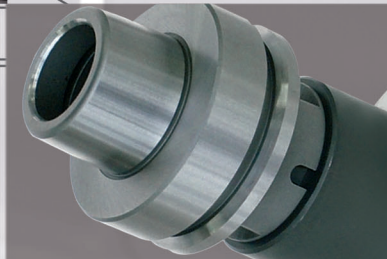
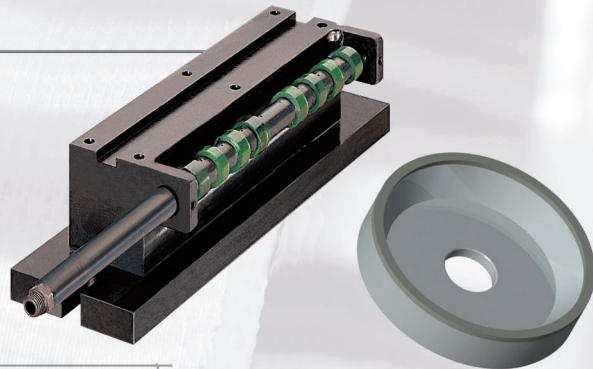


freud®

ACCESSORI ACCESSORIES

MP10M



ISO 9001:2008

LA FREUD ATTUA UN SISTEMA DI GESTIONE DELLA QUALITÀ CERTIFICATO ISO 9001:2008 PER LA COMMERCIALIZZAZIONE DI LAME CIRCOLARI CON RIPORTI IN HW E DI COMPONENTI IN METALLO DURO SINTERIZZATO.

FREUD APPLIES A QUALITY SYSTEM ISO 9001:2008 FOR TRADING OF HW TIPPED SAWBLADES AND HARD METAL COMPONENTS.



ZERTIFIKAT

CERTIFICATE

CERTIFICADO

CERTIFICATE

CERTIFICATE

CERTIFICATE

CERTIFICATE

CERTIFICATE



CERTIFICATO
 N° 50 100 4138 - Rev. 03
 Si attesta che il Sistema di Qualità di
 IL SISTEMA QUALITÀ DI
freud
 Freud S.p.A.

SEDE LEGALE: VIA MARCO ANTONIO COLONNA 35 20149 MILANO (MI)
 SEDE OPERATIVA E AGENZIA TRADING: VIA PRADIVA 3 1-39019 TRASNAGNACCO (UD)

È CONFORME AI REQUISITI DELLA NORMA
 HAS BEEN FOUND TO COMPLY WITH THE REQUIREMENTS OF
 UNI EN ISO 9001:2008
 Reference to quality manual for complete details of description of requirements
 at the item 50.100.4138.

Questo certificato è valido per il seguente campo di applicazione
 This certificate is valid for the following product or service range
 Commercializzazione e gestione magazzini di lame circolari, teste
 portacottelli, fresa saldobrasate, punte e componenti in metallo duro.
 Commercializzazione di lame a punta in diamante (SA 174)
 Trade at own brand of saw blades, cutter heads, brazed cutters, router
 bits and hard metal components. Trade of PCD tipped saw blades and
 router bits (SA 174)

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Per Ulteriori Certificazioni
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Data di emissione / Issue date
 2010-05-06
 Data di scadenza / Expiry date
 2013-03-03

Remissione del certificato ammesso per la prima volta in data 2004-03-10
 "La validità del presente certificato è condizionata a un'ispezione periodica a 12 mesi e al rinnovo completo del
 sistema di gestione della qualità del certificato titolare"
 "The validity of the present certificate depends on the annual recertification every 12 months and on the complete
 renewal of company's management system after three years."

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LEGENDA DEI SIMBOLI E DELLE ABBREVIAZIONI EXPLANATION OF SYMBOLS AND ABBREVIATIONS

Codice

CODICE ARTICOLO
ITEM CODE

D

DIAMETRO
DIAMETER

d

FORO
BORE

S

SPESORE
THICKNESS

H

ALTEZZA TOTALE
OVERALL HEIGHT

h

ALTEZZA UTILE
WORKING HEIGHT

A

ATTACCO
SHANK

Z

NUMERO DI DENTI
NUMBER OF TEETH

L

LUNGHEZZA
LENGTH

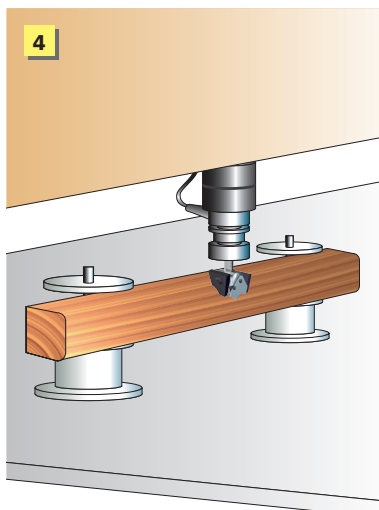
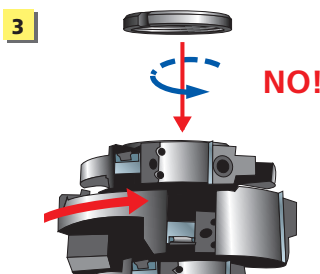
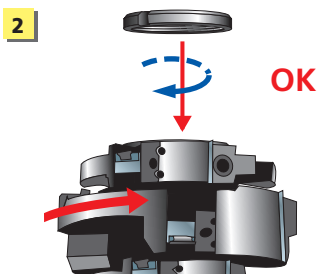
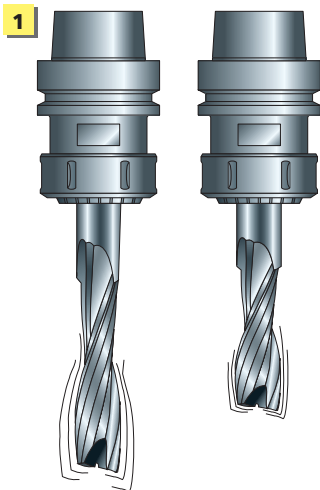
L.U.

LUNGHEZZA UTILE
WORKING LENGTH

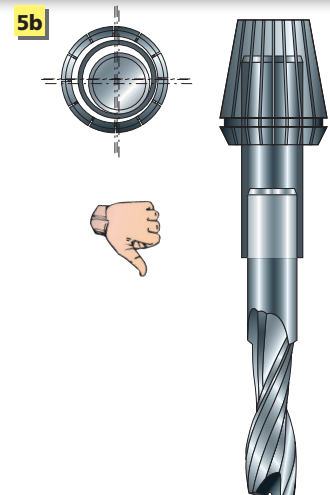
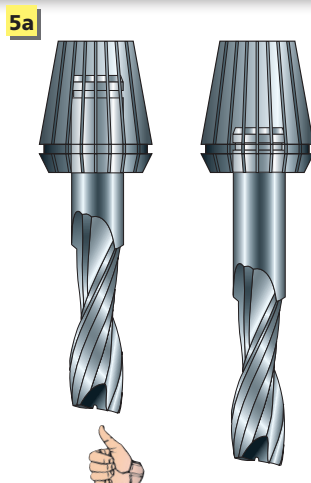
L.T.

LUNGHEZZA TOTALE
OVERALL LENGTH

CONSIGLI PER L'USO CORRETTO ADVICE FOR CORRECT USE

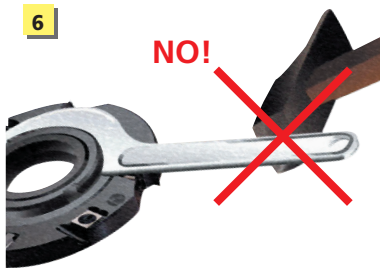


- Gli utensili devono essere maneggiati e utilizzati da persone addestrate ed esperte, in possesso delle conoscenze necessarie.
- A parità di diametro, un utensile con lunghezza utile inferiore vibra di meno (Fig. 1).
- Controllare periodicamente la macchina (spec. guide e cuscinetti), verificando che non ci siano problemi di eccentricità, per evitare che si generino deleterie vibrazioni dell'albero, particolarmente pericolose per utensili con riporti in diamante.
- Utensili e parti di utensili devono essere bloccati in modo che non si allentino durante l'uso (Figg. 2-3).
- Bloccare accuratamente il pezzo al piano di lavoro di dimensioni adeguate (Fig. 4).
- Rispettare la lunghezza di fissaggio minima del gambo e preferire mandrini corti, al fine di minimizzare gli errori di eccentricità (Fig. 5a). Per lo stesso motivo, in generale vanno evitati i prolungamenti (Fig. 5b).
- Per individuare difetti di eccentricità nell'utensile o nel mandrino: ruotare di 90° l'utensile nel mandrino, eseguire ancora la fresatura ed osservare i segni lasciati sul pezzo. Se questi restano invariati rispetto alla fresatura precedente, l'utensile è difettoso, se invece i segni variano, è probabile che l'errore risieda nel mandrino.
- Viti e dadi di bloccaggio devono essere serrati usando utensili appropriati e alla coppia di serraggio prevista dal costruttore.
- Prolunghe per attrezzi o serraggio con colpi di martello non sono permessi (Fig. 6).
- Non utilizzare bussole di riduzione del foro diverse da quelle previste dal costruttore.
- Le superfici di bloccaggio devono essere esenti da sporco, grasso, olio o acqua. La resina deve essere rimossa dal corpo di utensili in leghe leggere solo con solventi che non intacchino l'alluminio e non pregiudichino le caratteristiche meccaniche di questi materiali. Pulire accuratamente l'utensile ad ogni sostituzione dei taglienti.
- Gli utensili composti devono essere riparati da personale competente, addestrato ed esperto, che ha conoscenza dei requisiti progettuali e conosca il livello di sicurezza che deve essere raggiunto.
- La riparazione degli utensili è consentita solo in accordo con le istruzioni del fabbricante. Occorre prestare particolare attenzione ai seguenti punti:
 - La riparazione dovrà includere l'uso di parti di ricambio in accordo con le specifiche delle parti originali fornite dal costruttore.
 - Mantenere le tolleranze che assicurano un bloccaggio corretto.
- Non superare il n. massimo di giri marcato sugli utensili. Con velocità di avanzamento troppo elevate o profondità di taglio eccessive si rischia la rottura dell'utensile.
- Per evitare danneggiamenti, si consiglia di controllare che le superfici di fissaggio del mandrino e dell'utensile siano pulite e non presentino imperfezioni (Fig. 7).
- Per evitare pericolosi contraccolpi si consiglia di fissare al piano di lavoro eventuali sfridi e di fresare completamente i piccoli scarti formati con la lavorazione, eseguendo più passate (Figg. 8 e 9).
- Indossare guanti migliora la presa e riduce ulteriormente il rischio di lesioni.
- Per evitare lesioni, gli utensili devono essere maneggiati con cautela e utilizzando dispositivi come ganci di trasporto, maniglie specifiche, telai, contenitori, carrelli, ecc..



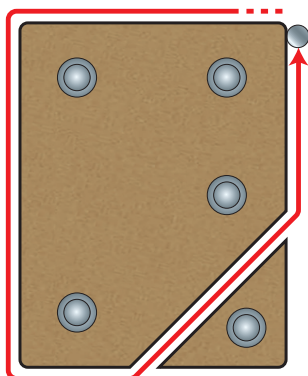
CONSIGLI PER L'USO CORRETTO

ADVICE FOR CORRECT USE

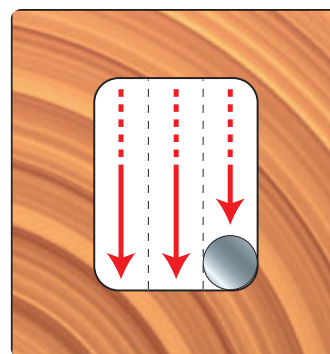
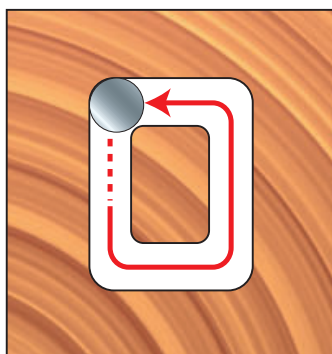


- Tools must be used and handled by experienced and trained personnel, in possession of the necessary understanding.
- A router bit with a shorter cutting height vibrates less than a router bit with the same diameter but with a longer cutting height (Fig. 1).
- Control your machine regularly (especially guides and ball bearings), making sure that there are no eccentricity problems, so as to avoid the arbor from vibrating hazardously, particularly dangerous for router bits with tips in PCD.
- Tools and tool bodies must be locked correctly, so they do not loosen during operation (Fig. 2 - 3).
- Accurately block the workpiece to the work table surface (Fig. 4).
- Respect the minimum fixing length of the shank with a preference to short chucks, with the aim of reducing eccentricity errors (Fig. 5a). For the same reason the use of extensions are generally avoided (Fig. 5b).
- To identify eccentricity defects in a router bit or a chuck: rotate the router bit by 90° in the chuck, carry out a moulding and observe the marks left on the workpiece. If they are invaried with respect to the previous moulding, then the tool is defective, if instead the marks vary, then it is possible that the error lies in the chuck.
- Screws and nuts shall be tightened using the appropriate spanners etc. and to the torque value provided by the manufacturer.
- Spanner extensions or tightening using hammer blows is strictly forbidden (see Fig. 6).
- Do not use reduction rings with a bore different to those specified by the constructor.
- Clamping surfaces must be free of dirt, grease, oil and water. Resins must be removed from tools with light alloy bodies using cleaners that do not damage the aluminium and compromise the materials mechanical features. Accurately clean the tool after every knife change.
- Tools compiling a set, must be repaired by experienced and fully trained personnel, with the knowledge of the design requirements and security levels to be reached .
- Repairing tools is allowed only in accordance to the tool manufacturer's instructions. Particular attention is drawn to the following:
 - Repair shall therefore include e. g. use of parts which are in accordance with the specification of the original parts provided by the manufacturer.
 - Tolerances which ensure correct locking shall be maintained.
- Do not exceed the maximum RPM limit marked on the tool. With too high an advancement rate, or an excessive cutting depth, there is the possibility that the tool may break.
- To avoid damaging router bits, we suggest controlling if the fixing surface of the chuck and the router bit are clean and that there are no imperfections (Fig. 7).
- To avoid dangerous kick backs, we suggest fixing a spare piece of material and moulding small parts of waste which have accumulated during the working process, by carrying out more passes (Fig. 8 - 9).
- Wearing gloves increases grip and reduces the risk of injury.
- To avoid injury, tools must be handled with care using special appliances so as to transport them without incurring injury to the user.

