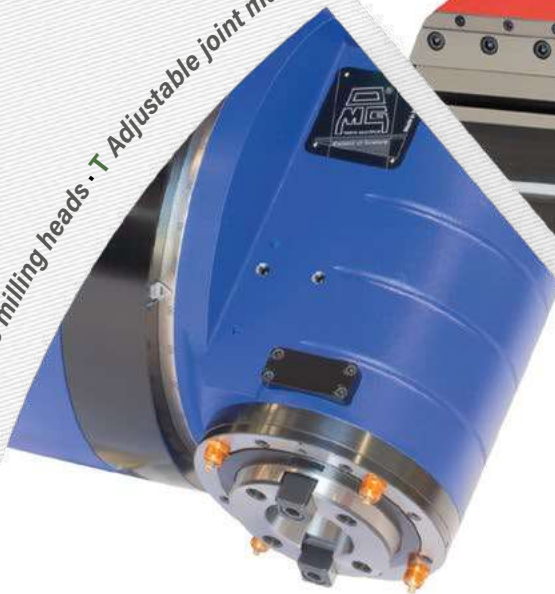




Sistemi di foratura
Sistemi di foratura
Sistemi di foratura

Made in Italy

FH Facing Heads • BAH Big Angle Heads • TA,CP Angle Heads • TA Angle Heads • MOX Spindle Speeders • HT Turret Heads • VH Variable axis heads • TSI/TSX Twin spindle milling heads • T Adjustable joint multi spindle heads • MT-TC-TC3 Fixed multi spindle heads





L'AZIENDA

Una realtà imprenditoriale caratterizzata da elevata esperienza, una forte attenzione verso nuove tecnologie e la continua ricerca di soluzioni sempre più avanzate: questi, in sintesi, i punti di forza di O.M.G. Srl, azienda che nasce negli anni '60 come laboratorio di piccole dimensioni e cresce fino a diventare oggi un'affermata realtà industriale a livello nazionale e internazionale.

Forte grazie alla vasta gamma di Teste ad Angolo in continua crescita, ma con la volontà di affrontare nuove sfide, allarga la propria produzione con l'introduzione di un nuovo prodotto: le Teste a Sfacciare. Prodotti sempre più innovativi che offrono soluzioni sempre più avanzate e personalizzate ad hoc, progettati e costruiti con quel know how tecnologico e culturale accumulato dall'azienda nel corso degli anni.

O.M.G. Srl

THE COMPANY



An enterprising culture, characterized by long experience, a strong focus on new technologies, and a continuous search for more and more advanced solutions. These are the strengths of O.M.G. Srl, a company that was founded in the 1960s as a small workshop and has grown to become a well established industrial presence at a national and international level.

Thanks to our vast, continuously growing range of Angle Heads, and our desire to face new challenges, our production capabilities have expanded with the introduction of a new product: the Facing Heads. New innovative products that offer increasingly advanced and customized solutions, designed and built with the technological and cultural know-how accumulated by O.M.G. Srl over many years.

O.M.G. Srl

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FACING





Le teste a sfacciare serie FH possono essere applicate sia manualmente che automaticamente alle macchine utensili quali alesatrici, centri di lavoro o macchine speciali. Le teste a sfacciare serie FH nascono con il preciso obiettivo di superare i limiti di coppia, precisione e manutenzione delle attuali soluzioni presenti sul mercato.

Grazie ad un'architettura brevettata ed all'esperienza e qualità che contraddistinguono la OMG nella progettazione e produzione di teste accessorie, le teste a sfacciare serie FH permettono di eseguire le lavorazioni meccaniche richieste con assoluta precisione ed affidabilità.

La soluzione OMG si contraddistingue per 4 caratteristiche fondamentali:

- Rapporto di riduzione 3:1, 4:1 o 6:1 che consente un aumento importante della coppia di uscita
- Sistema di azionamento della slitta montato direttamente sulla parte rotante per la massima rigidità di trasmissione e l'assenza di giochi
- Sistema di misura diretto per la lettura della posizione dell'asse U che permette lavorazioni di estrema precisione
- Bloccaggio idraulico della slitta per la massima rigidità e precisione nelle operazioni di barenatura

The FH Facing Heads can be applied manually or automatically to the machine tool spindle of boring machines, machining centers and special machines.

The FH series heads are designed to overcome the torque, precision and maintenance limits of the current solutions available on the market.

Thanks to a patented design and the experience and quality that characterize OMG in the design and production of Heads, the FH series Facing Heads allow you to perform the required machining operations with absolute precision and reliability.

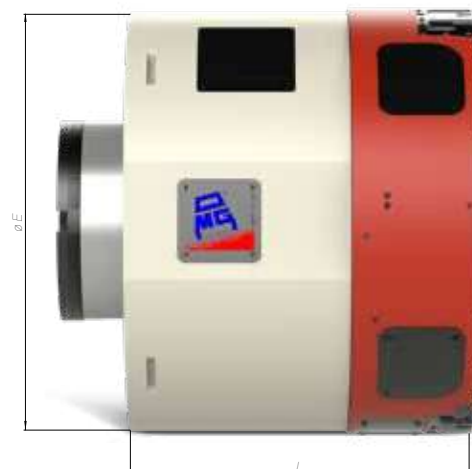
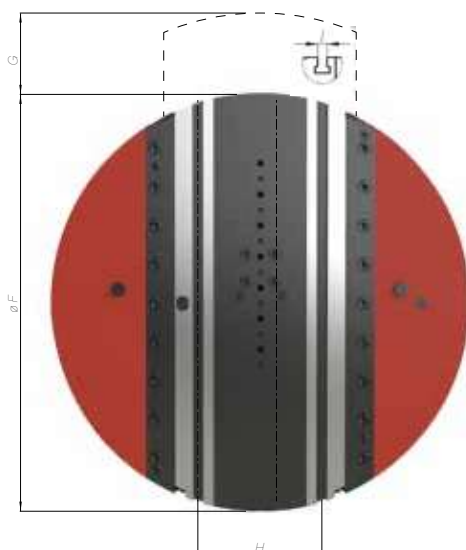
O.M.G.'s solution stands out for 4 main features:

- *Gear reduction ratios 3:1, 4:1 or 6:1 allow applications on machine tools with relatively low spindle torque*
- *The radial positioning system of the slide is directly mounted to the rotating area of the head for maximum rigidity and no backlash*
- *A direct measurement system for reading the position of the U axis allows extremely precise machining*
- *Hydraulic clamping of the slide for extreme rigidity and precision during boring operations*



FH

CARATTERISTICHE TECNICHE - SPECIFICATIONS



FH400 SERIES

FH540 SERIES

FH640 SERIES

FH800 SERIES

CARATTERISTICHE TECNICHE TECHNICAL DATA

DIAMETRO BASE BASE DIAMETER	E	mm	460	540			640			800	
DIAMETRO DIAMETER	F	mm	400	540	640	800	640	800	1000	800	1000
RAPPORTO DI RIDUZIONE RATIO			3:1	4:1					4/6:1		
CORSA RADIALE RADIAL STROKE	G	mm	115	160	205	290	205	290	390	290	390
DISTANZA CAVE A T T SLOT DISTANCE	H	mm	125	160					200		
CAVA T T SLOT	I	mm	10	12					14		
ALTEZZA HEIGHT	L	mm	380	420					538		
VELOCITÀ MASSIMA IN USCITA MAXIMUN OUTPUT SPEED		RPM	500	300	280	260	280	260	200	200	170
VELOCITÀ IN TRASLAZIONE RADIAL SPEED		mm/ min	400								
MASSIMA COPPIA IN USCITA MAXIMUN OUTPUT TORQUEE		Nm	4000	6000			8000			10000	
MASSIMA FORZA RADIALE MAXIMUN RADIAL FORCE		N	15000	20000			25000			30000	
MASSIMA SEZIONE DI TRUCIOLO MAXIMUN CHIP REMOVAL		mm²	5	9			10			15	
PRECIAIONE POSIZIONAMENTO POSITION ACCURACY		µm	2								
RIPETIBILITÀ DI POSIZIONAMENTO REPEATABILITY		µm	2								
DIREZIONE POSIZIONAMENTO POSITIONING DIRECTION			BIDIREZIONALE/BIDIRECTIONAL								
PESO WEIGHT		kg	280	480	490	510	560	660	740	1300	1400
DIAMETRO MASSIMO DI TORNITURA MAX. TURNING DIAMETER		mm	640	870	1060	1390	1060	1390	1750	1390	1790
DIAMETRO MASSIMO DI SFACCIATURA MAX. FACING DIAMETER		mm	910	1200	1400	1740	1400	1740	2140	1740	2140



FH

BAH

TA.CP

TA

MOX

HT

2-1

VH

TSI/TSX

T

MT-TC-TC3



BAH

B I G A N G L E H E A D S



Le teste ad angolo qui esposte, sono state progettate e costruite per soddisfare le esigenze di equipaggiamento di macchine utensili di grandi dimensioni utilizzate in diversi settori:

Trasporto Pesante, Aeronautico, Navale, Militare, Ferroviario, Energetico, Stampi, Automotive.

La tecnologia applicata, i materiali, i componenti, il montaggio sono ai massimi livelli ed i collaudi statici e dinamici certificati garantiscono nel tempo le migliori performance.

Le caratteristiche principali di questi prodotti, si possono così sinteticamente riassumere:

- corpo ricavato dal pieno per ottenere la massima precisione e stabilità
- la trasmissione del moto è con ingranaggi Gleason ad evolvente rettificato. Normalmente il rapporto di trasmissione è 1:1, ma può essere sia in moltiplica che in riduzione a seconda delle esigenze di trasmissione di coppia
- attacchi portautensili standard: DIN69871 - DIN 2080 - BT - HSK - Coromant Capto® o altri a richiesta
- il bloccaggio del portautensile sul mandrino può essere di due tipologie: manuale o automatico
- la adduzione del refrigerante può essere per il centro del portautensile. La pressione raggiungibile è di 100 Bar ed è prevista la pulizia del portautensile tramite aria. In ogni caso, attorno al mandrino, vi sono sempre alcuni ugelli direzionabili. Inoltre il mandrino è sempre pressurizzato onde evitare intrusioni
- cuscinetti mandrino a contatto obliquo di precisione lubrificati con grasso long life
- ingranaggi normalmente lubrificati a grasso, separato dal grasso cuscinetti. In caso di alta velocità la lubrificazione è a circolazione di olio
- i controlli elettrici sono interni alla testa e con accesso facilitato.

The angle heads exhibited here are designed and built to satisfy the tooling requirements of very large machines used in a variety of industries:

Heavy goods vehicles, Aeronautics, Shipping, Military, Railroad, Energy, Moulds and Automotive.

The applied technology, the materials, the parts and assembly all ensure top levels; the certified static and dynamic tests guarantee the best possible performance over time.

The main features of these products may be summarised as follows:

- *body made of cast iron to ensure maximum precision and stability*
- *motion transmitted by means of Gleason ground in volute gears. The transmission ratio is normally 1:1, but it may be in both multiplication and in reduction based on torque transmission requirements*
- *standard tool-holder couplings: DIN69871 - DIN 2080 - BT - HSK - Coromant Capto® or others on request*
- *the tool holder can be locked on the spindle in two ways: manually or automatically*
- *the coolant may be supplied in the centre of the tool holder. The pressure currently reached is 100 Bar and the tool holder is cleaned with air. Whatever the case, there are always some turning nozzles around the spindle. Furthermore, the spindle is always pressurised to avoid intrusions*
- *spindle oblique contact precision bearings lubricated with long life grease*
- *gears normally lubricated with grease separated from the grease of the bearings. For high speeds, the lubrication system is oil circulation*
- *all the electrical control devices are inside the head and are easily accessed.*





SERIE BAH

TIPOLOGIE DI TESTE • HEADS TYPE

FA
FORK
AUTOMATIC

OH
ORTOGONAL
WITH
HIRTH

TWA
TWIN
AUTOMATIC

YA
Y-AXIS

SE
SPINDLE
EXTENSION
WITH ATC BY
MACHINE SPINDLE

SEH
SPINDLE
EXTENSION
WITH HYDRAULIC
ATC



FA



OH



TWA



YA



FT



SE



SEH



OC



EXA



FM



EXM



FA



RA

SERIE BAH

TIPOLOGIE DI TESTE • HEADS TYPE

OC
ORTOGONAL
CONTINUOUS

EXA
EXTENDED
AUTOMATIC

FM
FORK
MANUAL

EXM
EXTENDED
MANUAL

FA
FORK
AUTOMATIC

RA
RIGHT
ANGLE HEAD

2-4

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

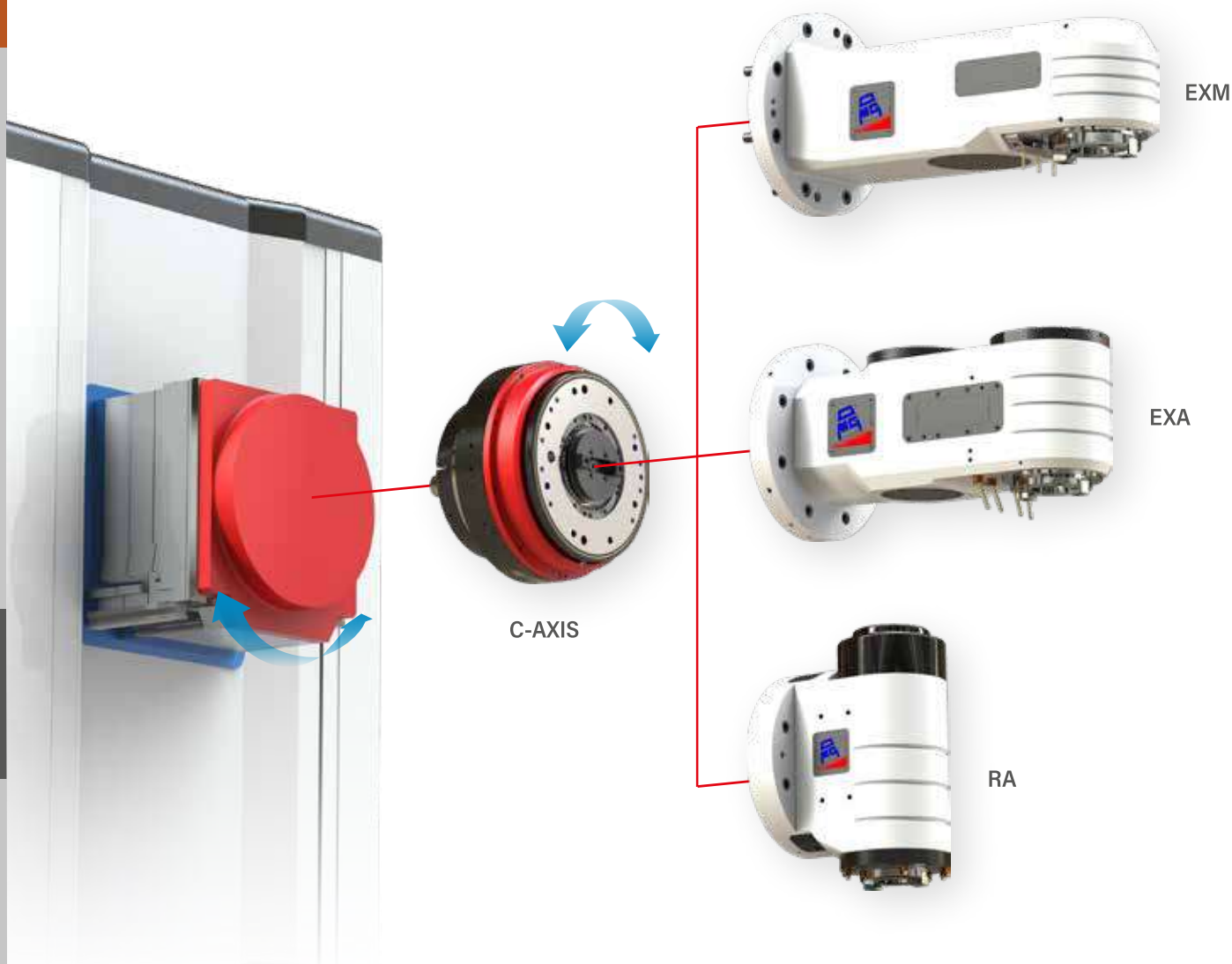
MOX

HT



SISTEMA MODULARE PER APPLICAZIONI FLESSIBILI

MODULAR SYSTEM FOR FLEXIBLE APPLICATION



Con il sistema modulare si possono eseguire varie combinazioni, scegliendo di conseguenza tra varie opzioni:

Asse C: con corona Hirth o con vite senza fine di alta precisione

EXM: Testa ad Angolo slim design con cambio utensile manuale

EXA: Testa ad Angolo slim design con cambio utensile automatico

RA: Testa ad Angolo con cambio utensile automatico

La posizione di lavoro può essere sia orizzontale che verticale. I vari componenti possono essere riutilizzati sia in altre applicazioni che su macchine diverse.

With the modular system different combinations are possible:

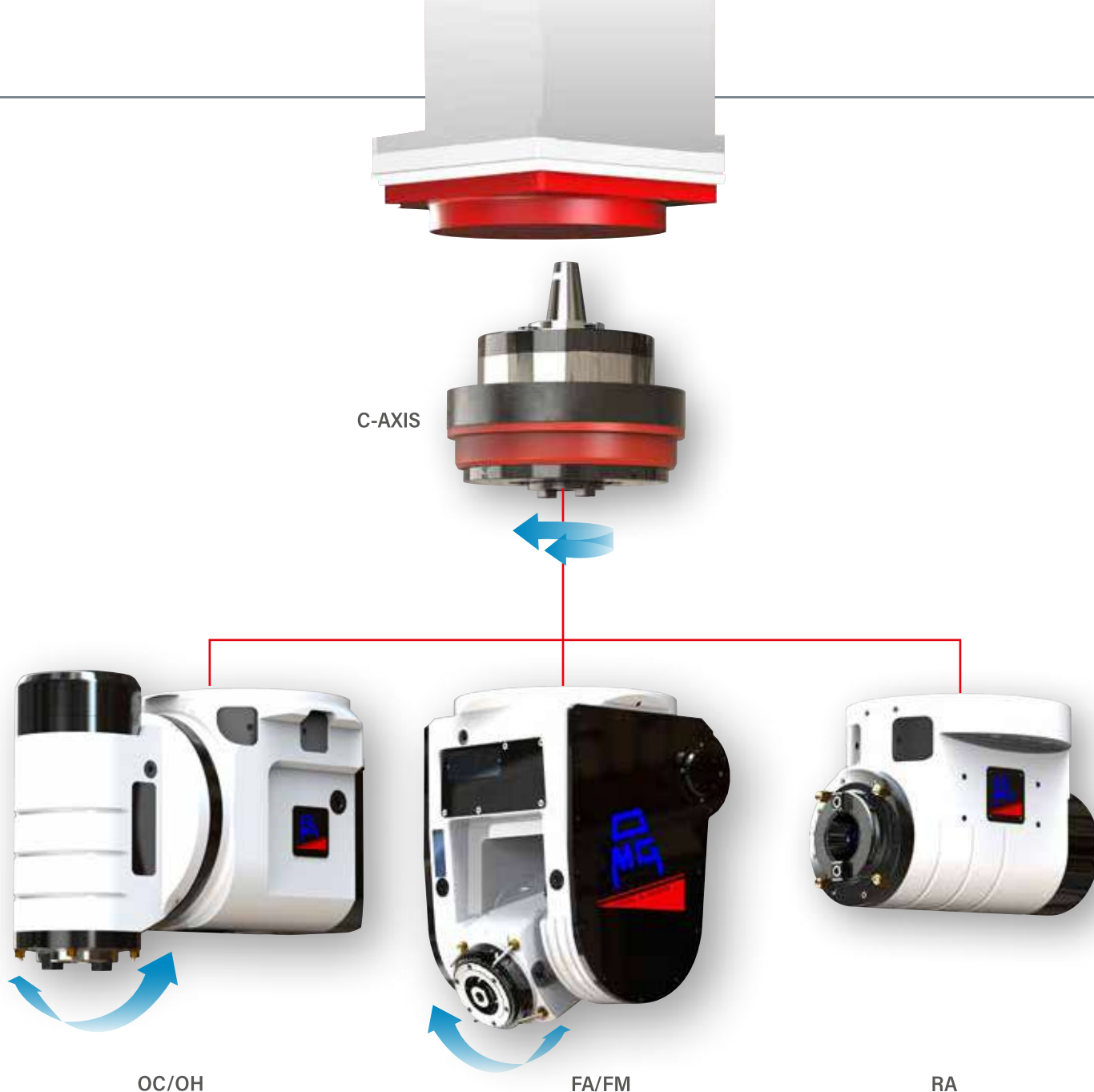
C Axis: Manual, with Hirth crown or with high precision worm screw

EXM: slim design Angle Head with manual tool change

EXA: slim design Angle Head with automatic tool change

RA: Angle Head with automatic tool change

The working position can be both horizontal and vertical. The components can be reused both in other applications and on different machines.



Con il sistema modulare si possono eseguire varie combinazioni, scegliendo di conseguenza tra varie opzioni:

Asse C: con corona Hirth o con vite senza fine di alta precisione

OC/OH: Testa ad angolo Tilting Automatic con cambio utensile automatico e rotazione asse mandrino

FA/FM: Testa ad angolo Fork Automatic con cambio utensile automatico e rotazione asse mandrino

RA: Testa ad Angolo con cambio utensile automatico

La posizione di lavoro può essere sia orizzontale che verticale. I vari componenti possono essere riutilizzati sia in altre applicazioni che su macchine diverse.

With the modular system different combinations are possible:

C Axis: Manual, with Hirth crown or with high precision worm screw

OC/OH: Tilting Automatic Angle Head, automatic tool change and spindle axis rotation

FA/FM: Fork Automatic Angle Head, automatic tool change and spindle axis rotation

RA: Angle Head with automatic tool change

The working position can be both horizontal and vertical. The components can be reused both in other applications and on different machines.



SERIE
TA *CP*
**LIGHT
DUTY**





Teste ad Angolo innovative, nate per tutte le macchine utensili, anche di piccole dimensioni e dagli ingombri contenuti, dove si richiedono performances elevate nonostante la capacità di peso limitata sul cambio utensile. Quindi Teste ad Angolo più leggere ma con qualità e affidabilità tipiche dei nostri prodotti.

L'obiettivo di contenere il peso è stato raggiunto costruendo il corpo in lega di alluminio aeronautico e adottando un sistema antirotante semplificato e alleggerito, pur rimanendo inalterata la modularità dei coni di attacco tipica della serie Heavy Duty.

La caratteristica principale di questa nuova generazione è di potere eseguire forature, maschiature e lamature su quelle macchine utensili dove il peso del cambio utensile ha forti limitazioni o quando i costi di produzione devono essere estremamente competitivi.

Caratteristiche comuni della Teste ad Angolo serie CP sono:

- perno antirotante conico che, al contrario dei perni cilindrici, elimina i giochi angolari
- possibilità di utilizzo su macchine dove già presente Stop-Block della serie Heavy Duty per una perfetta compatibilità di tutta la gamma
- sistema di orientamento testa ad angolo in macchina ottimizzato, per una più facile e rapida registrazione
- ingranaggi Gleason con evolvente rettificato
- lubrificazione a vita
- peso estremamente ridotto per Teste ad Angolo con queste capacità di lavoro
- utilizzo su centri di lavoro di piccole dimensioni
- versioni anche prolungate per una maggiore flessibilità di gamma
- coni disponibili: DIN69871, BT, BBT, HSK, CAT.

These angle heads introduce an innovative line targeting all the small machine-tools with restrained size, but with high performances despite limited weight on tool changer. Therefore TA.CP angle heads are lighter but with both quality and reliability typical of our products.

Highlight of this line is the head body in aeronautical aluminium alloy combined with a simplified and lightened torque-arm system, allowing to maintain unchanged the back-end shank modularity characteristic of our Heavy Duty range.

The major feature of this new generation of angle heads is to be able to perform drilling, tapping and reaming operations on machine-tools with high limitations on tool changer weight, or when production costs must be extremely competitive.

The major specifications of the new TA.CP range are:

- conical (V-shape) torque-arm pin which eliminates any angular backlashes, unlike cylindrical type of pins
- possibility of using them on machines which are already equipped with a Stop-Block of the Heavy Duty range, getting them fully compatible with our complete range
- optimized indexing set-up for an easier and faster adjustment on machine-tools
- lubricated-for-life
- ground involute Gleason type gears
- extremely reduced weight in comparison to the capabilities and performances of this new range of angle heads
- usable on small size machining centres
- extended length versions available further completing this new range
- DIN69871, BT, BBT, HSK and CAT back-end shanks available



FH

BAH

TA.CP

TA

MOx

HT

3-3

VH

TSI/TSX

T

MT-TC-TC3



TA07.CP

TESTA AD ANGOLO - ANGLE HEAD



30

2,1 KG

40

2,5 KG

PESO
WEIGHT

IN

INPUT

OUT

OUTPUT

ROTAZIONE
ROTATION

Ø7



M6



150 N



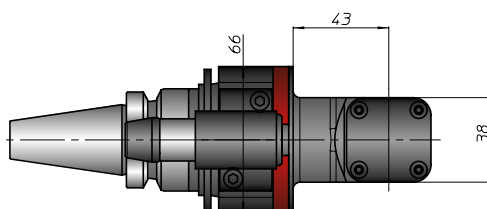
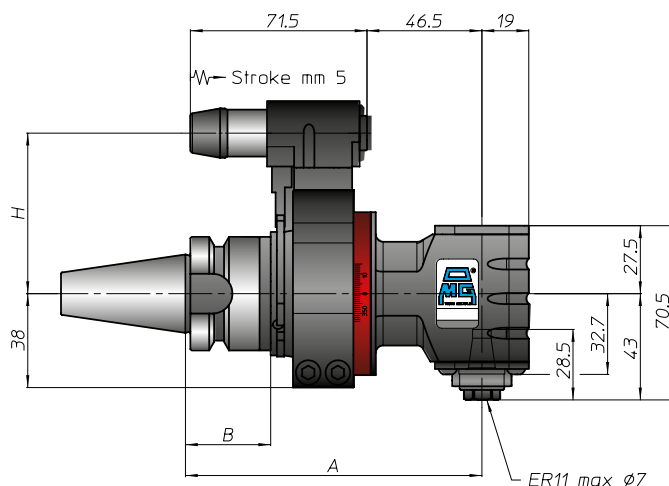
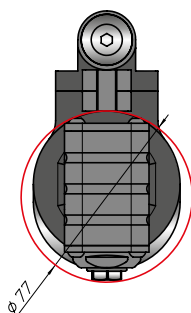
1-1



8000



5,6

CARATTERISTICHE
FEATURESCONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



ANSIB5.50



30 40

120

35

65



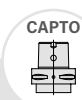
DIN69893

63

129

44

65



ISO26623



DIN2080



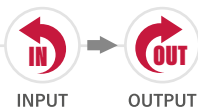
ANSIB5.18



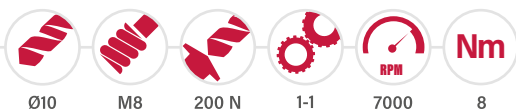
PESO
WEIGHT



ROTAZIONE
ROTATION

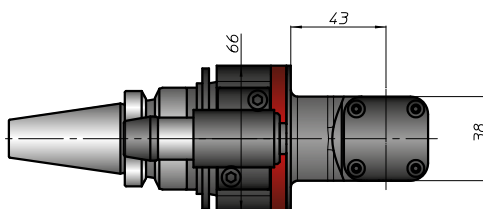
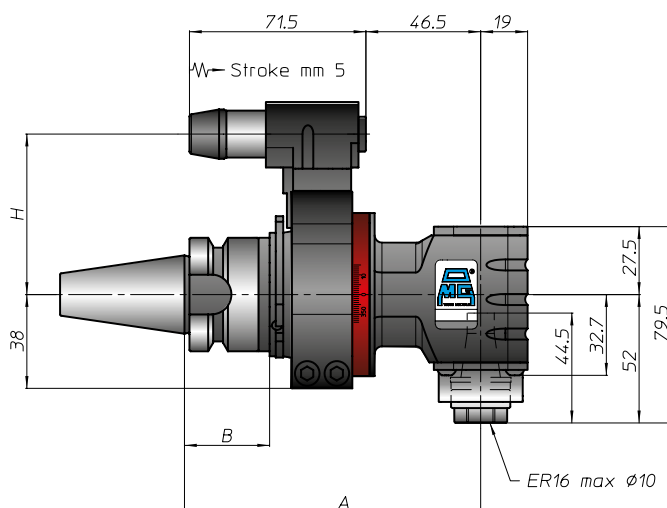
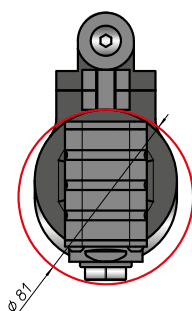


CARATTERISTICHE
FEATURES



TA10.CP

TESTA AD ANGOLO - ANGLE HEAD



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



30 40



40

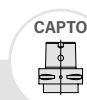


30 40



DIN69893

63



ISO26623



30 40



ANSIB5.18

120

120

120

129

35

35

35

44

65

65

65

65

FH

BAH

TA.CP

TA

MOx

HT

3-4

VH

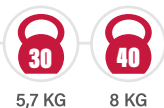
TSI/TSX

T

MT-TC-TC3



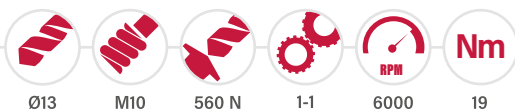
PESO
WEIGHT



ROTAZIONE
ROTATION

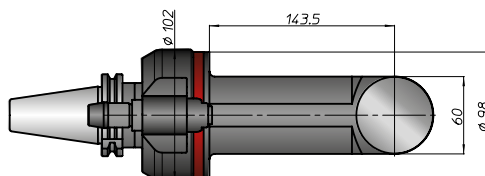
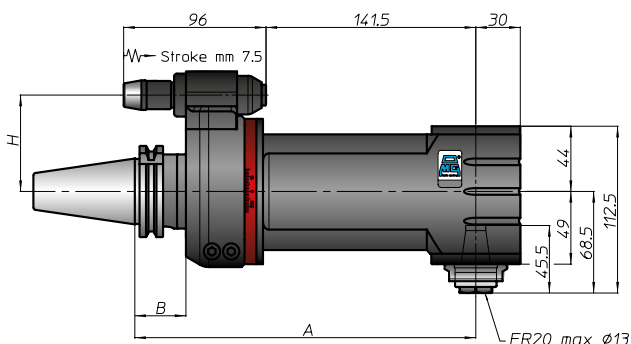
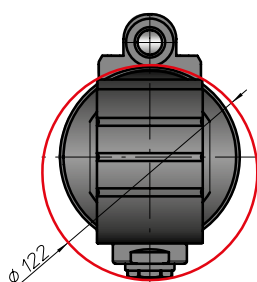


CARATTERISTICHE
FEATURES



TA13.CPL

TESTA AD ANGOLO - ANGLE HEAD



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



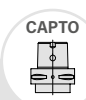
ANSIB5.50



BT



HSK



CAPTO



KM



DIN2080



NMTB

SIZE	30	40	45	50	40	50	40	50	63	80	100					
A	230	230	230	230	230	238	230	238	239							
B	35	35	35	35	35	45	35	45	44	46						
H STANDARD	65	80	65	80	65	80	65	80	65	80						
H OPTIONAL																

FH

BAH

TA.CP

TA

MOx

HT

3-6

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

3-9

VH

TSI/TSX

T

MT-TC-TC3



TAV07.CP

TESTA AD ANGOLO - ANGLE HEAD



30

2,2 KG

40

2,6 KG

PESO
WEIGHT

IN

INPUT

OUT

OUTPUT

ROTAZIONE
ROTATION



Ø7



M6



85 N



1-1

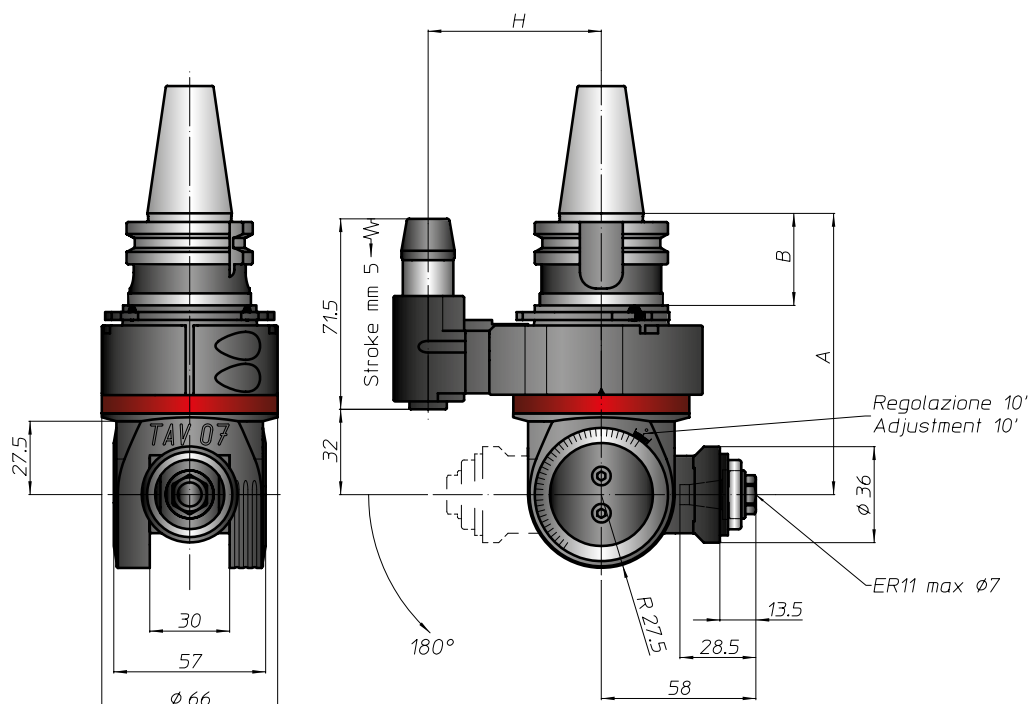


8000



5,6

CARATTERISTICHE
FEATURES



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871

30

40



ANSIB5.50

40



BT

30

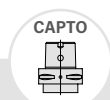
40



HSK

DIN69893

63



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18



TA.CP

GALLERY

FH

BAH

TA.CP

TA

MOX

III

3-10

VH

TSI/TSX

MT-TC-TC3





ANTIROTANTE TORQUE ARM



Il gruppo antirotante ricopre una funzione di fondamentale importanza nella qualità di lavorazione della testa ad angolo. Per questo motivo i tecnici della OMG hanno studiato e messo a punto un antirotante di nuova concezione i cui punti salienti sono:

- il perno conico
- registrazione flangia di fasatura semplice, veloce e precisa.

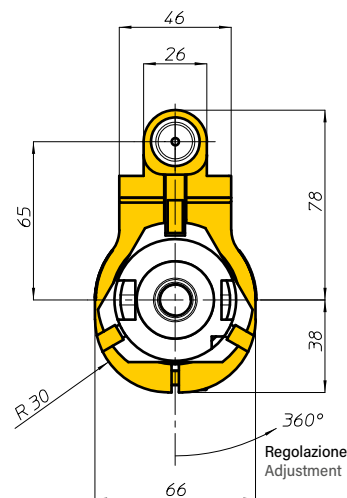
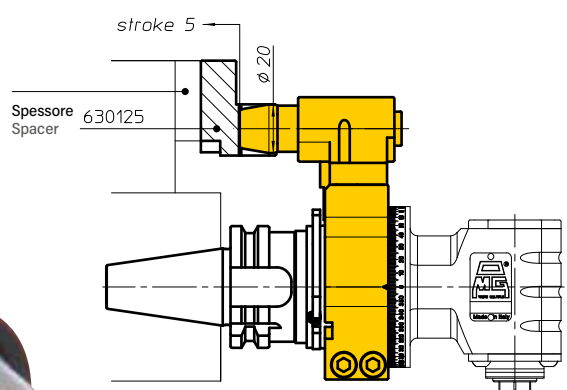
Il perno conico permette una maggiore rigidità del sistema antirotante rispetto ai tradizionali, dotati di perni di Ø18 mm, perché si eliminano i giochi. Conseguenza un miglioramento della rigidità sia angolare che assiale.

Il perno conico è forato e perciò predisposto per il passaggio del liquido refrigerante ad un max di 10 bar. Qualora il cliente volesse portare il liquido vicino all'utensile, occorre semplicemente installare un piccolo tubo.

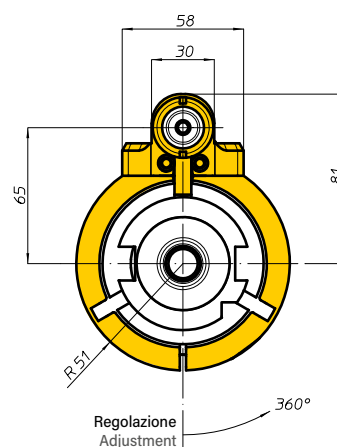
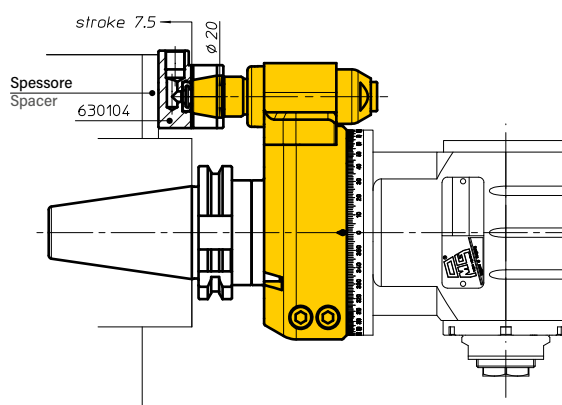


Quando possibile, nella Vostra applicazione, posizionate il perno conico dalla parte opposta al mandrino della testa ad angolo.

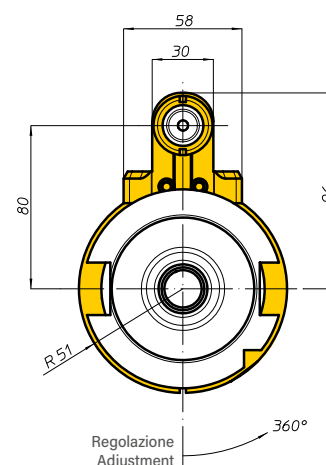
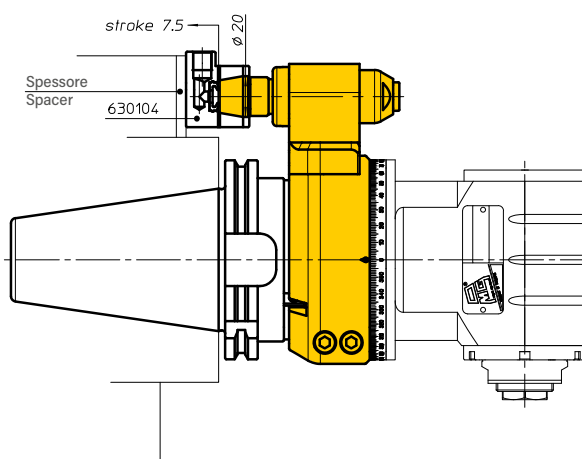
TESTE AD ANGOLO TA07.CP, TAV07.CP ANGLE HEADS TA07.CP, TAV07.CP

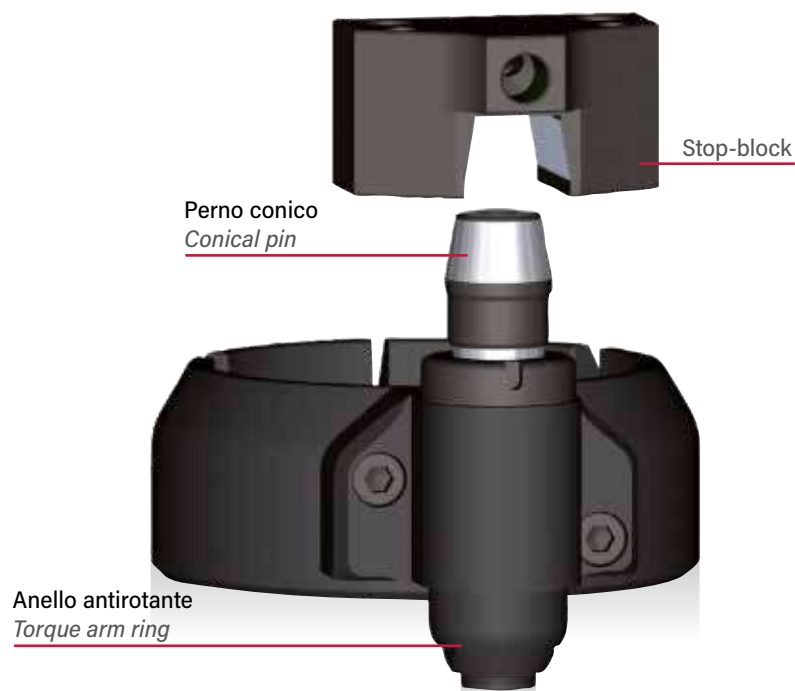


TESTE AD ANGOLO TA13.CP, TA16.CP CON INTERASSE H=65 ANGLE HEADS TA13.CP, TA16.CP WITH CENTRE DISTANCE H=65

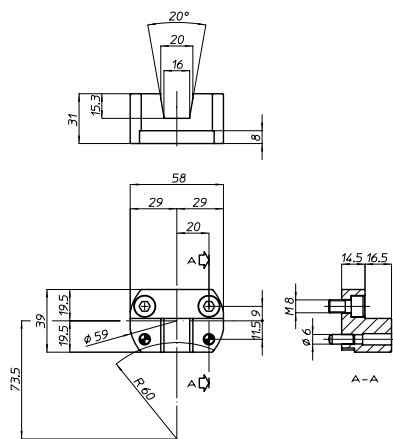


TESTE AD ANGOLO TA13.CP, TA16.CP CON INTERASSE H=80 ANGLE HEADS TA13.CP, TA16.CP WITH CENTRE DISTANCE H=80

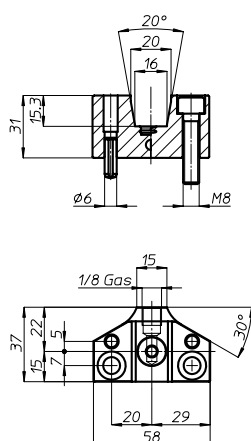




STOP-BLOCK (COD. 630125)



STOP-BLOCK (COD. 630104)



The torque-arm system is fundamental to achieve high quality machining results.

This is why the OMG technicians have engineered and fine tuned a new generation torque-arm system with following characteristics:

- conical (V-shape) timing pin
- simple, fast and precise timing pin adjustment

The conical (V-shaped) pin ensures a higher rigidity to the torque-arm system (than the traditional ones equipped with $\varnothing 18$ mm pins) because cancelling backlashes. The result is the enhancement of both angular and axial rigidity.

The conical timing pin is equipped with a hole and therefore prepared to let coolant through it up to max 10 bar. When customer needs coolant close to the tool, he can install just a small pipe.

Stop-block preparati per

Stop-block made for

HAAS



DMG Milltap



Mectron



Brother



Fanuc Robodrill



Position the conical pin on the opposite side of the angle head spindle when possible in your application.



SERIE

TA

**HEAVY
DUTY**



O.M.G. propone una vasta gamma di Teste ad Angolo. Con più di 110 modelli e quasi 4000 se si contano le varianti, quella di O.M.G. è la più ampia attualmente presente sul mercato. Le Teste ad Angolo sono studiate per consentire una riduzione di tempi e costi nelle lavorazioni meccaniche evitando ulteriori piazzamenti del pezzo. Applicate su macchine tradizionali, centri di lavoro con cambio automatico dell'utensile, oppure centri di tornitura con torretta motorizzata, sono particolarmente curate in ogni particolare, dal cinematismo trattato termicamente, alle coppie coniche Gleason fino ai cuscinetti di precisione per ottenere e garantire un'ottima rigidità e la massima precisione nelle lavorazioni. Fra le tante, queste le due caratteristiche fondamentali per identificare un prodotto moderno che risponde alle attuali esigenze: il gruppo antirotante di nuova concezione che permette alla testa di non avere giochi angolari, le velocità fino a 10.000 rpm (prestazioni che non hanno eguali nei modelli equivalenti della concorrenza). Le teste ad angolo serie TA sono state studiate e definite avvalendosi di sistemi computerizzati all'avanguardia a supporto di conoscenze acquisite dalla O.M.G. in sessant'anni di esperienza nel settore. Tutto ciò ha permesso di fare scelte innovative nei materiali da costruzione, nei trattamenti termici e nelle lavorazioni meccaniche così da ottenere precisione, robustezza, rigidità e finitura al "top".

È così disponibile un'offerta unica per qualità e quantità di modelli atti a soddisfare le esigenze sempre più mirate dell'utilizzatore finale, per qualsiasi macchina utensile: teste monomandrino a 90°, bimandrino a 90°, teste ad angolo variabile da +90° a -90°, teste ad angolo fisso, anche con adduzione refrigerante centro utensile e, dove non è possibile utilizzare teste di serie, teste angolari speciali.

O.M.G. offers a wide range of Angle Heads. With more than 110 models and almost 4000 if we consider all the possible options, what O.M.G. has is the widest range on the market today. The Angle Heads are designed to allow a reduction in time and costs in mechanical processing by reducing the management of the pieces to be machined. Applied on traditional machines, machining centers with automatic tool change, or turning centers with motorized turret, they are extremely meticulous in details, from the heat-treated kinematics to the Gleason bevel gear pairs up to the precision bearings to obtain and guarantee excellent rigidity and maximum precision in machining. Among many, these are the two fundamental characteristics to identify a modern product that responds to current needs: the newly designed anti-rotating group which allows the head to have no angular backlash, the speeds up to 10,000 rpm (performances which have no equal in the models competitive equivalents). The TA series angle heads have been studied and defined using cutting-edge computerized systems to support knowledge acquired by O.M.G. in sixty years of experience. All this has allowed us to make innovative choices in construction materials, heat treatments and mechanical processes so as to obtain precision, robustness, rigidity and "top" finishing.

A unique offer is thus available in terms of quality and quantity of models designed to satisfy the increasingly targeted needs of the end user, for any machine tool: 90° single-spindle heads, 90° double-spindle heads, +90 variable angle heads ° to -90°, fixed angle heads, also with tool center coolant supply and, where it is not possible to use standard heads, special angular heads.



PANORAMICA PRODOTTI

PRODUCT OVERVIEW

Pagina • Page: 4-11



TAR

Piccole per piccoli spazi.

Tiny for narrow spaces.

TA

Pagina • Page: 4-23

Lavorazione singola di foratura e fresatura.

Drilling and milling machining.



Pagina • Page: 4-49

TA... 2P

Due mandrini contrapposti di 180°.

180° two opposed spindles.



TA... D

Pagina • Page: 4-55

Input refrigerante attraverso lo stop-block e uscita attraverso il centro utensile.

Input coolant from stop-block, and output through tool spindle.



Pagina • Page: 4-75

TAV

Mandrino variabile $\pm 90^\circ$.

$\pm 90^\circ$ adjustable spindle.



TAF

Pagina • Page: 4-95

Mandrino fisso, angolo su richiesta del cliente.

Fixed spindle with custom angle.



Pagina • Page: 4-24



TA...L

Versione allungata per lavorazioni singole di foratura e fresatura.

Length stretched version for drilling and milling single machining operations.

TAL

Pagina • Page: 4-39

Versione leggera per lavorazioni singole di foratura e fresatura.

Light version for drilling and milling single machining operations.



Pagina • Page: 4-65



TAO

Mandrino offset, lavorazione in spazi ristretti ed ottima performance in fresatura.

Offset spindle, machining in narrow spaces, and excellent results in milling operations.

TAO... PD

Pagina • Page: 4-66

Mandrino offset, input refrigerante attraverso il centro cono, uscita attraverso centro utensili con pressione 70 bar.

Offset spindle, input coolant through machine taper, output through tool spindle at 70 bar pressure.



Pagina • Page: 4-101



TA... T

Connessione alla macchina tramite flangia.

To be connected to the machine by flange.

SIMBOLI

ICONS



RAPPORTO ENTRATA/USCITA
RATIO INPUT/OUTPUT



CAPACITÀ DI FORATURA
DRILLING CAPACITY



MASCHIATURA
TAPPING



PESO
WEIGHT



N° MAX GIRI IN USCITA
MAX OUTPUT RPM



PRESSIONE
PRESSURE



CARICO ASSIALE
AXIAL LOAD



PESO CON CONO 40
WEIGHT WITH SIZE 40 SHANK



PESO CON CONO 50
WEIGHT WITH SIZE 50 SHANK



ROTAZIONE IN INGRESSO
INPUT ROTATION



ROTAZIONE IN USCITA
OUTPUT ROTATION



DUAL CONTACT



ACCURACY



COPPIA
TORQUE

FH

BAH

TA.CP

TA

MO

HT

4-4

VH

TSI/TSX

T

MT-TC-TC3





SISTEMA MODULARE PER APPLICAZIONI FLESSIBILI

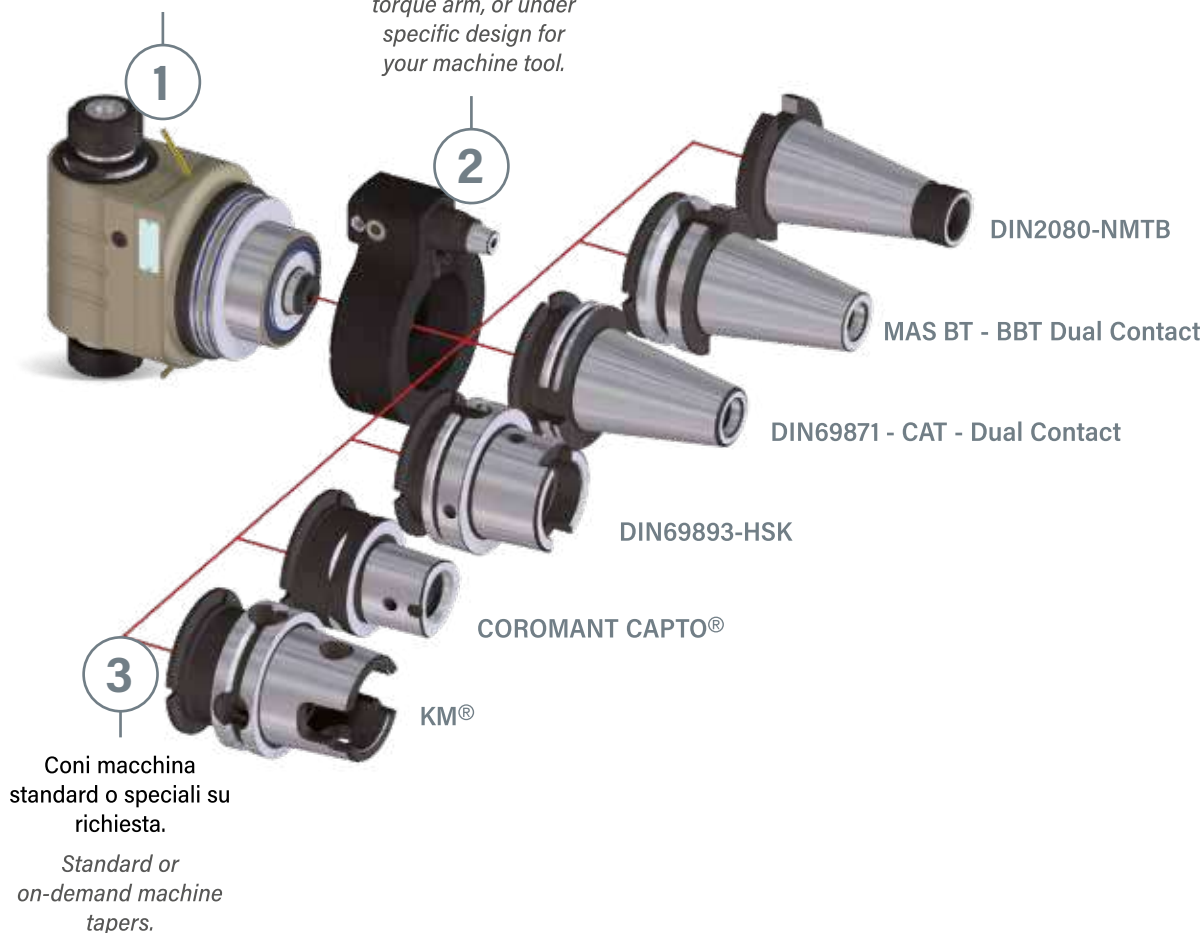
MODULAR SYSTEM FOR FLEXIBLE APPLICATION

Testa ad angolo con presa utensile ER standard, oppure vedi tipi Mandrino.

Angle Head with standard ER tool connection, or check other spindle types.

Antirotante standard "senza gioco", oppure su specifico design per la vostra macchina utensile.

No backlash standard torque arm, or under specific design for your machine tool.



MODULARITÀ CONI

Sono disponibili tutti i tipi di cono macchina, da sostituire tramite un esclusivo accoppiamento di precisione che crea un sistema rigido pari ai cono integrali, ma con i pregi dell'intercambiabilità.

MODULARITÀ ANTIROTANTI

esistono fondamentalmente tre dimensioni unificate di interasse tra il centro cono ed il centro perno antirotante: 65 mm per i cono grandezza 40, 80 mm per i cono grandezza 50 ed in alcuni casi anche 110 mm. Sono disponibili tutte le dimensioni e sostituire il gruppo antirotante è una operazione banale.

TAPER MODULARITY

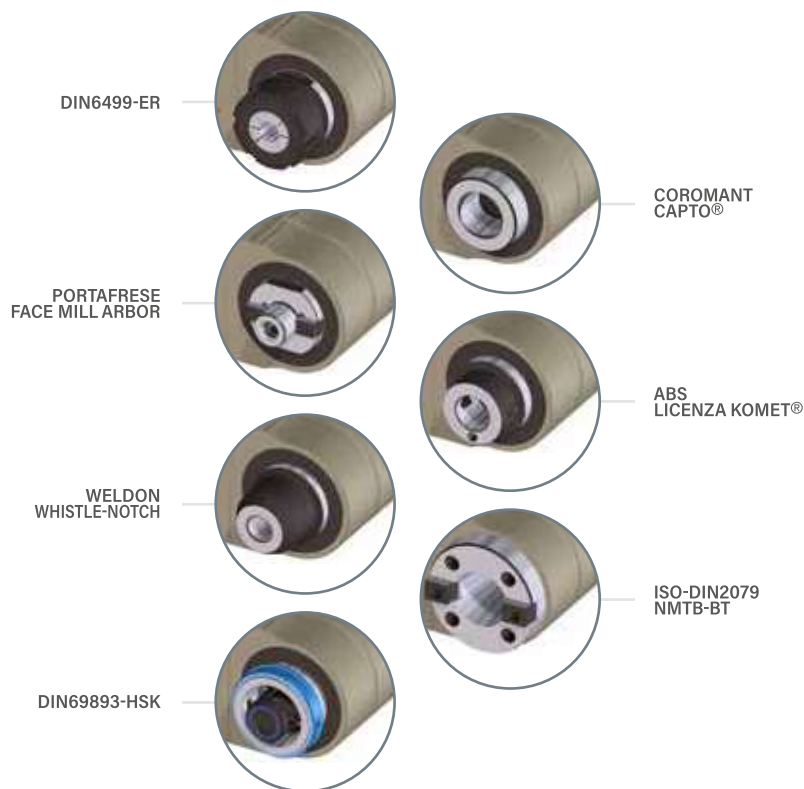
All the different machine tapers are available, and can be replaced with an exclusive precision coupling system generating a rigid system equal to integral tapers, but with additional interchangeability quality.

TORQUE ARM MODULARITY

Essentially three unified dimensions between taper and torque-arm centers exist: 65 mm for the taper size 40, 80 mm for the taper size 50 and also 110 mm in some cases. All sizes are available and torque-arm replacement is very simple.

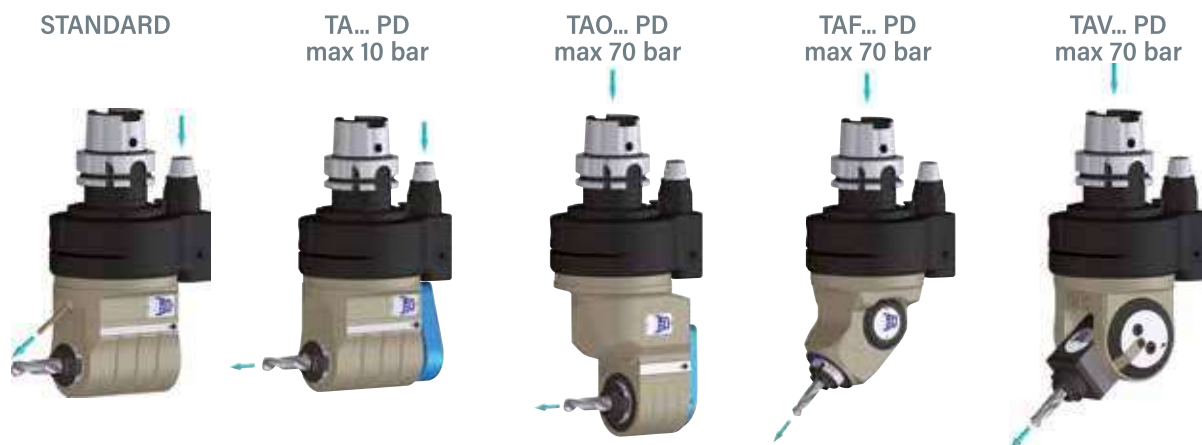
PRESE UTENSILI - TIPI MANDRINO

CLAMPING SYSTEMS AND SPINDLE TYPES



REFRIGERANTE UTENSILE

COOLANT TOOL



IL CIRCUITO REFRIGERANTE È STANDARD

Tutte le teste sono provviste di canalizzazione interna, che parte dal perno dell'antirotante e termina sull'ugello vicino all'utensile, senza alcun costo aggiuntivo.

REFRIGERANTE DA CONO MACCHINA

La costruzione offset delle Teste ad Angolo serie TAO consente il montaggio di tenute ad alta pressione affidabili nel tempo ed isolate dalle parti vitali della Testa ad Angolo, per un sicuro utilizzo di utensili con passaggio refrigerante interno.

COOLANT SYSTEM IS STANDARD

All our Angle Heads are supplied with an internal channel system, which starts from the torque-arm pin and ends on the nozzles next to the tool, without additional cost.

COOLANT SYSTEM FROM MACHINE TAPER

The offset construction of the TAO Angle Head series allows to fit high pressure seals which are time reliable and isolated from the vital parts of the Angle Heads, for a safe usage of tools with internal coolant transit.



ANTIROTANTE TORQUE ARM

PRESTAZIONI SUPERIORI

L'antirotante standard permette di cambiare la testa in automatico. Il sistema di accoppiamento fra perno conico regolabile assialmente e lo stop-block con sede a "V", permette di annullare la tolleranza tra le parti creando un sistema rigido, senza giochi. Evidenti sono i vantaggi: maggiore durata degli utensili, maggiore durata dei cuscinetti, risparmi in termini di manutenzione con conseguente riduzione dei costi.

MASSIMA STABILITÀ

I sistemi antirotanti **TriBlock** e **QuadBlock** di O.M.G. con perni regolabili permettono di contrastare al meglio le spinte radiali e assiali con la possibilità di affrontare in sicurezza lavorazioni di fresatura o finitura fino a ora mai effettuate con le teste ad angolo, destinate inizialmente a diversi piazzamenti pezzo.

HIGHER PERFORMANCES

The standard torque arm allows an automatic change of the head. The coupling system between the conical pin, which can be axial adjusted, and the "V"-housing of the stop-block, allows to cancel any tolerance between those parts generating a rigid and backlash free system. The advantages are evident: longer life of tools, longer life of bearings, maintenance savings with consequent cost reductions.

MAXIMUM STABILITY

*The O.M.G. **TriBlock** and **TriBlock** torque arm systems with adjustable pin allow to oppose both radial and axial thrusts at their best, with the possibility of milling or finishing with total security, which was not possible until nowadays because requiring several changes of placement of the piece to be machined.*

STANDARD



TriBlock 



QuadBlock 

Studiato e realizzato
su specifica richiesta.

*Customized design
according to your
application.*



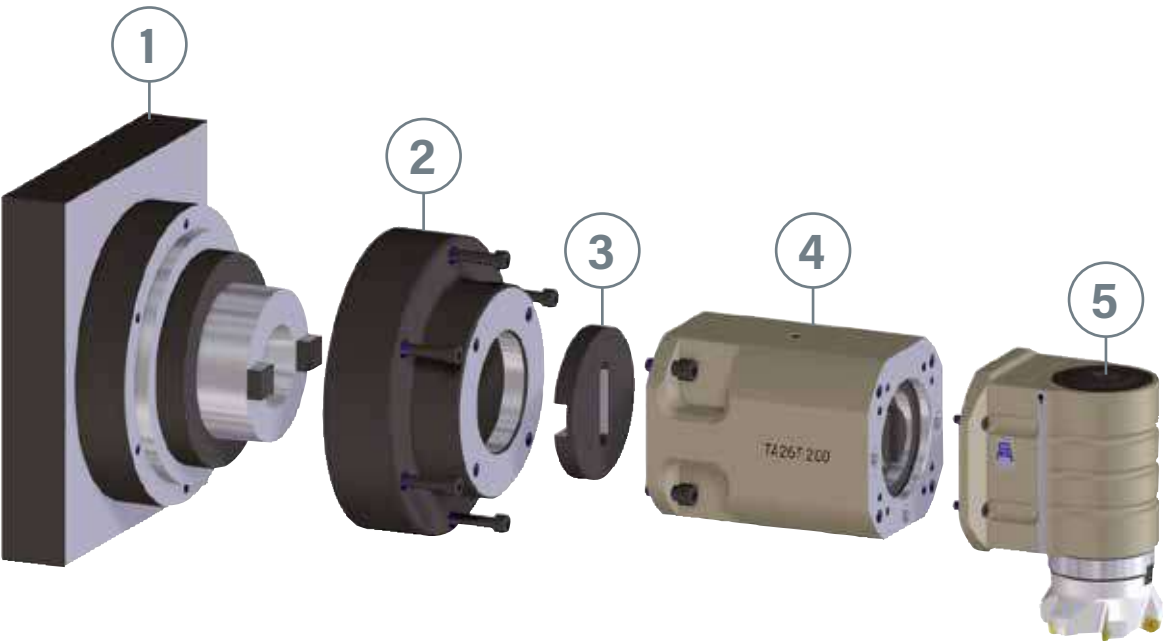
Stop-block

Perno conico
Conical pin



CONNESSIONE ALLA MACCHINA TRAMITE FLANGIA
MACHINE CONNECTION BY FLANGE

- 1 MACCHINA
MACHINE
- 2 FLANGIA DI CONNESSIONE
CONNECTION FLANGE
- 3 GIUNTO ISO 40/50
DRIVING JOINT ISO 40/50
- 4 ESTENSIONE
EXTENSION
- 5 TESTA AD ANGOLO TA... T
ANGLE HEAD TA... T





QUALITÀ DEI COMPONENTI

QUALITY OF COMPONENTS

CORPO - BODY

Corpo testa in acciaio: massima rigidità e minima dilatazione termica.

Heady body in steel: maximum rigidity and minimum thermal expansion.



CUSCINETTI BEARINGS

Cuscinetti obliqui in classe di precisione ABEC7/9.

Angular contact ball bearings of precision class ABEC7/9



INGRANAGGI GEARS

Ingranaggi Gleason con evolvente rettificato: massime performances e minori vibrazioni.

Gleason rectified gears: maximum performances and minimum vibration.



DESIGN

Design compatto, che insieme alle specifiche sopra descritte, consente: alte performances, elevate velocità, lunga durata degli utensili.

Compact design that, along with above mentioned described specifications, allows: high performances, high speeds, long life of tools.



MATERIALI

Tutte le teste ad angolo standard sono in acciaio ricavate dal pieno per fresatura a pareti sottili, minimo ingombro e minor peso. Hanno il corpo trattato con nipro, trattamento anticorrosione, che garantisce alta protezione contro la ruggine, lubrificanti aggressivi e acidi.

COMPONENTI

Tutte le teste montano cuscinetti di precisione, oppure conici nelle versioni per grandi asportazioni. Si utilizzano solo cinematismi trattati termicamente e coppie coniche Gleason con dentatura rettificata. Lubrificazione con grasso long-life.

MATERIALS

All our standard Angle Heads are made from solid steel for thin wall milling, resulting with the minimum possible size and less weight. Body is nipro treated and anti-corrosion coated giving the guarantee of high protection against rust as well as acid and aggressive lubricant-coolants.

COMPONENTS

All our Angle Heads integrate precision bearings, or tapered roller bearings when models are for big removal machining. We only use thermal treated cinematic components and Gleason bevel gears with rectified teeth. Lubrication is with long-life grease.

PACKAGING

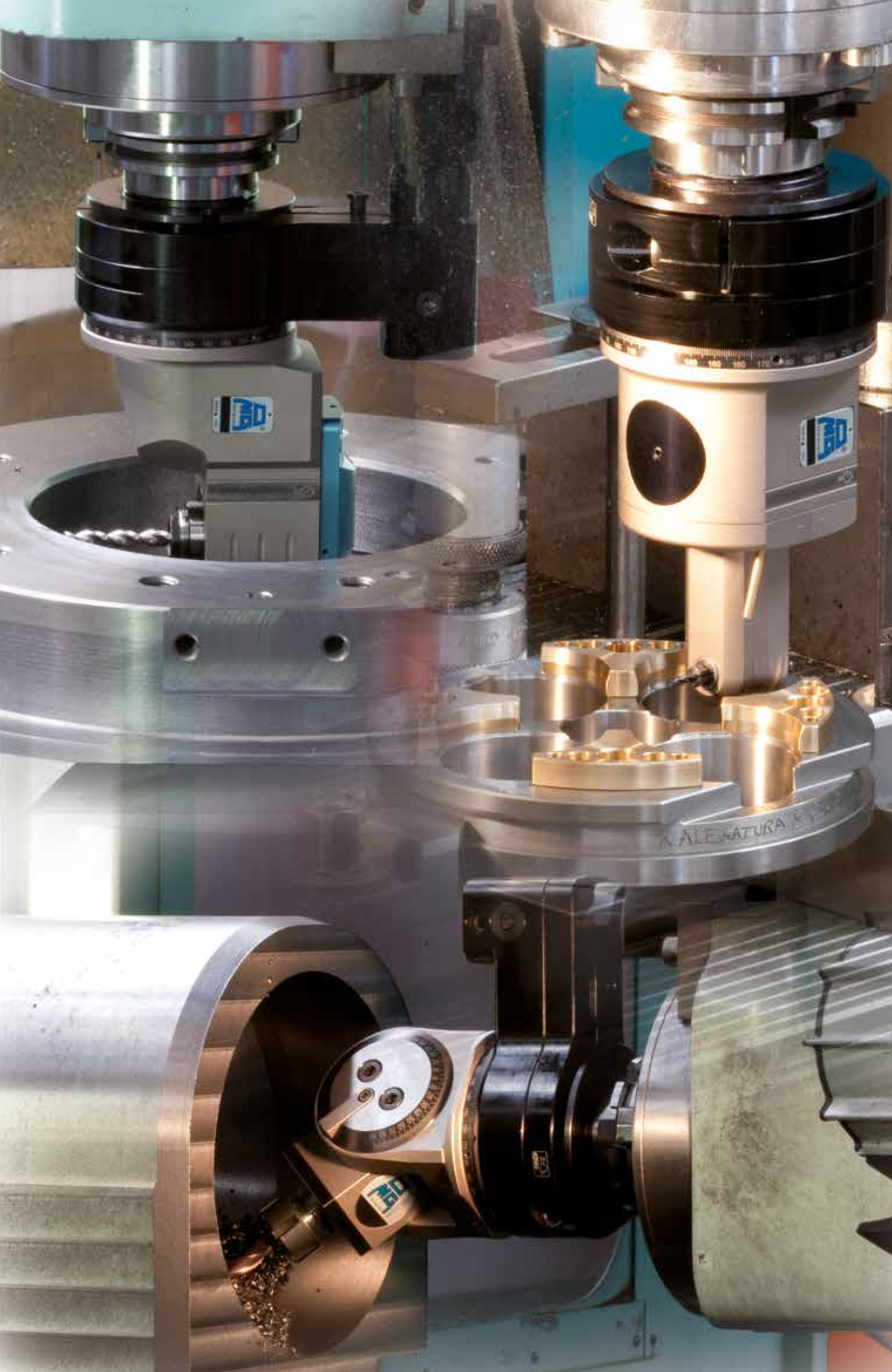


Le Teste ad Angolo sono racchiuse in robusta valigetta di materiale termoplastico e corredate di una completa dotazione di accessori:

- Stop-block standard con passaggio refrigerante
- Confezione di chiavi per messa in funzione e manutenzione
- Grasso di mantenimento
- Manuale istruzioni dettagliato per messa in funzione e manutenzione

The Angle Heads are packed in a strong thermoplastic case together with a complete set of accessories:

- Standard stop-block with coolant way
- Set of keys for operation and maintenance
- Grease tube
- Operation and maintenance manual



FH

BAH

TA.CP

TA

MO

HT

4-10

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

4-11

VH

TSI/TSX

T

MT-TC-TC3



TAR02.P

TESTA AD ANGOLO - ANGLE HEAD



6,6 KG



9 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø2



M2



40 N



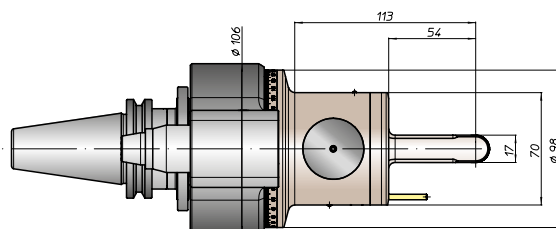
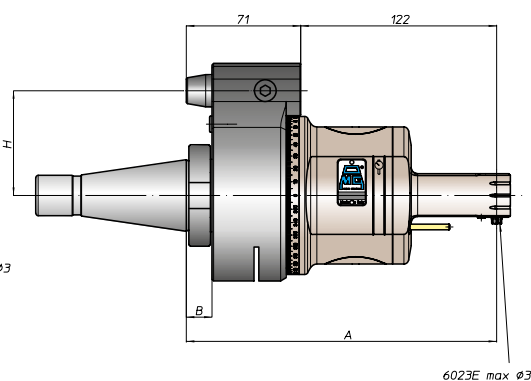
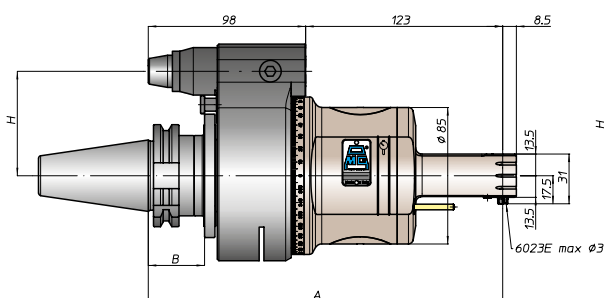
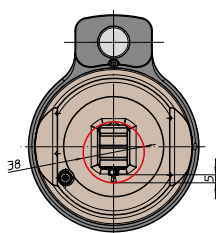
1-1.333



8000



2,5

CARATTERISTICHE
FEATURESCONO
SHANK

DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

221

221

221

229

230

225

221

191

194

191

194

B

35

35

35

45

44

46

39

41

13

16

13

16

H STANDARD

65

80

65

80

65

80

65

80

65

80

65

80

65

80

65

80

H OPTIONAL

110

110

110

110

110

110

110

110

110

For DIN69871, ANSIB5.50 and BT, dual contact as option



FH

BAH

TA.CP

TA

MOx

HT

4-13

VH

TSI/TSX

T

MT-TC-TC3



TAR03.P

TESTA AD ANGOLO - ANGLE HEAD



6,7 KG



9,1 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø3



M3



70 N



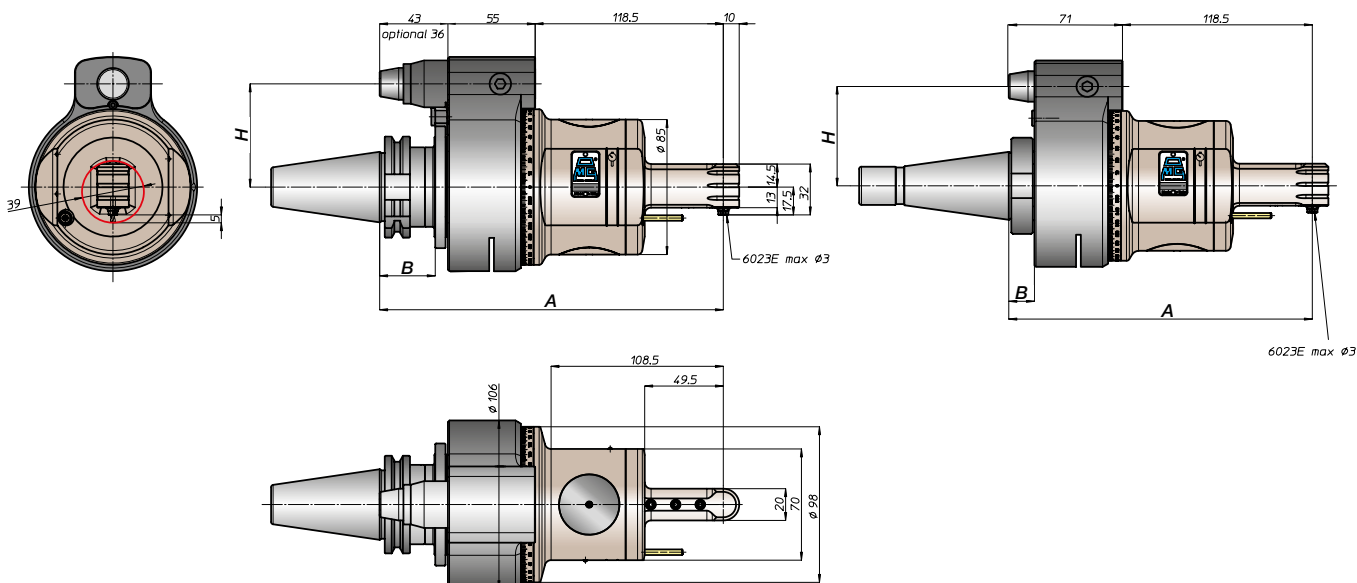
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8000



3,5

CARATTERISTICHE
FEATURESCONO
SHANK

DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



DIN2080



ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

216,5 216,5 216,5 224,5 225,5

220,5

216,5

186,5 189,5

188,5 191,5

B

35 35 35 45 44 46

39 41

13 16

13 16

13 16

H STANDARD

65 80 65 80 65 80 65 80

65 80

65 80

65 80

65 80

H OPTIONAL

110 110 110 110

110

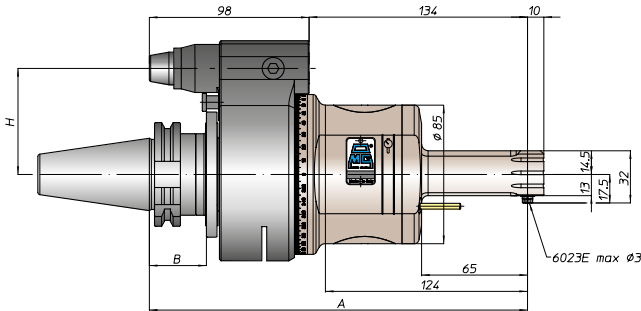
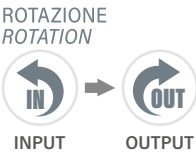
110

110

110

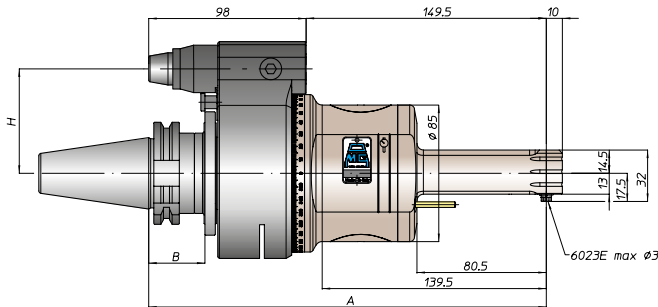
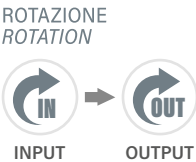
For DIN69871, ANSIB5.50 and BT, dual contact as option

TAR03.P-L65



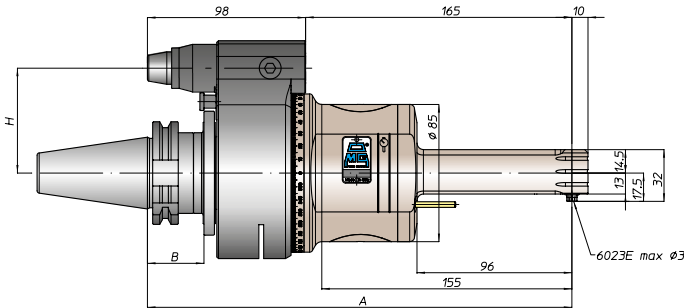
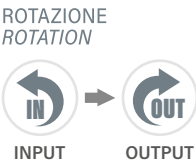
CONO SHANK	DIN69871				CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18		
	SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
	A	232				232		232	240	241			236			232			202	205	202	205

TAR03.P-L80



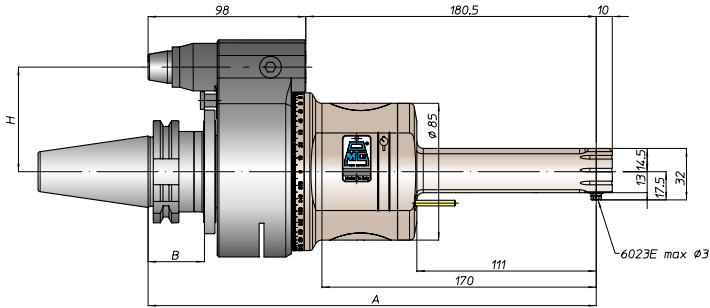
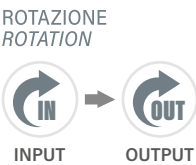
CONO SHANK	DIN69871				CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18		
	SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
	A	247				247		247	255	256			251			247			217	220	217	220

TAR03.P-L96



CONO SHANK	DIN69871				CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18		
	SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
	A	263				293		293	271	272			267			263			233	236	233	236

TAR03.P-L111



CONO SHANK	DIN69871				CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18		
	SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
	A	278				278		278	286	287			282			278			248	251	248	251

FH

BAH

TA.CP

TA

MOX

HT

4-14

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

4-15

VH

TSI/TSX

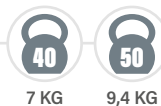
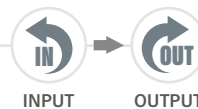
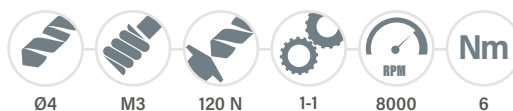
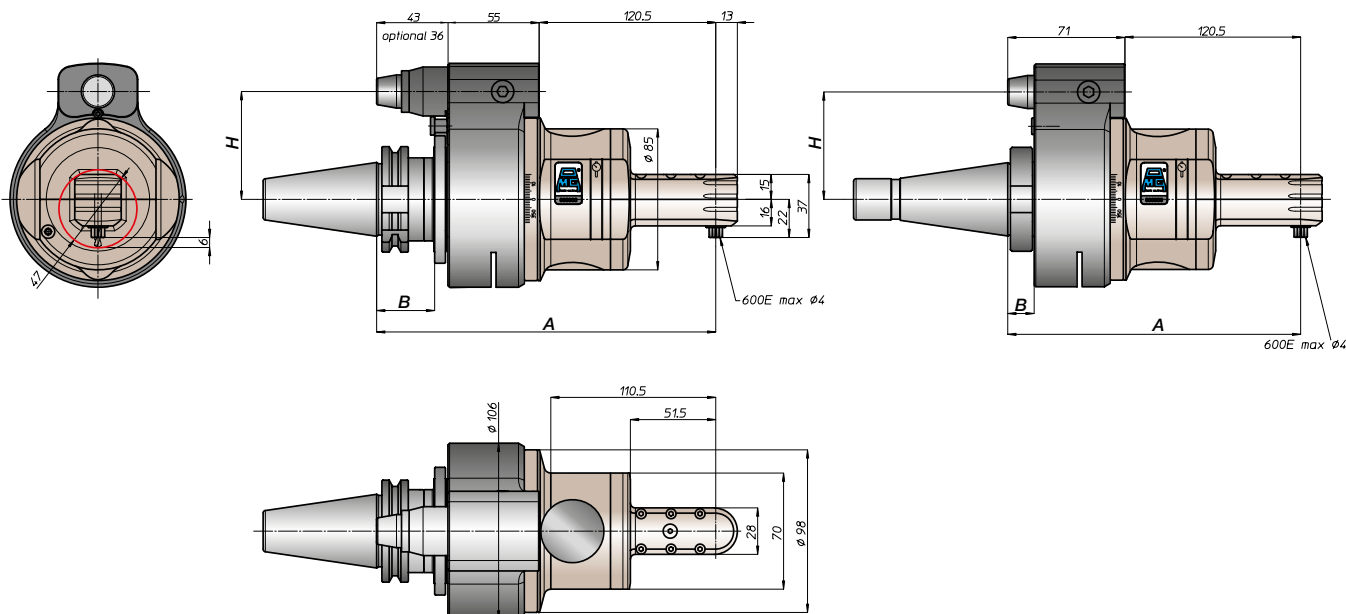
T

MT-TC-TC3



TAR04.P

TESTA AD ANGOLO - ANGLE HEAD

PESO
WEIGHTROTAZIONE
ROTATIONCARATTERISTICHE
FEATURESCONO
SHANK

DIN69871



ANSIB5.50



BT



HSK

DIN69893



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100

C5 C6 C8

63 80 100

40 50 40 50

A

218,5 218,5 218,5 226,5 227,5

222,5

218,5

188,5 191,5 188,5 191,5

B

35 35 35 45 44 46

39 41

13 16 13 16

H STANDARD

65 80 65 80 65 80 65 80

65 80 65 80

65 80 65 80

H OPTIONAL

110 110 110 110

110

110

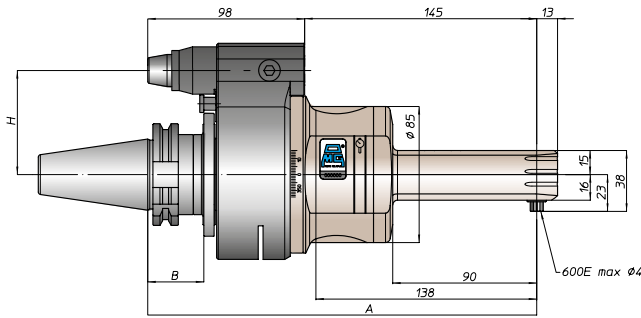
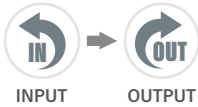
110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option



TAR04.P-L90

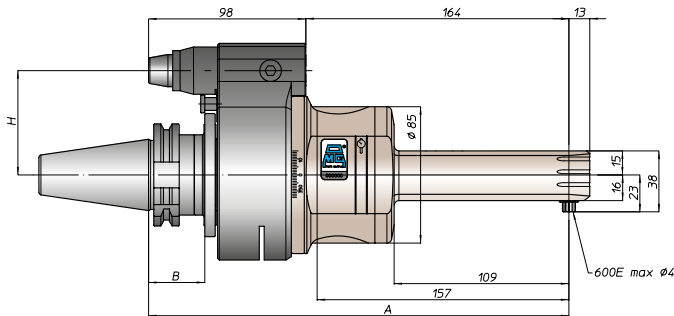
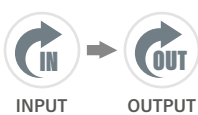
ROTAZIONE
ROTATION



CONO SHANK	DIN69871				CAT ANSIB5.50	BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
SIZE	30	40	45	50	40	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	257				257	257	265	266			261			257			227	230	227	230

TAR04.P-L109

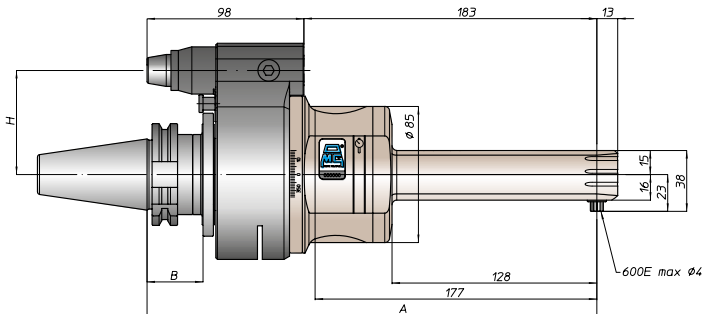
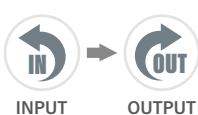
ROTAZIONE
ROTATION



CONO SHANK	DIN69871				CAT ANSIB5.50	BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
SIZE	30	40	45	50	40	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	276				276	276	284	285			280			276			246	249	246	249

TAR04.P-L128

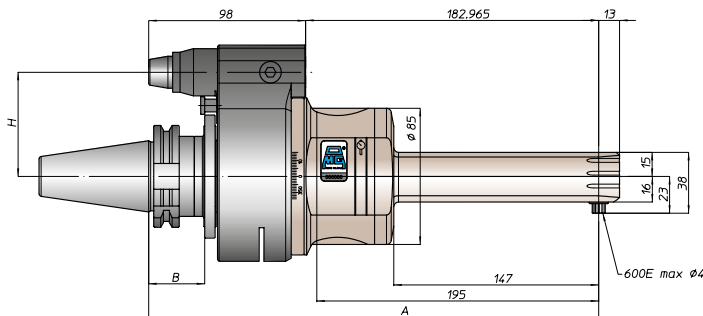
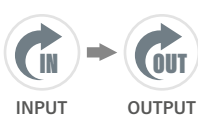
ROTAZIONE
ROTATION



CONO SHANK	DIN69871				CAT ANSIB5.50	BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
SIZE	30	40	45	50	40	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	295				295	295	303	304			299			295			265	268	265	268

TAR04.P-L147

ROTAZIONE
ROTATION



CONO SHANK	DIN69871				CAT ANSIB5.50	BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
SIZE	30	40	45	50	40	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	314				314	314	322	323			318			314			284	287	284	287

FH

BAH

TA.CP

TA

MOX

HT

4-16

VH

TSI/TSX

T

MT-TC-TC3





TESTA AD ANGOLO • ANGLE HEAD



7,2 KG



9,6 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION

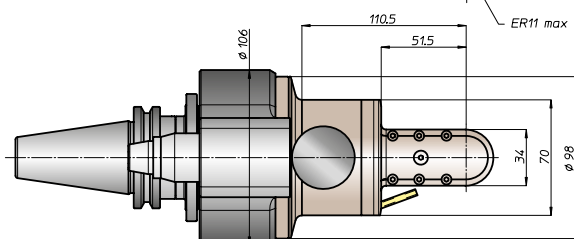
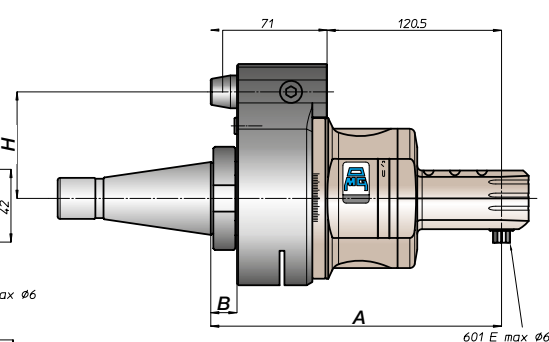
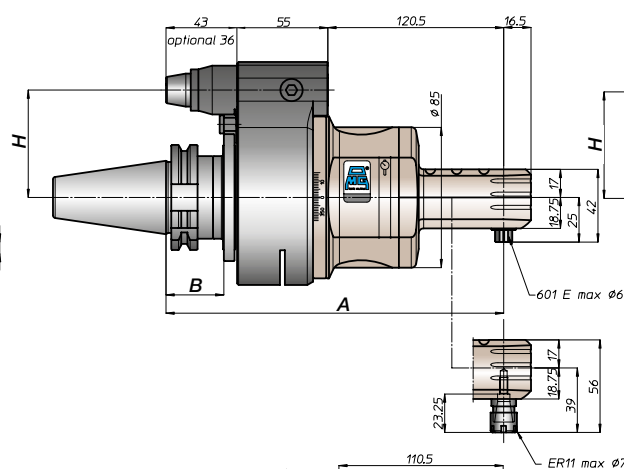
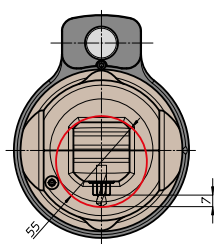


