

TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3



Made in Italy

Sistemi di foratura  
di foratura  
di foratura



L'azienda O.M.G. Srl è lieta di presentare in questa unica soluzione grafica tutti i suoi prodotti, interamente progettati e costruiti al suo interno.

Chi ci conosce da un po' di tempo avrà potuto notare l'evoluzione tecnica e strutturale di cui l'azienda è protagonista.

La nostra gamma di prodotti si è ampliata e migliorata:

serie **TA**, teste ad angolo

serie **MO**, moltiplicatori di giri

serie **HT**, torrette a revolver

serie **VH**, teste multiple ad interassi variabili

serie **TSI-TSX**, teste per spuntatura ingranaggi

serie **T**, teste a giunti universali

e dove i prodotti di serie non arrivano, le esecuzioni speciali serie **MT**, **TC**, **TC3**,

**TFS** ogni volta studiate e personalizzate renderanno possibili le più svariate applicazioni.

La sfida più recente per OMG risponde al nome di **BAH**, teste ad angolo per grosse asportazioni. Con il lancio di questa nuova serie l'azienda si affaccia nel mondo in piena propulsione della grande industria militare, navale, aerospaziale, ecc.

È una dichiarazione d'intenti, l'esplicitazione della nostra mission: creatività e consulenza tecnica al servizio del cliente per aiutarlo a migliorare la propria produttività, affidabilità del servizio pre e post vendita con la garanzia di un'assistenza tempestiva e una sempre maggiore puntualità nelle consegne. Ringraziamo con l'occasione tutti i clienti che hanno scelto i prodotti O.M.G., contribuendo così all'evoluzione degli stessi; un gradito benvenuto a tutti quelli che si rivolgeranno con fiducia a O.M.G., certi di avere un'azienda attenta alle singole esigenze e partecipe nelle più diverse attività produttive.

#### **Un po' di storia.**

L'azienda O.M.G. nasce negli anni '60 come laboratorio di piccole dimensioni specializzato nella progettazione e fabbricazione di teste multiple. La produzione era indirizzata, allora, verso tre prodotti: mandrini a maschiare, teste multiple a giunti universali e teste multiple ad interassi variabili.

In seguito, sintonizzandosi con la grande evoluzione dell'industria metalmeccanica, anche l'azienda O.M.G. cresce e si sviluppa, partecipando alla diffusione di nuovi prodotti con le proposte più innovative e d'avanguardia in questo settore di ricerca e produzione.

Le tecnologie d'avanguardia nei processi produttivi e l'impiego di nuove tecniche computerizzate firmano la notorietà e l'immagine del marchio O.M.G.; un nome diffuso e conosciuto da tutte le aziende, piccole e grandi, un'immagine mai smentita ma sottolineata nelle numerose campagne pubblicitarie realizzate.

***Ringraziamo per l'attenzione,  
O.M.G. Srl***



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O.M.G. Srl is pleased to present, in a single graphic solution, its entire range of products, all designed and built inside its production facility.

Those of you who have known us for some time will be well aware of the technical and organizational evolution that distinguishes our company.

Our range of products has been extended and upgraded:

series **TA**, angle heads

series **MO**, spindle speeders

series **HT**, revolver turret heads

series **VH**, variable centre distance multisindle heads

series **TSI-TSX**, gear chamfering heads

series **T**, universal joint heads

And where standard products are not enough, we can also offer a range of special products series **MT**, **TC**, **TC3**, **TFS** purposely designed and customized for various types of applications.

The most recent challenge of O.M.G. is named "BAH", angle heads for large removal machining. With the launch of this new series we strongly break into the big industry applications such as naval, aerospace, military etc.

Our mission involves a declaration of intent: creativity and technical advice at the service of customers to enable them to upgrade their output and their before and after-sales service reliability through prompt assistance and increasingly more punctual delivery.

Allow us to take this opportunity to thank all those customers who have chosen O.M.G. products, thereby contributing to their evolution; a warm welcome too to those who turn with confidence to O.M.G. , a company that caters for individual requirements and is involved in a range of different manufacturing activities.

#### **A short history.**

O.M.G. was established in the 1960s as a small workshop specialised in designing and manufacturing multisindle heads. At that time, production centred on three products: tapping spindles, adjustable joint multisindle heads and variable centre distance multisindle heads.

Later on, in line with the evolution of the mechanical engineering industry, O.M.G. expanded and developed, taking part in the diffusion of new products with innovative and cutting-edge proposals for this research and production sector. The cutting-edge technologies employed in the manufacturing processes and the use of new computerised methods resulted in the O.M.G. brand name and image becoming widely known to small and large companies alike, an image sustained by a long series of advertising campaigns.

*Thank you for your attention,  
O.M.G. Srl*



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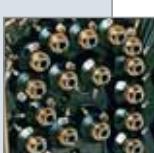
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serie



## testa ad angolo angle head

Un prodotto fondamentale che, grazie alla riduzione dei piazzamenti in lavorazione, vanta un contributo prezioso per l'aumento della produttività necessaria per competere su tutti i mercati: parliamo della Testa ad Angolo, da considerare come parte integrante del parco utensili della macchina.

- **Esperienza** - E' dall'inizio degli anni '60 che O.M.G. crea prodotti. L'esperienza non si acquista, si acquisisce. La realizzazione fin dai primi anni di prodotti speciali ha formato le competenze per lo sviluppo di una gamma di Teste ad Angolo articolata e performante, idonea alla clientela più esigente che crede negli investimenti per conquistare nuovi mercati.
- **Tradizione** - Il termine "qualità" viene spesso citato, ma non significa soltanto utilizzare macchine utensili tecnologicamente avanzate per ottenere lavorazioni precise. La qualità è il risultato di esperienze pratiche, di calcoli matematici, di sfide vinte e perse ma comunque accettate, di cui fare grande tesoro.
- **Innovazione** - Le Teste ad Angolo Speciali di ultima generazione offrono prestazioni superiori a tutti gli standard e condizionano spesso la produzione fino al punto da divenire indispensabili nel completamento del processo produttivo. Da queste OMG continua a trarne grande beneficio e soddisfazione con soluzioni tecniche poi riproposte sulle Teste ad Angolo Standard a catalogo.
- **Modularità** - Indispensabile oggi la flessibilità produttiva, ancora maggiore negli investimenti. In questa ottica gli elementi modulari delle Teste ad Angolo consentono di ridurre i costi ed aumentare i benefici.
- **Personalizzazione** - Se l'ampia gamma di Teste ad Angolo standard non risponde all'esigenza specifica, siamo pronti a progettare e costruire il prodotto speciale, forti dell'esperienza di centinaia di soluzioni operative volte alle più svariate attività produttive.

*An ultimate product that gives a valuable contribution to the productivity increase by reducing the management of the pieces to be machined, necessary condition to compete in the markets all over the world: we are talking about the Angle Heads, to be considered an integrant part of the machine tools range.*

- **Experience** - O.M.G. engineers its products since the beginning of the '60's. The experience cannot be bought but it is acquired. Since that time the achievement of special products gave us the expertise to develop a range of Angle Heads very broad and performing, suitable to the most demanding customers believing in investments to gain new market shares.
- **Tradition** - The word "quality" if often mentioned, but it does not mean just to use technologically advanced machine tools to get accurate machining. The quality is the result of practical experiences, of mathematical calculations, of won and lost challenges, anyway accepted, which are treasured.
- **Innovation** - The last generation Special Angle Heads offers performances much higher than all standards, and they often affect the production cycles until becoming indispensable when completing production stages. O.M.G. keeps getting beneficial results from his special range which is also reflected into the standard Angle Heads range.
- **Modularity** - Nowadays the productivity flexibility is mandatory, and even more in the investments. Towards this goal the O.M.G. Angle Heads modular system allows cost reductions and to increase profits.
- **Customization** - And if the wide range of standard Angle Heads will not meet your requirements, we are ready to engineer and to manufacture a new special product, always supported by our experience of hundreds of solutions done for many different industrial activities.

# Panoramica prodotti

## Product overview



### TAR

Piccole per piccoli spazi.

*Tiny for narrow spaces.*



### TA

Lavorazione singola di foratura e fresatura.

*Drilling and milling machining.*

Pagina/Page: 1-10

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### TA... D

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

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

Pagina/Page: 1-36

### TAO

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

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

Pagina/Page: 1-46



### TAF

Mandrino fisso, angolo su richiesta del cliente.

*Fixed spindle with custom angle.*

Pagina/Page: 1-60

### Simboli/Icons



Capacità di foratura  
*Drilling capacity*



Maschiatura  
*Tapping*



Rapporto entrata/uscita  
*Ratio input/output*



N° max giri in uscita  
*Max output RPM*

# Panoramica prodotti

## Product overview



### TA... L

Versione allungata per lavorazioni singole di foratura e fresatura.

*Length stretched version for drilling and milling single machining operations.*

Pagina/Page: 1-18



### TA... 2P

Due mandrini contrapposti di 180°.

*180° two opposed spindles.*

Pagina/Page: 1-30



### TAO... PD

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: 1-47



### TAV

Mandrino variabile ±90°.

*±90° variable spindle.*

Pagina/Page: 1-54

### Simboli/Icons



Peso con cono 40  
*Weight with size 40 shank*



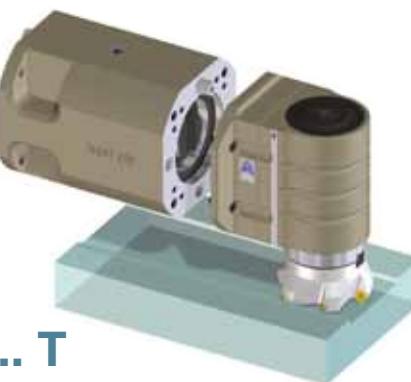
Peso con cono 50  
*Weight with size 50 shank*



Rotazione in ingresso  
*Input rotation*



Rotazione in uscita  
*Output rotation*



### TA... T

Connessione alla macchina tramite flangia.

*To be connected to the machine by flange.*

Pagina/Page: 1-64

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# Sistema modulare per applicazioni flessibili

## *Modular system for flexible application*



- 1** Testa ad angolo con presa utensile ER standard, oppure vedi tipi Mandrino.  
*Angle Head with standard ER tool connection, or check other spindle types.*
- 2** 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.*
- 3** Coni macchina standard o speciali su richiesta.  
*Standard or on-demand machine tapers.*

**Modularità Coni** – Sono disponibili tutti i tipi di coni macchina, da sostituire tramite un esclusivo accoppiamento di precisione che crea un sistema rigido pari ai coni 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: mm 65 per i cono grandezza 40, mm 80 per i coni grandezza 50 ed in alcuni casi anche mm 110. 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'antirottante 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



STANDARD



TRIBLOCK



QUADBLOCK



Studiato e realizzato su  
specifiche richiesta.  
*Customized design according  
to your application.*



Stop-block

Perno conico  
*Conical pin*

**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.

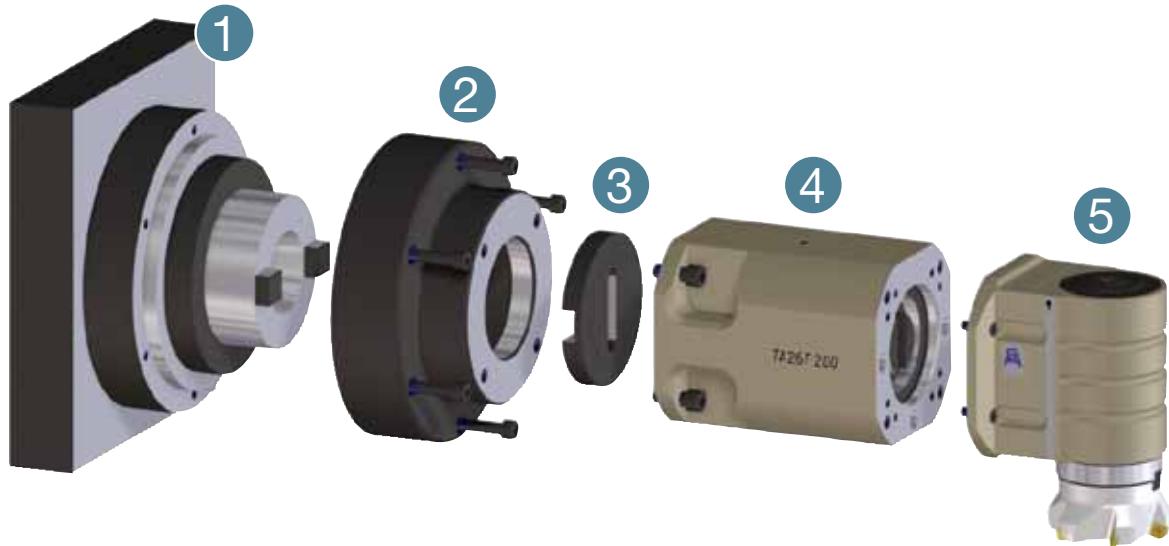
**Massima stabilità** - I sistemi antirotanti TriBlock e QuadBlock di O.M.G. con perni regolabili permettono di contrastare al meglio le spinte radiali e assiali con la possibilità di affrontare in sicurezza lavorazioni di fresatura o finitura fino a ora mai effettuate con le teste ad angolo, destinate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

# Connessione alla macchina tramite flangia

## Machine connection by flange



1	Macchina	<i>Machine</i>
2	Flangia di connessione	<i>Connection flange</i>
3	Viti	<i>Screws</i>
4	Giunto	<i>Driving joint</i>
5	Estensione	<i>Extension</i>
6	Testa ad angolo TA... T	<i>Angle head TA... T</i>

# 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/A.

*Angular contact ball bearings of precision class ABEC7/9*



### INGRANAGGI/GEAR

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

*Gleason rectified gearings:  
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 niploy, trattamento anticorrosione, che garantisce alta protezione contro la ruggine, lubrorefrigeranti aggressivi e acidi.

**Componenti** - Tutte le teste montano cuscinetti di precisione, oppure conici nelle versioni per grandi asportazioni. Si utilizzano solo cinematici 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 niploy 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.

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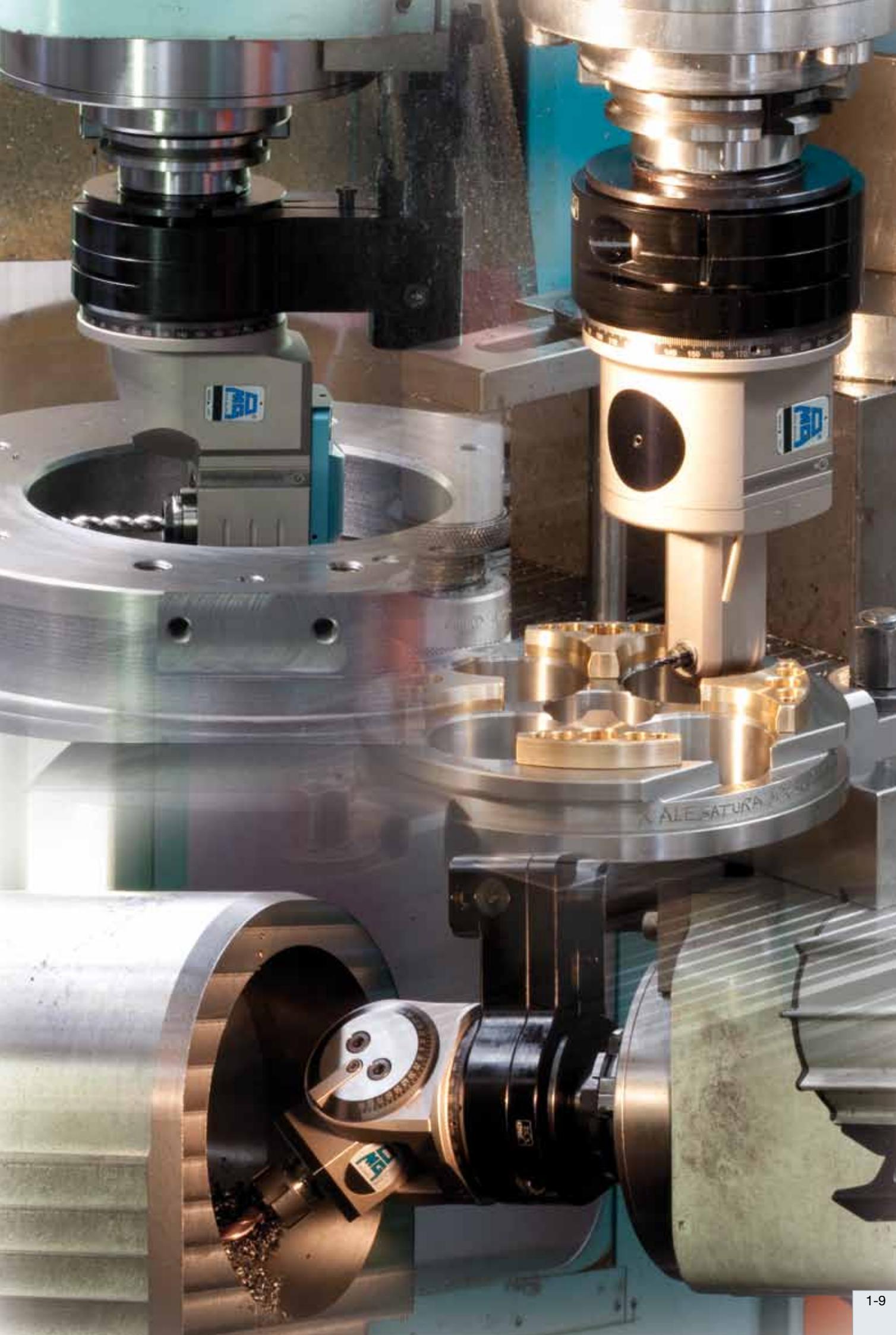
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# TAR03.P



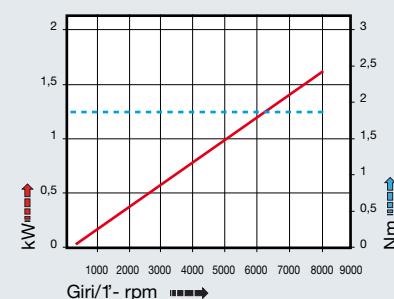
## caratteristiche/features

- ø 3
- M3
- 1-1
- 8000

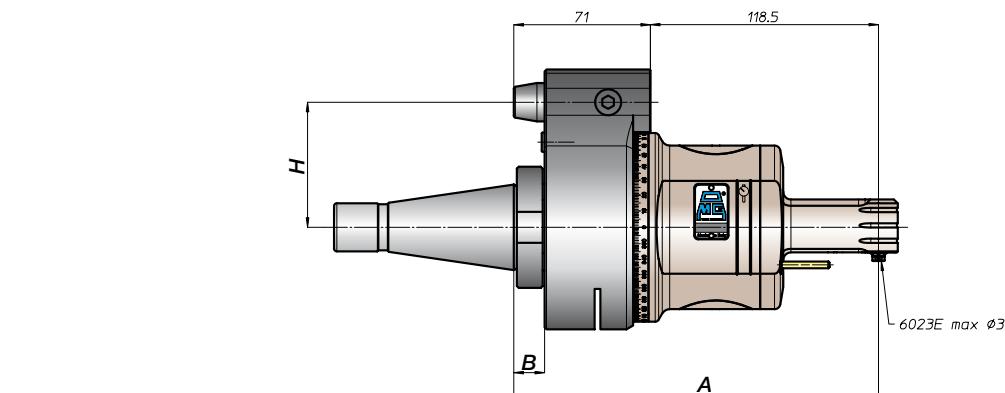
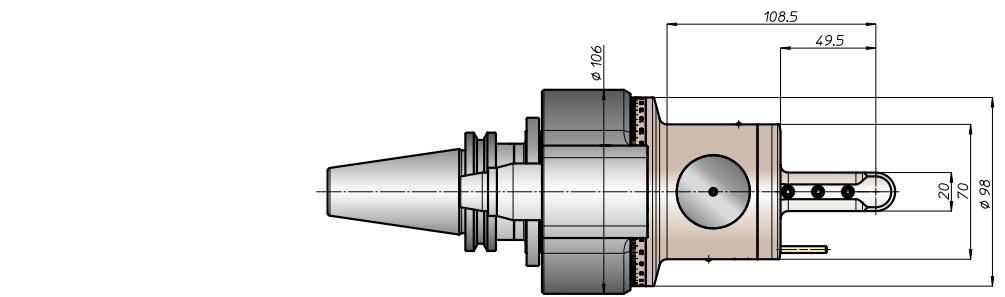
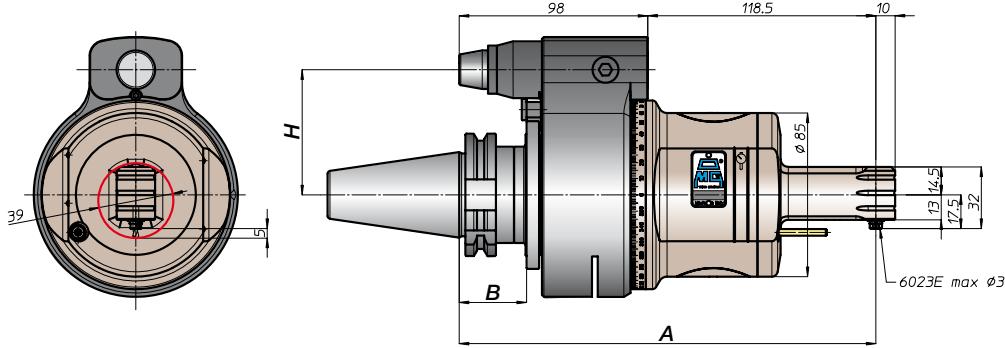
## peso/weight



## prestazioni/performances



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CONO SHANK	size	A	B	H standard	H optional
DIN9871	30			65	-
	40			80	110
	45			65	-
	50	216,5	35	80	110
ANSIB5.50	CAT 40			65	-
	50			80	110
BT	40			65	-
	50	224,5	43	80	110
HSK	63		44	65	-
	80	225,5		80	110
	100	46		80	110
CAPTO	C5			65	-
	C6			80	110
	C8	220,5		80	110
KM	63			65	-
	80	216,5		80	110
	100			80	110
DIN2080	-		186,5	13	65
	40			80	110
	-	189,5	16	80	110
	50			80	110
NMTB	40	186,5	13	65	-
	50	189,5	16	80	110
ANSIB5.18					

# TAR03.PL

## caratteristiche/features



ø 3



M3



1-1

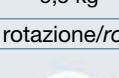


8000

## peso/weight



40



5,5 kg



50



7,5 kg

## rotazione/rotation

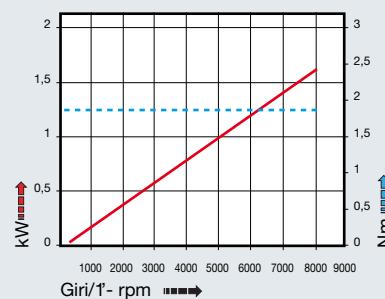


input

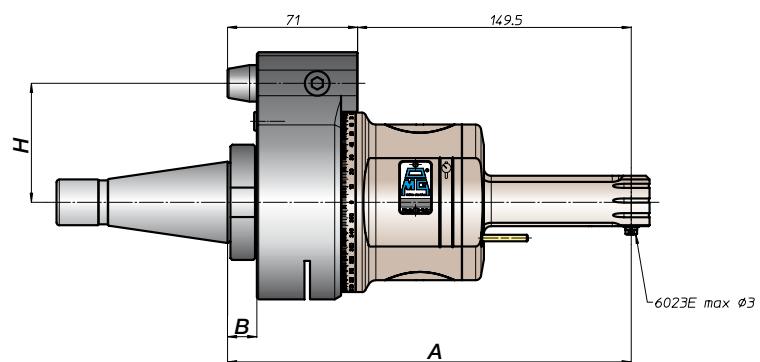
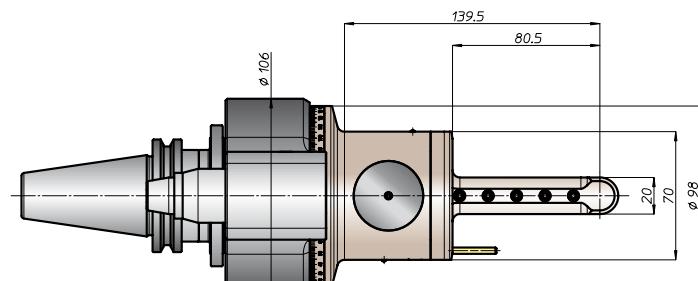
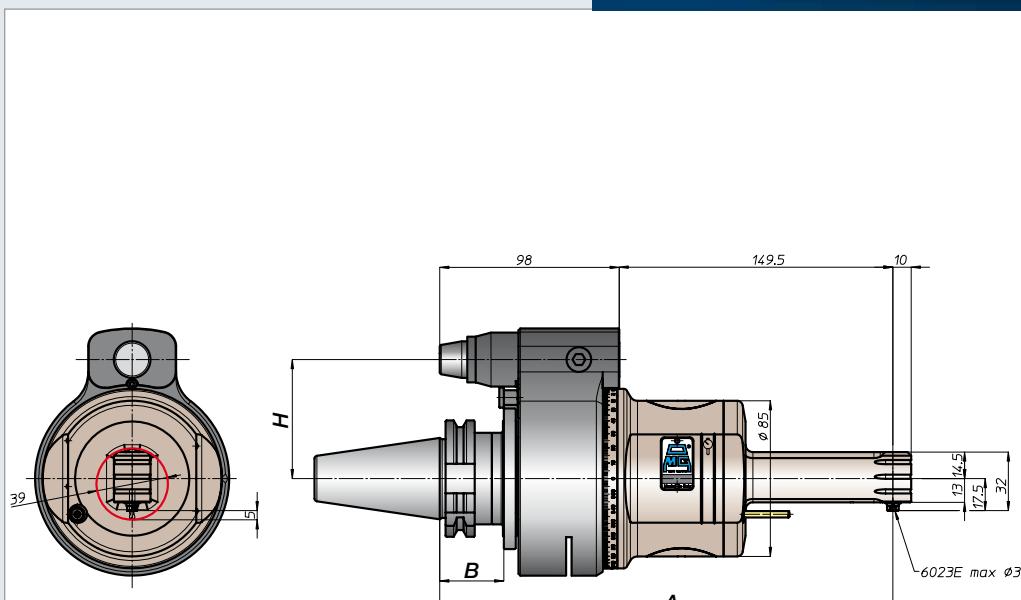


output

## prestazioni/performances



CONO SHANK	size	A	B	standard	optional
DIN9871	30	247,5	35	65	-
	40				
	45				
	50				110
ANSIB5.50	40	255,5	43	80	65
	50				110
BT	40	255,5	43	80	110
	50				
DIN69893	63	256,5	42	65	
	80	260,5	46	80	110
	100				
ISO26623	C5	255,5		65	
	C6				
	C8				110
KM	63	251,5		65	
	80				
	100				110
DIN2080	-	217,5	13	65	-
	40	220,5	16	80	110
	-	220,5	16	80	110
	50				
ANSIS5.18	40	217,5	13	65	-
	50	220,5	16	80	110



# TARO4.P



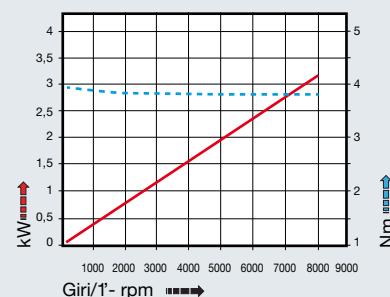
## caratteristiche/features

- ø 4
- M3
- 1-1
- 8000

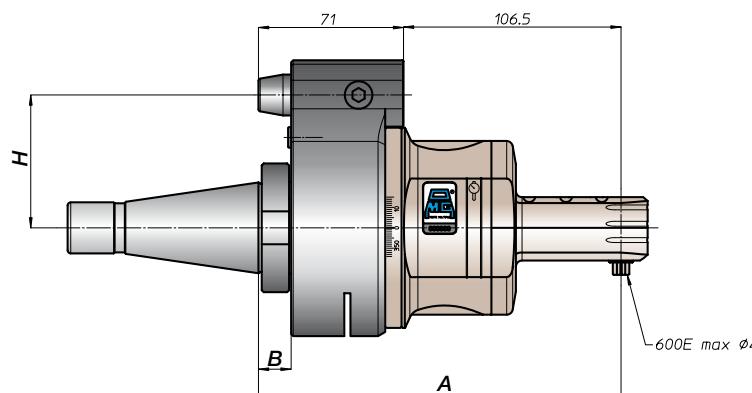
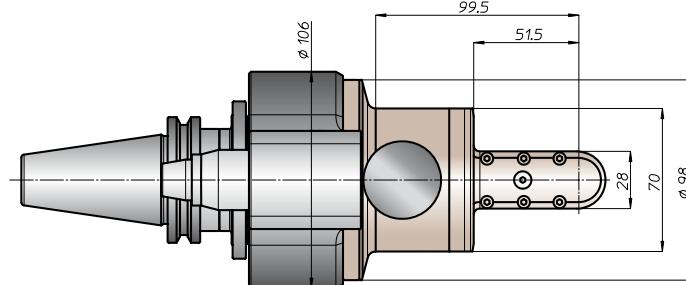
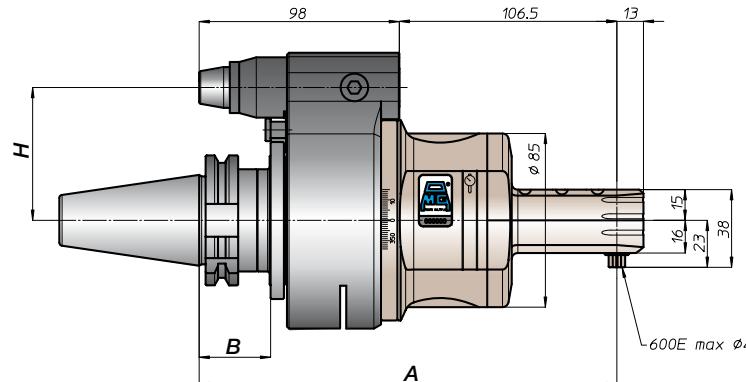
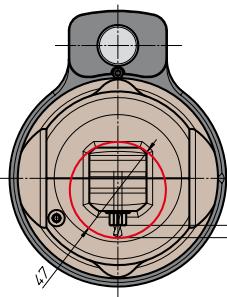
## peso/weight

- |    |        |
|----|--------|
| 40 | 5,5 kg |
| 50 | 7,5 kg |
- rotazione/rotation
- input      output

## prestazioni/performances



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CONO SHANK	size	A	B	H	standard	optional
DIN9871	30			65	-	
	40			80	110	
	45			65	-	
	50	218,5	35	80	110	
ANSIB5.50	40			65	-	
	50			80	110	
BT	40			65		
	50	236,5	43	80	110	
HSK	63			65		
	80	227,5	46	80	110	
	100					
DIN69893	C5			65		
	C6	222,5		80	110	
	C8					
ISO26623						
KM	63			65		
	80	218,5		80	110	
	100					
DIN2080						
	-	188,5	13	65	-	
	40					
	-	191,5	16	80	110	
	50					
NMTB	40	188,5	13	65	-	
	50	191,5	16	80	110	
ANSIS5.18						

# TARO4.PL

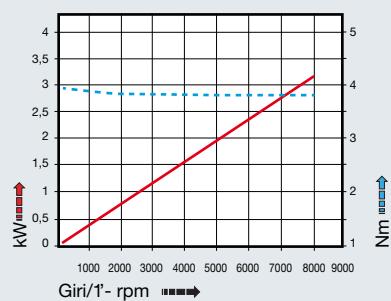
## caratteristiche/features



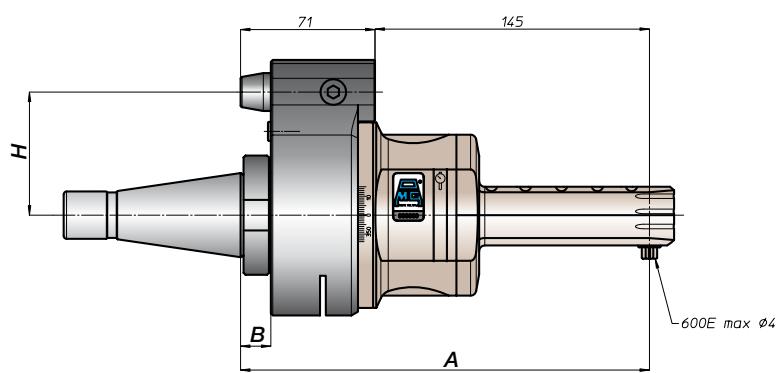
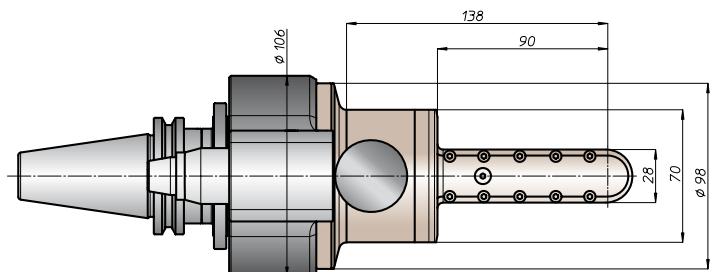
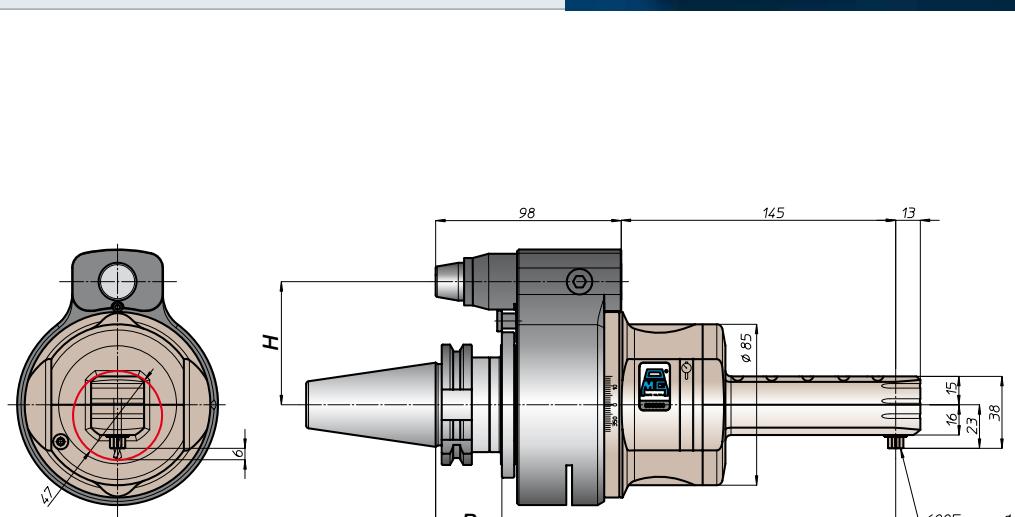
## peso/weight



## prestazioni/performances



CONO SHANK	size	A	B	H	
				standard	optional
DIN9871	30	257	35	65	-
	40			80	110
	45			80	110
	50			110	
ANSIB5.50	CAT	275	43	65	-
	BT			80	110
HSK	40	275	43	80	110
	50			110	
	63			65	
ISO26623	80	266	46	80	110
	100			110	
	C5			65	
CAPTO	C6	261	80	80	110
	C8			110	
KM	63	257	43	65	
	80			80	110
	100			110	
DIN2080	-	227	13	65	-
	40			80	110
	-			80	110
	50			110	
ANSIS5.18	40	227	13	65	-
	50	230	16	80	110



TA

MO

HT

VH

TSI/TSX

MT-Tc-Tc3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# TAR06.P



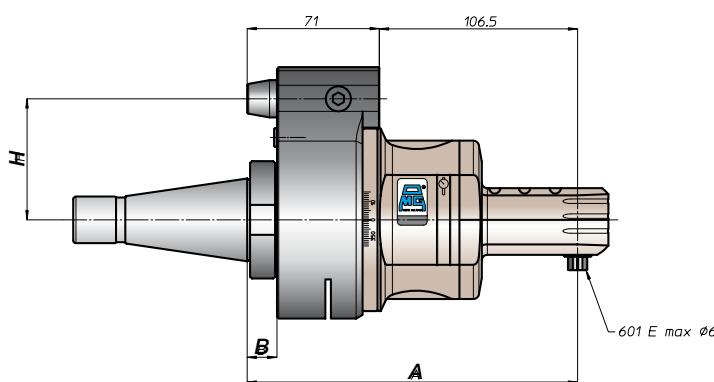
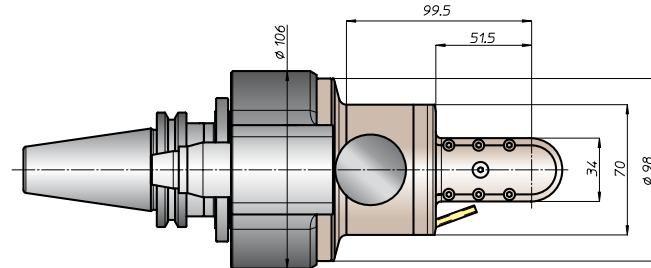
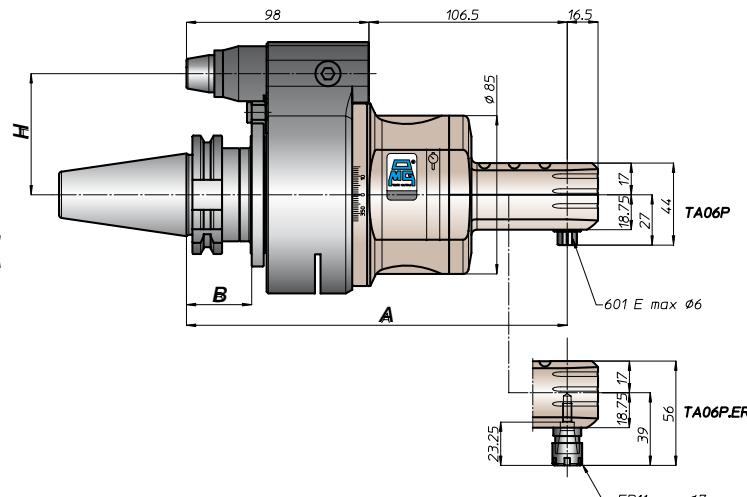
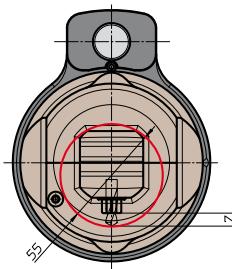
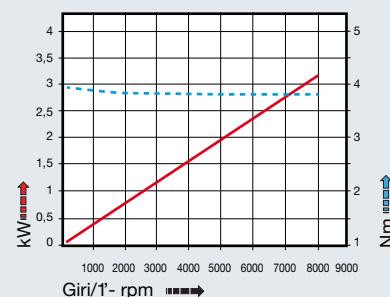
## caratteristiche/features

- ø 6
- M5
- 1-1
- 8000

## peso/weight

- |  |        |
|--|--------|
|  | 6 kg   |
|  | 8,3 kg |
- rotazione/rotation
- input      output

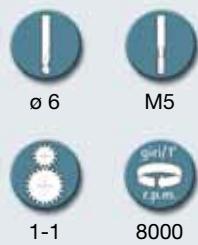
## prestazioni/performances



CONO SHANK	size	A	B	H	Standard	Optional
DIN9871	30			65	-	
	40			80	110	
	45			65	-	
	50	228,5	35	80	110	
ANSIB5.50	CAT	40		65	-	
	50	50		80	110	
BT	40			65		
	50	236,5	43	80	110	
HSK	63			65		
	80	237,5		80	110	
	100	46		80	110	
DIN69393				65		
ISO26623	CAPTO	C5		65		
	C6	232,5		80	110	
	C8			65		
KM	63			65		
	80	228,5		80	110	
	100			65		
DIN2080				65		
ANSIB5.18	NMTB	40	198,5	13	65	-
	50	-	201,5	16	80	110
				65		
				80	110	

# TAR06.PL

## caratteristiche/features



## peso/weight



6 kg



8,3 kg

## rotazione/rotation

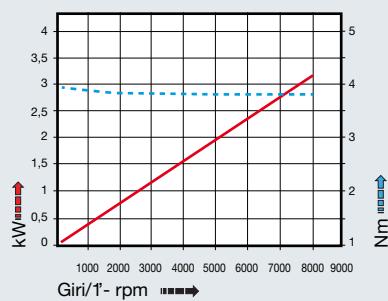


input

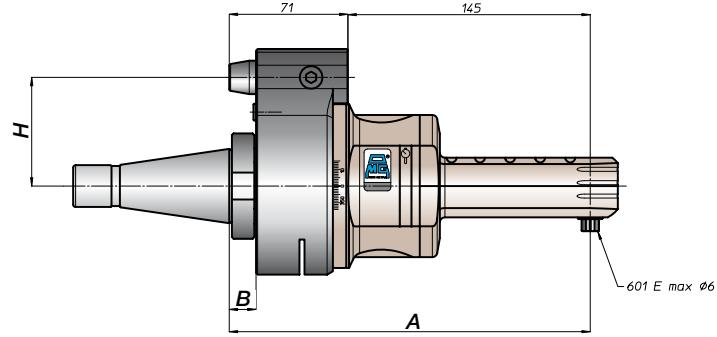
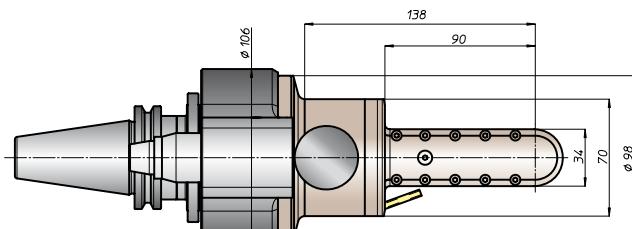
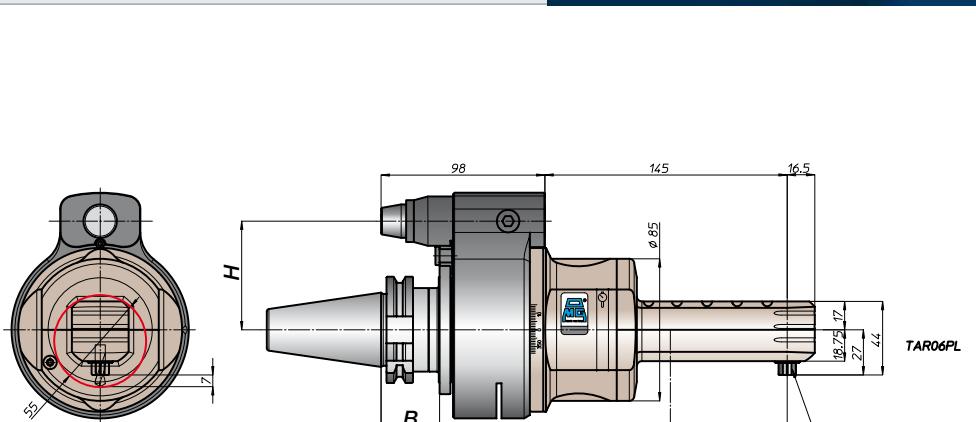


output

## prestazioni/performances



CONO SHANK	size	A	B	standard	optional
DIN69871	30	267	35	65	-
	40			80	110
	45			80	110
	50			80	110
CAT	40	275	43	65	-
	50			80	110
BT	40	275	43	80	110
	50			80	110
DIN69893	63	276	44	65	-
	80		46	80	110
	100				
ISO26623	C5	271		65	-
	C6			80	110
	C8				
KM	63	267		65	-
	80			80	110
	100				
DIN2080	-	237	13	65	-
	40		16	80	110
	-				
	50				
ANSI5.18	40	237	13	65	-
	50	240	16	80	110



# TAR10.P



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

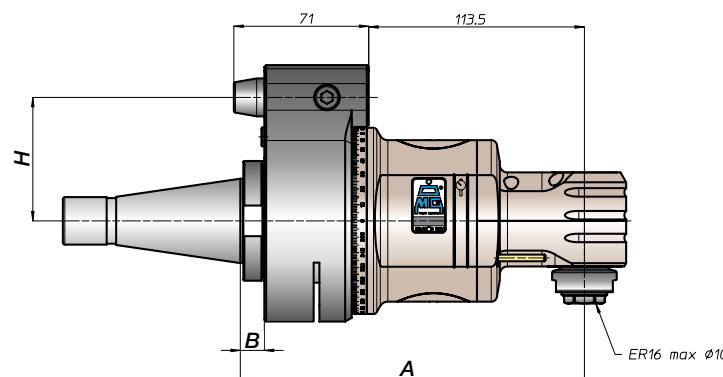
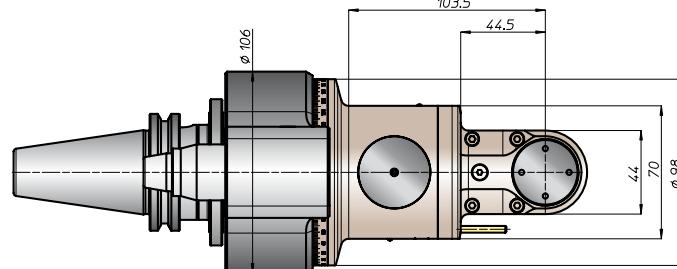
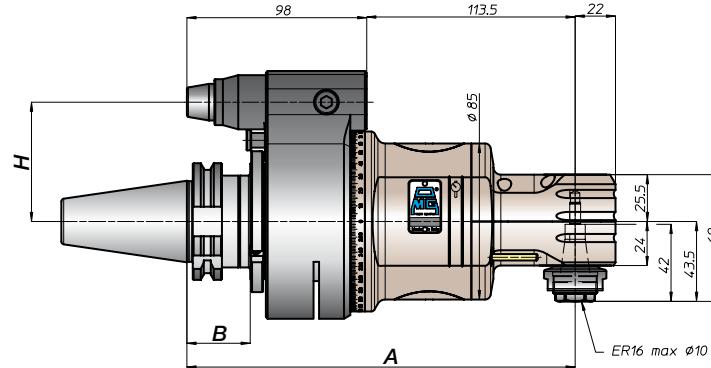
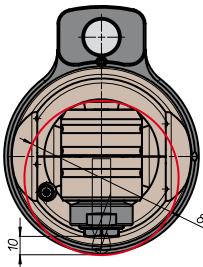
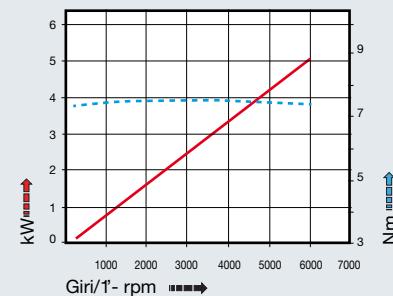
## caratteristiche/features

- ø 10
- M8
- 1-1
- 6000

## peso/weight

- |    |      |
|----|------|
| 40 | 7 kg |
| 50 | 9 kg |
- rotazione/rotation
- input      output

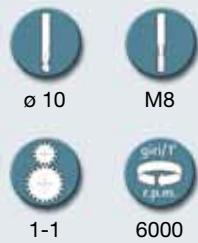
## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
DIN9871	-			65	-	
	40			80	110	
	45			65	-	
	50	211,5	35	80	110	
ANSIB5.50	40			65	-	
	50			80	110	
BT	40			65		
	50	219,5	43	80	110	
HSK	63			65		
	80	220,5		80	110	
	100		46	80	110	
DIN69893				65		
CAPTO	C5			65		
	C6	215,5		80	110	
	C8			65		
ISO26623				65		
KM	63			80	110	
	80	211,5		65		
	100			80	110	
DIN2080	-			65		
	40	181,5	13	65	-	
	-	184,5	16	80	110	
	50			65		
NMTB	40	181,5	13	65	-	
ANSIS5.18	50	184,5	16	80	110	