8

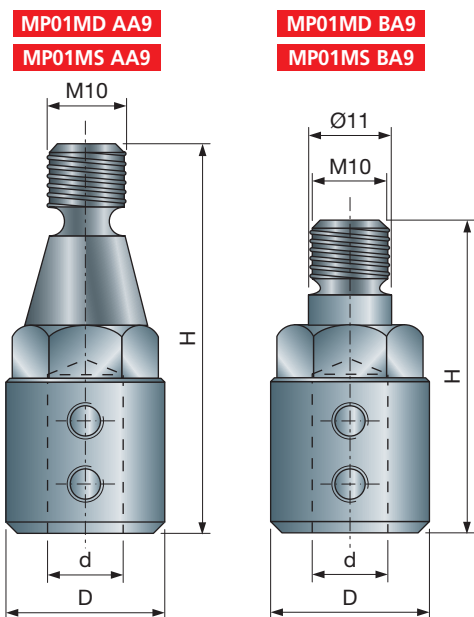


9



MP01MD MP01MS

MANDRINI PORTAPUNTE PER FORATRICI MULTIPLE CHUCKS FOR BITS FOR MULTIBORING MACHINES



D	H	d	Rotazione	Codice
mm	mm	mm	Rotation	Code
19	47	10	Dx / RH	MP01MD AA9
19	47	10	Sx / LH	MP01MS AA9

- Attacchi per foratrici: Alberti, Balestrini, Bilek, Busellato, Ompec, Reimall, Schlicher, SCM, Tanzani, Viciani, Vitap, Weingärter.
- Shanks for: Alberti, Balestrini, Bilek, Busellato, Ompec, Reimall, Schlicher, SCM, Tanzani, Viciani, Vitap, Weingärter.

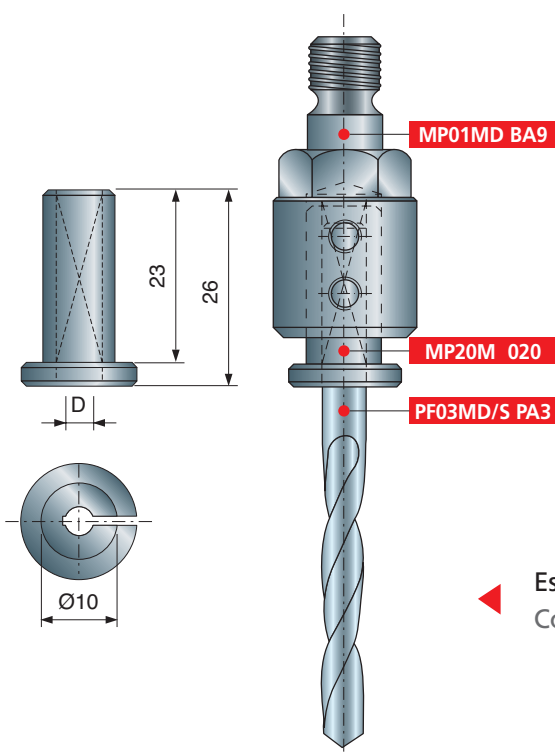
D	H	d	Rotazione	Codice
mm	mm	mm	Rotation	Code
19	41	10	Dx / RH	MP01MD BA9
19	41	10	Sx / LH	MP01MS BA9

- Attacchi per foratrici: Alberti, Balestrini, Biesse, Busellato, Gessner, Morbidelli, Torwegge, Weeke.
- Shanks for: Alberti, Balestrini, Biesse, Busellato, Gessner, Morbidelli, Torwegge, Weeke.

Parti di ricambio	Dimensioni	Codice
Spare Parts	Dimensions	Code
Vite / Screw	 M6 x 6	2615M DD9

MP20M

MANDRINI ELASTICI PER PUNTE ELICOIDALI SPRING CHUCKS FOR TWIST DRILLS



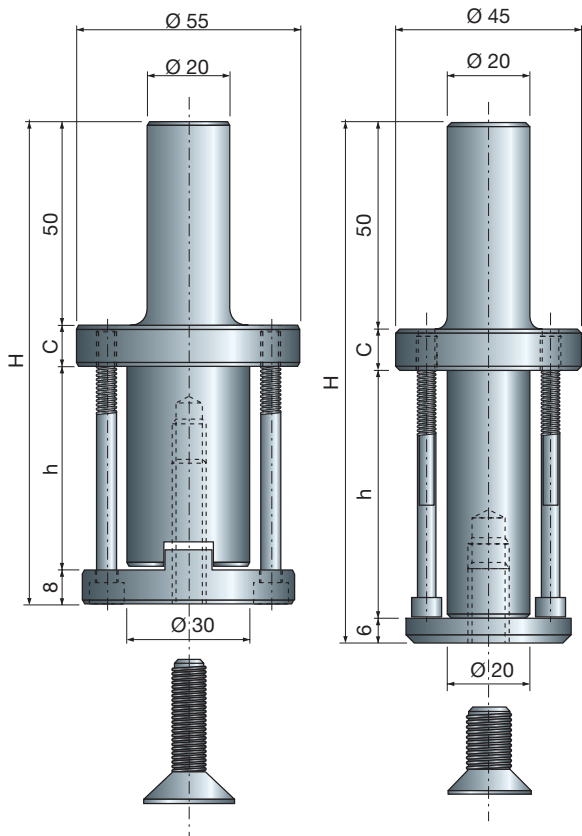
D	Codice
mm	Code
2	MP20M 020
2,5	MP20M 025
3	MP20M 030
3,2	MP20M 032
3,5	MP20M 035
4	MP20M 040
4,5	MP20M 045
5	MP20M 050
6	MP20M 060
8	MP20M 080

- Per montare punte PF03MD/S su mandrini portapunte MP01MD/S.
- Use with drill router bits PF03MD/S on chucks MP01MD/S.

◀ Esempio di accoppiamento
Combination example

AP08M

MANDRINO PORTAUTENSILI PER PANTOGRAFO CHUCK FOR OVERHEAD ROUTERS

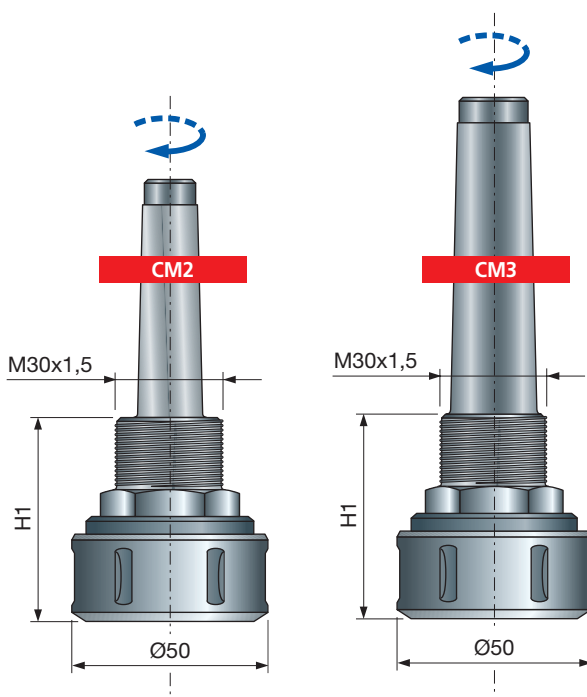


D	h	H	A	C	Codice
mm	mm	mm	mm	mm	Code
20	33	93	20x50	12	AP08M DA9
20	60	120	20x50	10	AP08M EA9
30	50	118	20x50	12	AP08M BB9

- Per pantografi manuali o CNC. Attacco $\text{\O}20 \times 50$ mm. I mandrini **AP08M DA9** ed **AP08M EA9** sono adatti per il montaggio di utensili con foro $\text{\O}20$ mm, mentre l'**AP08M BB9** per il montaggio di utensili con foro $\text{\O}30$ mm. Per l'**AP08M BB9** sono previste una ghiera anti rotazione e la sede per le viti di fissaggio degli utensili al mandrino.
- For manual or overhead CNC router machines. Shank $\text{\O}20 \times 50$ mm. The chucks **AP08M DA3** and **AP08M EA9** are suitable for mounting tools with bore $\text{\O}20$ mm, while the **AP08M BB9** for mounting tools with bore $\text{\O}30$ mm. The **AP08M BB9** includes an anti-rotation ring nut and the housing for the screws that fasten the tools to the chuck.

MP04MD

MANDRINI PORTAPINZA DI PRECISIONE - CM2 CM3 HIGH PRECISION CHUCKS - CM2 CM3

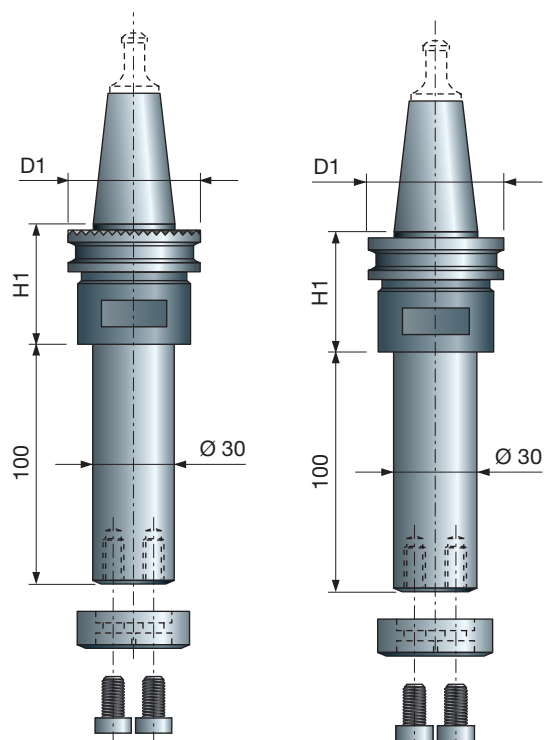


H1	Tipo	Codice
mm	Type	Code
60	CM2 Mc30	MP04MD AA9
62	CM3 Mc30	MP04MD BA9

- Per pantografi manuali o CNC.
Ghiera: ER32 Dx.
Adatti per il montaggio di punte con attacco cilindrico.
N.B.: le pinze **MP06M** non sono comprese nel mandrino.
- For manual or overhead CNC machines.
Locking ring: ER32 RH.
Ideal for router bits with cylindrical shank.
Note: Collet **MP06M** is not included.

MP05M

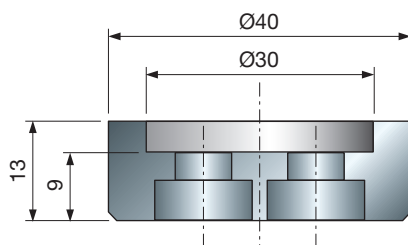
MANDRINI PORTAUTENSILI DI PRECISIONE - ISO30 CHUCKS FOR OVERHEAD ROUTERS - ISO30



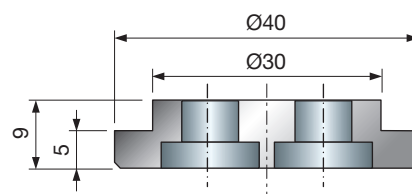
D1 mm	H1 mm	Pantografo Router	Codice Code
50	35	Universale / Universal	MP05M AA9
50	35	Biesse	MP05M AB9
46	35	CMS	MP05M AC9
58	35	Esseteam	MP05M AD9
49	55	SCM - Morbidelli	MP05M AE9

- Per pantografi manuali o CNC.
Adatti per il montaggio di utensili con foro Ø30 mm.
Per la flangia di fissaggio indicare se di tipo A o di tipo B.
N.B.: il tirante **CD01M** non è compreso nel mandrino.
- For manual or overhead CNC machines.
Ideal for tools with 30 mm bore.
Specify if flange is type A or type B.
Note: Terminal pin **CD01M** is not included.