CARATTERISTICHE FEATURES



06
WELDON
WHISTLE-NOTCH

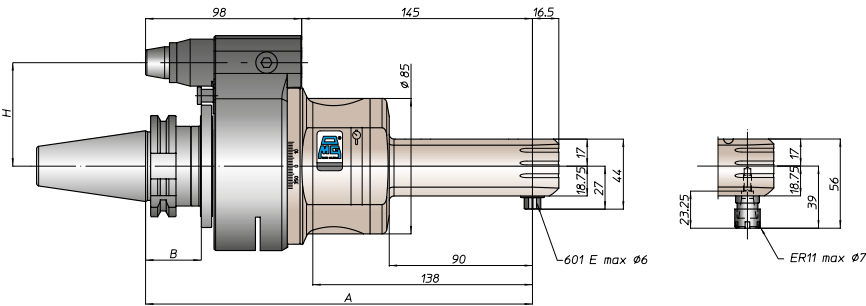
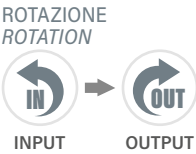
MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO SHANK																					
	DIN69871				ANSIB5.50				DIN69893			ISO26623						DIN2080		ANSIB5.18	
SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	218,5				218,5		218,5	226,5	227,5			222,5			218,5			188,5	191,5	188,5	191,5
B	35				35		35	45	44	46			39	41				13	16	13	16
H STANDARD	65		80		65		80		65	80		65		80		65	80		65	80	
H OPTIONAL			110				110			110				110			110			110	

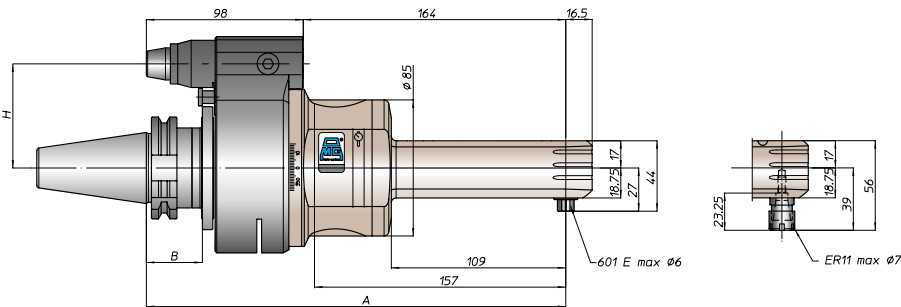
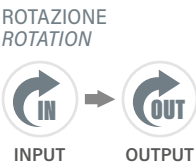
For DIN69871, ANSIB5.50 and BT, dual contact as option

TAR06.P-L90



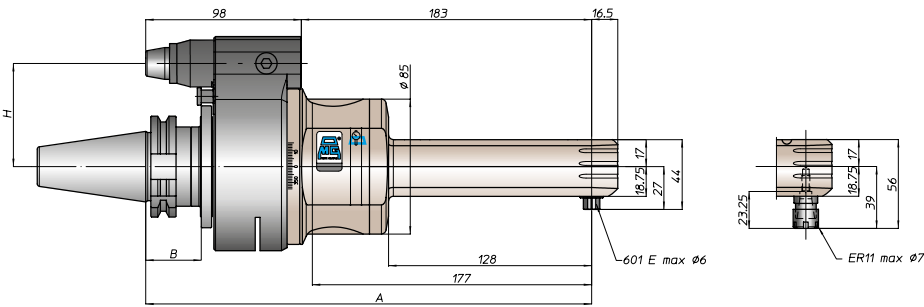
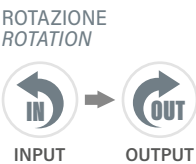
CONO SHANK	DIN69871				CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	257				257		257	265	266			261			257			227	230	227	230

TAR06.P-L109



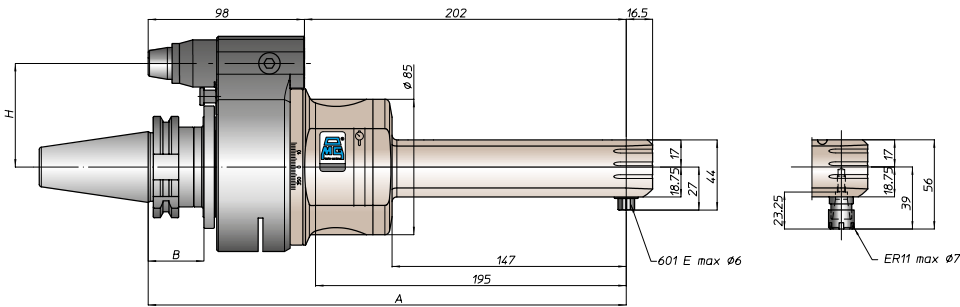
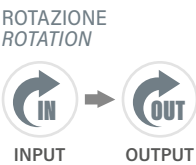
CONO SHANK	DIN69871				CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	276				276		276	284	285			280			276			246	249	246	249

TAR06.P-L128



CONO SHANK	DIN69871				CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	295				295		295	303	304			299			295			265	268	265	268

TAR06.P-L147



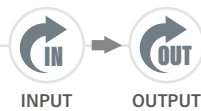
CONO SHANK	DIN69871				CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	314				314		314	322	323			318			314			284	287	284	287

TAR10.p

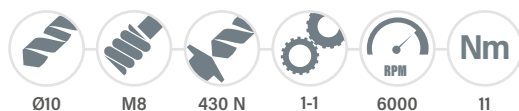
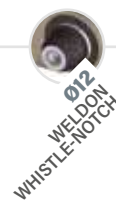
TESTA AD ANGOLO • ANGLE HEAD



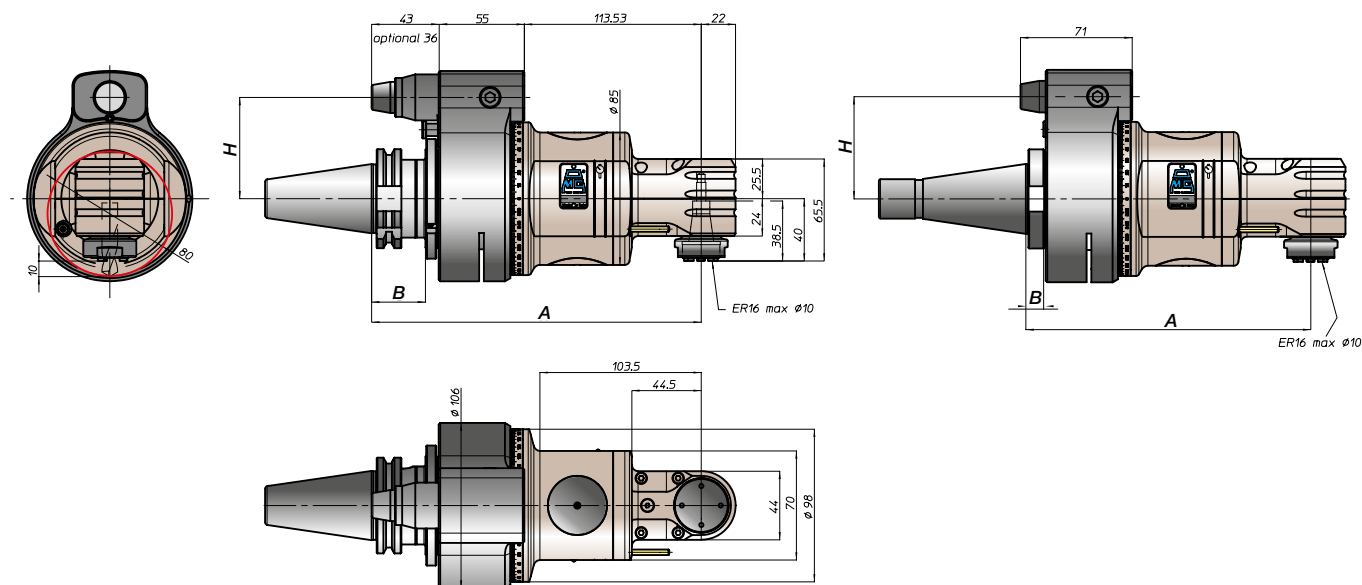
PESO
WEIGHT



ROTAZIONE
ROTATION

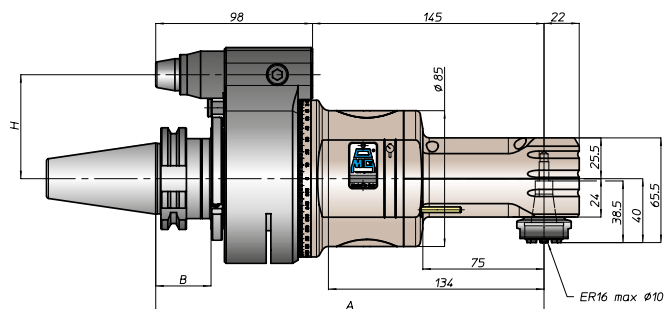
CARATTERISTICHE
FEATURES

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES

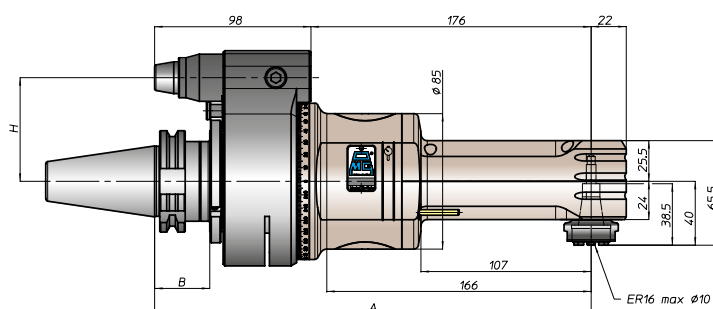


CONO SHANK																				
	DIN69871			ANSIB5.50				DIN69893			ISO26623						DIN2080		ANSIB5.18	
SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	211,5			211,5		211,5	219,5	220,5			215,5			211,5			181,5	184,5	181,5	184,5
B	35			35		35	45	44	46			39	41				13	16	13	16
H STANDARD	65			80		65	80	65	80		65		80	65	80		65	80	65	80
H OPTIONAL				110			110		110				110		110			110		110

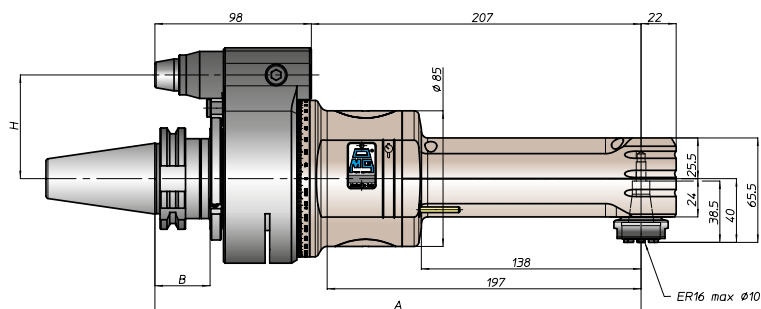
For DIN69871, ANSIB5.50 and BT, dual contact as option



CONO SHANK	DIN69871			CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
	SIZE																			
A	242,78			242,78		242,78 250,78		251,78			246,78			242,78			212,78	215,78	212,78	215,78



CONO SHANK	DIN69871			CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18		
	SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
	A	274,06			274,06		274,06	282,06	283,06			278,06			274,06			244,06	247,06	244,06	247,06



CONO SHANK	DIN69871			CAT ANSIB5.50		BT		HSK DIN69893			CAPTO ISO26623			KM			DIN2080		NMTB ANSIB5.18	
	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
	SIZE																			
A	305,35			305,35		305,35 313,35		314,35			309,35			205,35			275,35 278,35		275,35 278,35	

TAR

GALLERY





FH

BAH

TA.CP

TA

MOx

HT

4-23

VH

TSI/TSX

T

MT-TC-TC3



TA07.P

TESTA AD ANGOLO - ANGLE HEAD



5,5 KG



7,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø7



M6



180 N



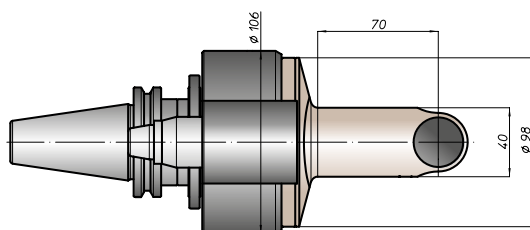
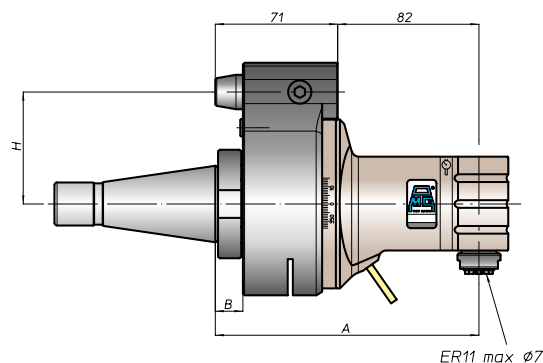
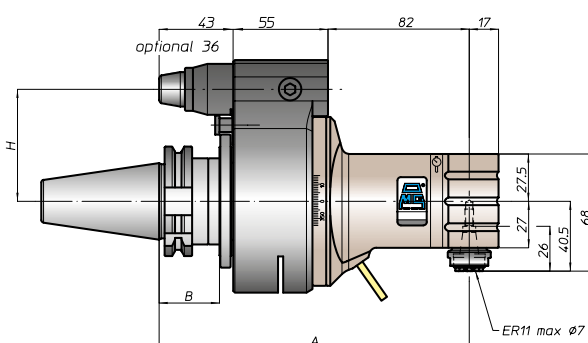
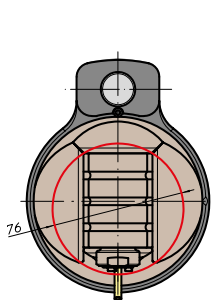
1-1



10000



11

CARATTERISTICHE
FEATURESØ8-Ø10
WELDON
WHISTLE-NOTCHMANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



HSK

DIN69893



CAPTO

ISO26623



KM



DIN2080



ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100

C5 C6 C8

63 80 100

40 50 40 50

A

180

180

180 188

189

184

180

150 153

150 153

B

35

35

35 45

44 46

39 41

13 16

13 16

H STANDARD

65 80

65 80

65 80

65 80

65 80

65 80

65 80

65 80

H OPTIONAL

110

110

110

110

110

110

110

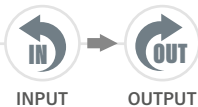
110

For DIN69871, ANSIB5.50 and BT, dual contact as option

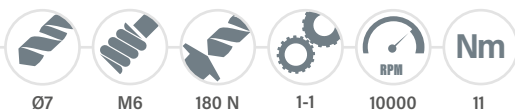
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TA07.PL

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

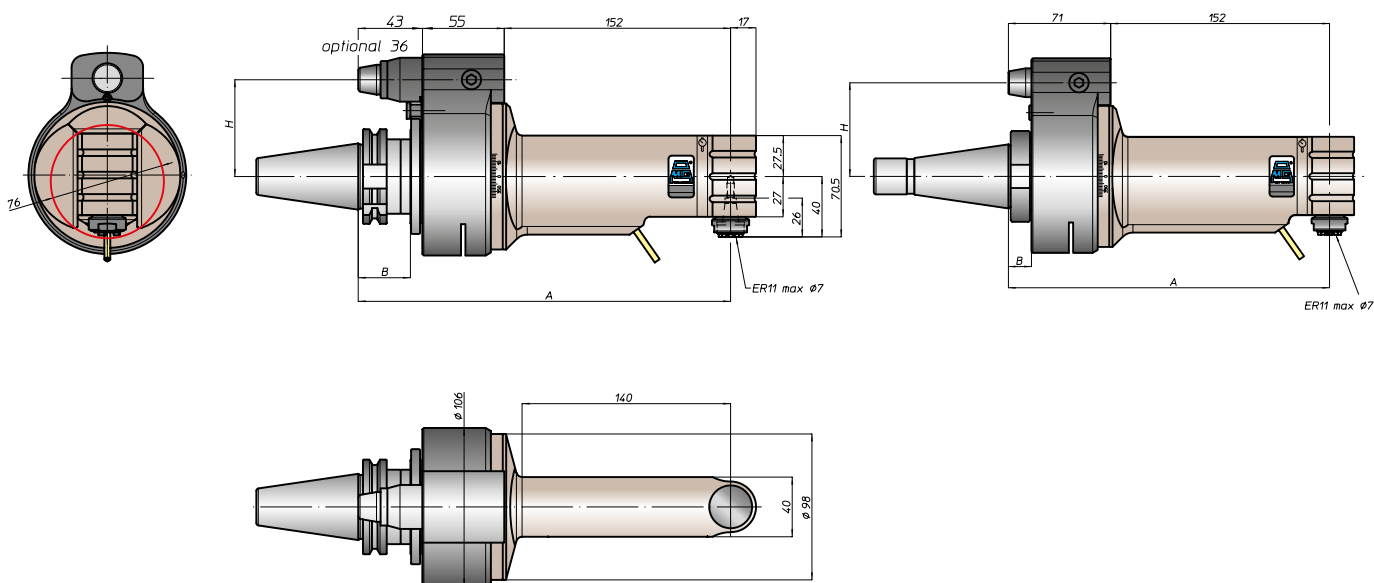
4-24

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

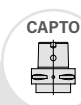
SIZE

A

B

H STANDARD

H OPTIONAL



ANSIB5.50

DIN69893

ISO26623

DIN2080

ANSIB5.18

SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	250	250	250	250	258	259	254	250	220	223	220	223	220	223	220	223	220	223	220	223
B	35	35	35	45	44	46	39	41	13	16	13	16	13	16	13	16	13	16	13	16
H STANDARD	65	80	65	80	65	80	65	80	65	80	65	80	65	80	65	80	65	80	65	80
H OPTIONAL	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-25

VH

TSI/TSX

T

MT-TC-TC3

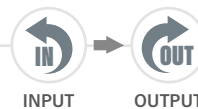


TA10.P

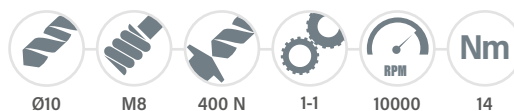
TESTA AD ANGOLO - ANGLE HEAD



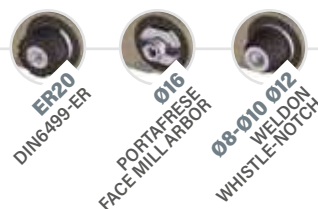
PESO
WEIGHT



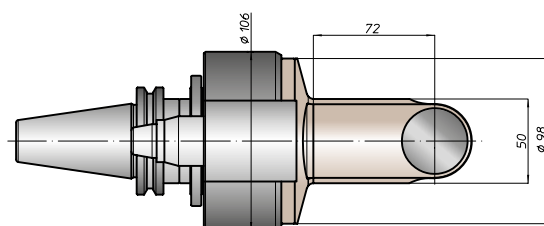
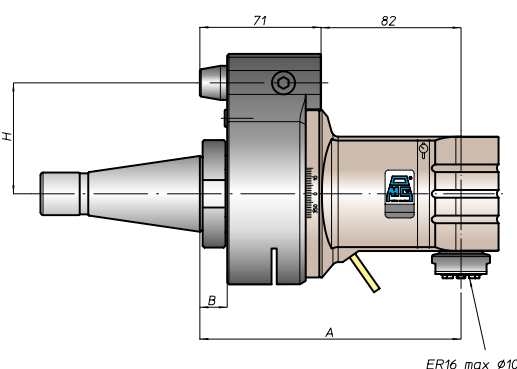
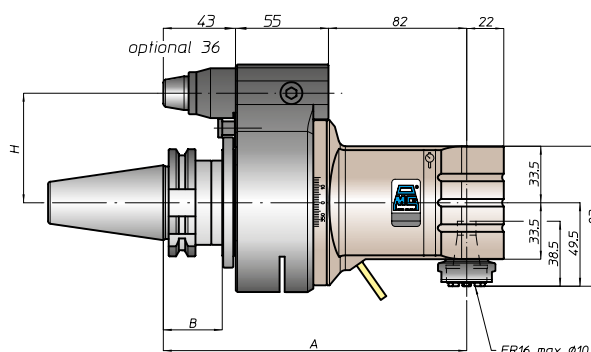
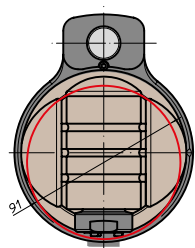
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK



DIN69871



ANSIB5.50

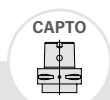


BT



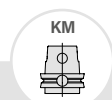
HSK

DIN69893



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100 C5 C6 C8 63 80 100 40 50 40 50

A

180 180 180 188 189 184 180 150 153 150 153

B

35 35 35 45 44 46 39 41 13 16 13 16

H STANDARD

65 80 65 80 65 80 65 80 65 80 65 80 65 80

H OPTIONAL

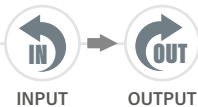
110 110 110 110 110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option

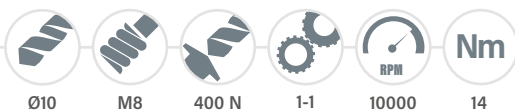
PESO
WEIGHT



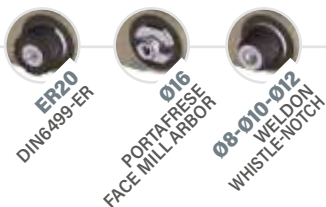
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TA10.PL

TESTA AD ANGOLO - ANGLE HEAD

FH

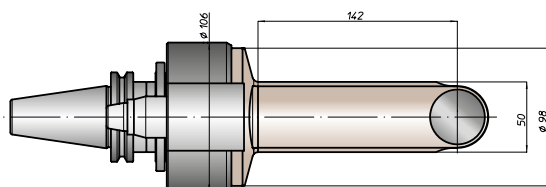
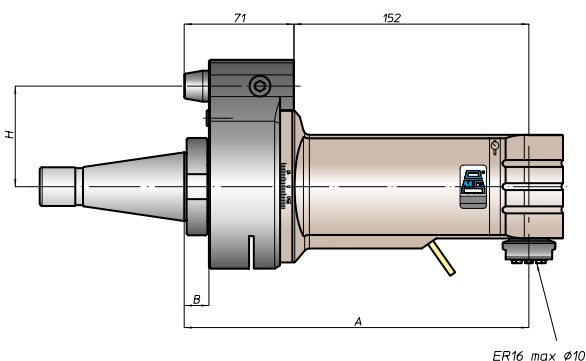
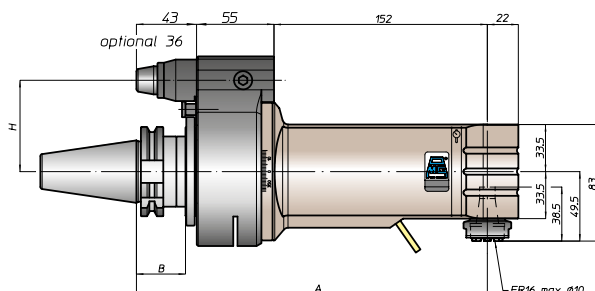
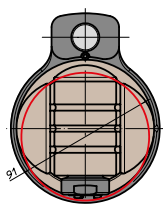
BAH

TA.CP

TA

MOX

HT



4-26

VH

TSI/TSX

T

MT-TC-TC3

CONO
SHANK



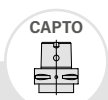
DIN69871



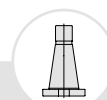
ANSIB5.50



DIN69893



ISO26623



DIN2080



ANSIB5.18

SIZE

40 45 50 40 50 40 50 63 80 100 C5 C6 C8 63 80 100 40 50 40 50

A

250 250 250 258 259 254 250 220 223 220 223

B

35 35 35 45 44 46 39 41 13 16 13 16

H STANDARD

65 80 65 80 65 80 65 80 65 80 65 80 65 80

H OPTIONAL

110 110 110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option



FH

BAH

TA.CP

TA

MOx

HT

4-27

VH

TSI/TSX

T

MT-TC-TC3



TA13.P

TESTA AD ANGOLO - ANGLE HEAD



6,5 KG



9 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø13



M10



810 N



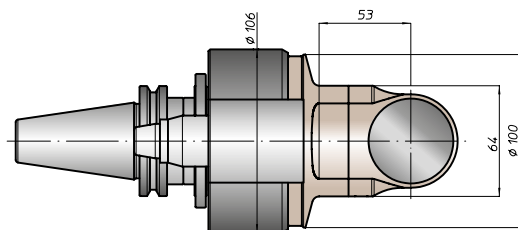
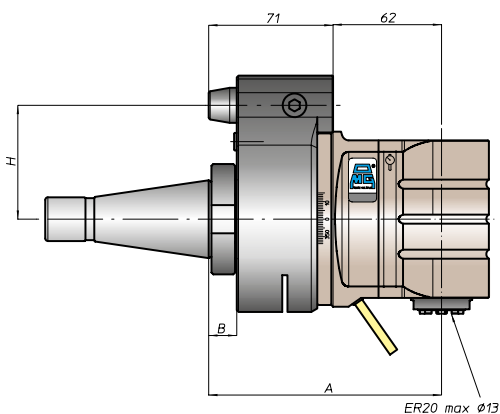
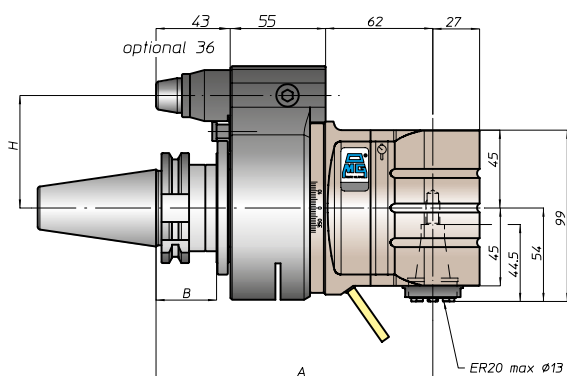
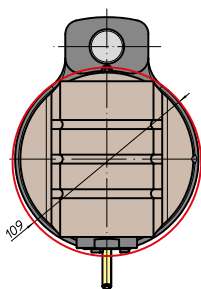
1-1



8000



38

CARATTERISTICHE
FEATURESER25
DIN6499-ERØ16-Ø22
PORTAFRESE
FACE MILL ARBORØ16
WELDON
WHISTLE-NOTCHABS25
LICENZA KOMET®
KOMET LICENCE®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

40

45

50

40

50

40

50

63

80

100

C5

C6

C8

63

80

100

40

50

40

50

A

160

160

160

168

169

164

160

130

133

130

133

B

35

35

35

45

44

46

39

41

13

16

13

16

H STANDARD

65

80

65

80

65

80

65

80

65

80

65

80

65

80

65

80

H OPTIONAL

110

110

110

110

110

110

110

110

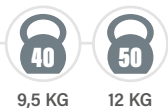
110

110

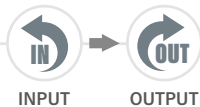
110

For DIN69871, ANSIB5.50 and BT, dual contact as option

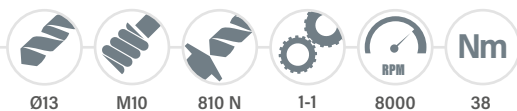
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TA13.PL

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

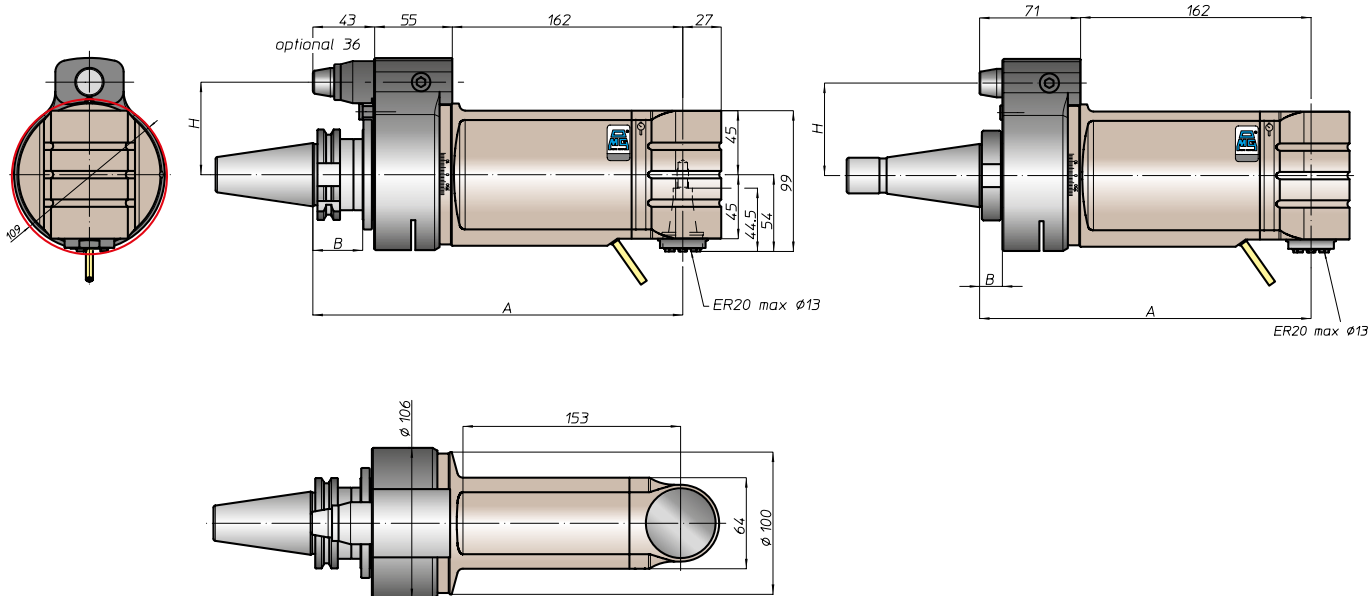
4-28

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



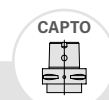
ANSIB5.50



BT



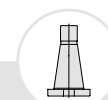
DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
260			260		260	268	269			264			260			230	233	230	233
35		35		35	45	44	46			39	41				13	16	13	16	
65	80	65	80	65	80	65	80		65		80	65	80		65	80	65	80	
	110		110		110		110				110		110			110		110	

For DIN69871, ANSIB5.50 and BT, dual contact as option



 **ER32**
DIN6499-ER
Ø16-Ø22-Ø27-Ø32
PORTAFRESE
FACE MILL ARBOR

 **Ø20**
WELDON
WHISTLE-NOTCH

 **HSK32**
DIN69893-HSK

 **C3**
COROMANT CAPTO®

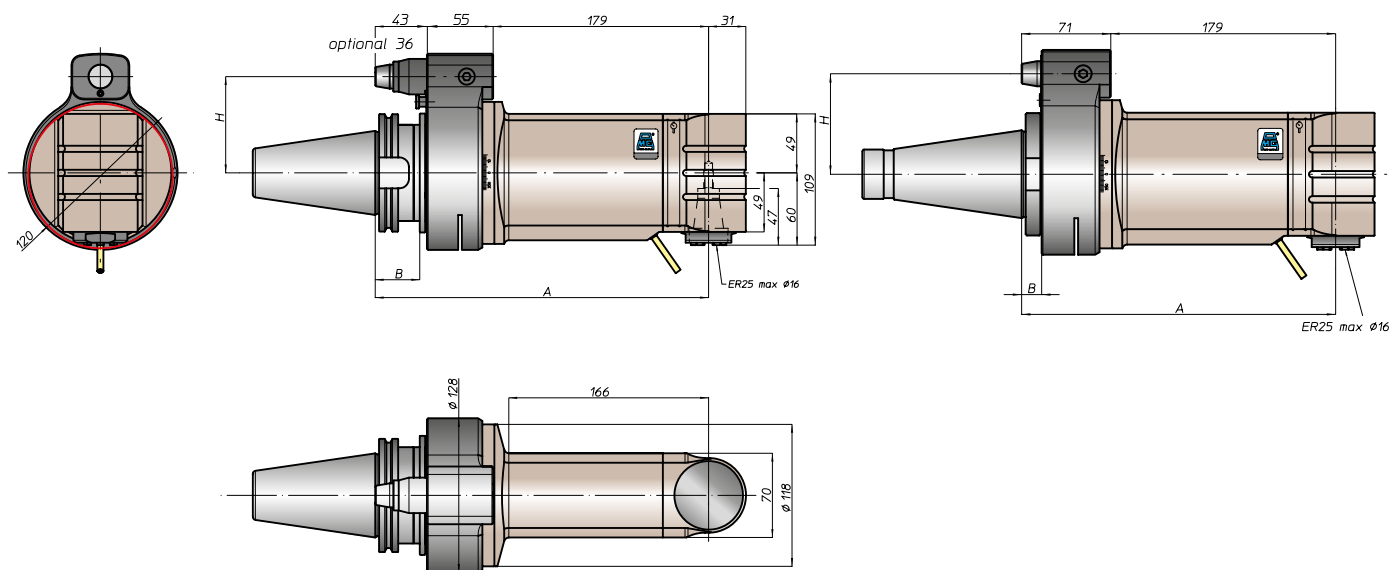
 **ABS32**
LICENZA KOMET®
KOMET LICENCE®



TA16.PL

TESTA AD ANGOLO • ANGLE HEAD

HT



CONO SHANK								
	DIN69871	ANSIB5.50		DIN69893	ISO26623		DIN2080	ANSIB5.18
SIZE	45 50	50	50	80 100	C6 C8	80 100	50	50
A	277	277	285	286	281	277	250	250
B	35	35	45	46	39 41		16	16
H STANDARD	80	80	80	80	80	80	80	80
H OPTIONAL	110	110	110	110	110	110	110	110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-31

VH

TSI/TSX

T

MT-TC-TC3



TA20.P

TESTA AD ANGOLO - ANGLE HEAD



14,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø20



M14



1460 N



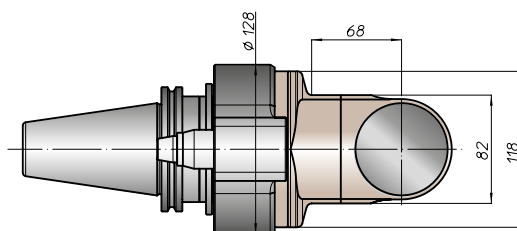
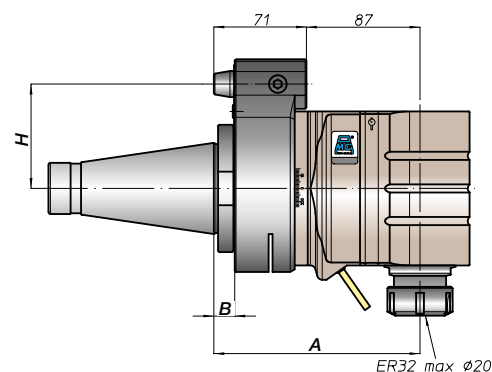
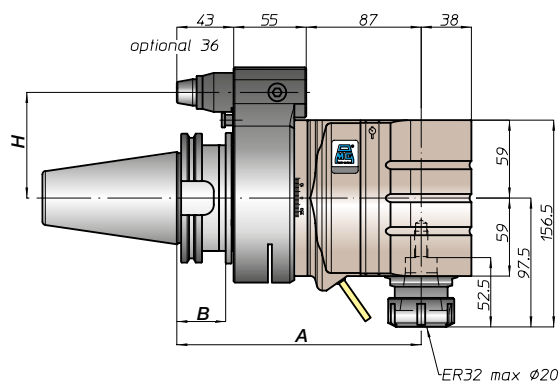
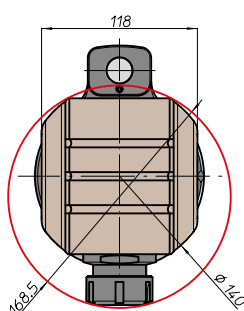
1-1



3500



90

CARATTERISTICHE
FEATURESER40
DIN6499-ERØ22-Ø27-Ø32
PORTA-PRESSE
FACE MILL ARBORØ20-Ø25-Ø32
WELDON
WHISTLE-NOTCHHSK40
DIN69893-HSKC4
COROMANT CAPTO®ABS40
LICENZA KOMET®
KOMET LICENCE®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



HSK



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

45

50

50

50

80

100

C8

80

100

50

50

A

185

185

193

194

189

185

158

158

B

35

35

45

46

41

16

16

H STANDARD

80

80

80

80

80

80

80

80

H OPTIONAL

110

110

110

110

110

110

110

110

For DIN69871, ANSIB5.50 and BT, dual contact as option

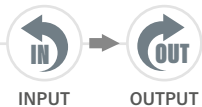


PESO
WEIGHT

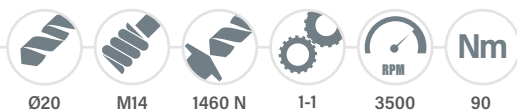


19 KG

ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TA20.PL

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

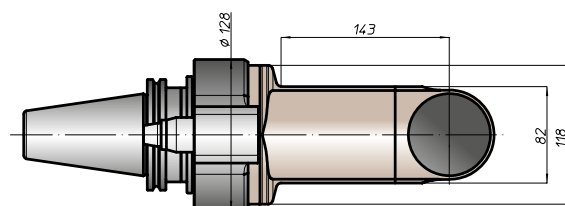
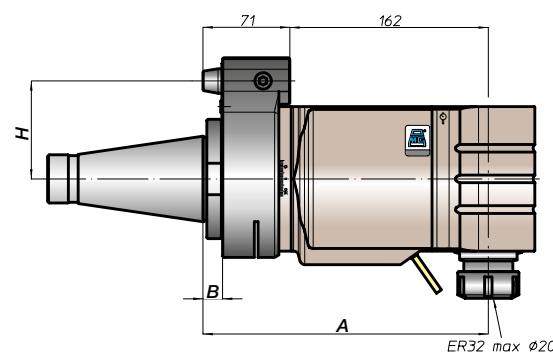
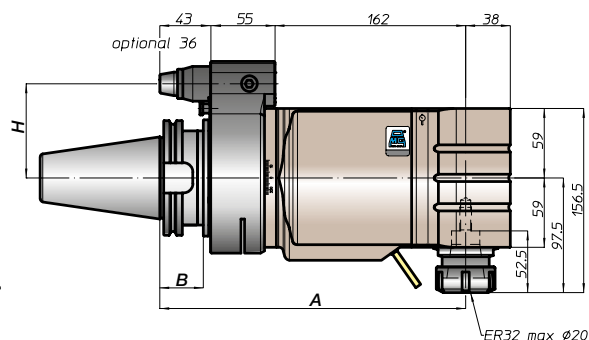
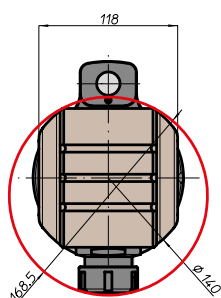
4-32

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



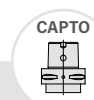
ANSIB5.50



BT

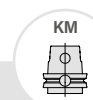


HSK

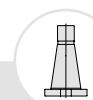


CAPTO

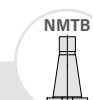
ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

45 50 50 50 80 100 C8 80 100 50 50

A

260 260 268 269 264 260 233 233

B

35 35 45 46 41 260 16 16

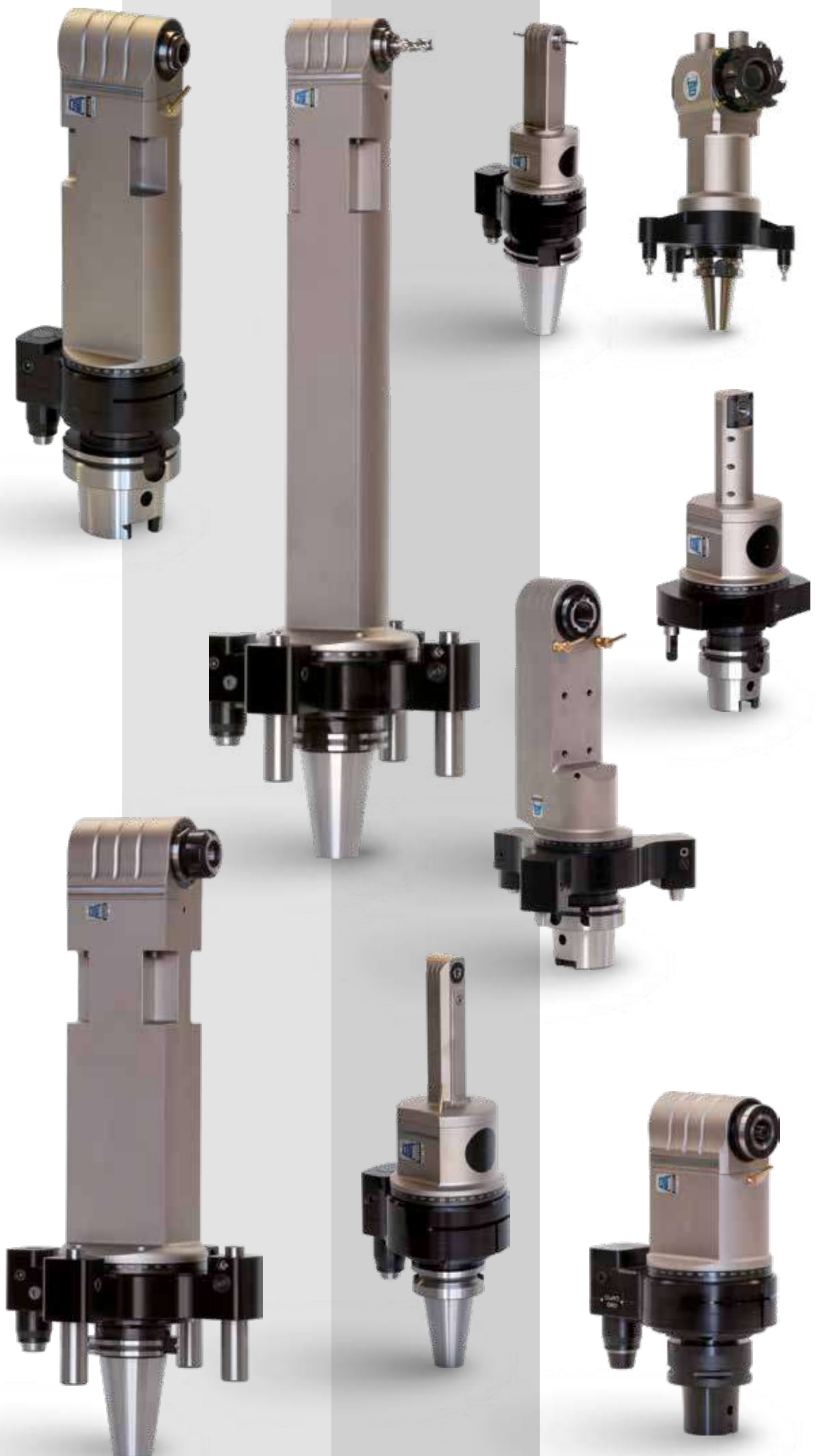
H STANDARD

80 80 80 80 80 80 80 80

H OPTIONAL

110 110 110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option





Nm

90



TESTA AD ANGOLO • ANGLE HEAD

BAH

TA.CP

TA

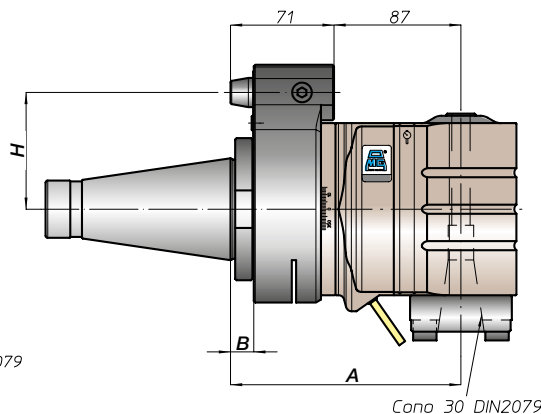
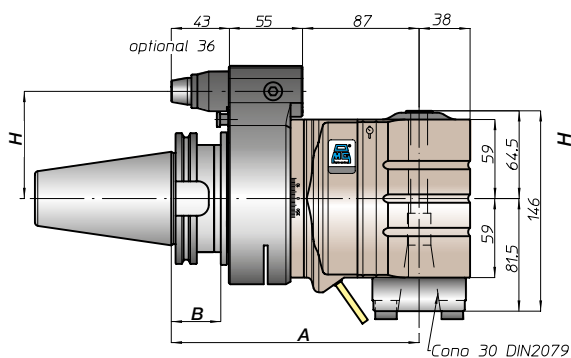
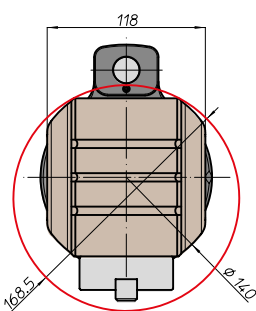
MOX

HT

VH

TSI/TSX

MT-TC-TC3



nel mandrino DIN2079 si possono
utilizzare coni DIN2080-30,
DIN69871-A30,MAS403-BT30

on the spindle DIN2079 you
can us shank DIN2080-30,
DIN69871-A30, MAS403-BT30



CAPTO



ANSIB5.18

50

158

16

80

110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-35

VH

TSI/TSX

T

MT-TC-TC3



TA26.P

TESTA AD ANGOLO - ANGLE HEAD



22 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø26



M20



3020 N



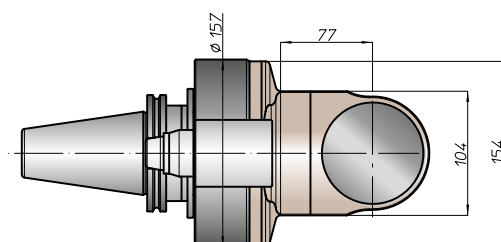
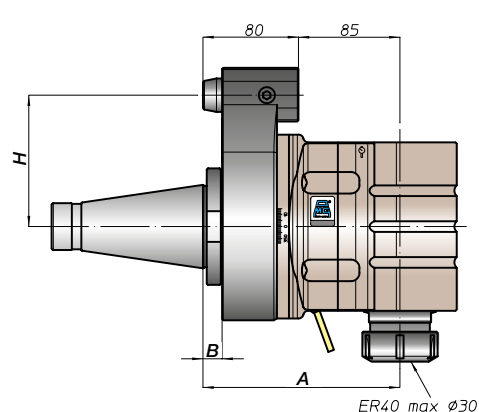
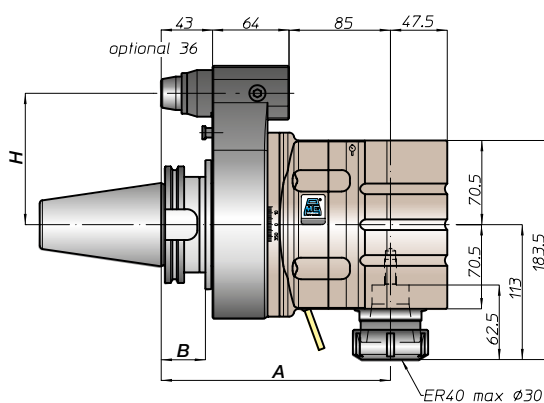
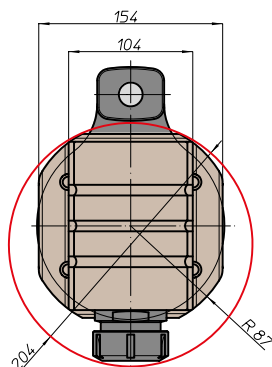
1-1



2500



165

CARATTERISTICHE
FEATURESER50
DIN6499-ERØ16-Ø27-Ø32-Ø40
PORTA-PRESSE
FACE-MILL ARBORØ32
WELDON
WHISTLE-NOTCHHSK63
DIN69893-HSKC4-C5-C6
COROMANT CAPTO®ABS550
LICENZA KOMET®
KOMET LICENCE®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



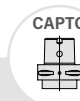
ANSIB5.50



BT



HSK



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

45

50

50

50

80

100

C8

100

50

50

A

192

192

200

201

196

192

165

165

B

37

37

45

46

41

16

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



22 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø26



M20



3020 N



1-1



2500



165



TA26.40

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

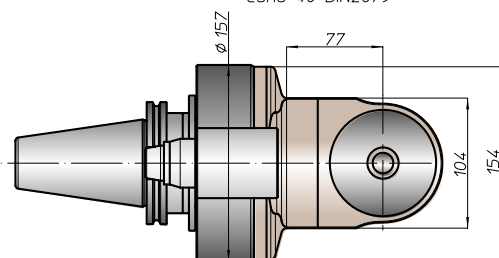
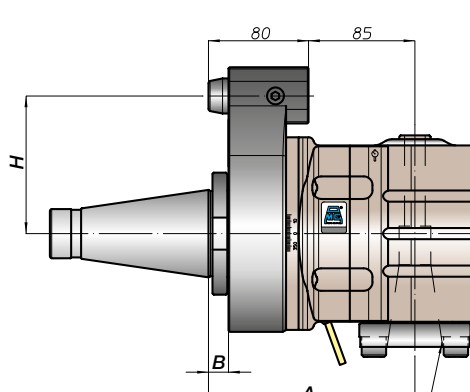
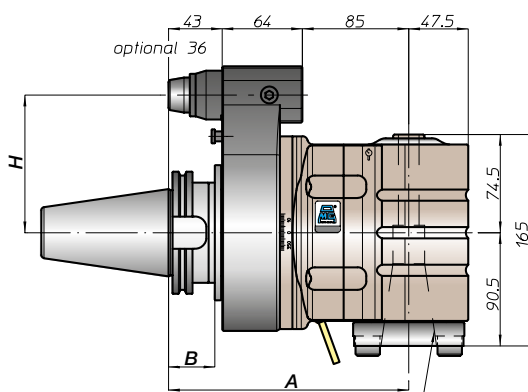
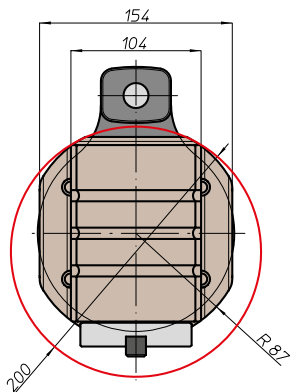
4-36

VH

TSI/TSX

T

MT-TC-TC3



Nota

nel mandrino DIN2079 si possono utilizzare coni DIN2080-40, DIN69871-A40, MAS403-BT40

Nota

on the spindle DIN2079 you can use shank DIN2080-40, DIN69871-A40, MAS403-BT40

CONO
SHANK



DIN69871



ANSIB5.50



BT



HSK



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

45 50

50

50

80 100

C8

100

50

50

A

192

192

200

201

196

192

165

165

B

37

37

45

46

41

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-37

VH

TSI/TSX

T

MT-TC-TC3



TA30.P

TESTA AD ANGOLO - ANGLE HEAD



24 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø30



M24



3500 N



1-1



2500



205

CARATTERISTICHE
FEATURES

Ø27-Ø32-Ø40
PORTA-PRESSE
FACE MILL ARBOR



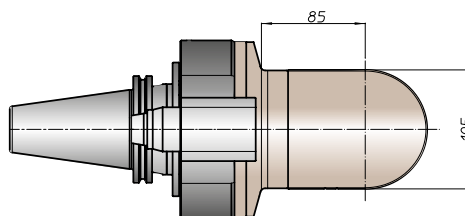
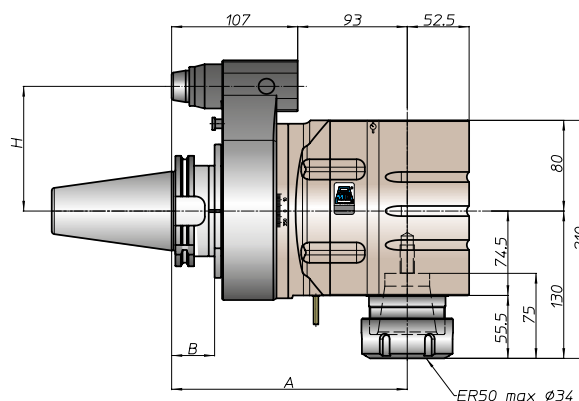
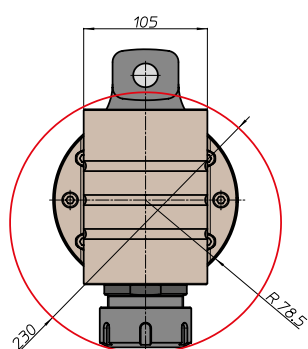
Ø32
WELDON
WHISTLE-NOTCH



HSK63
DIN69893-HSK



C6
COROMANT CAPTO®

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



50



DIN69893

100



ISO26623

C8



DIN2080



ANSIB5.18

SIZE

50

50

50

100

C8

A

200

200

208

209

204

B

36,5

36,5

45

46

41

H STANDARD

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



24 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø30



M24



3500 N



1-1



2500



205



TA30-40

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA,CP

TA

MOX

HT

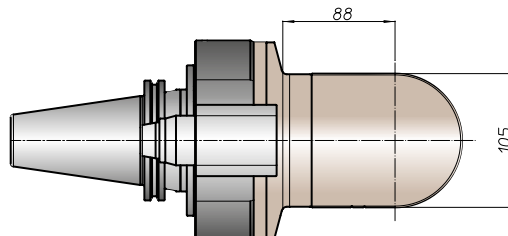
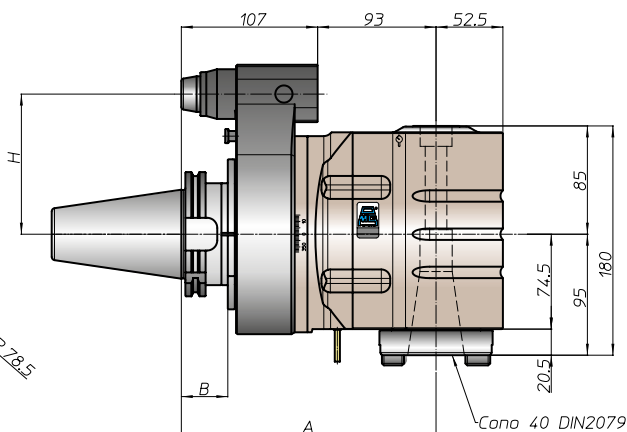
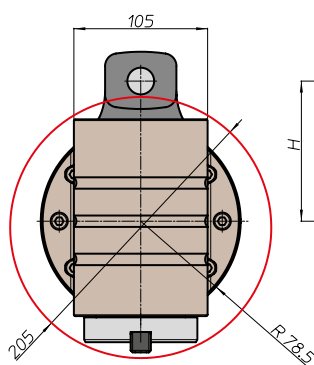
4-38

VH

TSI/TSX

T

MT-TC-TC3



Nota

nel mandrino DIN2079 si
possono utilizzare coni
DIN2080-40, DIN69871-A40,
MAS403-BT40

Note

on the spindle DIN2079
you can us shank
DIN2080-40, DIN69871-A40,
MAS403-BT40

CONO
SHANK



DIN69871



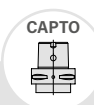
ANSIB5.50



BT



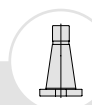
DIN69893



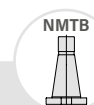
ISO26623



KM



DIN2080



ANSIB5.18

SIZE

45 50

50

50

80 100

C8

100

50

50

A

200

200

208

209

204

200

200

200

B

35

35

45

46

41

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-39

VH

TSI/TSX

T

MT-TC-TC3



SERIE

TAL



IGHT





Nuove Teste ad Angolo, quando la leggerezza è una priorità.

Le nuove Teste ad Angolo della serie TAL sono state realizzate con l'obiettivo di ottenere un prodotto leggero, che potesse essere applicato su macchine ATC dove il peso dell'utensile è considerato una limitazione. Un prodotto più leggero quindi, che non vede limiti nelle possibili lavorazioni le quali rimangono le stesse di una normale Testa ad Angolo O.M.G. Anche questa gamma si contraddistingue per la qualità con cui le teste vengono realizzate, che rimane sempre alta, come tutti i prodotti O.M.G.

Disponibili in diversi modelli, queste teste ad angolo vanno dalla piccola TAL07 alla grande TAL26.

New Angle Heads, when lightness is a priority.

The goal was to develop a product series that could be applied on machines with ATC where the weight of the head represents a limitation. A lighter weight product therefore, that does not limit the possible machining operations, with the same performance to our standard O.M.G. Angle Heads. This range also stands out for the high quality our customers have come to appreciate for all O.M.G. products.

Available in different models, these heads start from the small TAL07 to our large TAL26.

FH

BAH

TA.CP

TA

MOX

HT

4-40

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

4-41

VH

TSI/TSX

T

MT-TC-TC3



TAL07

TESTA AD ANGOLO - ANGLE HEAD



4,5 KG



6,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø7



M6



180 N



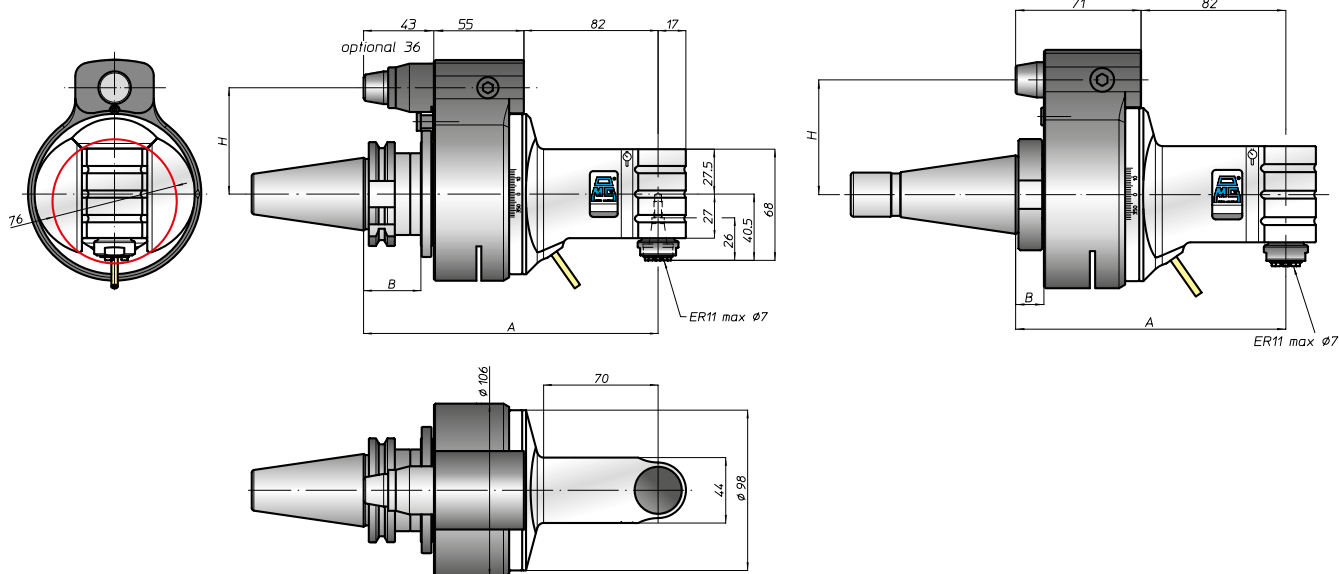
1-1



10000



11

CARATTERISTICHE
FEATURESØ8-Ø10
WELDON
WHISTLE-NOTCHMANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



HSK

DIN69893



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100

C5 C6 C8 63 80 100

40 50 40 50 40 50

40 50

A

180 180 180 188 189 184 180 150 153 150 153

B

35 35 35 45 44 46 39 41 13 16 13 16

H STANDARD

65 80 65 80 65 80 65 80 65 80 65 80 65 80

H OPTIONAL

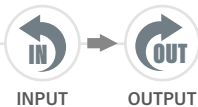
110 110 110 110 110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option

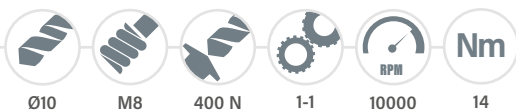
PESO
WEIGHT



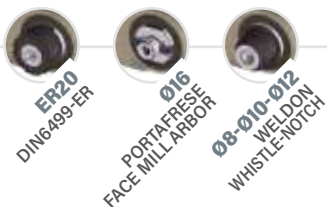
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TAL10

TESTA AD ANGOLO - ANGLE HEAD

FH

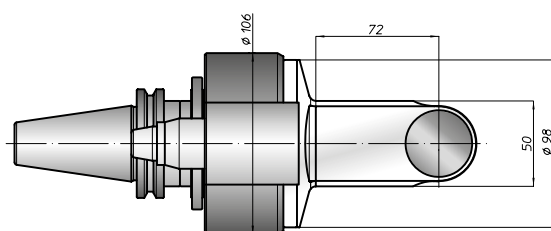
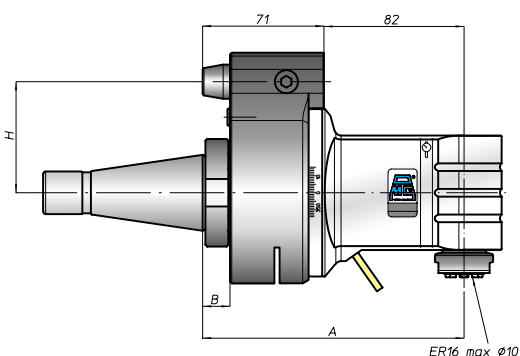
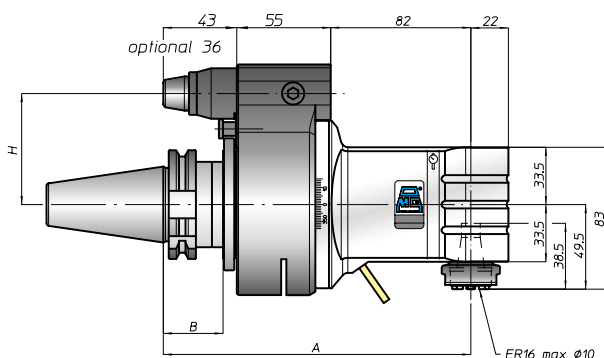
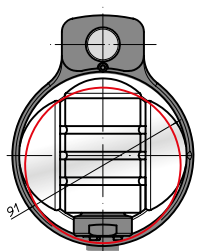
BAH

TA.CP

TA

MOX

HT



4-42

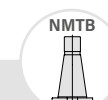
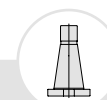
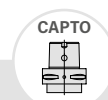
VH

TSI/TSX

T

MT-TC-TC3

CONO
SHANK



SIZE

30 40 45 50 40 50 40 50 63 80 100 C5 C6 C8 63 80 100 40 50 40 50

A

180 180 180 188 189 184 180 150 153 150 153

B

35 35 35 45 44 46 39 41 13 16 13 16

H STANDARD

65 80 65 80 65 80 65 80 65 80 65 80 65 80

H OPTIONAL

110 110 110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option



FH

BAH

TA.CP

TA

MOx

HT

4-43

VH

TSI/TSX

T

MT-TC-TC3



TAL13

TESTA AD ANGOLO - ANGLE HEAD



5 KG



7,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø13



M10



810 N



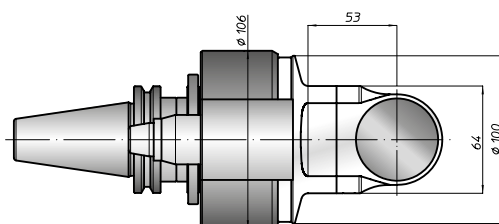
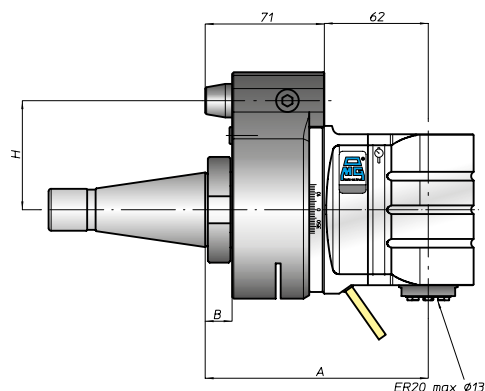
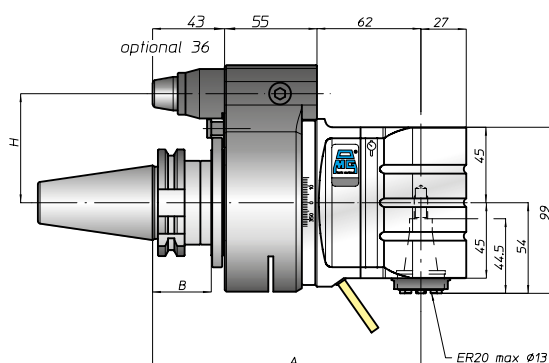
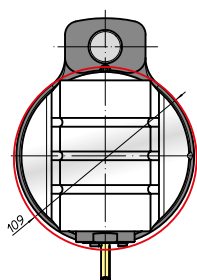
1-1



8000



38

CARATTERISTICHE
FEATURESER25
DIN6499-ERØ16-Ø22
PORTAFRESE
FACE MILL ARBORØ16
WELD ON
WHISTLE-NOTCHABS25
LICENZA KOMET®
KOMET LICENCE®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

40 45 50

40 50

40 50

63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

160

160

160 168

169

164

160

130 133

130 133

B

35

35

35 45

44 46

39 41

13 16

13 16

H STANDARD

65 80

65 80

65 80

65 80

65 80

65 80

65 80

65 80

H OPTIONAL

110

110

110

110

110

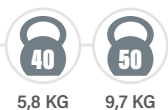
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110

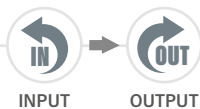
For DIN69871, ANSIB5.50 and BT, dual contact as option



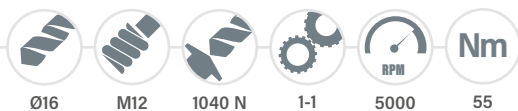
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TAL16

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

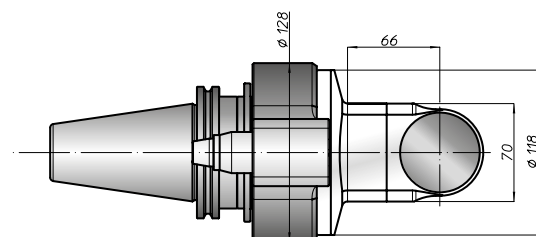
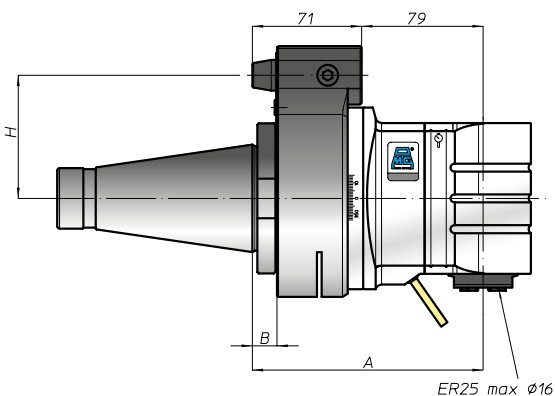
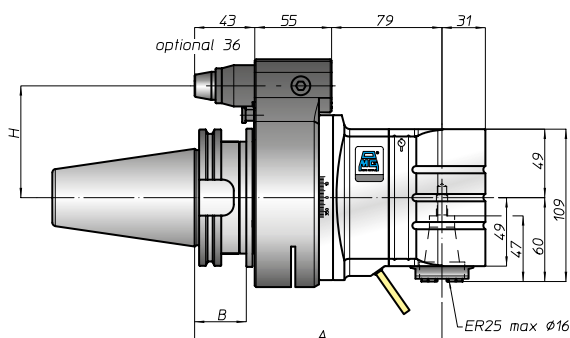
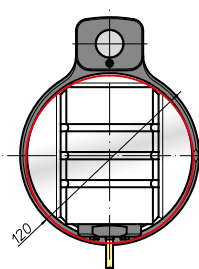
4-44

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

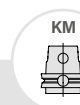
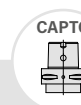
SIZE

A

B

H STANDARD

H OPTIONAL



ANSIB5.50

DIN69893

ISO26623

DIN2080

ANSIB5.18

40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
172	177		172	177	172	185	181	186		176	181		172	177		147	150	142	150
	35		35		35	45	44	46			39	41				13	16	13	16
65	80		65	80	65	80	65	80		65	80		65	80		65	80	65	80
	110			110		110		110			110			110			110		110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-45

VH

TSI/TSX

T

MT-TC-TC3



TAL20

TESTA AD ANGOLO - ANGLE HEAD



11,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø20



M14



1460 N



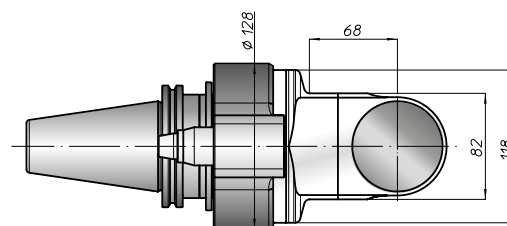
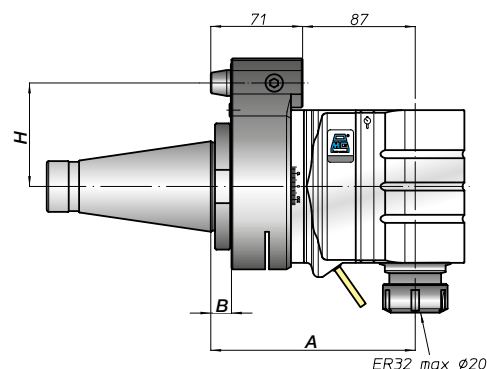
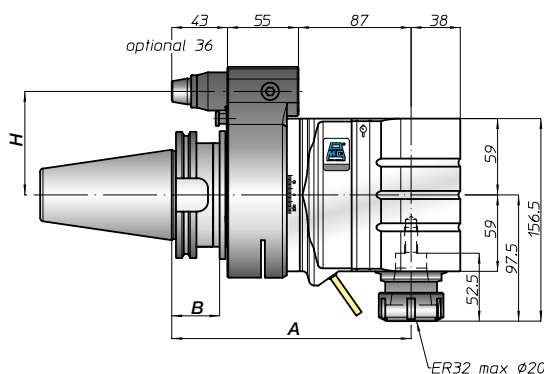
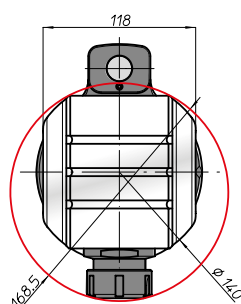
1-1



3500



90

CARATTERISTICHE
FEATURESER40
DIN6499-ERØ22-Ø27-Ø32
PORTA-PRESSE
FACE-MILL ARBORØ20-Ø25-Ø32
WELDON
WHISTLE-NOTCHHSK40
DIN69893-HSKC4
COROMANT CAPTO®ABS40
LICENZA KOMET®
KOMET LICENCE®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



HSK



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

45

50

50

50

80

100

C8

80

100

50

50

A

185

185

193

194

189

185

158

158

B

35

35

45

46

41

80

16

16

H STANDARD

80

80

80

80

80

80

80

80

H OPTIONAL

110

110

110

110

110

110

110

110

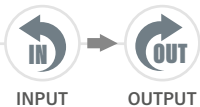
For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



19 KG

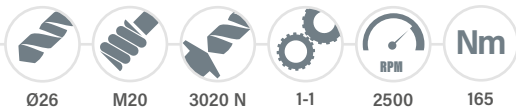
ROTAZIONE
ROTATION



INPUT

OUTPUT

CARATTERISTICHE
FEATURES



Ø26

M20

3020 N

1-1

2500

165

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



ER50
DIN6499-ER

Ø16-Ø27-Ø32-Ø40
PORTAFRESE
FACE MILL ARBOR

Ø32
WELDON
WHISTLE-NOTCH

HSK63
DIN69893-HSK

C4-C5-C6
COROMANT CAPTO®

ABS50
LICENZA KOMET®
KOMET LICENCE®

TAL26

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

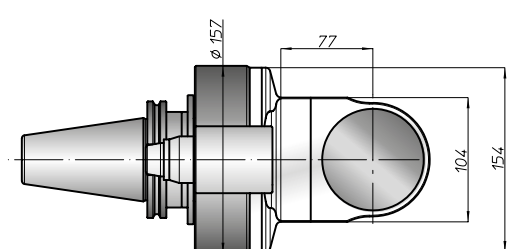
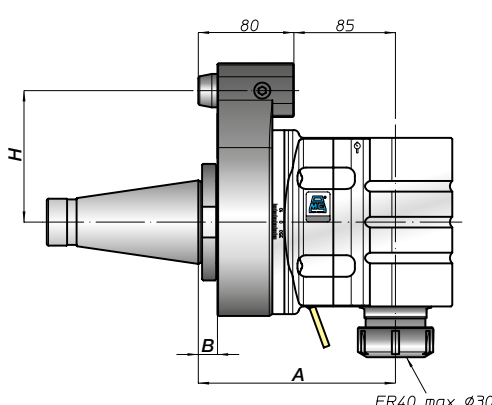
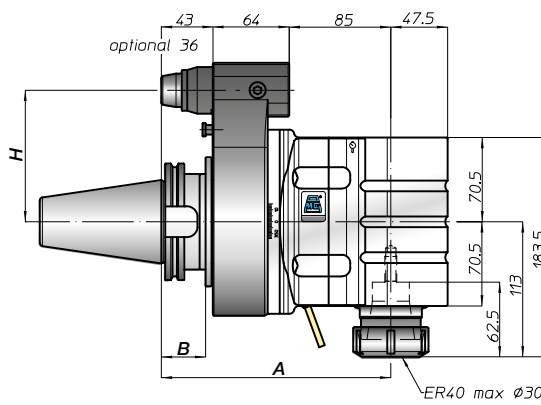
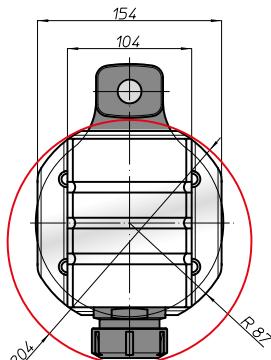
4-46

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



ANSIB5.50



BT



HSK



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

45

50

50

50

80

100

C8

100

50

50

A

192

192

200

201

196

192

165

165

B

37

37

45

46

41

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-47

VH

TSI/TSX

T

MT-TC-TC3



TAL26.40

TESTA AD ANGOLO - ANGLE HEAD



19 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø26



M20



3020 N



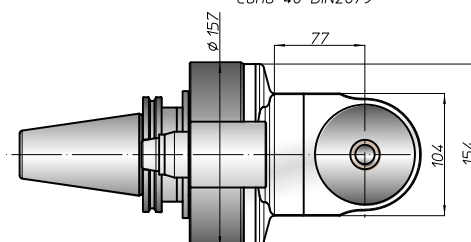
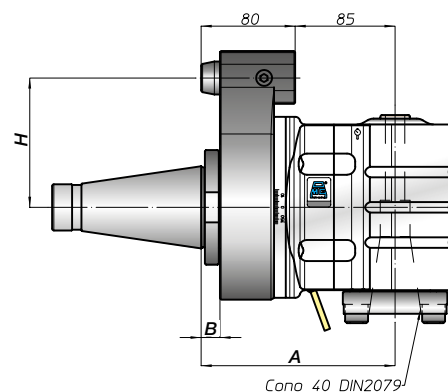
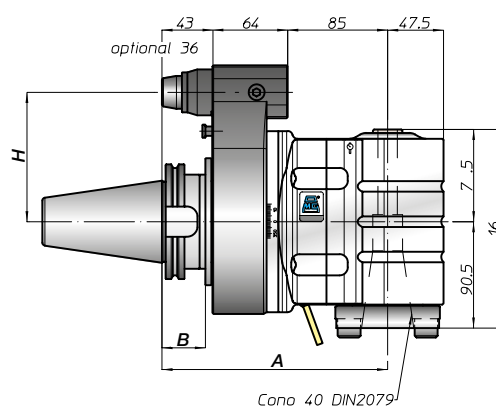
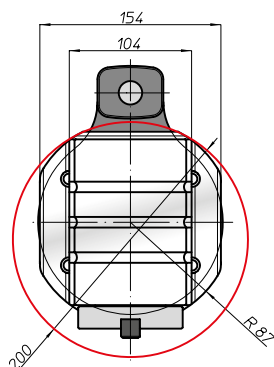
1-1



2500



165

CARATTERISTICHE
FEATURES

Nota

nel mandrino DIN2079 si possono
utilizzare coni DIN2080-40,
DIN69871-A40, MAS403-BT40

Note

on the spindle DIN2079 you
can use shank DIN2080-40,
DIN69871-A40, MAS403-BT40

CONO
SHANK

DIN69871



ANSIB5.50



BT



HSK



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

45

50

50

50

80

100

C8

100

50

50

A

192

192

200

201

196

192

165

165

B

37

37

45

46

41

16

16

H STANDARD

110

110

110

110

110

110

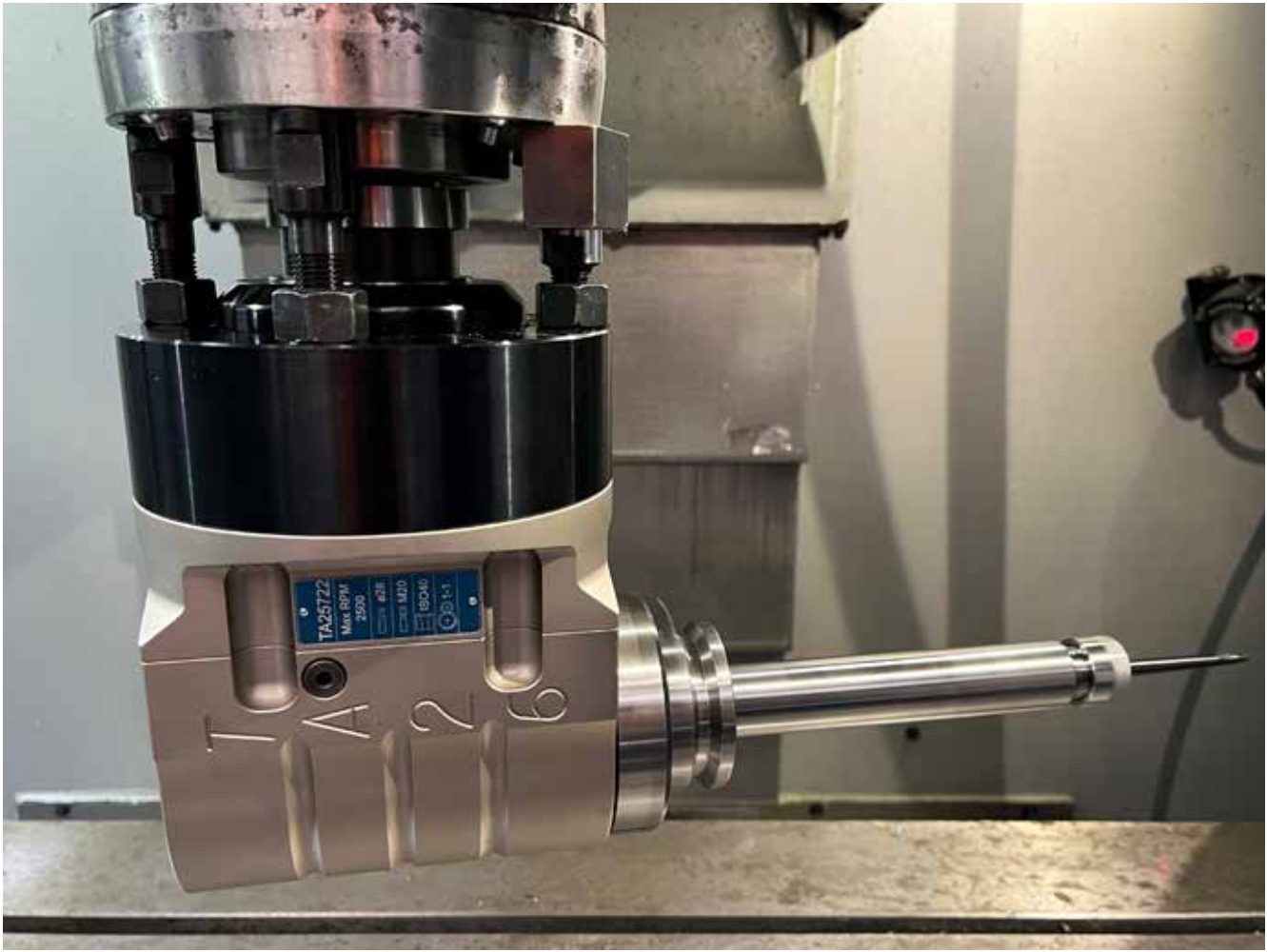
110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option





FH

BAH

TA.CP

TA

MOx

HT

4-48

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

4-49

VH

TSI/TSX

T

MT-TC-TC3

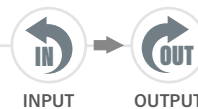


TA07.2P

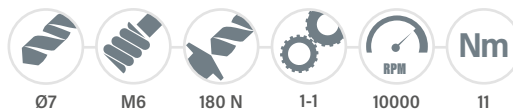
TESTA AD ANGOLO - ANGLE HEAD



PESO
WEIGHT



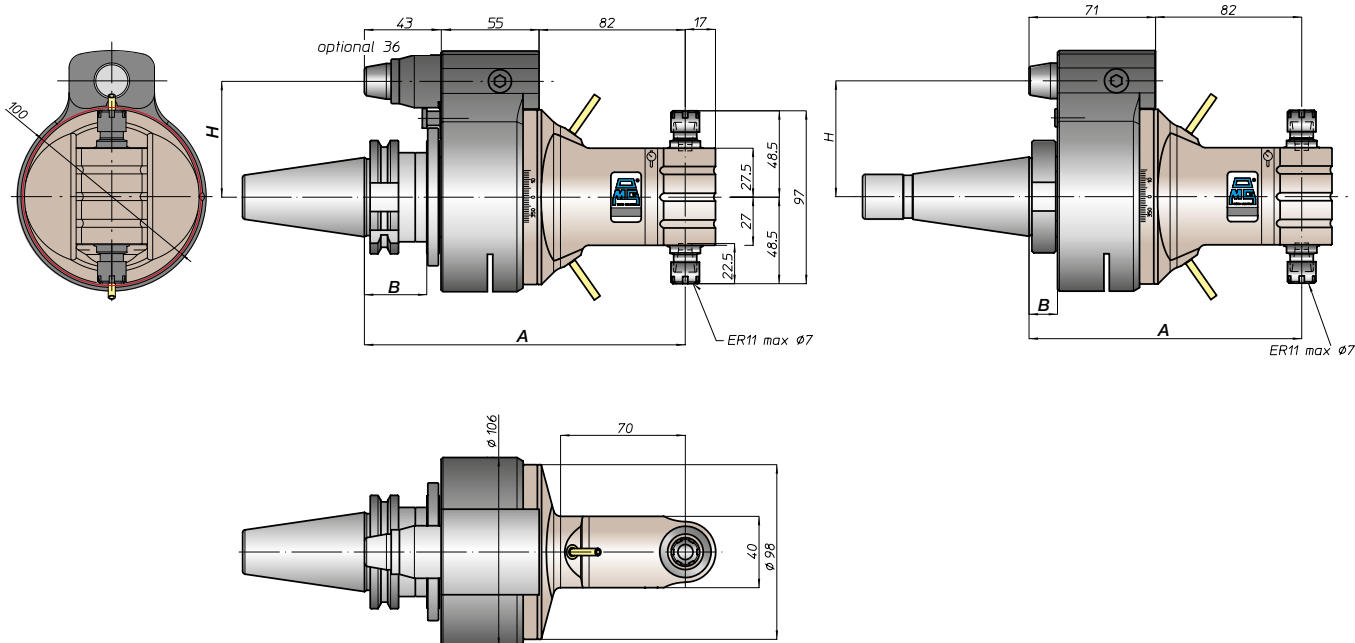
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK



DIN69871



ANSIB5.50



BT



HSK

DIN69893



CAPTO

ISO26623



KM



DIN2080



ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100

C5 C6 C8 63 80 100

40 50 40 50 40 50

A

180

180

180

188

189

184

180

150

153

150

153

B

35

35

35

45

44

46

39

41

13

16

13

16

H STANDARD

65

80

65

80

65

80

65

80

65

80

65

80

65

80

65

80

H OPTIONAL

110

110

110

110

110

110

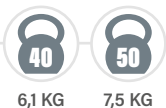
110

110

For DIN69871, ANSIB5.50 and BT, dual contact as option

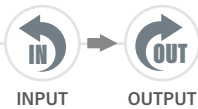


PESO
WEIGHT



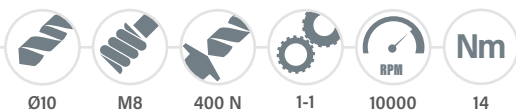
6,1 KG 7,5 KG

ROTAZIONE
ROTATION



INPUT OUTPUT

CARATTERISTICHE
FEATURES



Ø10 M8 400 N 1-1 10000 14



TA10.2P

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

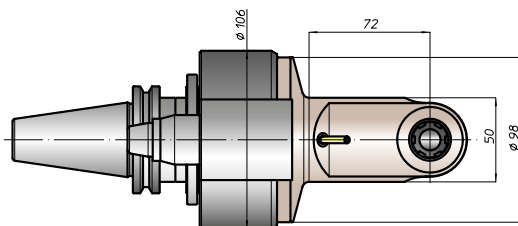
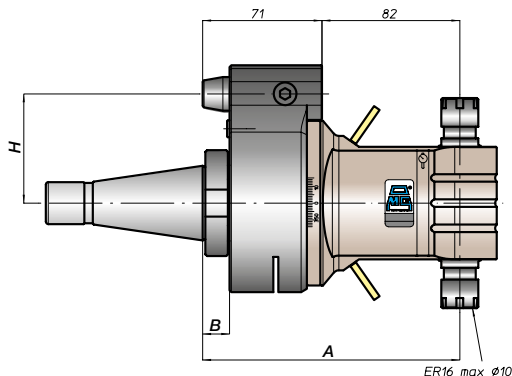
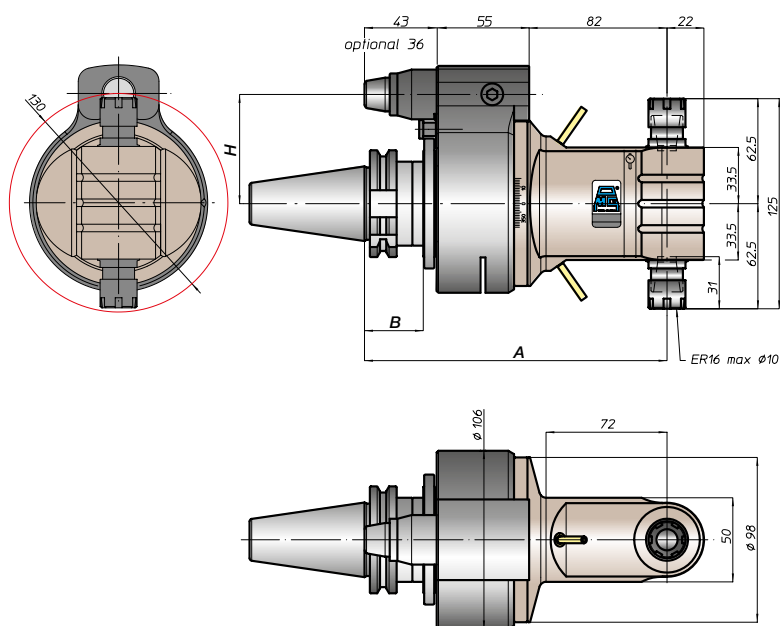
4-50

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



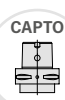
DIN69871



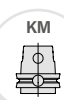
ANSIB5.50



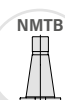
DIN69893



ISO26623



DIN2080



ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100 C5 C6 C8 63 80 100 40 50 40 50

A

180 180 180 188 189 184 180 150 153 150 153

B

35 35 35 45 44 46 39 41 13 16 13 16

H STANDARD

65 80 65 80 65 80 65 80 65 80 65 80 65 80

H OPTIONAL

110 110 110 110 110 110 110 110 110 110

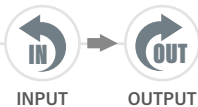
For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