# TAR10.PL

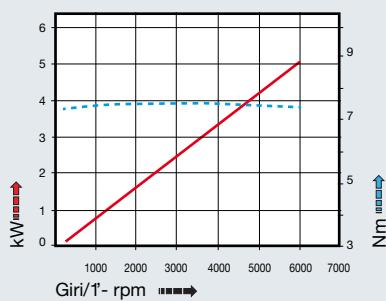
## caratteristiche/features



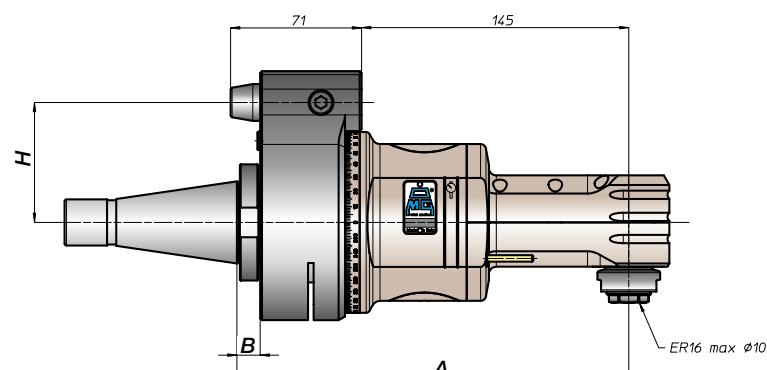
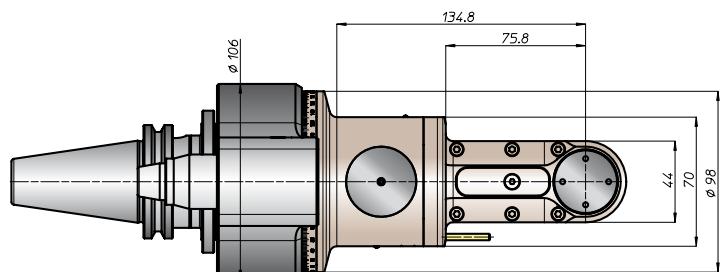
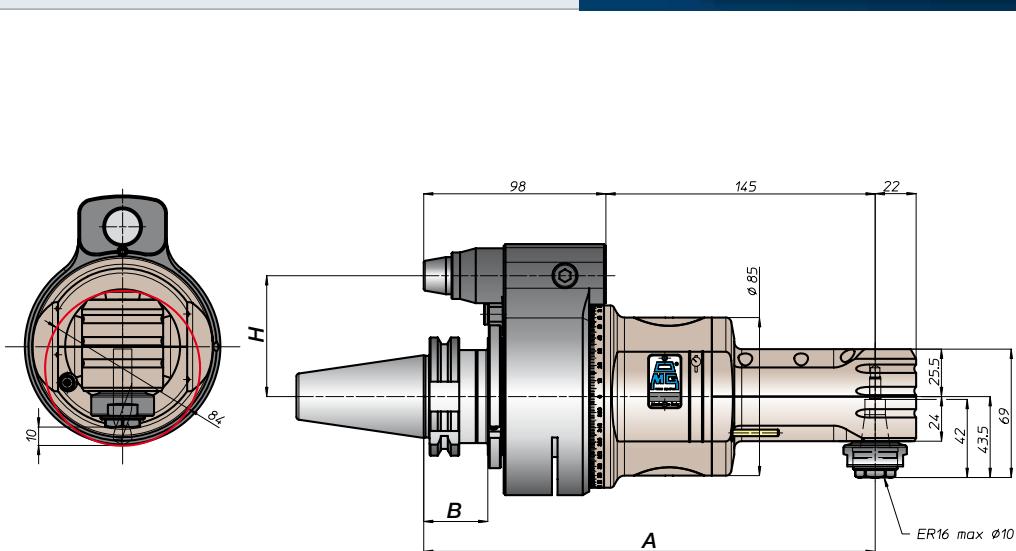
## peso/weight



## prestazioni/performances



CONO SHANK	size	A	B	standard	optional	H
DIN69871	-			65	-	
	40					
	45					
	50	243	35	80	110	
	CAT			65	-	
	50			80	110	
ANSIB5.50	40					
	50					
	BT			65		
	40	251	43	80	110	
HSK	63			65		
	80	252	44	80	110	
	100					
ISO26623	C5			65		
	C6	247		80	110	
	C8					
KM	63			65		
	80	243		80	110	
	100					
DIN2080	-			65		
	40	213	13	65	-	
	-	216	16	80	110	
	50					
ANSIS5.18	40	213	13	65	-	
	50	216	16	80	110	



## TA07.P



## caratteristiche/features

 $\varnothing 7$ 

M6

1-1

10000

## peso/weight



40

5 kg



50

7 kg

## rotazione/rotation

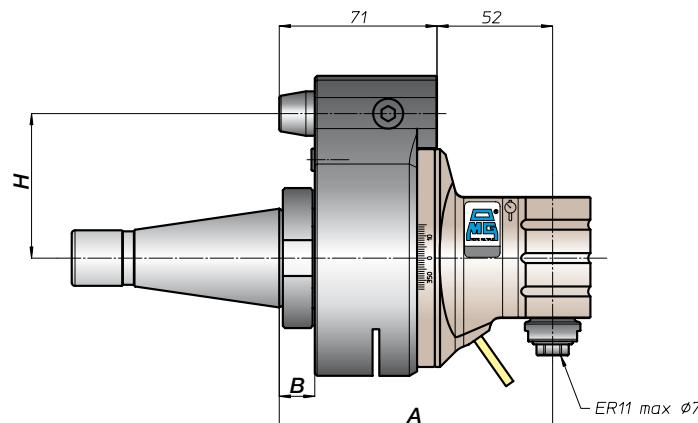
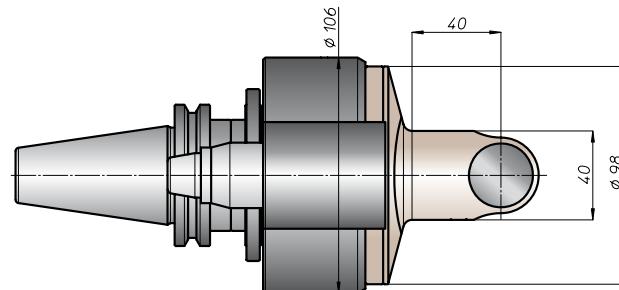
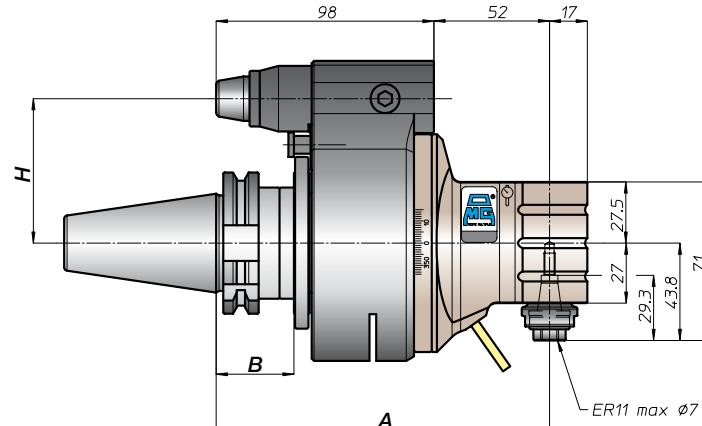
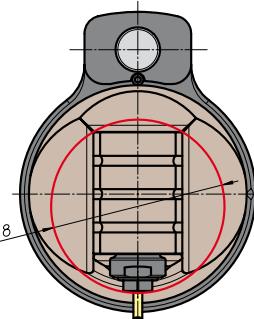
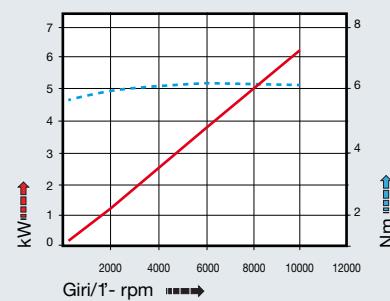


input



output

## prestazioni/performances



CONO SHANK	size	A	B	H standard	H optional
DIN9871	30			65	-
	40			80	110
	45				
	50	150	35		
ANSIB5.50	40			65	-
	50			80	110
BT	40			65	
	50	158	43	80	110
HSK	63			65	
	80	159		80	110
	100				
CAPTO	C5			65	
	C6	154			
	C8			80	110
KM	63			65	
	80	150			
	100			80	110
DIN2080	-			120	13
	40			123	16
	-				
	50			80	110
NMTB	40	120	13	65	-
ANSIB5.18	50	123	16	80	110

# TA07.PL

## caratteristiche/features



ø 7



M6



1:1



10000

## peso/weight



7,5 kg



9,5 kg

## rotazione/rotation

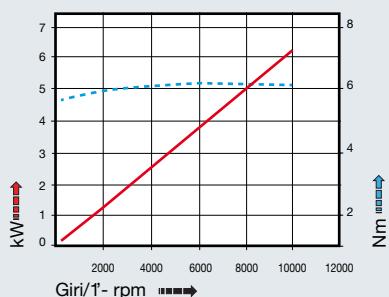


input

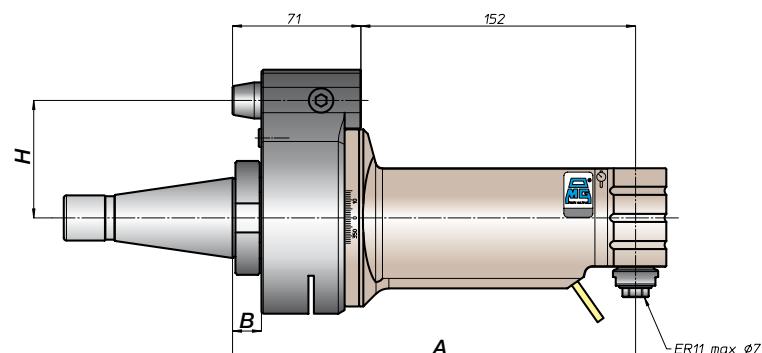
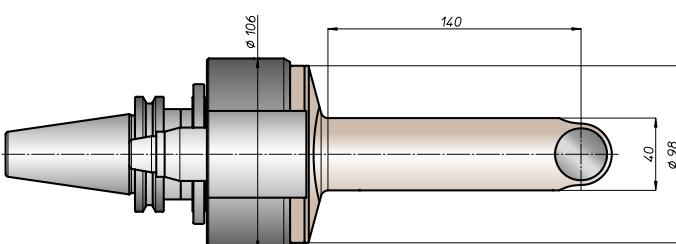
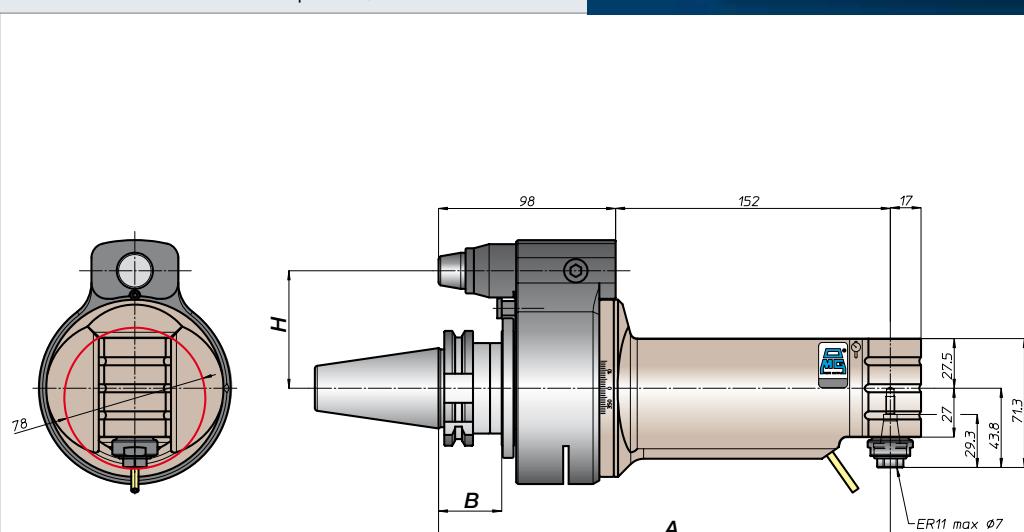


output

## prestazioni/performances



CONO SHANK	size	A	B	standard	optional	H
DIN69871	-			65	-	
	40					
	45					
	50	250	35	80	110	
ANSIB5.50	40			65	-	
	50			80	110	
BT	40			65		
	50	258	43	80	110	
DIN6983	63			44	65	
	80	259		46	80	110
	100					
ISO26623	C5			65		
	C6	254			80	110
	C8					
KM	63			65		
	80	250			80	110
	100					
DIN2080	-			65		
	40	220	13	65	-	
	-	223	16	80	110	
	50					
ANSIS5.18	40	220	13	65	-	
	50	223	16	80	110	



# TA10.P



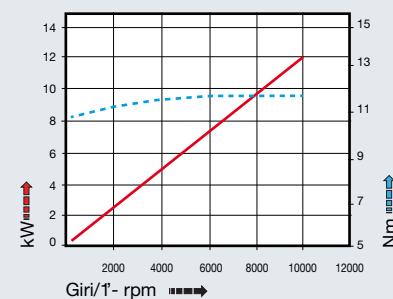
## caratteristiche/features

- ø 10
- M8
- 1-1
- 10000

## peso/weight



## prestazioni/performances



TA

MO

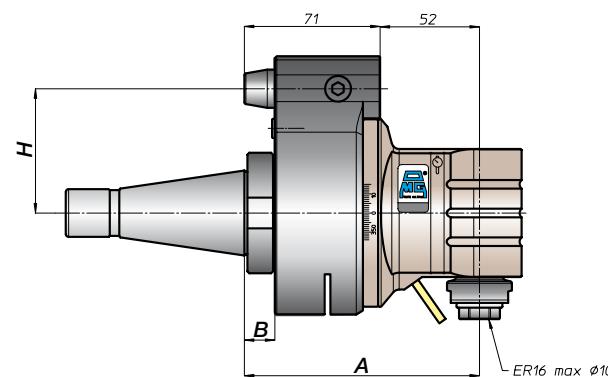
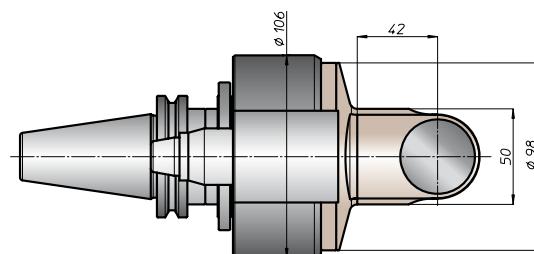
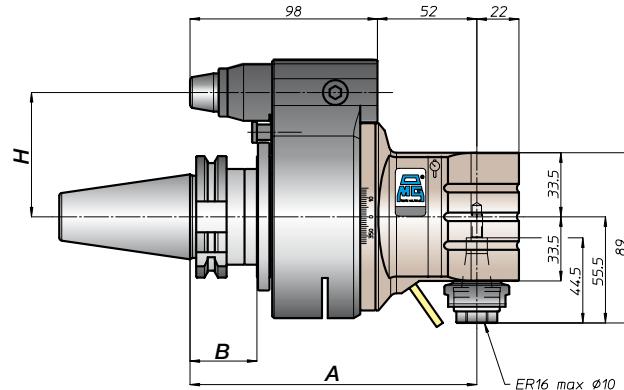
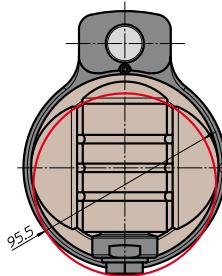
HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

CONO SHANK	size	A	B	H	standard	optional
DIN9871	30			65	-	
	40			80	110	
	45			65	-	
	50	150	35	80	110	
ANSIB5.50	CAT	40		65	-	
	50	50		80	110	
BT	40			65		
	50	158	43	80	110	
HSK	63			65		
	80	159		80	110	
	100	46		80	110	
DIN69893				65		
CAPTO	C5			65		
	C6	154		80	110	
	C8					
ISO26623				65		
KM	63			65		
	80	150		80	110	
	100					
DIN2080				65		
	-	120	13	65	-	
	40			80	110	
	-	123	16	80	110	
	50					
ANSIS5.18	NMTB	40	120	13	65	-
		50	123	16	80	110

# TA10.PL

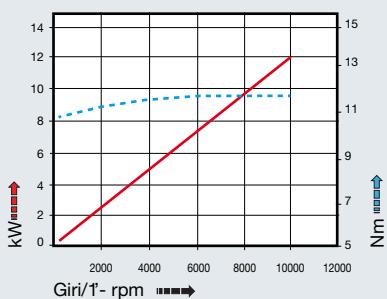
## caratteristiche/features



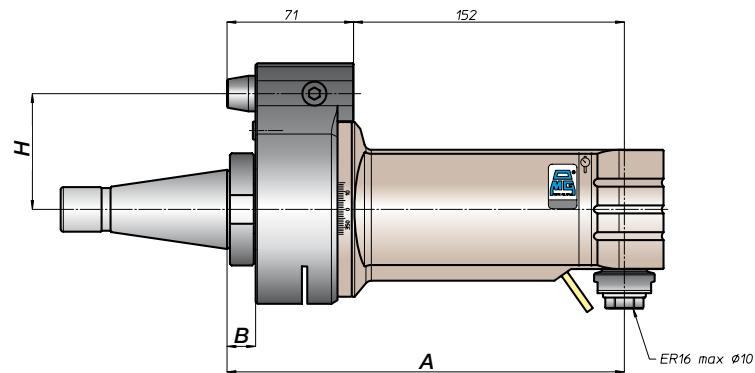
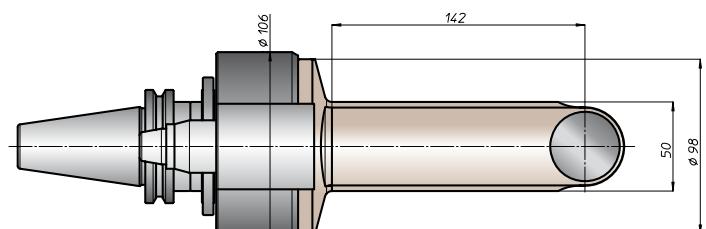
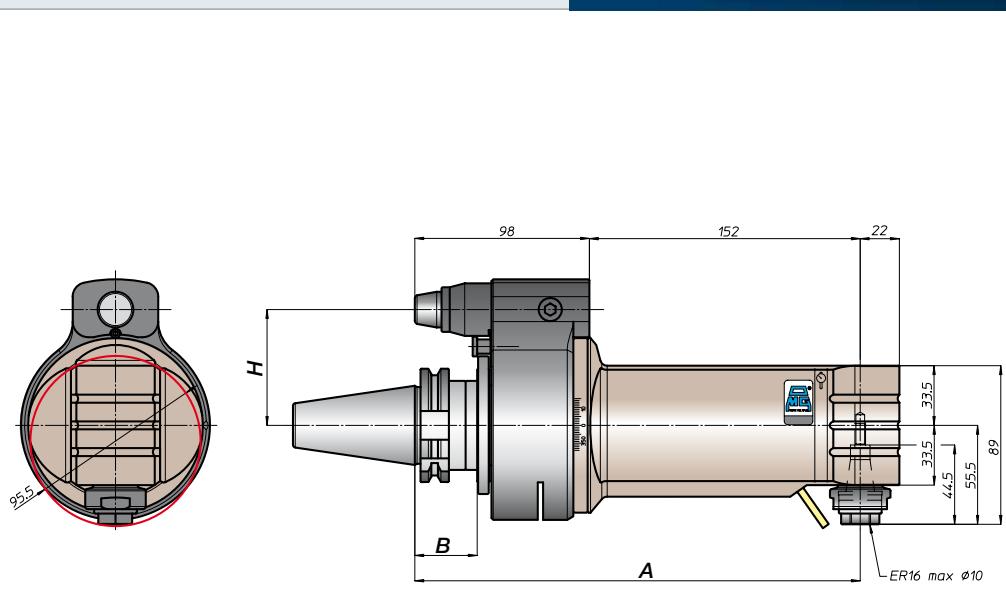
## peso/weight



## prestazioni/performances



CONO SHANK	size	A	B	H	
				standard	optional
DIN69871	-			65	-
	40				
	45				
	50	250	35	80	110
ANSIB5.50	40			65	-
	50			80	110
BT	40			65	
	50	258	43	80	110
DIN69893	63			44	65
	80	259		46	80
	100				110
ISO26623	C5			65	
	C6	254		80	110
	C8				
KM	63			65	
	80	250		80	110
	100				
DIN2080	-			65	-
	40	220	13	65	
	-	223	16	80	110
	50				
ANSIS5.18	40	220	13	65	-
	50	223	16	80	110



TA

MO

HT

VH

TSI/TSX

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# TA13.P



## caratteristiche/features

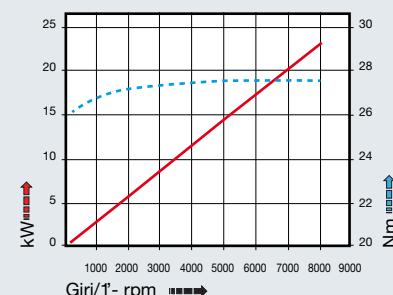
- ø 13
- M10
- 1-1
- 8000

## peso/weight



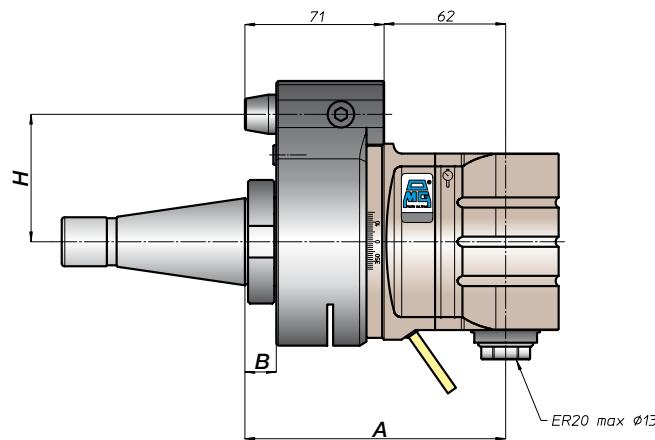
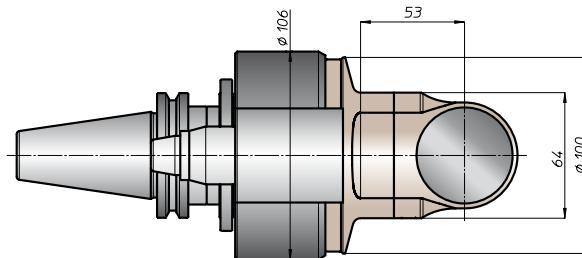
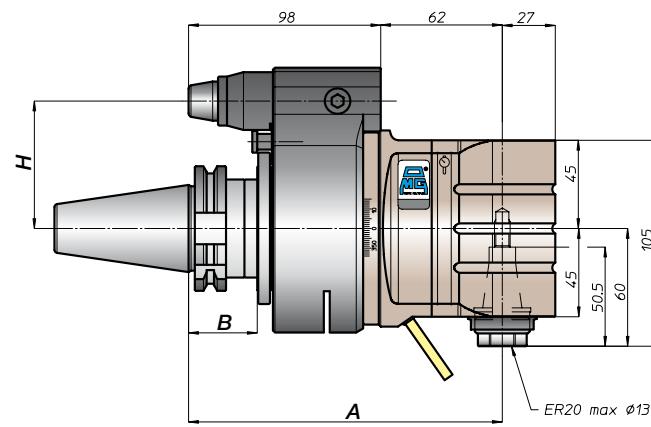
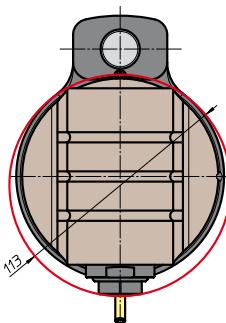
rotazione/rotation

## prestazioni/performances



## tipi mandrino/spindle type

- 2** **3**



CONO SHANK	size	A	B	H standard	H optional
DIN9871	-			65	-
	40			80	110
	45			65	-
	50	160	35	80	110
ANSIB5.50	40			65	-
	50			80	110
BT	40			65	
	50	168	43	80	110
HSK	63			65	
	80	169	44	80	110
	100		46	80	110
DIN69893				65	
CAPTO	C5			65	
	C6	164		80	110
	C8				
KM	63			65	
	80	160		80	110
	100				
DIN2080	-			130	13
	40			133	16
	-			80	110
	50				
NMTB	40	130	13	65	-
ANSIB5.18	50	133	16	80	110

# TA13.PL

## caratteristiche/features



ø 13



M10



1-1



8000

## peso/weight



40



50



rotazione/rotation

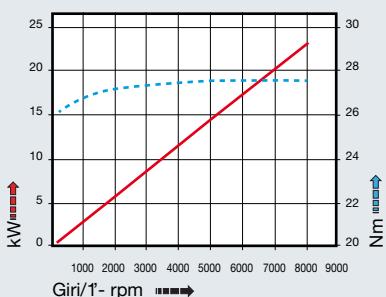


input



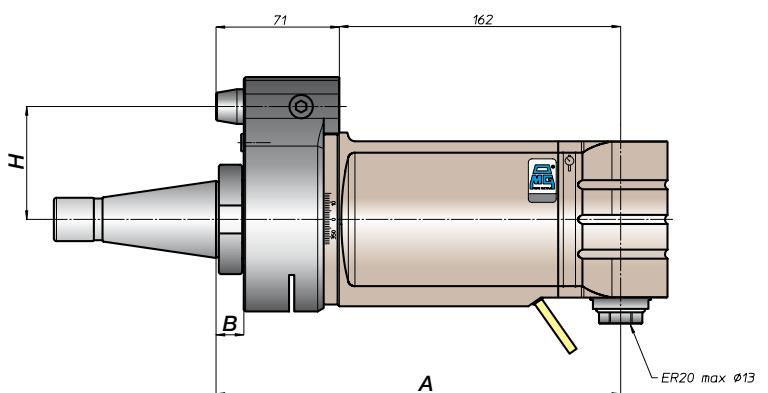
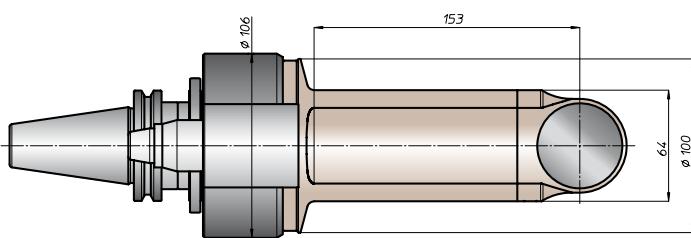
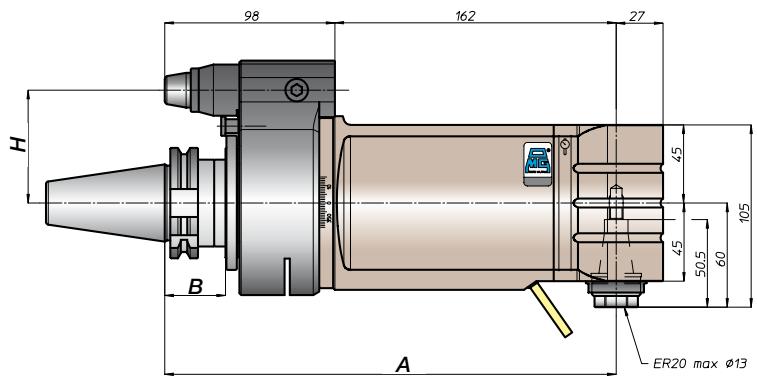
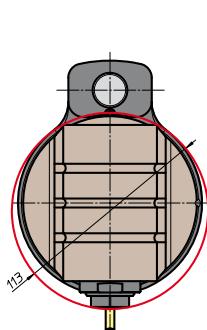
output

## prestazioni/performances



CONO SHANK	size	A	B	standard	optional	H
DIN9871	-			65	-	
	40					
	45					
	50	260	35	80	110	
ANSIB5.50	40			65	-	
	50			80	110	
BT	40			65		
	50	268	43	80	110	
DIN69933	63			44	65	
	80	269		46	80	110
	100					
ISO26623	C5			65		
	C6	264		80	110	
	C8					
KM	63			65		
	80	260		80	110	
	100					
DIN2080	-			65	-	
	40	230	13	65	-	
	-	233	16	80	110	
	50					
ANSIS.18	40	230	13	65	-	
	50	233	16	80	110	

tipi mandrino/spindle type	
<b>2</b>	
	<b>3</b>



# TA16.P



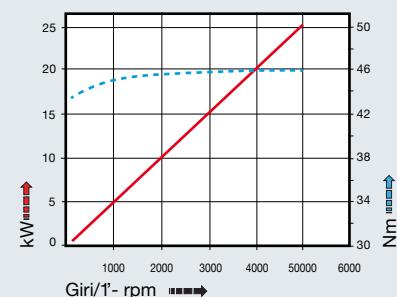
## caratteristiche/features



## peso/weight

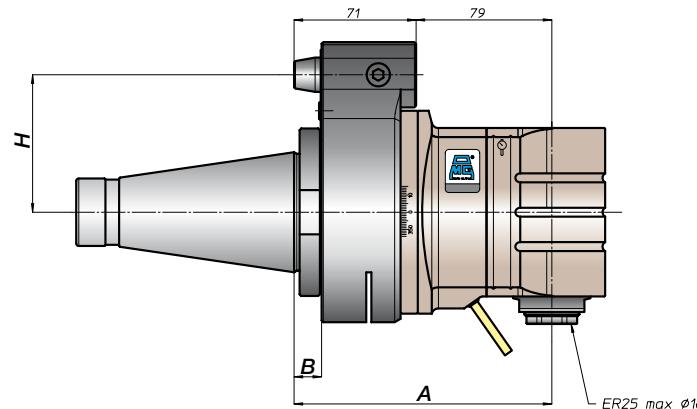
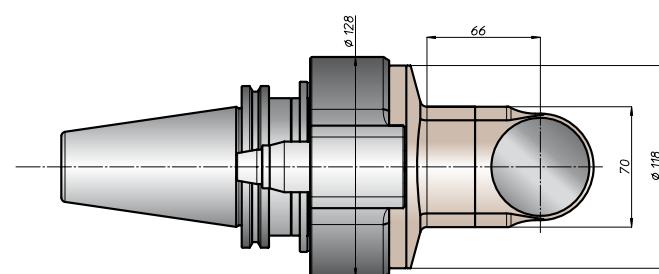
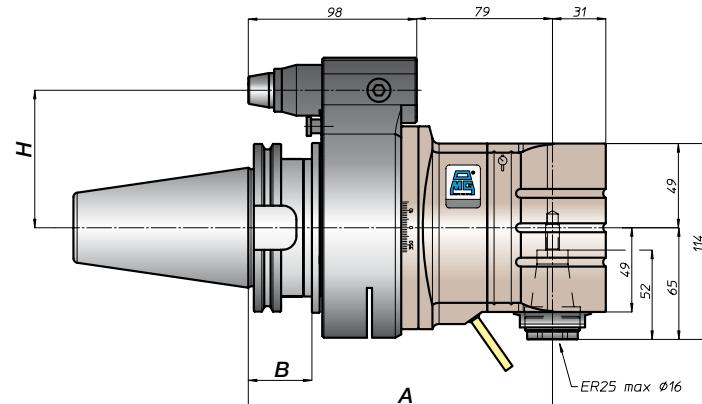
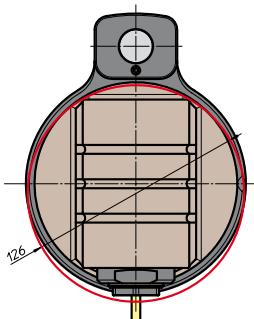


## prestazioni/performances



## tipi mandrino/spindle type

- 1** ER32    **2** Ø16-Ø27-Ø32    **3** Ø20    **4** HSK32    **6** ABS32



CONO SHANK	size	A	B	H	standard	optional
DIN69871	-	172		65	-	
CAT	40	172		80	110	
ANSIB5.50	45	177		65	-	
	50	177		80	110	
BT	40	172		65		
	50	185	43	80	110	
HSK	63	181	44	65		
	80	186	46	80	110	
	100					
CAPTO	C5	176		65		
	C6	181		80	110	
	C8					
KM	63	172		65		
	80	177		80	110	
	100					
DIN2080	-	147	13	65	-	
	40					
	-	150	16	80	110	
	50					
NMTB	40	-	13	65	-	
	50	150	16	80	110	
ANSIB5.18						

# TA16.PL

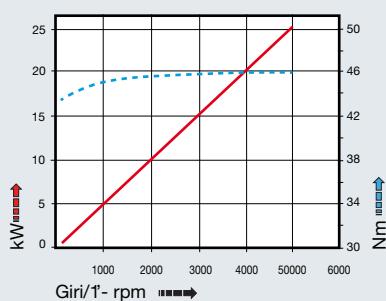
## caratteristiche/features



## peso/weight



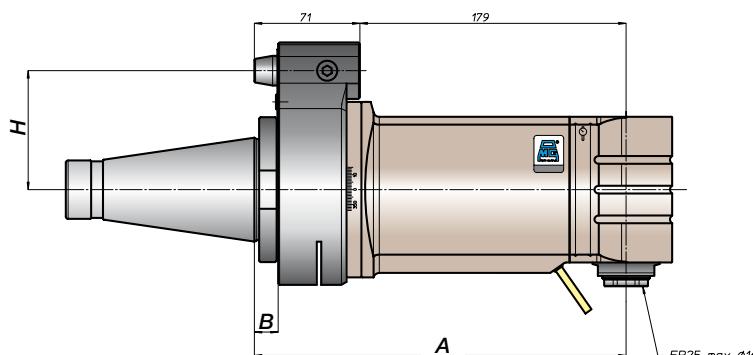
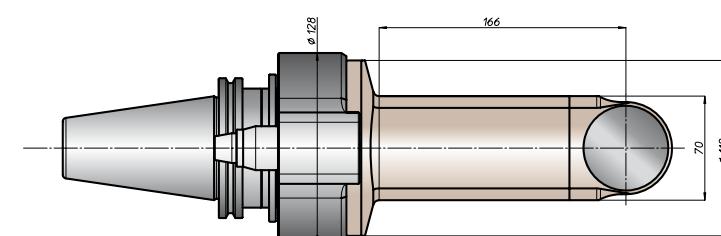
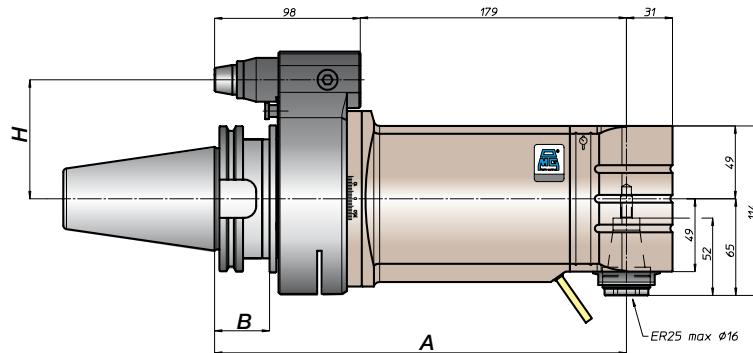
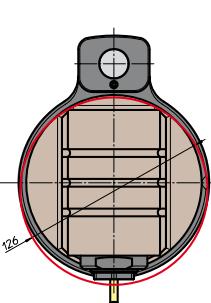
## prestazioni/performances



			H		
CONO SHANK	size	A	B	standard	optional
DIN69871	-	-		-	-
	-				
	45	277		35	80 110
ANSIB5.50	50	277			
	50	277		80	110
BT	40	272			
	50	285	43	80	110
				65	
DIN6983	63	281	44	65	
	80	286	46	80	110
	100				
ISO26623	C5	276			
	C6	281			
	C8			80	110
KM	63	272			
	80	277			
	100			80	110
DIN2080	-	-	-	-	-
	-				
	-				
	50	250	16	80	110
NMTB	-	-	-	-	-
ANSIS5.18	50	250	16	80	110

## tipi mandrino/spindle type

- 1 ER32    2 Ø16-Ø27-Ø32    3 Ø20    4 HSK32    6 ABS32



# TA20.P



## caratteristiche/features

- ø 20
- M14
- 1-1
- 3500

## peso/weight



14,5 kg

## rotazione/rotation

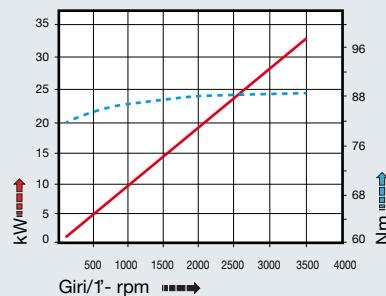


input



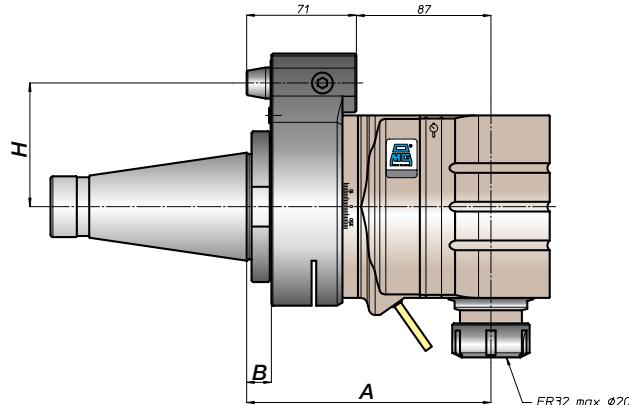
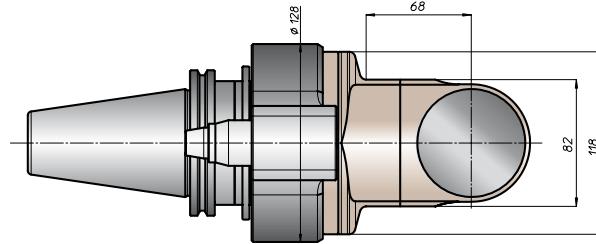
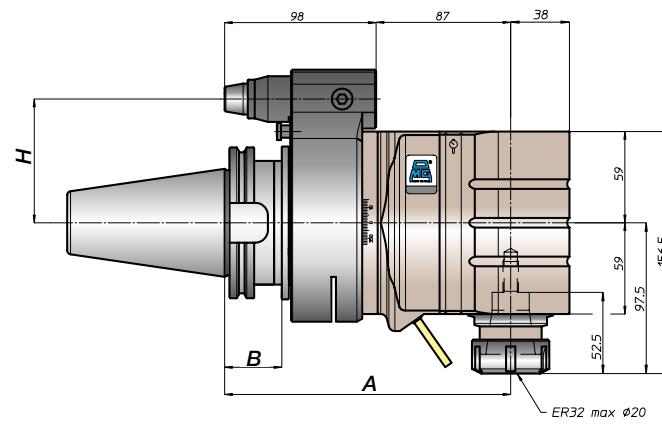
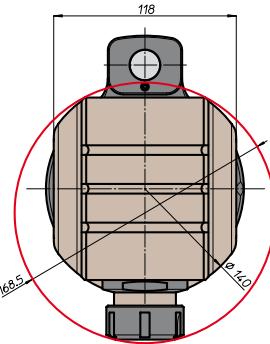
output

## prestazioni/performances



## tipi mandrino/spindle type

- 1** ER40   **2** Ø22-Ø27-Ø32   **3** Ø20-Ø25   **4** HSK40   **6** ABS40



CONO SHANK	size	A	B	H Standard	H optional
DIN9871	-			-	-
CAT	45			80	110
ANSIB5.50	50		185	-	-
BT	50			80	110
HSK	-			-	-
DIN69893	80		194	46	80 110
	100				
CAPTO	C6		189	-	-
ISO26623	C8			80	110
KM	-			-	-
DIN2080	80		185		
	100			80	110
NMTB	-			-	-
ANSIS5.18	50		158	16	80 110

# TA20.30

## caratteristiche/features



## peso/weight



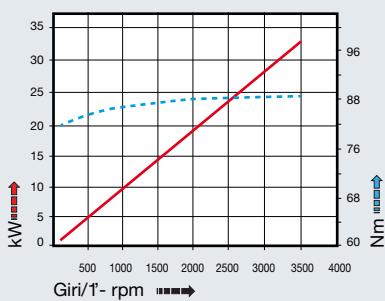
14,7 kg

## rotazione/rotation

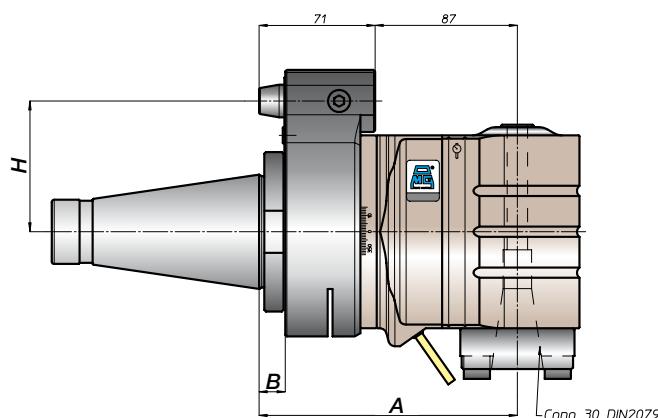
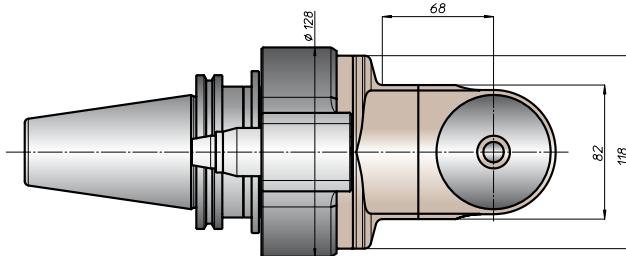
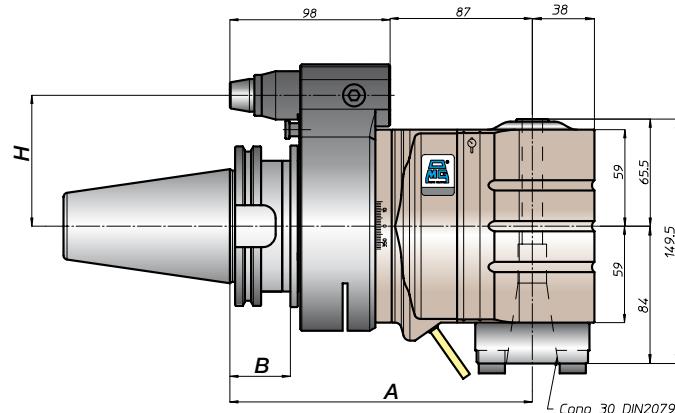
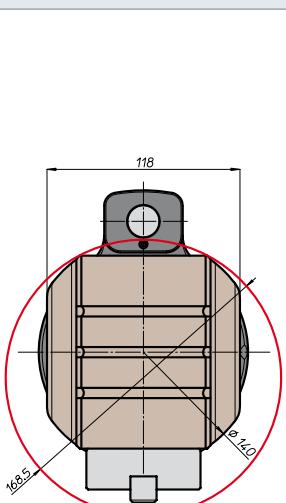


input → output

## prestazioni/performances



CONO SHANK	size	H		standard	optional
		A	B		
DIN9871	-			-	-
	-				
	45				
	50	185	35	80	110
CAT	-				
	-				
	50			65	-
				80	110
BT	-				
	-				
	50	193	43	80	110
HSK	-				
	-				
	80	194	46	80	110
	100				
CAPTO	-				
	-				
	C6	189		80	110
	C8				
KM	-				
	-				
	80	185		80	110
	100				
DIN2080	-				
	-				
	-				
	158	16	80	110	
	50				
ANSI5.18	-				
	-				
	50	158	16	80	110
NMTB	-				
	-				



# testa ad angolo - angle head

# TA26.P



## caratteristiche/features

- ø 26
- M20
- 1-1
- 2500

## peso/weight



22 kg  
rotazione/rotation

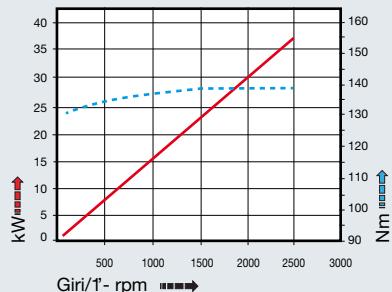


input



output

## prestazioni/performances



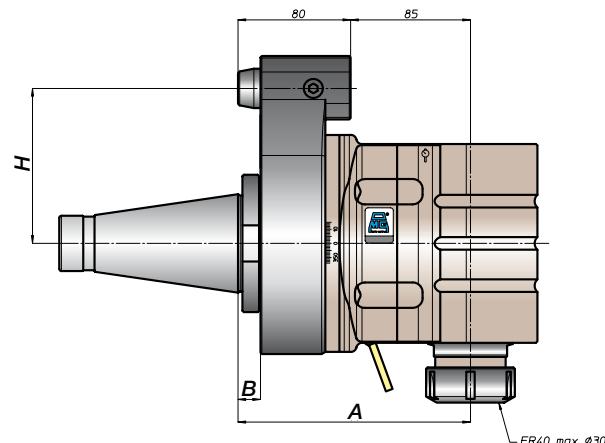
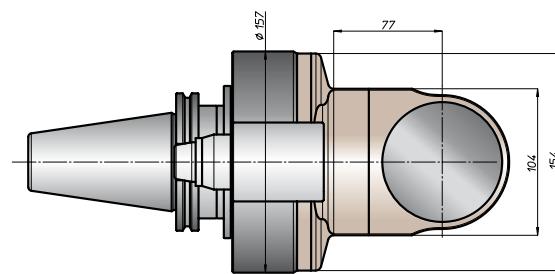
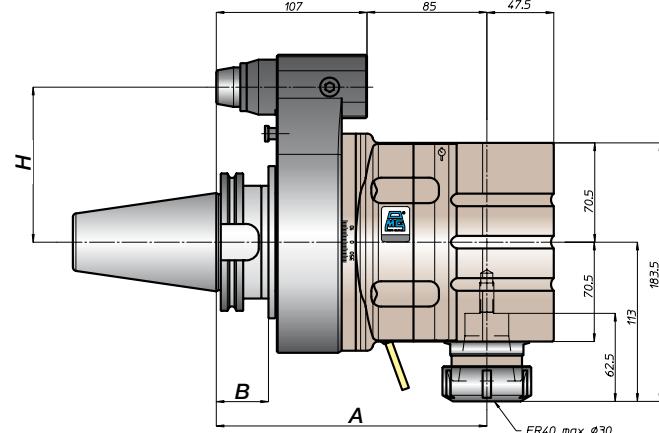
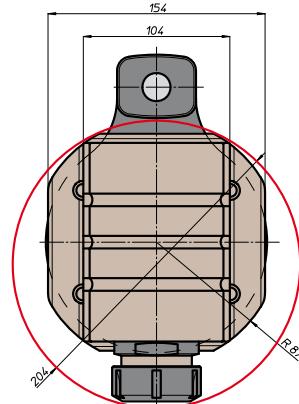
## tipi mandrino/spindle type

**2** Ø16-Ø27-Ø32

**3** Ø32

**4** HSK63

**6** ABS50



CONO SHANK	size	A	B	H
DIN9871	-			standard optional
CAT	45			110 -
ANSIB5.50	50	192	35	- -
BT	-			- -
HSK	50	200	43	110 -
DIN69893	80			
	100	201	46	110 -
CAPTO	-			- -
ISO26623	-	196		110 -
KM	C8			
DIN2080	-			- -
NMTB	100	192		110 -
ANSIS.18	-			
	50	165	16	110 -
	50	165	16	110 -

# TA26.40

## caratteristiche/features



ø 26



M20



1:1



2500

## peso/weight



22 kg

## rotazione/rotation

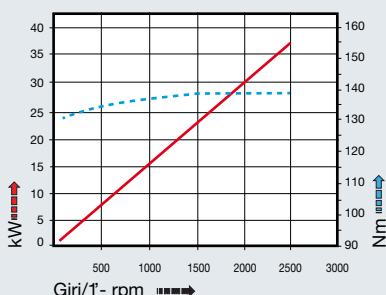


input

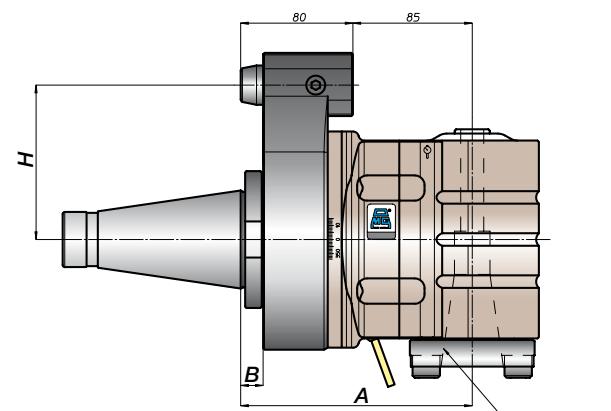
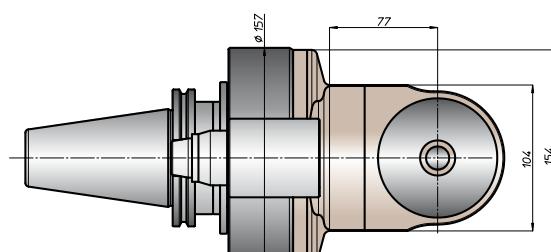
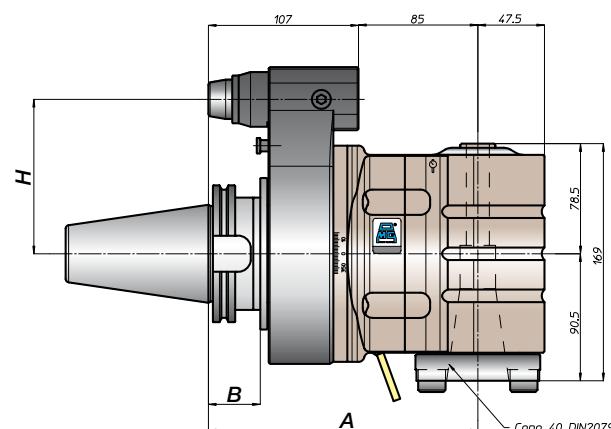
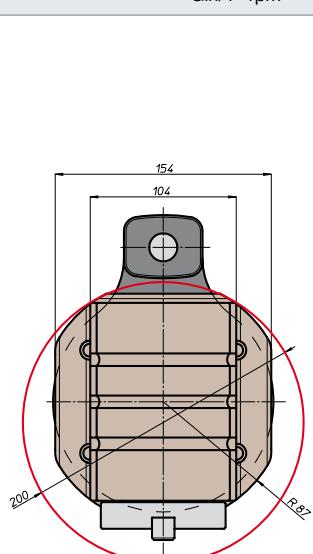


output

## prestazioni/performances



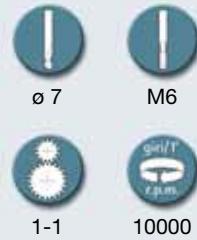
	CONO SHANK	size	A	B	standard	H	optional
DIN9871		-					
		-					
		45					
		50	192	35	110	-	
CAT		-					
ANSI5.50		50					
		-					
		50	192	35	110	-	
BT		-					
		-					
		50	200	43	110	-	
HSK		-					
DIN6993		80					
		-					
		100	201	46	110	-	
CAPTO		-					
ISO26623		-					
		-					
		196					
		-					
		196					
		-					
		196					
		-					
		196					
		-					
		196					
KM		-					
		-					
		192					
		-					
		192					
		-					
		192					
DIN2080		-					
		-					
		-					
		165					
		-					
		165					
		-					
		165					
		-					
		165					
NMTB		-					
ANSI5.18		50	165	16	110	-	