■ Flangia tipo A / Flange type A

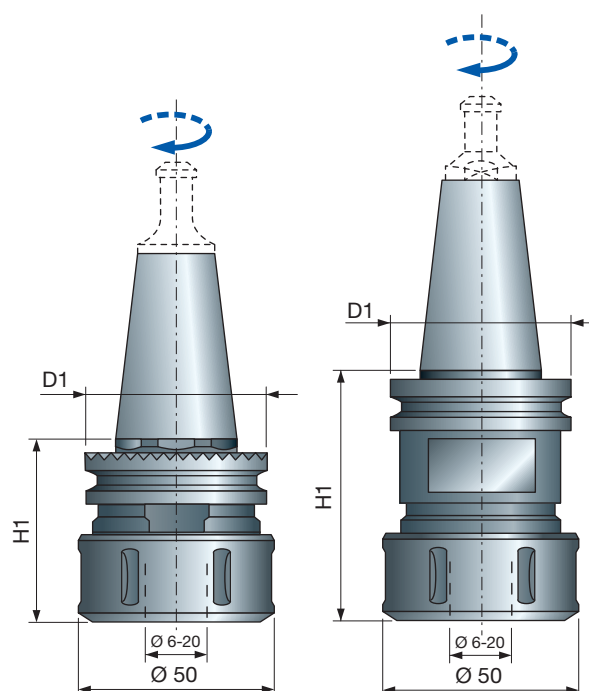


■ Flangia tipo B / Flange type B



MP06MD

MANDRINI PORTAPINZA DI PRECISIONE - ISO30 HIGH PRECISION CHUCKS - ISO30



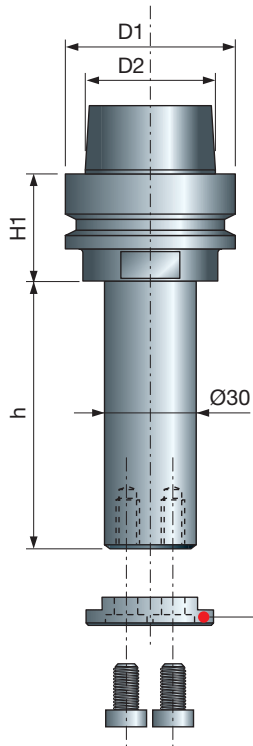
D1 mm	H1 mm	Pantografo Router	Codice Code
50	68	Universale / Universal	MP06MD AA9
50	50	Biesse	MP06MD AB9
46	60	CMS	MP06MD AC9
58	60	Esseteam	MP06MD AD9
49	55	SCM - Morbidelli	MP06MD AE9

- **Ghiera:** ER32 Dx. Per pantografi manuali o CNC.
Adatti per il montaggio di punte con attacco cilindrico.
N.B.: Il tirante **CD01M** e le pinze **MP06M** non sono compresi nel mandrino.
- **Locking ring:** ER32 RH.
For manual or overhead CNC machines.
Ideal for router bits with cylindrical shank.
Note: Terminal pin **CD01M** and collet **MP06M** are not included.

MP07M

MANDRINI PORTAUTENSILI - HSK 63 E

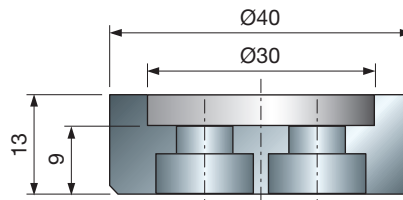
CHUCK FOR OVERHEAD ROUTERS - HSK 63 E



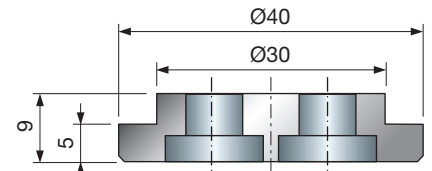
h	H1	D1	D2	Codice
mm	mm	mm	mm	Code
100	42	63	48	MP07M AA9

Mandrino per:	Codice
Chuck for:	Code
CMS, Esseteam	MP07M AA9

- Per pantografi CNC.
Adatti per il montaggio di utensili con foro Ø30 mm.
Per la flangia di fissaggio indicare se di tipo A o di tipo B.
- For overhead CNC machines.
Ideal for tools with 30 mm bore.
Specify if flange is type A or type B.



FX09M AA9 Flangia tipo A
Flange type A

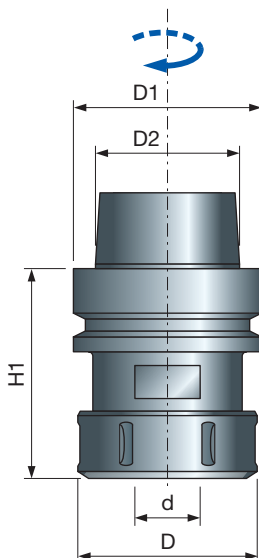


Flangia tipo B
Flange type B

MP08MD

MANDRINI PORTAPINZA - HSK 63 E

HIGH PRECISION CHUCK - HSK 63 E



H1	D	d	D1	D2	Codice
mm	mm	mm	mm	mm	Code
78	50	4-20	63	48	MP08MD AA9
78	63	6-25	63	48	MP08MD BA9

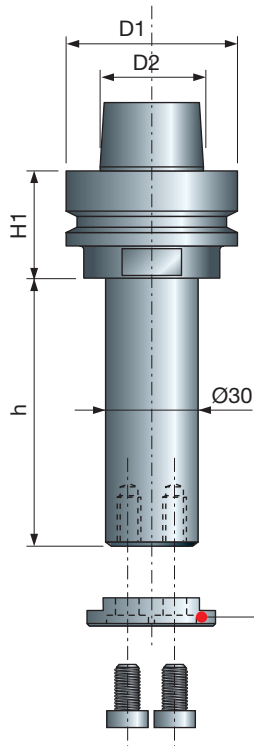
Mandrino per:	Codice
Chuck for:	Code
CMS, Esseteam	MP08MD AA9
CMS, Esseteam	MP08MD BA9

- Per pantografi CNC.
Ghiera: ER32 Dx per **MP08MD AA9** e ER40 Dx per **MP08MD BA9**.
Adatti per il montaggio di punte con attacco cilindrico.
N.B.: le pinze non sono comprese nel mandrino.
- For overhead CNC machines.
Locking ring: ER32 RH locking ring for item **MP08MD AA9** and ER40 RH for **MP08MD BA9**.
Ideal for router bits with cylindrical shank.
Note: Collet not included.

MP09M

MANDRINI PORTAUTENSILI - HSK 63 F

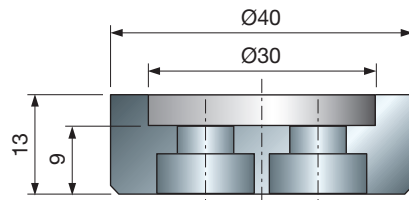
CHUCK FOR OVERHEAD ROUTERS - HSK 63 F



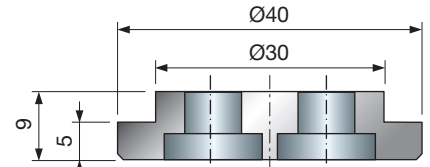
h	H1	D1	D2	Codice
mm	mm	mm	mm	Code
60	33	63	38	MP09M DA9
80	33	63	38	MP09M EA9
100	42	63	38	MP09M AA9
120	33	63	38	MP09M CA9
140	33	63	38	MP09M FA9
160	33	63	38	MP09M GA9
180	33	63	38	MP09M HA9
200	33	63	38	MP09M IA9

■ Per pantografi CNC. Adatti per il montaggio di utensili con foro Ø30 mm. La flangia di fissaggio standard fornita è di tipo **B**; su richiesta si fornisce il tipo **A**.

■ For overhead CNC machines. Ideal for tools with 30 mm bore. Standard supplied chucks are provided with the flange type **B**; the flange type **A** is supplied on demand.



FX09M AA9 Flangia tipo A
Flange type A

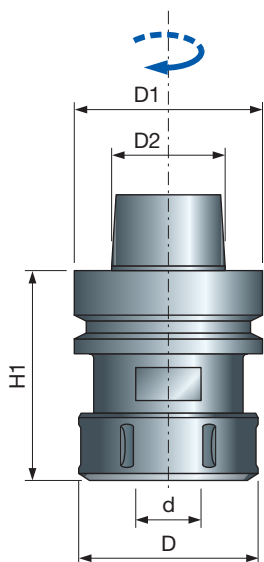


Flangia tipo B
Flange type B

MP10MD

MANDRINI PORTAPINZA - HSK 63 F

HIGH PRECISION CHUCK - HSK 63 F



H1	D	d	D1	D2	Codice
mm	mm	mm	mm	mm	Code
78	50	4-20	63	38	MP10MD AA9
78	63	6-25	63	38	MP10MD BA9

Mandrino per:	Codice
Chuck for:	Code
SCM, Biesse, Masterwood, Essetre, Maka, Ima, Homag, Weeke	MP10MD AA9
SCM, Biesse, Masterwood, Essetre, Maka, Ima, Homag, Weeke	MP10MD BA9

■ Per pantografi CNC.

Ghiera: ER32 Dx per **MP10MD AA9** e ER40 Dx per **MP10MD BA9**.

Adatti per il montaggio di punte con attacco cilindrico.

N.B.: le pinze non sono comprese nel mandrino.

■ For overhead CNC machines.

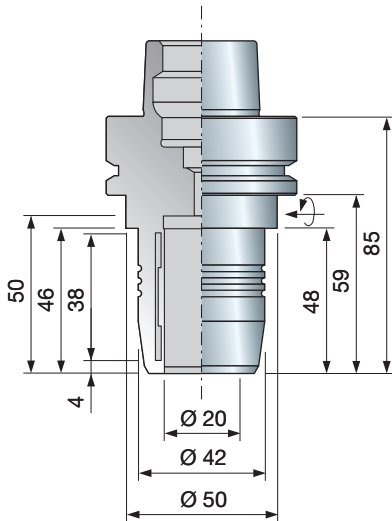
Locking ring: ER32 RH locking ring for item **MP10MD AA9** and ER40 RH for **MP10MD BA9**.

Ideal for router bits with cylindrical shank.

Note: Collet not included.

MP22M

MANDRINI AD ESPANSIONE IDRAULICA - TENDO SDF HSK-F 63 Ø 20 HYDRAULIC EXPANSION CHUCKS - TENDO SDF HSK-F 63 Ø 20



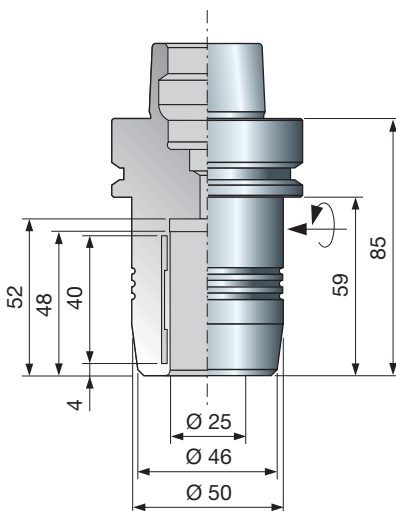
- I marchi TENDO e TRIBOS sono di proprietà di SCHUNK.
- TENDO and TRIBOS are marks owned by SCHUNK.

D	D1	D2	L	L1(max)	L2	L3	Codice
mm	mm	mm	mm	mm	mm	mm	Code
20	42	50	85	50	48	59	MP22M AA9

- Mandrini dotati di una tecnologia ad espansione idraulica tipo "TENDO", utile per il serraggio di utensili con gambo senza necessità di dispositivi periferici. Questa tecnologia permette:
 - Lavorazioni ad alta velocità.
 - Massima precisione di rotazione centrica (0,003mm) e posizionamento.
 - Elevato assorbimento delle vibrazioni e quindi una migliore qualità della lavorazione.
 - Maggior durata dell'utensile.
- Chucks equipped with a hydraulic expansion system known as "TENDO", useful for fastening tools with a shank without the need of peripheral devices. This technology allows:
 - High speed working.
 - Maximum centre rotation (0.003mm) and positioning.
 - High absorption of vibrations for greater quality of working.
 - Longer tool life.

MP23M

MANDRINI AD ESPANSIONE IDRAULICA - TENDO SDF HSK-F 63 Ø 25 HYDRAULIC EXPANSION CHUCKS - TENDO SDF HSK-F 63 Ø 25



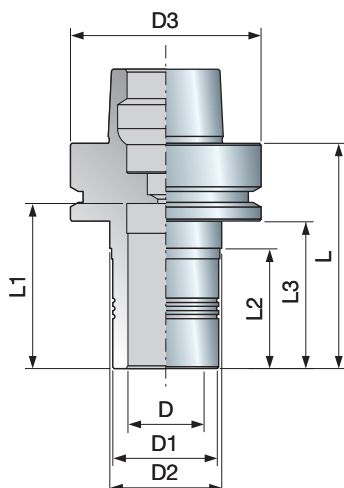
- I marchi TENDO e TRIBOS sono di proprietà di SCHUNK.
- TENDO and TRIBOS are marks owned by SCHUNK.

D	D1	D2	L	L1(max)	L2	L3	Codice
mm	mm	mm	mm	mm	mm	mm	Code
25	46	50	85	52	59	59	MP23M AA9

- Mandrini dotati di una tecnologia ad espansione idraulica tipo "TENDO", utile per il serraggio di utensili con gambo senza necessità di dispositivi periferici. Questa tecnologia permette:
 - Lavorazioni ad alta velocità.
 - Massima precisione di rotazione centrica (0,003mm) e posizionamento.
 - Elevato assorbimento delle vibrazioni e quindi una migliore qualità della lavorazione.
 - Maggior durata dell'utensile.
- Chucks equipped with a hydraulic expansion system known as "TENDO", useful for fastening tools with a shank without the need of peripheral devices. This technology allows:
 - High speed working.
 - Maximum centre rotation (0.003mm) and positioning.
 - High absorption of vibrations for greater quality of working.
 - Longer tool life.