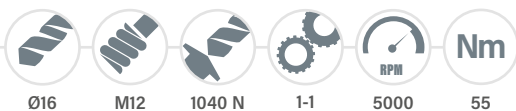
7,7 KG 12,2 KG

ROTAZIONE
ROTATION



INPUT OUTPUT

CARATTERISTICHE
FEATURES



Ø16 M12 1040 N 1-1 5000 55

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



ER32
DIN6499-ER



TA16.2P

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

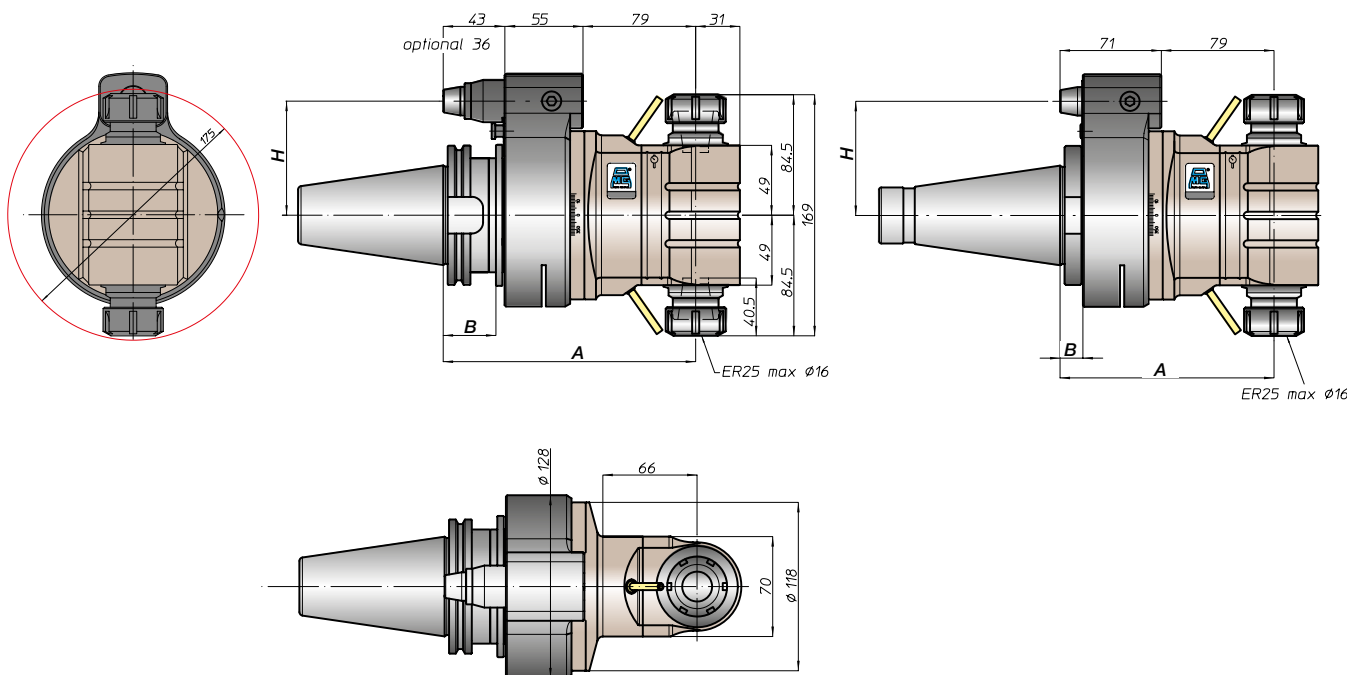
4-52

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

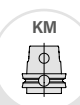
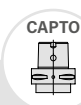
SIZE

A

B

H STANDARD

H OPTIONAL



ANSIB5.50

DIN69893

ISO26623

DIN2080

ANSIB5.18

	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	172	177		172	177	172	185	181	186		176	181		172	177		147	150	142	150
B		35		35		35	45	44	46			39	41				13	16	13	16
H STANDARD	65	80		65	80	65	80	65	80		65	80		65	80		65	80	65	80
H OPTIONAL		110			110		110		110			110			110			110		110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-53

VH

TSI/TSX

T

MT-TC-TC3



TA20.2P

TESTA AD ANGOLO - ANGLE HEAD



15 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø20



M14



1460 N



1-1



3500



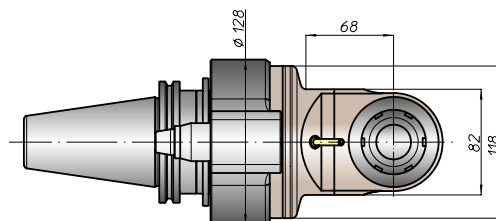
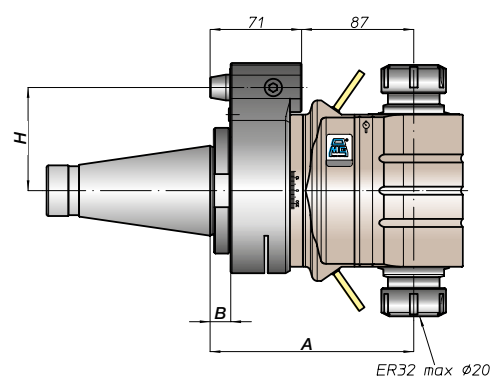
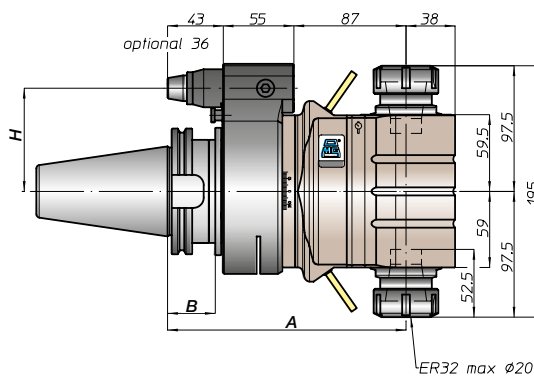
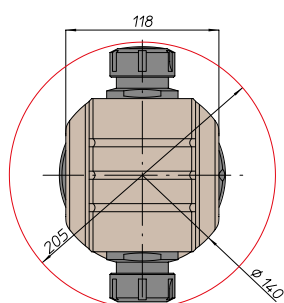
90

CARATTERISTICHE
FEATURES

Ø27-Ø32
PORTAFRESA
FACE MILL ARBOR



Ø20
WELDON
WHISTLE-NOTCH

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



HSK



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

45

50

50

50

80

100

C8

80

100

50

50

A

185

185

193

194

189

185

158

158

B

35

35

45

46

41

16

16

H STANDARD

80

80

80

80

80

80

80

80

H OPTIONAL

110

110

110

110

110

110

110

110

For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



22,5 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø26



M20



3020 N



1-1



2500



165

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



Ø16-Ø27-Ø32
PORTAFRESE
FACE MILL ARBOR



Ø32
WELDON
WHISTLE-NOTCH



AB550
LICENZA KOMET®
KOMET LICENCE®



TA26.2P

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

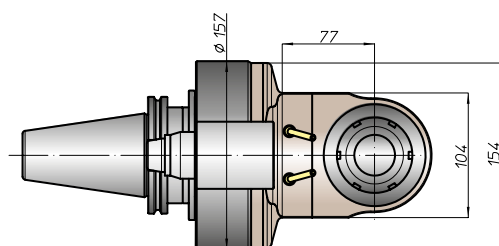
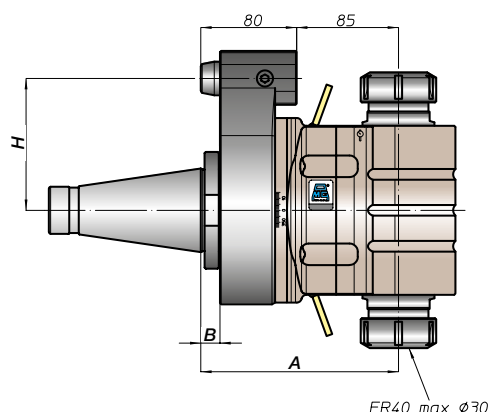
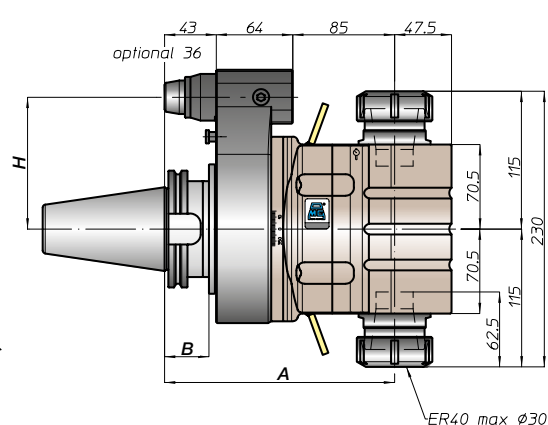
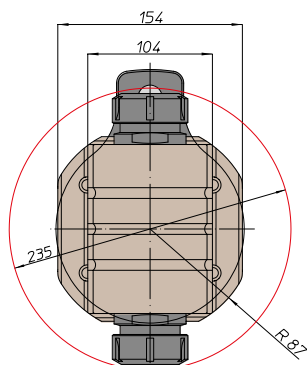
4-54

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



ANSIB5.50



50



80 100



ISO26623



100



DIN2080



ANSIB5.18

SIZE

45

50

50

50

80

100

C8

100

50

50

A

192

192

200

201

196

192

165

165

B

37

37

45

46

41

16

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-55

VH

TSI/TSX

T

MT-TC-TC3

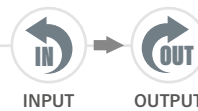


TA07.PD

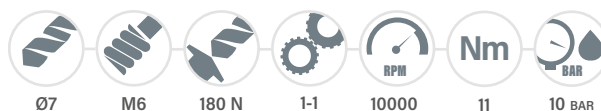
TESTA AD ANGOLO - ANGLE HEAD



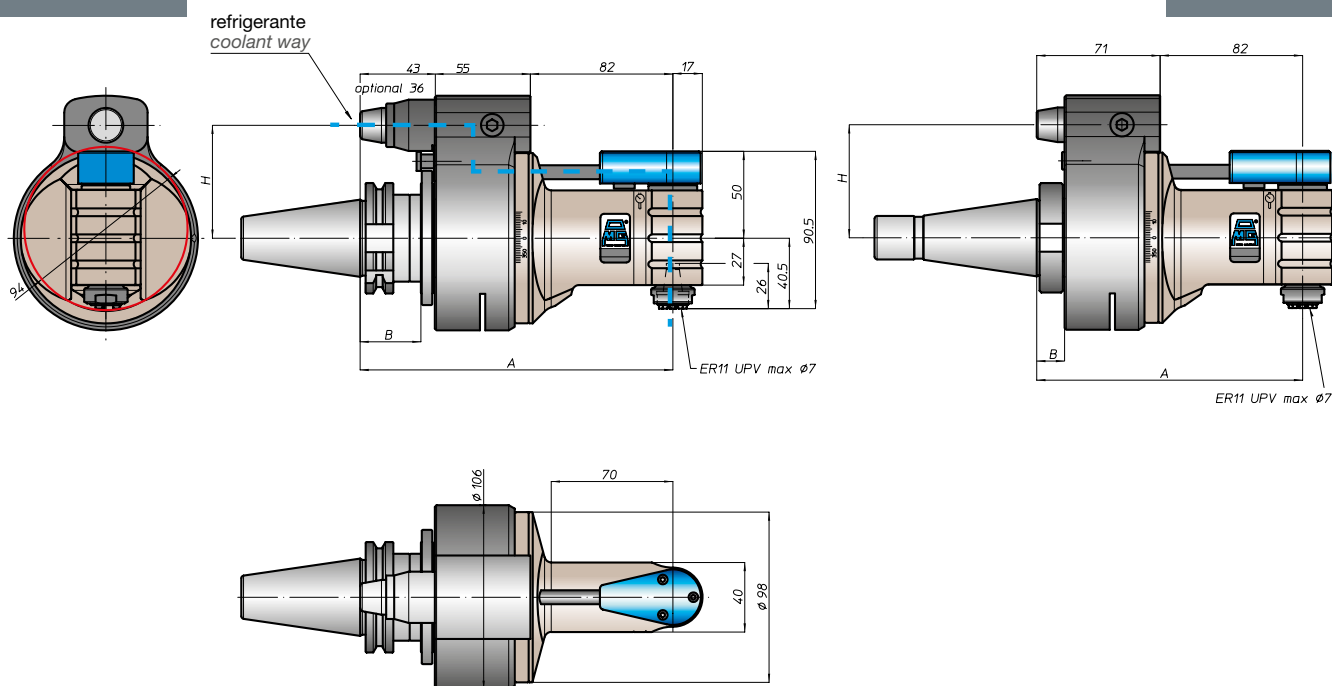
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



CONO
SHANK



DIN69871



ANSIB5.50

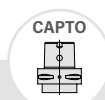


BT



HSK

DIN69893



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

30 40 45 50 40 50 40 50 63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

150

150

150 158

159

154

150

120 123

120 123

B

35

35

35 45

44 46

39 41

13 16

13 16

H STANDARD

65 80

65 80

65 80

65 80

65 80

65 80

65 80

65 80

H OPTIONAL

110

110

110

110

110

110

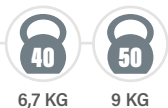
110

110

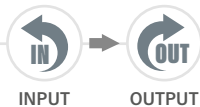
For DIN69871, ANSIB5.50 and BT, dual contact as option



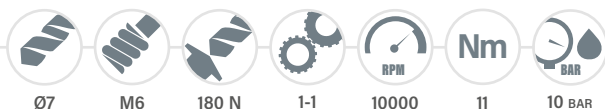
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



TA07.PDL

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

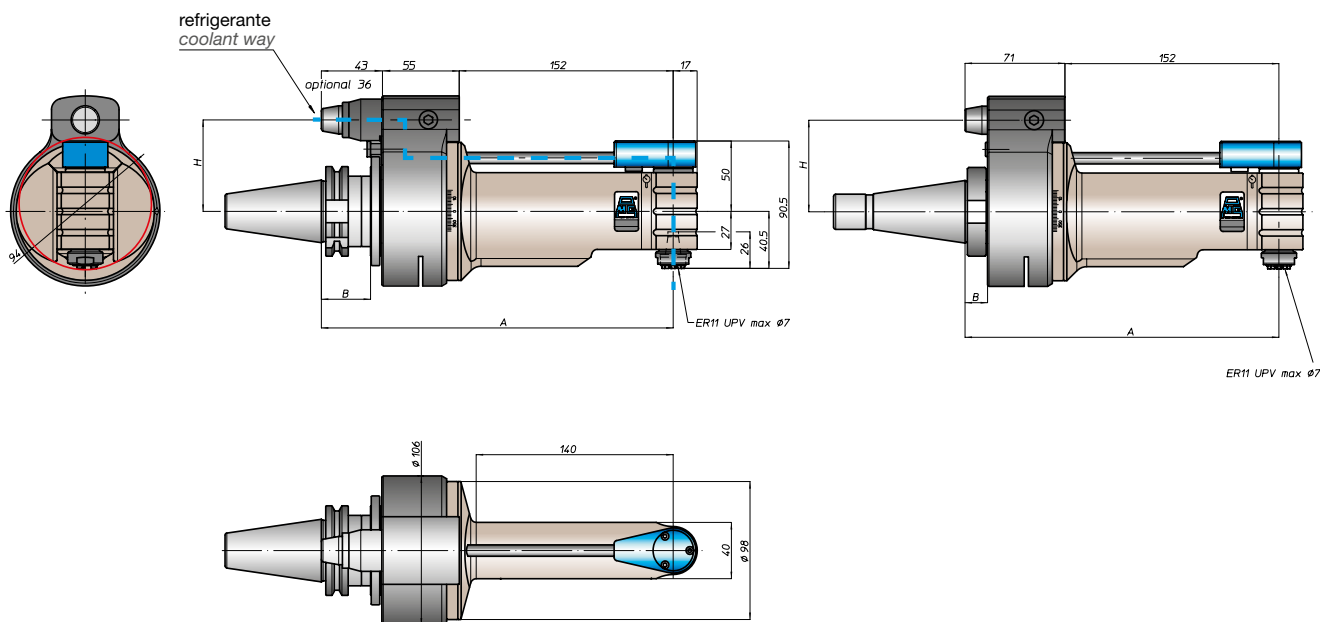
4-56

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



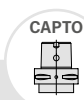
ANSIB5.50



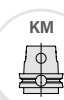
BT



DIN69893



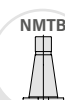
ISO26623



KM



DIN2080



ANSIB5.18

40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
250			250		250	258	259			254			250			220	223	220	223
35			35		35	45	44	46		39	41				13	16	13	16	
65	80		65	80	65	80	65	80	65			80	65	80		65	80	65	80
	110			110		110		110				110		110			110		110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-57

VH

TSI/TSX

T

MT-TC-TC3



TA10.PD

TESTA AD ANGOLO - ANGLE HEAD



5,8 KG

8 KG

 PESO
WEIGHT

INPUT

OUTPUT

 ROTAZIONE
ROTATION

Ø10

M8

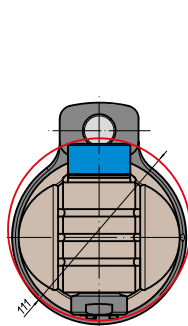
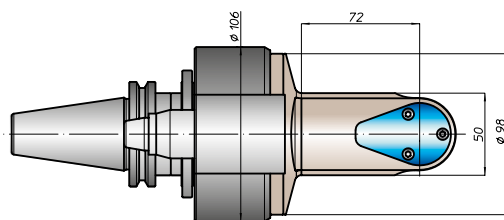
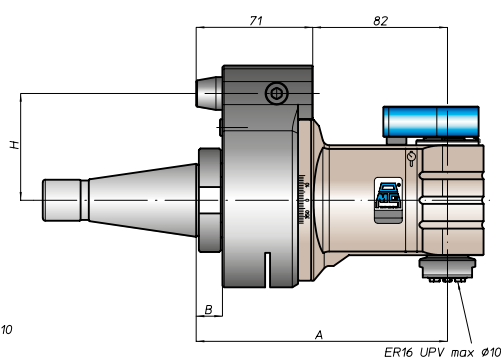
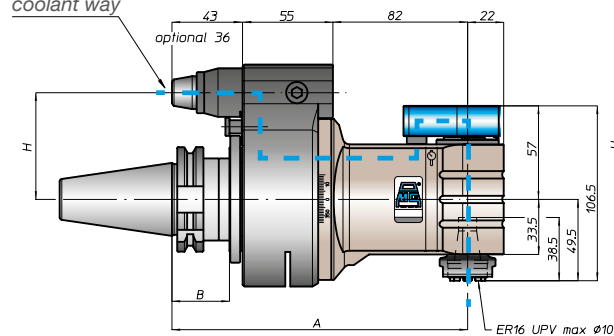
400 N

1-1

10000

14

10 BAR

 CARATTERISTICHE
FEATURES

 refrigerante
coolant way
CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



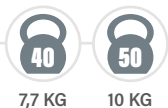
ANSIB5.18

SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	180	180	180	180	180	180	180	188	189	189	189	184	184	184	180	180	180	150	153	150	153
B	35	35	35	35	35	35	35	45	44	46	46	39	41	41				13	16	13	16
H STANDARD	65	80	80	80	65	80	65	80	65	80	80	65	80	80	65	80	80	65	80	65	80
H OPTIONAL		110	110	110		110		110		110	110		110	110		110	110		110		110

For DIN69871, ANSIB5.50 and BT, dual contact as option

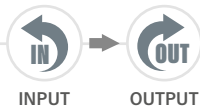


PESO
WEIGHT



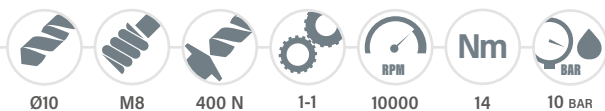
7,7 KG 10 KG

ROTAZIONE
ROTATION



INPUT OUTPUT

CARATTERISTICHE
FEATURES



Ø10 M8 400 N 1-1 10000 14 10 BAR



TA10.PDL

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

4-58

VH

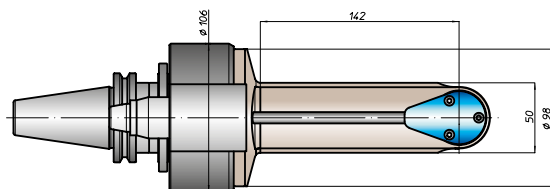
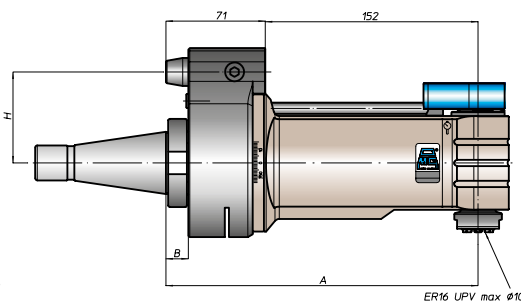
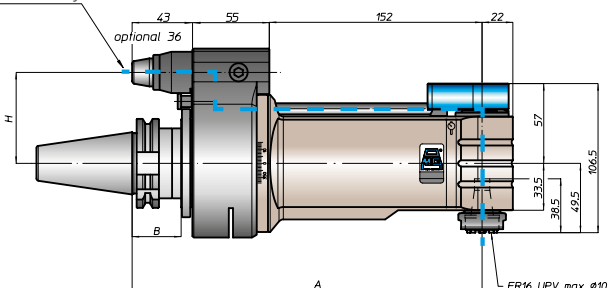
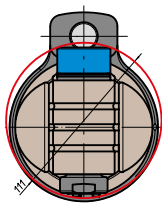
TSI/TSX

T

MT-TC-TC3



refrigerante
coolant way



CONO
SHANK

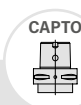
SIZE

A

B

H STANDARD

H OPTIONAL



ANSIB5.50

DIN69893

ISO26623

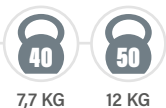
DIN2080

ANSIB5.18

SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	250	250	250	250	258	259	284	250	220	223	220	223	220	223	220	223	220	223	220	223
B	35	35	35	45	44	46	39	41	13	16	13	16	13	16	13	16	13	16	13	16
H STANDARD	65	80	65	80	65	80	65	80	65	80	65	80	65	80	65	80	65	80	65	80
H OPTIONAL	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110

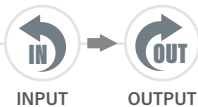
For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



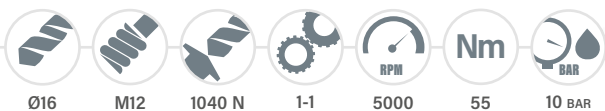
7,7 KG 12 KG

ROTAZIONE
ROTATION



INPUT OUTPUT

CARATTERISTICHE
FEATURES



Ø16 M12 1040 N 1-1 5000 55 10 BAR

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



ER32
DIN6499-ER



TA16-PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

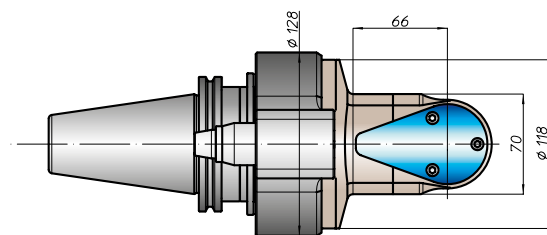
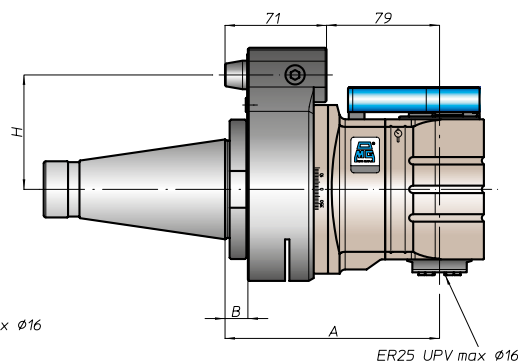
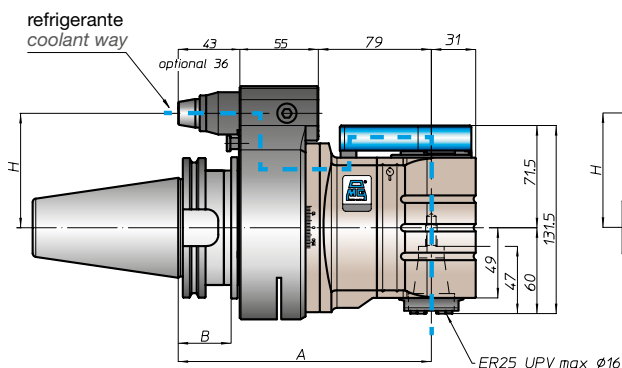
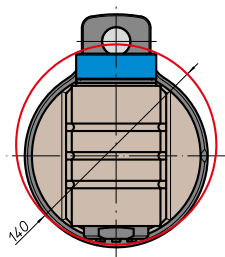
4-60

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



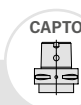
ANSIB5.50



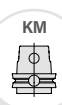
BT



DIN69893



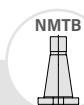
ISO26623



KM



DIN2080



ANSIB5.18

SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	172	177		172	177	172	185	181	186		176	181		172	177		147	150	142	150
B		35		35		35	45	44	46			39	41				13	16	13	16
H STANDARD	65	80		65	80	65	80	65	80		65	80		65	80		65	80	65	80
H OPTIONAL		110			110		110		110			110			110			110		110

For DIN69871, ANSIB5.50 and BT, dual contact as option



TA20.PD

TESTA AD ANGOLO - ANGLE HEAD



14,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø20



M14



1460 N



1-1



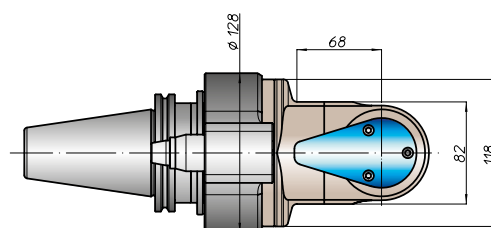
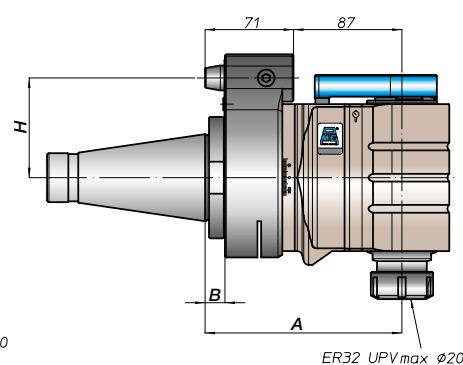
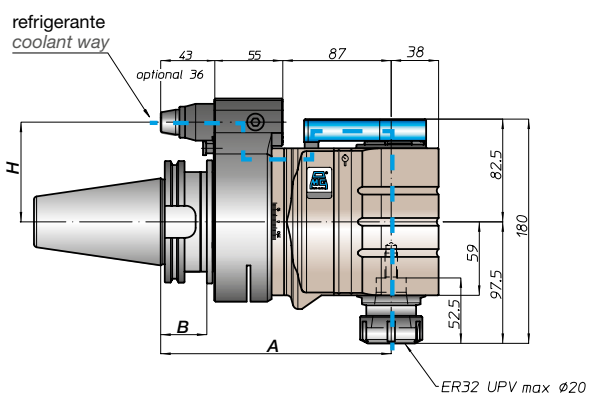
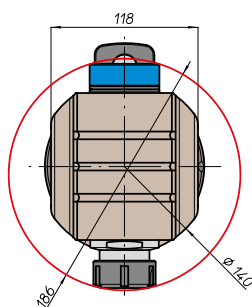
3500



90



10 BAR

CARATTERISTICHE
FEATURESCONO
SHANK

DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

45

50

50

50

80

100

C8

80

100

50

50

A

185

185

193

194

189

185

158

158

B

35

35

45

46

41

16

16

H STANDARD

80

80

80

80

80

80

80

80

H OPTIONAL

110

110

110

110

110

110

110

110

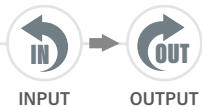
For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



22 KG

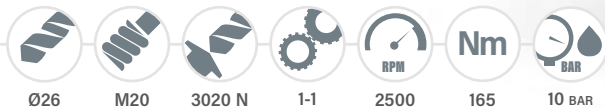
ROTAZIONE
ROTATION



INPUT

OUTPUT

CARATTERISTICHE
FEATURES



Ø26

M20

3020 N

1-1

2500

165

10 BAR



TA26.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

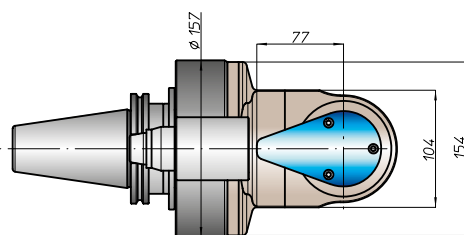
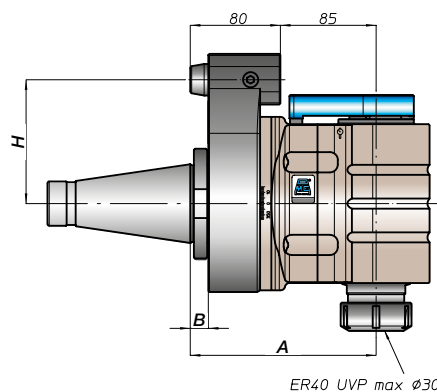
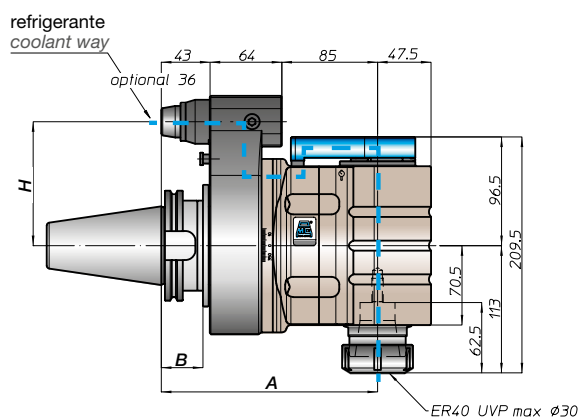
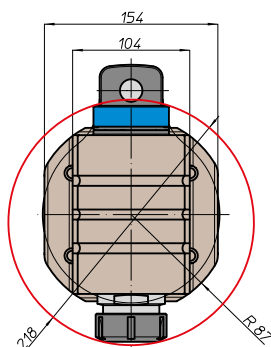
4-62

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



ANSIB5.50



BT



HSK

DIN69893



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

45

50

50

50

80

100

C8

100

50

50

A

192

192

200

201

196

192

165

165

B

37

37

45

46

41

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-63

VH

TSI/TSX

T

MT-TC-TC3



TA26.40.D

TESTA AD ANGOLO - ANGLE HEAD



22 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø26



M20



3020 N



1-1



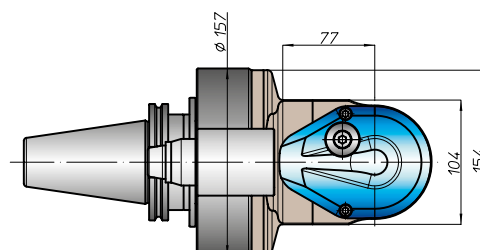
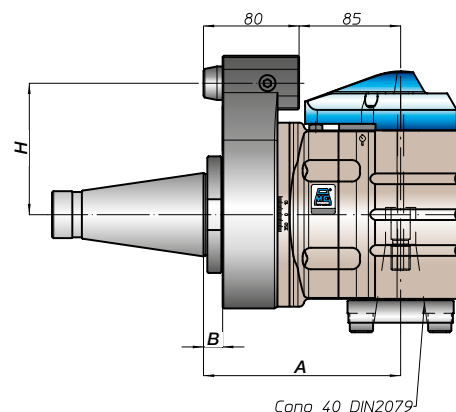
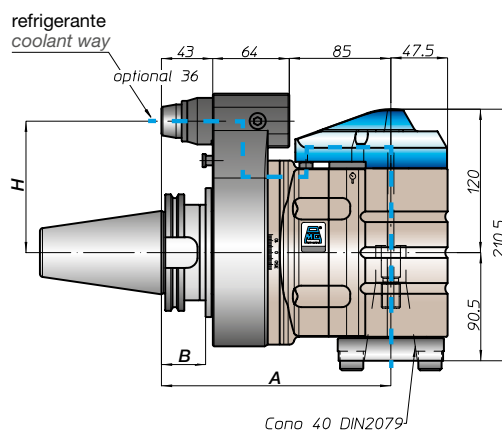
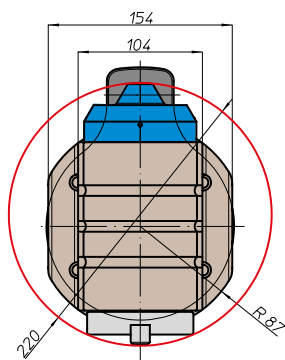
2500



165



40 BAR

CARATTERISTICHE
FEATURESCONO
SHANK

DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

45

50

50

50

80

100

C8

100

50

50

A

192

192

200

201

196

192

165

165

B

37

37

45

46

41

16

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option



FH

BAH

TA.CP

TA

MOx

HT

4-64

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

4-65

VH

TSI/TSX

T

MT-TC-TC3



TAO10.P

TESTA AD ANGOLO - ANGLE HEAD



6,2 KG



8,7 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø10



M8



500 N



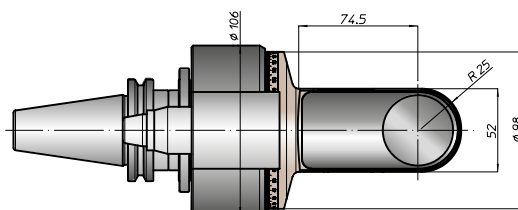
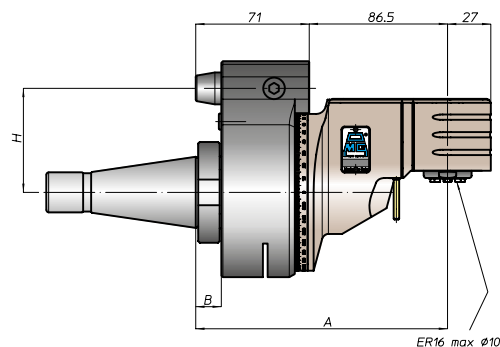
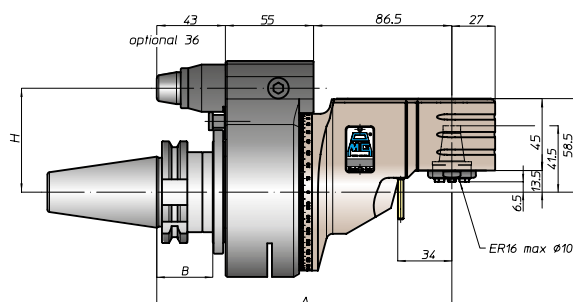
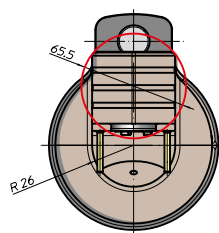
1-1



6000



25

CARATTERISTICHE
FEATURESØ16
PORTAFRESE
FACE MILL ARBORHSK25
DIN69893-HSKMANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

40

45

50

40

50

40

50

63

80

100

C5

C6

C8

63

80

100

40

50

40

50

A

184,5

184,5

184,5

192,5

193,5

188,5

184,5

157,5

160,5

157,5

160,5

B

35

35

35

45

44

46

39

41

13

16

13

16

H STANDARD

65

80

65

80

65

80

65

80

65

80

65

80

65

80

65

80

H OPTIONAL

110

110

110

110

110

110

110

110

110

110

110

For DIN69871, ANSIB5.50 and BT, dual contact as option

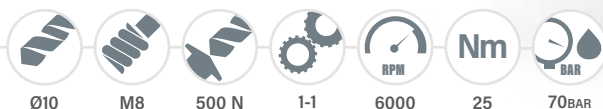
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TA010.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

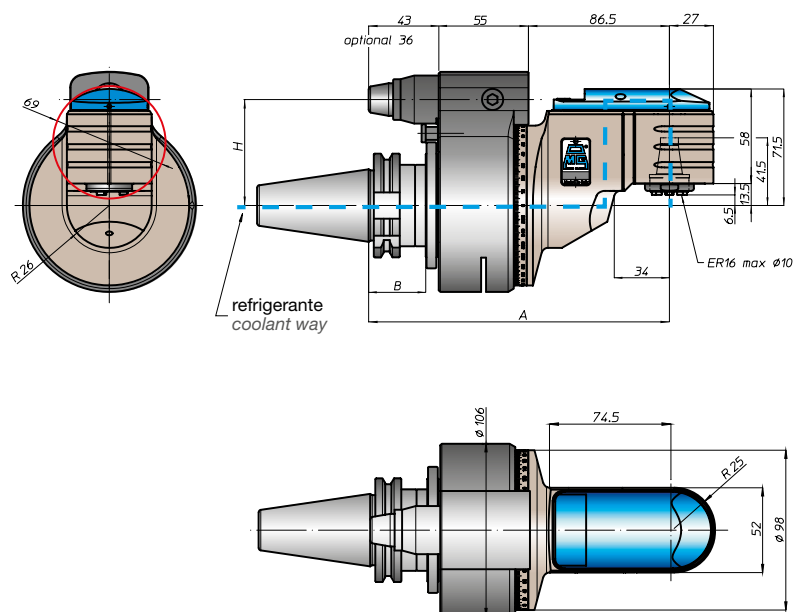
4-66

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



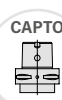
ANSIB5.50



BT



DIN69893



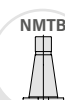
ISO26623



KM



DIN2080



ANSIB5.18

SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100		
A	184,5			184,5		184,5	192,5	193,5			188,5			184,5				
B	35			35		35	45	44	46		39	41						
H STANDARD	65	80		65	80	65	80	65	80		65	80	65	80				
H OPTIONAL		110			110		110		110			110		110				

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-67

VH

TSI/TSX

T

MT-TC-TC3



TA013.P

TESTA AD ANGOLO - ANGLE HEAD



7,5 KG



10,5 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION



Ø13



M10



570 N



1-1



4500



45

CARATTERISTICHE
FEATURES



Ø16
PORTAFRESE
FACE MILL ARBOR

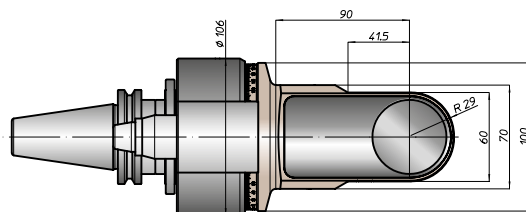
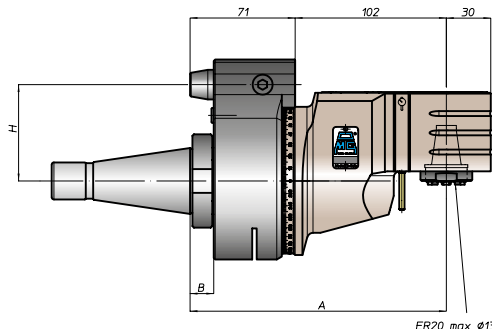
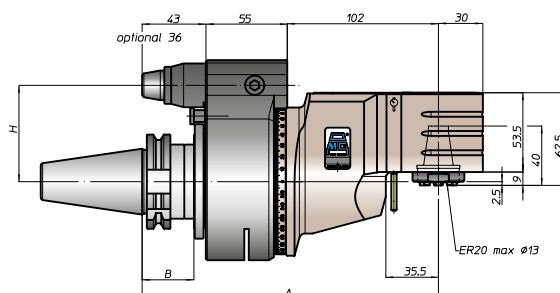
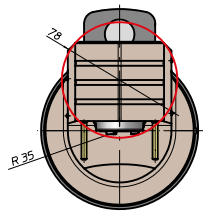


Ø12
WELDON
WHISTLE-NOTCH



HSK32
DIN69893-HSK

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK



DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

40 45 50

40 50

40 50

63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

200

200

200 208

209

204

200

170 176

173 176

B

35

35

35 45

44 46

39 41

13 16

13 16

H STANDARD

65 80

65 80

65 80

65 80

65 80

65 80

65 80

65 80

H OPTIONAL

110

110

110

110

110

110

110

110

For DIN69871, ANSIB5.50 and BT, dual contact as option

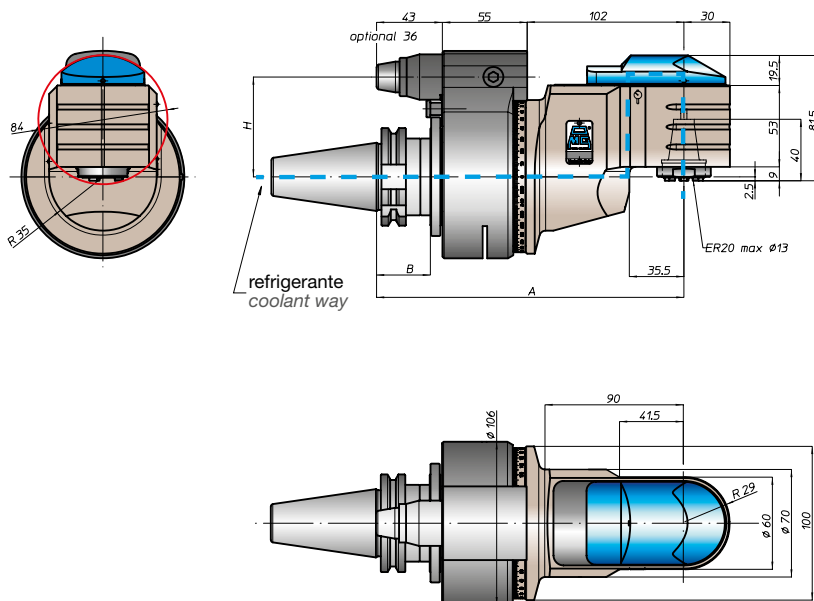
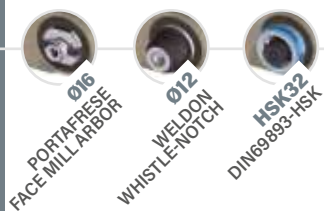
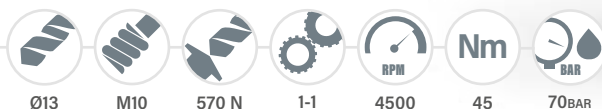
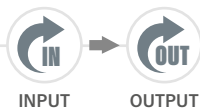


PESO
WEIGHT

ROTAZIONE
ROTATION

CARATTERISTICHE FEATURES

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO SHANK																				
	DIN69871			ANSIB5.50				DIN69893			ISO26623						DIN2080		ANSIB5.18	
	SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100			
	A	200			200		200	208	209			204			200					
	B	35			35		35	45	44	46			39	41						
H STANDARD	65	80		65	80	65	80	65	80		65		80	65	80					
H OPTIONAL		110			110		110		110				110		110					

For DIN69871, ANSIB5.50 and BT, dual contact as option

TA013.PD

TESTA AD ANGOLO • ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

TH

4-68

VH

TSI/TSX

MT-TC-TC3



PESO
WEIGHT



14 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø16



M12



810 N



1-1



4000



90



70 BAR

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



Ø16-Ø22-Ø27
PORTAFRESE
FACE MILL ARBOR



Ø16
WELDON
WHISTLE-NOTCH



HSK40
DIN69893-HSK



TA016.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

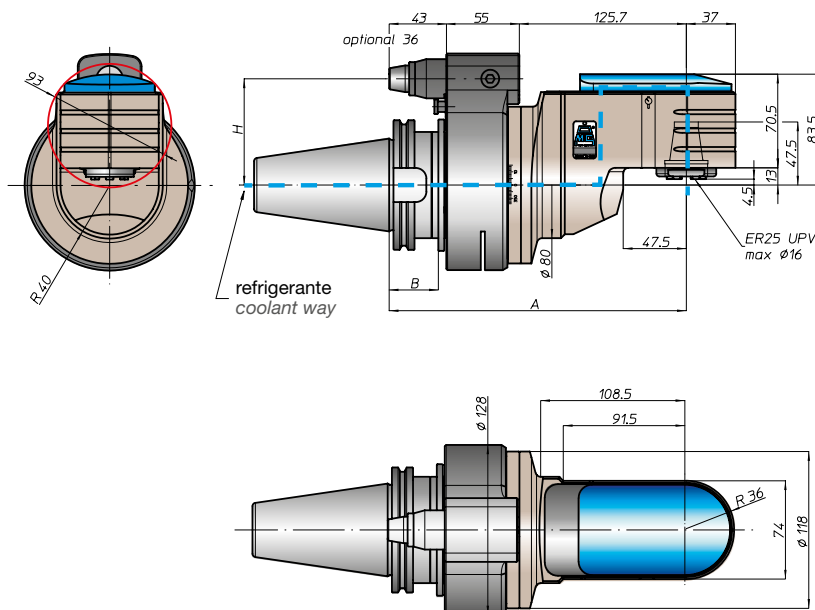
4-70

VH

TSI/TSX

T

MT-TC-TC3



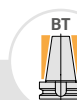
CONO
SHANK



DIN69871



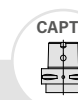
ANSIB5.50



50



80 100



ISO26623



DIN69893



DIN2080



ANSIB5.18

SIZE

45 50

50

50

80 100

C8

80 100

A

223,5

223,5

231,5

232,5

227,5

223,5

B

35

35

45

46

41

H STANDARD

80

80

80

80

80

80

H OPTIONAL

110

110

110

110

110

110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-71

VH

TSI/TSX

T

MT-TC-TC3

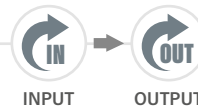


TAO20.P

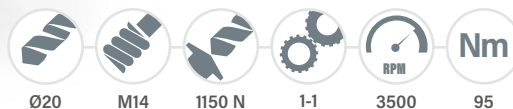
TESTA AD ANGOLO - ANGLE HEAD



PESO
WEIGHT



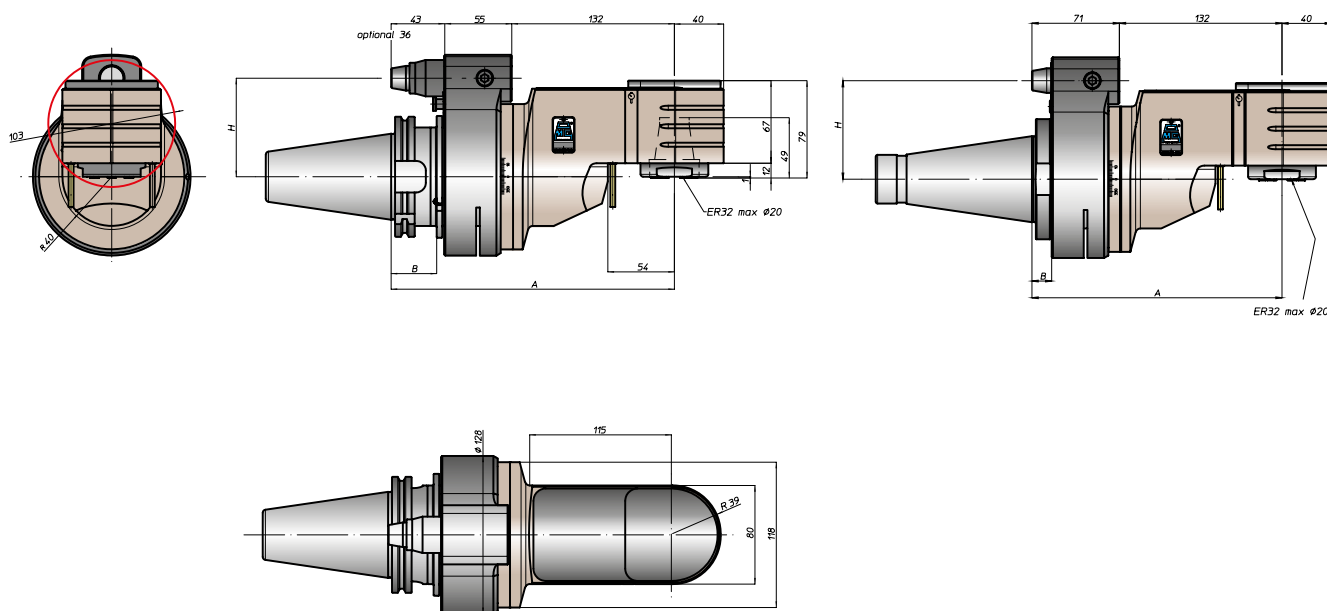
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



80 | 100



DIN2080



ANSIB5.18

45

50

50

50

80

100

C8

80

100

50

50

230

230

238

239

234

230

203

203

35

35

45

46

41

16

16

80

80

80

80

80

80

80

80

110

110

110

110

110

110

110

110

For DIN69871, ANSIB5.50 and BT, dual contact as option



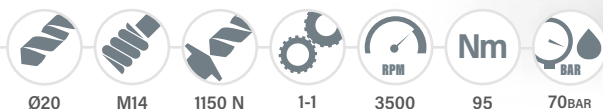
PESO
WEIGHT



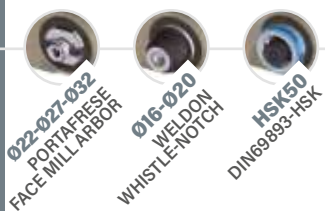
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TAO20.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

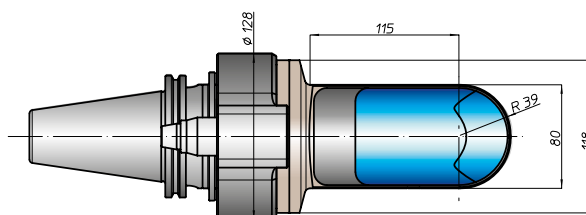
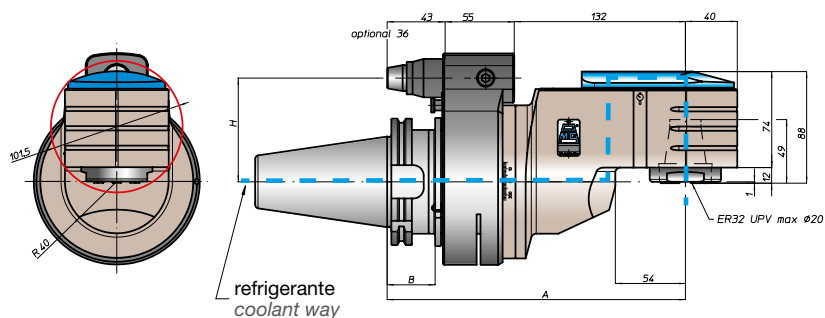
4-72

VH

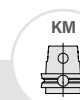
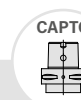
TSI/TSX

T

MT-TC-TC3



CONO
SHANK



SIZE

45 50 50 50 80 100 C8 80 100

A

230 230 238 239 234 230

B

35 35 45 46 41

H STANDARD

80 80 80 80 80 80

H OPTIONAL

110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-73

VH

TSI/TSX

T

MT-TC-TC3



TAO26.P

TESTA AD ANGOLO - ANGLE HEAD



24 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø26



M20



1590 N



1-1



3000



150

CARATTERISTICHE
FEATURES

Ø27-Ø32
PORTAFRESE
FACE MILL ARBOR



Ø25-Ø32
WELDON
WHISTLE-NOTCH



HSK63
DIN69893-HSK



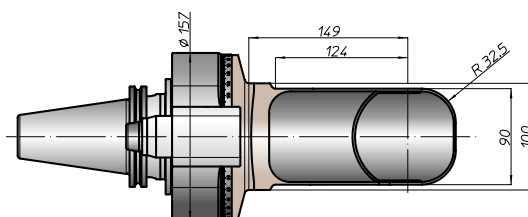
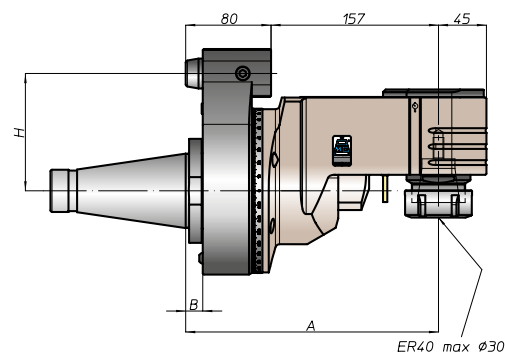
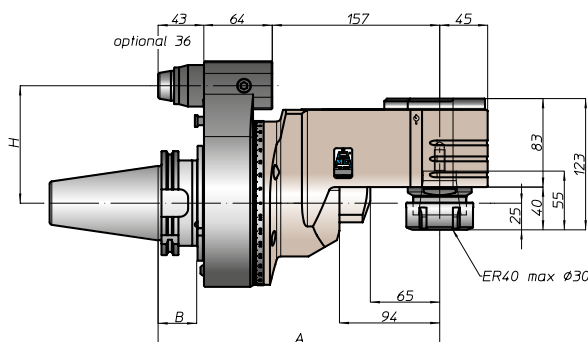
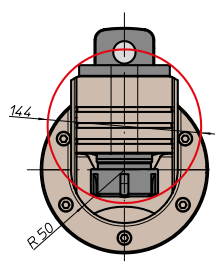
C4
COROMANT CAPTO®



ABS563
LICENZA KOMET®
KOMET LICENCE®



30-40
ISO DIN2079
NMTB-BT

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

50

50

50

100

C8

100

50

50

A

264

264

272

273

264

270

243

243

B

36,5

36,5

44,5

45,5

41

110

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



24 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø26



M20



1590 N



1-1



3000



150



70 BAR

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



Ø27-Ø32
PORTAFRESE
FACE MILL ARBOR



Ø25-Ø32
WELDON
WHISTLE-NOTCH



HSK63
DIN69893-HSK



C4
COROMANT CAPTO®



ABS63
LICENZA KOMET®
KOMET LICENCE®



TA026.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

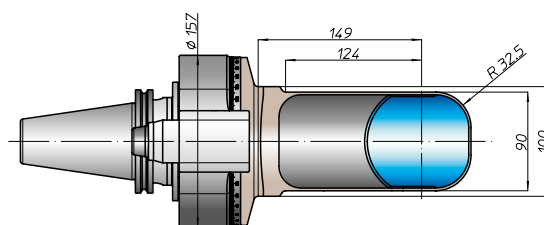
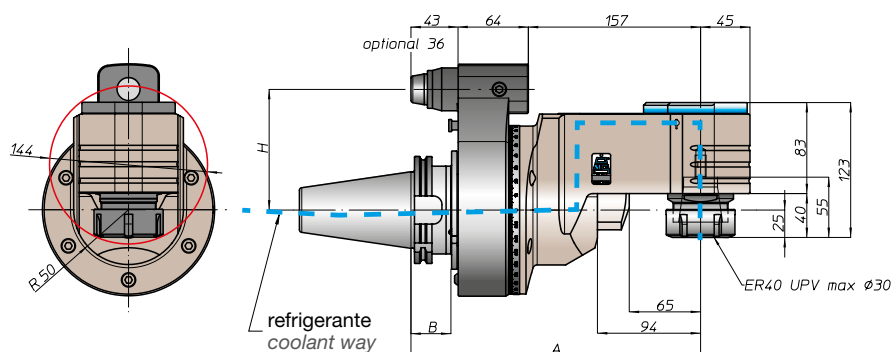
4-74

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



ANSIB5.50

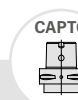


50



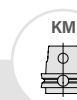
DIN69893

100



ISO26623

C8



100



DIN2080



ANSIB5.18

SIZE

50

50

50

100

C8

100

A

264

264

272

273

264

270

B

36,5

36,5

44,5

45,5

36,5

H STANDARD

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-75

VH

TSI/TSX

T

MT-TC-TC3



SERIE

TAV[®]

DIGITAL





Nuovo standard nelle teste ad angolo variabile.

La serie TAV si propone ora con un display per la visualizzazione dell'inclinazione del mandrino. La facilità di utilizzo, la precisione del sistema, l'ingombro estremamente ridotto consentirà agli utenti di registrare direttamente in macchina l'angolo della lavorazione che la Testa ad Angolo Variabile deve eseguire sul pezzo in modo semplice ed efficace.

Oggi sono disponibili i tre principali modelli di Teste ad Angolo Variabile: TAV10, TAV13 e TAV20.

Lo sviluppo di questa soluzione verrà presto trasportata a tutta la famiglia delle Teste ad Angolo della serie TAV.

New standard system on TAV adjustable angle heads.

The TAV series is now being enhanced with a display to check the spindle angle inclination. Both the user-friendliness and the precision, as well as the extremely reduced footprint of this new system, will allow the users to easily and effectively set the adjustable angle head directly on the machine prepared to machine pieces.

Nowadays the three major adjustable angle head models are available:

TAV10, TAV13 and TAV20.

And this new solution will be soon available on the whole range of TAV angle heads.

FH

BAH

TA.CP

TA

MOX

HT

4-76

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

4-77

VH

TSI/TSX

T

MT-TC-TC3



TAV10.P

TESTA AD ANGOLO - ANGLE HEAD


TAV
DIGITAL


6,4 KG



8,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø10



M8



550 N



1-1



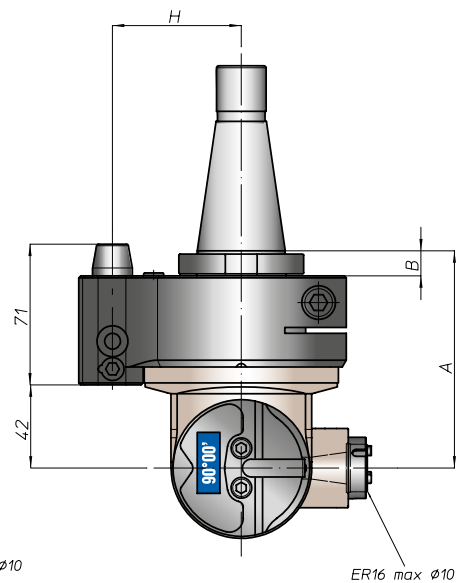
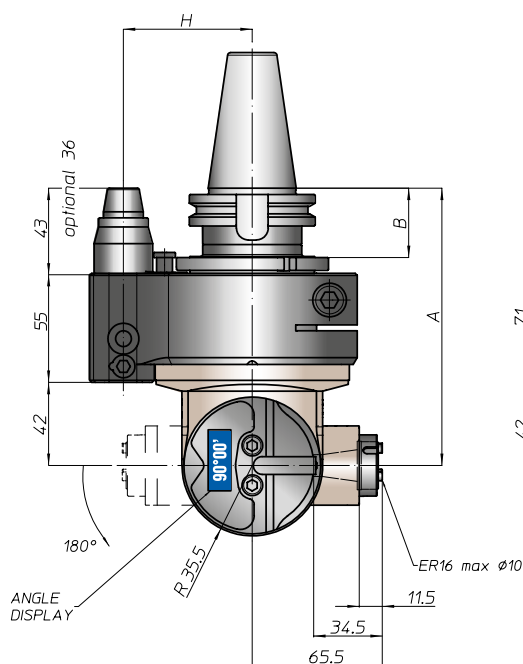
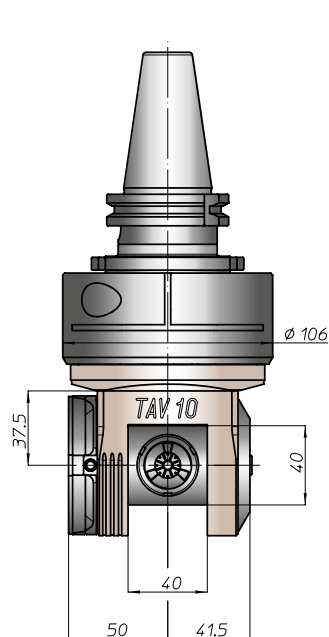
8000



12



±0,05

CARATTERISTICHE
FEATURESCONO
SHANK

DIN69871



ANSIB5.50

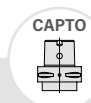


BT



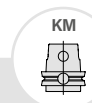
HSK

DIN69893

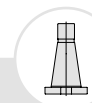


CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

40 45 50

40 50

40 50

63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

140

140

140 148

149

144

140

113 116

113 116

B

35

35

35 45

44 46

39 41

13 16

13 16

H STANDARD

65 80

65 80

65 80

65 80

65 80

65 80

65 80

65 80

H OPTIONAL

110

110

110

110

110

110

110

110

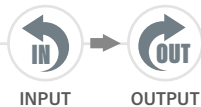
For DIN69871, ANSIB5.50 and BT, dual contact as option



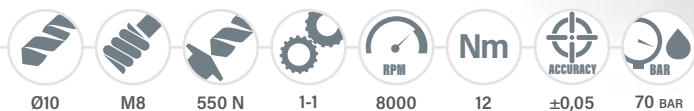
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



TAV10.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

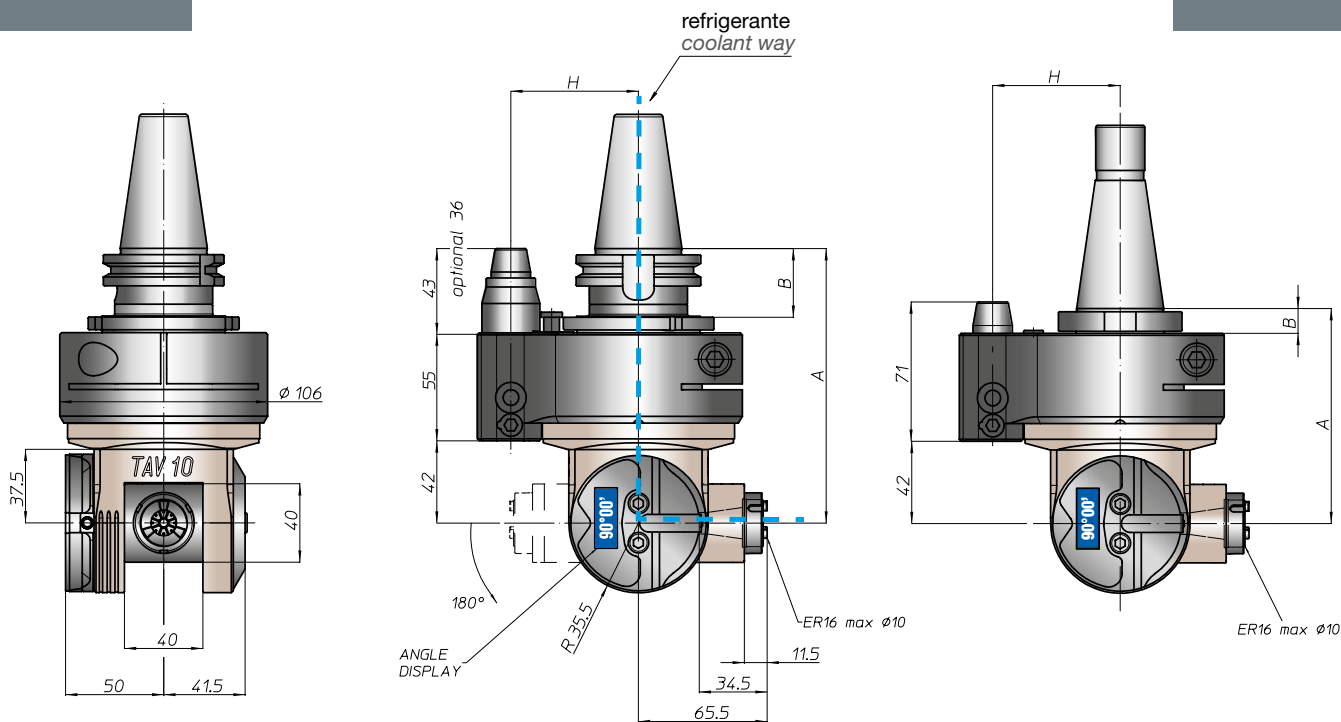
4-78

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



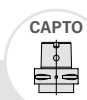
ANSIB5.50



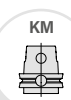
BT



HSK



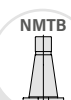
CAPTO



KM



DIN2080



NMTB

SIZE

40 45 50 40 50 40 50 63 80 100 C5 C6 C8 63 80 100 40 50 40 50

A

140 140 140 148 149 144 140 113 116 113 116

B

35 35 35 45 44 46 39 41 13 16 13 16

H STANDARD

65 80 65 80 65 80 65 80 65 80 65 80 65 80

H OPTIONAL

110 110 110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-79

VH

TSI/TSX

T

MT-TC-TC3



TAV13.P

TESTA AD ANGOLO - ANGLE HEAD



TAV
DIGITAL



7,8 KG



10,5 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION



Ø13



M10



630 N



1-1



6000



18

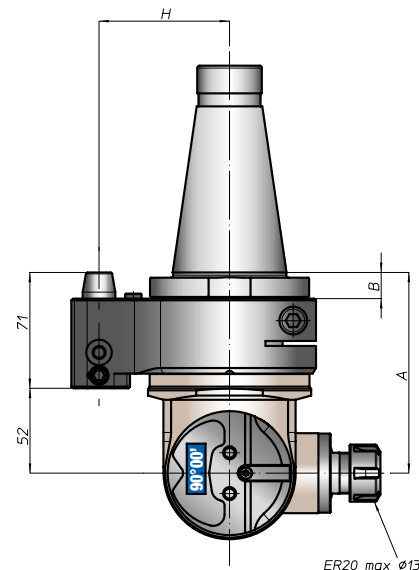
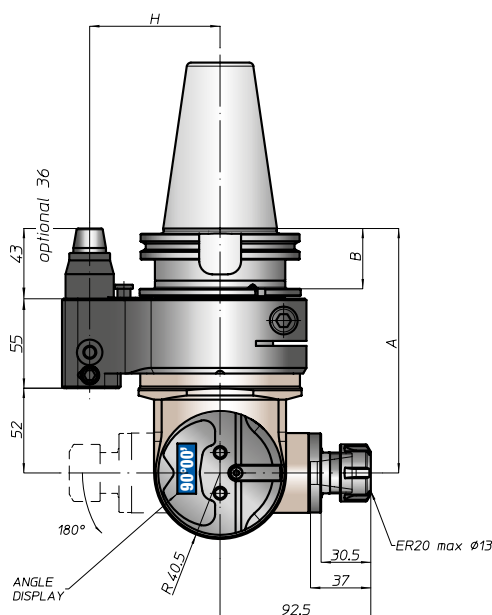
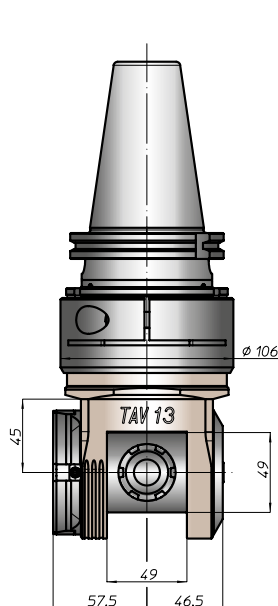


±0,05

CARATTERISTICHE
FEATURES

ER25
DIN6499-ERØ16
WELDON
WHISTLE-NOTCH

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK



DIN69871



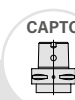
ANSIB5.50



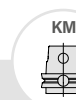
BT



DIN69893



CAPTO



KM



DIN2080



ANSIB5.18

SIZE

40 45 50

40 50

40 50

63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

150

150

150 158

159

154

150

120 123

120 123

B

35

35

35 45

44 46

39 41

13 16

13 16

H STANDARD

65 80

65 80

65 80

65 80

65 80

65 80

65 80

65 80

H OPTIONAL

110

110

110

110

110

110

110

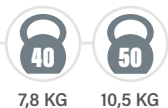
110

For DIN69871, ANSIB5.50 and BT, dual contact as option

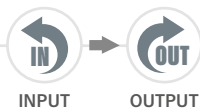




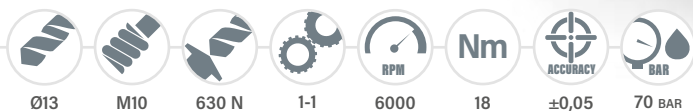
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TAV13.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

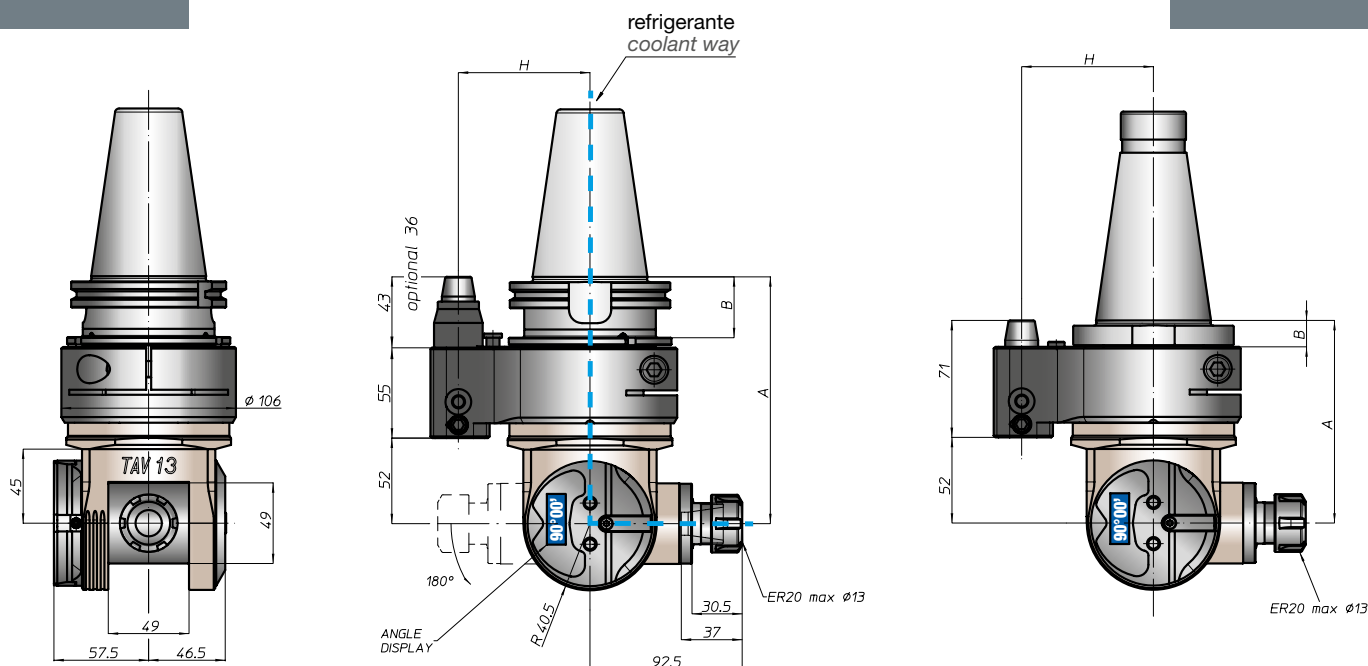
4-80

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



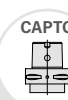
ANSIB5.50



BT



DIN69893



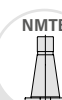
ISO26623



KM



DIN2080



ANSIB5.18

SIZE

40 45 50 40 50 40 50 63 80 100 C5 C6 C8 63 80 100 40 50 40 50

A

150 150 150 158 159 154 150 120 123 120 123

B

35 35 35 45 44 46 39 41 13 16 13 16

H STANDARD

65 80 65 80 65 80 65 80 65 80 65 80 65 80

H OPTIONAL

110 110 110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option



TAV20.P

TESTA AD ANGOLO - ANGLE HEAD



TAV
DIGITAL



22 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION



Ø20



M16



1740 N



1-1



4000



60



±0,05

CARATTERISTICHE
FEATURES



ER40
DIN6499-ER



Ø32
PORTAFRESSE
FACE MILL ARBOR



Ø20-Ø25
WELDON
WHISTLE-NOTCH

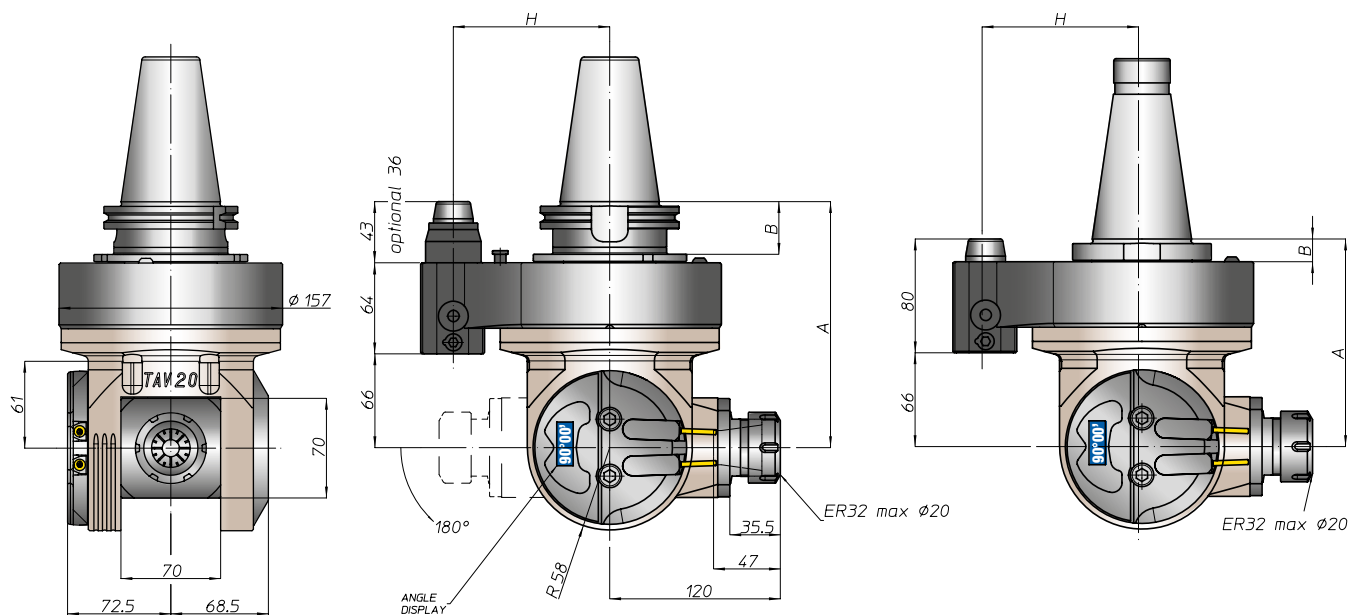


HSK50
DIN69893-HSK



ABS550
LICENZA KOMET®
KOMET LICENCE®

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK



DIN69871



CAT
ANSIB5.50



BT



HSK



CAPTO
ISO26623



KM



DIN2080



NMTB
ANSIB5.18

SIZE

50

50

50

80

100

C8

100

50

50

A

173

173

181

182

177

173

149

149

B

35

35

45

46

41

16

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



22 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø20



M16



1740 N



1-1



4000



60



±0,05



70 BAR

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



ER40
DIN6499-ER



Ø32
PORTAFRESE
FACE MILL ARBOR



Ø20-Ø25
WELDON
WHISTLE-NOTCH



HSK50
DIN69893-HSK



ABS50
LICENZA KOMET®
KOMET LICENCE®



TAV20-PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

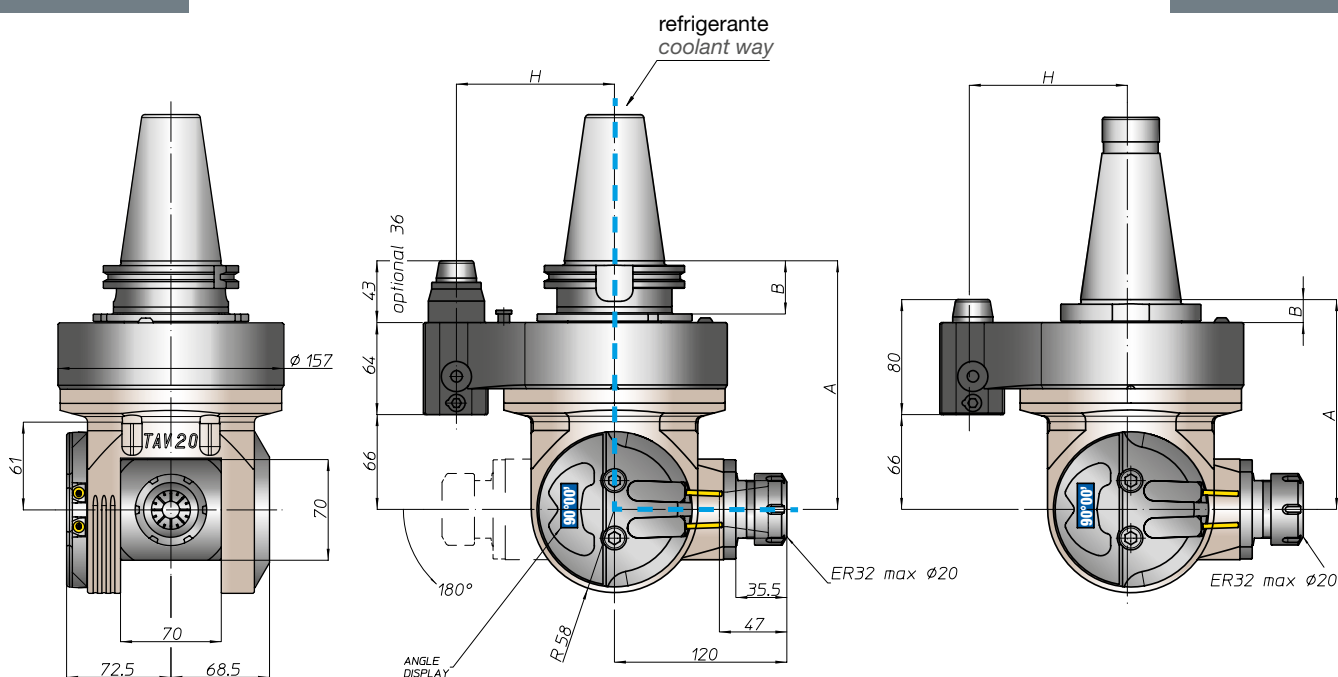
4-82

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



CAT
ANSIB5.50



BT



HSK



CAPTO
ISO26623



KM



DIN2080



NMTB
ANSIB5.18

SIZE

50

50

50

80

100

C8

100

50

50

A

173

173

181

182

177

173

149

149

B

35

35

45

46

41

16

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL



TAV40.T

TESTA AD ANGOLO - ANGLE HEAD



TAV
DIGITAL



70 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION



Ø32



M26



2610 N



1-2



5000



230



±0,014

CARATTERISTICHE
FEATURES

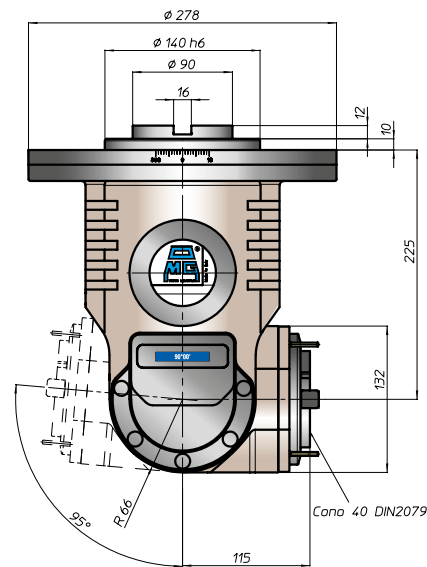
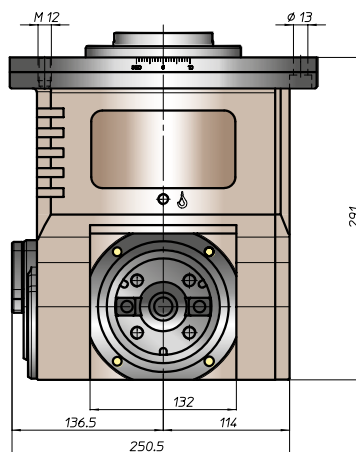
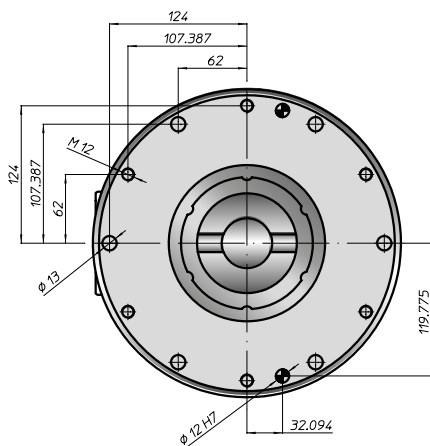


HSK63
DIN69893-HSK

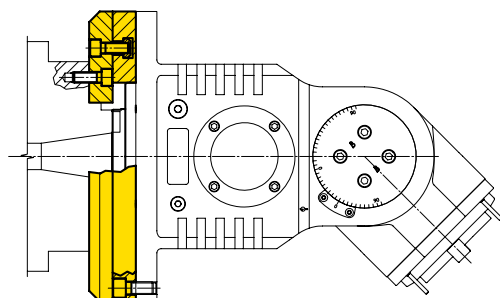


C5
COROMANT CAPTO®

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



Esempio di collegamento / Connection example



Equipaggiamento standard:

- pressurizzazione mandrino
- n. 4 ugelli orientabili vicino al mandrino
- regolazione angolare mandrino libera
- nel mandrino DIN2079 si possono utilizzare coni DIN2080-40, DIN69871-A40, MAS403-BT40

Standard equipment:

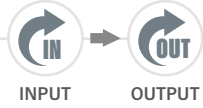
- spindle front pressurization
- nr. 4 adjustable nozzle near the spindle
- free angle spindle adjustment
- on the spindle DIN2079 you can use shank DIN2080-40, DIN69871-A40, MAS403-BT40

PESO
WEIGHT



145 KG

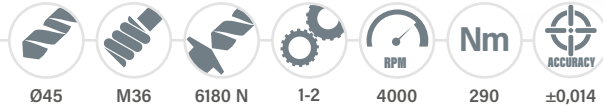
ROTAZIONE
ROTATION



INPUT

OUTPUT

CARATTERISTICHE
FEATURES



Ø45

M36

6180 N

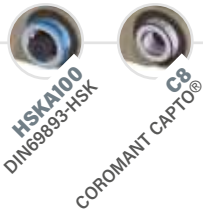
1-2

4000

290

±0,014

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



HSKA100
DIN69893-HSK

C8
COROMANT CAPTO®



TAV50.T

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

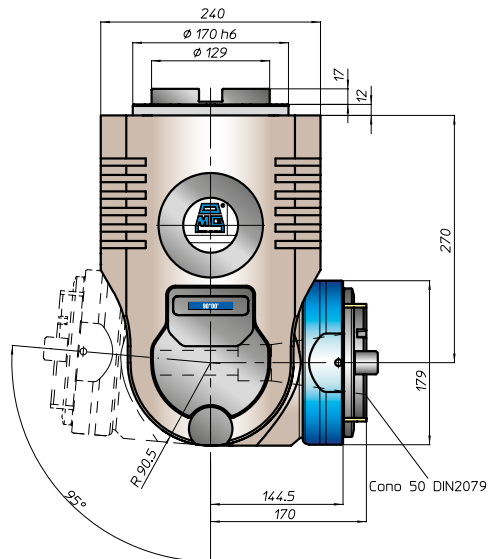
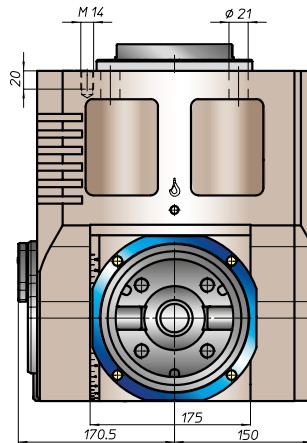
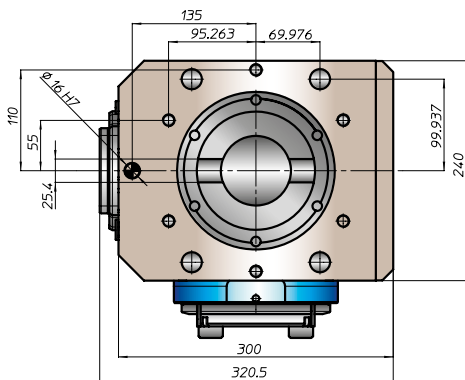
4-84

VH

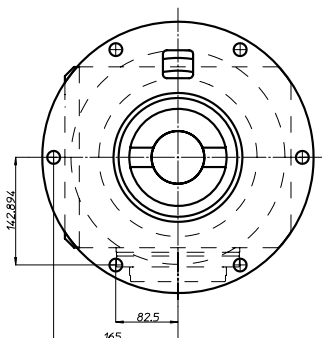
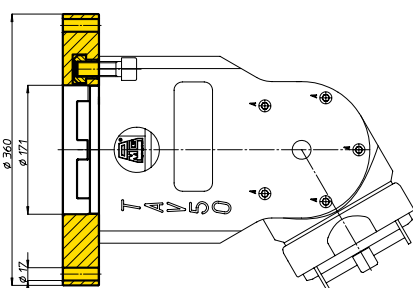
TSI/TSX

T

MT-TC-TC3



Esempio di collegamento / Connection example



Equipaggiamento standard:

- pressurizzazione mandrino
- n. 4 ugelli orientabili vicino al mandrino
- regolazione angolare mandrino libera o posizionabile ogni 15°
- nel mandrino DIN2079 si possono utilizzare coni DIN69871-A50, MAS403-BT50

Standard equipment:

- i spindle front pr essurization
- i nr. 4 adjustable nozzle near the spindle
- i fr ee angle spindle adjustment or by pin each 15°
- i on the spindle DIN2079 you can use shank DIN69871-A50, MAS403-BT50

FH

BAH

TA.CP

TA

MOx

HT

4-85

VH

TSI/TSX

T

MT-TC-TC3



TAV10.P

TESTA AD ANGOLO - ANGLE HEAD



6,4 KG



8,5 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION



Ø10



M8



550 N



1-1

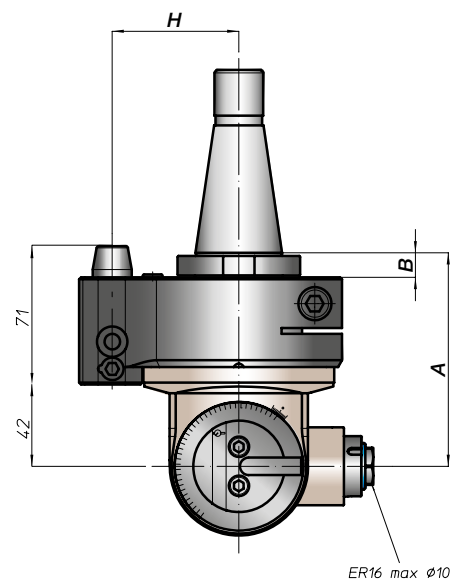
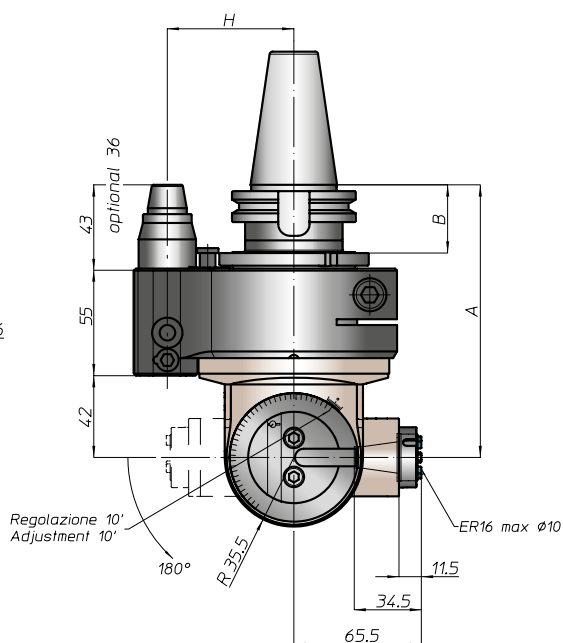
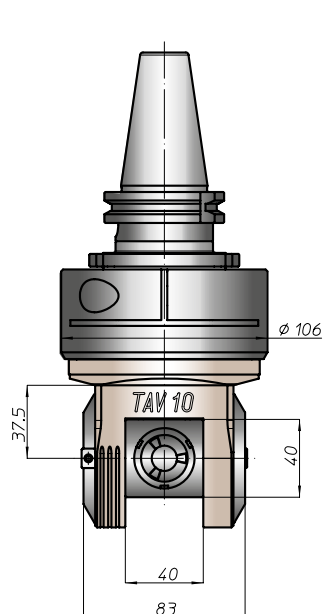


8000



12

CARATTERISTICHE
FEATURES



CONO
SHANK



DIN69871



ANSIB5.50



BT



HSK



CAPTO



KM



DIN2080



NMTB

ANSIB5.18

SIZE

40 45 50

40 50

40 50

63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

140

140

140

148

149

144

140

113

116

113

116

B

35

35

35

45

44

46

39

41

13

16

13

16

H STANDARD

65

80

65

80

65

80

65

80

65

80

65

80

65

80

65

80

H OPTIONAL

110

110

110

110

110

110

110

110

110

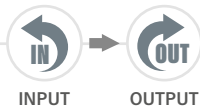
For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