# TA07.2P



## caratteristiche/features



M6

1-1

10000

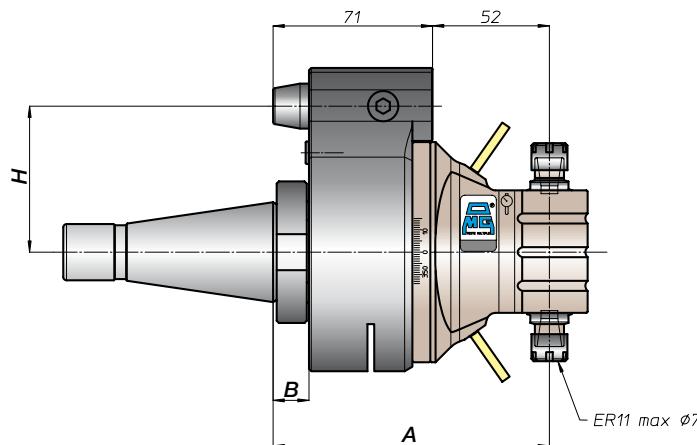
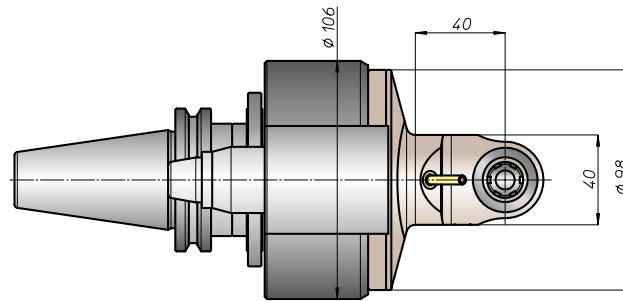
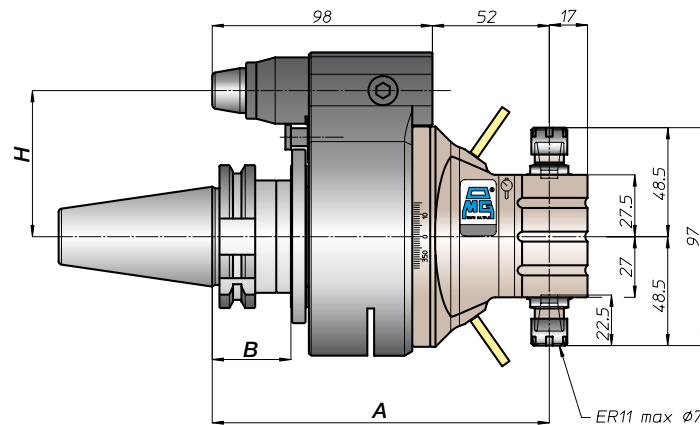
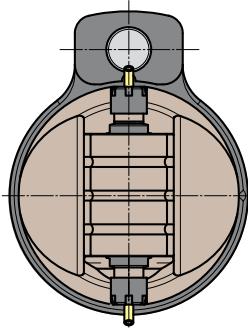
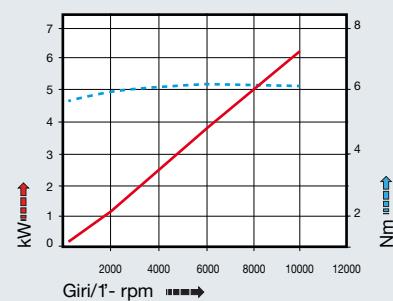
## peso/weight



## rotazione/rotation



## prestazioni/performances



CONO SHANK	size	A	B	H standard	H optional
DIN9871	30			65	-
	40			80	110
	45				
	50	150	35		
CAT	40			65	-
	50			80	110
BT	40			65	
	50	158	43	80	110
HSK	63			65	
	80	159		80	110
	100				
CAPTO	C5			65	
	C6	154			
	C8			80	110
KM	63			65	
	80	150			
	100			80	110
DIN2080	-			120	13
	40			123	16
	-				
	50			80	110
NMTB	40	120	13	65	-
	50	123	16	80	110
ANSI5.18					

# TA10.2P

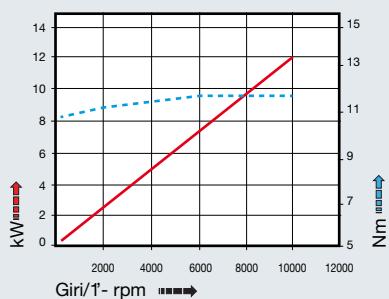
## caratteristiche/features



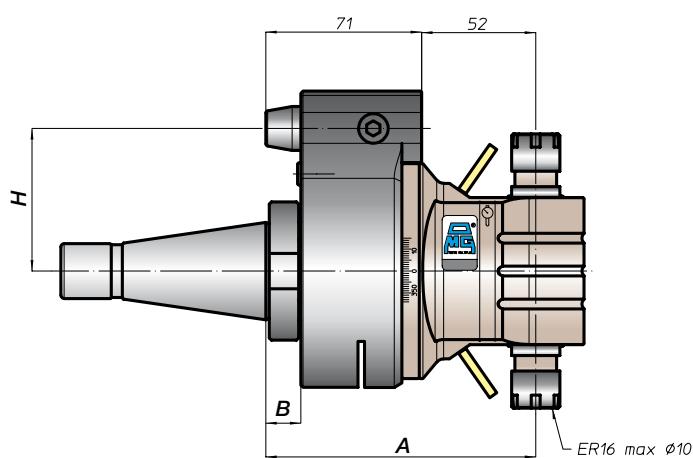
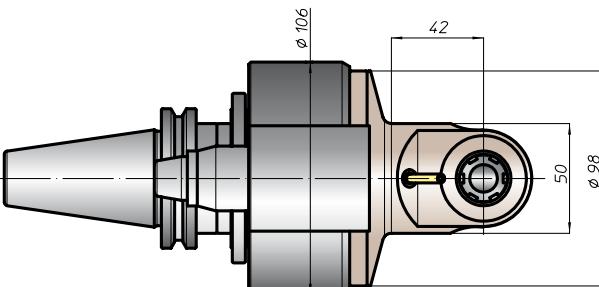
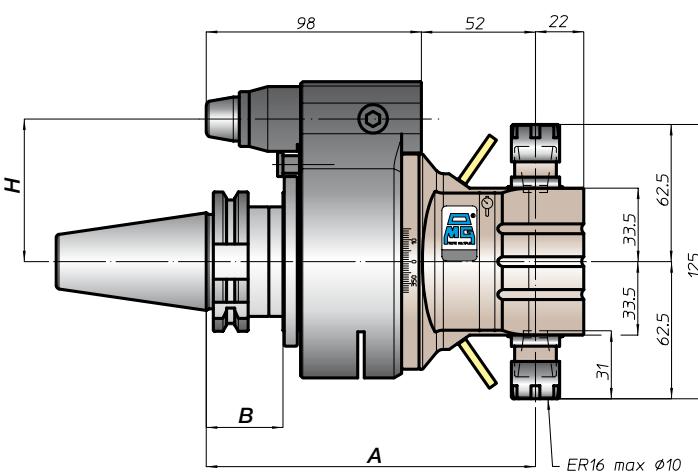
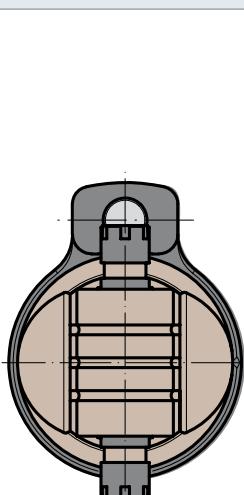
## peso/weight



## prestazioni/performances



CONO SHANK	size	A	B	H	
				standard	optional
DIN69871	30	150	35	65	-
	40				
	45			80	110
	50			65	-
ANSIB5.50	40	158	43	80	110
	50			65	
BT	40	158	43	80	110
	50			65	
DIN69893	63	159	46	65	
	80			80	110
	100			65	
ISO26623	C5	154	42	65	
	C6			80	110
	C8			65	
KM	63	150	42	65	
	80			80	110
	100			65	
DIN2080	-	120	13	65	-
	40			80	110
	-			80	110
	50			65	
ANSIS5.18	40	120	13	65	-
	50	123	16	80	110



# testa ad angolo - angle head

# TA13.2P



## caratteristiche/features

- ø 13
- M10
- 1-1
- 8000

## peso/weight



6,5 kg



9 kg

## rotazione/rotation

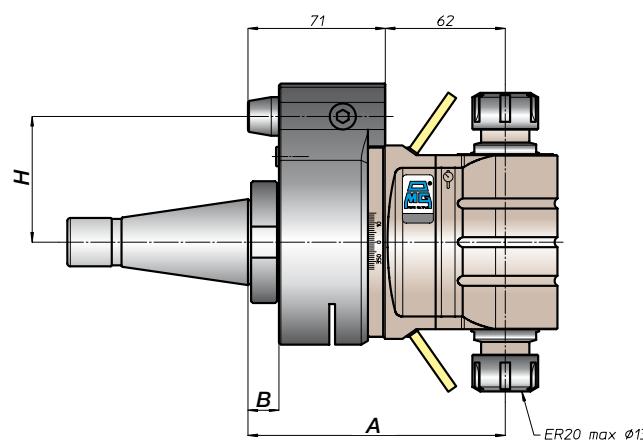
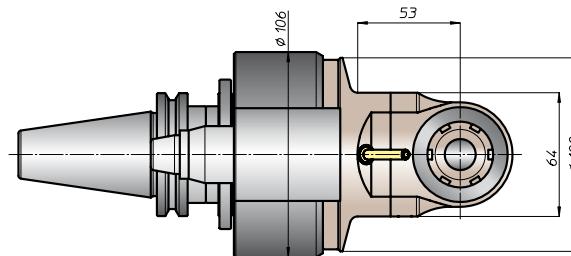
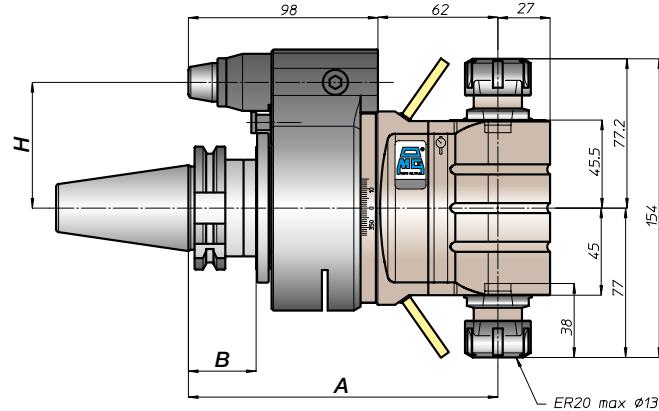
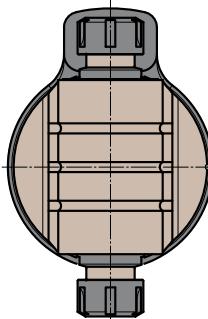
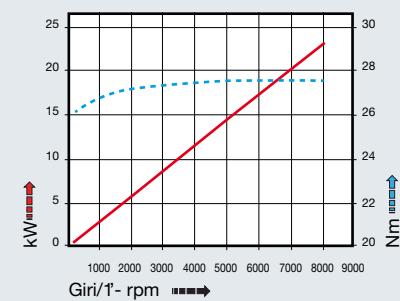


input



output

## prestazioni/performances



CONO SHANK	size	A	B	H standard	H optional
DIN9871	-			65	-
	40			80	110
	45			65	-
	50	160	35	80	110
ANSIB5.50	40			65	-
	50			80	110
BT	40			65	
	50	168	43	80	110
HSK	63			65	
	80	169		80	110
	100		46	80	110
CAPTO	C5			65	
	C6	164		80	110
	C8				
KM	63			65	
	80	160		80	110
	100				
DIN2080	-			130	13
	40			133	16
	-			80	110
	50				
ANSIB5.18	40	130	13	65	-
	50	133	16	80	110

# TA16.2P



## caratteristiche/features



ø 16



M12



1-1



5000

## peso/weight



40



50

## rotazione/rotation

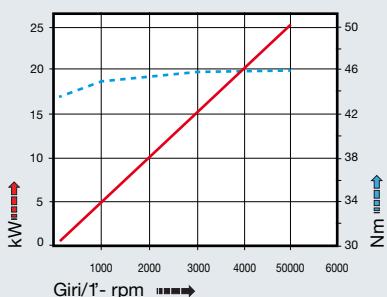


input

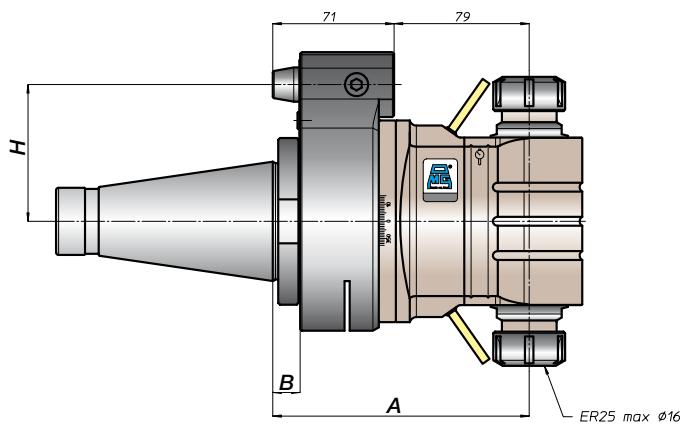
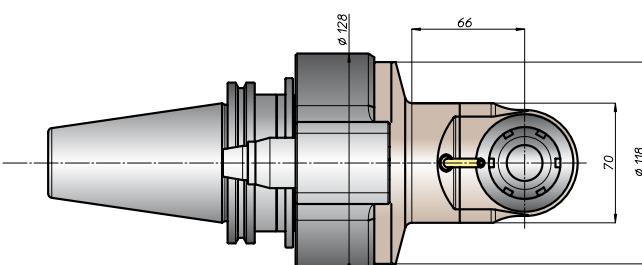
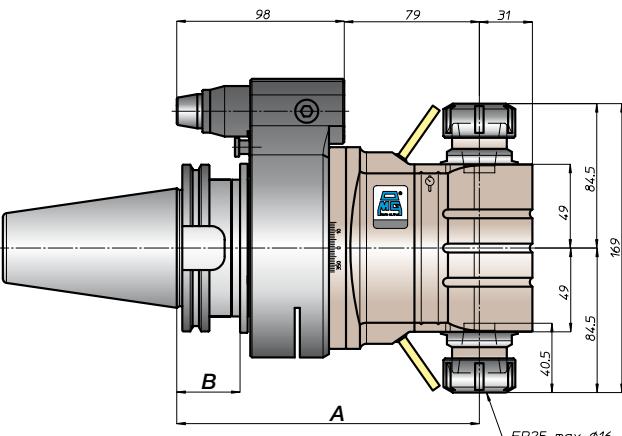
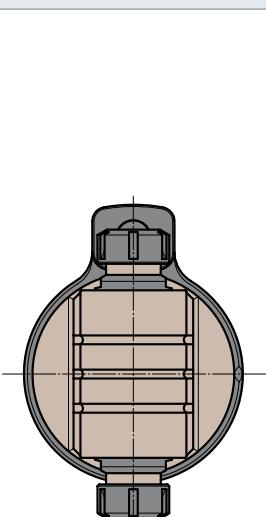


output

## prestazioni/performances



		size	A	B	H	standard	optional
CONO SHANK	DIN69871	-	172		35	65	-
		40				80	110
		45	177			65	-
		50				80	110
ANSIB5.50	CAT	40	172			65	-
		50	177			80	110
BT		40	172		43	65	
		50	185			80	110
HSK	DIN69893	63	181	44	65		
		80	186	46	80	110	
		100					
CAPTO	ISO26623	C5	176		80	65	
		C6				80	110
		C8	181				
KM		63	172		80	65	
		80	177			80	110
		100					
DIN2080		-	147	13	65		-
		40					
		-	150	16	80	110	
		50					
ANSIS5.18	NMTB	40	-	13	65		-
		50	150	16	80	110	



# TA20.2P



## caratteristiche/features

- - 
  - 
  -
- ø 20      M14  
 1-1      3500

## peso/weight



15 kg

## rotazione/rotation

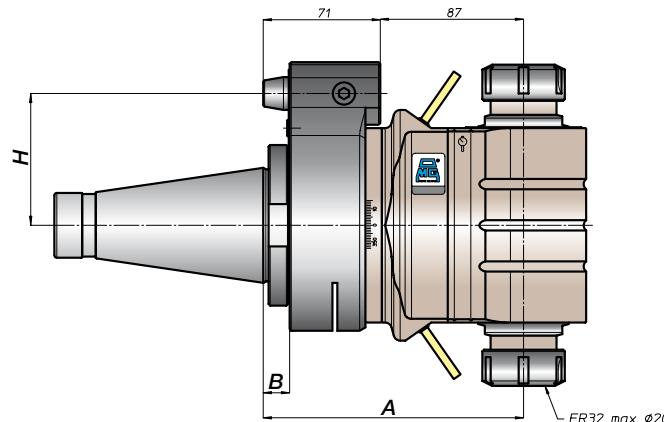
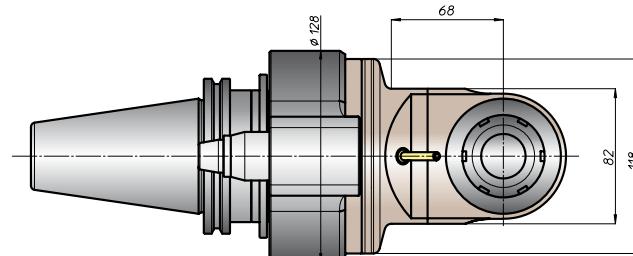
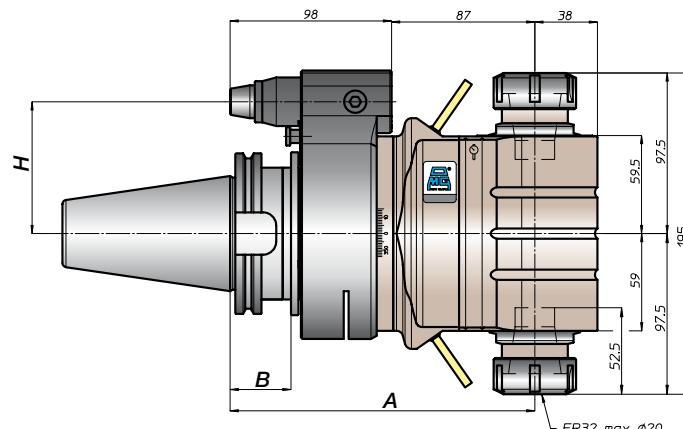
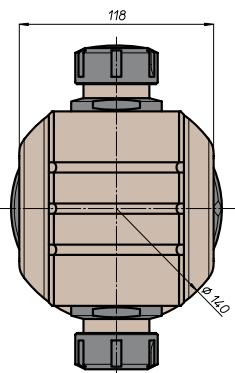
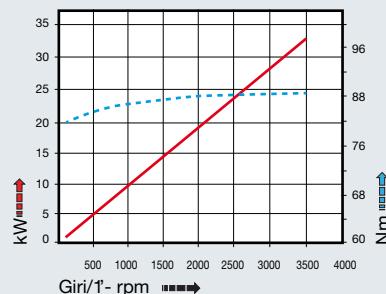


input



output

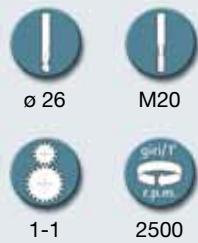
## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
DIN9871	-				-	-
CAT	45				80	110
ANSIB5.50	50			185	-	-
BT	50				80	110
HSK	-				-	-
DIN69893	80			194	46	80 110
	100					
CAPTO	C6			189	-	-
ISO26623	C8				80	110
KM	-				-	-
DIN2080	80			185	80	110
	100					
NMTB	-				-	-
ANSIB5.18	50			158	16	80 110

# TA26.2P

## caratteristiche/features



## peso/weight



22,5 kg

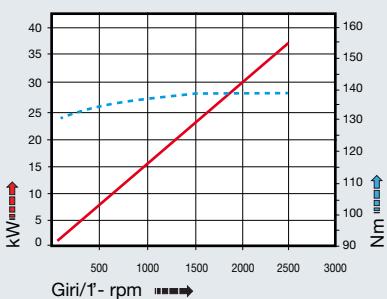
## rotazione/rotation



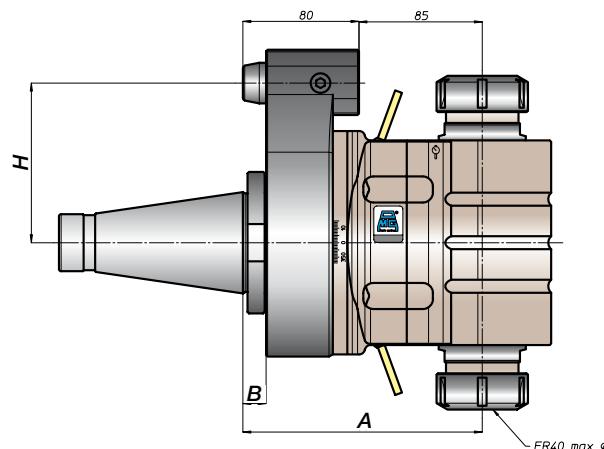
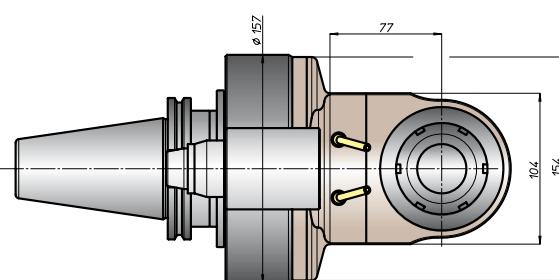
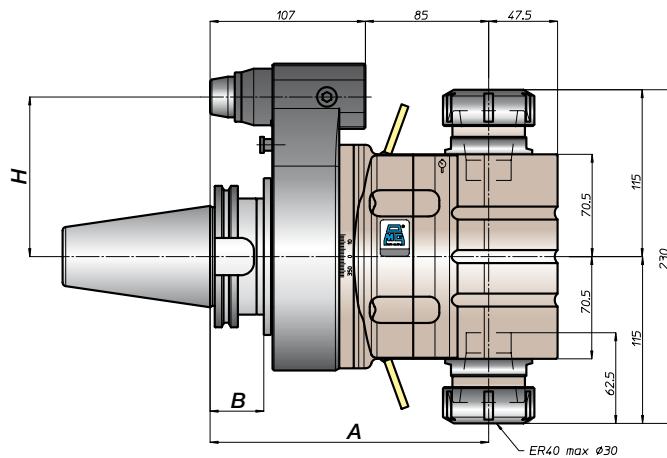
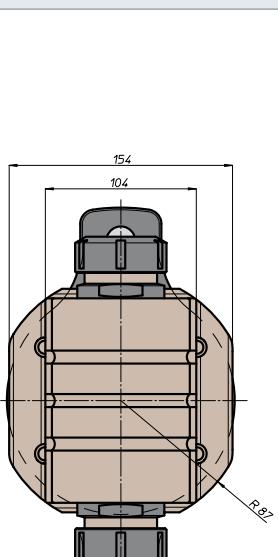
input



## prestazioni/performances



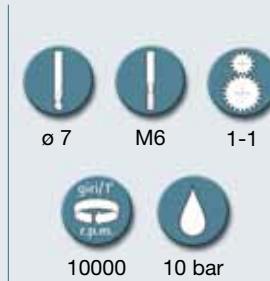
	CONO SHANK	size	A	B	standard	H	optional
DIN69871		-				-	-
		-				-	-
		45				-	-
CAT		50	192	35	110	-	-
ANSIB5.50		-				-	-
		50				-	-
BT		-				-	-
		50	200	43	110	-	-
HSK		-				-	-
DIN69893		80	201	46	110	-	-
		100				-	-
CAPTO		-				-	-
ISO26623		-				-	-
		196				-	-
		C8				-	-
KM		-				-	-
		-				-	-
		192				-	-
		100				-	-
DIN2080		-				-	-
		-				-	-
		-				-	-
		165		16	110	-	-
		50				-	-
ANSIB5.18		-				-	-
		50	165	16	110	-	-
NMTB		-				-	-



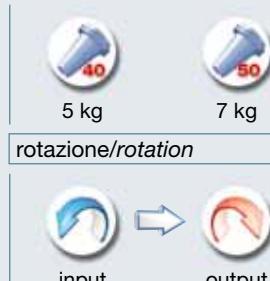
## TA07.PD



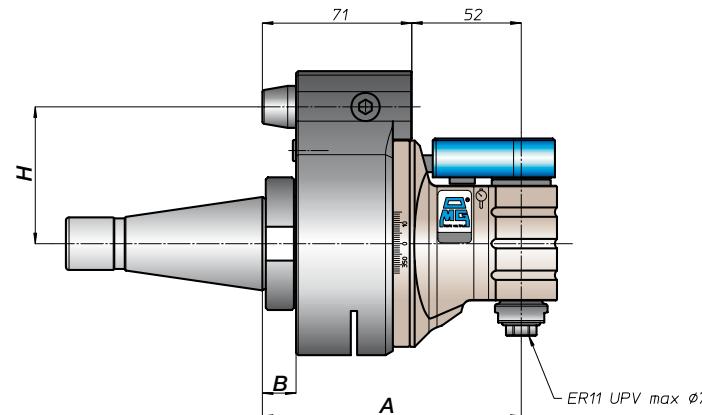
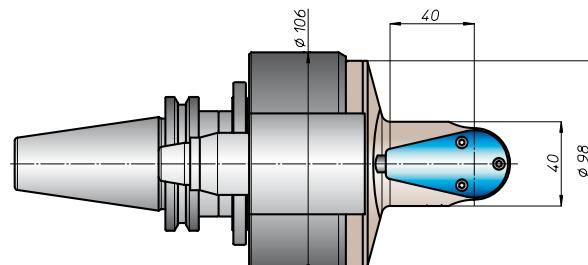
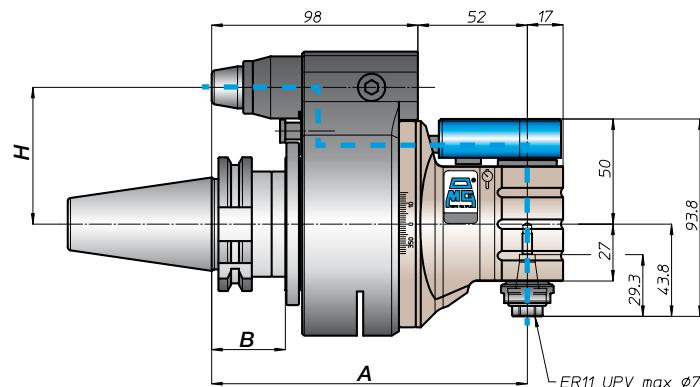
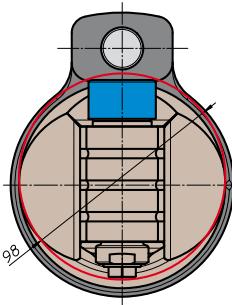
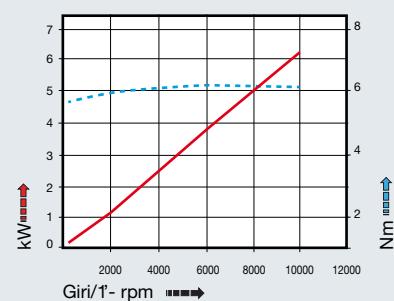
## caratteristiche/features



## peso/weight



## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
DIN9871	30			65	-	
	40			80	110	
	45					
	50	150	35			
ANSIB5.50	40			65	-	
	50			80	110	
BT	40			65		
	50	158	43	80	110	
HSK	63			65		
	80	159		46	80	110
	100					
DIN69893						
CAPTO	C5			65		
	C6	154				
	C8			80	110	
KM	63			65		
	80	150				
	100			80	110	
DIN2080						
	-	120	13	65	-	
	40					
	-	123	16	80	110	
	50					
NMTB	40	120	13	65	-	
ANSIB5.18	50	123	16	80	110	

# TA07.PDL

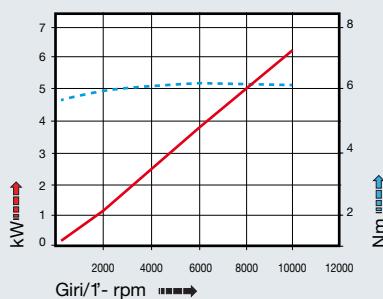
## caratteristiche/features



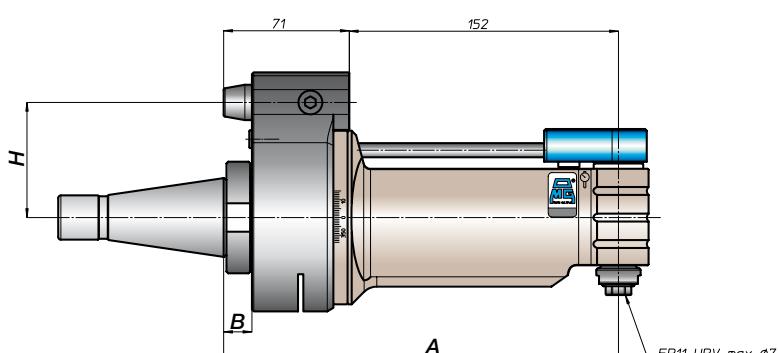
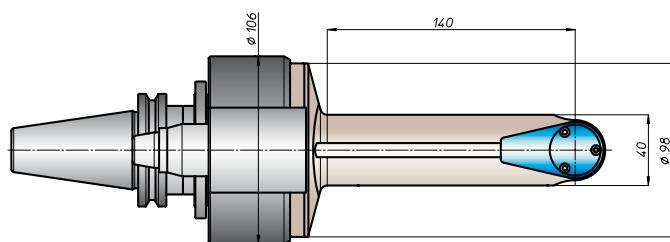
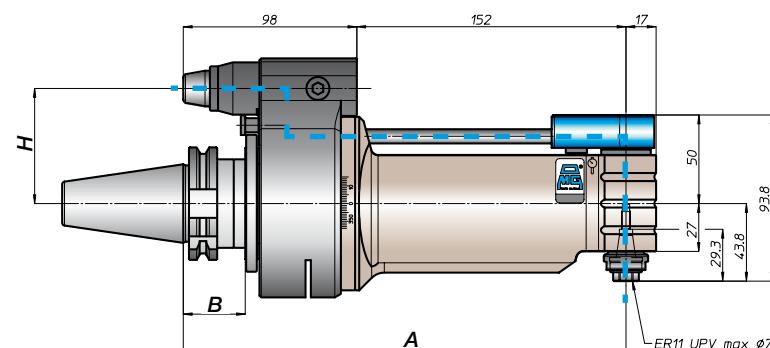
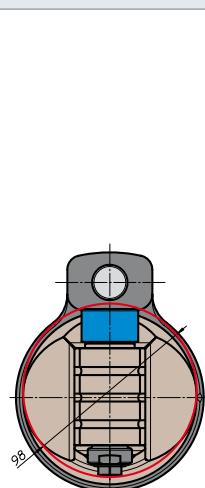
## peso/weight



## prestazioni/performances



CONO SHANK	size	A	B	standard	optional
DIN9871	-			65	-
	40				
	45				
	50	250	35	80	110
ANSIB5.50	40			65	-
	50			80	110
BT	40			65	
	50	258	43	80	110
DIN6993	63			44	65
	80	259		46	80
	100				110
ISO26623	C5			65	
	C6	254			
	C8			80	110
KM	63			65	
	80	250			
	100			80	110
DIN2080	-			65	-
	40	220	13	65	
	-	223	16	80	110
	50				
ANSIS5.18	40	220	13	65	-
	50	223	16	80	110



## TA10.PD



TA

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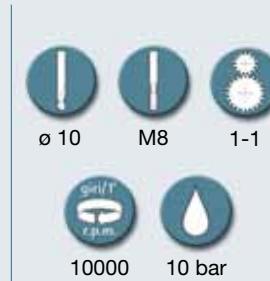
TSI/TSX

T

MT-TC-TC3

Accessori  
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Technical supplement

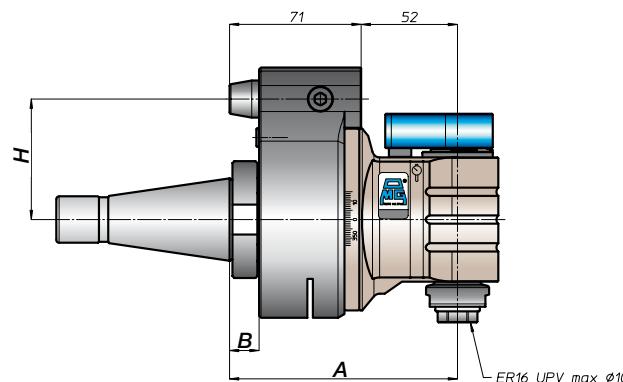
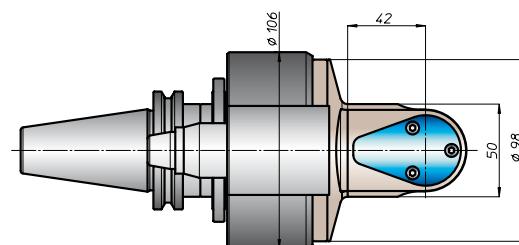
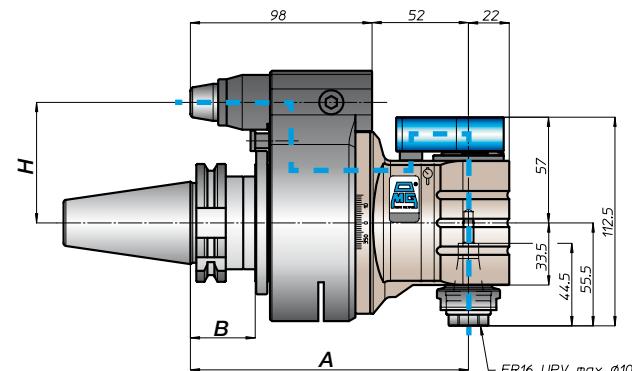
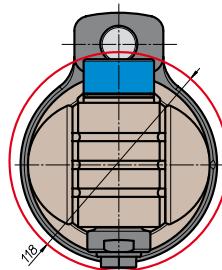
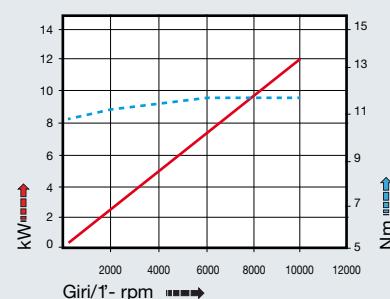
## caratteristiche/features



## peso/weight



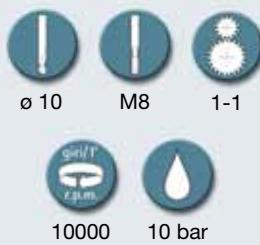
## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
DIN9871	30			65	-	
	40			80	110	
	45			65	-	
	50	150	35	80	110	
ANSIB5.50	CAT	40		65	-	
	50	50		80	110	
BT	40			65		
	50	158	43	80	110	
HSK	63			65		
	80	159		80	110	
	100	46		80	110	
DIN69893				65		
CAPTO	C5			65		
	C6	154		80	110	
	C8			65		
ISO26623				80	110	
KM	63			65		
	80	150		80	110	
	100			65		
DIN2080	-			120	13	65
	40			123	16	80
	-			123	16	110
	50			120	13	65
NMTB	40	120	13	65	-	
ANSIS.18	50	123	16	80	110	

# TA10.PDL

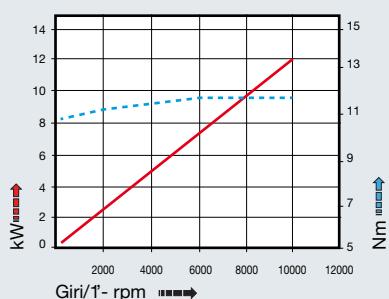
## caratteristiche/features



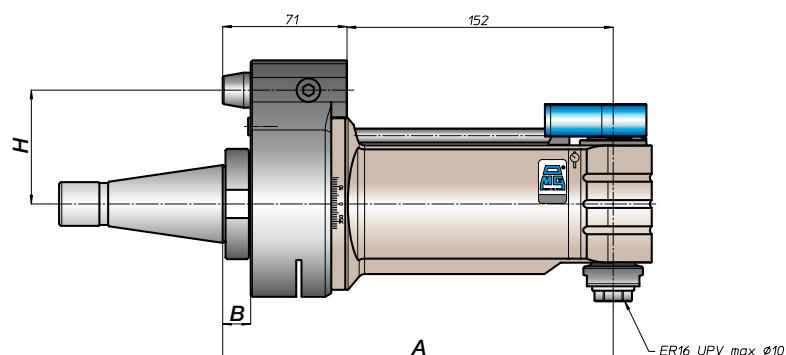
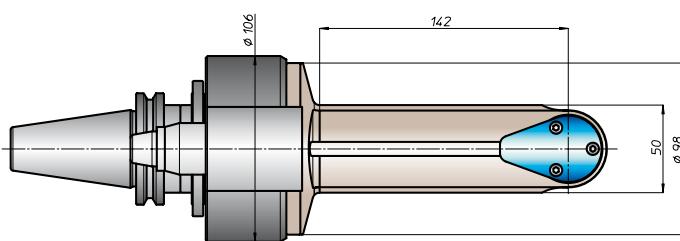
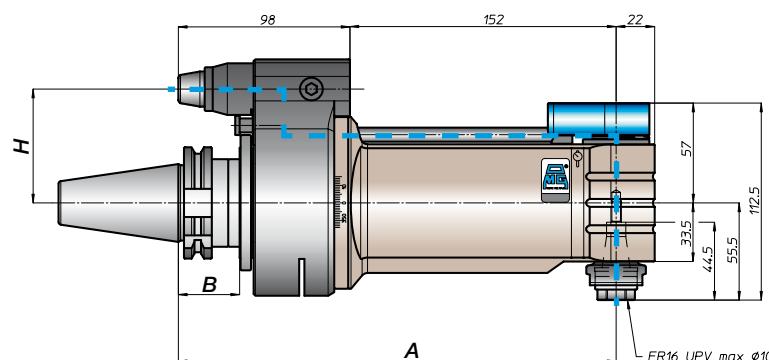
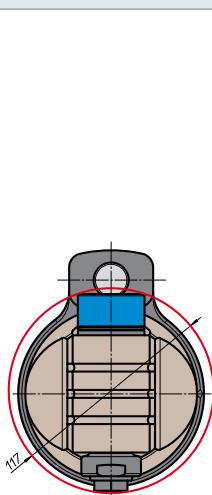
## peso/weight



## prestazioni/performances



CONO SHANK	size	A	B	standard	optional	H
DIN9871	-			65	-	
	40					
	45					
	50	250	35	80	110	
	CAT			65	-	
	40					
ANSIB5.50	50			80	110	
	BT					
	40			65		
	50	258	43	80	110	
	HSK					
	63			44	65	
DIN6993	80	259		46	80	110
	100					
	CAPTO					
ISO26623	C5			65		
	C6	284				
	C8			80	110	
KM	63			65		
	80	250				
	100			80	110	
DIN2080	-			65		
	40	220	13	65	-	
	-	223	16	80	110	
	50					
ANSIS5.18	40	220	13	65	-	
	50	223	16	80	110	
NMTB						



TA

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TSI/TSX

MT-Tc-Tc3

Accessori  
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Technical supplement

# TA13.PD



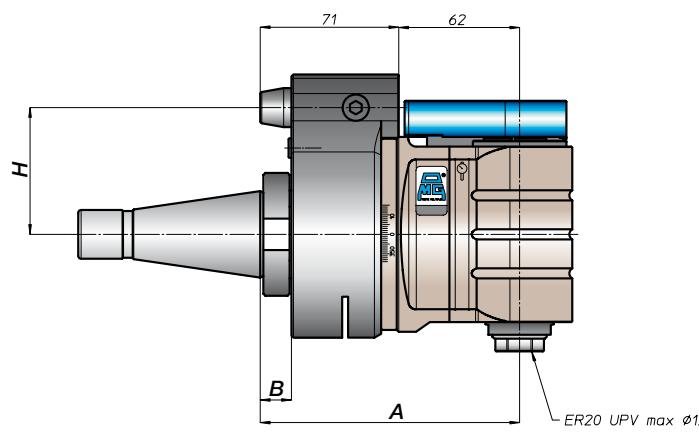
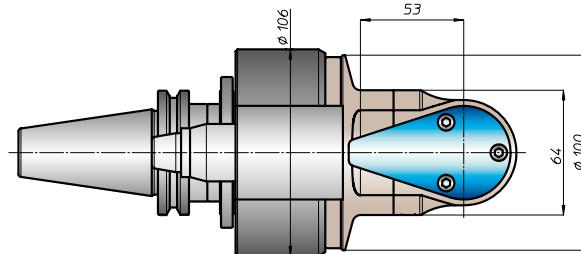
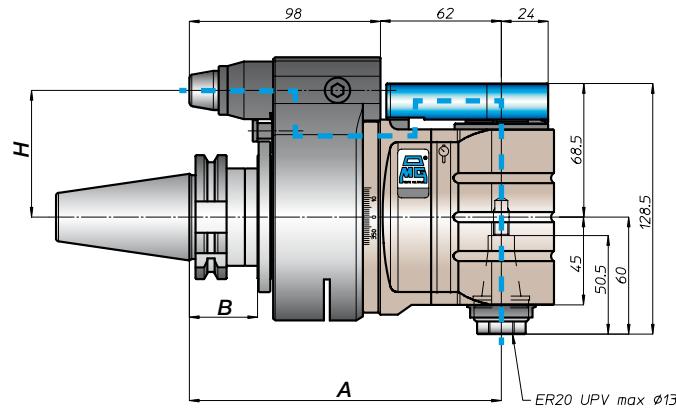
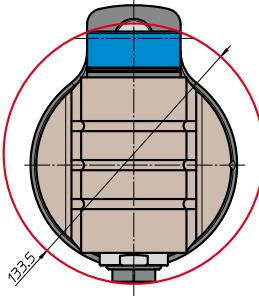
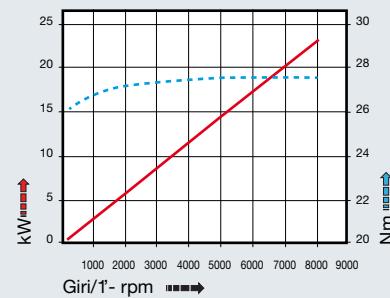
## caratteristiche/features

- ø 13
- M10
- 1-1
- 8000 giri/min
- 10 bar

## peso/weight

- |    |        |
|----|--------|
| 40 | 6,5 kg |
| 50 | 9 kg   |
- rotazione/rotation
- input      output

## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
DIN9871	-			65	-	
	40			80	110	
	45			65	-	
	50	160	35	80	110	
ANSIB5.50	40			65	-	
	50			80	110	
BT	40			65		
	50	168	43	80	110	
HSK	63			65		
	80	169	46	80	110	
	100			65		
DIN69893				80	110	
CAPTO	C5			65		
	C6	164		80	110	
	C8			65		
KM	63			65		
	80	160		80	110	
	100			65		
DIN2080	-			130	13	65
	40			133	16	80
	-			133	16	110
	50			130	13	65
ANSIB5.18	40	130	13	65	-	
	50	133	16	80	110	

# TA16.PD



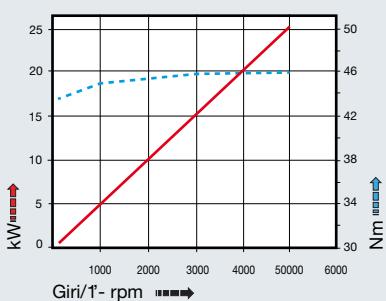
## caratteristiche/features



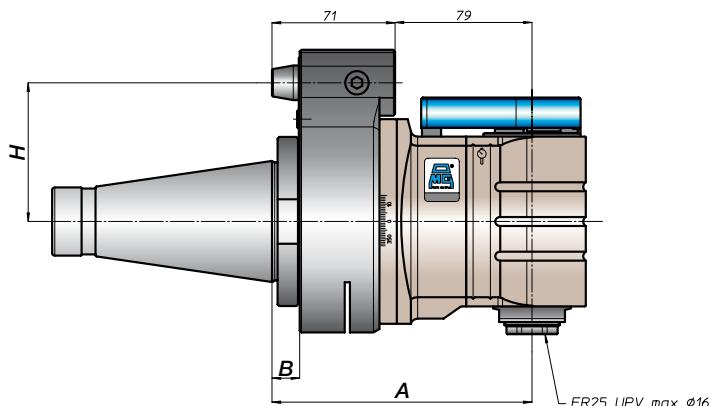
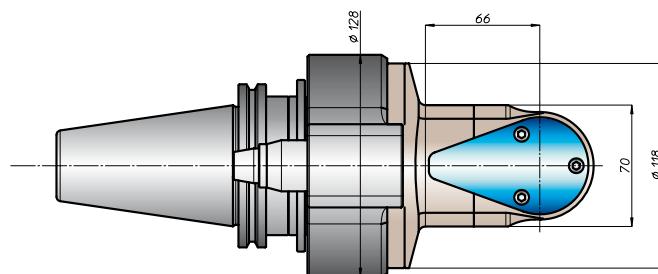
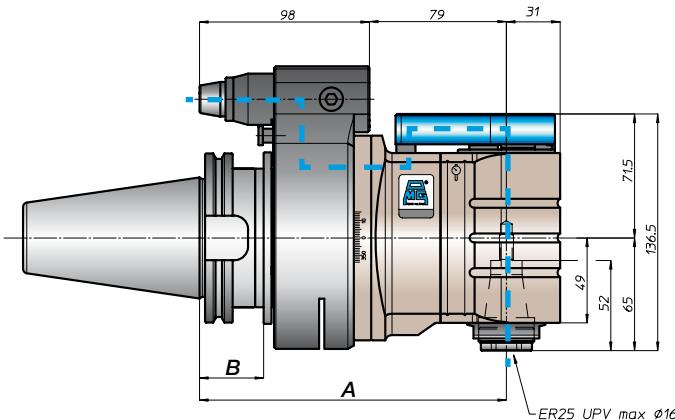
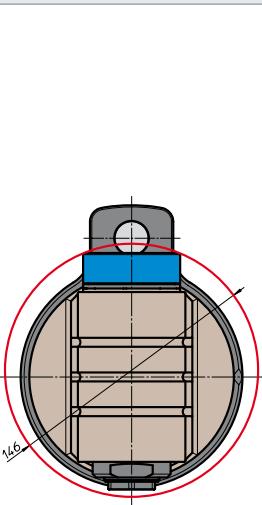
## peso/weight



## prestazioni/performances



			H		
CONO SHANK	size	A	B	standard	optional
DIN69871	-	172		65	-
	40				
	45	177		80	110
	50				
ANSIB5.50	40	172		65	-
	50	177		80	110
BT	40	172		65	
	50	185	43	80	110
DIN69893	63	181	44	65	
	80	186	46	80	110
	100				
ISO26623	C5	176		65	
	C6	181		80	110
	C8				
KM	63	172		65	
	80	177		80	110
	100				
DIN2080	-	147	13	65	-
	40				
	-	150	16	80	110
	50				
ANSIS5.18	40	-	13	65	-
	50	150	16	80	110