MP24M

MANDRINI A SERRAGGIO POLIGONALE - TRIBOS SPF-S HSK-F 63 CHUCKS WITH POLYGON FASTENING - TRIBOS SPF-S HSK-F 63



D	D1	D2	D3	L	L1(max)	L2	L3	Codice
mm	mm	mm	mm	mm	mm	mm	mm	Code
12	19	21	63	75	48	45	49	MP24M AA9
20	30	32	63	75	52	45	49	MP24M CA9

Altri accessori	Dimensioni	Codice
Further accessories	Dimensions	Code
Dispositivo di serraggio / Clamping device	300 x 370	MP26M AA9
Inseri di riduzione / Reduction inserts	12 x ø88 x 45	MP25M 129
Inseri di riduzione / Reduction inserts	20 x ø88 x 45	MP25M 209

■ I marchi TENDO e TRIBOS sono di proprietà di SCHUNK.

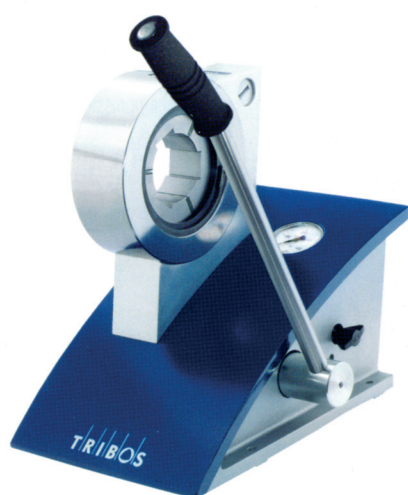
■ TENDO and TRIBOS are marks owned by SCHUNK.

■ I mandrini TRIBOS sono dotati di un sistema di serraggio a camere riempite con materia plastica termoindurente con effetto antivibrante. Questa tecnologia prolunga la durata dell'utensile e migliora la qualità della lavorazione. L'aumento del diametro esterno, con la sua particolare struttura reticolare, aumenta la resistenza contro le forze radiali, rendendo questi articoli ideali per lavorazioni di sgrossatura con forze radiali elevate.

■ The TRIBOS chucks are equipped with a tightening system with chambers filled with thermosetting plastic material with anti-vibration effect. This system increase the tool's life and allows a better finishing. The increase of the external diameter, with its unique reticular structure increases resistance to radial forces, making these items perfect for roughing work with high radial forces.

MP26M

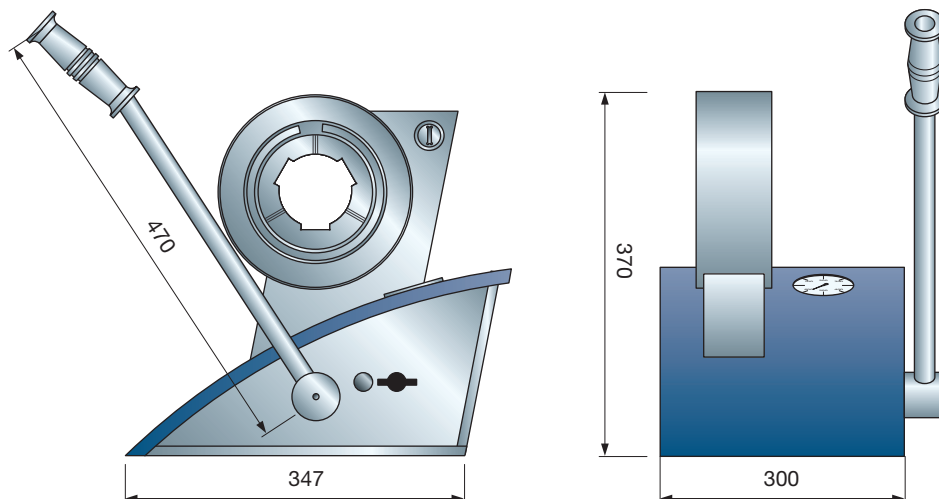
DISPOSITIVO DI SERRAGGIO TRIBOS SVP-2 CLAMPING DEVICE TRIBOS SVP-2



L	H	P	Peso (kg)	Codice
mm	mm	mm	Weight (kg)	Code
300	370	347	29,5	MP26M AA9

■ Dispositivi per il serraggio e lo sbloccaggio del mandrino porta utensili. Esecuzione con pompa manuale per un azionamento veloce e per un cambio frequente di utensile TRIBOS con SVP-2.

■ Device for clamping and releasing the TRIBOS toolholders in SVP-2. Design with manual pump for quick actuation and for frequent tool changes.

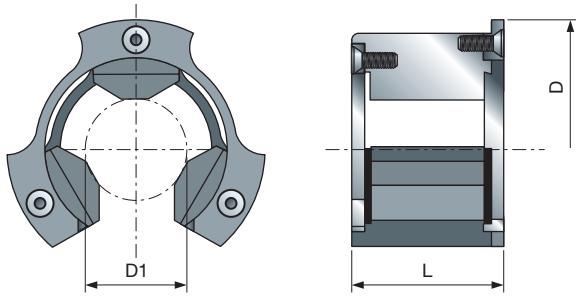


■ I marchi TENDO e TRIBOS sono di proprietà di SCHUNK.

■ TENDO and TRIBOS are marks owned by SCHUNK.

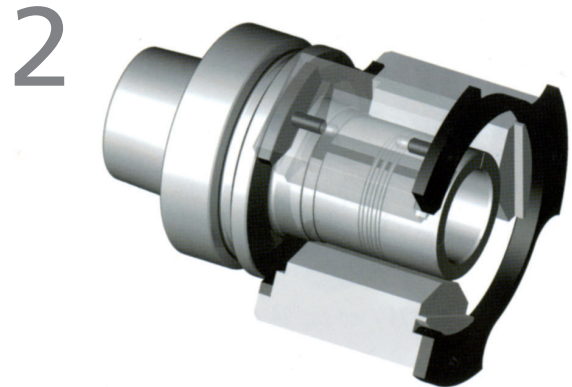
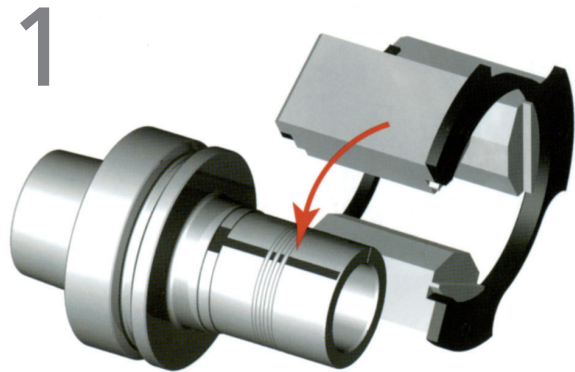
MP25M

INSERTI DI RIDUZIONE PER DISPOSITIVO DI SERRAGGIO TRIBOS REDUCTION INSERTS FOR TRIBOS CLAMPING DEVICE



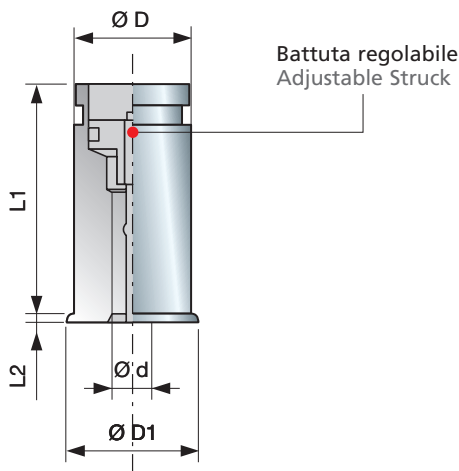
A	D	D1	L	Codice
mm	mm	mm	mm	Code
12	88	19	45	MP25M 129
20	88	30	45	MP25M 209

- I marchi TENDO e TRIBOS sono di proprietà di SCHUNK.
- TENDO and TRIBOS are marks owned by SCHUNK.



MP21M

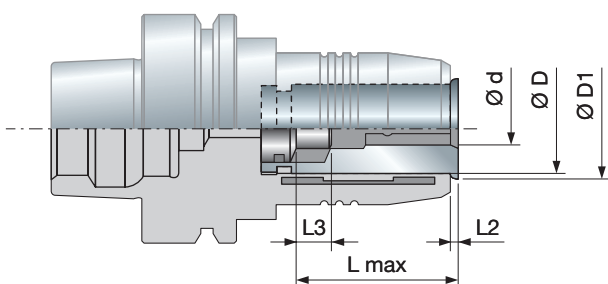
BUSSE DI RIDUZIONE DEL DIAMETRO DI SERRAGGIO GZB-S GZB-S BUSHES FOR THE REDUCTION OF TIGHTENING DIAMETER



D	d	D1	L1	L2	L (max)	L3	Codice
mm	mm	mm	mm	mm	mm	mm	Code
20	3	29	50,5	2	28,5	10	MP21M 039
20	4	29	50,5	2	28,5	10	MP21M 049
20	5	29	50,5	2	28,5	10	MP21M 059
20	6	29	50,5	2	28,5	10	MP21M 069
20	8	29	50,5	2	37,5	10	MP21M 089
20	10	29	50,5	2	42,5	10	MP21M 109
20	12	29	50,5	2	47,5	10	MP21M 129
20	14	29	50,5	2	47,5	10	MP21M 149
20	16	29	50,5	2	47,5	10	MP21M 169

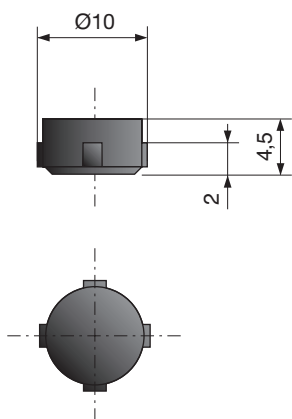
- Adatte a tutti i tipi di mandrini ad espansione idraulica TENDO con diametro di serraggio di 20 mm. Bussola di riduzione con arresto regolabile. La tenuta stagna del refrigerante e la coppia massima si ottiene solamente con la massima profondità di serraggio. Senza passaggio periferico del refrigerante, collare chiuso, a tenuta stagna fino a max 80 bar. I marchi TENDO e TRIBOS sono di proprietà di SCHUNK.

- Suitable for all types of TENDO hydraulic expansion chucks with tightening diameter of 20 mm. Reduction bushing with adjustable stop. The seal of the coolant and maximum torque can be obtained only by tightening all the way down. Without peripheral passage of coolant, collar closed, sealed up to 80 bar. TENDO and TRIBOS are marks owned by SCHUNK.



MC01M

MICROCHIP DI CODIFICA PER UTENSILI INTELLIGENTI ENCODING MICROCHIP FOR SMART TOOLS



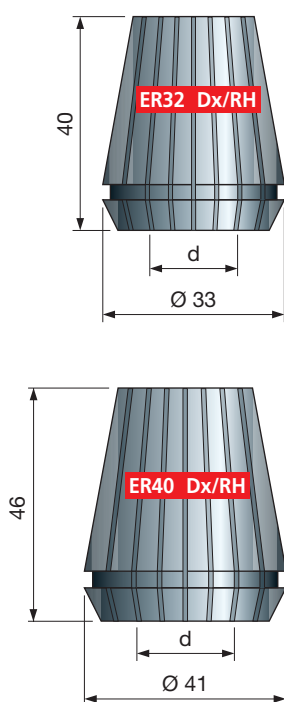
D	H	h	Codice
mm	mm	mm	Code
10	4,5	2	MC01M 010

- Per l'applicazione su macchine predisposte alla lettura e scrittura di dati per il riconoscimento dell'utensile. Di forma circolare, ha una capacità di memoria pari a 511 byte. In fase di lavoro resiste a temperature che vanno da 0° a + 70°; in fase di memorizzazione da - 20° a + 80°.
- Suitable for machines set up to read and write data for tool recognition. Circular in shape, it has storage capacity of 511 bytes. During operation it withstands temperatures from 0° to + 70° and from - 20° to + 80° during memorization.

MP06M MP16M

PINZE DI PRECISIONE PER GHIERE ER32 Dx E ER40 Dx

HIGH PRECISION COLLET FOR ER32 RH AND ER40 RH LOCKING RINGS



d	H	Ghiera	Codice
mm	mm	Locking ring	Code
4	40	ER32 Dx/RH	MP06M 049
6	40	ER32 Dx/RH	MP06M 069
8	40	ER32 Dx/RH	MP06M 089
10	40	ER32 Dx/RH	MP06M 109
12	40	ER32 Dx/RH	MP06M 129
14	40	ER32 Dx/RH	MP06M 149
16	40	ER32 Dx/RH	MP06M 169
18	40	ER32 Dx/RH	MP06M 189
20	40	ER32 Dx/RH	MP06M 209

d	H	Ghiera	Codice
mm	mm	Locking ring	Code
6	46	ER40 Dx/RH	MP16M 069
8	46	ER40 Dx/RH	MP16M 089
10	46	ER40 Dx/RH	MP16M 109
12	46	ER40 Dx/RH	MP16M 129
14	46	ER40 Dx/RH	MP16M 149
16	46	ER40 Dx/RH	MP16M 169
18	46	ER40 Dx/RH	MP16M 189
20	46	ER40 Dx/RH	MP16M 209
25	46	ER40 Dx/RH	MP16M 259

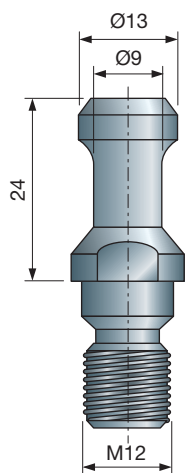
- Adatte all'utilizzo con punte con attacco cilindrico. Le pinze **MP06M** vanno montate su mandrini **MP04MD**, **MP06MD**, **MP08MD AA9** e **MP10MD AA9**. Le pinze **MP16M** vanno montate su mandrini **MP08MD BA9** e **MP10MD BA9**.
- Collets **MP06M** are to be mounted on **MP04MD**, **MP06MD**, **MP08MD AA9** and **MP10MD AA9** chucks. Collets **MP16M** are to be mounted on **MP08MD BA9** and **MP10MD BA9** chucks.