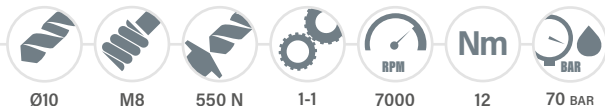
6,4 KG 8,5 KG

ROTAZIONE
ROTATION



INPUT OUTPUT

CARATTERISTICHE
FEATURES



Ø10 M8 550 N 1-1 7000 12 70 BAR



TAV10-PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

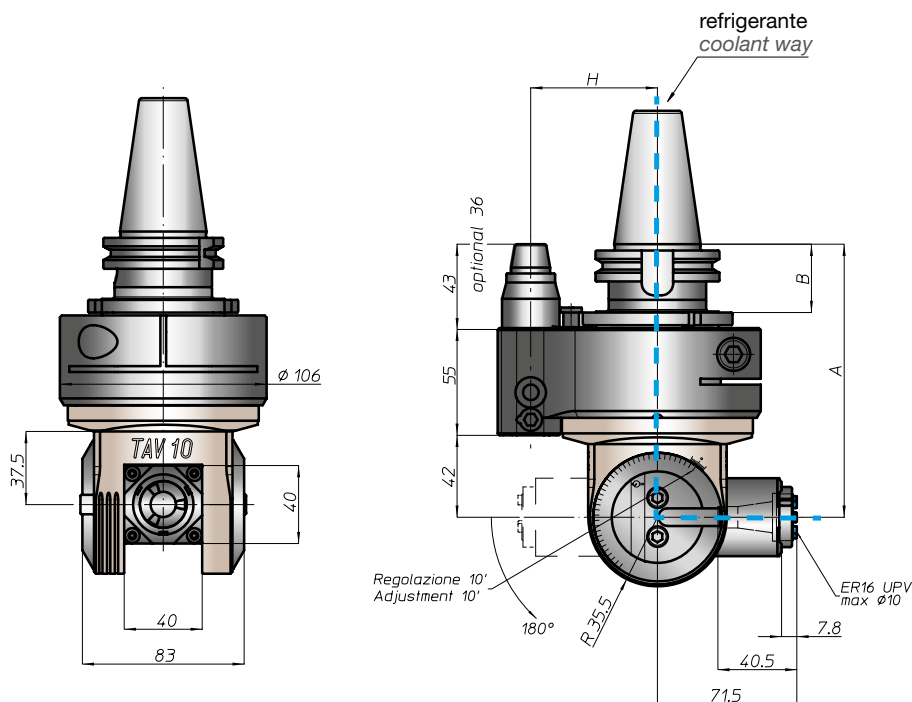
4-86

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



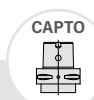
ANSIB5.50



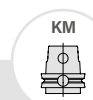
BT



HSK



CAPTO



KM



DIN2080



NMTB

ANSIB5.18

SIZE

40 45 50 40 50 40 50 63 80 100 C5 C6 C8 63 80 100

A

140 140 140 148 149 144 140

B

35 35 35 45 44 46 39 41

H STANDARD

65 80 65 80 65 80 65 80 65 80 65 80

H OPTIONAL

110 110 110 110 110 110 110

For DIN69871, ANSIB5.50 and BT, dual contact as option

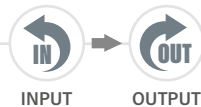


TAV13.P

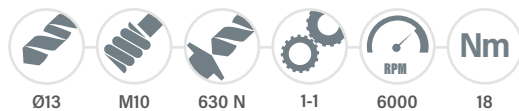
TESTA AD ANGOLO - ANGLE HEAD



PESO
WEIGHT



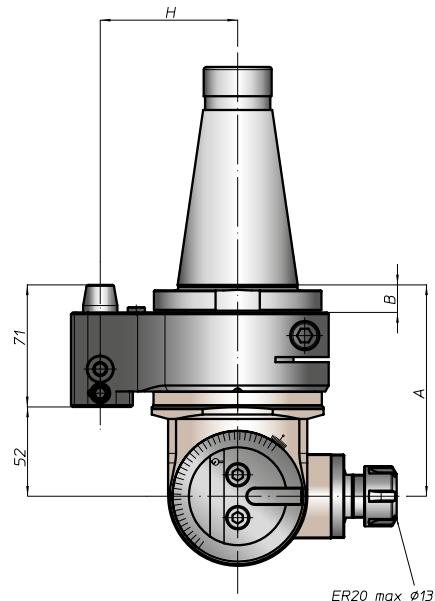
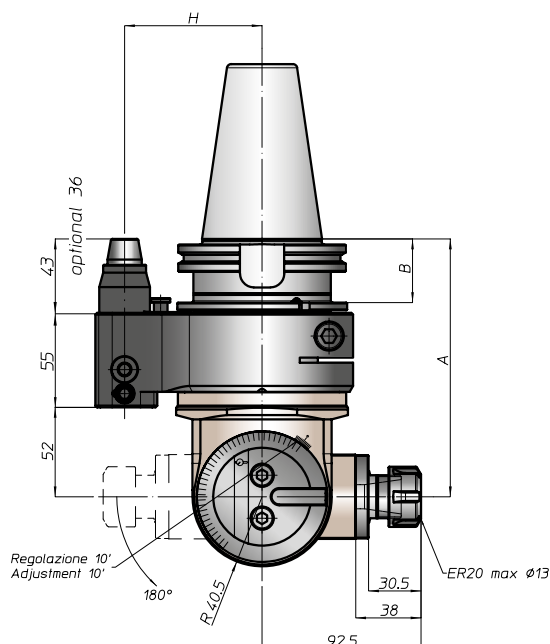
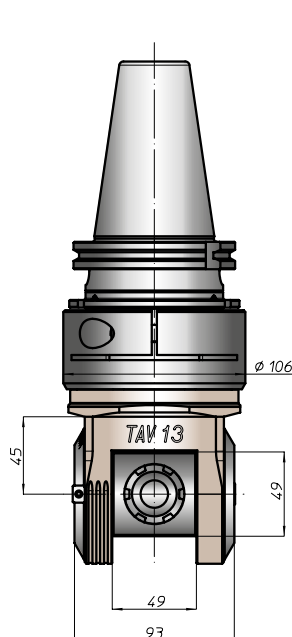
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK



DIN69871



ANSIB5.50



BT



HSK

DIN69893



CAPTO

ISO26623



KM



DIN2080



ANSIB5.18

SIZE

40 45 50

40 50

40 50

63 80 100

C5 C6 C8

63 80 100

40 50

40 50

A

150

150

150 158

159

154

150

120 123

120 123

B

35

35

35 45

44 46

39 41

13 16

13 16

H STANDARD

65 80

65 80

65 80

65 80

65 80

65 80

65 80

65 80

H OPTIONAL

110

110

110

110

110

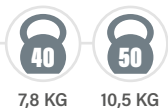
110

110

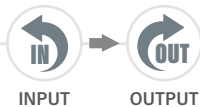
110

For DIN69871, ANSIB5.50 and BT, dual contact as option

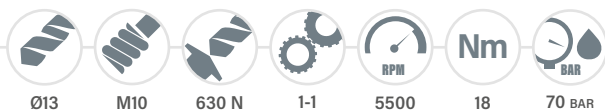
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TAV13-PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

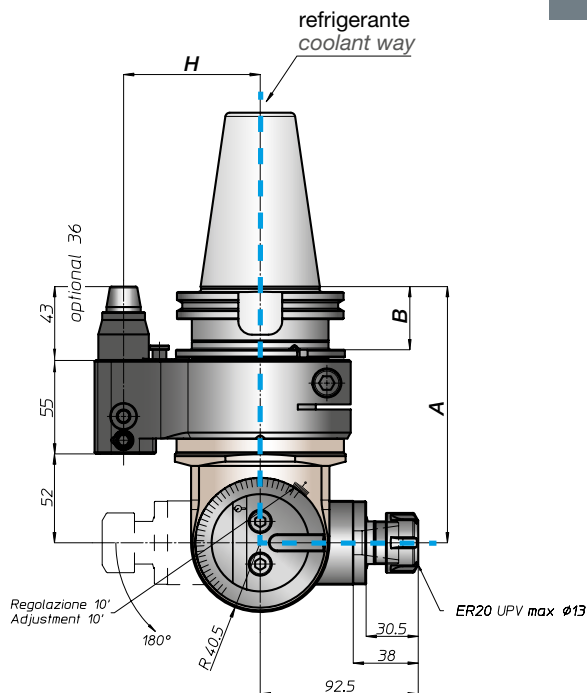
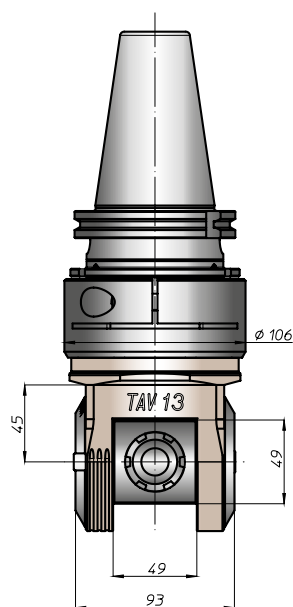
4-88

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



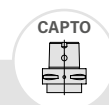
ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	
A	150			150		150	158	159			154			150			120	
B	35			35		35	45	44	46		39	41					13	
H STANDARD	65	80		65	80	65	80	65	80		65	80	65	80	65	80	65	
H OPTIONAL		110			110		110		110			110			110			

For DIN69871, ANSIB5.50 and BT, dual contact as option

FH

BAH

TA.CP

TA

MOx

HT

4-89

VH

TSI/TSX

T

MT-TC-TC3



TAV20.P

TESTA AD ANGOLO - ANGLE HEAD



22 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø20



M16



1740 N



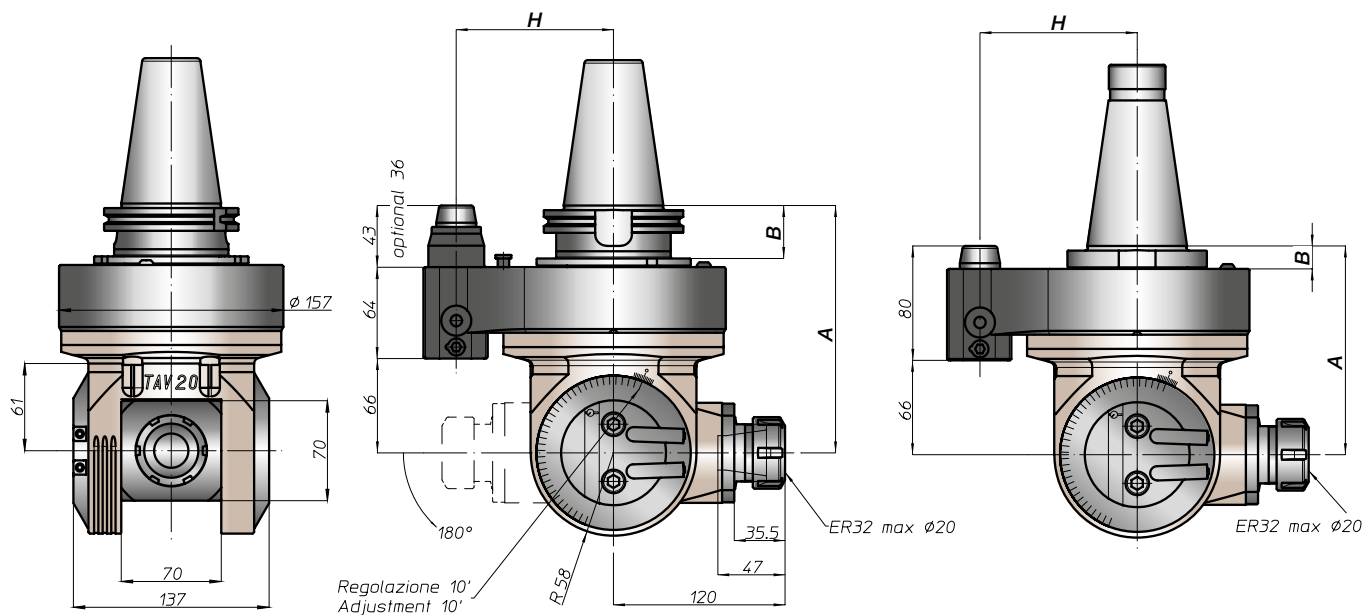
1-1



4000



60

CARATTERISTICHE
FEATURESER40
DIN6499-ERØ32
PORTAFRESE
FACE MILL ARBORØ20-Ø25
WELDON
WHISTLE-NOTCHHSK50
DIN69893-HSKABS550
LICENZA KOMET®
KOMET LICENCE®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

DIN69871



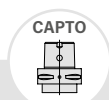
ANSIB5.50



BT



HSK



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

50

50

50

80

100

C8

100

50

50

A

173

173

181

182

177

173

149

149

B

35

35

45

46

41

16

16

16

H STANDARD

110

110

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



22 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø20



M16



1740 N



1-1



4000



60



70 BAR

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



ER40
DIN6499-ER



Ø20-Ø25
WELDON
WHISTLE-NOTCH



HSK50
DIN69893-HSK



ABS50
LICENZA KOMET®
KOMET LICENCE®



TAV20-PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

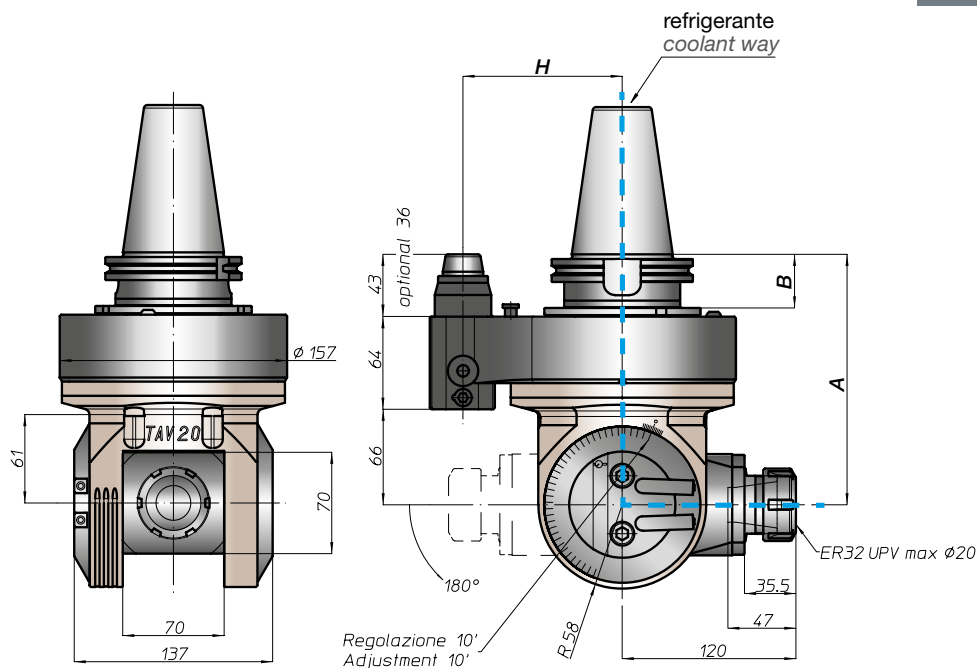
4-90

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



ANSIB5.50



50



80 100



ISO26623

C8



100



DIN2080



ANSIB5.18

SIZE

50

50

50

80 100

C8

100

A

173

173

181

182

177

173

B

35

35

45

46

41

H STANDARD

110

110

110

110

110

110

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option



TAV30.P

TESTA AD ANGOLO - ANGLE HEAD



50
42 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION



Ø30



M24



2740 N



1-1



2500



130

CARATTERISTICHE
FEATURES



ER50
DIN6499-ER



Ø32-Ø40
PORTAFRESE
FACE MILL ARBOR

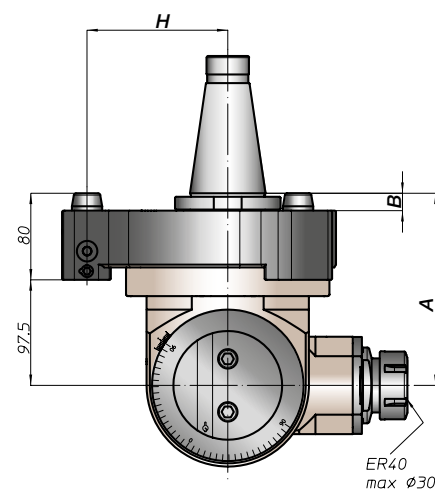
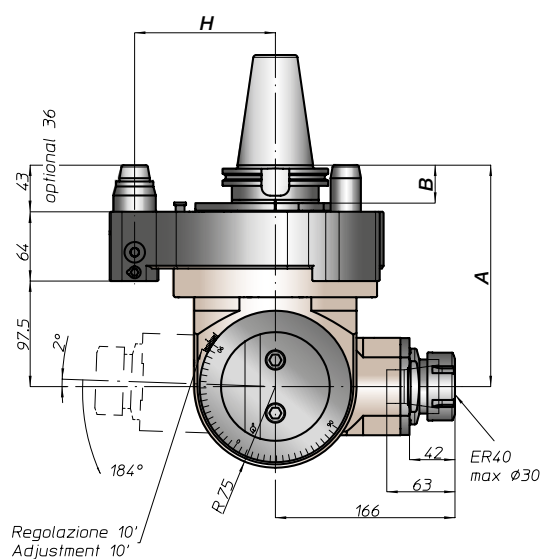
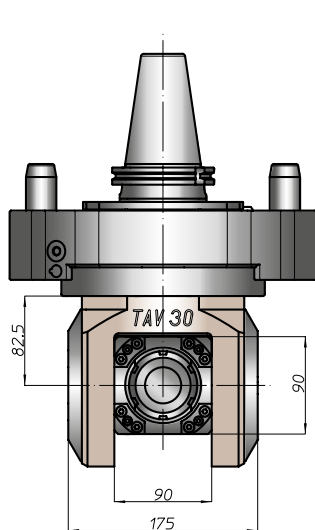


HSK63
DIN69893-HSK



AB563
LICENZA KOMET®
KOMET LICENCE®

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK



DIN69871



CAT
ANSIB5.50



BT



HSK



CAPTO

ISO26623



KM



DIN2080



NMTB

ANSIB5.18

SIZE

50

50

50

100

C8

100

50

50

A

204,5

204,5

212,5

213,5

208,5

204,5

177,5

177,5

B

35

35

45

46

41

16

16

16

H STANDARD

130

130

130

130

130

130

130

130

H OPTIONAL

For DIN69871, ANSIB5.50 and BT, dual contact as option

PESO
WEIGHT



70 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø32



M26



2610 N



1-2



5000
OUTPUT



230

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



HSK63
DIN69893-HSK



C5
COROMANT CAPTO®



TAV40.T

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA,CP

TA

MOX

HT

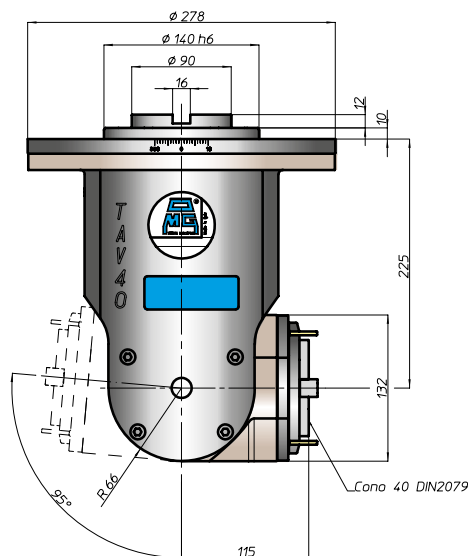
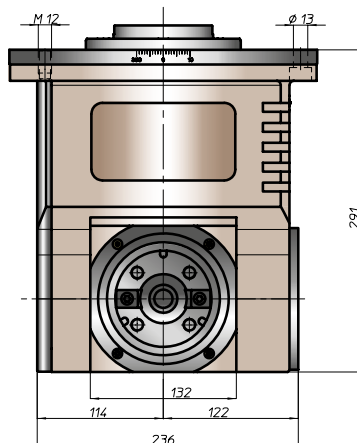
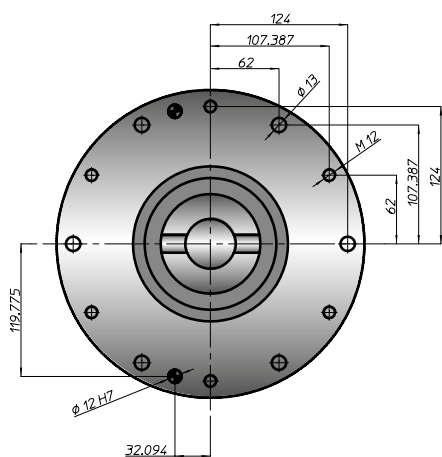
4-92

VH

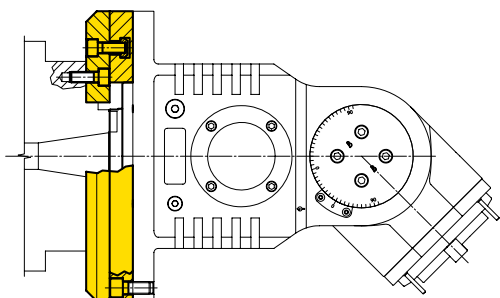
TSI/TSX

T

MT-TC-TC3



Esempio di collegamento / Connection example



Equipaggiamento standard:

- pressurizzazione mandrino
- n. 4 ugelli orientabili vicino al mandrino
- regolazione angolare mandrino libera
 - nel mandrino DIN2079 si possono utilizzare coni DIN2080-40, DIN69871-A40, MAS403-BT40

Standard equipment:

- spindle front pressurization
- nr. 4 adjustable nozzle near the spindle
- free angle spindle adjustment
 - on the spindle DIN2079 you can use shank DIN2080-40, DIN69871-A40, MAS403-BT40



TAV50.T

TESTA AD ANGOLO - ANGLE HEAD



145 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø45



M36



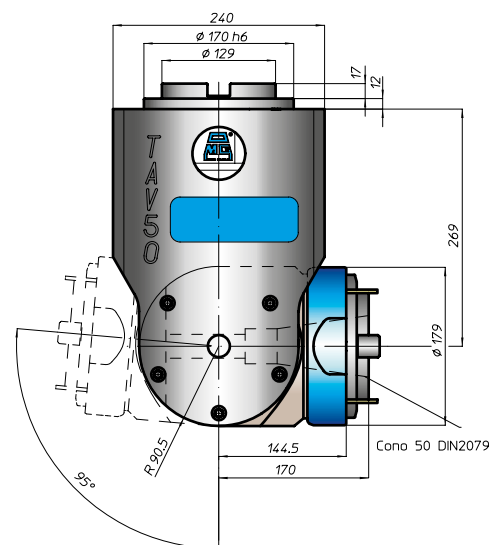
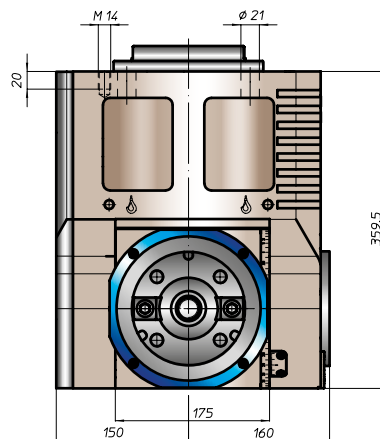
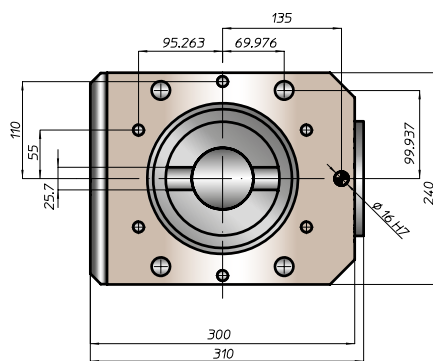
6180 N



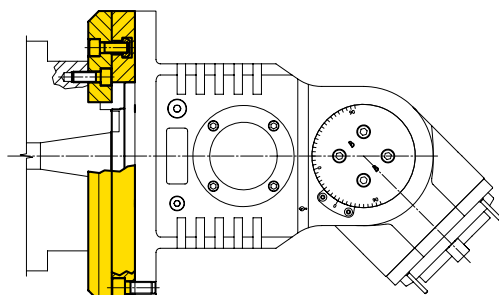
1-2

4000
OUTPUT

290

CARATTERISTICHE
FEATURESHSK A100
DIN69893-HSKC8
COROMANT CAPTO®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES

Esempio di collegamento / Connection example



Equipaggiamento standard:

- pressurizzazione mandrino
- n. 4 ugelli orientabili vicino al mandrino
- regolazione angolare mandrino libera o posizionabile ogni 15°
- nel mandrino DIN2079 si possono utilizzare coni DIN69871-A50, MAS403-BT50

Standard equipment:

- spindle front pressurization
- nr. 4 adjustable nozzle near the spindle
- free angle spindle adjustment or by pin each 15°
- on the spindle DIN2079 you can use shank DIN69871-A50, MAS403-BT50



TAV

GALLERY



MT-TC-TC3

T

TSI/TSX

VH

4-94

HT

MOx

TA

TA.CP

BAH

FH

FH

BAH

TA.CP

TA

MOx

HT

4-95

VH

TSI/TSX

T

MT-TC-TC3

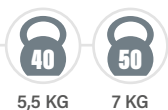


TAF

GALLERY

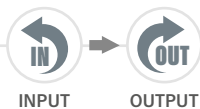


PESO
WEIGHT



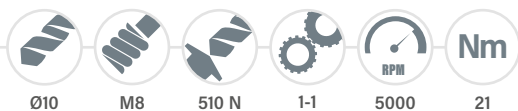
5,5 KG 7 KG

ROTAZIONE
ROTATION



INPUT OUTPUT

CARATTERISTICHE
FEATURES



Ø10 M8 510 N 1-1 5000 21



TAFE10.P

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

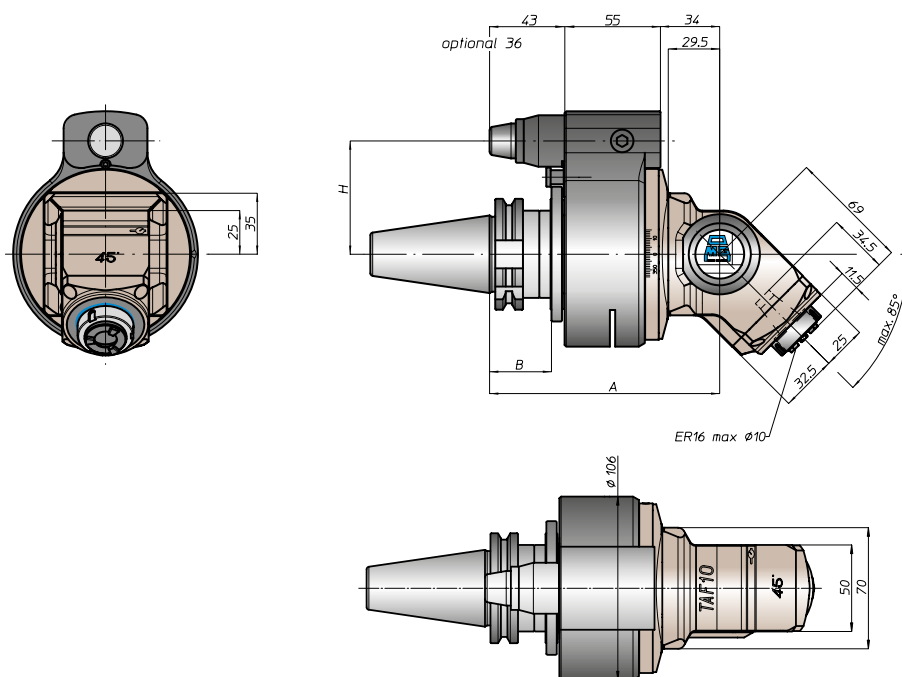
4-96

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



ANSIB5.50



BT



DIN69893



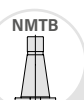
ISO26623



KM



DIN2080



ANSIB5.18

SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100		
A		132			132		132	140	141			136			132				
B		35			35		35	45	44	46		39	41						
H STANDARD	65	80			65	80	65	80	65	80		65	80	65	80				
H OPTIONAL		110				110		110		110			110		110				

FH

BAH

TA.CP

TA

MOx

HT

4-97

VH

TSI/TSX

T

MT-TC-TC3



TAF13.P

TESTA AD ANGOLO - ANGLE HEAD



6,5 KG



8,5 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION



Ø13



M10



900 N



1-1



4000



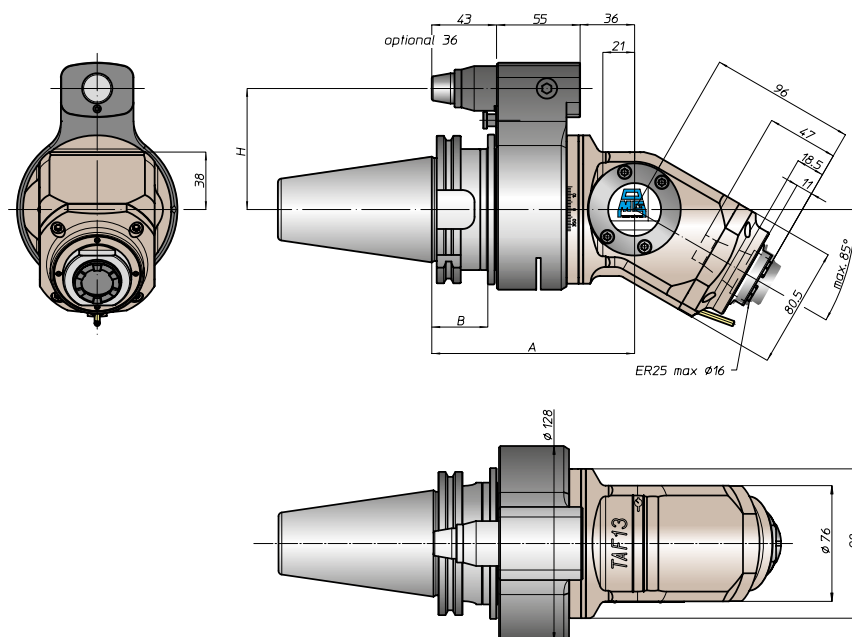
35

CARATTERISTICHE
FEATURES



HSK32
DIN69893-HSK

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

40 45 50

40 50

40 50

63 80 100

C5 C6 C8

63 80 100

134

134

134 142

143

138

134

35

35

35 45

44 46

39 41

65 80

65 80

65 80

65 80

65 80

65 80

110

110

110

110

110

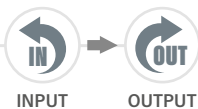
110

110

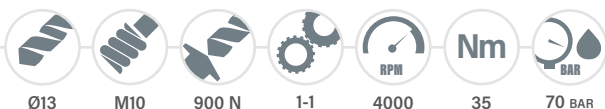
PESO
WEIGHT



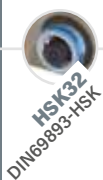
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TAFE13.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

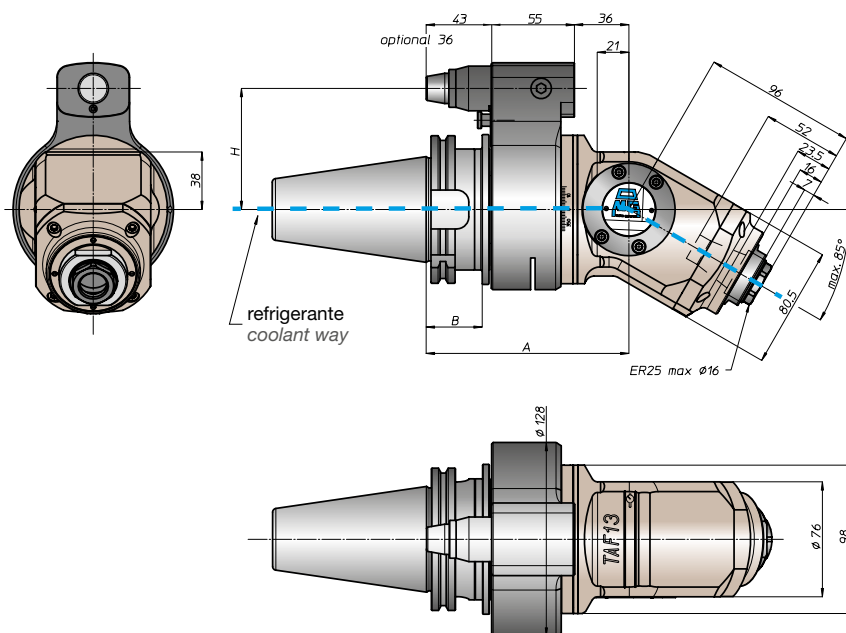
4-98

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

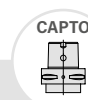
SIZE

A

B

H STANDARD

H OPTIONAL



	DIN69871			ANSIB5.50		BT		HSK			CAPTO			KM			DIN2080		ANSIB5.18	
SIZE	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100				
A	134			134		134	142	143			138			134						
B	35			35		35	45	44	46		39	41								
H STANDARD	65	80		65	80	65	80	65	80		65	80		65	80					
H OPTIONAL		110			110		110		110			110			110					

FH

BAH

TA.CP

TA

MOx

HT

4-99

VH

TSI/TSX

T

MT-TC-TC3



TAF20.P

TESTA AD ANGOLO - ANGLE HEAD



13,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø20



M26



1610 N



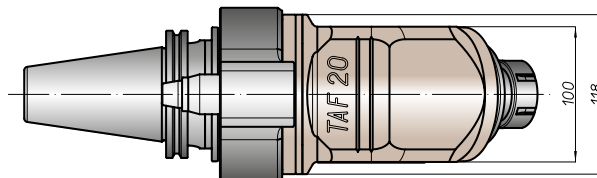
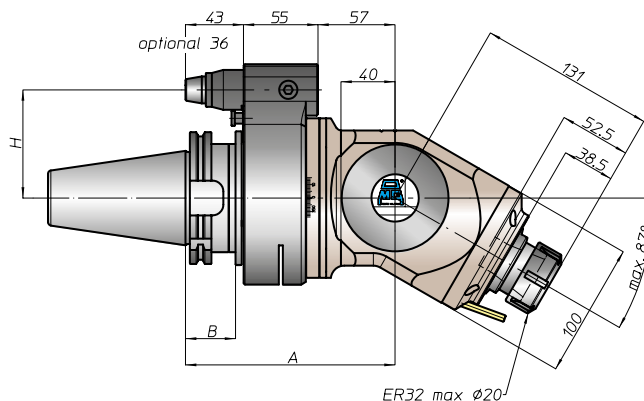
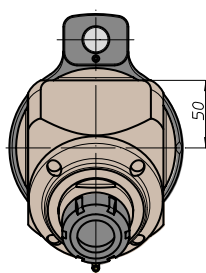
1-1



3000



79

CARATTERISTICHE
FEATURESER40
DIN6499-ERØ32
PORTAFRESSE
FACE MILL ARBORØ20
WELDON
WHISTLE-NOTCHHSK50
DIN69893-HSKABS50
LICENZA KOMET®
KOMET LICENCE®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLESCONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



ANSIB5.50



50



DIN69893

80

100



ISO26623

C6

C8



80

100



DIN2080



ANSIB5.18

45

50

50

50

80

100

C6

C8

80

100

155

155

163

164

159

155

35

35

45

46

41

80

80

80

80

80

80

110

110

110

110

110

110

PESO
WEIGHT



13,5 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø20



M16



1610 N



1-1



3000



79



70 BAR

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



ER40
DIN6499-ER



Ø20
WELDON
WHISTLE-NOTCH



HSK50
DIN69893-HSK



ABS50
LICENZA KOMET®
KOMET LICENCE®



TAF20.PD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

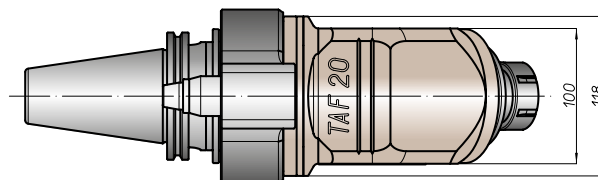
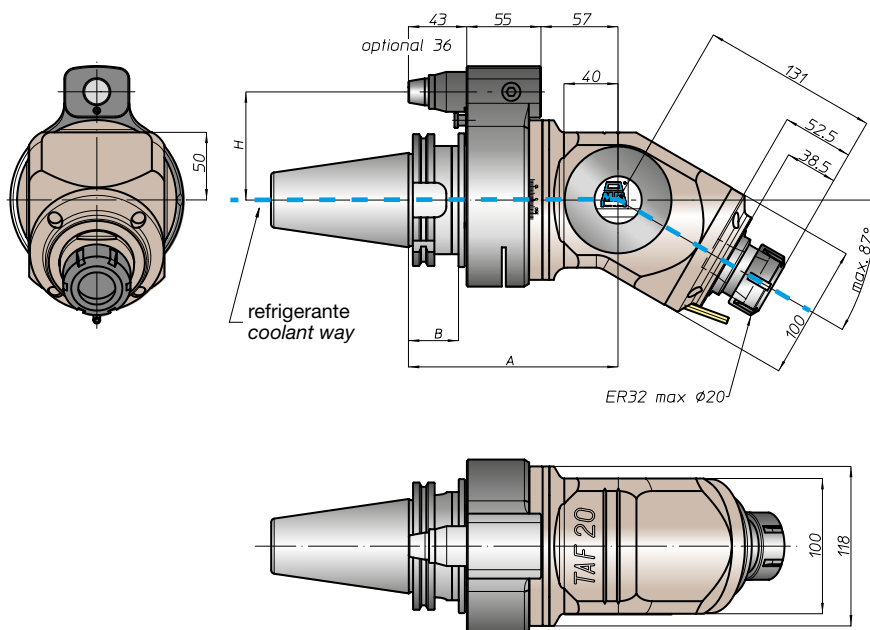
4-100

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



ANSIB5.50



50



DIN69893



ISO26623



80 100



DIN2080



ANSIB5.18

SIZE

45 50

50

50

80 100

C6 C8

80 100

A

155

155

163

164

159

155

B

35

35

45

46

41

H STANDARD

80

80

80

80

80

80

H OPTIONAL

110

110

110

110

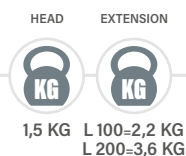
110

110

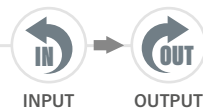
TAO7PT

TESTA AD ANGOLO - ANGLE HEAD

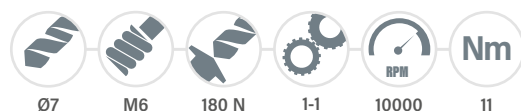
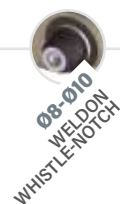
TESTA AD ANGOLO • ANGLE HEAD



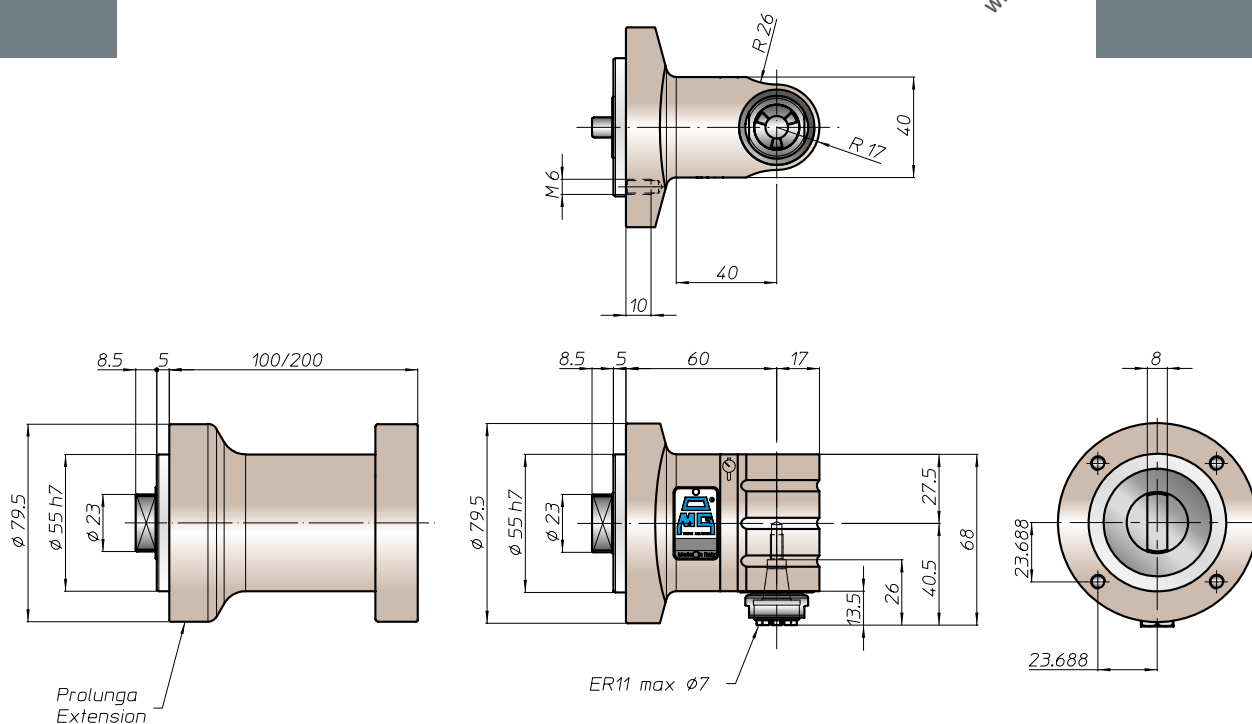
PESO
WEIGHT



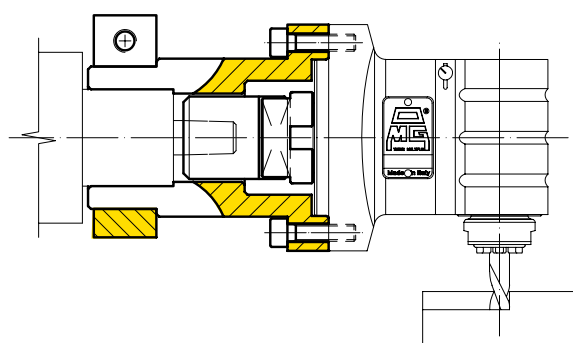
ROTAZIONE
ROTATION

CARATTERISTICHE
FEATURES

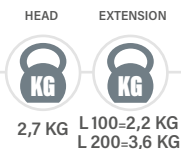
MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



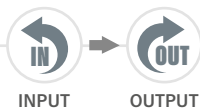
Esempio di collegamento / Connection example



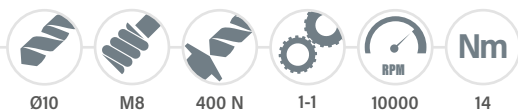
PESO
WEIGHT



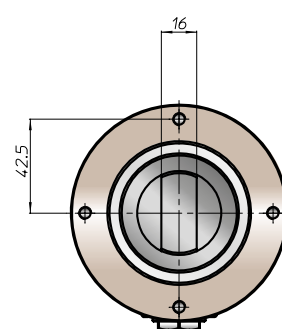
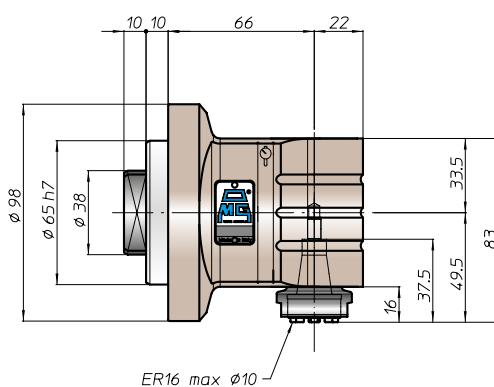
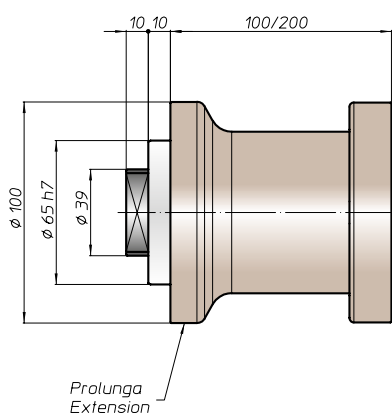
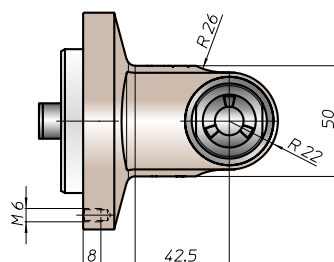
ROTAZIONE
ROTATION



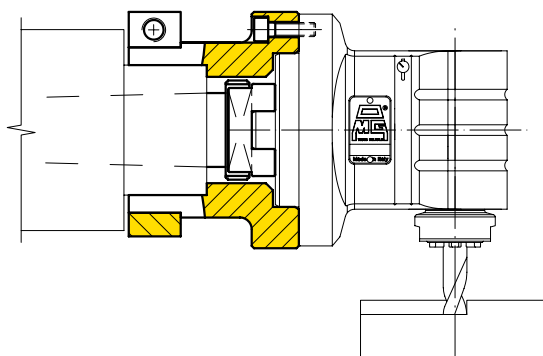
CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



Esempio di collegamento / Connection example



TA10PT

TESTA AD ANGOLO - ANGLE HEAD

4-102

VH

TSI/TSX

T

MT-TC-TC3



HT

MOX

TA

TA.CP

BAH

FH

FH

BAH

TA.CP

TA

MOx

HT

4-103

VH

TSI/TSX

T

MT-TC-TC3



TA13PT

TESTA AD ANGOLO - ANGLE HEAD



3,5 KG

PESO
WEIGHT



INPUT



OUTPUT

ROTAZIONE
ROTATION



Ø13



M10



810 N



1-1



8000



38

CARATTERISTICHE
FEATURES



ER25
DING499-ER

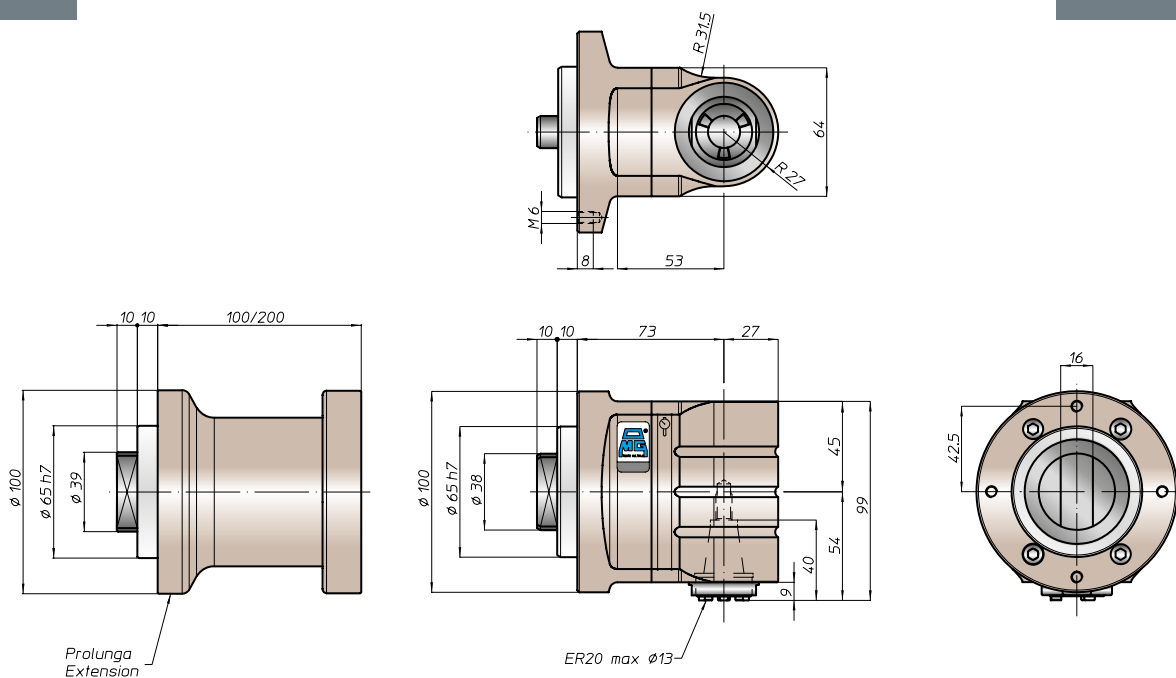


Ø16-Ø22
PORTAFRESE
FACE MILL ARBOR

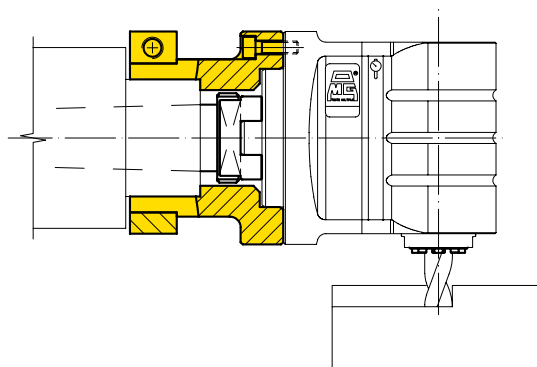


Ø16
WELDON
WHISTLE-NOTCH

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



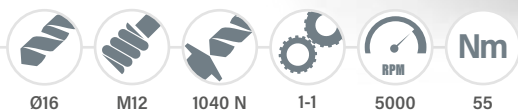
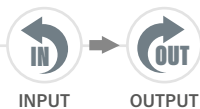
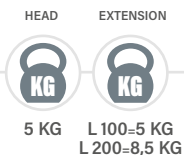
Esempio di collegamento / Connection example



ROTAZIONE
ROTATION

CARATTERISTICHE FEATURES

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TA16PT

TESTA AD ANGOLO • ANGLE HEAD

BAH

TA.CP

TA

MOX

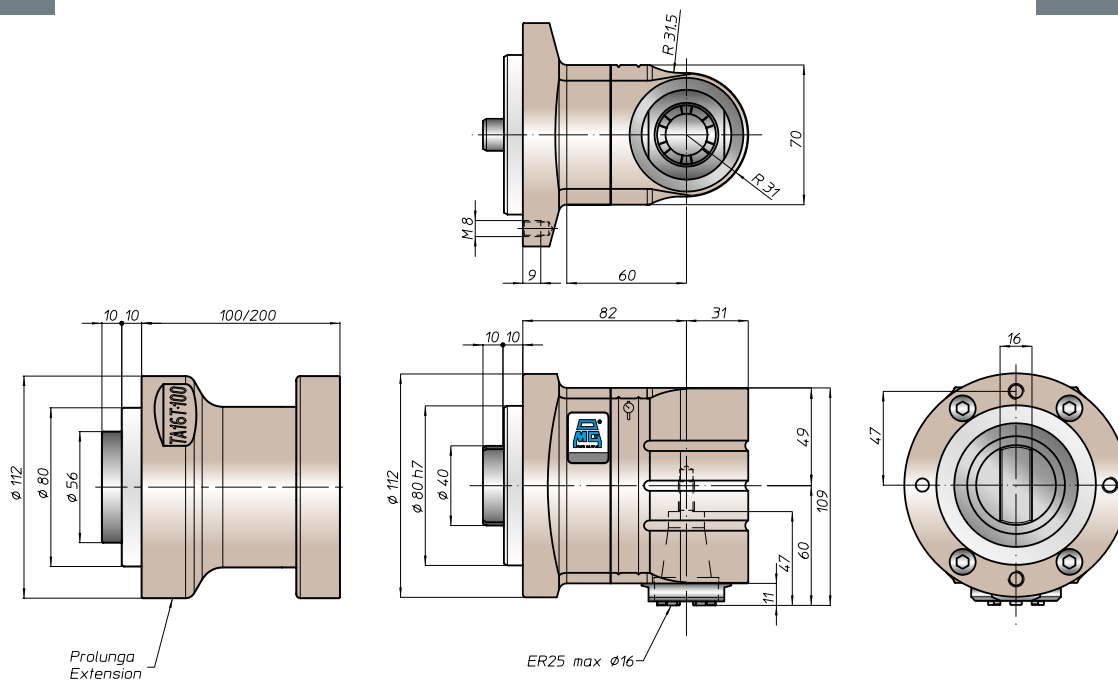
HT

4-104

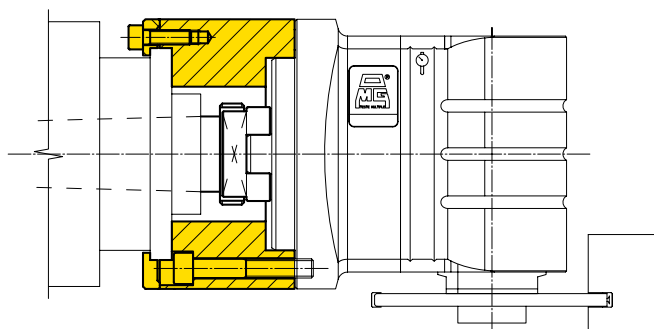
VH

TSI/TSX

MT-TC-TC3



Esempio di collegamento / Connection example





TA20.PT

TESTA AD ANGOLO - ANGLE HEAD



HEAD

EXTENSION



7,5 KG

L 100=7,5 KG
L 200=15 KGPESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø20



M14



1460 N



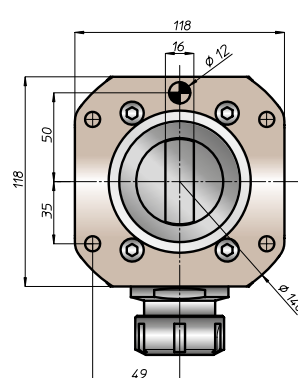
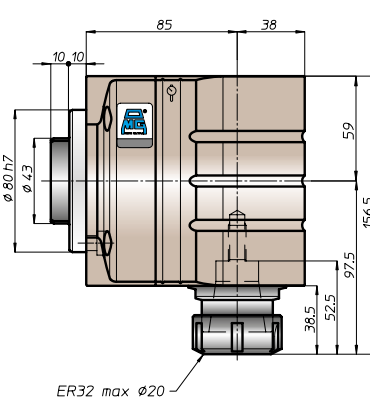
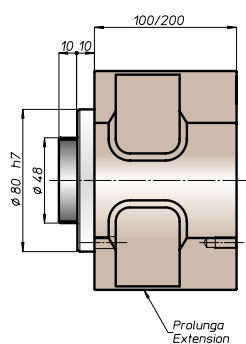
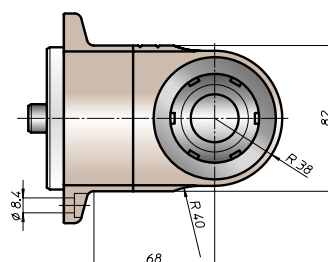
1-1



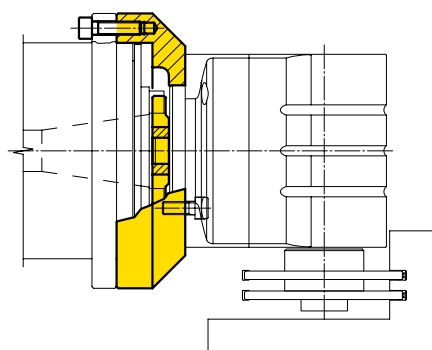
3500



90

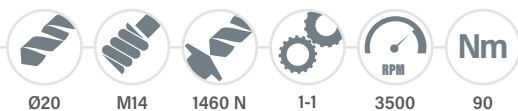
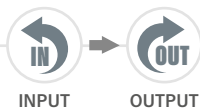
CARATTERISTICHE
FEATURES**ER40**
DIN6499-ER**Ø22-Ø27-Ø32**
PORTAFRESE
FACE MILL ARBOR**Ø20-Ø25**
WELDON
WHISTLE-NOTCH**HSK40**
DIN69893-HSK**C4**
COROMANT CAPTO®**ABS40**
LICENZA KOMET®
KOMET LICENCE®MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES

Esempio di collegamento / Connection example



ROTAZIONE
ROTATION

CARATTERISTICHE FEATURES



TA2030.T

TESTA AD ANGOLO • ANGLE HEAD

BAH

TA.CP

TA

MOX

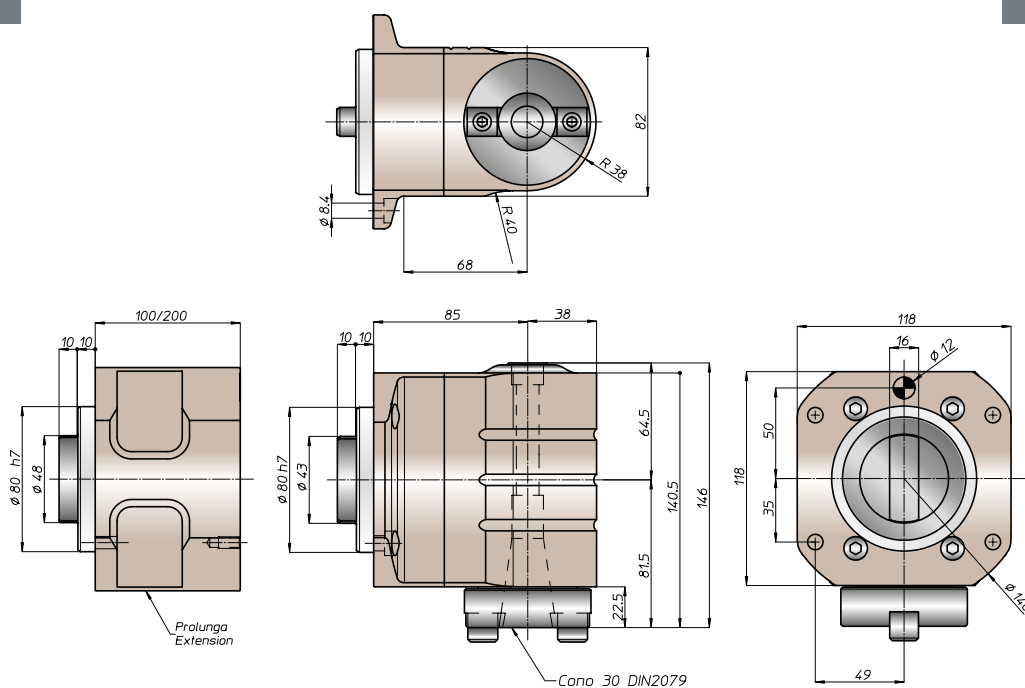
HT

4-106

VH

TSI/TSX

MT-TC-TC3

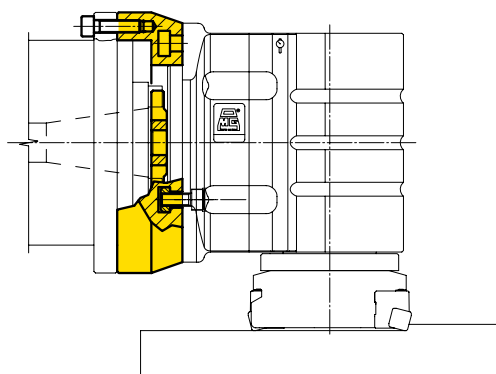


Nota

nel mandrino DIN2079 si possono utilizzare coni DIN2080-30, DIN69871-A30, MAS403-BT30

Note

on the spindle DIN2079 you
can us shank DIN2080-30,
DIN69871-A30, MAS403-BT30

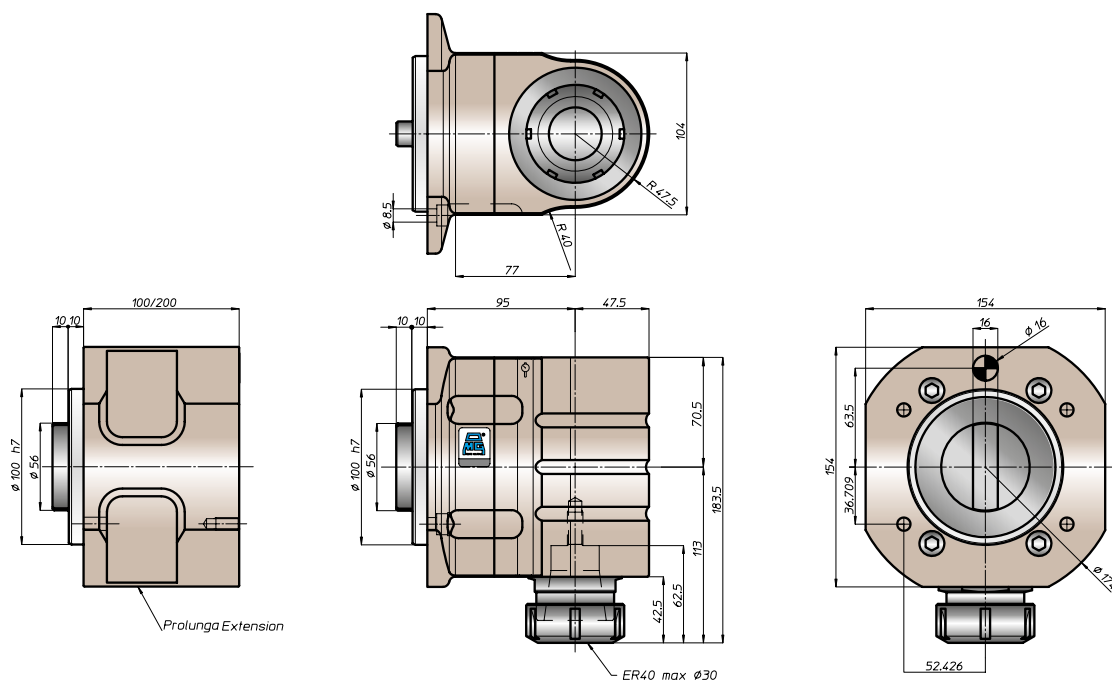
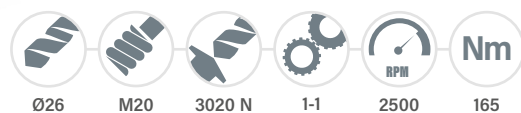
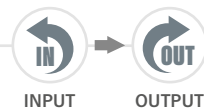
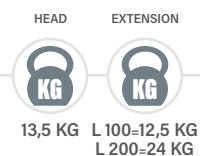




TA26.PT

TESTA AD ANGOLO • ANGLE HEAD

TESTA AD ANGOLO • ANGLE HEAD



Esempio di collegamento / Connection example



ROTAZIONE
ROTATION

CARATTERISTICHE FEATURES

13,5 KG L 100=12,5 KG
L 200=24 KG

INPUT

OUTPUT

Nm

020

M20

3020 N

1-1

2500

165



TA26.40.T

TESTA AD ANGOLO • ANGLE HEAD

FH

BAH

TA.CP

TA

MOX

HT

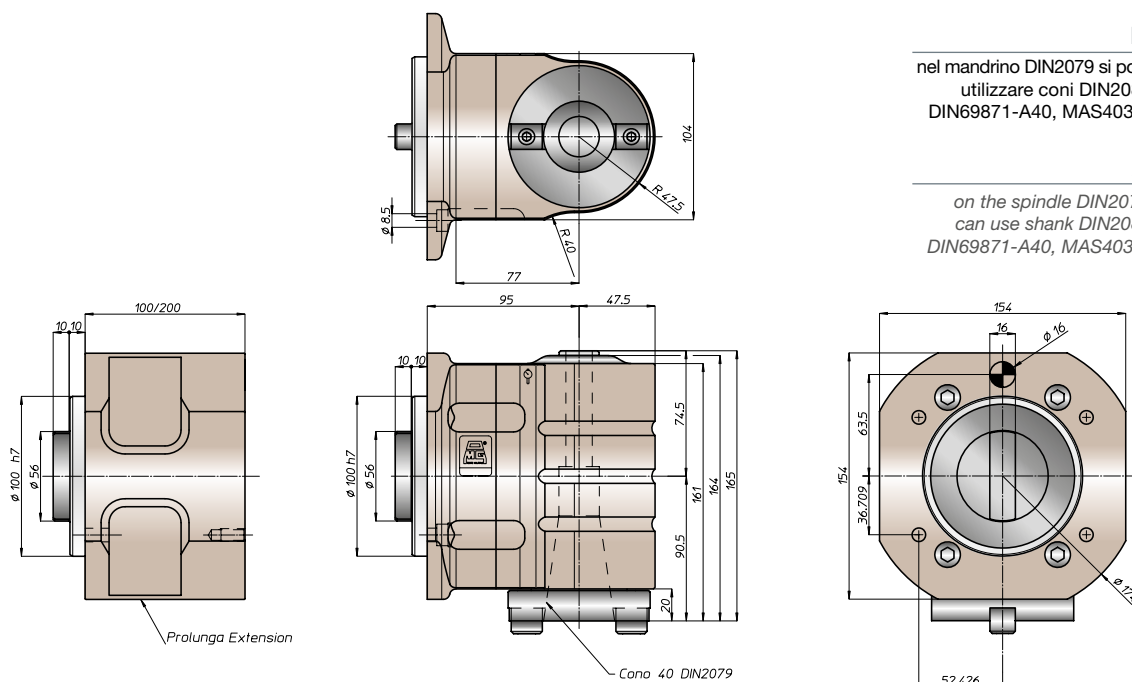
4-108

Nota

nel mandrino DIN2079 si possono
utilizzare coni DIN2080-40,
DIN69871-A40, MAS403-BT40

Note

on the spindle DIN2079 you
can use shank DIN2080-40,
DIN69871-A40, MAS403-BT40



Esempio di collegamento / Connection example



VH

TSI/TSX

MT-TC-TC3



TA30.PT

TESTA AD ANGOLO - ANGLE HEAD



HEAD

 18,5 KG

PESO
WEIGHT

INPUT OUTPUT
 ROTAZIONE
ROTATION

ROTAZIONE
ROTATION

Ø30

 M24

 4700 N

 1-1

 2500

 194 Nm

CARATTERISTICHE
FEATURES

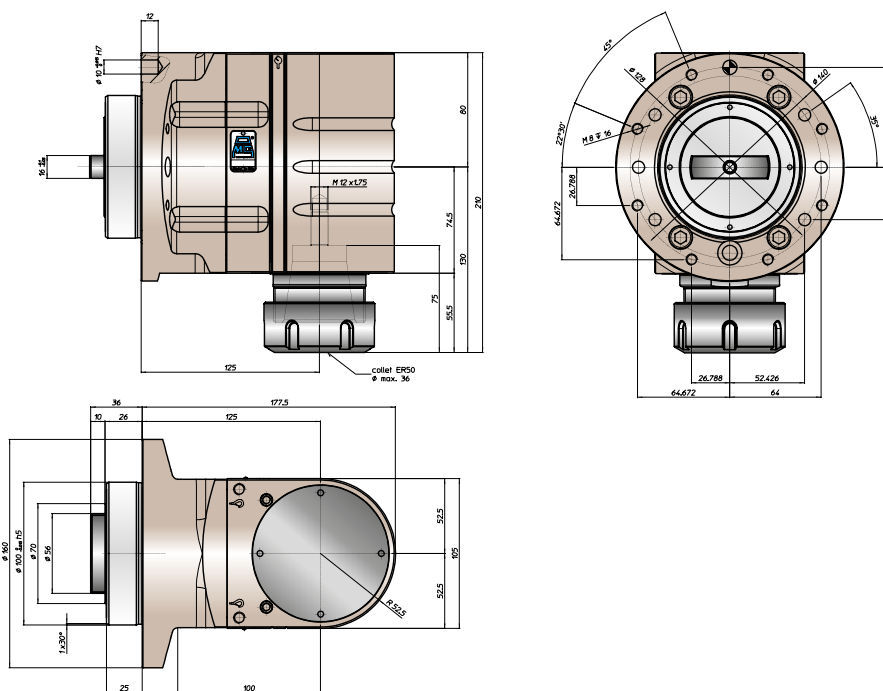
Ø27-Ø32-Ø40
 PORTA-PRESSE
 FACE MILL ARBOR

 Ø32
 WELDON
 WHISTLE-NOTCH

 HSK63
 DIN69893-HSK

 C5-C6
 COROMANT CAPTO®

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



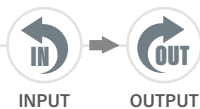
Esempio di collegamento / Connection example



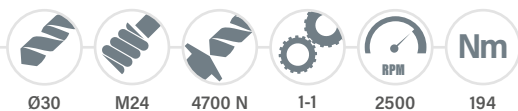
PESO
WEIGHT



ROTAZIONE
ROTATION

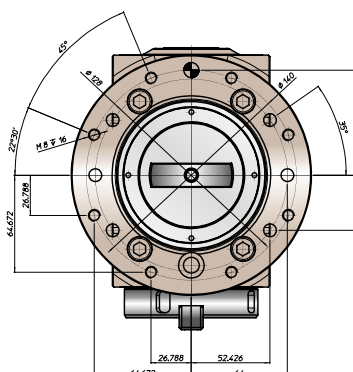
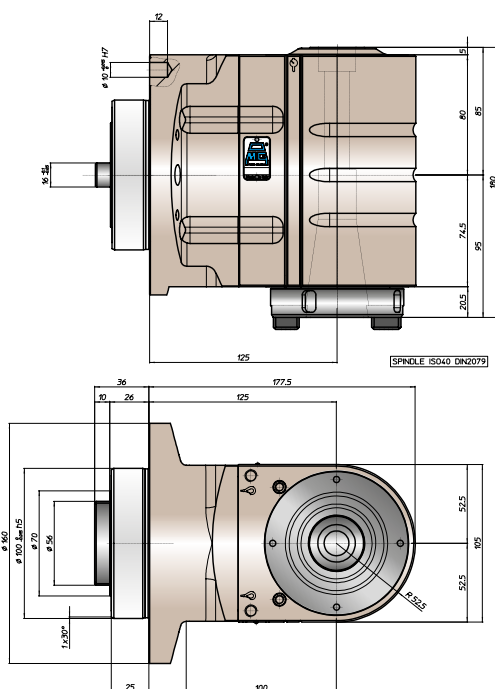


CARATTERISTICHE
FEATURES



TA30.40.T

TESTA AD ANGOLO - ANGLE HEAD



Nota

nel mandrino DIN2079 si possono utilizzare coni DIN2080-40, DIN69871-A40, MAS403-BT40

Note

on the spindle DIN2079 you can use shank DIN2080-40, DIN69871-A40, MAS403-BT40

Esempio di collegamento / Connection example



HT MOX TA TA.CP BAH FH

4-110

VH

TSI/TSX

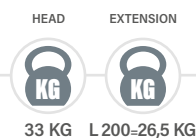
T

MT-TC-TC3

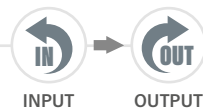


TA40.T

TESTA AD ANGOLO - ANGLE HEAD



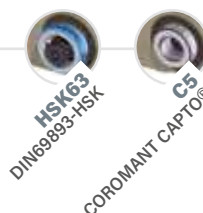
PESO
WEIGHT



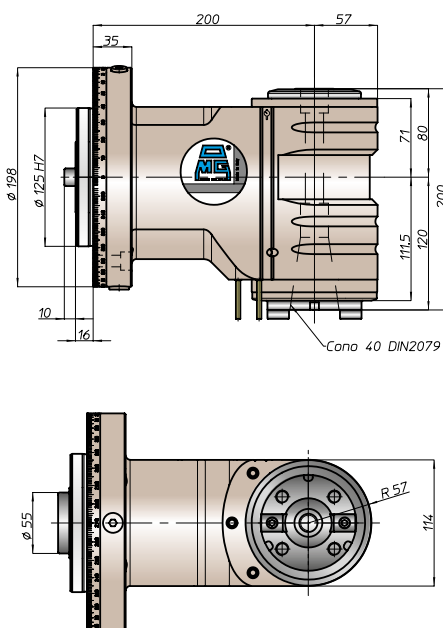
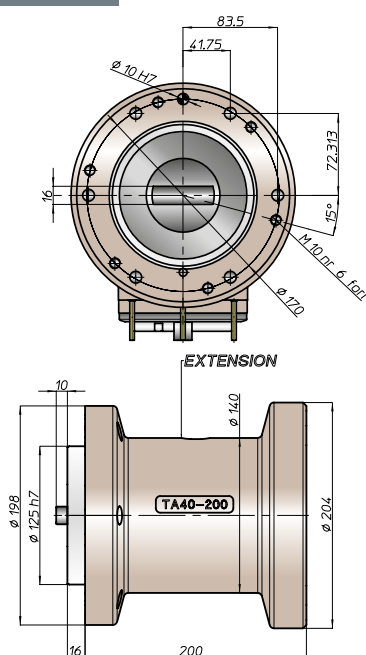
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



Equipaggiamento standard:

- pressurizzazione mandrino
- n. 3 ugelli orientabili vicino al mandrino
- nel mandrino DIN2079 si possono utilizzare coni DIN2080-40, DIN69871-A40, MAS403-BT40

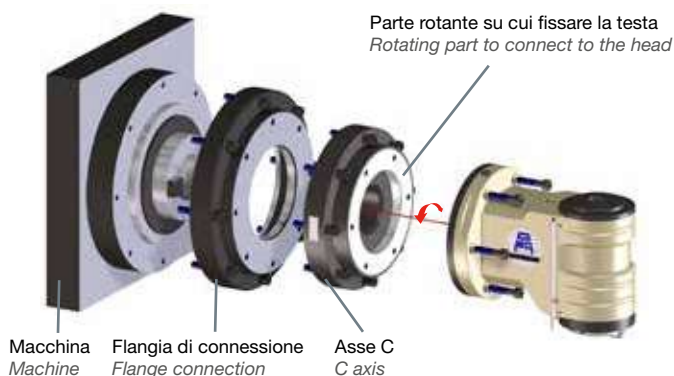
Standard equipment:

- spindle front pressurization
- nr. 3 adjustable nozzle near the spindle
- on the spindle DIN2079 you can use shank DIN2080-40, DIN69871-A40, MAS403-BT40

Utilizzo su asse C manuale / Manual C axis

- Nuovo Asse C a rotazione manuale
- Compatto, semplice e preciso
- Bloccaggio rotazione su cava a T
- Rotazione libera su cuscinetto a rulli incrociati
- Facilità di posizionamento

- New C Axis with manual rotation
- Space-saving, user friendly and precise
- Rotation lock on T slot
- Free rotation on crossed roller bearings
- Easy set up



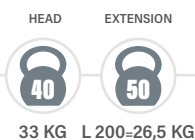
Parte rotante su cui fissare la testa
Rotating part to connect to the head

Macchina
Machine

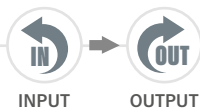
Flangia di connessione
Flange connection

Asse C
C axis

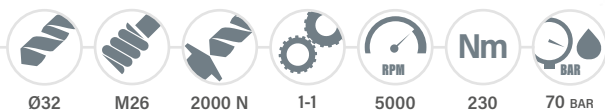
PESO
WEIGHT



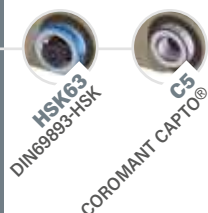
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TA40-TD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

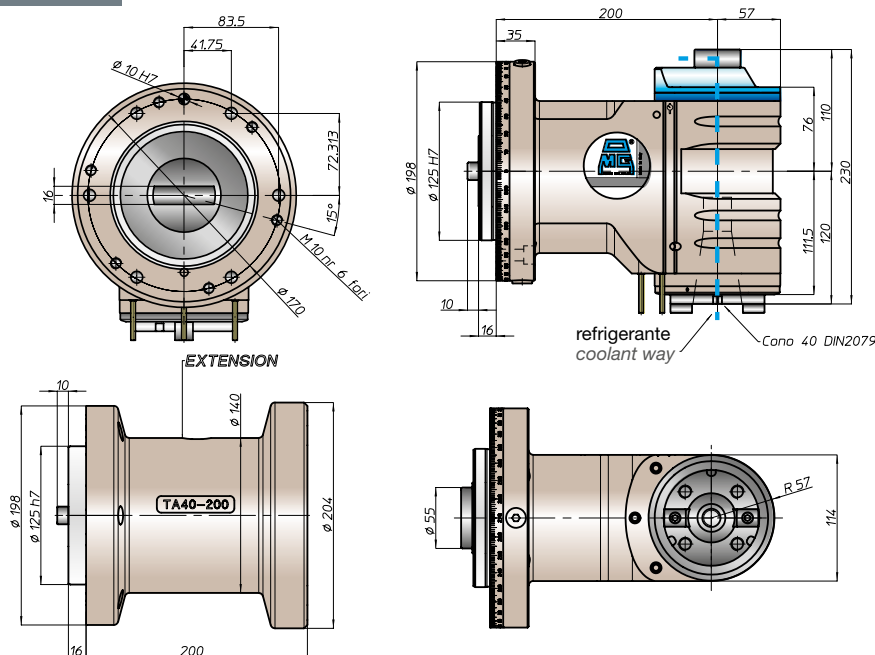
4-112

VH

TSI/TSX

T

MT-TC-TC3



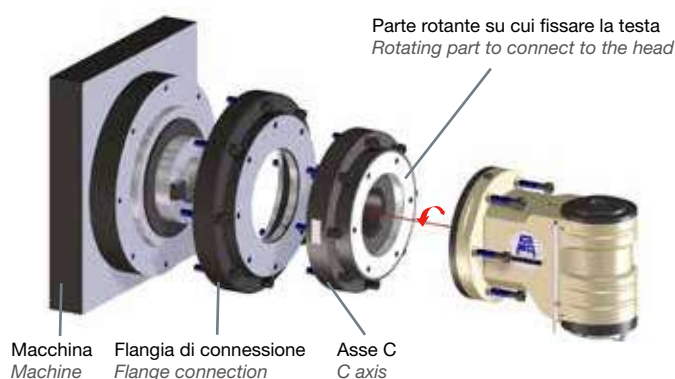
Equipaggiamento standard:

- pressurizzazione mandrino
- n. 3 ugelli orientabili vicino al mandrino
- nel mandrino DIN2079 si possono utilizzare coni DIN2080-40, DIN69871-A40, MAS403-BT40

Standard equipment:

- spindle front pressurization
- nr. 3 adjustable nozzle near the spindle
- on the spindle DIN2079 you can use shank DIN2080-40, DIN69871-A40, MAS403-BT40

Esempio di collegamento / Connection example

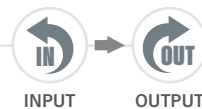


TA50.T

TESTA AD ANGOLO - ANGLE HEAD



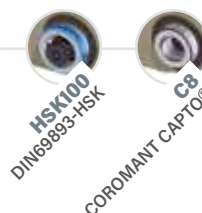
PESO
WEIGHT



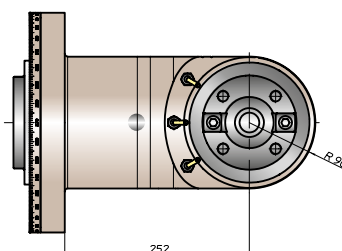
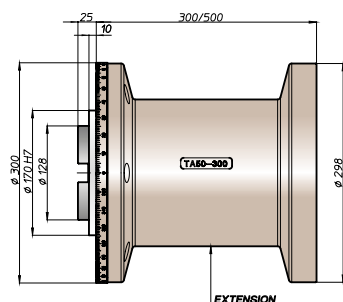
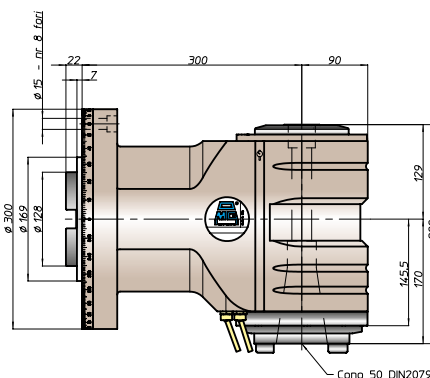
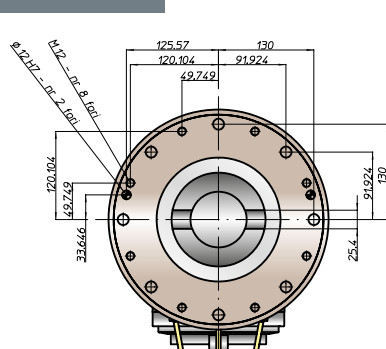
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



Equipaggiamento standard:

- pressurizzazione mandrino
- n. 3 ugelli orientabili vicino al mandrino
- nel mandrino DIN2079 si possono utilizzare coni DIN2080-40, DIN69871-A40, MAS403-BT40

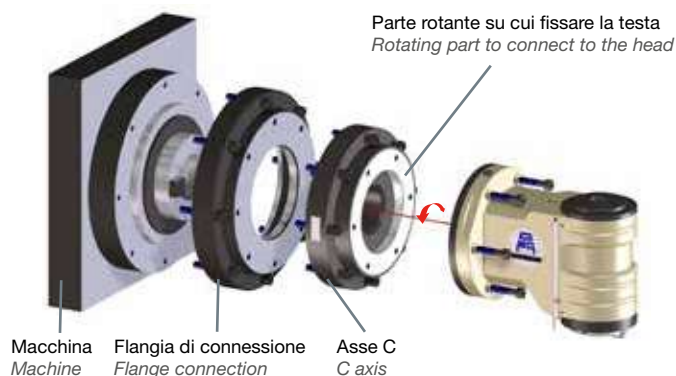
Standard equipment:

- spindle front pressurization
- nr. 3 adjustable nozzle near the spindle
- on the spindle DIN2079 you can use shank DIN2080-40, DIN69871-A40, MAS403-BT40

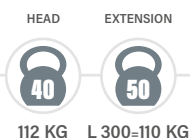
Utilizzo su asse C manuale / Example with manual C axis

- Nuovo Asse C a rotazione manuale
- Compatto, semplice e preciso
- Bloccaggio rotazione su cava a T
- Rotazione libera su cuscinetto a rulli incrociati
- Facilità di posizionamento

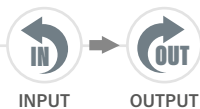
- New C Axis with manual rotation
- Space-saving, user friendly and precise
- Rotation lock on T slot
- Free rotation on crossed roller bearings
- Easy set up



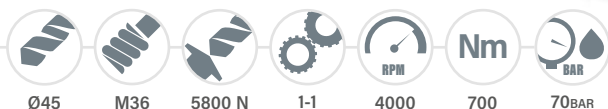
PESO
WEIGHT



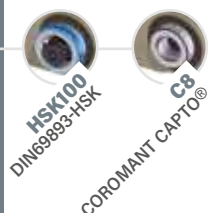
ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



TA50.TD

TESTA AD ANGOLO - ANGLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

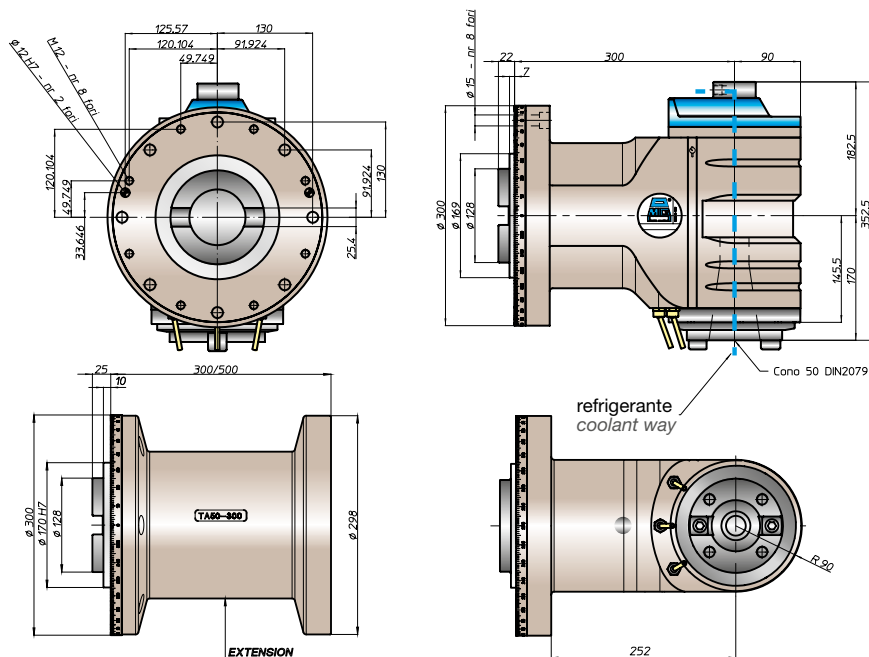
4-114

VH

TSI/TSX

T

MT-TC-TC3



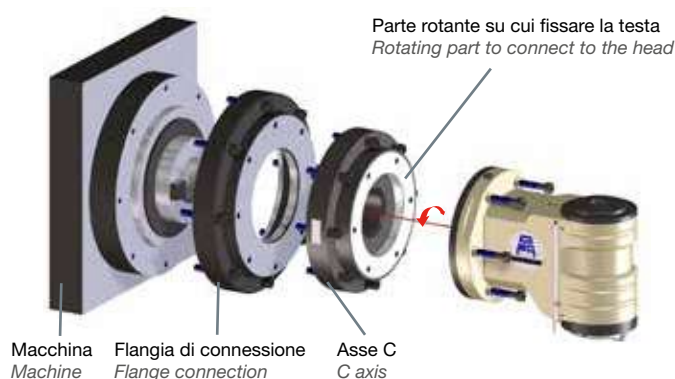
Equipaggiamento standard:

- pressurizzazione mandrino
- n. 3 ugelli orientabili vicino al mandrino
- nel mandrino DIN2079 si possono utilizzare coni DIN69871-A50, MAS403-BT50

Standard equipment:

- spindle front pressurization
- nr. 3 adjustable nozzle near the spindle
- on the spindle DIN2079 you can use shank DIN69871-A50, MAS403-BT50

Esempio di collegamento / Connection example



Parte rotante su cui fissare la testa
Rotating part to connect to the head

FH

BAH

TA.CP

TA

MOx

HT

4-115

VH

TSI/TSX

T

MT-TC-TC3





TA-CP

EXTENDED GALLERY

FH

BAH

TA-CP

TA

MOx

HT

4-116

VH

TSI/TSX

T

MT-TC-TC3



TA13.PVDI

TESTA AD ANGOLO - ANGLE HEAD



4,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø13



M10



810 N



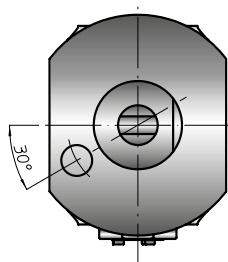
1-1



8000



38

CARATTERISTICHE
FEATURESER25
DIN6499-ERØ16-Ø22
PORTAFRESE
FACE MILL ARBORØ16
WELDON
WHISTLENOTCHMANDRINI
DISPONIBILI
AVAILABLE
SPINDLESDIN1809
DIN5482DIN69880-20
DIN69880-30
DIN69880-40

ER20 max Ø15

R 31,5

R 27

64

53

Soluzioni speciali / Special solutions



PESO
WEIGHT



6,5 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø16



M12



1040 N



1-1



5000



Nm

55

MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



ER32
DIN6499-ER



Ø16-Ø27-Ø32
PORTAFRESE
FACE MILL ARBOR



Ø20
WELDON
WHISTLE-NOTCH



HSK32
DIN69893-HSK



C3
COROMANT CAPTO®

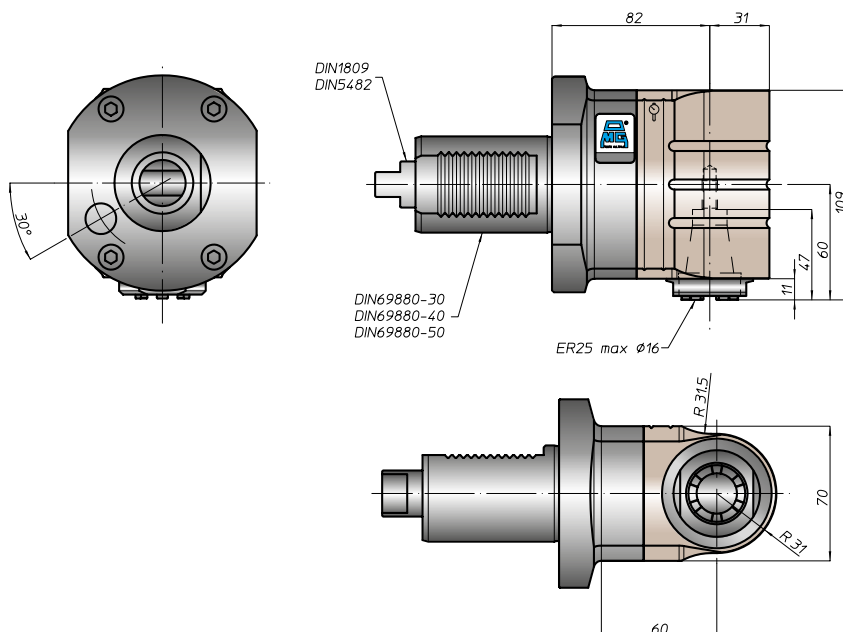


ABS32
LICENZA KOMET®
KOMET LICENCE®



TA16-PVDI

TESTA AD ANGOLO - ANGLE HEAD



Soluzioni speciali / Special solutions



FH

BAH

TA,CP

TA

MOX

HT

4-118

VH

TSI/TSX

T

MT-TC-TC3





TAV10.PVPI

TESTA AD ANGOLO - ANGLE HEAD



3,5 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

Ø10



M8



550 N



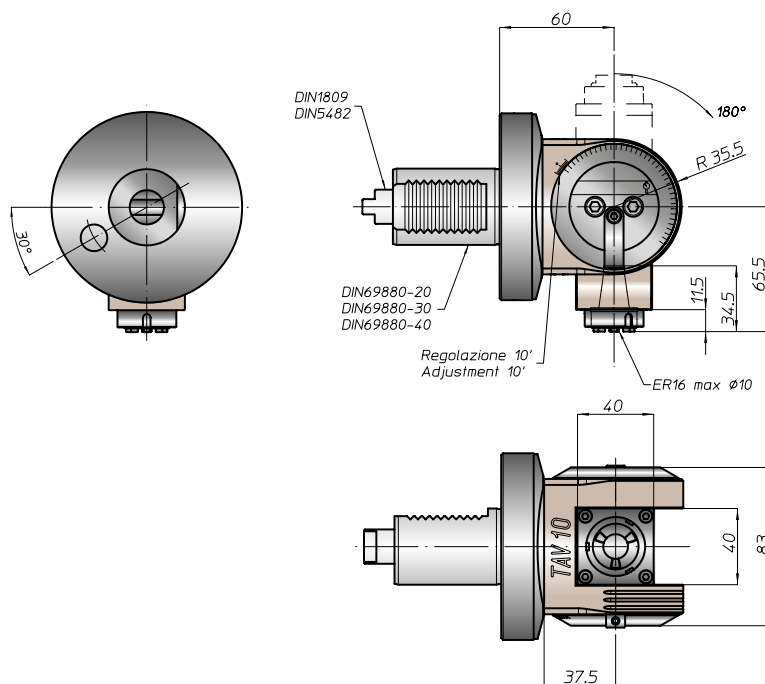
1-1



4000



12

CARATTERISTICHE
FEATURES

Soluzioni speciali / Special solutions



PESO
WEIGHT



5,5 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



Ø13



M10



630 N



1-1



6000



18

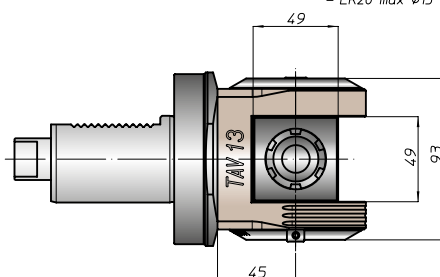
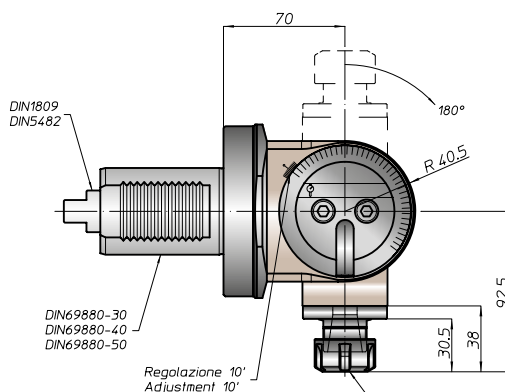
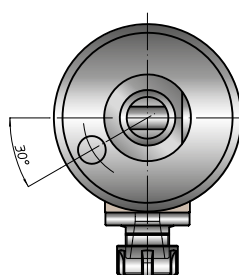
MANDRINI
DISPONIBILI
AVAILABLE
SPINDLES



ER25
DIN6499-ER



Ø16
WELDON
WHISTLE-NOTCH



Soluzioni speciali / Special solutions



TAV13-PVDI

TESTA AD ANGOLO - ANGLE HEAD

4-120

VH

TSI/TSX

T

MT-TC-TC3



HT

MOx

TA

TA.CP

BAH

FH



ANTIROTANTE TORQUE ARM



Il gruppo antirotante ricopre una funzione di fondamentale importanza nella qualità di lavorazione della testa ad angolo. Per questo motivo i tecnici della OMG hanno studiato e messo a punto un antirotante di nuova concezione i cui punti salienti sono:

- Il perno conico
- La registrazione assiale del perno
- Adduzione del liquido passante per il corpo testa

Il perno conico e la propria registrazione assiale di mm 1.5 permettono una maggiore rigidità del sistema antirotante rispetto ai tradizionali, dotati di perni di Ø18 mm perché si eliminano i giochi con conseguente miglioramento della rigidità sia angolare che assiale.

