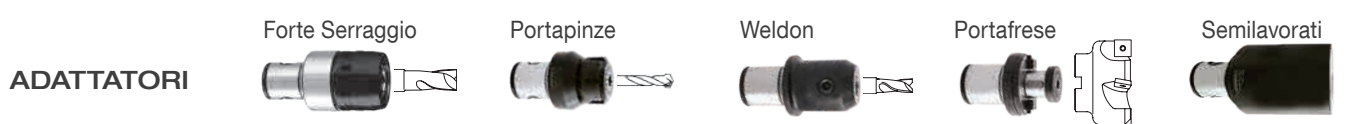
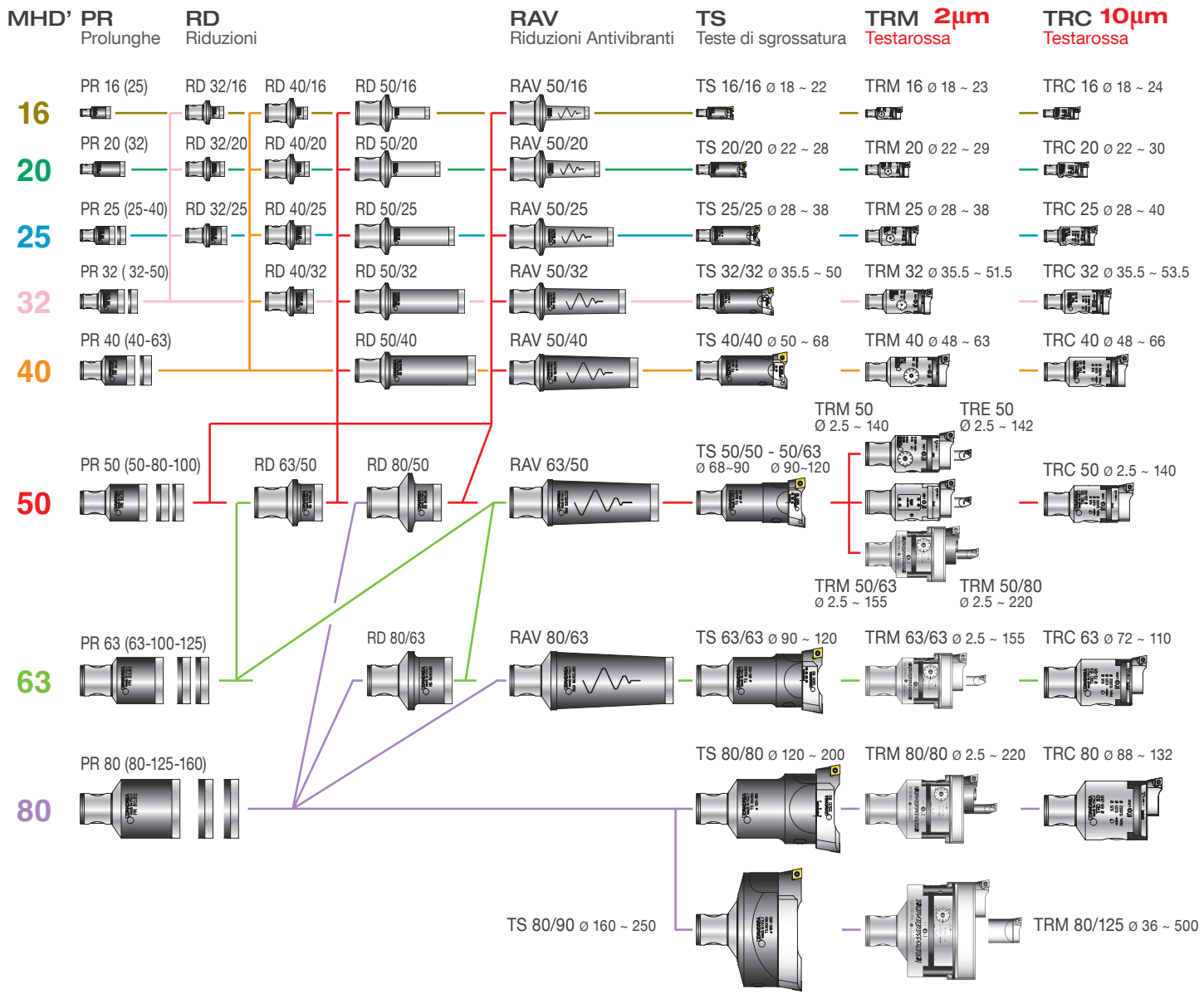
L'attacco MHD' è il punto di forza del Modulhard'andrea. Disponibile in otto grandezze, garantisce l'intercambiabilità di tutti gli elementi del sistema, che include attacchi base, prolunghe, riduzioni e adattatori portautensili.



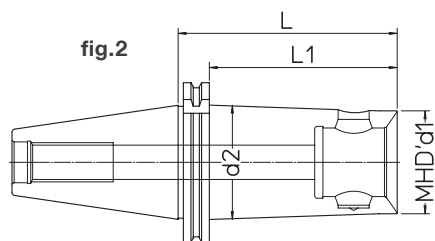
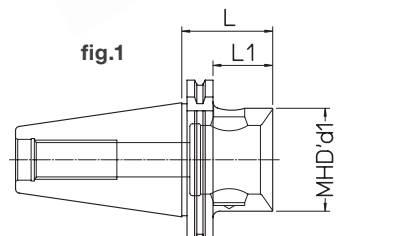
ATTACCO MHD'



| MHD' | Ø d1 | Ø m1 | ⬡ S | N-m |
|------|------|------|-----|-----------|
| 16 | 16 | 10 | 2,5 | 2 - 2,5 |
| 20 | 20 | 13 | 3 | 4 - 4,5 |
| 25 | 25 | 16 | 3 | 6,5 - 7,5 |
| 32 | 32 | 20 | 4 | 7 - 8 |
| 40 | 40 | 25 | 5 | 16 - 18 |
| 50 | 50 | 32 | 6 | 30 - 35 |
| 63 | 63 | 42 | 8 | 70 - 80 |
| 80 | 80 | 42 | 8 | 70 - 80 |



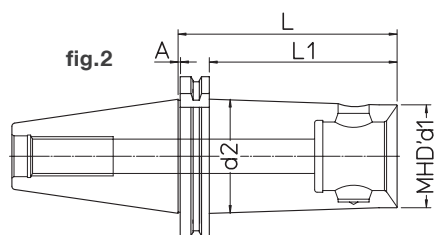
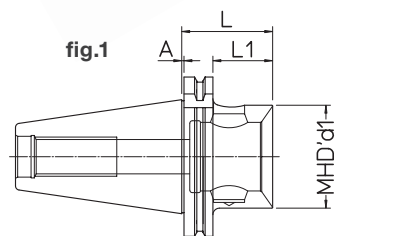
DIN 69871 AD



| DIN | REF. | CODE | MHD' d1 | d2 | L | L1 | kg | fig. |
|-----|--------------------------|--------------|------------|------|-----|-----|-----|------|
| 30 | DIN69871-AD30 MHD'50.60 | 416500103020 | 50 | | 60 | 0.6 | 1 | |
| 40 | DIN69871-AD40 MHD'16.40 | 416160414020 | 16 | | 40 | 21 | 0.7 | 1 |
| 40 | DIN69871-AD40 MHD'16.63 | 416160614020 | 16 | 18.5 | 63 | 44 | 0.8 | 2 |
| 40 | DIN69871-AD40 MHD'16.100 | 416161014020 | 16 | 21.5 | 100 | 81 | 0.9 | 2 |
| 40 | DIN69871-AD40 MHD'20.50 | 416200514020 | 20 | | 50 | 31 | 0.8 | 1 |
| 40 | DIN69871-AD40 MHD'20.80 | 416200814020 | 20 | 22.5 | 80 | 61 | 0.9 | 2 |
| 40 | DIN69871-AD40 MHD'20.125 | 416201214020 | 20 | 26 | 125 | 106 | 1 | 2 |
| 40 | DIN69871-AD40 MHD'25.50 | 416250514020 | 25 | | 50 | 31 | 0.9 | 1 |
| 40 | DIN69871-AD40 MHD'25.80 | 416250814020 | 25 | 28 | 80 | 61 | 1 | 2 |
| 40 | DIN69871-AD40 MHD'25.125 | 416251214020 | 25 | 31 | 125 | 106 | 1.1 | 2 |
| 40 | DIN69871-AD40 MHD'32.50 | 416320514020 | 32 | | 50 | 31 | 1 | 1 |
| 40 | DIN69871-AD40 MHD'32.80 | 416320814020 | 32 | 34.5 | 80 | 61 | 1.1 | 2 |
| 40 | DIN69871-AD40 MHD'32.125 | 416321214020 | 32 | 39 | 125 | 106 | 1.2 | 2 |
| 40 | DIN69871-AD40 MHD'40.45 | 416400104020 | 40 | | 45 | 26 | 0.5 | 1 |
| 40 | DIN69871-AD40 MHD'40.120 | 416401214020 | 40 | 44.5 | 120 | 101 | 1.4 | 2 |
| 40 | DIN69871-AD40 MHD'50.48 | 416500104020 | 50 | | 48 | 29 | 0.9 | 1 |
| 40 | DIN69871-AD40 MHD'50.120 | 416501214020 | 50 | | 120 | 101 | 1.7 | 1 |
| 40 | DIN69871-AD40 MHD'63.80 | 416630104020 | 63 | | 80 | | 1.5 | 1 |
| 50 | DIN69871-AD50 MHD'50.48 | 416500105020 | 50 | | 48 | 29 | 2.5 | 1 |
| 50 | DIN69871-AD50 MHD'50.120 | 416501215020 | 50 | 60 | 120 | 101 | 3.5 | 2 |
| 50 | DIN69871-AD50 MHD'63.56 | 416630105020 | 63 | | 56 | 37 | 2.8 | 1 |
| 50 | DIN69871-AD50 MHD'63.150 | 416631515020 | 63 | 70 | 150 | 131 | 5 | 2 |
| 50 | DIN69871-AD50 MHD'80.62 | 416800105020 | 80 | | 62 | 43 | 3.4 | 1 |
| 50 | DIN69871-AD50 MHD'80.180 | 416801815020 | 80 | | 180 | 161 | 7.6 | 1 |

Attacchi Versione B - SU RICHIESTA

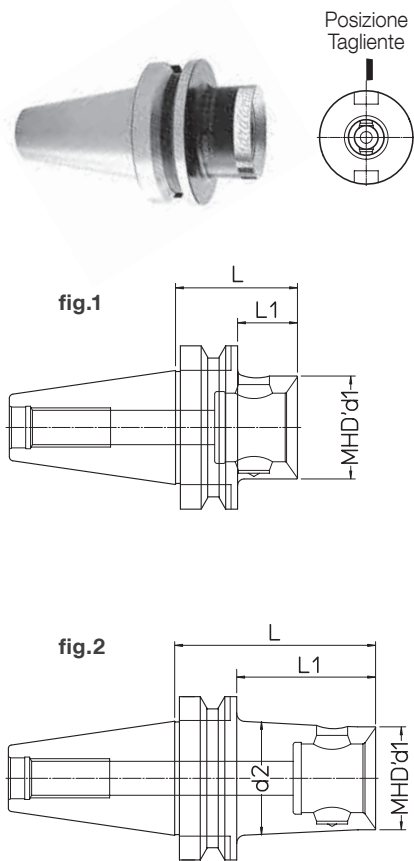
DIN 69871 FC AD FACE CONTACT



| DIN | REF. | CODE | MHD' d1 | d2 | A | L | L1 | kg | fig. |
|-----|-----------------------------|---------------|------------|------|-----|-----|-----|-----|------|
| 40 | DIN69871-AD40 FC MHD'50.48 | 416500104020F | 50 | 1 | 48 | 29 | 0.9 | 1 | |
| 40 | DIN69871-AD40 FC MHD'50.120 | 416501214020F | 50 | 1 | 120 | 101 | 1.7 | 1 | |
| 40 | DIN69871-AD40 FC MHD'63.80 | 416630104020F | 63 | 1 | 80 | | 1.5 | 1 | |
| 50 | DIN69871-AD50 FC MHD'50.48 | 416500105020F | 50 | 1.5 | 48 | 29 | 2.5 | 1 | |
| 50 | DIN69871-AD50 FC MHD'50.120 | 416501215020F | 50 | 59 | 1.5 | 120 | 101 | 3.5 | 2 |
| 50 | DIN69871-AD50 FC MHD'50.200 | 416502015020F | 50 | 68 | 1.5 | 200 | 181 | 6.1 | 2 |
| 50 | DIN69871-AD50 FC MHD'63.56 | 416630105020F | 63 | 1.5 | 56 | 37 | 2.8 | 1 | |
| 50 | DIN69871-AD50 FC MHD'63.150 | 416631515020F | 63 | 75.5 | 1.5 | 150 | 131 | 5.2 | 2 |
| 50 | DIN69871-AD50 FC MHD'63.250 | 416632515020F | 63 | 80 | 1.5 | 250 | 231 | 7.1 | 2 |
| 50 | DIN69871-AD50 FC MHD'80.62 | 416800105020F | 80 | 1.5 | 62 | 43 | 3.4 | 1 | |
| 50 | DIN69871-AD50 FC MHD'80.180 | 416801815020F | 80 | 1.5 | 180 | 161 | 6.9 | 1 | |
| 50 | DIN69871-AD50 FC MHD'80.300 | 416803015020F | 80 | 1.5 | 300 | 281 | 9.2 | 1 | |

Attacchi Versione B - SU RICHIESTA

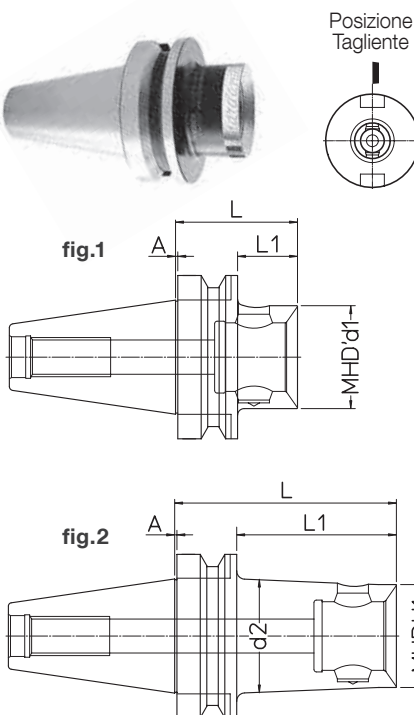
MAS 403 BT AD



| BT | REF. | CODE | MHD' d1 | d2 | L | L1 | kg | fig. |
|----|---------------------------|--------------|------------|------|-----|-----|-----|------|
| 30 | MAS403 BT30-AD MHD'50.60 | 416500103030 | 50 | | 60 | | 0.7 | 1 |
| 40 | MAS403 BT40-AD MHD'16.45 | 416160414030 | 16 | | 45 | 18 | 0.8 | 1 |
| 40 | MAS403 BT40-AD MHD'16.63 | 416160614030 | 16 | 17 | 63 | 36 | 0.9 | 2 |
| 40 | MAS403 BT40-AD MHD'16.100 | 416161014030 | 16 | 19.5 | 100 | 73 | 1 | 2 |
| 40 | MAS403 BT40-AD MHD'20.50 | 416200514030 | 20 | | 50 | 23 | 0.9 | 1 |
| 40 | MAS403 BT40-AD MHD'20.80 | 416200814030 | 20 | 22 | 80 | 53 | 1 | 2 |
| 40 | MAS403 BT40-AD MHD'20.125 | 416201214030 | 20 | 25 | 125 | 98 | 1.1 | 2 |
| 40 | MAS403 BT40-AD MHD'25.50 | 416250514030 | 25 | | 50 | 23 | 1 | 1 |
| 40 | MAS403 BT40-AD MHD'25.80 | 416250814030 | 25 | 26.5 | 80 | 53 | 1.1 | 2 |
| 40 | MAS403 BT40-AD MHD'25.125 | 416251214030 | 25 | 29.5 | 125 | 98 | 1.2 | 2 |
| 40 | MAS403 BT40-AD MHD'32.50 | 416320514030 | 32 | | | 23 | 1.1 | 1 |
| 40 | MAS403 BT40-AD MHD'32.80 | 416320814030 | 32 | 33 | 80 | 53 | 1.2 | 2 |
| 40 | MAS403 BT40-AD MHD'32.125 | 416321214030 | 32 | 36 | 125 | 98 | 1.4 | 2 |
| 40 | MAS403 BT40 AD MHD'40.45 | 416400104030 | 40 | | 45 | 18 | 0.6 | 1 |
| 40 | MAS403 BT40-AD MHD'40.120 | 416401214030 | 40 | 44.5 | 120 | 93 | 0.9 | 2 |
| 40 | MAS403 BT40-AD MHD'50.48 | 416500104030 | 50 | | 48 | 21 | 0.9 | 1 |
| 40 | MAS403 BT40-AD MHD'50.120 | 416501214030 | 50 | | 120 | 93 | 1.9 | 2 |
| 40 | MAS403 BT40-AD MHD'63.66 | 416630104030 | 63 | | 66 | | 1.2 | 1 |
| 50 | MAS403 BT50-AD MHD'50.66 | 416500105030 | 50 | | 66 | 28 | 3.3 | 1 |
| 50 | MAS403 BT50-AD MHD'50.120 | 416501215030 | 50 | 60 | 120 | 82 | 4.2 | 2 |
| 50 | MAS403 BT50-AD MHD'63.75 | 416630105030 | 63 | | 75 | 37 | 3.7 | 1 |
| 50 | MAS403 BT50-AD MHD'63.150 | 416631515030 | 63 | 70 | 150 | 112 | 5.8 | 2 |
| 50 | MAS403 BT50-AD MHD'80.75 | 416800105030 | 80 | | 75 | 37 | 4 | 1 |
| 50 | MAS403 BT50-AD MHD'80.180 | 416801815030 | 80 | | 180 | 142 | 7.5 | 2 |

Attacchi Versione B - SU RICHIESTA

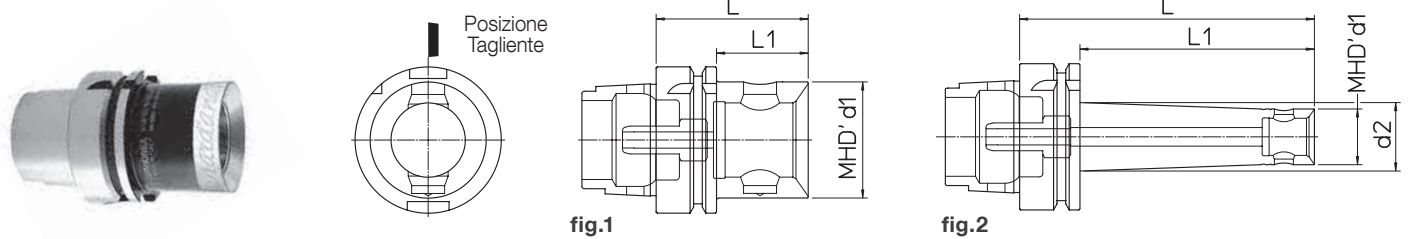
MAS 403 BT FC AD FACE CONTACT



| BT | REF. | CODE | MHD' d1 | d2 | A | L | L1 | kg | fig. |
|----|------------------------------|---------------|------------|------|-----|-----|-----|-----|------|
| 40 | MAS403 BT40-AD FC MHD'50.48 | 416500104030F | 50 | 1 | 48 | 21 | 0.9 | 1 | |
| 40 | MAS403 BT40-AD FC MHD'50.120 | 416501214030F | 50 | 1 | 120 | 93 | 1.9 | 1 | |
| 40 | MAS403 BT40-AD FC MHD'63.66 | 416630104030F | 63 | 1 | 66 | | 1.2 | 1 | |
| 50 | MAS403 BT50-AD FC MHD'50.66 | 416500105030F | 50 | 1.5 | 66 | 28 | 3.2 | 1 | |
| 50 | MAS403 BT50-AD FC MHD'50.120 | 416501215030F | 50 | 57.5 | 1.5 | 120 | 82 | 4.2 | 2 |
| 50 | MAS403 BT50-AD FC MHD'50.200 | 416502015030F | 50 | 66 | 1.5 | 200 | 162 | 4.5 | 2 |
| 50 | MAS403 BT50-AD FC MHD'63.75 | 416630105030F | 63 | 1.5 | 75 | 37 | 3.7 | 1 | |
| 50 | MAS403 BT50-AD FC MHD'63.150 | 416631515030F | 63 | 73.5 | 1.5 | 150 | 112 | 5.8 | 2 |
| 50 | MAS403 BT50-AD FC MHD'63.250 | 416632515030F | 63 | 84 | 1.5 | 250 | 212 | 6.1 | 2 |
| 50 | MAS403 BT50-AD FC MHD'80.75 | 416800105030F | 80 | 1.5 | 75 | 37 | 4 | 1 | |
| 50 | MAS403 BT50-AD FC MHD'80.180 | 416801815030F | 80 | 1.5 | 180 | 142 | 7.5 | 1 | |
| 50 | MAS403 BT50-AD FC MHD'80.300 | 416803015030F | 80 | 1.5 | 300 | 262 | 9.2 | 1 | |

Attacchi Versione B - SU RICHIESTA

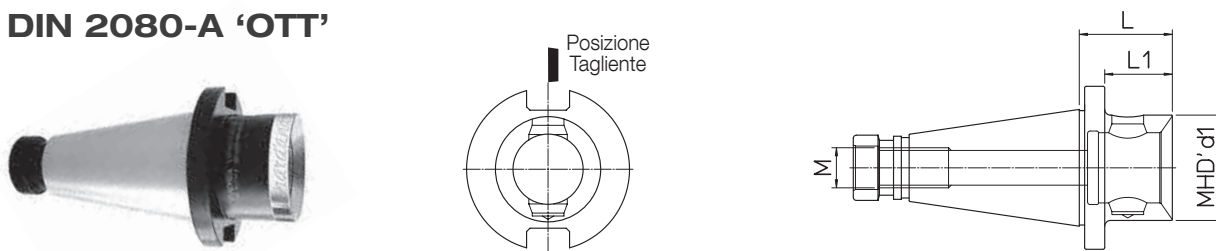
DIN 69893 HSK-A



Completo di raccordo per il refrigerante

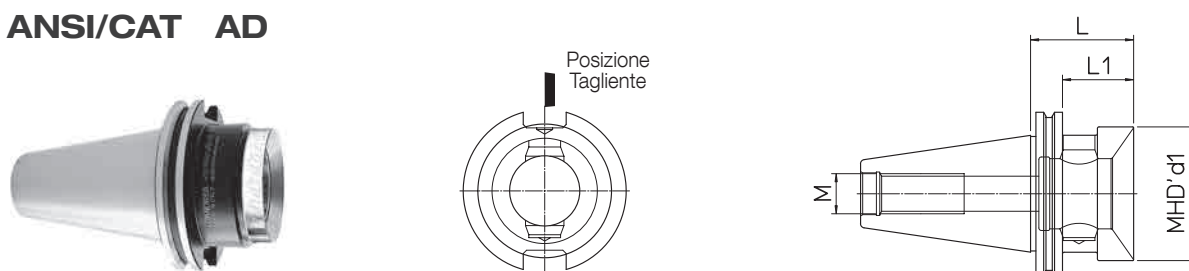
| HSK-A | REF. | CODE | MHD' d1 | d2 | L | L1 | kg | fig. | | |
|-------|---------------------|--------------|---------|------|-----|-----|-----|------|--|--|
| 50 | HSK-A50 MHD'50.66 | 416501505020 | 50 | | 66 | | 0.6 | 1 | | |
| 63 | HSK-A63 MHD'16.100 | 416161056320 | 16 | 19.5 | 100 | 74 | 0.8 | 2 | | |
| 63 | HSK-A63 MHD'20.125 | 416201256320 | 20 | 25 | 125 | 99 | 0.9 | 2 | | |
| 63 | HSK-A63 MHD'25.125 | 416251256320 | 25 | 29.5 | 125 | 99 | 1 | 2 | | |
| 63 | HSK-A63 MHD'32.90 | 416320956320 | 32 | 33.5 | 90 | 64 | 1 | 2 | | |
| 63 | HSK-A63 MHD'32.125 | 416321256320 | 32 | 36 | 125 | 99 | 1.2 | 2 | | |
| 63 | HSK-A63 MHD'40.60 | 416401506320 | 40 | | 60 | 34 | 0.7 | 1 | | |
| 63 | HSK-A63 MHD'40.120 | 416401506328 | 40 | 46 | 120 | 94 | 1.4 | 2 | | |
| 63 | HSK-A63 MHD'50.66 | 416501506320 | 50 | | 66 | 40 | 0.9 | 1 | | |
| 63 | HSK-A63 MHD'50.120 | 416501506328 | 50 | | 120 | 94 | 1.7 | 1 | | |
| 63 | HSK-A63 MHD'63.75 | 416631506320 | 63 | | 75 | | 1.1 | 1 | | |
| 80 | HSK-A80 MHD'50.70 | 416501508020 | 50 | | 70 | 44 | 1.5 | 1 | | |
| 80 | HSK-A80 MHD'63.80 | 416631508020 | 63 | | 80 | 54 | 1.8 | 1 | | |
| 100 | HSK-A100 MHD'50.72 | 416501510020 | 50 | | 72 | 43 | 2.4 | 1 | | |
| 100 | HSK-A100 MHD'50.120 | 416501510028 | 50 | 60 | 120 | 91 | 3.2 | 2 | | |
| 100 | HSK-A100 MHD'63.82 | 416631510020 | 63 | | 82 | 53 | 2.7 | 1 | | |
| 100 | HSK-A100 MHD'63.150 | 416631510028 | 63 | 70 | 150 | 121 | 4.5 | 2 | | |
| 100 | HSK-A100 MHD'80.88 | 416801510020 | 80 | | 88 | 59 | 3 | 1 | | |
| 100 | HSK-A100 MHD'80.180 | 416801510028 | 80 | | 180 | 151 | 6.5 | 1 | | |

DIN 2080-A 'OTT'



| DIN | REF. | CODE | MHD' d1 | L | L1 | M | kg | | |
|-----|-----------------------|--------------|---------|----|------|-----|-----|--|--|
| 30 | DIN2080-A30 MHD'50.58 | 416500103000 | 50 | 58 | | M12 | 0.6 | | |
| 40 | DIN2080-A40 MHD'50.48 | 416500104000 | 50 | 48 | 36.5 | M16 | 0.9 | | |
| 40 | DIN2080-A40 MHD'63.60 | 416630104000 | 63 | 60 | | M16 | 1.2 | | |
| 50 | DIN2080-A50 MHD'50.48 | 416500105000 | 50 | 48 | 33 | M24 | 2.6 | | |
| 50 | DIN2080-A50 MHD'63.56 | 416630105000 | 63 | 56 | 41 | M24 | 2.7 | | |
| 50 | DIN2080-A50 MHD'80.60 | 416800105000 | 80 | 60 | 45 | M24 | 3.2 | | |

ANSI/CAT AD



| ANSI/CAT | REF. | CODE | MHD' d1 | L | L1 | M | kg | | |
|----------|-----------------------|--------------|---------|-----|----|-----|-----|--|--|
| 40 | ANSI/CAT40 MHD'50.66 | 416500104040 | 50 | 66 | 47 | M16 | 1.1 | | |
| 40 | ANSI/CAT40 MHD'63.100 | 416630104040 | 63 | 100 | | M16 | 1.9 | | |
| 50 | ANSI/CAT50 MHD'50.48 | 416500105040 | 50 | 48 | 29 | M24 | 2.4 | | |
| 50 | ANSI/CAT50 MHD'63.56 | 416630105040 | 63 | 56 | 37 | M24 | 2.9 | | |
| 50 | ANSI/CAT50 MHD'80.62 | 416800105040 | 80 | 62 | 43 | M24 | 3.2 | | |

BR BARRE IN ACCIAIO

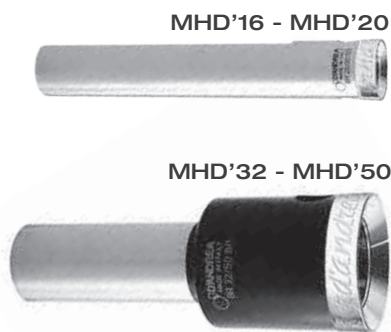


fig.1

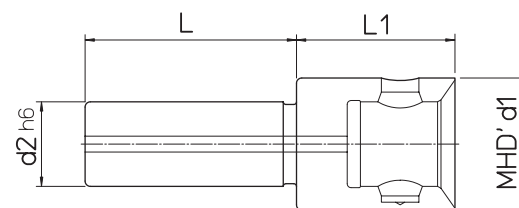
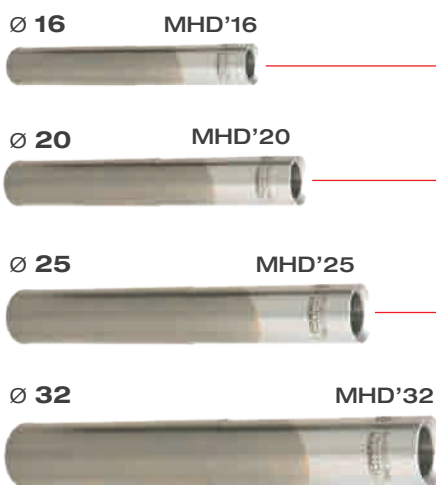
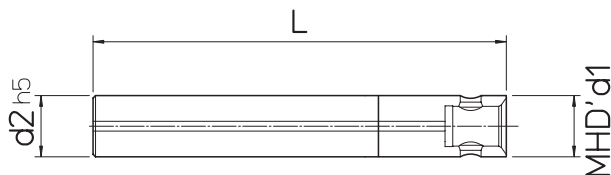


fig.2

| REF. | CODE | MHD' d1 | L | L1 | d2 | kg | fig. |
|--------------|--------------|---------|-----|----|----|------|------|
| BR 16/16.100 | 657081601001 | 16 | 100 | | 16 | 0.15 | 1 |
| BR 20/20.125 | 657082001251 | 20 | 125 | | 20 | 0.3 | 1 |
| BR 25/32.35 | 416320802500 | 32 | 65 | 35 | 25 | 0.7 | 2 |
| BR 32/50.60 | 416500803200 | 50 | 80 | 60 | 32 | 1 | 2 |

BMD BARRE IN METALLO DURO

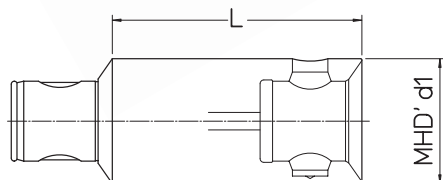
MONOforce
vedere p.50-51



| REF. | CODE | MHD' d1 | d2 | L | kg |
|---------------|--------------|---------|----|-----|------|
| BMD 16/16.110 | 657081601105 | 16 | 16 | 110 | 0.3 |
| BMD 16/16.140 | 657081601405 | 16 | 16 | 140 | 0.4 |
| BMD 16/16.170 | 657081601705 | 16 | 16 | 170 | 0.5 |
| BMD 20/20.135 | 657082001355 | 20 | 20 | 135 | 0.6 |
| BMD 20/20.170 | 657082001705 | 20 | 20 | 170 | 0.75 |
| BMD 20/20.210 | 657082002105 | 20 | 20 | 210 | 0.9 |
| BMD 25/25.160 | 657082501605 | 25 | 25 | 160 | 1 |
| BMD 25/25.205 | 657082502055 | 25 | 25 | 205 | 1.3 |
| BMD 25/25.255 | 657082502555 | 25 | 25 | 255 | 1.6 |
| BMD 32/32.195 | 657083201955 | 32 | 32 | 195 | 2.1 |
| BMD 32/32.250 | 657083202505 | 32 | 32 | 250 | 2.8 |
| BMD 32/32.315 | 657083203155 | 32 | 32 | 315 | 3.5 |

PR PROLUNGHE

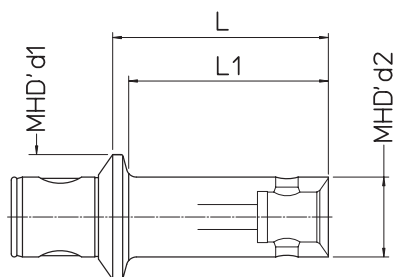
Per ogni grandezza MHD' esistono prolunghe di diverse lunghezze che consentono di raggiungere le profondità di lavorazione desiderate.



| REF. | CODE | MHD' d1 | L | kg |
|-----------|--------------|---------|-----|------|
| PR 16.25 | 656901600250 | 16 | 25 | 0.04 |
| PR 20.32 | 656902000320 | 20 | 32 | 0.07 |
| PR 25.25 | 656902500250 | 25 | 25 | 0.09 |
| PR 25.40 | 656902500400 | 25 | 40 | 0.15 |
| PR 32.32 | 656903200320 | 32 | 32 | 0.2 |
| PR 32.50 | 656903200500 | 32 | 50 | 0.3 |
| PR 40.40 | 656904000400 | 40 | 40 | 0.4 |
| PR 40.63 | 656904000630 | 40 | 63 | 0.6 |
| PR 50.50 | 656905000500 | 50 | 50 | 0.7 |
| PR 50.80 | 656905000800 | 50 | 80 | 1.1 |
| PR 50.100 | 656905001000 | 50 | 100 | 1.5 |
| PR 63.63 | 656906300630 | 63 | 63 | 1.4 |
| PR 63.100 | 656906301000 | 63 | 100 | 2.2 |
| PR 63.125 | 656906301250 | 63 | 125 | 2.9 |
| PR 80.80 | 656908000800 | 80 | 80 | 3 |
| PR 80.125 | 656908001250 | 80 | 125 | 4.6 |
| PR 80.160 | 656908001600 | 80 | 160 | 6.1 |

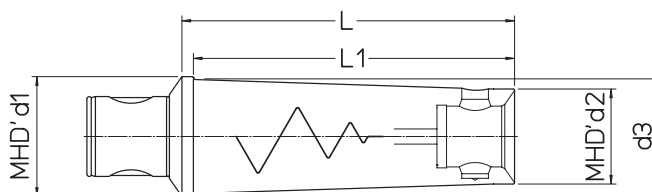
RD RIDUZIONI

Le riduzioni permettono di utilizzare componenti MHD' di una grandezza più piccola e quindi ottimizzare la composizione dell'utensile in funzione degli ingombri.



| REF. | CODE | MHD' d1 | MHD' d2 | L | L1 | kg |
|--------------|--------------|---------|---------|-----|-----|------|
| RD 20/16.20 | 657002000160 | 20 | 16 | 20 | 16 | 0.05 |
| RD 25/16.20 | 657002500160 | 25 | 16 | 20 | 15 | 0.07 |
| RD 25/20.25 | 657002500200 | 25 | 20 | 25 | 20 | 0.08 |
| RD 32/16.24 | 657003200160 | 32 | 16 | 24 | 18 | 0.10 |
| RD 32/20.25 | 657003200200 | 32 | 20 | 25 | 20 | 0.12 |
| RD 32/25.28 | 657003200250 | 32 | 25 | 28 | 23 | 0.14 |
| RD 40/16.24 | 657004000160 | 40 | 16 | 24 | 17 | 0.18 |
| RD 40/20.26 | 657004000200 | 40 | 20 | 26 | 20 | 0.2 |
| RD 40/25.28 | 657004000250 | 40 | 25 | 28 | 22 | 0.25 |
| RD 40/32.32 | 657004000320 | 40 | 32 | 32 | 27 | 0.3 |
| RD 50/16.24 | 657005000160 | 50 | 16 | 24 | 15 | 0.34 |
| RD 50/16.40 | 657005000162 | 50 | 16 | 40 | 32 | 0.2 |
| RD 50/16.74 | 657005000163 | 50 | 16 | 74 | 65 | 0.25 |
| RD 50/20.26 | 657005000200 | 50 | 20 | 26 | 18 | 0.37 |
| RD 50/20.70 | 657005000202 | 50 | 20 | 70 | 62 | 0.3 |
| RD 50/20.93 | 657005000203 | 50 | 20 | 93 | 85 | 0.35 |
| RD 50/25.28 | 657005000250 | 50 | 25 | 28 | 21 | 0.4 |
| RD 50/25.87 | 657005000252 | 50 | 25 | 87 | 80 | 0.6 |
| RD 50/25.117 | 657005000253 | 50 | 25 | 117 | 110 | 0.65 |
| RD 50/32.32 | 657005000320 | 50 | 32 | 32 | 25 | 0.45 |
| RD 50/32.87 | 657005000322 | 50 | 32 | 87 | 80 | 0.75 |
| RD 50/32.144 | 657005000323 | 50 | 32 | 144 | 137 | 1 |
| RD 50/40.36 | 657005000400 | 50 | 40 | 36 | 30 | 0.5 |
| RD 50/40.87 | 657005000402 | 50 | 40 | 87 | 80 | 0.9 |
| RD 50/40.176 | 657005000403 | 50 | 40 | 176 | 170 | 1.8 |
| RD 63/50.40 | 657006300500 | 63 | 50 | 40 | 34 | 0.9 |
| RD 80/50.45 | 657008000500 | 80 | 50 | 45 | 36 | 1.2 |
| RD 80/63.60 | 657008000630 | 80 | 63 | 60 | 52 | 1.7 |

RAV ANTIVIBBRANTI



Riduzioni antivibranti per lavorazioni profonde o gravose.

| REF. | CODE | MHD' d1 | MHD' d2 | d3 | L | L1 | kg |
|---------------|--------------|---------|---------|------|-----|-----|------|
| RAV 50/16.74 | 657005000165 | 50 | 16 | 17.5 | 74 | 65 | 0.4 |
| RAV 50/20.93 | 657005000205 | 50 | 20 | 21.5 | 93 | 85 | 0.5 |
| RAV 50/25.117 | 657005000255 | 50 | 25 | 27 | 117 | 110 | 0.8 |
| RAV 50/32.144 | 657005000325 | 50 | 32 | 35 | 144 | 138 | 1.4 |
| RAV 50/40.176 | 657005000405 | 50 | 40 | 47 | 176 | 170 | 2.5 |
| RAV 63/50.220 | 657006300505 | 63 | 50 | 60 | 220 | 214 | 5.6 |
| RAV 80/63.280 | 657008000635 | 80 | 63 | 77 | 280 | 272 | 10.6 |

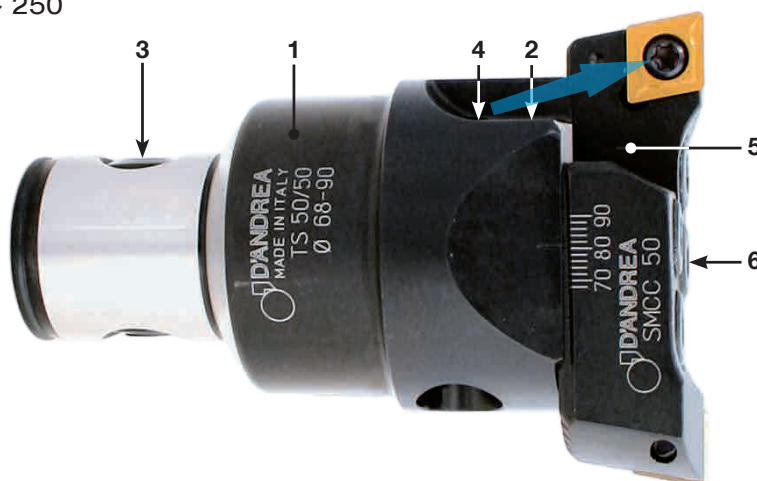
L'ALESATURA



TS 16 ~ 80 Ø 18 ~ 250

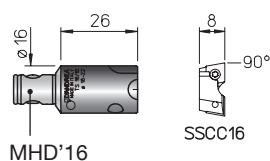
Teste di sgrossatura semplici ed estremamente rigide grazie alle superfici di contatto dentellate tra il corpo testa e i seggi portainserto.

La distanza costante tra la vite di serraggio del seggio ed il tagliente garantisce la stabilità del sistema.

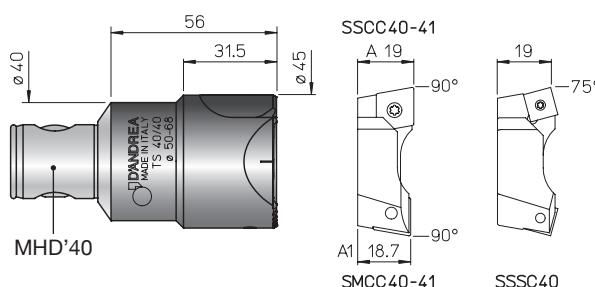


1. Corpo
2. Vite di regolazione
3. Perno radiale espandibile
4. Fori uscita refrigerante
Max BAR 40
5. Seggio portainserti
6. Viti bloccaggio utensile

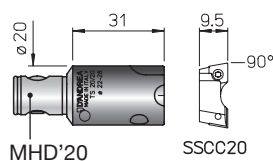
TS 16/16 Ø 18 ~ 22



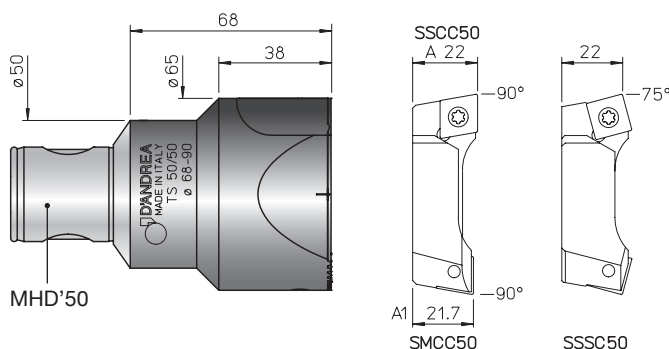
TS 40/40 Ø 50 ~ 68



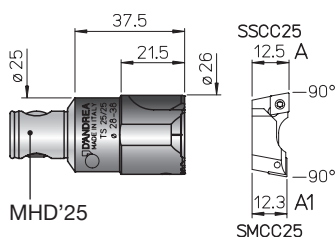
TS 20/20 Ø 22 ~ 28



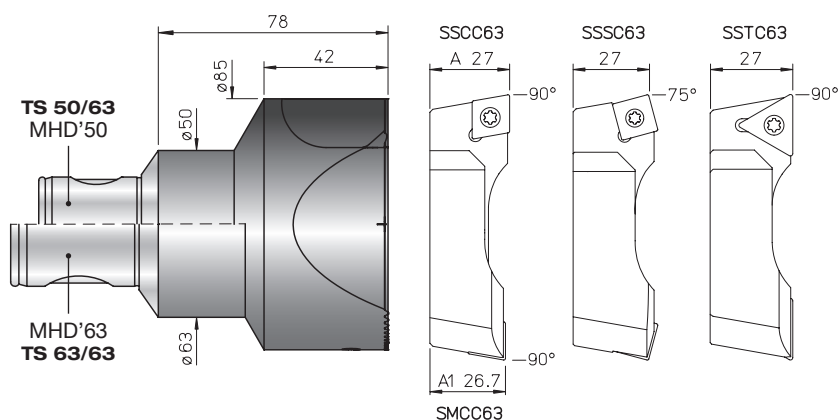
TS 50/50 Ø 68 ~ 90



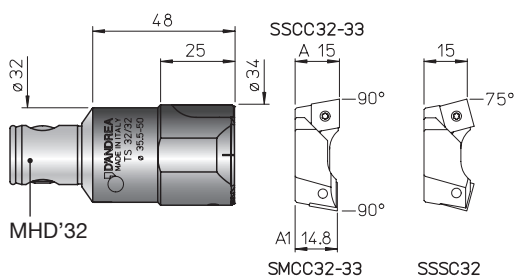
TS 25/25 Ø 28 ~ 38



TS 50/63 - TS 63/63 Ø 90 ~ 120



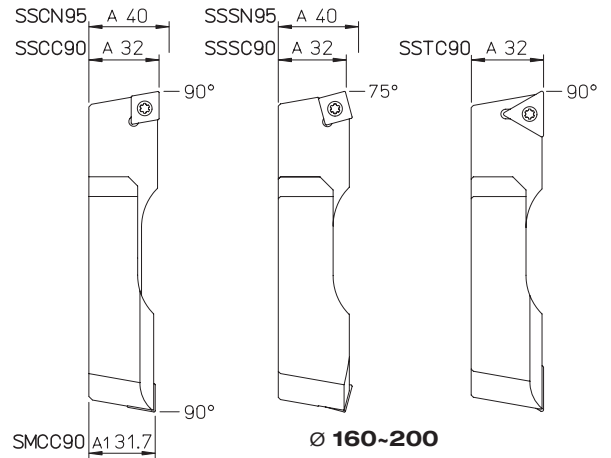
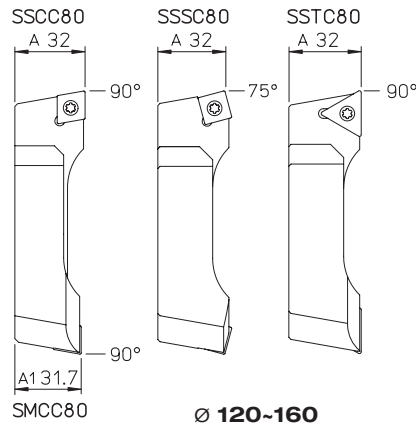
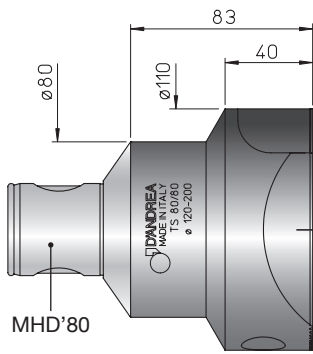
TS 32/32 Ø 35.5 ~ 50



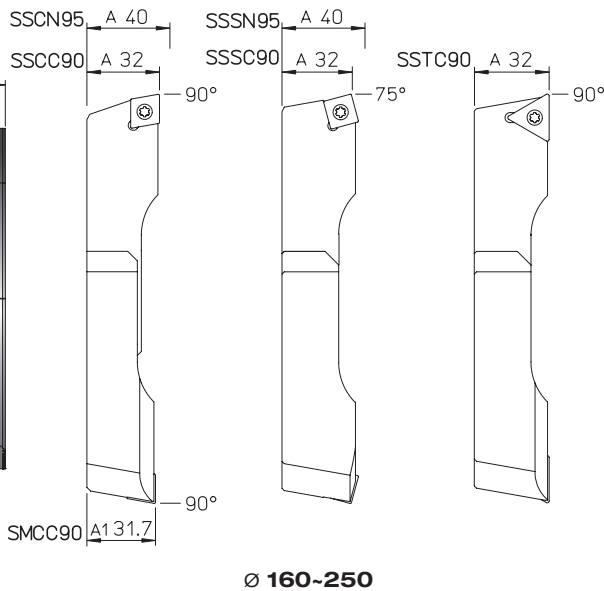
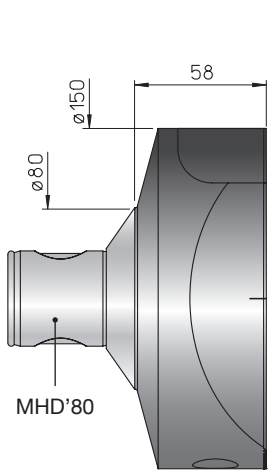
| REF. | CODE | kg | | |
|----------|--------------|------|--|--|
| TS 16/16 | 455501600340 | 0.05 | | |
| TS 20/20 | 455502000400 | 0.09 | | |
| TS 25/25 | 455502500510 | 0.2 | | |
| TS 32/32 | 455503200638 | 0.35 | | |
| TS 40/40 | 455504040070 | 0.7 | | |

| REF. | CODE | kg | | |
|----------|--------------|-----|--|--|
| TS 50/50 | 455505050090 | 1.5 | | |
| TS 50/63 | 455505063100 | 2 | | |
| TS 63/63 | 455506363100 | 3 | | |
| TS 80/80 | 455508080110 | 5.3 | | |
| TS 80/90 | 455508090090 | 6.3 | | |

TS 80/80 Ø 120 ~ 200



TS 80/90 Ø 160 ~ 250



IMPIEGO TS per operazioni di SGROSSATURA e SEMI-FINITURA

La regolazione dei taglienti va eseguita su un banco di presetting e le testine **TS** possono essere utilizzate in tre diverse configurazioni. Per lavorazioni con un solo tagliente (**fig. 3**) o seggi disallineati (**fig. 2**) si deve dimezzare l'avanzamento.

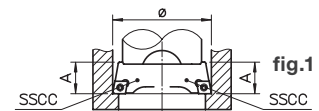


fig. 1 con due seggi SSCC allineati e sullo stesso diametro per operazioni di sgrossatura con forti avanzamenti.

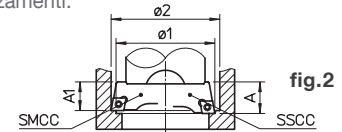


fig. 2 con un seggio SSCC ed un seggio SMCC disallineato e su un diverso diametro per operazioni di sgrossatura con alte profondità di passata.

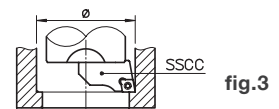


fig. 3 con un solo seggio per operazioni di sgrossatura leggera o semifinitura.

| REF. | CODE | | TS | TORX | T | kg | | |
|---------|--------------|-------------|----|------|-------|-----|--|--|
| SSCC 16 | 470500516201 | CCMT 0602.. | 25 | 08 | 0.003 | | | |
| SSCC 20 | 470500520201 | CCMT 0602.. | 25 | 08 | 0.006 | | | |
| SSCC 25 | 470500525201 | CCMT 0602.. | 25 | 08 | 0.1 | | | |
| SSCC 32 | 470500532201 | CCMT 0602.. | 25 | 08 | 0.02 | | | |
| SSCC 33 | 470500532204 | CCMT 09T3.. | 4 | 15 | 0.025 | | | |
| SSCC 40 | 470500540201 | CCMT 09T3.. | 4 | 15 | 0.06 | | | |
| SSCC 41 | 470500540204 | CCMT 1204.. | 5 | 25 | 0.06 | | | |
| SSCC 50 | 470500550204 | CCMT 1204.. | 5 | 25 | 0.1 | | | |
| SSCC 63 | 470500563201 | CCMT 1204.. | 5 | 25 | 0.2 | | | |
| SSCC 80 | 470500580201 | CCMT 1204.. | 5 | 25 | 0.5 | | | |
| SSCC 90 | 470500590201 | CCMT 1204.. | 5 | 25 | 0.7 | | | |
| SSCN 95 | 470500595201 | CNM. 1906.. | | | 0.9 | | | |
| SSTC 63 | 470500563206 | TCMT 2204.. | 5 | 25 | 0.2 | | | |
| SSTC 80 | 470500580206 | TCMT 2204.. | 5 | 25 | 0.5 | | | |
| SSTC 90 | 470500590206 | TCMT 2204.. | 5 | 25 | 0.7 | | | |
| SMCC 25 | 470500525203 | CCMT 0602.. | 25 | 08 | 0.01 | | | |
| SMCC 32 | 470500532203 | CCMT 0602.. | 25 | 08 | 0.02 | | | |
| SMCC 33 | 470500532205 | CCMT 09T3.. | 4 | 15 | 0.025 | | | |
| SMCC 40 | 470500540203 | CCMT 09T3.. | 4 | 15 | 0.06 | | | |
| SMCC 41 | 470500540205 | CCMT 1204.. | 5 | 25 | 0.06 | | | |
| SMCC 50 | 470500550205 | CCMT 1204.. | 5 | 25 | 0.1 | | | |
| SMCC 63 | 470500563203 | CCMT 1204.. | 5 | 25 | 0.2 | | | |
| SMCC 80 | 470500580203 | CCMT 1204.. | 5 | 25 | 0.5 | | | |
| SMCC 90 | 470500590203 | CCMT 1204.. | 5 | 25 | 0.7 | | | |
| SSSC 32 | 470500532202 | SCMT 09T3.. | 4 | 15 | 0.02 | | | |
| SSSC 40 | 470500540202 | SCMT 09T3.. | 4 | 15 | 0.06 | | | |
| SSSC 50 | 470500550202 | SCMT 1204.. | 5 | 25 | 0.1 | | | |
| SSSC 63 | 470500563202 | SCMT 1204.. | 5 | 25 | 0.2 | | | |
| SSSC 80 | 470500580202 | SCMT 1204.. | 5 | 25 | 0.5 | | | |
| SSSC 90 | 470500590202 | SCMT 1204.. | 5 | 25 | 0.7 | | | |
| SSSN 95 | 470500595202 | SNM. 1906.. | | | p.57 | 0.9 | | |

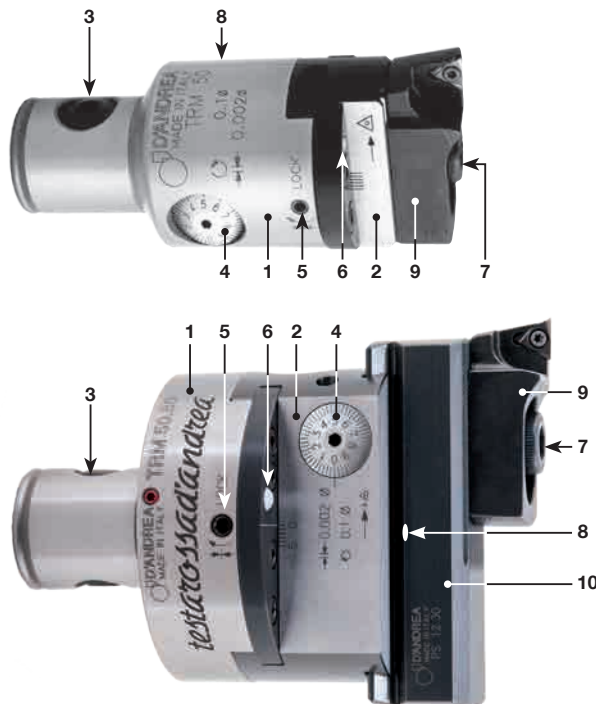
• Per lavorazioni SOTTOSQUADRA vedere p.24

TRM 16 ~ 125 Ø 2.5 ~ 500

- TRM 16** RPM 12.000
- TRM 20** RPM 12.000
- TRM 25** RPM 10.000
- TRM 32** RPM 10.000
- TRM 40** RPM 8.000
- TRM 50** RPM 8.000
- TRM 63** RPM 6.000
- TRM 80** RPM 5.000
- TRM 125** RPM 4.000

Le testine **TRM** consentono lavorazioni di alta precisione e ottima finitura superficiale in tolleranze di grado **IT6**. La sensibilità di regolazione di **1 micron** sul raggio è facilmente leggibile sul nonio ed eseguibile anche in macchina.