## TA20.PD



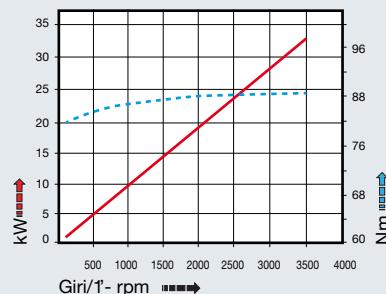
## caratteristiche/features



## peso/weight

14,5 kg  
rotazione/rotation

## prestazioni/performances



HT

VH

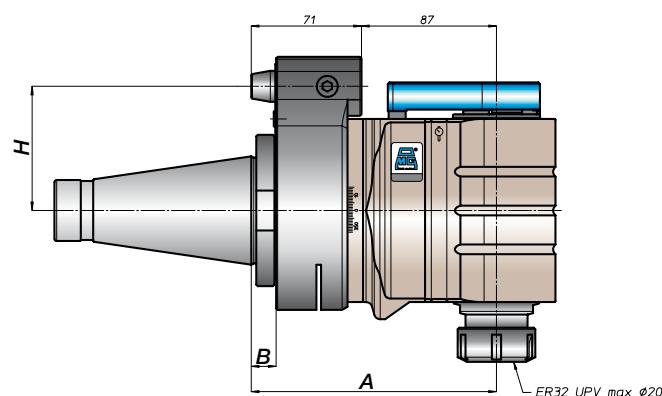
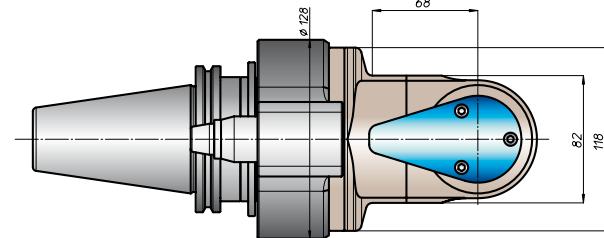
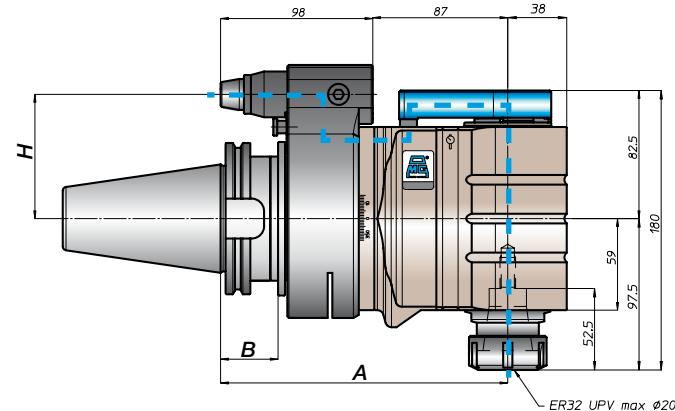
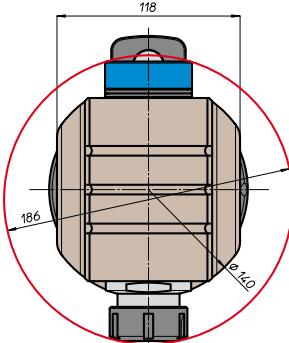
TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

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CONO SHANK	size	A	B	H	standard	optional
DIN9871	-				-	-
CAT	45			185	80	110
ANSIB5.50	50				-	-
BT	50	193	43	80	110	
HSK	-				-	-
DIN69893	80	194		46	80	110
	100					
CAPTO	-				-	
ISO26623	C6	189			80	110
	C8					
KM	-				-	
	80	185			80	110
	100					
DIN2080	-				-	-
	-					
	-					
	50	158	16	80	110	
NMTB	-				-	-
ANSIB5.18	50	158	16	80	110	

# TA26.PD

## caratteristiche/features



## peso/weight



22 kg

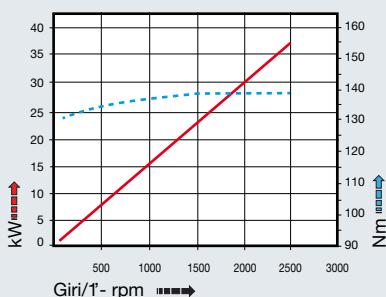
## rotazione/rotation



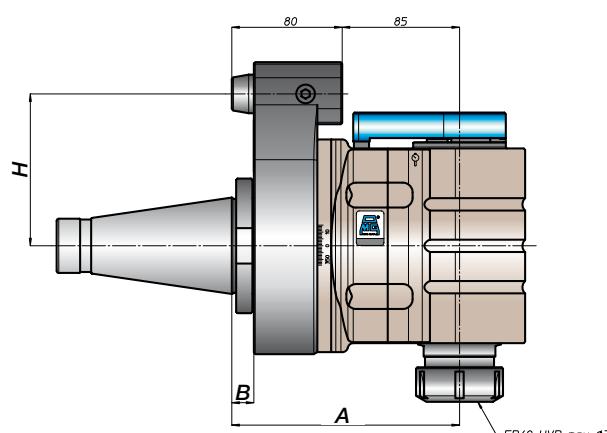
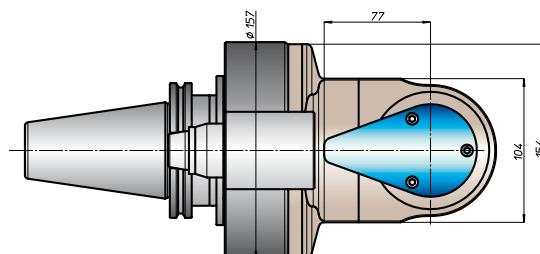
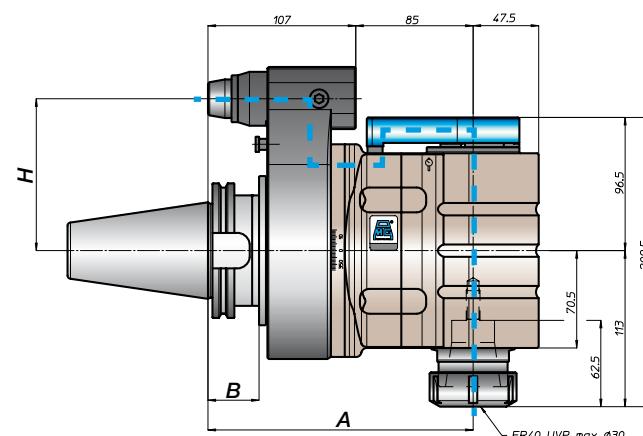
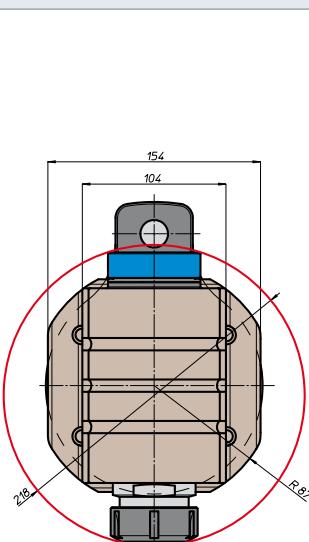
input



## prestazioni/performances



CONO SHANK	size	A	B	standard	H	optional
DIN69871	-	-	-	-	-	-
	-	-	-	-	-	-
	45	-	-	-	-	-
	50	192	35	110	-	-
CAT	-	-	-	-	-	-
ANSI/B5.50	-	-	-	-	-	-
	50	-	-	-	-	-
BT	-	-	-	-	-	-
	50	200	43	110	-	-
HSK	-	-	-	-	-	-
DIN69893	-	-	-	-	-	-
	80	201	46	110	-	-
	100	-	-	-	-	-
CAPTO	-	-	-	-	-	-
ISO26623	-	-	-	-	-	-
	-	196	-	-	-	-
	C8	-	-	-	-	-
KM	-	-	-	-	-	-
	-	192	-	-	-	-
	100	-	-	-	-	-
DIN2080	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	50	165	16	110	-	-
ANSI/B5.18	-	-	-	-	-	-
	50	165	16	110	-	-
NMTB	-	-	-	-	-	-



# testa ad angolo - angle head

# TA26.40.D



## caratteristiche/features



## peso/weight

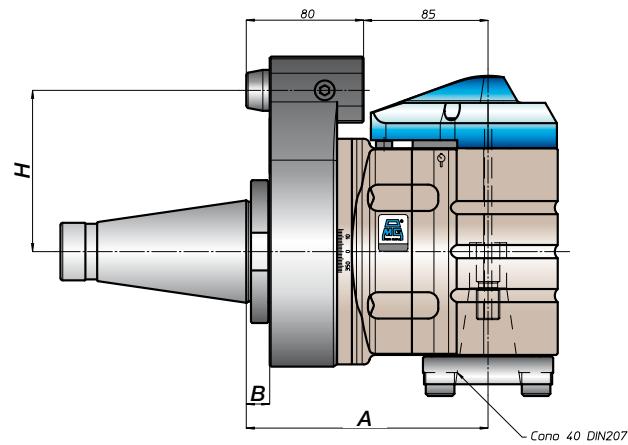
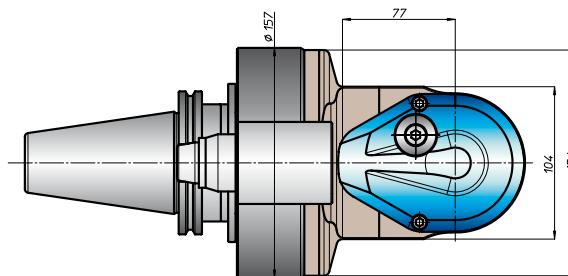
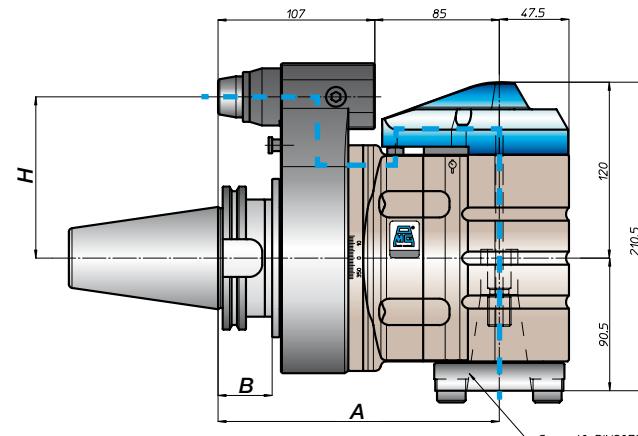
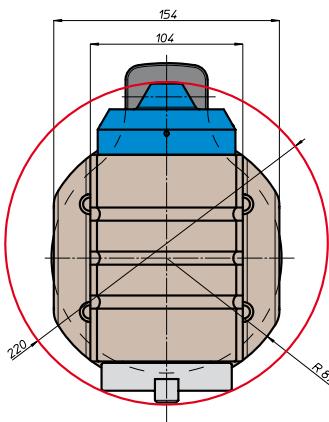
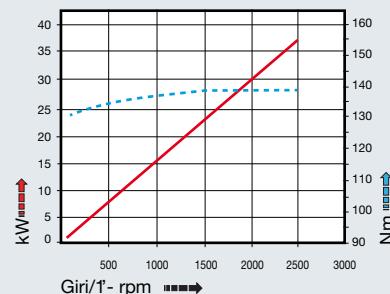


rotazione/rotation



input

## prestazioni/performances



CONO SHANK	size	A	B	H standard	H optional
DIN9871	-	-	-	-	-
CAT	45	-	-	110	-
ANSIB5.50	50	192	35	-	-
BT	-	-	-	-	-
HSK	50	200	43	110	-
DIN69393	80	-	-	-	-
	100	201	46	110	-
CAPTO	-	-	-	-	-
ISO26623	-	-	-	110	-
KM	196	-	-	-	-
C8	-	-	-	-	-
DIN2080	100	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
NMTB	165	16	110	-	-
ANSIB5.18	50	165	16	110	-

TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
Accessories

Appendice tecnica  
Technical supplement



# TAO10.P



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

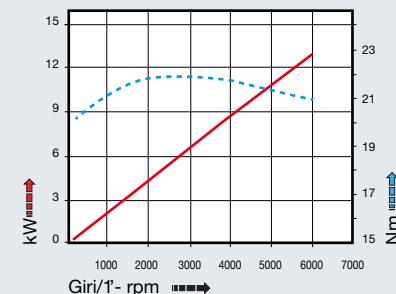
## caratteristiche/features

- ø 10
- M8
- 1-1
- 6000

## peso/weight

- |    |        |
|----|--------|
| 40 | 6,2 kg |
| 50 | 8,7 kg |
- rotazione/rotation
- input      output

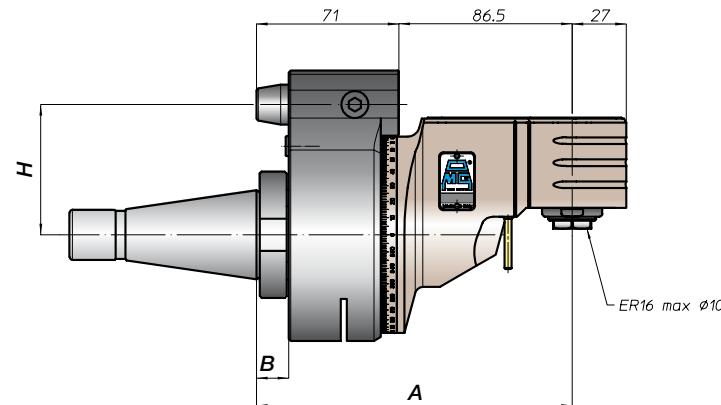
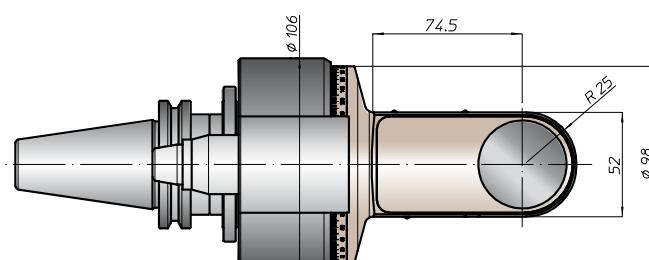
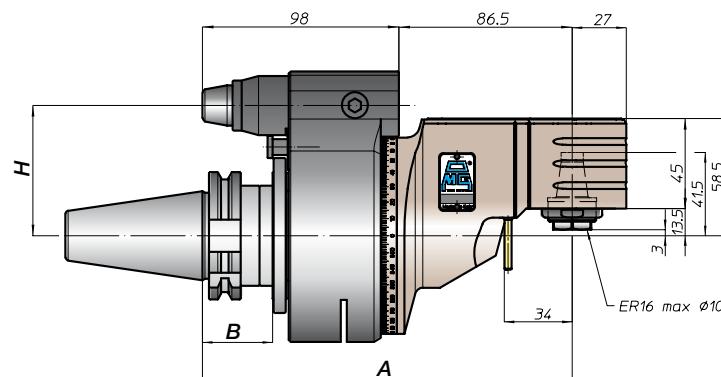
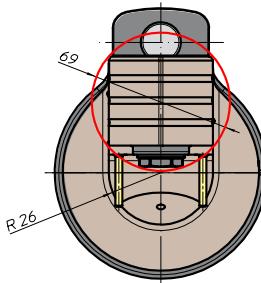
## prestazioni/performances



## tipi mandrino/spindle type

- 2** Ø16      **3**

- 4** HSK25



CONO SHANK	size	A	B	H	standard	optional
DIN9871	-			65	-	
CAT	40			80	110	
ANSIB5.50	45			65	-	
BT	50	184,5	35	80	110	
HSK	40			65		
DIN69393	63			80	110	
	80	193,5	46	65		
	100			80	110	
CAPTO	C5			65		
ISO26623	C6	188,5		80	110	
	C8			65		
KM	63			80	110	
	80	184,5		65		
	100			80	110	
DIN2080	-			65		
	40	157,5	13	80	110	
	-			65		
	50	160,5	16	80	110	
NMTB	40	157,5	13	65		
ANSIB5.18	50	160,5	16	80	110	

# TA010.PD

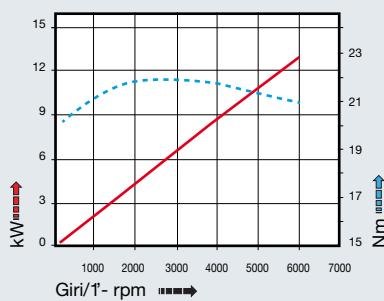
## caratteristiche/features



## peso/weight

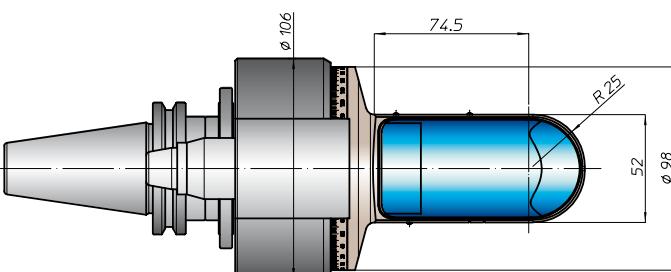
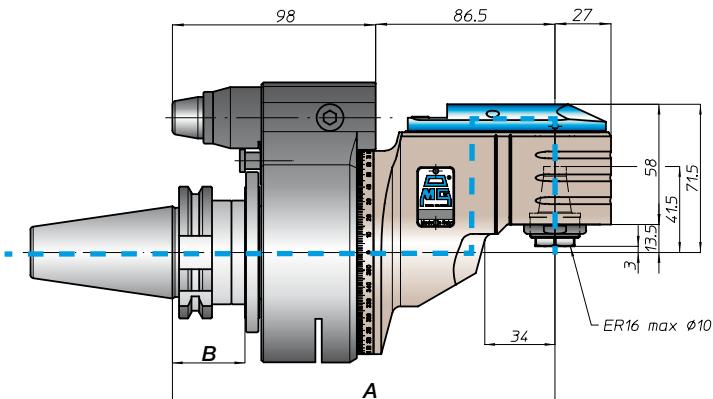
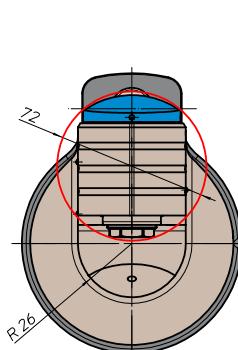


## prestazioni/performances



		A	B	standard	optional
CONO SHANK	size			H	
DIN69871	-			65	-
	40				
	45				
CAT	40	184,5	35	80	110
ANSI/B5.50	50			65	-
	40				
	50			80	110
BT	40			65	
	50	192,5	43	80	110
HSK	63				
DIN69893	80	193,5	44	65	
	100				
CAPTO	C5			65	
ISO26623	C6	188,5			
	C8			80	110
KM	63			65	
	80	184,5			
	100			80	110
DIN2080	-			-	-
	-			-	-
	-			-	-
	-			-	-
ANSI/B5.18	NMTB	-		-	-
		-		-	-

## tipi mandrino/spindle type

**2** Ø16**3****4** HSK25

# TAO13.P



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

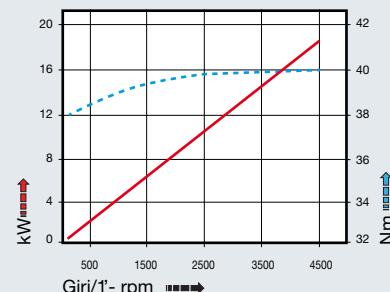
## caratteristiche/features

- ø 13
- M10
- 1-1
- 4500

## peso/weight

- |                           |         |
|---------------------------|---------|
| 7,5 kg                    | 10,5 kg |
| <b>rotazione/rotation</b> |         |
| input                     | output  |

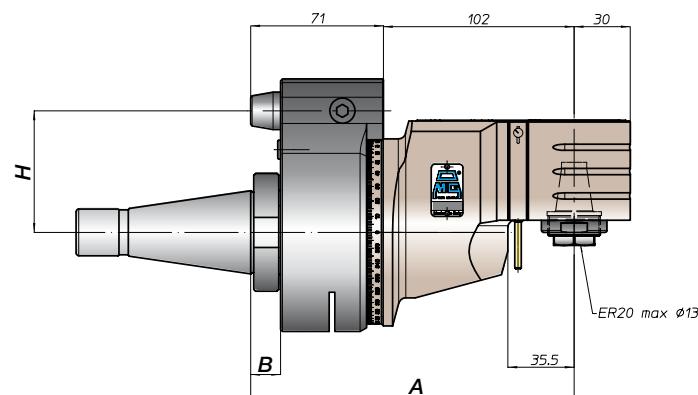
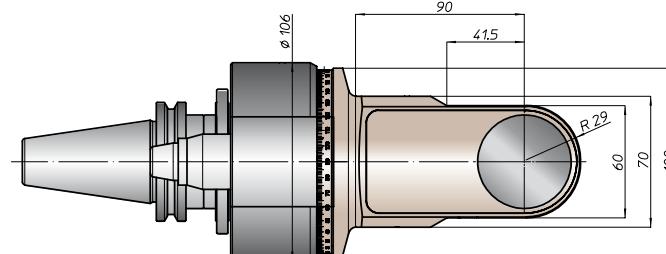
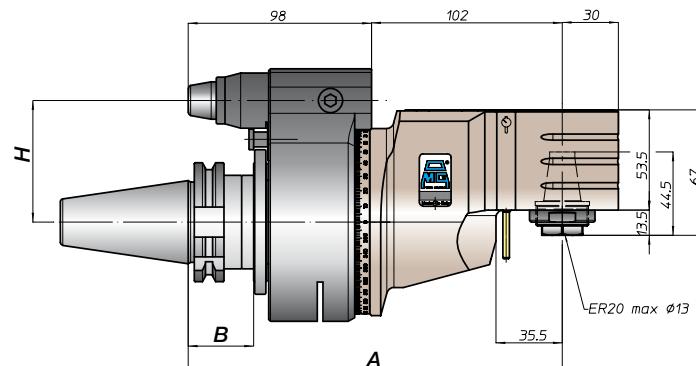
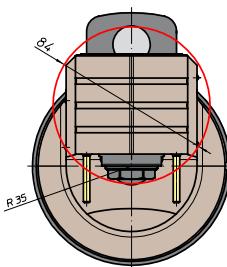
## prestazioni/performances



## tipi mandrino/spindle type

2 Ø16 - Ø22      3

4 HSK32



CONO SHANK	size	A	B	H	standard	optional
DIN9871	-			65	-	
CAT	40			80	110	
ANSIB5.50	45			65	-	
BT	50	200	35	80	110	
HSK	40			65		
DIN69893	50	208	43	80	110	
CAPTO	63			65		
ISO26623	80	209	46	80	110	
KM	100			80	110	
DIN2080	-			65		
NMTB	40	173	13	80	110	
ANSIB5.18	50	176	16	80	110	

# TA013.PD

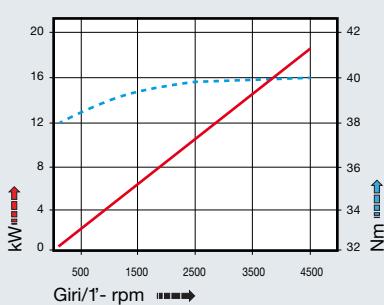
## caratteristiche/features



## peso/weight

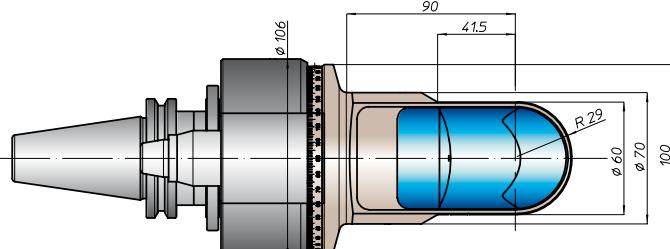
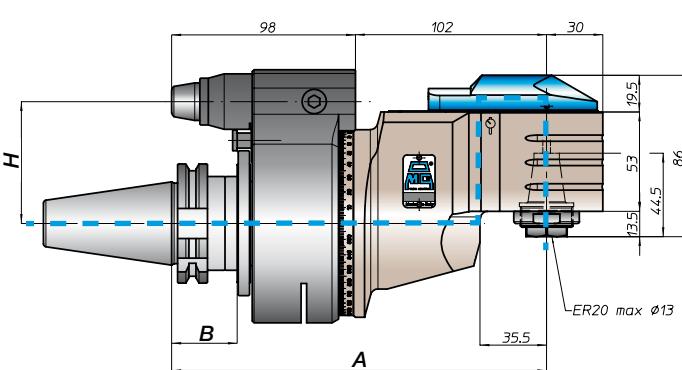
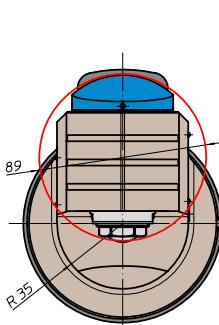


## prestazioni/performances



	CONO SHANK	size	A	B	standard	optional	H
DIN69871		-			65	-	
	CAT	40					
		45					
		50	200	35	80	110	
	BT	40					
		50	208	43	80	110	
DIN69893	HSK	63		44	65		
		80	209		46	80	110
		100					
ISO26623	CAPTO	C5			65		
		C6	204				
		C8			80	110	
KM		63			65		
		80	200				
		100			80	110	
DIN2080		-			-	-	
		-			-	-	
		-			-	-	
		-			-	-	
ANSI56.18	NMTB	-			-	-	
		-			-	-	

## tipi mandrino/spindle type

**2** Ø16 - Ø22**3****4** HSK32

## TAO16.P



## caratteristiche/features



## peso/weight



7,7 kg 11,7 kg

## rotazione/rotation



input

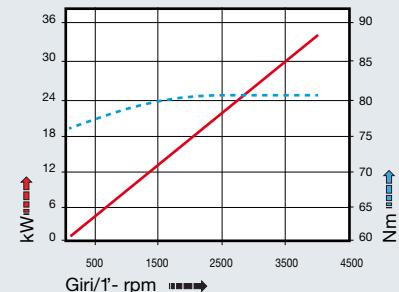


11,7 kg



output

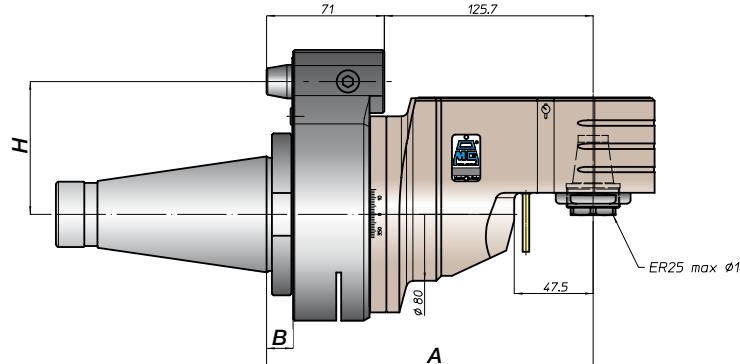
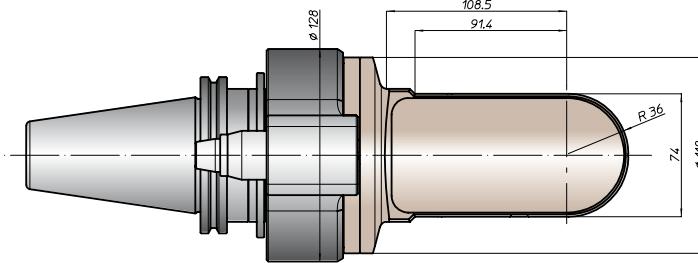
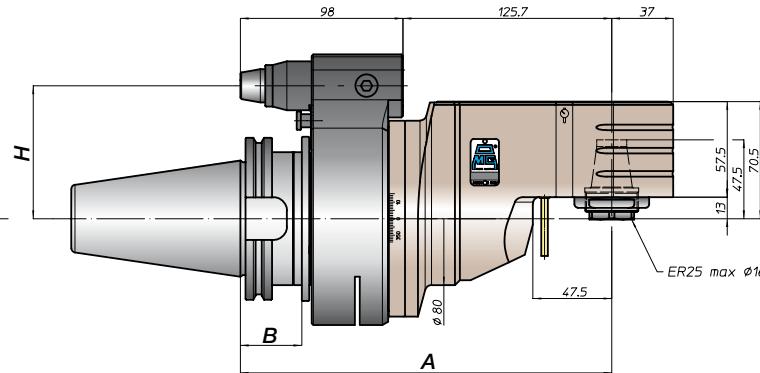
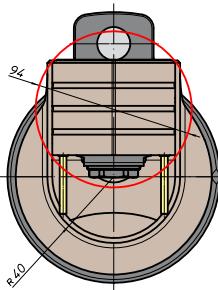
## prestazioni/performances



## tipi mandrino/spindle type

2 Ø16 - Ø22 - Ø27 3

4 HSK40



CONO SHANK	size	A	B	H standard	H optional
DIN9871	-			-	-
CAT	45			80	110
ANSIB5.50	50	223,5	35	65	-
BT	-			80	110
HSK	50	231,5	43	65	-
DIN9893	-			80	110
CAPTO	80	232,5	46	80	110
ISO26623	C6	227,5		-	-
KM	100	-		80	110
DIN2080	-			-	-
NMTB	50	199,5	16	80	110
ANSIB5.18	-	-	13	-	-

# TA016.PD

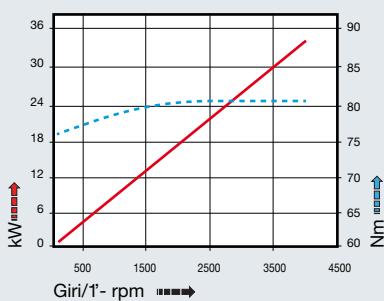
## caratteristiche/features



## peso/weight



## prestazioni/performances

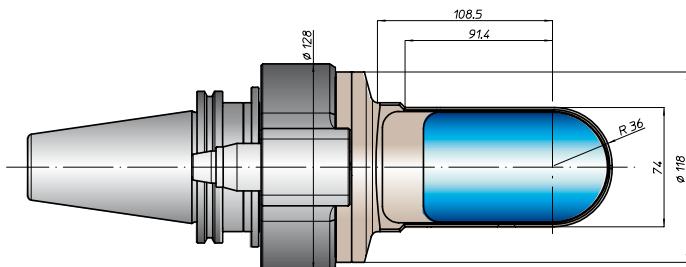
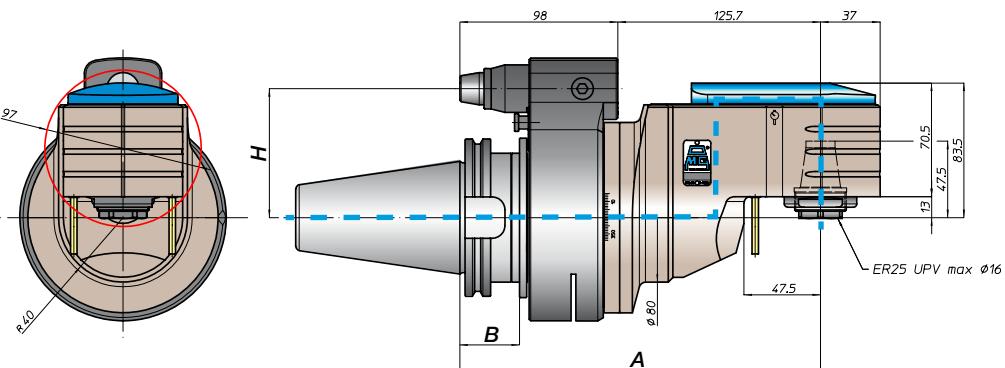


CONO SHANK	size	A	B	H	
				standard	optional
DIN69871	-	-	-	-	-
	-	-	-	-	-
	45	-	-	-	-
	50	223,5	35	80	110
CAT	-	-	-	-	-
ANSI65.50	50	-	-	65	-
	-	-	-	-	-
BT	-	-	-	65	-
	50	231,5	43	80	110
HSK	-	-	-	-	-
DIN69893	80	232,5	46	80	110
	100	-	-	-	-
CAPTO	-	-	-	-	-
ISO26623	C6	227,5	-	-	-
	C8	-	-	80	110
KM	-	-	-	-	-
	80	223,5	-	-	-
	100	-	-	80	110
DIN2080	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
	-	-	-	-	-
ANSI65.18	NMTB	-	-	-	-
	-	-	-	-	-

## tipi mandrino/spindle type

2 Ø16 - Ø22 - Ø27      3

4 HSK40



# TAO20.P



## caratteristiche/features



## peso/weight



14,5 kg

## rotazione/rotation



## prestazioni/performances



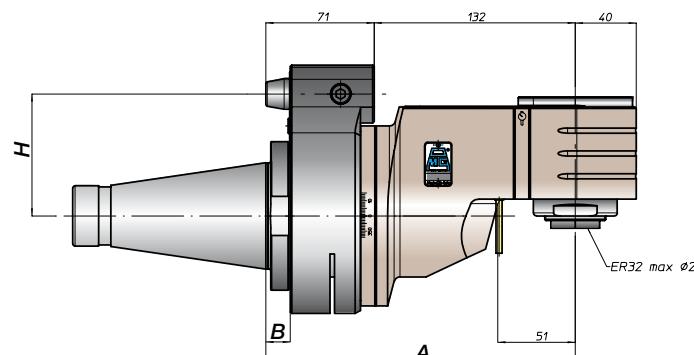
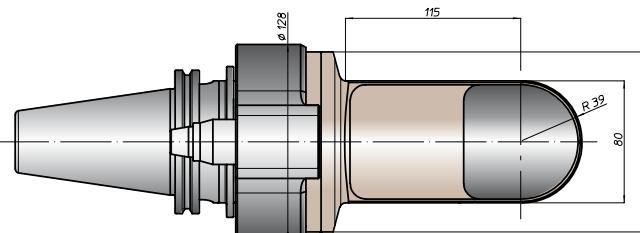
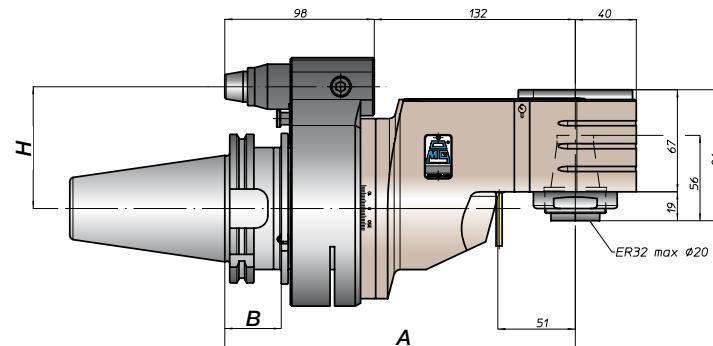
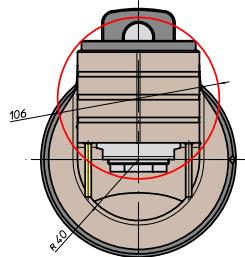
## tipi mandrino/spindle type

2 Ø22-Ø27-Ø32

3

4 HSK50

6



CONO SHANK	size	A	B	H standard	H optional
DIN9871	-			-	-
CAT	45			80	110
ANSIB5.50	50	230	35	-	-
BT	-			65	
HSK	50	238	43	80	110
DIN9893	-			-	-
CAPTO	80	239	46	80	110
ISO26623	100			-	-
KM	-			80	110
DIN2080	80	230		-	-
NMTB	100			-	-
ANSIB5.18	-			203	16
	-			80	110
	-			-	-
	-			203	16
	50			80	110
	-			-	-
	-			203	16
	50			80	110

# TA020.PD

## caratteristiche/features



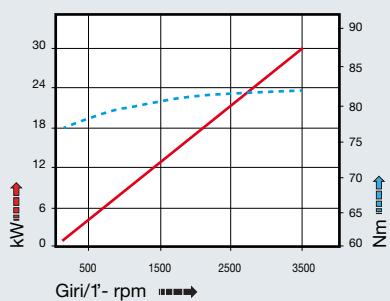
## peso/weight



## rotazione/rotation



## prestazioni/performances



		H			
CONO SHANK	size	A	B	standard	optional
DIN69871	-	230	35	-	-
	-			-	-
	45			80	110
	50			80	110
ANSIB5.50	-	238	43	80	110
	50			65	
BT	-	239	46	80	110
	50			80	110
	80			42	-
DIN69933	-	239	46	80	110
	80			80	110
	100			80	110
ISO26623	-	234	80	-	-
	C6			80	110
KM	-	230	80	-	-
	80			80	110
DIN2080	-	230	80	-	-
	100			80	110
ANSIS5.18	-	-	-	-	-
	-			-	-
	-			-	-
	-			-	-

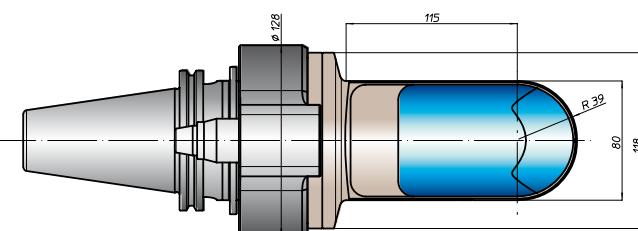
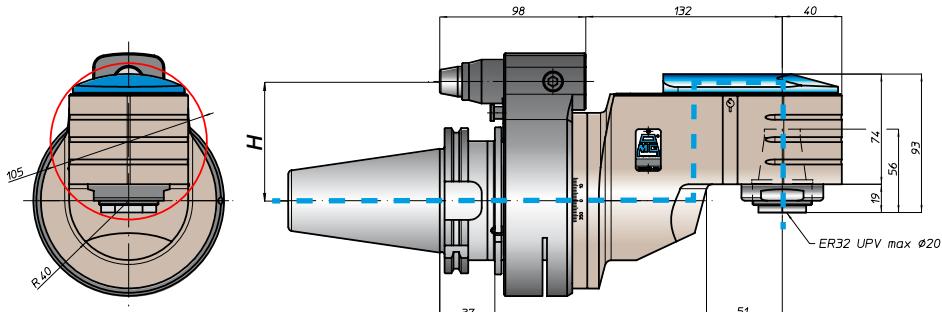
## tipi mandrino/spindle type

2 Ø22-Ø27-Ø32

3

4 HSK50

6





# TAV10.P

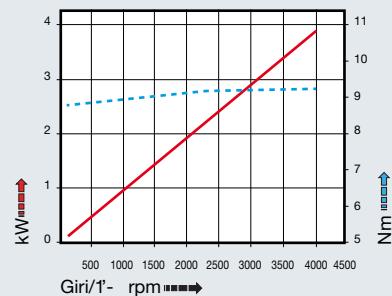
## caratteristiche/features

- ø 10
- M8
- 1-1
- 4000

## peso/weight



## prestazioni/performances



TA

MO

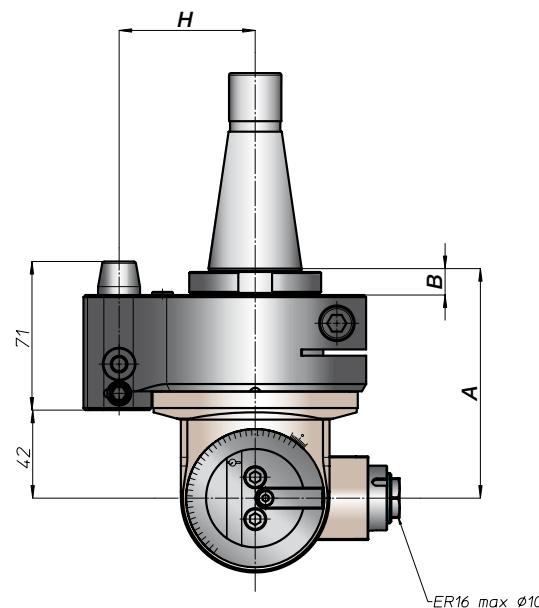
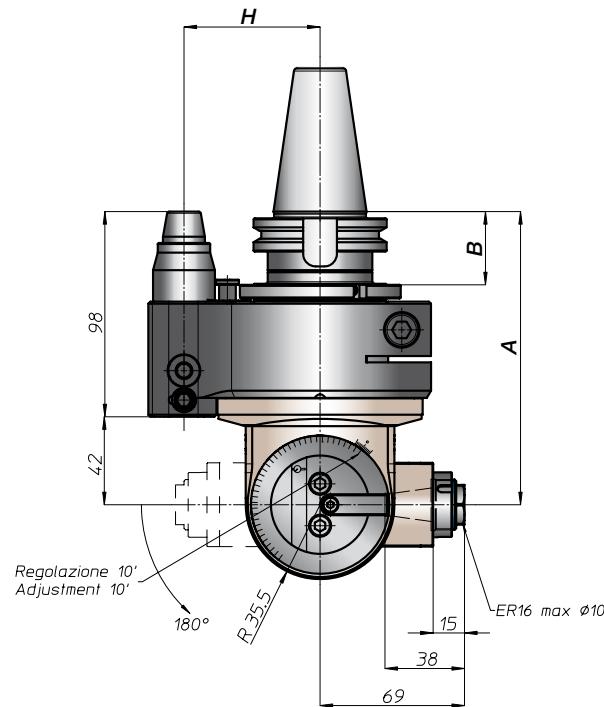
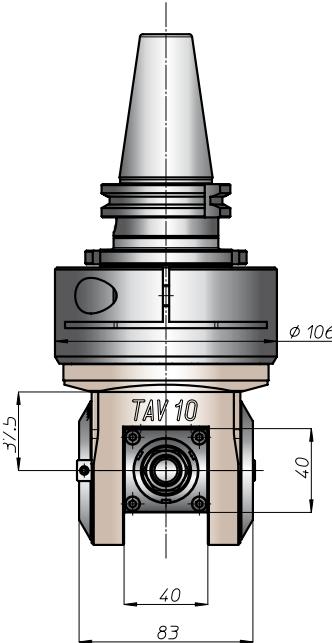
HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

CONO SHANK	size	A	B	H	standard	optional
DIN69871	-			65	-	
	40			80	110	
	45			65	-	
	50	140	35	80	110	
ANSIB5.50	40			65	-	
	50			80	110	
BT	40			65		
	50	148	43	80	110	
HSK	63			65		
	80	149	46	80	110	
	100					
DIN69893						
CAPTO	C5			65		
	C6	144		80	110	
	C8					
KM	63			65		
	80	140		80	110	
	100					
DIN2080	-			113	13	65
	40			116	16	80
	-			116	16	110
	50					
ANSIB5.18	40	113	13	65		
	50	116	16	80	110	

# TAV13.P

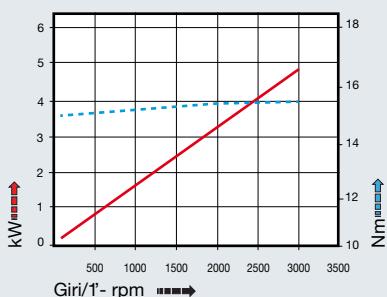
## caratteristiche/features



## peso/weight



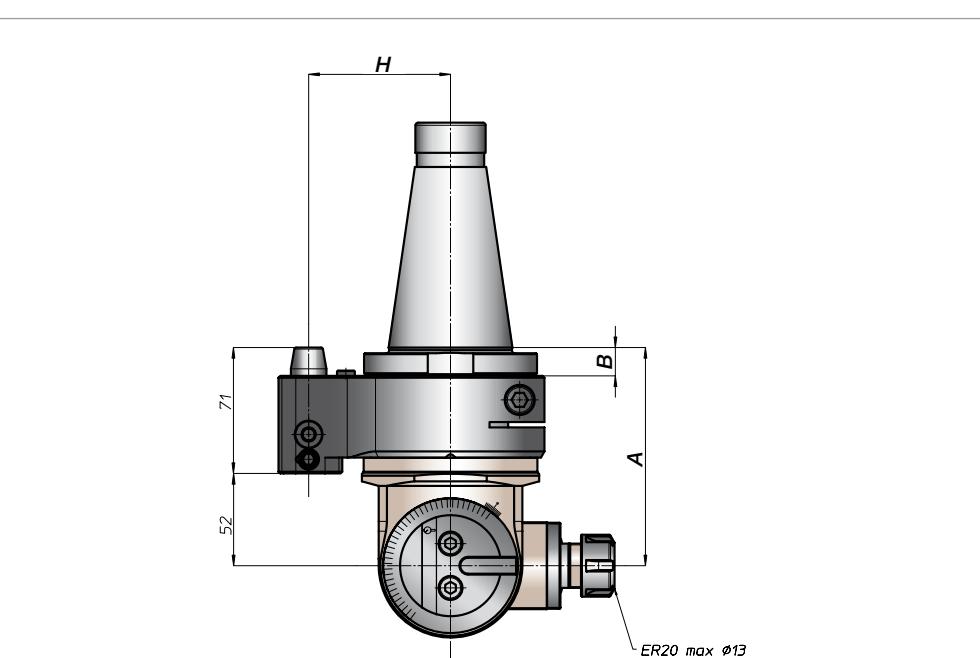
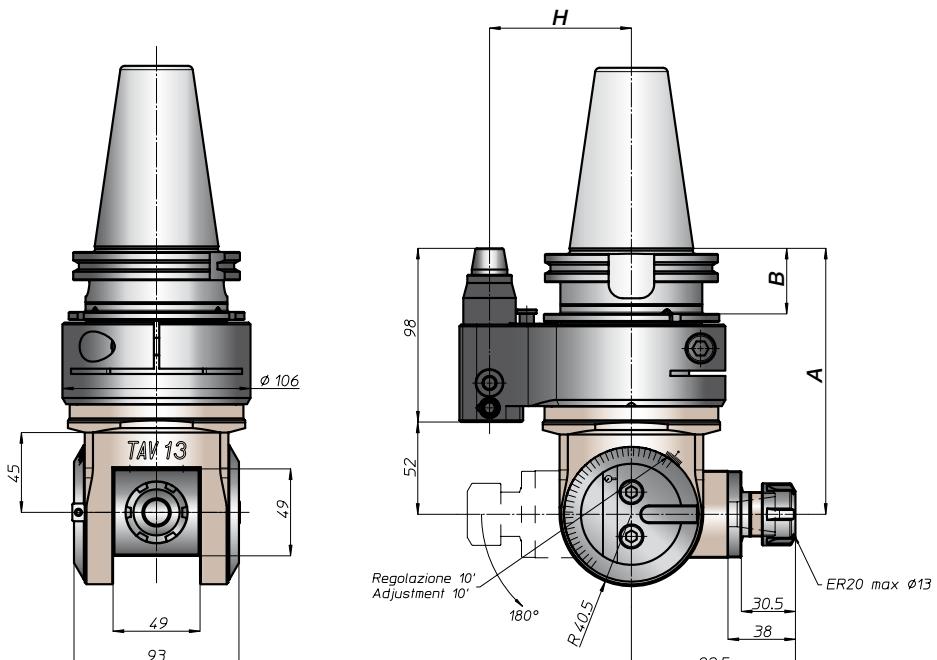
## prestazioni/performances



	CONO SHANK	size	A	B	standard	H	optional
DIN69871		-			65		-
		40					
		45					
		50	150	35	80	110	
ANSIB5.50	CAT	40			65		-
		50			80	110	
BT	40				65		
	50	158	43	80	110		
DIN69893	HSK	63			65		
		80	159	42	65		
		100		46	80	110	
ISO26623	CAPTO	C5			65		
		C6	154		80	110	
		C8					
KM		63			65		
		80	150		80	110	
		100					
DIN2080		-	120	13	65		-
		40					
		-	123	16	80	110	
		50					
ANSIS5.18	NMTB	40	120	13	65		-
		50	123	16	80	110	

## tipi mandrino/spindle type

**1** ER25      **3**



# TAV20.P



## caratteristiche/features



## peso/weight

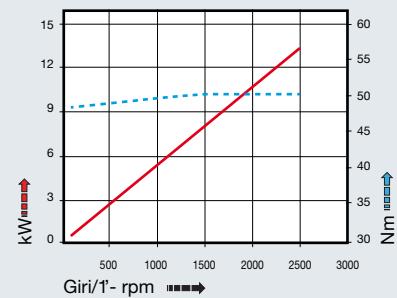
18,5 kg  
rotazione/rotation

input



output

## prestazioni/performances



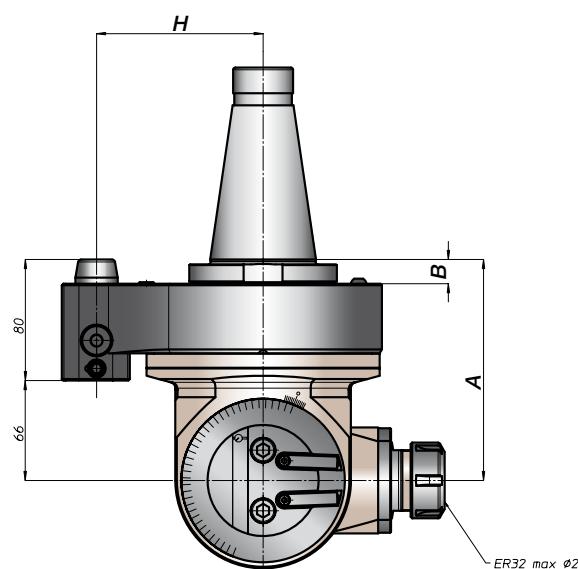
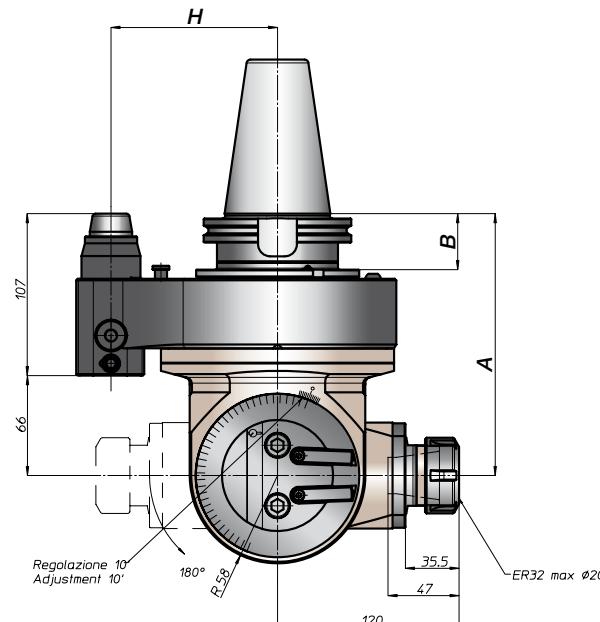
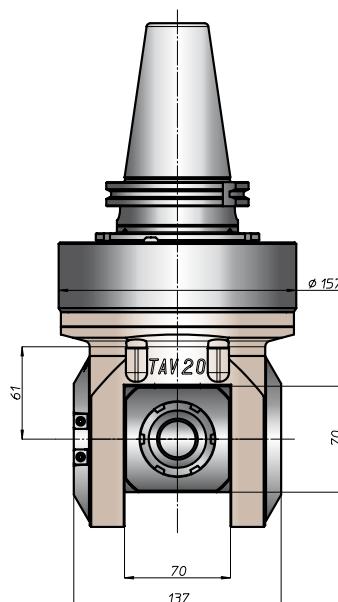
## tipi mandrino/spindle type