L'adduzione del liquido passante per il corpo testa, la cui uscita avviene tramite un ugello direzionabile, offre il vantaggio di non avere tubi "volanti" che possono muoversi durante le lavorazioni.

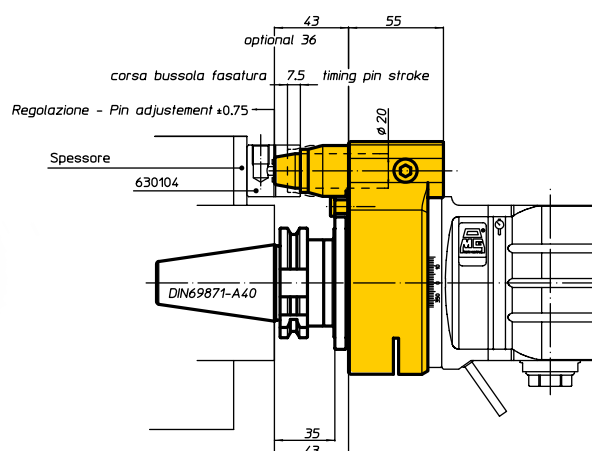


Scannerizza il codice per vedere il video di montaggio delle Teste ad Angolo

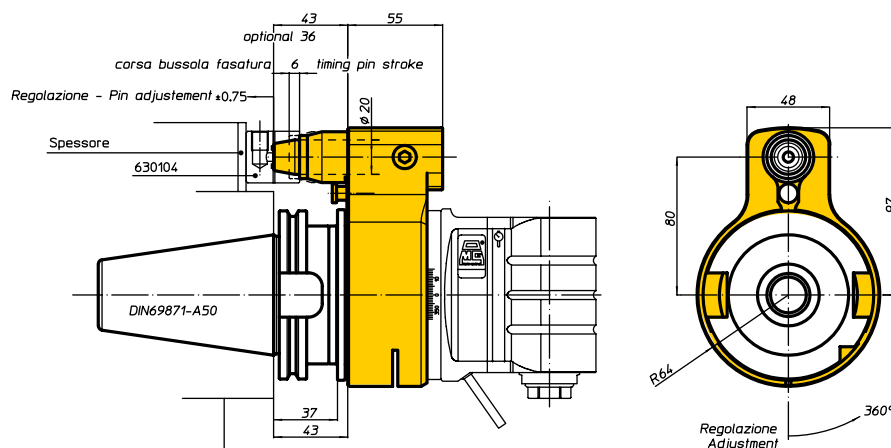


Quando possibile, nella Vostra applicazione, posizionate il perno conico dalla parte opposta al mandrino della testa ad angolo.

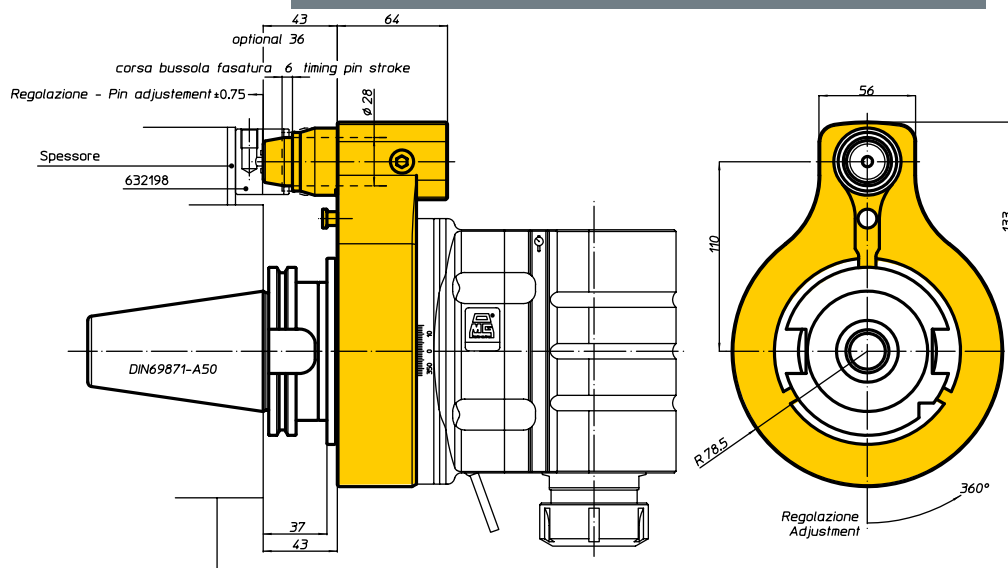
TESTE AD ANGOLO CON INTERASSE H=65 ANGLE HEADS WITH CENTRE DISTANCE H=65

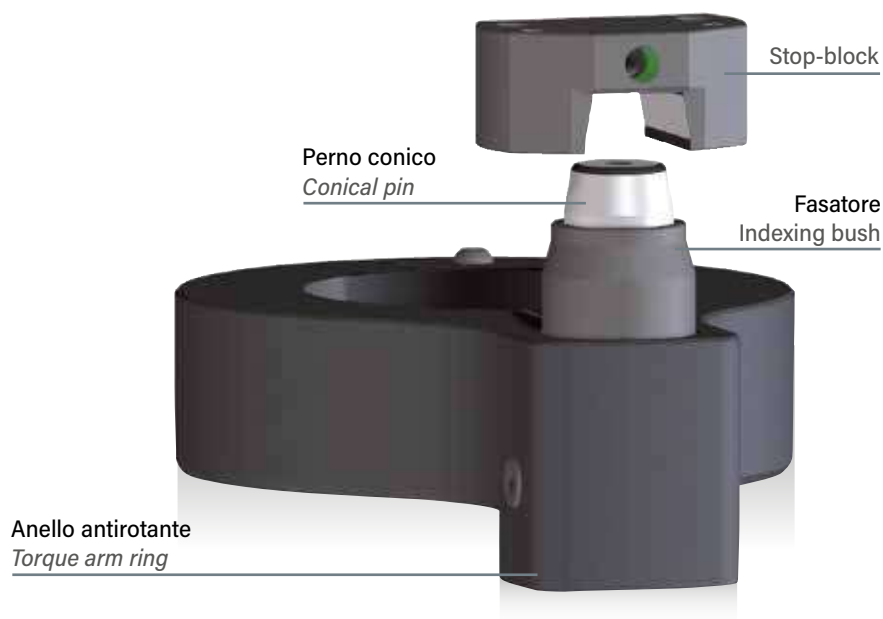


TESTE AD ANGOLO CON INTERASSE H=80 ANGLE HEADS WITH CENTRE DISTANCE H=80

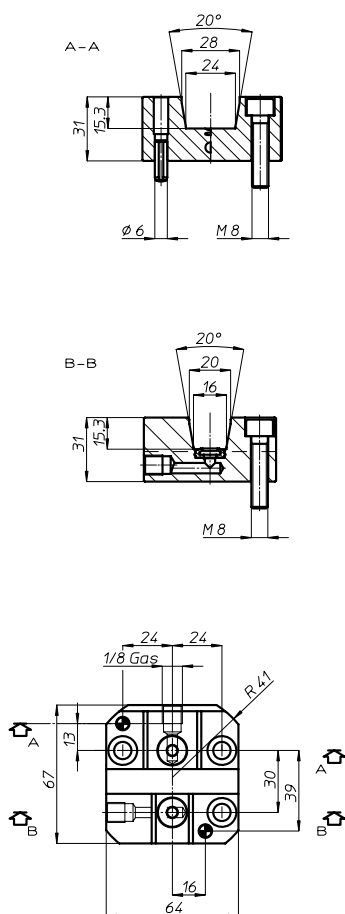


TESTE AD ANGOLO CON INTERASSE H=110 ANGLE HEADS WITH CENTRE DISTANCE H=110

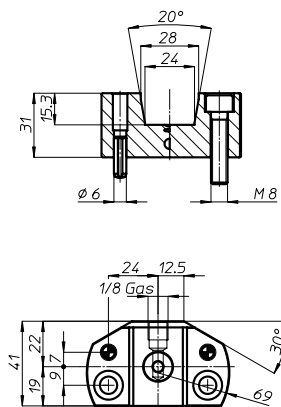




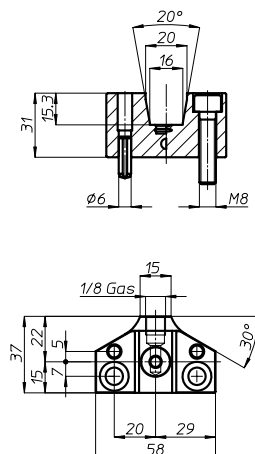
DOUBLE STOP-BLOCK (COD. 635354)



STOP-BLOCK (COD. 635353)



STOP-BLOCK (COD. 635352)



The torque arm system is crucial as far as angle-head machining quality is concerned. For this reason OMG technicians have designed and developed a new system with the following characteristics:

- conical pin
- axial pin adjustment
- coolant through the head body

The conical pin and its 1.5 mm axial adjustment ensure upgraded anti-rotation system strength compared to traditional systems, featuring Ø 18 mm pin, because play is eliminated, thereby improving both angular and axial strength. By the pin the coolant through the head, thanks to an adjustable nozzle, the added advantage is achieved of eliminating "free" pipes that could move during machining operations.



Scan the QR code and watch the video on how to install the Angle Heads



Position the conical pin on the opposite side of the angle head spindle when possible in your application.

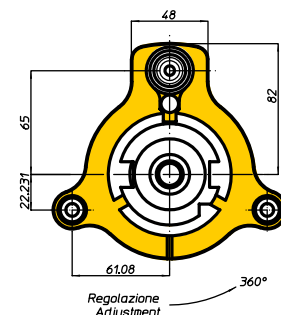
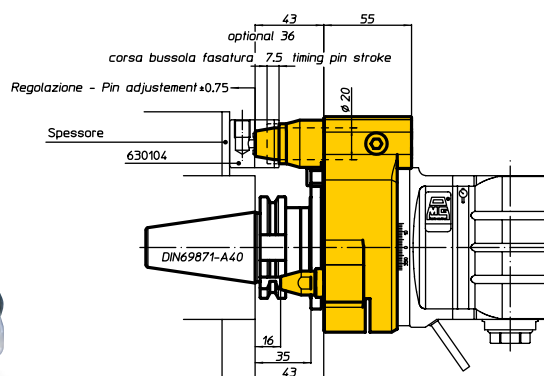


ANTIROTANTE TORQUE ARM

TriBlock 



TESTE AD ANGOLO CON INTERASSE H=65 ANGLE HEADS WITH CENTRE DISTANCE H=65



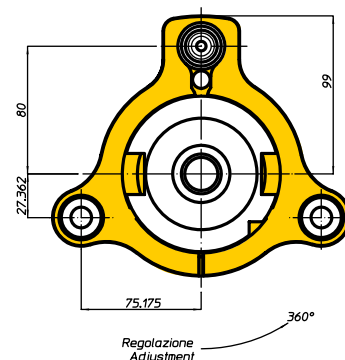
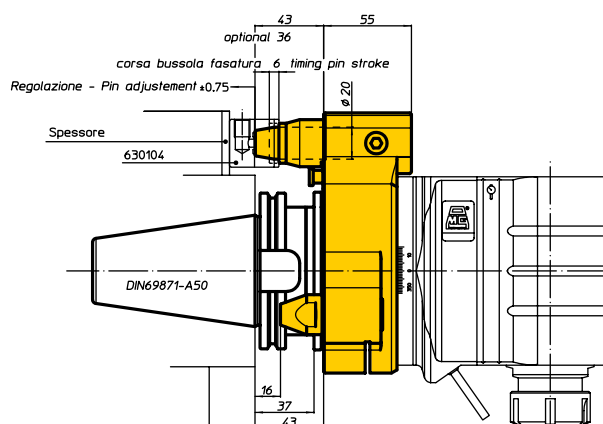
Il gruppo antirotante **TriBlock** ricopre una funzione di fondamentale importanza quando alla testa ad angolo è richiesto di:

- eseguire una lavorazione più pesante
- essere più lunga dello standard
- finitura superficiale eccellente

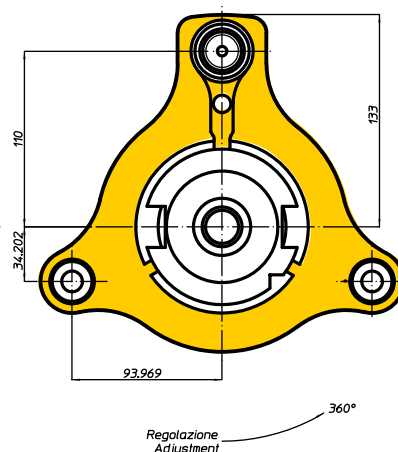
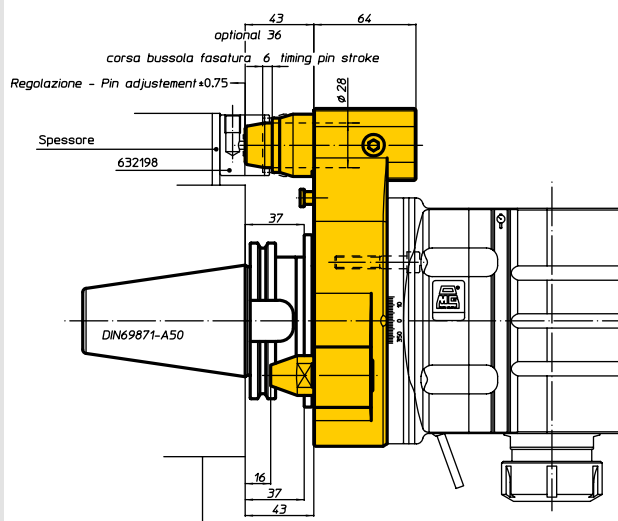
Il **TriBlock** è dotato di tre punti di appoggio di cui uno è lo standard come nei precedenti e due supplementari da registrare tramite un rasamento. Questi tre punti, allargando l'appoggio di base della testa ad angolo, consentono di ottenere una rigidità superiore allo standard.

Quando poi si richiede alla testa di essere immagazzinata su di un supporto esterno al magazzino standard, ecco che il TriBlock utilizza i propri tre punti per posizionare la testa.

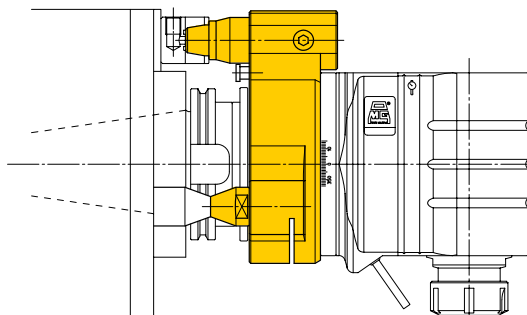
TESTE AD ANGOLO CON INTERASSE H=80 ANGLE HEADS WITH CENTRE DISTANCE H=80



TESTE AD ANGOLO CON INTERASSE H=110 ANGLE HEADS WITH CENTRE DISTANCE H=110



Sul mandrino macchina
On spindle machine



TFS 19907

Testa ad angolo per fresatura
componente motore a reazione.
Peso Kg 45,5
*Milling angle head for jet engine.
Weight Kg 45,5*

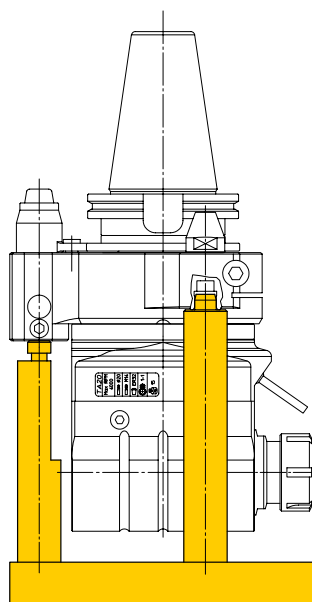


TFS 39195

Testa bimandrino di fresatura
n° 2 frese Ø 100 peso Kg 33
*Twin milling head,
nr. 2 milling cutter
Ø 100 weight Kg 33*



Sul supporto da tavola
On rack table



The **TriBlock** system is of crucial importance when it comes to:

- doing difficult jobs
- having a head that is longer than standard
- achieving an excellent surface finish

The **TriBlock** system features three supporting points, one of which is standard, as in the previous version, plus two additional ones that need adjusting by means of a spacer. These three points, by extending the angle-head supporting base, provide above-average standards of strength.

When the head has to be stored on a rack table outside the standard magazine, the **TriBlock** system uses the three points to storage the angle heads.

FH

BAH

TA.CP

TA

MOX

HT

4-124

VH

TSI/TSX

T

MT-TC-TC3





ANTIROTANTE TORQUE ARM



Il sistema antirotante **QuadBlock** è un sistema all'avanguardia per equipaggiare Teste ad Angolo dove si richiede alta asportazione e alta rigidità dell'insieme "testa ad angolo-macchina". Utilizzabile nel montaggio manuale, esso consiste in un anello antirotante completo di quattro perni di contrasto suddivisi equamente sui 360°. Tale disposizione consente di poter ruotare la Testa ad Angolo in automatico con un semplice movimento della macchina, se questa ne ha le capacità. Il vantaggio di poter lavorare quattro facce del pezzo senza sostituire la Testa ad Angolo si concretizza con la riduzione dei costi previsti per gli utensili.

L'evoluzione del sistema **QuadBlock** per le macchine con cambio automatico, consente di utilizzare la Testa ad Angolo come un prolungamento del mandrino macchina ruotato dei gradi richiesti dal cliente. È possibile inoltre sostituire il portautensile in automatico ed ampliare infinitamente la versatilità della macchina utensile avendo a disposizione quei servizi normalmente presenti sul mandrino macchina:

- Aria pulizia del portautensile
- Liquido refrigerante centro utensile alta pressione
- Liquido refrigerante esterno utensile
- Liquido bloccaggio-sbloccaggio utensile
- Controllo presenza utensile

Tutto ciò per consentire l'utilizzo di portautensili tipo Capto, HSK, DIN69871. Mettiamo a disposizione il nostro ufficio tecnico e la nostra esperienza per personalizzare al meglio il Vostro sistema.

QuadBlock 

TAS13609

Fresatura su corpo in fusione di ghisa.

Peso kg 36.

Milling on cast iron pump's body.

Weight 36 kg.



TAS13209

Lavorazione di finitura interna culle motore idraulico. Peso kg 36.

Internal finishing work for hydraulic motor's body. Weight 21 kg.



TAS16209

Linee di servizio per il mandrino HSK63F con cambio automatico dell'utensile, sensore presenza utensile in radiofrequenza.

Peso kg 28.

Utility line for HSK63F spindle with automatic tool change, radio-frequency switch to verify tool presence. Weight 28 kg.



TAS24408

Lavorazione di fresatura
interna corpo pinza
freno in ghisa.

Peso Kg 28.

*Triblock with automatic
locking. Cast iron brake
housing internal milling
work. Weight 28 kg.*



TA12907

Lavorazione di fresatura
generica struttura
elettrosaldada di acciaio.
Peso Kg 48.

*Special Quadblock
with automatic locking.
General milling work
on electro-welded steel
structure. Weight 48 kg.*



TAS08606

Servizi per mandrino
CAPTO C4 con cambio
automatico dell'utensile.
Peso kg 36.

*Spindle with utility line
for CAPTO C4 with
automatic tool change.
Weight kg 36.*



The **QuadBlock** torque arm is a forefront system to equip Angle Heads which are requested with a high removal machining capacity and with extremely high rigidity in coupling with the machine tool. It can be used with a manual tool change and is made by a torque arm ring complete with four counterposed pins with same distance each other on the 360°. Such a layout allows an automatic rotation of the Angle Head with a simple movement of the machine if featured to do it. The possibility of machining four faces of the piece without replacing the Angle Head is giving the advantage of reducing costs of tools equipment.

The evolution of the **QuadBlock** system on automatic tool change machines allows to use the Angle Head like an extension of the machine spindle with the degree rotations required by the customer. It is also possible to automatically change the tool holder and to infinitely widen the versatility of the machine tool getting those utilities normally available on the machine spindle:

- tool-holder cleaning air
- through-tool high pressure coolant
- side-tool coolant
- tool locking-unlocking liquid
- tool presence control

All these to allow using tool-holders like Capto, HSK, DIN69871. Our R&D department is at your disposal with his experience to customize your system at its best.

FH

BAH

TA.CP

TA

MOx

HT

4-126

VH

TSI/TSX

T

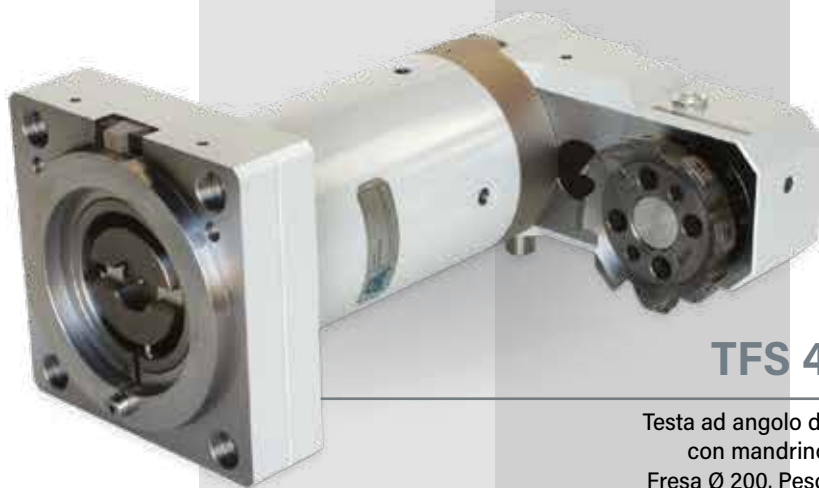
MT-TC-TC3





TA

TESTA AD ANGOLO SPECIALI • SPECIAL ANGLE HEAD



TFS 41304

Testa ad angolo di fresatura
con mandrino ribaltato.
Fresa Ø 200. Peso Kg 327,5.

*Milling angle head with
reverse spindle. Milling tool
Ø 200. Weight Kg 327,5.*



TFS 05303

Testa ad angolo di fresatura
con fresa diam. 7 Peso Kg 8

*Milling angle head with mil-
ling cutter diam. 7 weight Kg 8*



TFS 23301

Testa ad angolo di foratura
a tre mandrini peso kg 5,9

*Drilling angle head with
three spindles weight kg 5,9*



TAS 15505

Testa ad angolo di foratura e
fresatura, attacco utensile CAPTO
C4 automatico. Peso Kg 130.

*Drilling and milling angle head, au-
tomatic tools changer CAPTO C4.
Weight Kg 130.*

TFS 39998

Testa ad angolo universale.
Preso utensili ISO50, peso kg 580

*Angle head with tool
shank ISO50, weight kg 580*

TFS 36699

Testa ad angolo bimandrino
registrabile, peso kg 29
*Adjustable twin angle head,
weight kg 29*



TFS 34004

Testa ad angolo di foratura
a 3 mandrini a 120°.
*Drilling angle head, n 3
spindles at 120°.
Weight Kg 18.*



TFS 09063

Testa ad angolo di alesatura con
utensile Ø 160 peso Kg 77
*Boring angle head with tools
Ø 160 weight Kg 77*

TFS 06003

Testa ad angolo di
fresatura con fresa Ø
110 peso Kg 210
*Milling angle head with
milling cutter Ø 110
weight Kg 210*



TFS 37503

Doppia testa ad angolo di foratura.
Twin drilling angle head.

TFS 08993

Testa ad angolo speciale con doppia
coppia di mandrini contrapposti
peso kg 18
*Angle head with two opposite twin
spindles weight kg 18*





TFS 33206

Testa bimandrino di fresatura
per frese Ø 160, peso kg 63

*Twin milling head with
milling cutter Ø 160 weight
kg 63*



TFS 21701

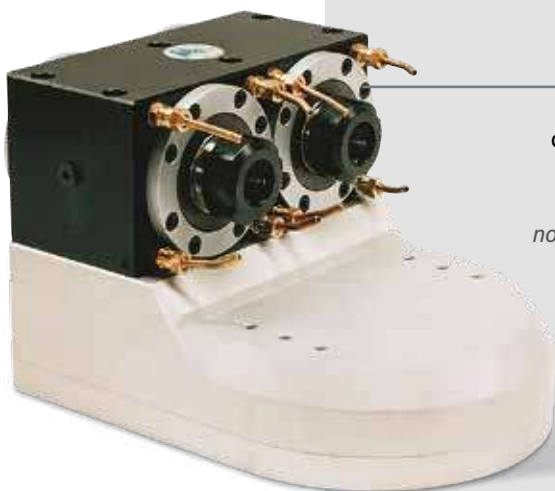
Testa di fresatura a due man-
drini paralleli, peso kg 14

*Milling angle head with two
parallel spindles, weight kg 14*

TFS 34495

Testa bimandrino di fresatura
n. 2 frese Ø 130, peso kg 290

*Twin milling head, nr. 2 milling
cutter Ø 130, weight kg 290*



TFS 16696

Doppia testa ad angolo
disassata rispetto all'asse
macchina, peso kg 24

*Twin spindle angle head
not in line with the machine
spindle, weight kg 24*

TFS 36994

Testa bimandrino di fresatura
n. 2 frese Ø 60, peso kg 15,5

*Twin milling head, nr. 2 mil-
ling cutter Ø 60, weight kg 15,5*





TFS 12101

Testa di fresatura con cono
ISO30, peso kg 16

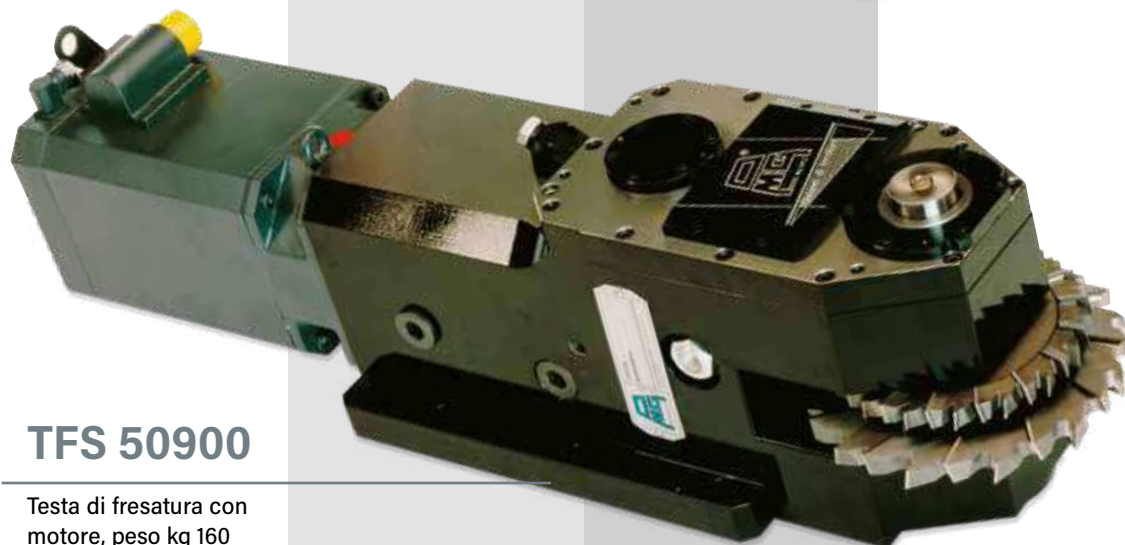
*Milling angle head with
ISO30, weight kg 16*



TFS 13094

Testa ad angolo disassata
rispetto all'asse macchina
peso kg 17

*Angle head not in line
with the machine spindle
weight kg 17*



TFS 50900

Testa di fresatura con
motore, peso kg 160

*Milling angle head with
brushless motor
weight kg 160*



TFS 09400

Testa di fresatura
con n. 2 frese Ø 125
peso kg 20

*Milling angle head with
nr. 2 milling cutter Ø 125
weight kg 20*



TFS 24196

Testa ad angolo bimandri-
no per fresatura su scatola
del cambio, peso kg 70

*Twin milling spindle angle
head on gear box, weight
kg 70*

TA

TESTA AD ANGOLO SPECIALI - SPECIAL ANGLE HEAD

4-130

FH

BAH

TA.CP

TA

MOX

HT

VH

TSI/TSX

T

MT-TC-TC3



TFS 41504

Testa ad angolo mandrino di fresatura. Peso Kg 338.
Twin milling angle head.
Weight Kg 338.



TFS 35698

Testa ad angolo di fresatura con fresa Ø 100, peso Kg 34
Milling angle head, with
milling cutter Ø 100, weight Kg 34



TFS 28603

Testa di fresatura con n. 4 frese a disco Ø 125. Peso Kg 218.
Milling head, nr. 4 milling disc
cutter Ø 125. Weight Kg 218.



TFS 12005

Testa ad angolo disassata per fresature Ø 150. Peso Kg 48.
Shift spindle angle head,
milling tools Ø 150.
Weight Kg 48.



TFS 33303

Testa ad angolo disassata per foratura. Peso Kg 9,4.

*Angle head with shift drilling spindle.
Weight Kg 9,4.*



TFS 33503

Testa ad angolo di lucidatura con doppia rotazione, sia corpo che utensile. Peso kg 6,5.

Polish angle head with duple rotation: body and tools. Weight Kg 6,5.

TFS 12095

Testa ad angolo di foratura, peso kg 5

Drilling angle head weight Kg 5



TAS 30505

Testa ad angolo di foratura HSK100 entrata e uscita. Peso Kg 50.

*Drilling angle head, HSK 100 input-output.
Weight Kg 50*

TFS 13198

Testa ad angolo disassata per foratura, peso kg 5

Angle head with shift spindle, weight kg 5





TA

TESTA AD ANGOLO SPECIALI • SPECIAL ANGLE HEAD



TFS 39997

Testa ad angolo speciale
bimandrino per foratura e
maschiatura peso kg 16

*Twin angle head for
drilling and tapping
weight kg 16*



TAS 13806

Testa bimandrino Capto C5
manuale, peso kg 33

*Twin angle head with Capto
C5 manual clamping tool
weight kg 33*



TAS 39806

Testa di foratura a due mandri-
ni con refrigerante attraverso
il centro utensile a 50 Bar,
peso kg 21

*Twin drilling angle head with
coolant through the centre
tool at 50 Bar, weight kg 21*



TAS 08606

Testa fresatura conica su
acciaio, peso kg 23

*Milling angle head with
conical tool, weight kg 23*



TFS 40601

Testa ad angolo bimandrino,
angolo tra i due mandrini 176°,
peso Kg 13

*Twin angle head, angle 176°
between spindles, weight Kg 13*

*Twin milling angle head,
nr.2 milling cutter Ø 120
weight kg 25*

Milling angle head with mil-
ling cutter Ø 125, weight kg 17

Testa ad angolo di fresatura
con cono ISO20, peso kg 0,9
*Milling angle head with hank
ISO20, weight kg 0,9*

*Milling head for engine's
bracket milling cutter
Ø160/180 weight kg 31*

Angle milling head
for brake housing,
weight Kg 23

Testa ad angolo
speciale fresatura
su plastica peso kg 4
*Milling angle head
for plastic weight kg 4*

*Twin angle head with
nr. 2 milling cutter for
wood, weight kg 3*





TAS 37806

Testa ad Angolo di fresatura
componente aeronautico,
materiale Inconel. Peso Kg 40

*Milling Angle Head for ae-
ronautic piece, Inconel alloy
material. Weight Kg 40*

TFS 23910

Testa ad Angolo bimandrino,
fresatura di componente in
ghisa. Peso Kg 50

*Twin Angle Head, milling
cast iron pieces.
Weight Kg 50*



TFS 31110

Testa ad Angolo di foratu-
ra con mandrino HSK50
ribaltato. Peso Kg 31

*Drilling Angle Head with
HSK50 reverse spindle.
Weight Kg 31*



TAS 10708

Testa ad Angolo lunghezza
mm 1.000, fresatura di cave
su acciaio. Peso Kg 216

*Angle Head overall lenght
mm 1.000, milling key-way on
steel. Weight Kg 216*



TAS 13910

Testa ad Angolo di foratura
con mandrino ER25.
Peso Kg 31

*Drilling Angle Head with
ER25 spindle.
Weight Kg 31*



TAS 08411

Testa ad Angolo con tre mandrini di foratura con avanzamento idraulico. Peso Kg 17,5

Drilling Angle Head with three spindles, hydraulic spindles feed. Weight Kg 17,5



TFS 05609

Testa ad Angolo di fresatura per tornio verticale. Peso Kg 286

Milling Angle Head for vertical lathe. Weight Kg 286



TAS 19610

Testa ad Angolo di fresatura per macchina transfer. Peso Kg 35

Milling Angle Head for transfer machine. Weight Kg 35



TFS 26908

Testa ad Angolo bimandrino di foratura per macchina transfer. Peso Kg 9,5

Twin drilling Angle Head for transfer machine. Weight Kg 9,5

TAS 28010

Testa ad Angolo con tre assi a regolazione manuale. Peso Kg 590

Angle Head with three manual movement axis. Weight Kg 590



TAS 26810

Testa ad Angolo TAO20, utilizzata in fresatura su torretta a revolver HT250. Peso Kg 14

Milling Angle Head TA 20, assembled on HT250 turret head. Weight Kg 14



TAS 19010

Testa ad Angolo di foratura per macchina transfer. Max RPM 20.000. Peso Kg 5

Drilling Angle Head for transfer machine. Max RPM 20.000. Weight Kg 5



TFS 06906

Testa ad Angolo di foratura scatola sterzo. Peso Kg 10

Drilling Angle Head for steering body. Weight Kg 10



TAS 09407

Testa ad Angolo per fresatura canna di fucile. Peso Kg 6,5

Milling Angle Head for rifle barrel. Weight Kg 6,5



TAS 16308

Testa ad Angolo di foratura con mandrino HSK32 a cambio automatico utensile. Peso Kg 13,5

Drilling Angle Head with spindle HSK32 with automatic tool changer. Weight Kg 13,5

TAS 24508

Testa ad Angolo di fresatura
pinza freno. Peso Kg 29

*Milling Angle Head for brake
truck body. Weight Kg 29*



TAS 07309

Testa ad Angolo di fresatura,
basamento motore 12 cilin-
dri. Peso Kg 60

*Milling Angle Head, 12 cylin-
der engine block. Weight Kg 60*



TAS 24010

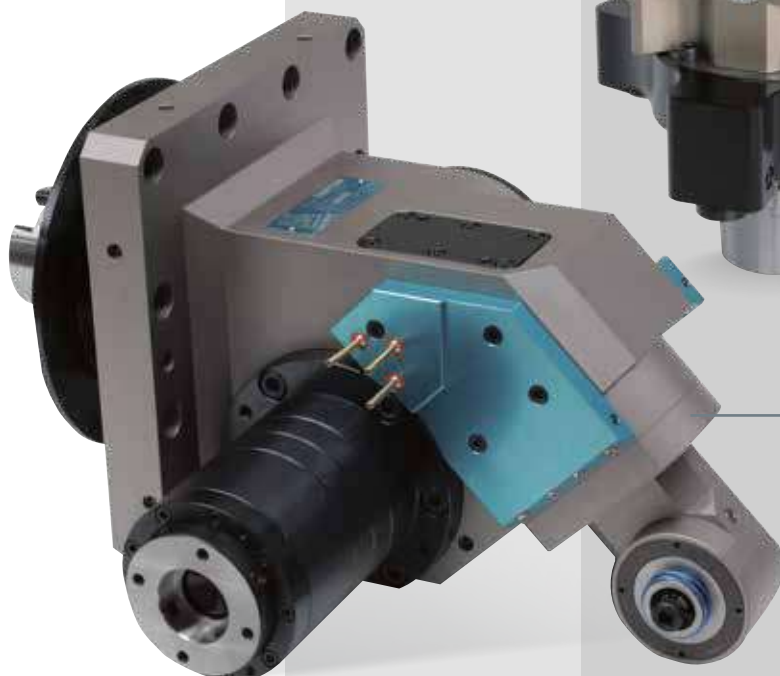
Testa ad Angolo di foratura com-
ponente aeronautico in alluminio.
Peso Kg 13,5

*Drilling Angle Head for aluminium
aeronautic component. Weight
Kg 13,5*

TAS 28606

Testa ad Angolo di foratura componente
aeronautico con mandrino HSK50, mate-
riale Inconel. Peso Kg 27

*Drilling Angle Head with HSK50 spindle
for aeronautic piece, Inconel alloy mate-
rial. Weight Kg 27*



TAS 07509

Testa ad Angolo bimandrino
di alesatura, motore 12 cilindri.
Peso Kg 63

*Twin spindle boring Angle
Head, 12 cylinder engine
block. Weight Kg 63*

FH

BAH

TA.CP

TA

MOx

HT

5-1

VH

TSI/TSX

T

MT-TC-TC3



SERIE MO_x





I moltiplicatori di giri serie "MOx" sono stati studiati e definiti con l'intento di offrire un prodotto che possa assicurare la massima affidabilità e precisione nelle operazioni di fresatura e foratura.

Dalla progettazione al controllo statico e dinamico del prodotto finito, i nostri moltiplicatori di giri sfruttano le più avanzate conoscenze tecniche e tecnologiche. La costruzione compatta, i componenti in acciaio trattato termicamente, gli ingranaggi rettificati sull'evolvente permettono la trasmissione di potenze elevate con ottimi livelli di silenziosità. Il mandrino è supportato da cuscinetti a sfere di precisione a contatto obliquo precaricati che gli conferiscono un'elevata rigidità e precisione di rotazione.

I moltiplicatori della serie MOx vedono infatti le seguenti caratteristiche:

- Equilibratura di tutti i componenti in rotazione
- Semplice set up nelle macchine con cambio utensile automatico
- Ingranaggi progettati per ridurre il rumore e le vibrazioni dell'utensile
- Liquido refrigerante ad alta pressione su tutta la gamma
- Poca generazione di calore e maggiore stabilità termica grazie a nuovi cuscinetti
- Giri max 35.000
- Utilizzati specialmente in operazioni di finitura
- Possibilità di montaggio manuale o automatico
- Consentono alla macchina di ruotare a bassi regimi di giri
- Possibilità di utilizzare utensili in metallo duro

The "MOx" series spindle speeders have been designed and developed to offer maximum reliability and precision in milling and drilling. From design to static and dynamic testing of the finished product, our spindle speeders rely on the most advanced technical know-how. The compact construction, the heat-treated steel parts, and the ground gears on the involute, guarantee transmission of high power ratings with amazingly low noise levels. The spindle is supported by a set of preloaded precision ball bearings with oblique contact that ensure greater strength and rotation precision.

Our MOx series includes the following features:

- *Balancing of all the rotating components*
- *Greater speed*
- *More stability thanks to an advanced bearing layout*
- *A new system making set up easier for automatic tool change*
- *A new bearing layout that reduces noise and vibration of the tool*
- *Greater load capacity*
- *Low heat generation and more thermal stability thanks to the advanced bearing layout*
- *Max 35.000 rpm*
- *Mainly used for finishing operations*
- *Manual or automatic tool change options*
- *Allows the machine to rotate at low rpm*
- *Allows the use of carbide cutting tools*



FH

BAH

TA.CP

TA

MOx

HT

5-3

VH

TSI/TSX

T

MT-TC-TC3



MOX10.HS

MOLTIPLICATORE DI GIRI • SPINDLE SPEEDERS



40
5,8 KG

50
8 KG

PESO
WEIGHT

IN
INPUT

OUT
OUTPUT

ROTAZIONE
ROTATION

OPTIONAL



ER16



10 BAR



MAX 242 N



1-8



36000

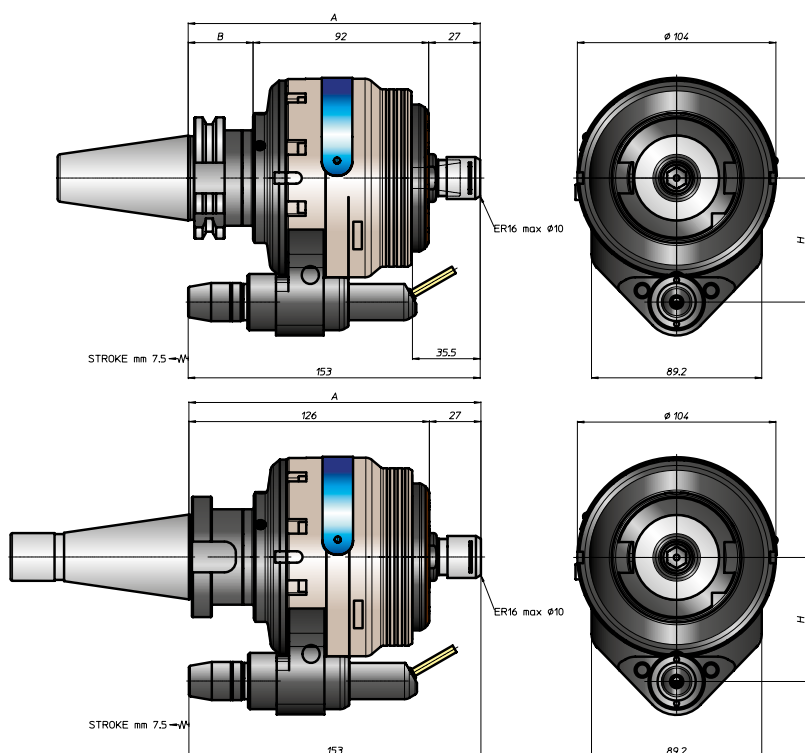


70 BAR



8

CARATTERISTICHE
FEATURES



CONO
SHANK

SIZE

A

B

H STANDARD

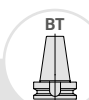
H OPTIONAL



DIN69871



ANSIB5.50



BT



DIN69893



ISO26623



KM



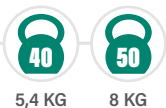
DIN2080



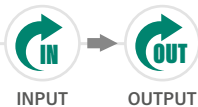
ANSIB5.18

SIZE	30	40	45	50	40	50	40	50	63	80	100	C5	C6	C8	63	80	100	40	50	40	50
A	154				154		154	162	163			163	158		154			154		154	
B	34	42			34	42	35	50	42	51								34	42	34	42
H STANDARD	65	80			65	80	65	80	65	80		65	80		65	80		65	80	65	80
H OPTIONAL	80	110	110		80	110	80	110	80	110	110	80	110	110	80	110	110	80	110	80	110

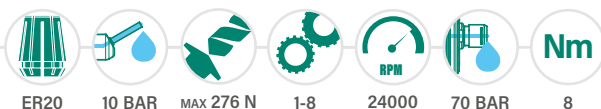
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MOX10

MOLTIPLICATORE DI GIRI • SPINDLE SPEEDERS

FH

BAH

TA.CP

TA

MOX

HT

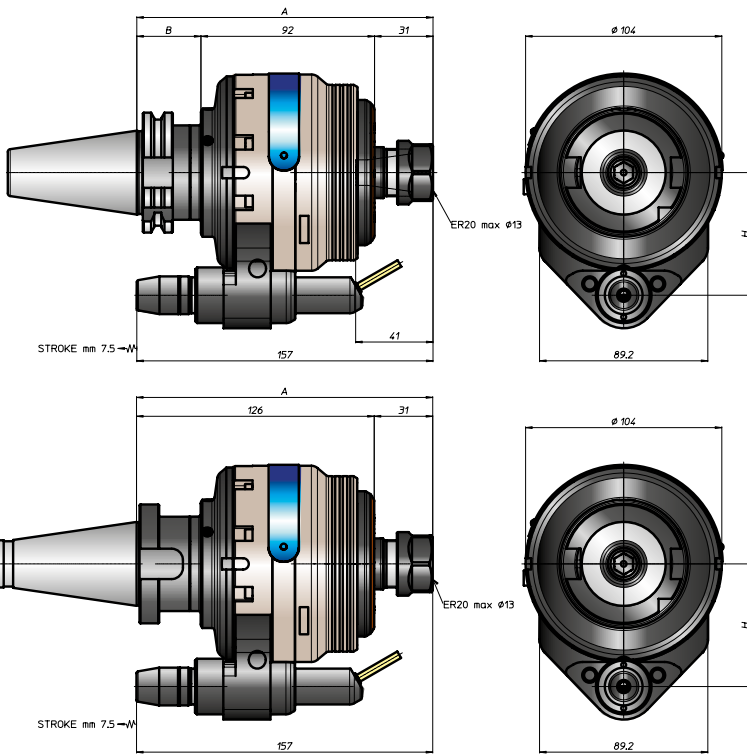
5-4

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

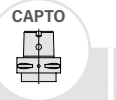
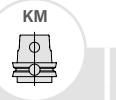
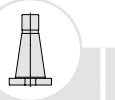
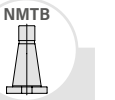
SIZE

A

B

H STANDARD

H OPTIONAL

	DIN69871					ANSIB5.50						DIN69893				ISO26623				KM				DIN2080			ANSIB5.18	
30	40	45	50		40		50	40		50	63	80	100		C5	C6	C8		63	80	100		40		50	40		50
157					157			157		165	166				166		161		157				157			157		
34		42			34	42		35	50		42		51										34	42		34	42	
65		80			65	80		65	80		65		80		65	80			65	80			65	80		65	80	
80	110	110			80	110	110	80	110	80	80	110	110		80	110	110		80	110	110		80	110	110	80	110	110



MOX13

MOLTIPLICATORE DI GIRI • SPINDLE SPEEDERS



6,5 KG



9 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

OPTIONAL



ER25



10 BAR



MAX 460 N



1-6



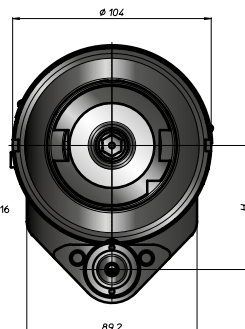
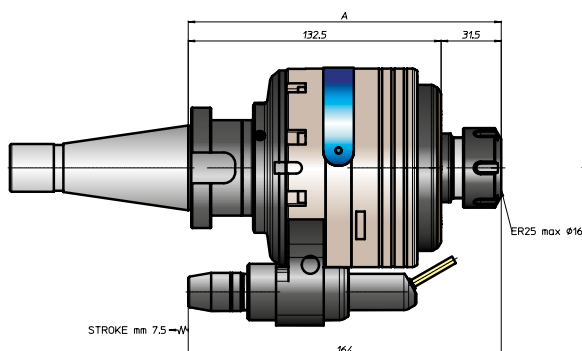
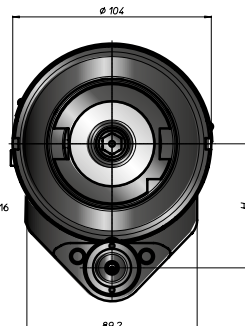
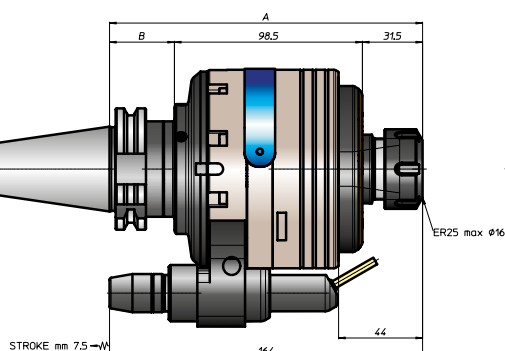
20000



70 BAR



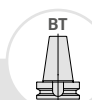
16

CARATTERISTICHE
FEATURESCONO
SHANK

DIN69871



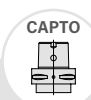
ANSIB5.50



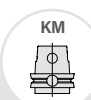
BT



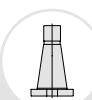
DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

SIZE

40

45

50

40

50

40

50

63

80

100

C5

C6

C8

63

80

100

40

50

40

50

A

164

164

164

172

173

172,5

168

163,5

164

164

B

34

42

34

42

35

50

42

51

34

42

34

42

H STANDARD

65

80

65

80

65

80

65

80

65

80

65

80

65

80

65

80

H OPTIONAL

80

110

80

110

80

110

80

110

80

110

80

110

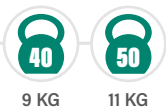
80

110

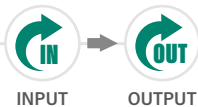
80

110

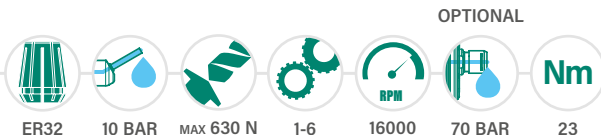
PESO
WEIGHT



ROTAZIONE
ROTATION



CARATTERISTICHE
FEATURES



MOX16

MOLTIPLICATORE DI GIRI • SPINDLE SPEEDERS

FH

BAH

TA.CP

TA

MOX

HT

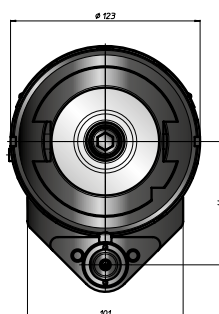
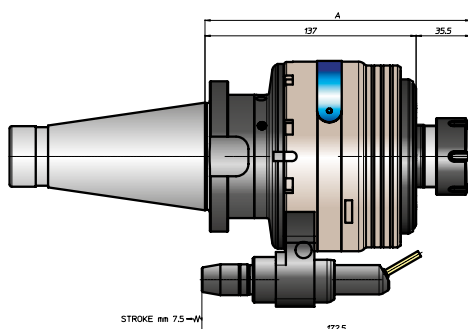
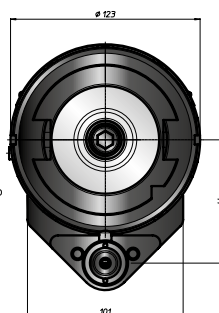
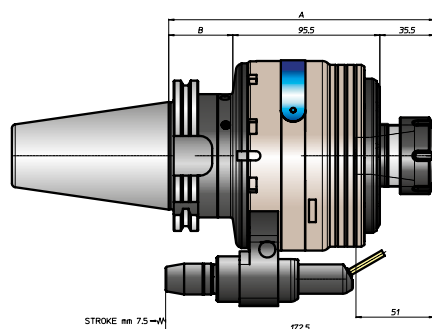
5-6

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK

SIZE

A

B

H STANDARD

H OPTIONAL



DIN69871



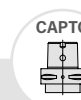
ANSIB5.50



BT



HSK



CAPTO



KM



DIN2080



ANSIB5.18

40 50

50

50

80 100

C6 C8

80 100

40 50

40 50

172,5

172,5

180,5

181,5

176,5

172,5

172,5

172,5

34 42

35

50

42 51

34 42

34 42

80

80

80

80

80

80

80

80

110

110

110

110

110

110

110 110

110

FH

BAH

TA.CP

TA

MOx

HT

5-7

VH

TSI/TSX

T

MT-TC-TC3



MOX26

MOLTIPLICATORE DI GIRI • SPINDLE SPEEDERS



21 KG

PESO
WEIGHT

INPUT



OUTPUT

ROTAZIONE
ROTATION

OPTIONAL



ER40



10 BAR



MAX 1325 N



1-4,2



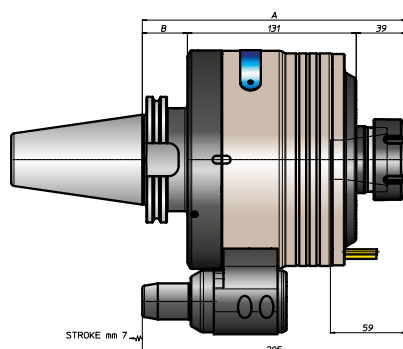
12000



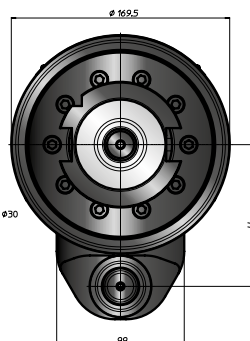
70 BAR



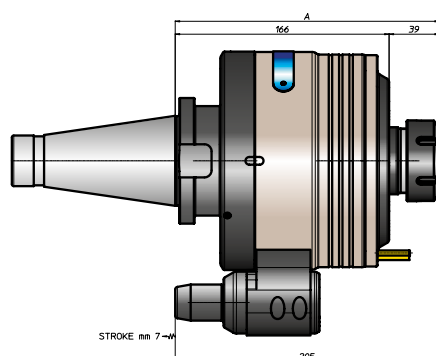
47

CARATTERISTICHE
FEATURES

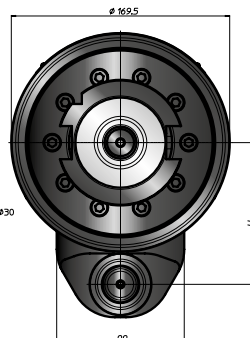
STROKE mm 7-4



ER40 max Ø30



STROKE mm 7-4



ER40 max Ø30

CONO
SHANK

SIZE

A

B

H STANDARD

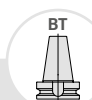
H OPTIONAL



DIN69871



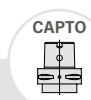
ANSIB5.50



BT



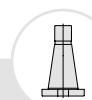
DIN69893



ISO26623



KM



DIN2080



ANSIB5.18

50

60

50

50

100

C8

100

50

50

205

221

221

221

223,5

213

209

205

205

35

51

35

51

53

110

110

110

110

110

110

110

110

110

110

110

110

PESO
WEIGHT



27 KG

ROTAZIONE
ROTATION



INPUT



OUTPUT

CARATTERISTICHE
FEATURES



ER50



10 BAR



MAX 1470 N



1-4



10000

OPTIONAL



70 BAR



Nm

180



MOX34

MOLTIPLICATORE DI GIRI • SPINDLE SPEEDERS

FH

BAH

TA.CP

TA

MOX

HT

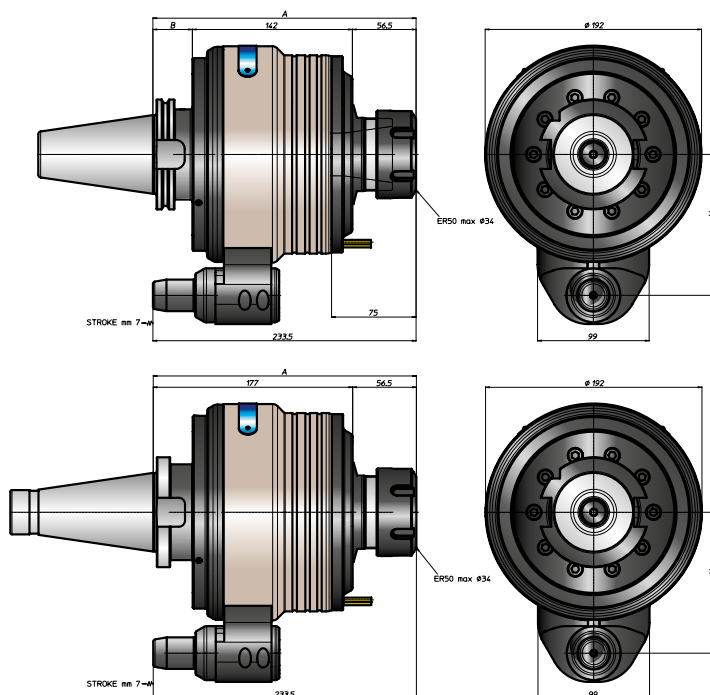
5-8

VH

TSI/TSX

T

MT-TC-TC3



CONO
SHANK



DIN69871



ANSIB5.50



BT



HSK



CAPTO



KM



DIN2080



NMTB

SIZE

50

60

50

50

100

C8

100

50

50

A

233,5

249,5

249,5

249,5

252

241,5

237,5

233,5

233,5

B

35

51

35

51

53

125

125

125

125

H STANDARD

125

125

125

125

125

125

125

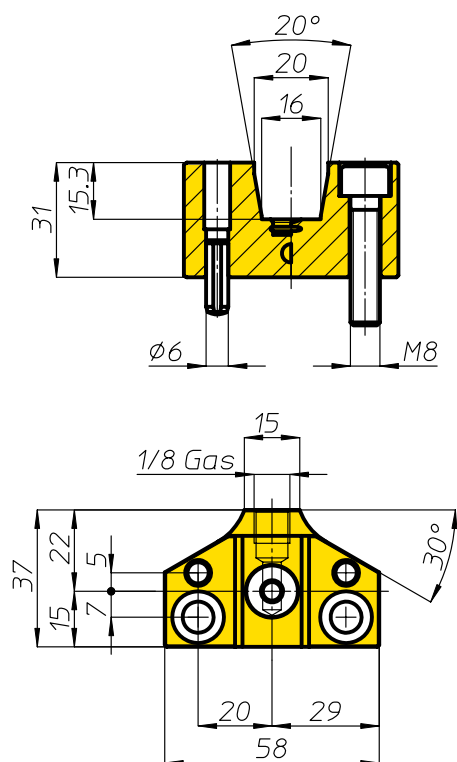
125

H OPTIONAL

STOP-BLOCK (COD. 630104)



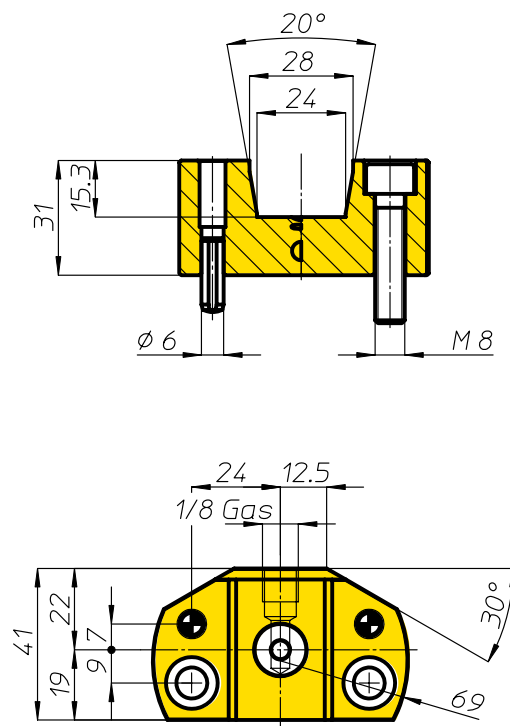
MOX CON H=65/80
MOX WITH H=65/80

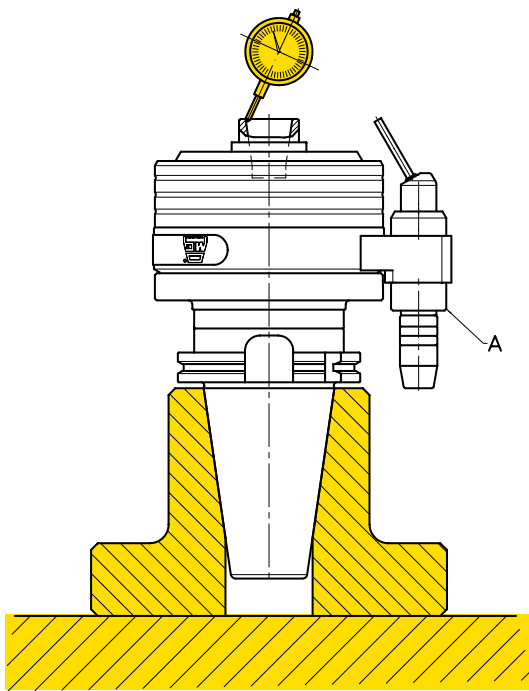


STOP-BLOCK (COD. 632198)



MOX CON H=110/125
MOX WITH H=110/125





CERTIFICATO DI COLLAUDO / TEST REPORT

Banco prova BP03 / Testing bench BP03
Data prova / Test date: 10/07/2011
Articolo / Item: MO10
Matricola / SN: 1315

N° Max Giri Uscita / Max Output RPM: 22.000
Rapporto Entrata-Uscita / Ratio Input-Output : 1:6
N° Giri Uscita = N° Giri Entrata * Rapporto / Output RPM = Input RPM * Ratio

Prova Test	N° Giri Entrata Input RPM	Temp.(°C) Sonda 1 Probe 1	Temp.(°C) Sonda 2 Probe 2	Temp. Ambiente Enviroment Temp.
1	1000	45,40	43,20	24,60
2	1500	40,80	36,80	24,60
3	2000	44,20	42,00	24,80
4	2500	48,80	42,00	24,80
5	3000	49,20	38,60	25,00

Concentricità Max Cono - Mandrino / Max Runout between Shank and Spindle : 0,006



COLLAUDO
Ogni moltiplicatore di giri ha allegato il proprio certificato di collaudo dove sono riportate le proprie caratteristiche tecniche, il numero di matricola, i risultati ottenuti dai test eseguiti sul nostro banco prova BP03, il valore della concentricità tra il cono e la sede pinza il cui valore massimo è mm 0.01. Per verificare il valore della concentricità occorre disporre il moltiplicatore come in fig. 1, fermare il perno A e ruotare il cono. Il valore letto sul comparatore millesimale è la concentricità tra l'asse del cono e l'asse del mandrino.

TEST
Every spindle speeder has his test certificate in which there are the technical characteristics, the serial number, the results of the tests made on our BP03 testing bench, the concentricity value between the shank and the collet (max. value 0,01 mm). To verify the concentricity value it is necessary to have the spindle speeder as from picture N°. 1, stopping the pin "A" and rotating the shank. The value on the dial indicator is the concentricity between the shank axe and the spindle axe.



MOX

MOLTIPLICATORI DI GIRI SPECIALI • SPECIAL SPINDLE SPEEDERS

MO 26310

Riduttore di giri, rapporto 6-1,
input max 15.000 RPM, attacco
HSK63, mandrino ER20

*Spindle reducer, ratio 6-1, input
max 15.000 RPM, shank HSK63,
ER20 spindle*



MO 28910

MO16 con attacco CAPTO C8 e
mandrino ER25 prolungato

*MO16 with CAPTO C8 shank and
extended ER25 spindle*



MO 12110

Rapporto/Ratio 1-4
RPM max 4.500
Torque 1.150 Nm
Output DIN69871-A50
Peso/Weight Kg 240

TFS 09011

Riduttore di giri per maschiatura con compensazione assiale mandrino, corsa compensazione ± 7 mm, rapporto 6-1, input max 10.000 RPM, attacco HSK-F63, mandrino per bussola porta maschio grandezza 1

Tapping spindle reducer with axial compensation, stroke ± 7 mm, ratio 6-1, input max 10.000 RPM, shank HSK-F63, spindle for tapping bush size 1



VDI 16610

MO13 rinviato di 90° con attacco VDI30
MO13 with VDI30 shank at 90°



MO 26

MO26 con cono DIN69871-A60, mandrino Weldon Ø25 e liquido refrigerante utensile passante dal centro stop-block/centro mandrino

MO26 with DIN69871-A60 shank, output spindle Weldon Ø25, coolant trough the stop-block/spindle centre



MO 16210

MO13 con attacco VDI40
MO13 with VDI40 shank



MOX

MOLTIPLICATORI DI GIRI SPECIALI • SPECIAL SPINDLE SPEEDERS

FH

BAH

TA.CP

TA

MOX

HT

5-12

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

6-1

VH

TSI/TSX

T

MT-TC-TC3



SERIE

HT



Le torrette a revolver serie **HT** sono nate dall'esigenza di aumentare la flessibilità delle macchine utensili e possono eseguire lavorazioni di foratura, filettatura, alesatura, fresatura. Trovano collocazione direttamente sul mandrino della macchina o, con motorizzazione propria, montate su slitte a uno o più assi di movimento.

Hanno la possibilità di montare teste multiple, teste ad angolo e moltiplicatori di giri per aumentare la velocità dell'utensile. Tutte le versioni utilizzano un sistema di posizionamento tramite corona Hirth; questa soluzione costruttiva permette grande precisione, grande rigidità nelle lavorazioni di fresatura e alesatura di finitura, grande ripetitività.

- Costruzione torretta in acciaio e ghisa.
- Mandrini montati su cuscinetti di precisione.
- Mandrini con diverso attacco utensile (DIN55058, Komet, HSK, ecc) intercambiabili sulla stessa torretta.
- Mandrini in presa diretta con la presa di forza per sfruttare appieno la potenza
- Sistema idraulico di bloccaggio-sbloccaggio corona Hirth.
- La stessa motorizzazione permette la rotazione della torretta e la rotazione dei mandrini.
- Rotazione torretta bidirezionale per ricercare più velocemente il mandrino necessario alla lavorazione da eseguire.
- Refrigerante indipendente per ogni mandrino.
- Possibilità del refrigerante di passare attraverso il centro del mandrino.
- Lubrificazione effettuata a grasso o con miscela olio-aria.
- Pressurizzazione torretta
- Connettore unico per l'interscambio dati tra la torretta ed il cnc.

*The **HT** series of turret heads are inspired by the need to increase the flexibility of machine tools and they are able to perform drilling, tapping, boring and milling. They can be installed directly on the machine spindle or, with their own drive, mounted on slides with one or more movement axes.*

They can be fitted with multispindle heads, angle heads and multipliers for greater tool velocity.

All versions use a positioning system based on a Hirth crown gear, providing utmost precision, excellent strength in milling and finishing boring and outstanding repeatability.

- Turret made of steel and cast iron
- Spindles mounted on precision bearings
- Spindles with different tool connections (HSK, Komet, DIN55058, etc.) which can be interchanged on the same turret
- Spindles directly engaged with p.t.o. to exploit power to the full
- Hydraulic Hirth crown gear locking-release system
- Single drive rotates both turret and spindles
- Two-way turret rotation for quicker retrieval of the spindle needed for the next process
- Separate coolant for each spindle
- Coolant through the spindle centre
- Lubrication with grease or oil-air mixture
- Pressurised turret
- Single connector for data exchange between turret and cnc.





HT 160



CIRCUITO OLIO PER
BLOCCAGGIO-SBLOCCAGGIO TORRETTA
OIL CIRCUIT FOR TURRETLOCKING-RELEASE

F1

ENTRATA REFRIGERANTE
UTENSILI
COOLANT TOOLS

F2

FORI FISSAGGIO TORRETTA
TURRET FIXING HOLES

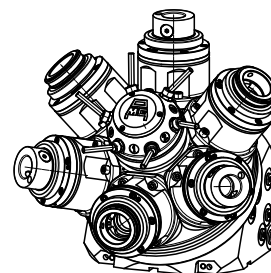
F3

ENTRATA OLIO-ARIA
INPUT OIL-AIR

F4

CONNETTORE
ELETTRICO
ELECTRIC CONNECTOR

F5



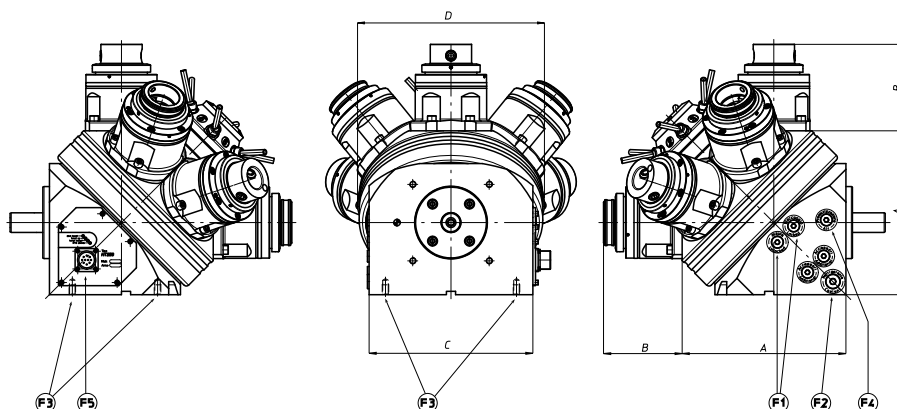
HT 200



HT 250



HT 360



N° DI POSIZIONI MAX
MAX NR. OF POSITION

COPPIA TRASMISSIBILE AL MANDRINO
TRANSMITTING TORQUE BY SPINDLE

N° GIRI MAX MANDRINO
MAX RPM SPINDLE

PRECISIONE DI POSIZIONE MANDRINI
PRECISION OF SPINDLES POSITIONING

POTENZA MOTORE
MOTOR POWER

TEMPO DI ROTAZIONE (1/6 DI GIRO)
INDEXING TIME 1/6 OF ROTATION

DIAMETRO CORONA HIRTH
DIMENSION RINGS HIRTH

A

B DIPENDE DAL TIPO DI MANDRINO
TO DEPEND ON THE SPINDLE TYPE

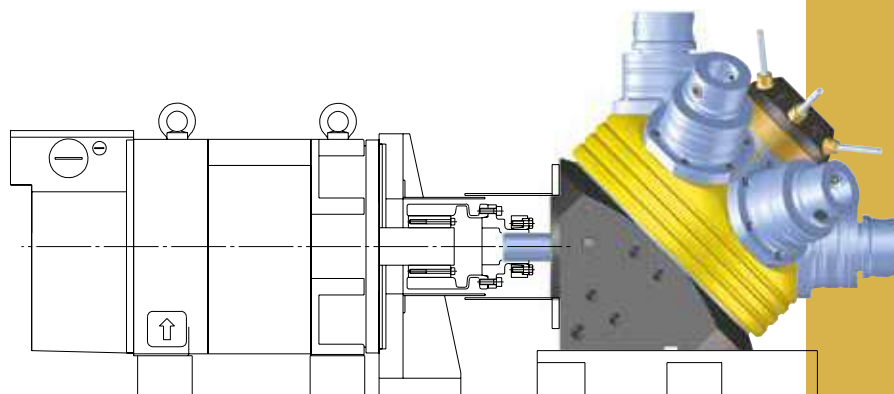
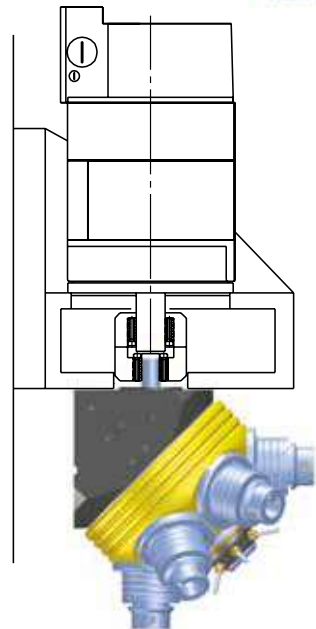
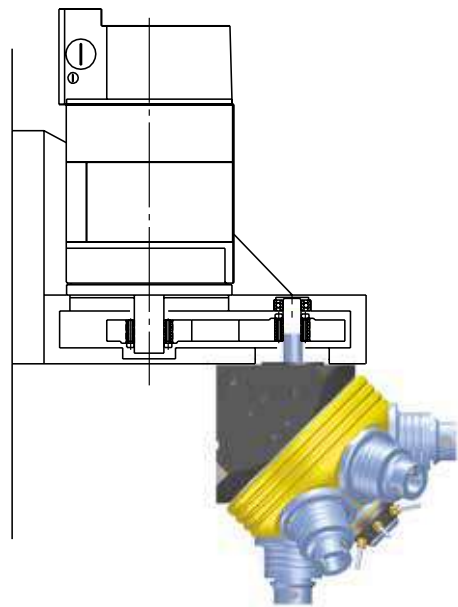
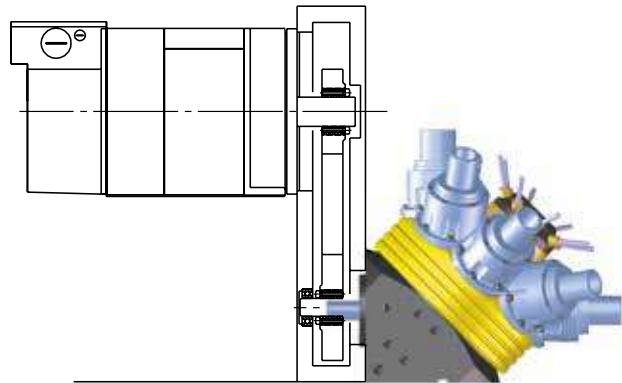
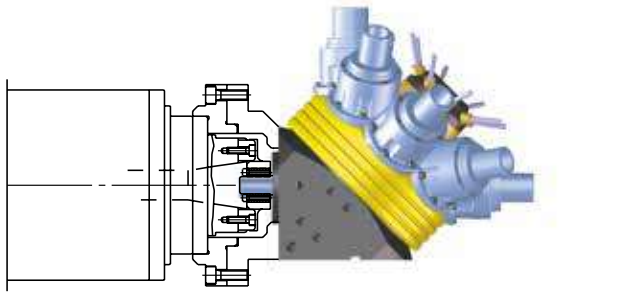
C

D

TIPI DI MANDRINI DISPONIBILI
TYPE OF SPINDLE

PESO
WEIGHT

	HT 160	HT 200	HT 250	HT 360
	6	6	6-8	6-8-12
Nm	80	200	300	800
	12.000	10.000	10.000	8.000
	± 3"	± 3"	± 3"	± 3"
approx Kw	4	5	6,5	16
sec	0,9	1	1,1	1,5
mm	160	200	250	350
	160	200	250	360
approx mm	70/80	100/150	100/150	120/170
	160	200	250	350
	180	228	290	400
	ABS, HSK, ER, DIN 55058			
kg	35	60	140	300



HT

APPLICAZIONI • APPLICATIONS

FH

BAH

TA.CP

TA

MOx

HT

6-4

VH

TSI/TSX

T

MT-TC-TC3





HT 05007

HT 05209

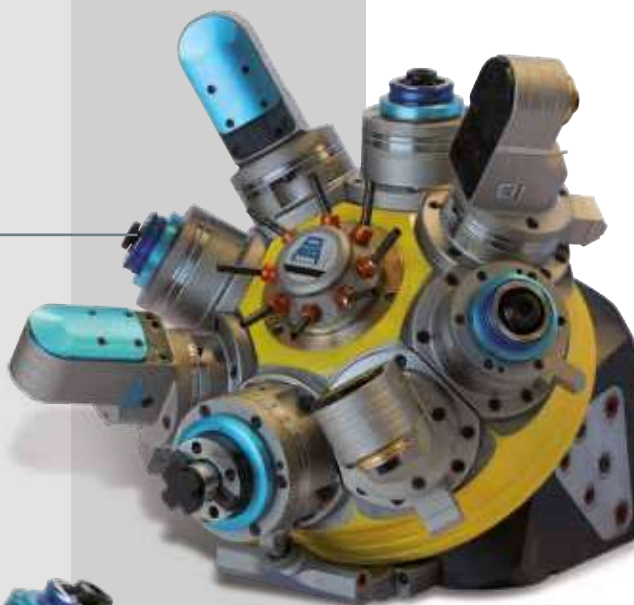


HT 31808

HT 08509



HT 08718



HT 35907

HT 07813



HT 27206

HT

GALLERY

FH

BAH

TA.CP

TA

MOx

HT

7-1

VH

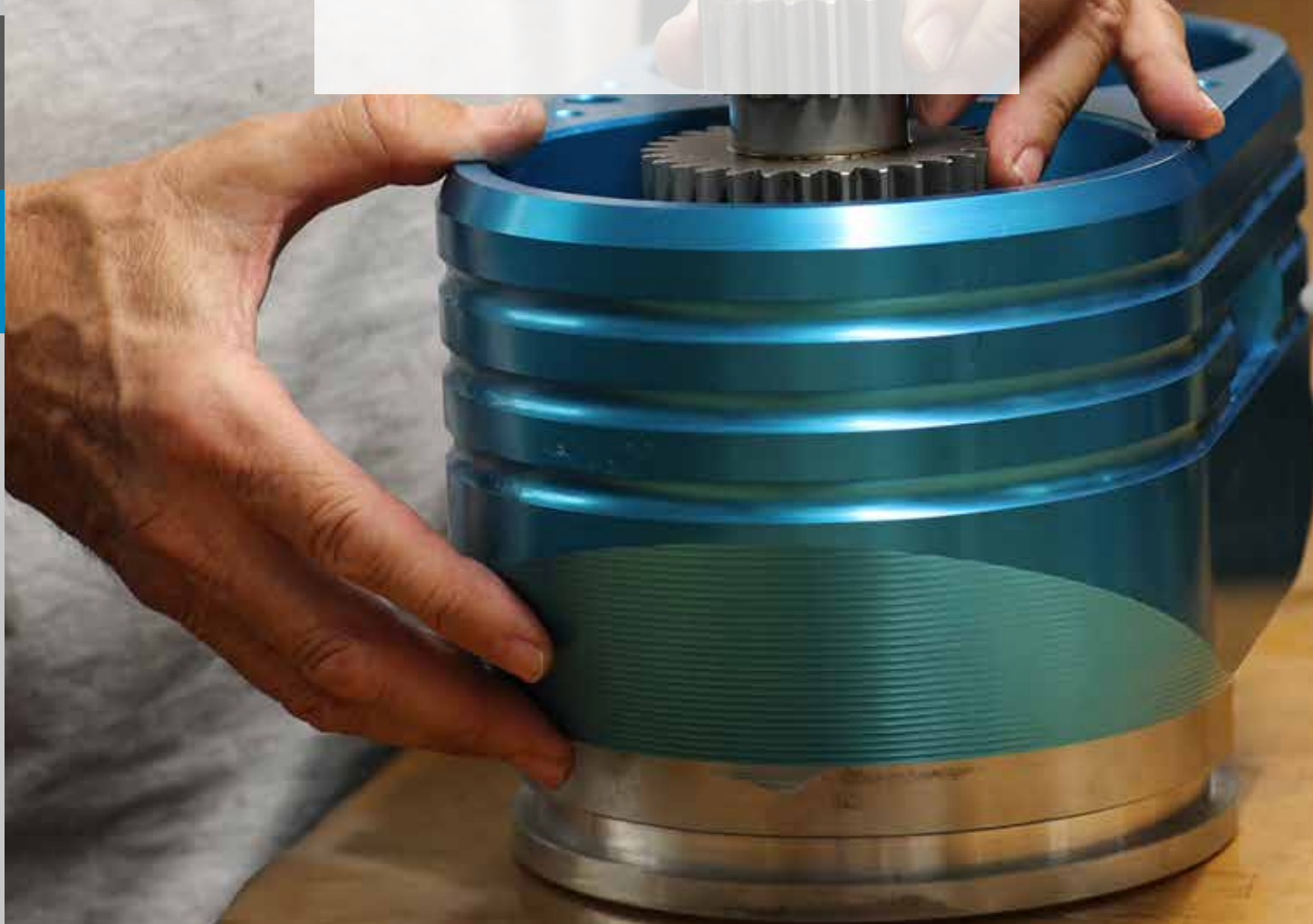
TSI/TSX

T

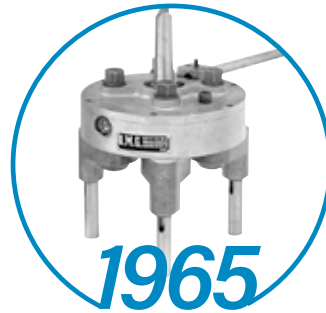
MT-TC-TC3



SERIE VH



Le teste multiple ad assi variabili raggiungono velocità di 4000 rpm, forando fino a 25 mm e maschiando M20. Il corpo testa è in lega di alluminio, ingranaggi e mandrini in acciaio trattati termicamente e rettificati per una maggiore precisione e resistenza all'usura. Disponibili in 31 differenti modelli, a 2,3,4 mandrini o con 1 solo mandrino decentrato, coprono interassi variabili da un minimo di 12 mm ad un massimo di 300 mm. Soluzioni personalizzate sono comunque sempre possibili anche in questa fascia di teste standard. L'utilizzo principale è su macchine o unità foratrici e maschiatrici, raramente su macchine CNC.



The variable axis multispindle heads are able to achieve a speed of 4000 rpm, drilling up to 25 mm and tapping M20. The head body is made of aluminium alloy, the gears and spindles are made of steel which has undergone heat treatment and has been ground for greater precision and wear resistance. Available in 31 different models, with 2,3,4 spindles or just one decentralised spindle, they cover a range of centre distances from minimum 12 mm to maximum 300 mm. Customised solutions are in any case also available within this range of standard heads. They are mainly used on drilling and tapping units, but rarely on CNC machines.

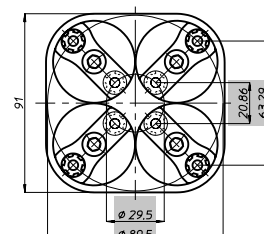
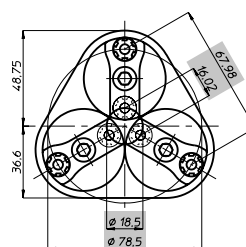
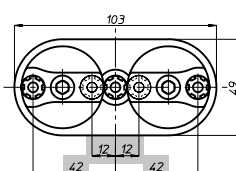
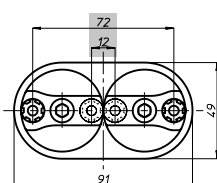
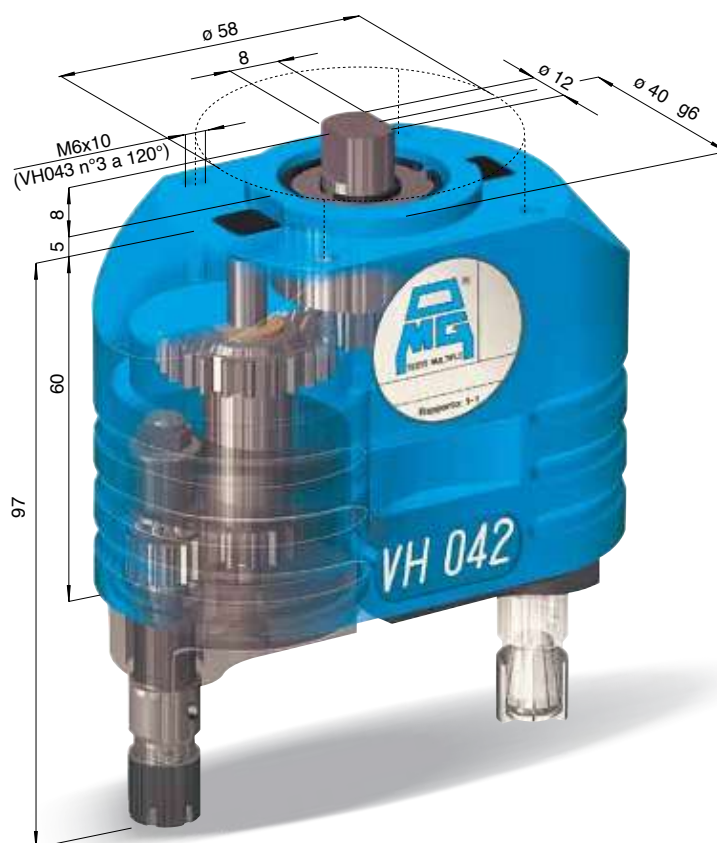


VH04

TESTE MULTIPLE AD ASSI VARIABILI • VARIABLE AXIS HEADS



CAPACITÀ FORATURA
DRILLING CAPACITY



TESTA MODELLO
HEAD TYPE

VH 042

VH 043 L

VH 043

VH 044

ARTICOLO
ITEM

VH 042 P

VH 043 LP

VH 043 P

VH 044 P

ATTACCO UTENSILE
SPINDLE TYPE

ER 8 - max Ø 5

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

N. MANDRINI
SPINDLES NR.

2

3

3

4

CAMPO DI LAVORO MIN.
CENTRE DISTANCES MIN.

12

12+12

Ø 18,5

Ø 29,5

CAMPO DI LAVORO MAX.
CENTRE DISTANCES MAX.