CD01M

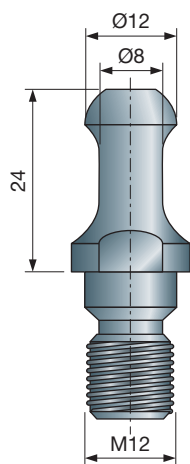
TIRANTI PER MANDRINI ISO30

TERMINAL PINS FOR CHUCKS ISO30

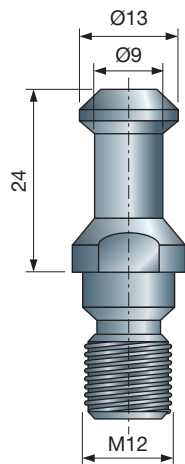
Per pantografi: For routers:	Codice Code
CMS	CD01M AA9
Biesse, Bulleri, Lari&Lari, Masterwood	CD01M BA9
Alberti, Masterwood	CD01M CA9
SCM, Morbidelli	CD01M DA9
Bulleri, Busellato, IMA, Weeke, Maka, Esseteam	CD01M EA9



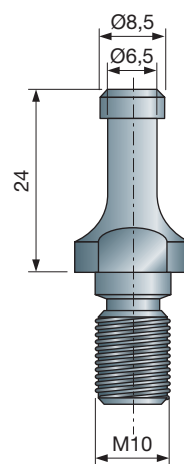
CD01M AA9



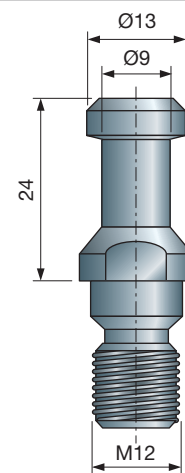
CD01M BA9



CD01M CA9



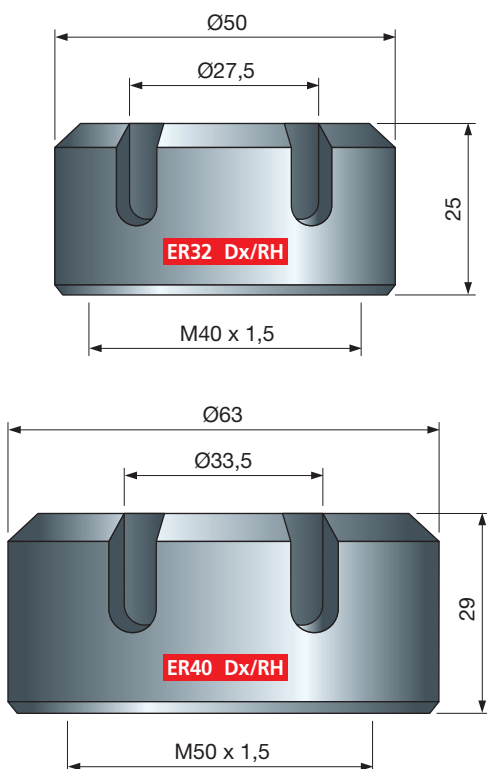
CD01M DA9



CD01M EA9

GH32M GH40M

GHIERE A SFERA AD ALTA PRECISIONE HIGH PRECISION LOCKING RING



D	H	Ghiera	Codice
mm	mm	Locking ring	Code
50	25	ER32 Dx/RH	GH32M AA9

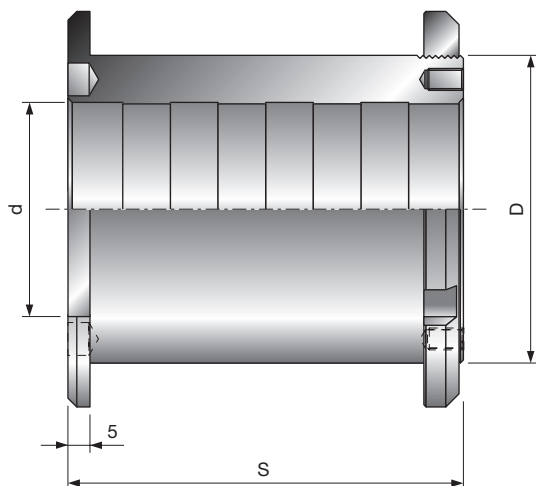
- Adottando la ghiera **GH32M AA9** a sfere, è possibile utilizzare un solo tipo di mandrino sia per lavorazioni Dx che Sx, con un notevole vantaggio economico. Gli errori di eccentricità creati al momento del montaggio vengono eliminati, migliorando così la resa degli utensili in termini di maggiore durata e migliore finitura. Per mandrini portapinze universali, con pinze tipo **MP06M**.
- Applying locking ring **GH32M AA9**, allows you to use one type of chuck for both right and left hand workings, with a notable reduction in cost. Certain errors during mounting are eliminated, improving the tools' performance and with a longer duration and better finish. The locking ring is adapted for universal high precision chucks with **MP06M** collet.

D	H	Ghiera	Codice
mm	mm	Locking ring	Code
63	29	ER40 Dx/RH	GH40M AA9

- Adottando la ghiera **GH40M AA9** a sfere, è possibile utilizzare un solo tipo di mandrino sia per lavorazioni Dx che Sx, con un notevole vantaggio economico. Gli errori di eccentricità creati al momento del montaggio vengono eliminati, migliorando così la resa degli utensili, in termini di maggiore durata e migliore finitura. Per mandrini portapinze universali ISO30 (eccetto HSK), con pinze tipo **MP16M**.
- Applying locking ring **GH40M AA9**, allows you to use one type of chuck for both right and left hand workings, with a notable reduction in cost. Certain errors during mounting are eliminated, improving the tools' performance and with a longer duration and better finish. The locking ring is adapted for universal high precision ISO30 chucks (except HSK) with **MP16M** collet.

BF10MD BF10MS

BUSSOLE DI FISSAGGIO SLEEVES WITH LOCKING NUT

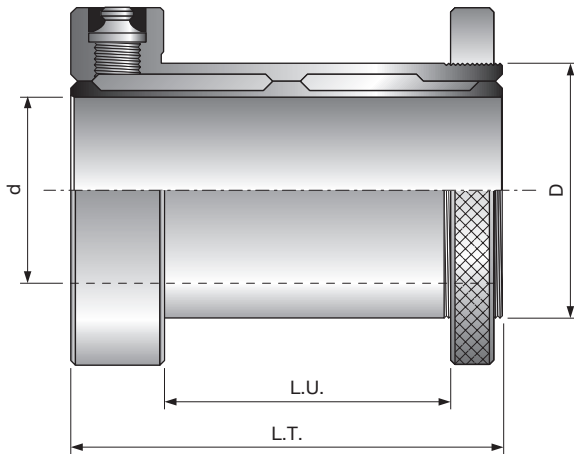


- * Bussole con fori per spine.
- * Item already fitted with pin holes.

D	S	d	Codice
mm	mm	mm	Code
50	60	35	BF10MD AG9
50	110	30	BF10MD AA9
50	110	35	BF10MD AB9
50	110	40	BF10MD AC9
50	130	30	BF10MD AD9
50	130	35	BF10MD AE9
50	130	40	BF10MD AF9
55	110	35	BF10MD BA9
55	110	40	BF10MD BB9
55	130	35	BF10MD BC9
55	130	40	BF10MD BD9
60	85	35	BF10MD KB9
60	85	40	BF10MD KC9
60	85	50	BF10MD KD9
60	90	35	BF10MD DB9
60	90	40	BF10MD DC9
60	90	50	BF10MD DD9
60	110	35	BF10MD CB9
60	110	40	BF10MD CC9
60	110	50	BF10MD CD9
70	40	50	BF10MD QD9*
70	45	50	BF10MD PD9*
70	50	50	BF10MD OD9*
70	55	50	BF10MD ND9*
70	60	50	BF10MD MD9*
70	65	50	BF10MD ID9*
70	70	50	BF10MD GD9*
70	75	30	BF10MD LA9
70	75	40	BF10MD LC9
70	75	50	BF10MD LD9*
70	80	50	BF10MD FD9*
70	85	35	BF10MD HB9
70	85	40	BF10MD HC9
70	85	50	BF10MD HD9*
70	90	35	BF10MD EB9
70	90	40	BF10MD EC9
70	90	50	BF10MD ED9*
50	110	30	BF10MS AA9
50	110	35	BF10MS AB9
50	110	40	BF10MS AC9
50	130	30	BF10MS AD9
50	130	40	BF10MS AF9
55	110	35	BF10MS BA9
55	130	35	BF10MS BC9
55	130	40	BF10MS BD9
60	90	40	BF10MS DC9
70	40	50	BF10MS QD9*
70	45	50	BF10MS PD9*
70	50	50	BF10MS OD9*
70	55	50	BF10MS ND9*
70	60	50	BF10MS MD9*
70	65	50	BF10MS ID9*
70	70	50	BF10MS GD9*
70	75	50	BF10MS LD9*
70	80	50	BF10MS FD9*
70	85	30	BF10MS HA9
70	85	50	BF10MS HD9*
70	90	35	BF10MS EB9
70	90	40	BF10MS EC9
70	90	50	BF10MS ED9*

BS05M

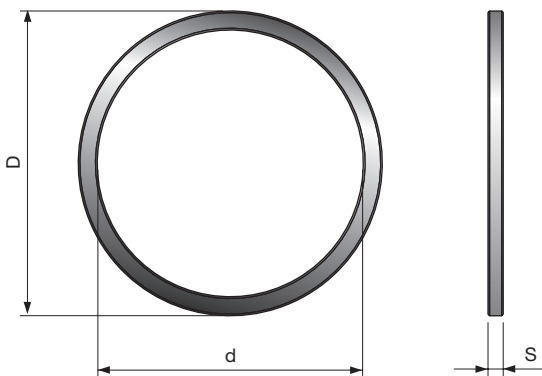
BUSSOLE DI FISSAGGIO AD ESPANSIONE IDRAULICA STANDARD HYDRAULIC CLAMPING SLEEVES



D	L.U.	d	L.T.	Codice
mm	mm	mm	mm	Code
60	80	40	115	BS05M CDE
60	105	40	140	BS05M CFE
60	130	40	165	BS05M CGE
60	80	50	115	BS05M CDI
60	105	50	140	BS05M CFI
60	155	50	190	BS05M CII
60	195	50	230	BS05M CMI

BL15M BL20M

BUSSOLE DI RIDUZIONE RETTIFICATE PER LAME CIRCOLARI STANDARD REDUCTION RINGS FOR SAWBLADES



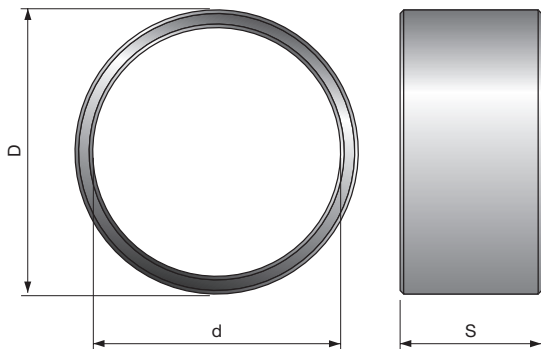
D	S	d	Codice
mm	mm	mm	Code
20	1,5	12,7	BL15M20127
20	1,5	16	BL15M20160
30	1,5	15,8	BL15M30158
30	1,5	16	BL15M30160
30	1,5	18	BL15M30180
30	1,5	20	BL15M30200
30	1,5	25	BL15M30250
35	1,5	16	BL15M35160
35	1,5	25	BL15M35250
35	1,5	30	BL15M35300

D	S	d	Codice
mm	mm	mm	Code
30	2	15,8	BL20M30158
30	2	16	BL20M30160
30	2	20	BL20M30200
30	2	22	BL20M30220
30	2	25	BL20M30250
30	2	25,4	BL20M30254
32	2	20	BL20M32200
32	2	22	BL20M32220
32	2	30	BL20M32300
35	2	20	BL20M35200
35	2	25	BL20M35250
35	2	25,4	BL20M35254
35	2	30	BL20M35300
40	2	25,4	BL20M40254
40	2	35	BL20M40350