TESTAROSSA MICROMETRICA



2 µm

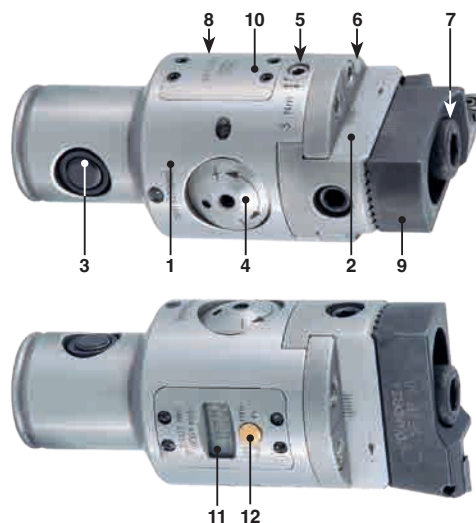
1. Corpo
2. Slitta portautensili
3. Perno radiale espandibile
4. Nonio micrometrico
5. Vite bloccaggio slitta
6. Uscita refrigerante
Max BAR 40
7. Viti bloccaggio utensili
8. Oliatore
9. Sedgiu portainseriti
10. Porta utensile

TRE 50 IP69K Ø 2.5 ~ 142

- TRE 50 69K** RPM 20.000

La testina **TRE 50** consente lavorazioni di alta precisione e ottima finitura superficiale in tolleranze di grado **IT6**. La sensibilità di regolazione di **1 micron** sul raggio è veloce e precisa, facilmente visualizzabile sul display integrato. La **TRE 50** è resistente alle infiltrazioni secondo il grado **IP69K**.

TESTAROSSA MICROMETRICA DIGITALE



2 µm

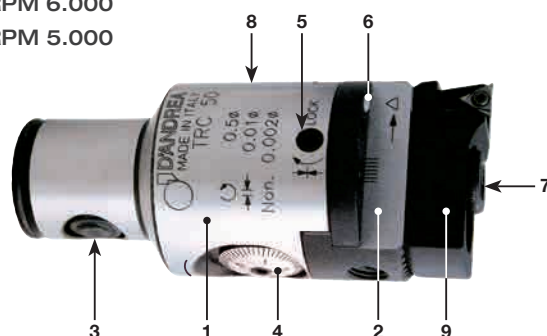
1. Corpo
2. Slitta portautensili
3. Perno radiale espandibile
4. Vite di regolazione
5. Vite bloccaggio slitta
6. Ugello uscita refrigerante
Max BAR 40
7. Vite bloccaggio utensili
8. Oliatore
9. Sedgiu portainseriti
10. Coperchio vano pile
11. Display digitale
12. Pulsante di selezione

TRC 16 ~ 80 Ø 2.5 ~ 140

- TRC 16** RPM 12.000 **TRC 40** RPM 8.000
- TRC 20** RPM 12.000 **TRC 50** RPM 8.000
- TRC 25** RPM 10.000 **TRC 63** RPM 6.000
- TRC 32** RPM 10.000 **TRC 80** RPM 5.000

Le testine **TRC** consentono lavorazioni di alta precisione e ottima finitura superficiale in tolleranze di grado **IT7**. La sensibilità di regolazione di **5 micron** sul raggio è facilmente leggibile sul nonio ed eseguibile anche in macchina.

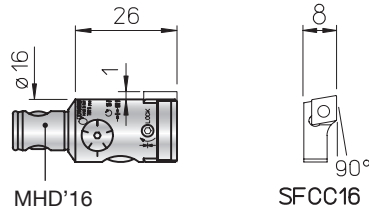
TESTAROSSA CENTESIMALE



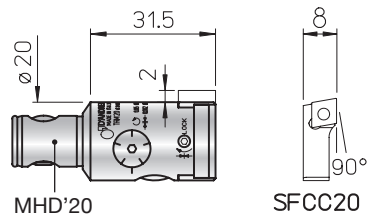
10 µm
nonio vernier 2 µm

1. Corpo
2. Slitta portautensili
3. Perno radiale espandibile
4. Nonio
5. Vite bloccaggio slitta
6. Uscita refrigerante
Max BAR 40
7. Viti bloccaggio utensile
8. Oliatore
9. Sedgiu portainseriti

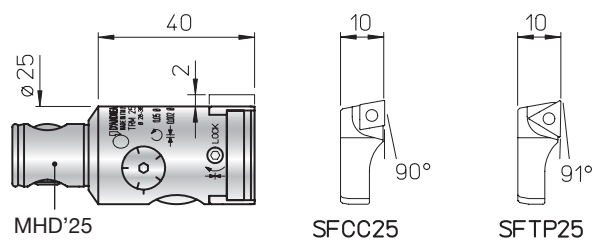
TRM 16 Ø 18 ~ 23



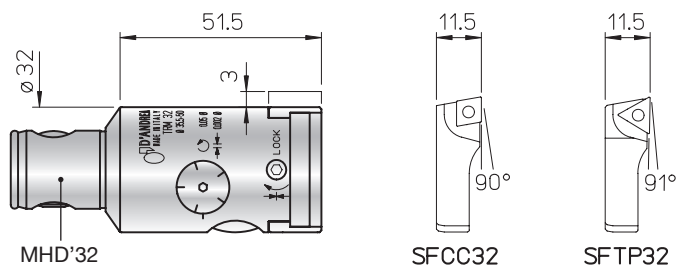
TRM 20 Ø 22 ~ 29



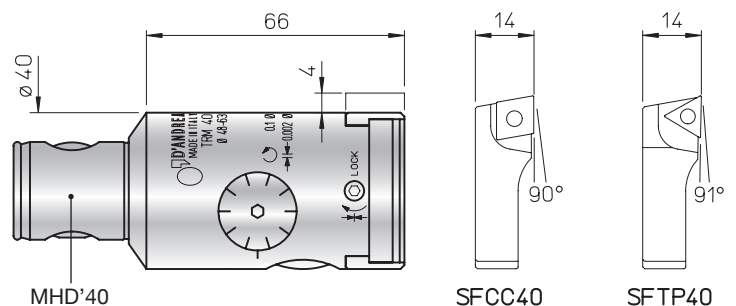
TRM 25 Ø 28 ~ 38



TRM 32 Ø 35.5 ~ 51.5



TRM 40 Ø 48 ~ 63



| REF. | CODE | kg |
|--------|--------------|------|
| TRM 16 | 455001600341 | 0.05 |
| TRM 20 | 455002000401 | 0.1 |
| TRM 25 | 455002500500 | 0.2 |
| TRM 32 | 455003200630 | 0.35 |
| TRM 40 | 455004000800 | 0.7 |

| REF. | CODE | | TORX T | kg |
|---------|--------------|-------------|---------------|-------|
| SFCC 16 | 470500516002 | CCGT 0602.. | TS 25 08 | 0.003 |
| SFCC 20 | 470500520002 | CCGT 0602.. | TS 25 08 | 0.005 |
| SFCC 25 | 470500525002 | CCGT 0602.. | TS 25 08 | 0.01 |
| SFCC 32 | 470500532002 | CCGT 0602.. | TS 25 08 | 0.02 |
| SFCC 40 | 470500540002 | CCGT 09T3.. | TS 4 15 | 0.04 |
| SFTP 25 | 470500525001 | TPGX 0902.. | CS 250T 08 | 0.01 |
| SFTP 32 | 470500532001 | TPGX 0902.. | CS 250T 08 | 0.02 |
| SFTP 40 | 470500540001 | TPGX 1103.. | CS 300890T 08 | 0.04 |

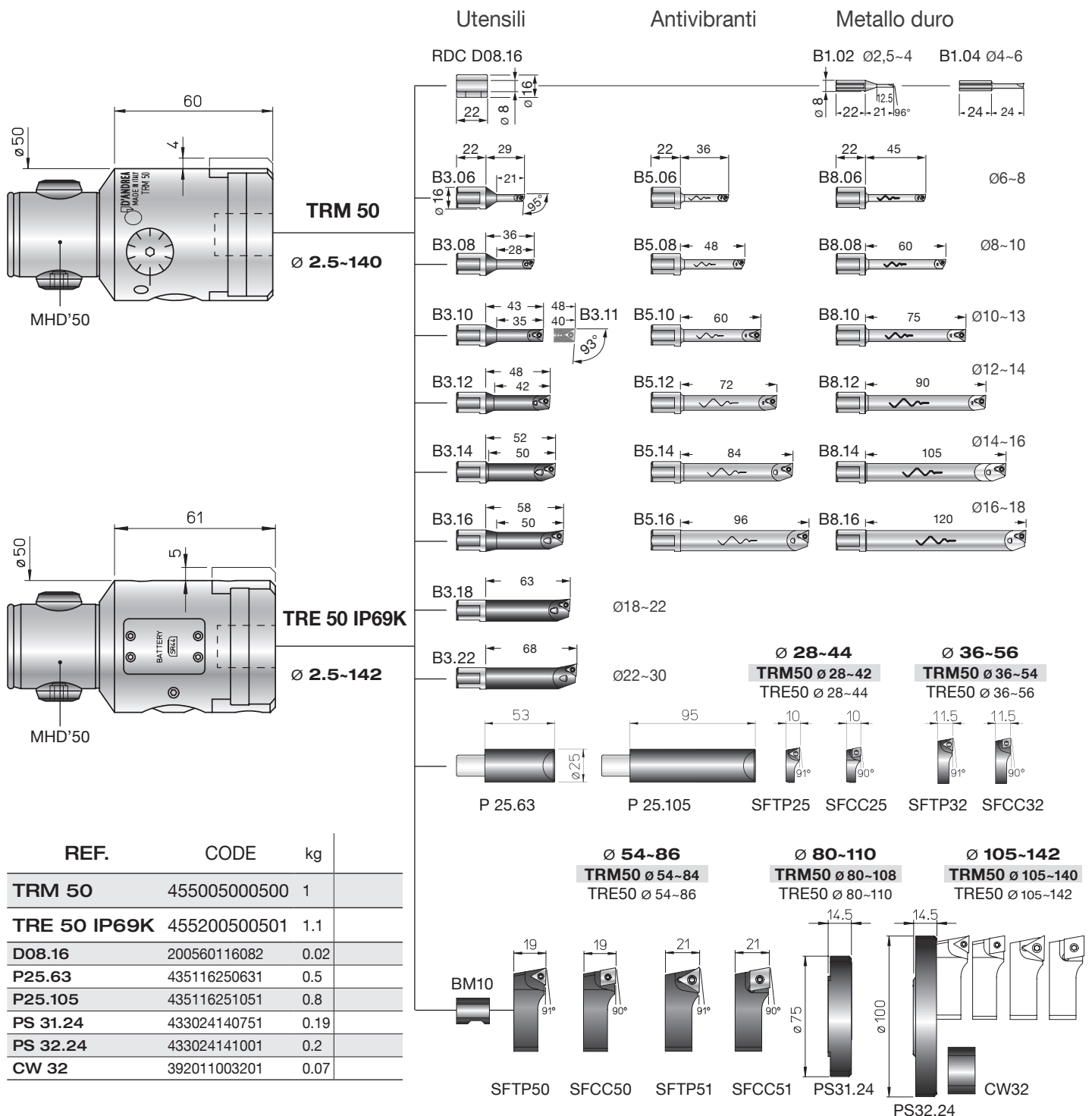
• Per lavorazioni SOTTOSQUADRA vedere p.24

TRM 50 Ø 2.5 ~ 140

TRE 50 IP69K Ø 2.5 ~ 142



2 μm



| REF. | CODE | kg |
|--------------|--------------|------|
| TRM 50 | 455005000500 | 1 |
| TRE 50 IP69K | 455200500501 | 1.1 |
| D08.16 | 200560116082 | 0.02 |
| P25.63 | 435116250631 | 0.5 |
| P25.105 | 435116251051 | 0.8 |
| PS 31.24 | 433024140751 | 0.19 |
| PS 32.24 | 433024141001 | 0.2 |
| CW 32 | 392011003201 | 0.07 |

KIT K01 TRM 50 Ø 6 ~ 140



- 1 TRM 50**
- 1 B3.06
- 1 B3.08
- 1 B3.11
- 1 B3.16
- 1 B3.22
- 1 SFTP 25
- 1 SFTP 32
- 1 SFTP 50
- 1 P 25.63
- 1 PS 31.24
- 1 PS 32.24
- 1 CW 32
- 5 TPGX 090202L DC100
- 1 TPGX 110302L DC100
- 2 WCGT 020102L DC10

KIT K01 TRE 50 IP69K Ø 6 ~ 142



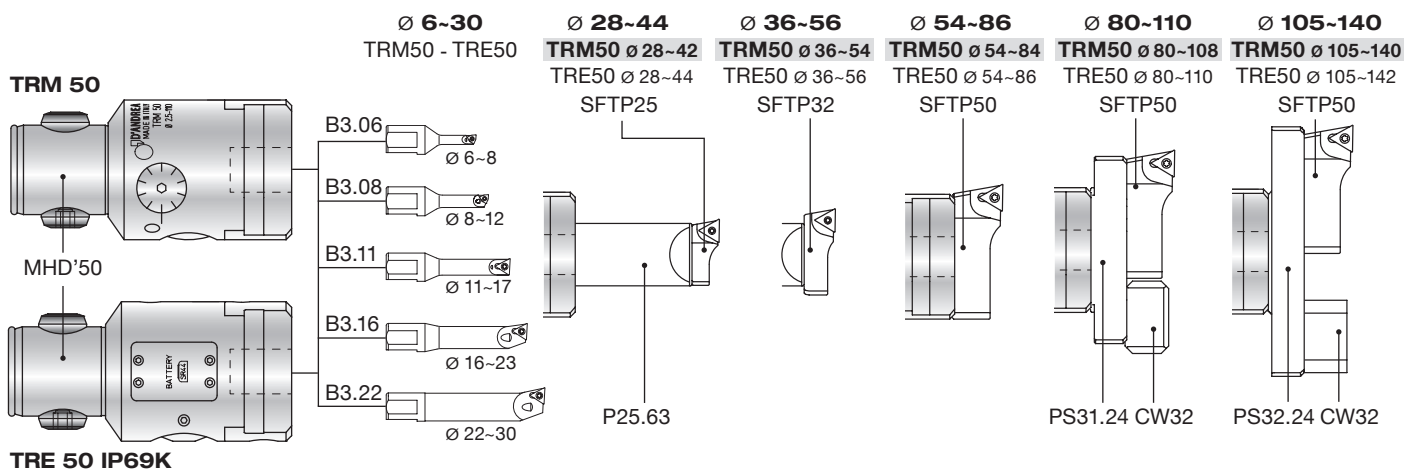
- 1 TRE 50**
- 1 B3.06
- 1 B3.08
- 1 B3.11
- 1 B3.16
- 1 B3.22
- 1 SFTP 25
- 1 SFTP 32
- 1 SFTP 50
- 1 P 25.63
- 1 PS 31.24
- 1 PS 32.24
- 1 CW 32
- 5 TPGX 090202L DC100
- 1 TPGX 110302L DC100
- 2 WCGT 020102L DC10

| REF. | CODE | kg |
|----------------|--------------|-----|
| KIT K01 TRM 50 | 655005010510 | 3.1 |

| REF. | CODE | kg |
|----------------------|--------------|-----|
| KIT K01 TRE 50 IP69K | 655200500504 | 3.1 |

KIT K01 TRM 50 - TRE 50 IP69K

Campi di Lavoro



| REF. | CODE | TORX T | kg |
|-------|--------------|------------------------|-------|
| B1.02 | 572010502001 | | 0.02 |
| B1.04 | 572010504001 | | 0.02 |
| B3.06 | 572010506001 | WCGT0201.. TS 21 06 | 0.035 |
| B3.08 | 572010508001 | WCGT0201.. TS 211 06 | 0.4 |
| B3.10 | 572010510001 | TPGX0902.. CS 250 T 08 | 0.05 |
| B3.11 | 572010511001 | TPGX0902.. CS 250 T 08 | 0.055 |
| B3.12 | 572010512001 | TPGX0902.. CS 250 T 08 | 0.06 |
| B3.14 | 572010514001 | TPGX0902.. CS 250 T 08 | 0.07 |
| B3.16 | 572010516001 | TPGX0902.. CS 250 T 08 | 0.07 |
| B3.18 | 572010518001 | TPGX0902.. CS 250 T 08 | 0.1 |
| B3.22 | 572010522001 | TPGX0902.. CS 250 T 08 | 0.1 |

| REF. | CODE | TORX T | kg |
|-------|--------------|------------------------|-------|
| B5.06 | 572010506105 | WCGT0201.. TS 21 06 | 0.075 |
| B5.08 | 572010508105 | WCGT0201.. TS 211 06 | 0.09 |
| B5.10 | 572010510105 | TPGX0902.. CS 250 T 08 | 0.1 |
| B5.12 | 572010512105 | TPGX0902.. CS 250 T 08 | 0.1 |
| B5.14 | 572010514105 | TPGX0902.. CS 250 T 08 | 0.2 |
| B5.16 | 572010516105 | TPGX0902.. CS 250 T 08 | 0.3 |
| B8.06 | 572010506108 | WCGT0201.. TS 21 06 | 0.065 |
| B8.08 | 572010508108 | WCGT0201.. TS 211 06 | 0.08 |
| B8.10 | 572010510108 | TPGX0902.. CS 250 T 08 | 0.1 |
| B8.12 | 572010512108 | TPGX0902.. CS 250 T 08 | 0.2 |
| B8.14 | 572010514108 | TPGX0902.. CS 250 T 08 | 0.2 |
| B8.16 | 572010516108 | TPGX0902.. CS 250 T 08 | 0.3 |

| REF. | CODE | TORX T | kg |
|--------|--------------|-------------------------|------|
| SFTP25 | 470500525001 | TPGX0902.. CS 250T 08 | 0.01 |
| SFTP32 | 470500532001 | TPGX0902.. CS 250T 08 | 0.02 |
| SFTP50 | 470500550001 | TPGX1103.. CS300890T 08 | 0.08 |
| SFTP51 | 470500550003 | TCMT16T3.. TS 4 15 | 0.09 |

| REF. | CODE | TORX T | kg |
|--------|--------------|---------------------|------|
| SFCC25 | 470500525002 | CCGT0602.. TS 25 08 | 0.01 |
| SFCC32 | 470500532002 | CCGT0602.. TS 25 08 | 0.02 |
| SFCC50 | 470500550002 | CCGT09T3.. TS 4 15 | 0.08 |
| SFCC51 | 470500550004 | CCMT1204.. TS 5 25 | 0.09 |

• Per lavorazioni SOTTOSQUADRA vedere p.24

TRM 50/63 - TRM 63/63

Ø 2.5 ~ 155



TRM 50/80 - TRM 80/80

Ø 2.5 ~ 220



2 µm

TRM 50/63
Ø 2.5-155

TRM 50/80
Ø 2.5-220

TRM 80/80

| Utensili | Antivibranti | Metallo duro |
|------------|------------------|----------------------------|
| RDC D08.16 | | B1.02 Ø2,5-4 B1.04 Ø4-6 |
| B3.06 | B5.06 | B8.06 Ø6-8 |
| B3.08 | B5.08 | B8.08 Ø8-10 |
| B3.10 | B5.10 | B8.10 Ø10-13 |
| B3.11 | B5.11 | B8.11 Ø12-14 |
| B3.12 | B5.12 | B8.12 Ø14-16 |
| B3.14 | B5.14 | B8.14 Ø16-18 |
| B3.16 | B5.16 | B8.16 Ø18-22 |
| B3.18 | | |
| B3.22 | | |
| P20.30 | | |
| P02.30 | | |
| P03.30 | | |
| P04.30 | | |
| PS11.30 | | |
| PS12.30 | | |
| PS13.30 | | |
| | Ø 30-83 | Ø 35.5-95 |
| | TRM63 Ø 30-66 | TRM63 Ø 35.5-77 |
| | TRM80 Ø 30-83 | TRM80 Ø 35.5-95 |
| | SFTP25 SFCC25 | SFTP32 SFCC32 |
| | SFTP50 SFCC50 | SFTP51 SFCC51 |
| | Ø 77-220 | |

| REF. | CODE | kg |
|-----------|--------------|------|
| TRM 50/63 | 455005000631 | 1.1 |
| TRM 63/63 | 455006300631 | 1.5 |
| TRM 50/80 | 455005000801 | 2 |
| TRM 80/80 | 455008000801 | 2.5 |
| D08.16 | 200560116082 | 0.02 |
| P20.30 | 431030160300 | 0.2 |
| P02.30 | 431030250400 | 0.3 |
| P03.30 | 431030250700 | 0.4 |
| P04.30 | 431030251150 | 0.7 |
| PS 11.30 | 433030260750 | 0.4 |
| PS 12.30 | 433030260950 | 0.5 |
| PS 13.30 | 433030261400 | 0.7 |

20 D'ANDREA

KIT K01 TRM 50/63 - 63/63

Ø 6 ~ 155



1 TRM 50/63 - 63/63

- 1 P20.30 1 B3.11
- 1 PS11.30 1 B3.16
- 1 PS12.30 1 B3.22
- 1 P02.30 1 SFTP25
- 1 P03.30 1 SFTP32
- 1 B3.06 1 SFTP50
- 1 B3.08

- 5 TPGX 090202L DC100
- 1 TPGX 110302L DC100
- 2 WCGT 020102L DC 10

| REF. | CODE | kg | | |
|------------------|--------------|-----|--|--|
| KIT K01 TRM50/63 | 655005010633 | 3.9 | | |
| KIT K01 TRM63/63 | 655006310633 | 4.2 | | |

KIT K01 TRM 50/80 - 80/80

Ø 6 ~ 220



1 TRM 50/80 - 80/80

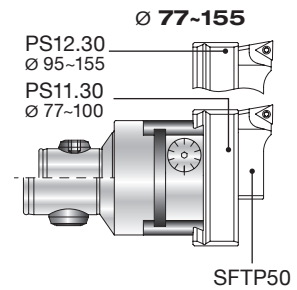
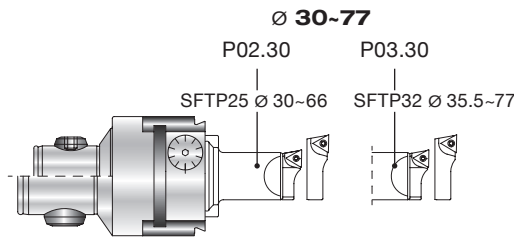
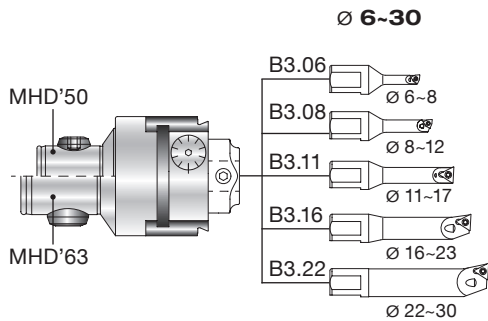
- 1 P20.30 1 B3.08
- 1 PS12.30 1 B3.11
- 1 PS13.30 1 B3.16
- 1 P02.30 1 B3.22
- 1 P03.30 1 SFTP25
- 1 P04.30 1 SFTP32
- 1 B3.06 1 SFTP50

- 5 TPGX 090202L DC100
- 1 TPGX 110302L DC100
- 2 WCGT 020102L DC 10

| REF. | CODE | kg | | |
|------------------|--------------|-----|--|--|
| KIT K01 TRM50/80 | 655005010802 | 6.2 | | |
| KIT K01 TRM80/80 | 655008010802 | 6.6 | | |

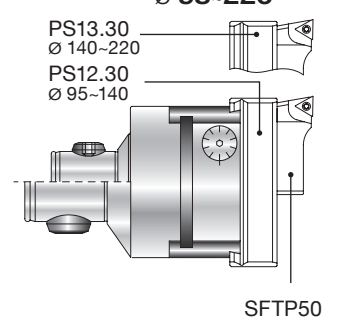
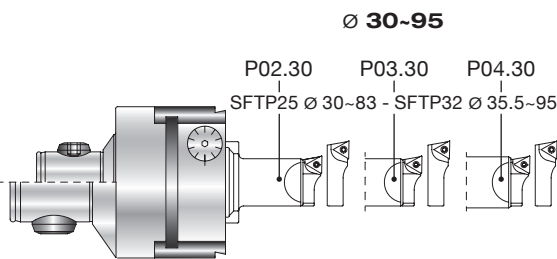
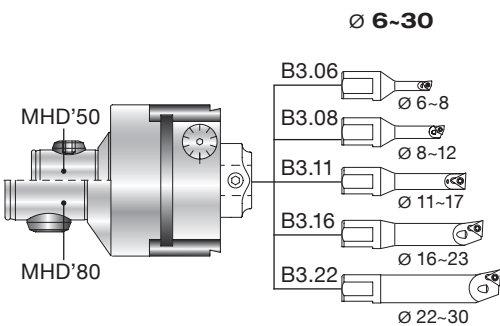
KIT K01 TRM 50/63 - 63/63

Campo di Lavoro



KIT K01 TRM 50/80 - 80/80

Campo di Lavoro



| REF. | CODE | | TORX T | kg |
|-------|--------------|------------|-------------|-------|
| B1.02 | 572010502001 | | | 0.02 |
| B1.04 | 572010504001 | | | 0.02 |
| B3.06 | 572010506001 | WCGT0201.. | TS 21 06 | 0.035 |
| B3.08 | 572010508001 | WCGT0201.. | TS 211 06 | 0.4 |
| B3.10 | 572010510001 | TPGX0902.. | CS 250 T 08 | 0.05 |
| B3.11 | 572010511001 | TPGX0902.. | CS 250 T 08 | 0.055 |
| B3.12 | 572010512001 | TPGX0902.. | CS 250 T 08 | 0.06 |
| B3.14 | 572010514001 | TPGX0902.. | CS 250 T 08 | 0.07 |
| B3.16 | 572010516001 | TPGX0902.. | CS 250 T 08 | 0.07 |
| B3.18 | 572010518001 | TPGX0902.. | CS 250 T 08 | 0.1 |
| B3.22 | 572010522001 | TPGX0902.. | CS 250 T 08 | 0.1 |

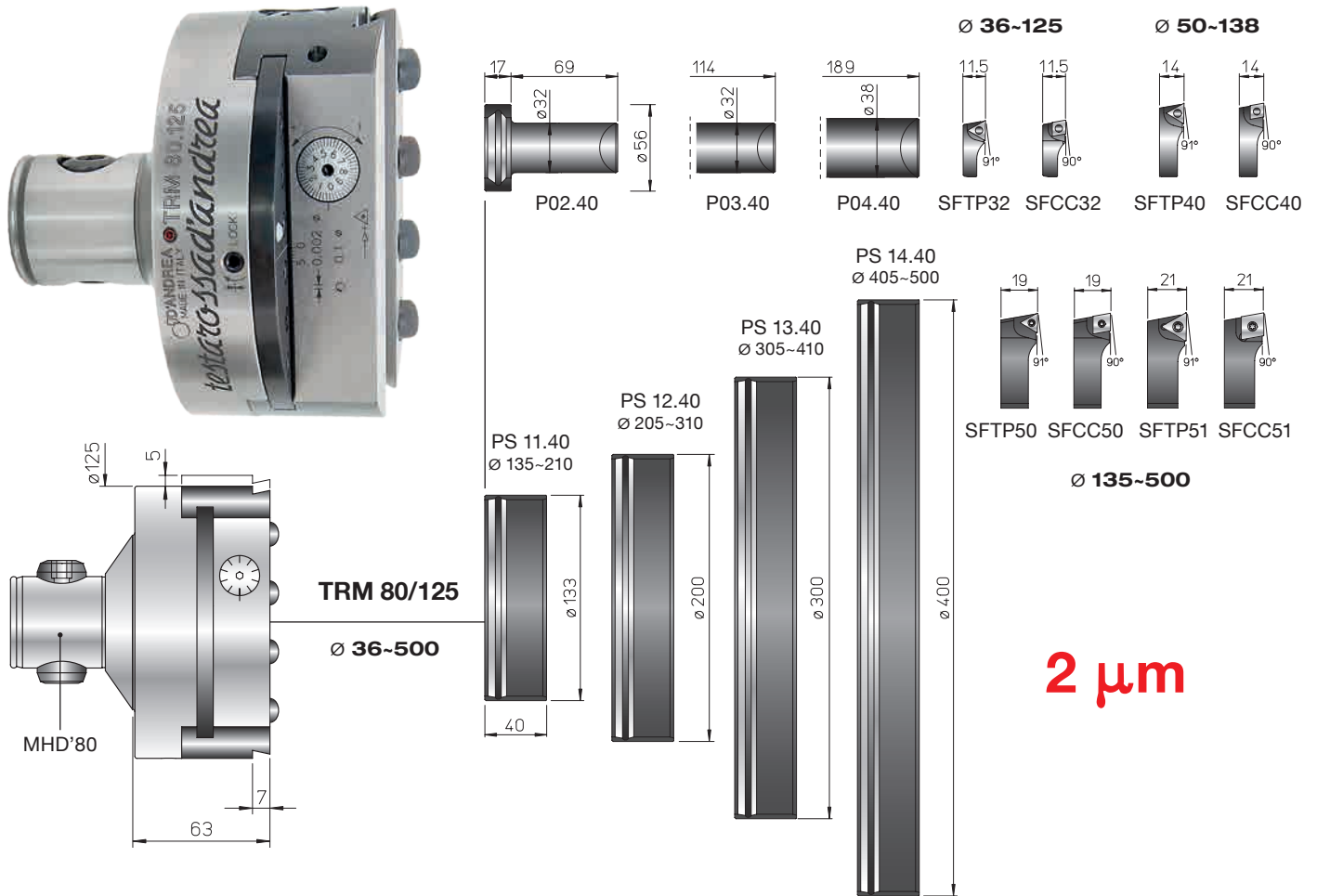
| REF. | CODE | | TORX T | kg |
|-------|--------------|------------|-------------|-------|
| B5.06 | 572010506105 | WCGT0201.. | TS 21 06 | 0.075 |
| B5.08 | 572010508105 | WCGT0201.. | TS 211 06 | 0.09 |
| B5.10 | 572010510105 | TPGX0902.. | CS 250 T 08 | 0.1 |
| B5.12 | 572010512105 | TPGX0902.. | CS 250 T 08 | 0.1 |
| B5.14 | 572010514105 | TPGX0902.. | CS 250 T 08 | 0.2 |
| B5.16 | 572010516105 | TPGX0902.. | CS 250 T 08 | 0.3 |
| B8.06 | 572010506108 | WCGT0201.. | TS 21 06 | 0.065 |
| B8.08 | 572010508108 | WCGT0201.. | TS 211 06 | 0.08 |
| B8.10 | 572010510108 | TPGX0902.. | CS 250 T 08 | 0.1 |
| B8.12 | 572010512108 | TPGX0902.. | CS 250 T 08 | 0.2 |
| B8.14 | 572010514108 | TPGX0902.. | CS 250 T 08 | 0.2 |
| B8.16 | 572010516108 | TPGX0902.. | CS 250 T 08 | 0.3 |

| REF. | CODE | | TORX T | kg |
|--------|--------------|------------|--------------|------|
| SFTP25 | 470500525001 | TPGX0902.. | CS 250T 08 | 0.01 |
| SFTP32 | 470500532001 | TPGX0902.. | CS 250T 08 | 0.02 |
| SFTP50 | 470500550001 | TPGX1103.. | CS300890T 08 | 0.08 |
| SFTP51 | 470500550003 | TCMT16T3.. | TS 4 15 | 0.09 |

| REF. | CODE | | TORX T | kg |
|--------|--------------|------------|----------|------|
| SFCC25 | 470500525002 | CCGT0602.. | TS 25 08 | 0.01 |
| SFCC32 | 470500532002 | CCGT0602.. | TS 25 08 | 0.02 |
| SFCC50 | 470500550002 | CCGT09T3.. | TS 4 15 | 0.08 |
| SFCC51 | 470500550004 | CCMT1204.. | TS 5 25 | 0.09 |

• Per lavorazioni SOTTOSQUADRA vedere p.24

TRM 80/125 Ø 36 ~ 500



| REF. | CODE | kg |
|------------|--------------|-----|
| TRM 80/125 | 455008001251 | 5.5 |
| P02.40 | 431040320700 | 0.7 |
| P03.40 | 431040321150 | 1 |
| P04.40 | 431040321900 | 2 |

| REF. | CODE | kg |
|----------|--------------|-----|
| PS 11.40 | 433040351500 | 1.5 |
| PS 12.40 | 433040352300 | 2.4 |
| PS 13.40 | 433040353300 | 3.5 |
| PS 14.40 | 433040354000 | 4.6 |

KIT K03 Ø 36 ~ 410

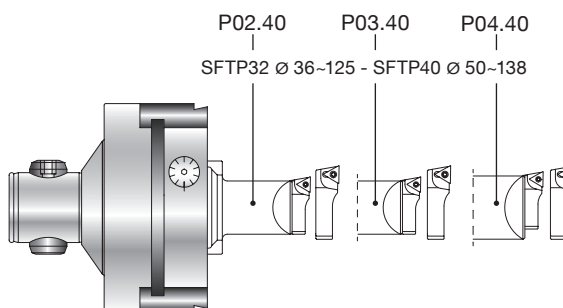
TRM 80/125 ESCLUSA



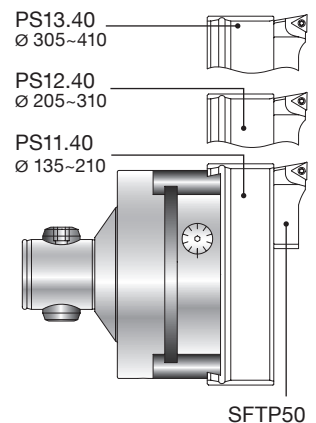
- 1 PS11.40
- 1 PS12.40
- 1 PS13.40
- 1 P02.40
- 1 P03.40
- 1 P04.40
- 1 SFTP32
- 1 SFTP40
- 1 SFTP50

Campo di Lavoro

Ø 36-138



Ø 135-410



| REF. | CODE | kg |
|--------------------|--------------|------|
| KIT K03 TRM 80/125 | 655012500030 | 11.2 |

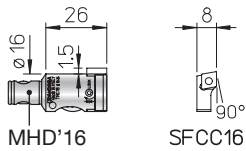
| REF. | CODE | △ | □ | TORX T | kg |
|--------|--------------|-------------|-----------|---------|----|
| SFTP32 | 470500532001 | TPGX 0902.. | CS 250T | 08 0.02 | |
| SFTP40 | 470500540001 | TPGX 1103.. | CS300890T | 08 0.04 | |
| SFTP50 | 470500550001 | TPGX 1103.. | CS300890T | 08 0.08 | |
| SFTP51 | 470500550003 | TCMT 16T3.. | TS 4 | 15 0.09 | |

| REF. | CODE | ⊗ | □ | TORX T | kg |
|--------|--------------|-------------|----------|--------|----|
| SFCC32 | 470500532002 | CCGT 0602.. | TS 25 08 | 0.02 | |
| SFCC40 | 470500540002 | CCGT 09T3.. | TS 4 15 | 0.04 | |
| SFCC50 | 470500550002 | CCGT 09T3.. | TS 4 15 | 0.08 | |
| SFCC51 | 470500550004 | CCMT 1204.. | TS 5 25 | 0.09 | |

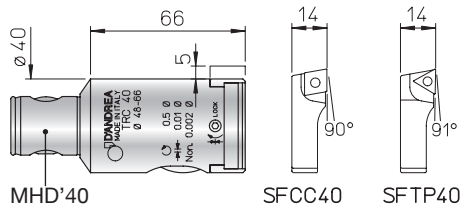
TRC 16 ~ 80 Ø 18 ~ 132



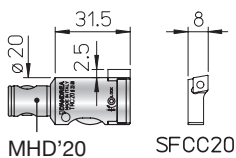
TRC 16 Ø 18 ~ 24



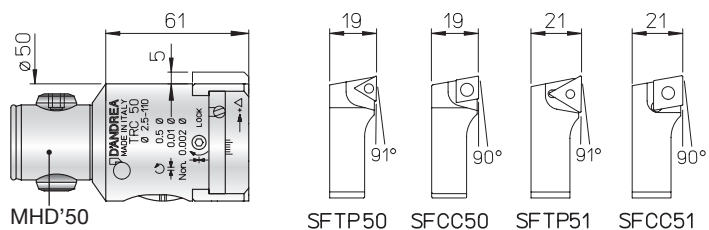
TRC 40 Ø 48 ~ 66



TRC 20 Ø 22 ~ 30

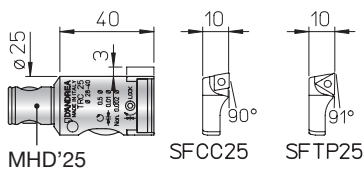


TRC 50 Ø 54 ~ 86

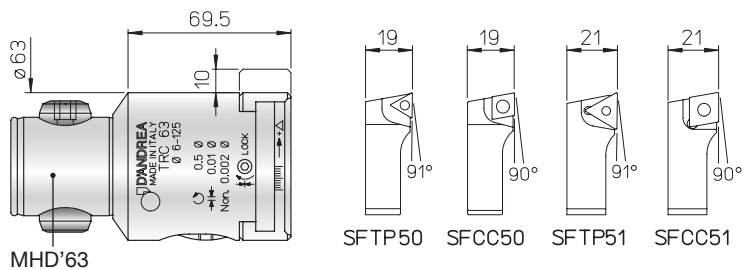


LA TRC 50 UTILIZZA TUTTI GLI UTENSILI A CORREDO DELLA TRM 50 (p.18-19)

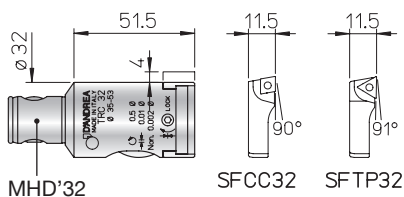
TRC 25 Ø 28 ~ 40



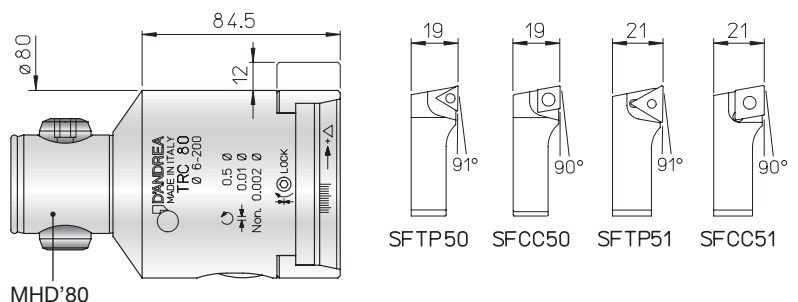
TRC 63 Ø 72 ~ 110



TRC 32 Ø 35.5 ~ 53.5



TRC 80 Ø 88 ~ 132



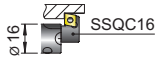
| REF. | CODE | kg | |
|--------|--------------|------|--|
| TRC 16 | 455011600341 | 0.05 | |
| TRC 20 | 455012000401 | 0.1 | |
| TRC 25 | 455012500501 | 0.2 | |
| TRC 32 | 455013200631 | 0.35 | |
| TRC 40 | 455014000801 | 0.7 | |
| TRC 50 | 455015000801 | 1 | |
| TRC 63 | 455016301001 | 2 | |
| TRC 80 | 455018001201 | 3.8 | |

| REF. | CODE | | TORX T | kg | |
|--------|--------------|-------------|-----------|----|-------|
| SFCC16 | 470500516002 | CCGT 0602.. | TS 25 | 08 | 0.003 |
| SFCC20 | 470500520002 | CCGT 0602.. | TS 25 | 08 | 0.005 |
| SFCC25 | 470500525002 | CCGT 0602.. | TS 25 | 08 | 0.01 |
| SFCC32 | 470500532002 | CCGT 0602.. | TS 25 | 08 | 0.02 |
| SFCC40 | 470500540002 | CCGT 09T3.. | TS 4 | 15 | 0.04 |
| SFCC50 | 470500550002 | CCGT 09T3.. | TS 4 | 15 | 0.08 |
| SFCC51 | 470500550004 | CCMT 1204.. | TS 5 | 25 | 0.09 |
| SFTP25 | 470500525001 | TPGX 0902.. | CS 250T | 08 | 0.01 |
| SFTP32 | 470500532001 | TPGX 0902.. | CS 250T | 08 | 0.02 |
| SFTP40 | 470500540001 | TPGX 1103.. | CS300890T | 08 | 0.04 |
| SFTP50 | 470500550001 | TPGX 1103.. | CS300890T | 08 | 0.08 |
| SFTP51 | 470500550003 | TCMT 16T3.. | TS 4 | 15 | 0.09 |

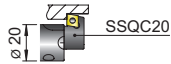
• Per lavorazioni SOTTOSQUADRA vedere p.24

MHD' TS / PSC TS

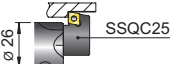
TS 16/16
Ø 20-24



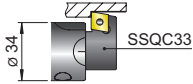
TS 20/20
Ø 23.5-30



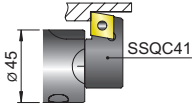
TS 25/25
Ø 29.5-40



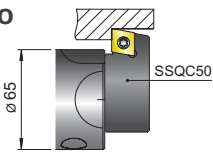
TS 32/32
Ø 39-52



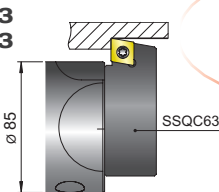
TS 40/40
Ø 51-70



TS 50/50
Ø 69-92

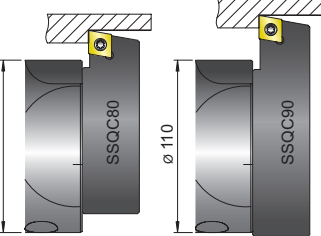


TS 50/63
TS 63/63
Ø 91-122



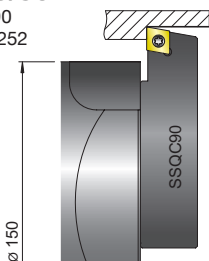
BHT
250 Ø 273-414
500 Ø 523-664
750 Ø 773-914

TS 80/80
SSQC80
Ø 121-162



SSQC90
Ø 161-202

TS 80/90
SSQC90
Ø 161-252



TRM - TRC

TRM 16 Ø 20-25
TRC 16 Ø 20-26



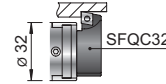
TRM 20 Ø 24.5-32
TRC 20 Ø 24.5-33



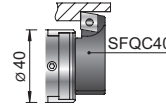
TRM 25 Ø 31.5-40.5
TRC 25 Ø 31.5-42.5



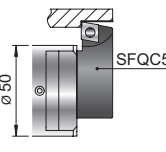
TRM 32 Ø 38.5-51.5
TRC 32 Ø 38.5-53.5



TRM 40 Ø 50.5-65
TRC 40 Ø 50.5-67

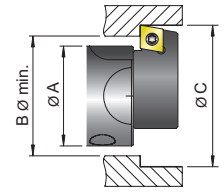


TRM 50 Ø 56-142
TRE 50 Ø 56-144
TRC 50 Ø 56-144

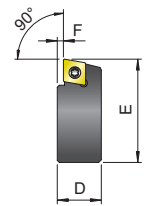


CALCOLO MINIMO Ø INGRESSO

$$B \text{ } \varnothing \text{ min} = (\varnothing C + \varnothing A + 1) : 2$$



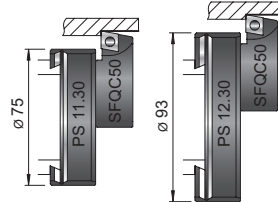
QUOTE SEGGI



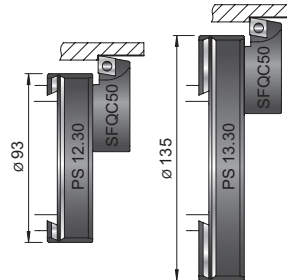
TRM

BHT
250 Ø 253-505
500 Ø 503-755
750 Ø 753-1005

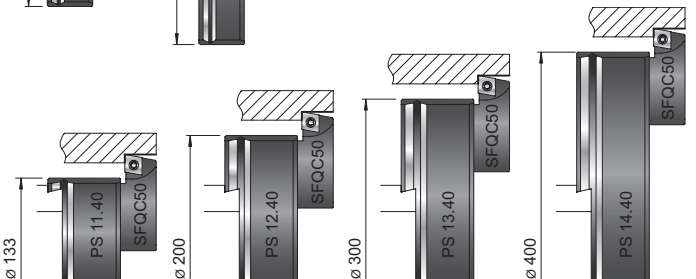
TRM 50/63
TRM 63/63
PS 11.30
Ø 82-102
PS 12.30
Ø 100-157



TRM 50/80
TRM 80/80
PS 12.30
Ø 100-142
PS 13.30
Ø 142-162

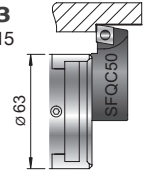


TRM 80/125
PS 11.40
Ø 140-212
PS 12.40
Ø 210-312
PS 13.40
Ø 310-412
PS 14.40
Ø 410-502

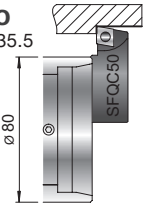


TRC

TRC 63
Ø 72.5-115



TRC 80
Ø 88.5-135.5

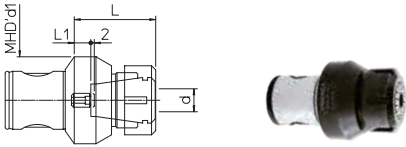


| REF. | CODE | D | E | F | CCMT | TS | TORX T |
|---------|--------------|------|------|-----|--------|----|--------|
| SSQC 16 | 470500516261 | 10 | 16 | 2 | 0602.. | 25 | 08 |
| SSQC 20 | 470500520261 | 11 | 19.5 | 1.5 | 0602.. | 25 | 08 |
| SSQC 25 | 470500525261 | 14.5 | 24 | 2.5 | 0602.. | 25 | 08 |
| SSQC 33 | 470500533261 | 17 | 32 | 3 | 09T3.. | 4 | 15 |
| SSQC 41 | 470500541261 | 21 | 42 | 3.5 | 1204.. | 5 | 25 |
| SSQC 50 | 470500550261 | 24.5 | 57 | 3.5 | 1204.. | 5 | 25 |
| SSQC 63 | 470500563261 | 28.5 | 76 | 3.5 | 1204.. | 5 | 25 |
| SSQC 80 | 470500580261 | 31.5 | 101 | 3.5 | 1204.. | 5 | 25 |
| SSQC 90 | 470500590261 | 31.5 | 122 | 3.5 | 1204.. | 5 | 25 |

| REF. | CODE | D | E | F | CCMT | TS | TORX T |
|---------|--------------|------|------|-----|--------|----|--------|
| SFQC 16 | 470500516062 | 10 | 18 | 2 | 0602.. | 25 | 08 |
| SFQC 20 | 470500520062 | 10.5 | 22.5 | 2 | 0602.. | 25 | 08 |
| SFQC 25 | 470500525062 | 12 | 28.5 | 2.5 | 0602.. | 25 | 08 |
| SFQC 32 | 470500532062 | 13.5 | 35.5 | 2.5 | 0602.. | 25 | 08 |
| SFQC 40 | 470500540062 | 16.5 | 46 | 3 | 09T3.. | 4 | 15 |
| SFQC 50 | 470500550062 | 20.5 | 53 | 3 | 09T3.. | 4 | 15 |

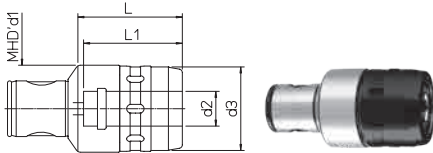
PE ADATTATORI PER PINZE ELASTICHE

Pinze elastiche e chiavi di serraggio escluse



| REF. | CODE | MHD' d1 | d | L | L1 | kg | | | N·m |
|---------------|--------------|------------|--------|----|-----|------|---------|------|-----|
| PE 20 / ER16M | 655702000160 | 20 | 0.5-10 | 32 | 1 | 0.06 | ER-16M | E16M | 40 |
| PE 32 / ER25M | 655703200250 | 32 | 1-16 | 42 | 1.5 | 0.25 | ER-25M | E25M | 160 |
| PE 40 / ER25 | 655704000250 | 40 | 1-16 | 45 | 5 | 0.4 | UM/ER25 | E25 | 200 |
| PE 50 / ER25 | 655705000250 | 50 | 1-16 | 48 | 7 | 0.7 | UM/ER25 | E25 | 200 |
| PE 50 / ER32 | 655705000320 | 50 | 2-20 | 55 | 8 | 1 | UM/ER32 | E32 | 220 |
| PE 63 / ER32 | 655706300320 | 63 | 2-20 | 59 | 12 | 1.3 | UM/ER32 | E32 | 220 |

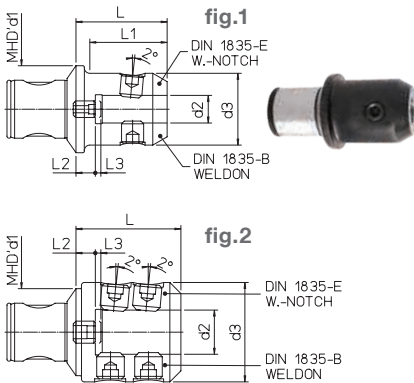
FORCE ADATTATORI A FORTE SERRAGGIO



Chiave di serraggio escluse

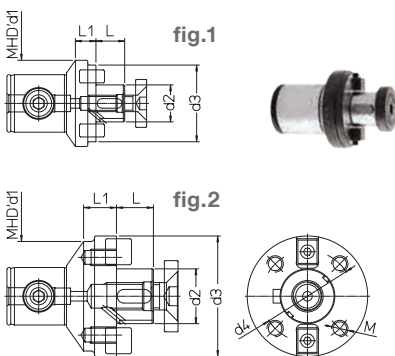
| REF. | CODE | MHD' d1 | d2 | d3 | L | L1 | kg |
|-------------|--------------|------------|----|----|----|----|----|
| FORCE 50/20 | 656305000200 | 50 | 20 | 48 | 60 | 60 | 1 |
| FORCE 63/32 | 656306300320 | 63 | 32 | 66 | 80 | 80 | 2 |

AW ADATTATORI WELDON WHISTLE NOTCH



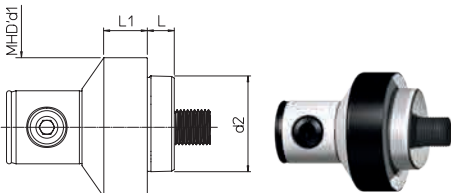
| REF. | CODE | MHD' d1 | d2 ^{H5} | d3 | L | L1 | L2 | L3 | kg | fig. |
|----------|--------------|------------|------------------|----|----|------|----|----|-----|------|
| AW 50/6 | 655805000060 | 50 | 6 | 25 | 44 | 32.5 | 7 | 2 | 0.5 | 1 |
| AW 50/8 | 655805000080 | 50 | 8 | 28 | 44 | 33 | 7 | 2 | 0.5 | 1 |
| AW 50/10 | 655805000100 | 50 | 10 | 35 | 52 | 42 | 11 | 3 | 0.7 | 1 |
| AW 50/12 | 655805000120 | 50 | 12 | 42 | 57 | 48 | 11 | 3 | 0.8 | 1 |
| AW 50/14 | 655805000140 | 50 | 14 | 42 | 57 | 48 | 11 | 3 | 0.8 | 1 |
| AW 50/16 | 655805000160 | 50 | 16 | 48 | 67 | 61 | 17 | 4 | 1.1 | 1 |
| AW 50/20 | 655805000200 | 50 | 20 | 51 | 67 | | 16 | 4 | 1.2 | 1 |
| AW 50/25 | 655805000250 | 50 | 25 | 63 | 80 | | 22 | 4 | 1.8 | 2 |
| AW 63/16 | 655806300160 | 63 | 16 | 48 | 64 | 53 | 14 | 4 | 1.4 | 1 |
| AW 63/20 | 655806300200 | 63 | 20 | 52 | 66 | 56 | 14 | 4 | 1.5 | 1 |
| AW 63/25 | 655806300250 | 63 | 25 | 64 | 74 | | 16 | 4 | 2.1 | 2 |
| AW 63/32 | 655806300320 | 63 | 32 | 72 | 76 | | 14 | 4 | 2.5 | 2 |
| AW 80/40 | 655808000400 | 80 | 40 | 80 | 83 | | 12 | 4 | 3.2 | 2 |

PF ADATTATORI PER FRESE A DISCO E A SPIANARE



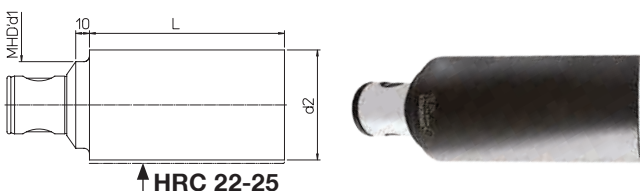
| REF. | CODE | MHD' d1 | d2 | d3 | d4 | M | L | L1 | kg | fig. |
|----------|--------------|------------|----|-------|-------|-----|----|------|-----|------|
| PF 40/16 | 655904020165 | 40 | 16 | 32 | | | 17 | 15 | 0.3 | 1 |
| PF 40/22 | 655904020225 | 40 | 22 | 40 | | | 19 | 13 | 0.4 | 1 |
| PF 50/16 | 655905000160 | 50 | 16 | 32 | | | 17 | 15 | 0.5 | 1 |
| PF 50/22 | 655905000220 | 50 | 22 | 40 | | | 19 | 15 | 0.5 | 1 |
| PF 50/27 | 655905000270 | 50 | 27 | 50 | | | 21 | 15 | 0.6 | 1 |
| PF 50/32 | 655905000320 | 50 | 32 | 60 | | | 24 | 15 | 0.7 | 1 |
| PF 63/22 | 655906300220 | 63 | 22 | 60 | | | 19 | 15 | 0.9 | 1 |
| PF 63/27 | 655906300270 | 63 | 27 | 60 | | | 21 | 15 | 1.1 | 1 |
| PF 63/32 | 655906300320 | 63 | 32 | 63 | | | 24 | 15 | 1.2 | 1 |
| PF 80/32 | 655908000320 | 80 | 32 | 80 | | | 24 | 24 | 1.7 | 1 |
| PF 80/40 | 655908000400 | 80 | 40 | 84 | 66.7 | M12 | 27 | 24 | 1.9 | 2 |
| PF 80/50 | 655908000500 | 80 | 50 | 90 | | | 30 | 24 | 2.0 | 2 |
| PF 80/60 | 655908000600 | 80 | 60 | 128.5 | 101.6 | M16 | 40 | 31.5 | 3.5 | 2 |

MHD' 80 - HT 8 ADATTATORE MHD' 80 - HT 8



| REF. | CODE | MHD' d1 | d2 | L | L1 | kg |
|------------|--------------|------------|-----|------|----|----|
| MHD'80-HT8 | 655108000080 | 80 | HT8 | 15.5 | 25 | 2 |

NS ADATTATORI SEMILAVORATI

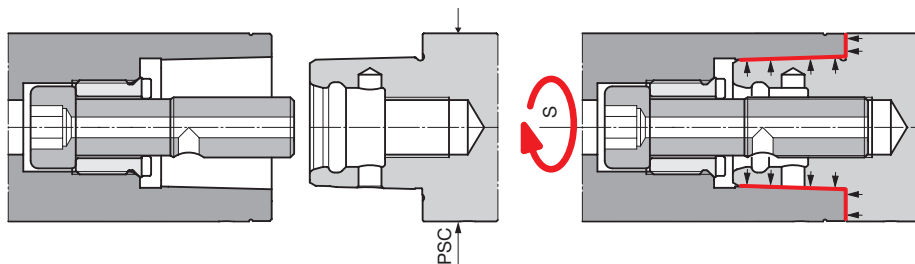



SPECIALI A RICHIESTA

| REF. | CODE | MHD' d1 | d2 | L | kg |
|-------|--------------|------------|-----|-----|-----|
| NS 50 | 657205001600 | 50 | 63 | 160 | 4.2 |
| NS 63 | 657206302000 | 63 | 80 | 200 | 8.7 |
| NS 80 | 657208002500 | 80 | 100 | 250 | 16 |

Attacco PSC ISO 26623-1/2

Linea di portautensili monolitici e modulari di alta precisione che consente di eseguire differenti operazioni di asportazione di truciolo sulle più moderne macchine utensili. Il punto di forza del sistema **PSC** è l'attacco poligonale-conico ISO 26623 che garantisce estrema rigidità anche nelle operazioni più gravose. Il sistema permette l'impiego di tutta la linea **MHD'**.



| PSC | S  | N·m |
|-------|---|-----|
| 40 | 8 | 55 |
| 50 | 10 | 95 |
| 63-80 | 14 | 170 |

L'**attacco PSC**, conforme alla normativa ISO 26623, è disponibile in quattro grandezze. Il sistema è completo di attacchi base, prolunghe, riduzioni, adattatori, testine di sgrossatura e di finitura. La gamma, prevede anche portapinze ER e mandrini a forte serraggio **MONOFORCE**.