1 ER40

3

4 HSK50

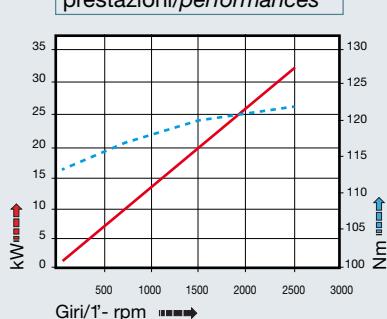
6 ABS50



CONO SHANK	size	A	B	H
DIN9871	-	-	-	Standard -
	50	140	35	Optional 110 -
ANSIB5.50	CAT	-	-	-
	50	148	43	110 -
BT	50	148	43	110 -
HSK	-	-	-	-
	80	149	-	110 -
	100	-	46	-
CAPTO	-	-	144	-
	C8	-	-	110 -
KM	-	-	140	-
	100	-	-	110 -
DIN2080	-	-	-	-
	50	116	16	110 -
ANSIS5.18	NMTB	-	-	-
	50	116	16	110 -

# TAV30.P

caratteristiche/features	peso/weight
diametro/diameter	capacità/capacity
 ø 30	 50
 M24	42 kg
velocità/velocity	rotazione/rotation
 1-1	 2500



					H	
CONO SHANK	size	A	B	standard	optional	
DIN69671	-	204,5	35	-	-	
	-			130	-	
	50			-	-	
	-			130	-	
ANSIB5.50	CAT	-	43	-	-	
	50	212,5		130	-	
DIN69893	BT	-	46	-	-	
	50	212,5		130	-	
	HSK	-		-	-	
ISO26623	-	213,5	42	-	-	
	-		46	130	-	
	100			-	-	
ISO26623	CAPTO	-	-	-	-	
	-	208,5		130	-	
	C8			-	-	
DIN2080	KM	-	-	-	-	
	-	204,5		130	-	
	100			-	-	
ANSIB5.18	-	177,5	16	-	-	
	-			-	-	
	-			130	-	
	50			-	-	

**tipi mandrino/spindle type**

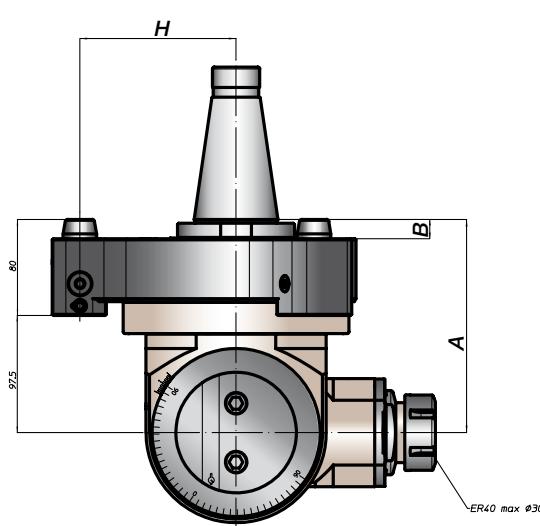
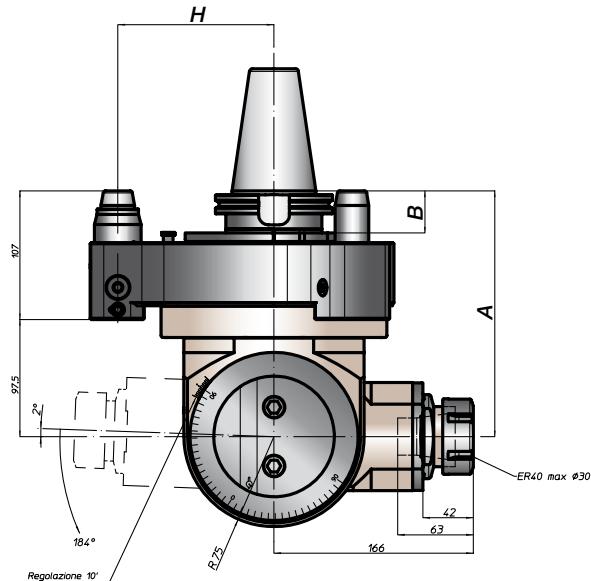
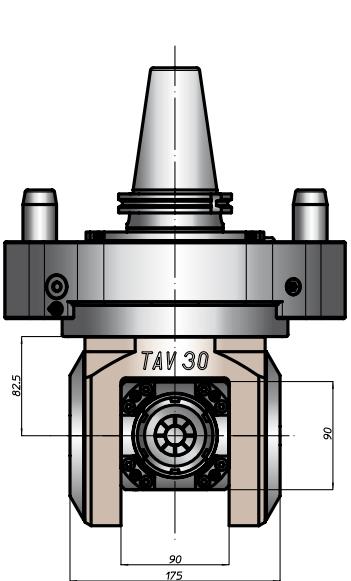
1 ER50

2

3

HSK63

6 ABS63





# TAV40.T

## caratteristiche/features

- ø 32
- M26
- 1-2
- 5000  
OUTPUT

## peso/weight



70 kg

## rotazione/rotation

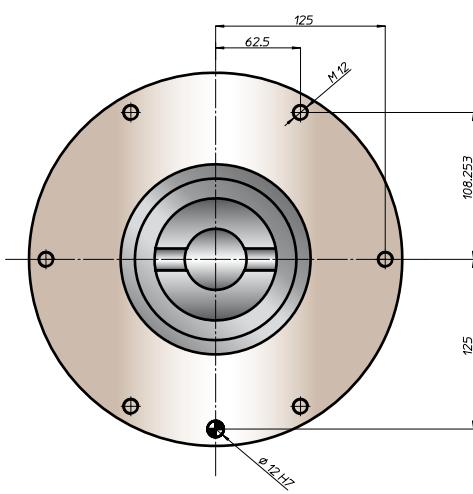
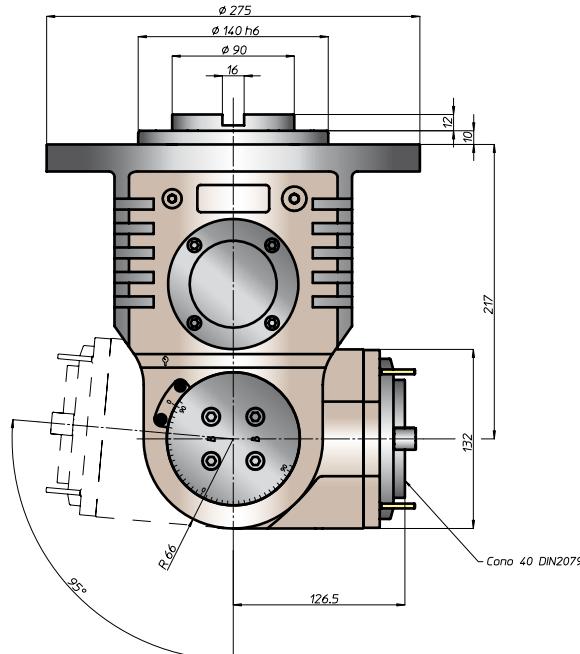
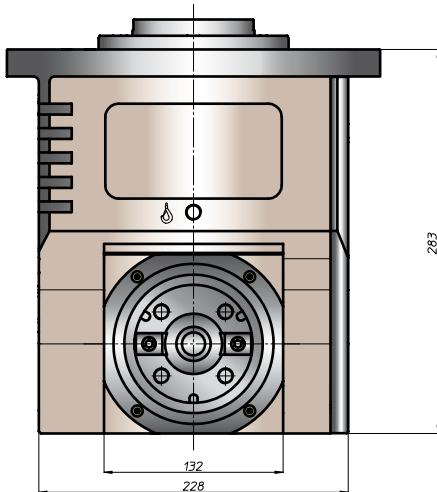
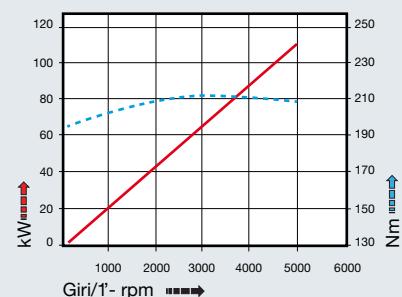


input



output

## prestazioni/performances

**Equipaggiamento standard:**

- pressurizzazione mandrino
- nr 4 ugelli orientabili vicino al mandrino
- regolazione angolare mandrino libero
- nel mandrino DIN2079 si possono utilizzare coni DIN69871-A40, MAS403-BT40

**Opzioni:**

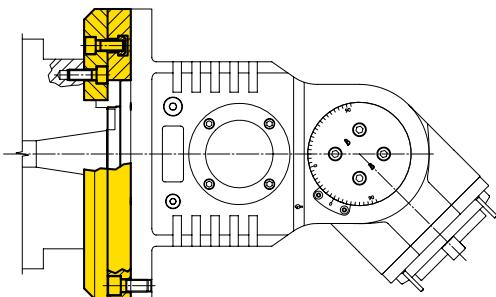
- mandrino DIN69893-HSK-A63, CAPTO C5

**Standard equipment:**

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

**Options:**

- spindle DIN69893-HSK-A63, CAPTO C5

**esempio di collegamento - connection example**

# TAV50.T

## caratteristiche/features

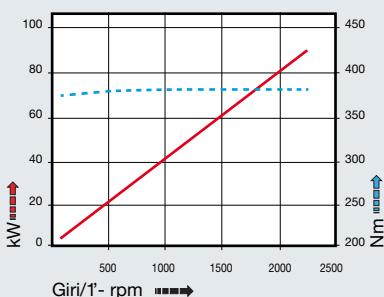
	Φ 45
	M36
	1-2
	4000 OUTPUT

## peso/weight



145 kg

## prestazioni/performances



TA

MO

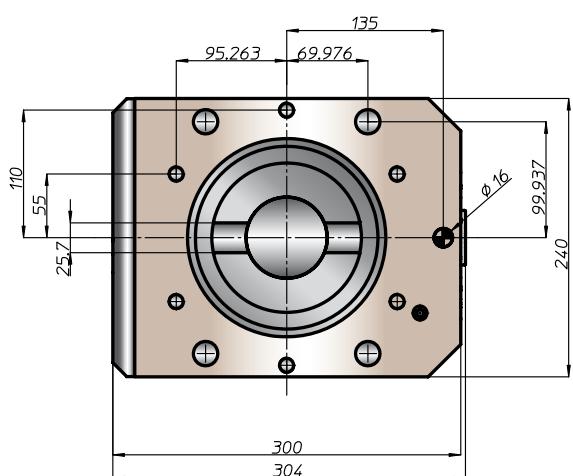
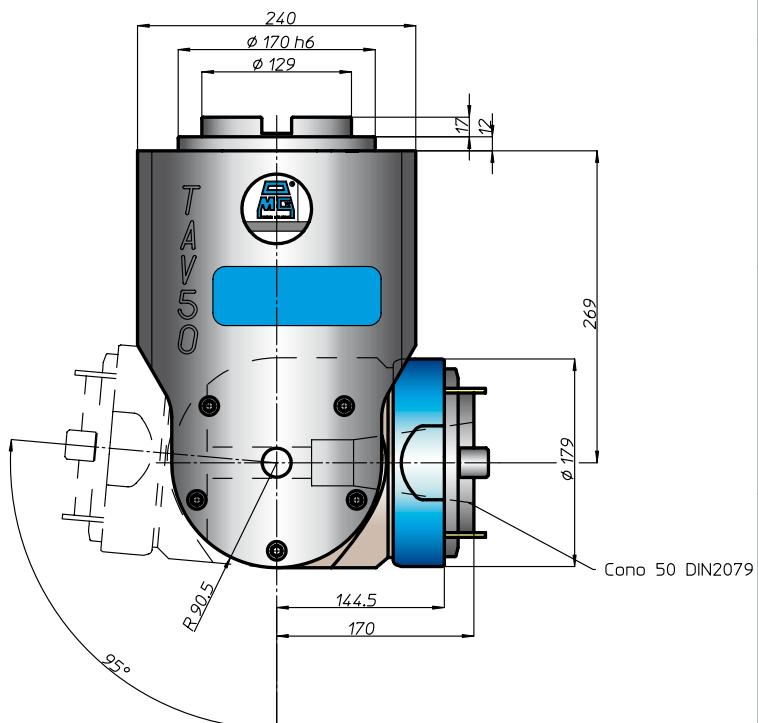
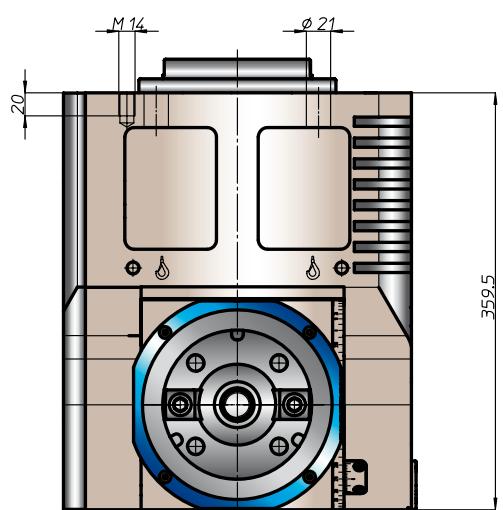
HT

VH

TSI/TSX

T

MT-Tc-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

## Equipaggiamento standard:

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

## Opzioni:

- mandrino DIN69893-HSK-A100, CAPTO C8

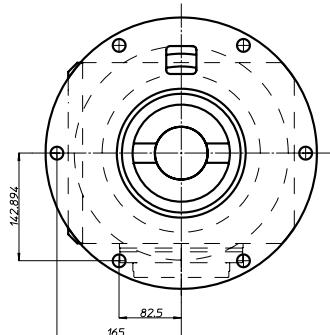
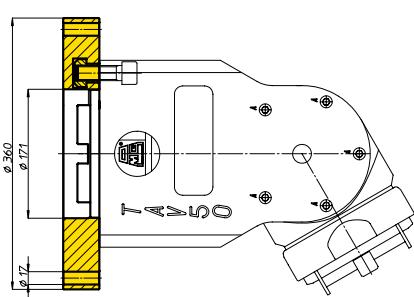
## Standard equipment:

- 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

## Options:

- spindle DIN69893-HSK-A100, CAPTO C8

## esempio di collegamento - connection example



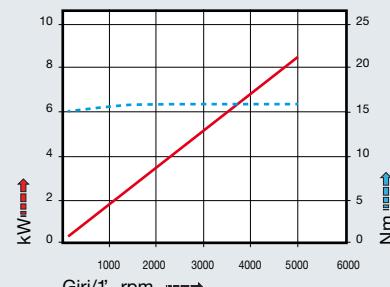
# TAF10.P



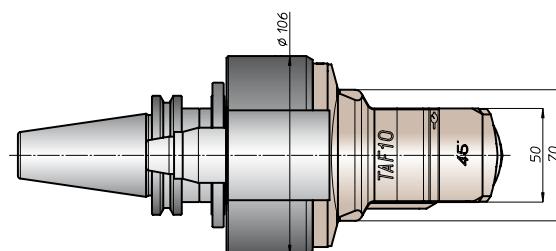
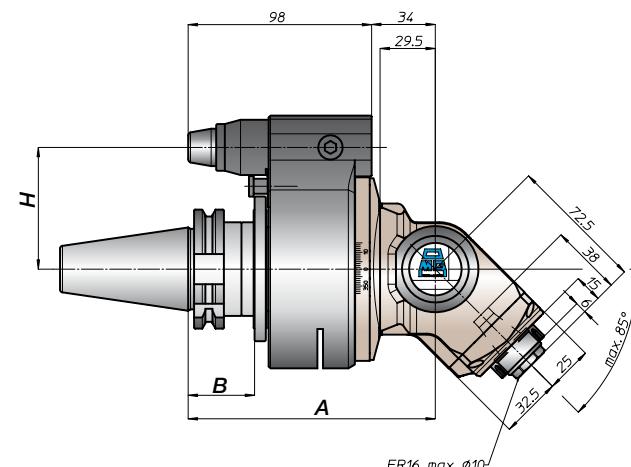
#### **caratteristiche/features**

*peso/weight*

#### **prestazioni/performances**

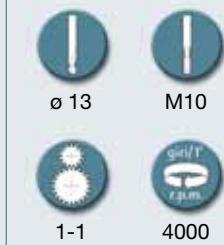


CONO SHANK		size	A	B	Standard	H
					Options	
DIN69871		30	132	35	65	-
		40			80	110
		45			65	-
		50			80	110
ANSI5.50		40	140	43	65	-
		50			80	110
BT		40	140	43	65	-
		50			80	110
DIN69893		63	141	46	65	-
		80			80	110
		100				
ISO26623		C5	136		65	-
		C6			80	110
		C8				
KM		63	132		65	-
		80			80	110
		100				
DIN2080		-			-	-
		-			-	-
		-			-	-
ANSI5.18		-			-	-
		-			-	-



# TAF13.P

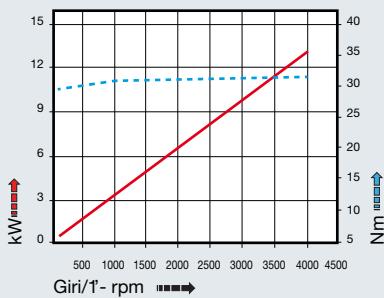
## caratteristiche/features



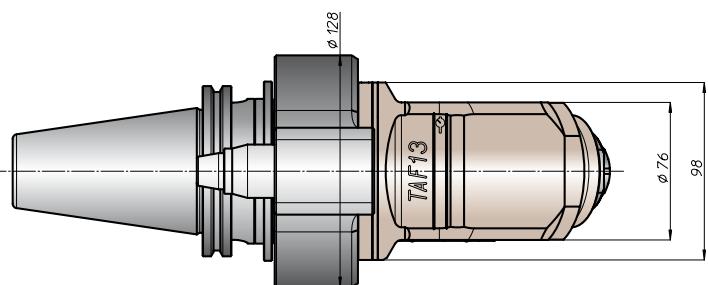
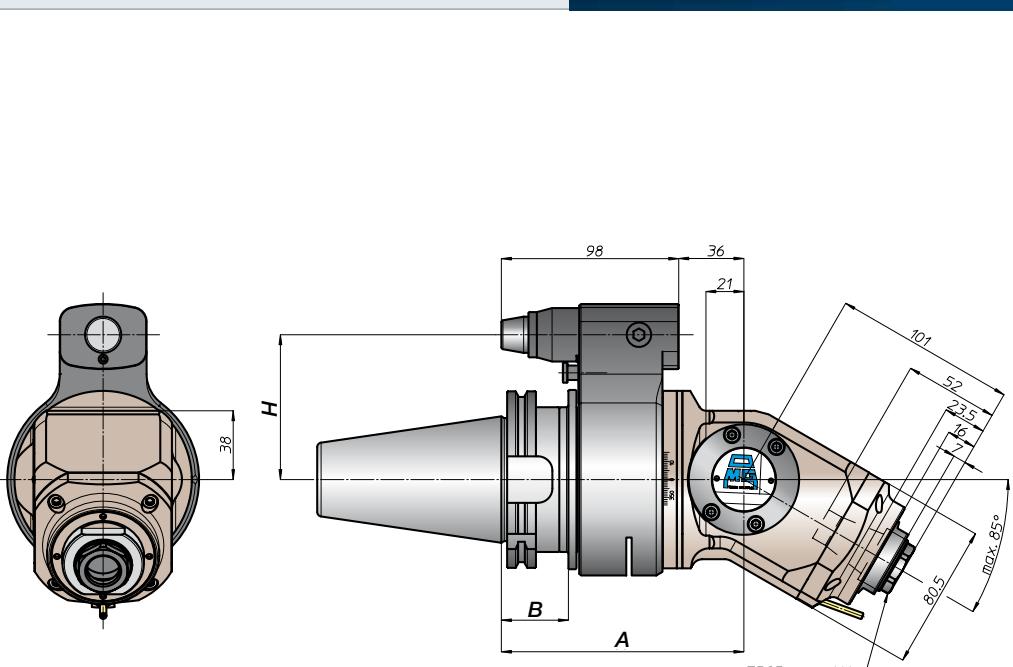
## peso/weight



## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
				65		
DIN69871	-	134	35	65	80 110	-
	40			80		
	45			110		
	50			65		
ANSI5.50	40	142	43	80	110	-
	50			110		
BT	40	142	43	65	80 110	-
	50			110		
DIN69893	63	143	46	65	80 110	-
	80			80		
	100			110		
ISO26623	C5	138	80	65	110	-
	C6			80		
	C8			110		
KM	63	134	80	65	110	-
	80			80		
	100			110		
DIN2080	-	-	-	65	-	-
	-			80		
	-			110		
	-			-		
ANSI5.18	-	-	-	-	-	-
	NMTB			-		

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

TA

MO

HT

VH

TSI/TSX

MT-TC-TC3

T

# TAF20.P



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

## caratteristiche/features

- ø 20
- M16
- 1-1
- 3000

## peso/weight



13,5 kg

## rotazione/rotation

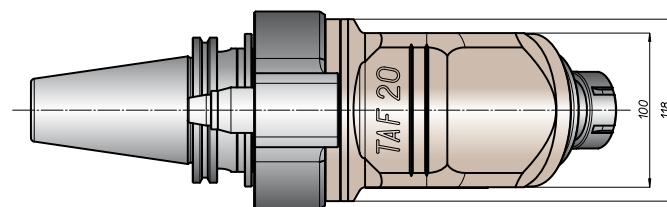
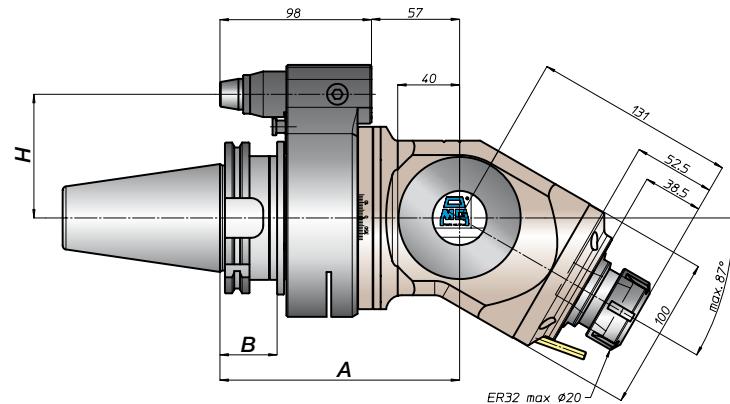
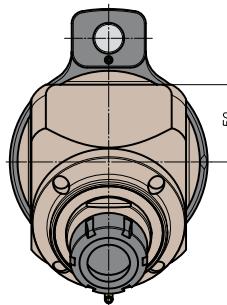
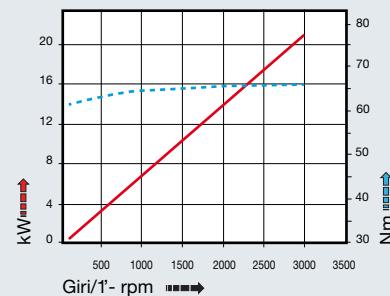


input



output

## prestazioni/performances



CONO SHANK	size	A	B	H standard	H optional
DIN69871	-	-	-	-	-
CAT	45	-	-	80	110
ANSIB5.50	50	155	35	-	-
BT	50	-	-	80	110
HSK	50	163	43	80	110
DIN69893	-	-	-	42	-
CAPTO	80	164	46	80	110
ISO26623	100	-	-	-	-
KM	-	-	-	80	110
DIN2080	C6	159	-	-	-
	C8	-	-	-	-
ANSIB5.18	80	155	-	-	-
NMTB	100	-	-	-	-



# TA13P.T



## caratteristiche/features

- ø 13
- M10
- 1-1
- 8000

## peso/weight



3,5 kg

## rotazione/rotation

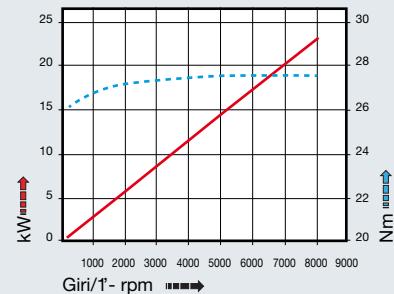


input



output

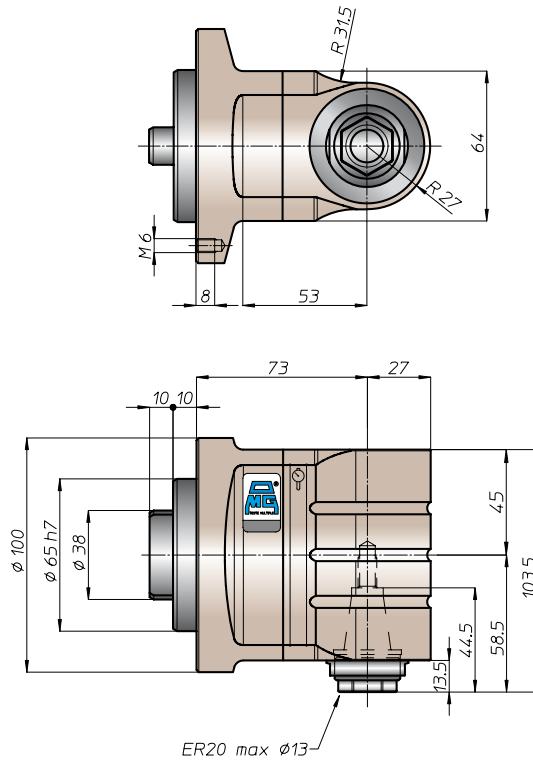
## prestazioni/performances



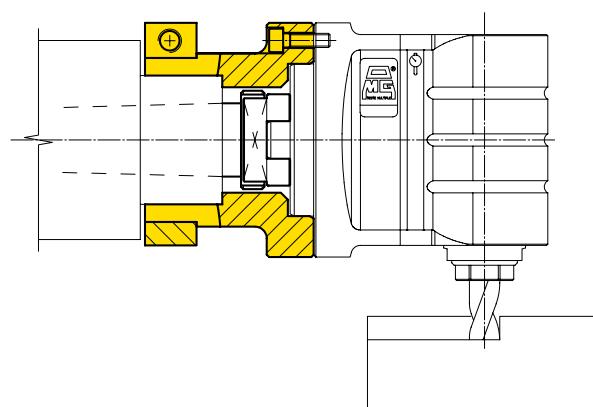
## tipi mandrino/spindle type

2

3



## esempio di collegamento - connection example



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# TA16P.T

## caratteristiche/features

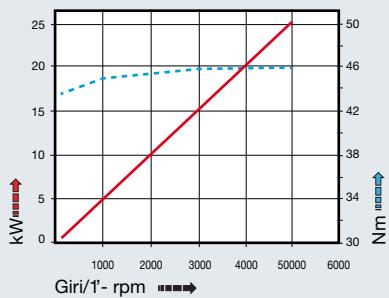
	Φ 16
	M12
	1-1
	5000

## peso/weight



5 kg

## prestazioni/performances



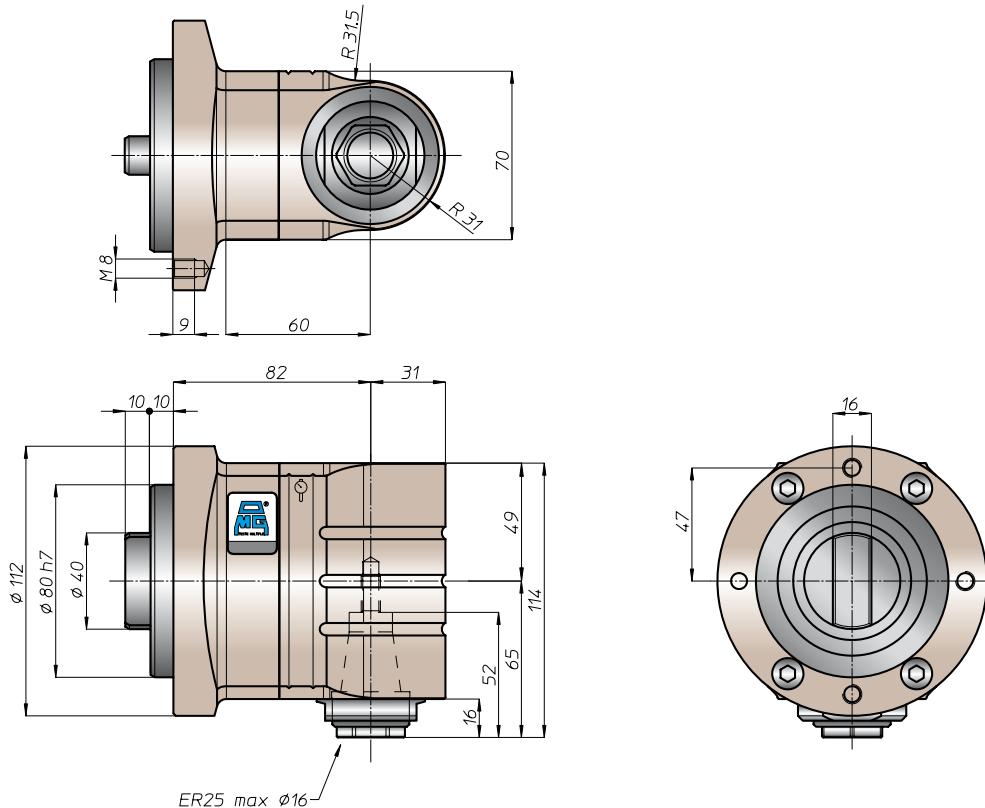
## tipi mandrino/spindle type

1 ER32

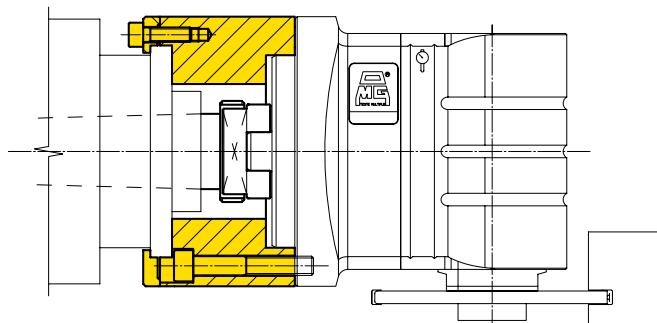
2 Ø16-Ø27-Ø32

3 Ø20

4 HSK32



## esempio di collegamento - connection example



# TA20.PT



## caratteristiche/features

- ø 20
- M14
- 1-1
- 3500

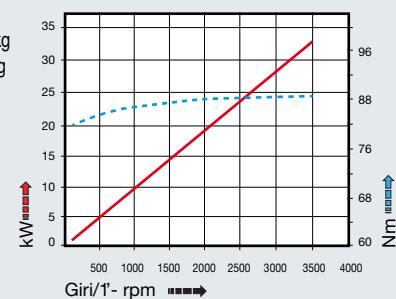
## peso/weight

- |        |                             |
|--------|-----------------------------|
| head   | extension                   |
| 7,5 kg | L 100=7,5 kg<br>L 200=15 kg |

## rotazione/rotation

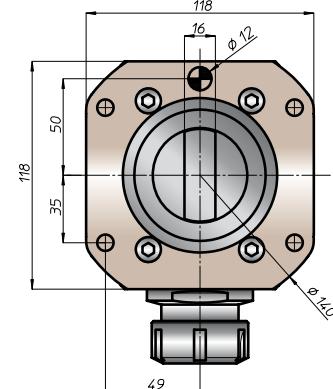
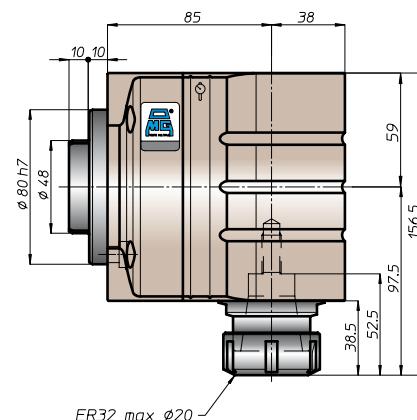
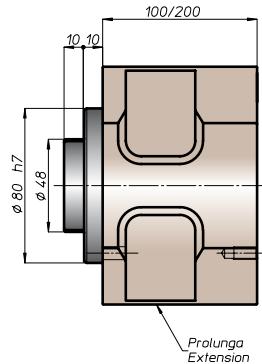
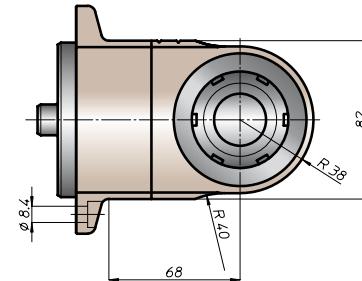


## prestazioni/performances

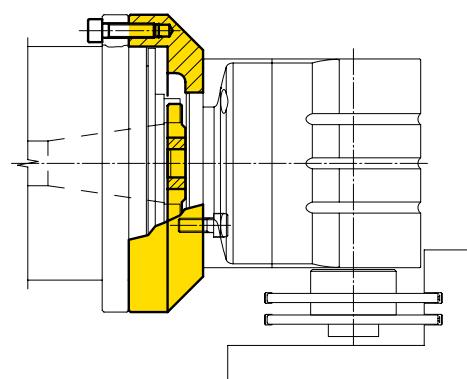


## tipi mandrino/spindle type

- 1** ER40      **2** Ø22-Ø27-Ø32      **3** Ø20-Ø25      **4** HSK40



## esempio di collegamento - connection example



# TA20.30.T

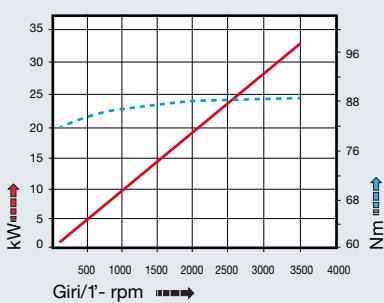
## caratteristiche/features

	ø 20
	M14
	1-1
	3500

## peso/weight

head		L 100=7,5 kg
extension		L 200=15 kg

## prestazioni/performances



TA

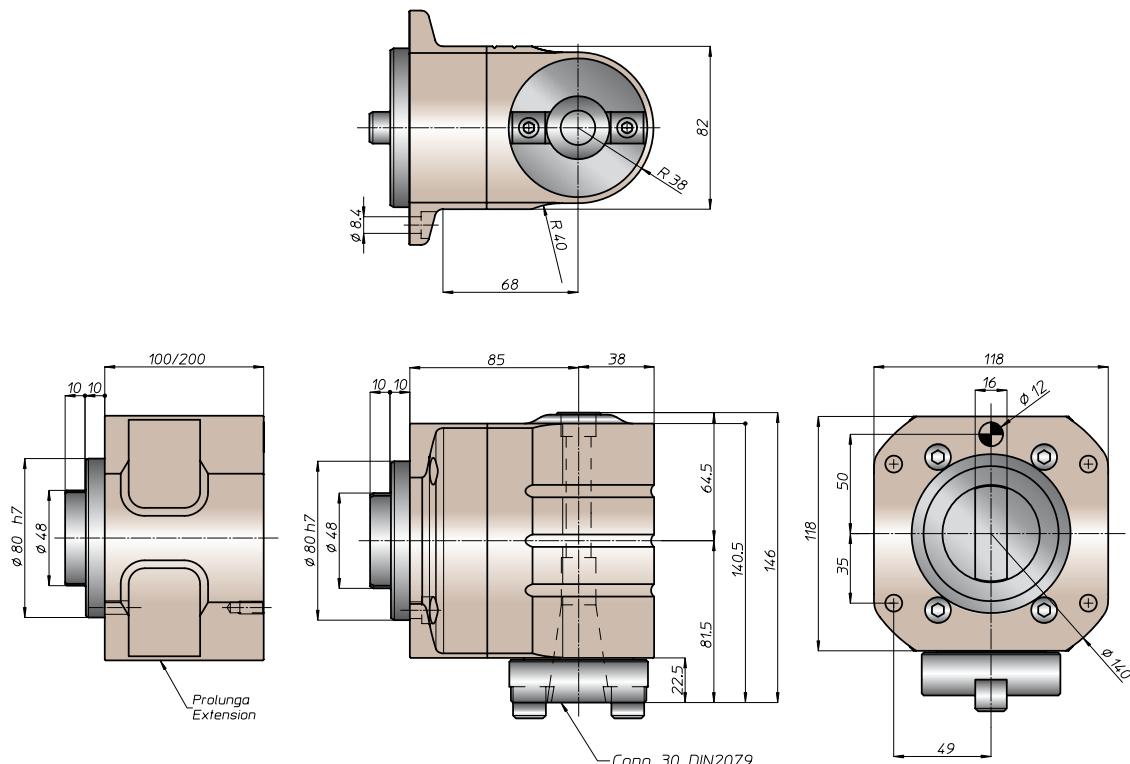
MO

HT

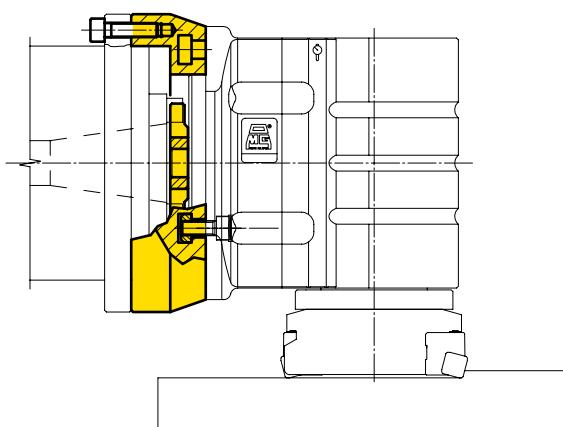
VH

TSI/TSX

MT-TC-TC3 T

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

## esempio di collegamento - connection example



# TA26.PT



## caratteristiche/features

- ø 26
- M20
- 1-1
- 2500

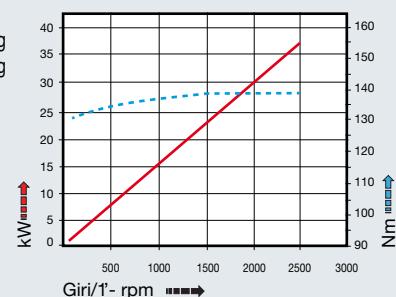
## peso/weight

- |      |         |           |                            |
|------|---------|-----------|----------------------------|
| head | 13,5 kg | extension | L 100=21 kg<br>L 200=21 kg |
|------|---------|-----------|----------------------------|

## rotazione/rotation



## prestazioni/performances

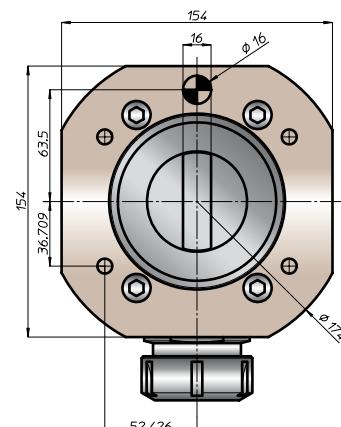
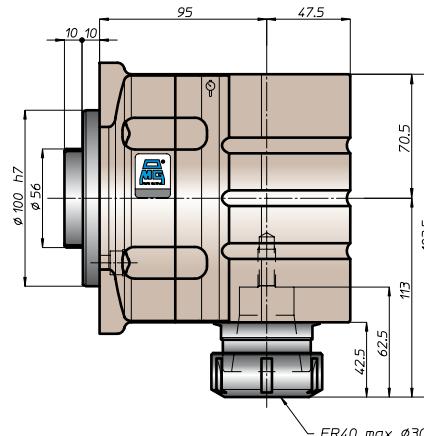
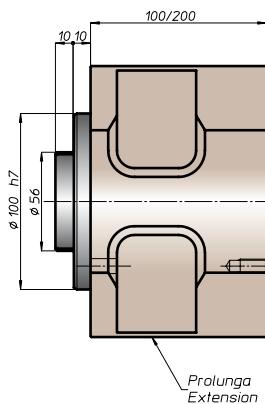
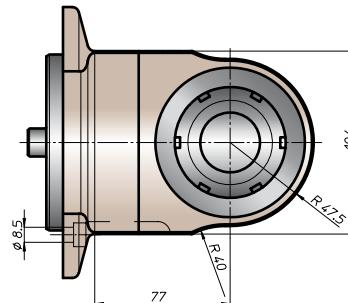


## tipi mandrino/spindle type

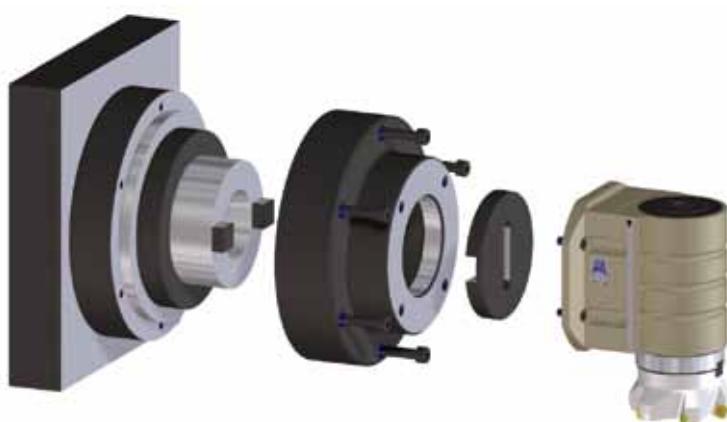
**2** Ø16-Ø27-Ø32    **3** Ø32

**4** HSK63

**6** ABS50



## esempio di collegamento - connection example



# TA26.40.T

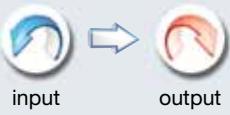
## caratteristiche/features



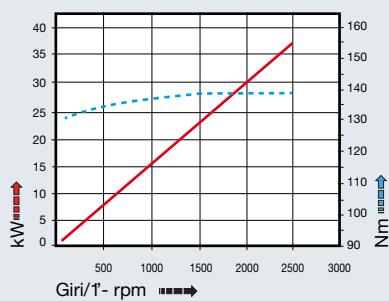
## peso/weight

head L 100=21 kg  
extension L 200=21 kg

## rotazione/rotation



## prestazioni/performances



TA

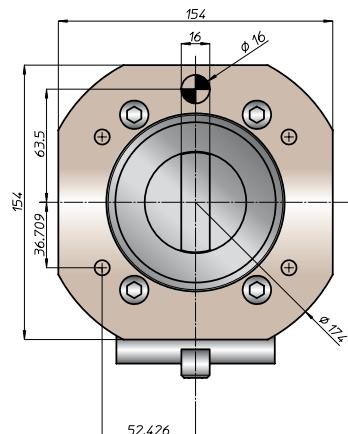
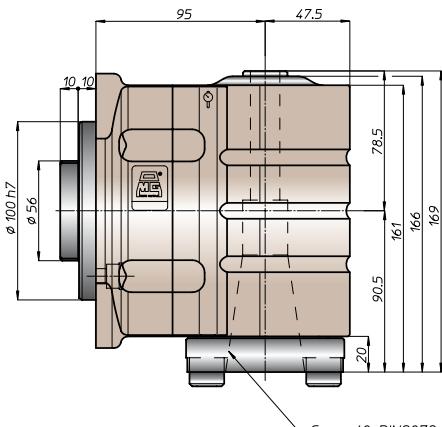
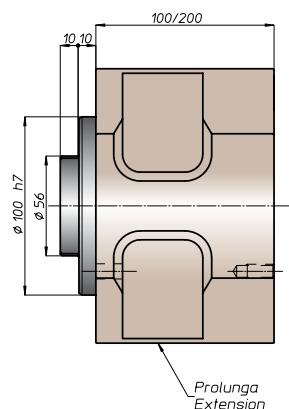
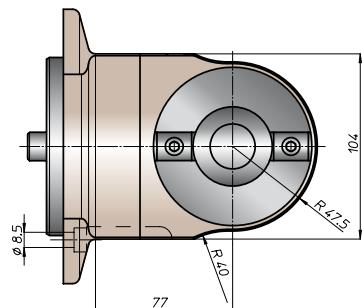
MO

HT

VH

TSI/TSX

MT-TC-TC3 T

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

## esempio di collegamento - connection example



# TA40.T



## caratteristiche/features

- ø 32
- M26
- 1-1
- 5000

## peso/weight



33 kg

## rotazione/rotation

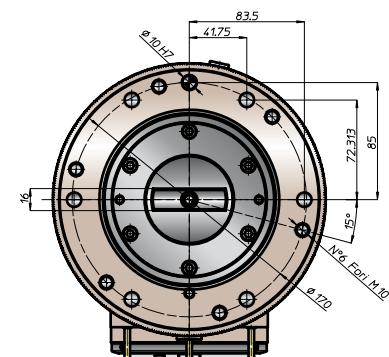
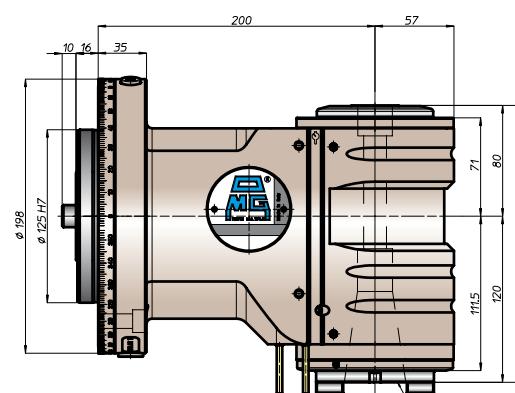
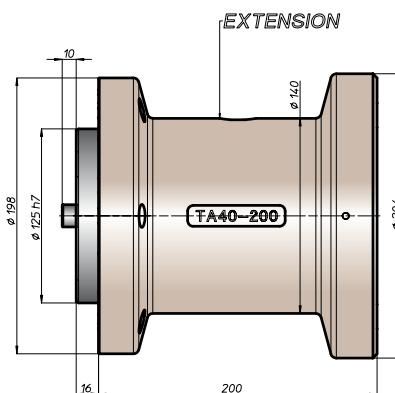
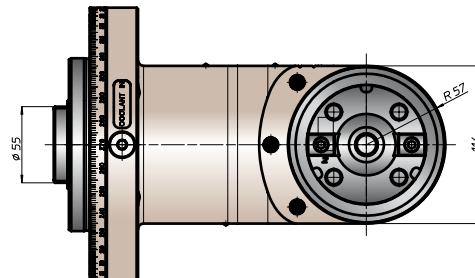
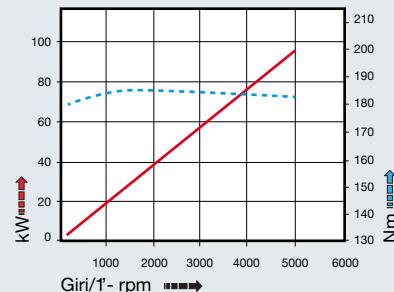


input



output

## prestazioni/performances

**Equipaggiamento standard:**

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

**Opzioni:**

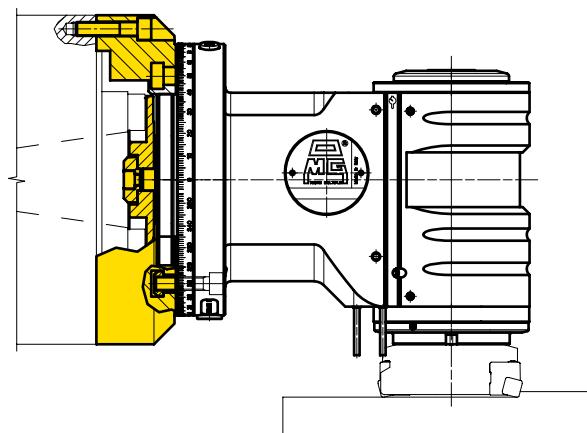
- mandrino DIN69893-HSK-A63, CAPTO C5

**Standard equipment:**

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

**Options:**

- spindle DIN69893-HSK-A63, CAPTO C5

**esempio di collegamento - connection example**

# TA40.TD

## caratteristiche/features



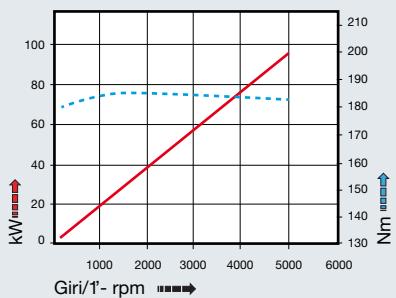
## peso/weight



## rotazione/rotation



## prestazioni/performances



TA

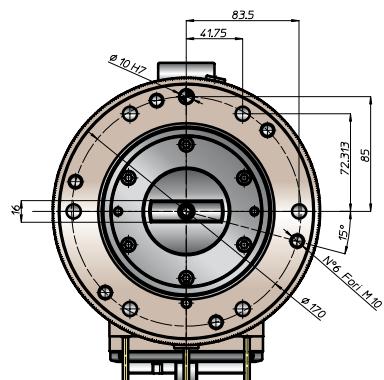
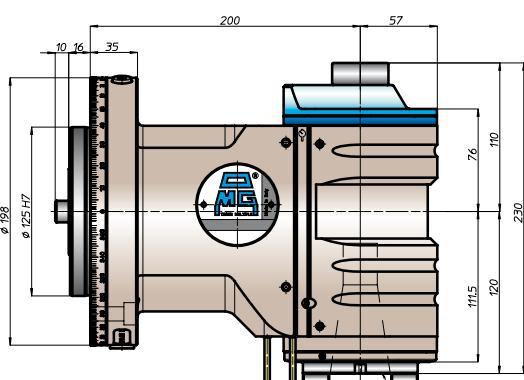
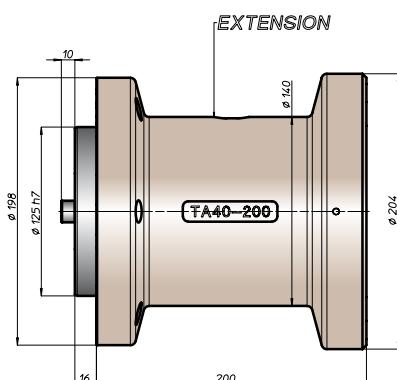
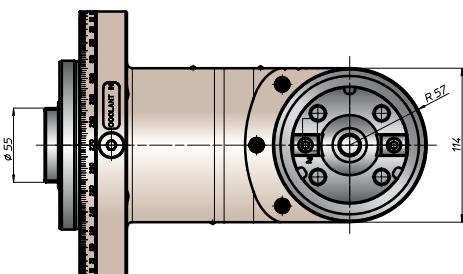
MO