BF01M

BUSSELE DI RIDUZIONE RETTIFICATE

STANDARD REDUCTION RINGS FOR CUTTERHEADS

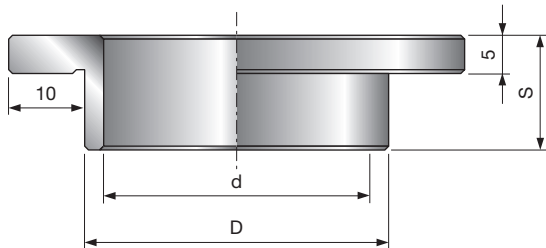


D	S	d	Codice
mm	mm	mm	Code
35	5	30	BF01M AA9
35	10	30	BF01M AB9
35	15	30	BF01M AC9
35	20	30	BF01M AD9
35	25	30	BF01M AE9
35	50	30	BF01M AF9
40	5	35	BF01M BA9
40	10	35	BF01M BB9
40	15	35	BF01M BC9
40	20	35	BF01M BD9
40	25	35	BF01M BE9
40	50	35	BF01M BF9

FX01M

BUSSELE DI RIDUZIONE CON SPALLAMENTO

REDUCING BUSHES

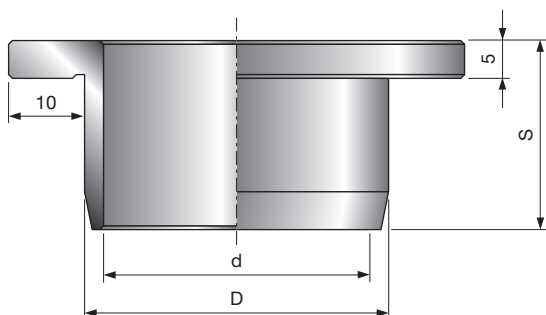


D	S	d	Codice
mm	mm	mm	Code
30	15	25	FX01M AA9
35	15	30	FX01M BA9
40	15	30	FX01M CA9
40	15	35	FX01M CB9
50	15	30	FX01M DA9
50	15	35	FX01M DB9
50	15	40	FX01M DC9

FX02M

BUSSELE DI RIDUZIONE CON SPALLAMENTO

REDUCING BUSHES



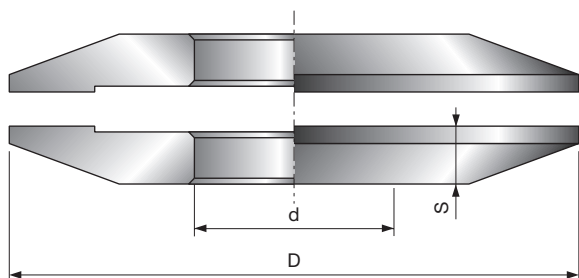
D	S	d	Codice
mm	mm	mm	Code
40	25	35	FX02M CB9

- Per teste portacoltelli TM06M e TM07M.
- For cutterheads TM06M and TM07M.

FX03M

FLANGE DI FISSAGGIO

STIFFENING COLLARS FOR SAWBLADES

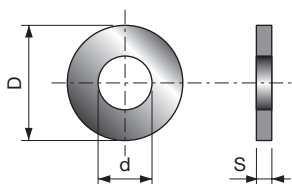


D	S	d	Codice
mm	mm	mm	Code
80	10	30	FX03M AA9
80	10	35	FX03M AB9
100	10	30	FX03M BA9
100	10	35	FX03M BB9
100	10	40	FX03M BC9
125	10	30	FX03M CA9
125	10	35	FX03M CB9

ST07M

ANELLI DISTANZIALI PER INSERTI

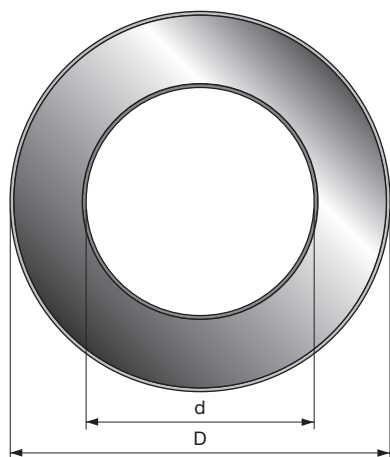
SPACERS FOR INSERTS



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mm	mm	mm	Code
13,6	0,1	7	ST07M 019
13,6	0,2	7	ST07M 029
13,6	0,5	7	ST07M 059
15	1	7	ST07M 109
15	2	7	ST07M 209

AN01M

ANELLI DISTANZIALI SPACERS



D	S	d	Codice
mm	mm	mm	Code
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30	0,2	20	AN01MG0029
30	0,3	20	AN01MG0039
30	0,5	20	AN01MG0059
30	1	20	AN01MG0109
30	3	20	AN01MG0309
30	6	20	AN01MG0609
30	10	20	AN01MG1009
33	0,1	19,05	AN01ML0019
33	0,2	19,05	AN01ML0029
33	0,3	19,05	AN01ML0039
33	0,5	19,05	AN01ML0059
33	1	19,05	AN01ML0109
33	3,6	19,05	AN01ML0369
33	6,8	19,05	AN01ML0689
33	7,3	19,05	AN01ML0739
48	0,1	31,75	AN01MM0019
48	0,2	31,75	AN01MM0029
48	0,3	31,75	AN01MM0039
48	0,5	31,75	AN01MM0059
48	1	31,75	AN01MM0109
48	3,2	31,75	AN01MM0329
48	3,6	31,75	AN01MM0369
48	4	31,75	AN01MM0409
48	5,5	31,75	AN01MM0559
48	6,8	31,75	AN01MM0689
48	7,3	31,75	AN01MM0739
48	8,05	31,75	AN01MM0809
48	8,35	31,75	AN01MM0839
48	8,35	31,75	AN01MM0849
48	9,4	31,75	AN01MM0949
48	24,6	31,75	AN01MM2469
48	99	31,75	AN01MM9909
50	0,1	30	AN01MA0019
50	0,2	30	AN01MA0029
50	0,3	30	AN01MA0039
50	0,5	30	AN01MA0059
50	1	30	AN01MA0109
50	2	30	AN01MA0209
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50	8	30	AN01MA0809
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50	16	30	AN01MA1609
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50	18	30	AN01MA1809
50	19	30	AN01MA1909
50	20	30	AN01MA2009
50	21	30	AN01MA2109

D	S	d	Codice
mm	mm	mm	Code
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50	24	30	AN01MA2409
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50	26	30	AN01MA2609
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50	36	30	AN01MA3609
50	37	30	AN01MA3709
50	38	30	AN01MA3809
50	40	30	AN01MA4009
50	41	30	AN01MA4109
50	42	30	AN01MA4209
50	53	30	AN01MA5309
50	60	30	AN01MA6009
50	93	30	AN01MA9309
50	99	30	AN01MA9909
55	0,1	35	AN01MB0019
55	0,2	35	AN01MB0029
55	0,3	35	AN01MB0039
55	0,5	35	AN01MB0059
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D	S	d	Codice
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55	32	35	AN01MB3209
55	33	35	AN01MB3309
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55	35	35	AN01MB3509
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55	99	35	AN01MB9909
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60	0,2	40	AN01MC0029
60	0,3	40	AN01MC0039
60	0,5	40	AN01MC0059
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60	2	40	AN01MC0209
60	3	40	AN01MC0309
60	4	40	AN01MC0409
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60	19	40	AN01MC1909
60	20	40	AN01MC2009
60	21	40	AN01MC2109
60	22	40	AN01MC2209
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60	99	40	AN01MC9909
70	0,1	50	AN01MD0019
70	0,2	50	AN01MD0029
70	0,3	50	AN01MD0039
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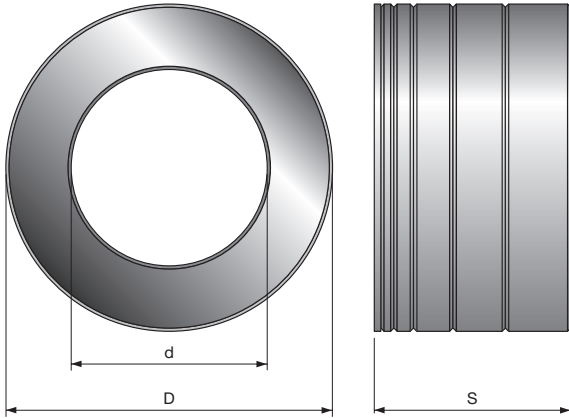
D	S	d	Codice
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70	19	50	AN01MD1909
70	20	50	AN01MD2009
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70	99	50	AN01MD9909
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80	0,2	60	AN01MK0029
80	0,3	60	AN01MK0039
80	0,5	60	AN01MK0059
80	1	60	AN01MK0109
80	2	60	AN01MK0209
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80	20	60	AN01MK2009
80	21	60	AN01MK2109

D	S	d	Codice
mm	mm	mm	Code
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80	23	60	AN01MK2309
80	24	60	AN01MK2409
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80	40	60	AN01MK4009
80	99	60	AN01MK9909
90	0,1	70	AN01MH0019
90	0,2	70	AN01MH0029
90	0,3	70	AN01MH0039
90	0,5	70	AN01MH0059
90	1	70	AN01MH0109
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AN03M

SERIE DI ANELLI DISTANZIALI STANDARD

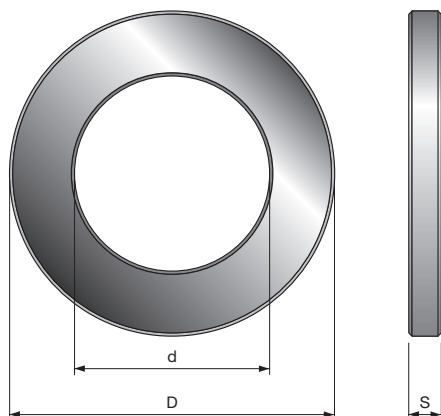
STANDARD SPACER SET



D mm	S mm	d mm	Codice Code
50	10	30	AN03M AA9
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50	30	30	AN03M AC9
50	40	30	AN03M AD9
50	50	30	AN03M AE9
55	10	35	AN03M BA9
55	20	35	AN03M BB9
55	30	35	AN03M BC9
55	40	35	AN03M BD9
55	50	35	AN03M BE9
60	10	40	AN03M CA9
60	20	40	AN03M CB9
60	30	40	AN03M CC9
60	40	40	AN03M CD9
60	50	40	AN03M CE9
70	10	50	AN03M DA9
70	20	50	AN03M DB9
70	30	50	AN03M DC9
70	40	50	AN03M DD9
70	50	50	AN03M DE9
80	10	60	AN03M EA9
80	20	60	AN03M EB9
80	30	60	AN03M EC9
80	40	60	AN03M ED9
80	50	60	AN03M EE9
90	10	70	AN03M FA9
90	20	70	AN03M FB9
90	30	70	AN03M FC9
90	40	70	AN03M FD9
90	50	70	AN03M FE9

AN01

ANELLI DISTANZIALI SPECIALI SPECIAL SPACERS



D mm	S mm	d mm	Codice Code
	5	30 ÷ 40	
	10	30 ÷ 40	
	20	30 ÷ 40	
	40	30 ÷ 40	
	99	30 ÷ 40	
	5	50 ÷ 70	
	10	50 ÷ 70	
	20	50 ÷ 70	
	40	50 ÷ 70	
	99	50 ÷ 70	

■ Non si producono anelli distanziali speciali con spessore inferiore a 1 mm.

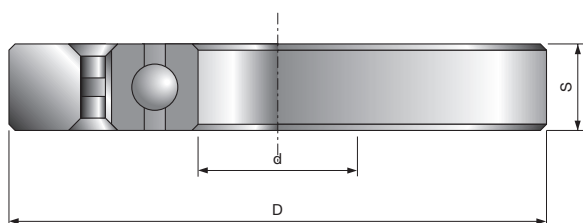
N.B.: Il codice è puramente indicativo e vale solo come proposta d'ordine.

■ Spacer rings are not produced with a thickness of less than 1 mm.

Note: The code is only guideline and is only applicable while order is being processed.

CC01

CUSCINETTI DI CONTROGUIDA PER CONTORNARE BALL-BEARING GUIDE FOR MOULDING



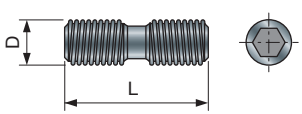
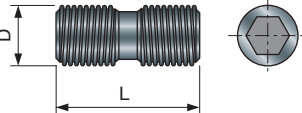
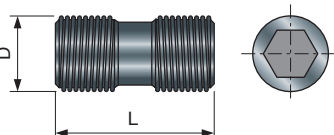
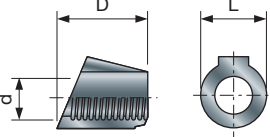
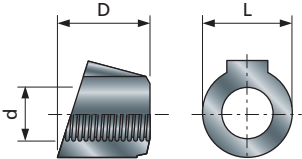
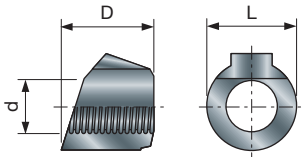
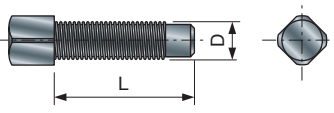
D mm	S mm	d mm	Codice Code
	12	20	CC01 AA9
	12	25	CC01 BA9
	13	30	CC01 CA9
	14	35	CC01 DA9
	15	40	CC01 EA9
	16	45	CC01 FA9
	16	50	CC01 GA9
	18	55	CC01 HA9
	18	60	CC01 IA9
	20	70	CC01 LA9

■ **N.B.:** Il codice è puramente indicativo e vale solo come proposta d'ordine.