72

42+42

Ø 78,5

Ø 89,5

CAPACITÀ FORATURA
DRILLING CAPACITY

ACCIAIO/STILL Rm 500 N/mm² - Ø 4 | GHISA/CAST IRON GG25 - Ø 5

MASCHIATURA
TAPPING

M 3

RAPPORTO
RATIO

1 - 1

VELOCITÀ
RPM

4.000

PESO
WEIGHT

0,95 kg

1,05 kg

1,4 kg

1,9 kg

NOTA:
NOTE:

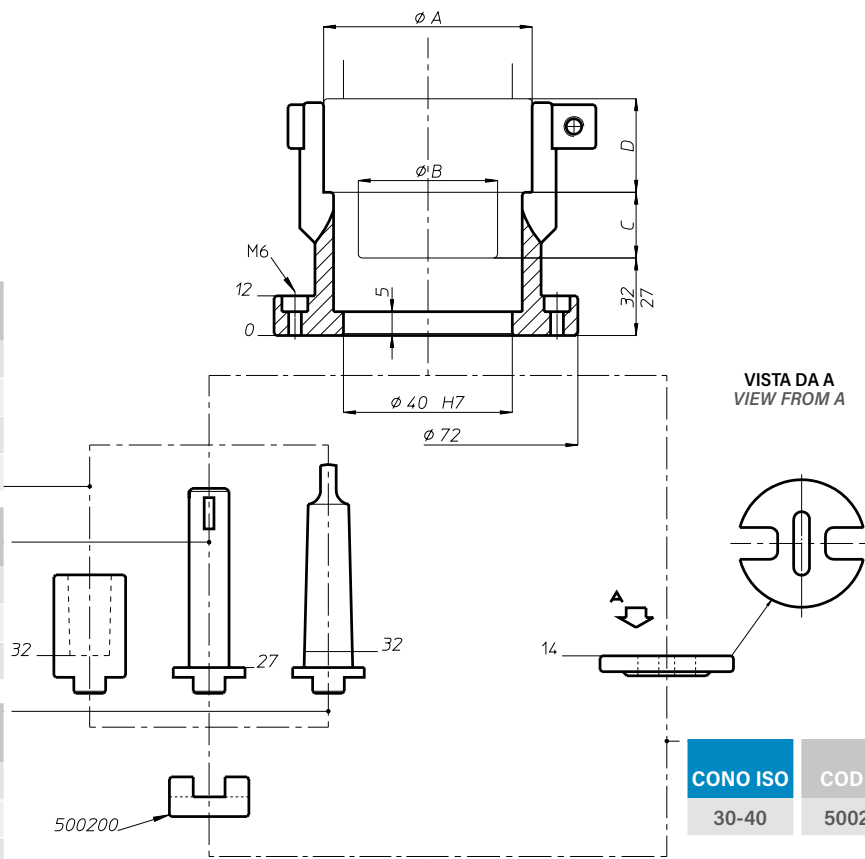
A.B.C.D. MACHINE FEATURES

MANICOTTO DI COLLEGAMENTO • CONNECTION COLLAR

DIN 238	CODICE
B 10	011277
B 12	011278
B 16	011279
B 18	011280

DIN 55058	CODICE
16	525405
20	525406
28	525407

DIN 228	CODICE
cm 1	011115
cm 2	011120
cm 3	011125



VH	7-4	HT	MOx	TA	TA,CP	BAH	FH
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MT-TC-TC3	T	TSI/TSX
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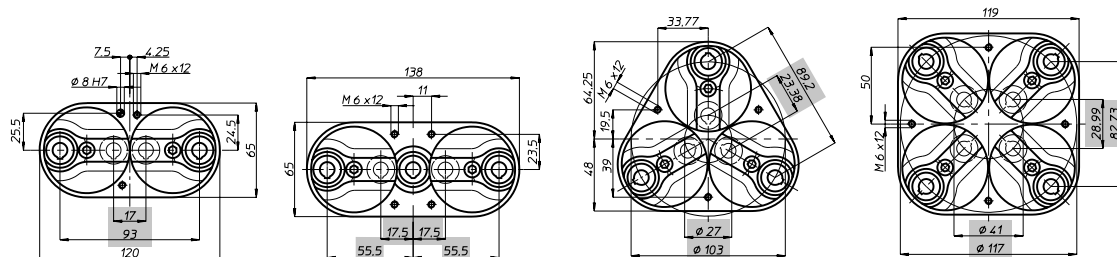
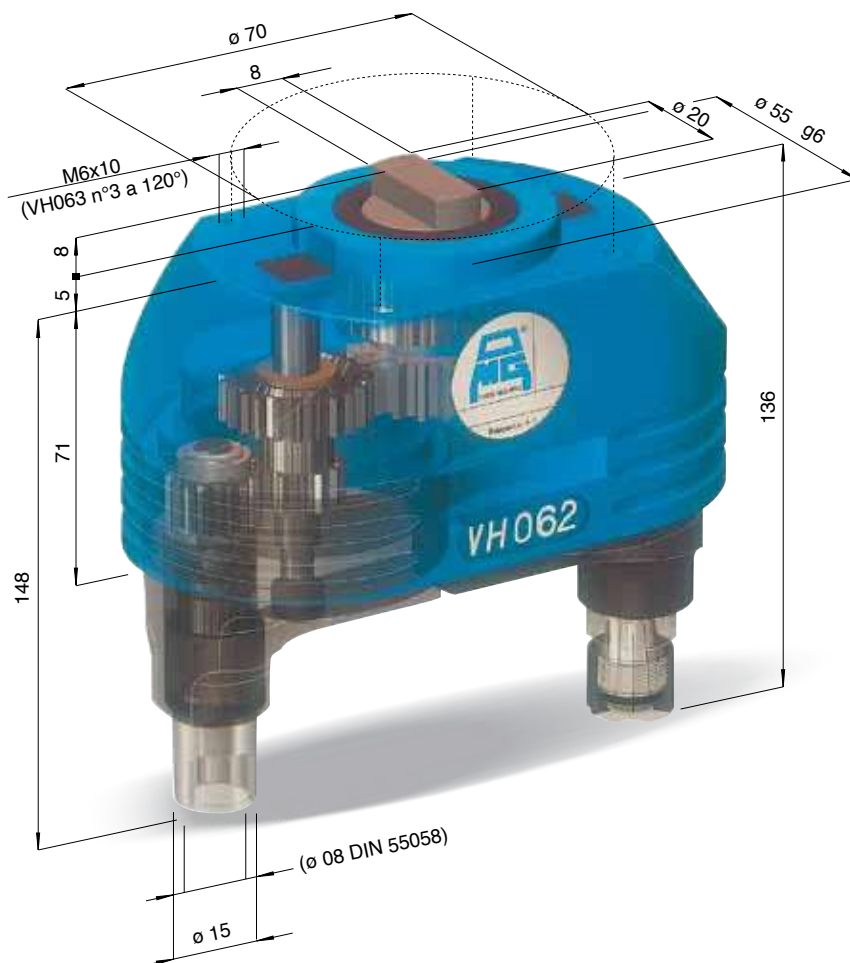


VH06

TESTE MULTIPLE AD ASSI VARIABILI • VARIABLE AXIS HEADS



CAPACITÀ FORATURA
DRILLING CAPACITY



TESTA MODELLO
HEAD TYPE

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

N. MANDRINI
SPINDLES NR.

CAMPO DI LAVORO MIN.
CENTRE DISTANCES MIN.

CAMPO DI LAVORO MAX.
CENTRE DISTANCES MAX.

CAPACITÀ FORATURA
DRILLING CAPACITY

MASCHIATURA
TAPPING

RAPPORTO
RATIO

VELOCITÀ
RPM

PESO
WEIGHT

VH 062

VH 062 P

VH 062 D

2

17

93

VH 063 L

VH 063 LP

VH 063 LD

3

17,5 + 17,5

55,5 + 55,5

VH 063

VH 063 P

VH 063 D

3

ø 27

ø 103

VH 064

VH 064 P

VH 064 D

4

ø 41

ø 117

ACCIAIO/STILL Rm 500 N/mm² - ø 6 | GHISA/CAST IRON GG25 - ø 7

M 5

1 - 1

4.000

1,65 kg

1,95 kg

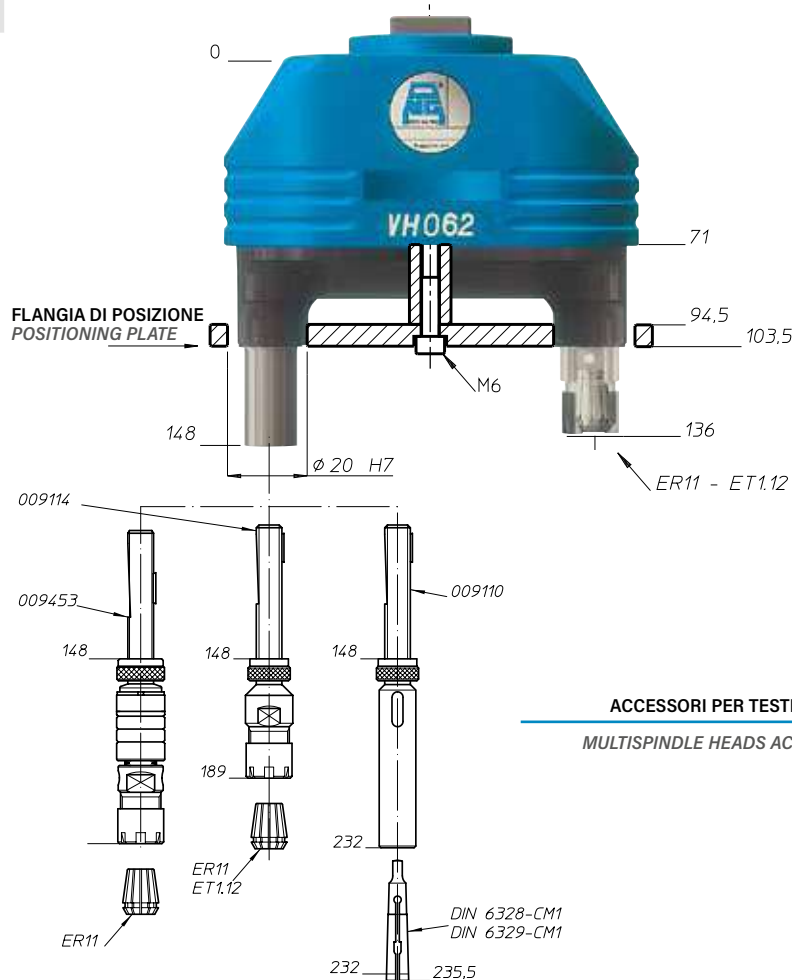
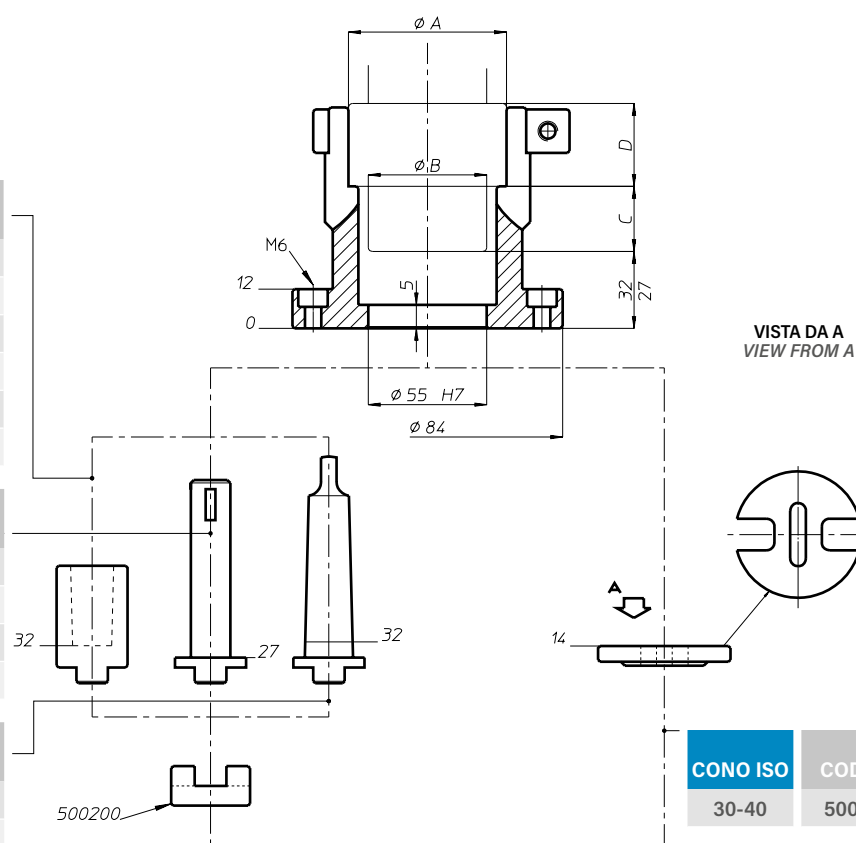
2,3 kg

3,1 kg

DIN 238	CODICE
B 10	011277
B 12	011278
B 16	011279
B 18	011280
B 22	011281
B 24	011282

DIN 55058	CODICE
16	525405
20	525406
28	525407
36	525408

DIN 228	CODICE
cm 1	011115
cm 2	011120
cm 3	011125
cm 4	011130
cm 5	011135



90HV

MANICOTTO DI COLLEGAMENTO • CONNECTION COLLAR

7-6

VH

TSI/TSX

MT-TC-TC3



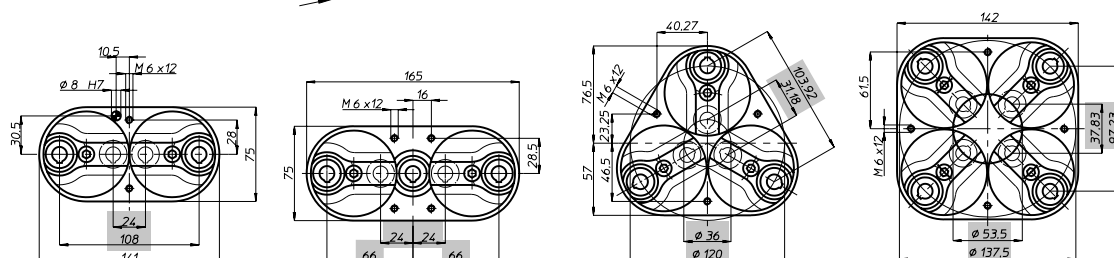
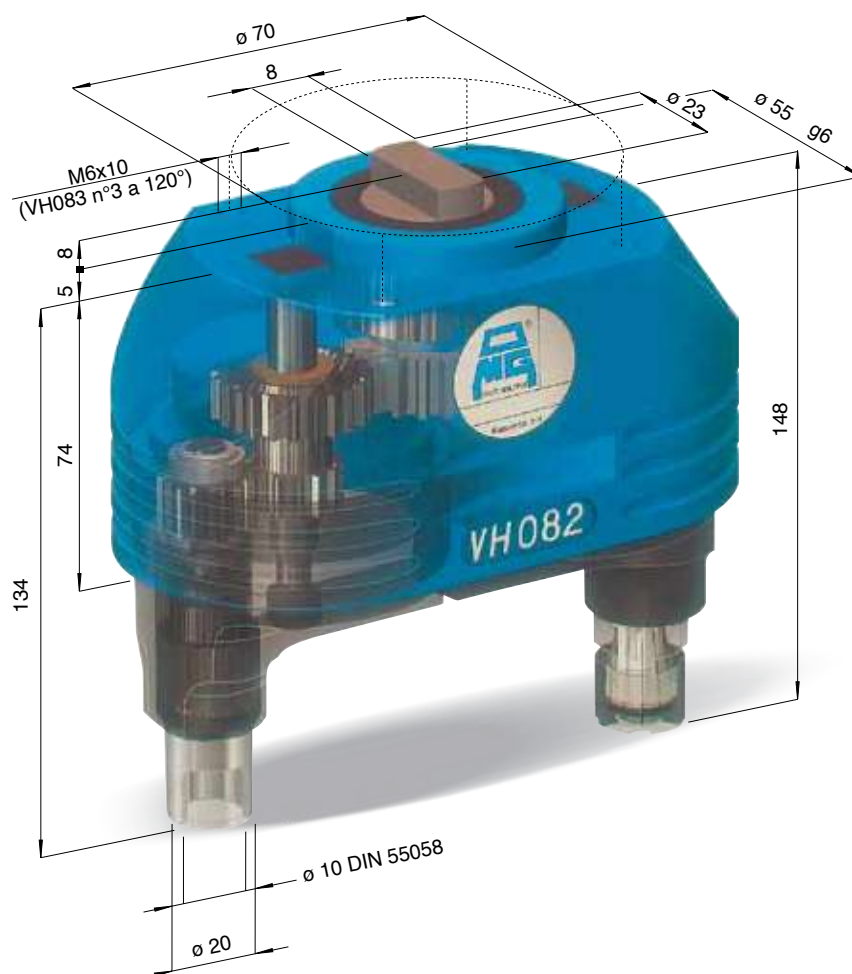


VH08

TESTE MULTIPLE AD ASSI VARIABILI - VARIABLE AXIS HEADS



CAPACITÀ FORATURA
DRILLING CAPACITY



TESTA MODELLO
HEAD TYPE

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

N. MANDRINI
SPINDLES NR.

CAMPO DI LAVORO MIN.
CENTRE DISTANCES MIN.

CAMPO DI LAVORO MAX.
CENTRE DISTANCES MAX.

CAPACITÀ FORATURA
DRILLING CAPACITY

MASCHIATURA
TAPPING

RAPPORTO
RATIO

VELOCITÀ
RPM

PESO
WEIGHT

	VH 082	VH 083 L	VH 083	VH 084
ARTICOLO ITEM	VH 082 P	VH 083 LP	VH 083 P	VH 84 P
ATTACCO UTENSILE SPINDLE TYPE	ER 16 - max ø 10			
ARTICOLO ITEM	VH 082 D	VH 083 LD	VH 083 D	VH 84 D
ATTACCO UTENSILE SPINDLE TYPE	DIN55058 - ø 10			
N. MANDRINI SPINDLES NR.	2	3	3	4
CAMPO DI LAVORO MIN. CENTRE DISTANCES MIN.	24	24 + 24	ø 36	ø 53,5
CAMPO DI LAVORO MAX. CENTRE DISTANCES MAX.	108	66 + 66	ø 120	ø 137,5
CAPACITÀ FORATURA DRILLING CAPACITY	ACCIAIO/STILL Rm 500 N/mm ² - ø 8 GHISA/CAST IRON GG25 - ø 10			
MASCHIATURA TAPPING	M 6			
RAPPORTO RATIO	1 - 1			
VELOCITÀ RPM	4.000			
PESO WEIGHT	2,2 kg	2,9 kg	3,4 kg	4,6 kg

NOTA:
NOTE:

A.B.C.D. DATI MACCHINA
A.B.C.D. MACHINE FEATURES

VH08

MANICOTTO DI COLLEGAMENTO • CONNECTION COLLAR

FH

BAH

TA,CP

TA

MOx

HT

7-8

VH

TSI/TSX

T

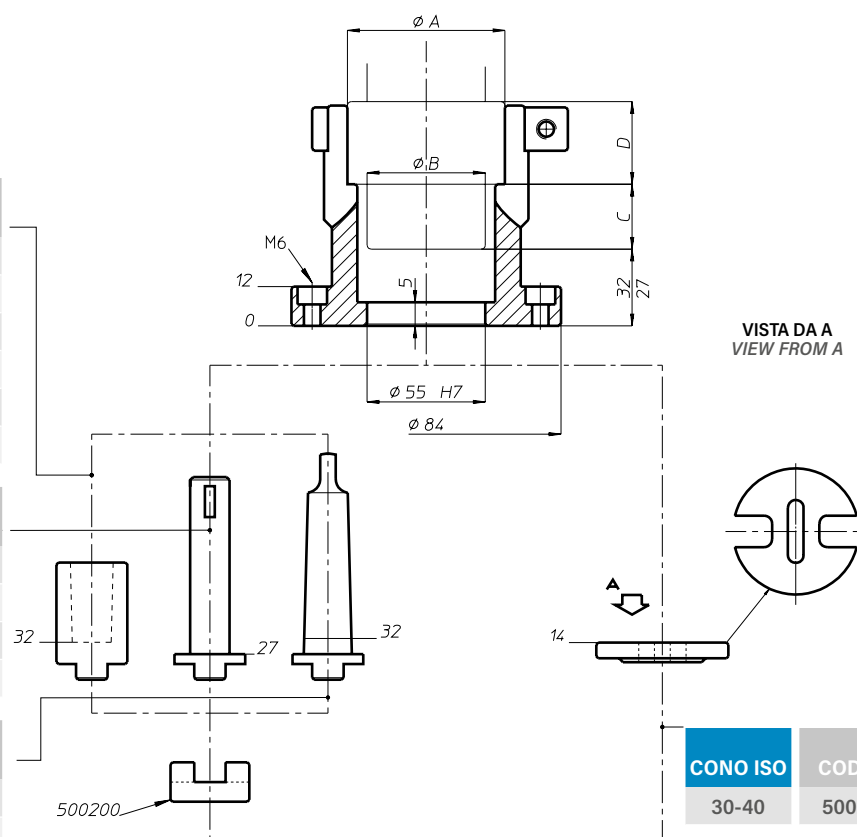
MT-TC-TC3



DIN 238	CODICE
B 10	011277
B 12	011278
B 16	011279
B 18	011280
B 22	011281
B 24	011282

DIN 55058	CODICE
16	525405
20	525406
28	525407
36	525408

DIN 228	CODICE
cm 1	011115
cm 2	011120
cm 3	011125
cm 4	011130
cm 5	011135

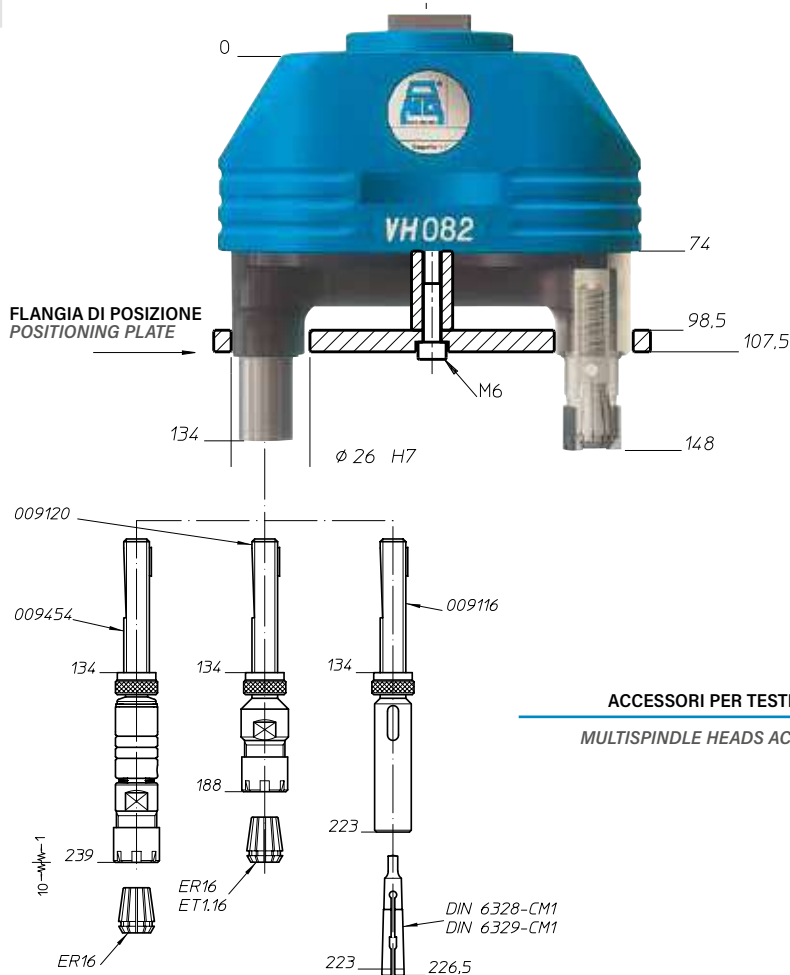


CONO ISO

30-40

CODICE

500202



FLANGIA DI POSIZIONE
POSITIONING PLATE

ACCESSORI PER TESTE MULTIPLE

MULTISPINDLE HEADS ACCESSORIES

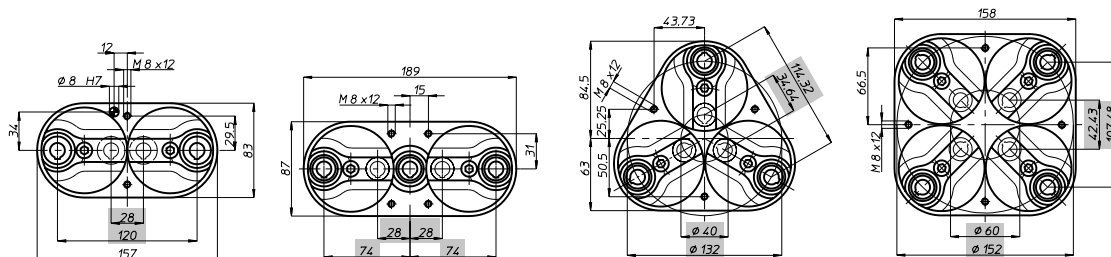
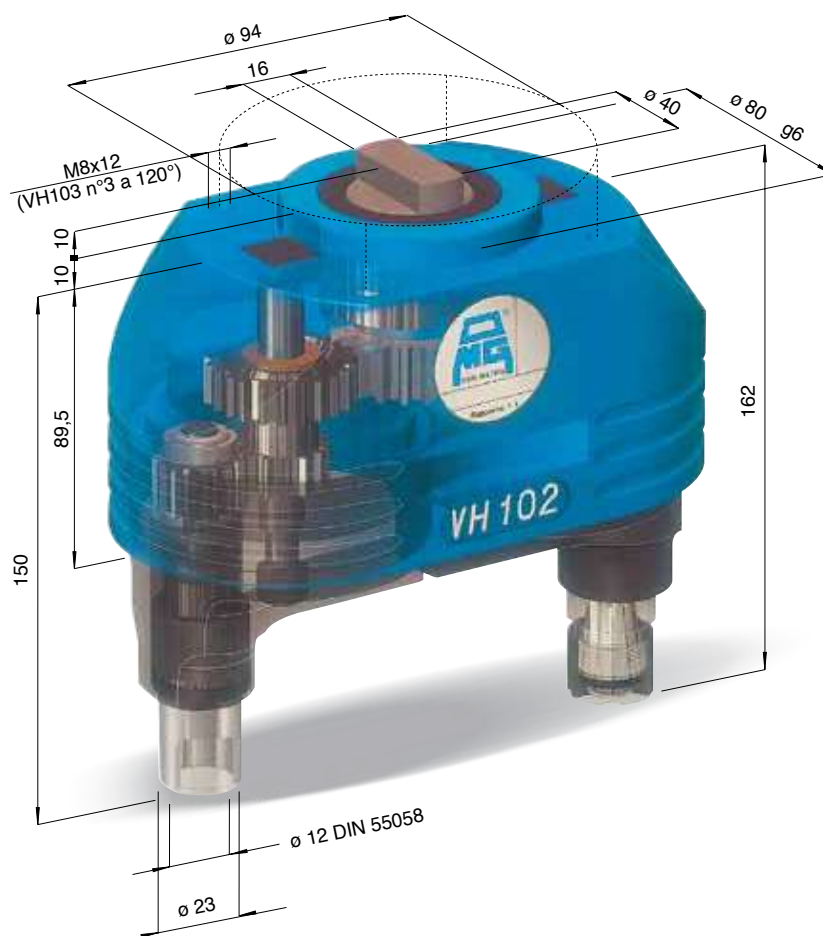


VH10

TESTE MULTIPLE AD ASSI VARIABILI - VARIABLE AXIS HEADS



CAPACITÀ FORATURA
DRILLING CAPACITY



TESTA MODELLO
HEAD TYPE

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

N. MANDRINI
SPINDLES NR.

CAMPO DI LAVORO MIN.
CENTRE DISTANCES MIN.

CAMPO DI LAVORO MAX.
CENTRE DISTANCES MAX.

CAPACITÀ FORATURA
DRILLING CAPACITY

MASCHIATURA
TAPPING

RAPPORTO
RATIO

VELOCITÀ
RPM

PESO
WEIGHT

VH 102

VH 103 L

VH 103

VH 104

VH 102 P

VH 103 LP

VH 103 P

VH 104 P

ER 16 - max Ø 10

VH 102 D

VH 103 LD

VH 103 D

VH 104 D

DIN55058 - Ø 12

2

3

3

4

28

28 + 28

Ø 40

Ø 60

120

74 + 74

Ø 132

Ø 152

ACCIAIO/STILL Rm 500 N/mm² - Ø 10 | GHISA/CAST IRON GG25 - Ø 12

M 8

1 - 1

3.500

3,5 kg

4,9 kg

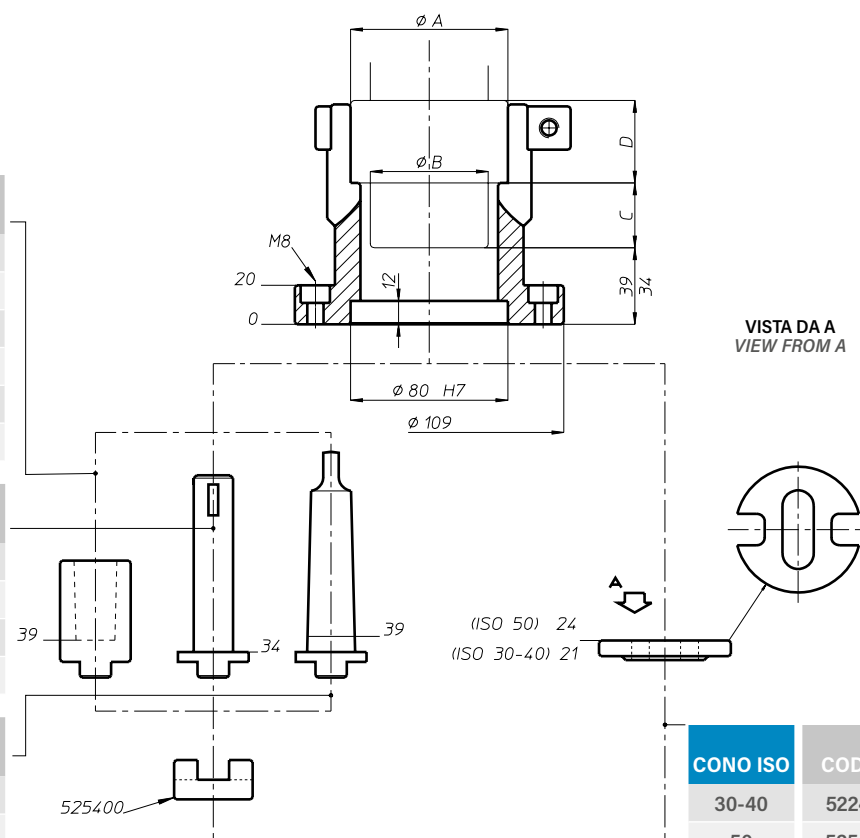
4,9 kg

7,2 kg

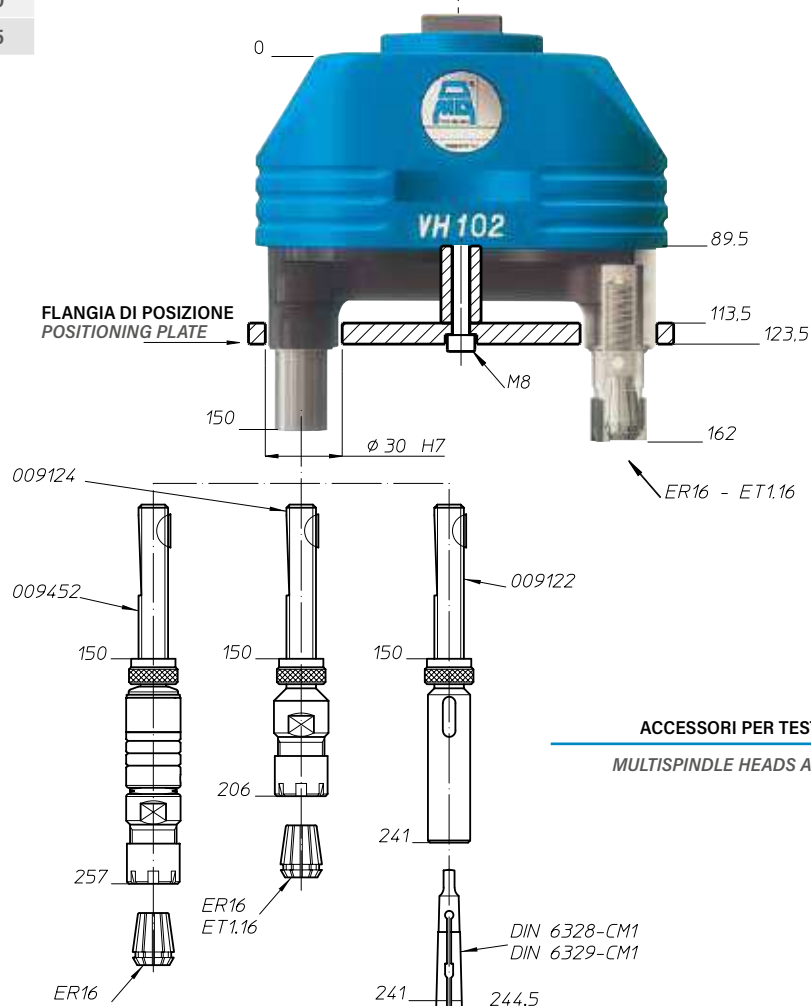
DIN 238	CODICE
B 10	011277
B 12	011278
B 16	011279
B 18	011280
B 22	011281
B 24	011282

DIN 55058	CODICE
16	525405
20	525406
28	525407
36	525408

DIN 228	CODICE
cm 1	011115
cm 2	011120
cm 3	011125
cm 4	011130
cm 5	011135



CONO ISO	CODICE
30-40	522402
50	525403

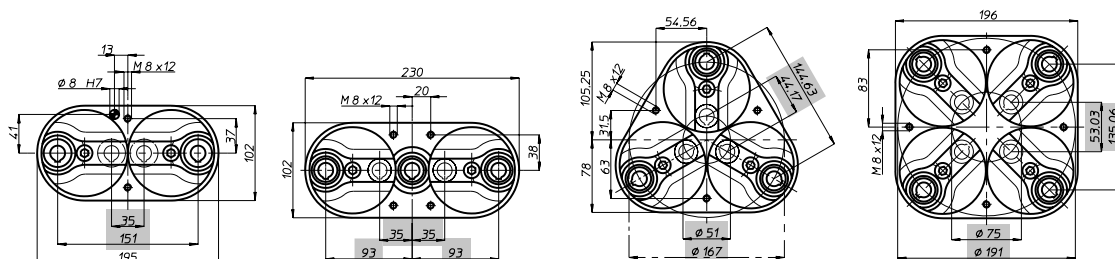
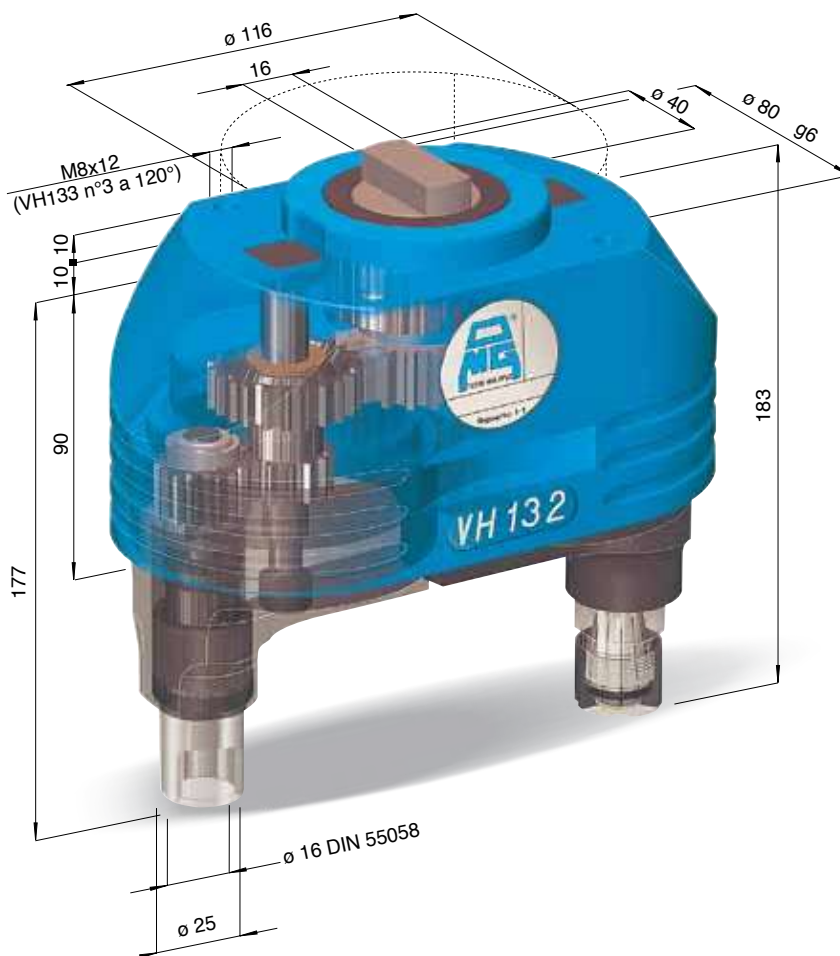




TESTE MULTIPLE AD ASSI VARIABILI - VARIABLE AXIS HEADS

Ø14

CAPACITÀ FORATURA
DRILLING CAPACITY



TESTA MODELLO HEAD TYPE	VH 132	VH 133 L	VH 133	VH 134
ARTICOLO ITEM	VH 132 P	VH 133 LP	VH 133 P	VH 134 P
ATTACCO UTENSILE SPINDLE TYPE	ER 20 - max ø 13			
ARTICOLO ITEM	VH 132 D	VH 133 LD	VH 133 D	VH 134 D
ATTACCO UTENSILE SPINDLE TYPE	DIN55058 - ø 16			
N. MANDRINI SPINDLES NR.	2	3	3	4
CAMPO DI LAVORO MIN. CENTRE DISTANCES MIN.	35	35 + 35	ø 51	ø 75
CAMPO DI LAVORO MAX. CENTRE DISTANCES MAX.	151	93 + 93	ø 167	ø 191
CAPACITÀ FORATURA DRILLING CAPACITY	ACCIAIO/STILL Rm 500 N/mm² - ø 13 GHISA/CAST IRON GG25 - ø 14			
MASCHIATURA TAPPING	M 12			
RAPPORTO RATIO	1 - 1			
VELOCITÀ RPM	3.000			
PESO WEIGHT	5,3 kg	7,2 kg	7 kg	10,8 kg

NOTA:
NOTE:

A.B.C.D. DATI MACCHINA
A.B.C.D. MACHINE FEATURES

VH13

MANICOTTO DI COLLEGAMENTO - CONNECTION COLLAR

FH

BAH

TA,CP

TA

MOx

HT

7-12

VH

TSI/TSX

T

MT-TC-TC3

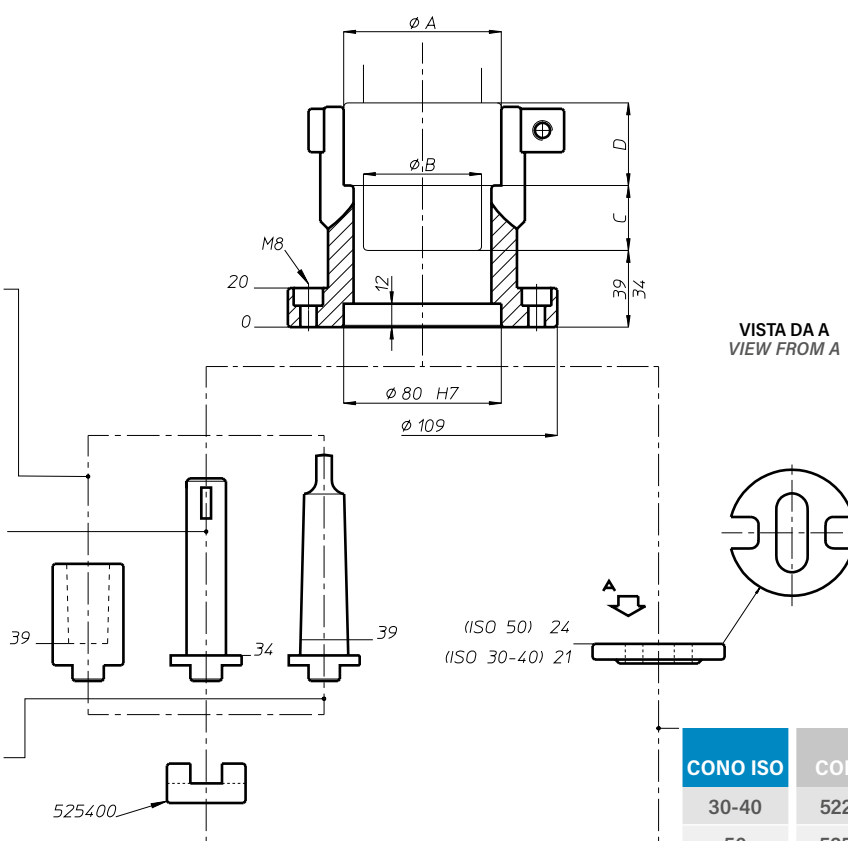


DIN 238	CODICE
B 16	011279
B 18	011280
B 22	011281
B 24	011282

DIN 55058	CODICE
16	525405
20	525406
28	525407
36	525408

DIN 228	CODICE
cm 2	011120
cm 3	011125
cm 4	011130
cm 5	011135

CONO ISO	CODICE
30-40	522402
50	525403

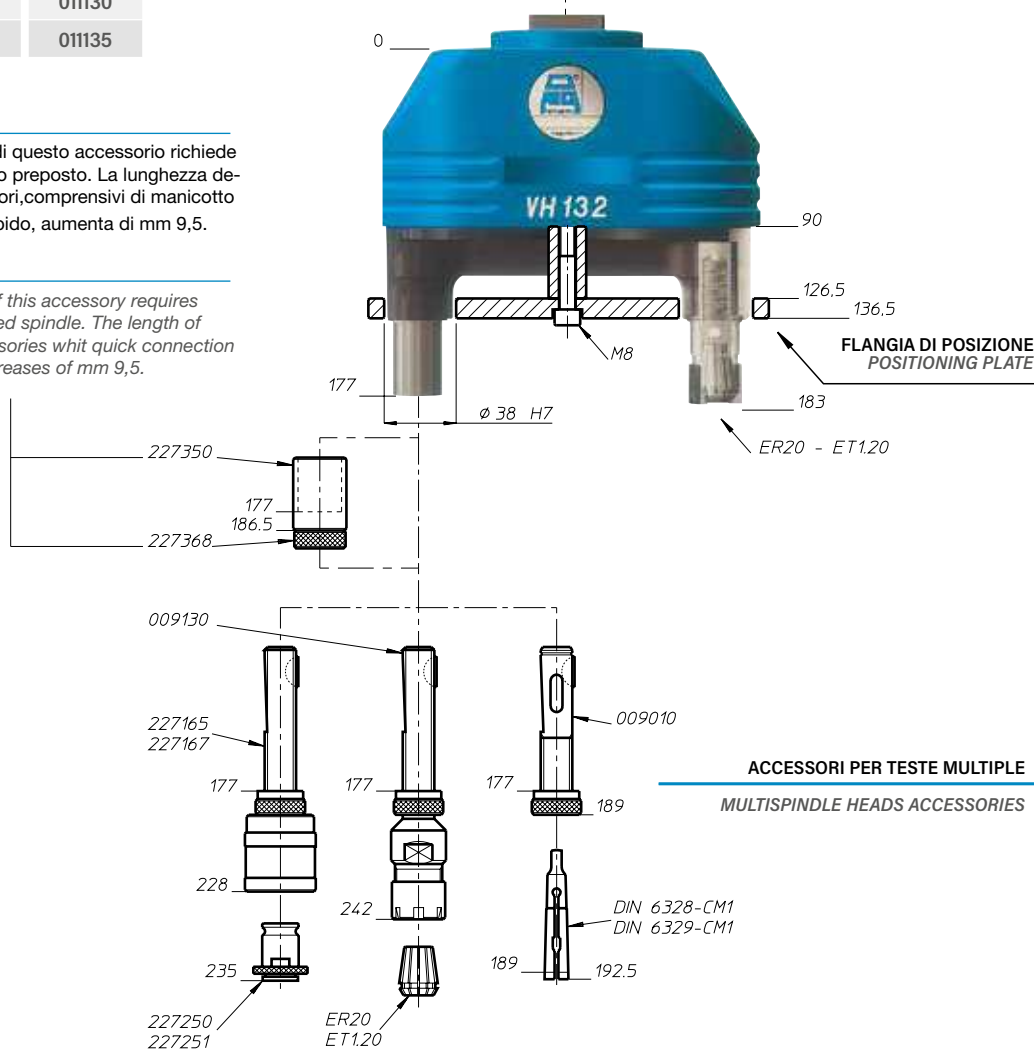


Nota:

L'utilizzo di questo accessorio richiede il mandrino preposto. La lunghezza degli accessori, comprensivi di manicotto attaccorapido, aumenta di mm 9,5.

Note:

The use of this accessory requires prearranged spindle. The length of this accessories whit quick connection sleeve increases of mm 9,5.



ACCESSORI PER TESTE MULTIPLE

MULTISPINDLE HEADS ACCESSORIES

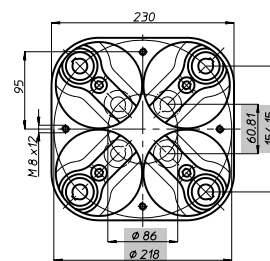
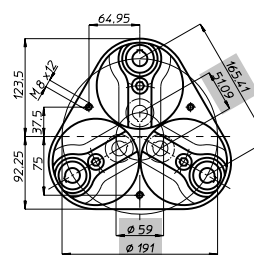
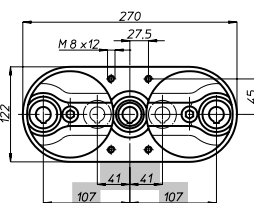
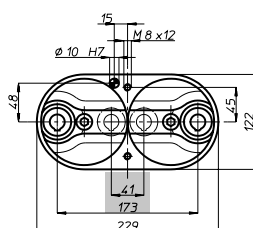
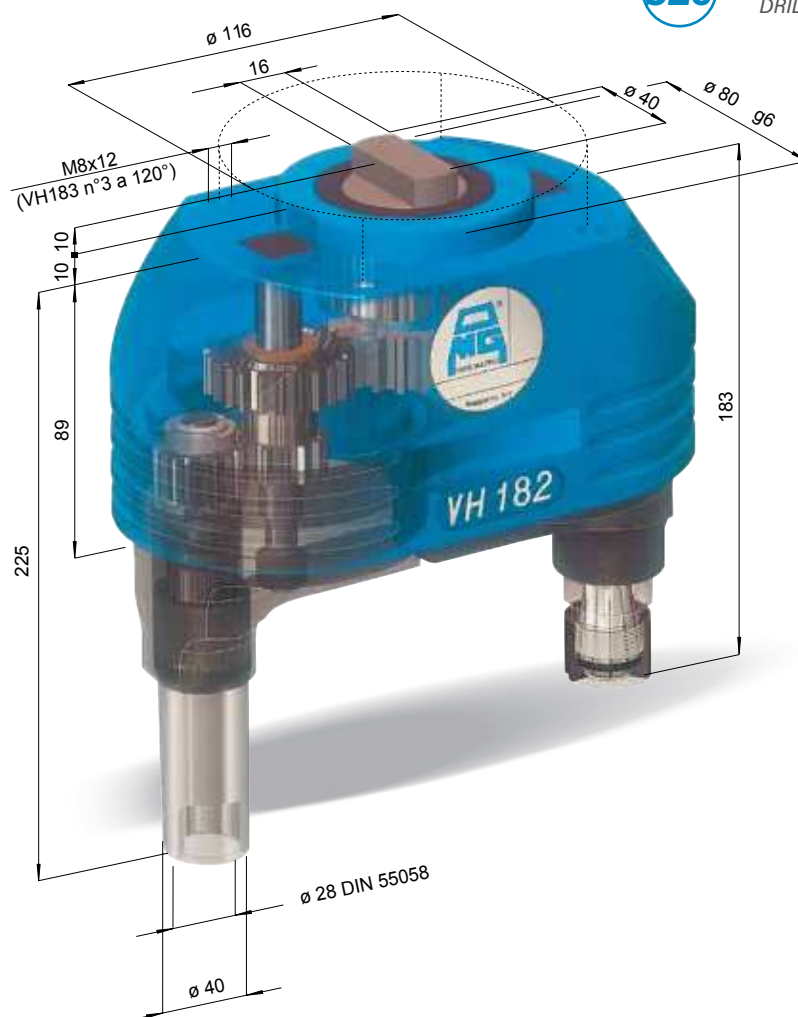


VH18

TESTE MULTIPLE AD ASSI VARIABILI • VARIABLE AXIS HEADS



CAPACITÀ FORATURA
DRILLING CAPACITY



TESTA MODELLO
HEAD TYPE

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

ARTICOLO
ITEM

ATTACCO UTENSILE
SPINDLE TYPE

N. MANDRINI
SPINDLES NR.

CAMPO DI LAVORO MIN.
CENTRE DISTANCES MIN.

CAMPO DI LAVORO MAX.
CENTRE DISTANCES MAX.

CAPACITÀ FORATURA
DRILLING CAPACITY

MASCHIATURA
TAPPING

RAPPORTO
RATIO

VELOCITÀ
RPM

PESO
WEIGHT

VH 182

VH 182 P

VH 182 D

2

41

173

ACCIAIO/STILL Rm 500 N/mm² - ø 18 | GHISA/CAST IRON GG25 - ø 20

M 14

1 - 1

2.500

8,3 kg

VH 183 L

VH 183 LP

VH 183 LD

3

41 + 41

107 + 107

10,75 kg

VH 183

VH 183 P

VH 183 D

3

ø 59

ø 191

12 kg

VH 184

VH 184 P

VH 184 D

4

ø 86

ø 218

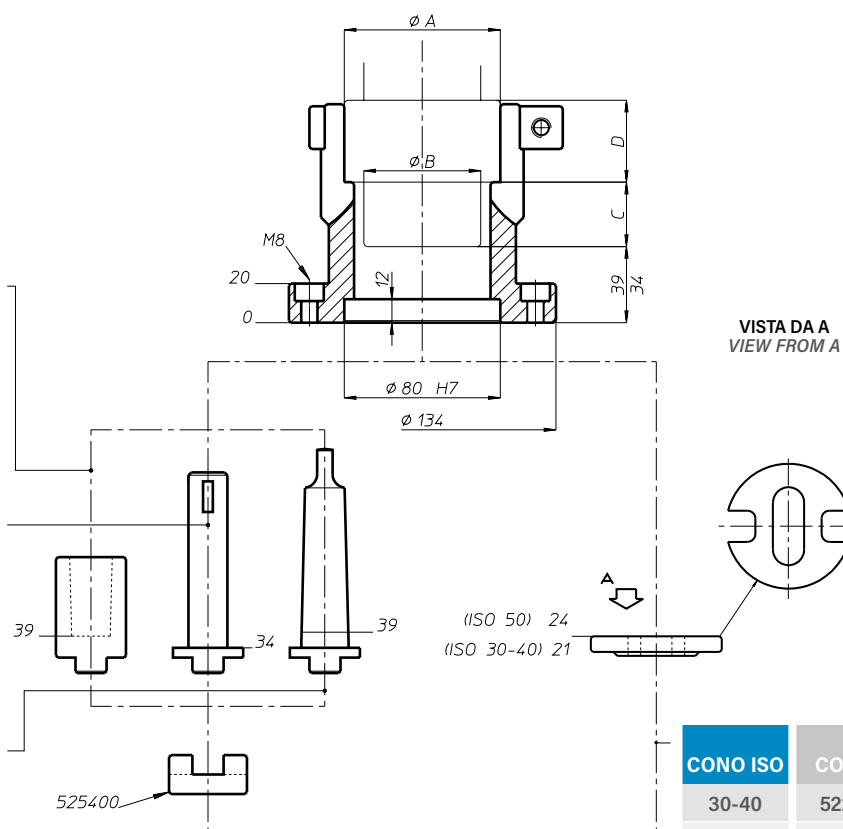
15,75 kg

DIN 238	CODICE
B 16	011279
B 18	011280
B 22	011281
B 24	011282

DIN 55058	CODICE
16	525405
20	525406
28	525407
36	525408

DIN 228	CODICE
cm 3	011125
cm 4	011130
cm 5	011135

CONO ISO	CODICE
30-40	522402
50	525403

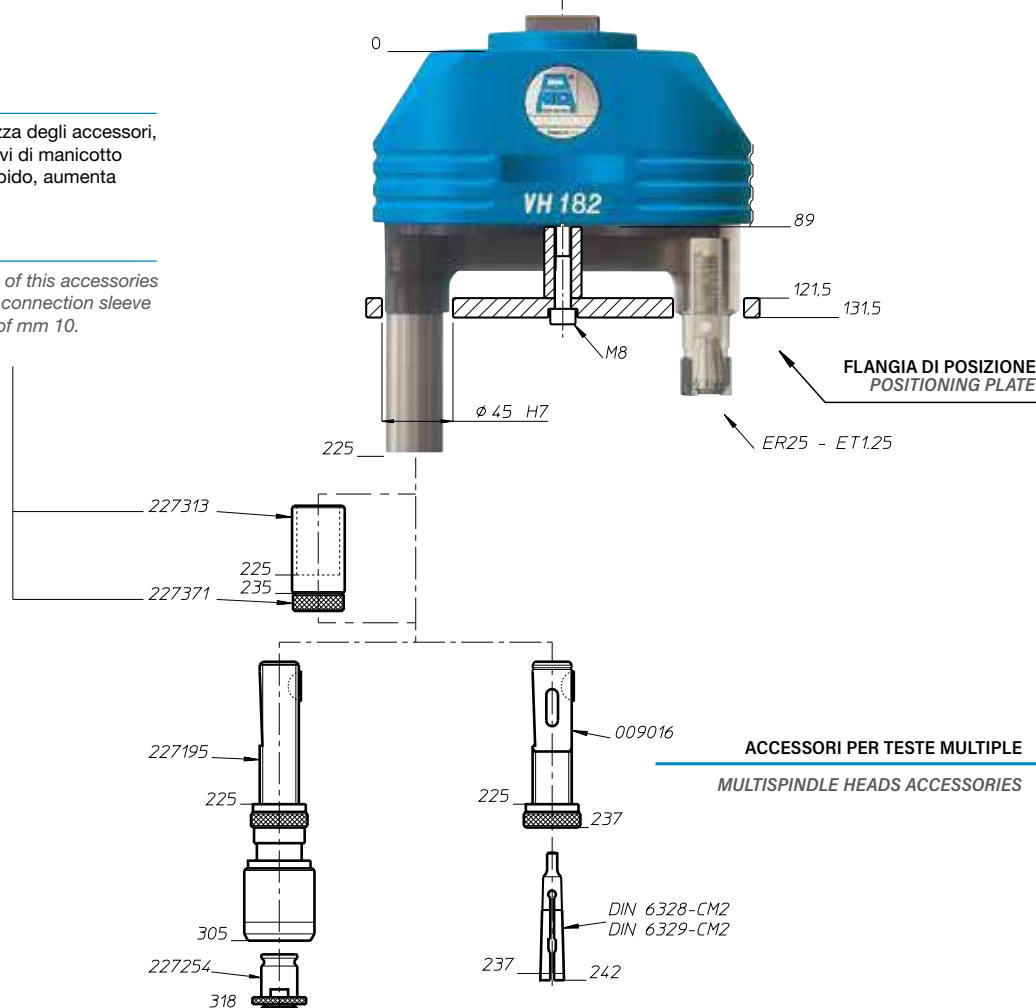


Nota:

La lunghezza degli accessori, comprensivi di manicotto attacco rapido, aumenta di mm 10.

Note:

The length of this accessories
whit quick connection sleeve
increases of mm 10.

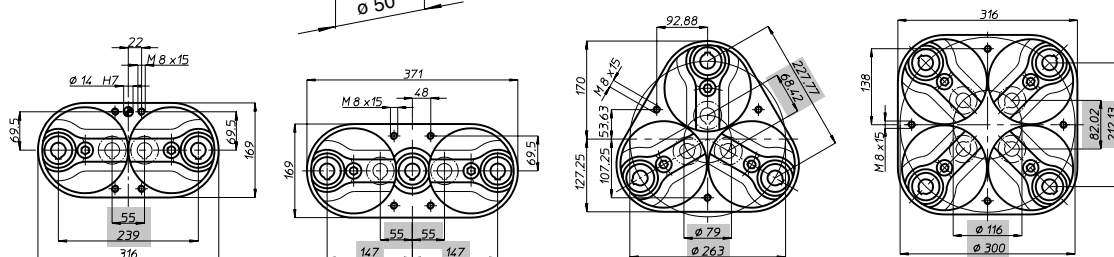
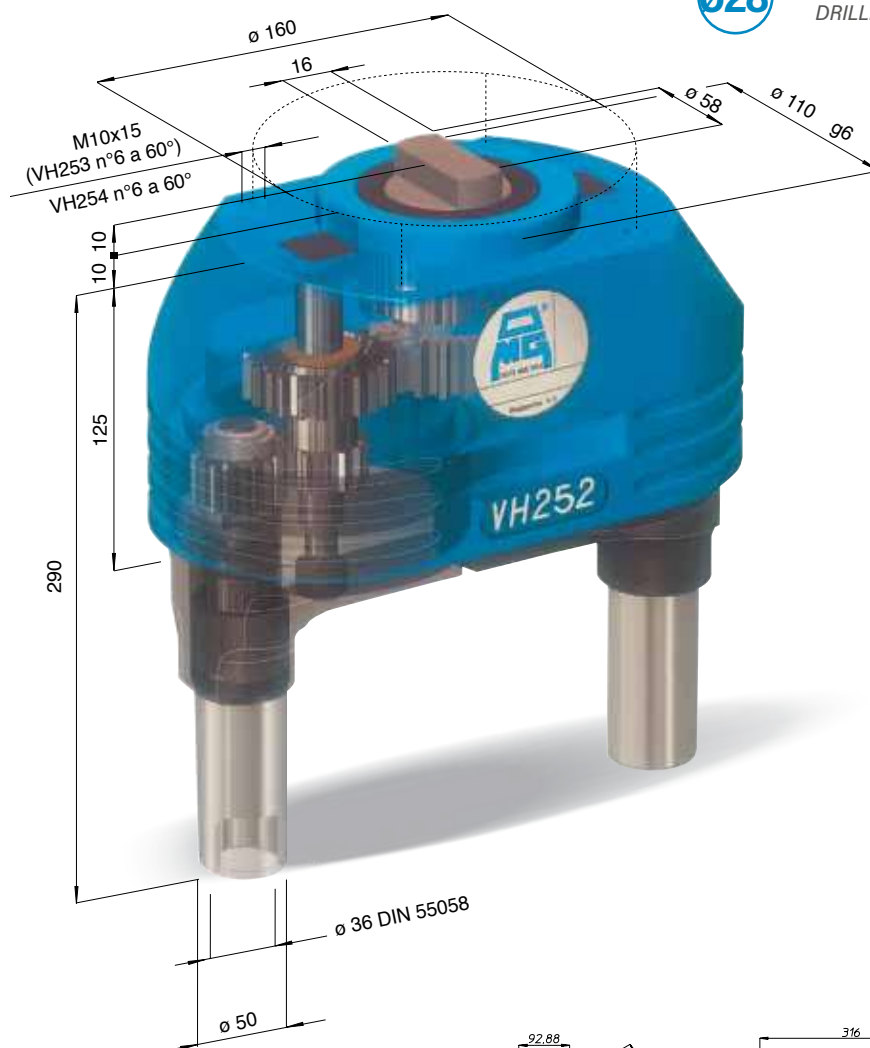




TESTE MULTIPLE AD ASSI VARIABILI • VARIABLE AXIS HEADS

ø28

CAPACITÀ FORATURA
DRILLING CAPACITY



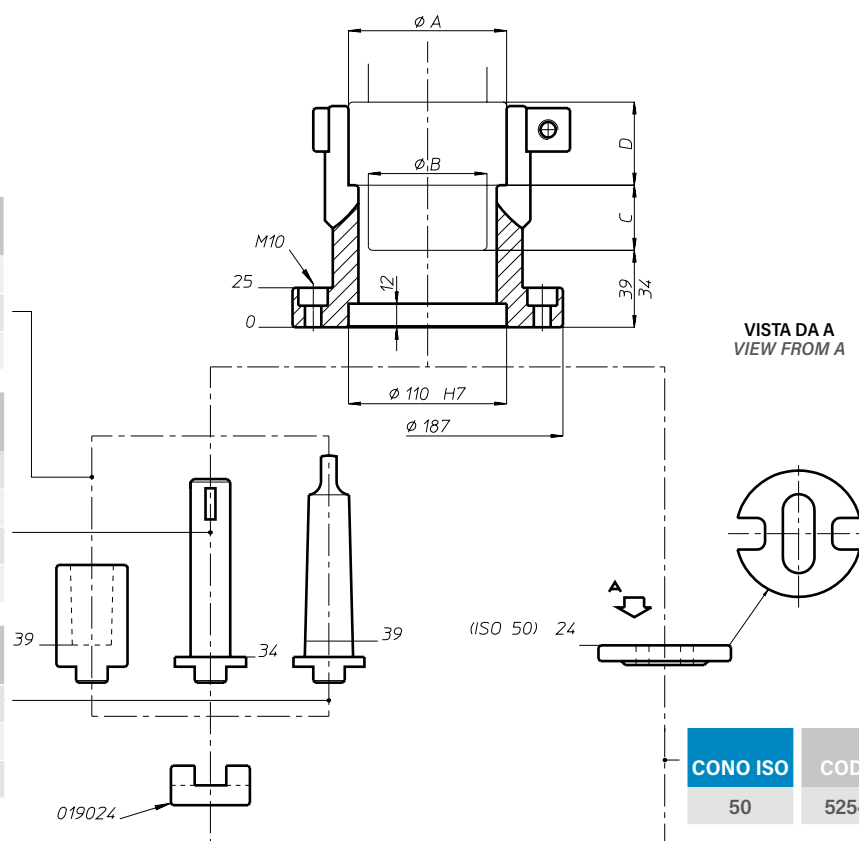
TESTA MODELLO HEAD TYPE	VH 252	VH 253 L	VH 253	VH 254
ARTICOLO ITEM				
ATTACCO UTENSILE SPINDLE TYPE				
ARTICOLO ITEM	VH 252 D	VH 253 LD	VH 253 D	VH 254 D
ATTACCO UTENSILE SPINDLE TYPE	DIN55058 - ø 36			
N. MANDRINI SPINDLES NR.	2	3	3	4
CAMPO DI LAVORO MIN. CENTRE DISTANCES MIN.	55	55 + 55	ø 79	ø 116
CAMPO DI LAVORO MAX. CENTRE DISTANCES MAX.	239	147 + 147	ø 263	ø 300
CAPACITÀ FORATURA DRILLING CAPACITY	ACCIAIO/STILL Rm 500 N/mm² - ø 25 GHISA/CAST IRON GG25 - ø 28			
MASCHIATURA TAPPING	M 20			
RAPPORTO RATIO	1 - 1			
VELOCITÀ RPM	2.000			
PESO WEIGHT	27 kg	32 kg	39 kg	52 kg

DIN 238	CODICE
B 18	011280
B 22	011281
B 24	011282

DIN 55058	CODICE
16	525405
20	525406
28	525407
36	525408

DIN 228	CODICE
cm 3	011125
cm 4	011130
cm 5	011135

CONO ISO	CODICE
50	525403

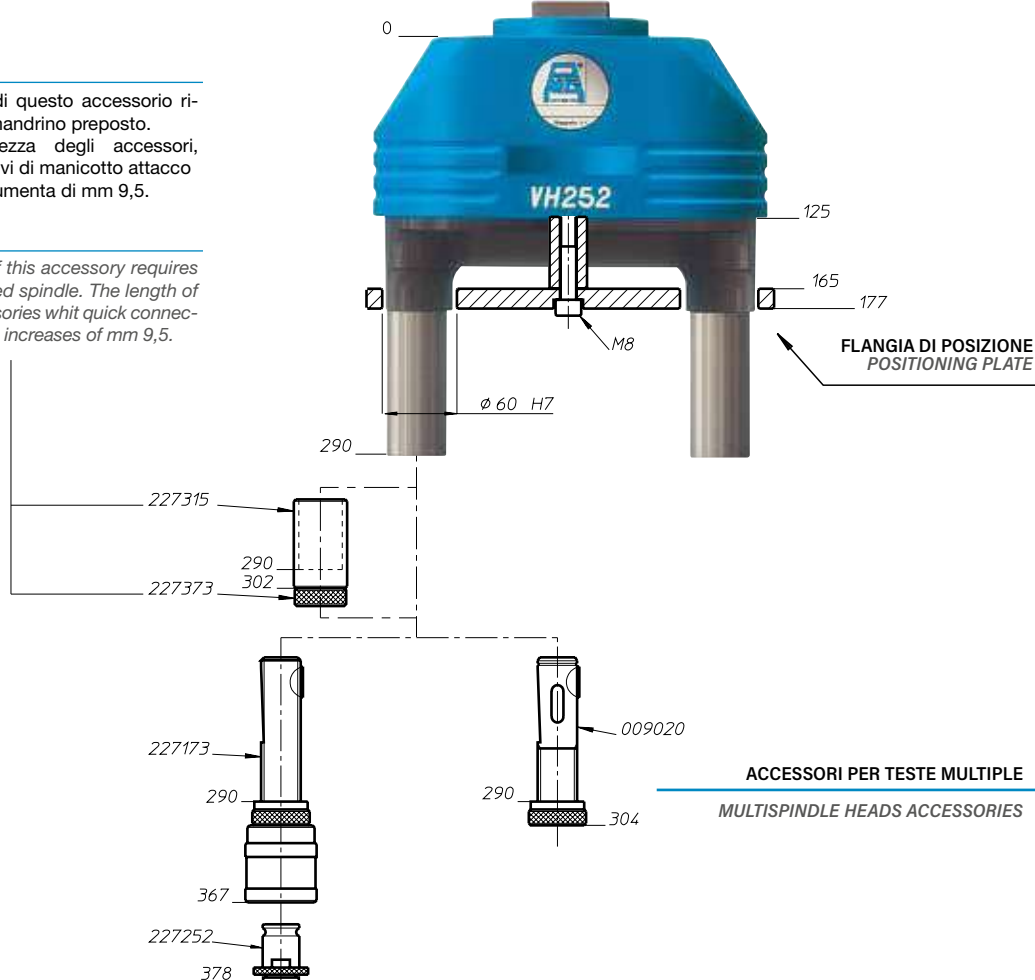


Nota:

L'utilizzo di questo accessorio richiede il mandrino preposto.
La lunghezza degli accessori, comprensivi di manicotto attacco Rapido, aumenta di mm 9,5.

Note:

The use of this accessory requires prearranged spindle. The length of this accessories whit quick connection sleeve increases of mm 9,5.



ACCESSORI PER TESTE MULTIPLE

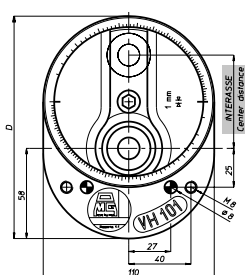


VH101

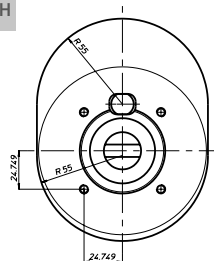
TESTE MULTIPLE AD ASSI VARIABILI • VARIABLE AXIS HEADS

Ø12

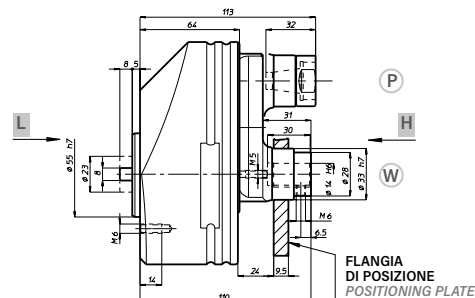
CAPACITÀ FORATURA
DRILLING CAPACITY



VISTA
VIEW H



VISTA
VIEW L



FLANGIA
DI POSIZIONE
POSITIONING PLATE

TESTA MODELLO
HEAD TYPE

VH 101

ARTICOLO
ITEM

VH 101 P

ATTACCO UTENSILE
SPINDLE TYPE

ER 16 - max ø 10

ARTICOLO
ITEM

VH 101W14

ATTACCO UTENSILE
SPINDLE TYPE

ø 14

N. MANDRINI
SPINDLES NR.

1

CAMPO DI LAVORO MIN.
CENTRE DISTANCES MIN.

0

CAMPO DI LAVORO MAX.
CENTRE DISTANCES MAX.

60

D

143

CAPACITÀ FORATURA
DRILLING CAPACITY

ACCIAIO/STILL Rm 500 N/mm² - ø 10 | GHISA/CAST IRON GG25 - ø 12

MASCHIATURA
TAPPING

M 10

RAPPORTO
RATIO

1 - 1

VELOCITÀ
RPM

3.000

PESO
WEIGHT

2,8 kg



18HV

TESTE MULTIPLE AD ASSI VARIABILI • VARIABLE AXIS HEADS

FH

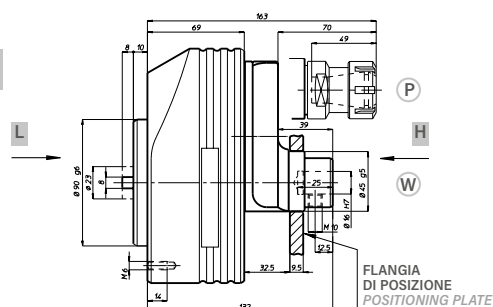
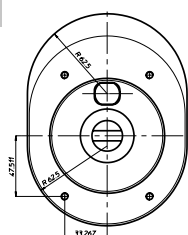
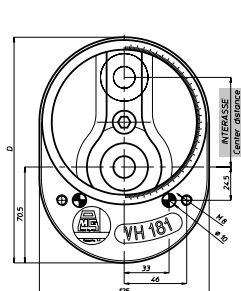
BAH

TA.CP

TA

MOX

IT



7-18

VH

TESTA MODELLO HEAD TYPE	VH 181	VH 181-122
ARTICOLO ITEM	VH 181 P	VH 181-122-P
ATTACCO UTENSILE SPINDLE TYPE	ER 25 - max ø 16	
ARTICOLO ITEM	VH 181 W16	VH 181-122-W 16
ATTACCO UTENSILE SPINDLE TYPE	ø 16	
N. MANDRINI SPINDLES NR.	1	1
CAMPO DI LAVORO MIN.	0	56
CENTRE DISTANCES MAX	66	122
D	166	122
CAPACITÀ FORATURA DRILLING CAPACITY	ACCIAIO/STILL Rm 500 N/mm² - ø 18 GHISA/CAST IRON GG25 - ø 20	
MASCHIATURA TAPPING	M 14	
RAPPORTO RATIO	1 - 1	
VELOCITÀ RPM	2.500	
PESO WEIGHT	4,1 kg	6,4 kg

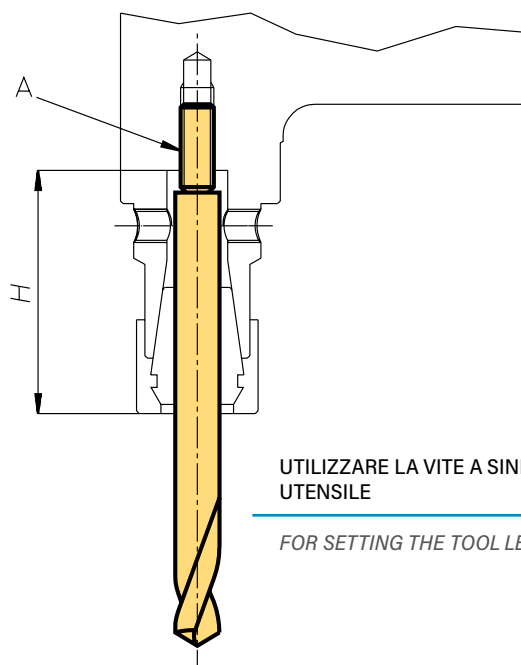
TSI/TSX

MT-TC-TC3





REGOLAZIONI UTENSILI TOOL ADJUSTMENTS



FORATURA CON PINZE ER
DRILLING WITH ER COLLETS

UTILIZZARE LA VITE A SINISTRA PER REGISTRARE L'ALTEZZA
UTENSILE

FOR SETTING THE TOOL LENGHT, USE THE LEFT SCREW A

TESTA MODELLO
HEAD TYPE

H MAX

VH 04

23

VH 06

27

VH 08

44

VH 10

44

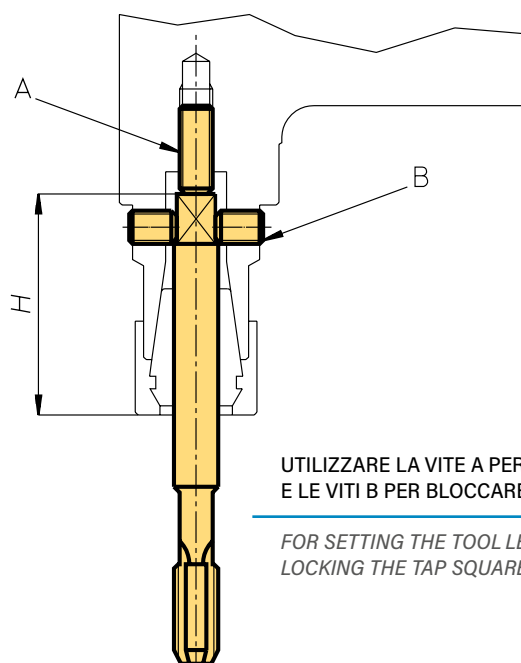
VH 13

52

VH 18

49

NOTA: nella testa VH04 e VH06 la vite A non è presente **NOTE:** in the head VH04 and VH06 there isn't the screw A



MASCHIATURA CON PINZE ER
TAPPING WITH ER COLLETS

UTILIZZARE LA VITE A PER REGISTRARE L'ALTEZZA UTENSILE
E LE VITI B PER BLOCCARE IL QUADRO DEL MASCHIO

FOR SETTING THE TOOL LENGHT, USE THE SCREW A;
LOCKING THE TAP SQUARE WITH THE SCREWS B

TESTA MODELLO
HEAD TYPE

H MAX

VH 04

23

VH 06

27

VH 08

38

VH 10

38

VH 13

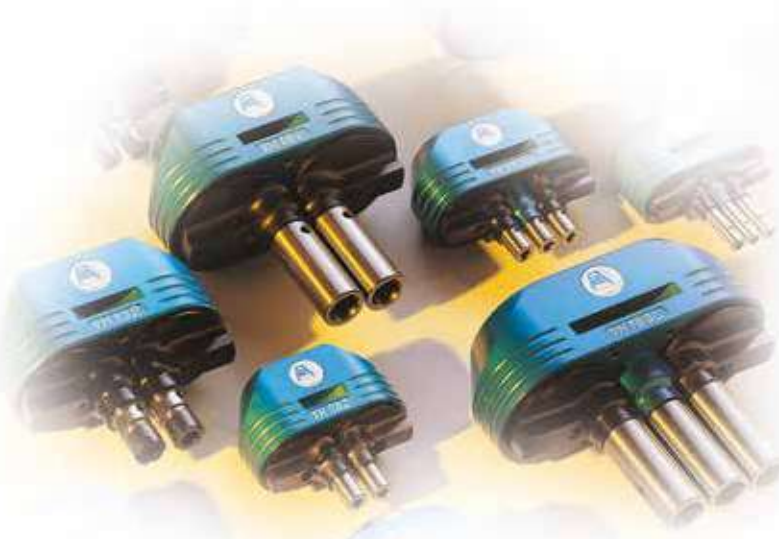
44

VH 18

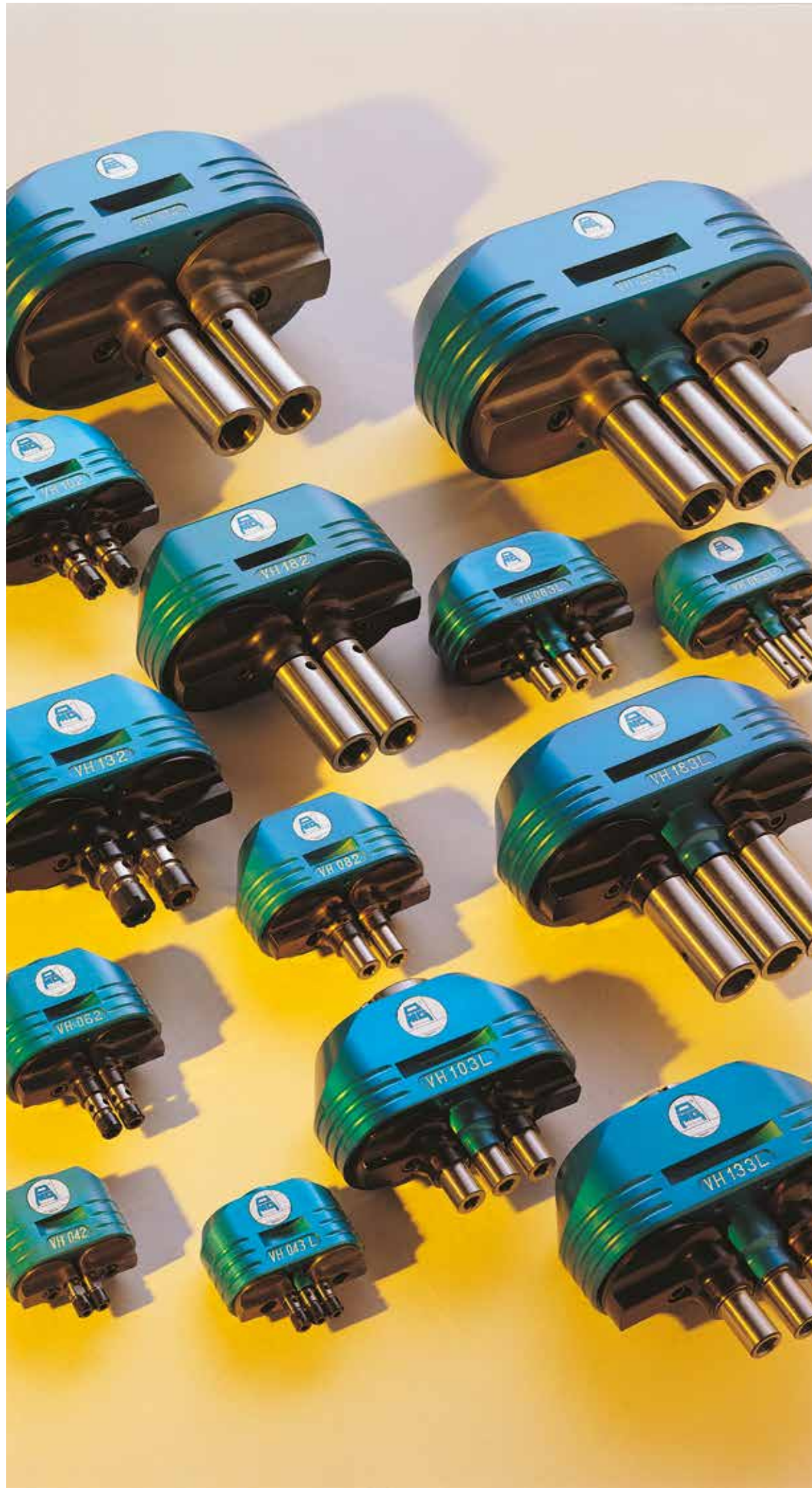
49

NOTA: nella testa VH04 e VH06 la vite A non è presente **NOTE:** in the head VH04 and VH06 there isn't the screw A

VH 042 LP	n° 2 mandrini a pinza, min. 24 max. 84	2 spindles for spring collets min. 24 max. 84
VH 042P R. 1-2	n° 2 mandrini a pinza, min. 12 max. 72 rapp. 1-2	2 spindles for spring collets min. 12 max. 72 ratio 1-2
VH 062 LP	n° 2 mandrini a pinza, min. 35 max. 111	2 spindles for spring collets min. 35 max. 111
VH 062 LD	n° 2 mandrini DIN 55058-8 min. 35 max. 111	2 spindles DIN 55058-8 min. 35 max. 111
VH 062/I	n° 1 mandrino a pinza, min. 8,5 max. 46,5	1 spindle for spring collets min. 8,5 max. 46,5
VH 062P R.1-2	n° 2 mandrini a pinza min. 17 max. 93 rapp. 1-2, 067	2 spindles for spring collets min. 17 max. 93 ratio 1-2, 067
VH 062P CNC40	n° 2 mandrini a pinza min. 17 max. 93 completa di cono ISO 40	2 spindles for spring collets min. 17 max. 93 with shank ISO 40
VH 063P CNC40	n° 3 mandrini a 120° a pinza min. 27 max. 103 completa di cono ISO 40	3 spindles at 120° for spring collets min. 27 max. 103 with shank ISO 40
VH 064P CNC40	n° 4 mandrini a 90° a pinza min. 41 max. 117 completa di cono ISO 40	4 spindles at 90° for spring collets min. 41 max. 117 with shank ISO 40
VH 064/3P	n° 3 mandrini a pinza min. 41 max. 117	3 spindles for spring collets min. 41 max. 117
VH 081 P	n° 1 mandrino a pinza min. 0 max. 42	1 spindle for spring collets min. 0 max. 42
VH 082 LP	n° 2 mandrini a pinza min. 48 max. 132	2 spindles for spring collets min. 48 max. 132
VH 082 LD	n° 2 mandrini DIN 55058 - 10 min. 48 max. 132	2 spindles DIN 55058 - 10 min. 48 max. 132
VH 082 P R. 1-2	n° 2 mandrini a pinza min. 24 max. 108 rapp. 1-2, 067	2 spindles for spring collets min. 24 max. 108 ratio 1-2
VH 082P CNC 40	n° 2 mandrini a pinza min. 24 max. 108 completa di cono ISO 40	2 spindles for spring collets min. 24 max. 108 with shank ISO 40
VH 082PFM	n° 2 mandrini a pinza min. 24 max. 108 fora/maschia	2 spindles for spring collets min. 24 max. 108 drilling and tapping
VH 083 LP CNC40	n° 3 mandrini in linea a pinza min. 24+24 max. 66+66 completa di cono ISO 40	3 spindles on line for spring collets min. 24+24 max. 66+66 with shank ISO 40
VH 084P CNC 40	n° 4 mandrini a pinza min. 53,5 max. 137,5 completa di cono ISO 40	4 spindles for spring collets min. 53,5 max. 137,5 with shank ISO 40
VH 084/3P	n° 3 mandrini a pinza min. 53,5 max. 137,5	3 spindles for spring collets min. 53,5 max. 137,5
VH 102 LP	n° 2 mandrini a pinza min. 56 max. 148	2 spindles for spring collets min. 56 max. 148
VH 102 LD	n° 2 mandrini DIN 55058-12 min. 56 max. 148	2 spindles DIN 55058-12 min. 56 max. 148
VH 102 P CNC 40	n° 2 mandrini a pinza min. 28 max. 120 completa di cono ISO 40	2 spindles for spring collets min. 28 max. 120 with shank ISO 40
VH 102P R. 1-2	n° 2 mandrini a pinza min. 28 max. 120 rapporto 1-2	2 spindles for spring collets min. 28 max. 120 ratio 1-2
VH 102 PFM	n° 2 mandrini a pinza min. 28 max. 120 fora/maschia	2 spindles for spring collets min. 28 max. 120 drilling and tapping
VH 102-220 P	n° 2 mandrini a pinza min. 128 max. 220	2 spindles for spring collets min. 128 max. 220
VH 102-300 P	n° 2 mandrini a pinza min. 208 max. 300	2 spindles for spring collets min. 208 max. 300
VH 104D R.1-2	n° 4 mandrini a 90° DIN 55058-12 min. 60 max. 152 rapp. 1-2	4 spindles at 90° DIN 55058-12 min. 60 max. 152 ratio 1-2
VH 104P CNC50	n° 4 mandrini a 90° a pinza min. 60 max. 152 completa di cono ISO 50	4 spindles at 90° for spring collets min. 60 max. 152 with shank ISO 50
VH 132 LP	n° 2 mandrini a pinza min. 70 max. 186	2 spindles for spring collets min. 70 max. 186
VH 132 LD	n° 2 mandrini DIN 55058-16 min. 70 max. 186	2 spindles DIN 55058-16 min. 70 max. 186
VH 132D CNC50	n° 2 mandrini DIN 55058-16 min. 35 max. 151 completa di cono ISO 50	2 spindles DIN 55058-16 min. 35 max. 151 with shank ISO 50
VH 132P CNC50	n° 2 mandrini a pinza min. 35 max. 151 completa di cono ISO 50	2 spindles for spring collets min. 35 max. 151 with shank ISO 50
VH 132 W12	n° 2 mandrini foro cilindrico diam. 12 min. 35 max. 151	2 spindles diam. 12 min. 35 max. 151
VH 132-260 D	n° 2 mandrini DIN 55058-16 min. 144 max. 260	2 spindles DIN 55058-16 min. 144 max. 260
VH 134P CNC50	n° 4 mandrini a 90° a pinza, min. 75 max. 191 completa di cono ISO 50	4 spindles at 90° for spring collets, min. 75 max. 191 with shank ISO 50
VH 181 R 1-2	n° 1 mandrino diam. 16 min. 16,5 max. 82,5 rapp. 1-2	1 spindle diam. 16, min. 16,5 max. 82,5 ratio 1-2
VH 182 LP	n° 2 mandrini a pinza, min. 82 max. 214	2 spindles for spring collets, min. 82 max. 214
VH 182 LD	n° 2 mandrini DIN 55058-28 min. 82 max. 214	2 spindles DIN 55058-28 min. 82 max. 214
VH 182 W16	n° 2 mandrini foro cilindrico diam. 16 min. 41 max. 173	2 spindles diam 16, min. 41 max. 173
VH 182 P CNC 50	n° 2 mandrini a pinza, min. 41 max. 173 completa di cono ISO 50	2 spindles for spring collets, min. 41 max. 173 with shank ISO 50
VH 182 P R.1-2	n° 2 mandrini a pinza, min. 41 max. 173 rapp. 1-2	2 spindles for spring collets, min. 41 max. 173 ratio 1-2
VH 182D R. 1-2	n° 2 mandrini DIN 55058-28 min. 41 max. 173 rapp. 1-2	2 spindles DIN 55058-28, min. 41 max. 173 ratio 1-2
VH 183 L W16	n° 3 mandrini foro cilindrico diam. 16 min. 41+41 max. 107+107	3 spindles diam. 16 min. 41+41 max. 107+107
VH 252 LD	n° 2 mandrini DIN 55058-36 min. 110 max. 294	2 spindles DIN 55058-36, min. 110 max. 294







VH

GALLERY

FH

BAH

TA.CP

TA

MOx

HT

7-22

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

MOx

HT

8-1

VH

TSI/TSX

T

MT-TC-TC3



SERIE

TS/
TSX

Le teste multiple ad assi variabili serie TSI-TSX progettate a due mandrini paralleli o convergenti, sono adatte in lavorazioni di fresatura ed in particolare per la smussatura dei denti di ingranaggi.

Varie sono le caratteristiche tecniche delle teste multiple ad assi variabili serie TSI-TSX e sintetizzandone solamente alcune possiamo dire che:

- il corpo è in lega di alluminio;
- i supporti mandrino in ghisa e la loro regolazione avviene con un'unica azione dell'operatore;
- i mandrini possono ruotare concordi o discordi e la lubrificazione della testa è a grasso.

La loro realizzazione si è resa possibile in virtù dell'esperienza acquisita nella costruzione di teste multiple, della conoscenza dei processi produttivi e dalla capacità di saper proporre, per ogni particolare esigenza, prodotti qualificati.

The adjustable multispindle heads TSI and TSX series with two parallel or convergent spindles are suitable to mill and to chamfering the gear teeth. This is a solid, compact, reliable unit that also has a nice look.

The adjustable multispindle heads TSI and TSX series have many different features among which:

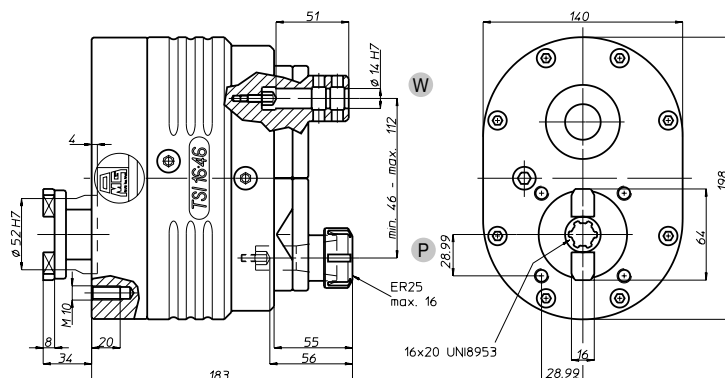
- an aluminum body;
- cast iron spindle support, simply and easily adjusted by the operator;
- the spindles may turn in the same direction or in opposite direction and the adjustment of both spindles is achieved thanks to a single act. The tool connection may be cylindrical or with spring collets. The lubrication is by long life grease.

The production of our twin adjustable multispindle head was made possible thanks to the experience acquired in the construction of multispindle heads, our knowledge of production process and our ability to know how to cater for individual requirements with qualified products.