HT

VH

TSI/TSX

MT-Tc-Tc3 | T

Accessori  
AccessoriesAppendice tecnica  
Technical supplement**Equipaggiamento standard:**

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

**Opzioni:**

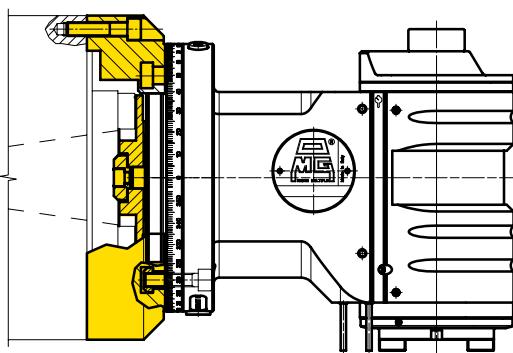
- mandrino DIN69893-HSK-A63, CAPTO C5

**Standard equipment:**

- spindle front pressurization
- nr 3 adjustable nozzle near the spindle
- on the spindle DIN2079 you can use shank DIN2080-50, DIN69871-A40, MAS403-BT40

**Options:**

- spindle DIN69893-HSK-A63, CAPTO C5

**esempio di collegamento - connection example**



# TA50.T

## caratteristiche/features

	ø 45
	M36
	1-1
	2500 / 4000

## peso/weight

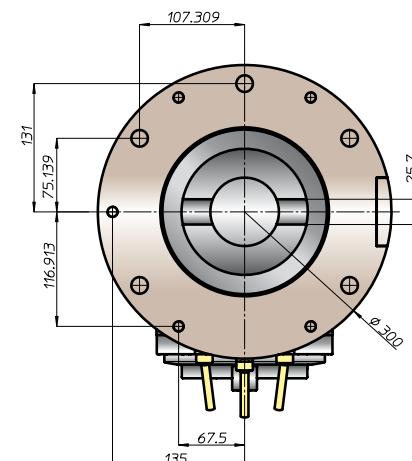
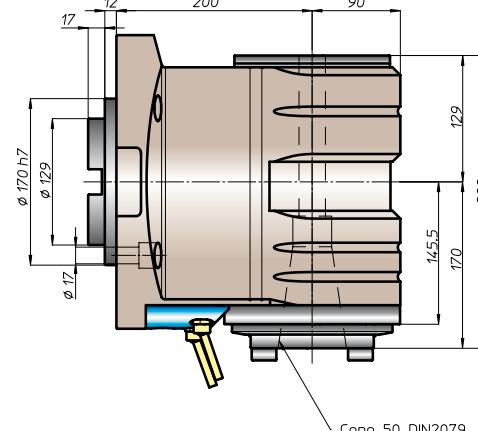
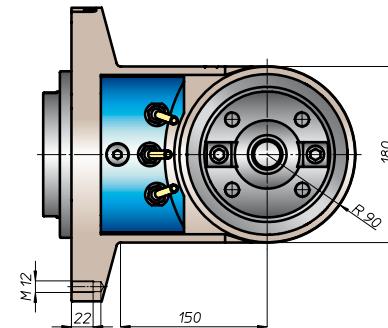
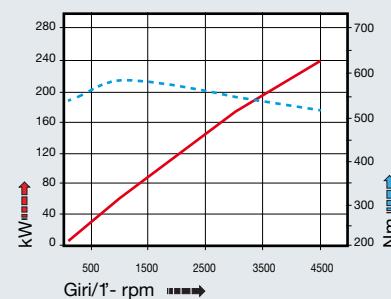


95 kg

## rotazione/rotation



## prestazioni/performances



### Equipaggiamento standard:

- pressurizzazione mandrino
- n. 3 ugelli orientabili vicino al mandrino
- nel mandrino DIN2079 si possono utilizzare coni DIN2080-50, DIN69871-A50, MAS403-BT50

### Opzioni:

- mandrino DIN69893-HSK-A100, CAPTO C8

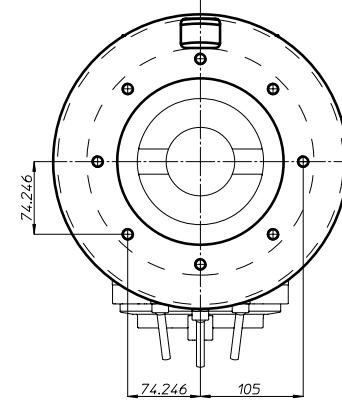
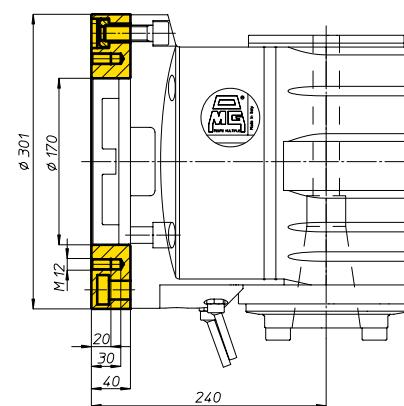
### Standard equipment:

- spindle front pressurization
- nr 3 adjustable nozzle near the spindle
- on the spindle DIN2079 you can use shank DIN2080-50, DIN69871-A50, MAS403-BT50

### Options:

- spindle DIN69893-HSK-A100, CAPTO C8

## esempio di collegamento - connection example



# TA50.TD

## caratteristiche/features

ø 45	M36	1-1
2500 4000	50 bar	

## peso/weight



95 kg

## rotazione/rotation

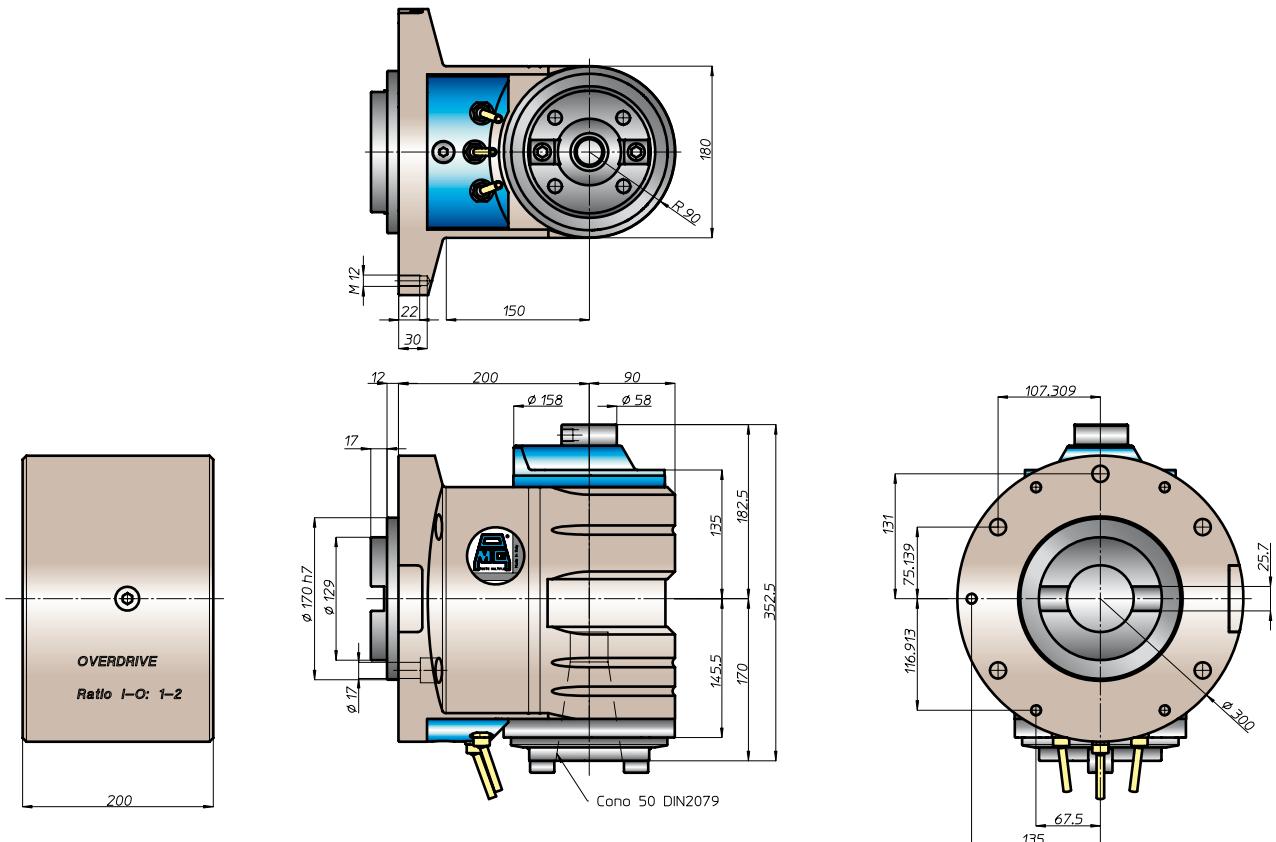
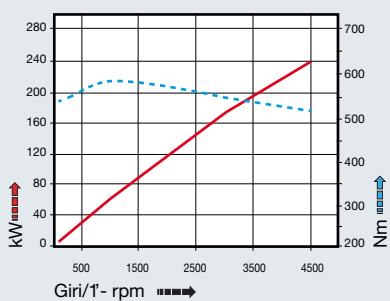


input



output

## prestazioni/performances



## Equipaggiamento standard:

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

## Opzioni:

- mandrino DIN69893-HSK-A100, CAPTO C8

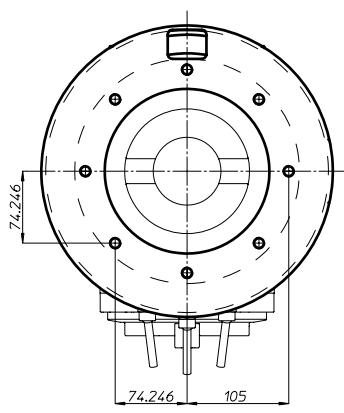
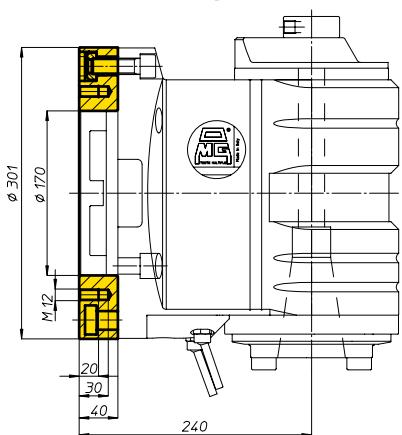
## Standard equipment:

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

## Options:

- spindle DIN69893-HSK-A100, CAPTO C8

## esempio di collegamento - connection example



# TA13.PVDI



## caratteristiche/features

- ø 13
- M10
- 1-1
- 8000

## peso/weight



4,5 kg

## rotazione/rotation

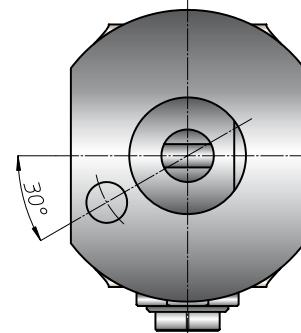
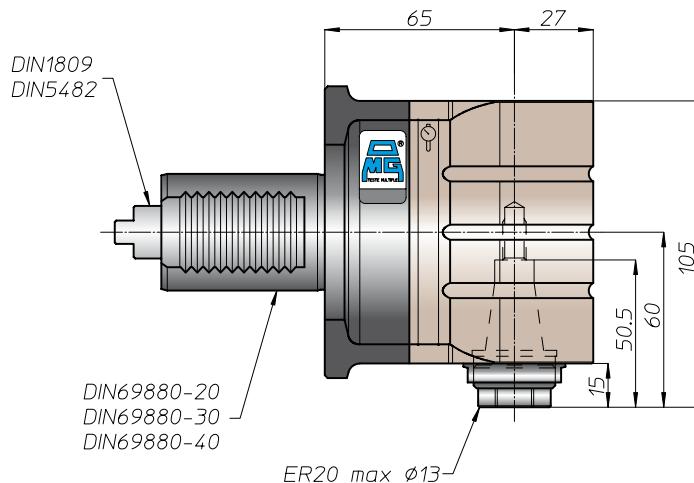
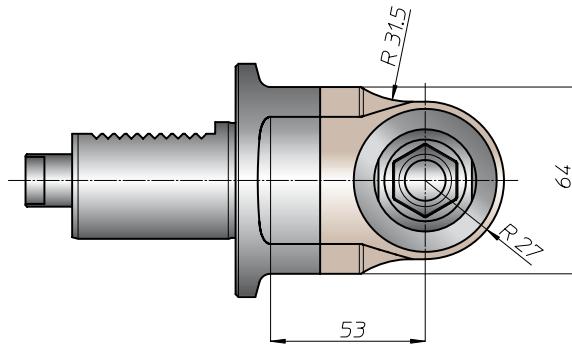
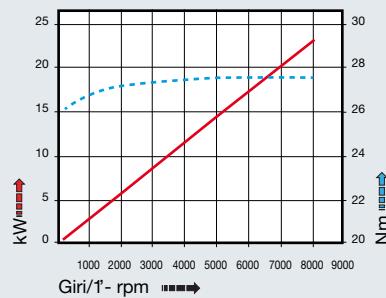


input



output

## prestazioni/performances



## soluzioni speciali - special solutions



# TA16.PVDI

## caratteristiche/features

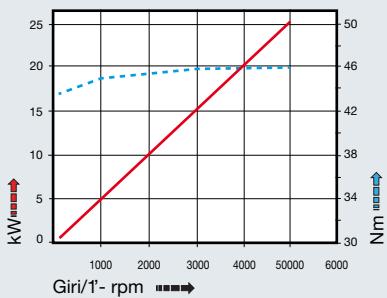
	ø 16
	M12
	1-1
	5000

## peso/weight



6,5 kg

## prestazioni/performances



## rotazione/rotation



input



output



TA

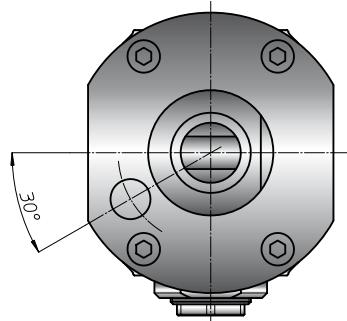
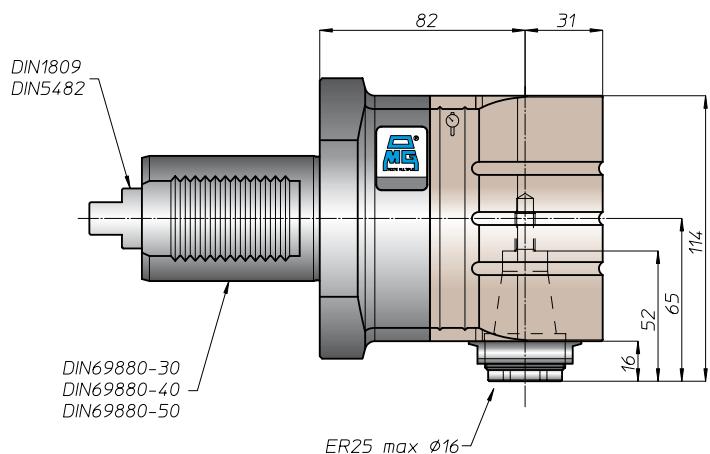
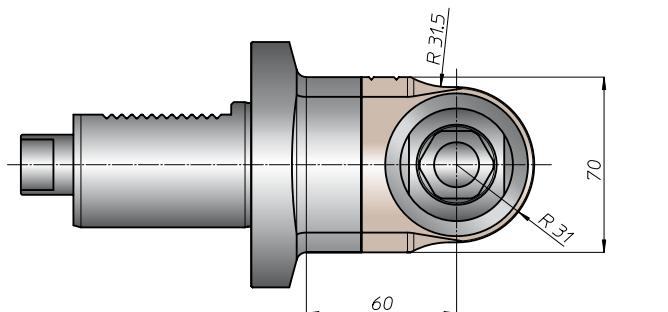
MO

HT

VH

TSI/TSX

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

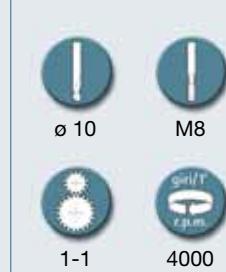
## soluzioni speciali - special solutions





# TAV10.PVDI

## caratteristiche/features



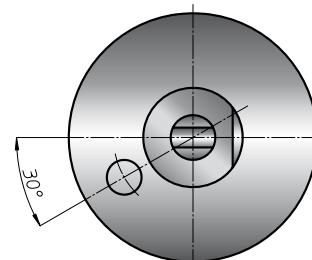
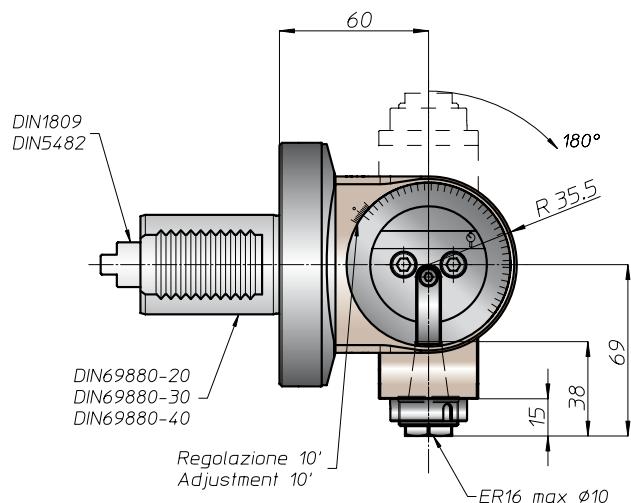
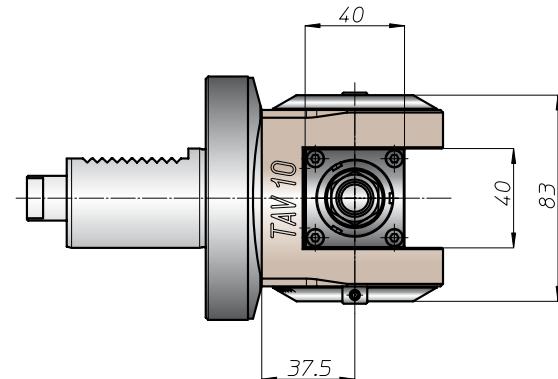
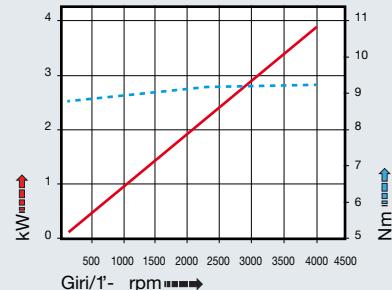
## peso/weight



rotazione/rotation



## prestazioni/performances



## soluzioni speciali - special solutions



# TAV13.PVDI

## caratteristiche/features



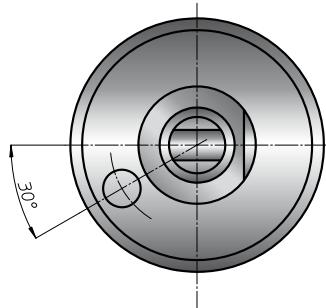
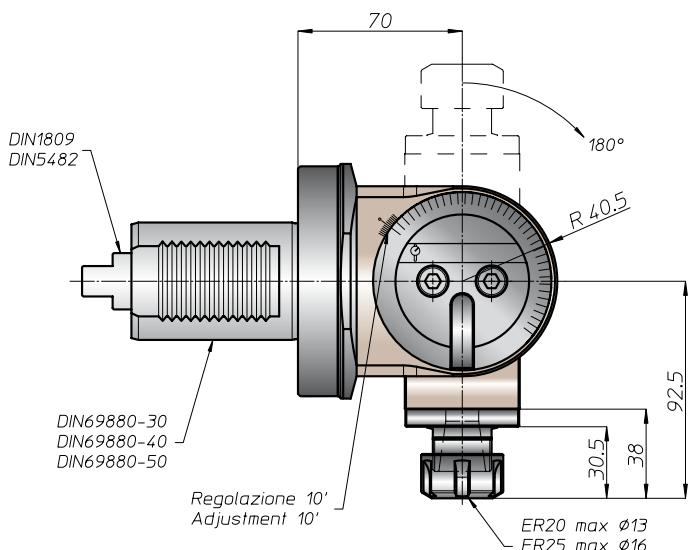
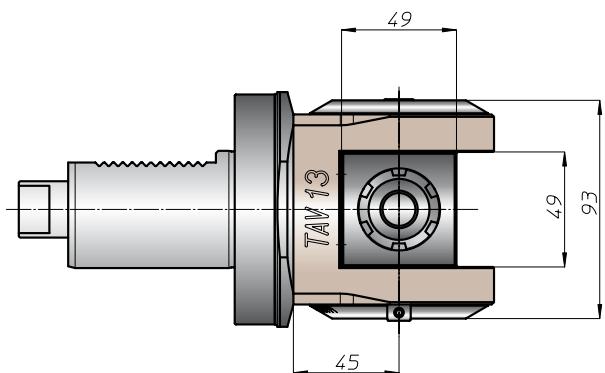
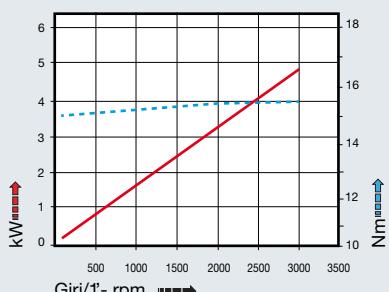
## peso/weight



## rotazione/rotation



## prestazioni/performances



## soluzioni speciali - special solutions





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.

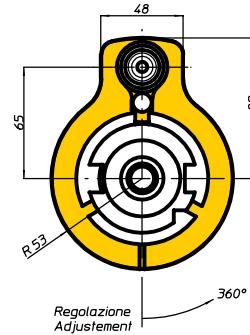
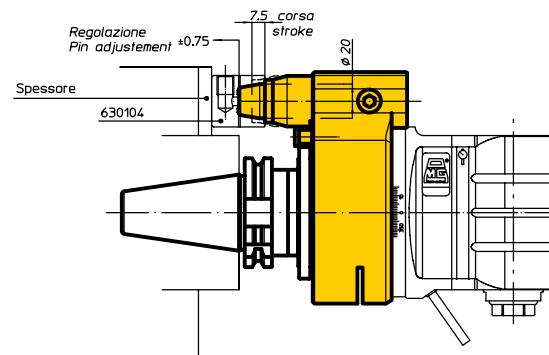
L'adduzione del liquido passante per il corpo testa, la cui uscita avviene tramite un ugello direzionale, offre il vantaggio di non avere tubi "volanti" che possono muoversi durante le lavorazioni.



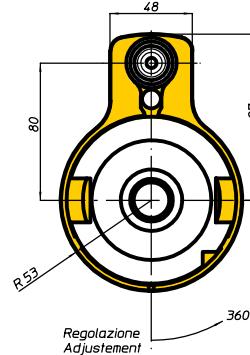
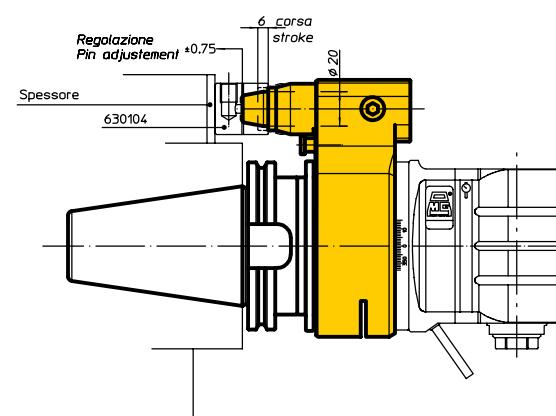
Quando possibile, nella Vostra applicazione, posizionate il perno conico dalla parte opposta al mandrino della testa ad angolo.

# Antirotante Torque arm

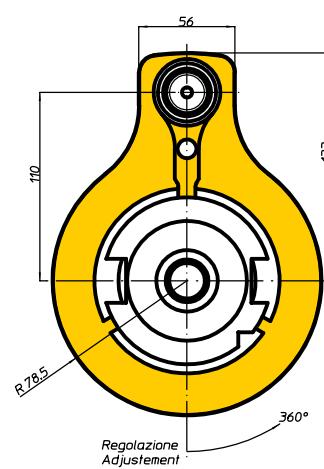
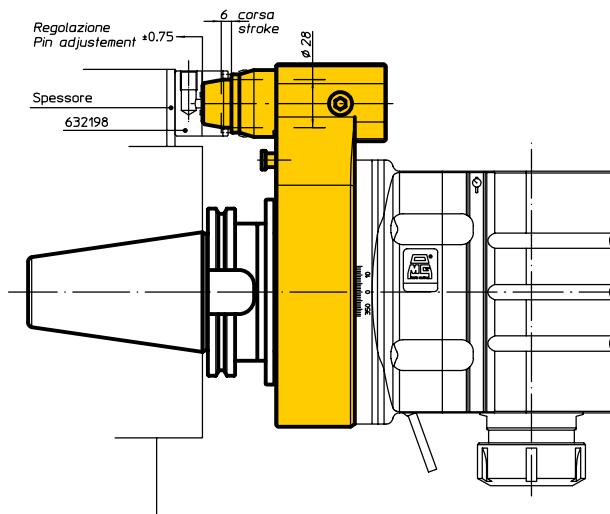
Teste ad angolo con interasse H=65  
Angle heads with centre distance H=65



Teste ad angolo con interasse H=80  
Angle heads with centre distance H=80



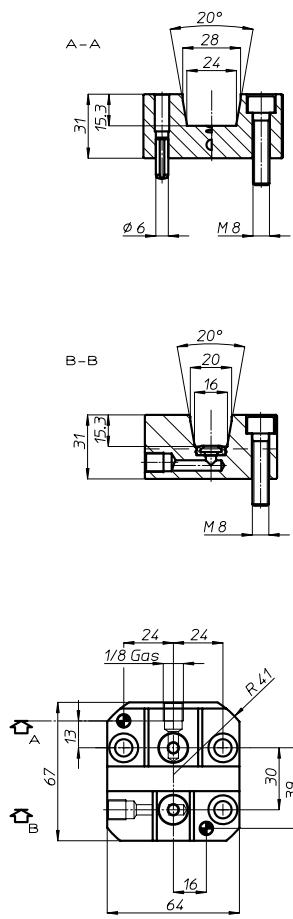
Teste ad angolo con interasse H=110  
Angle heads with centre distance H=110



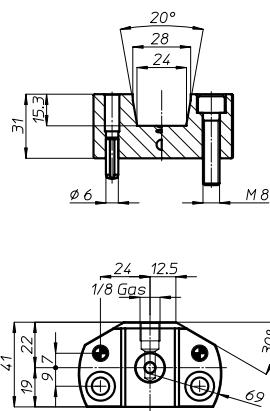
# Stop-block



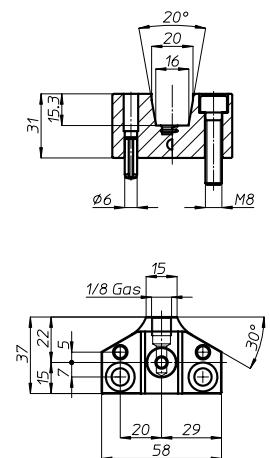
Double Stop-block (cod. 632199)



Stop-block (cod. 632198)



Stop-block (cod. 630104)



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 antirotation 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.

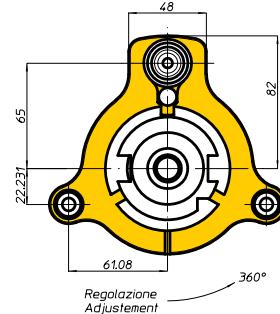
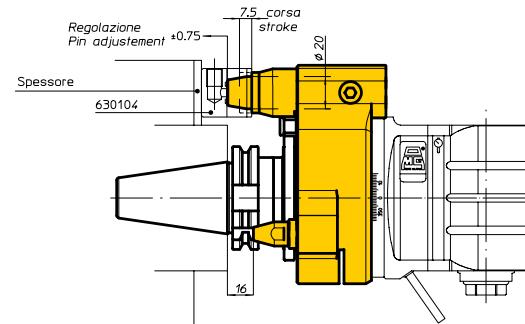
 Position the conical pin on the opposite side of the angle head spindle when possible in your application.



# Antirotante TRIBLOCK

## Torque arm TRIBLOCK

Teste ad angolo con interasse H=65  
Angle heads with centre distance H=65

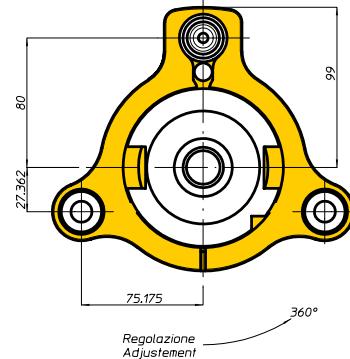
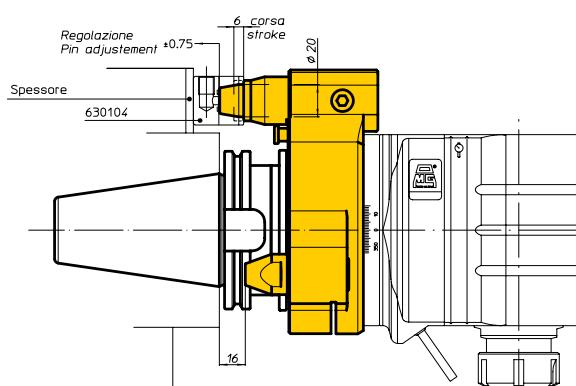


Il gruppo antirotante TRIBLOCK ricopre una funzione di fondamentale importanza quando alla testa ad angolo è richiesto di:

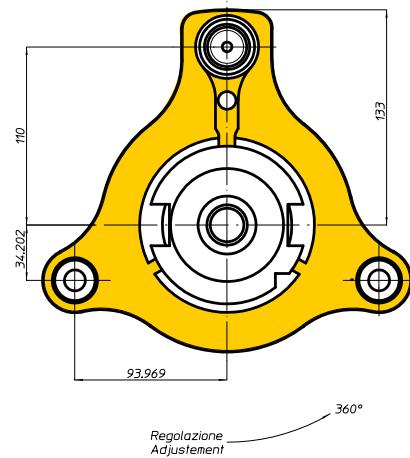
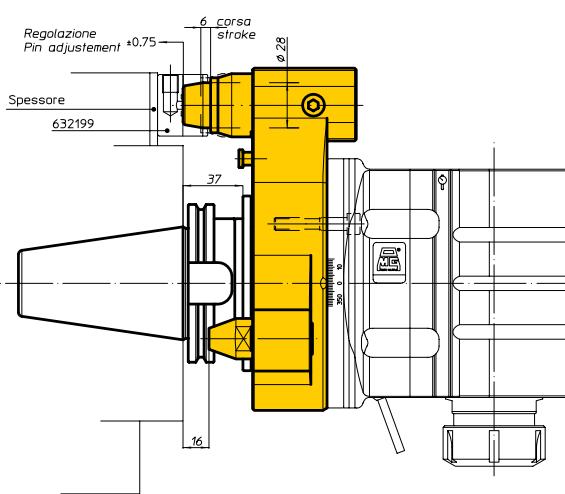
- eseguire una lavorazione più pesante
- essere più lunga dello standard
- finitura superficiale eccellente

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 raccordo. 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



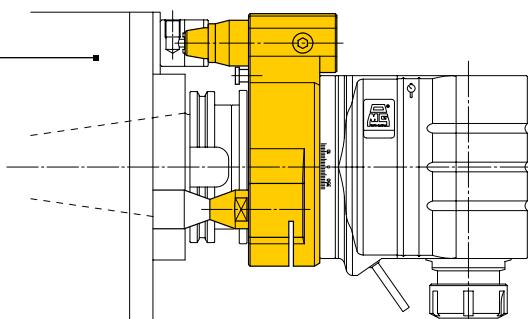
Teste ad angolo con interasse H=110  
Angle heads with centre distance H=110



# Antirotante TRIBLOCK

## Torque arm TRIBLOCK

Sul mandrino macchina  
On spindle machine

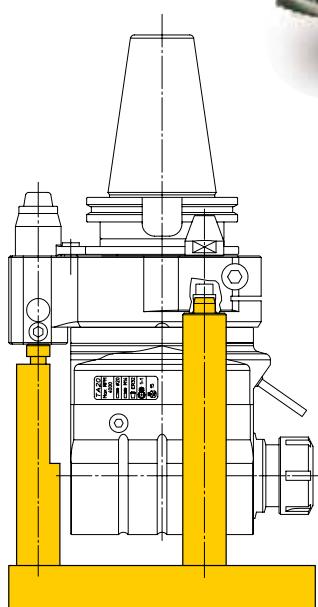


**TFS 19907**  
Testa ad angolo per fresatura  
componente motore a reazione.  
Peso Kg 45,5  
Milling angle head for jet engine.  
Weight Kg 45,5



**TFS 39195**  
Testa bimandrino di fresatura n° 2 fresa  
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.

TA

MO

HT

VH

TSI/TSX

MT-Tc-Tc3

Accessori  
Accessories

Appendice tecnica  
Technical supplement



# Antirotante QUADBLOCK

## Torque arm QUADBLOCK

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.

### 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.*



# Antirotante QUADBLOCK

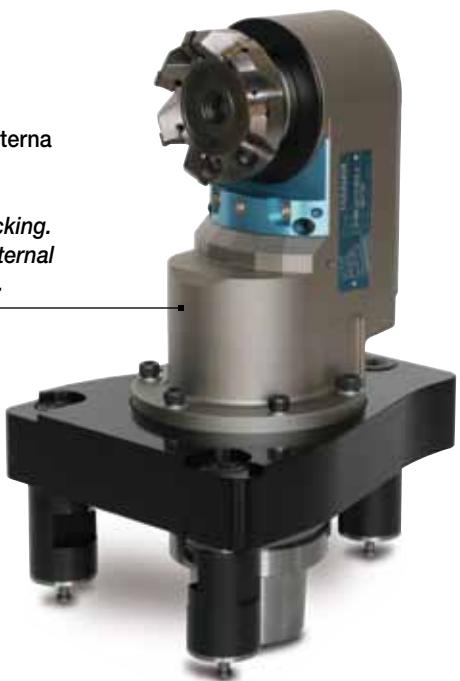
## Torque arm QUADBLOCK

### 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 elettrosaldata 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.

# Teste ad angolo speciali

## Special angle heads



**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 milling cutter diam. 7 weight Kg 8



**TAS 15505**

Testa ad angolo di foratura e fresa-tusa, attacco utensile CAPTO C4 automatico. Peso Kg 130.  
Drilling and milling angle head, automatic tools changer CAPTO C4.  
Weight Kg 130.



**TFS 23301**

Testa ad angolo di foratura a tre mandrini peso kg 5,9  
Drilling angle head with three spindles weight kg 5,9



**TFS 39998**

Testa ad angolo universale. Presa utensili ISO50, peso kg 580  
Angle head with tool shank ISO50, weight kg 580

# Teste ad angolo speciali

## Special angle heads



**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°.  
Peso Kg 18.  
*Drilling angle head, n 3  
spindles at 120°.  
Weight Kg 18.*



**TA 09603**  
Testa ad angolo di alesatura con  
utensile Ø 160 peso Kg 77  
*Boring angle head with tools  
Ø 160 weight Kg 77*

### 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 06003**  
Testa ad angolo di fresatura con  
fresa Ø 110 peso Kg 210  
*Milling angle head with milling  
cutter Ø 110 weight Kg 210*

# Teste ad angolo speciali

## *Special angle heads*



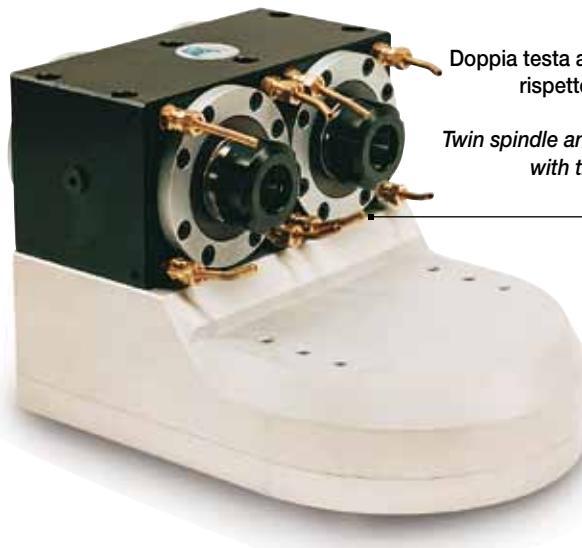
**TAS 33206**  
Testa bimandrino di fresatura  
per frese Ø 160 peso kg 63  
*Twin milling head with  
milling cutter Ø 160 weight kg 63*



**TFS 21701**  
Testa di fresatura a due mandrini  
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 milling  
cutter Ø 60, weight kg 15,5*

# Teste ad angolo speciali

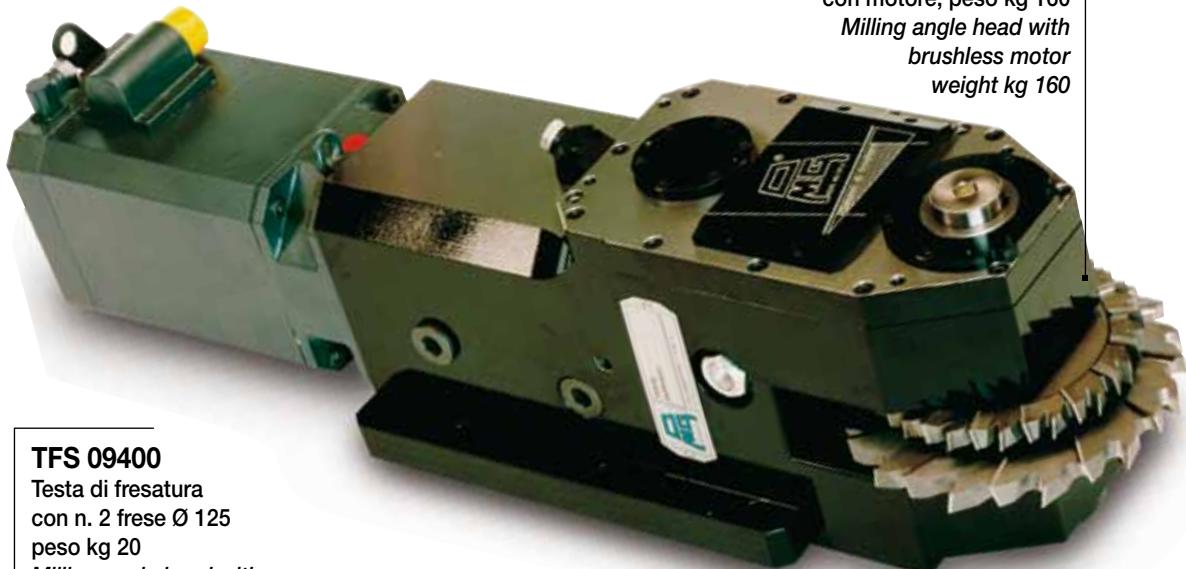
## Special angle heads

**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 bimandrino per  
fresatura su scatola del cambio  
peso kg 70  
*Twin milling spindle angle head  
on gear box weight kg 70*

# Teste ad angolo speciali

## *Special angle heads*

**TAS 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 Kg34

*Milling angle head, with  
milling cutter Ø 100  
weight Kg 34*

**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 28603**

Testa di fresatura con n. 4 fresa a disco Ø 125. Peso Kg 218.

*Milling head, nr. 4 milling disc  
cutter Ø 125. Weight Kg 218.*



# Teste ad angolo speciali

## Special angle heads



**TFS 33303**  
Testa ad angolo disassata per foratura. Peso Kg 9,4.  
*Angle head with shift drilling spindle.*  
*Weight Kg 9,4.*



**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 33503**  
Testa ad angolo di lucidatura con doppia rotazione, sia corpo che utensile.  
*Peso Kg 6,5.*  
*Polish angle head with double rotation: body and tools. Weight Kg 6,5.*



**TFS 13198**  
Testa ad angolo disassata per foratura peso kg 5  
*Angle head with shift spindle weight kg 5*

# Teste ad angolo speciali

## *Special angle heads*



**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 mandrini  
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*



# Teste ad angolo speciali

## Special angle heads



**TFS 20298**  
Testa bimandrino di fresatura  
n°2 fresa Ø 120 peso kg 25  
*Twin milling angle head, nr.2  
milling cutter Ø 120  
weight kg 25*



**TA 05500**  
Testa ad angolo di fresatura  
con fresa Ø125 peso kg 17  
*Milling angle head with milling  
cutter Ø 125, weight kg 17*



**TAS 20706**  
Testa per fresatura interna  
pinza freno peso Kg 23  
*Angle milling head for brake  
housing weight Kg 23*



**TAS 39706**  
Testa di fresatura per  
supporto motore frese  
Ø160/180 peso kg 31  
*Milling head for engine's  
bracket milling cutter  
Ø160/180 weight kg 31*



**TA 34397**  
Testa ad angolo  
di fresatura  
con cono ISO20  
peso kg 0,9  
*Milling angle head  
with shank ISO20  
weight kg 0,9*



**TFS 39999**  
Testa ad angolo  
speciale fresatura  
su plastica peso kg 4  
*Milling angle head  
for plastic weight kg 4*

**TA 17292**  
Testa ad angolo di fresatura  
n. 2 fresa per legno  
peso kg 3  
*Twin angle head with nr. 2  
milling cutter for wood  
weight kg 3*



# Teste ad angolo speciali

## *Special angle heads*

**TAS 37806**

Testa ad Angolo di fresatura  
componente aeronautico,  
materiale Inconel. Peso Kg 40  
*Milling Angle Head for  
aeronautic 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 foratura  
con mandrino HSK50 ribal-  
tato. 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*



# Teste ad angolo speciali

## Special angle heads



**TFS 05609**  
Testa ad Angolo di fresatura  
per tornio verticale.  
Peso Kg 286  
*Milling Angle Head for vertical lathe. Weight Kg 286*



**TAS 08411**  
Testa ad Angolo con tre mandri-  
ni di foratura con avanzamento  
idraulico. Peso Kg 17,5  
*Drilling Angle Head with three  
spindles, hydraulic spindles  
feed. Weight Kg 17,5*



**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 19610**  
Testa ad Angolo di fresatura  
per macchina transfer.  
Peso Kg 35  
*Milling Angle Head for transfer  
machine. Weight Kg 35*



**TAS 28010**  
Testa ad Angolo con tre  
assi a regolazione manuale.  
Peso Kg 590  
*Angle Head with three  
manual movement axis.  
Weight Kg 590*

# Teste ad angolo speciali

## *Special angle heads*

**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***TAS 26810**

Testa ad Angolo TAO20, utilizzata in fresatura su torretta a revolver HT250. Peso Kg 14  
*Milling Angle Head TAO20, assembled on HT250 turret head. Weight Kg 14*

**TAS 09407**

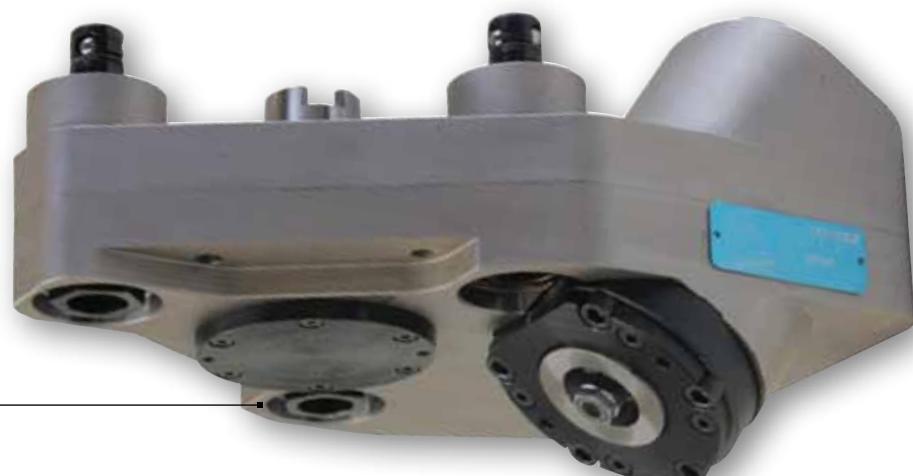
Testa ad Angolo per fresa-tura canna di fucile.

Peso Kg 6,5

*Milling Angle Head for rifle barrel. Weight Kg 6,5***TFS 06906**

Testa ad Angolo di foratura scatola sterzo.

Peso Kg 10

*Drilling Angle Head for steering body.**Weight Kg 10***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*

# Teste ad angolo speciali

## Special angle heads

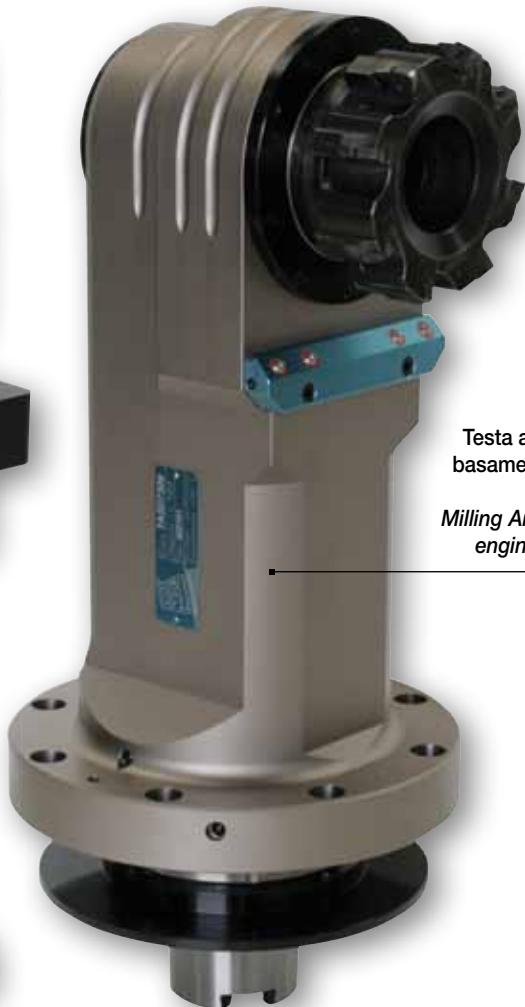
### TAS 24508

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 cilindri.  
Peso Kg 60  
*Milling Angle Head, 12 cylinder  
engine block. Weight Kg 60*



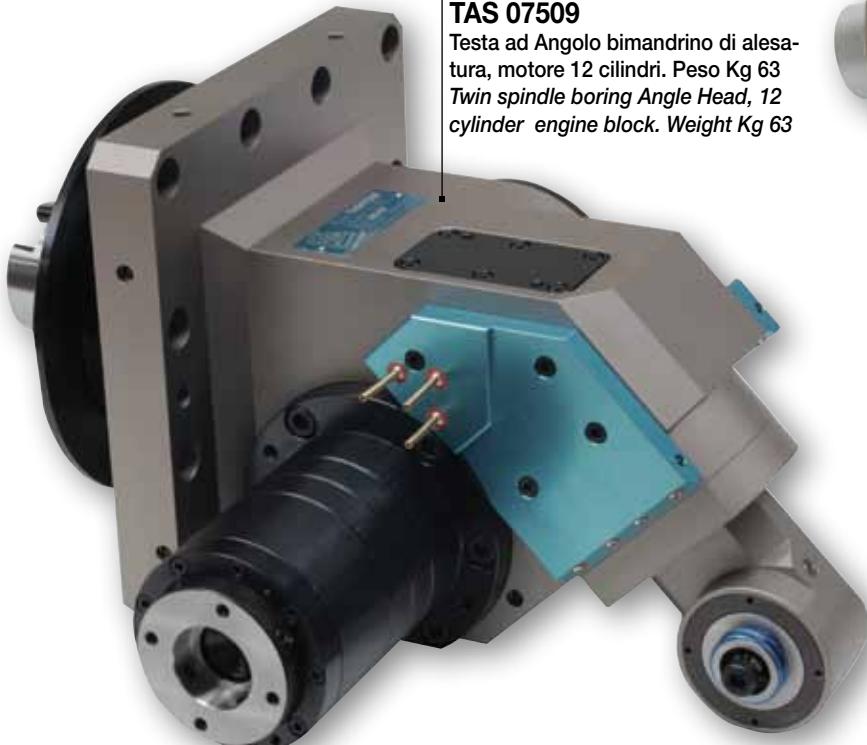
### TAS 24010

Testa ad Angolo di foratura componente  
aeronautico in alluminio.  
Peso Kg 13,5  
*Drilling Angle Head for aluminium  
aeronautic component. Weight Kg 13,5*



### TAS 07509

Testa ad Angolo bimandrino di alesa-  
tura, motore 12 cilindri. Peso Kg 63  
*Twin spindle boring Angle Head, 12  
cylinder engine block. Weight Kg 63*



### TAS 28606

Testa ad Angolo di foratura compone-  
nte aeronautico con mandrino HSK50,  
materiale Inconel. Peso Kg 27  
*Drilling Angle Head with HSK50 spin-  
dle for aeronautic piece, Inconel alloy  
material. Weight Kg 27*



# Serie M



## moltiplicatori di giri spindle speeders

I **moltiplicatori di giri** serie “MO” sono stati studiati e definiti con l'intento di offrire un prodotto che possa assicurare la massima affidabilità e precisione nelle operazioni di fresaatura 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.