■ **Note:** The code is only guideline and is only applicable while order is being processed.

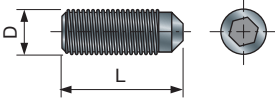
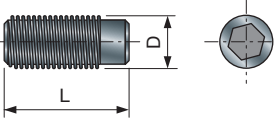
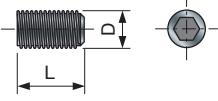
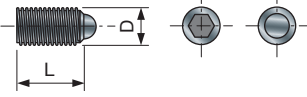
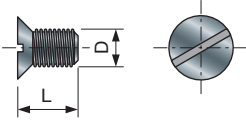
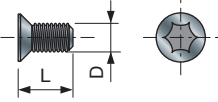
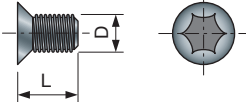
VITI, OGIVE, RONDELLE, GHIERE E CHIAVI DI RICAMBIO

SPARE SCREWS, NUTS, WASHERS AND KEYS

	Descrizione Description	Dimensioni / Dimensions D/L x L/H x d/S (mm)	Codice Code
	Viti Dx-Sx per bloccaggio cunei RH-LH wedge locking screws	M6 x 18 M6 x 22	VT19M IA9 VT19M AB9
	Viti Dx-Sx per bloccaggio cunei RH-LH wedge locking screws	M8 x 19 M8 x 22	VT19M LA9 VT19M BB9
	Viti Dx-Sx per bloccaggio cunei RH-LH wedge locking screws	M10 x 19 M10 x 22	VT19M MB9 VT19M MA9
	Ogive per viti Dx-Sx VT19M AB9 - IA9 Nuts for RH-LH VT19M AB9 - IA9 screws	10 x 11,5 x M6 9 x 10,5 x M6	VT20M AA9 VT20M GA9
	Ogive per viti Dx-Sx VT19M MA9 - MB9 Nuts for RH-LH VT19M MA9 - MB9 screws	15 x 13,3 x M10	VT20M MA9
	Ogive ribassate per viti Dx Sx VT19M MA9 - MB9 Reduced nuts for RH-LH VT19M MA9 - MB9 screws	15 x 13,3 x M10	VT20M NA9
	Viti a testa quadra per coltelli reversibili Square head screws for disposable knives	M5 x 19	VT11M AA9

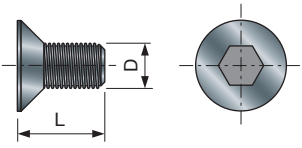
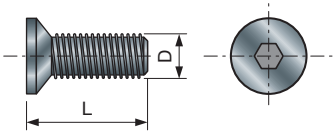
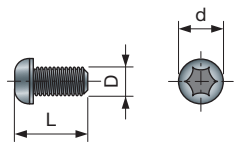
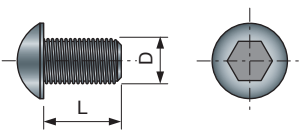
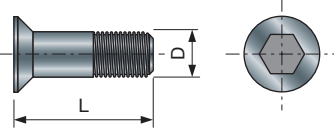
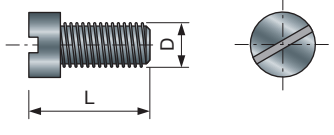
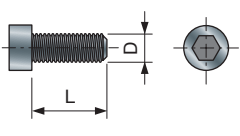
VITI, OGIVE, RONDELLE, GHIERE E CHIAVI DI RICAMBIO

SPARE SCREWS, NUTS, WASHERS AND KEYS

	Descrizione Description	Dimensioni / Dimensions D/L x L/H x d/S (mm)	Codice Code
	Viti con esagono incassato per coltelli reversibili Hex print screws for disposable knives	M6 x 16	VT03M DI9
		M8 x 16	VT03M AA9
		M6 x 12	VT03M DL9
	Viti con esagono incassato per coltelli reversibili Hex print screws for disposable knives	M4 x 10	2602M CB9
		M5 x 12	VT03M BA9
		M5 x 16	VT03M BB9
		M8 x 16	2602M BB9
		M8 x 25	2602M EI9
		M10 x 18	VT03M CC9
		M10 x 25	2602M FI9
	Viti con esagono incassato Hex print screws	M3 x 3	2615M AA9
		M4 x 6	2602M CE9
		M5 x 5	2615M CC9
		M5 x 10	2602M DC9
		M6 x 6	2615M DD9
		M8 x 8	2615M EE9
		M8 x 10	2602M CC9
	Viti con inserto sferico per teste Isoprofil Screws with spherule, for Isoprofil cutterheads	M8 x 16	2616M DE9
		M10 x 16	2616M EE9
	Viti a testa svasata Countersink screws	M4 x 6	VT05M AB9
	Viti a testa svasata per bloccaggio CG03M Countersink screws for locking CG03M	M4 x 3,2	VT05M BB9
		M4 x 4,2	VT05M BC9
		M4 x 6,5	VT05M BD9
	Viti a testa svasata per fissaggio rasanti Countersink screws for fastening spurs	M5 x 6	VT05M AC9
		M5 x 8	VT05M AA9

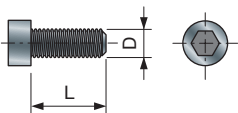
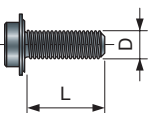
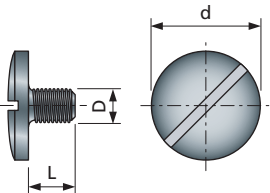
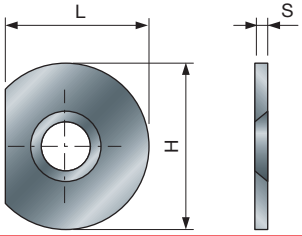
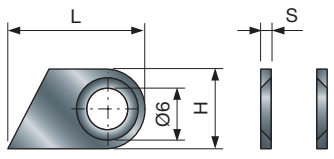
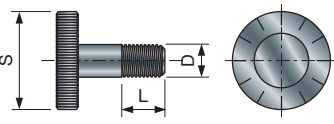
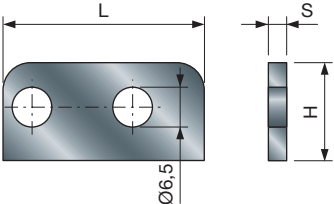
VITI, OGIVE, RONDELLE, GHIERE E CHIAVI DI RICAMBIO

SPARE SCREWS, NUTS, WASHERS AND KEYS

	Descrizione Description	Dimensioni / Dimensions D/L x L/H x d/S (mm)	Codice Code
	Viti a testa svasata Countersink screws	M5 x 8	VT05M CA9
		M6 x 8	VT01M AB9
		M6 x 10	VT01M AA9
	Viti per deflettori Screw for deflectors	M4 x 12	VT05M DA9
		M4 x 14	VT05M DB9
		M4 x 16	2609M BD9
		M6 x 16	VT05M DC9
		M6 x 16	2609M DD9
		M8 x 40	2609M EK9
		M10 x 20	2609M FF9
	Vite per bloccaggio coltellini reversibili Screw for locking disposable knives	M4 x 8 x 6	VT70M AA9
		M4 x 10 x 9	VT71M AA9
		M3 x 6 x 5	VT72M AA9
	Viti a testa bombata Rounded head screws	M4 x 10	2622M AB9
		M6 x 8	2622M CA9
		M6 x 10	2622M CB9
		M6 x 12	2622M CC9
		M8 x 18	2622M DF9
		M8 x 30	2622M DI9
	Viti a testa svasata per bloccaggio inserti Countersink screws for insert	M6 x 11,5	VT16M AB9
		M6 x 13	VT16M AE9
		M6 x 14,5	VT16M AA9
		M6 x 15,5	VT16M AD9
		M6 x 18,5	VT16M AC9
		M6 x 20	VT16M AF9
	Vite a testa cilindrica con intaglio Slotted cheese head screw	M4 x 10	2611M DB9
		M5 x 10	2606M DE9
	Vite a testa cilindrica con esagono incassato Allen screw	M3 x 6	2607M AA9
		M3 x 8	2607M AB9
		M3 x 10	2607M AC9
		M4 x 8	2607M BB9
		M5 x 20	2607M CH9
		M5 x 40	2607M CL9
		M5 x 50	2607M CN9
		M5 x 60	2607M CP9
		M5 x 70	2607M CQ9
		M5 x 80	2607M CR9
	M5 x 90	2607M CS9	

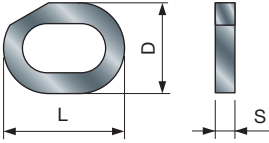
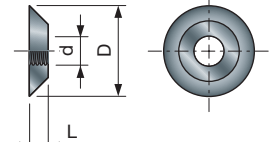
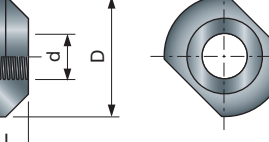
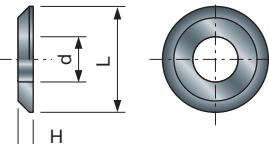
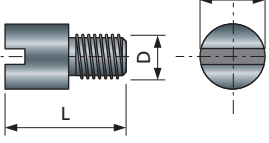
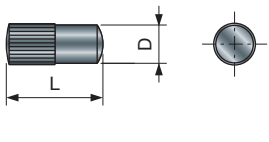
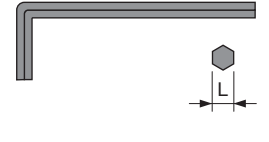
VITI, OGIVE, RONDELLE, GHIERE E CHIAVI DI RICAMBIO

SPARE SCREWS, NUTS, WASHERS AND KEYS

	Descrizione Description	Dimensioni / Dimensions D/L x L/H x d/S (mm)	Codice Code
	Vite a testa cilindrica con esagono incassato Allen screw	M6 x 16	2607M AF9
		M8 x 16	VT02M AA9
		M8 x 35	2607M EK9
		M10 x 20	2607M FH9
		M10 x 30	2607M FJ9
	Vite flangiata Flanged screw	M3 x 7,6	2607M 001
	Viti di riscontro Positioning screws	M5 x 7 x 18	VT08M AE9
		M5 x 8,8 x 18	VT08M AM9
		M8 x 10 x 22	VT08M AD9
	Piastrina di riscontro Positioning plate	19 x 22 x 1,7	VT18M GB9
	Piastrina di riscontro Positioning plate	20 x 11,6 x 2,2	VT18M AR9
		20 x 11,6 x 2,2	VT18M AS9
	AS9 AR9		
	Viti di regolazione Adjustment screws	M5 x 8 x 25	VT08M AC9
		M6 x 7 x 18	VT08M AG9
		M6 x 8 x 25	VT08M AB9
	Piastrina di riscontro Positioning plate	33 x 16 x 3	VT18M AI9

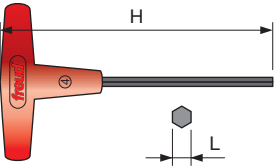
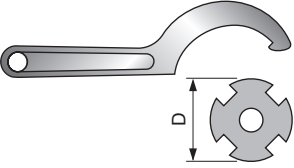
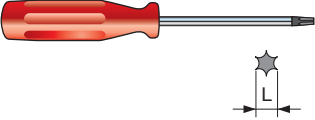

VITI, OGIVE, RONDELLE, GHIERE E CHIAVI DI RICAMBIO

SPARE SCREWS, NUTS, WASHERS AND KEYS

	Descrizione Description	Dimensioni / Dimensions D/L x L/H x d/S (mm)	Codice Code
	Rondella di registro per IG25M Adjustment ring for IG25M	16 x 11,9 x 2,6	VT18M AG9
	Ghiere filettate per bloccaggio viti Threaded rings for locking screw	10,2 x 1 x M4 11,6 x 1,5 x M4 11,6 x 2,5 x M4 9,4 x 1,7 x M4 8 x 5 x M4	VT18M AA9 VT18M BA9 VT18M BB9 VT18M DA9 VT18M CB9
	Ogive per viti Dx-Sx VT19M AB9 - IA9 Nuts for RH-LH VT19M AB9 - IA9 screws	16 x 4 x M6 16 x 5 x M6	VT18M CC9 VT18M CA9
	Rondelle per coltelli Rings for knives	16 x 2 x 4 14 x 2 x 6 9 x 1,5 x 4	VT18M AB9 VT18M AL9 VT18M AH9
	Spine di trascinamento tra bussole Traction pins between bushes	M5 x 9,5 x 7 M6 x 15,5 x 8	VT08M AH9 VT08M AI9
	Spina in acciaio Steel pin	4 x 10	2601M AB9
	Chiavi esagonali a "L" Allen key	2 2,5 3 4 5 6 8	2619M BA9 2619M CA9 2619M DA9 2619M EA9 2619M FA9 2619M GA9 2619M HA9

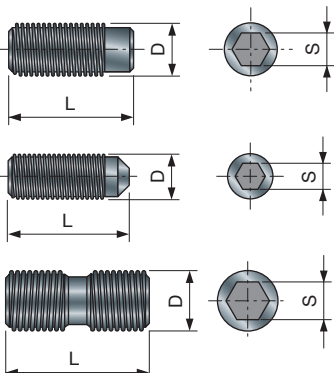
VITI, OGIVE, RONDELLE, GHIERE E CHIAVI DI RICAMBIO