PSC - TS linea completa di utensili bitaglienti per la sgrossatura da \varnothing 68 mm a \varnothing 200 mm.



PSC - TRM linea completa di Testine micrometrici per la finitura da \varnothing 2,5 mm. a \varnothing 220 mm.



ATTACCHI BASE realizzati in 4 differenti grandezze **PSC 40-50-63 e 80**, sono prodotti in acciaio cementato, temprato e successivamente rettificato.



PSC - PR e RD per ogni grandezza di PSC sono disponibili prolunghe e riduzioni in differenti lunghezze che consentono di raggiungere le profondità di lavoro richieste.



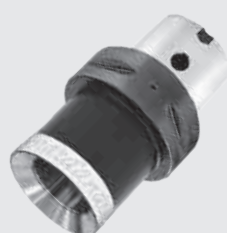
MONOforce linea di portautensili a forte serraggio ideale per lavorazioni ove sussistano esigenze di precisione e necessità di serraggio utensili sollecitati ad elevati carichi torsionali.



PSC - ER portapinze ER realizzati per l'impiego di pinze standard ER.



PF adattatori per frese a disco e a spianare.



PSC - MHD' adattatori per integrare al programma PSC tutta la linea di alesatura del sistema MHD'.

PSC - PR
Prolunghe
PSC - RD
Riduzioni



PSC50 - PR50



PSC50 - RD50

PSC63 - PR63



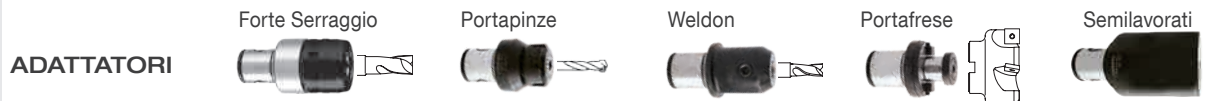
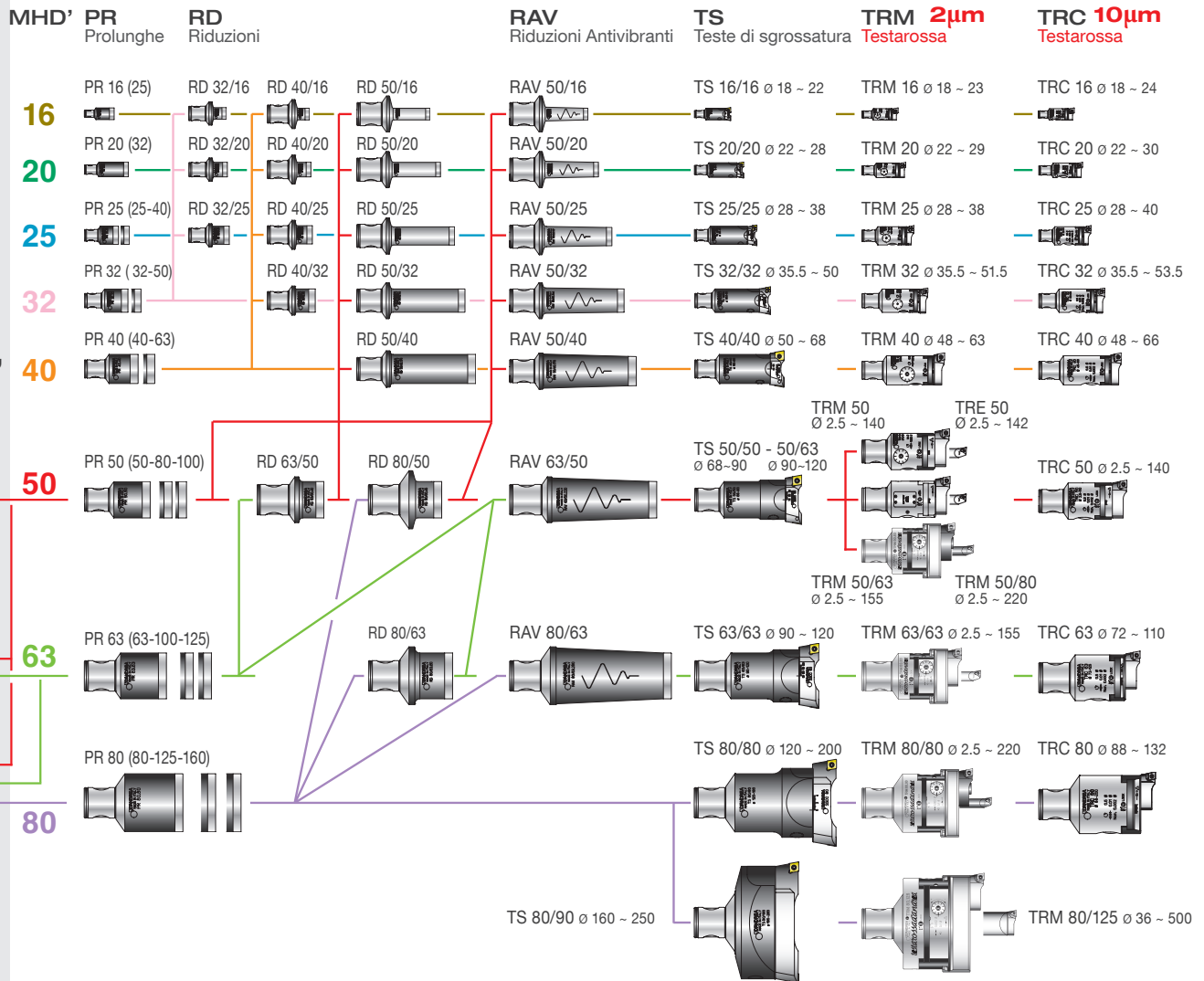
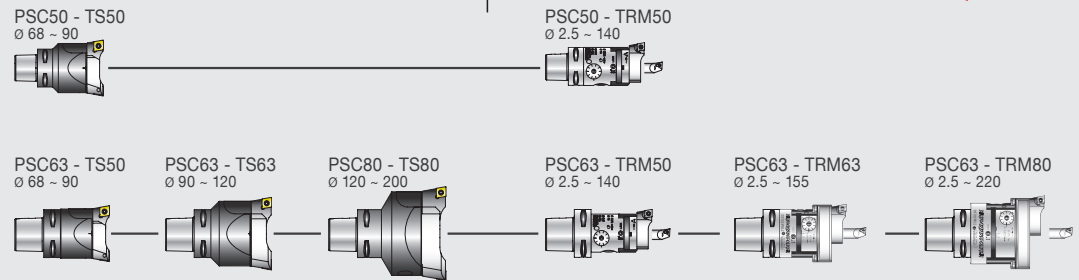
PSC63 - RD63



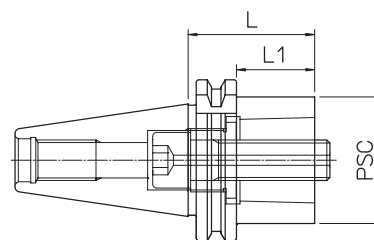
PSC80 - PR80

PSC - TS Teste Sgrossatura

PSC - TRM Testarossa **2µm**

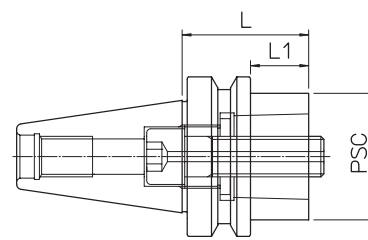


DIN-AD - PSC DIN 69871 / ISO 26623-2



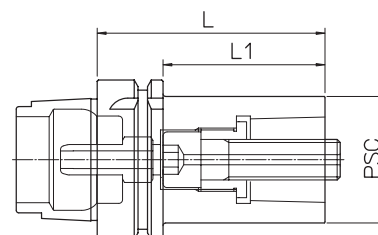
| DIN | REF. | CODE | PSC | L | L1 | kg | | |
|-----|-------------------------|--------------|-----|----|----|-----|--|--|
| 40 | DIN69871-AD40 PSC 50.40 | 41PS05014028 | 50 | 40 | 21 | 0.9 | | |
| 50 | DIN69871-AD50 PSC 50.30 | 41PS05015020 | 50 | 30 | 11 | 2.7 | | |
| 50 | DIN69871-AD50 PSC 63.30 | 41PS06315028 | 63 | 30 | 11 | 2.8 | | |
| 50 | DIN69871-AD50 PSC 80.70 | 41PS08015020 | 80 | 70 | 51 | 3.7 | | |

MAS BT-AD - PSC MAS 403 BT / ISO 26623-2



| BT | REF. | CODE | PSC | L | L1 | kg | | |
|----|--------------------------|--------------|-----|----|----|-----|--|--|
| 40 | MAS403 BT40-AD PSC 50.50 | 41PS05014032 | 50 | 50 | 23 | 1.2 | | |
| 50 | MAS403 BT50-AD PSC 50.40 | 41PS05015030 | 50 | 40 | 2 | 3.4 | | |
| 50 | MAS403 BT50-AD PSC 63.50 | 41PS06315032 | 63 | 50 | 12 | 3.5 | | |
| 50 | MAS403 BT50-AD PSC 80.70 | 41PS08015030 | 80 | 70 | 32 | 4 | | |

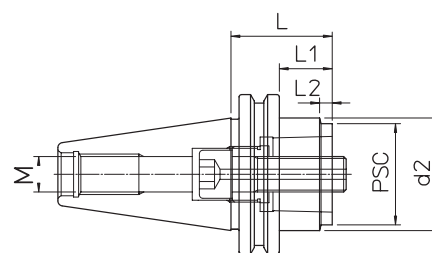
HSK-T - PSC DIN 69893 / ISO 26623-2



Completo di raccordo per il refrigerante

| HSK-T | REF. | CODE | PSC | L | L1 | kg | | |
|-------|---------------------|--------------|-----|-----|----|-----|--|--|
| 63 | HSK-T63 PSC 40.80 | 41PS0405632T | 40 | 80 | 54 | 1.1 | | |
| 63 | HSK-T63 PSC 50.90 | 41PS0505632T | 50 | 90 | 64 | 1.5 | | |
| 100 | HSK-T100 PSC 50.100 | 41PS0505992T | 50 | 100 | 71 | 3 | | |
| 100 | HSK-T100 PSC 63.110 | 41PS0635992T | 63 | 110 | 81 | 3.6 | | |
| 100 | HSK-T100 PSC 80.120 | 41PS0805992T | 80 | 120 | 91 | 4.7 | | |

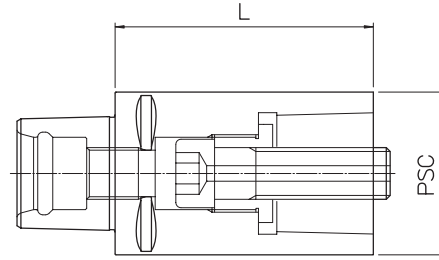
CAT-AD - PSC ANSI B5.50 / ISO 26623-2



| CAT | REF. | CODE | PSC | d2 | L | L1 | L2 | M | kg | | |
|-----|---------------------|--------------|-----|------|-----|----|------|------------|-----|--|--|
| 40 | CAT40 AD PSC 50.50 | 41PS05014045 | 50 | | 50 | 31 | | UNC 5/8-11 | 1 | | |
| 50 | CAT50 AD PSC 50.40 | 41PS05015045 | 50 | 69.9 | 40 | 21 | 5 | UNC 1-8 | 2.5 | | |
| 50 | CAT50 AD PSC 63.50 | 41PS06315045 | 63 | 70 | 50 | 31 | 12.5 | UNC 1-8 | 3 | | |
| 50 | CAT50 AD PSC 80.100 | 41PS08015045 | 80 | | 100 | 81 | | UNC 1-8 | 4.6 | | |

PSC - PR ISO 26623-1 / 2

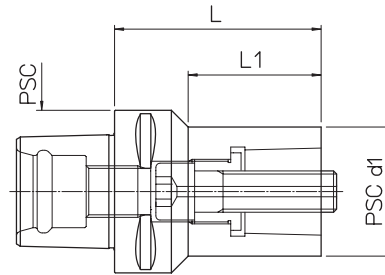
PROLUNGHE



| PSC | REF. | CODE | L | kg |
|-----|---------------|---------------|-----|------|
| 40 | PR PSC 40.60 | 656PS04006000 | 60 | 0.55 |
| 50 | PR PSC 50.80 | 656PS05008000 | 80 | 1.1 |
| 63 | PR PSC 63.100 | 656PS06310000 | 100 | 2.2 |
| 80 | PR PSC 80.100 | 656PS08010000 | 100 | 3.6 |

PSC - RD ISO 26623-1 / 2

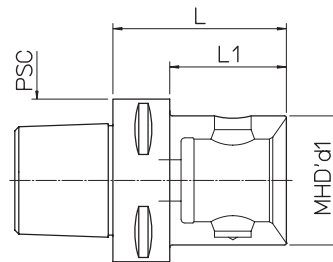
RIDUZIONI



| PSC | REF. | CODE | PSCd1 | L | L1 | kg |
|-----|-----------------|---------------|-------|----|------|-----|
| 50 | RD PSC 50/40.65 | 657PS05004000 | 40 | 65 | 45 | 0.7 |
| 63 | RD PSC 63/40.80 | 657PS06304000 | 40 | 80 | 51.4 | 1.3 |
| 63 | RD PSC 63/50.80 | 657PS06305000 | 50 | 80 | 51.5 | 1.5 |
| 80 | RD PSC 80/50.80 | 657PS08005000 | 50 | 80 | 49.3 | 2.2 |
| 80 | RD PSC 80/63.80 | 657PS08006300 | 63 | 80 | 53.1 | 2.5 |

PSC - MHD' ISO 26623-1

RIDUZIONI A MODULARE



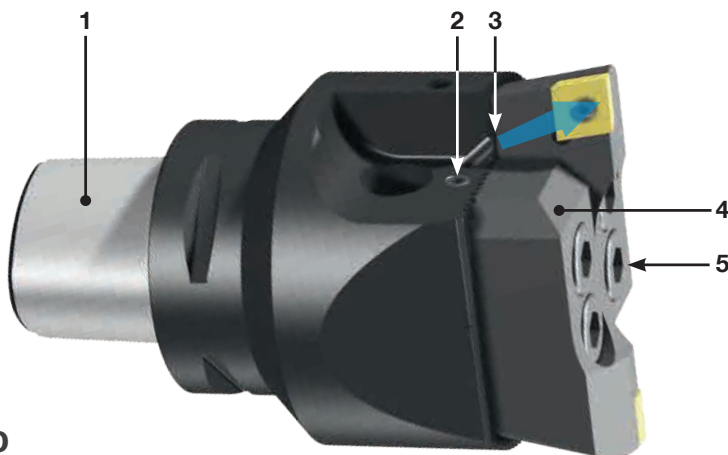
| PSC | REF. | CODE | MHD' d1 | L | L1 | kg |
|-----|---------------------|--------------|---------|----|----|-----|
| 50 | PSC 50 - MHD' 50.55 | 416502605005 | 50 | 55 | | 0.8 |
| 63 | PSC 63 - MHD' 40.50 | 416402606305 | 40 | 50 | 28 | 0.9 |
| 63 | PSC 63 - MHD' 50.55 | 416502606305 | 50 | 55 | 33 | 0.8 |
| 63 | PSC 63 - MHD' 63.77 | 416632606307 | 63 | 77 | | 1.8 |
| 80 | PSC 80 - MHD' 50.60 | 416502608006 | 50 | 60 | 30 | 2 |
| 80 | PSC 80 - MHD' 63.70 | 416632608007 | 63 | 70 | 40 | 2.3 |
| 80 | PSC 80 - MHD' 80.75 | 416802608007 | 80 | 75 | | 2.6 |

A richiesta Raccordo Refrigerante **PSC** vedere pag.57 

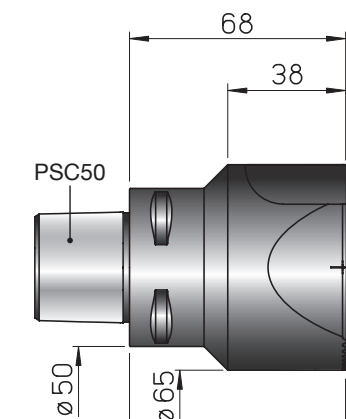
PSC - TS Ø 68 ~ 200

Teste di sgrossatura semplici ed estremamente rigide grazie alle superfici di contatto dentellate tra il corpo testa e i seggi portainserto.

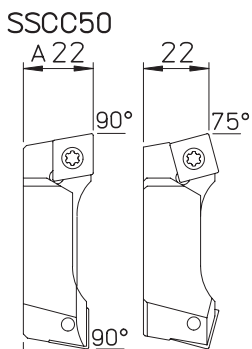
La distanza costante tra la vite di serraggio del seggio ed il tagliente garantisce la stabilità del sistema.



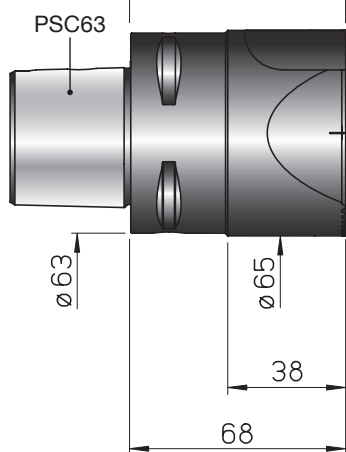
- 1. PSC 50 - 63 - 80
- 2. Vite di regolazione
- 3. Fori uscita refrigerante **Max BAR 40**
- 4. Seggio portainserti
- 5. Viti bloccaggio utensile



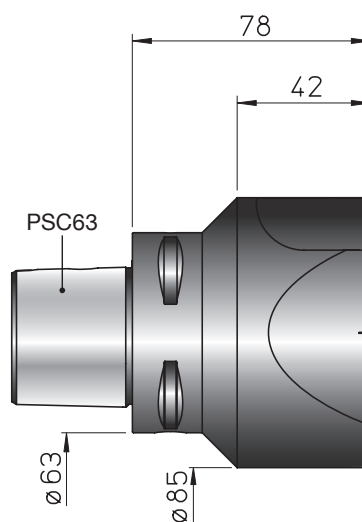
PSC50 - TS50
Ø 68 ~ 90



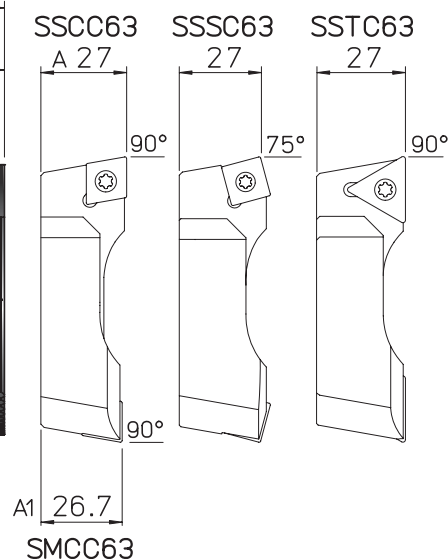
SMCC50 SSSC50



PSC63 - TS50
Ø 68 ~ 90



PSC63 - TS63
Ø 90 ~ 120



SMCC63

| REF. | CODE | kg | | |
|---------------------|-----------------|-----|--|--|
| PSC50 - TS50 | 71PSC050TS50090 | 1.4 | | |
| PSC63 - TS50 | 71PSC063TS50090 | 1.8 | | |

| REF. | CODE | kg | | |
|---------------------|-----------------|-----|--|--|
| PSC63 - TS63 | 71PSC063TS63105 | 2.7 | | |
| PSC63 - TS80 | 71PSC063TS80115 | 3.8 | | |

A richiesta Raccordo Refrigerante **PSC** vedere pag.57



IMPIEGO PSC - TS per operazioni di SGROSSATURA e SEMI-FINITURA

La regolazione dei taglienti va eseguita su un banco di presetting e le testine **PSC-TS** possono essere utilizzate in tre diverse configurazioni. Per lavorazioni con un solo tagliente (**fig. 3**) o seggi disallineati (**fig.2**) si deve dimezzare l'avanzamento.

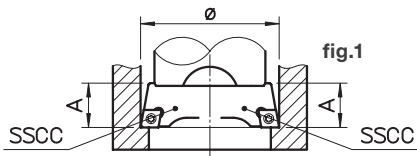


fig.1 con due seggi SSCC allineati e sullo stesso diametro per operazioni di sgrossatura con forti avanzamenti.

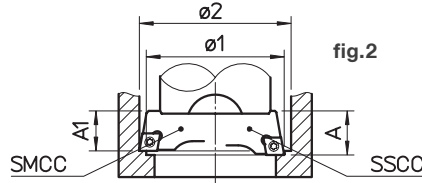


fig. 2 con un seggio SSCC ed un seggio SMCC disallineato e su un diverso diametro per operazioni di sgrossatura con alte profondità di passata.

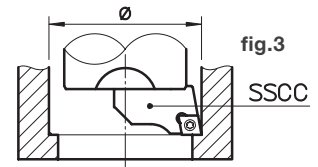
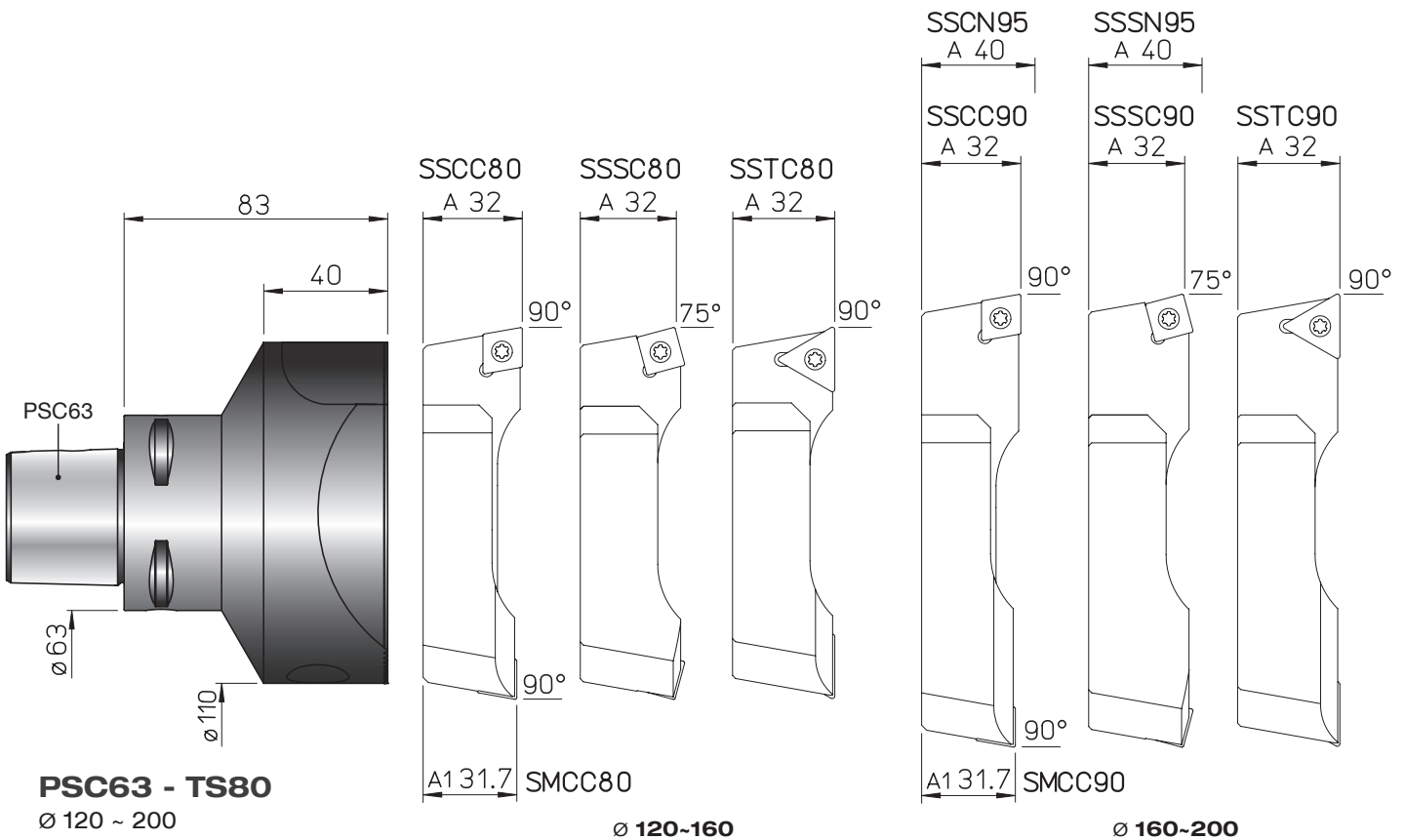


fig.3 con un solo seggio per operazioni di sgrossatura leggera o semifinitura.



PSC63 - TS80

ø 120 ~ 200

ø 120-160

ø 160-200

| REF. | CODE | | TS | TORX | T | kg |
|---------|--------------|-------------|----|------|-----|----|
| SSCC 50 | 470500550204 | CCMT 1204.. | 5 | 25 | 0.1 | |
| SSCC 63 | 470500563201 | CCMT 1204.. | 5 | 25 | 0.2 | |
| SSCC 80 | 470500580201 | CCMT 1204.. | 5 | 25 | 0.5 | |
| SSCC 90 | 470500590201 | CCMT 1204.. | 5 | 25 | 0.7 | |
| SSCN 95 | 470500595201 | CNM. 1906.. | | | 0.9 | |
| SSTC 63 | 470500563206 | TCMT 2204.. | 5 | 25 | 0.2 | |
| SSTC 80 | 470500580206 | TCMT 2204.. | 5 | 25 | 0.5 | |
| SSTC 90 | 470500590206 | TCMT 2204.. | 5 | 25 | 0.7 | |

| REF. | CODE | | TS | TORX | T | kg |
|---------|--------------|-------------|----|------|------|-----|
| SMCC 50 | 470500550205 | CCMT 1204.. | 5 | 25 | 0.1 | |
| SMCC 63 | 470500563203 | CCMT 1204.. | 5 | 25 | 0.2 | |
| SMCC 80 | 470500580203 | CCMT 1204.. | 5 | 25 | 0.5 | |
| SMCC 90 | 470500590203 | CCMT 1204.. | 25 | 08 | 0.7 | |
| SSSC 50 | 470500550202 | SCMT 1204.. | 5 | 25 | 0.1 | |
| SSSC 63 | 470500563202 | SCMT 1204.. | 5 | 25 | 0.2 | |
| SSSC 80 | 470500580202 | SCMT 1204.. | 5 | 25 | 0.5 | |
| SSSC 90 | 470500590202 | SCMT 1204.. | 5 | 25 | 0.7 | |
| SSSN 95 | 470500595202 | SNM. 1906.. | | | p.57 | 0.9 |

• Per lavorazioni SOTTOSQUADRA vedere p.24

PSC - ER



PSC - FORCE



PSC - PF



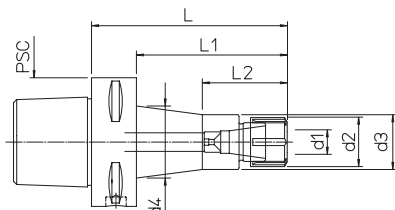
PSC - NS



PSC - ER

ADATTATORI PER PINZE ELASTICHE

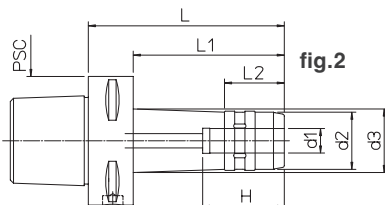
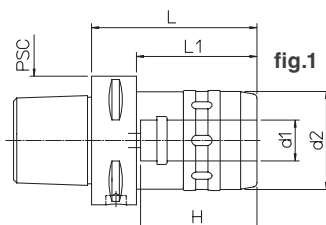
Pinze elastiche e chiavi di serraggio escluse - Predisposizione Chip



| PSC | REF. | CODE | ER | d1 | d2 | d3 | d4 | L | L1 | L2 | kg |
|-----|-------------------------|-----------------|-----|--------|----|----|------|-----|-----|------|------|
| 50 | PSC50 - ER16.55 | 71PSC-050ER1605 | 16M | 0.5-10 | 22 | 24 | | 55 | 35 | 26 | 0.5 |
| 50 | PSC50 - ER25.65 | 71PSC-050ER2506 | 25 | 1-16 | 42 | | | 65 | 45 | | 0.8 |
| 63 | PSC63 - ER16.60 | 71PSC-063ER1606 | 16M | 0.5-10 | 22 | 24 | | 60 | 38 | | 0.85 |
| 63 | PSC63 - ER16.120 | 71PSC-063ER1612 | 16M | 0.5-10 | 22 | 24 | 31 | 120 | 98 | 33 | 1.1 |
| 63 | PSC63 - ER25.65 | 71PSC-063ER2506 | 25 | 1-16 | 42 | | | 65 | 43 | 37 | 1.1 |
| 63 | PSC63 - ER25.140 | 71PSC-063ER2514 | 25 | 1-16 | 42 | | 47.5 | 140 | 118 | 43.5 | 1.9 |
| 63 | PSC63 - ER32.75 | 71PSC-063ER3207 | 32 | 2-20 | 50 | | | 75 | 53 | | 1.5 |
| 63 | PSC63 - ER32.160 | 71PSC-063ER3216 | 32 | 2-20 | 50 | | | 160 | 138 | | 2.5 |
| 80 | PSC80 - ER25.70 | 71PSC-080ER2507 | 25 | 1-16 | 42 | | | 70 | 40 | | 2.1 |
| 80 | PSC80 - ER32.75 | 71PSC-080ER3207 | 32 | 2-20 | 50 | | | 72 | 45 | | 2.5 |

PSC - FORCE

FORTE SERRAGGIO



Chiave di serraggio esclusa - Predisposizione Chip

| PSC | REF. | CODE | d1 | d2 | d3 | H | L | L1 | L2 | kg | fig. |
|-----|---------------------------|-----------------|----|----|------|-----|-----|----|------|-----|----------|
| 63 | PSC 63 - MF 12.100 | 71PSC-063MF1210 | 12 | 28 | 31.5 | 46 | 100 | 78 | 29.5 | 1.4 | 2 |
| 63 | PSC 63 - MF 20.80 | 71PSC-063MF2008 | 20 | 48 | 60 | 80 | 58 | | | 1.3 | 1 |
| 63 | PSC 63 - MF 32.100 | 71PSC-063MF3210 | 32 | 66 | 80 | 100 | | | | 2.1 | 1 |
| 80 | PSC 80 - MF 20.80 | 71PSC-080MF2008 | 20 | 48 | 60 | 80 | 50 | | | 3.7 | 1 |
| 80 | PSC 80 - MF 32.100 | 71PSC-080MF3210 | 32 | 66 | 80 | 100 | 70 | | | 4.4 | 1 |

PSC - KIT K01

MONOFORCE 20-32

- 1 RC 20.06 1 RC 20.12 1 RC 32.06 1 RC 32.16
- 1 RC 20.08 1 RC 20.16 1 RC 32.08 1 RC 32.20
- 1 RC 20.10 1 CHV 50 1 RC 32.10 1 RC 32.25
- 1 RC 32.12 1 CHV 75



MF 20

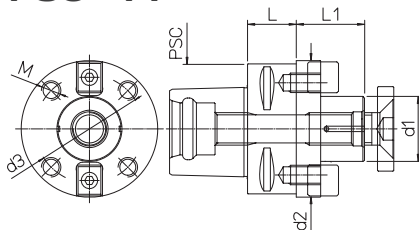


MF 32

| PSC | REF. | CODE | kg |
|-----|---------------------------------------|-----------------|-----|
| 63 | KIT K01 MONOFORCE 20.80 PSC63 | 7KPSC-063MF2008 | 2.3 |
| 63 | KIT K01 MONOFORCE 32.100 PSC63 | 7KPSC-063MF3210 | 4.6 |
| 80 | KIT K01 MONOFORCE 20.80 PSC80 | 7KPSC-080MF2008 | 5.4 |
| 80 | KIT K01 MONOFORCE 32.100 PSC80 | 7KPSC-080MF3210 | 7.5 |

PSC - PF

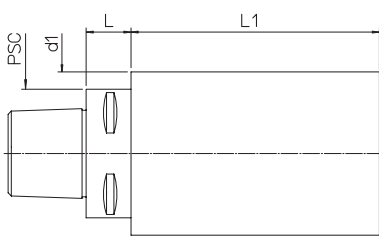
PORTAFRESE



| PSC | REF. | CODE | d1 | d2 | d3 | M | L | L1 | kg |
|-----|-------------------------|-----------------|----|----|------|-----|----|----|-----|
| 50 | PSC 50 - PF22.25 | 71PSC-050PF2202 | 22 | | | | 25 | 19 | 0.5 |
| 50 | PSC 50 - PF27.25 | 71PSC-050PF2702 | 27 | | | | 25 | 21 | 0.6 |
| 63 | PSC 63 - PF27.25 | 71PSC-063PF2702 | 27 | | | | 25 | 21 | 0.8 |
| 63 | PSC 63 - PF32.25 | 71PSC-063PF3202 | 32 | | | | 25 | 24 | 0.9 |
| 80 | PSC 80 - PF32.30 | 71PSC-080PF3203 | 32 | | | | 30 | 24 | 1.8 |
| 80 | PSC 80 - PF40.45 | 71PSC-080PF4004 | 40 | 84 | 66.7 | M12 | 45 | 27 | 2.4 |

PSC - NS

ADATTATORI SEMILAVORATI



HRC42

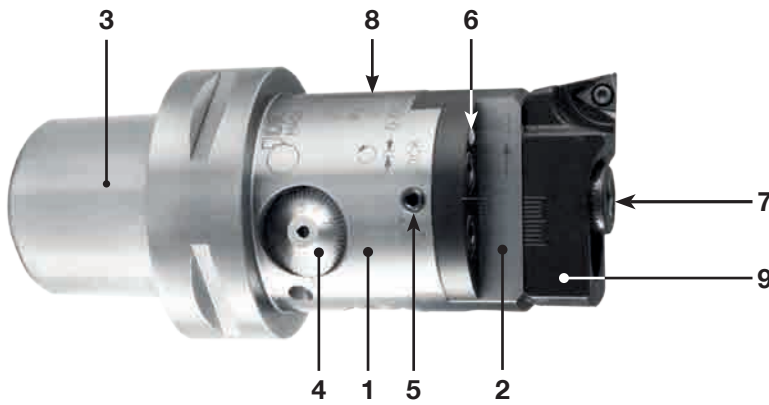
| PSC | REF. | CODE | d1 | L | L1 | kg |
|-----|--------------------------------|-----------------|-----|----|-----|------|
| 50 | PSC 50 - NS 63.160/140 | 71PSC050Z406314 | 63 | 20 | 140 | 3.8 |
| 50 | PSC 50 - NS 80.160/140 | 71PSC050Z408014 | 80 | 20 | 140 | 10.2 |
| 50 | PSC 50 - NS 100.180/160 | 71PSC050Z410016 | 100 | 22 | 160 | 5.9 |
| 63 | PSC 63 - NS 80.162/140 | 71PSC063Z408014 | 80 | 22 | 140 | 6.2 |
| 63 | PSC 63 - NS 100.182/160 | 71PSC063Z410016 | 100 | 22 | 160 | 10.4 |
| 63 | PSC 63 - NS 120.202/180 | 71PSC063Z412018 | 120 | 22 | 180 | 17 |
| 80 | PSC 80 - NS 100.190/160 | 71PSC080Z410016 | 100 | 30 | 160 | 11.5 |

A richiesta Raccordo Refrigerante **PSC** vedere pag.57

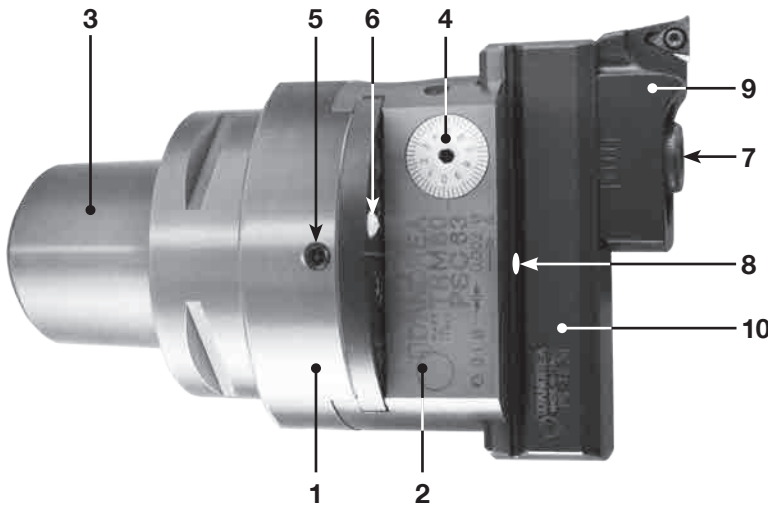


PSC - TRM Ø 2.5 ~ 220

| | |
|-----------------------|-----------|
| PSC50 - TRM 50 | RPM 8.000 |
| PSC63 - TRM 50 | RPM 8.000 |
| PSC63 - TRM 63 | RPM 6.000 |
| PSC63 - TRM 80 | RPM 5.000 |



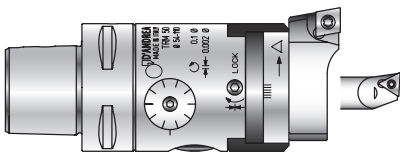
Le testine **PSC-TRM** consentono lavorazioni di alta precisione e ottima finitura superficiale in tolleranze di grado **IT6**.
La sensibilità di regolazione di **1 micron** sul raggio è facilmente leggibile sul nonio ed eseguibile anche in macchina.