- 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

La costruzione compatta, i componenti in acciaio trattato termicamente, gli ingranaggi rettificati sull'evolente 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 entro mm. 0,01.

- Due ingranaggi satelliti per elevate potenze trasmissibili
- Attacco utensile speciale a richiesta (Komet, DIN 1835, ecc...)
- Adduzione liquido refrigerante attraverso il centro utensile standard o a richiesta
- Attacco macchina speciale a richiesta (Cone Morse, DIN 69880, ecc...)
- Perno antirotante intercambiabile e perciò personalizzabile dal cliente

I **moltiplicatori di giri** possono essere montati su macchine tradizionali o con cambio utensile automatico.

La lubrificazione è assicurata con grasso a base sintetica a lunga vita che non richiede praticamente interventi di manutenzione.

Il certificato di collaudo che troverete allegato ad ogni **moltiplicatore di giri** garantisce la qualità del prodotto.

Robustezza, versatilità, facilità d'impiego e di manutenzione sono caratteristiche che hanno sempre contraddistinto la nostra produzione ed i **moltiplicatori di giri** ne sono una conferma.

The “MO” series of **spindle speeders** has been designed and developed to offer a product that ensures maximum reliability and precision in milling and drilling. From design to static and dynamic testing of the finished product, our **spindle speeders** use the most advanced technical and technological know-how.

- Max 35.000 rpm
- Used in particular for finishing operations
- Manual or automatic tool change option
- Allow the machine to rotate at low rpm
- Possibility of using hard metal tools

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 less than 0,01 mm.

- Two planetary gears for high transmission power ratings
- Special tool attachment on request (Komet, DIN 1835, etc.)
- Coolant through the tool centre standard or on request
- Special machine shank connection, on request (Morse Cone, DIN 69880 etc.)
- Interchangeable anti-rotating pin which can therefore be customized by the customer

The MO **spindle speeders** series can be mounted on traditional machines and on machines with automatic tool change.

The MO **spindle speeders** series is lubricated with a long-life synthetic grease that is practically maintenance free.

The test certificate enclosed to each spindle speeders guarantees the quality of the product.

Our products have always stood out for their sturdiness, flexibility and easy use and maintenance and the MO **spindle speeders** series is an additional proof of such outstanding features.



MO10.HS.....	2-2
MO10.....	2-3
MO13.....	2-4
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MO26.....	2-6
MO34.....	2-7
Stop Block.....	2-8
Collaudo/Test result.....	2-9
Soluzioni speciali/Special executions....	2-10
Accessori/Accessories .....	8-1

### Simboli/Icons



Pinza tipo ER  
Spring collet ER type



Refrigerante centro cono-mandarino  
Coolant through the centre shank-spindle



Refrigerante centro perno-ugello  
Coolant through the pin-nozzle



Rapporto entrata/uscita  
Ratio input/output



N° max giri in uscita  
Max output RPM



Peso con cono 40  
Weight with size 40 shank



Peso con cono 50  
Weight with size 50 shank



Rotazione in ingresso  
Input rotation

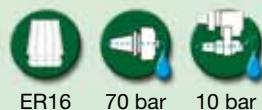


Rotazione in uscita  
Output rotation

# M010.HS



## caratteristiche/features



ER16 70 bar 10 bar



1-8 35000

## peso/weight

5,8 kg  
rotazione/rotation

8 kg

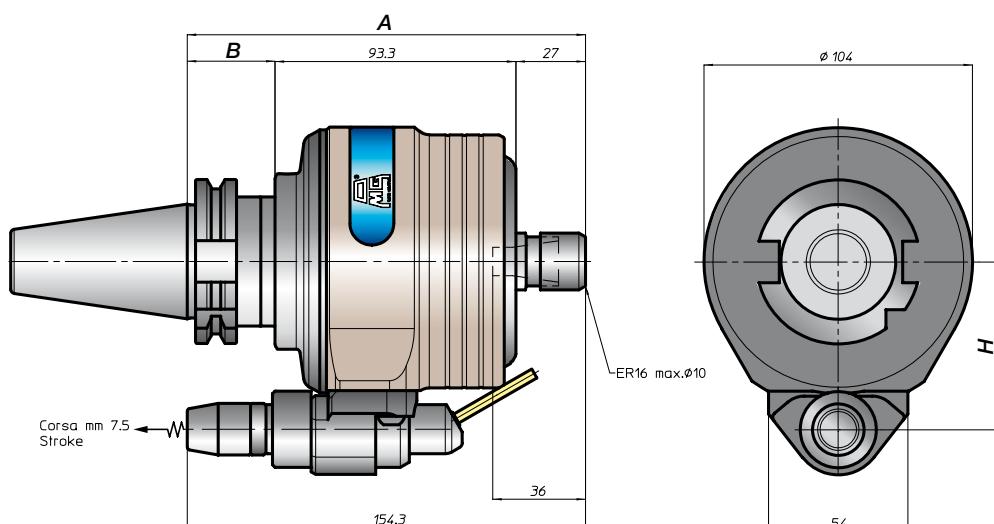
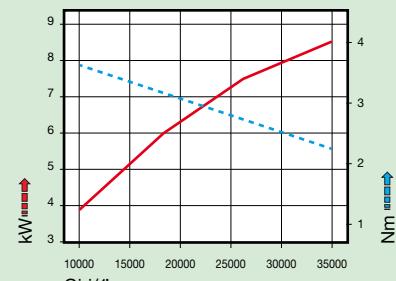


input



output

## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
DIN9871	30			35	65	-
	40			42	80	-
	45			154		
	50					
ANSIB5.50	CAT	40		35	65	-
		50		42	80	-
BT	40			35	65	-
	50	162	50	80		
HSK	63	163		42	65	-
	80		167		80	-
	100			52		
CAPTO	C5				65	-
	C6	162			80	-
	C8					
KM	63				65	-
	80	158			80	-
	100					
DIN2080		-	-	-	-	-
ANSIB5.18	NMTB		-	-	-	-

# M010

## caratteristiche/features



ER16-ER20



10 bar



1-6



22000

## peso/weight



3,7 kg



6,5 kg

## rotazione/rotation

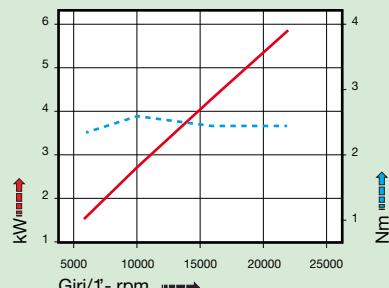


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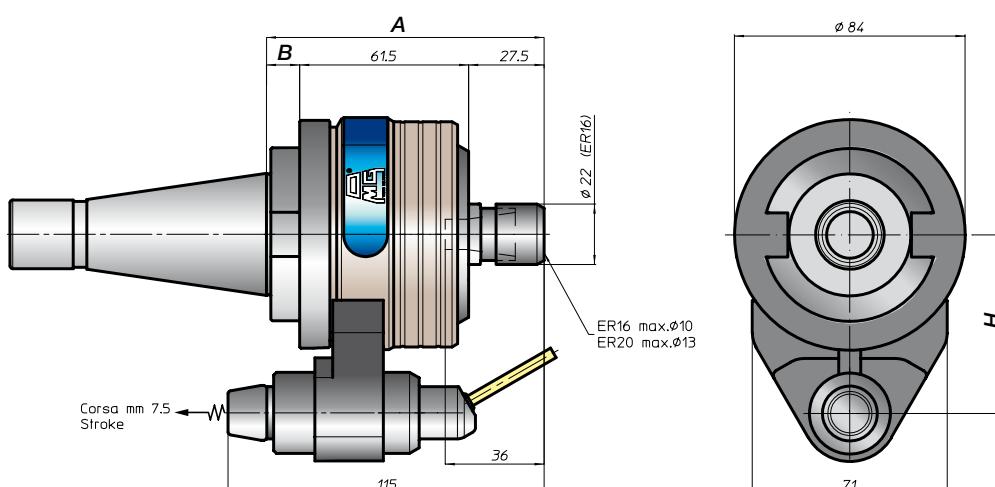
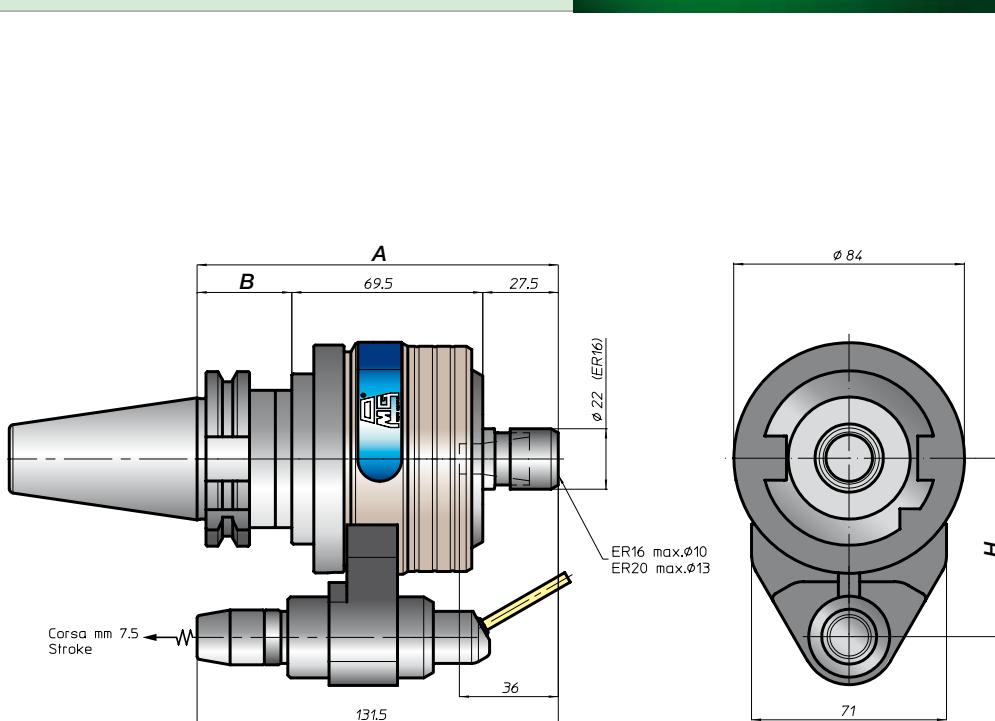


output

## prestazioni/performances



CONO SHANK	size	A	B	standard	H	optional
DIN69871	30					
	40					
	45					
	50	131,5				
ANSIB5.50	40					
	50					
BT	40					
	50	139,5				
		50	80			
DIN6983	63	140,5				
	80	144,5				
	100					
ISO26623	C5					
	C6	139,5				
	C8					
KM	63					
	80	135,5				
	100					
DIN2080	40	101	12	65		
	50	104,5	12	80		
ANSIS5.18	40	101	12	65		
	50	104,5	12	80		



# M013



## caratteristiche/features



## peso/weight



5 kg



7,5 kg

## rotazione/rotation

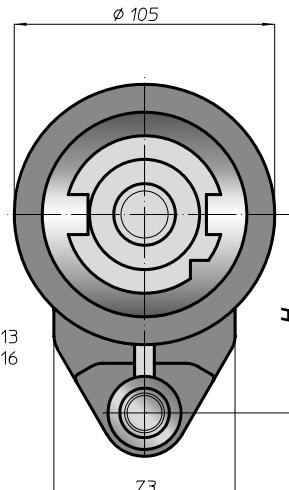
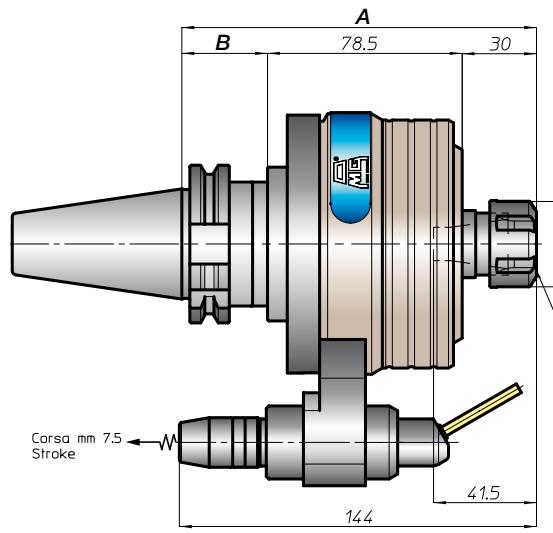
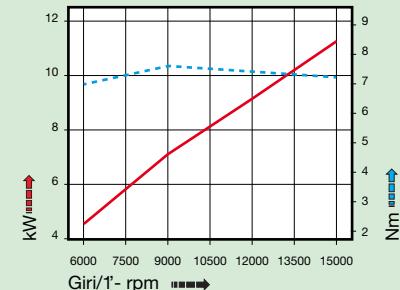


input

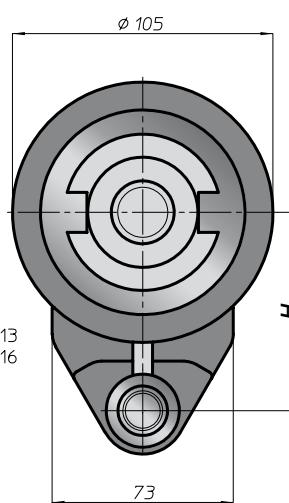
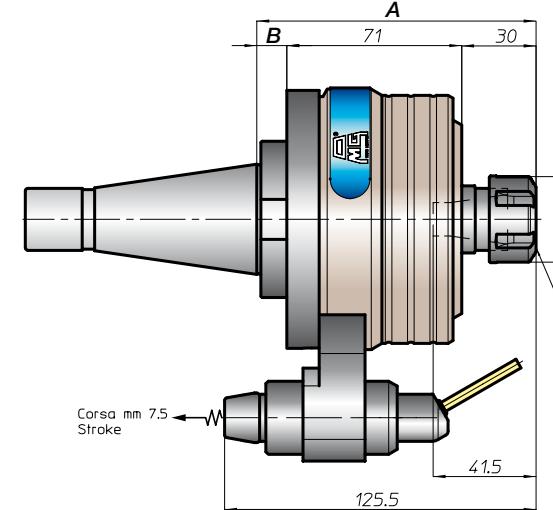


output

## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
DIN9871	40			35	65	-
	45			42	80	-
	50		143			
ANSIB5.50	40			35	65	-
	50			42	80	-
	BT			35	65	-
DIN69893	40			50	80	-
	50	151		42		
	63	152			65	
ISO26623	63			156		
	80			52	80	
	100					
CAPTO	C5				65	
	C6	151				80
	C8					
KM	63				65	
	80	147				80
	100					
DIN2080	40	112,5	11,5	65		
	50	116	15	80		
ANSIB5.18	40	112,5	11,5	65		
	50	116	15	80		



# M016

## caratteristiche/features



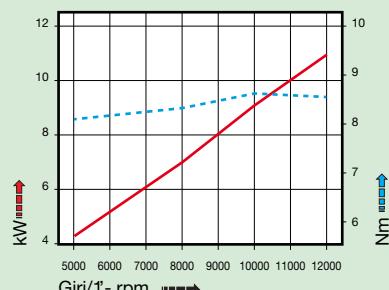
## peso/weight



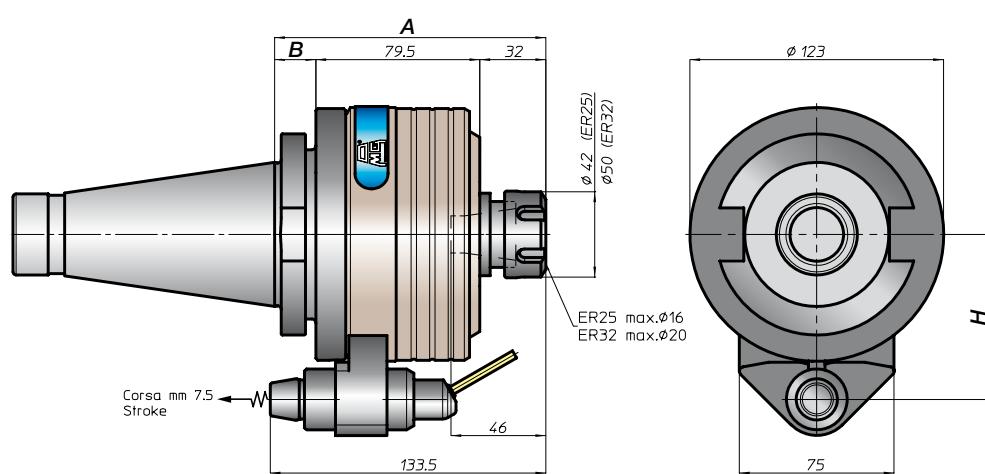
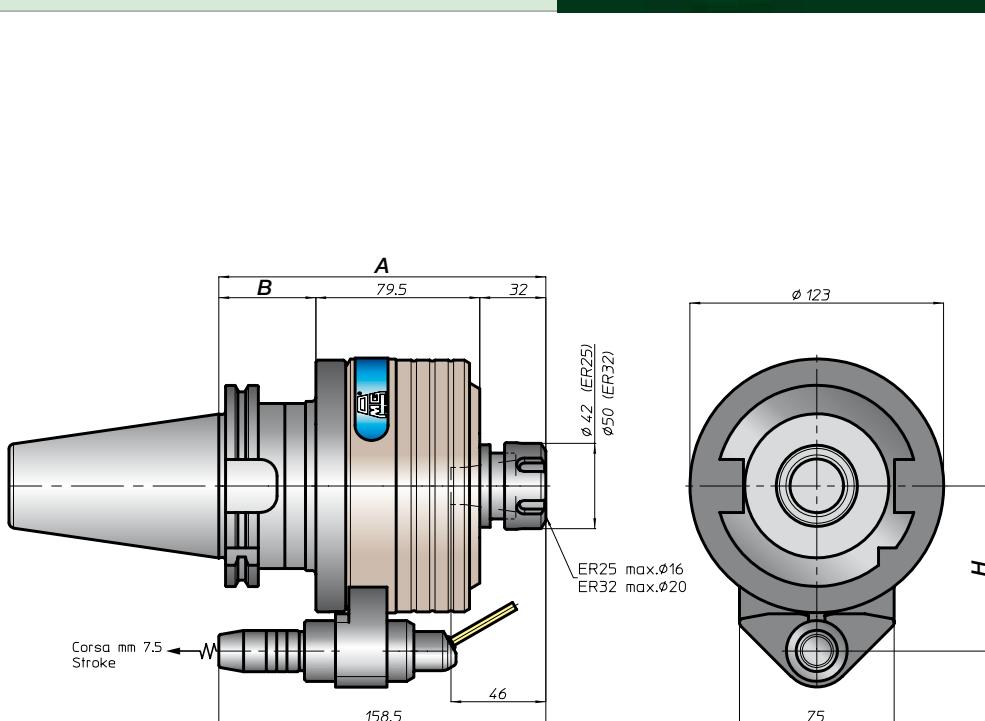
## rotazione/rotation



## prestazioni/performances



CONO SHANK	size	A	B	standard	H	optional
DIN9871	45		35	80		-
	50	158,5	42			
ANSIB5.50	50		35	80		-
BT	50	164,5	50	80		-
DIN69893	80		42	80		-
	100	165,5	55			
ISO26623	C6			80		-
	C8	164,5	-			
KM	80			80		-
	100	160,5	-			
DIN2080	40	128	11,5	65		-
	50	131,5	20	80		
ANSI5.18	40	128	11,5	65		-
	50	131,5	20	80		



# MO26



## caratteristiche/features



ER40 70 bar 10 bar



1-4,2 10000

## peso/weight



24 kg

## rotazione/rotation

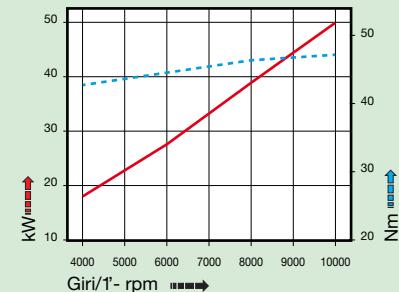


input

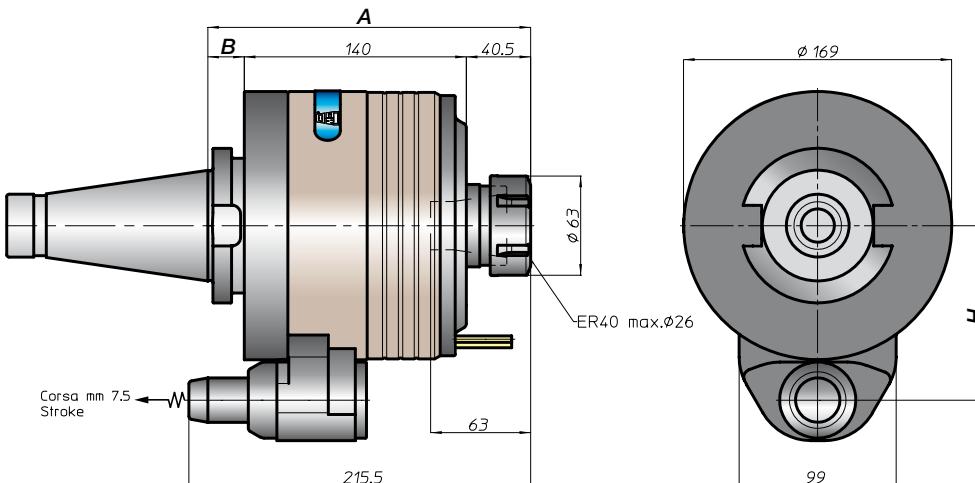
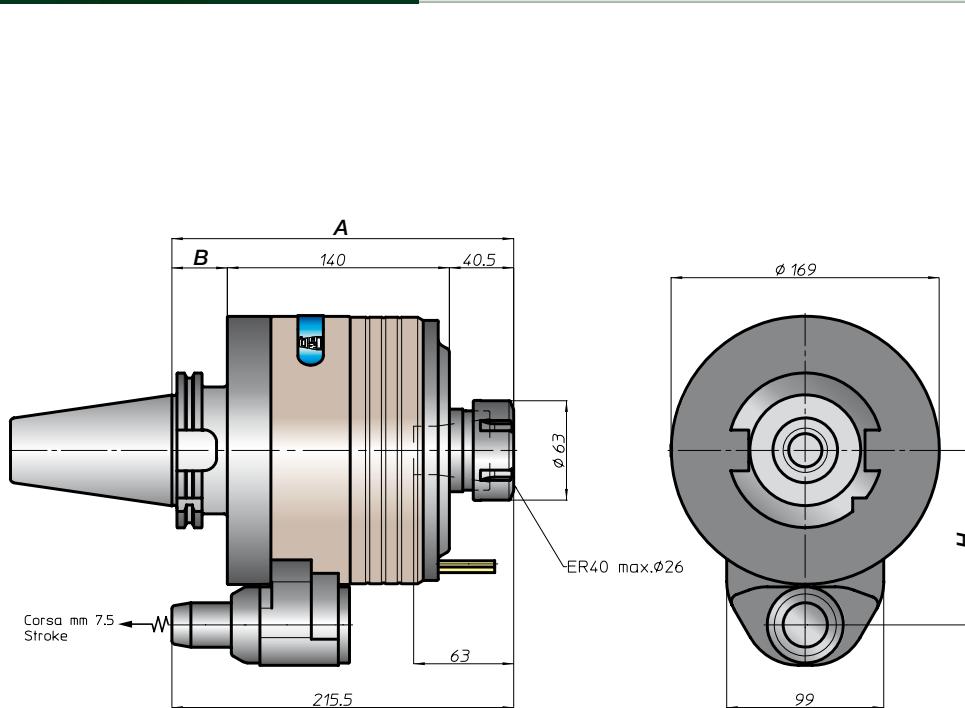


output

## prestazioni/performances



CONO SHANK	size	A	B	H	standard	optional
DIN69871	50	215,5	35	110	-	
	60	229	48			
ANSIB5.50	50		35	110	-	
CAT						
BT	50	231,5	51	110	-	
HSK	100	234	53	110	-	
DIN69893						
CAPTO	C8	229	-	110	-	
ISO26623						
KM	100	225	-	110	-	
DIN2080	50	203,5	23	110	-	
ANSIB5.18	50	203,5	23	110	-	
NMTB						



# M034

## caratteristiche/features



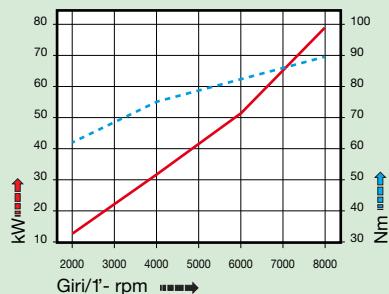
## peso/weight



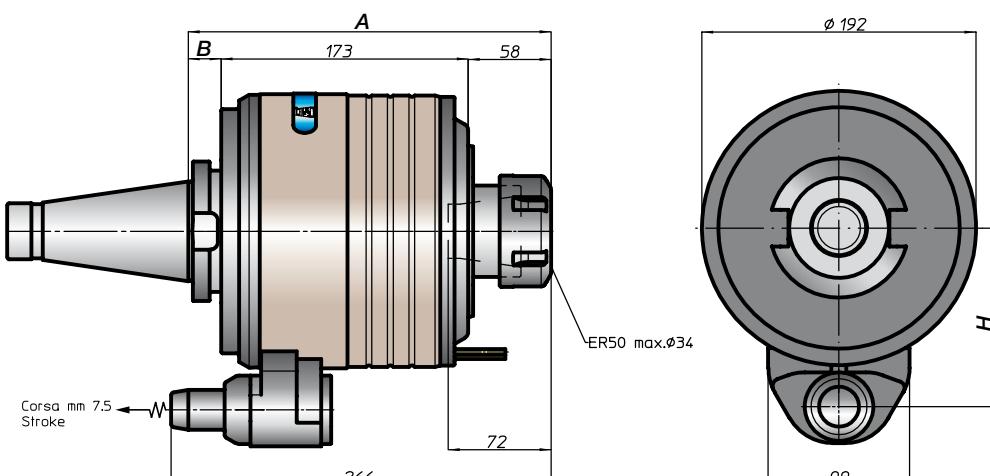
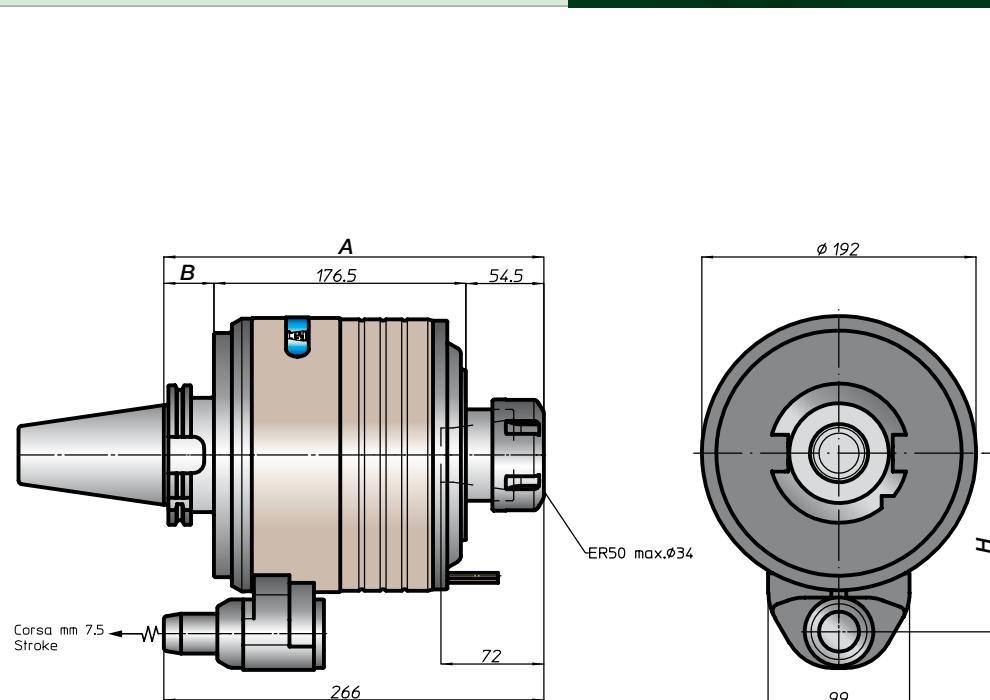
## rotazione/rotation



## prestazioni/performances

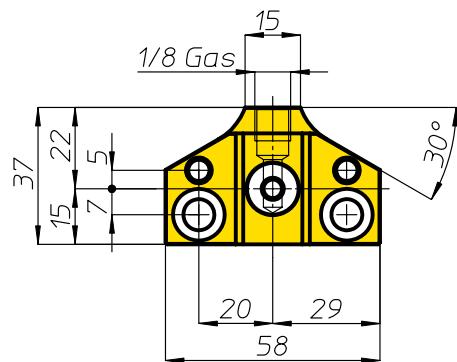
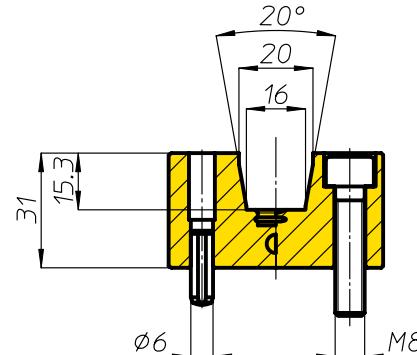


CONO SHANK	size	A	B	standard	optional	H
DIN69871	50	266	35	125	-	
	60	272	41			
ANSIB5.50	50	282	36	125	-	
BT	50	284	51			
DIN69893	100	284	46	125	-	
ISO26623	C8	279	-	125	-	
KM	100	275	-	125	-	
DIN2080	50	254	23	125	-	
ANSIB5.18	50	254	23	125	-	
NMTB						

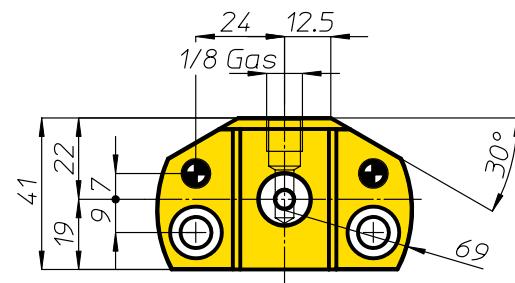
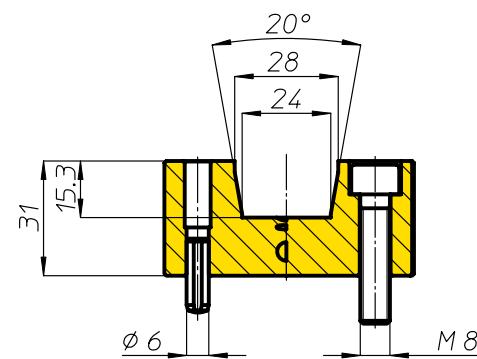


# Stop-block

**MO10.HS - MO10 - MO13 - MO16**  
Stop-block (cod. 630104)



**MO26 - MO34**  
Stop-block (cod. 632198)



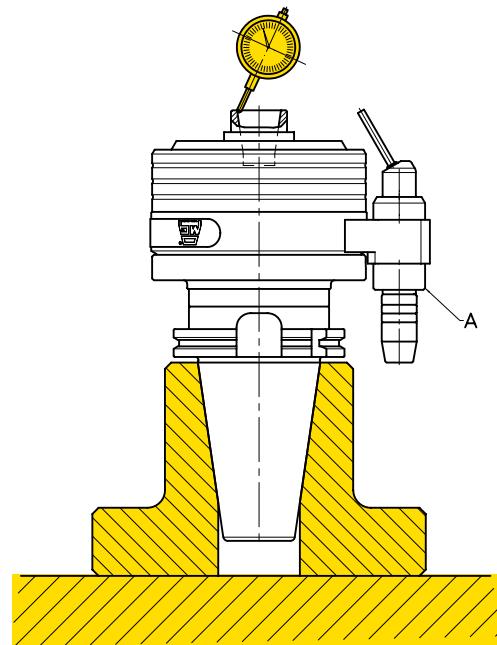


## COLLAUDO

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

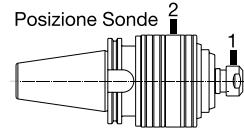
*Every spindle speeder has his test certificate in which there are the technical characteristics, the serial number, the results of the tests made on our BP03 testing bench, the concentricity value between the shank and the collet (max. value 0,01 mm). To verify the concentricity value it is necessary 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.*



## CERTIFICATO DI COLLAUDO

Banco prova BP03  
Data prova: 10/07/2011  
Articolo: MO10 Matricola: 1315

N° Max Giri Uscita: 22.000  
Rapporto Entrata-Uscita: 1:6  
N° Giri Uscita = N° Giri Entrata \* Rapporto



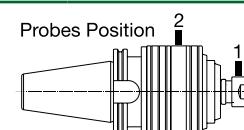
Prova	N° Giri Entrata	Temp.(°C) Sonda 1	Temp.(°C) Sonda 2	Temp. Ambiente
1	1000	45,40	43,20	24,60
2	1500	40,80	36,80	24,60
3	2000	44,20	42,00	24,80
4	2500	48,80	42,00	24,80
5	3000	49,20	38,60	25,00

Concentricità Max Cono - Mandrino: 0,006

## TEST REPORT

Testing bench BP03  
Test date: 10/07/2011  
Item: MO10 SN: 1315

Max Output RPM: 22.000  
Ratio Input-Output: 1:6  
Output RPM = Input RPM \* Ratio



Test	Input RPM	Temp.(°C) Probe 1	Temp.(°C) Probe 2	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

Max Runout between Shank and Spindle: 0,006

# 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

# Moltiplicatori di giri speciali

## Special spindle speeders

### TFS 09011

Riduttore di giri per maschiatura con compensazione assiale mandrino, corsa compensazione  $\pm 7$  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  $\pm 7$  mm, ratio 6-1, input max 10.000 RPM, shank HSK-F63, spindle for tapping bush size 1*



### VDI 16610

MO13 rinvianto di 90° con attacco VDI30  
*MO13 with VDI30 shank at 90°*



### MO 16210

MO13 con attacco VDI40  
*MO13 with VDI40 shank*



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*



# serie HT

## torrette a revolver turret heads



Le torrette a revolver serie **HT** sono una novità della produzione O.M.G. Nate dall'esigenza di aumentare la flessibilità delle macchine utensili, 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.

Disponibili in tre grandezze, 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.

La serie **HT**, quindi, conferma la capacità di O.M.G. di affinare la gamma degli strumenti ad elevata affidabilità per le lavorazioni industriali e di puntare al centro delle esigenze della propria clientela offrendo sempre, come risorsa per l'innovazione, la versatilità dei propri prodotti.

*The HT series of turret heads are a novelty in the O.M.G. production range. Inspired by the need to increase the flexibility of machine tools, 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.*

*Available in three sizes, they can be fitted with multisindle 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.

*The HT series once more reflects O.M.G.'s ability to constantly perfect its range of highly reliable tools for industrial machining and to target the exact needs of its customers, offering product versatility as a resource for innovation.*

Caratteristiche tecniche/Features ..... 3-2  
Applicazioni/Applications ..... 3-3

TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
Accessories

Appendice tecnica  
Technical supplement

# caratteristiche tecniche - specifications



**HT 160**



**HT 250**



**HT 360**



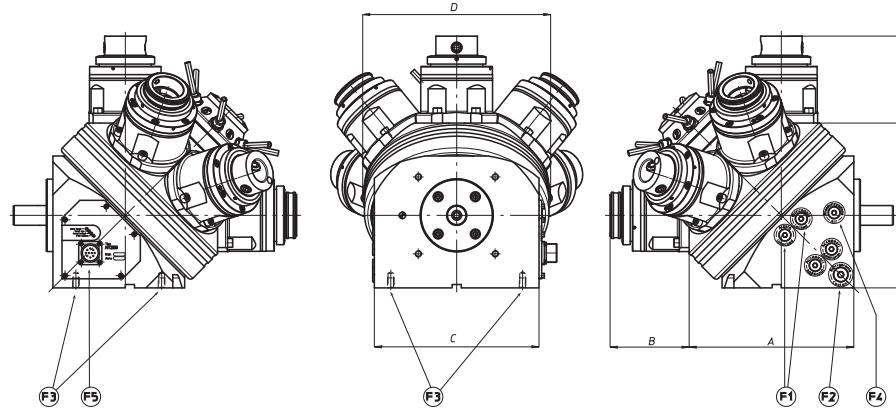
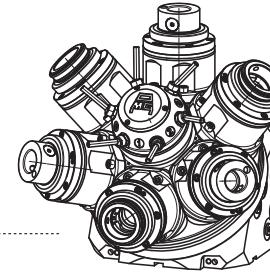
**F1** circuito olio per bloccaggio-sbloccaggio torretta  
oil circuit for turret locking-release

**F2** entrata refrigerante utensili  
coolant tools

**F3** fori fissaggio torretta  
turret fixing holes

**F4** entrata olio-aria  
input oil-air

**F5** connettore elettrico  
electric connector



**n° di posizioni max**  
max nr. of position

**HT 160**      **HT 250**      **HT 360**

**coppia trasmisibile al mandrino**  
transmitting torque by spindle

Nm	80	300	800
----	----	-----	-----

**n° giri max mandrino**  
max rpm spindle

12.000	10.000	8.000
--------	--------	-------

**precisione di posizione mandrini**  
precision of spindles positioning

± 3"	± 3"	± 3"
------	------	------

**potenza motore**  
motor power

approx Kw	3	6,5	16
-----------	---	-----	----

**tempo di rotazione (1/6 di giro)**  
indexing time 1/6 of rotation

sec	0,9	1,1	1,5
-----	-----	-----	-----

**diametro corona Hirth**  
dimension rings Hirth

mm	160	250	350
----	-----	-----	-----

**A**

160	250	360
-----	-----	-----

**B** dipende dal tipo di mandrino  
*to depend on the spindle type*

approx mm	70/80	100/120	120/160
-----------	-------	---------	---------

**C**

160	250	350
-----	-----	-----

**D**

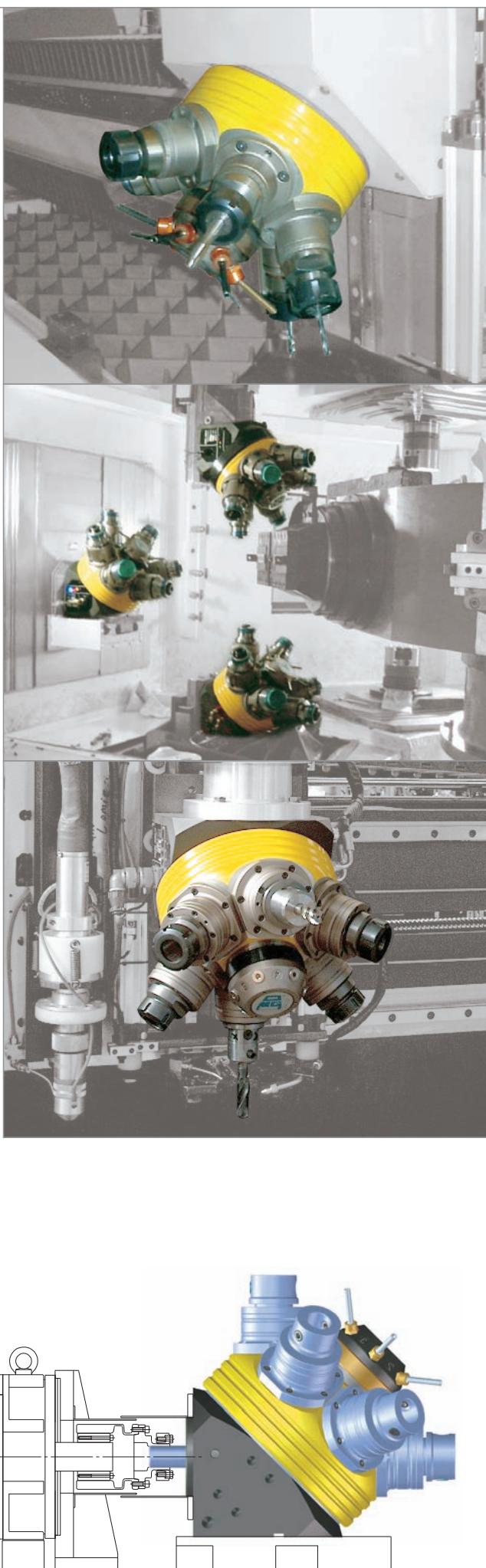
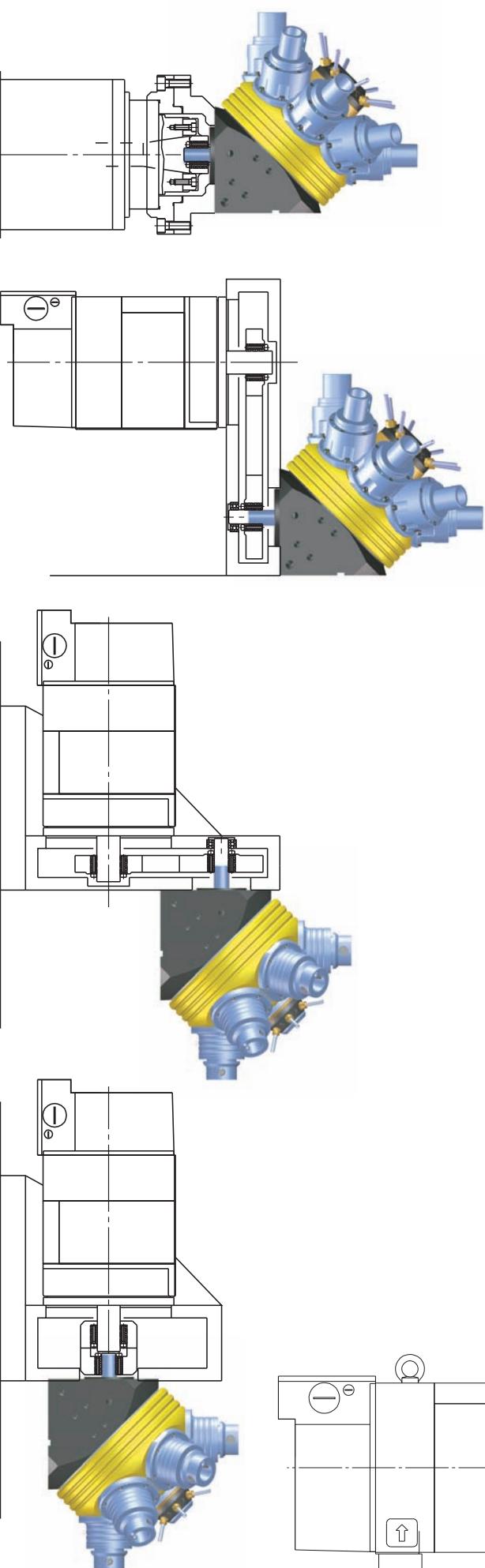
180	280	400
-----	-----	-----

**tipi di mandrini disponibili**  
type of spindles

ABS, HSK, ER, DIN 55058

**peso**

kg	35	140	300
----	----	-----	-----



Accessori Accessories	Appendice tecnica Technical supplement
MT-TC-TC3	TSI/TSX
T	H
VH	HT
MO	TA



*serie*

# VH

teste multiple ad assi variabili  
variable axis heads



1965

l'impiego di nuove tecniche computerizzate firmano la notorietà e l'immagine del marchio O.M.G.: un nome diffuso e conosciuto da tutte le aziende, piccole e grandi, un'immagine mai smentita ma sottolineata nelle numerose campagne pubblicitarie realizzate.

L'ultima generazione, la serie VH, racchiude gli elementi di tecnologia e know how delle teste multiple ad interassi fissi. Si tratta di strumenti ad alta prestazione che consentono agli utilizzatori l'impiego ottimale di tutte le più avanzate tecnologie applicate agli utensili.

La VH rappresenta una serie completamente diversa, sia sotto il profilo tecnologico che estetico: un prodotto per il quale anche la ricerca ergonomica è stata assolutamente meticolosa.