TSI 1646

TESTA DI FRESATURA • TWIN SPINDLE MILLING HEAD



TSI 16-46C-P
TSI 16-46C-W



12 KG



1-2



3000

TSI 16-46D-P
TSI 16-46D-W



12 KG



1-2



3000

PESO
WEIGHT

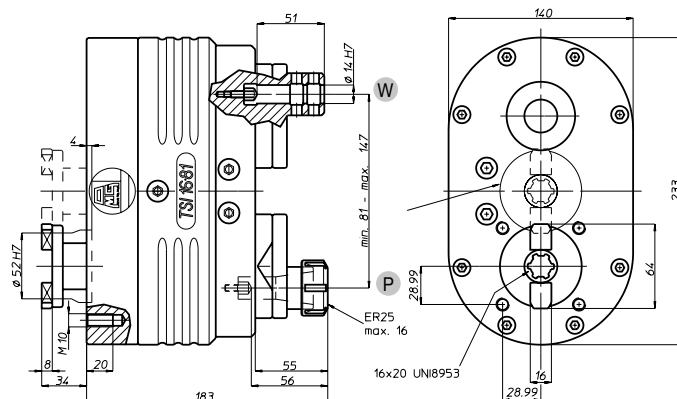
ROTAZIONE
MANDRINI
SPINDLE
ROTATION

RAPPORTO
RATIO

GIRI MAX
RPM

TSI 1681

TESTA DI FRESATURA • TWIN SPINDLE MILLING HEAD



TSI 16-81C-P
TSI 16-81C-W



13,5 KG



1-2



3000

TSI 16-81D-P
TSI 16-81D-W



13,5 KG



1-2



3000

PESO
WEIGHT

ROTAZIONE
MANDRINI
SPINDLE
ROTATION

RAPPORTO
RATIO

GIRI MAX
RPM

PE
SO
WEIGHT

ROTAZIONE
MANDRINI
SPINDLE
ROTATION

RAPPORTO
RATIO

RPM MAX
RPM

TSI 16-180C-P
TSI 16-180C-W



22,5 KG



1-1



3000

TSI 16-180D-P
TSI 16-180D-W



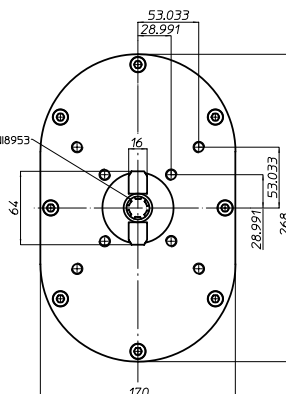
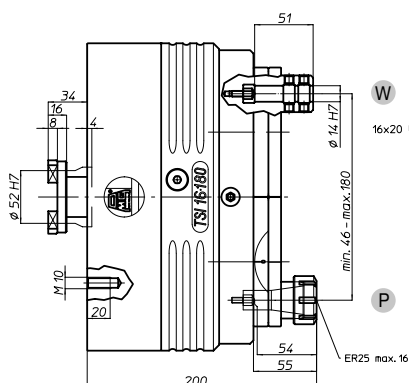
22,5 KG



1-1



3000



TSI 16180

TESTA DI FRESATURA • TWIN SPINDLE MILLING HEAD

FH

BAH

TA.CP

TA

MOX

HT

8-4

PE
SO
WEIGHT

ROTAZIONE
MANDRINI
SPINDLE
ROTATION

RAPPORTO
RATIO

RPM MAX
RPM

TSI 16-210C-P
TSI 16-210C-W



22,5 KG



1-1



3000

TSI 16-210D-P
TSI 16-210D-W



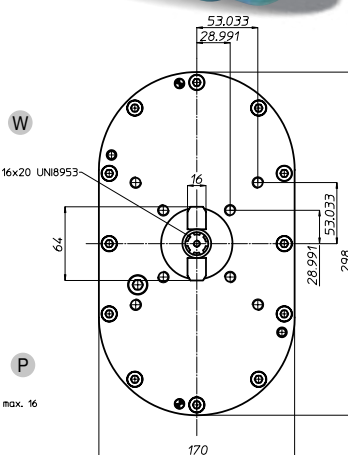
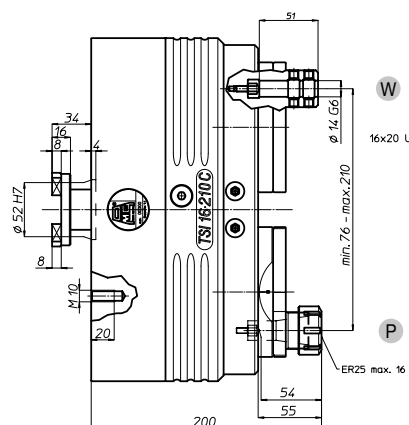
22,5 KG



1-1



3000



TSI 16210

TESTA DI FRESATURA • TWIN SPINDLE MILLING HEAD

VH

TSI/TSX

T

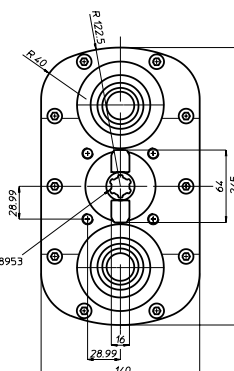
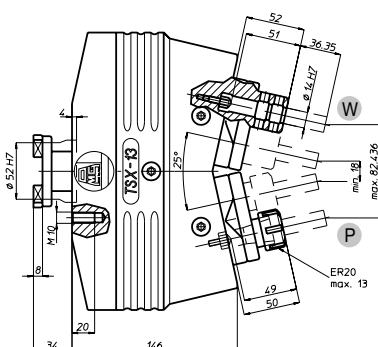
MT-TC-TC3





TSX13C

TESTA DI FRESATURA • TWIN SPINDLE MILLING HEAD



TSX 13C-P
TSX 13C-W



15,5 KG



ROTAZIONE
MANDRINI
SPINDLE
ROTATION

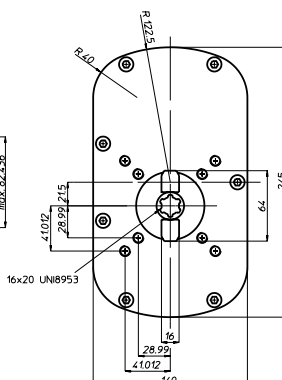
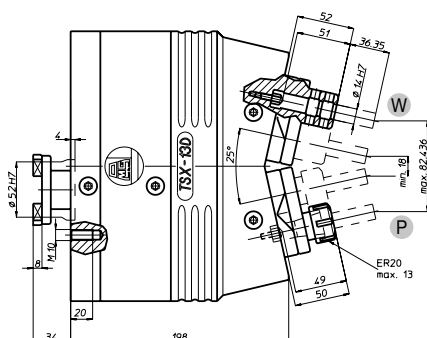
RAPPORTO
RATIO

1-1



GIRI MAX
RPM

3000



TSX 13D-P
TSX 13D-W



21 KG



ROTAZIONE
MANDRINI
SPINDLE
ROTATION

RAPPORTO
RATIO

1-



GIRI MAX
RPM

3000

PE SO
VEIGHT

OTAZIONE
ANDRINI
PINDLE
ROTATION

APPOR TO
ATIO

IRI MAX
PM

TSI 16-280C-P
TSI 16-280C-W



22,5 KG



1-1



3000

TSI 16-280D-P
TSI 16-280D-W



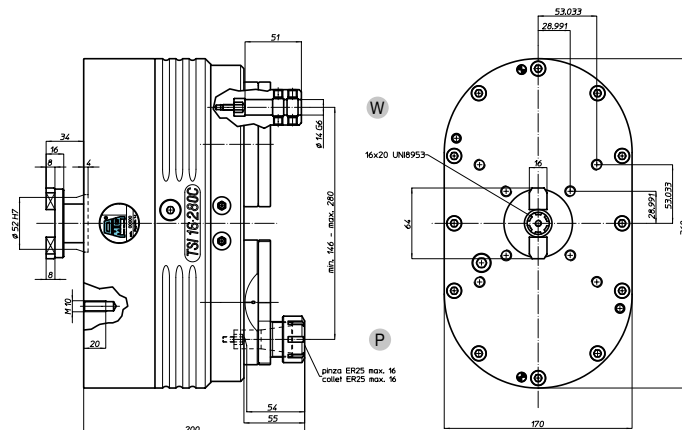
22,5 KG



1-1



3000



TSI 16280

TESTA DI FRESATURA - TWIN SPINDLE MILLING HEAD

FH

BAH

TA.CP

TA

MOx

HT

8-6

TFS 23801

Testa di spuntatura con
angolo di 34°
*Fixed twin-spindle
milling head
with 34° from the axis*



TS 31588

Testa di spuntatura ad assi
variabili, interasse min. 55
max 205,24
*Adjustable twin multispindle
milling head, centre distance
min. 55 max 205,24*



TFS 20205

Testa di spuntatura ad
assi sghembi, angolo
di 25°
*Fixed twin-spindle
milling head
with skew axis at 25°*



TFS 14005

Testa di spuntatura ad assi
fissi e paralleli, distanza
mm 40
*Fixed twin-spindle milling
head, axis distance mm 40*



ESECUZIONI SPECIALI
SPECIAL EXECUTIONS

VH

TSI/TSX

T

MT-TC-TC3





SERIE



FH

BAH

TA.CP

TA

MOx

HT

9-1

VH

TSI/TSX

T

MT-TC-TC3





Le teste multiple a giunti universali sono in produzione dal 1961 e confermano tutt'oggi la validità dell'idea lasciando inalterate le caratteristiche salienti:

- possibilità di utilizzo sia in foratura che in maschiatura
- possibilità di posizionamento nello spazio dei gruppi mandrino, vincolato soltanto dalle dimensioni dello stesso e dall'area di lavoro
- adattabilità a tutti i tipi di trapani o a soluzioni speciali
- vantaggiose soprattutto quando è necessario modificare di frequente gli interassi dei fori
- ampia gamma di modelli per le diverse esigenze

Sono disponibili a magazzino le seguenti versioni:

- serie T-TS a base circolare per l'esecuzione di massimo 12 fori; massima capacità di foratura diam. mm 22, interasse minimo mm 15 e massimo mm 350
- serie TL a base lineare per l'esecuzione di massimo 12 fori; massima capacità di foratura diam. mm 22, interasse minimo mm 17 e massimo mm 610
- serie TR a base rettangolare per l'esecuzione di massimo 16 fori; massima capacità di foratura diam. mm 22, interasse minimo mm 32 e massimo mm 395x345
- serie TM-TRM a base circolare e rettangolare per l'esecuzione di massimo 26 fori; grazie alle loro caratteristiche tecniche possono eseguire i più diversi schemi di foratura e maschiatura su macchine con potenza adeguata.

The universal joint multispindle heads have been in production since 1961; over the years they have been modified and updated, without however refuting the goodness of the idea and always leaving major features unaltered:

- *possibility of using for both drilling and tapping*
- *possibility of multi-positioning the spindle units, restricted only by the size of the spindle and of the working area*
- *suitable for all types of drills or for special solutions*
- *especially useful when the need arises to frequently change the hole centre distances*
- *broad range of models for different requirements*

The following versions are in stock:

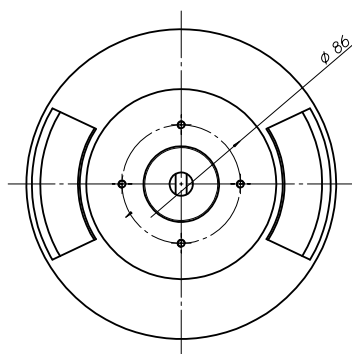
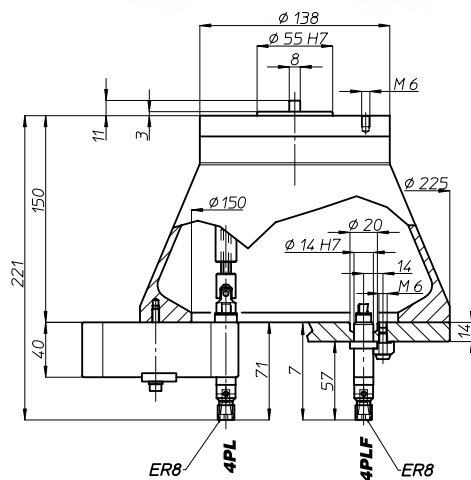
- *series T-TS with round base for making up to 12 holes; max drilling capacity dia. 22 mm, minimum centre distance 15 mm, max centre distance 350 mm*
- *series TL with linear base for making up to 12 holes; max drilling capacity dia. 22 mm, minimum centre distance 17 mm, max centre distance 610 mm*
- *series TR with rectangular base for making up to 16 holes; max drilling capacity dia. 22 mm, minimum centre distance 32 mm, max centre distance 395x345 mm*
- *series TM-TRM with round and rectangular base for making up to 26 holes; thanks to their technical features, they are able to execute a series of different drilling and tapping patterns on machines of adequate power.*





T2

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD



08



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1



RAPPORTO
RATIO

4



CAPACITÀ
DI FORATURA
DRILLING CAPACITY

M4



MASCHIATURA
TAPPING

P: ER8



ATTACCO UTENSILE
TYPE OF SPINDLE

3,25 KG



PESO
GRUPPO TESTA
HEAD WEIGHT

0,3 KG



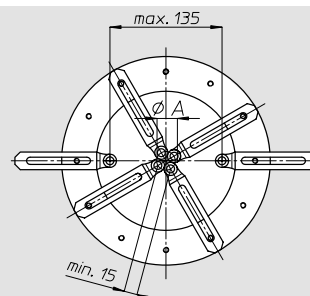
PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT

Ø A

N° MANDRINI
N° SPINDLES

15 17,5 21,5 26 30 35 39,5

2 3 4 5 6 7 8



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

T2

PRESE DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

08

PRESE DI MOTO
DRIVES

R

CAPACITÀ FORATURA
DRILLING CAPACITY

R

4

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

SERIE LEGGERA
LIGHT SERIES

P

ER 8

L

ASTUCCIO
FIXED SPINDLE

F

CODICE
MANDRINO
SPINDLE CODE

N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 4
ghisa / cast iron: GG25 5

MASCHIATURA
TAPPING



M4

ATTACCO UTENSILE
TYPE OF SPINDLE



P: ER11

PESO
GRUPPO TESTA
HEAD WEIGHT

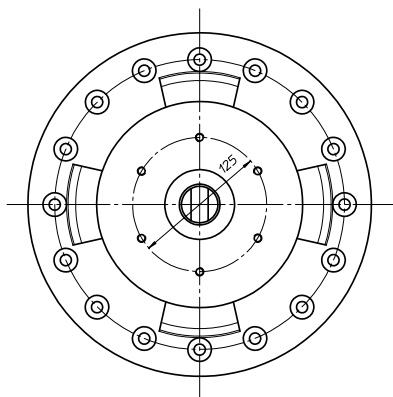
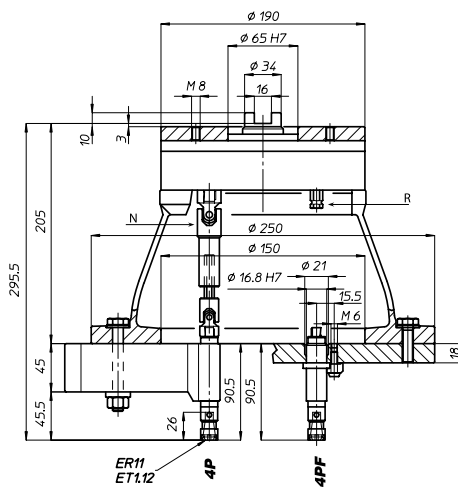


9,5 KG

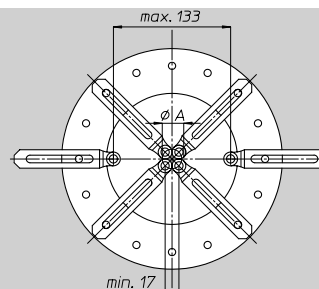
PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



1 KG



Ø A	20	24,5	29,5	34,5	39,5	45
N° MANDRINI N° SPINDLES	3	4	5	6	7	8



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE
T4

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESE DI MOTO
DRIVES

08

PRESA DI MOTO
ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

TRASMISSIONE
NORMALE
STANDARD TRANSMISSION

N

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION
QUICK CONNECTION

R

CAPACITÀ FORATURA
DRILLING CAPACITY

4

PINZA

P

ASTUCCIO
FIXED SPINDLE

F

CODICE
MANDRINO
SPINDLE CODE

T4

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

9-4

VH

TSI/TSX

T

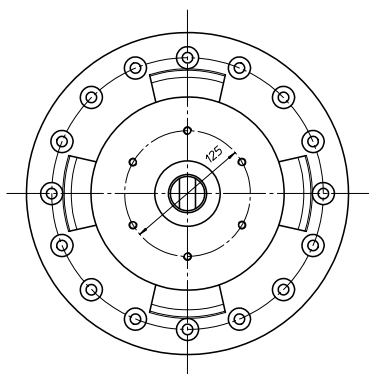
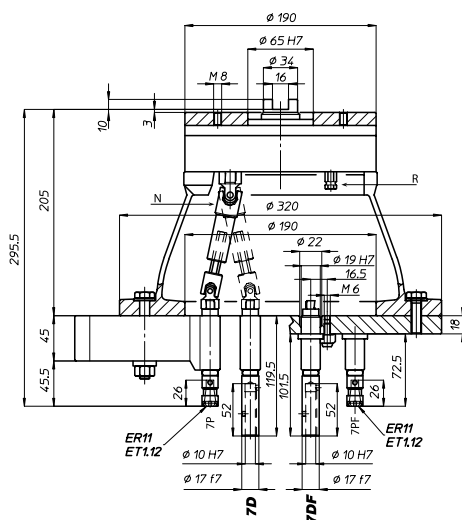
MT-TC-TC3





T7

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD



08-12



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1



RAPPORTO
RATIO

acciaio / still R=500 N/mm² 6

ghisa / cast iron: GG25 7



CAPACITÀ
DI FORATURA
DRILLING CAPACITY

M5



MASCHIATURA
TAPPING

D: DIN 55058 Ø10

P: ER11



ATTACCO UTENSILE
TYPE OF SPINDLE

10 KG



PESO
GRUPPO TESTA
HEAD WEIGHT

1,1 KG



PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT

Ø A

N° MANDRINI
N° SPINDLES

23,5

28,5

34,5

40,5

46,5

52,5

59

65,5

71,5

77,5

3

4

5

6

7

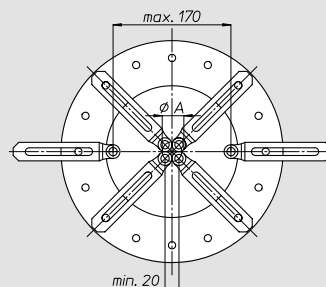
8

9

10

11

12



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

T7

08

PRESE DI MOTO NORMALE
STANDARD DRIVE

N

R

12

PRESE DI MOTO
DRIVES

PRESE DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

CAPACITÀ FORATURA
DRILLING CAPACITY

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

R

7

P

D

F

DIN 55058

PINZA

ASTUCCIO

FIXED SPINDLE

TRASMISSIONE ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

CODICE
MANDRINO
SPINDLE CODE

N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08-12

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 8
ghisa / cast iron: GG25 10

MASCHIATURA
TAPPING



M6

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø12
P: ER16

PESO
GRUPPO TESTA
HEAD WEIGHT

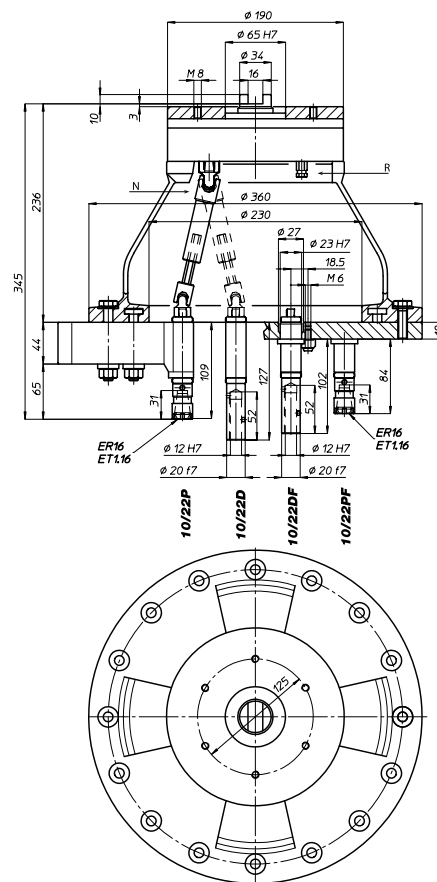


12 KG

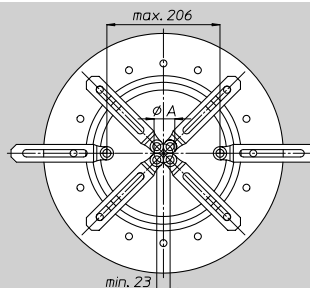
PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



1,5 KG



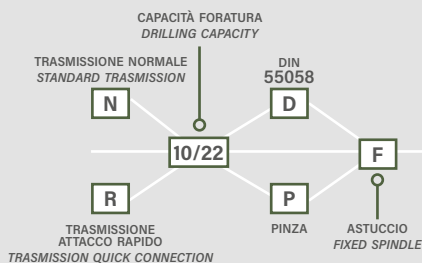
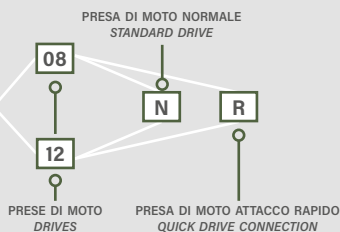
Ø A	27	33	39,5	46,5	53,5	60,5	67,5	75	82	89,5
N° MANDRINI N° SPINDLES	3	4	5	6	7	8	9	10	11	12



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE
T10



CODICE
MANDRINO
SPINDLE CODE

T10

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD



**CODICE
MANDRINO
SPINDLE CODE**



N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08-12

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 13
ghisa / cast iron: GG25 15

MASCHIATURA
TAPPING



M12

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø20

PESO
GRUPPO TESTA
HEAD WEIGHT

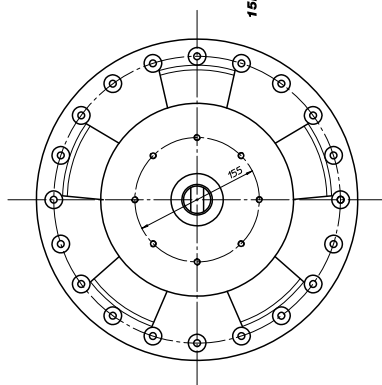
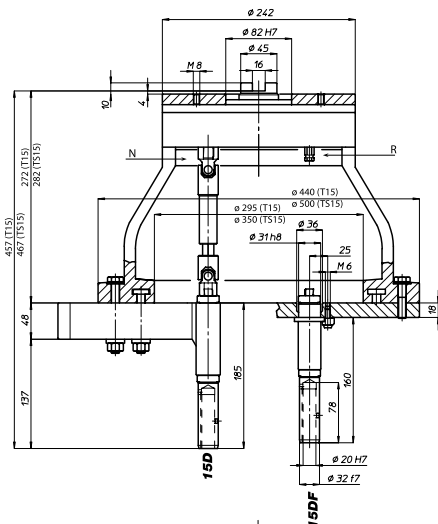


T15: 21,5 KG
TS15: 24,5 KG

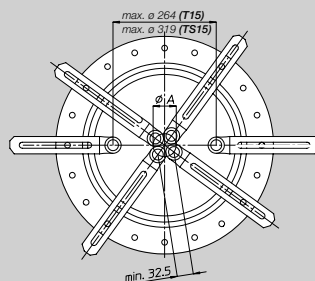
PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



2,6 KG



Ø A	38	46,5	56	65,5	75,5	85,5	95,5	105,5	116	126
N° MANDRINI N° SPINDLES	3	4	5	6	7	8	9	10	11	12



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

T15

TS15

PRESA DI MOTO NORMALE
STANDARD DRIVE

08

PRESE DI MOTO
DRIVES

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

R

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

15

DIN 55058

D

F

ASTUCCIO
FIXED SPINDLE

CODICE
MANDRINO
SPINDLE CODE

T15-TS15

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

9-8

VH

TSI/TSX

T

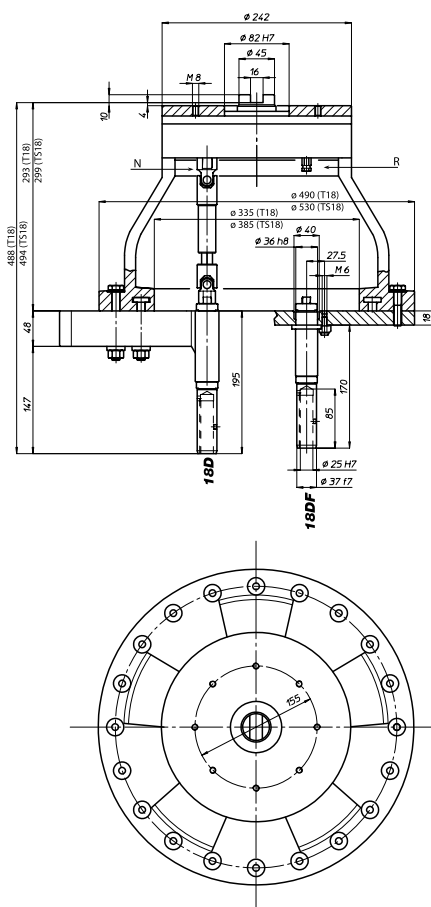
MT-TC-TC3





T18-TS18

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD



08



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1



RAPPORTO
RATIO

acciaio / still R=500 N/mm² 16

ghisa / cast iron: GG25 18



CAPACITÀ
DI FORATURA
DRILLING CAPACITY

M14



MASCHIATURA
TAPPING

D: DIN 55058 Ø25



ATTACCO UTENSILE
TYPE OF SPINDLE

T18: 25 KG

TS18: 26,5 KG



PESO
GRUPPO TESTA
HEAD WEIGHT

3,3 KG



PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT

Ø A

N° MANDRINI
N° SPINDLES

44

53,5

64,5

75,5

87

98,5

3

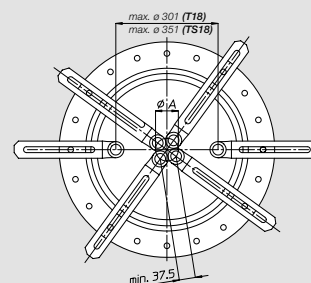
4

5

6

7

8



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

T18

TS18

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESE DI MOTO
DRIVES

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

CAPACITÀ FORATURA
DRILLING CAPACITY

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

R

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

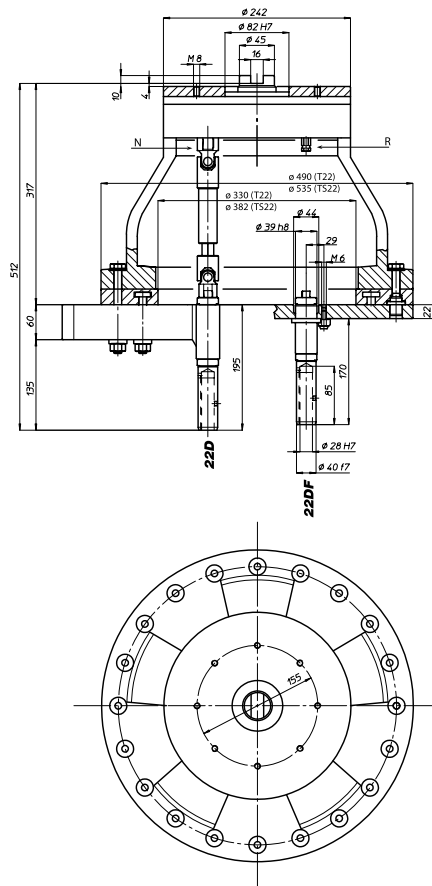
DIN 55058

D

ASTUCCIO
FIXED SPINDLE

F

CODICE
MANDRINO
SPINDLE CODE



N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 20
ghisa / cast iron: GG25 22

MASCHIATURA
TAPPING



M16

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø28

PESO
GRUPPO TESTA
HEAD WEIGHT



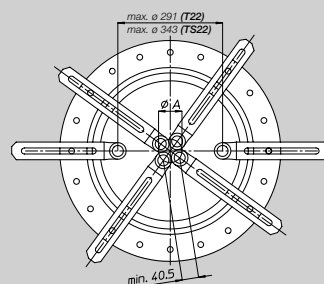
T15: 38,5 KG
TS15: 41 KG

PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



5,5 KG

Ø A	47,5	58	69,5	81,5	94	106,5
N° MANDRINI N° SPINDLES	3	4	5	6	7	8



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

T22

TS22

08

PRESE DI MOTO
DRIVES

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

R

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

CAPACITÀ FORATURA
DRILLING CAPACITY

22

DIN 55058

D

ASTUCCIO
FIXED SPINDLE

F

CODICE
MANDRINO
SPINDLE CODE

T22-TS22

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH
BAH
TA.CP
TA
MOx
HT
9-10
VH
TSI/TSX

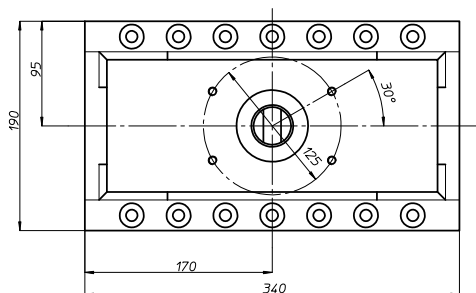
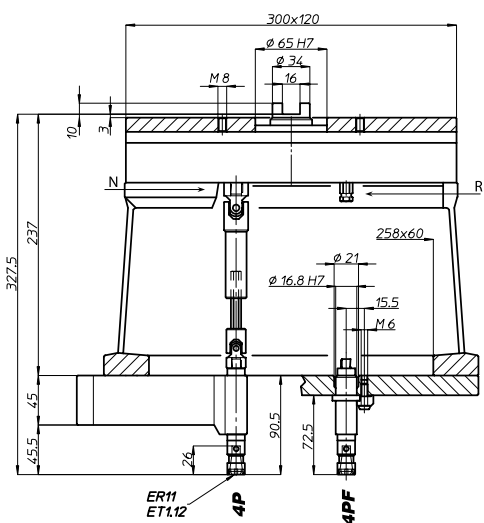
T
MT-TC-TC3





TL20/4

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD



08



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1



RAPPORTO
RATIO

acciaio / still R=500 N/mm² 4

ghisa / cast iron: GG25 5



CAPACITÀ
DI FORATURA
DRILLING CAPACITY

M4



MASCHIATURA
TAPPING

P: ER11



ATTACCO UTENSILE
TYPE OF SPINDLE

13,5 KG

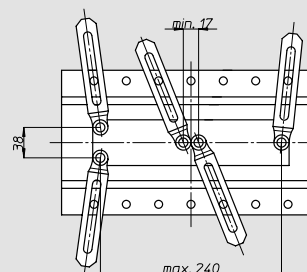


PESO
GRUPPO TESTA
HEAD WEIGHT

1 KG



PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TL20/4

08

PRESE DI MOTO
DRIVES

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

CAPACITÀ FORATURA
DRILLING CAPACITY

4

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

R

PINZA

P

ASTUCCIO
FIXED SPINDLE

F

CODICE
MANDRINO
SPINDLE CODE

N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 6
ghisa / cast iron: GG25 7

MASCHIATURA
TAPPING



M5

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø10
P: ER11

PESO
GRUPPO TESTA
HEAD WEIGHT

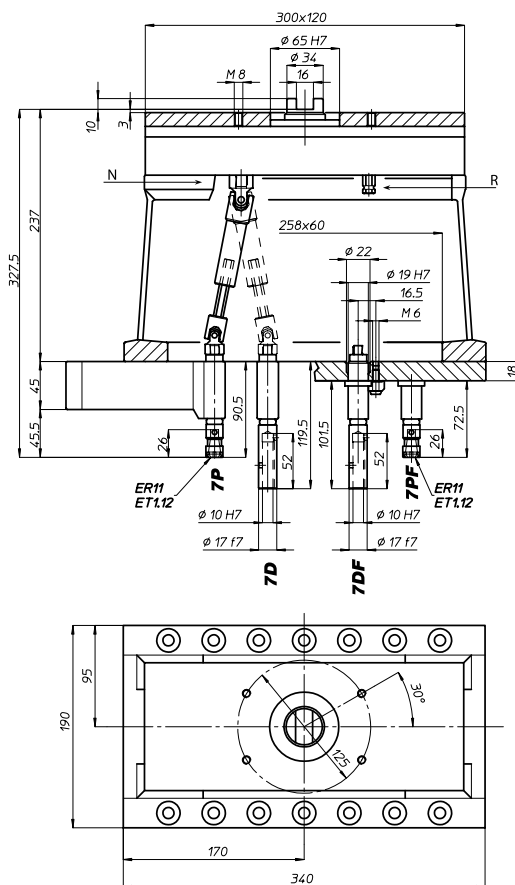
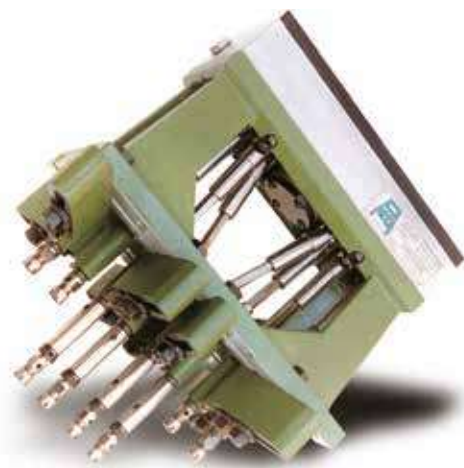


13,5 KG

PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



1 KG



TL20/6

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

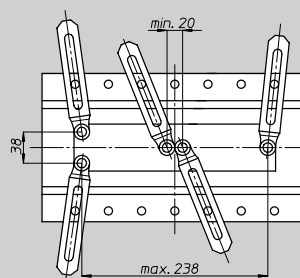
9-12

VH

TSI/TSX

T

MT-TC-TC3



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE
TL20/6

08

PRESE DI MOTO
DRIVES

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

N

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

R

TRASMISSIONE ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

N

CAPACITÀ FORATURA
DRILLING CAPACITY

7

DIN 55058

D

P

PINZA

F

ASTUCCIO
FIXED SPINDLE

CODICE
MANDRINO
SPINDLE CODE



N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / steel R=500 N/mm² 13
ghisa / cast iron: GG25 15

MASCHIATURA
TAPPING



M12

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø20

PESO
GRUPPO TESTA
HEAD WEIGHT

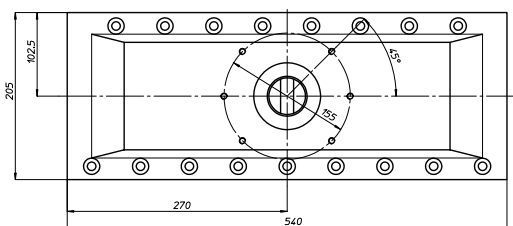
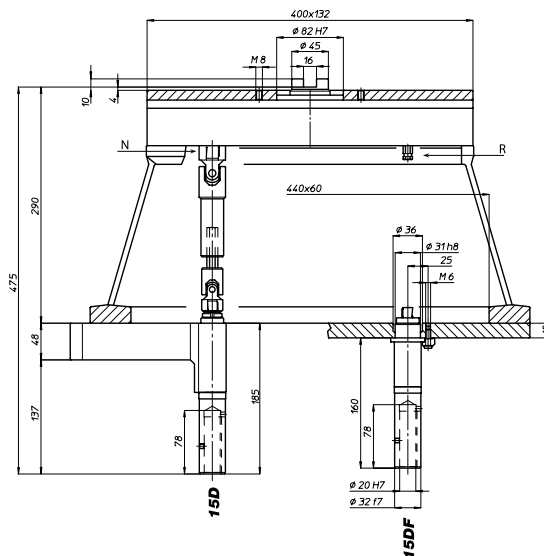


25 KG

PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



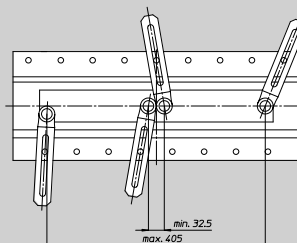
2,5 KG



TL40/12

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH
BAH
TA.CP
TA
MOx
HT
9-14
VH
TSI/TSX



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TL40/12

08

PRESE DI MOTO
DRIVES

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

CAPACITÀ FORATURA
DRILLING CAPACITY

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

R

DIN 55058

15

D

ASTUCCIO
FIXED SPINDLE

F

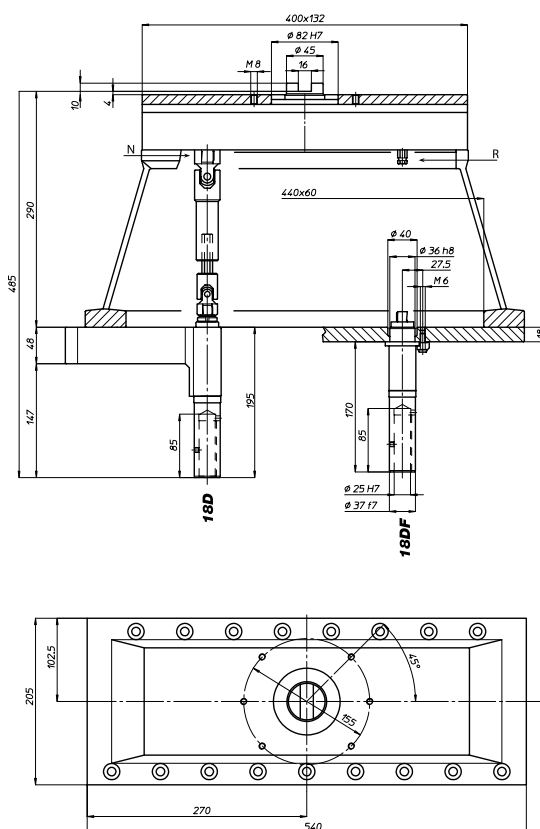
CODICE
MANDRINO
SPINDLE CODE

T
MT-TC-TC3
T
ME



TL40/16

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD



08



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1



RAPPORTO
RATIO

acciaio / still R=500 N/mm² 16

ghisa / cast iron: GG25 18



CAPACITÀ
DI FORATURA
DRILLING CAPACITY

M14



MASCHIATURA
TAPPING

D: DIN 55058 Ø25



ATTACCO UTENSILE
TYPE OF SPINDLE

26 KG

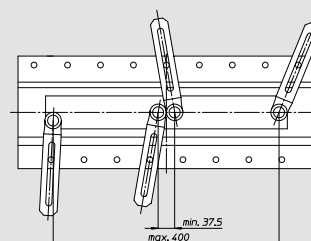


PESO
GRUPPO TESTA
HEAD WEIGHT

2,5 KG



PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TL40/16

08

PRESE DI MOTO
DRIVES

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

CAPACITÀ FORATURA
DRILLING CAPACITY

18

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

R

DIN
55058

ASTUCCIO
FIXED SPINDLE

F

CODICE
MANDRINO
SPINDLE CODE

N° PRESE DI MOTO
NR. SPINDLE
DRIVES



06

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 20
ghisa / cast iron: GG25 22

MASCHIATURA
TAPPING



M16

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø28

PESO
GRUPPO TESTA
HEAD WEIGHT

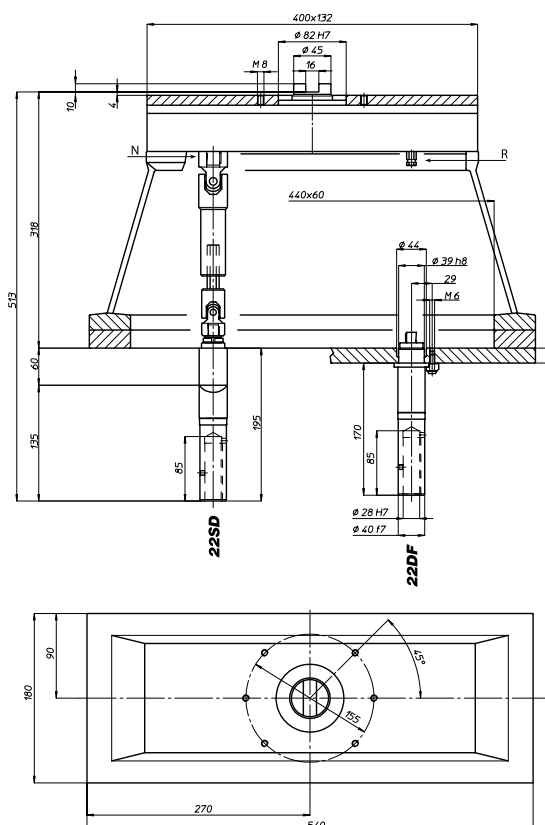


37 KG

PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



5 KG



TL40/22

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH

BAH

TA,CP

TA

MOx

HT

9-16

VH

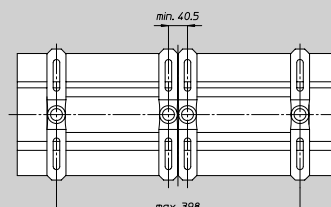
TSI/TSX

T

MT-TC-TC3



AREA DI LAVORO
WORKING AREA



PRESA DI MOTO NORMALE
STANDARD DRIVE

N

TRASMISSIONE
NORMALE
STANDARD TRANSMISSION

N

CAPACITÀ FORATURA
DRILLING CAPACITY

22

DIN 55058

SD

F

ASTUCCIO
FIXED SPINDLE

CODICE
MANDRINO
SPINDLE CODE

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TL40/22

06

PRESE DI MOTO
DRIVES

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION
QUICK CONNECTION

R

**CODICE
MANDRINO
SPINDLE CODE**

N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08-12

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 16
ghisa / cast iron: GG25 18

MASCHIATURA
TAPPING



M14

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø25

PESO
GRUPPO TESTA
HEAD WEIGHT

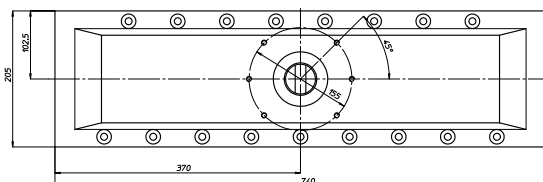
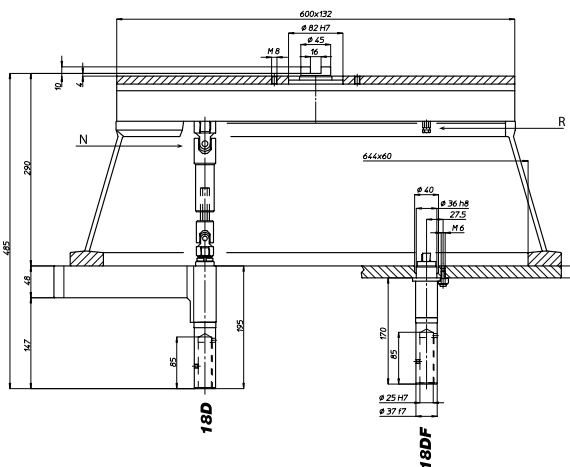


36 KG

PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



2,5 KG



TL60/16

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

9-18

VH

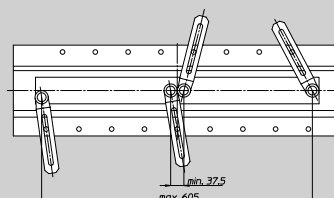
TSI/TSX

T

MT-TC-TC3

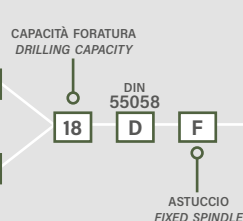
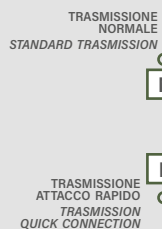
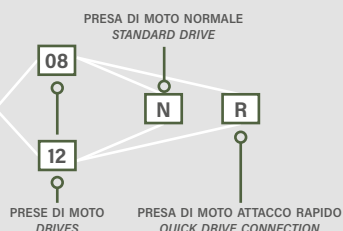


AREA DI LAVORO
WORKING AREA



CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE
T60/16



CODICE
MANDRINO
SPINDLE CODE



TL60/22

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD



08



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1



RAPPORTO
RATIO

acciaio / still R=500 N/mm² 20
ghisa / cast iron: GG25 22



CAPACITÀ
DI FORATURA
DRILLING CAPACITY

M16



MASCHIATURA
TAPPING

D: DIN 55058 Ø28



ATTACCO UTENSILE
TYPE OF SPINDLE

47,5 KG

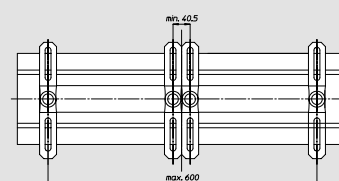
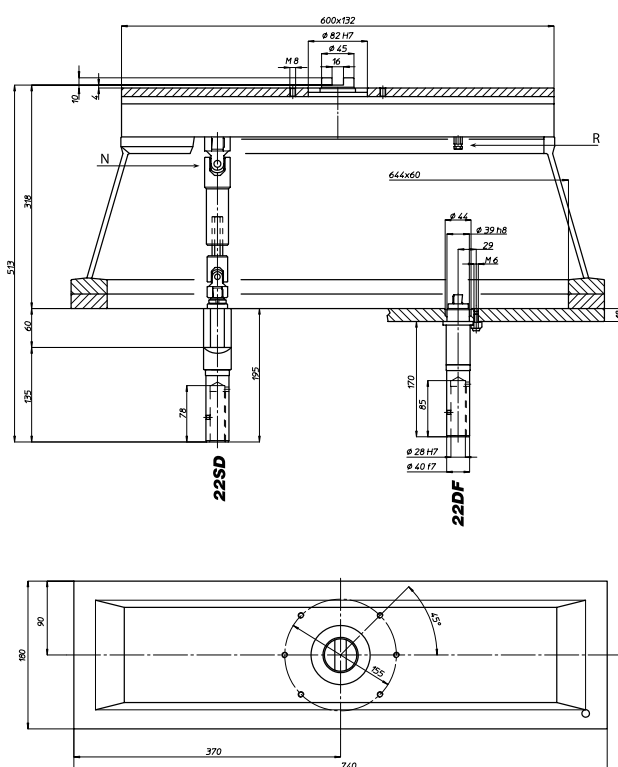


PESO
GRUPPO TESTA
HEAD WEIGHT

5 KG



PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

T60/22

08

PRESE DI MOTO
DRIVES

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

CAPACITÀ FORATURA
DRILLING CAPACITY

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

R

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

22

DIN
55058

SD

ASTUCCIO
FIXED SPINDLE

F

CODICE
MANDRINO
SPINDLE CODE



N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08-12

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 13
ghisa / cast iron: GG25 15

MASCHIATURA
TAPPING



M12

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø20

PESO
GRUPPO TESTA
HEAD WEIGHT

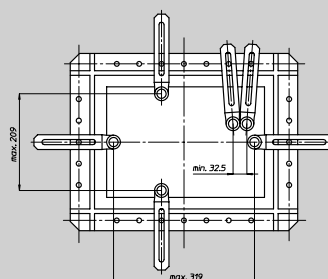
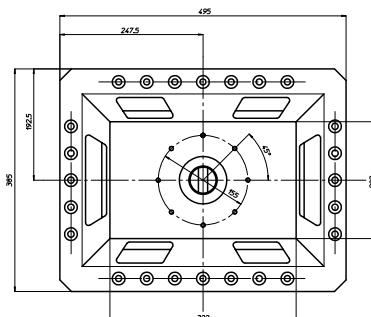
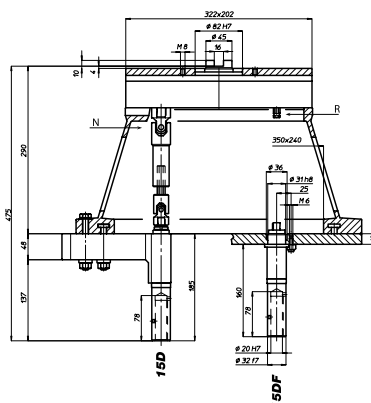


30 KG

PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



2,6 KG



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE
TR2/12

PRESA DI MOTO NORMALE
STANDARD DRIVE

08

N

R

PRESE DI MOTO
DRIVES

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

TRASMISSIONE
NORMALE
STANDARD TRANSMISSION

N

R

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION
QUICK CONNECTION

CAPACITÀ FORATURA
DRILLING CAPACITY

15

DIN
55058

D

F

ASTUCCIO
FIXED SPINDLE

CODICE
MANDRINO
SPINDLE CODE

TR2/12

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

9-20

VH

TSI/TSX

T

MT-TC-TC3



N° PRESE DI MOTO
NR. SPINDLE
DRIVES



08-12-16

RAPPORTO
RATIO



1-1

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / steel R=500 N/mm² 13
ghisa / cast iron: GG25 15

MASCHIATURA
TAPPING



M12

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø20

PESO
GRUPPO TESTA
HEAD WEIGHT

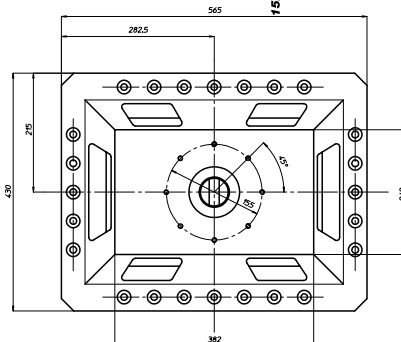
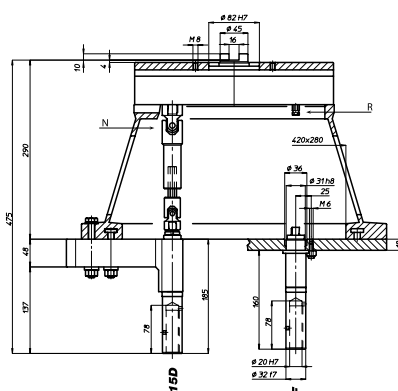


34,5 KG

PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



2,6 KG



TR5/12

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH

BAH

TA.CP

TA

MOx

HT

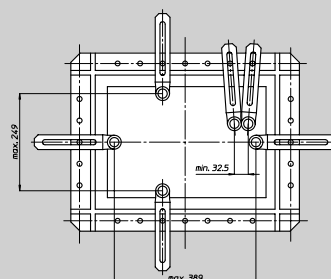
9-22

VH

TSI/TSX

T

MT-TC-TC3



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE
TR5/12

08
12
16

PRESE DI MOTO
DRIVES

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

TRASMISSIONE
NORMALE
STANDARD TRANSMISSION

N

TRASMISSIONE
ATTACCO RAPIDO
TRANSMISSION
QUICK CONNECTION

R

CAPACITÀ FORATURA
DRILLING CAPACITY

15

DIN
55058

D

F

ASTUCCIO
FIXED SPINDLE

CODICE
MANDRINO
SPINDLE CODE

N° PRESE DI MOTO
NR. SPINDLE
DRIVES



12

RAPPORTO
RATIO



1-1,5

CAPACITÀ
DI FORATURA
DRILLING CAPACITY



acciaio / still R=500 N/mm² 15D: 13 22D: 20
ghisa / cast iron: GG25 15D: 15 22D: 22

MASCHIATURA
TAPPING



15D: M12 22D: M16

ATTACCO UTENSILE
TYPE OF SPINDLE



D: DIN 55058 Ø20-Ø28

PESO
GRUPPO TESTA
HEAD WEIGHT

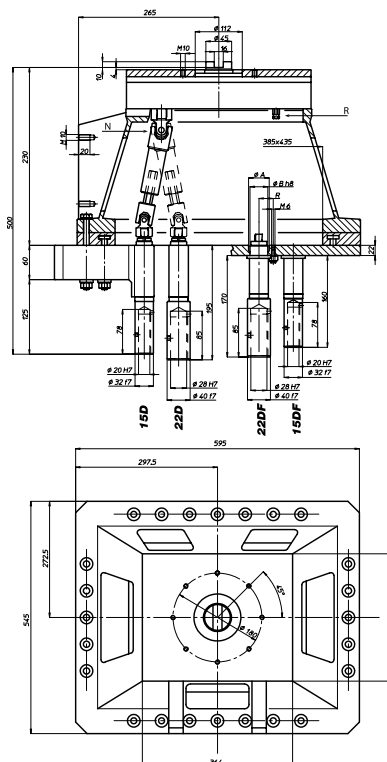


86 KG

PESO GRUPPO
MANDRINO
SPINDLE-SET WEIGHT



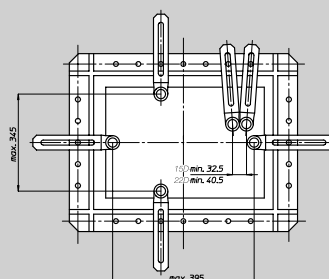
15D: 4 KG 22D: 5,5 KG



TR8/22

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

FH
BAH
TA.CP
TA
MOx
HT
9-24
VH
TSI/TSX



AREA DI LAVORO
WORKING AREA

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE
TR8/22

08

PRESE DI MOTO
DRIVES

PRESA DI MOTO NORMALE
STANDARD DRIVE

N

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

CAPACITÀ FORATURA
DRILLING CAPACITY

N

15

R

22

TRASMISSIONE NORMALE
STANDARD TRANSMISSION

N

15

R

22

TRASMISSIONE ATTACCO RAPIDO
TRANSMISSION QUICK CONNECTION

R

22

DIN 55058

D

ASTUCCIO
FIXED SPINDLE

F

CODICE
MANDRINO
SPINDLE CODE

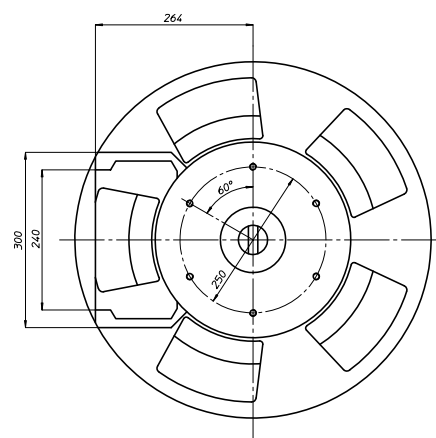
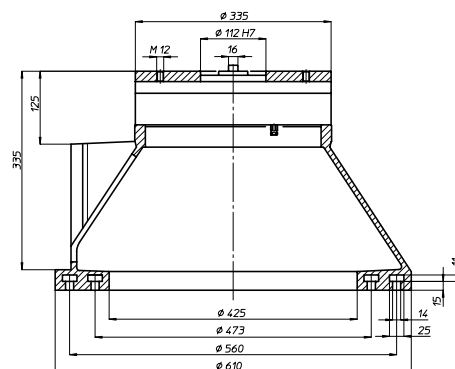
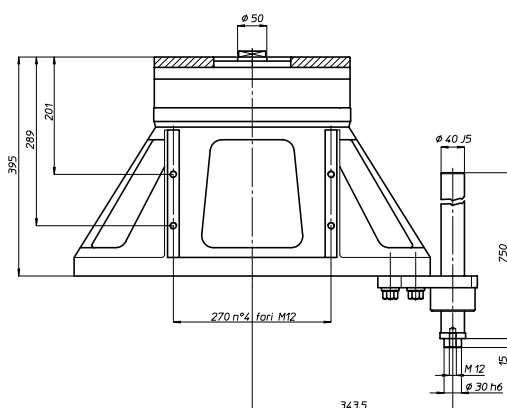
T
MT-TC-TC3





TM400

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD



12



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1



RAPPORTO
RATIO

105 KG



PESO
WEIGHT

CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TM400

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

12 **R**

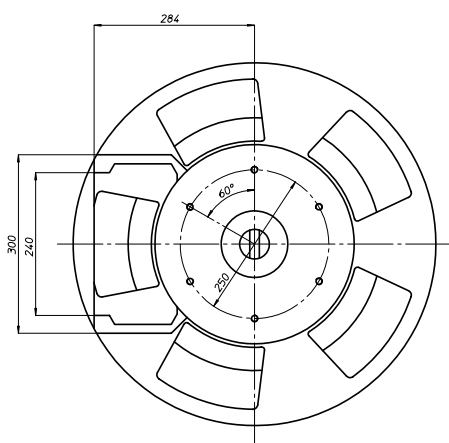
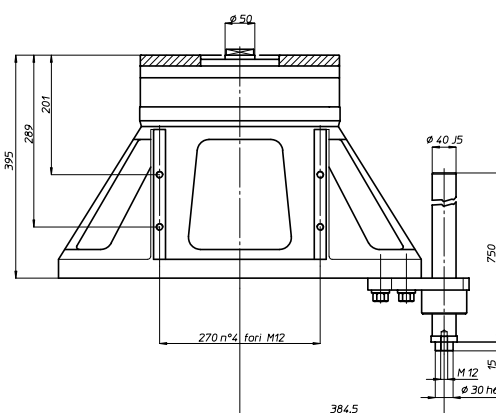
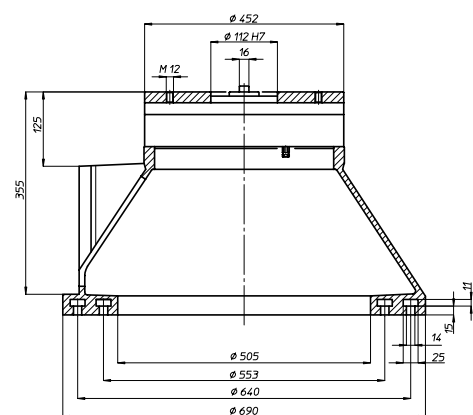
PRESE DI MOTO
DRIVES

Ø 385

AREA DI LAVORO
WORKING AREA

 18 1-1

145 KG



TESTA MODELLO
HEAD TYPE
TM500

18

18

Ø 465

AREA DI LAVORO
WORKING AREA

TM500

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD

9-26

MT-TC-TC3



TSI/TSX

VH

HT

M

TA

TA.CP

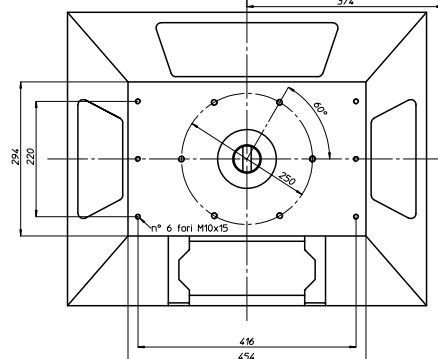
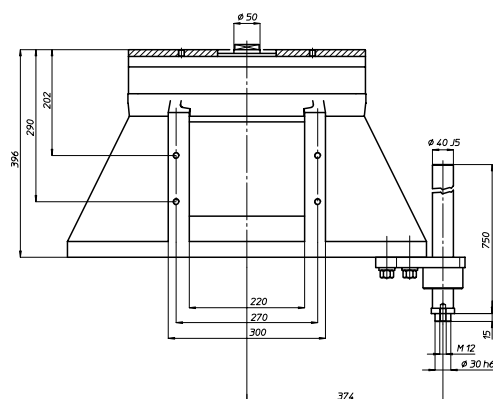
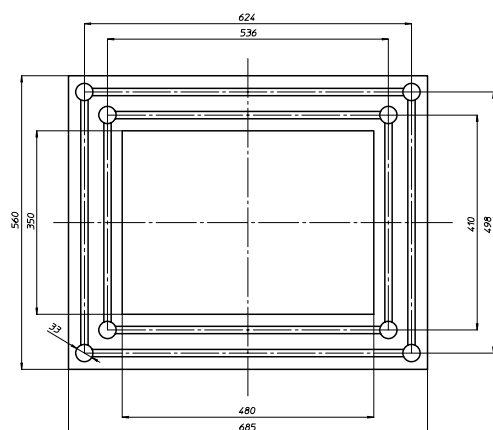
BAH

FH



TRM43

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD



16



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1

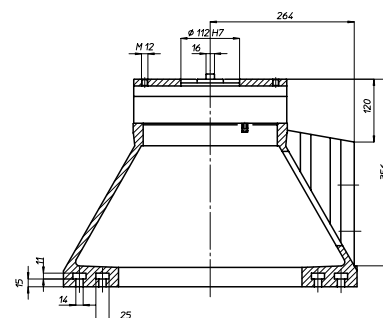


RAPPORTO
RATIO

135 KG



PESO
WEIGHT



CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TRM43

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

R

PRESE DI MOTO
DRIVES

16

300x440

AREA DI LAVORO
WORKING AREA

N° PRESE DI MOTO
NR. SPINDLE
DRIVES



26

RAPPORTO
RATIO

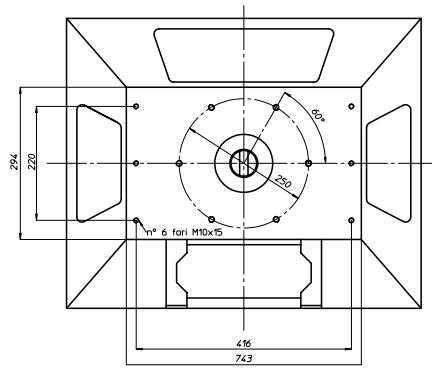
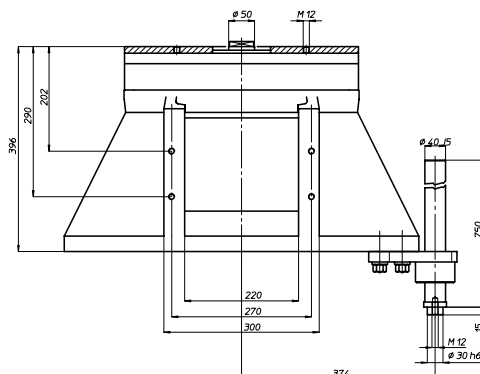
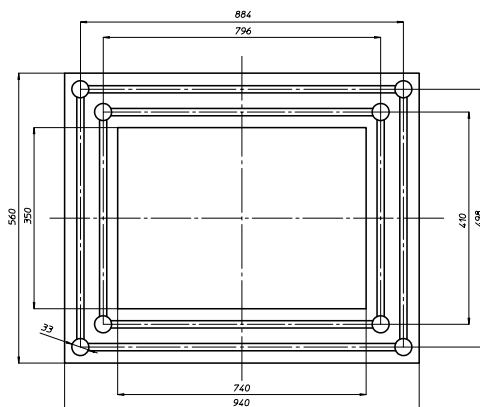
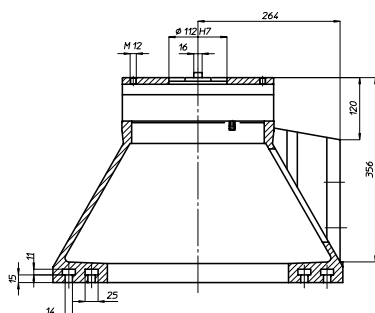


1-1

PESO
WEIGHT



210 KG



CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TRM73

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

26

R

PRESE DI MOTO
DRIVES

300x700

AREA DI LAVORO
WORKING AREA

TRM73

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

9-28

TSI/TSX

VH

HT

MOx

TA

TA.CP

BAH

FH

MT-TC-TC3

T

TSI/TSX

VH

HT

MOx

TA

TA.CP

BAH

FH



FH

BAH

TA.CP

TA

MOx

HT

9-29

VH

TSI/TSX

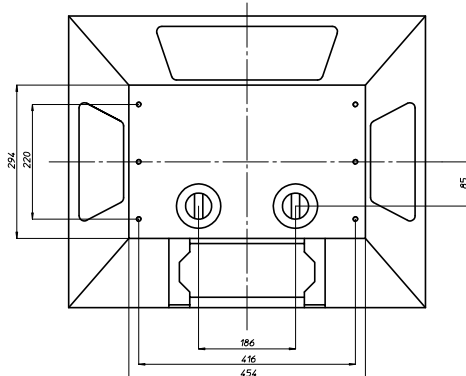
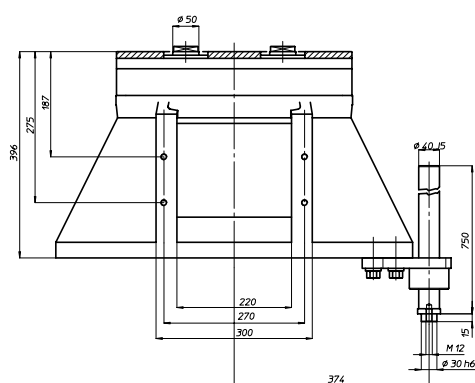
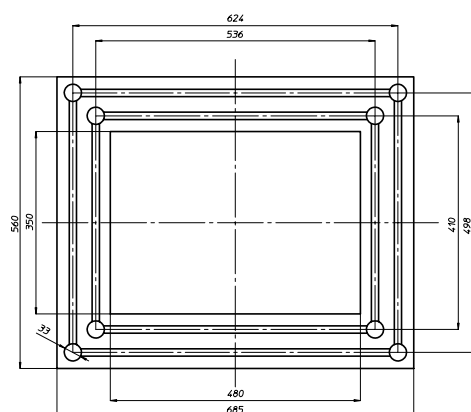
T

MT-TC-TC3



TRM43-2P

TESTA MULTIPLA A GIUNTI UNIVERSALI • ADJUSTABLE JOINT MULTISPINDLE HEAD



8+8



N° PRESE DI MOTO
NR. SPINDLE
DRIVES

1-1

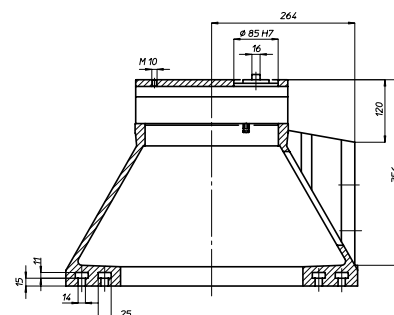


RAPPORTO
RATIO

140 KG



PESO
WEIGHT



CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TRM43

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

16

PRESE DI MOTO
DRIVES

R

2P

N.2 PRESE DI FORZA
NR.2 CENTRAL DRIVES

300x440

AREA DI LAVORO
WORKING AREA

N° PRESE DI MOTO
NR. SPINDLE
DRIVES



13+13

RAPPORTO
RATIO

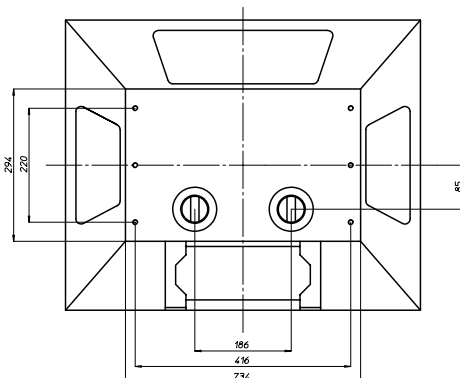
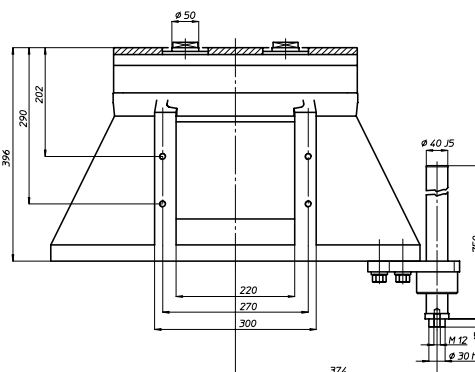
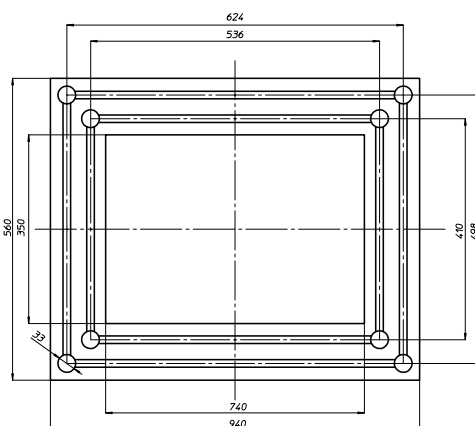


1-1

PESO
WEIGHT



210 KG



TRM73-2P

TESTA MULTIPLA A GIUNTI UNIVERSALI - ADJUSTABLE JOINT MULTISPINDLE HEAD

9-30

VH

TSI/TSX

T

MT-TC-TC3



CODICE TESTA
HEAD CODE

TESTA MODELLO
HEAD TYPE

TRM73

26

PRESE DI MOTO
DRIVES

R

PRESA DI MOTO ATTACCO RAPIDO
QUICK DRIVE CONNECTION

2P

N.2 PRESE DI FORZA
NR.2 CENTRAL DRIVES

300x700

AREA DI LAVORO
WORKING AREA

FH

BAH

TA.CP

TA

MOx

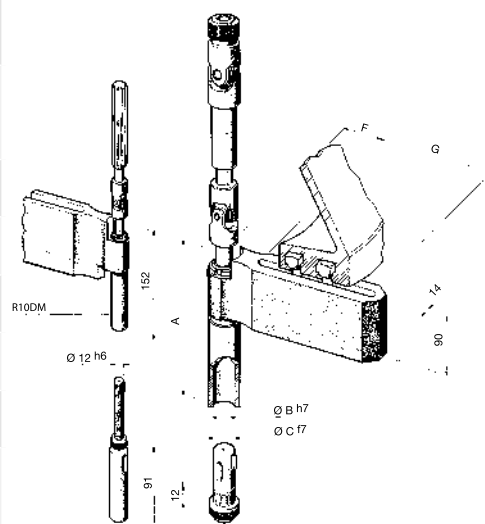
HT

SOLO PER TESTE TM-TRM

FOR TM-TRM HEADS ONLY

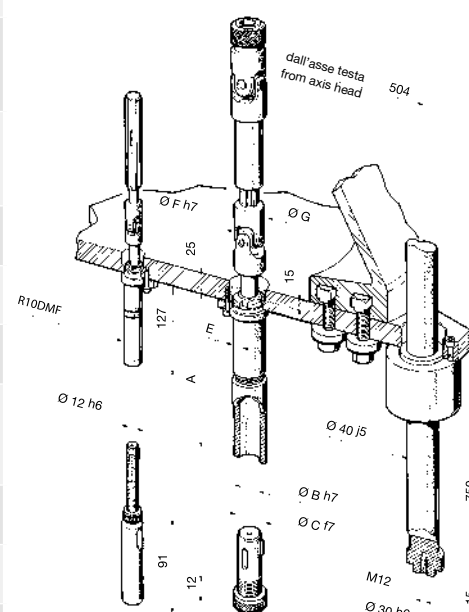
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CODICE CODE	R10DM-S5 R10DM-S6	R15DM-S5 R15DM-S6	R22DM-S5 R22DM-S6
CAPACITÀ MASCHIATURA TAPPING	M6	M12	M16
CORSA MASCHIATURA TAPPING STROKE	40	40	40
A	152	208	217
ØB H7	12	20	28
ØC F7	20	32	40
F	59	55	55
G	200 270	200 270	200 270
INTERASSE MINIMO CENTER DISTANCE	23	32,5	40,5
PESO WEIGHT	4,0 KG 4,5 KG	5,2 KG 5,7 KG	6,6 KG 7,4 KG

SU STAFFA ON ARM



TIPI MANDRINI SPINDLES TYPE	10DM	15DM	22DM
CODICE CODE	R10DMF	R15DMF	R22DMF
CAPACITÀ MASCHIATURA TAPPING	M6	M12	M16
CORSA MASCHIATURA TAPPING STROKE	40	40	40
A	127	183	192
ØB H7	12	20	28
ØC F7	20	32	40
E	18,5	25	29
INTERASSE VITE M6 DISTANCE SCREW M6	18,5	25	29
ØF F7	23	31	39
ØG	27	36	44
INTERASSE MINIMO CENTER DISTANCE	23,5	32,5	40,5
PESO WEIGHT	2,0 KG	2,6 KG	3,8 KG

SU ASTUCCIO PER FLANGIA FISSA FIXED PLATE SPINDLE



GRUPPO MANDRINO PER FORATURA E MASCHIATURA - DRILLING AND TAPPING SPINDLE SET

9-32

FH

BAH

TA.CP

TA

MOx

HT

VH

TSI/TSX

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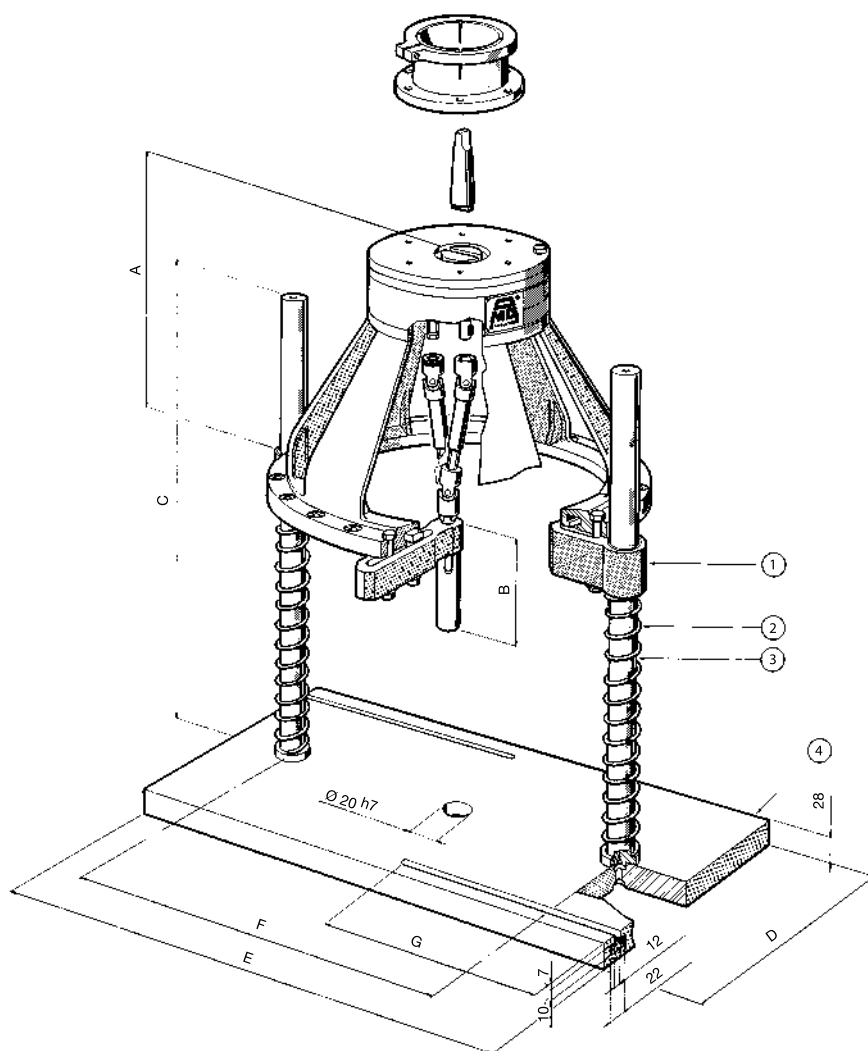
MT-TC-TC3





SERIE T-TS-TL-TR

ATTREZZATURE PER TESTE MULTIPLE
MULTISPINDLE HEADS EQUIPMENT



MODELLO TESTA HEAD TYPE	A	B		C	D	E	F	G	1 SUPPORTO DI GUIDA GUIDE BUSH	2 MOLLA SPRING	3 COLONNA COLUMN	4 BASE BASE
		DIN 55058	Pinza ER									
T4	205	91,5	76	500	250	500	280	300	076123	076126	076120	076081
T7	205	101,5	76				350					076082
T10	236	109	94,5				404					076083
T12	260	172					454					076084
TS12	283	172					542					076088
T15	272	175		650	300	650	492	350	076133	076136	076130	076085
TS15	282	175					552					076089
T18	293	185					540					076086
TS18	299	185					582					076090
T22	317	185					540					076087
TS22	317	185					582					076091
TL20/4	237	91,5	76	500	250	500	400	300	076123	076126	076120	076092
TL20/6	237	101,5	76									
TL20/8	237	109	94,5									
TL40/12	290	175		650	300	650	604	350	076133	076136	076130	076093
TL40/16	290	185										
TL40/22	318	185										
TL60/12	290	175				850	804	450	076133	076136	076130	076094
TL60/16	290	185										
TL60/22	318	185										
TR2/12	290	175		650	300	650	548		076133	076136	076130	076095
TR2/16	290	185										
TR5/12	290	175										
TR5/16	290	185					629					076096



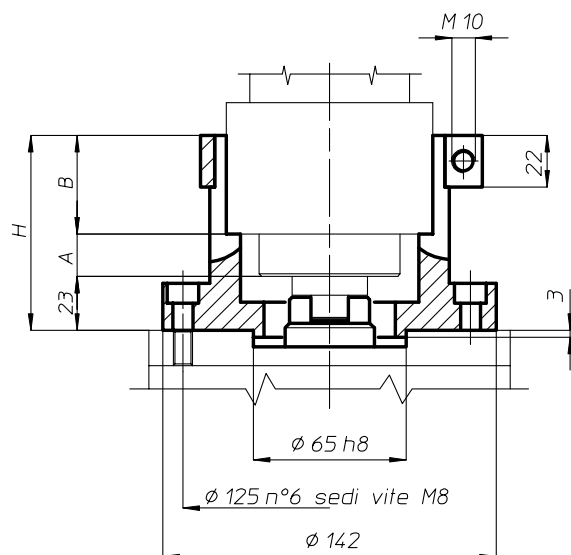
ATTACCO CONO MORSE TRASCINATORE

MORSE TAPER WITH DRIVING DOG

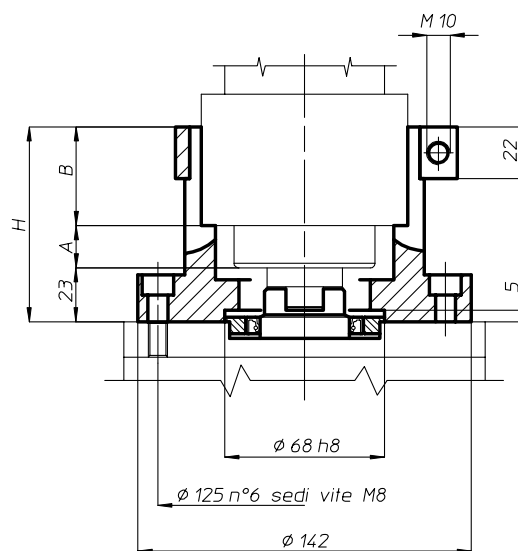
MANICOTTI DI COLLEGAMENTO - CONNECTION COLLARS

T4 - T7 - T10 - TL20...

SOLO VERSIONE ORIZZONTALE
FOR HORIZONTAL USE ONLY

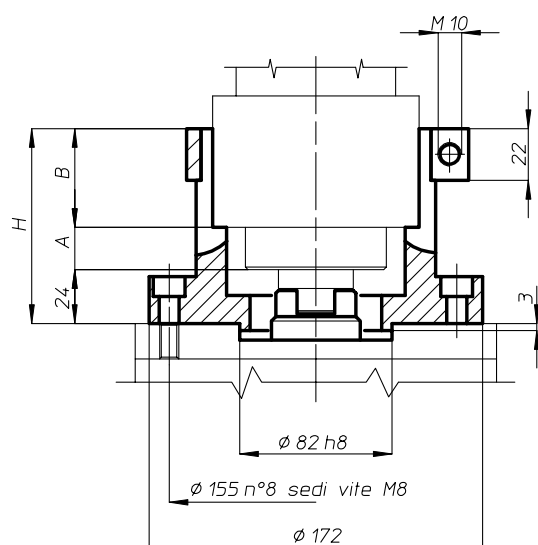


VERSIONE STANDARD
STANDARD VERSION

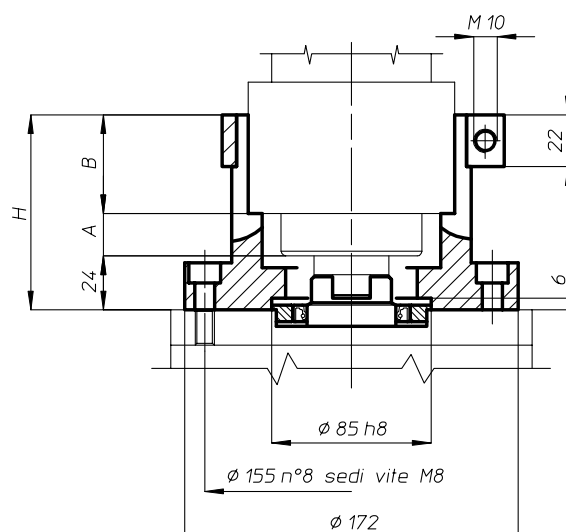


T12 - T15 - T18 - T22 - TL40... - TL60... - TR2... - TR5...

SOLO VERSIONE ORIZZONTALE
FOR HORIZONTAL USE ONLY



VERSIONE STANDARD
STANDARD VERSION



NOTE

NOTES

FH

BAH

TA.CP

TA

MOx

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9-36

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TSI/TSX

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MT-TC-TC3





TESTE MULTIPLE AD ASSI FISSI
FIXED MULTISPINDLE HEADS

SYSTEM **MT**



SYSTEM **TC**



SYSTEM **TC3**



SERIE **TFS**





FH

BAH

TA.CP

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MO

HT

10-2

VH

TSI/TSX

T

MT-TC-TC3



SYSTEM MT

TESTE MULTIPLE FLESSIBILI AD ASSI FISSI

MULTISPINDLE HEADS WITH FIXED CENTERS DISTANCE



Il sistema MT si utilizza dove gli interassi e le capacità di torsione sono ridotte. L'interasse minimo realizzabile è mm 10 perché al di sotto di tale misura verrebbero a mancare i requisiti di sicurezza caratteristici dei prodotti O.M.G.. Le realizzazioni MT, generalmente, hanno dimensioni contenute, pochi mandrini (3 o 4), peso ridotto (kg 2) e sono lubrificate con grasso long-life. È possibile eseguire con la medesima testa filettature con passo differente. Tutta la componentistica, trattata termicamente, ruota interamente su cuscinetti offrendo la possibilità di raggiungere velocità di rotazione di 10.000 giri al minuto. Nonostante le caratteristiche minute, si possono comunque realizzare teste con un ragguardevole numero di mandrini (oltre 20) e con corpi di una certa dimensione.

The MT system is for small centre distances and low torque requirements. The minimum centre distance is 10 mm; below this heads reliability becomes questionable. MT units are normally very compact and with 3 or 4 spindles weigh little - 2 kg for example - and are permanent grease lubricated. Rotating components are hardened and ground, and are carried in anti-friction bearings enabling these heads to run up to 10.000 rpm. In special cases, MT heads are built with large bodies and high numbers of spindles - even in excess of 20.



Migliaia di realizzazioni sia per trapani, unità, macchine combinate, centri di lavorazione con cambio automatico dell'utensile sono state costruite con il sistema TC, la serie di media capacità. La sua caratteristica principale sta nell'essere la più grande normalizzazione in materia di teste multiple oggi sul mercato. Corpi testa il lega di alluminio delle più varie forme e dimensioni sono normalizzati. Partendo da un interasse minimo di mm 16 si può realizzare qualsiasi figura il cliente richieda; mandrini con tutti i tipi di attacchi utensili (a pinza DIN 6499, DIN 55058, Komet ABS, DIN 1895, ecc.) ruotano su cuscinetti a rullini selezionati, su cuscinetti a sfere a contatto obliquo di precisione, su cuscinetti a rulli conici, tutti indifferentemente per potere utilizzare qualsiasi tipologia di utensile. I mandrini di maschiatura a patrona partono da un interasse di mm 28. Colonne mobili o fisse per maschiare guida utensili completano l'intera gamma. È permesso inoltre superare abbondantemente la soglia dei 10.000 giri al minuto per ottemperare alle elevate velocità richieste dagli utensili.

Many TC system - medium capacity - heads have been supplied for drilling machines, unit head applications, special machines and machining centres. Outstanding is that this standardised series has become the industries Modular multi-head market leader. Head bodies of many sizes and form have been rationalised. With a minimum centre distance of 16 mm holes patterns can be provided for any client need; spindles with all types of tool connection (DIN 6499 collets, DIN 55058, Komet, ABS, DIN 1895, etc.) are carried in combinations of selected needle, precision angular contact ball and taper rolling bearings to suit all tool types. Threading spindles with lead nuts give a minimum centres distance of 28 mm; additionally, fixed and movable columns with bush lates for tool guidance are available when required. When the tolls or work demand. TC series head spindles can be run excess of 10.000 rpm.

SYSTEM TC

TESTE MULTIPLE FLESSIBILI AD ASSI FISSI
MULTISPINDLE HEADS WITH FIXED CENTERS DISTANCE



HT MO TA TA.CP BAH FH

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MT-TC-TC3

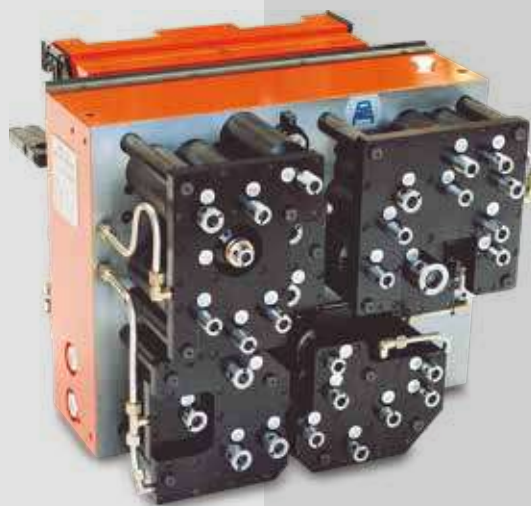




SYSTEM TC3

TESTE MULTIPLE FLESSIBILI AD ASSI FISSI

MULTISPINDLE HEADS WITH FIXED CENTERS DISTANCE



La serie TC3 è l'espressione dell'alta tecnologia O.M.G.. È il sistema di teste utilizzato per trasmettere elevate potenze su grosse unità, roto-traslanti, macchine col cambio automatico delle teste. Massicce, solide, dal peso elevato (anche kg 900) non hanno limiti di utilizzo che non siano quelli della macchina utensile.

Il corpo, normalmente in fusione di ghisa sferoidale, racchiude tutto il cinematismo rettificato, con lubrificazione forzata e prssurizzato. Vari tipi di mandrini sono disponibili su questo tipo di teste e tra essi particolarmente indicati sono quelli supportati da cuscinetti a contatto obliquo di precisione adatti ad operazioni di foratura senza guida utensile, alesatura, fresatura; in questo caso all'interno della testa si hanno due tipi di lubrificazione, ad olio per gli ingranaggi elicoidali ad evolvente rettificato e a grasso per tutti i gruppi mandrino. Anche questa serie si può equipaggiare con maschere guida utensili su colonne mobili o fisse, adduttori per refrigerante passanti per il centro dell'utensile.

Molte macchine utensili non potrebbero funzionare senza queste teste multiple e la qualità delle lavorazioni dipende esclusivamente dalla loro precisione, tanto che si potrebbero definire vere e proprie "macchine utensili".

The TC3 series is the expression of O.M.G.'s cutting-edge technology. This system of heads is used for transmitting high powers on large units, rotational-translating, machines with automatic head change. Sturdy, strong, of heavy weight (up to 900 kg) they have no restrictions as regards use excepting those of all machine tools.

The body, normally made of spheroidal cast iron, encloses all the ground kinematic mechanism, with forced and pressurised lubrication. Various types of spindles are available on this type of head and, among these, especially appropriate are those supported by precision oblique contact bearings suitable for drilling operations without tool jigs, boring, milling; in this case, inside the head are two types of lubrication - oil for the helical gears with ground involute and grease for all the spindle units. This series can also be equipped with tool jigs on moving or fixed columns, coolant feeders passing through the centre of the tool.

Many machine tools could not operate without these multiple heads and the quality of machining operations depends on their precision alone, to the extent that they could be considered "machine tools" in their own right.



TFS: Testa Fissa Speciale. Speciale perché la sua progettazione è unica in quanto nasce per soddisfare richieste specifiche e particolari per le quali non può essere utilizzato nessuno degli standard già esistenti.

A differenza delle altre serie speciali MT-TC-TC3 che siamo riusciti a standardizzare e quindi a redigere delle tabelle tecniche, per la serie TFS possiamo presentarvi solo immagini, in quanto la loro unicità non ci permette di definire alcuna scheda tecnica, se non una specifica per ogni testa.

In breve:

1- non hanno limiti di dimensioni perché dipendono dalla macchina su cui verranno applicate;
2- possono trasmettere potenze fino e oltre il limite della macchina stessa;

3- possono equipaggiare una qualsiasi macchina utensile o far parte di applicazioni particolari.

Tutta la testa ed i suoi componenti sono studiati propriamente per soddisfare le caratteristiche di lavorazione che il pezzo, gli utensili e il cliente richiede.

TFS: Special Fixed Head. Special because of its unique design, intended to cater for specific requirements and parts for which no existing standards can be used.

Unlike the other special series MT-TC-TC3 which we have managed to standardise and for which we have consequently drawn up technical charts, for the TFS series, we are only able to provide you with images because their uniqueness makes it impossible to define any technical sheet, except a specific one for each head. In short:

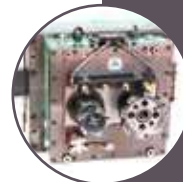
*1- there are no dimensional limits because these depend on the machine on which they are to be fitted;
2- they can transmit powers up to and beyond the limit of the machine itself;
3- they can equip any machine tool or become part of special applications.*

The entire head and its component parts have been designed to satisfy the machining characteristics that the piece, the tools and the customer require.