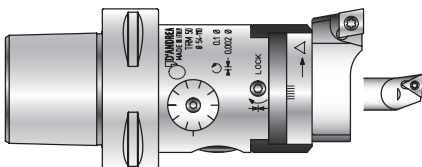
2 µm

1. Corpo
2. Slitta portautensili
3. **PSC 50-63-80**
4. Nonio micrometrico
5. Vite bloccaggio slitta
6. Uscita refrigerante **Max BAR 40**
7. Viti bloccaggio utensili
8. Oliatore
9. Seggio portainseriti
10. Porta utensile

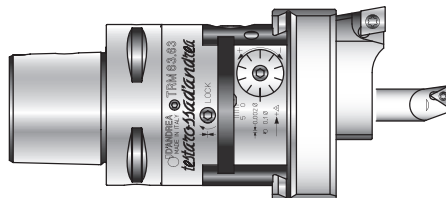
PSC50 - TRM50
Ø 2.5 ~ 140



PSC63 - TRM50
Ø 2.5 ~ 140



PSC63 - TRM63
Ø 2.5 ~ 155



PSC63 - TRM80
Ø 2.5 ~ 220



PSC50 - TRM50

Ø 2.5 ~ 140

PSC63 - TRM50

Ø 2.5 ~ 140



2 μm

PSC50-TRM50
Ø 2.5~140

PSC63-TRM50
Ø 2.5~140

| REF. | CODE | kg |
|-------------|-----------------|------|
| PSC50-TRM50 | 71PSC050TR50080 | 0.9 |
| PSC63-TRM50 | 71PSC063TR50080 | 1.1 |
| D08.16 | 200560116082 | 0.02 |
| P25.63 | 435116250631 | 0.5 |
| P25.105 | 435116251051 | 0.8 |
| PS 31.24 | 433024140751 | 0.19 |
| PS 32.24 | 433024141001 | 0.2 |
| CW 32 | 392011003201 | 0.07 |

A richiesta Raccordo Refrigerante **PSC** vedere pag.57

| | | |
|------------|--------------|--------------------------------------|
| Utensili | Antivibranti | Metallo duro |
| RDC D08.16 | | B1.02 Ø2,5~4 B1.04 Ø4~6 |
| | | |
| B3.06 | B5.06 | B8.06 Ø6~8 |
| | | |
| B3.08 | B5.08 | B8.08 Ø8~10 |
| | | |
| B3.10 | B5.10 | B8.10 Ø10~13 |
| | | |
| B3.12 | B5.12 | B8.12 Ø12~14 |
| | | |
| B3.14 | B5.14 | B8.14 Ø14~16 |
| | | |
| B3.16 | B5.16 | B8.16 Ø16~18 |
| | | |
| B3.18 | | Ø18~22 |
| | | |
| B3.22 | | Ø22~30 |
| | | |
| | | Ø 28-42 Ø 36-54 |
| P 25.63 | P 25.105 | SFTP25 SFCC25 SFTP32 SFCC32 |
| | | |
| | | Ø 54-84 Ø 80-108 Ø 105-140 |
| BM10 | | PS31.24 PS32.24 CW32 |
| | | |

KIT K01 PSC50 - TRM50

Ø 6 ~ 140



1 PSC50-TRM50 1 SFTP 25
 1 B3.06 1 SFTP 32
 1 B3.08 1 SFTP 50
 1 B3.11 1 P 25.63
 1 B3.16 1 PS 31.24
 1 B3.22 1 PS 32.24
 1 CW 32

5 TPGX 090202L DC100
 1 TPGX 110302L DC100
 2 WCGT 020102L DC10

KIT K01 PSC63 - TRM50

Ø 6 ~ 140



1 PSC63-TRM50 1 SFTP 25
 1 B3.06 1 SFTP 32
 1 B3.08 1 SFTP 50
 1 B3.11 1 P 25.63
 1 B3.16 1 PS 31.24
 1 B3.22 1 PS 32.24
 1 CW 32

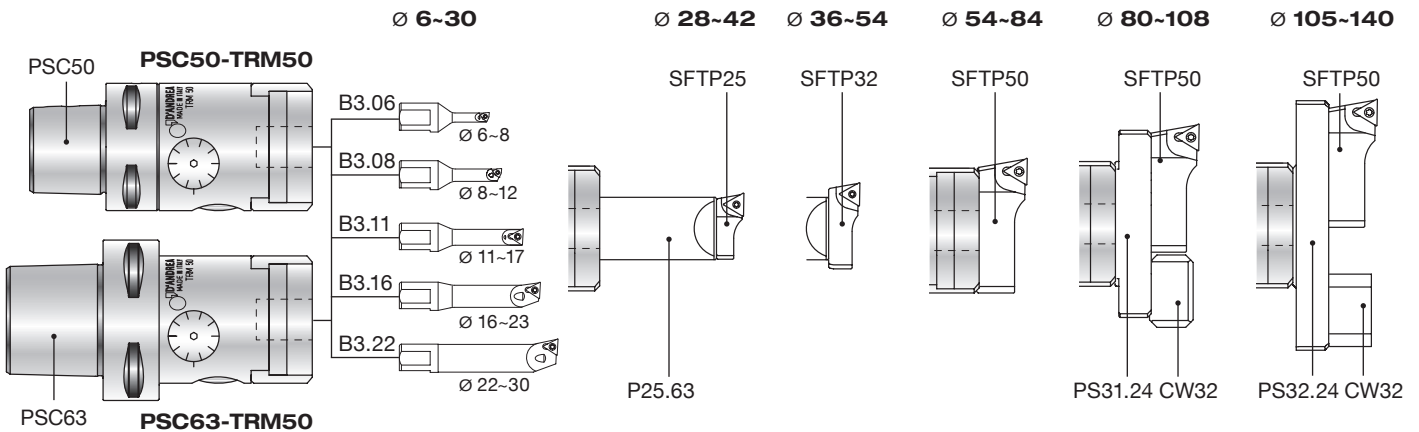
5 TPGX 090202L DC100
 1 TPGX 110302L DC100
 2 WCGT 020102L DC10

| REF. | CODE | kg | | |
|---------------------|-----------------|-----|--|--|
| KIT K01 PSC50-TRM50 | 7KPSC050TR50081 | 3.5 | | |

| REF. | CODE | kg | | |
|---------------------|-----------------|-----|--|--|
| KIT K01 PSC63-TRM50 | 7KPSC063TR50081 | 4.2 | | |

KIT K01 PSC50-TRM50 / PSC63-TRM50

Campo di Lavoro



| REF. | CODE | | TORX T | kg |
|-------|--------------|------------|-------------|-------|
| B1.02 | 572010502001 | | | 0.02 |
| B1.04 | 572010504001 | | | 0.02 |
| B3.06 | 572010506001 | WCGT0201.. | TS 21 06 | 0.035 |
| B3.08 | 572010508001 | WCGT0201.. | TS 211 06 | 0.4 |
| B3.10 | 572010510001 | TPGX0902.. | CS 250 T 08 | 0.05 |
| B3.11 | 572010511001 | TPGX0902.. | CS 250 T 08 | 0.055 |
| B3.12 | 572010512001 | TPGX0902.. | CS 250 T 08 | 0.06 |
| B3.14 | 572010514001 | TPGX0902.. | CS 250 T 08 | 0.07 |
| B3.16 | 572010516001 | TPGX0902.. | CS 250 T 08 | 0.07 |
| B3.18 | 572010518001 | TPGX0902.. | CS 250 T 08 | 0.1 |
| B3.22 | 572010522001 | TPGX0902.. | CS 250 T 08 | 0.1 |

| REF. | CODE | | TORX T | kg |
|-------|--------------|------------|-------------|-------|
| B5.06 | 572010506105 | WCGT0201.. | TS 21 06 | 0.075 |
| B5.08 | 572010508105 | WCGT0201.. | TS 211 06 | 0.09 |
| B5.10 | 572010510105 | TPGX0902.. | CS 250 T 08 | 0.1 |
| B5.12 | 572010512105 | TPGX0902.. | CS 250 T 08 | 0.1 |
| B5.14 | 572010514105 | TPGX0902.. | CS 250 T 08 | 0.2 |
| B5.16 | 572010516105 | TPGX0902.. | CS 250 T 08 | 0.3 |
| B8.06 | 572010506108 | WCGT0201.. | TS 21 06 | 0.065 |
| B8.08 | 572010508108 | WCGT0201.. | TS 211 06 | 0.08 |
| B8.10 | 572010510108 | TPGX0902.. | CS 250 T 08 | 0.1 |
| B8.12 | 572010512108 | TPGX0902.. | CS 250 T 08 | 0.2 |
| B8.14 | 572010514108 | TPGX0902.. | CS 250 T 08 | 0.2 |
| B8.16 | 572010516108 | TPGX0902.. | CS 250 T 08 | 0.3 |

| REF. | CODE | | TORX T | kg |
|--------|--------------|------------|--------------|------|
| SFTP25 | 470500525001 | TPGX0902.. | CS 250T 08 | 0.01 |
| SFTP32 | 470500532001 | TPGX0902.. | CS 250T 08 | 0.02 |
| SFTP50 | 470500550001 | TPGX1103.. | CS300890T 08 | 0.08 |
| SFTP51 | 470500550003 | TCMT16T3.. | TS 4 15 | 0.09 |

| REF. | CODE | | TORX T | kg |
|--------|--------------|------------|----------|------|
| SFCC25 | 470500525002 | CCGT0602.. | TS 25 08 | 0.01 |
| SFCC32 | 470500532002 | CCGT0602.. | TS 25 08 | 0.02 |
| SFCC50 | 470500550002 | CCGT09T3.. | TS 4 15 | 0.08 |
| SFCC51 | 470500550004 | CCMT1204.. | TS 5 25 | 0.09 |

• Per lavorazioni SOTTOSQUADRA vedere p.24

PSC63 - TRM63

Ø 2.5 ~ 155

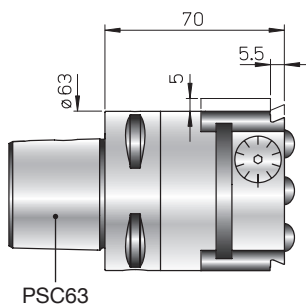


PSC63 - TRM80

Ø 2.5 ~ 220

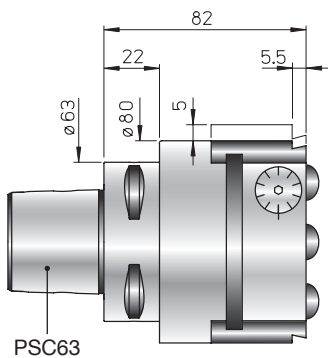


2 μm



PSC63 TRM63

Ø 2.5-155

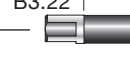
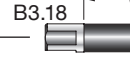
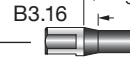
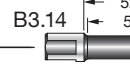
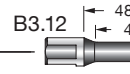
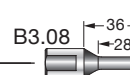
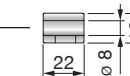


PSC63 TRM80

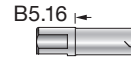
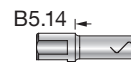
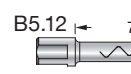
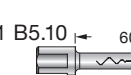
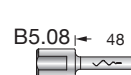
Ø 2.5-220

Utensili

RDC D08.16

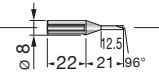


Antivibranti

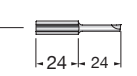


Metallo duro

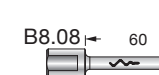
B1.02 Ø2,5-4



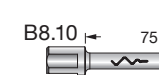
B1.04 Ø4-6



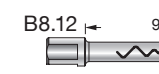
Ø6-8



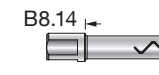
Ø8-10



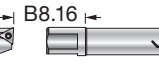
Ø10-13



Ø12-14



Ø14-16



Ø16-18

Ø 30-83

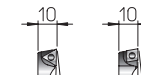
TRM63 Ø 30-66

TRM80 Ø 30-83

Ø 35.5-95

TRM63 Ø 35.5-77

TRM80 Ø 35.5-95



SFTP25

SFCC25

SFTP32

SFCC32

PS13.30

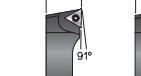


SFTP50

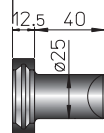
SFCC50

SFTP51

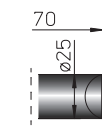
SFCC51



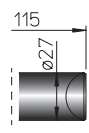
Ø 77-220



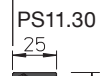
P02.30



P03.30



P04.30



PS11.30



PS12.30



TRM80

Ø 140-220

TRM63
Ø 77-100

TRM63 - TRM80
Ø 95-155 - Ø 95-140

TRM80
Ø 140-220

| REF. | CODE | kg |
|-------------|-----------------|------|
| PSC63-TRM63 | 71PSC063TR63080 | 1.5 |
| PSC63-TRM80 | 71PSC063TR80080 | 2 |
| D08.16 | 200560116082 | 0.02 |
| P20.30 | 431030160300 | 0.2 |
| P02.30 | 431030250400 | 0.3 |
| P03.30 | 431030250700 | 0.4 |
| P04.30 | 431030251150 | 0.7 |
| PS 11.30 | 433030260750 | 0.4 |
| PS 12.30 | 433030260950 | 0.5 |
| PS 13.30 | 433030261400 | 0.7 |

A richiesta Raccordo Refrigerante **PSC** vedere pag.57



KIT K01 PSC63 - TRM63

Ø 6 ~ 155



1 PSC63 - TRM63

- 1 P20.30 1 B3.11
- 1 PS11.30 1 B3.16
- 1 PS12.30 1 B3.22
- 1 P02.30 1 SFTP25
- 1 P03.30 1 SFTP32
- 1 B3.06 1 SFTP50
- 1 B3.08
- 5 TPGX 090202L DC100
- 1 TPGX 110302L DC100
- 2 WCGT 020102L DC 10

| REF. | CODE | kg |
|---------------------|-----------------|-----|
| KIT K01 PSC63-TRM63 | 7KPSC063TR63081 | 5.5 |

KIT K01 PSC63 - TRM80

Ø 6 ~ 220



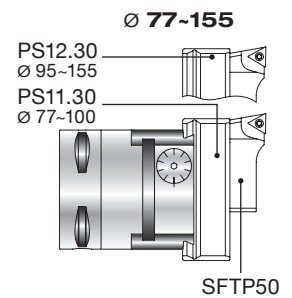
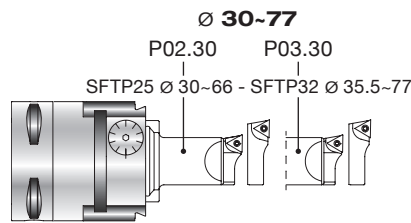
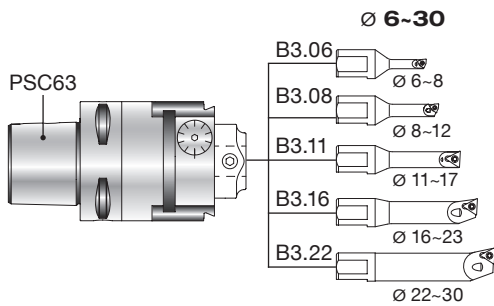
1 PSC63 - TRM80

- 1 P20.30 1 B3.08
- 1 PS12.30 1 B3.11
- 1 PS13.30 1 B3.16
- 1 P02.30 1 B3.22
- 1 P03.30 1 SFTP25
- 1 P04.30 1 SFTP32
- 1 B3.06 1 SFTP50
- 5 TPGX 090202L DC100
- 1 TPGX 110302L DC100
- 2 WCGT 020102L DC 10

| REF. | CODE | kg |
|---------------------|-----------------|-----|
| KIT K01 PSC63-TRM80 | 7KPSC063TR80080 | 6.5 |

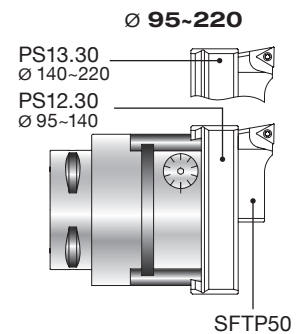
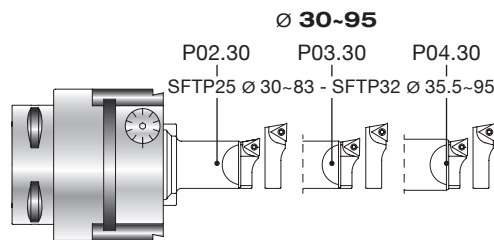
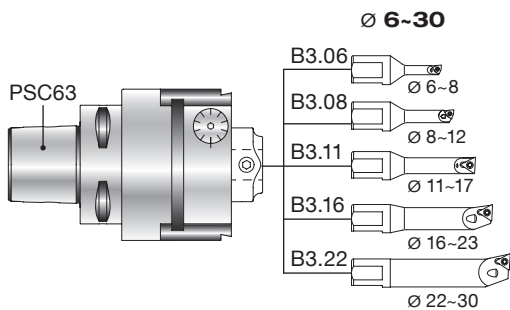
KIT K01 PSC63 - TRM63

Campo di Lavoro



KIT K01 PSC63 - TRM80

Campo di Lavoro



| REF. | CODE | TORX T | kg |
|-------|--------------|------------------------|-------|
| B1.02 | 572010502001 | | 0.02 |
| B1.04 | 572010504001 | | 0.02 |
| B3.06 | 572010506001 | WCGT0201.. TS 21 06 | 0.035 |
| B3.08 | 572010508001 | WCGT0201.. TS 211 06 | 0.4 |
| B3.10 | 572010510001 | TPGX0902.. CS 250 T 08 | 0.05 |
| B3.11 | 572010511001 | TPGX0902.. CS 250 T 08 | 0.055 |
| B3.12 | 572010512001 | TPGX0902.. CS 250 T 08 | 0.06 |
| B3.14 | 572010514001 | TPGX0902.. CS 250 T 08 | 0.07 |
| B3.16 | 572010516001 | TPGX0902.. CS 250 T 08 | 0.07 |
| B3.18 | 572010518001 | TPGX0902.. CS 250 T 08 | 0.1 |
| B3.22 | 572010522001 | TPGX0902.. CS 250 T 08 | 0.1 |

| REF. | CODE | TORX T | kg |
|-------|--------------|------------------------|-------|
| B5.06 | 572010506105 | WCGT0201.. TS 21 06 | 0.075 |
| B5.08 | 572010508105 | WCGT0201.. TS 211 06 | 0.09 |
| B5.10 | 572010510105 | TPGX0902.. CS 250 T 08 | 0.1 |
| B5.12 | 572010512105 | TPGX0902.. CS 250 T 08 | 0.1 |
| B5.14 | 572010514105 | TPGX0902.. CS 250 T 08 | 0.2 |
| B5.16 | 572010516105 | TPGX0902.. CS 250 T 08 | 0.3 |
| B8.06 | 572010506108 | WCGT0201.. TS 21 06 | 0.065 |
| B8.08 | 572010508108 | WCGT0201.. TS 211 06 | 0.08 |
| B8.10 | 572010510108 | TPGX0902.. CS 250 T 08 | 0.1 |
| B8.12 | 572010512108 | TPGX0902.. CS 250 T 08 | 0.2 |
| B8.14 | 572010514108 | TPGX0902.. CS 250 T 08 | 0.2 |
| B8.16 | 572010516108 | TPGX0902.. CS 250 T 08 | 0.3 |

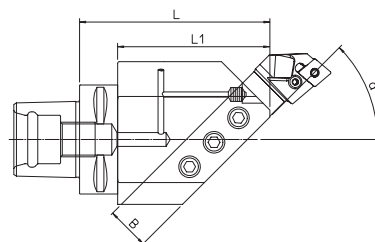
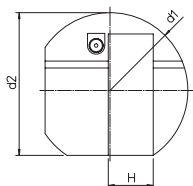
| REF. | CODE | TORX T | kg |
|--------|--------------|-------------------------|------|
| SFTP25 | 470500525001 | TPGX0902.. CS 250T 08 | 0.01 |
| SFTP32 | 470500532001 | TPGX0902.. CS 250T 08 | 0.02 |
| SFTP50 | 470500550001 | TPGX1103.. CS300890T 08 | 0.08 |
| SFTP51 | 470500550003 | TCMT16T3.. TS 4 15 | 0.09 |

| REF. | CODE | TORX T | kg |
|--------|--------------|---------------------|------|
| SFCC25 | 470500525002 | CCGT0602.. TS 25 08 | 0.01 |
| SFCC32 | 470500532002 | CCGT0602.. TS 25 08 | 0.02 |
| SFCC50 | 470500550002 | CCGT09T3.. TS 4 15 | 0.08 |
| SFCC51 | 470500550004 | CCMT1204.. TS 5 25 | 0.09 |

• Per lavorazioni SOTTOSQUADRA vedere p.24

TCD' è la linea di utensili e portautensili di tornitura, realizzati seguendo le norme ISO 26623-1 **PSC** per l'applicazione sui mandrini di macchine MULTI-TASK. Il programma **TCD'** è composto da adattatori portautensili di tornitura. La linea **TCD'** è predisposta con il passaggio del liquido refrigerante.

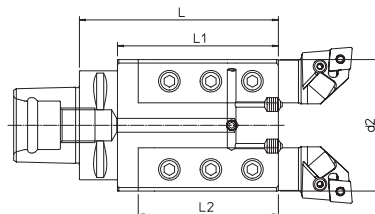
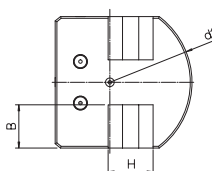
PSC - TU ISO 26623-1



In figura portautensile destro. L'utilizzo normale richiede un utensile sinistro in un adattatore destro.

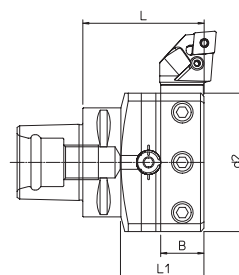
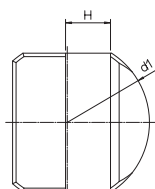
| PSC | REF. | CODE | L | L1 | d1 | d2 | a° | BxH | kg |
|-----|-----------------------|-----------------|-----|-----|-----|------|-----|-------|-----|
| 50 | TCD' PSC50 - TU20.45R | 71PSC050T2045R1 | 90 | 70 | 72 | 65 | 45° | 20x20 | 1.8 |
| 50 | TCD' PSC50 - TU20.45L | 71PSC050T2045L1 | 90 | 70 | 72 | 65 | 45° | 20x20 | 1.8 |
| 63 | TCD' PSC63 - TU25.45R | 71PSC063T2545R1 | 110 | 88 | 90 | 82.5 | 45° | 25x25 | 3.5 |
| 63 | TCD' PSC63 - TU25.45L | 71PSC063T2545L1 | 110 | 88 | 90 | 82.5 | 45° | 25x25 | 3.5 |
| 80 | TCD' PSC80 - TU32.45R | 71PSC080T3245R1 | 135 | 105 | 115 | 98.5 | 45° | 32x32 | 6.4 |
| 80 | TCD' PSC80 - TU32.45L | 71PSC080T3245L1 | 135 | 105 | 115 | 98.5 | 45° | 32x32 | 6.4 |

PSC - TU ISO 26623-1



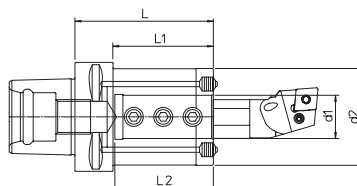
| PSC | REF. | CODE | L | L1 | L2 | d1 | d2 | BxH | kg |
|-----|----------------------|-----------------|-----|----|----|-----|----|-------|-----|
| 50 | TCD' PSC50 - TU20.02 | 71PSC050T200201 | 100 | 80 | 64 | 80 | 63 | 20x20 | 2.5 |
| 63 | TCD' PSC63 - TU25.02 | 71PSC063T250201 | 115 | 93 | 80 | 95 | 76 | 25x25 | 4 |
| 80 | TCD' PSC80 - TU32.02 | 71PSC080T320201 | 125 | 95 | 80 | 115 | 86 | 32x32 | 6.2 |

PSC - TU ISO 26623-1



| PSC | REF. | CODE | L | L1 | d1 | d2 | BxH | kg |
|-----|----------------------|-----------------|----|----|-----|-----|-------|-----|
| 50 | TCD' PSC50 - TU20.90 | 71PSC050T209001 | 60 | 40 | 80 | 64 | 20x20 | 1.4 |
| 63 | TCD' PSC63 - TU25.90 | 71PSC063T259001 | 70 | 48 | 95 | 80 | 25x25 | 2.6 |
| 80 | TCD' PSC80 - TU32.90 | 71PSC080T329001 | 85 | 55 | 133 | 105 | 32x32 | 5.2 |

PSC - D... ISO 26623-1



Bussole di riduzione a richiesta.

| PSC | REF. | CODE | d1H7 | d2 | L | L1 | L2 | kg |
|-----|-----------------------|-----------------|------|----|-----|-----|----|-----|
| 50 | TCD' PSC50 - D.25x80 | 71PSC050D250801 | 25 | 56 | 80 | 60 | 58 | 1.4 |
| 63 | TCD' PSC63 - D.25x80 | 71PSC063D250801 | 25 | 56 | 80 | 58 | 58 | 1.7 |
| 63 | TCD' PSC63 - D.40x125 | 71PSC063D401201 | 40 | 80 | 125 | 103 | 85 | 3.9 |
| 80 | TCD' PSC80 - D.25x85 | 71PSC080D250801 | 25 | 56 | 85 | 55 | 58 | 2.6 |
| 80 | TCD' PSC80 - D.40x125 | 71PSC080D401201 | 40 | 80 | 125 | 95 | 85 | 4.6 |

A richiesta Raccordo Refrigerante **PSC** vedere pag. 57



BHT 250 - 500 - 750

BARRE MODULARI

SGROSSATURA

FINITURA - TORNITURA

2 μ m

**ATTACCO
HT®**

**ATTACCO
HT®**

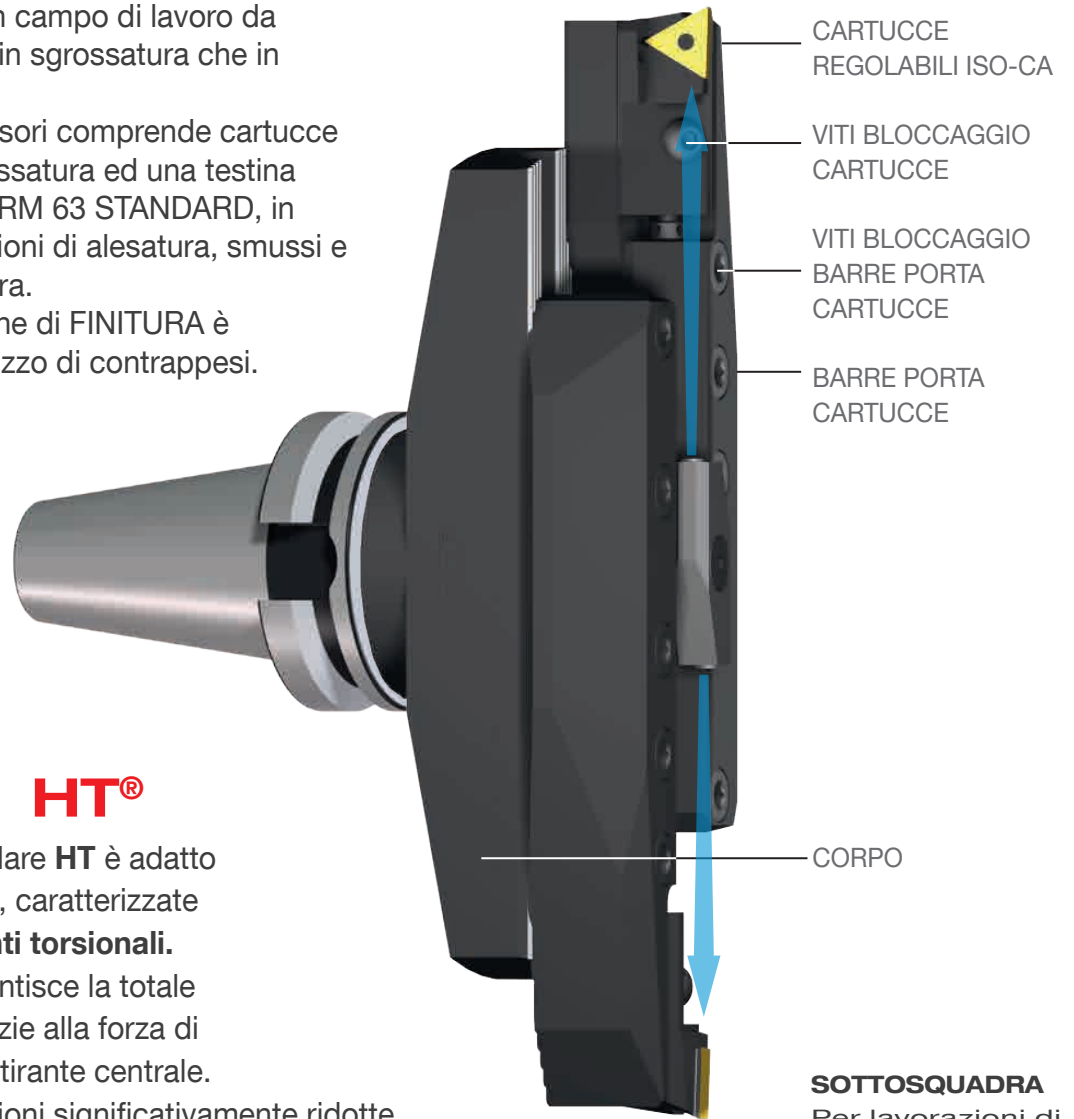
Il nuovo sistema di barenatura **BHT** è caratterizzato dal nuovo attacco base standard **HT** che assicura un perfetto accoppiamento ed una elevata resistenza alla torsione.

Le barre **BHT** coprono un campo di lavoro da Ø 250 a Ø 1000 mm, sia in sgrossatura che in finitura.

L'ampia gamma di accessori comprende cartucce ISO-CA regolabili di sgrossatura ed una testina micrometrica di finitura TRM 63 STANDARD, in grado di eseguire operazioni di alesatura, smussi e lavorazioni in sottosquadra.

Il sistema in configurazione di FINITURA è bilanciabile mediante utilizzo di contrappesi.

SGROSSATURA

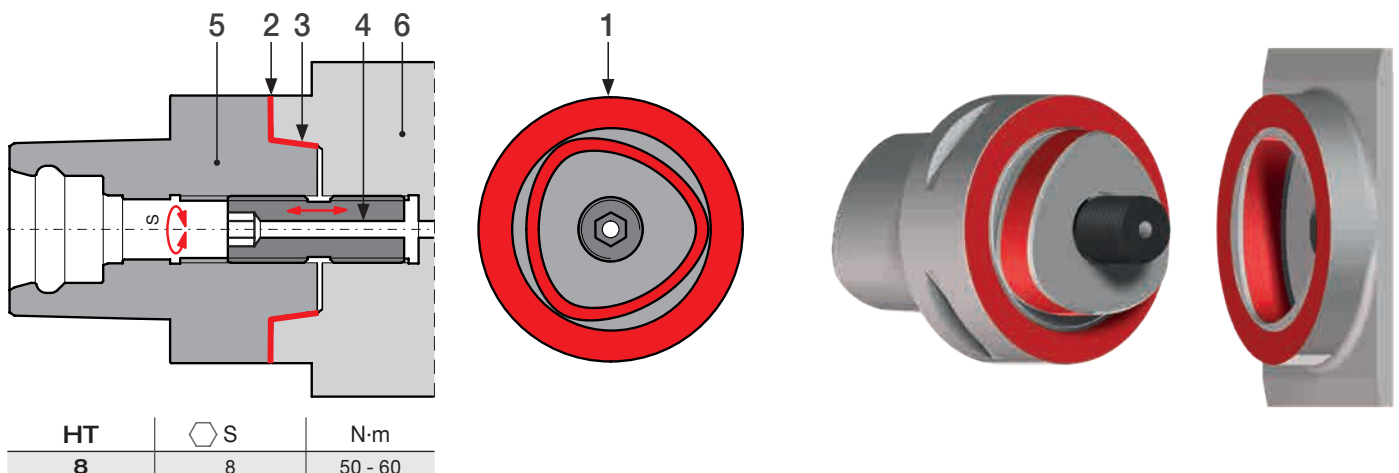


SOTTOSQUADRA
Per lavorazioni di **SGROSSATURA** utilizzare TS 63/63 +SSQC 63 vedere p.24

ATTACCO HT®

1. Il nuovo attacco modulare **HT** è adatto per lavorazioni pesanti, caratterizzate da **elevate componenti torsionali**.
2. L'accoppiamento garantisce la totale **assenza di gioco**, grazie alla forza di trazione esercitata dal tirante centrale.
3. Il nuovo HT ha dimensioni significativamente ridotte.
4. Facilita il passaggio centrale del refrigerante.
5. Il cono è realizzato con durezza di 55-60 HRC.
6. Il corpo utensile è realizzato con durezza di 45-50 HRC.

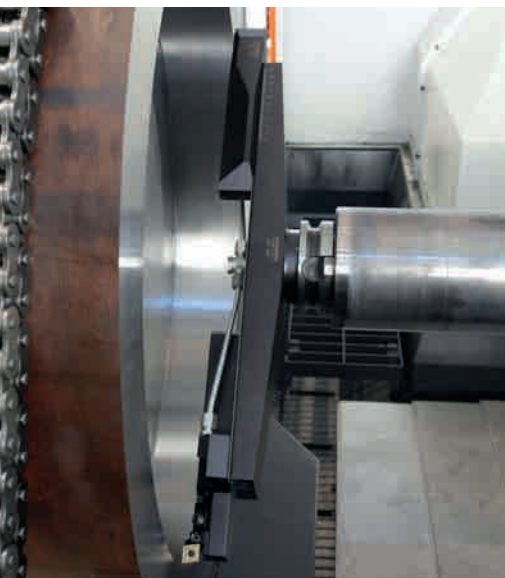
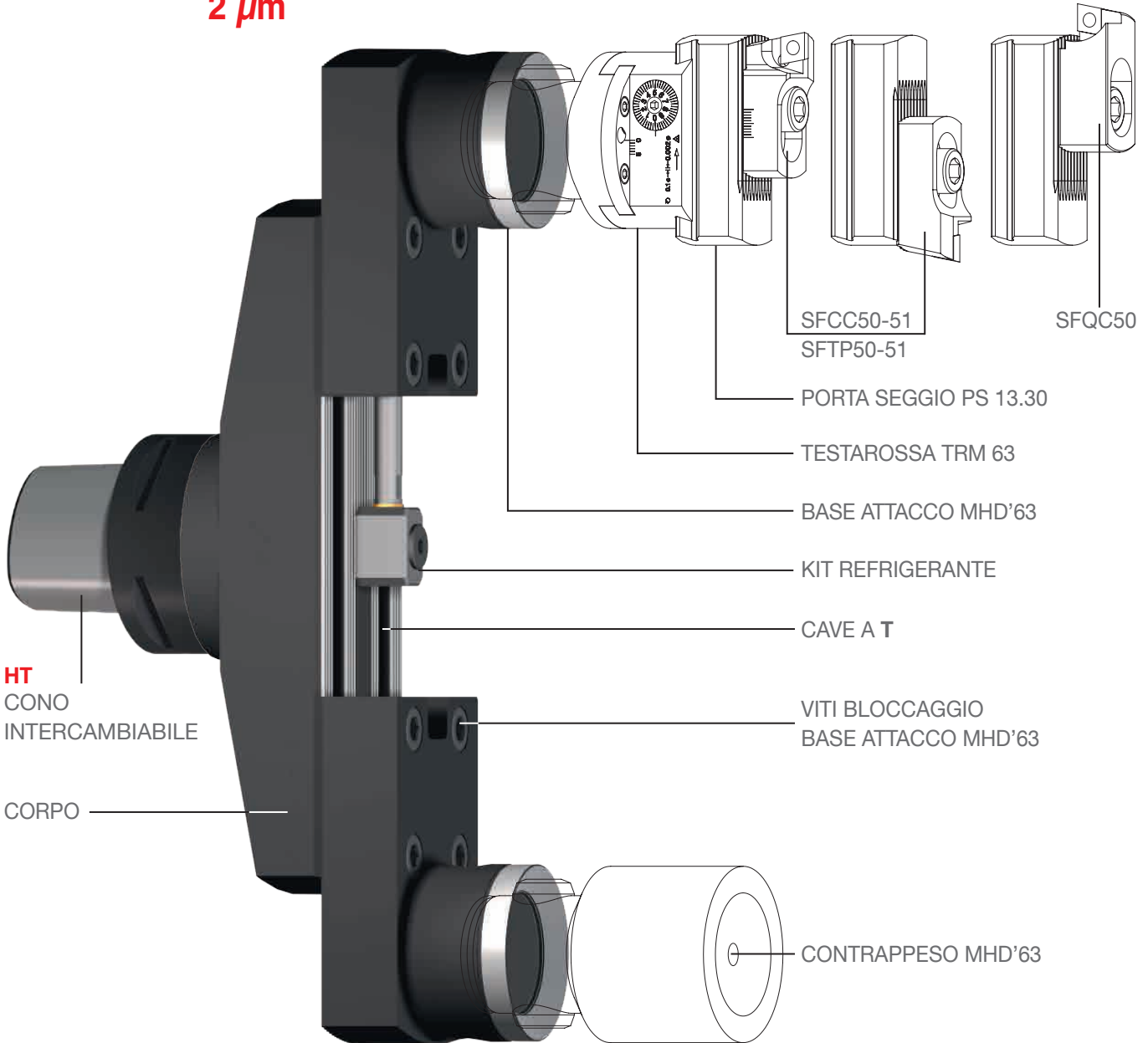
ATTACCO HT CONICO TRILOBATO, AREE DI CONTATTO E DI TRASCINAMENTO



FINITURA - TORNITURA

2 μm

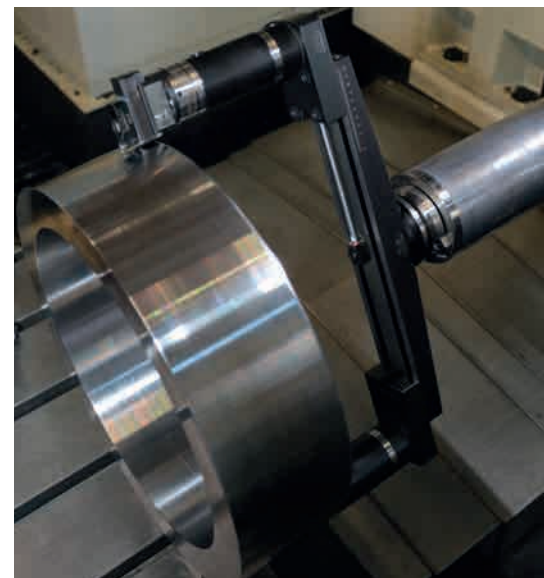
ALESATURA TORNITURA SOTTOSQUADRA



SGROSSATURA



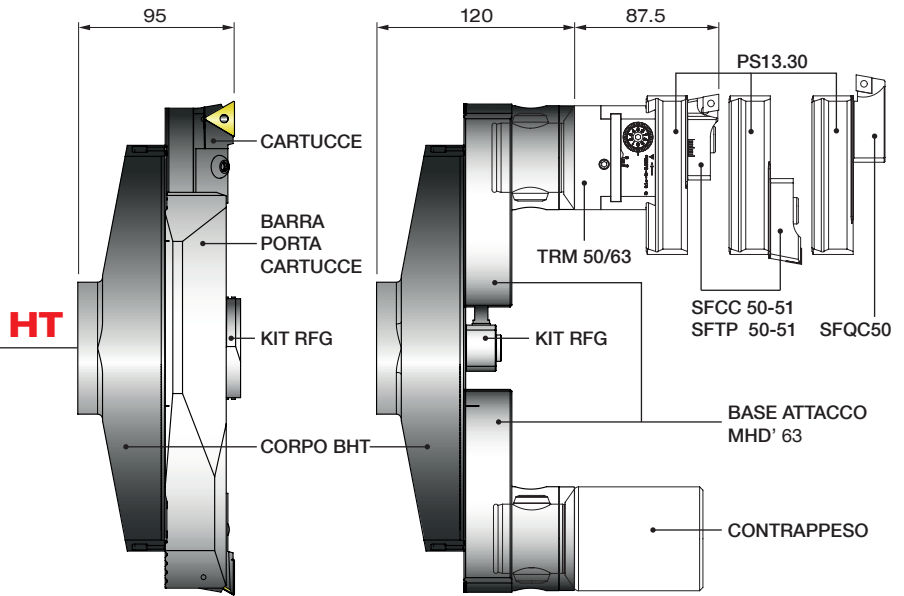
FINITURA



TORNITURA

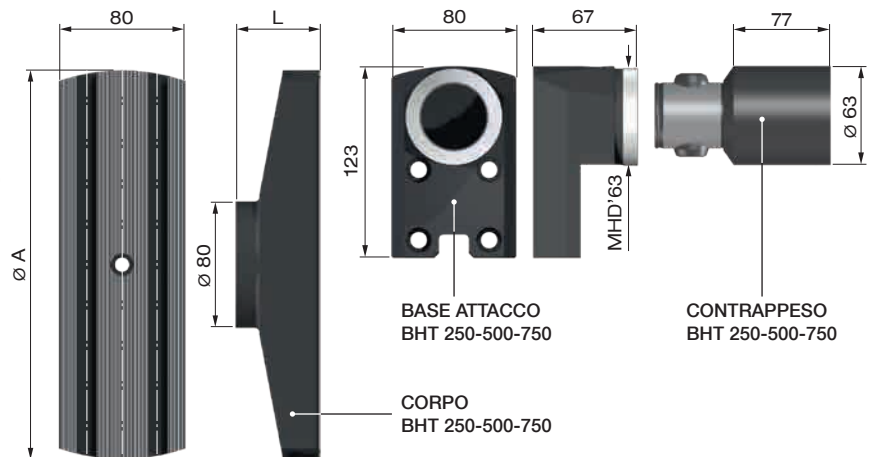
ATTACCHI **HT** PATENTED

BHT 250 Ø 250 ~ 500

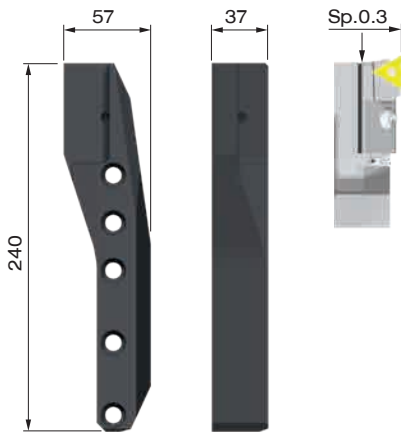


| | REF. | CODE | kg |
|----------------|-----------|--------------|-----|
| DIN 69871-AD50 | HT8 .36.5 | 41HT08025000 | 3.4 |
| MAS403BT-AD50 | HT8 .38.5 | 41HT08035000 | 3.7 |
| PSC 80 | HT8 .30 | 41HT08018000 | 2 |
| HSK 100 | HT8 .76.5 | 41HT08041000 | 4 |
| CAT 50 UNC | HT8 .50.5 | 41HT08055000 | 3.9 |
| MHD' 80 | HT8 | 655108000080 | 2 |

COMPONENTI E ACCESSORI

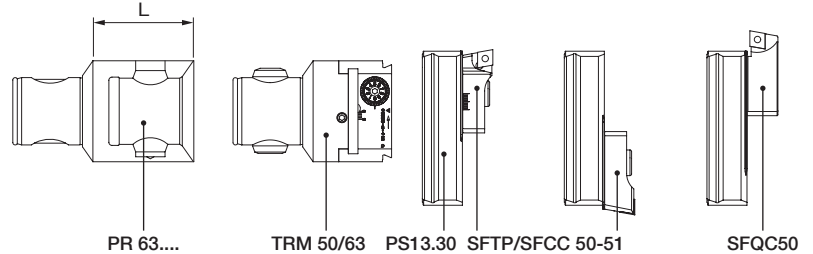


BARRA PORTA CARTUCCE



BARRA PORTA CARTUCCE BHT 250-500-750

| CODE | 382090024000 | kg | 2.5 |
|------|--------------|----|-----|
|------|--------------|----|-----|



CARTUCCE 20CA ISO 5611

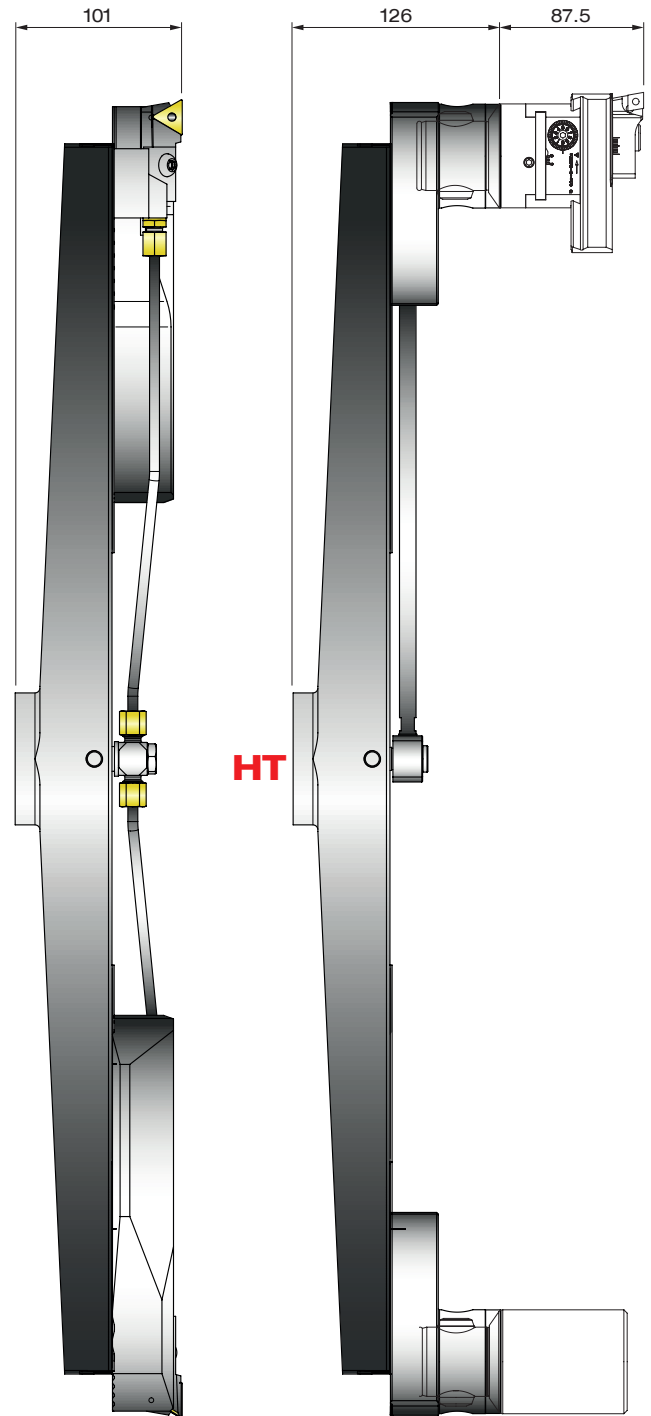
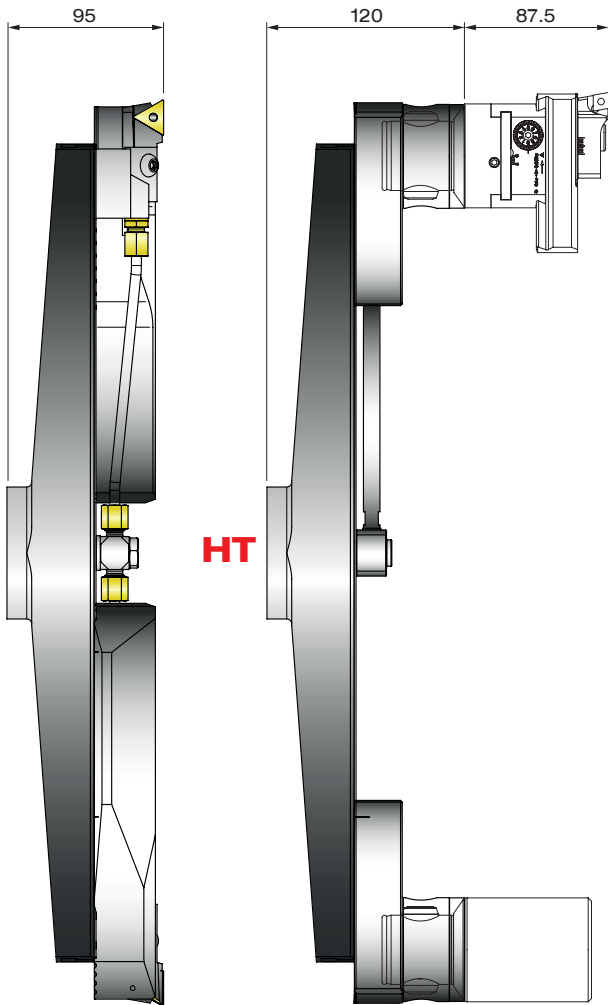
| | |
|-------------------|-------------------|
| | |
| PTGNL20CA-22 | SCGCL20CA-12 |
| CODE 483010201001 | CODE 483010201003 |
| TNM2204 | CCM1204 |
| | |
| PCGNL20CA-16 | PSRNL20CA-15 |
| CODE 483010201002 | CODE 483010201004 |
| CNM1606 | SNM1506 |

| REF. | CODE | Ø | A | L | kg |
|------------------------------|-----------------|------------|-----|-----|------|
| CORPO BHT 250 | 435508882460 | 250 ~ 500 | 246 | 54 | 4.0 |
| CORPO BHT 500 | 435508882960 | 500 ~ 750 | 496 | 54 | 7.2 |
| CORPO BHT 750 | 435508887460 | 750 ~ 1000 | 746 | 60 | 13.0 |
| BASE ATTACCO BHT 250-500-750 | 382090006301 | | | | 2.5 |
| CONTRAPPESO BHT 250-500-750 | 392011006300 | | | | 2.4 |
| TRM 50/63 | BHT 250-500-750 | | | | 1.1 |
| PS 13.30 | BHT 250-500-750 | | | | 0.7 |
| PR 63.63 | BHT 250-500-750 | | | 63 | 1.4 |
| PR 63.100 | BHT 250-500-750 | | | 100 | 2.2 |
| PR 63.125 | BHT 250-500-750 | | | 125 | 2.9 |

A richiesta BHT per diametri superiori

BHT 500 Ø 500 ~ 750

BHT 750 Ø 750 ~ 1000



KIT REFRIGERANTE

SGROSSATURA

FINITURA



KIT RFG BHT 250 SG

KIT RFG BHT 250 FN

CODE 382090025000

CODE 382090025001



KIT RFG BHT 500 SG

KIT RFG BHT 500 FN

CODE 382090050003

CODE 382090050004



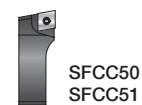
KIT RFG BHT 750 SG

KIT RFG BHT 750 FN

CODE 382090075000

CODE 382090075001

SEGGI SF..

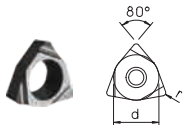


| REF. | CODE | △ | ⊗ | ♻️ | TORX | kg |
|--------|--------------|-------------|------|-----------|------|------|
| SFTP50 | 470500550001 | TPGX 1103.. | | CS300890T | 08 | 0.08 |
| SFTP51 | 470500550003 | TCMT 16T3.. | TS 4 | | 15 | 0.09 |
| SFCC50 | 470500550002 | CCGT 09T3.. | TS 4 | | 15 | 0.08 |
| SFCC51 | 470500550004 | CCMT 1204.. | TS 5 | | 25 | 0.09 |
| SFQC50 | 470500550062 | CCMT 09T3.. | TS 4 | | 15 | 0.1 |

INSERTI

WCGT ○○○○○○L

FINITURA

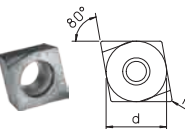


| REF. | CODE | d | s | r | | |
|----------------------|----------------------------------|------|------|-----|------------------|----------|
| WCGT 020102L DC 100 | CERMET WCGT020102LC100 | 3.97 | 1.59 | 0.2 | TS 21* - TS 211* | TORX T06 |
| WCGT 020102L DC 100T | CERMET RIVESTITO WCGT020102LC10T | 3.97 | 1.59 | 0.2 | TS 21* - TS 211* | TORX T06 |
| WCGT 020102L DK 100 | METALLO DURO WCGT020102LK100 | 3.97 | 1.59 | 0.2 | TS 21* - TS 211* | TORX T06 |
| WCGT 020102L DP 300 | METALLO DURO WCGT020102LP300 | 3.97 | 1.59 | 0.2 | TS 21* - TS 211* | TORX T06 |
| WCGT 020104L DC 100 | CERMET WCGT020104LC100 | 3.97 | 1.59 | 0.4 | TS 21* - TS 211* | TORX T06 |
| WCGT 020104L DC 100T | CERMET RIVESTITO WCGT020104LC10T | 3.97 | 1.59 | 0.4 | TS 21* - TS 211* | TORX T06 |
| WCGT 020104L DK 100 | METALLO DURO WCGT020104LK100 | 3.97 | 1.59 | 0.4 | TS 21* - TS 211* | TORX T06 |
| WCGT 020104L DP 300 | METALLO DURO WCGT020104LP300 | 3.97 | 1.59 | 0.4 | TS 21* - TS 211* | TORX T06 |

* TS21 : B...06 / * TS211 : B...08

CCGT ○○○○○○L

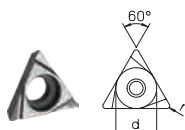
FINITURA



| REF. | CODE | d | s | r | | |
|----------------------|----------------------------------|-------|------|-----|-------|----------|
| CCGT 060200L DC 100 | CERMET CCGT060200LC100 | 6.35 | 2.38 | 0 | TS 25 | TORX T08 |
| CCGT 060200L DC 100T | CERMET RIVESTITO CCGT060200LC10T | 6.35 | 2.38 | 0 | TS 25 | TORX T08 |
| CCGT 060200L DK 100 | METALLO DURO CCGT060200LK100 | 6.35 | 2.38 | 0 | TS 25 | TORX T08 |
| CCGT 060200L DP 300 | METALLO DURO CCGT060200LP300 | 6.35 | 2.38 | 0 | TS 25 | TORX T08 |
| CCGT 060202L DC 100 | CERMET CCGT060202LC100 | 6.35 | 2.38 | 0.2 | TS 25 | TORX T08 |
| CCGT 060202L DC 100T | CERMET RIVESTITO CCGT060202LC10T | 6.35 | 2.38 | 0.2 | TS 25 | TORX T08 |
| CCGT 060202L DK 100 | METALLO DURO CCGT060202LK100 | 6.35 | 2.38 | 0.2 | TS 25 | TORX T08 |
| CCGT 060202L DP 300 | METALLO DURO CCGT060202LP300 | 6.35 | 2.38 | 0.2 | TS 25 | TORX T08 |
| CCGT 060204L DC 100 | CERMET CCGT060204LC100 | 6.35 | 2.38 | 0.4 | TS 25 | TORX T08 |
| CCGT 060204L DC 100T | CERMET RIVESTITO CCGT060204LC10T | 6.35 | 2.38 | 0.4 | TS 25 | TORX T08 |
| CCGT 060204L DK 100 | METALLO DURO CCGT060204LK100 | 6.35 | 2.38 | 0.4 | TS 25 | TORX T08 |
| CCGT 060204L DP 300 | METALLO DURO CCGT060204LP300 | 6.35 | 2.38 | 0.4 | TS 25 | TORX T08 |
| CCGT 09T302L DC 100 | CERMET CCGT09T302LC100 | 9.525 | 3.97 | 0.2 | TS 4 | TORX T15 |
| CCGT 09T302L DC 100T | CERMET RIVESTITO CCGT09T302LC10T | 9.525 | 3.97 | 0.2 | TS 4 | TORX T15 |
| CCGT 09T302L DK 100 | METALLO DURO CCGT09T302LK100 | 9.525 | 3.97 | 0.2 | TS 4 | TORX T15 |
| CCGT 09T302L DP 300 | METALLO DURO CCGT09T302LP300 | 9.525 | 3.97 | 0.2 | TS 4 | TORX T15 |
| CCGT 09T304L DC 100 | CERMET CCGT09T304LC100 | 9.525 | 3.97 | 0.4 | TS 4 | TORX T15 |
| CCGT 09T304L DC 100T | CERMET RIVESTITO CCGT09T304LC10T | 9.525 | 3.97 | 0.4 | TS 4 | TORX T15 |
| CCGT 09T304L DK 100 | METALLO DURO CCGT09T304LK100 | 9.525 | 3.97 | 0.4 | TS 4 | TORX T15 |
| CCGT 09T304L DP 300 | METALLO DURO CCGT09T304LP300 | 9.525 | 3.97 | 0.4 | TS 4 | TORX T15 |

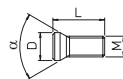
TPGX ○○○○○○L

FINITURA



| REF. | CODE | d | s | r | | |
|----------------------|----------------------------------|------|------|-----|-----------|----------|
| TPGX 090200L DC 100 | CERMET TPGX090200LC100 | 5.56 | 2.38 | 0 | CS250T | TORX T08 |
| TPGX 090200L DC 100T | CERMET RIVESTITO TPGX090200LC10T | 5.56 | 2.38 | 0 | CS250T | TORX T08 |
| TPGX 090200L DK 100 | METALLO DURO TPGX090200LK100 | 5.56 | 2.38 | 0 | CS250T | TORX T08 |
| TPGX 090200L DP 300 | METALLO DURO TPGX090200LP300 | 5.56 | 2.38 | 0 | CS250T | TORX T08 |
| TPGX 090202L DC 100 | CERMET TPGX090202LC100 | 5.56 | 2.38 | 0.2 | CS250T | TORX T08 |
| TPGX 090202L DC 100T | CERMET RIVESTITO TPGX090202LC10T | 5.56 | 2.38 | 0.2 | CS250T | TORX T08 |
| TPGX 090202L DK 100 | METALLO DURO TPGX090202LK100 | 5.56 | 2.38 | 0.2 | CS250T | TORX T08 |
| TPGX 090202L DP 300 | METALLO DURO TPGX090202LP300 | 5.56 | 2.38 | 0.2 | CS250T | TORX T08 |
| TPGX 090204L DC 100 | CERMET TPGX090204LC100 | 5.56 | 2.38 | 0.4 | CS250T | TORX T08 |
| TPGX 090204L DC 100T | CERMET RIVESTITO TPGX090204LC10T | 5.56 | 2.38 | 0.4 | CS250T | TORX T08 |
| TPGX 090204L DK 100 | METALLO DURO TPGX090204LK100 | 5.56 | 2.38 | 0.4 | CS250T | TORX T08 |
| TPGX 090204L DP 300 | METALLO DURO TPGX090204LP300 | 5.56 | 2.38 | 0.4 | CS250T | TORX T08 |
| TPGX 110300L DC 100 | CERMET TPGX110300LC100 | 6.35 | 3.18 | 0 | CS300890T | TORX T08 |
| TPGX 110300L DC 100T | CERMET RIVESTITO TPGX110300LC10T | 6.35 | 3.18 | 0 | CS300890T | TORX T08 |
| TPGX 110300L DK 100 | METALLO DURO TPGX110300LK100 | 6.35 | 3.18 | 0 | CS300890T | TORX T08 |
| TPGX 110300L DP 300 | METALLO DURO TPGX110300LP300 | 6.35 | 3.18 | 0 | CS300890T | TORX T08 |
| TPGX 110302L DC 100 | CERMET TPGX110302LC100 | 6.35 | 3.18 | 0.2 | CS300890T | TORX T08 |
| TPGX 110302L DC 100T | CERMET RIVESTITO TPGX110302LC10T | 6.35 | 3.18 | 0.2 | CS300890T | TORX T08 |
| TPGX 110302L DK 100 | METALLO DURO TPGX110302LK100 | 6.35 | 3.18 | 0.2 | CS300890T | TORX T08 |
| TPGX 110302L DP 300 | METALLO DURO TPGX110302LP300 | 6.35 | 3.18 | 0.2 | CS300890T | TORX T08 |
| TPGX 110304L DC 100 | CERMET TPGX110304LC100 | 6.35 | 3.18 | 0.4 | CS300890T | TORX T08 |
| TPGX 110304L DC 100T | CERMET RIVESTITO TPGX110304LC10T | 6.35 | 3.18 | 0.4 | CS300890T | TORX T08 |
| TPGX 110304L DK 100 | METALLO DURO TPGX110304LK100 | 6.35 | 3.18 | 0.4 | CS300890T | TORX T08 |
| TPGX 110304L DP 300 | METALLO DURO TPGX110304LP300 | 6.35 | 3.18 | 0.4 | CS300890T | TORX T08 |