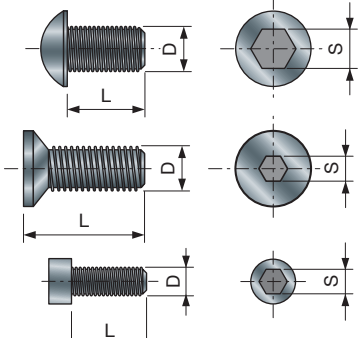
SPARE SCREWS, NUTS, WASHERS AND KEYS

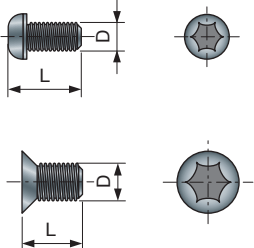
	Descrizione Description	Dimensioni / Dimensions D/L x L/H x d/S (mm)	Codice Code
 <p>Diagram of an Allen key with handle. The handle is red and has the 'freud' logo. The shaft is silver. Dimensions H and L are indicated with arrows.</p>	Chiavi esagonali a "T" Allen key with handle	3 x 110 4 x 110 4 x 170 5 x 110 5 x 260	CB03M AA9 CB03M BA9 CB03M BB9 CB03M EA9 CB03M EC9
 <p>Diagram of a wrench. The handle is silver. The head is silver and has a curved shape. Dimension D is indicated with an arrow.</p>	Chiavi a settore Wrench	45 - 50 58 - 62 68 - 75 80 - 90	CB07M 4550 CB07M 5862 CB02M BA9 CB02M CA9
 <p>Diagram of a Torx key with handle. The handle is red and has the 'freud' logo. The shaft is silver. Dimension L is indicated with an arrow.</p>	Chiavi Torx Torx key with handle	T9 T15 T20	CB03M CA9 CB03M DA9 CB03M CC9
 <p>Diagram of a fork wrench. The handle is silver. The head is silver and has a fork shape. Dimension L is indicated with an arrow.</p>	Chiavi a forchetta Fork wrench	5	CB04M 059

COPPIE DI SERRAGGIO CORRETTE DI VITI E GRANI PER IL FISSAGGIO DI COLTELLI E INSERTI FREUD

TORQUE VALUES FOR SCREWS AND GRUB SCREWS USED FOR TIGHTENING FREUD KNIVES AND INSERTS

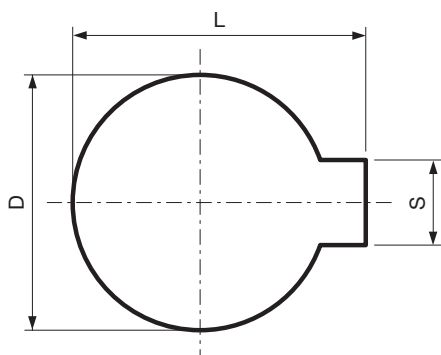
Descrizione		Filettatura mm	Chiave (S) mm	Coppia serraggio - 45H (Nm)
Description		Screw thread mm	Key (S) mm	Tightening torques - 45H (Nm)
	GRANI CON ESAGONO INCASSATO HEXAGON GRUB SCREWS	M4	2	1,9
		M5	2,5	3,5
		M6	3	5,5
		M8	4	9,5
		M10	5	14,3
		M12	6	30,0

Descrizione		Filettatura mm	Chiave (S) mm	Coppia serraggio - 8,8 (Nm)
Description		Screw thread mm	Key (S) mm	Tightening torques - 8,8 (Nm)
	VITI CON ESAGONO INCASSATO HEX PRINT SCREWS	M3	2,5	1,0
		M4	3	2,0
		M5	4	5,0
		M6	5	8,0
		M8	6	12,0
		M10	8	30,0

Descrizione		Filettatura mm	Chiave	Coppia serraggio (Nm)
Description		Screw thread mm	Key	Tightening torques (Nm)
	VITI CON IMPRONTA TORX TORX SCREWS	M4 x 0,5	T9	2,0
		M4	T15	5,2
		M5	T20	8,6
		M6	T25	15,0

OPT04

ESECUZIONE CHIAVETTE STANDARD STANDARD KEYWAY



D	S	d	Codice
mm	mm	mm	Code
12	5	13,8	OPT04 AA9
14	5	16,3	OPT04 BA9
16	5	18,3	OPT04 CA9
18	6	20,8	OPT04 DA9
20	6	22,8	OPT04 EA9
25	8	28,3	OPT04 FA9
30	8	33,3	OPT04 GA9
35	10	38,3	OPT04 HA9
40	10	43,3	OPT04 IA9

- Per l'esecuzione di chiavette diverse, utilizzare il codice **OPT05 AA9** ed indicare le misure desiderate
- For other keyway sizes, use code **OPT05 AA9** and specify the necessary dimensions.

OPT09

ALLARGATURA FORO TESTE PORTACOLTELLI E FRESE SALDOBRASATE BORE WIDENING CUTTERHEADS AND BRAZED CUTTERS

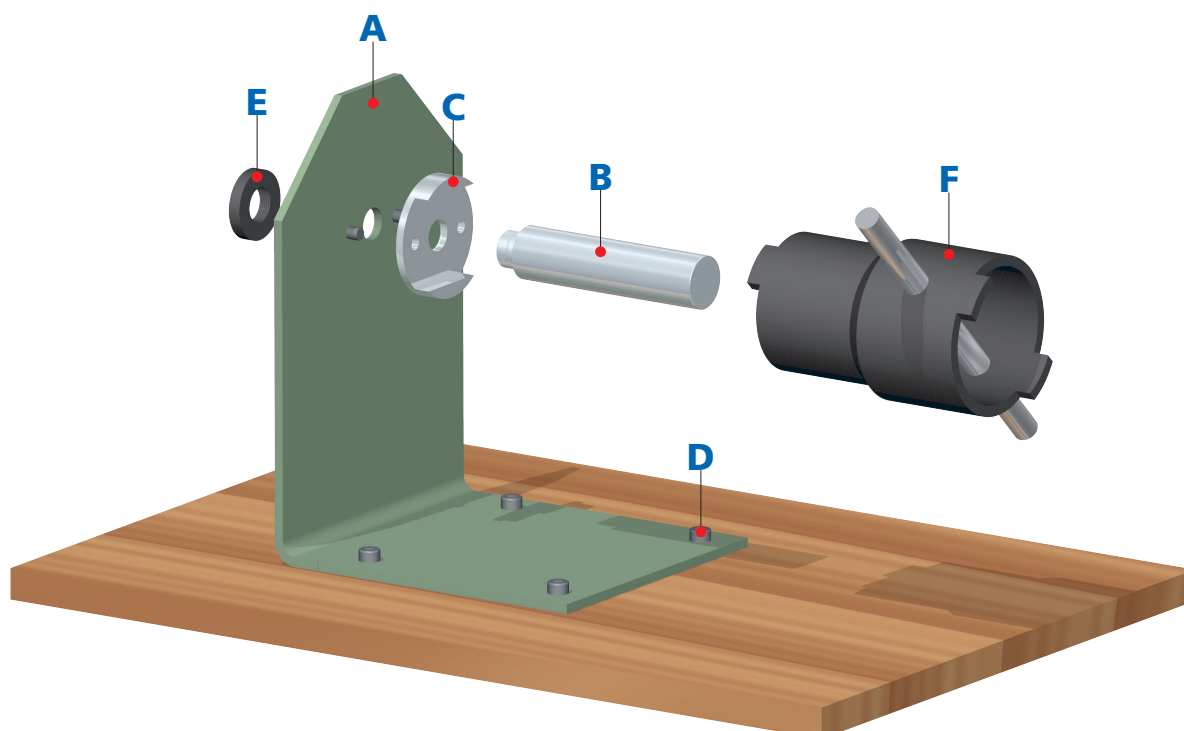
Codice
Code
OPT09 AA9

L'ATTREZZATURA È COMPOSTA DA:

- A:** Supporto in acciaio.
- B:** Kit asse nei diametri 35-40-50 mm (da sostituire a seconda del foro dei gruppi).
- C:** Kit di flange ad innesto per il bloccaggio del piede della bussola (misure 65 - 75 - 85 mm).
- D:** Viti di fissaggio per il bloccaggio dell'attrezzatura al banco di lavoro.
- E:** Ghiera di fissaggio per il bloccaggio dell'asse "B" al supporto "A".
- F:** Chiave ad innesto per le ghiera delle bussole, disponibili nelle misure:
 - Ø 60/70 mm per bussole con Ø esterno 40/50 mm.
 - Ø 80/90 mm per bussole con Ø esterno 60/70 mm.

THE MAINTENANCE TOOL CONSISTS OF:

- A:** Steel support plate.
- B:** Replaceable arbor (diameter 35 - 40 - 50 mm based on sets bore diameter).
- C:** Replaceable coupling disk for jamming the base of the toolsets' sleeve (65 - 75 - 85 mm).
- D:** Screws for mounting support plate "A" to the workbench.
- E:** Locking ring pin "B" to support plate "A".
- F:** Coupling key for the sleeves threaded ring available in the following sizes:
 - Ø 60/70 mm for sleeves with external diameter 40/50 mm.
 - Ø 80/90 mm for sleeves with external diameter 60/70 mm.



Codice	
Code	
	SAG1M AA9
	SAG1M AB9

Componenti dell'articolo SAG1M AA9 Item code SAG1M AA9 components

Parti di ricambio	Dimensioni	Codice
Spare Parts	Dimensions	Code
A Base per assi / Support plate	150 x 230 x 250	SAG1M BA9
E Ghiera autoblocc. / Self-locking nut	50 x 8 x 30	SAG1M DA9
C Flangia / Coupling disk	65 x 20 x 30 Ø50	SAG1M F65
C Flangia / Coupling disk	75 x 20 x 30 Ø60	SAG1M F75
C Flangia / Coupling disk	85 x 20 x 30 Ø70	SAG1M F85
B Asse / Arbor	Ø35 x 122	SAG1M 035
B Asse / Arbor	Ø40 x 122	SAG1M 040
B Asse / Arbor	Ø50 x 122	SAG1M 050
F Chiave Ø40-50 / Key Ø40-50	70 x 100 x 50	CB02M 6070
F Chiave Ø60-70 / Key Ø60-70	90 x 100 x 50	CB02M 8090

Componenti dell'articolo SAG1M AB9 Item code SAG1M AB9 components

Parti di ricambio	Dimensioni	Codice
Spare Parts	Dimensions	Code
A Base per assi / Support plate	150 x 230 x 250	SAG1M BA9
E Ghiera autoblocc. / Self-locking nut	50 x 8 x 30	SAG1M DA9
C Flangia / Coupling disk	65 x 20 x 30 Ø50	SAG1M F65
C Flangia / Coupling disk	75 x 20 x 30 Ø60	SAG1M F75
C Flangia / Coupling disk	85 x 20 x 30 Ø70	SAG1M F85

Articoli opzionali Optional items




Parti di ricambio	Dimensioni	Codice
Spare Parts	Dimensions	Code
B Asse / Arbor	Ø35 x 122	SAG1M 035
B Asse / Arbor	Ø40 x 122	SAG1M 040
B Asse / Arbor	Ø50 x 122	SAG1M 050
F Chiave Ø40-50 / Key Ø40-50	70 x 100 x 50	CB02M 6070
F Chiave Ø60-70 / Key Ø60-70	90 x 100 x 50	CB02M 8090

TA01M



PIASTRA PER AFFILATURA COLTELLI PERFORMANCE DEVICE FOR GRINDING PERFORMANCE KNIVES

L	H	S	Codice
mm	mm	mm	Code
260	60	15	TA01M AA9

Parti di ricambio	Dimensioni	Codice
Spare Parts	Dimensions	Code
Vite / Screw	 M4 x 6,5	VT05M BD9
Vite / Screw	 M4 x 5,75	VT05M AB9
Chiave Torx / Torx key	 T9	CB03M CA9




- La piastra va montata su lapidello con l'ausilio del supporto TA03M.
- This device must be fitted on the TA03M support to work on grinding machines.

TA02M



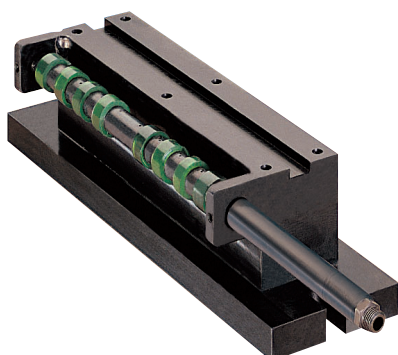
PIASTRA PER AFFILATURA COLTELLI PERFORMANCE DEVICE FOR GRINDING PERFORMANCE KNIVES

L	H	S	Codice
mm	mm	mm	Code
220	100	100	TA02M AA9

Parti di ricambio	Dimensioni	Codice
Spare Parts	Dimensions	Code
Vite / Screw	 M4 x 6,5	VT05M BD9
Vite / Screw	 M4 x 5,75	VT05M AB9
Chiave Torx / Torx key	 T9	CB03M CA9
Chiave / Allen key	4 x 110	CB03M BA9

- La piastra va montata su affilatrici verticali.
- The device is fitted on vertical grinding machines.

TA03M



SUPPORTO PER AFFILATURA COLTELLI PERFORMANCE SUPPORT FOR GRINDING PERFORMANCE KNIVES

L	H	S	Codice
mm	mm	mm	Code
340	98	90	TA03M AA9