SERIES TFS

TESTE FISSE SPECIALI

SPECIAL FIXED HEADS



10-6

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TSI/TSX

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MT-TC-TC3



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MT 05599

Testa multipla per foratura corpo rubinetto. Applicazione su tornio. Peso Kg 4,8.

Multispindle head for tap's body drilling on turning centre. Weight Kg 4,8.



MT 38098

Testa multipla per rivettatura componenti in plastica. Peso Kg 22.

Rivet multispindle head for plastic components. Weight Kg 22.



MT 22604

Testa multipla per foratura su corpo pompa. Applicazione su torretta a revolver. Peso Kg 11,5.

Multispindle head for pump's body drilling on turret head. Weight Kg 11,5.



MT 38205

Testa multipla di maschiatura con compensazione a trazione. Peso Kg 16,5.

Multispindle tapping head with tapping compensation. Weight Kg 16,5.



MT 09305

Testa multipla per foratura su valvole oleodinamiche. Applicazione su centro di lavoro con ATC. Peso Kg 19.

Multispindle head for hydraulic control valves drilling on ATC machining centre. Weight Kg 19.



TC 15102



Testa di foratura su ghisa.
Applicazione su tornio. Peso Kg 47.
*Drilling multispindle head on cast iron
for turning centre. Weight Kg 47.*

TC 06694

Testa di foratura su alluminio per
centro di lavoro con ATC.
Peso Kg 33,5.
*Drilling multispindle head on
aluminium for ATC. Weight Kg 33,5.*



TC 40604

Testa di foratura su alluminio, punte in metal-
lo duro, passaggio refrigerante centro utensi-
le a 50 Bar, 9500 giri/min. Peso Kg 26.
*Drilling multispindle head on aluminium,
hard metal tools, coolant through the centre
tool at 50 Bar, 9500 Rpm. Weight Kg 26.*



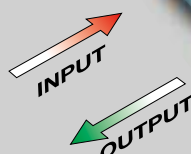
TC 13006

Testa multipla per lavorazione testata
motore a scoppio. Peso Kg 8,5.
*Multispindle head for working internal
combustion engine. Weight Kg 8,5.*



TC 34706

Testa multipla per foratura ad
alta velocità con circolazione
liquido per stabilizzazione
temperatura. Peso Kg 9.
*High speed multispindle head
with coolant for temperature
control. Weight Kg 9.*



TC 38204

Testa multipla di spazzolatura con doppia
rotazione: testa e mandrini. Peso Kg 224.
*Brushing multispindle head with double
rotation: body and spindles. Weight Kg 224.*



TC3 43889

Testa di maschiatura equipaggiata di maschiatori con controllo rottura utensile a radiofrequenza. Peso Kg 69.

Tapping head equipped with tapping spindles with broken tool control device by remote control. Weight Kg 69.



TC3 33391

Testa di maschiatura a patrona di componente in ghisa per motore agricolo. Peso Kg 450.

Lead screw tapping head for tractor engine. Weight Kg 450.



TC3 35602

Testa di alesatura e smussatura con utensile combinato su cerchi ruota in acciaio per autotrazione. Peso Kg 285.

Boring and chamfering head with combined tools on truck's steel rim. Weight Kg 285.



TC3 35205

Testa di foratura f25 con passaggio refrigerante per centro utensile a 50 Bar su componenti per desalatori. Peso Kg 322.

Drilling multispindle head f25 with coolant through the centre tool at 50 Bar for desalinators. Weight Kg 322.



TC3 10191

Testa di foratura basamento motore di autoveicolo. Peso Kg 540.

Drilling head for car engine. Weight Kg 540.





TSF 38906

Testa di fresatura per biella in acciaio.
Peso Kg 72,5.
*Milling head for steel connecting rod.
Weight Kg 72,5.*



TSF 34102

Testa di fresatura pendolare a 24°. Peso Kg 25,5.
Testa di fresatura pendolare a 24°. Peso Kg 25,5.



TSF 06806

Testa di foratura con movimento assiale mandrino. Peso Kg 15.
Drilling head with axial spindle movement weight. Weight Kg 15.



TSF 30605

Testa di foratura su 4 lati di componente oleodinamico. Peso Kg 11.
Drilling head on 4 sides of hydraulic components. Weight Kg 11.



TSF 21704

Testa con slitta movimentata idraulicamente. Peso Kg 6,5.
Head equipped with hydraulic slide. Weight Kg 6,5.



TSF 36805

Testa di lavorazione facce di motore automobile. Peso Kg 291.
Multispindle head for working on different car engine faces. Weight Kg 291.



FH

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ACCESSORI



ACCESSORIES



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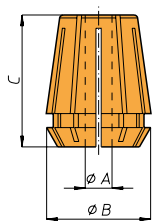
VH

TSI/TSX

T

MT-TC-TC3

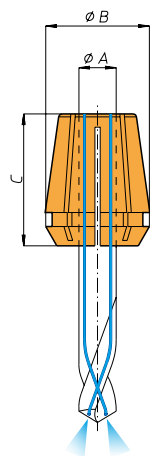




PINZE DIN 6499 FORMA B - TIPO ER SPRING COLLETS DIN 6499 FORM B - ER TYPE

ER8	øB=8,5		C=15													
CODICE CODE	224400	224401	224402	224403	224404	224405	224406	224407	224408							
øA	1-0,5	1,5-1	2-1,5	2,5-2	3-2,5	3,5-3	4-3,5	4,5-4	5-4,5							
ER11	øB=11,5		C=18													
CODICE CODE	224411	224412	224413	224414	224415	224416	224417	224418	224419	224420	224421	224422	224423			
øA	1-0,5	1,5-1	2-1,5	2,5-2	3-2,5	3,5-3	4-3,5	4,5-4	5-4,5	5,5-5	6-5,5	6,5-6	7-6,5			
ER16	øB=17		C=27,5													
CODICE CODE	224426	224424	224425	224467	224436	224429	224430	224431	224432	224433	224434	224435				
øA	1-0,5	1,5-1	2-1,5	2,5-2	3-2,5	4-3	5-4	6-5	7-6	8-7	9-8	10-9				
ER20	øB=21		C=31,5													
CODICE CODE	224451	224437	224450	224409	224410	224440	224441	224442	224443	224444	224445	224446	224447	224448	224449	
øA	1-0,5	1,5-1	2-1,5	2,5-2	3-2,5	4-3	5-4	6-5	7-6	8-7	9-8	10-9	11-10	12-11	13-12	
ER25	øB=26		C=34													
CODICE CODE	224468	224469	224470	224471	224472	224454	224455	224456	224457	224458	224459	224460	224461	224462	224463	224464
øA	1-0,5	1,5-1	2-1,5	2,5-2	3-2,5	4-3	5-4	6-5	7-6	8-7	9-8	10-9	11-10	12-11	13-12	14-13
CODICE CODE	224465	224466	224550													
øA	15-14	16-15	16-17													
ER32	øB=33		C=40													
CODICE CODE	224473	224474	224476	224477	224478	224479	224480	224481	224482	224483	224484	224485	224486	224487		
øA	2,5-2	3-2,5	4-3	5-4	6-5	7-6	8-7	9-8	10-9	11-10	12-11	13-12	14-13	15-14		
CODICE CODE	224488	224489	224490	224491	224492	224551	224552									
øA	16-15	17-16	18-17	19-18	20-19	21-20	22-21									
ER40	øB=41		C=46													
CODICE CODE	224499	224500	224501	224502	224503	224504	224505	224506	224507	224508	224509	224510	224511	224512	224513	
øA	3-2	4-3	5-4	6-5	7-6	8-7	9-8	10-9	11-10	12-11	13-12	14-13	15-14	16-15	17-16	
CODICE CODE	224514	224515	224516	224517	224518	224519	224520	224521	224522	224523	224524	224525	224526			
øA	18-17	19-18	20-19	21-20	22-21	23-22	24-23	25-24	26-25	27-26	28-27	29-28	30-29			
ER50	øB=52		C=60													
CODICE CODE	224530	224531	224532	224533	224534	224535	224536	224537	224538	224539	224540	224541	224542	224543	224544	224545
øA	6-4	8-6	10-8	12-10	14-12	16-14	18-16	20-18	22-20	24-22	25-23	26-24	28-26	30-28	32-30	34-32

PINZE DIN 6499 SPRING COLLETS DIN 6499

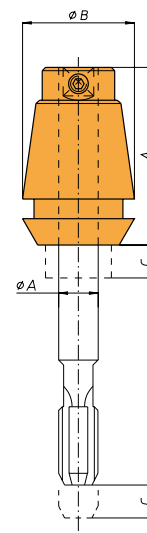


ER16 UPV	øB=17		C=27,5													
CODICE CODE	235205	235206	235207	235208	235209	235210	235211	235212								
øA	3	4	5	6	7	8	9	10								
ER20 UPV	øB=21		C=31,5													
CODICE CODE	235215	235216	235217	235218	235219	235220	235221	235222	235223	235224	235225					
øA	3	4	5	6	7	8	9	10	11	12	13					
ER25 UPV	øB=26		C=34													
CODICE CODE	235228	235229	235230	235231	235232	235233	235234	235235	235236	235237	235238	235239	235240	235241		
øA	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
ER32 UPV	øB=33		C=40													
CODICE CODE	235246	235247	235248	235249	235250	235251	235252	235253	235254	235255	235256	235257	235258	235259	235260	
øA	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
CODICE CODE	235261	235262	235263													
øA	18	19	20													
ER40 UPV	øB=41		C=46													
CODICE CODE	235266	235267	235268	235269	235270	235271	235272	235273	235274	235275	235276	235277	235278	235279	235280	
øA	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
CODICE CODE	235281	235282	235283	235284	235285	235286	235287	235288								
øA	19	20	21	22	23	24	25	26								

PINZE DI MASCHIATURA CON COMPENSAZIONE - TIPO ET1* TAPPING COLLETS WITH COMPENSATION - ET1 TYPE*

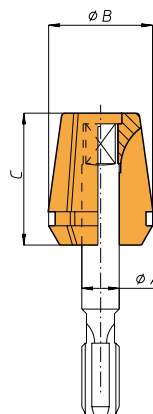
ET 1-12	A=21,5		øB=11,5		C=5,5		CAPACITÀ M2 - M4					
CODICE CODE	224650	224651	224652	224653	224654							
øA	1,4	2,2	2,5	2,8	3,5							
ET 1-16	A=27		øB=17		C=7		CAPACITÀ M2 - M8					
CODICE CODE	224658	224659	224660	224661	224662	224663	224664	224665				
øA	1,4	2,2	2,5	2,8	3,5	4	4,5	6				
ET 1-20	A=31		øB=21		C=7		CAPACITÀ M2 - M10					
CODICE CODE	224670	224671	224672	224673	224674	224675	224676	224677				
øA	2,2	2,5	2,8	3,5	4	4,5	6	7				
ET1-25	A=34		øB=26		C=8		CAPACITÀ M2 - M12					
CODICE CODE	224682	224683	224684	224685	224686	224687	224688	224689	224690	224691		
øA	2,2	2,5	2,8	3,5	4	4,5	6	7	8	9		
ET 1-32	A=43		øB=33		C=10		CAPACITÀ M35 - M16					
CODICE CODE	224695	224696	224697	224698	224699	224700	224701	224702	224703			
øA	4	4,5	6	7	8	9	10	11	12			
ET1-40	A=54		øB=41		C=13		CAPACITÀ M5 - M20					
CODICE CODE	224706	224707	224708	224709	224710	224711	224712	224713	224714			
øA	6	7	8	9	10	11	12	14	16			

*Not suitable for coolant through (tool)



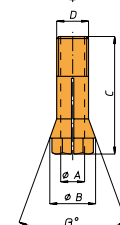
PINZE DI MASCHIATURA SENZA COMPENSAZIONE - TIPO ER TAPPING COLLETS WITHOUT COMPENSATION - ER TYPE

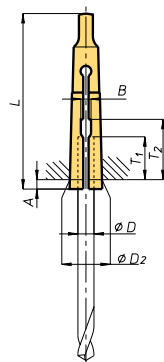
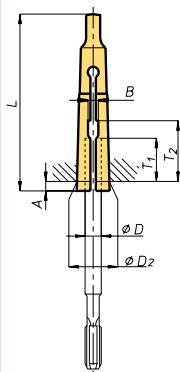
ER 16 GB	øB=16		C=27,5									
CODICE CODE	224585	224587	22458	224589	224590							
øA	4,5	6	7	8	9							
ER 20 GB	øB=20		C=31,5									
CODICE CODE	224593	224595	224596	224597	224598	224599	224600					
øA	4,5	6	7	8	9	10	11					
ER 25 GB	øB=25		C=34									
CODICE CODE	224604	224606	224607	224608	224609	224610	224611	224612	224613	224614		
øA	4,5	6	7	8	9	10	11	12	14	16		
ER 32 GB	øB=32		C=40									
CODICE CODE	224617	224619	224620	224621	224622	224623	224624	224625	224626	224627	224628	224629
øA	4,5	6	7	8	9	10	11	12	14	16	18	20
ER 40 GB	øB=40		C=46									
CODICE CODE	224634	224635	224636	224637	224638	224639	224640	224641	224642	224643	224644	224645
øA	6	7	8	9	10	11	12	14	16	18	20	22



PINZE COLLETS

6023E	øB=6,5		C=20		D=M5x0,6		SW=5,5		β°=20°		COPPIA SERRAGGIO (NM)=3	
CODICE CODE	224740	224741	224742	224743	224746							
øA	1	1,5	2	2,5	3							
600E	øB=9		C=28,5		D=M6x0,75		SW=7		β°=20°		COPPIA SERRAGGIO (NM)=5	
CODICE CODE	224574	224575	224576	224577	224578	224579						
øA	1,5	2	2,5	3	3,5	4						
601E	øB=11		C=33		D=M8x0,75		SW=9		β°=20°		COPPIA SERRAGGIO (NM)=9	
CODICE CODE	224728	224729	224730	224731	224732	224733	224734	224735	224736	224737		
øA	1,5	2	2,5	3	3,5	4	4,5	5	5,5	6		





PINZE PORTA MASCHI DIN 6328 TAPHOLDER COLLETS DIN 6328

DIN 6328 - CONO MORSE 1										D2=12.065 A=3,5 L=65,5									
D	2,5	2,8	3,5	4	4,5	6	7	8	9										
CODICE CODE	224000	224002	224008	224010	224012	224018	224022	224024	224026										
B	2,2	2,2	2,8	3,1	3,5	5,1	5,7	6,3	7,3										
T1	15	15	16	16	18	19,5	19,5	22	25										
T2	19	19	21	24	24	26	27	30	32										

DIN 6328 - CONO MORSE 2										D2=17.78 A=5 L=80									
D	6	7	8	9	10	11	12												
CODICE CODE	224112	224116	224120	224122	224126	224128	224134												
B	5,1	5,7	6,4	7,3	8,3	9,3	9,3												
T1	19,5	19,5	19,5	22	23	24	24												
T2	26	26	27	22	32	34	34												

PINZE PORTA PUNTE DIN 6329 TOOLHOLDER COLLETS DIN 6329

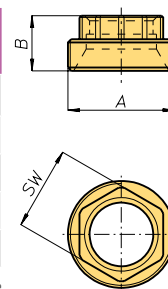
DIN 6329 - CONO MORSE 1										D2=12.065 A=3,5 L=65,5											
D	3	3,2	3,5	3,75	4	4,25	4,5	4,75	5	5,25	5,5	5,75	6	6,25	6,5	6,75	7	7,25	7,5	7,75	8
CODICE CODE	224164	224166	224168	224170	224172	224174	224176	224178	224180	224182	224184	224186	224188	224190	224192	224194	224196	224198	224200	224202	224204
B	1,8		2,2		2,4		2,7			3,2			3,8								
T1	20										22			22							
T2	25					26					29			29							

DIN 6329 - CONO MORSE 2										D2=17.78 A=5 L=80											
D	5,5	6	6,5	7	7,5	8	8,5	9	9,5	10	10,5	11	11,5	12	12,5	13					
CODICE CODE	224260	224262	224264	224266	224268	224270	224272	224274	224276	224278	224280	224282	224284	224286	224288	224290					
B	3,2		3,8		4,8			5,3			6,3										
T1	22						25			28											
T2	29						33			37			39								

GHIERE ESAGONALI PER PINZE DIN 6499 EXAGON CLAMPING NUT FOR SPRING COLLETS DIN 6499

Ghiera Nut	Codice Code	øA	B	SW	Coppia serraggio Clamping force (Nm)
ER 11AE	224980	M18 x 1	9	15	24 (30)
ER 16AE	224981	M24 x 1	12	19	40 (50)
ER 20AE	224982	M28 x 1,5	13	22	52 (65)
ER 25AE	224983	M32 x 1,5	16,5	27	80 (100)
ER 32AE	224984	M40 x 1,5	19	32	104 (130)

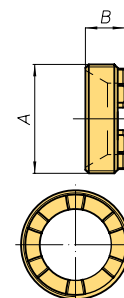
Tra parentesi valore massimo - Between brackets max. value



GHIERE REGOFIX PER PINZE DIN 6499 REGOFIX CLAMPING NUT FOR SPRING COLLETS DIN 6499

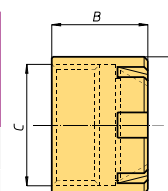
Ghiera Nut	Codice Code	øA	B	Wrench	Pinze con scarico Spring collet with extractor	Pinze senza scarico Spring collet without extractor
HI-Q/ER AX 11	224951	M18 x 1	7,5	E 11 AX	21 (25)	24 (29)
HI-Q/ER AX 16	224950	M24 x 1	7,6	E 16 AX	40 (50)	40 (50)
HI-Q/ER AX 20	224952	M28 x 1,5	8,5	E 20 AX	35 (42)	40 (50)
HI-Q/ER AX 25	224953	M32 x 1,5	8,8	E 25 AX	64 (80)	64 (80)
HI-Q/ER AX 32	224954	M40 x 1,5	9,8	E 32 AX	72 (90)	104 (125)

Tra parentesi valore massimo - Between brackets max. value

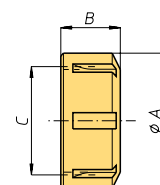


GHIERE PER PINZE DIN 6499 CLAMPING NUT FOR SPRING COLLETS DIN 6499

Ghiera Nut	Codice Code	øA	B	C	Pinze con scarico Spring collet with extractor	Pinze senza scarico Spring collet without extractor
ER 8M	224900	11,8	10,8	M10 x 0,75	5 (6)	5 (6)
ER 11M	224902	16	12	M13 x 0,75	12 (15)	16 (20)
ER 16M	224904	22	18	M19 x 1	24 (30)	24 (30)
ER 20M	224906	28	21	M24 x 1	28 (35)	28 (35)
ER 25M	224908	35	20	M30 x 1	32 (40)	32 (40)

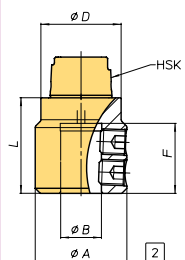
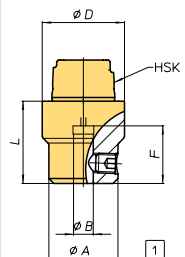
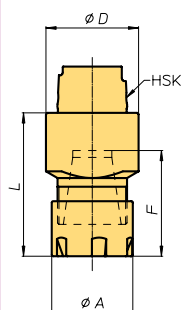
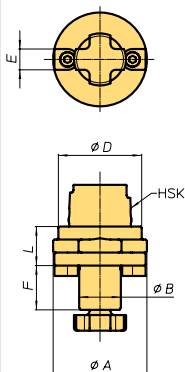


Ghiera Nut	Codice Code	øA	B	C	Pinze con scarico Spring collet with extractor	Pinze senza scarico Spring collet without extractor
ER 11 S	224985	19	11,3	M14 x 0,75	16 (19)	24 (30)
ER 16 S	224932	28	17,5	M22 x 1,5	44 (53)	56 (70)
ER 20 S	224935	34	19	M25 x 1,5	35 (42)	80 (100)
ER 25 S	224974	42	20	M32 x 1,5	64 (80)	104 (130)
ER 32 S	224975	50	22,5	M40 x 1,5	136 (170)	136 (170)
ER 40 S	224976	63	25,5	M50 x 1,5	176 (220)	176 (220)
ER 50 S	224986	78	35,3	M64 x 2	240 (300)	240 (300)



Ghiera Nut	Codice Code	øA	B	C	Pinze con scarico Spring collet with extractor	Pinze senza scarico Spring collet without extractor
HI-Q/ER 11	224933	19	11,3	M14 x 0,75	16 (19)	24 (30)
HI-Q/ER 16	224909	28	17,5	M22 x 1,5	44 (53)	56 (70)
HI-Q/ER 20	224910	34	19	M25 x 1,5	35 (42)	80 (100)
HI-Q/ER 25	224912	42	20	M32 x 1,5	64 (80)	104 (130)
HI-Q/ER 32	224914	50	22,5	M40 x 1,5	136 (170)	136 (170)
HI-Q/ER 40	224916	63	25,5	M50 x 1,5	176 (220)	176 (220)
HI-Q/ER 50	224918	78	35,3	M64 x 2	240 (300)	240 (300)

Tra parentesi valore massimo - Between brackets max. value



INSERTO HSK PORTA FRESA HSK MILL ADAPTERS

Codice Code	Grandezza Size	HSK	øA	øB	øD	E	F	L	Vite Screw	Chiave* Wrench*
009401	HSK 32-16	32	36	16	32	8	17	15	M8	097419
009419	HSK 32-22	32	54	22	32	10	19	22	M10	097415
009404	HSK 40-16	40	40	16	40	8	17	15	M8	097419
009405	HSK 40-22	40	54	22	40	10	19	22	M10	097415
009416	HSK 50-22	50	54	22	50	10	19	23	M10	
009406	HSK 50-27	50	64	27	50	12	21	23	M12	097416
009417	HSK 63-27	63	64	27	64	12	21	25	M12	
009408	HSK 63-32	63	74	32	63	14	24	25	M16	097417
009414	HSK 80-32	80	80	32	80	14	24	35	M16	
009413	HSK 80-40	80	80	40	80	16	27	35	M20	097591

*Le chiavi non sono comprese - *The wrench aren't included

INSERTO HSK PORTA PINZE PER UTENSILI A GAMBO CILINDRICO HSK ADAPTERS WITH COLLET FOR CYLINDRICAL SHANK TOOLS

Codice Code	Grandezza Size	HSK	Pinza Collet	øA	øD	F	L	Ghiera Nut
009400	HSK 32-ER 20M	32	ER 20	28	32	37,5	49,5	ER 20M
009402	HSK 32-ER 25M	32	ER 25	35	32	41	53	ER 25M
009415	HSK 40-ER 20M	40	ER 20	28	40	37,5	49,5	ER 20M
009403	HSK 40-ER 25M	40	ER 25	35	40	41	54	ER 25M
009418	HSK 40-ER 32M	40	ER 32	50	42	47	59,5	ER 32UM

009407	HSK 50-ER 32	50	ER 32	50	50	47	64	ER 32UM
009409	HSK 63-ER 32	63	ER 32	50	63	47	65	ER 32UM
009410	HSK 63-ER 40	63	ER 40	63	63	53	71	ER 40UM
009411	HSK 80-ER 40	80	ER 40	63	80	53	73,5	ER 40UM
009412	HSK 80-ER 50	80	ER 50	78	80	69	91,5	ER 50UM

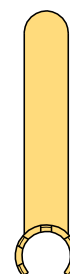
INSERTO HSK WELDON/WHISTLE NOTCH ADAPTER HSK WELDON/WHISTLE NOTCH

Codice Code	Grandezza Size	HSK	øA	øD	F	L	B	TIPO Type
228220	HSK 32 W8	32	28	32	30	45	8	1
228221	HSK 32 W10	32	32	32	30	45	10	
228222	HSK 32 W12	32	32	32	35	50	12	
228223	HSK 40 W8	40	28	40	30	45	8	
228224	HSK 40 W10	40	35	40	30	45	10	
228225	HSK 40 W12	40	40	40	35	50	12	
228226	HSK 40 W16	40	40	40	40	55	16	
228227	HSK 50 W8	50	28	50	30	45	8	
228228	HSK 50 W10	50	35	50	30	45	10	
228229	HSK 50 W12	50	42	50	35	50	12	
228230	HSK 50 W16	50	50	50	40	55	16	
228231	HSK 50 W20	50	50	50	45	60	20	
228232	HSK 63 W8	63	28	63	30	45	8	
228233	HSK 63 W10	63	35	63	30	45	10	
228234	HSK 63 W12	63	42	63	35	50	12	
228235	HSK 63 W16	63	50	63	40	55	16	
228236	HSK 63 W20	63	52	63	45	60	20	

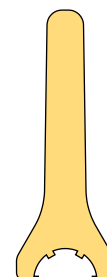
228237	HSK 63 W25	63	63	63	50	70	25	2
228238	HSK 63 W32	63	72	63	55	75	32	

CHIAVI PER GHIERE CLAMPING NUTS SPANNER

Chiavi Spanner	Codice chiave Spanner code	Per ghiera For clamping nut	Codice ghiera Clamping nut code	
CE 8M	231300	ER 8M	224900	
CE 11M	231302	ER 11M	224902	
CE 16M	231306	ER 16M	224904	
CE 20M	231309	ER 20M	224906	
CE 25M	231313	ER 25M	224908	

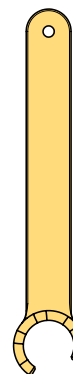


Chiavi Spanner	Codice chiave Spanner code	Per ghiera For clamping nut	Codice ghiera Clamping nut code	
CE 20U	231315	ER 20UM	224973	224910
CE 25U	231314	ER 25UM	224974	224912
CE32U	231320	ER 32UM	224975	224914
CE 40U	231321	ER 40UM	224976	224916
CE 50U	231323	ER 50UM	224986	224918



CHIAVI PER GHIERE CLAMPING NUTS SPANNER

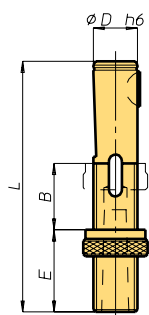
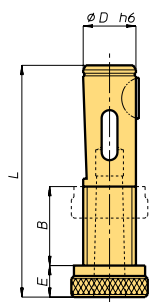
Chiavi Spanner	Codice chiave Spanner code	Per ghiera For clamping nut	Codice ghiera Clamping nut code	
E 11 AX	231356	ERAX11	224951	
E 16 AX	231357	ERAX16	224950	
E 20 AX	231358	ERAX20	224952	
E 25 AX	231359	ERAX25	224953	
E 32 AX	231360	ERAX32	224954	



CHIAVI PER VITI SPANNER SCREW

Chiavi Spanner	Codice chiave Spanner code	Inserto HSK HSK mill adapter			
CM8	097419	HSK 32-16 HSK 40-16			
CM10	097415	HSK 40-22 HSK 50-22			
CM12	097416	HSK 50-27 HSK 63-27			
CM16	097417	HSK 63-32 HSK 80-32			
CM20	097591	HSK 80-40			





INSERTI REGISTRABILI DIN 6327/1 PORTA UTENSILI A CONO MORSE DIN 6327/1 ADJUSTABLE ADAPTERS FOR MORSE TAPER SHANK TOOLS

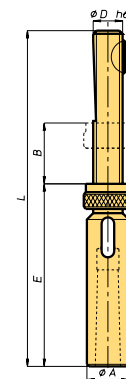
Codice Code	Grandezza Size	Cono Morse Morse taper	oD ^{h6}	Filettatura Thread	B	E	L	Linguetta Woodruff key
009010	D 16 x 1	1	16	Tr 16 x 1,5	28	12	85	5 x 6,5
009012	D 20 x 1	1	20	Tr 20 x 2	28	12	88	5 x 7,5
009014	D 25 x 2	2	25	Tr 25 x 2	30	12	95	6 x 9
009016	D 28 x 2	2	28	Tr 28 x 2	30	12	95	6 x 9
009018	D 32 x 3	3	32	Tr 32 x 2	36	12	118	8 x 11
009020	D 36 x 3	3	36	Tr 36 x 2	36	14	118	8 x 11
009022	D 48 x 4	4	48	Tr 48 x 2	47	18	144	10 x 13

INSERTI REGISTRABILI DIN 6327/2 PORTA UTENSILI A CONO MORSE DIN 6327/2 ADJUSTABLE ADAPTERS FOR MORSE TAPER SHANK TOOLS

Codice Code	Grandezza Size	Cono Morse Morse taper	oD ^{h6}	Filettatura Thread	B	E	L	Linguetta Woodruff key
009024	F 16 x 1 x 25	1	16	Tr 16 x 1,5	28	37	110	5 x 6,5
009026	F 16 x 1 x 50					62	135	
009028	F 16 x 1 x 75					87	160	
009030	F 16 x 1 x 100					112	185	
009032	F 20 x 1 x 25	1	20	Tr 20 x 2	28	37	113	5 x 7,5
009034	F 20 x 1 x 50					62	38	
009036	F 20 x 1 x 75					87	163	
009038	F 20 x 1 x 100					112	188	
009040	F 25 x 2 x 25	2	25	Tr 25 x 2	30	37	120	6 x 9
009042	F 25 x 2 x 50					62	145	
009044	F 25 x 2 x 75					87	170	
009046	F 25 x 2 x 100					112	195	
009048	F 28 x 2 x 25	2	28	Tr 28 x 2	30	37	120	6 x 9
009050	F 28 x 2 x 50					62	145	
009052	F 28 x 2 x 75					87	1170	
009054	F 28 x 2 x 100					112	195	
009056	F 32 x 3 x 25	3	32	Tr 32 x 2	36	37	148	8 x 11
009058	F 32 x 3 x 50					62	178	
009060	F 32 x 3 x 75					87	208	
009062	F 32 x 3 x 100					112	238	
009064	F 36 x 3 x 25	3	36	Tr 36 x 2	36	37	148	8 x 11
009066	F 36 x 3 x 50					62	178	
009068	F 36 x 3 x 75					87	208	
009070	F 36 x 3 x 100					112	238	
009072	F 48 x 4 x 25	4	48	Tr 48 x 2	47	37	184	10 x 13
009074	F 48 x 4 x 50					62	224	
009076	F 48 x 4 x 75					87	264	
009078	F 48 x 4 x 100					112	304	

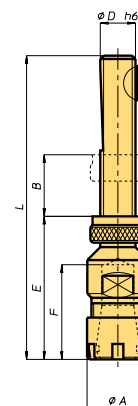
INSERTI REGISTRABILI PORTA UTENSILI A CONO MORSE (NORMA OMG) ADJUSTABLE ADAPTERS FOR MORSE TAPER SHANK TOOLS (OMG NORM)

Codice Code	Grandezza Size	Cono Morse Morse taper	ϕD^{h6}	Filettatura Thread	ϕA	B	E	L	Linguetta Woodruff key
009110	Tr 8 x 1	1	8	Tr 8 x 1	16,8	16	84	126	2 x 3,7
009116	Tr 10 x 1	1	10	Tr 10 x 1,5	19,5	18	89	138	3 x 5
009122	Tr 12 x 1	1	12	Tr 12 x 1,5	22	18	91	138	3 x 5



INSERTO PORTA PINZE PER UTENSILI A GAMBO CILINDRICO (DIN 6327) DIN 6327 ADJUSTABLE ADAPTERS FOR CYLINDRICAL SHANK TOOLS

Codice Code	Grandezza Size	ϕD^{h6}	Filettatura Thread	ϕA	B	E	F	L	Pinza Collet	Linguetta Woodruff key
009112	Tr 8 ER 8	8	Tr 8 x 1	12	16	36	23	75	ER 8	2 x 3,7
009114	Tr 8 ER 11	8	Tr 8 x 1	16	16	41	28	80	ER 11	2 x 3,7
009118	Tr 10 ER 11	10	Tr 10 x 1,5	16	18	43	28	93	ER 11	3 x 5
009120	Tr 10 ER 16	10	Tr 10 x 1,5	22	18	54	39	104	ER 16	3 x 5
009124	Tr 12 ER 16	12	Tr 12 x 1,5	22	18	56	39	106	ER 16	3 x 5
009130	Tr 16 ER 20	16	Tr 16 x 1,5	28	28	65	47	136	ER 20	5 x 6,5
009140	Tr 20 ER 20	20	Tr 20 x 2	32	28	65	47	139	ER 20	5 x 7,5
009145	Tr 20 ER 25	20	Tr 20 x 2	35	28	61	44	135	ER 25	5 x 7,5
009170	Tr 28 ER 32	28	Tr 28 x 2	50	30	65	49	147	ER 32	6 x 9



ACCESSORI - ACCESSORIES

11-10



T

TSI/TSX

VH

HT

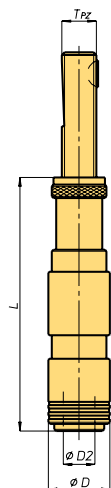
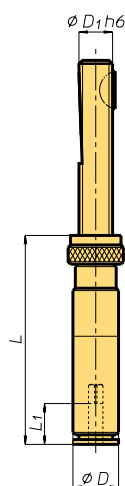
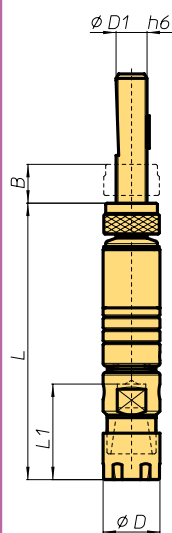
MO

TA

TA.CP

BAH

FH



MANDRINI OMG PER MASCHIARE CON DIAMETRO RIDOTTO OMG TAPPING SPINDLES WITH REDUCED DIAMETER

CNC TURNING SPINDLES WITH REDUCED DIAMETER										
Codice Code	Mandrino Spindle				øD	D1	L	L1	B	Pinza Collet
009450	MM.Tr8.ER8	M5	0,5	8	15	8	75	23	16	ER8
009453	MM.Tr8.ER11	M6	1	10	19	8	90	27	16	ER11
009451	MM.Tr10.ER11	M6	1	10	19	10	90	27	18	ER11
009454	MM.Tr10.ER16	M8	1	10	22	10	105	37	18	ER16
009452	MM.Tr12.ER16	M8	1	10	22	12	107	37	18	ER16

MANDRINI PER MASCHIARE CON DIAMETRO RIDOTTO TAPPING SPINDLES WITH REDUCED DIAMETER

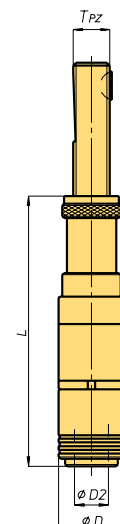
TAPPING SPINDLES WITH REDUCED DIAMETER							
Codice Code	Mandrino Spindle		øD	D1	L	L1	
227030	MR. 0 -10 x 1.5 Tpz	M1 - M10	2.5 - 7.2	14	10	44	15
227031	MR. 0 -12 x 1.5 Tpz				12		
227032	MR. 1 -12 x 1.5 Tpz	M4 - M14	4.5 - 11.3	19	12	52	17
227033	MR. 1 -16 x 1.5 Tpz				16		
227034	MR. 2 -20 x 2 Tpz	M8 - M24	7 - 18	31	20	77	30
227035	MR. 2 -28 x 2 Tpz				28		
227036	MR. 3 -28 x 2 Tpz	M14 - M36	11 - 28	48	28	95	44
227037	MR. 3 -36 x 2 Tpz				36	97	
227038	MR. 4 -36 x 2 Tpz	M22 - M48	18 - 36	60	36	132	71
227039	MR. 4 -48 x 2 Tpz				48	136	

MANDRINI A CAMBIO RAPIDO PER MASCHIARE CON COMPENSAZIONE ASSIALE QUICK CHANGE TAPPING CLUCKS WITH AXIAL COMPENSATION

Mandrino Spindle		D	D2			16x1.5 Tpz	Codice Code	20x2 Tpz	Codice Code	28x2 Tpz	Codice Code	36x2 Tpz	Codice Code			
MF 0-5D-20-10	M1 - M10	23	13	20	10	0	116	227060	116	227061						
MF 0-5D-15-15							15	15	111	227062	111	227063				
MF 0-5D-0-30							0	30	96	227064	96	227065				
MF 1-5D-30-10	M3 - M12	35	19	30	10	1	148	227066	148	227067	148	227068				
MF 1-5D-20-20							20	20	138	227069	138	227070	138	227071		
MF 1-5D-0-40							0	40	118	227072	118	227073	118	227074		
MF 2-4D-30-10	M8 - M20	50	31	30	10	2			172	227075	172	227076	172	227077		
MF 2-4D-20-20							20	20			162	227078	162	227079	162	227080
MF 2-4D-0-40							0	40			142	227081	142	227082	142	227083
MF 3-3D-30-10	M14 - M33	72	48	30	10	3					218	227084	218	227085		
MF 3-3D-20-20							20	20					208	227086	208	227087
MF 3-3D-0-40							0	40					188	227088	188	227089

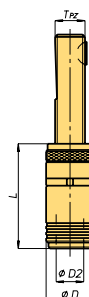
MANDRINI A CAMBIO RAPIDO PER MASCHIARE CON COMPENSAZIONE ASSIALE E SPOSTAMENTO PARALLELO ALL'ASSE QUICK CHANGE TAPPING CHUCKS WITH AXIAL COMPENSATION AND RADIAL PARALLEL FLOATING

Mandrino Spindle		D	D2				16x1,5 Tpz	Codice Code	20x2 Tpz	Codice Code	28x2 Tpz	Codice Code	36x2 Tpz	Codice Code
MF 0-5D-20-10	M1 - M10	23	13	0,25	20	10	0	138	227090	138	227091			
MF 0-5D-15-15					15	15		133	227092	133	227093			
MF 0-5D-0-30					0	30		118	227094	118	227095			
MF 1-5D-30-10	M3 - M12	35	19	0,5	30	10	1	163	227096	163	227097	163	227098	
MF 1-5D-20-20					20	20		153	227099	153	227100	153	227101	
MF 1-5D-0-40					0	40		133	227102	133	227103	133	227104	
MF 2-4D-30-10	M8 - M20	50	31	1	30	10	2			196	227105	196	227106	174
MF 2-4D-20-20					20	20				186	227108	186	227109	164
MF 2-4D-0-40					0	40				166	227111	166	227112	144
MF 3-3D-30-10	M14 - M33	72	48	1,5	30	10	3					252	227084	220
MF 3-3D-20-20					20	20						242	227116	210
MF 3-3D-0-40					0	40						222	227118	190



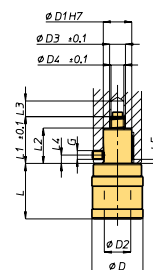
MANDRINI A CAMBIO RAPIDO PER MASCHIARE CON SPOSTAMENTO PARALLELO ALL'ASSE QUICK CHANGE TAPPING CHUCKS WITH RADIAL PARALLEL FLOATING

Mandrino Spindle		D	D2			16x1,5 Tpz	Codice Code	20x2 Tpz	Codice Code	28x2 Tpz	Codice Code	36x2 Tpz	Codice Code
MFC 0	M1 - M10	23	13	0,25	0	65	227131	65	227132				
MFC 1	M3 - M12	35	19	0,5	1	70	227133	70	227134	70	227135		
MFC 2	M8 - M20	50	31	1	2			96	227136	96	227137	98	227138
MFC 3	M14 - M33	72	48	1,5	3					136	227139	138	227146



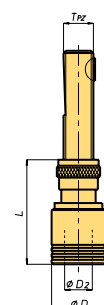
MANDRINI A CAMBIO RAPIDO PER MASCHIARE CON COMPENSAZIONE ASSIALE QUICK CHANGE TAPPING CHUCKS WITH AXIAL COMPENSATION

QUICK CHANGE TAPPING CHUCKS WITH AXIAL COMPLIANCE																		
Codice Code	Mandrino Spindle				D	D1	D2	D3	D4	L	L1	L2 min.	L3 min.	L4	L5	G	Chiavetta DIN 6885	
227185	MKD0.GC	M1 - M10	0	6,5	6,5	26	15	13	8,2	6	37	32	18,5	11	6	3	M5	5x3x12
227186	MKD1.GC	M3 - M12	1	7,5	7,5	36	20	19	11,2	9	39	33	24,5	11	6	3	M6	6x4x16
227187	MKD2.GC	M8 - M20	2	12,5	12,5	53	25	31	13,2	11	63	39	30,5	20	8	4	M8	6x6x20



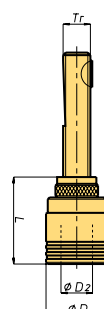
MANDRINI A CAMBIO RAPIDO PER MASCHIARE CON COMPENSAZIONE ASSIALE QUICK CHANGE TAPPING CHUCKS WITH AXIAL COMPENSATION

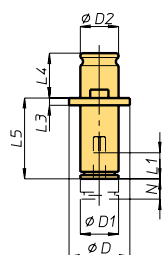
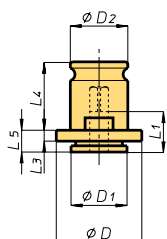
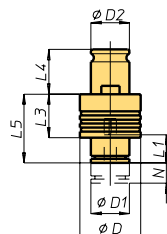
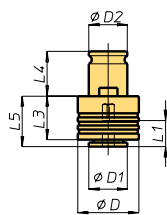
Mandrino Spindle				øD	øD2	28x2 Tpz	Codice Code	36x2 Tpz	L	Codice Code	48x2 Tpz	Codice Code
AKD 1-..	M3 - M12	1	20	20	32	19	65	227190	67	227191	71	227192
AKD 2-..	M8 - M20	2	20	25	50	31			83	227193	87	227194
AKD 40-..	M6 - M18	4	20	20	40	26	80	227195				



MANDRINI A CAMBIO RAPIDO PER MASCHIARE CON COMPENSAZIONE ASSIALE QUICK CHANGE TAPPING CHUCKS WITH AXIAL COMPENSATION

Mandrino Spindle					øD	øD2	16x1,5 Tpz	Codice Code	20x2 Tpz	Codice Code	L	28x2 Tpz	Codice Code	36x2 Tpz	Codice Code
MKD-0- Tr..	M1 - M10	0	6,5	6,5	26	13	50	227165	50	227166					
MKD-1- Tr..	M1 - M12	1	7,5	7,5	36	19	52	227167	52	227168	52	227169			
MKD-2- Tr..	M4 - M20	2	12,5	12,5	53	31			76	227171	76	227172	78	227173	
MKD-3- Tr..	M4 - M33	3	20	20	78	48								111	227175





BUSSOLE PORTA MASCHIO A CAMBIO RAPIDO CON FRIZIONE DESTRA E SFERE QUICK CONNECTION TAP-HOLDER BUSHES WITH BALL RIGHT CLUTCH

Codice Code	Bussola Bush		øgambo maschio Tap shank diameter	øD	øD1	øD2	L1	L3	L4	L5
227206	BFS 0	M1 - M10	2,5 - 7,2	23	13	13	15	20	19,5	21
227207	BFS 1	M3 - M12	3,5 - 11,3	32	19	19	17	25	21,5	25
227208	BFS 2	M8 - M20	7 - 18	50	30	31	30	31	35	34
227209	BFS 3	M14 - M33	11 - 28	72	48	48	44	41	55,5	45
227210	BFS 40	M6 - M18	6 - 14	40	25	26	30	27	32	30

BUSSOLE PORTA MASCHIO A CAMBIO RAPIDO CON FRIZIONE DESTRA E SFERE QUICK CONNECTION TAP-HOLDER BUSHES WITH BALL RIGHT CLUTCH

Codice Code	Bussola Bush		øgambo maschio Tap shank diameter	N	øD	øD1	øD2	L1	L3	L4	L5
227211	BFSR 0	M1 - M10	2,5 - 7,2	8	23	13	13	15	20	19,5	28
227212	BFSR 1	M2 - M12	3,5 - 11,3	10	32	19	19	17	25	21,5	33
227213	BFSR 2	M8 - M20	7 - 18	15	50	30	31	30	31	35	59
227214	BFSR 3	M14 - M33	11 - 28	25	72	48	48	44	41	55,5	82

BUSSOLE PORTA MASCHIO A CAMBIO RAPIDO QUICK CONNECTION TAP-HOLDER BUSHES

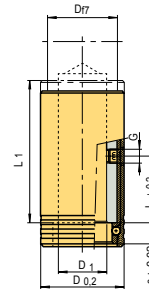
Codice Code	Bussola Bush		øgambo maschio Tap shank diameter	øD	øD1	øD2	L1	L3	L4	L5
227250	BFC 0	M1 - M10	2,5 - 7,2	22	13	13	15	4	19,5	7
227251	BFC 1	M3 - M12	3,5 - 11,3	30	19	19	17	4	21,5	7
227252	BFC 2	M8 - M20	7 - 18	48	30	31	30	5	35	11
227253	BFC 3	M14 - M33	11 - 28	70	48	48	44	6	55,5	14
227254	BFC 40	M6 - M18	6 - 14	40	25	26	30	5	32	13

BUSSOLE PORTA MASCHIO A CAMBIO RAPIDO QUICK CONNECTION TAP-HOLDER BUSHES

Codice Code	Bussola Bush		øgambo maschio Tap shank diameter	N	øD	øD1	øD2	L1	L3	L4	L5
227255	BFCR 0	M1 - M10	2,5 - 7,2	8	22	13	13	15	4	19,5	28
227256	BFCR 1	M2 - M12	3,5 - 11,3	10	30	19	19	17	4	21,5	33
227257	BFCR 2	M8 - M20	7 - 18	15	48	30	31	30	5	35	59
227258	BFCR 3	M14 - M33	11 - 28	25	70	48	48	44	6	55,5	82

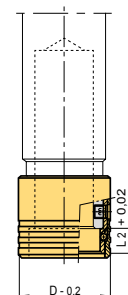
MANICOTTI AD INNESTO RAPIDO QUICK CONNECTION SLEEVES

Codice Code	Manicotto Sleeve	øD	øD1	øD3	L	L1	L2	G
227309	AIRFA. 12	24	12	20	22	48	9	M5
227310	AIRFA. 16	30	16	25	34	64	9,5	M6
227311	AIRFA. 20	38	20	32	34	70	11	M6
227312	AIRFA. 25	45	25	37	38	76	12	M8
227313	AIRFA. 28	48	28	40	38	78	12	M8
227314	AIRFA. 32	55	32	45	45	89	14	M8
227315	AIRFA. 36	60	36	50	45	97	16	M8
227316	AIRFA. 48	80	48	67	57	122	20	M10



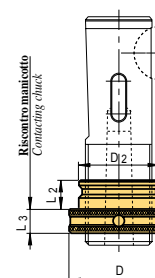
MANICOTTI AD INNESTO RAPIDO QUICK CONNECTION SLEEVES

Codice Code	Manicotto Sleeve	øD	øD1	øD3	øD4	L	L1	L2	G
227350	AIRFCA. 16	27	16	25	22	8	30	9,5	M5
227351	AIRFCA. 20	34	20	32	28	8	30	11	M5
227352	AIRFCA. 25	41	25	37	34,5	8	32	12	M6
227353	AIRFCA. 28	44	28	40	37	8	32	12	M6
227354	AIRFCA. 32	49	32	45	41	9	39	13,5	M6
227355	AIRFCA. 36	55	36	50	46	9	39	16	M6
227356	AIRFCA. 48	73	48	67	61	11	51	20	M8



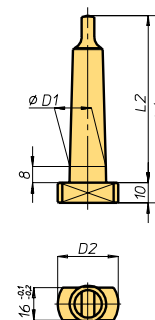
GHIERE AD INNESTO RAPIDO RING NUTS

Codice Code	Manicotto Sleeve	øD	øD2	L2	L3
227367	GIRF. 12	21,5	16,4	9	9
227368	GIRF. 16	26	19,9	9,5	9
227369	GIRF. 20	33	25,4	11	9
227370	GIRF. 25	40	31,9	12	10
227371	GIRF. 28	42	33,9	12	10
227372	GIRF. 32	47	37,9	13,5	10
227373	GIRF. 36	54	43,4	16	10
227374	GIRF. 48	72	57,9	20	14



TRASCINATORI A CONO MORSE MORSE TAPER WITH DRIVING DOG

Codice Code	Cono Morse Morse taper	A	B	L1	L2	L3	D1	D2	D3	R	β
011120	2	8	6,3	93	83	16	17,78	28	13,5	6	1°25'50"
011125	3	8	7,9	112	102	20	23,825	30	18,5	7	1°26'16"
011130	4	8	11,9	135,5	125,5	24	31,267	42	24,5	8	1°29'15"
011135	5	8	15,9	167,5	157,5	29	44,399	50	35,7	10	1°30'26"
011136	6	8	19	228	218	40	63,348	62	51	13	1°29'

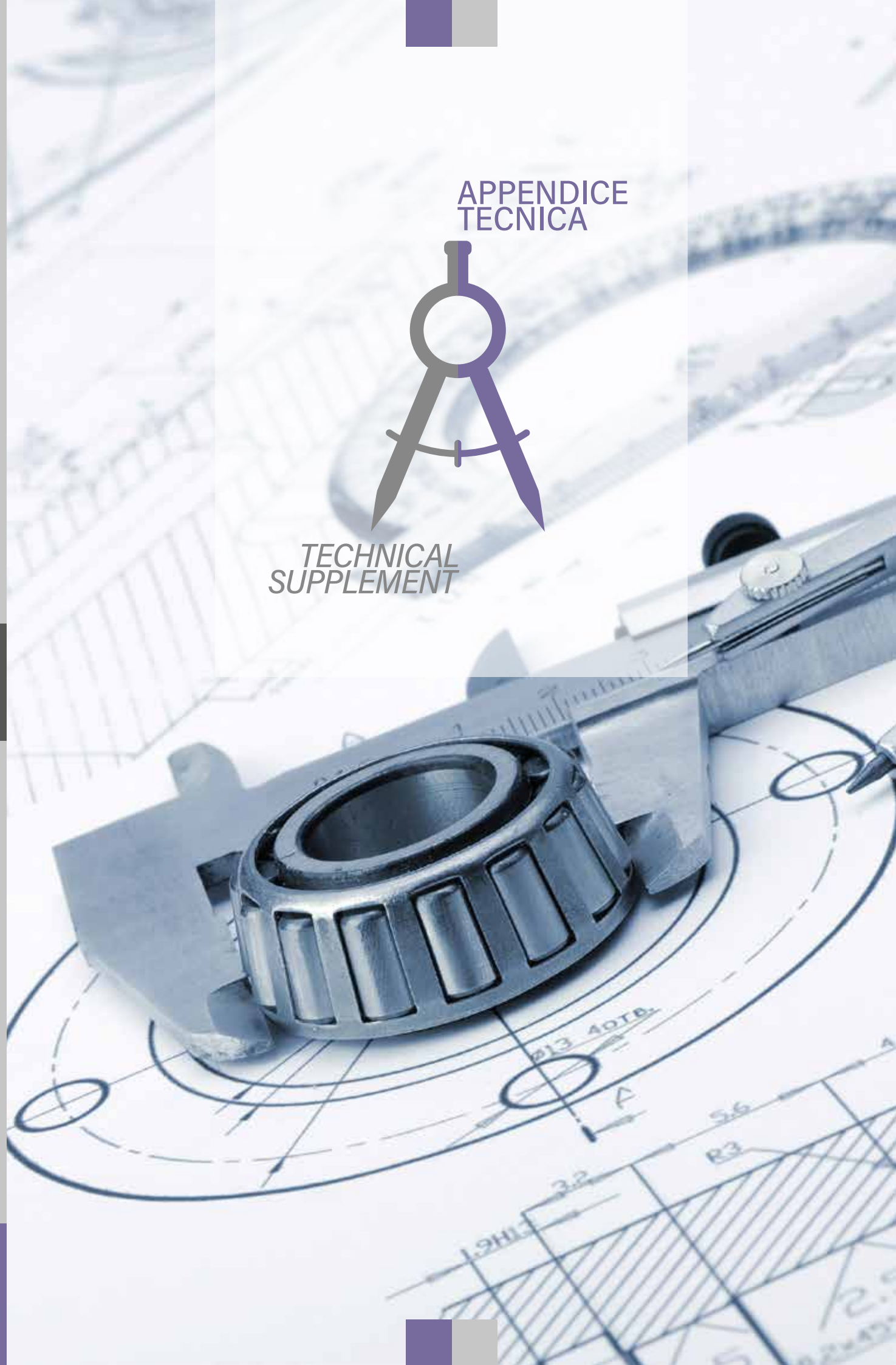




APPENDICE TECNICA



TECHNICAL SUPPLEMENT





FH

BAH

TA.CP

TA

MOX

HT

12-2

VH

TSI/TSX

T

MT-TC-TC3





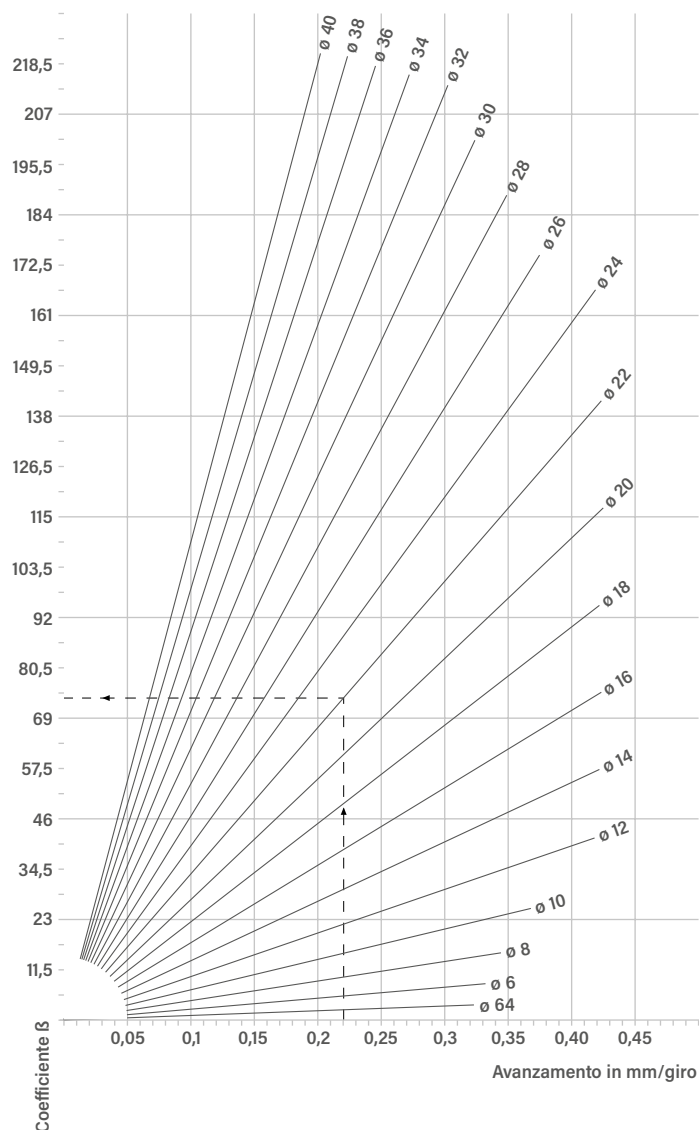
CALCOLO MOMENTO TORCENTE E POTENZA ESTIMATE TORQUE AND POWER

Es:

$a = 0,22 \text{ mm/giro}$
 punta $\varnothing 22$
 $\text{giri/l' = } 230$
 $R = 500 \text{ N/mm}^2$
 coefficiente $\beta = 73$

Ex:

$a = 0,22 \text{ mm/revs}$
 tip $\varnothing 22$
 $\text{rpm} = 230$
 $R = 500 \text{ N/mm}^2$
 coefficient $\beta = 73$



$$M_t = \frac{73 \times 500}{1000} = 36,5 \text{ Nm}$$

$$N = \frac{36,5 \times 230}{9549,3} = 0,88 \text{ kW}$$

La OMG, con questo diagramma, desidera offrire la possibilità di calcolare con velocità e ottima approssimazione, il momento torcente e la relativa potenza necessaria per l'esecuzione delle forature. Scegliendo l'appropriato avanzamento sull'ascissa, congiungendo con il relativo diametro di foratura, in ordinata si leggerà un determinato valore del "coefficiente β "; moltiplicando questo per la resistenza del materiale si otterrà il momento torcente. Applicando poi la formula

$$N = \frac{M_t \times n}{9549,3}$$

dove n è il n° di giri, si otterrà la potenza N espressa in kW

With this diagram, OMG makes it possible to calculate the torque and corresponding power necessary for drilling quickly and with maximum approximation. By selecting the proper feed on the abscissa and adding it to the corresponding drilling diameter on the ordinate, a certain «coefficient β » value is obtained. By multiplying this by the material strength, the torque can be found. Then, by applying the formula,

$$N = \frac{M_t \times n}{9549,3}$$

where n is the number of revolutions, it is possible to determine power N expressed in kW.



Dimensioni estremità
mandrini macchine
utensili per la costruzione
del manicotto
di collegamento.

*Spindles dimensions
off machine-tools
to manufacture
the connection collar.*

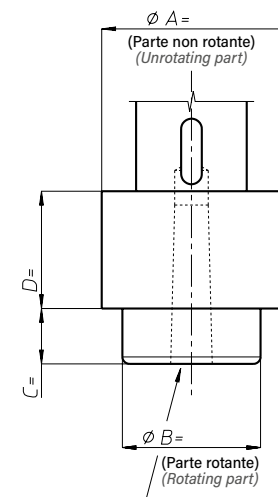


Fig.
1

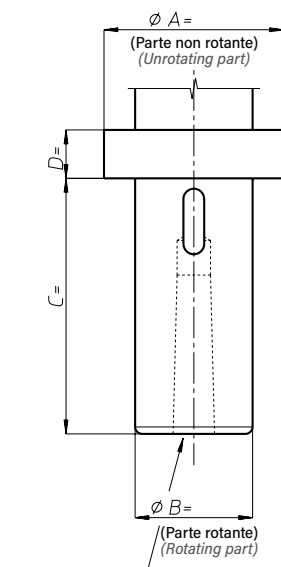


Fig.
2

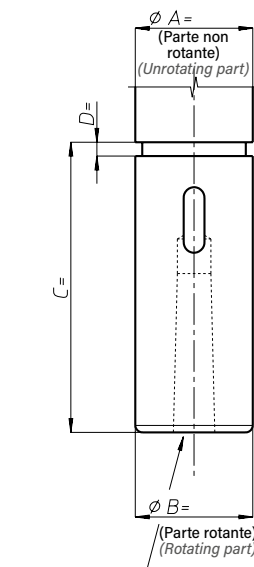


Fig.
3

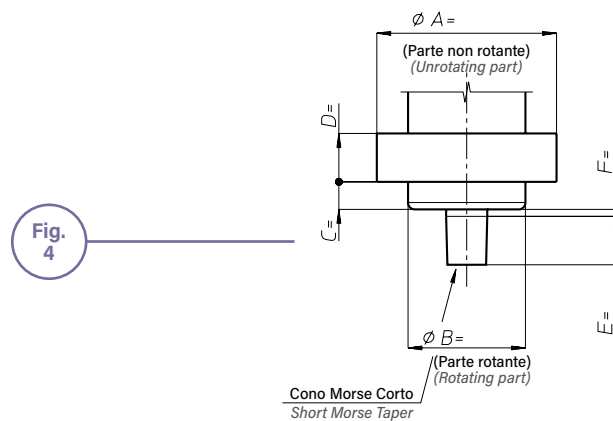
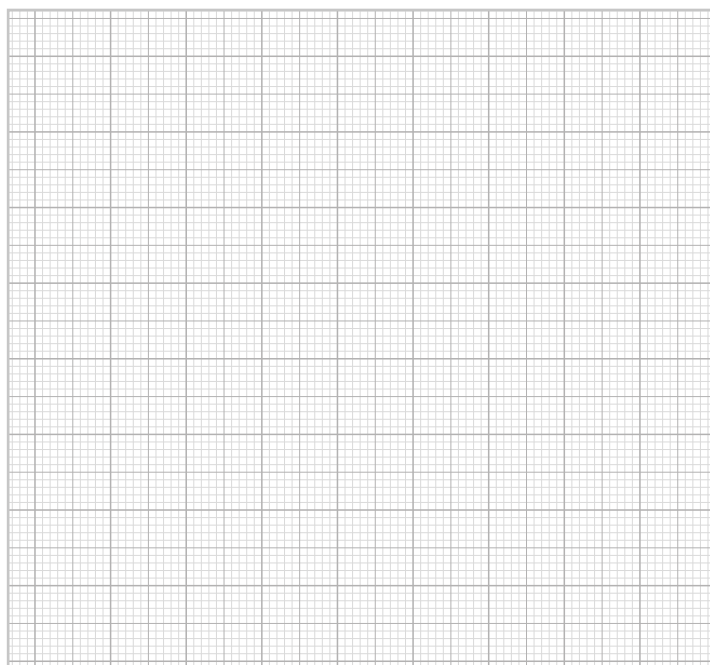


Fig.
4



Se nessuna
figura si adatta
alla vostra
macchina,
disegnate qui
l'estremità
mandrino.

*If no picture fits
your machine,
draw here the
spindle end.*

MANICOTTI DI COLLEGAMENTO CONNECTION COLLARS

12-4

FH

BAH

TA,CP

TA

MOx

HT

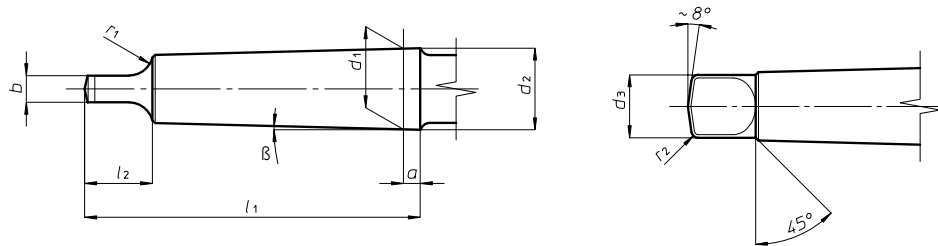
VH

TSI/TSX

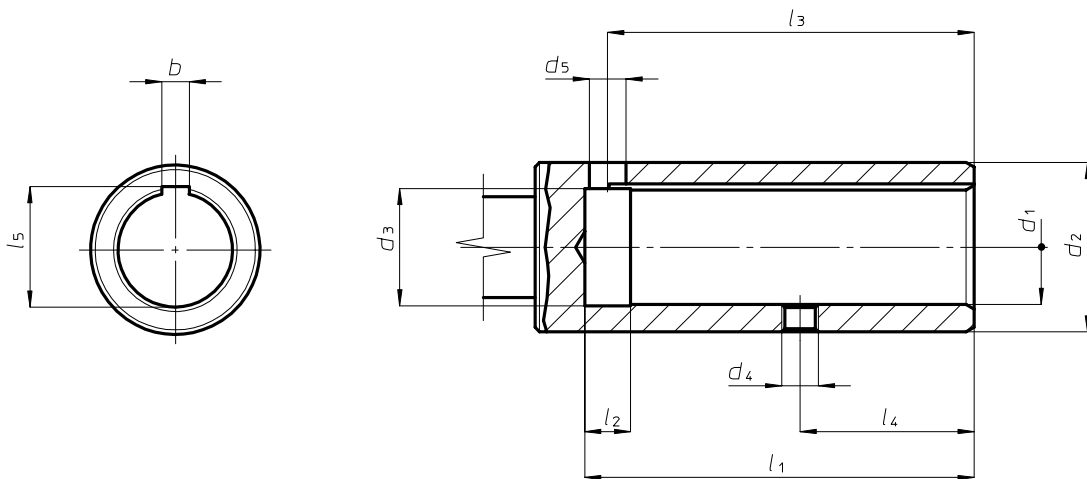
T

MT-TC-TC3

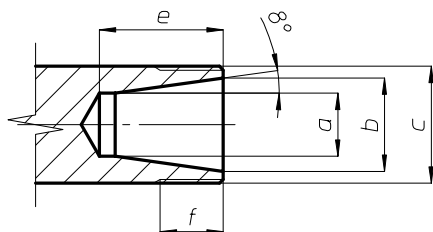




Cono Morse Morse Taper	a	b h13	d1	d2	d3max	l1max	l2max	r1	r2	B
0	3	3,9	9,045	9,2	6	59,5	10,5	4	1	1°29'27"
1	3,5	5,2	12,065	12,2	8,7	65,5	13,5	5	1,2	1°25'43"
2	5	6,3	17,780	18	13,5	80	16	6	1,6	1°25'50"
3	5	7,9	23,825	24,1	18,5	99	20	7	2	1°26'16"
4	6,5	11,9	31,267	31,6	24,5	124	24	8	2,5	1°29'15"
5	6,5	15,9	44,399	44,7	35,7	156	29	10	3	1°30'26"
6	8	19	63,348	63,8	51	218	40	13	4	1°29'36"

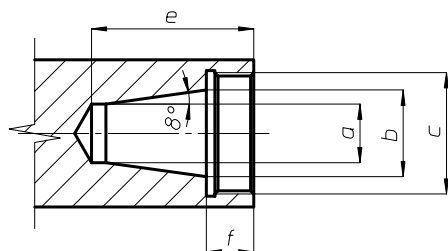


Grandezza Size d1 H7	Ø8	Ø10	12	16	Ø20	Ø25	28	Ø32	Ø36	48
b	2	3	3	5	5	6	6	8	9	10
d2f7	15	18	20	25	32	37	40	45	50	67
d3	8,6	10,6	12,6	16,6	20,6	25,6	28,6	32,8	36,8	48,8
d4	M4	M5	M5	M6	M6	M8	M8	M8	M8	M10
d5	3,5	5	5	6	6	8	8	10	10	12
l1 min	42	52	52	75	78	85	85	106	106	129
l2	8	8	8	8	8	10	10	10	10	12
l3	35	48	48	70	73	80	80	101	101	123
l4 ±0,1	16	22	22	34	34	38	38	45	45	57
l5 ±0,1	9	11,1	13,1	17,3	21,3	26,7	29,7	33,7	37,7	50,1



Grandezza Size di H7	Serraggio Clamping	a	b $\pm 0,05$	c	e	f	
ER8	0,5... 5,0	5,2	8	M10x0,75	13,0	7,5	
ER11	0,5... 7,0	7,5	11	M13x0,75	17,0	10,0	
ER16	0,5... 10,0	10,5	16	M19x1,00	22,0	13,0	
ER20	0,5... 13,0	13,5	20	M24x1,00	26,5	13,5	
ER25	0,5... 16,0	18,0	25	M30x1,00	29,0	14,0	

ER16	0,5... 10,0	10,5	16	M22x1,50	22,0	13,0	
ER20	0,5... 13,0	13,5	20	M25x1,50	26,5	13,5	
ER25	0,5... 16,0	18,0	25	M32x1,50	29,0	14,0	
ER32	1,0... 20,0	23,5	32	M40x1,50	34,0	16,0	
ER40	2,0... 30,0	30,5	40	M50x1,50	38,0	17,0	
ER50	4,0... 34,0	38,0	50	M64x2,00	48,0	24,0	



Grandezza Size di H7	Serraggio Clamping	a	b $\pm 0,05$	c	e	f	
ER11	0,5... 7,0	7,5	11	M18x1,00	23,0	7,0	
ER16	0,5... 10,0	10,5	16	M24x1,00	32,0	10,0	
ER20	0,5... 13,0	13,5	20	M28x1,50	37,5	11,0	
ER25	0,5... 16,0	18,0	25	M32x1,50	41,0	12,0	
ER32	1,0... 20,0	23,5	32	M40x1,50	48,0	14,0	

DIN 6499

SEDI DELLE PINZE ER - ER HOUSING

12-6

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA.CP

TA

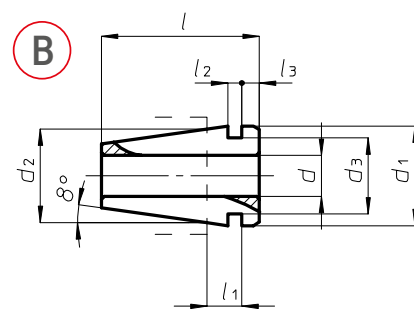
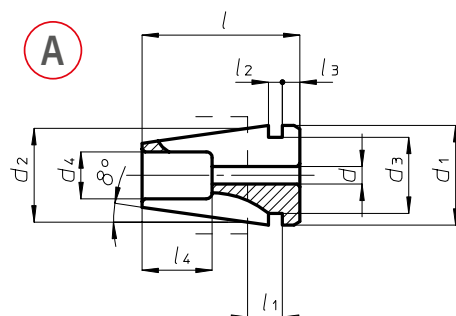
MOx

HT

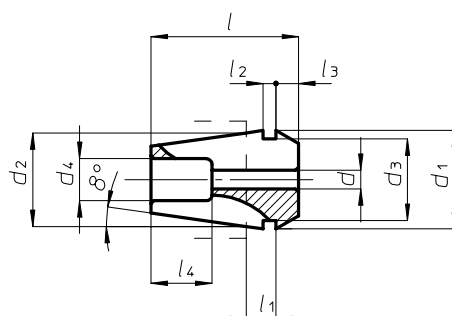


DIN 6499-B

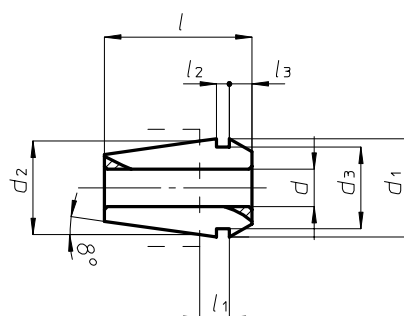
PINZE • COLLETS



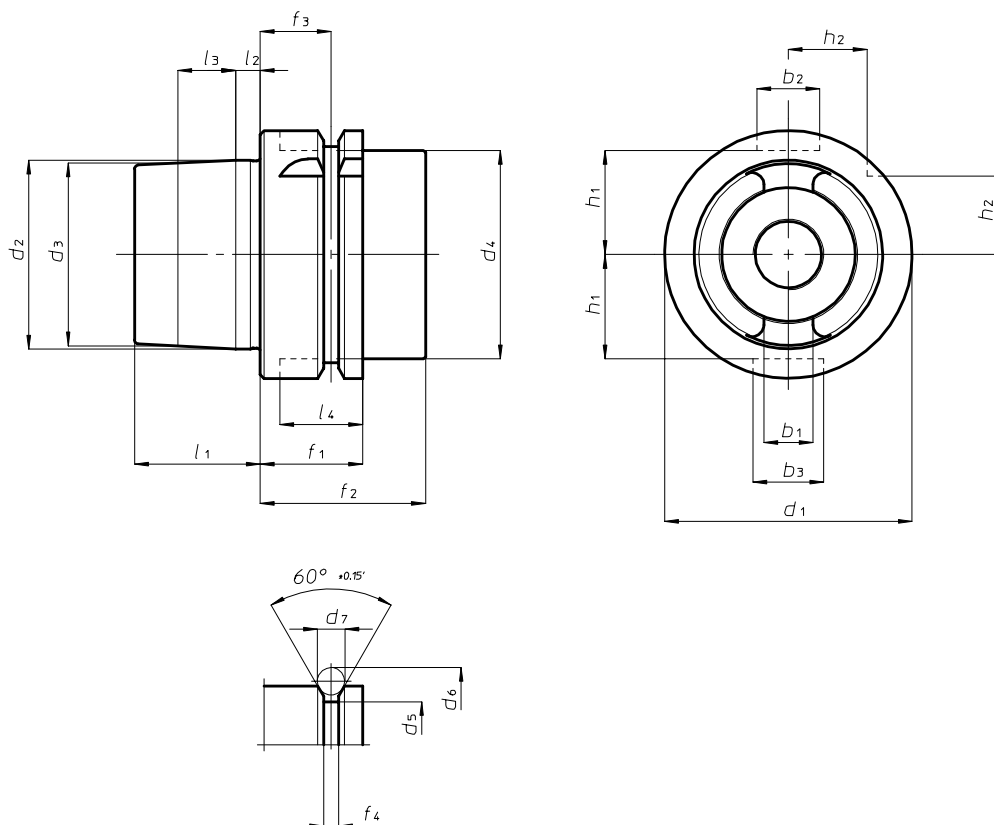
Grandezza Size d1 H7	d	d1	d2	d3	d4	l	l1	l2	l3	l4	Disegno Picture
ER8	0,5... 2,5	8,5	8,0	6,5	4,0	13,5	2,98	1,2	1,5	6,0	A
ER8	3,0... 5,0	8,5	8,0	6,5	-	13,5	2,98	1,2	1,5	-	A



Grandezza Size d1 H7	d	d1	d2	d3	d4	l	l1	l2	l3	l4	
ER11	0,5... 2,5	11,5	11,0	9,5	5,0	18,0	3,80	2,0	2,5	9,0	
ER16	0,5... 4,5	17,0	16,0	13,8	7,5	27,5	6,26	2,7	4,0	10,0	
ER20	1,0... 6,5	21,0	20,0	17,4	9,0	31,5	6,36	2,8	4,8	13,0	
ER25	1,0... 7,5	26,0	25,0	22,0	12,0	34,0	6,66	3,1	5,0	15,0	
ER32	2,0... 3,5	33,0	32,0	29,2	15,0	40,0	7,16	3,6	5,5	20,0	
ER32	4,0... 7,5	33,0	32,0	29,2	15,0	40,0	7,16	3,6	5,5	15,0	
ER40	3,0... 3,5	41,0	40,0	36,2	20,0	46,0	7,66	4,1	7,0	21,0	
ER40	4,0... 8,5	41,0	40,0	36,2	20,0	46,0	7,66	4,1	7,0	18,0	
ER50	4,0... 10,0	52,0	50,0	46,0	20,0	60,0	12,60	5,5	8,5	26,0	



Grandezza Size d1 H7	d	d1	d2	d3	l	l1	l2	l3		
ER11	3,0... 7,0	11,5	11,0	9,5		18,0	3,80	2,0	2,5	
ER16	5,0... 10,0	17,0	16,0	13,8		27,5	6,26	2,7	4,0	
ER20	7,0... 13,0	21,0	20,0	17,4		31,5	6,36	2,8	4,8	
ER25	8,0... 16,0	26,0	25,0	22,0		34,0	6,66	3,1	5,0	
ER32	8,0... 20,0	33,0	32,0	29,2		40,0	7,16	3,6	5,5	
ER40	9,0... 30,0	41,0	40,0	36,2		46,0	7,66	4,1	7,0	
ER50	12,0... 34,0	52,0	50,0	46,0		60,0	12,60	5,5	8,5	



	HSK50	HSK63	HSK80	HSK100
b1 H10	10,5	12,5	16	20
b2 H10	12	16	18	20
b3 H10	14	18	20	22
d1 H10	50	63	80	100
d2	38 ^{+0,009 +0,006}	48 ^{+0,011 +0,007}	60 ^{+0,013 +0,008}	75 ^{+0,015 +0,009}
d3	36,900 ^{+0,006 +0,003}	46,530 ^{+0,007 +0,003}	58,100 ^{+0,008 +0,003}	72,600 ^{+0,009 +0,003}
d4 max	42	53	67	85
d5 ^{0 -0,1}	43	55	70	92
d6 ^{0 -0,1}	59,3	72,3	88,8	109,75
d7	7	7	7	7
f1 ^{0 -0,1}	26	26	26	29
f2 min	42	42	42	45
f3 ±0,1	18	18	18	20
f4 ^{+0,15 0}	3,75	3,75	3,75	3,75
h1 ^{0 -0,2}	21	26,5	34	44
h2 ^{0 -0,3}	15,5	20	25	31,5
l1 ^{0 -0,2}	25	32	40	50
l2	5	6,3	8	10
l3	11	14,7	19	24
l4	19	21	22	24

DIN 69893

12-8

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA,CP

TA

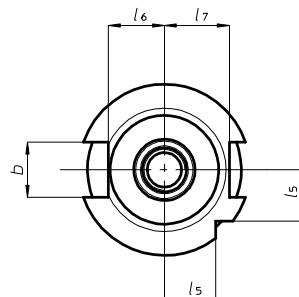
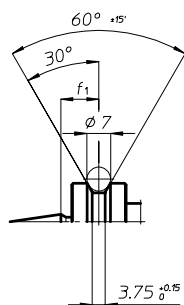
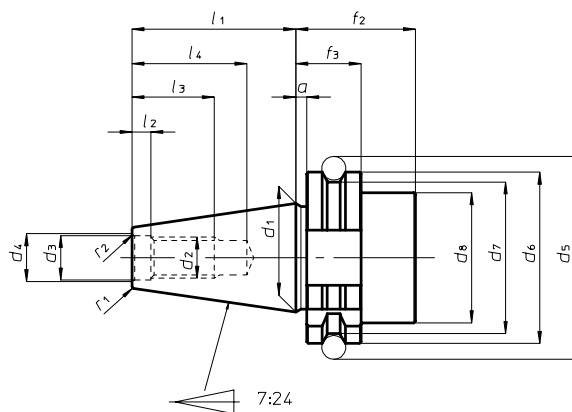
MOX

HT



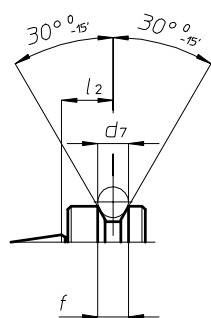
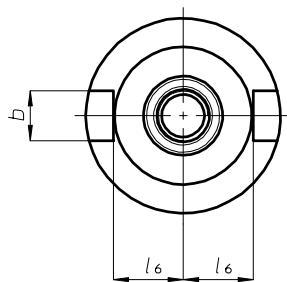
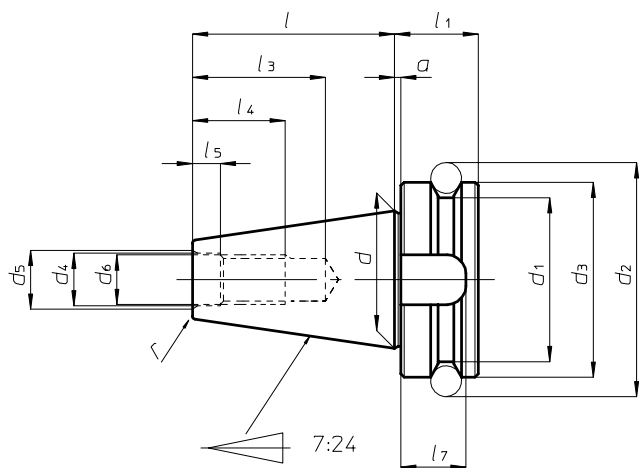
DIN 69871

FORMA A - A SHAPE



Grandezza Size d1 H7	30	40	45	50
a $\begin{smallmatrix} +0,1 \\ -0,1 \end{smallmatrix}$	32	3,2	3,2	3,2
b H12	16,1	16,1	19,3	25,7
d1	31,75	44,45	57,15	69,85
d2	M12	M16	M20	M24
d3 H7	13	17	21	25
d4 max	14	19	23,4	28
d5 $\begin{smallmatrix} +0,05 \\ -0,05 \end{smallmatrix}$	59,3	72,3	91,35	107,25
d6 $\begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	50	63,55	82,55	97,50
d7 $\begin{smallmatrix} 0 \\ -0,5 \end{smallmatrix}$	44,3	56,25	75,25	91,25
d8 max	45	50	63	80
f1 $\begin{smallmatrix} +0,1 \\ -0,1 \end{smallmatrix}$	11,1	11,1	11,1	11,1
f2 min	35	35	35	35
f3 $\begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	19,1	19,1	19,1	19,1
l1 $\begin{smallmatrix} 0 \\ -0,3 \end{smallmatrix}$	47,8	68,4	82,7	101,75
l2 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	5,5	8,2	10	11,5
l3 min	24	32	40	47
l4 min	33,5	42,5	52,5	61,5
l5 $\begin{smallmatrix} 0 \\ -0,3 \end{smallmatrix}$	15	18,5	24	30
l6 $\begin{smallmatrix} 0 \\ -0,4 \end{smallmatrix}$	16,4	22,8	29,1	35,5
l7 $\begin{smallmatrix} 0 \\ -0,4 \end{smallmatrix}$	19	25	31,3	37,7
r1 $\begin{smallmatrix} 0 \\ -0,3 \end{smallmatrix}$	0,6	1,2	2 $\begin{smallmatrix} 0 \\ -0,5 \end{smallmatrix}$	2,5 $\begin{smallmatrix} 0 \\ -0,5 \end{smallmatrix}$
r2 $\begin{smallmatrix} 0 \\ -0,5 \end{smallmatrix}$	0,8	1	1,2	1,5





Grandezza Size d1 H7	30	40	50
a ±0,4	2	2	3
b H8	16,1	16,1	25,7
d	31,75	44,45	69,85
d1 $\begin{smallmatrix} -0,1 \\ -0,3 \end{smallmatrix}$	38	53	85
d2	56,144	74,679	119,019
d3 H8	46	63	100
d4 H8	12,5	17	25
d5	14,5	19	27
d6	M12	M16	M24
d7	8	10	15
f $\begin{smallmatrix} +0,1 \\ 0 \end{smallmatrix}$	8	10	15
l ±0,15	48,4	65,4	101,8
l1	22	27	38
l2 ±0,1	13,6	16,6	23,2
l3	34	43	62
l4	24	30	45
l5 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	7	9	13
l6 $\begin{smallmatrix} 0 \\ -0,2 \end{smallmatrix}$	16,3	22,6	35,4
l7	17	21	31
r	0,5	1	1

MAS 403

12-10

VH

TSI/TSX

T

MT-TC-TC3



FH

BAH

TA,CP

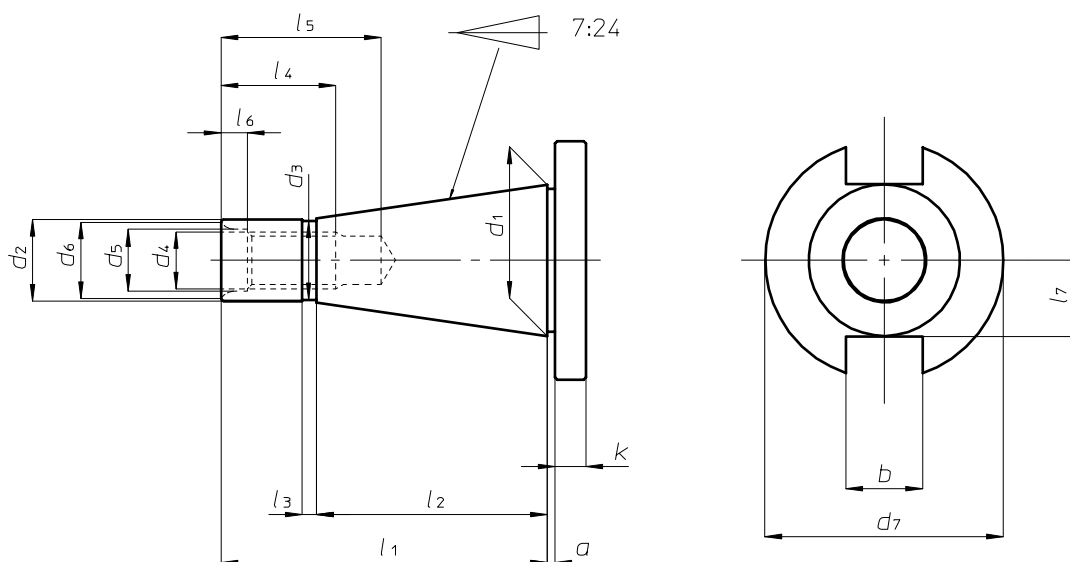
TA

MOX

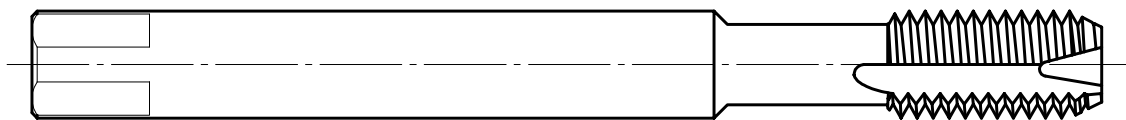
HT



DIN 2080



Grandezza Size	30	40	45	50
a $\pm 0,2$	1,6	1,6	3,2	3,2
b H12	16,1	16,1	19,3	25,7
d1	31,75	44,45	57,15	69,85
d2 a 10	17,4	25,3	32,4	39,6
d3	16,5	24	30	38
d4	M12	M16	M20	M24
d5	13	17	21	26
d6 max	16	21,5	26	32
d7 $\begin{smallmatrix} 0 \\ -0,4 \end{smallmatrix}$	50	63	80	97,5
k $\pm 0,15$	8	10	12	12
l1	68,4	93,4	106,8	126,8
l2	48,4	65,4	82,8	101,8
l3	3	5	6	8
l4	24	32	40	47
l5 min	33,5	42,5	52,5	61,5
l6 $\begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	5,5	8,2	10	11,5
l7 max	16,2	22,5	29	35,3



Maschi Clamping		ISO 529		DIN 371 (DIN 2181)		DIN 371		DIN 376		JAPAN JIS		US STANDARD	
(mm)	(pollici)	(Ø)	(□)	(Ø)	(□)	(Ø)	(□)	(Ø)	(□)	(Ø)	(□)	(Ø)"	(□)"
M1.0		2,50	2,10	-	-	2,50	2,10	-	-	3,00	2,50	-	-
M1.1		2,50	2,10	-	-	2,50	2,10	-	-	3,00	2,50	-	-
M1.2		2,50	2,10	-	-	2,50	2,10	-	-	3,00	2,50	-	-
M1.4		2,50	2,10	-	-	2,50	2,10	-	-	3,00	2,50	-	-
M1.6	1/16	2,50	2,10	-	-	2,50	2,10	-	-	3,00	2,50	0,141	0,110
M1.7		2,50	2,10	-	-	2,50	2,10	-	-	3,00	2,50	-	-
M1.8		2,50	2,10	-	-	2,50	2,10	-	-	3,00	2,50	0,141	0,110
M2.0		2,80	2,10	2,50	2,00	2,50	2,10	-	-	3,00	2,50	0,141	0,110
M2.2		2,80	2,10	2,80	2,24	2,50	2,10	-	-	3,00	2,50	0,141	0,110
M2.3		2,80	2,10	2,80	2,24	2,50	2,10	-	-	3,00	2,50	-	-
M2.5	3/32	2,80	2,10	2,80	2,24	2,50	2,10	-	-	3,00	2,50	0,141	0,110
M2.6		2,80	2,10	2,80	2,24	2,50	2,10	-	-	3,00	2,50	-	-
M3.0	1/8	3,15	2,50	3,15	2,50	3,50	2,70	3,00	-	4,00	3,00	0,141	0,110
M3.5		3,55	2,80	3,55	2,80	4,00	3,00	2,50	2,10	4,00	3,00	0,141	0,110
M4.0	5/32	4,00	3,15	-	-	4,50	3,40	2,80	2,10	5,00	4,00	0,168	0,131
M4.5	3/16	4,50	3,55	-	-	6,00	4,90	3,50	2,70	5,00	4,00	0,194	0,152
M5.0		5,00	4,00	-	-	6,00	4,90	3,50	2,70	5,50	4,50	0,194	0,152
M6.0	1/4	6,30	5,00	-	-	6,00	4,90	4,50	3,40	6,00	4,50	0,255	0,191
M7.0	5/16	7,10	5,60	-	-	7,00	5,50	5,50	4,30	6,20	5,00	0,318	0,238
M8.0		8,00	6,30	-	-	8,00	6,20	6,00	4,90	6,20	5,00	0,318	0,238
M9.0		9,00	7,10	-	-	9,00	7,00	7,00	5,50	7,00	5,50	0,381	0,286
M10.0	3/8	10,00	8,00	-	-	10,00	8,00	7,00	5,50	7,00	5,50	0,381	0,286
M11.0		8,00	6,30	-	-	-	-	8,00	6,20	8,00	6,20	0,381	0,286
M12.0	1/2	9,00	7,10	-	-	-	-	9,00	7,00	8,50	6,50	0,367	0,275
M14.0	9/16	11,20	9,00	11,20	-	-	-	11,00	9,00	10,50	8,00	0,429	0,322
M16.0	5/8	12,50	10,00	12,50	-	-	-	12,00	9,00	12,50	10,00	0,480	0,360
M18.0	11/16	14,00	11,20	14,00	-	-	-	14,00	11,00	14,00	11,00	0,542	0,406
M20.0	13/16	14,00	11,20	14,00	-	-	-	16,00	12,00	15,00	12,00	0,652	0,489
M22.0	7/8	16,00	12,50	16,00	-	-	-	18,00	14,50	17,00	13,00	0,697	0,523
M24.0	15/16	18,00	14,00	18,00	-	-	-	18,00	14,50	19,00	15,00	0,760	0,570
M27.0	1 1/16	20,00	16,00	20,00	-	-	-	20,00	16,00	20,00	15,00	0,896	0,672
M30.0	1 3/16	20,00	16,00	20,00	-	-	-	22,00	18,00	23,00	23,17	1,021	0,766

US STANDARD: in pollici

MASCHI/TAPS

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