VITE BLOCCAGGIO INSERTI

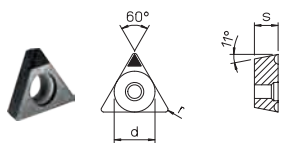


CHIAVE TORX

| REF. | | CODE | M | L | D | α | N-m | REF. | | CODE |
|-------------|--|--------------|------------|------|------|-----|-----|----------|--|--------------|
| TS 21 | | 494010002034 | M 2x0.4 | 3.7 | 2.7 | 60° | 0,5 | TORX T06 | | 101500900600 |
| TS 211 | | 494010002040 | M 2x0.4 | 4 | 2.7 | 60° | 0,5 | TORX T06 | | 101500900600 |
| CS 250 T | | 494010002565 | M 2.5x0.45 | 6 | 3.7 | 90° | 1,0 | TORX T08 | | 101500900800 |
| CS 300890 T | | 494010003008 | M 3x0.5 | 8 | 4.1 | 90° | 1,0 | TORX T08 | | 101500900800 |
| TS 25 | | 494010002555 | M 2.5x0.45 | 5.7 | 3.45 | 60° | 1,0 | TORX T08 | | 101500900800 |
| TS 4 | | 494010004008 | M 4x0.7 | 10 | 5.5 | 60° | 3,0 | TORX T15 | | 101500901500 |
| TS 5 | | 494010005009 | M 5x0.8 | 11.5 | 7 | 60° | 7,5 | TORX T25 | | 101500902500 |

TPGX ○○○○○○

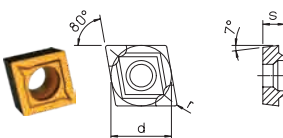
FINITURA



| REF. | CODE | d | s | r | | |
|---------------------|-----------------|------|------|-----|-----------|----------|
| TPGX 090202 D20 MDC | TPGX090202MDC20 | 5.56 | 2.38 | 0.2 | CS250T | TORX T08 |
| TPGX 090204 D20 MDC | TPGX090204MDC20 | 5.56 | 2.38 | 0.4 | CS250T | TORX T08 |
| TPGX 110302 D20 MDC | TPGX110302MDC20 | 6.35 | 3.18 | 0.2 | CS300890T | TORX T08 |
| TPGX 110304 D20 MDC | TPGX110304MDC20 | 6.35 | 3.18 | 0.4 | CS300890T | TORX T08 |
| TPGX 090202 D20 CBN | TPGX090202CBN20 | 5.56 | 2.38 | 0.2 | CS250T | TORX T08 |
| TPGX 090202 D25 CBN | TPGX090202CBN25 | 5.56 | 2.38 | 0.2 | CS250T | TORX T08 |
| TPGX 090204 D20 CBN | TPGX090204CBN20 | 5.56 | 2.38 | 0.4 | CS250T | TORX T08 |
| TPGX 090204 D25 CBN | TPGX090204CBN25 | 5.56 | 2.38 | 0.4 | CS250T | TORX T08 |
| TPGX 110302 D25 CBN | TPGX110302CBN25 | 6.35 | 3.18 | 0.2 | CS300890T | TORX T08 |
| TPGX 110304 D20 CBN | TPGX110304CBN20 | 6.35 | 3.18 | 0.4 | CS300890T | TORX T08 |
| TPGX 110304 D25 CBN | TPGX110304CBN25 | 6.35 | 3.18 | 0.4 | CS300890T | TORX T08 |

CCMT ○○○○○○

SGROSSATURA



| REF. | CODE | d | s | r | | |
|---------------------|-----------------|-------|------|-----|-------|----------|
| CCMT 060202 DP 100R | CCMT060202P100R | 6.35 | 2.38 | 0.2 | TS 25 | TORX T08 |
| CCMT 060202 DP 300 | CCMT060202P300 | 6.35 | 2.38 | 0.2 | TS 25 | TORX T08 |
| CCMT 060204 DP 100R | CCMT060204P100R | 6.35 | 2.38 | 0.4 | TS 25 | TORX T08 |
| CCMT 060204 DP 300 | CCMT060204P300 | 6.35 | 2.38 | 0.4 | TS 25 | TORX T08 |
| CCMT 09T304 DP 100R | CCMT09T304P100R | 9.525 | 3.97 | 0.4 | TS 4 | TORX T15 |
| CCMT 09T304 DP 300 | CCMT09T304P300 | 9.525 | 3.97 | 0.4 | TS 4 | TORX T15 |
| CCMT 09T308 DP 100R | CCMT09T308P100R | 9.525 | 3.97 | 0.8 | TS 4 | TORX T15 |
| CCMT 09T308 DP 300 | CCMT09T308P300 | 9.525 | 3.97 | 0.8 | TS 4 | TORX T15 |
| CCMT 120404 DP 100R | CCMT120404P100R | 12.7 | 4.76 | 0.4 | TS 5 | TORX T25 |
| CCMT 120404 DP 300 | CCMT120404P300 | 12.7 | 4.76 | 0.4 | TS 5 | TORX T25 |
| CCMT 120408 DP 100R | CCMT120408P100R | 12.7 | 4.76 | 0.8 | TS 5 | TORX T25 |
| CCMT 120408 DP 300 | CCMT120408P300 | 12.7 | 4.76 | 0.8 | TS 5 | TORX T25 |

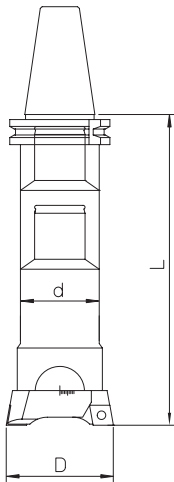
QUALITÀ DI BARENATURA

| ISO | METALLO DURO | CERMET | CERMET RIVESTITO | METALLO DURO RIVESTITO CVD |
|-----|--------------|--------|------------------|----------------------------|
| P01 | | | | |
| P10 | | DC100 | DC100T | DP100R |
| P20 | DP300 | | | |
| P30 | | | | |
| P40 | | | | |
| K01 | | | | |
| K10 | DK100 | DC100 | DC100T | DP100R |
| K20 | DP300 | | | |
| K30 | | | | |

| | |
|--------|---|
| DP300 | Sgrossatura e finitura. Acciai a basso tenore di carbonio - acciai inox |
| DK100 | Sgrossatura e finitura. Leghe di alluminio Ghise |
| DP100R | Sgrossatura. Acciai, acciai legati e ghise |
| DC100 | Finitura. Acciai legati in genere e ghise sferoidali |
| DC100T | Finitura. Acciai legati in genere, acciai inox e ghise sferoidali |
| D20MDC | Finitura. Leghe di alluminio, materiali non-ferrosi e non-metalli |
| D20CBN | Finitura. Acciai con elevata durezza superiore 50 HRC (può sostituire la rettifica) |
| D25CBN | Finitura. Acciai con elevata durezza superiore 50 HRC e taglio interrotto (può sostituire la rettifica) |

DATI TECNICI DATI DI TAGLIO

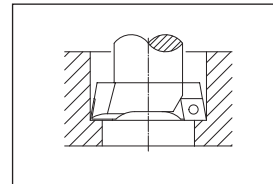
DATI DI TAGLIO CONSIGLIATI PER SGROSSATURA DI FORI CON TESTINE BITAGLIANTI TS



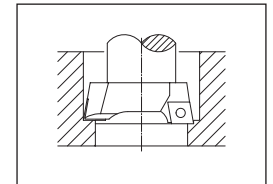
| materiale | dimensioni bareno | condizioni di lavoro | velocità di taglio Vc = m/min. diametro | | | avanzamento f = mm/giro (due taglienti) raggio inserto | | |
|------------------------------|-------------------|----------------------|---|------------|-----------|--|-----------|-----------|
| | | | D < 38 | D = 38-120 | D > 120 | R = 0.2 | R = 0.4 | R = 0.8 |
| acciaio al carbonio HB ≤ 200 | L / d = 2.5 | buona | 120 - 180 | 140 - 200 | 160 - 250 | | 0.2 - 0.4 | 0.3 - 0.5 |
| | L / d = 4 | normale | 100 - 160 | 120 - 180 | 140 - 200 | | 0.2 - 0.4 | 0.3 - 0.5 |
| | L / d = 6.3 | difficile | 70 - 100 | 70 - 100 | 70 - 100 | 0.15 - 0.3 | 0.2 - 0.4 | |
| acciaio al carbonio HB > 200 | L / d = 2.5 | buona | 100 - 160 | 120 - 180 | 140 - 200 | | 0.2 - 0.4 | 0.3 - 0.5 |
| | L / d = 4 | normale | 80 - 140 | 100 - 160 | 120 - 180 | | 0.2 - 0.4 | 0.3 - 0.5 |
| | L / d = 6.3 | difficile | 60 - 90 | 70 - 100 | 70 - 100 | 0.15 - 0.3 | 0.2 - 0.4 | |
| acciaio inox AISI 304 - 316 | L / d = 2.5 | buona | 80 - 110 | 90 - 120 | 100 - 140 | | 0.2 - 0.4 | 0.3 - 0.5 |
| | L / d = 4 | normale | 70 - 100 | 80 - 110 | 90 - 120 | | 0.2 - 0.4 | 0.3 - 0.5 |
| | L / d = 6.3 | difficile | 60 - 90 | 60 - 90 | 60 - 90 | 0.15 - 0.3 | 0.2 - 0.4 | |
| ghisa | L / d = 2.5 | buona | 90 - 120 | 100 - 140 | 120 - 160 | | 0.2 - 0.4 | 0.3 - 0.5 |
| | L / d = 4 | normale | 70 - 100 | 90 - 120 | 100 - 140 | | 0.2 - 0.4 | 0.3 - 0.5 |
| | L / d = 6.3 | difficile | 60 - 90 | 60 - 90 | 60 - 90 | 0.15 - 0.3 | 0.2 - 0.4 | |
| alluminio | L / d = 2.5 | buona | 160 - 250 | 200 - 300 | 250 - 350 | | 0.3 - 0.5 | 0.4 - 0.6 |
| | L / d = 4 | normale | 140 - 200 | 160 - 250 | 200 - 300 | | 0.3 - 0.5 | 0.4 - 0.6 |
| | L / d = 6.3 | difficile | 100 - 150 | 100 - 150 | 100 - 150 | 0.2 - 0.4 | 0.3 - 0.5 | |

| profondità di passata ap = mm | campo di lavoro Ø = mm | max. profondità di passata | |
|-------------------------------|------------------------|----------------------------|------------------|
| | | acciaio | 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 | |

È consigliabile che il preforo B sia ≥ al diametro del bareno d.



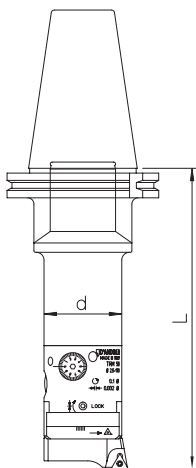
Due taglienti sullo stesso diametro



Due taglienti su diametri diversi

ATTENZIONE: Per lavorare con un solo tagliente o con differenti diametri di taglio, dimezzare l'avanzamento indicato in tabella.

DATI DI TAGLIO CONSIGLIATI PER L'ALESATURA CON TESTAROSSA TRM / TRC / TR-E



| materiale | dimensioni bareno | condizioni di lavoro | velocità di taglio Vc = m/min. | avanzamento fn = mm/giro raggio inserto | | | qualità inserto | profondità di passata |
|------------------------------|-------------------|----------------------|--------------------------------|---|-------------|-------------|-----------------|-----------------------|
| | | | | R = 0.0 | R = 0.2 | R = 0.4 | | |
| acciaio al carbonio HB ≤ 200 | L / d = 2.5 | buona | 200 - 300 | | 0.05 - 0.08 | 0.07 - 0.1 | DC100 DP300 | 0.1 - 0.25 mm |
| | L / d = 4 | normale | 160 - 250 | | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 6.3 | difficile | 70 - 100 | 0.05 - 0.08 | 0.05 - 0.08 | | | |
| acciaio al carbonio HB > 200 | L / d = 2.5 | buona | 160 - 250 | | 0.05 - 0.08 | 0.07 - 0.1 | DC100 | |
| | L / d = 4 | normale | 150 - 200 | | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 6.3 | difficile | 70 - 100 | 0.05 - 0.08 | 0.05 - 0.08 | | | |
| acciaio inox AISI 304 - 316 | L / d = 2.5 | buona | 120 - 160 | | 0.05 - 0.08 | 0.07 - 0.1 | DP300 | |
| | L / d = 4 | normale | 100 - 140 | | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 6.3 | difficile | 70 - 100 | 0.05 - 0.08 | 0.05 - 0.08 | | | |
| ghisa | L / d = 2.5 | buona | 120 - 160 | | 0.05 - 0.08 | 0.07 - 0.1 | DK100 DP100 | |
| | L / d = 4 | normale | 100 - 140 | | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 6.3 | difficile | 70 - 100 | 0.05 - 0.08 | 0.05 - 0.08 | | | |
| alluminio | L / d = 2.5 | buona | 300 - 400 | | 0.05 - 0.08 | 0.07 - 0.1 | DK100 | |
| | L / d = 4 | normale | 250 - 350 | | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 6.3 | difficile | 100 - 150 | 0.05 - 0.08 | 0.05 - 0.08 | | | |
| acciaio HB > 200 | L / d = 2.5 | buona | 80 - 100 | | 0.04 - 0.06 | 0.05 - 0.07 | D20CBN | |
| | L / d = 4 | normale | 80 - 100 | | 0.04 - 0.06 | 0.05 - 0.07 | | |

FORMULA DI CALCOLO PER ALESATURA

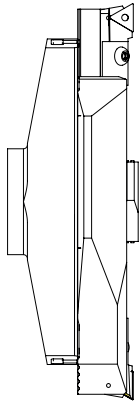
Vc velocità di taglio (m/min.)
D diametro del pezzo da lavorare (mm)
n numero di giri al minuto (giri/min.)
Vf velocità avanzamento (mm/min.)
fn avanzamento al giro (mm/giro)
 π 3.14

$$Vc = \frac{\pi \cdot D \cdot n}{1000}$$

$$n = \frac{Vc \cdot 1000}{\pi \cdot D}$$

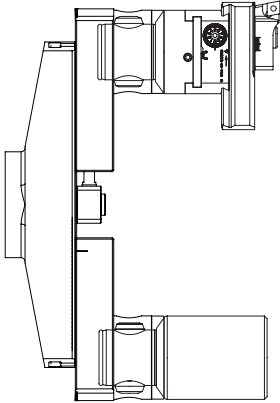
$$Vf = n \cdot fn$$

DATI DI TAGLIO CONSIGLIATI PER SGROSSATURA DI FORI CON BHT 250-500-750



| materiale | dimensioni bareno | condizioni di lavoro | velocità di taglio Vc = m/min. | avanzamento f = mm/giro (due taglienti) raggio inserto | | profondità di passata | |
|------------------------------|-------------------|----------------------|--------------------------------|--|-----------|-----------------------|-----------------------------|
| | | | | R = 0.4 | R = 0.8 | acciaio | ghisa alluminio |
| acciaio al carbonio HB ≤ 200 | L / d = 2.5 | buona | 160 - 250 | 0.2 - 0.4 | 0.3 - 0.5 | | 1.5 - 8 mm 1.5 - 10 mm |
| | L / d = 4 | normale | 140 - 200 | 0.2 - 0.4 | 0.3 - 0.5 | | |
| acciaio al carbonio HB > 200 | L / d = 2.5 | buona | 140 - 200 | 0.2 - 0.4 | 0.3 - 0.5 | | |
| | L / d = 4 | normale | 120 - 180 | 0.2 - 0.4 | 0.3 - 0.5 | | |
| acciaio inox AISI 304 - 316 | L / d = 2.5 | buona | 100 - 140 | 0.2 - 0.4 | 0.3 - 0.5 | | |
| | L / d = 4 | normale | 80 - 120 | 0.2 - 0.4 | 0.3 - 0.5 | | |
| ghisa | L / d = 2.5 | buona | 120 - 160 | 0.2 - 0.4 | 0.3 - 0.5 | | |
| | L / d = 4 | normale | 100 - 140 | 0.2 - 0.4 | 0.3 - 0.5 | | |
| alluminio | L / d = 2.5 | buona | 250 - 350 | 0.3 - 0.5 | 0.4 - 0.6 | | |
| | L / d = 4 | normale | 200 - 300 | 0.3 - 0.5 | 0.4 - 0.6 | | |

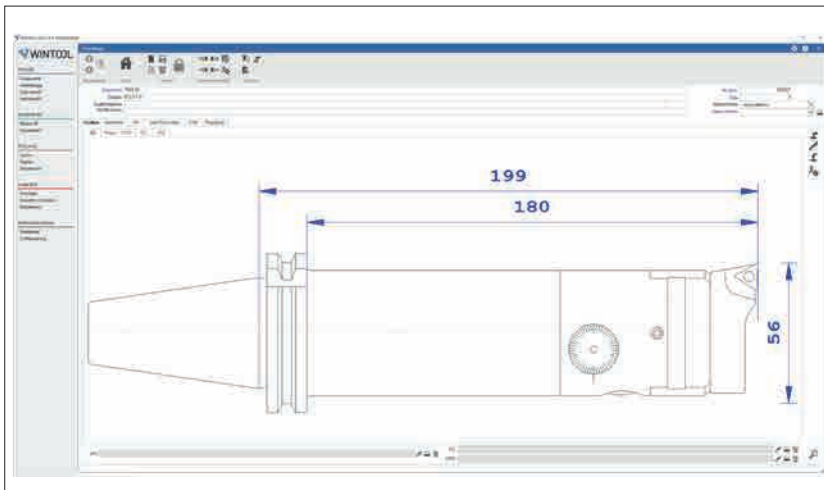
DATI DI TAGLIO CONSIGLIATI PER FINITURA DI FORI CON BHT 250-500-750



| materiale | dimensioni bareno | condizioni di lavoro | velocità di taglio Vc = m/min. | avanzamento f = mm/giro raggio inserto | | profondità di passata | qualità inserto |
|------------------------------|-------------------|----------------------|--------------------------------|--|------------|-----------------------|-----------------|
| | | | | R = 0.2 | R = 0.4 | | |
| acciaio al carbonio HB ≤ 200 | L / d = 2.5 | buona | 200 - 300 | 0.05 - 0.08 | 0.07 - 0.1 | | DC100 DP300 |
| | L / d = 4 | normale | 150 - 250 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| acciaio al carbonio HB > 200 | L / d = 2.5 | buona | 160 - 250 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 4 | normale | 140 - 200 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| acciaio inox AISI 304 - 316 | L / d = 2.5 | buona | 90 - 140 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 4 | normale | 80 - 120 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| ghisa | L / d = 2.5 | buona | 120 - 180 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 4 | normale | 100 - 140 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| alluminio | L / d = 2.5 | buona | 250 - 400 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 4 | normale | 200 - 350 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| acciaio legato | L / d = 2.5 | buona | 60 - 100 | 0.05 - 0.08 | 0.07 - 0.1 | | |
| | L / d = 4 | normale | 60 - 100 | 0.05 - 0.08 | 0.07 - 0.1 | | |

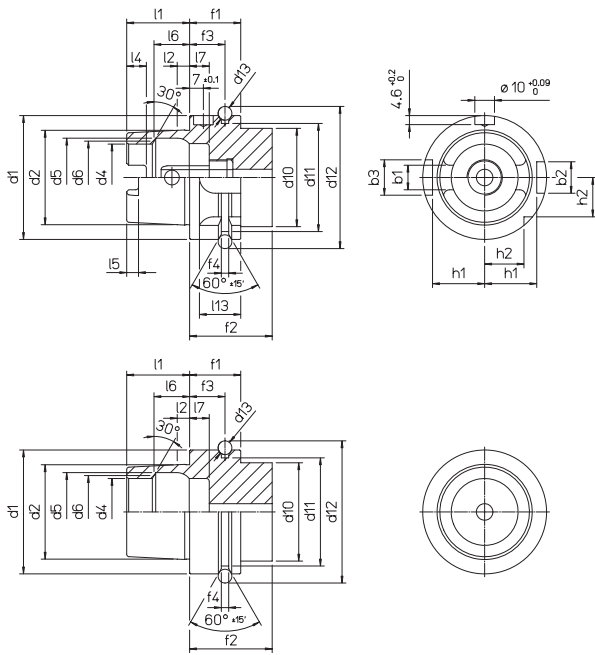
WINTOOL

Generatore grafico che permette di comporre in breve tempo utensili completi con elementi del MODULHARD'ANDREA, indicando le dimensioni, il peso e la lista dei componenti.



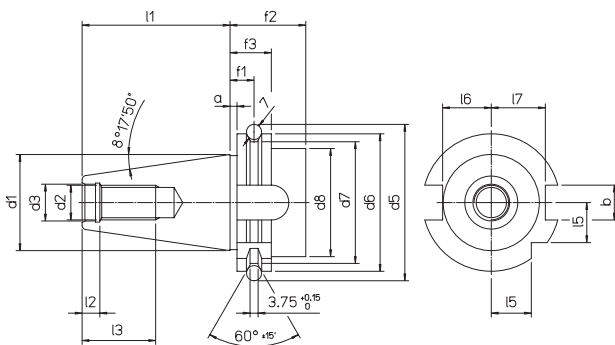
| Scheda Utensile | | WINTOOL | |
|---|---------------------|---|--|
| 600038 | TRM 50 Ø 2.5-110 | Macchina tipo | senza attacco |
| | | metro parte pezzo Lunghezza taglio Raggio Area magnetica Lunghezza Lung. coltore (L3) Dia. coltore Lunghezza di taglio Piano angolo Peso Prezzo | 96 0 0 0 190 0 0 0 0 1.08 0 |
| Destinazione / Tipo 1 DIN69871-AD40 MHD50.120 MHD50 | | No del Part / No EDV / Codice prodotto / Locazione e magazzino 418501204020 | Immersione 21/11/2023 Modificato 21/11/2023 RC:Stato editato Utente Admin |
| 1 TRM 50 Ø 2.5-110 | | 45005000500 | |
| 1 SFTP 50 TP04 1103 - L Ø 54-500 | | 47050500001 | |

HSK-A



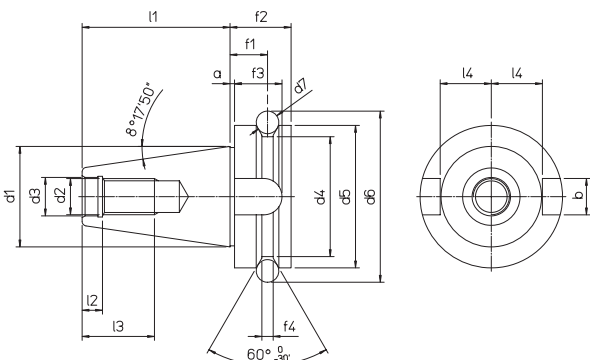
| HSK | 32 | 40 | 50 | 63 | 80 | 100 |
|-----------------------|--------|--------|--------|--------|--------|--------|
| b1 $+0.04$ -0.04 | 7.05 | 8.05 | 10.54 | 12.54 | 16.04 | 20.02 |
| b2 H10 | 7 | 9 | 12 | 16 | 18 | 20 |
| b3 H10 | 9 | 11 | 14 | 18 | 20 | 22 |
| d1 h10 | 32 | 40 | 50 | 63 | 80 | 100 |
| d2 | 24.007 | 30.007 | 38.009 | 48.010 | 60.012 | 75.013 |
| d4 H10 | 17 | 21 | 26 | 34 | 42 | 53 |
| d5 H11 | 20.5 | 25.5 | 32 | 40 | 50 | 63 |
| d6 | 19 | 23 | 29 | 37 | 46 | 58 |
| d10 max. | 26 | 34 | 42 | 53 | 68 | 88 |
| d11 0 -0.1 | 26.5 | 34.8 | 43 | 55 | 70 | 92 |
| d12 0 -0.1 | 37 | 45 | 59.3 | 72.3 | 88.8 | 109.75 |
| d13 | 4 | | 7 | | | |
| f1 0 -0.1 | 20 | | 26 | | 29 | |
| f2 min. | 35 | | 42 | | 45 | |
| f3 ± 0.1 | 16 | | 18 | | 20 | |
| f4 $+0.15$ 0 | 2 | | 3.75 | | | |
| h1 0 -0.2 | 13 | 17 | 21 | 26.5 | 34 | 44 |
| h2 0 -0.3 | 9.5 | 12 | 15.5 | 20 | 25 | 31.5 |
| l1 0 -0.2 | 16 | 20 | 25 | 32 | 40 | 50 |
| l2 | 3.2 | 4 | 5 | 6.3 | 8 | 10 |
| l4 $+0.2$ 0 | 5 | 6 | 7.5 | 10 | 12 | 15 |
| l5 $+0.2$ 0 | 3 | 3.5 | 4.5 | 6 | 8 | 10 |
| l6 JS10 | 8.92 | 11.42 | 14.13 | 18.13 | 22.85 | 28.56 |
| l7 0 -0.1 | 8 | | 10 | 10 | 12.5 | 12.5 |
| l13 | 12 | | 19 | 21 | 22 | 24 |

DIN 69871 A (ISO 7388-1)



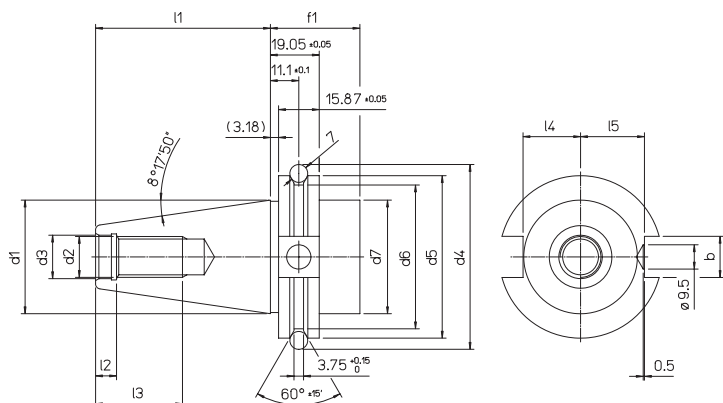
| ISO | 30 | 40 | 45 | 50 | 60 |
|---------------|-------|-------|-------|--------|--------|
| a ± 0.1 | 3.2 | | | | |
| b $+0.5/0$ | 16.1 | | 19.3 | 25.7 | |
| d1 | 31.75 | 44.45 | 57.15 | 69.85 | 107.95 |
| d2 6H | M12 | M16 | M20 | M24 | M30 |
| d3 H7 | 13 | 17 | 21 | 25 | 32 |
| d5 ± 0.05 | 59.3 | 72.3 | 91.35 | 107.25 | 164.75 |
| d6 $0/-0.1$ | 50 | 63.55 | 82.55 | 97.50 | 155 |
| d7 $0/-0.5$ | 44.3 | 56.25 | 75.25 | 91.25 | 147.70 |
| d8 max. | 45 | 50 | 63 | 80 | 130 |
| f1 ± 0.1 | 11.1 | | | | |
| f2 min. | 35 | | | | 38 |
| f3 $0/-0.1$ | 19.1 | | | | |
| l1 $0/-0.3$ | 47.8 | 68.4 | 82.7 | 101.75 | 161.90 |
| l2 $+0.5/0$ | 5.5 | 8.2 | 10 | 11.5 | 14 |
| l3 min. | 24 | 32 | 40 | 47 | 59 |
| l5 $0/-0.3$ | 15 | 18.5 | 24 | 30 | 49 |
| l6 $0/-0.3$ | 16.4 | 22.8 | 29.1 | 35.5 | 54.5 |
| l7 $0/-0.3$ | 19 | 25 | 31.3 | 37.7 | 59.3 |

MAS 403 BT A



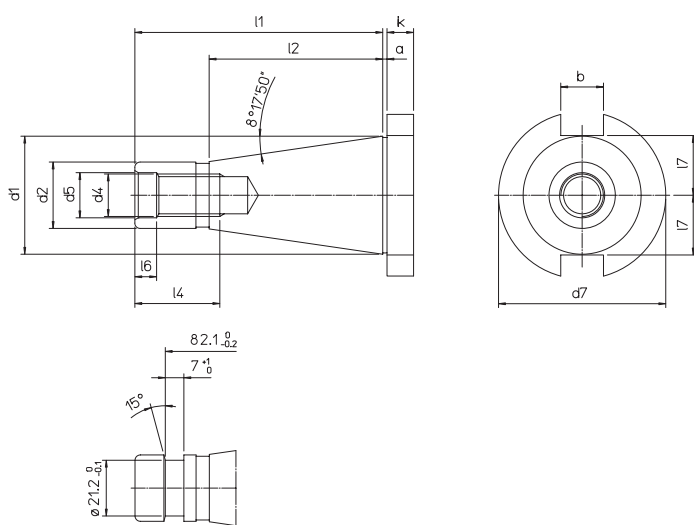
| ISO | 30 | 35 | 40 | 45 | 50 | 60 |
|---------------|-------|-------|-------|--------|--------|--------|
| a ± 0.4 | 2 | | | 3 | | |
| b $+0.2/0$ | 16.1 | | 19.3 | 25.7 | 25.7 | |
| d1 | 31.75 | 38.10 | 44.45 | 57.15 | 69.85 | 107.95 |
| d2 6H | M 12 | | M 16 | M 20 | M 24 | M 30 |
| d3 H8 | 12.5 | | 17 | 21 | 25 | 31 |
| d4 $0/-0.5$ | 38 | 43 | 53 | 73 | 85 | 135 |
| d5 h8 | 46 | 53 | 63 | 85 | 100 | 155 |
| d6 ± 0.05 | 56.03 | 65.68 | 75.56 | 100.09 | 118.89 | 180.22 |
| d7 | 8 | 10 | | 12 | 15 | 20 |
| f1 ± 0.1 | 13.6 | 14.6 | 16.6 | 21.2 | 23.2 | 28.2 |
| f2 | 22 | 24 | 27 | 33 | 38 | 48 |
| f3 min. | 17 | 20 | 21 | 26 | 31 | 34 |
| f4 | 4 | 5 | | 6 | 7 | 11 |
| l1 ± 0.2 | 48.4 | 56.4 | 65.4 | 82.8 | 101.8 | 161.8 |
| l2 $+0.5/0$ | 7 | | 9 | 11 | 13 | 16 |
| l3 min. | 24 | | 30 | 36 | 45 | 56 |
| l4 $0/-0.3$ | 16.3 | 19.6 | 22.6 | 29.1 | 35.4 | 60.1 |

ANSI/CAT



| ISO | 40 | 45 | 50 |
|-------------|-------|-------|--------|
| b +0.2 / 0 | 16.1 | 19.3 | 25.7 |
| d1 6H | 44.45 | 57.15 | 69.85 |
| d2 | M 16 | M 20 | M 24 |
| d3 H7 | 17 | 21 | 25 |
| d4 ±0.05 | 72.3 | 91.35 | 108.25 |
| d5 0 / -0.1 | 63.55 | 82.55 | 98.5 |
| d6 0 / -0.5 | 56.25 | 75.25 | 91.25 |
| d7 ±0.15 | 44.45 | 57.15 | 69.95 |
| f1 min | 35 | | 38 |
| l1 0 / -0.3 | 68.4 | 82.7 | 101.75 |
| l2 +0.5 / 0 | 8.2 | 10 | 11.5 |
| l3 min. | 32 | 40 | 47 |
| l4 0 / -0.3 | 22.8 | 29.10 | 35.50 |
| l5 0 / -0.3 | 25 | 31.3 | 37.7 |

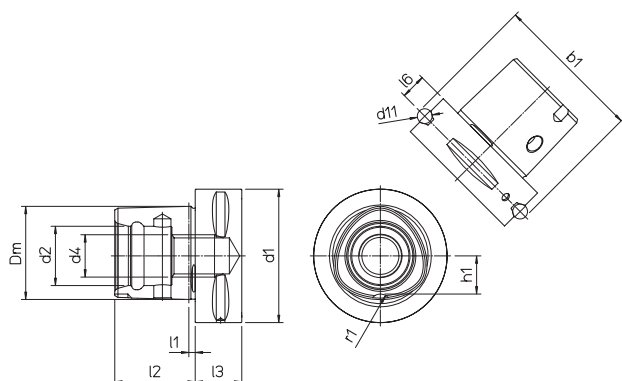
DIN 2080



ISO 40 OTT

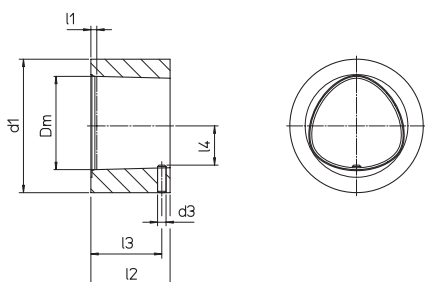
| ISO | 30 | 40 | 45 | 50 |
|-------------|-------|-------|-------|-------|
| a ±0.2 | 1.6 | | 3.2 | |
| b H12 | 16.1 | | 19.3 | 25.7 |
| d1 | 31.75 | 44.45 | 57.15 | 69.85 |
| d2 a10 | 17.4 | 25.3 | 32.4 | 39.6 |
| d4 ±0.05 | M 12 | M 16 | M 20 | M 24 |
| d5 | 13 | 17 | 21 | 26 |
| d7 0 / -0.4 | 50 | 63 | 80 | 97.5 |
| k ±0.15 | 8 | 10 | 12 | 12 |
| l1 | 68.4 | 93.4 | 106.8 | 126.8 |
| l2 | 48.4 | 65.4 | 82.8 | 101.8 |
| l4 | 24 | 32 | 40 | 47 |
| l6 +0.5 / 0 | 5.5 | 8.2 | 10 | 11.5 |
| l7 max. | 16.2 | 22.5 | 29 | 35.3 |

ISO 26623-1



| PSC | 40 | 50 | 63 | 80 |
|-----------------|---------|---------|-------|------|
| b1 ±0.1 | 46 | 59.3 | 70.7 | 86 |
| Dm | 28 | 35 | 44 | 55 |
| d1 ±0.1 | 40 | 50 | 63 | 80 |
| d2 +0.1 / -0.05 | 18 | 21 | 28 | 32 |
| d4 | M14x1.5 | M16x1.5 | M20x2 | |
| d11 | 5 | 7 | | |
| l1 | 2.5 | 3 | | |
| l2 ±0.1 | 24 | 30 | 38 | 48 |
| l3 min | 20 | | 22 | 30 |
| l6 ±0.15 | 8 | 10 | 12 | |
| h1 ±0.1 | 11 | 14 | 18 | 22.2 |
| r1 ±0.3 | 4 | 5 | 6 | 7 |

ISO 26623-2



| PSC | 40 | 50 | 63 | 80 |
|---------|-----------|-----------|-----------|-----------|
| Dm | 28 | 35 | 44 | 55 |
| d1 min | 40 | 50 | 63 | 80 |
| d3 | 2.5 | 3 | 4 | 5 |
| l1 | 2.3 | 2.8 | 2.8 | 2.8 |
| l2 ±0.1 | 23.4 | 29.4 | 37.4 | 47.4 |
| l3 ±0.2 | 21 | 26 | 33.5 | 43 |
| l4 | 11.5 ±0.2 | 14.5 ±0.2 | 18.5 ±0.2 | 22.8 ±0.2 |

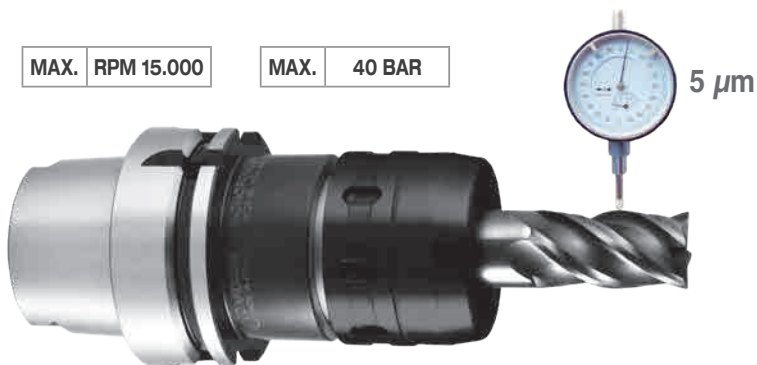
MONOforce portautensile a forte serraggio, adatto per lavorazioni di fresatura di grossatura e finiture di precisione.

Prodotto in accordo agli standard più diffusi dei mandrini macchina, con l'impiego delle bussole di riduzione RC, permette un range d'impiego da Ø 3mm a Ø 25mm, disponibili anche le pinze RC a tenuta.

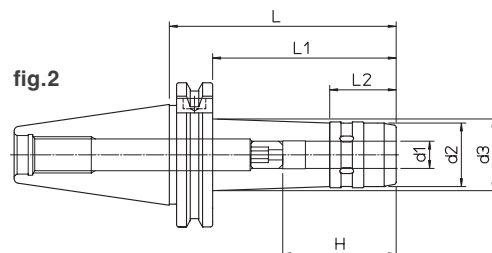
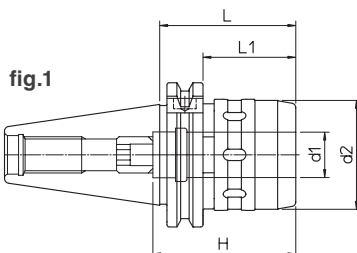
Tutti i portautensili MONOforce sono equilibrati in classe G 6,3 a 15.000 giri/min.

MAX. RPM 15.000

MAX. 40 BAR



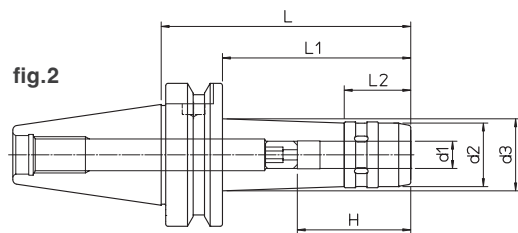
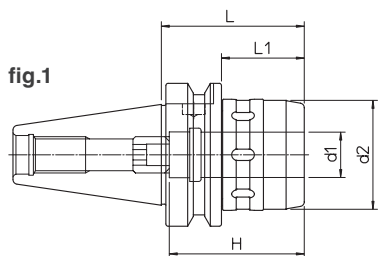
DIN 69871 AD



Chiave di serraggio esclusa - Predisposizione Chip

| DIN | REF. | CODE | d1 | d2 | d3 | H | L | L1 | L2 | kg | fig. |
|-----|------------------------|-----------------|----|----|----|----|-----|----|------|-----|------|
| 40 | DIN69871-AD40 MF12.100 | 71DIN-A40MF1210 | 12 | 28 | 32 | 46 | 100 | 81 | 29.5 | 1.2 | 2 |
| 40 | DIN69871-AD40 MF20.60 | 71DIN-A40MF2006 | 20 | 48 | | 63 | 60 | 41 | | 1.1 | 1 |
| 40 | DIN69871-AD40 MF32.95 | 71DIN-A40MF3209 | 32 | 66 | | 80 | 95 | | | 1.6 | 1 |
| 50 | DIN69871-AD50 MF20.80 | 71DIN-A50MF2008 | 20 | 48 | | 63 | 80 | 61 | | 2.3 | 1 |
| 50 | DIN69871-AD50 MF32.75 | 71DIN-A50MF3207 | 32 | 66 | | 90 | 75 | 56 | | 2.8 | 1 |

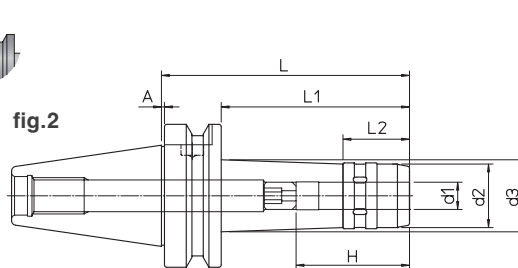
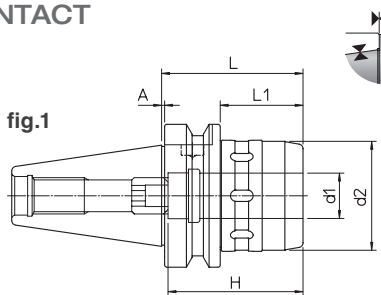
MAS 403 BT AD



Chiave di serraggio esclusa - Predisposizione Chip

| BT | REF. | CODE | d1 | d2 | d3 | H | L | L1 | L2 | kg | fig. |
|----|-------------------------|-----------------|----|----|----|----|-----|----|------|-----|------|
| 40 | MAS403 BT40-AD MF12.100 | 71MBT-A40MF1210 | 12 | 28 | 32 | 46 | 100 | 73 | 29.5 | 1.4 | 2 |
| 40 | MAS403 BT40-AD MF20.65 | 71MBT-A40MF2007 | 20 | 48 | | 63 | 65 | 38 | | 1.3 | 1 |
| 40 | MAS403 BT40-AD MF32.90 | 71MBT-A40MF3209 | 32 | 66 | | 80 | 90 | | | 2.1 | 1 |
| 50 | MAS403 BT50-AD MF20.85 | 71MBT-A50MF2008 | 20 | 48 | | 63 | 85 | 47 | | 3.7 | 1 |
| 50 | MAS403 BT50-AD MF32.95 | 71MBT-A50MF3209 | 32 | 66 | | 90 | 95 | 57 | | 4.4 | 1 |

MAS 403 BT AD FACE CONTACT

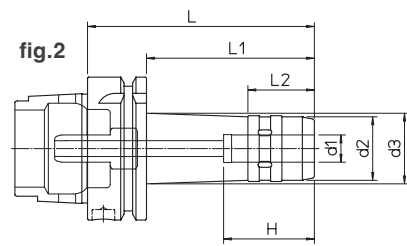
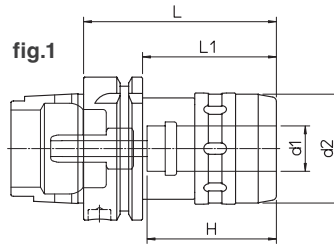


Chiave di serraggio esclusa - Predisposizione Chip

| BT | REF. | CODE | d1 | d2 | d3 | H | A | L | L1 | L2 | kg | fig. |
|----|----------------------------|-----------------|----|----|----|----|-----|-----|----|------|-----|------|
| 40 | MAS403 BT40-AD FC MF12.100 | 71MBF-A40MF1210 | 12 | 28 | 32 | 46 | 1 | 100 | 73 | 29.5 | 1.4 | 2 |
| 40 | MAS403 BT40-AD FC MF20.65 | 71MBF-A40MF2007 | 20 | 48 | | 63 | 1 | 65 | 38 | | 1.3 | 1 |
| 40 | MAS403 BT40-AD FC MF32.90 | 71MBF-A40MF3209 | 32 | 66 | | 80 | 1 | 90 | | | 2.1 | 1 |
| 50 | MAS403 BT50-AD FC MF20.85 | 71MBF-A50MF2008 | 20 | 48 | | 63 | 1.5 | 85 | 47 | | 3.7 | 1 |
| 50 | MAS403 BT50-AD FC MF32.95 | 71MBF-A50MF3209 | 32 | 66 | | 90 | 1.5 | 95 | 57 | | 4.4 | 1 |

BUSSOLE - PROLUNGHE CALETTAMENTO TERMICO

DIN 69893 HSK-A



Completo di raccordo per il refrigerante - Chiave di serraggio esclusa - Predisposizione Chip

| HSK-A | REF. | CODE | d1 | d2 | d3 | H | L | L1 | L2 | kg | fig. |
|-------|-------------------|-----------------|----|----|----|----|-----|----|------|-----|------|
| 63 | HSK-A63 MF12.100 | 71HSK-A63MF1210 | 12 | 28 | 32 | 46 | 100 | 74 | 29.5 | 1.1 | 2 |
| 63 | HSK-A63 MF20.85 | 71HSK-A63MF2008 | 20 | 48 | | 60 | 85 | 59 | | 1.2 | 1 |
| 63 | HSK-A63 MF32.105 | 71HSK-A63MF3210 | 32 | 66 | | 80 | 105 | | | 2 | 1 |
| 100 | HSK-A100 MF20.95 | 71HSKA100MF2009 | 20 | 48 | | 60 | 95 | 66 | | 2.8 | 1 |
| 100 | HSK-A100 MF32.110 | 71HSKA100MF3211 | 32 | 66 | | 80 | 110 | 81 | | 3.1 | 1 |



PSC - FORCE vedere p.32

KIT K01

MONOforce 20



1 RC 20.06
1 RC 20.08
1 RC 20.10
1 RC 20.12
1 RC 20.16
1 CHV 50

| DIN | REF. | CODE | kg |
|-----|---------------------------------|-----------------|-----|
| 40 | KIT K01 MONOFORCE 20.60 DIN40AD | 7KDIN-A40MF2006 | 2 |
| 40 | KIT K01 MONOFORCE 32.95 DIN40AD | 7KDIN-A40MF3209 | 4.4 |
| 50 | KIT K01 MONOFORCE 20.80 DIN50AD | 7KDIN-A50MF2008 | 4.6 |
| 50 | KIT K01 MONOFORCE 32.75 DIN50AD | 7KDIN-A50MF3207 | 6.2 |

KIT K01

MONOforce 32



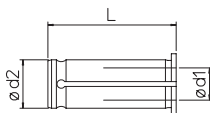
1 RC 32.06
1 RC 32.08
1 RC 32.10
1 RC 32.12
1 RC 32.16
1 RC 32.20
1 RC 32.25
1 CHV 75

| BT | REF. | CODE | kg |
|----|--------------------------------|-----------------|-----|
| 40 | KIT K01 MONOFORCE 20.65 BT40AD | 7KMBT-A40MF2007 | 2.3 |
| 40 | KIT K01 MONOFORCE 32.90 BT40AD | 7KMBT-A40MF3209 | 4.6 |
| 50 | KIT K01 MONOFORCE 20.85 BT50AD | 7KMBT-A50MF2008 | 5.4 |
| 50 | KIT K01 MONOFORCE 32.95 BT50AD | 7KMBT-A50MF3209 | 7.5 |

A RICHIESTA KIT K01 FACE CONTACT

| HSK-A | REF. | CODE | kg |
|-------|---------------------------------|-----------------|-----|
| 63 | KIT K01 MONOFORCE 20.85 HSK63 | 7KHSK-A63MF2008 | 2.3 |
| 63 | KIT K01 MONOFORCE 32.105 HSK63 | 7KHSK-A63MF3210 | 4.5 |
| 100 | KIT K01 MONOFORCE 32.110 HSK100 | 7KHKA100MF3211 | 6.7 |

RC BUSSOLE MANDRINO A FORTE SERRAGGIO



A richiesta bussole RC a TENUTA

| ød2 | REF. | CODE | d1 | L |
|-----|---------|--------------|----|----|
| 12 | RC12.03 | 497080012030 | 3 | 44 |
| 12 | RC12.04 | 497080012040 | 4 | 44 |
| 12 | RC12.06 | 497080012060 | 6 | 44 |
| 12 | RC12.08 | 497080012080 | 8 | 44 |
| 12 | RC12.10 | 497080012100 | 10 | 44 |

| ød2 | REF. | CODE | d1 | L |
|-----|---------|--------------|----|----|
| 20 | RC20.03 | 497080020030 | 3 | 50 |
| 20 | RC20.04 | 497080020040 | 4 | 50 |
| 20 | RC20.05 | 497080020050 | 5 | 50 |
| 20 | RC20.06 | 497080020060 | 6 | 50 |
| 20 | RC20.08 | 497080020080 | 8 | 50 |
| 20 | RC20.10 | 497080020100 | 10 | 50 |
| 20 | RC20.12 | 497080020120 | 12 | 50 |
| 20 | RC20.14 | 497080020140 | 14 | 50 |
| 20 | RC20.16 | 497080020160 | 16 | 50 |

| ød2 | REF. | CODE | d1 | L |
|-----|---------|--------------|----|----|
| 32 | RC32.03 | 497080032030 | 3 | 63 |
| 32 | RC32.04 | 497080032040 | 4 | 63 |
| 32 | RC32.05 | 497080032050 | 5 | 63 |
| 32 | RC32.06 | 497080032060 | 6 | 63 |
| 32 | RC32.08 | 497080032080 | 8 | 63 |
| 32 | RC32.10 | 497080032100 | 10 | 63 |
| 32 | RC32.12 | 497080032120 | 12 | 63 |
| 32 | RC32.14 | 497080032140 | 14 | 63 |
| 32 | RC32.16 | 497080032160 | 16 | 63 |
| 32 | RC32.18 | 497080032180 | 18 | 63 |
| 32 | RC32.20 | 497080032200 | 20 | 63 |
| 32 | RC32.25 | 497080032250 | 25 | 63 |

PR CT R PROLUNGHE A CALETTAMENTO TERMICO A REGOLAZIONE ASSIALE



Completo di grano regolazione assiale

| REF. | CODE | d1 | d2 | d3 | L | L1 | kg |
|--------------------|--------------|----|----|----|-----|---------|------|
| PR.CT.R D20.06.130 | 49DC21320060 | 6 | 14 | 20 | 130 | 22 / 36 | 0.20 |
| PR.CT.R D20.06.160 | 49DC21620060 | 6 | 14 | 20 | 160 | 22 / 32 | 0.33 |
| PR.CT.R D20.08.130 | 49DC21320080 | 8 | 14 | 20 | 130 | 22 / 36 | 0.25 |
| PR.CT.R D32.16.160 | 49DC21632160 | 16 | 27 | 32 | 160 | 39 / 49 | 0.78 |
| PR.CT.R D32.16.200 | 49DC22032160 | 16 | 27 | 32 | 200 | 39 / 49 | 1.81 |
| PR.CT.R D32.18.160 | 49DC21632180 | 18 | 27 | 32 | 160 | 39 / 49 | 0.77 |
| PR.CT.R D32.20.160 | 49DC21632200 | 20 | 27 | 32 | 160 | 41 / 51 | 0.67 |
| PR.CT.R D32.20.200 | 49DC22032200 | 20 | 27 | 32 | 200 | 41 / 51 | 0.87 |

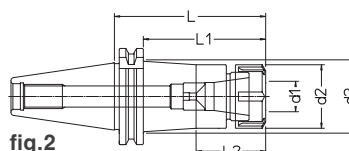
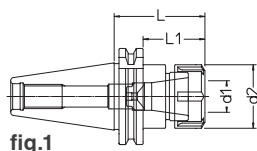
MONOd' serie di portapinzine integrali prodotti in accordo agli Standard ISO negli attacchi macchina DIN 69871, MAS 403 BT e DIN 69893 HSK. Prodotti in alta qualità, garantiscono un elevato grado di precisione. Tutti i portautensili ER sono equilibrati in classe G 6,3 a 15.000 giri/min.



0.003

MAX. RPM 15.000

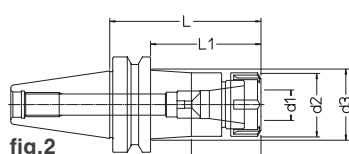
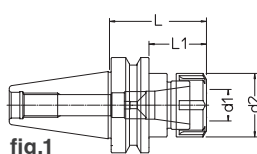
DIN 69871 AD PORTAPINZINE - ER DIN 6499



Pinze elastiche e chiavi di serraggio escluse

| DIN | REF. | CODE | ER | d1 | d2 | d3 | L | L1 | L2 | kg | fig. |
|-----|------------------------|-----------------|-----|--------|----|------|-----|-----|----|-----|------|
| 40 | DIN69871-AD40 ER16.60 | 71DIN-A40ER1606 | 16M | 0.5-10 | 22 | | 60 | 41 | | 0.9 | 1 |
| 40 | DIN69871-AD40 ER16.100 | 71DIN-A40ER1610 | 16M | 0.5-10 | 22 | 29.5 | 100 | 81 | 41 | 1 | 2 |
| 40 | DIN69871-AD40 ER25.60 | 71DIN-A40ER2506 | 25 | 1-16 | 42 | | 60 | 41 | | 1.1 | 1 |
| 40 | DIN69871-AD40 ER25.100 | 71DIN-A40ER2510 | 25 | 1-16 | 42 | 47 | 100 | 81 | 46 | 1.6 | 2 |
| 40 | DIN69871-AD40 ER32.70 | 71DIN-A40ER3207 | 32 | 2-20 | 50 | | 70 | 51 | | 1.2 | 1 |
| 40 | DIN69871-AD40 ER32.110 | 71DIN-A40ER3211 | 32 | 2-20 | 50 | | 110 | 91 | | 1.7 | 1 |
| 50 | DIN69871-AD50 ER16.100 | 71DIN-A50ER1610 | 16M | 0.5-10 | 22 | 29.5 | 100 | 81 | 41 | 2.5 | 2 |
| 50 | DIN69871-AD50 ER16.160 | 71DIN-A50ER1616 | 16M | 0.5-10 | 22 | 32.5 | 160 | 141 | 41 | 3.3 | 2 |
| 50 | DIN69871-AD50 ER25.110 | 71DIN-A50ER2511 | 25 | 1-16 | 42 | 48 | 110 | 91 | 46 | 2.8 | 2 |
| 50 | DIN69871-AD50 ER25.160 | 71DIN-A50ER2516 | 25 | 1-16 | 42 | 50 | 160 | 141 | 46 | 3.6 | 2 |
| 50 | DIN69871-AD50 ER32.70 | 71DIN-A50ER3207 | 32 | 2-20 | 50 | | 70 | 51 | | 2.9 | 1 |
| 50 | DIN69871-AD50 ER32.160 | 71DIN-A50ER3216 | 32 | 2-20 | 50 | 57.5 | 160 | 141 | 52 | 4 | 2 |

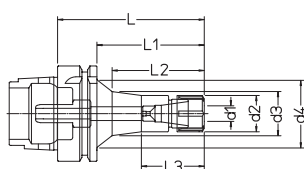
MAS 403 BT AD PORTAPINZINE - ER DIN 6499



Pinze elastiche e chiavi di serraggio escluse

| BT | REF. | CODE | ER | d1 | d2 | d3 | L | L1 | L2 | kg | fig. |
|----|-------------------------|-----------------|-----|--------|----|------|-----|-----|----|-----|------|
| 40 | MAS403 BT40-AD ER16.60 | 71MBT-A40ER1606 | 16M | 0.5-10 | 22 | | 60 | 33 | | 1 | 1 |
| 40 | MAS403 BT40-AD ER16.100 | 71MBT-A40ER1610 | 16M | 0.5-10 | 22 | 28 | 100 | 73 | 41 | 1.1 | 2 |
| 40 | MAS403 BT40-AD ER25.65 | 71MBT-A40ER2506 | 25 | 1-16 | 42 | | 65 | 38 | | 1.2 | 1 |
| 40 | MAS403 BT40-AD ER25.100 | 71MBT-A40ER2510 | 25 | 1-16 | 42 | 45.5 | 100 | 73 | 46 | 1.7 | 2 |
| 40 | MAS403 BT40-AD ER32.70 | 71MBT-A40ER3207 | 32 | 2-20 | 50 | | 70 | 43 | | 1.3 | 1 |
| 40 | MAS403 BT40-AD ER32.110 | 71MBT-A40ER3211 | 32 | 2-20 | 50 | | 110 | 83 | | 1.8 | 1 |
| 50 | MAS403 BT50-AD ER16.100 | 71MBT-A50ER1610 | 16M | 0.5-10 | 22 | 26.5 | 100 | 62 | 41 | 3.6 | 2 |
| 50 | MAS403 BT50-AD ER16.160 | 71MBT-A50ER1616 | 16M | 0.5-10 | 22 | 31 | 160 | 122 | 41 | 4.3 | 2 |
| 50 | MAS403 BT50-AD ER25.110 | 71MBT-A50ER2511 | 25 | 1-16 | 42 | 45.5 | 110 | 72 | 46 | 3.8 | 2 |
| 50 | MAS403 BT50-AD ER25.160 | 71MBT-A50ER2516 | 25 | 1-16 | 42 | 48.5 | 160 | 122 | 46 | 4.6 | 2 |
| 50 | MAS403 BT50-AD ER32.80 | 71MBT-A50ER3208 | 32 | 2-20 | 50 | | 80 | 42 | | 3.9 | 1 |
| 50 | MAS403 BT50-AD ER32.160 | 71MBT-A50ER3216 | 32 | 2-20 | 50 | 56 | 160 | 122 | 52 | 5 | 2 |

DIN 69893 HSK-A PORTAPINZINE - ER DIN 6499



Completo di raccordo per il refrigerante

| HSK-A | REF. | CODE | ER | d1 | d2 | d3 | d4 | L | L1 | L2 | L3 | kg |
|-------|-------------------|-----------------|-----|--------|----|------|----|-----|-----|-----|------|-----|
| 63 | HSK-A63 ER16.80 | 71HSKA063ER1608 | 16M | 0.5-10 | 22 | 32 | | 80 | 54 | 41 | | 1.1 |
| 63 | HSK-A63 ER16.120 | 71HSKA063ER1612 | 16M | 0.5-10 | 22 | 31 | | 120 | 94 | | | 1.9 |
| 63 | HSK-A63 ER25.80 | 71HSKA063ER2508 | 25 | 1-16 | 42 | | | 80 | 54 | | | 1.3 |
| 63 | HSK-A63 ER25.140 | 71HSKA063ER2514 | 25 | 1-16 | 42 | 47.5 | | 140 | 114 | 46 | | 1.7 |
| 63 | HSK-A63 ER32.90 | 71HSKA063ER3209 | 32 | 2-20 | 50 | | | 90 | 64 | | | 1.6 |
| 63 | HSK-A63 ER32.160 | 71HSKA063ER3216 | 32 | 2-20 | 50 | | | 160 | 134 | | | 2.2 |
| 100 | HSK-A100 ER16.100 | 71HSKA100ER1610 | 16M | 0.5-10 | 22 | 25 | 45 | 100 | 71 | 61 | 41.5 | 2.3 |
| 100 | HSK-A100 ER16.160 | 71HSKA100ER1616 | 16M | 0.5-10 | 22 | 34.5 | 44 | 160 | 131 | 126 | | 2.5 |
| 100 | HSK-A100 ER25.100 | 71HSKA100ER2510 | 25 | 1-16 | 42 | 45.5 | | 100 | 71 | 47 | | 2.6 |
| 100 | HSK-A100 ER25.160 | 71HSKA100ER2516 | 25 | 1-16 | 42 | 49.5 | | 160 | 131 | 47 | | 3.2 |
| 100 | HSK-A100 ER32.120 | 71HSKA100ER3212 | 32 | 2-20 | 50 | 55 | | 120 | 91 | 52 | | 3.1 |
| 100 | HSK-A100 ER32.160 | 71HSKA100ER3216 | 32 | 2-20 | 50 | 56.5 | | 160 | 131 | 52 | | 3.7 |

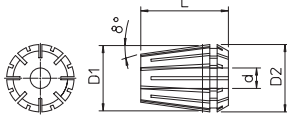


PSC - PE vedere p.32

ER DIN 6499-B



0.01



| REF. | d | D1 | D2 | L |
|-------|----------|----|----|------|
| ER 16 | 0.5 ~ 10 | 16 | 17 | 27.5 |
| ER 25 | 1 ~ 16 | 25 | 26 | 34 |
| ER 32 | 2 ~ 20 | 32 | 33 | 40 |

| RANGE | CODE ER16 | CODE ER25 | CODE ER32 |
|---------|--------------|--------------|--------------|
| 1 - 0.5 | 496080116010 | | |
| 1.5 - 1 | 496080116015 | | |
| 2 - 1 | | 496080125020 | |
| 2 - 1.5 | 496080116021 | | |
| 2.5 - 2 | 496080116025 | | |
| 3 - 2 | 496080116030 | 496080125030 | 496080132030 |
| 4 - 3 | 496080116040 | 496080125040 | 496080132040 |
| 5 - 4 | 496080116050 | 496080125050 | 496080132050 |
| 6 - 5 | 496080116060 | 496080125060 | 496080132060 |
| 7 - 6 | 496080116070 | 496080125070 | 496080132070 |
| 8 - 7 | 496080116080 | 496080125080 | 496080132080 |
| 9 - 8 | 496080116090 | 496080125090 | 496080132090 |
| 10 - 9 | 496080116100 | 496080125100 | 496080132100 |
| 11 - 10 | | 496080125110 | 496080132110 |
| 12 - 11 | | 496080125120 | 496080132120 |
| 13 - 12 | | 496080125130 | 496080132130 |
| 14 - 13 | | 496080125140 | 496080132140 |
| 15 - 14 | | 496080125150 | 496080132150 |
| 16 - 15 | | 496080125160 | 496080132160 |
| 17 - 16 | | | 496080132170 |
| 18 - 17 | | | 496080132180 |
| 19 - 18 | | | 496080132190 |
| 20 - 19 | | | 496080132200 |

A richiesta pinze ER a TENUTA

SET ER



| REF. | Ø | CODE |
|-------------|----------|--------------|
| SET ER16/10 | 0.5 ~ 10 | 496080116000 |
| SET ER25/15 | 1 ~ 16 | 496080125000 |
| SET ER32/18 | 2 ~ 20 | 496080132000 |

ISO 7388/2 A - DIN 69872



fig. 1

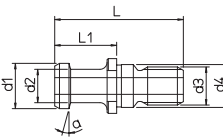
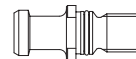


fig. 2



| REF. | CODE | ISO | d1 | d2 | d3 | d4 | L | L1 | a | fig. |
|----------------------------|--------------|-----|----|----|-----|----|----|----|-----|------|
| TNT DIN69872-ISO7388/2A 40 | 201430250401 | 40 | 19 | 14 | M16 | 17 | 54 | 26 | 15° | 1 |
| TNT DIN69872-ISO7388/2A 50 | 201430250501 | 50 | 28 | 21 | M24 | 25 | 74 | 34 | 15° | 1 |
| TNT ISO7388/2A 40 WH | 201430250400 | 40 | 19 | 14 | M16 | 17 | 54 | 26 | 15° | 2 |
| TNT ISO7388/2A 50 WH | 201430250500 | 50 | 28 | 21 | M24 | 25 | 74 | 34 | 15° | 2 |

ISO 7388/2 B - ANSI B.5 50



fig. 1

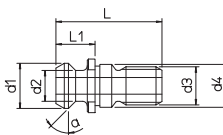
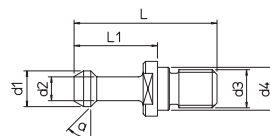


fig. 2



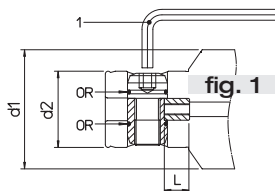
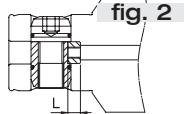
| REF. | CODE | ISO | d1 | d2 | d3 | d4 | L | L1 | a | fig. |
|------------------------------|--------------|-----|-------|-------|-----|----|-------|-------|-----|------|
| TNT ISO7388/2B 40 ANSI B5.50 | 201430251401 | 40 | 18.95 | 12.95 | M16 | 17 | 44.50 | 16.40 | 45° | 1 |
| TNT ISO7388/2B 50 ANSI B5.50 | 201430251501 | 50 | 29.10 | 19.60 | M24 | 25 | 65.50 | 25.55 | 45° | 1 |
| TNT ISO7388/2B 40 WH | 201430251400 | 40 | 18.95 | 12.95 | M16 | 17 | 44.50 | 16.40 | 45° | 2 |
| TNT ISO7388/2B 50 WH | 201430251500 | 50 | 29.10 | 19.60 | M24 | 25 | 65.50 | 25.55 | 45° | 2 |

MAS 403 BT - 30° - 45°

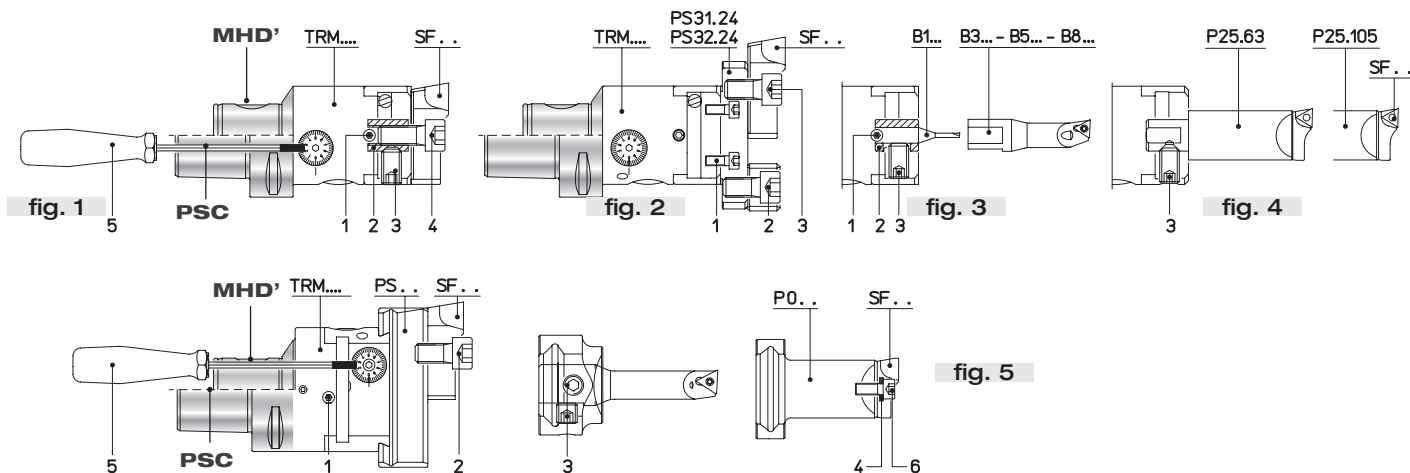


| REF. | CODE | ISO | d1 | d2 | d3 | d4 | L | L1 | a |
|---------------------|--------------|-----|----|----|-----|------|----|----|-----|
| TNT MAS403 BT30 30° | 201430252301 | 30 | 11 | 7 | M12 | 12.5 | 43 | 23 | 30° |
| TNT MAS403 BT40 30° | 201430252401 | 40 | 15 | 10 | M16 | 17 | 60 | 35 | 30° |
| TNT MAS403 BT50 30° | 201430252501 | 50 | 23 | 17 | M24 | 25 | 85 | 45 | 30° |
| TNT MAS403 BT30 45° | 201430252302 | 30 | 11 | 7 | M12 | 12.5 | 43 | 23 | 45° |
| TNT MAS403 BT40 45° | 201430252402 | 40 | 15 | 10 | M16 | 17 | 60 | 35 | 45° |
| TNT MAS403 BT50 45° | 201430252502 | 50 | 23 | 17 | M24 | 25 | 85 | 45 | 45° |

SISTEMA MHD'

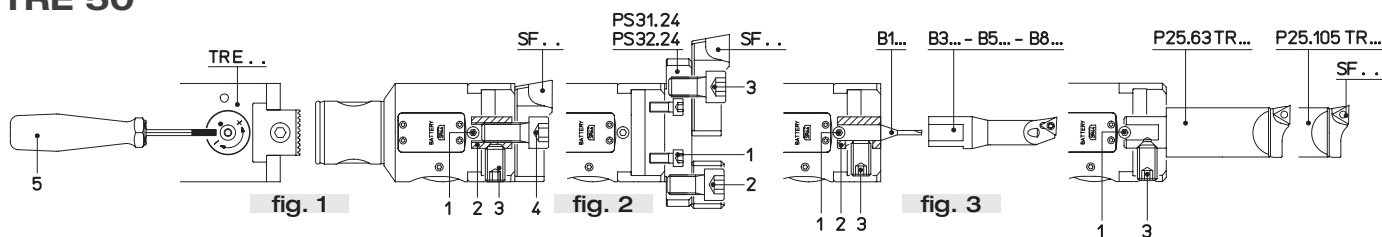
| | REF. | CODE | d1 | d2 | CODE 1 | CODE OR | L | fig. |
|---|--|--------------|-------|----|--------------|--------------|-------|------|
|  | MHD' 16 | 381725001161 | 16 | 10 | 101500100250 | | 2 | 2 |
| | MHD' 20 | 381725001201 | 20 | 13 | 101500100300 | | 2.5 | 2 |
| | MHD' 25 | 381725001251 | 25 | 16 | 101500100300 | | 3 | 2 |
| | MHD' 32 | 381725001321 | 32 | 20 | 101500100400 | 101254007510 | 3.55 | 2 |
| | MHD' 40 | 381725001401 | 40 | 25 | 101500100500 | 101254010010 | 4 | 2 |
|  | MHD' 50 RD 50 / .. TRM - TRC - TR-E | 381725001501 | 50 | 32 | 101500100600 | 101254013010 | 4.2 | 2 |
| | MHD' 50 | 381725001001 | 50 | 32 | 101500100600 | 101254013010 | 12.2 | 1 |
| | MHD' 63-80 RD 63 / .. TRM - TRC | 381725001502 | 63-80 | 42 | 101500100800 | 101251002075 | 4.9 | 2 |
| | MHD' 63-80 | 381725001002 | 63-80 | 42 | 101500100800 | 101251002075 | 13.85 | 1 |

MHD' - PSC / TRM



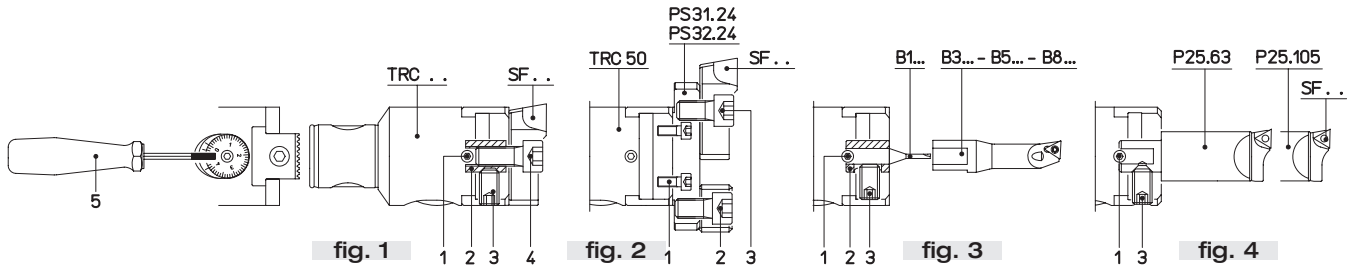
| REF. | CODE 1 | CODE 2 | CODE 3 | CODE 4 | CODE 5 | CODE 6 | fig. |
|---|--------------|--------------|--------------|--------------|--------------|--------------|------|
| TRM 16 MHD' | 200100190301 | | | 100051030006 | 101500800150 | | 1 |
| TRM 20 MHD' | 200100190301 | | | 100051040008 | 101500800150 | | 1 |
| TRM 25 MHD' | 100271040004 | | | 100051050010 | 101500800200 | | 1 |
| TRM 32 MHD' | 100271040006 | | | 100051060012 | 101500800200 | | 1 |
| TRM 40 MHD' | 100271050005 | | | 100051080014 | 101500800250 | | 1 |
| TRM 50 MHD' PSC50-TRM50 PSC63-TRM50 | 100271050008 | 201041015002 | 100231100016 | 100051100025 | 101500800250 | | 1 |
| TRM 50 MHD' PSC50-TRM50 PSC63-TRM50 | 200100150501 | 100051100020 | 100051100020 | | 101500800250 | | 2 |
| TRM 50 MHD' PSC50-TRM50 PSC63-TRM50 | 100271050008 | 200560116082 | 100231100016 | | 101500800250 | | 3-4 |
| TRM 63 MHD' PSC63-TRM63 | 100251060010 | 100051100018 | 100251080008 | 100051050012 | 101500800300 | 100800100530 | 5 |
| TRM 80-MHD' PSC63-TRM80 | 100251060014 | 100051100018 | 100251080008 | 100051050012 | 101500800300 | 100800100530 | 5 |
| TRM 125 MHD' | 100251060020 | 100051100025 | | 100051060018 | 101500800300 | 100800100640 | 5 |

TRE 50



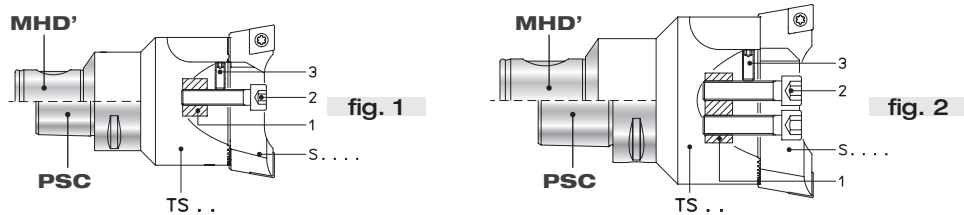
| REF. | CODE 1 | CODE 2 | CODE 3 | CODE 4 | CODE 5 | fig. |
|--------|--------------|--------------|--------------|--------------|--------------|------|
| TRE 50 | 100238060010 | 201041015002 | 100231100016 | 100051100025 | 101500800250 | 1 |
| TRE 50 | 200100150501 | 100051100020 | 100051100020 | | | 2 |
| TRE 50 | 100238060010 | 200560116082 | 100231100016 | | | 3 |

TRC



| REF. | CODE 1 | CODE 2 | CODE 3 | CODE 4 | CODE 5 | fig. |
|--------|--------------|--------------|--------------|--------------|--------------|------|
| TRC 16 | 200100190301 | | | 100051030006 | 101500800150 | 1 |
| TRC 20 | 200100190301 | | | 100051040008 | 101500800150 | 1 |
| TRC 25 | 100271040004 | | | 100051050010 | 101500800150 | 1 |
| TRC 32 | 100271050005 | | | 100051060012 | 101500800250 | 1 |
| TRC 40 | 100271060006 | | | 100051080014 | 101500800300 | 1 |
| TRC 50 | 100271060008 | 201041015002 | 100231100016 | 100051100025 | 101500800300 | 1 |
| TRC 50 | 200100150501 | 100051100020 | 100051100025 | | | 2 |
| TRC 50 | 100271060008 | 200560116082 | 100231100010 | | | 3-4 |
| TRC 63 | 100271060008 | | | 100051100020 | 101500800300 | 1 |
| TRC 80 | 100271060012 | | | 100051100025 | 101500800300 | 1 |

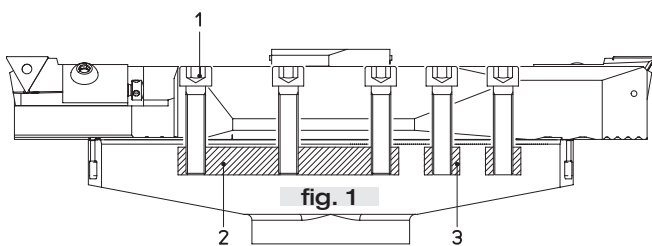
MHD' - PSC / TS



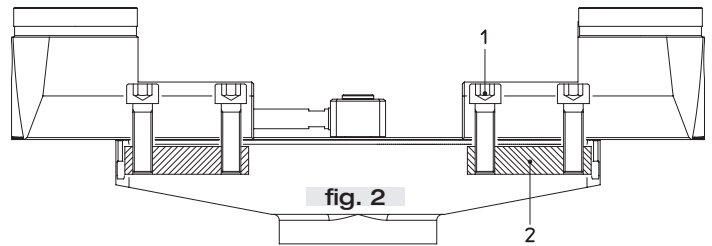
| REF. | CODE 1 | CODE 2 | CODE 3 | fig. |
|---|--------------|--------------|--------------|------|
| TS 16/16 MHD' | 201430110008 | 100051030014 | 100231030004 | 1 |
| TS 20/20 MHD' | 201430110009 | 100051040015 | 100231030005 | 1 |
| TS 25/25 MHD' | 201430110032 | 100051040020 | 100231030008 | 1 |
| TS 32/32 MHD' | 201430110031 | 100051050025 | 100231040012 | 1 |
| TS 40/40 MHD' | 201430110029 | 100051060030 | 100231050014 | 1 |
| TS 50/50 MHD' - PSC50-TS50 / PSC63-TS50 | 201430110013 | 100051080035 | 100231050012 | 1-2 |
| TS 50/63 MHD' | 201430110030 | 100051100040 | 100231060016 | 2 |
| TS 63/63 MHD' - PSC63-TS63 | 201430110030 | 100051100040 | 100231060016 | 1-2 |
| TS 80/80 MHD' - PSC63-TS80 | 201430110015 | 100051120045 | 100231080025 | 1-2 |
| TS 80/90 MHD' | 201430110015 | 100051120045 | 100231080025 | 1-2 |

BHT 250 - 500 - 750

SGROSSATURA BHT 250 - 500 - 750 SG

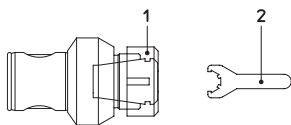


FINITURA BHT 250 - 500 - 750 FN



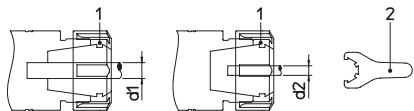
| REF. | CODE 1 | CODE 2 | CODE 3 |
|---|--------------|--------------|--------------|
| SGROSSATURA fig. 1 BHT 250 - 500 - 750 SG | 100051100045 | 201430100065 | 201430100066 |
| FINITURA fig.2 BHT 250 - 500 - 750 FN | 100051100035 | 201430100067 | |

PE - MHD' ER DIN 6499



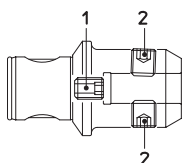
| REF. | CODE 1 | CODE 2 |
|---------------|--------------|--------------|
| PE 20 / ER16M | 100451011600 | 101501001600 |
| PE 32 / ER25M | 100451012500 | 101501002500 |
| PE 40 / ER25 | 100451032500 | 101501002501 |
| PE 50 / ER25 | 100451032500 | 101501002501 |
| PE 50 / ER32 | 100451033200 | 101501003201 |
| PE 63 / ER32 | 100451033200 | 101501003201 |

PE - PSC / MONOd ER DIN 6499



| REF. | CODE 1 | d1 | CODE 2 | d2 |
|---------|--------------|--------|--------------|-------|
| ER 16 M | 100451011600 | 5 ~ 10 | 101501001600 | 1 ~ 4 |
| ER 25 | 100451032500 | 8 ~ 16 | 101501002501 | 2 ~ 7 |
| ER 32 | 100451033200 | 8 ~ 20 | 101501003201 | 3 ~ 7 |

AW DIN 1835 B-E



| REF. | CODE 1 | CODE 2 |
|----------|--------------|--------------|
| AW 50/6 | 200100190808 | 200100190610 |
| AW 50/8 | 200100190808 | 200100190810 |
| AW 50/10 | 200100190809 | 200100191012 |
| AW 50/12 | 200100190809 | 200100191216 |
| AW 50/14 | 200100190809 | 200100191216 |
| AW 50/16 | 200100191215 | 200100191416 |
| AW 50/20 | 200100191215 | 200100191616 |

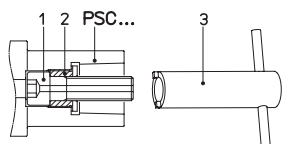
| REF. | CODE 1 | CODE 2 |
|----------|--------------|--------------|
| AW 50/25 | 200100191615 | 200100191820 |
| AW 63/16 | 200100191215 | 200100191416 |
| AW 63/20 | 200100191215 | 200100191616 |
| AW 63/25 | 200100191615 | 200100191820 |
| AW 63/32 | 200100191615 | 200100192020 |
| AW 80/40 | 200100192019 | 200100192020 |

PF MHD' - PSC



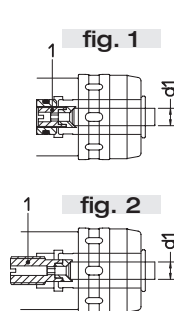
| REF. | CODE 1 | CODE 2 | CODE 3 | CODE 4 | CODE 5 |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|
| PF 40/16 | 201010085010 | 201101800801 | 101001040014 | 100101080025 | 100051030008 |
| PF 40/22 | 201010105030 | 201101801002 | 101001060016 | 100101100025 | 100051040010 |
| PF 50/16 | 201010085010 | 201101800801 | 101001040014 | 100101080025 | 100051030008 |
| PF 50/22 MHD' / PSC50-PF22.25 | 201010105030 | 201101801002 | 101001060016 | 100101100025 | 100051040010 |
| PF 50/27 MHD' / PSC50-PF27.25 | 201010125030 | 201101801202 | 101001070018 | 100101120030 | 100051050012 |
| PF 50/32 | 201010165020 | 201101801402 | 101001080020 | 100101160035 | 100051060016 |
| PF 63/22 | 201010105030 | 201101801002 | 101001060016 | 100101100025 | 100051040010 |
| PF 63/27 MHD' / PSC63-PF27.25 | 201010125030 | 201101801202 | 101001070018 | 100101120030 | 100051050012 |
| PF 63/32 MHD' / PSC63-PF32.25 | 201010165020 | 201101801402 | 101001080020 | 100101160035 | 100051060016 |
| PF 80/32 MHD' / PSC80-PF32.30 | 201010165020 | 201101801402 | 101001080020 | 100101160035 | 100051060016 |
| PF 80/40 MHD' / PSC80-PF40.45 | 201010210010 | 201101801603 | 101001100025 | 100101200045 | 100051060018 |
| PF 80/50 | 201010260330 | 201101801802 | 101001120028 | 100101240050 | 100051060020 |
| PF 80/60 | | 201101802510 | 101001140036 | | 100051120025 |

PSC



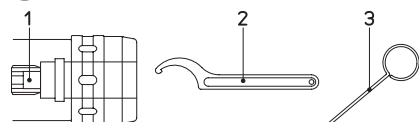
| PSC | CODE 1 | CODE 2 | CODE 3 |
|-----|--------------|--------------|--------------|
| 40 | 200101151448 | 201032215005 | 101501402101 |
| 50 | 200101151658 | 201032515005 | 101501402401 |
| 63 | 200101152071 | 201033015021 | 101501403001 |
| 80 | 200101152071 | 201033015021 | 101501403001 |

FORCE VCR VITE REGOLAZIONE CON PASSAGGIO REFRIGERANTE



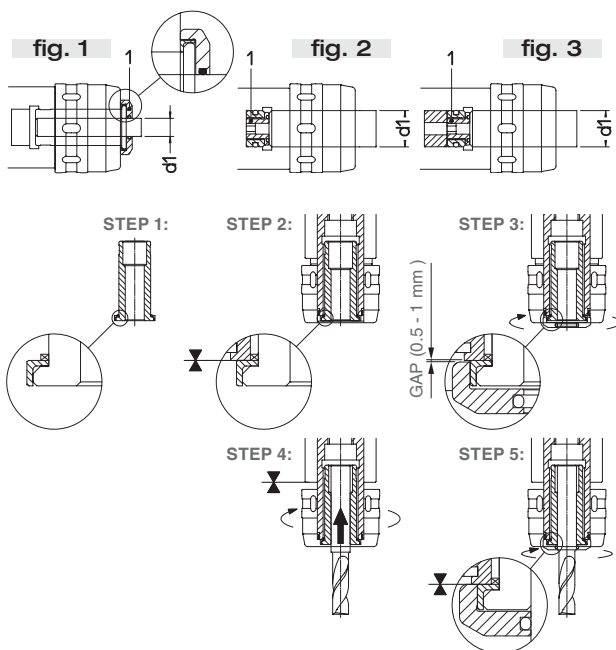
| fig. | REF. | CODE 1 | d1 | fig. | REF. | CODE 1 | d1 |
|------|---------------------|--------------|---------|------|---------------------|--------------|---------|
| 1 | VCR 20 MONOforce 20 | 382041020032 | 3 ~ 5 | 2 | VCR 20 MONOforce 20 | 382041020031 | 3 ~ 5 |
| | HSK63-100 MHD'50 | 382041020062 | 6 ~ 12 | | DIN/BT-40-50 | 382041020061 | 6 ~ 12 |
| | PSC 63-80 | 382041020142 | 14 ~ 20 | | | 382041020141 | 14 ~ 20 |
| 1 | VCR 32 MONOforce 32 | 382041032033 | 3 ~ 5 | 2 | VCR 32 MONOforce 32 | 382041032031 | 3 ~ 5 |
| | HSK63-100 MHD'63 | 382041032063 | 6 ~ 12 | | DIN/BT-40 | 382041032061 | 6 ~ 12 |
| | PSC 63-80 | 382041032143 | 14 ~ 20 | | | 382041032141 | 14 ~ 20 |
| | | 382041032253 | 25 ~ 32 | | 382041032251 | 25 ~ 32 | |
| | | | | 2 | VCR 32 MONOforce 32 | 382041032032 | 3 ~ 5 |
| | | | | | DIN/BT-50 | 382041032062 | 6 ~ 12 |
| | | | | | | 382041032142 | 14 ~ 20 |
| | | | | | | 382041032252 | 25 ~ 32 |

FORCE

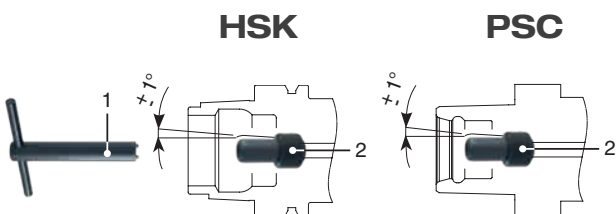


| REF | CODE 1 | CODE 2 | CODE 3 |
|----------|--------------|--------------|--------------|
| FORCE 12 | 200100191014 | 101500400028 | 201271600400 |
| FORCE 20 | 200100191615 | 101500400050 | 201271600400 |
| FORCE 32 | 200100191615 | 101500400075 | 201271600400 |

FORCE GH - VT DISPOSITIVI A TENUTA PER REFRIGERANTE AD ALTA PRESSIONE

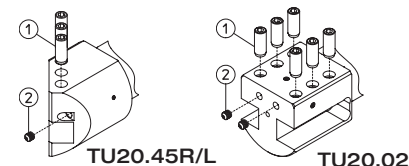


| fig. | REF. | CODE 1 | d1 |
|--------------|--|--------------|--|
| 1 | GH 20 MONOforce 20 HSK63 MHD'50 / DIN/BT-40-50 PSC 63 - 80 | 382042020061 | 6 |
| | | 382042020081 | 8 |
| | | 382042020101 | 10 |
| | | 382042020121 | 12 |
| | | 382042020141 | 14 |
| 382042020161 | 16 | | |
| 2 | VT 20.20 MONOforce 20 DIN/BT-40-50 HSK63-100 PSC 63-80 | 382042020201 | 20 |
| 1 | GH 32 MONOforce 32 DIN/BT-40-50 / HSK63-100 MHD'63 PSC 63-80 | 382042032061 | 6 |
| | | 382042032081 | 8 |
| | | 382042032101 | 10 |
| | | 382042032121 | 12 |
| | | 382042032141 | 14 |
| | | 382042032161 | 16 |
| | | 382042032181 | 18 |
| | | 382042032201 | 20 |
| | | 382042032251 | 25 |
| | | 2 | VT 32.32 MONOforce 32 DIN/BT-40 HSK63-100 PSC 63-80 |
| 3 | VT 32.32.100 MONOforce 32 DIN/BT-50 | 382042032322 | 32 |



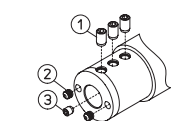
| REF. | CODE 1 | CODE 2 |
|--------------|--------------|--------------|
| RFR HSK-A50 | 101501101400 | 382019010001 |
| RFR HSK-A63 | 101501101600 | 382019012001 |
| RFR HSK-A80 | 101501101800 | 382019014001 |
| RFR HSK-A100 | 101501102200 | 382019016001 |
| RFR PSC 40 | 101501200700 | 382020006001 |
| RFR PSC 50 | 101501200800 | 382020007001 |
| RFR PSC 63 | 101501200900 | 382020008001 |
| RFR PSC 80 | 101501201100 | 382020010001 |

PSC - TU ISO 26623-1



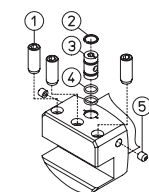
| REF. | CODE 1 | CODE 2 |
|------------------------|--------------|--------------|
| TCD' PSC 50 TU20.45R/L | 100231120025 | 100585010800 |
| TCD' PSC 63 TU25.45R/L | 100231120025 | 100585010800 |
| TCD' PSC 80 TU32.45R/L | 100231120025 | 100585010800 |
| TCD' PSC 50 TU20.02 | 100231120025 | 100585010800 |
| TCD' PSC 63 TU25.02 | 100231120025 | 100585010800 |
| TCD' PSC 80 TU32.02 | 100231120025 | 100585010800 |

PSC - D... ISO 26623-1



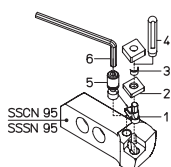
| REF. | CODE 1 | CODE 2 | CODE 3 |
|----------------------|--------------|--------------|--------------|
| TCD' PSC 50 D.25x80 | 100231100016 | 100585010800 | |
| TCD' PSC 63 D.25x80 | 100231100016 | 100585010800 | |
| TCD' PSC 63 D.40x125 | 100231120020 | 100585010800 | 100231080008 |
| TCD' PSC 80 D.25x85 | 100231100016 | 100585010800 | |
| TCD' PSC 80 D.40x125 | 100231120020 | 100585010800 | 100231080008 |

PSC - TU ISO 26623-1



| REF. | CODE 1 | CODE 2 | CODE 3 | CODE 4 | CODE 5 |
|---------------------|--------------|--------------|--------------|--------------|--------------|
| TCD' PSC 63 TU20.90 | 100231120025 | 100900301400 | 201462501400 | 101251002043 | 100580610180 |
| TCD' PSC 63 TU25.90 | 100231120025 | 100900301400 | 201462501400 | 101251002043 | 100580610180 |
| TCD' PSC 80 TU32.90 | 100231120025 | 100900301400 | 201462501400 | 101251002043 | 100580610180 |

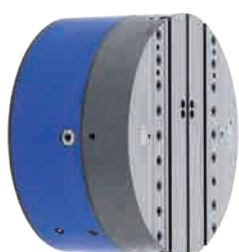
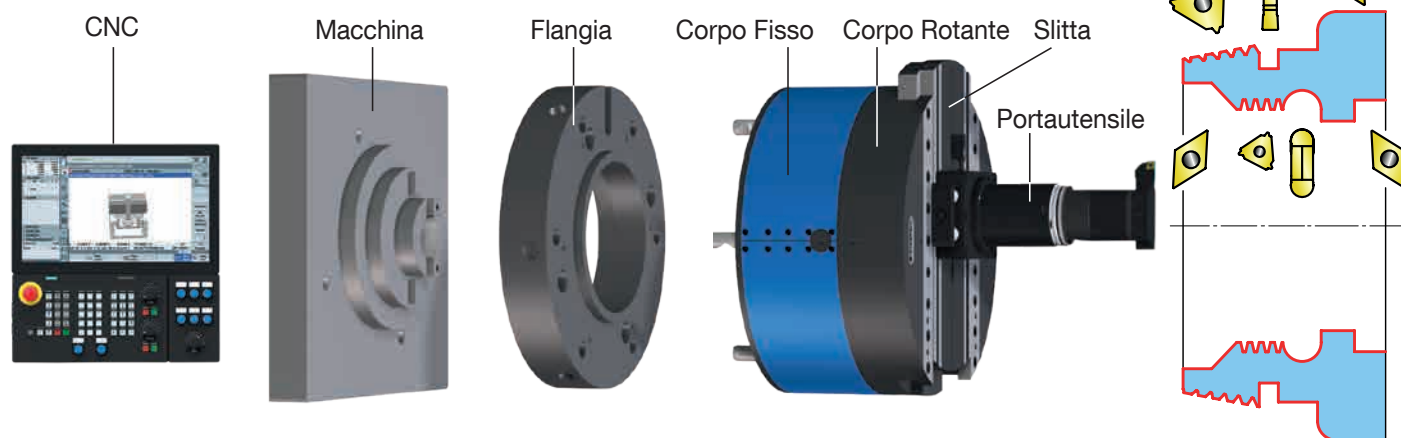
SS.. 95



| REF. | CODE 1 | CODE 2 | CODE 3 | CODE 4 | CODE 5 | CODE 6 |
|---------|--------------|--------------|--------------|--------------|--------------|--------------|
| SSCN 95 | 491111190600 | 492031190600 | 100655095112 | 101501301408 | 494311190600 | 101500100400 |
| SSSN 95 | 491111190600 | 492035190600 | 100655095112 | 101501301408 | 494311190600 | 101500100400 |

U-TRONIC

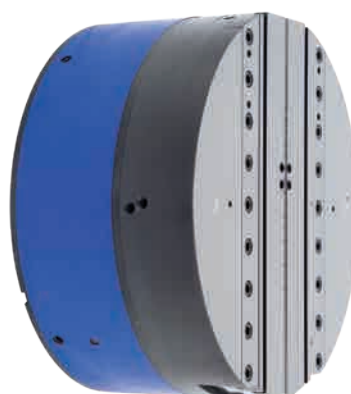
Teste a Controllo Numerico di medie e grandi dimensioni, applicabili su alesatrici, centri di lavoro e macchine speciali. Permettono di eseguire differenti lavorazioni, sia interne che esterne. Lo spostamento della slitta è gestito da un servomotore integrato e direttamente collegato al CN. L'applicazione in macchina può essere manuale o automatica grazie all'utilizzo di una flangia di interfaccia.



UT 5-500
Ø max 1000



UT 5-630
Ø max 1250

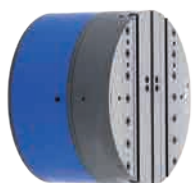


UT 8-800
Ø max 1600

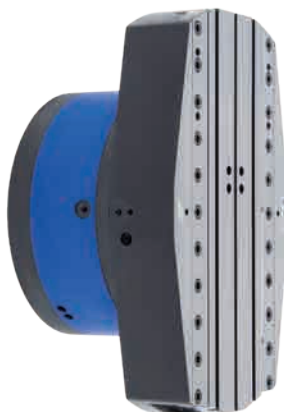
UT 8-1000
Ø max 2000

UT 8-1250
Ø max 2500

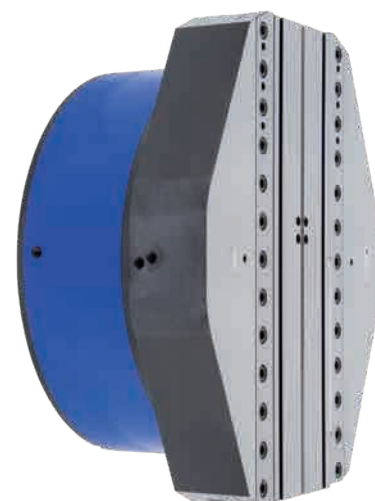
UT 8-1600
Ø max 3200



UT 3-360
Ø max 800



UT 5-800
Ø max 1600



STANDARD

PROLUNGATE

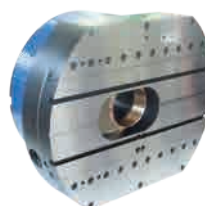
ANGOLARI

RIDUTTORE

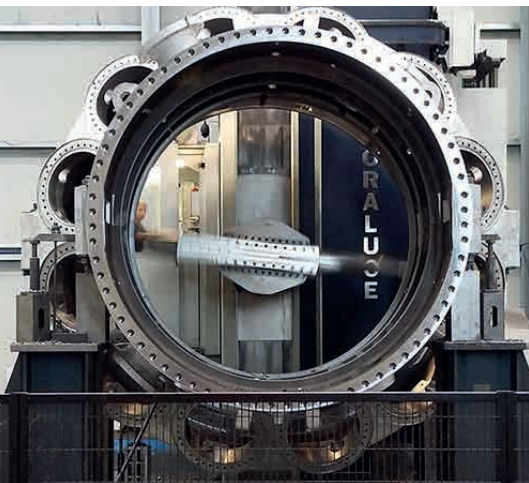
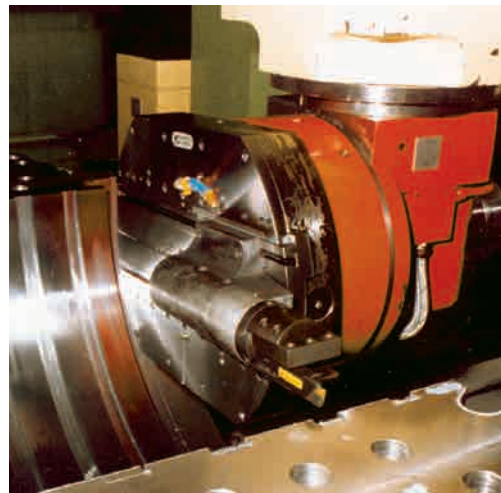
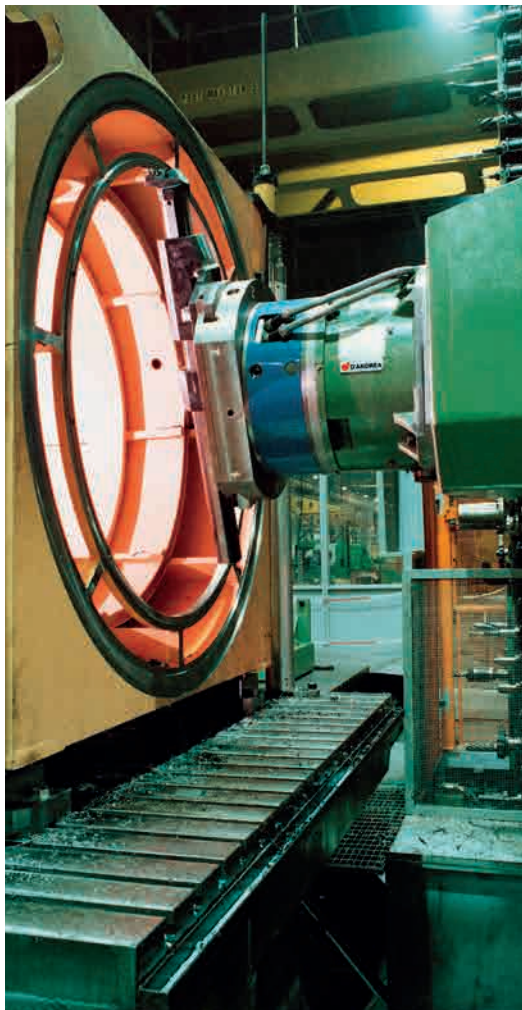
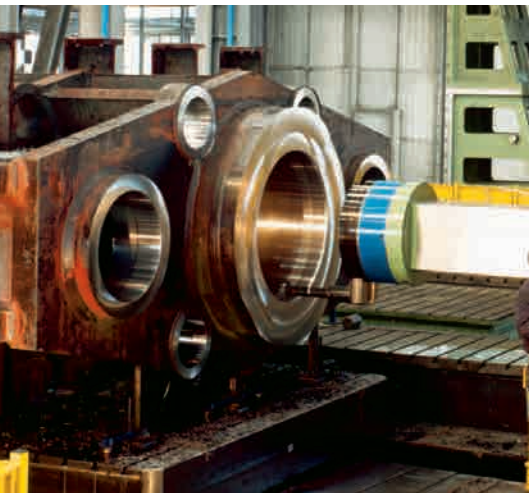
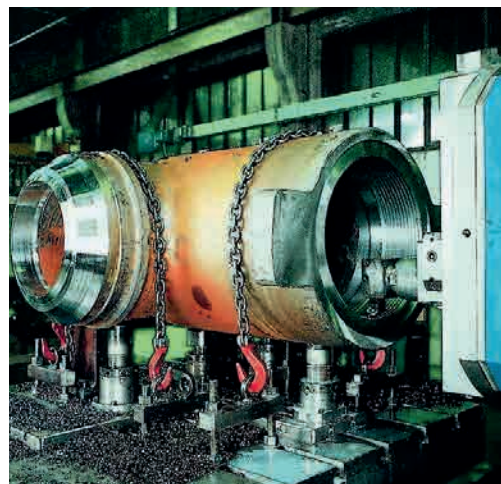
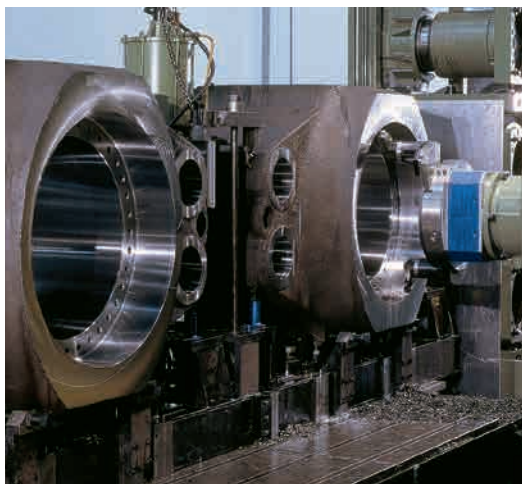
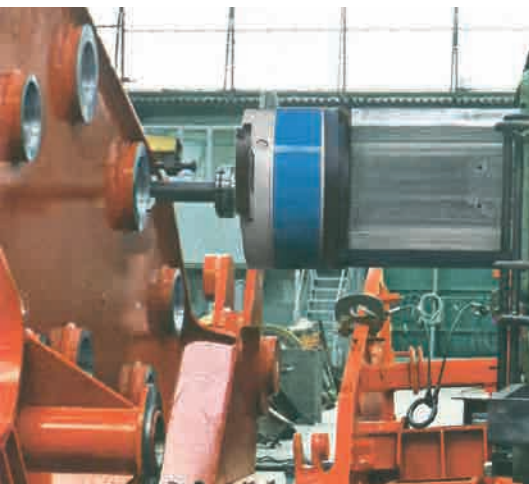
HOLE

DOPPIA
SLITTA

ALTA VELOCITA'
(BILANCIATE)

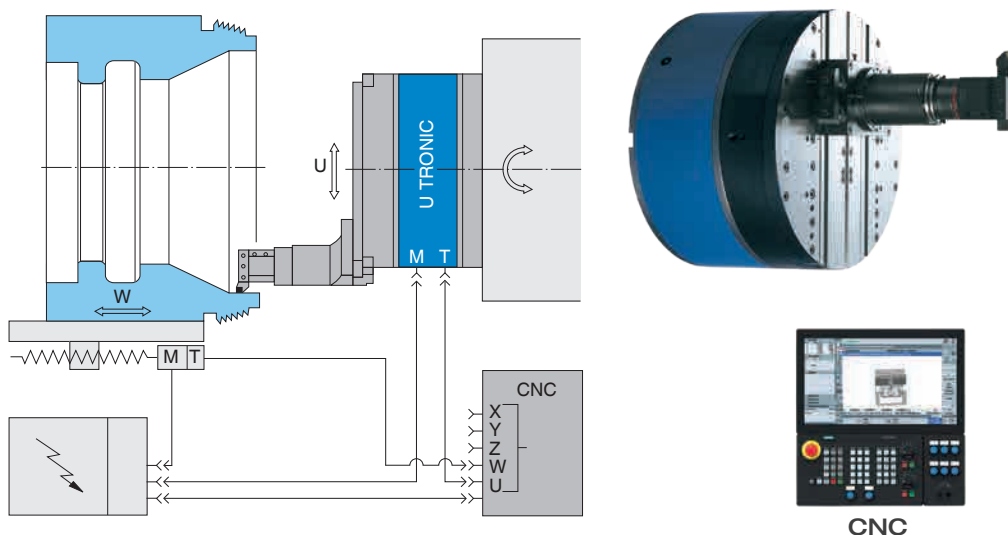


SPECIALI



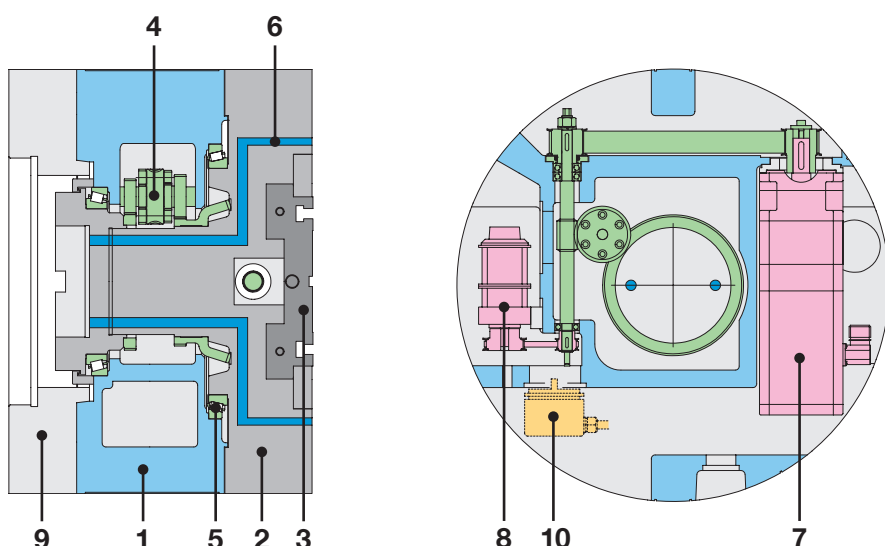
U-TRONIC

COMANDO



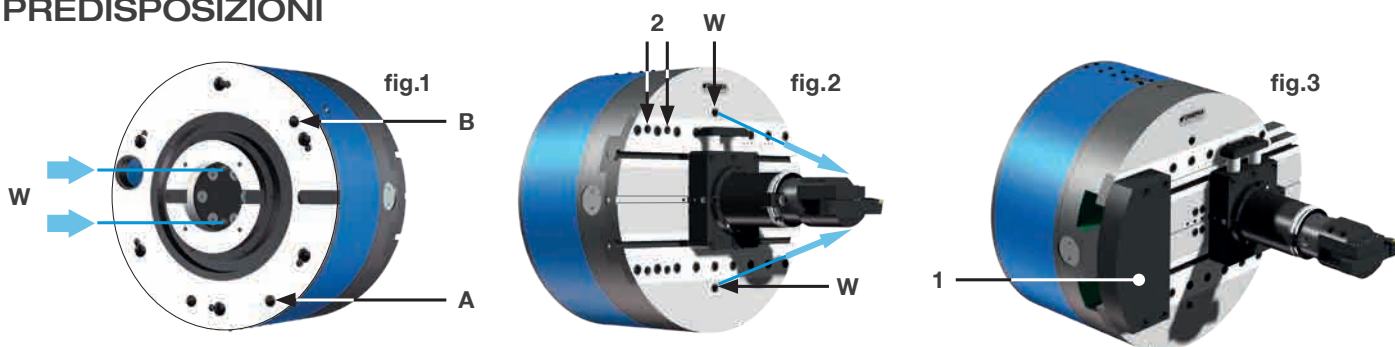
Il controllo delle teste U-TRONIC avviene tramite il collegamento diretto all'asse "U" del controllo numerico della macchina utensile, mediante l'interpolazione degli assi permette di eseguire ogni tipo di operazione di tornitura, alesature, raggiature e operazioni sferiche.

COMPONENTI



1. Corpo fisso
2. Corpo rotante
3. Slitta portautensili
4. Cinematismo
5. Cuscinetti
6. Passaggio refrigerante
7. Servomotore
8. Microinterruttori di finecorsa
9. Flangia
10. Encoder a richiesta

PREDISPOSIZIONI



A-Pressurizzazione interna fig.1

Per evitare che liquido e polvere entrino nella zona del motore, trasduttore e finecorsa, è previsto un foro $\varnothing 8,5$ (A) per pressurizzare l'interno del corpo fisso con l'ingresso dell'aria a **0,5-1 BAR**.

B-Ingrassatore automatico fig.1

Sulla testa è previsto un foro $\varnothing 8,5$ (B) per permettere l'inserimento automatico del grasso all'interno della U-TRONIC.

Adduzione liquido refrigerante fig.1-2

All'interno del corpo rotante della U-TRONIC sono previste delle canalizzazioni (W) che permettono il passaggio del liquido refrigerante dal mandrino della macchina sino a due fori filettati posti a fianco della slitta (W). Su tali fori è possibile avvitare dei condotti flessibili e portare il liquido refrigerante direttamente all'utensile. Pressione **Max BAR 40**.

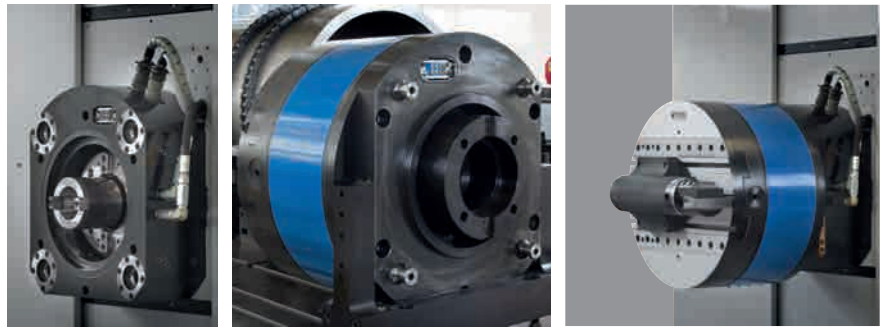
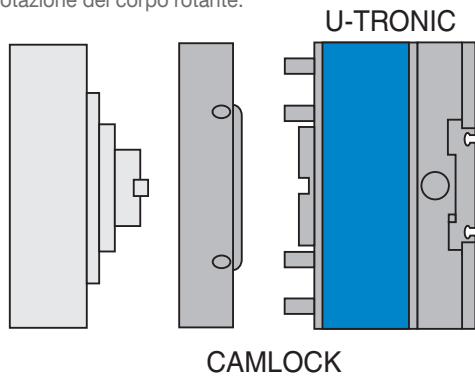
Bilanciatura fig.3

Per migliorare le condizioni di lavoro e bilanciare la posizione dell'utensile quando risulta spostato rispetto all'asse della U-TRONIC, è possibile applicare dei contrappesi (1) utilizzando i fori filettati (2) posti sul corpo rotante.

APPLICAZIONI

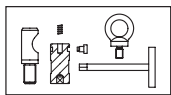
Le U-TRONIC si applicano manualmente o automaticamente mediante una flangia per il fissaggio alla macchina utensile e un plattello per la rotazione del corpo rotante.

Si applicano manualmente utilizzando una flangia per il fissaggio con attacco rapido camlock, o automaticamente con sistemi palettizzati e appositi connettori.

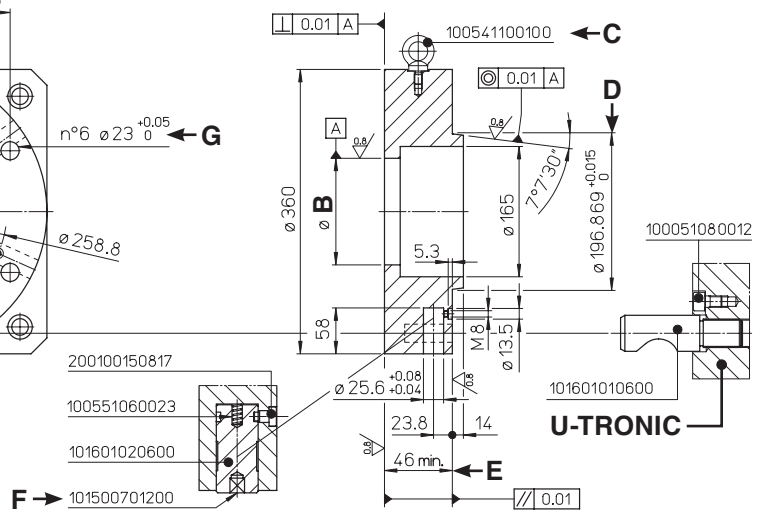
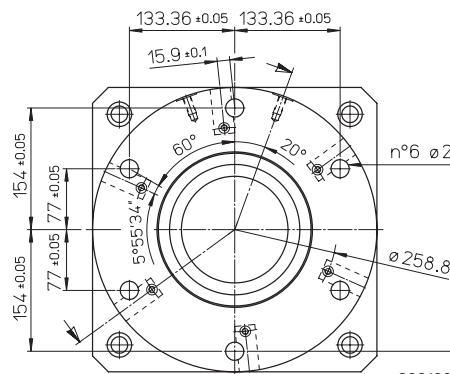


I seguenti layout riportano i dati di base per la costruzione delle flange con attacco rapido camlock.

Le U-TRONIC UT 8-800 S e UT 8-1000 S non prevedono il fissaggio con attacco rapido camlock.



| REF | CODE |
|---------------------------------|--------------|
| KIT CAMLOCK UT 360 | 394200136000 |
| n°6 VTC 8x12 | 100051080012 |
| n°1 GOLFARE M10 UT BASE 3 | 100541100100 |
| n°6 MOLLA UT BASE 3 E 5 | 100551060023 |
| n°1 CMC DA 6 UT BASE 3 | 101500701200 |
| n°6 TNT BLOC. CAM 6 UT BASE 3 | 101601010600 |
| n°6 CAMMA ECC. BLOC 6 UT BASE 3 | 101601020600 |
| n°6 PUNTALINO CAMMA 8 UT BASE 3 | 200100150817 |

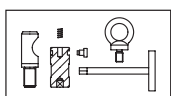


B Centraggio mandrino C Golfare D Controllare con calibro E Quota da controllare in funzione della sporgenza mandrino F Chiave di manovra G Fori prof. min. 46 H Fori prof. min. 53

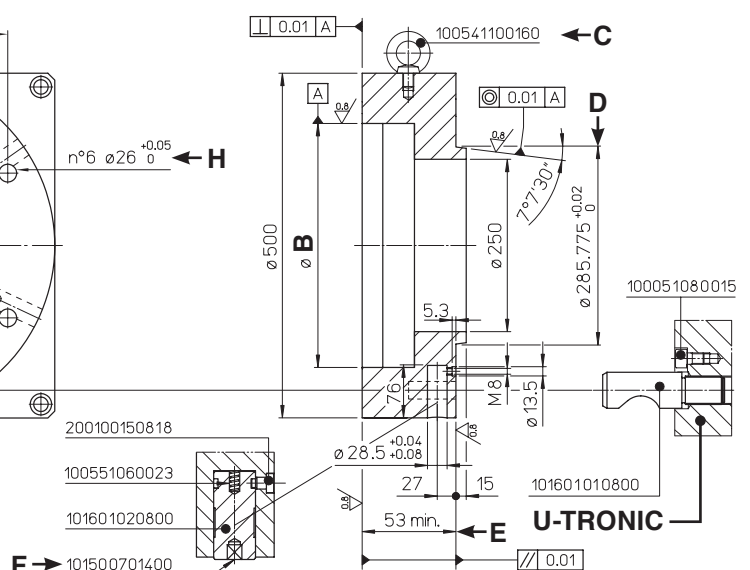
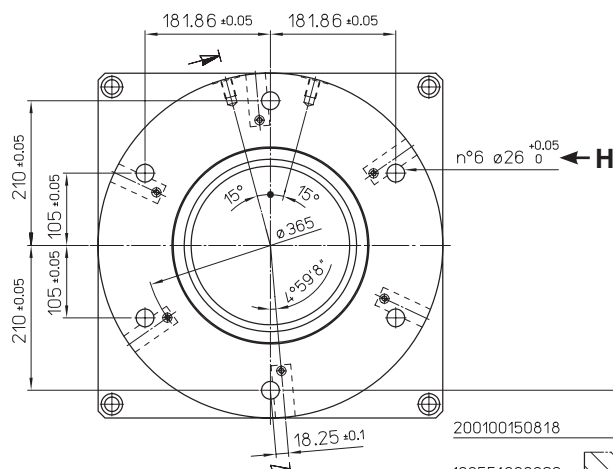
U-TRONIC 3-360 S

I seguenti layout riportano i dati di base per la costruzione delle flange con attacco rapido camlock.

Le U-TRONIC UT 8-800 S e UT 8-1000 S non prevedono il fissaggio con attacco rapido camlock.



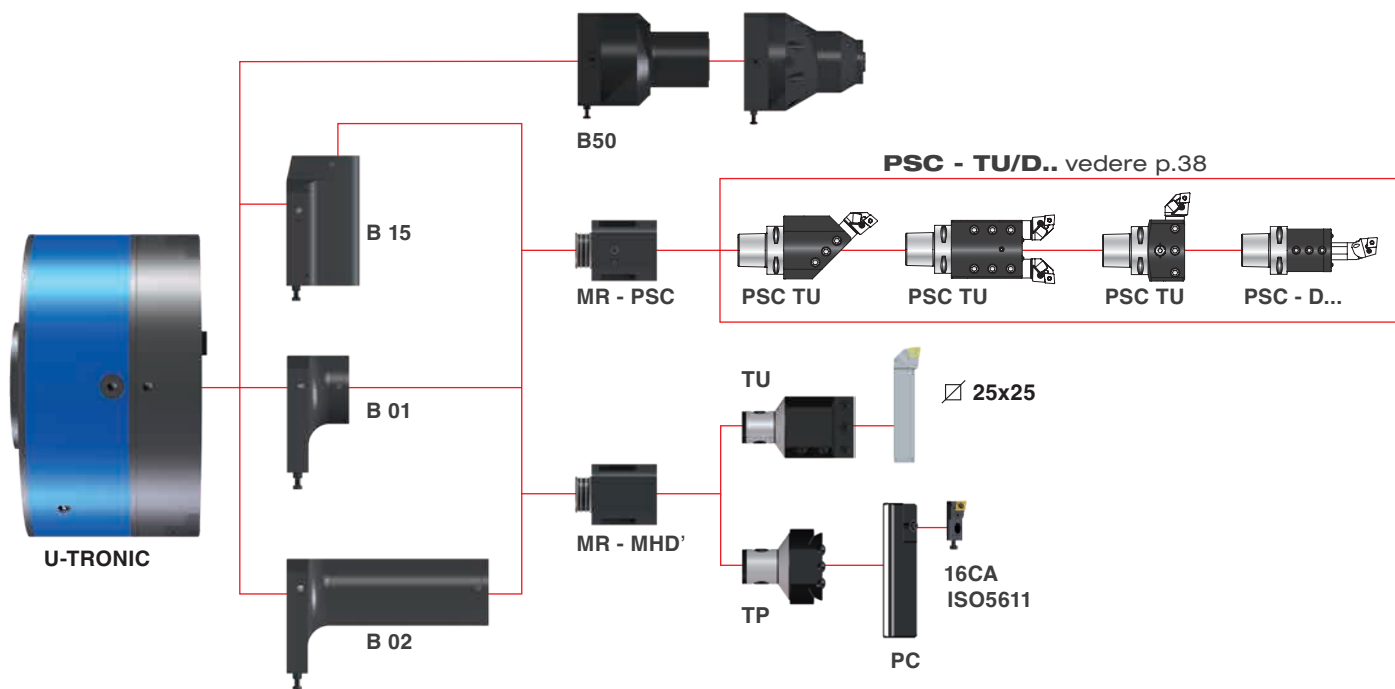
| REF | CODE |
|---------------------------------|--------------|
| KIT CAMLOCK UT 500 | 394200150000 |
| n°6 VTC 8x14 | 100051080014 |
| n°1 GOLFARE M16 UT BASE 5 | 100541100160 |
| n°6 MOLLA UT BASE 3 E 5 | 100551060023 |
| n°1 CMC DA 8 UT BASE 5 | 101500701400 |
| n°6 TNT BLOC. CAM 8 UT BASE 5 | 101601010800 |
| n°6 CAMMA ECC. BLOC 6 UT BASE 5 | 101601020800 |
| n°6 PUNTALINO CAMMA 8 UT BASE 5 | 200100150818 |



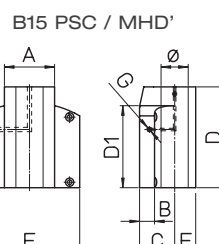
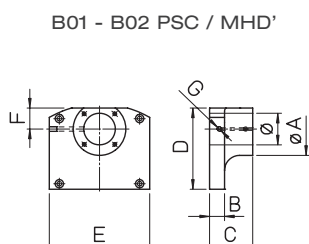
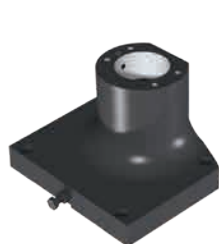
B Centraggio mandrino C Golfare D Controllare con calibro E Quota da controllare in funzione della sporgenza mandrino F Chiave di manovra G Fori prof. min. 46 H Fori prof. min. 53

U-TRONIC 5-500 / 5-630 / 5-800 S

UT 3-360 / 5-500 / 5-630 / 5-800 / 8-800 / 8-1000 S

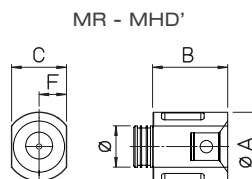
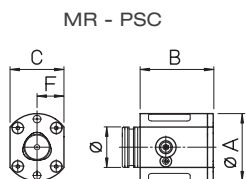


B01 / B02 / B15 - PSC / MHD'



| U-TRONIC | REF. | CODE | Ø ^{H7} | A | B | C | D | D1 | E | F | G | kg |
|----------------------------|------------------|--------------|-----------------|-----|----|-----|-----|-----|-----|----|-------|------|
| UT 3-360 S | B01 PSC63-MHD'80 | 443006300310 | 63 | 105 | 25 | 31 | 137 | | 150 | 42 | G1/8' | 3.5 |
| | B02 PSC63-MHD'80 | 443006301610 | 63 | 105 | 27 | 161 | 137 | | 150 | 42 | G1/8' | 10 |
| | B15 PSC63-MHD'80 | 445006301210 | 63 | 105 | 32 | 60 | 121 | | 150 | 42 | G1/8' | 10 |
| UT 5-500 / 5-630 / 5-800 S | B01 PSC63-MHD'80 | 443006300861 | 63 | 105 | 30 | 86 | 167 | | 200 | 42 | G1/8' | 11 |
| | B02 PSC63-MHD'80 | 443006303310 | 63 | 105 | 30 | 331 | 167 | | 200 | 42 | G1/8' | 22 |
| | B15 PSC63-MHD'80 | 445006302010 | 63 | 105 | 31 | 70 | 167 | 170 | 200 | 42 | G1/8' | 6.5 |
| UT 8-800 / 8-1000 S | B01 PSC80-MHD'80 | 443007500710 | 75 | 133 | 30 | 71 | 185 | | 200 | 50 | G1/8' | 10.5 |
| | B02 PSC80-MHD'80 | 443007503160 | 75 | 133 | 32 | 71 | 235 | | 200 | 50 | G1/8' | 34 |
| | B15 PSC80-MHD'80 | 445007502620 | 75 | 133 | 30 | 316 | 235 | 200 | 200 | 50 | G1/8' | 32 |
| UT 8-800 / 8-1000 S | B01 PSC80-MHD'80 | 443007501460 | 75 | 133 | 30 | 146 | 192 | | 250 | 50 | G1/4' | 19 |
| | B02 PSC80-MHD'80 | 443007506360 | 75 | 133 | 45 | 636 | 192 | | 250 | 50 | G1/4' | 70 |
| | B15 PSC80-MHD'80 | 445007503000 | 75 | 133 | 30 | 85 | 300 | 200 | 250 | 50 | G1/4' | 37 |

MR - PSC / MHD'



| U-TRONIC | REF. | CODE | Øg6 | PSC | MHD' | A | B | C | F | kg |
|----------------|------------------|--------------|-----|-----|------|-----|-----|-----|----|-----|
| UT 3 / 5 ... S | MR - PSC 63 | 450206301050 | 63 | 63 | | 105 | 114 | 84 | 42 | 6 |
| UT 3 / 5 ... S | MR - MHD' 80/105 | 450208001050 | 63 | | 80 | 105 | 114 | 84 | 42 | 6.5 |
| UT 5 / 8 ... S | MR - PSC 80 | 450208001335 | 75 | 80 | | 130 | 129 | 100 | 50 | 11 |
| UT 8 ... S | MR - MHD' 80/133 | 450208001330 | 75 | | 80 | 130 | 129 | 100 | 50 | 11 |

PORTAUTENSILI E ACCESSORI PSC-MHD'

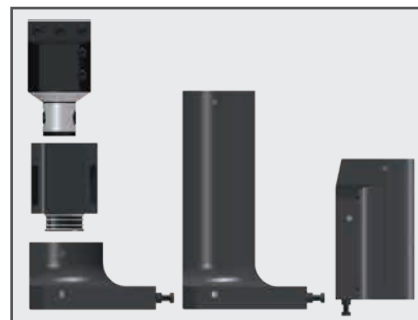
K03 PSC 63-80

1 B 01
1 B 02
1 B 15
1 MR



K03 MHD'80

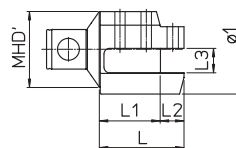
1 B 01
1 B 02
1 B 15
1 MR
1 TU



| REF. | CODE |
|---|--------------|
| KIT K03 PSC 63 UT 3-360 S | 501703259501 |
| KIT K03 PSC 63 UT 5-500 / 5-630 / 5-800 S | 501705009501 |
| KIT K03 PSC 80 UT 5-500 / 5-630 / 5-800 S | 501705009502 |
| KIT K03 PSC 80 UT 8-800 / 8-1000 S | 501708009501 |

| REF. | CODE |
|------------------------------------|--------------|
| KIT K03 UT 3-360 S | 501703259500 |
| KIT K03 UT 5-500 / 5-630 / 5-800 S | 501705009500 |
| KIT K03 UT 8-800 / 8-1000 S | 501708009500 |

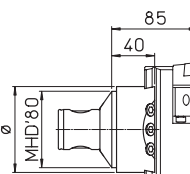
TU - MHD'



◆ Utilizzare con RD 80/ ...

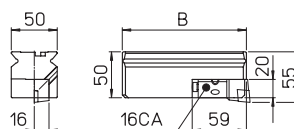
| U-TRONIC | REF. | CODE | MHD' | Ø1 | L | L1 | L2 | L3 | kg |
|----------------------|-------------|--------------|------|----|----|----|----|----|-----|
| UT 3 / 5 / 8 ... S ◆ | TU 50/60.16 | 460505016001 | 50 | 60 | 60 | 44 | 16 | 16 | 1.2 |
| UT 3 / 5 / 8 ... S ◆ | TU 63/75.20 | 460506320001 | 63 | 75 | 75 | 55 | 20 | 20 | 4 |
| UT 3 / 5 / 8 ... S | TU 80/95.25 | 460508025001 | 80 | 95 | 90 | 65 | 25 | 25 | 3.6 |

TP - MHD'



| U-TRONIC | REF. | CODE | Ø | kg |
|----------------------------|--------------|--------------|-----|-----|
| UT 3-360 S | TP 80/90.50 | 460408050001 | 90 | 2.3 |
| UT 5-500 / 5-630 / 5-800 S | TP 80/90.50 | 460408050001 | 90 | 2.3 |
| UT 8-800 / 8-1000 S | TP 80/125.50 | 460408050002 | 125 | 3.2 |

PC



| U-TRONIC | REF. | CODE | Ø | kg |
|----------------------------|----------|--------------|-----|-----|
| UT 3-360 S | PC 11.50 | 433050160950 | 95 | 1.3 |
| UT 5-500 / 5-630 / 5-800 S | PC 12.50 | 433050161350 | 135 | 2 |
| | PC 13.50 | 433050162000 | 200 | 3.2 |
| UT 8-800 / 8-1000 S | PC 14.50 | 433050163000 | 300 | 5 |

CARTUCCE 20CA ISO 5611



PTGNL16CA-16



PCLNL16CA-12



PSSNL16CA-12



PSRNL16CA-12

| | |
|------|--------------|
| CODE | 483010161001 |
| △ | TNM1604 |

| | |
|------|--------------|
| CODE | 483010161002 |
| ⊗ | CNM1204 |

| | |
|------|--------------|
| CODE | 483010161003 |
| ⊗ | SNM1204 |

| | |
|------|--------------|
| CODE | 483010161004 |
| ⊗ | SNM1204 |

PORTAUTENSILI A CAMBIO AUTOMATICO B50



B50 MECCANICO



B50 OLEODINAMICI

fig.1



| U-TRONIC | REF. |
|-------------------------------|---------------------|
| UT 3-360 S | - HSK - A63 - A100 |
| UT 5-500 / UT 5-630 / 5-800 S | B50 - DIN69871-B 50 |
| UT 8-800 / 8-1000 S | - MAS BT50 |

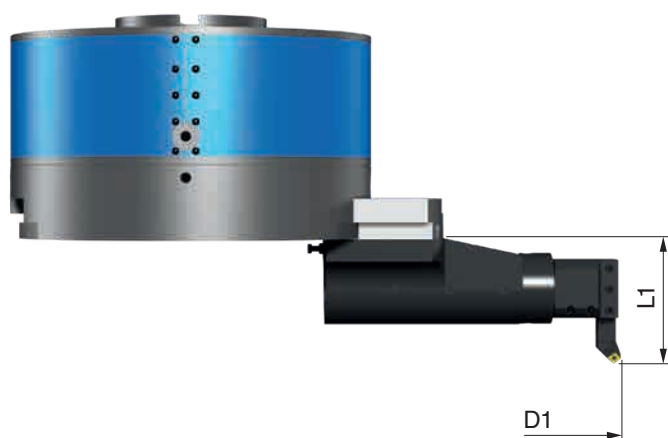
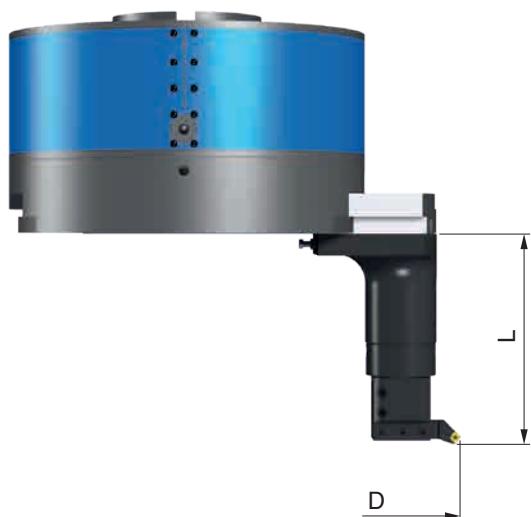
| U-TRONIC | REF. |
|-------------------------------|----------------|
| UT 3-360 S | - PSC / HSK |
| UT 5-500 / UT 5-630 / 5-800 S | B50 - DIN69871 |
| UT 8-800 / 8-1000 S | - MAS BT |

A richiesta sono fornibili portautensili a cambio automatico dell'utensile B50, speciali e OLEODINAMICI (fig.1)

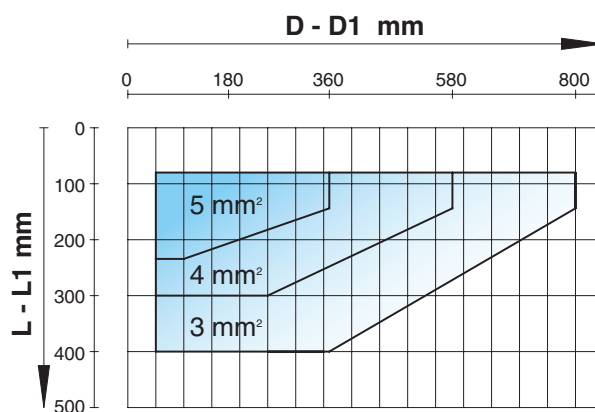
U-TRONIC

CAPACITÀ DI ASPORTAZIONE

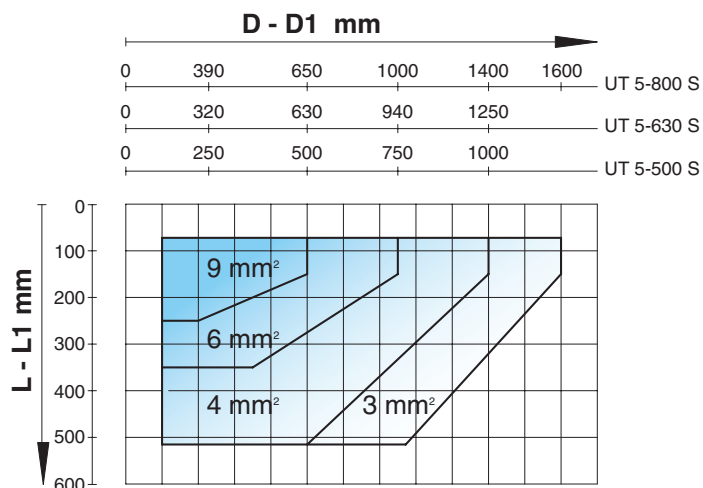
Le asportazioni sono indicative per condizioni di lavoro normali su acciai con durezza 160-200 HB, (Ks medio = 2000 N/mm²) Vt consigliata 120/160 m/min. I valori ottimali ed i tempi di lavoro dovranno essere determinati con delle prove.



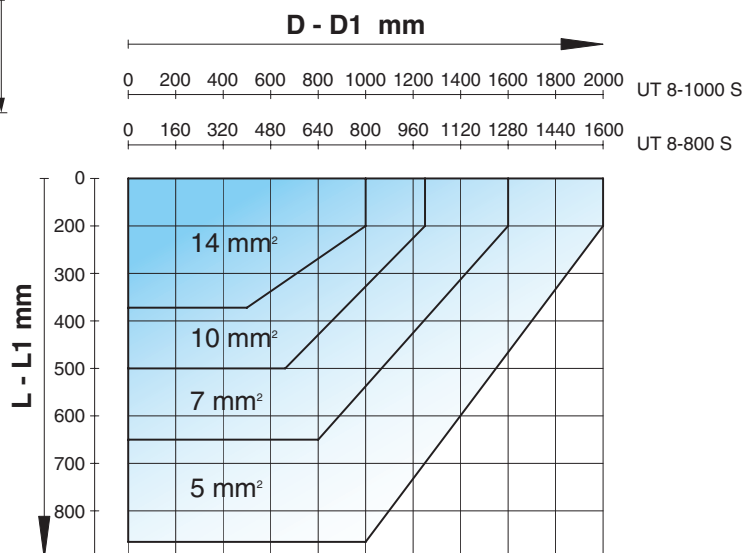
U-TRONIC 3-360 S

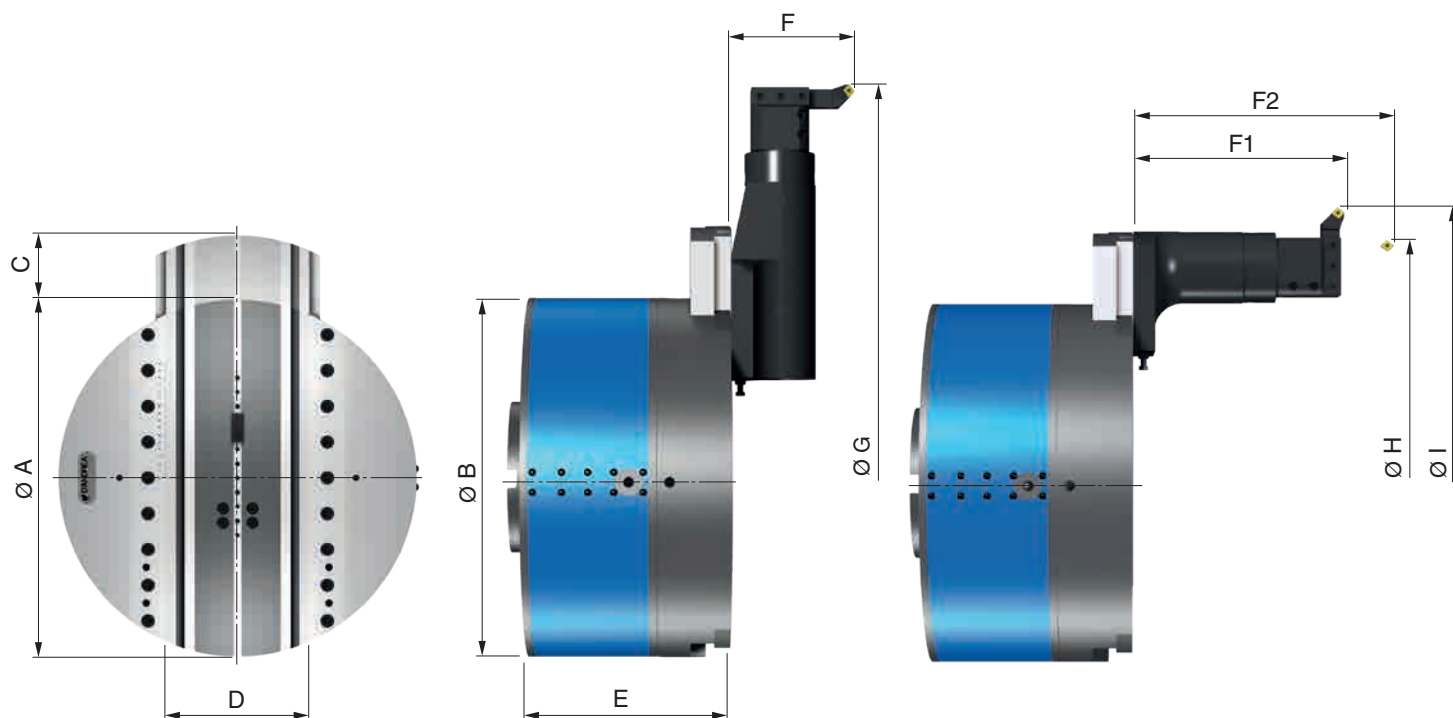


U-TRONIC 5-500 / 5-630 / 5-800 S



U-TRONIC 8-800 / 8-1000 S

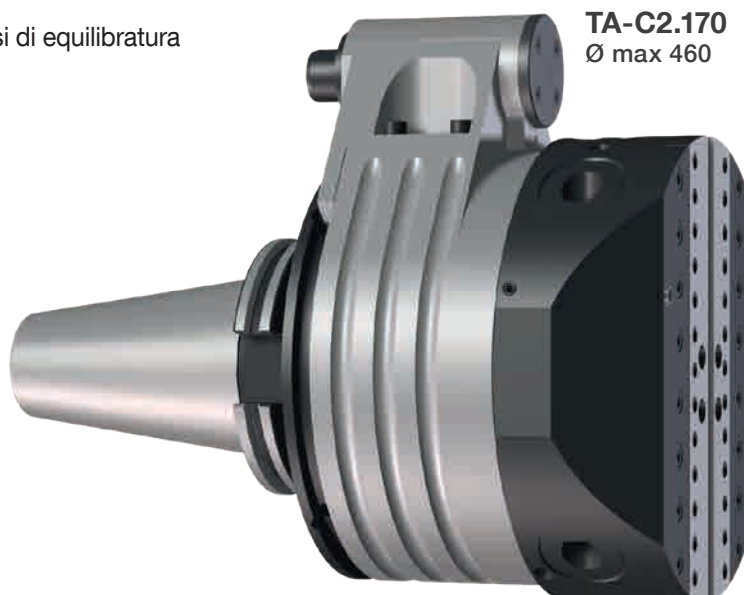
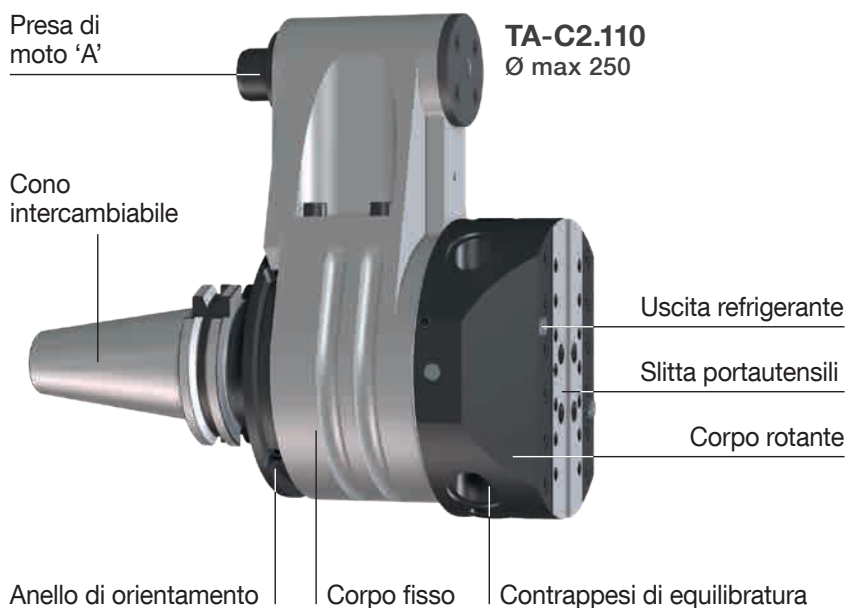
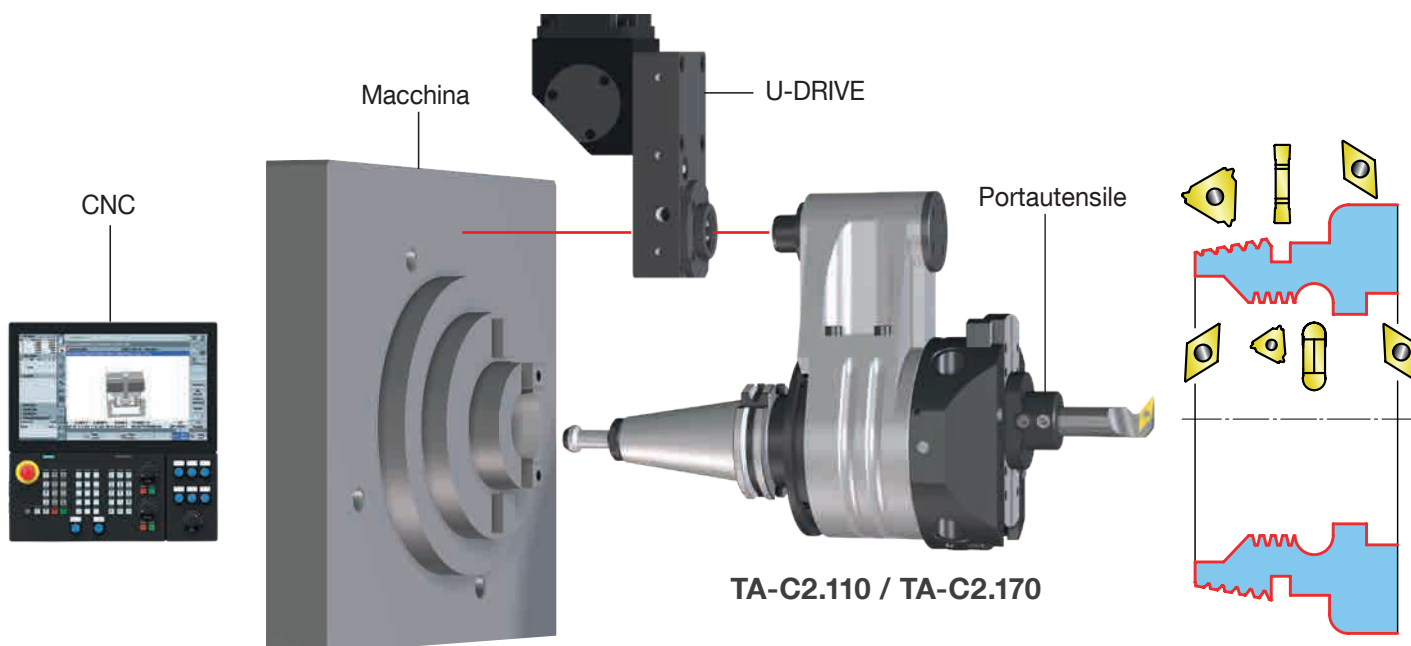


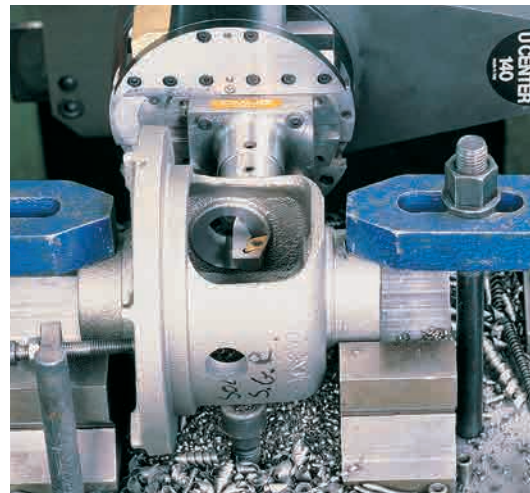
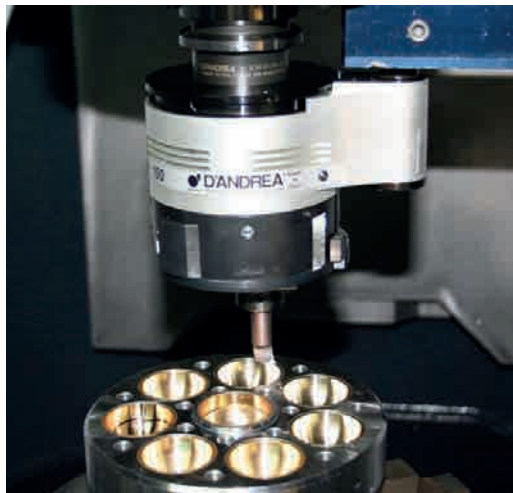
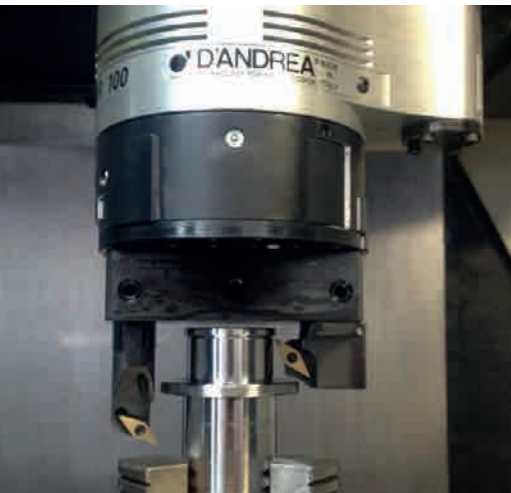
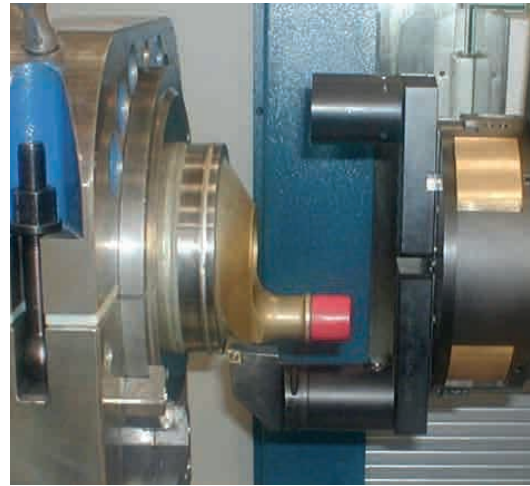
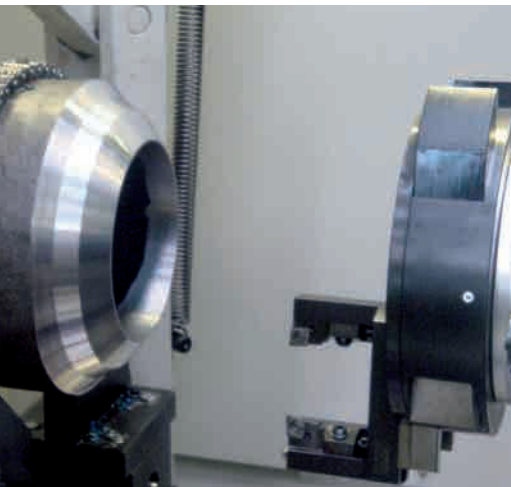
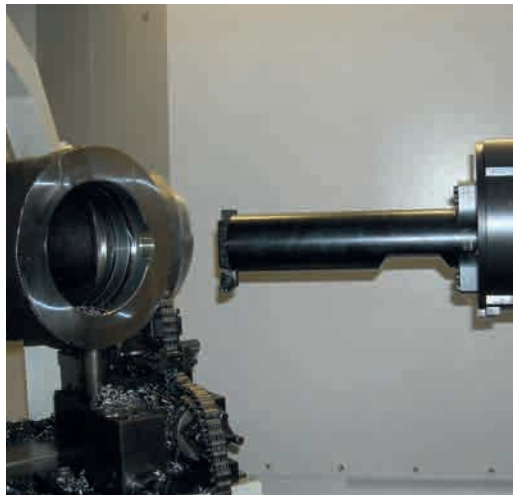
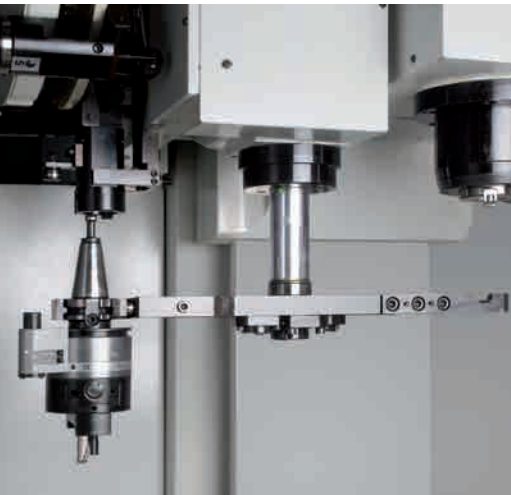


| DATI TECNICI | | UT 3-360 S | UT 5-500 S | UT 5-630 S | UT 5-800 S | UT 8-800 S | UT 8-1000 S |
|----------------------------|---------------------|------------|------------|------------|------------|------------|-------------|
| Ø A | mm | 360 | 500 | 630 | 800 | | 1000 |
| Ø B | mm | 360 | 500 | | | 800 | |
| C Corsa radiale | mm | 120 | 160 | 200 | 250 | 280 | 350 |
| D | mm | 154.6 | 199.6 | | 230 | 250 | 260 |
| E | mm | 235 | 278.5 | 282 | 370 | 410 | 415 |
| Ø G x F | mm | 800 x 140 | 1000 x 150 | 1250 x 150 | 1600 x 150 | 1600 x 160 | 2500 x 160 |
| Ø H x F2 | mm | 400 x 400 | 560 x 540 | 700 x 540 | 830 x 540 | 850 x 860 | 1050 x 860 |
| Ø I x F1 | mm | 670 x 240 | 850 x 295 | 1050 x 295 | 1300 x 295 | 1250 x 370 | 1600 x 370 |
| Max. mm/min | mm/min | 1 ÷ 400 | | | | 1 ÷ 500 | |
| Max. ◌/min | RPM | 500 | 315 | 250 | 200 | | 160 |
| Peso | Kg | 130 | 230 | 310 | 530 | 1000 | 1200 |
| Forza radiale | daN | 400 | 500 | | | 1000 | |
| Momento torcente | daNm | 400 | 800 | | | 1000 | |
| Precisione di ripetibilità | mm | 0.003 | | | | | |
| Precisione in alesatura | | IT7 | | | | | |
| Max asportazione | mm ² C40 | 5 | 9 | | | 14 | |
| Rapido | mm/min | 400 | | | | 500 | |
| Rugosità | Ra | 0,8 ~ 1,2 | | | | | |

TA-CENTER 2 TA-C2

TA-CENTER 2 teste dedicate a macchine con cambio utensile automatico e applicabili su ogni centro di lavoro. Lo spostamento della slitta portautensile è gestito da un gruppo di motorizzazione U-DRIVE esterno e fissato alla flangia mandrino.





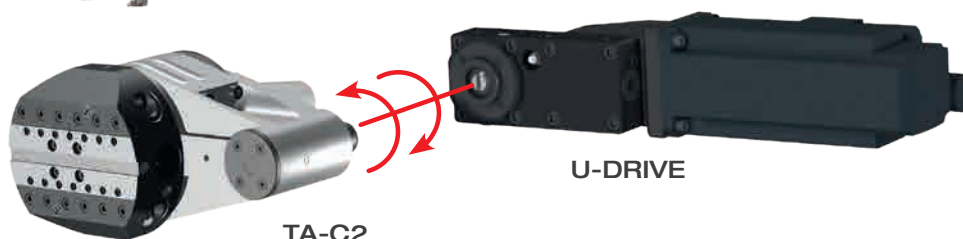
TA-CENTER 2

COMANDO



CNC

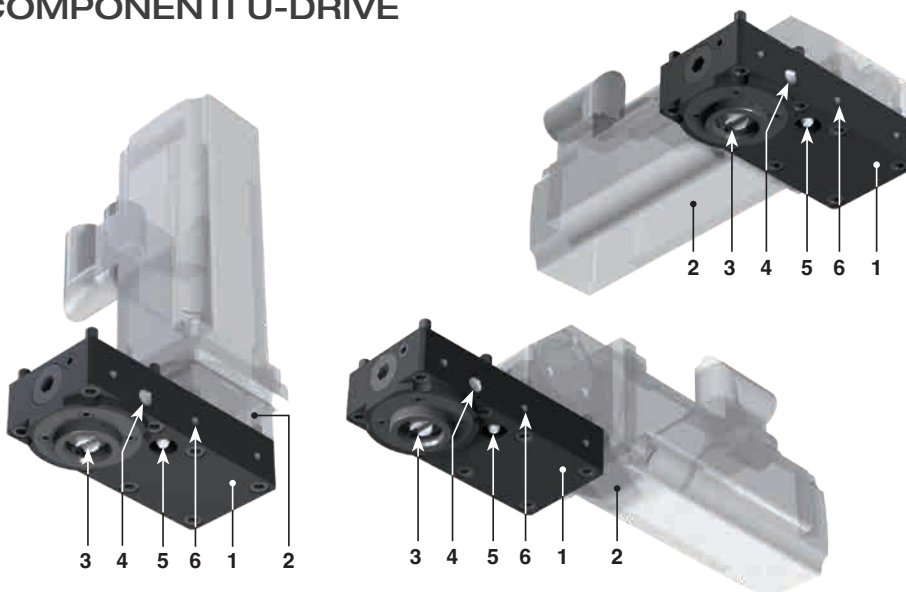
Le teste per alesare e sfacciare TA-CENTER 2 nascono per essere impiegate su macchine con cambio utensili automatico, dunque essenzialmente su tutti i centri di lavoro. Il controllo dell'avanzamento, della slitta portautensili e della posizione utensile, anche durante la rotazione, è comandato da un gruppo di motorizzazione **U-DRIVE**. Questo gruppo viene gestito direttamente da un asse chiamato "U" del controllo numerico del centro di lavoro. Un centro di lavoro così predisposto permetterà di risolvere una serie di lavorazioni differenti come tornitura interna ed esterna, canalini, alesature coniche anche variabili, raggiature concave e convesse, filettature cilindriche e coniche, spirali fonografiche.



TA-C2

U-DRIVE

COMPONENTI U-DRIVE



1. Corpo base
2. Servomotore
3. Gruppo meccanico per il collegamento alla presa di moto della TA-CENTER 2
4. Predisposizione attacco entrata aria per pulizia della presa di moto
5. Ingrassatore manuale
6. N°6 fori M5x8 da utilizzare per il fissaggio di un eventuale carter di protezione

PREDISPOSIZIONI



fig.1

Adduzione liquido refrigerante fig.1

Nelle TA-C2 il liquido refrigerante esce da due ugelli orientabili posti a fianco della slitta dopo aver attraversato il cono ed il corpo rotante della testa. Questo notevole vantaggio assicura una maggiore durata dell'inserto, una maggiore velocità di taglio e l'ottenimento di buone finiture superficiali. L'adduzione centralizzata del liquido refrigerante non danneggia la TA-C-2 i cui labirinti interni sono protetti da anelli di tenuta. È consigliabile non superare i **50 BAR** di pressione.

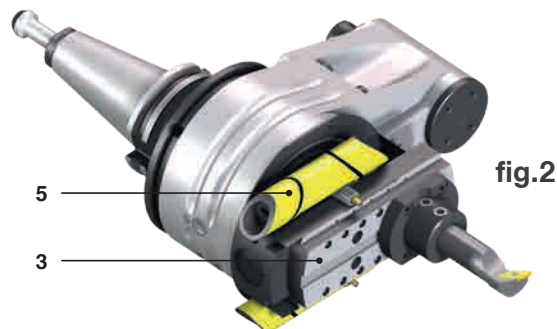
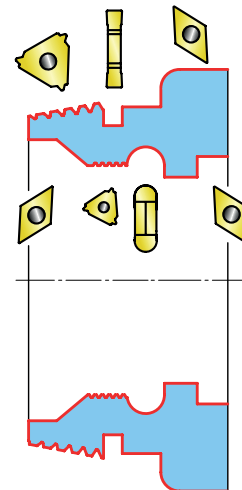


fig.2

Bilanciatura fig.2

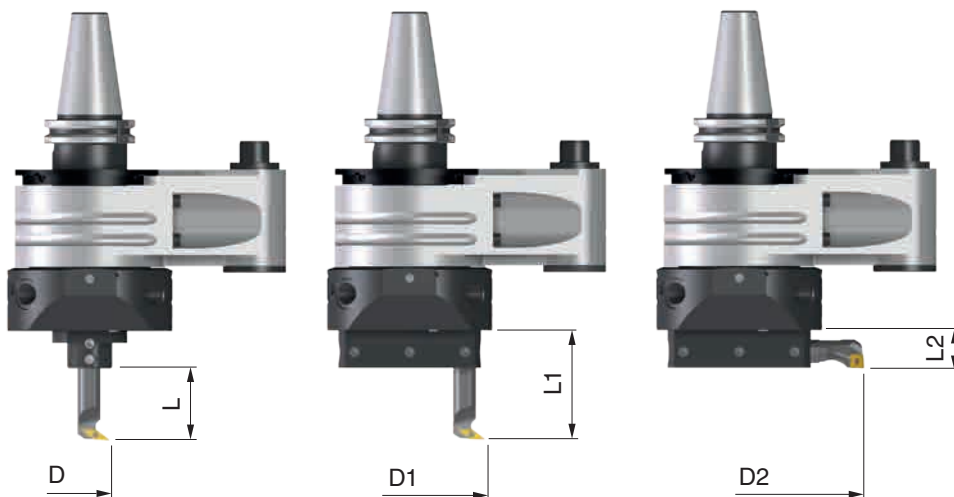
Le teste TA-C2 sono state progettate con due contrappesi (**5**) per il bilanciamento automatico, che si muovono in senso opposto alla slitta (**3**) permettendo di lavorare ad un elevato numero di giri senza oscillazioni apprezzabili.



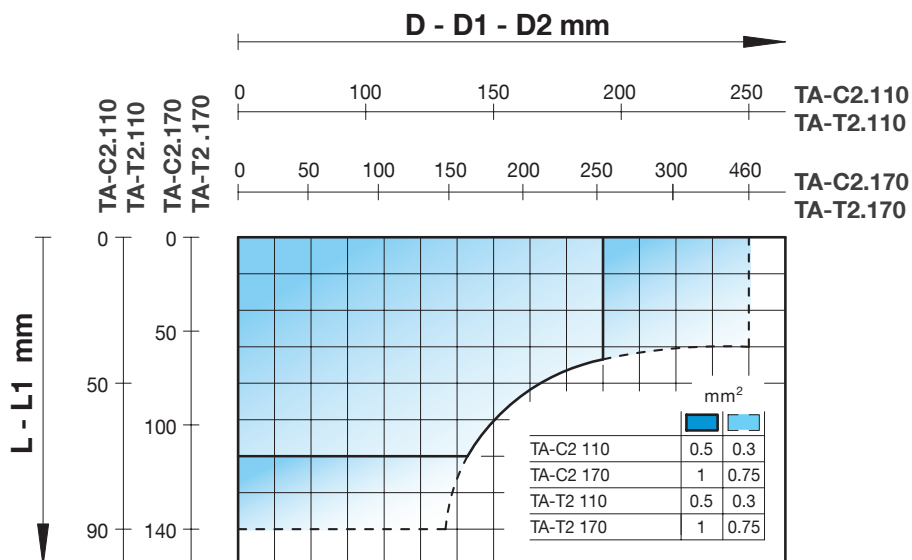
Le asportazioni sono indicative per condizioni di lavoro normali su acciai con durezza 160-200 HB, (K_s medio = 2000 N/mm²)
Vt consigliata 120/160 m/min.

CAPACITÀ DI ASPORTAZIONE
TA-C2 / TA-T2

I valori ottimali ed i tempi di lavoro dovranno essere determinati con delle prove.

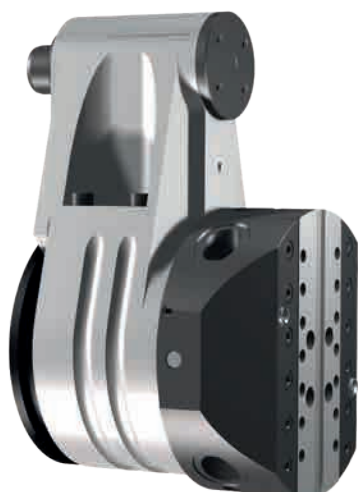


| | TA-C2.110 TA-T2.110 | TA-C2.170 TA-T2.170 |
|----|------------------------|------------------------|
| D | 10 ~ 102 | 20 ~ 194 |
| L | 65 | 100 |
| D1 | 96 ~ 126 | 153 ~ 263 |
| L1 | 90 | 140 |
| D2 | 126 ~ 250 | 203 ~ 460 |
| L2 | 25.5 | 38.5 |



TA-CENTER 2

K02



| REF. | CODE | | |
|-----------------------------|--------------|--|--|
| K02 TA-C2.110 I.80 R. 0.25 | 501251100800 | | |
| K02 TA-C2.110 I.80 R. 0.5 | 501251100801 | | |
| K02 TA-C2.110 I.110 R. 0.25 | 501251101100 | | |
| K02 TA-C2.110 I.110 R. 0.5 | 501251101101 | | |
| K02 TA-C2.170 I.110 R. 0.25 | 501251701100 | | |
| K02 TA-C2.170 I.110 R. 0.5 | 501251701101 | | |
| U-DRIVE KB1-KA1 | | | |

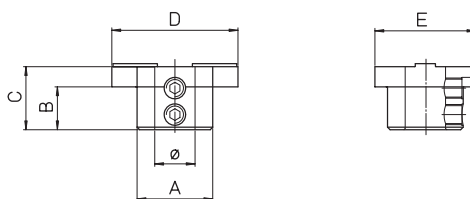
Per Intercambiabilità con versione precedente TA-CENTER.
Utilizzare **TA-C2** con rapporto meccanico **R.0.5**.

ATTACCHI HT TA-C2 / TA-T2



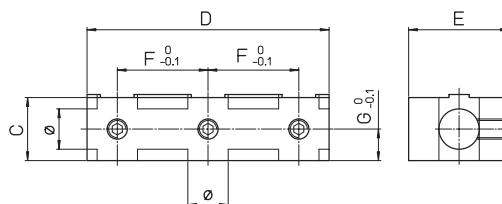
| | REF. | | CODE | L | Kg | | |
|------------------------|-------------------------|--------------|------|-----|----|--|--|
| TA-C2.110 TA-T2.110 | DIN69871-AD40 HT5 .36.5 | 41HT05024000 | 36.5 | 1.1 | | | |
| | DIN69871-AD40 HT5 .44.5 | 41HT05024001 | 44.5 | 1.2 | | | |
| | DIN69871-AD50 HT5 .36.5 | 41HT05025000 | 36.5 | 2.8 | | | |
| | MAS403BT-AD40 HT5 .27 | 41HT05034000 | 27 | 1 | | | |
| | MAS403BT-AD40 HT5 .36.5 | 41HT05034001 | 36.5 | 1.1 | | | |
| | MAS403BT-AD40 HT5 .44.5 | 41HT05034002 | 44.5 | 1.2 | | | |
| | MAS403BT-AD50 HT5 .54.5 | 41HT05035000 | 54.5 | 3.7 | | | |
| | HSK-A63 HT5 .54.5 | 41HT05046300 | 54.5 | 1.1 | | | |
| | HSK-100 HT5 .60.5 | 41HT05041000 | 60.5 | 2.8 | | | |
| | CAT40 UNC HT5 .54.5 | 41HT05054000 | 54.5 | 1.3 | | | |
| CAT50 UNC HT5 .36.5 | 41HT05055000 | 36.5 | 2.8 | | | | |
| TA-C2.170 TA-T2.170 | DIN69871-AD50 HT8 .36.5 | 41HT08025000 | 36.5 | 3.4 | | | |
| | MAS403BT-AD50 HT8 .38.5 | 41HT08035000 | 38.5 | 3.7 | | | |
| | HSK-A100 HT8 .76.5 | 41HT08041000 | 76.5 | 4 | | | |
| | CAT50 UNC HT8 .50.5 | 41HT08055000 | 50.5 | 3.9 | | | |

P120 TA-C2 / TA-T2

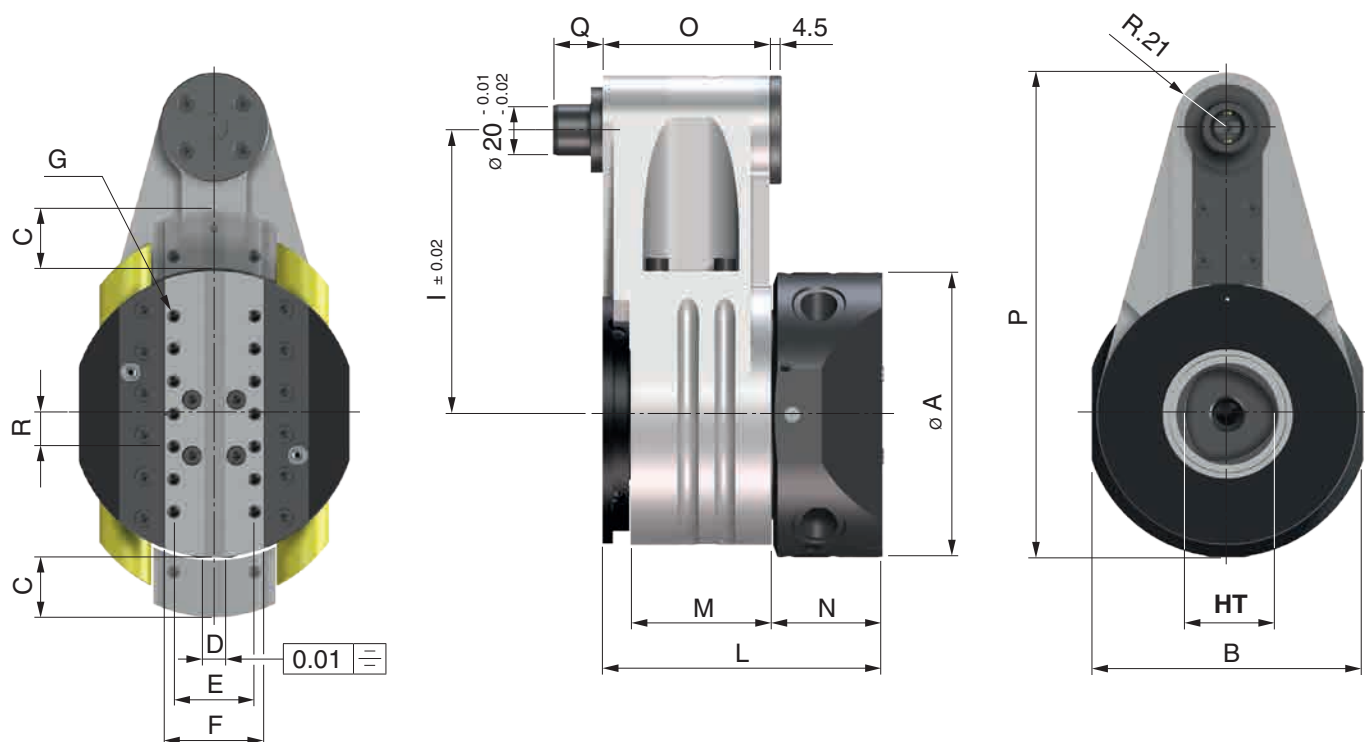


| REF. | CODE | ØH7 | A | B | C | D | E | Kg. | | |
|-----------------------------|--------------|-----|----|------|----|----|----|------|--|--|
| P 120 TA-C2.110 / TA-T2.110 | 431550160250 | 16 | 30 | 17 | 25 | 50 | 40 | 0.2 | | |
| P 120 TA-C2.170 / TA-T2.170 | 431550250380 | 25 | 47 | 27.5 | 38 | 76 | 54 | 0.55 | | |

P130 TA-C2 / TA-T2



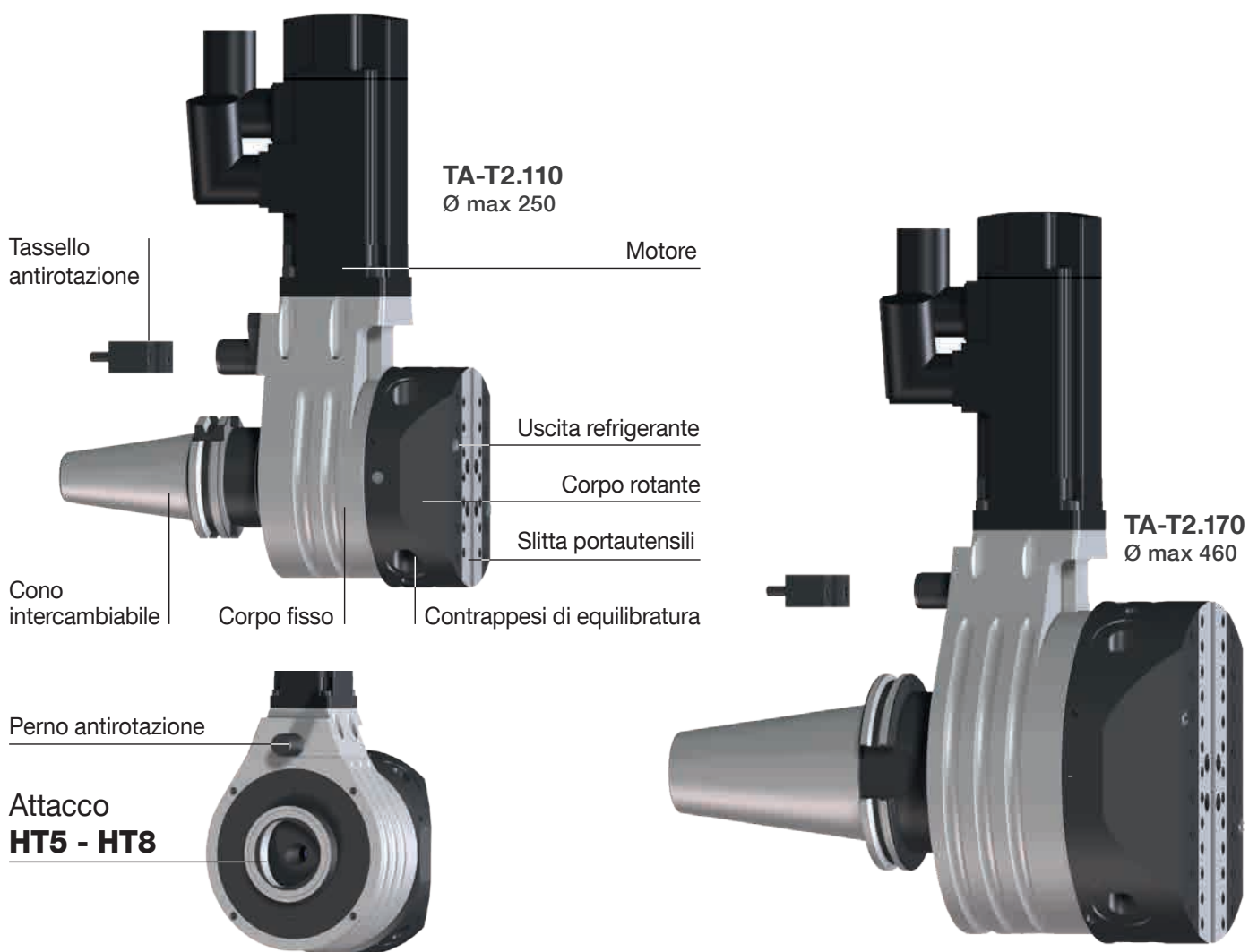
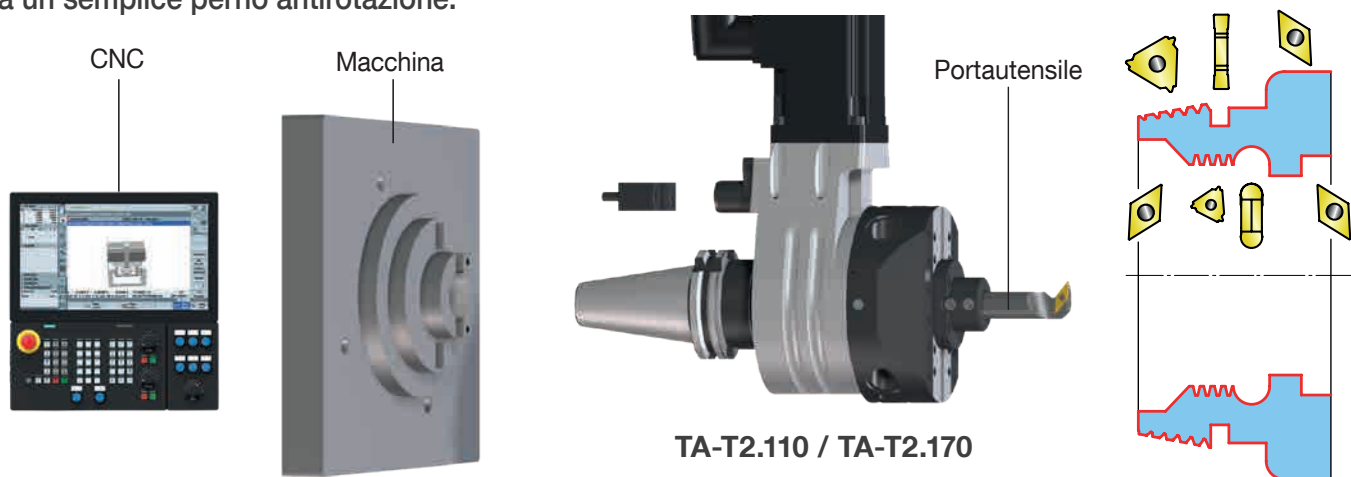
| REF. | CODE | ØH7 | C | D | E | F | G | Kg. | | |
|-----------------------------|--------------|-----|----|-----|----|------|------|-----|--|--|
| P 130 TA-C2.110 / TA-T2.110 | 433040250950 | 16 | 25 | 95 | 40 | 37 | 10.5 | 0.5 | | |
| P 130 TA-C2.170 / TA-T2.170 | 433054381520 | 25 | 38 | 152 | 54 | 59.5 | 16.5 | 1.6 | | |



| DATI TECNICI | | TA-C2.110 | TA-C2.170 |
|----------------------------------|-----------------|-------------------------------------|--------------------------------------|
| Ø A | mm | 110 | 170 |
| B | mm | 104 | 164 |
| C corsa radiale | mm | ± 15 | ± 30 |
| D | mm | 8 ^{+0.04} _{+0.02} | 10 ^{+0.04} _{+0.02} |
| E | mm | 31 | 40 |
| F | mm | 38 | 54 |
| G | mm | M 4 | M5 |
| HT | mm | HT5 | HT8 |
| I | mm | 80/110 | 110 |
| L | mm | 108 | 136 |
| M | mm | 55 | 69 |
| N | mm | 42 | 56 |
| O | mm | 64.5 | 69 |
| P | mm | 156 / 186 | 216 |
| Q | mm | 19 | 19 |
| R | mm | 12.5 | 12.5 |
| Avanzamento | mm/min | 1 ÷ 500 | |
| Forza radiale | daN | 150 | 250 |
| Massima velocità | RPM | 2000 | 1600 |
| Momento torcente | Nm | 400 | 800 |
| Peso senza cono | Kg | 5.7 | 16.5 |
| Precisione in alesatura | | IT7 | |
| Ø max. lavorabile | mm | 250 | 460 |
| Cap. max asportazione su Acc.C40 | mm ² | 0,5 | 1 |
| Rugosità | Ra | 0.8 - 1.2 | |

TA-TRONIC 2 TA-T2

TA-TRONIC 2 Teste progettate per essere applicate manualmente su piccole alesatrici, centri di lavoro e macchine speciali. Il motore integrato si collega al CN e gestisce lo spostamento della slitta portautensile. Il corpo fisso viene mantenuto in posizione da una flangia o, per operazioni poco gravose, da un semplice perno antirotazione.



COMANDO

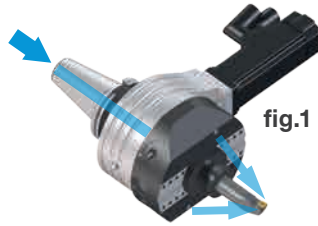


Il comando delle teste TA-T2 avviene tramite il collegamento diretto all'asse "U" del controllo numerico della macchina utensile che permette lavorazioni di alesatura, sfacciatura interna, esterna e sottosquadra, tornitura interna ed esterna, canali, spirali fonografiche, filettature e alesature coniche, alesature coniche anche variabili, raggiature concave e convesse mediante l'interpolazione con gli altri assi.

Adduzione liquido refrigerante fig.1

Nelle TA-T2 il liquido refrigerante esce da due ugelli orientabili posti a fianco della slitta dopo aver attraversato il cono ed il corpo rotante della testa. Questo notevole vantaggio assicura una maggiore durata dell'inserto, una

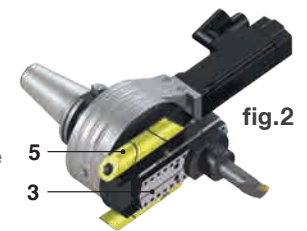
maggiore velocità di taglio e l'ottenimento di buone finiture superficiali. L' adduzione centralizzata del liquido refrigerante non danneggia la TA-T2 i cui labirinti interni sono protetti da anelli di tenuta. È consigliabile non superare i **50 BAR** di pressione.



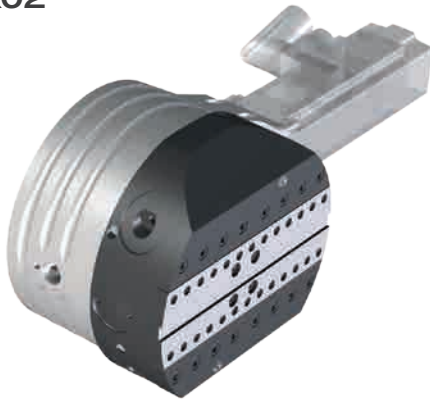
Bilanciatura fig.2

Le teste TA-T2 sono state progettate con due contrappesi (5) per il bilanciamento automatico, che si muovono in senso opposto alla slitta (3) permettendo di lavorare ad un elevato numero di giri senza oscillazioni apprezzabili.

PREDISPOSIZIONI



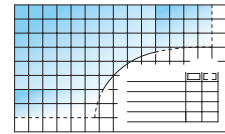
K02



ATTACCHI HT / P120 - P130 p.70

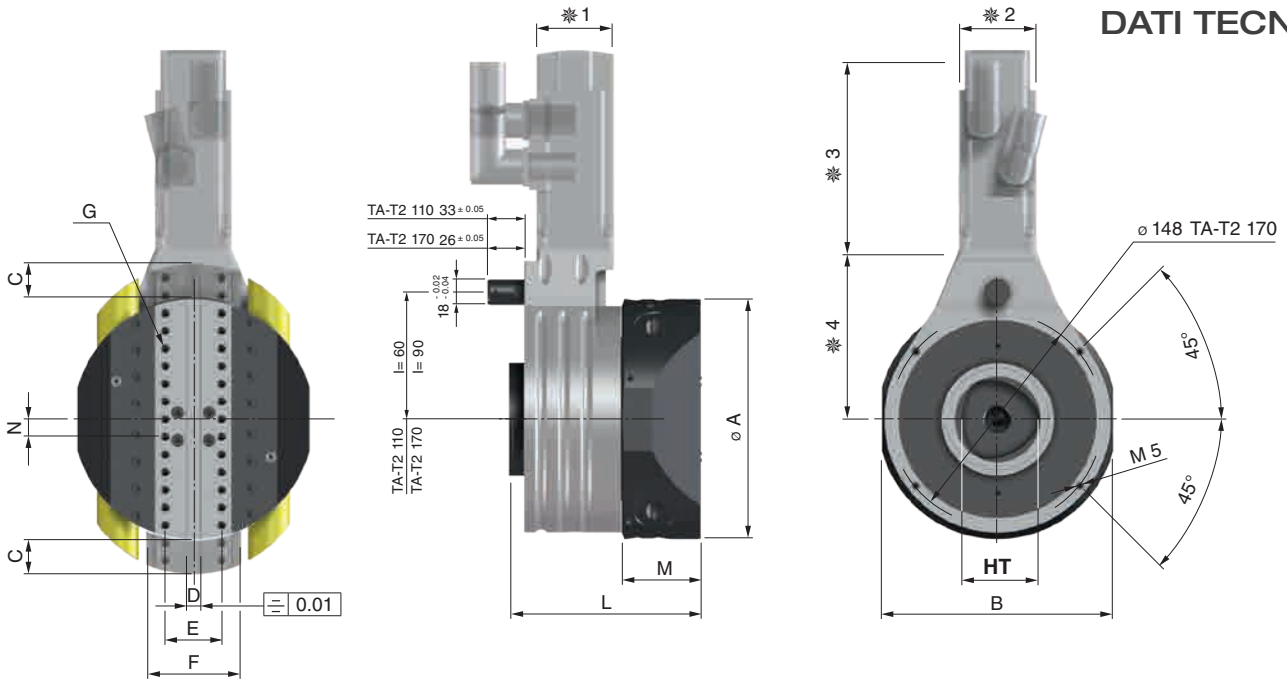


ASPORTAZIONE p.69



| REF. | CODE | | |
|--------------------------------------|--------------|--|--|
| K02 TA-T2.110 1FK7022-5AK74-1HA5 | 501201100400 | | |
| K02 TA-T2.110 FANUC bis 1/6000 | 501201100800 | | |
| K02 TA-T2.170 1FK7032-2AK74-1EA2 | 501201700400 | | |
| K02 TA-T2.170 FANUC bis 1/6000 | 501201700800 | | |
| FLANGIA TA-T2.110 / TA-T2.170 | | | |

DATI TECNICI



| DATI TECNICI | | TA-T2.110 | TA-T2.170 |
|------------------|--------|-------------------------------------|--------------------------------------|
| Ø A | mm | 110 | 170 |
| B | mm | 104 | 164 |
| C corsa radiale | mm | ± 15 | ± 30 |
| D | mm | 8 ^{+0.04} _{+0.02} | 10 ^{+0.04} _{+0.02} |
| E | mm | 31 | 40 |
| F | mm | 38 | 54 |
| G | mm | M4 | M5 |
| HT | mm | 5 | 8 |
| L | mm | 108 | 136 |
| M | mm | 42 | 56 |
| N | mm | 12.5 | |
| Avanzamento | mm/min | 1 ÷ 500 | |
| Forza radiale | daN | 150 | 250 |
| Massima velocità | RPM | 2000 | 1600 |

| DATI TECNICI | | TA-T2.110 | TA-T2.170 |
|----------------------------------|-----------------|-------------------------|------------------------|
| Momento torcente | Nm | 400 | 800 |
| Peso senza cono | Kg | 5.3 senza motore | 15.8 senza motore |
| Precisione in alesatura | | IT7 | |
| Ø max. lavorabile | mm | 250 | 460 |
| Cap. max asportazione su Acc.C40 | mm ² | 0,75 | 1 |
| Rugosità | Ra | 0.8 - 1.2 | |
| Dimensioni Motori SIEMENS | | Siemens 1FK7022 | Siemens 1FK7032 |
| * 1 | | 55 | 72 |
| * 2 | | 55 | 72 |
| * 3 | | 178 | 173 |
| * 4 | | 90 | 120 |
| Dimensioni Motori FANUC | | FANUC bis 1/6000 | |
| * 1 | | 60 | |
| * 2 | | 60 | |
| * 3 | | 111.5 | |
| * 4 | | 90/120 | |

* Misure indicative che possono variare al variare del motore

AUTORADIAL

AUTORADIAL teste automatiche a sfacciare, applicabili su centri di lavoro e macchin a CN senza bisogno di alcuna interfaccia elettronica o asservimento. Eseguono automaticamente un ciclo di lavoro senza mai arrestare la rotazione del mandrino. Particolarmente indicate per l'esecuzione di sedi per anelli elastici e spirali fonografiche.



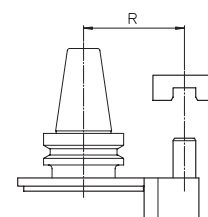
K02



A RICHIESTA
AUTORADIAL
SPECIALI

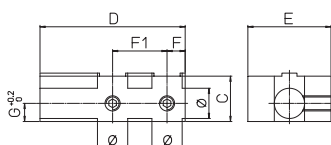
| REF. | Fmm/° | K02 AR 125 | K02 AR 160 |
|--------------------------|-------|--------------|--------------|
| | | CODE | CODE |
| K02 AR...-F.0.05 ± 0.005 | 0.05 | 500612520050 | 500616020050 |
| K02 AR...-F.0.1 ± 0.005 | 0.1 | 500612520100 | 500616020100 |
| K02 AR...-F.0.2 ± 0.01 | 0.2 | 500612520200 | 500616020200 |
| K02 AR...-F.0.3 ± 0.01 | 0.3 | 500612520300 | 500616020300 |
| K02 AR...-F.0.4 ± 0.02 | 0.4 | 500612520400 | 500616020400 |
| K02 AR...-F.0.5 ± 0.02 | 0.5 | 500612520500 | 500616020500 |
| K02 AR...-F.0.6 ± 0.02 | 0.6 | 500612520600 | 500616020600 |

K-NC



| REF. | R.80 | R.110 |
|-----------------|--------------|--------------|
| | CODE | CODE |
| K-NC R...-AR125 | 394112508002 | 394112511002 |
| K-NC R...-AR160 | 394116008002 | 394116011003 |

P110



| REF. | CODE | ØH7 | C | D | E | F | F1 | G | Kg. |
|----------------|--------------|-----|----|-----|----|----|------|----|-----|
| AR 125 - P 110 | 433056381200 | 25 | 39 | 121 | 56 | 15 | 45.5 | 16 | 1.3 |
| AR 160 - P 110 | 433063481600 | 32 | 49 | 164 | 63 | 19 | 63 | 21 | 2.5 |



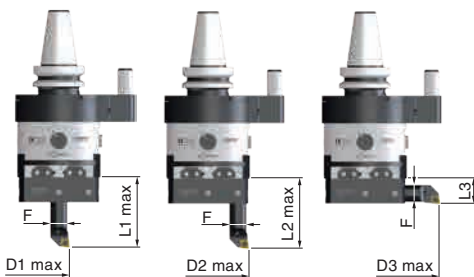
| REF. | MHD' Gamma completa dei coni a pag.8 |
|--------|--------------------------------------|
| AR 125 | 63 |
| AR 160 | 80 |

| REF. | Fmm/∅ | K02 AR 125 CODE | K02 AR 160 CODE |
|------------------------|-------|-----------------|-----------------|
| F. 0.05-AR... ± 0.005 | 0.05 | 382006105001 | 382006205001 |
| F. 0.1 - AR... ± 0.005 | 0.1 | 382006110001 | 382006210001 |
| F. 0.2 - AR... ± 0.01 | 0.2 | 382006120001 | 382006220001 |
| F. 0.3 - AR... ± 0.01 | 0.3 | 382006130001 | 382006230001 |
| F. 0.4 - AR... ± 0.02 | 0.4 | 382006140001 | 382006240001 |
| F. 0.5 - AR... ± 0.02 | 0.5 | 382006150001 | 382006250001 |
| F. 0.6 - AR... ± 0.02 | 0.6 | 382006160001 | 382006260001 |

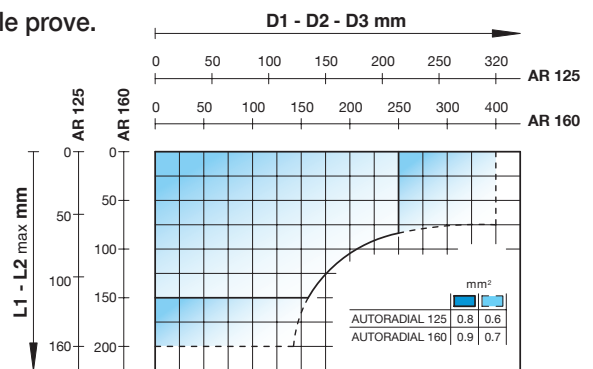
CAPACITÀ DI ASPORTAZIONE - MAX VELOCITÀ DI ROTAZIONE

Le asportazioni sono indicative per condizioni di lavoro normali su acciai con durezza 160-200 HB, (Ks medio = 2000 N/mm²) Vt consigliata 120/160 m/min.

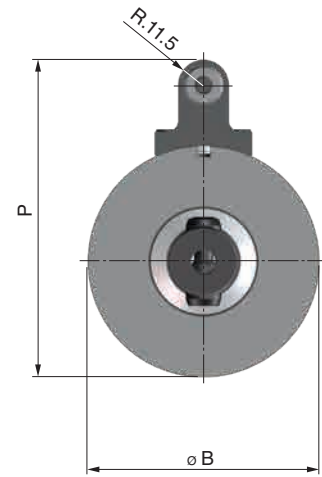
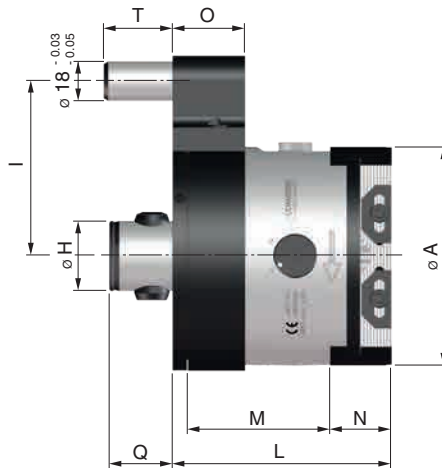
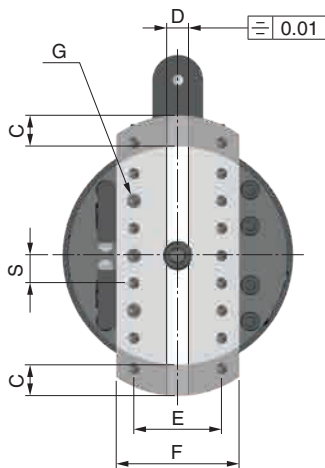
I valori ottimali ed i tempi di lavoro dovranno essere determinati con delle prove.



| | AR 125 | AR 160 |
|--------|--------|--------|
| F | 25 | 32 |
| D1 max | 99 | 144 |
| L1 | 160 | 200 |
| D2 max | 190 | 270 |
| L2 | 160 | 200 |
| D3 max | 320 | 400 |
| L3 | 40 | 50 |



DATI TECNICI



| DATI TECNICI | | AR 125 | AR 160 |
|-----------------|----|---|---|
| ∅ A | mm | 125 | 160 |
| ∅ B | mm | 130 | 130 |
| C corsa radiale | mm | ± 20 | ± 35 |
| D | mm | 10 ^{+0.03} ₀ | 12 ^{+0.03} ₀ |
| E | mm | 40 | 50 |
| F | mm | 63 ^{-0.003} _{-0.007} | 80 ^{-0.003} _{-0.007} |
| G | mm | M5 | M6 |
| ∅ H | mm | (MHD'63) 42 ^{-0.005} _{-0.008} | (MHD'63) 42 ^{-0.005} _{-0.008} |
| I | mm | 80/110 | 80/110 |
| L | mm | 110 | 125 |

| DATI TECNICI | | AR 125 | AR 160 |
|------------------|------|---------------|---------------|
| M | mm | 75 | 83 |
| N | mm | 28 | 35 |
| O | mm | 35 | 35 |
| P | mm | 156.5 / 186.5 | 171.5 / 201.5 |
| Q | mm | 38.5 | 44.5 |
| S | mm | 12.5 | 15 |
| T | mm | 39.5 | 45.5 |
| Massima velocità | RPM | 500 | 400 |
| Peso senza cono | Kg | 9 | 14 |
| Ritorno rapido | mm/∅ | 0.8 | 0.8 |

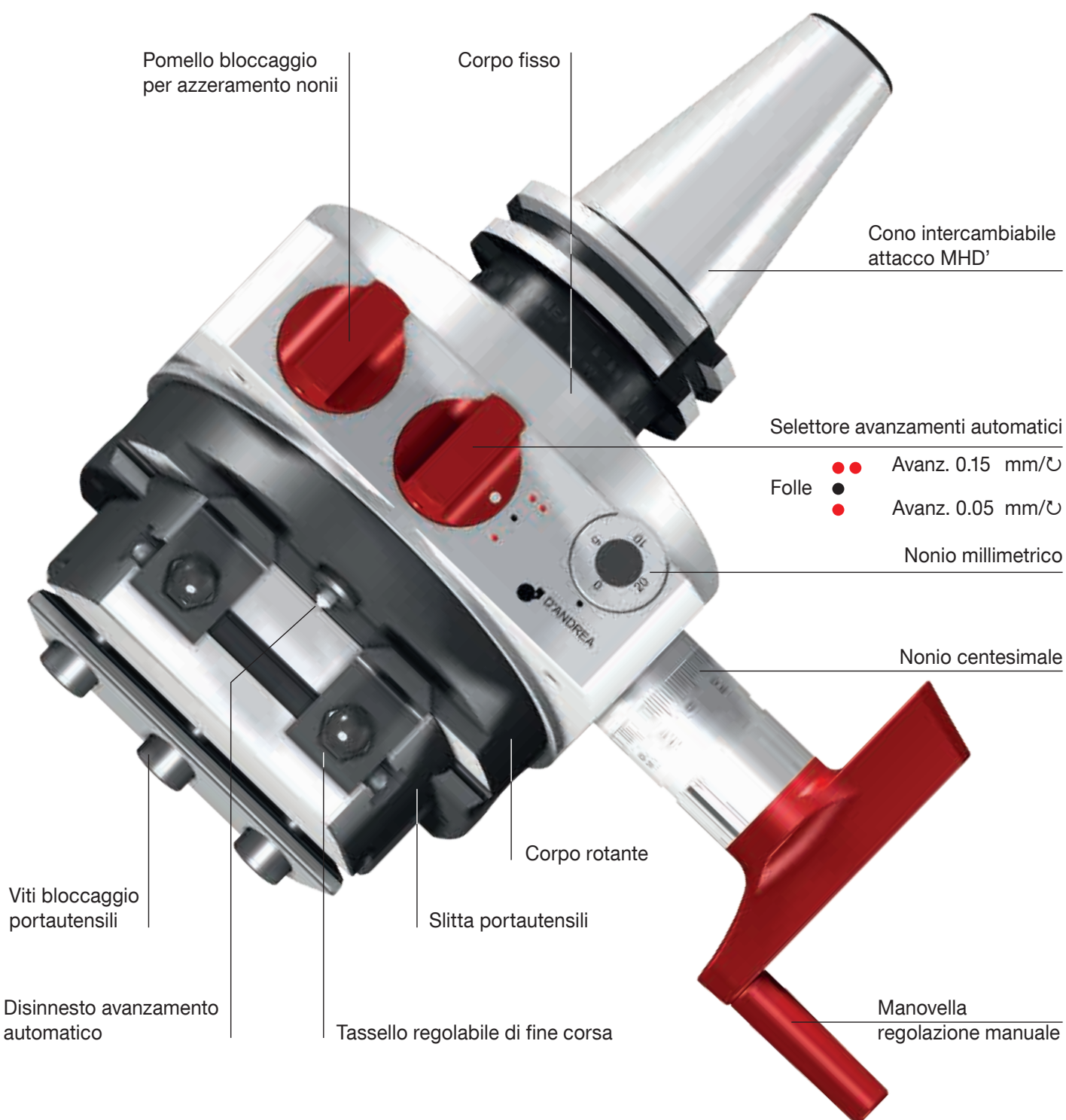
TESTE PER ALESARE E SFACCIARE

Teste per alesare e sfacciare, applicabili a fresatrici, alesatrici e trapani radiali con possibilità di regolazioni manuali a **macchina ferma** ed avanzamenti automatici durante la rotazione del mandrino macchina.

È possibile effettuare lavorazioni di sfacciate esterne, interne, sottosquadra, alesature cilindriche e coniche, scanalature interne ed esterne, torniture e smussature.

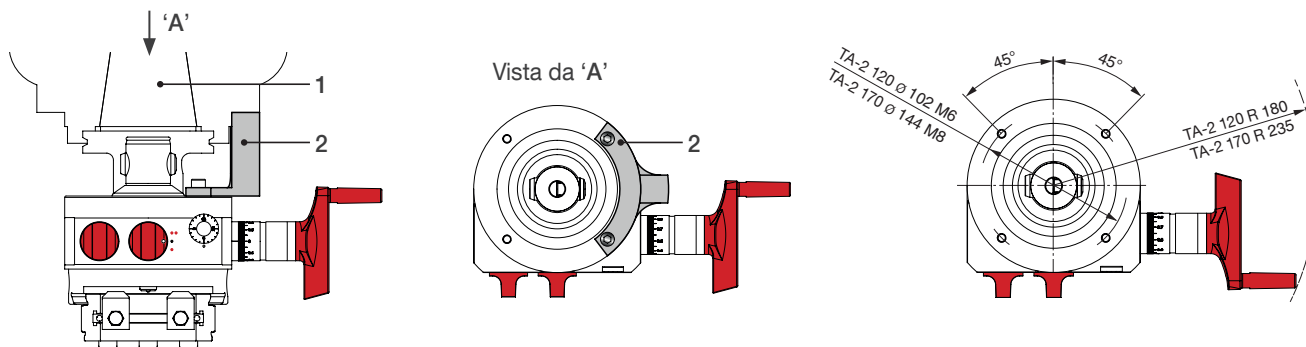
Il cono è intercambiabile e, grazie all'adattatore MHD' System, permette l'utilizzo di tutti i coni disponibili del nostro sistema modulare.

TA-S2.120 max Ø 250 **TA-S2.170** max Ø 400



APPLICAZIONI

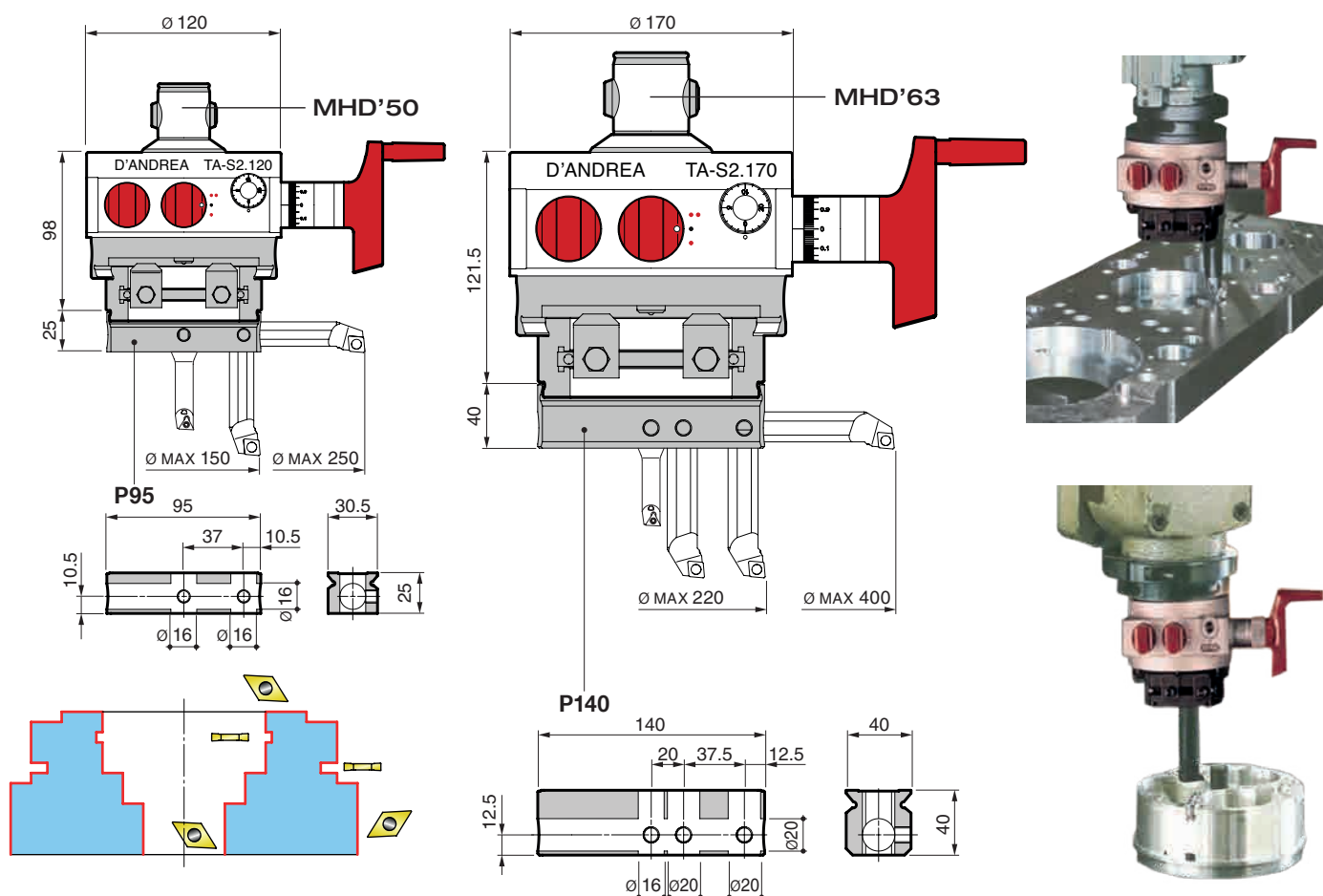
Le TA-S2 vengono applicate alla macchina utensile mediante il cono di trascinamento (1) e un tassello di fermo antirotativo (2). Per lavorazioni gravose è consigliato applicare una flangia.



DATI TECNICI

| TA-S2.120 | DATI TECNICI | TA-S2.170 |
|-----------|----------------------|-----------|
| 250 | Ø max. lavorabile mm | 400 |
| 40 | C corsa radiale mm | 60 |
| 1000 | Max. velocità RPM | 800 |
| 6.5 | Peso netto Kg | 19 |
| 400 | Momento torcente Nm | 800 |
| 2 - 6 | Potenza motore Kw | 3.5 - 11 |

| REF. | CODE | Kg |
|-----------------------|--------------|-----|
| K02 TA-S2.120 | 500212031001 | 5,8 |
| P95 TA-S2.120 | 433030300951 | 0,4 |
| K02 TA-S2.170 | 500217031001 | 14 |
| P140 TA-S2.170 | 433040401401 | 0,8 |



D'ANDREA
Lainate - Milano

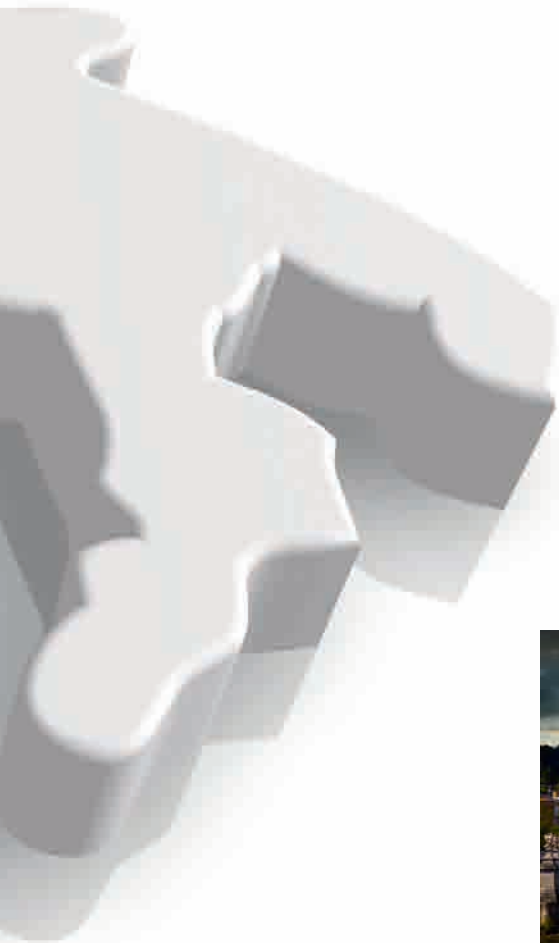
D'ANDREA Molise
Castel del Giudice - Isernia

 *made in italy*

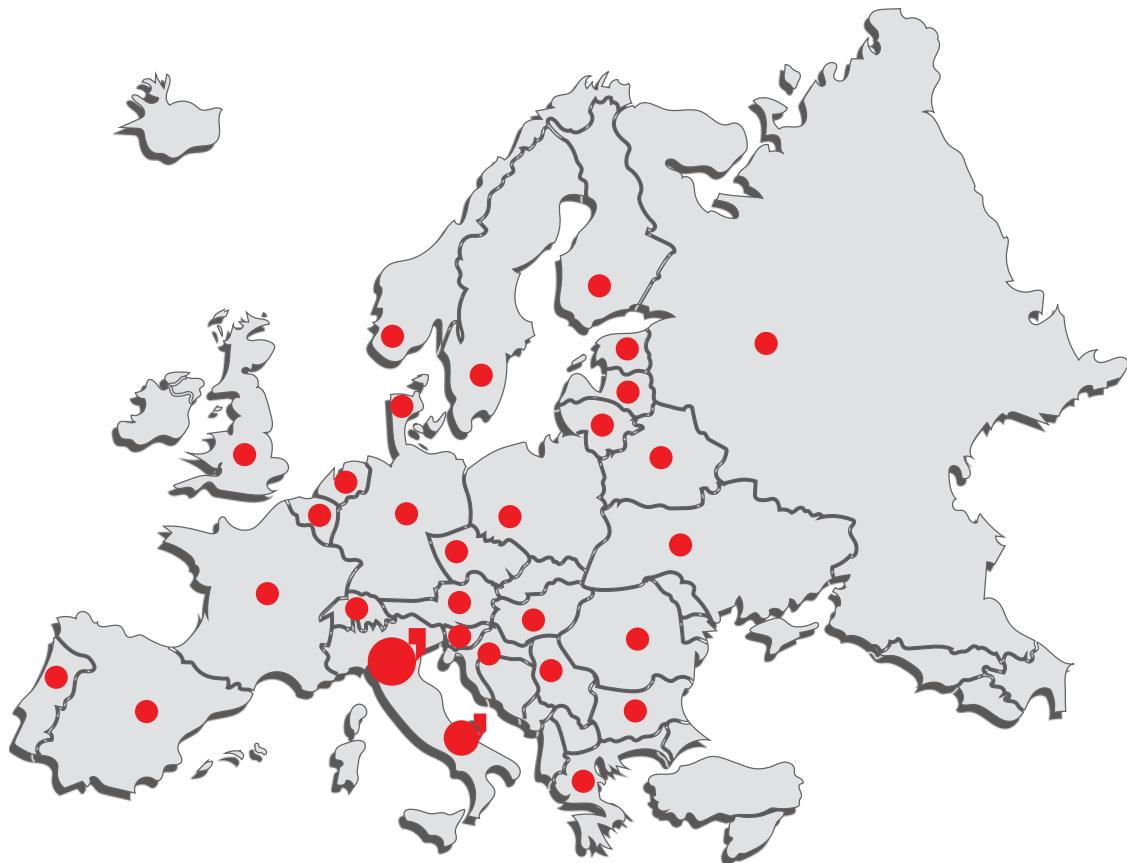


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Ennio D'Andrea



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