1983

*The TE series, a complete range of variable axes heads, represented a major company achievement in the seventies: it was a success and brought OMG into the limelight.*

*The eighties were characterised by upgrades to the TE range and the addition of two new series TEM and TEF.*

*Together this forms the most complete range of variable axis heads on domestic and international markets.*

*Cutting-edge technologies in production processes and the use of new computerised methods are the hallmarks of the O.M.G. brand name and image thanks to which the company has won renown among small and large enterprises alike, an image that has never lost its importance but which is, instead, stressed by frequent advertising campaigns.*



Now

*The latest generation, the VH series, bears witness to the technology and "know how" of multisindle heads with fixed centres and allows the end user to fully exploit the latest developments in tool manufacturing.*

*This new VH series, so different in terms of technology and aesthetics, is also the result of meticulous ergonomic research.*



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

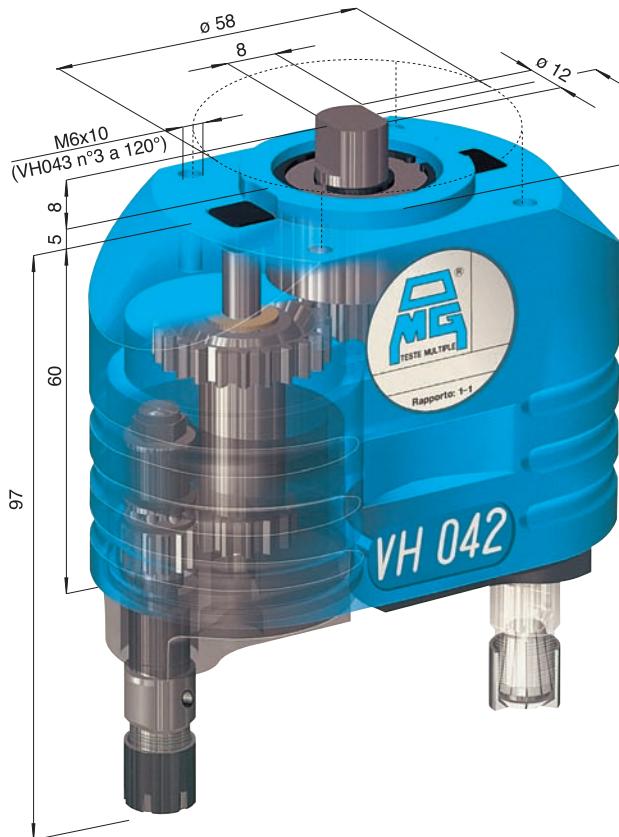
Accessori  
Accessories

Appendice tecnica  
Technical supplement

VH 04 .....	4-2
VH 06 .....	4-4
VH 08 .....	4-6
VH 10 .....	4-8
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VH 18 .....	4-12
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VH 181 .....	4-17
Regolazione utensili/Tool settings .....	4-18
Esecuzioni speciali/Special executions .....	4-19
Galleria fotografica/Photographic gallery .....	4-20
Accessori/Accessories .....	8-1
Dimensione mandrini/Spindle dimensions .....	9-3

# Teste multiple ad assi variabili Variable axis heads

**CAPACITA' FORATURA Ø 5**  
DRILLING CAPACITY Ø 5

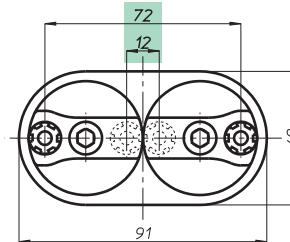


**VH**

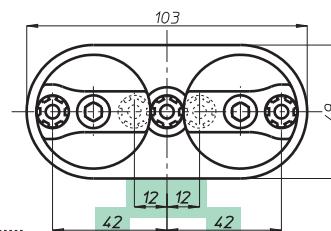
**modello 04**

Testa modello Head type	<b>VH 042</b>	<b>VH 043 L</b>	<b>VH 043</b>	<b>VH 044</b>	
Articolo Article	VH 042 P	VH 043 LP	VH 043 P	VH 044 P	
Attacco utensile Type of spindle	ER 8 - Ø max 5				
Articolo Article					
Attacco utensile Type of spindle					
N. mandrini Spindles nr.	2	3	3	4	
Campo di lavoro min. Centre distances min.	12	12 + 12	Ø 18,5	Ø 29,5	
Centre distances max. Centre distances max.	72	42 + 42	Ø 78,5	Ø 89,5	
Capacità foratura Drilling capacity	Acciaio Rm 500 N/mm <sup>2</sup> - Ø 4	Ghisa GG25 - Ø 5			
Maschiatura Tapping		M 3			
Rapporto Ratio		1 - 1			
Velocità RPM		4000			
Peso Weight	Kg.	0,95	1,05	1,4	1,9

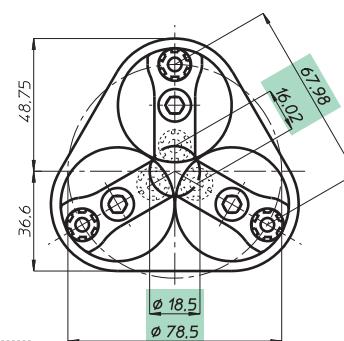
**VH 042**



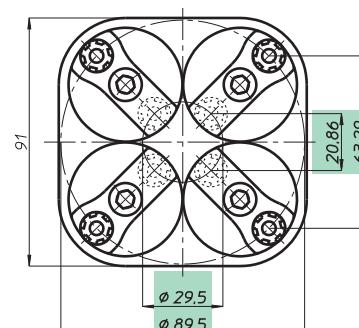
**VH 043 L**



**VH 043**



**VH 044**



# MANICOTTO DI COLLEGAMENTO - CONNECTION COLLAR

**NOTA: A.B.C.D. dati macchina**  
**NOTE: A.B.C.D. machine features**

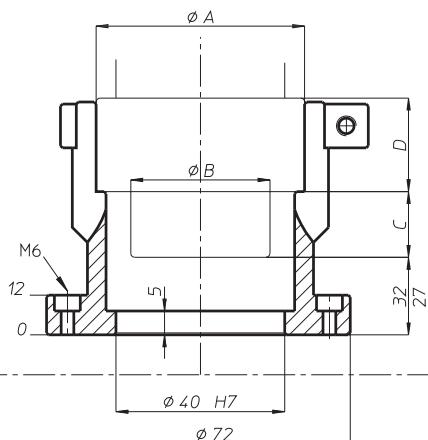
DIN 238	CODICE
B 10	0II277
B 12	0II278
B 16	0II279
B 18	0II280

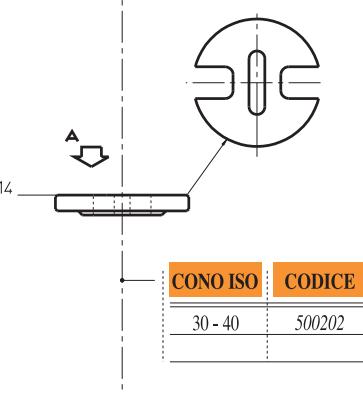
DIN 55058	CODICE
16	525405
20	525406
28	525407

DIN 228	CODICE
CM 1	0III15
CM 2	0III120
CM 3	0III125



Visio da A  
View from A



Teste multiple ad assi variabili o Variable axis heads

TA

MO

HT

VH

TSI/TSX

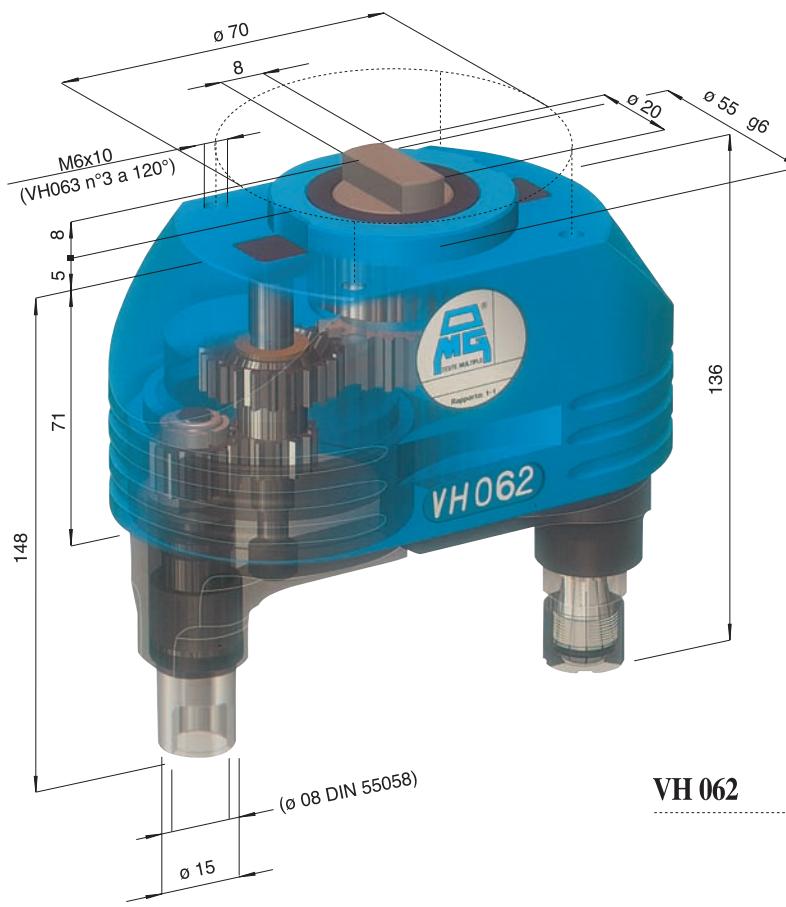
MT-TC-TC3

Accessori  
Accessories

Appendice tecnica  
Technical supplement

# Teste multiple ad assi variabili Variable axis heads

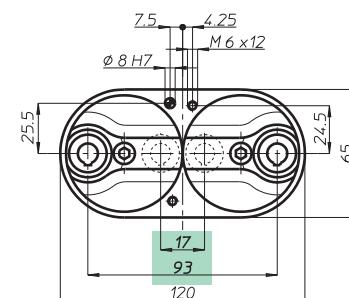
**CAPACITA' FORATURA Ø 7**  
**DRILLING CAPACITY Ø 7**



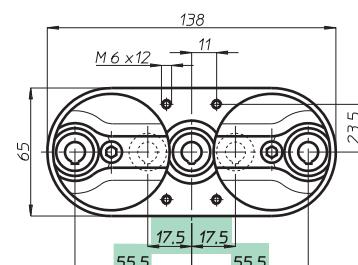
Testa modello Head type	VH 062	VH 063 L	VH 063	VH 064	
Articolo Article	VH 062 P	VH 063 LP	VH 063 P	VH 064 P	
Attacco utensile Type of spindle	ER 11 - Ø max 7				
Articolo Article	VH 062 D	VH 063 LD	VH 063 D	VH 064 D	
Attacco utensile Type of spindle	DIN 55058 - Ø 8				
N. mandrini Spindles nr.	2	3	3	4	
Campo di lavoro min. Centre distances max.	17	17,5 + 17,5	Ø 27	Ø 41	
Capacità foratura Drilling capacity	Acciaio Rm 500 N/mm <sup>2</sup> - Ø 6	Ghisa GG25 - Ø 7			
Maschiatura Tapping	M 5				
Rapporto Ratio	1 - 1				
Velocità RPM	4000				
Peso Weight	Kg.	1,65	1,95	2,3	3,1

**VH**

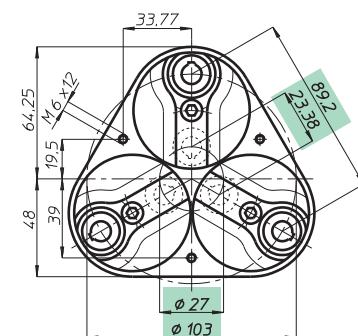
**modello 06**



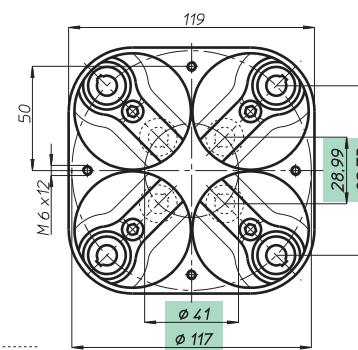
VH 062



VH 063 L



VH 063



VH 064

## MANICOTTO DI COLLEGAMENTO - CONNECTION COLLAR

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

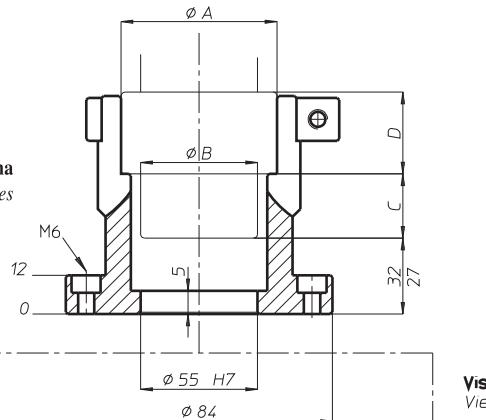
  

DIN 55058	CODICE
16	525405
20	525406
28	525407
36	525408

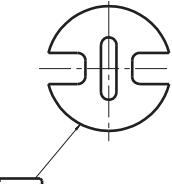
  

DIN 228	CODICE
CM 1	011115
CM 2	011120
CM 3	011125
CM 4	011130
CM 5	011135

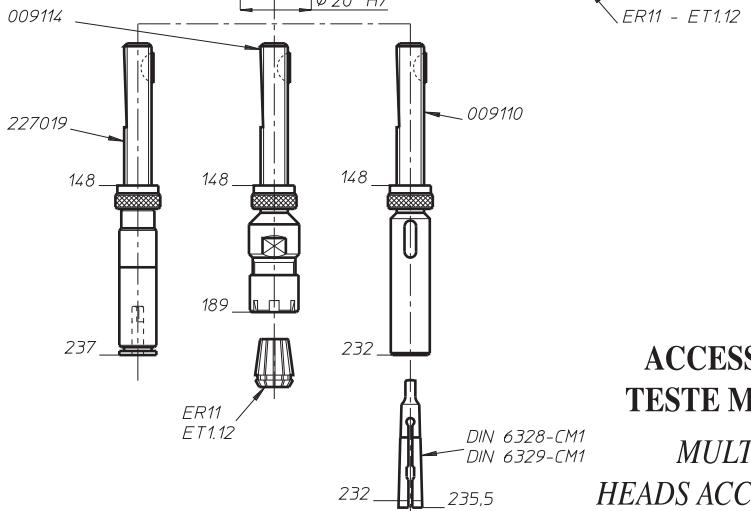
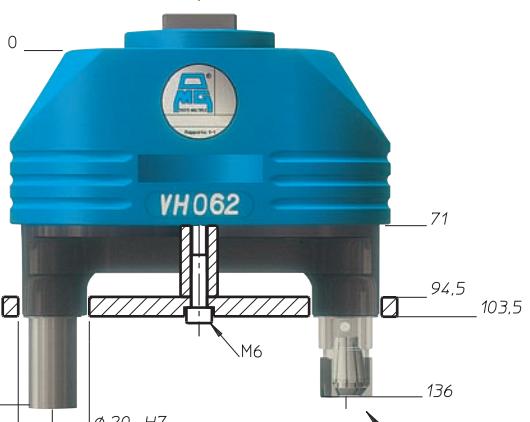
NOTA: A.B.C.D. dati macchina  
NOTE: A.B.C.D. machine features



Viso da A  
View from A



CONO ISO	CODICE
30 - 40	500202



ACCESSORI PER  
TESTE MULTIPLE  
MULTISPINDLE  
HEADS ACCESSORIES

Teste multiple ad assi variabili Variable axis heads

TA

MO

HT

VH

TSI/TSX

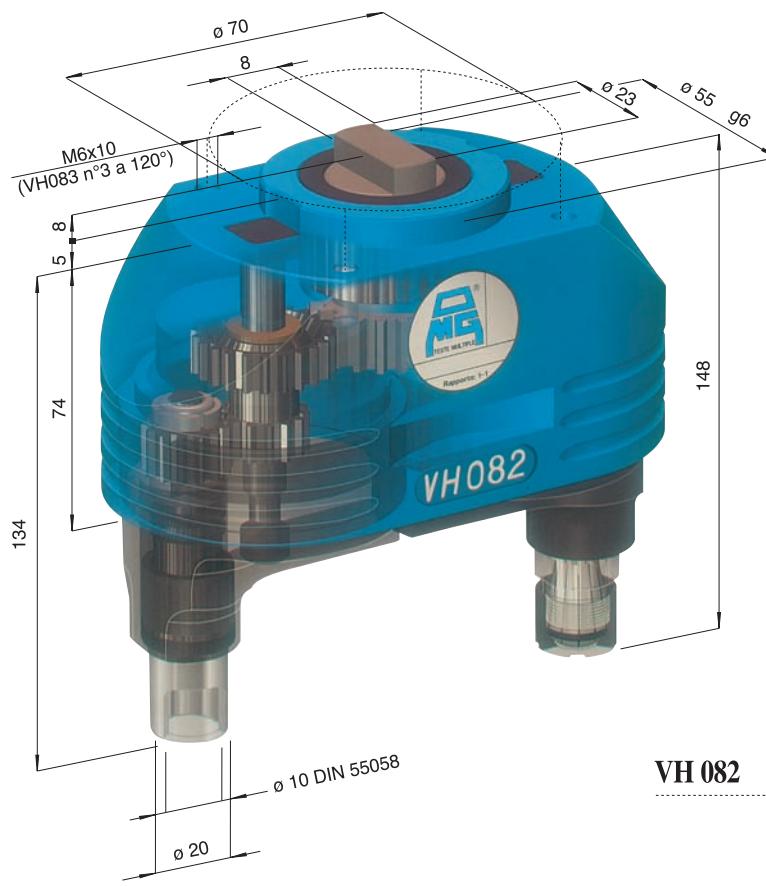
MT-TC-TC3

Accessori  
Accessories

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# Teste multiple ad assi variabili Variable axis heads

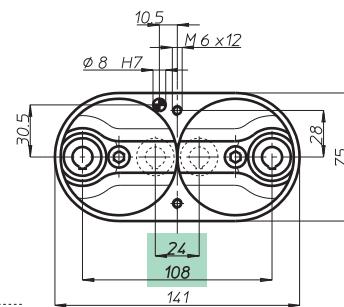
CAPACITA' FORATURA DRILLING CAPACITY **ø10**



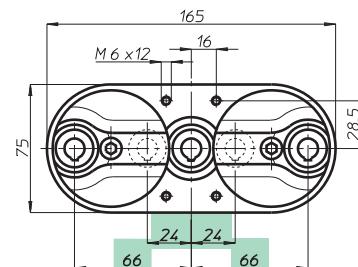
Testa modello Head type	<b>VH 082</b>	<b>VH 083 L</b>	<b>VH 083</b>	<b>VH 084</b>	
Articolo Article	VH 082 P	VH 083 LP	VH 083 P	VH 084 P	
Attacco utensile Type of spindle	ER 16 - ø max 10				
Articolo Article	VH 082 D	VH 083 LD	VH 083 D	VH 084 D	
Attacco utensile Type of spindle	DIN 55058 - ø 10				
N. mandrini Spindles nr.	2	3	3	4	
Campo di lavoro min. Centre distances min.	24	24 + 24	ø 36	ø 53,5	
Centre distances max. Centre distances max.	108	66 + 66	ø 120	ø 137,5	
Capacità foratura Drilling capacity	Acciaio Rm 500 N/mm <sup>2</sup> - ø 8	Ghisa GG25 - ø 10			
Maschiatura Tapping	M 6				
Rapporto Ratio	1 - 1				
Velocità RPM	4000				
Peso Weight	Kg.	2,2	2,9	3,4	4,6

**VH**

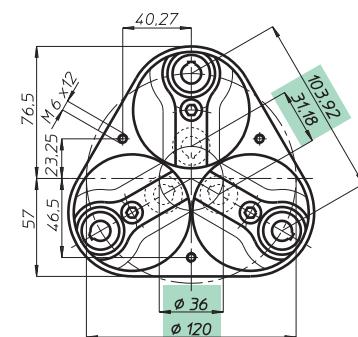
**modello 08**



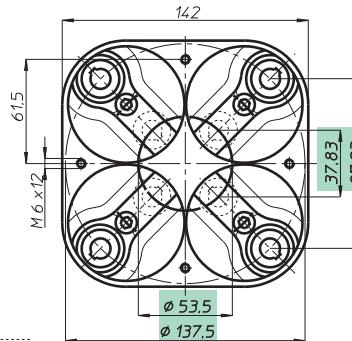
**VH 082**



**VH 083 L**

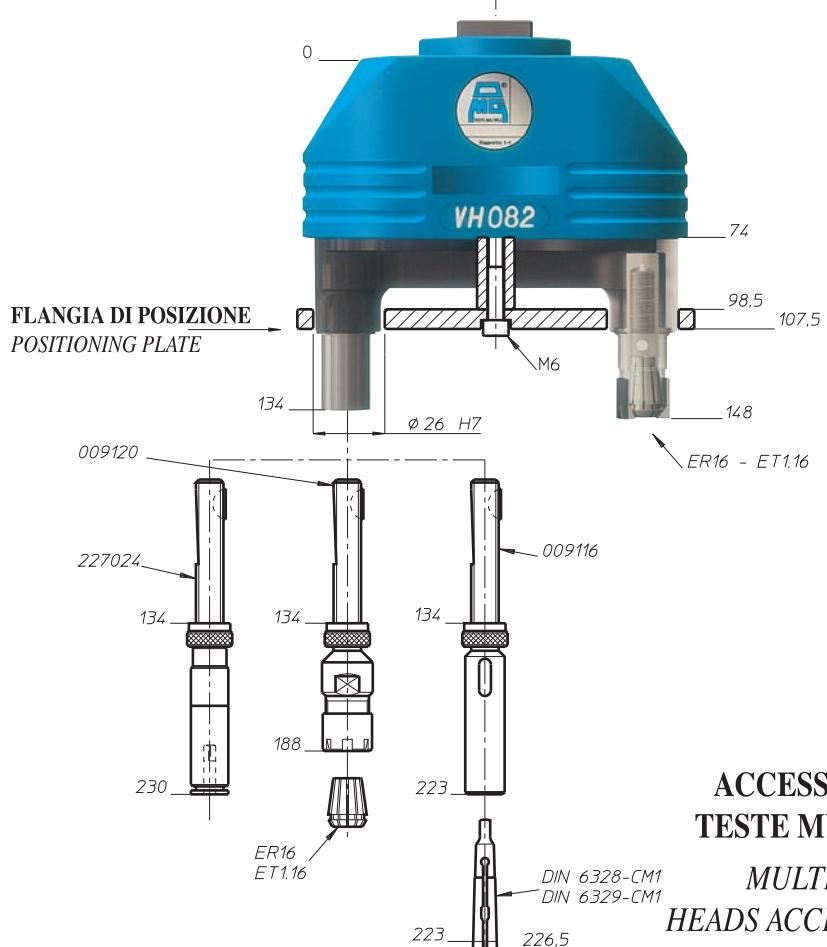
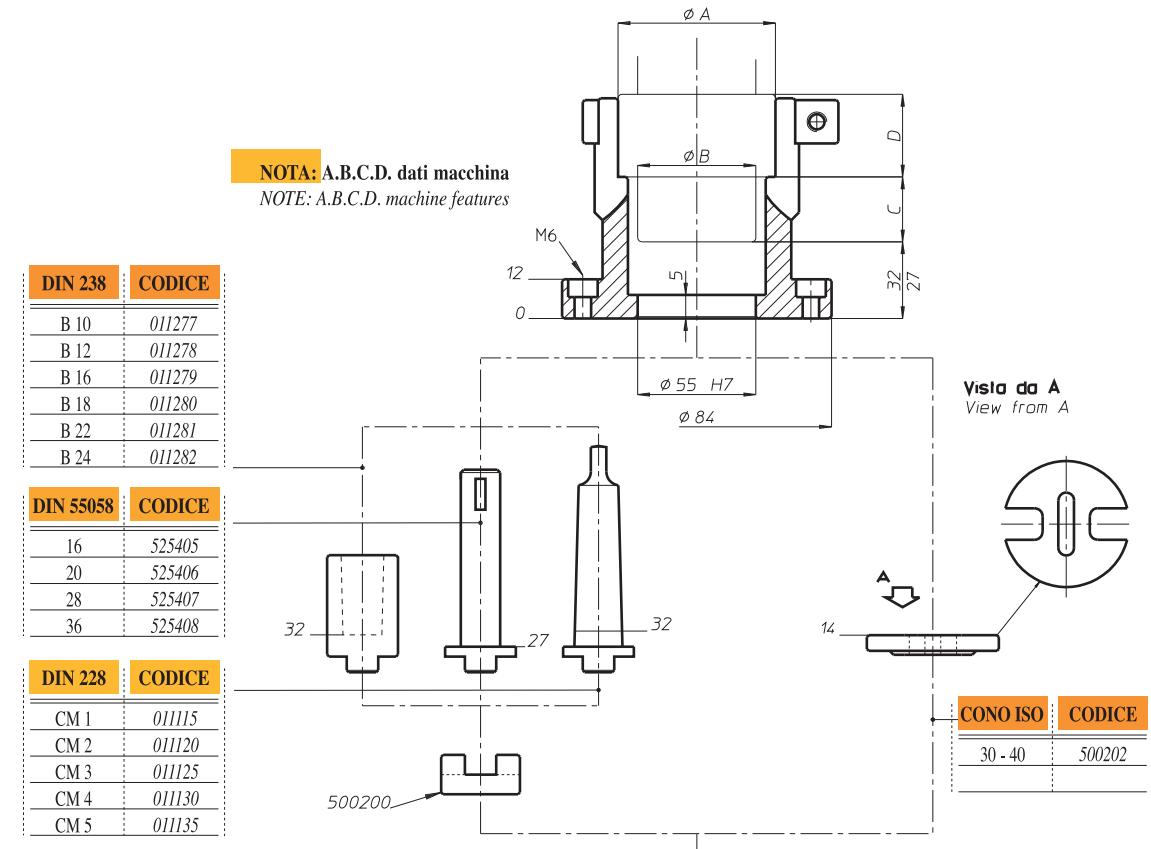


**VH 083**



**VH 084**

## MANICOTTO DI COLLEGAMENTO - CONNECTION COLLAR



TA

MO

HT

VH

TSI/TSX

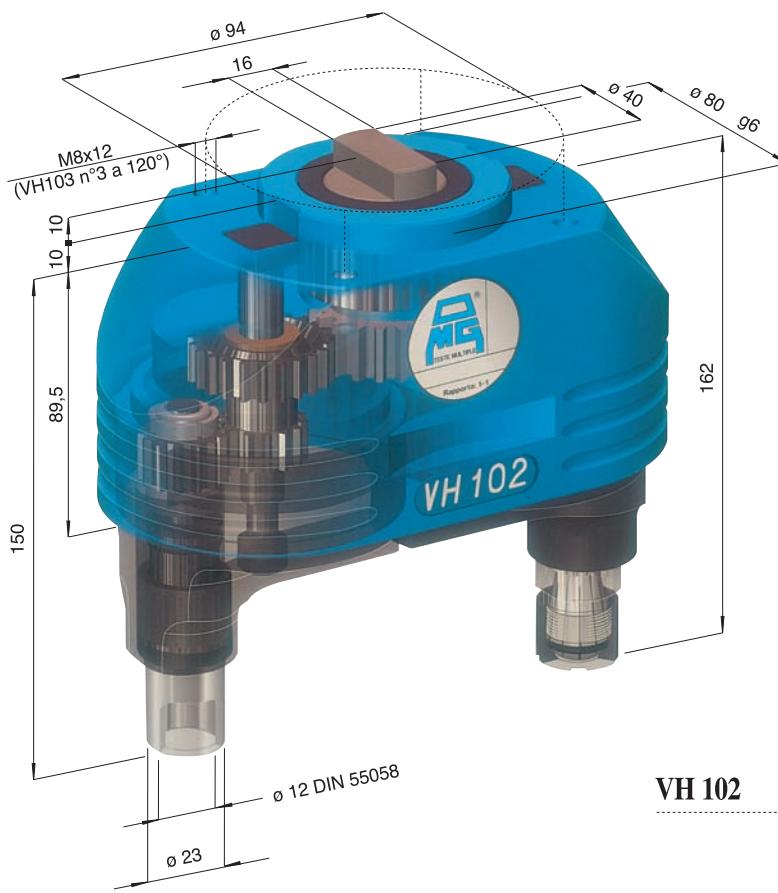
MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

Teste multiple ad assi variabili o Variable axis heads

# Teste multiple ad assi variabili Variable axis heads

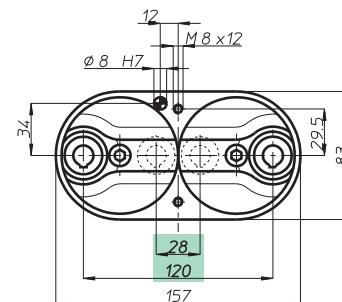
**CAPACITA' FORATURA Ø12**  
**DRILLING CAPACITY Ø12**



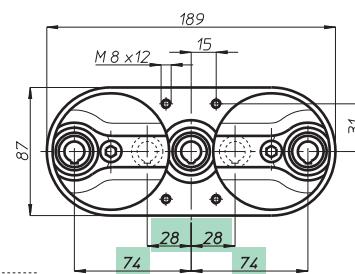
Testa modello Head type	VH 102	VH 103 L	VH 103	VH 104
Articolo Article	VH 102 P	VH 103 LP	VH 103 P	VH 104 P
Attacco utensile Type of spindle	ER 16 - Ø max 10			
Articolo Article	VH 102 D	VH 103 LD	VH 103 D	VH 104 D
Attacco utensile Type of spindle	DIN 55058 - Ø 12			
N. mandrini Spindles nr.	2	3	3	4
Campo di lavoro min.	28	28 + 28	Ø 40	Ø 60
Centre distances max.	120	74 + 74	Ø 132	Ø 152
Capacità foratura	Acciaio Rm 500 N/mm <sup>2</sup> - Ø 10			
Drilling capacity	Ghisa GG25 - Ø 12			
Maschiatura Tapping	M 8			
Rapporto Ratio	1 - 1			
Velocità RPM	3500			
Peso Weight	Kg.	3,5	4,9	4,9
				7,2

**VH**

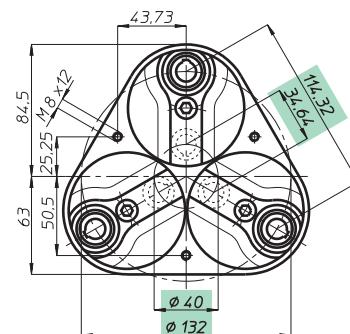
**modello 10**



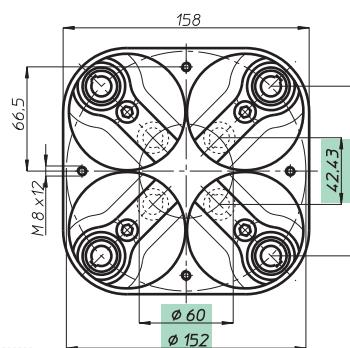
VH 102



VH 103 L

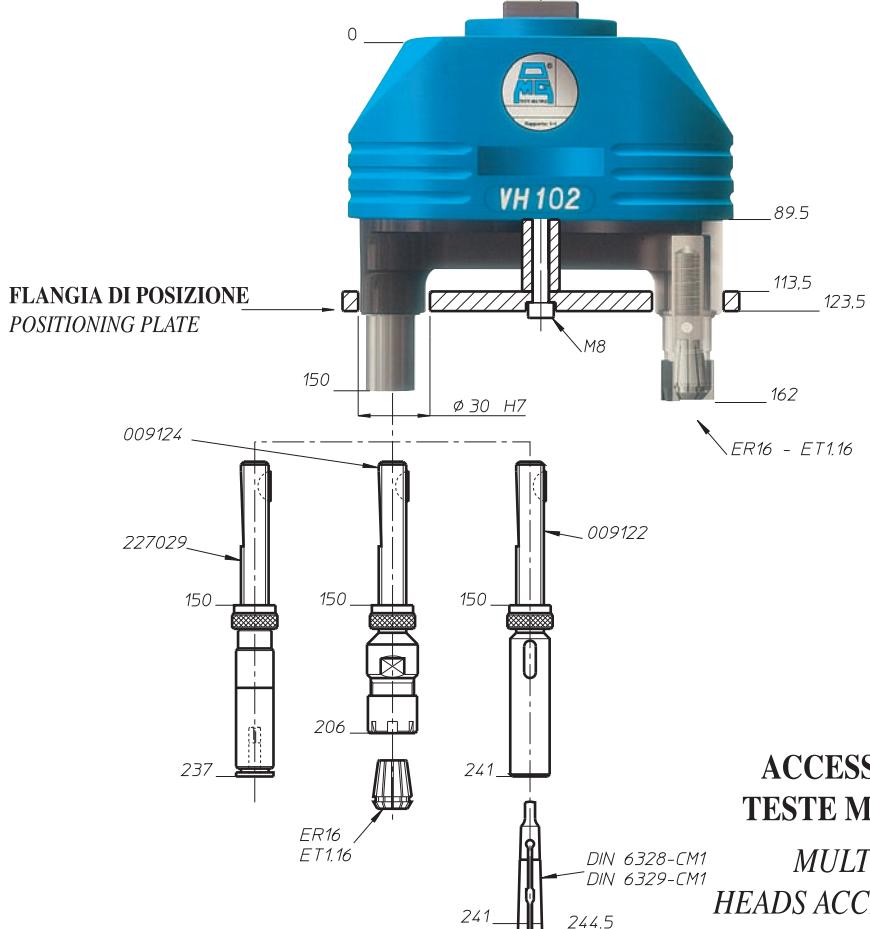
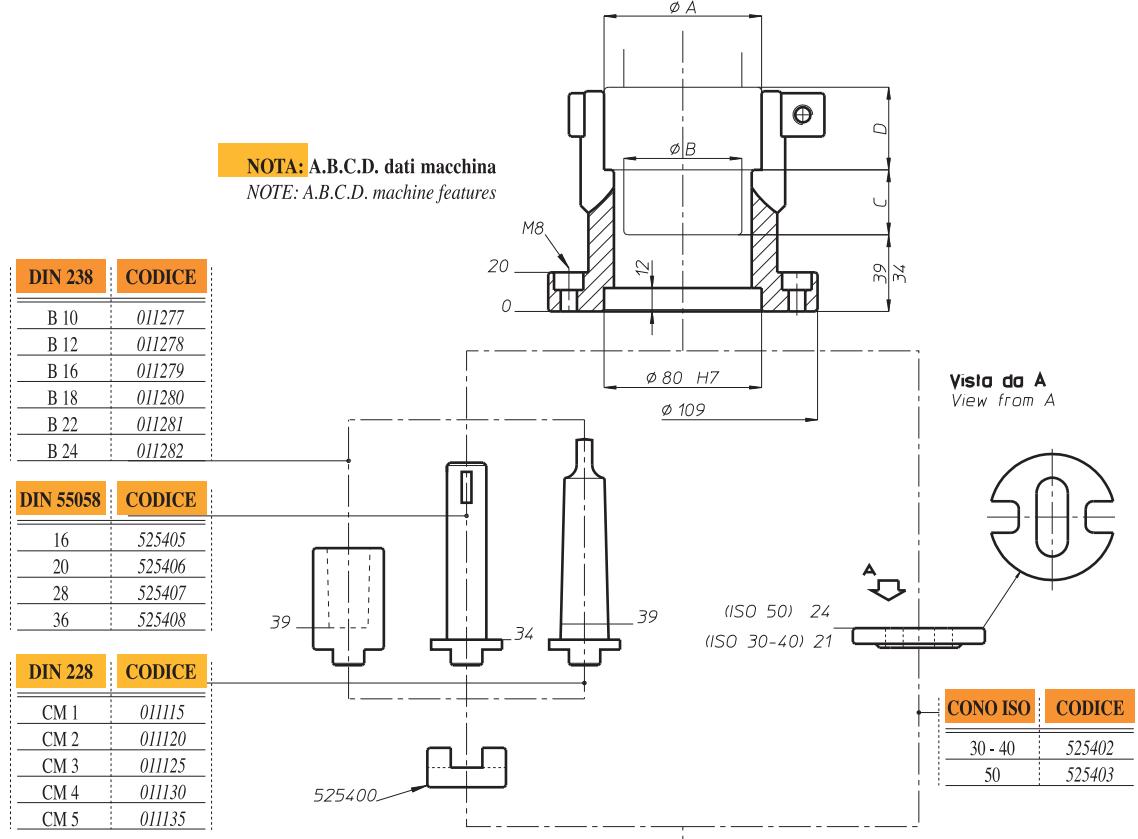


VH 103



VH 104

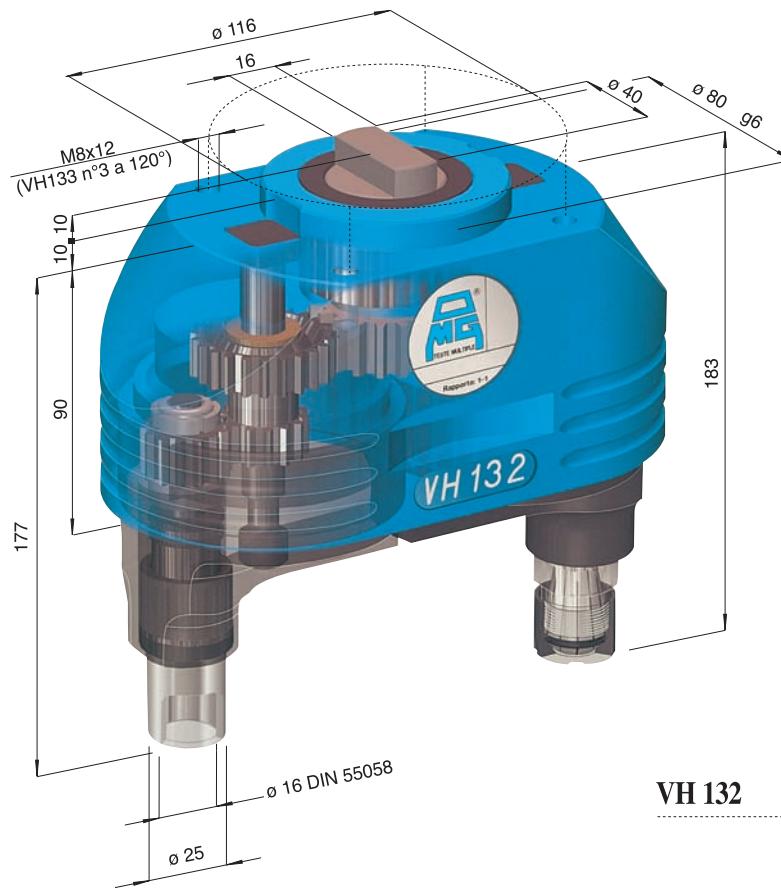
## MANICOTTO DI COLLEGAMENTO - CONNECTION COLLAR



Teste multiple ad assi variabili o Variable axis heads

# Teste multiple ad assi variabili Variable axis heads

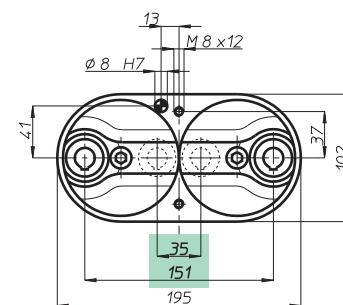
CAPACITA' FORATURA DRILLING CAPACITY **ø14**



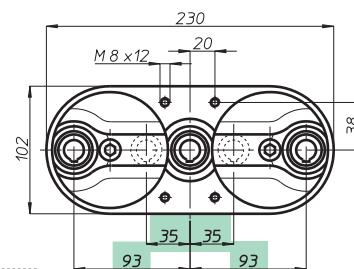
Testa modello Head type	<b>VH 132</b>	<b>VH 133 L</b>	<b>VH 133</b>	<b>VH 134</b>
Articolo Article	VH 132 P	VH 133 LP	VH 133 P	VH 134 P
Attacco utensile Type of spindle	ER 20 - ø max 13			
Articolo Article	VH 132 D	VH 133 LD	VH 133 D	VH 134 D
Attacco utensile Type of spindle	DIN 55058 - ø 16			
N. mandrini Spindles nr.	2	3	3	4
Campo di lavoro min. Centre distances min.	35	35 + 35	ø 51	ø 75
Centre distances max. Centre distances max.	151	93 + 93	ø 167	ø 191
Capacità foratura Drilling capacity	Acciaio Rm 500 N/mm <sup>2</sup> - <b>ø 13</b>			
Maschiatura Tapping	Ghisa GG25 - <b>ø 14</b>			
Rapporto Ratio	M 12			
Velocità RPM	3000			
Peso Weight	Kg. 5,3	7,2	7	10,8

**VH**

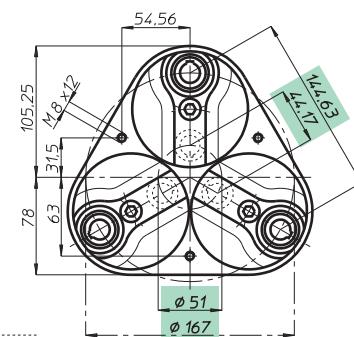
**modello 13**



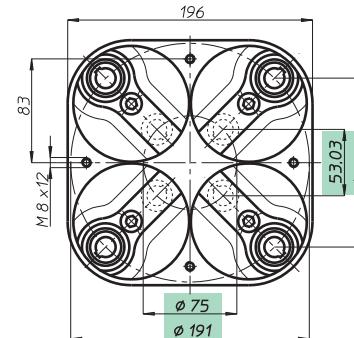
VH 132



VH 133 L



VH 133

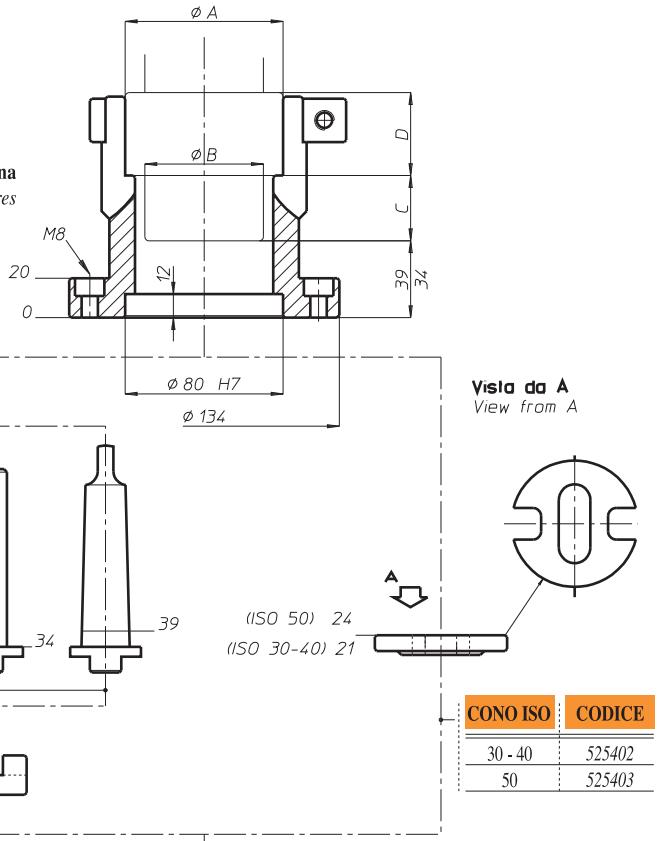


VH 134

# MANICOTTO DI COLLEGAMENTO - CONNECTION COLLAR

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

NOTA: A.B.C.D. dati macchina  
NOTE: A.B.C.D. machine features

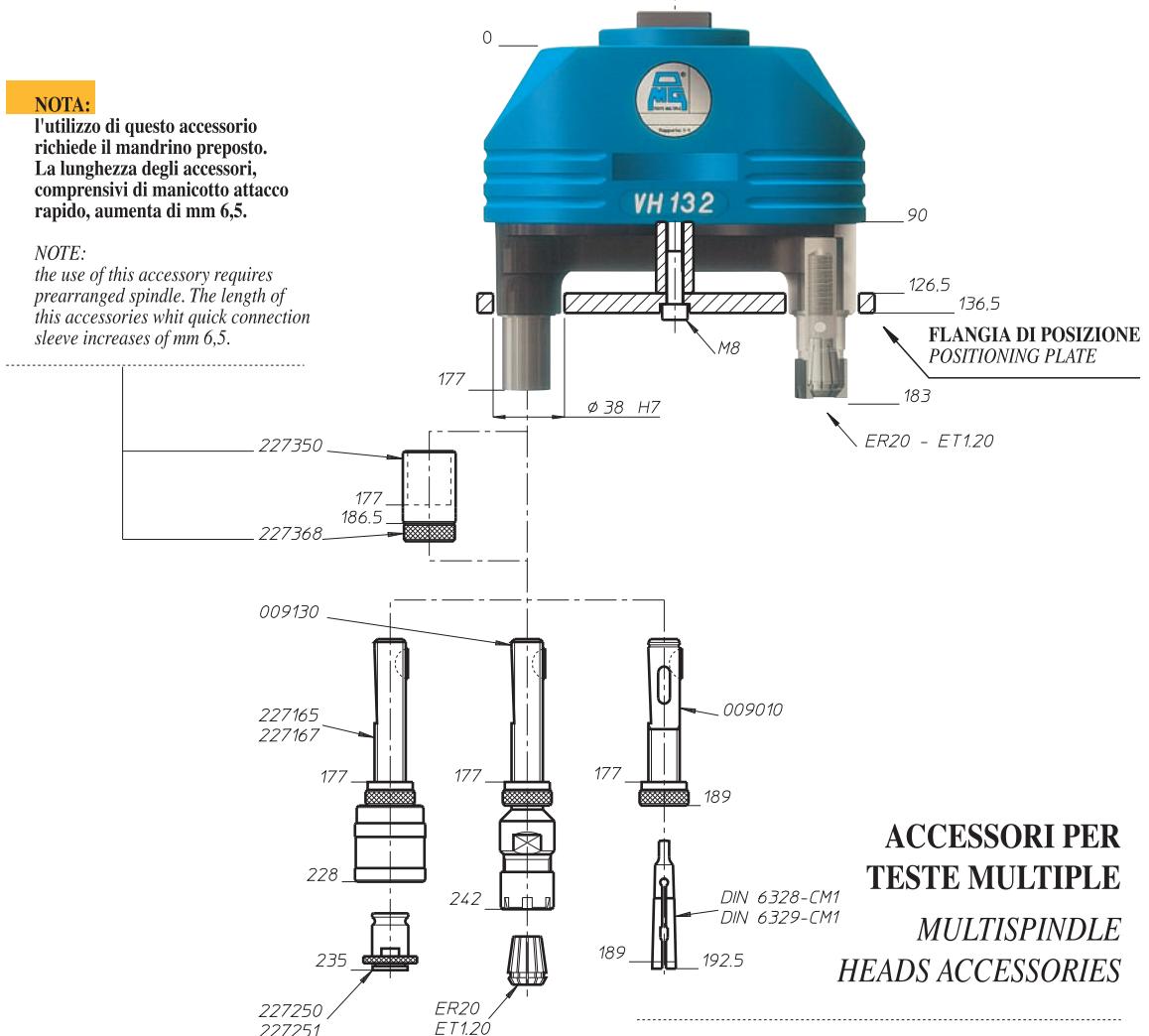


## NOTA:

l'utilizzo di questo accessorio richiede il mandrino preposto. La lunghezza degli accessori, comprensivi di manicotto attacco rapido, aumenta di mm 6,5.

## NOTE:

the use of this accessory requires prearranged spindle. The length of this accessories with quick connection sleeve increases of mm 6,5.



**ACCESSORI PER  
TESTE MULTIPLE**  
**MULTISPINDLE  
HEADS ACCESSORIES**

Teste multiple ad assi variabili o Variable axis heads

TA

MO

HT

VH

TSI/TSX

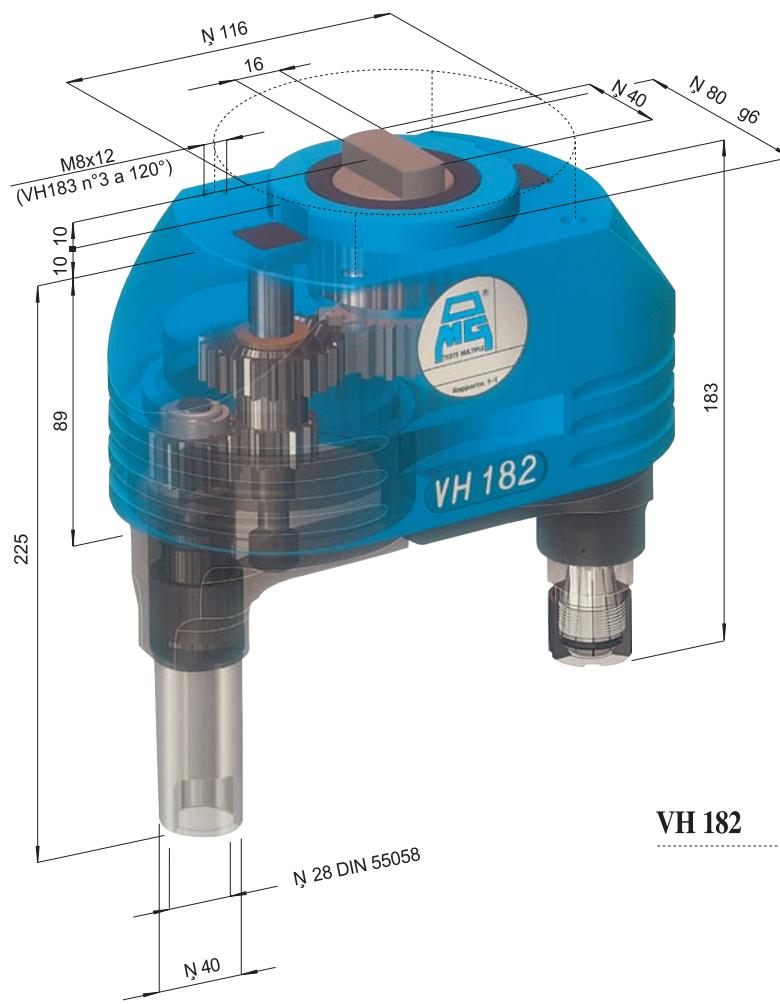
MT-TC-TC3

Accessori  
Accessories

Appendice tecnica  
Technical supplement

# Teste multiple ad assi variabili Variable axis heads

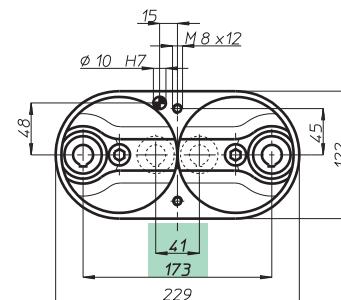
CAPACITA' FORATURA DRILLING CAPACITY **Ø20**



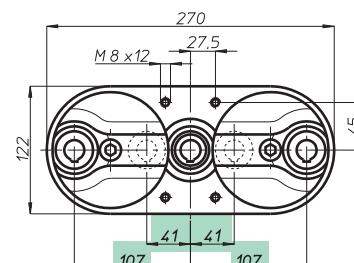
Testa modello / Head type	<b>VH 182</b>	<b>VH 183 L</b>	<b>VH 183</b>	<b>VH 184</b>	
Articolo / Article	VH 182 P	VH 183L P	VH 183 P	VH 184 P	
Attacco utensile / Type of spindle	ER 25 - Ø max 16				
Articolo / Article	VH 182 D	VH 183 LD	VH 183 D	VH 184 D	
Attacco utensile / Type of spindle	DIN 55058 - Ø 28				
N. mandrini / Spindles nr.	2	3	3	4	
Campo di lavoro min. / Centre distances min.	41	41 + 41	Ø 59	Ø 86	
Centre distances max. / Centre distances max.	173	107 + 107	Ø 191	Ø 218	
Capacità foratura / Drilling capacity	Acciaio Rm 500 N/mm <sup>2</sup> - Ø 18				
Maschiatura / Tapping	Ghisa GG25 - Ø 20				
Rapporto / Ratio	M 14				
Velocità / RPM	1 - 1				
Peso / Weight	Kg.	8,3	10,75	12	15,75

**VH**

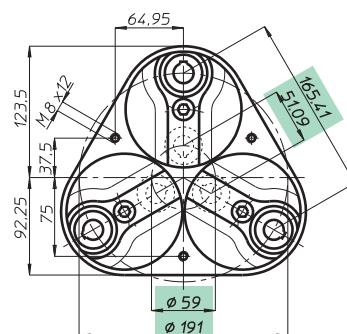
**modello 18**



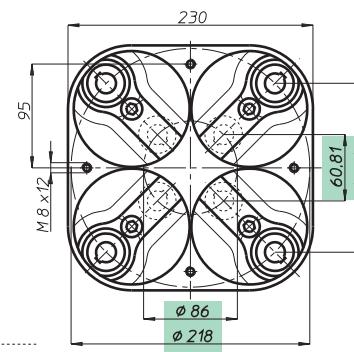
**VH 182**



**VH 183 L**



**VH 183**



**VH 184**

# Teste multiple ad assi variabili o Variable axis heads

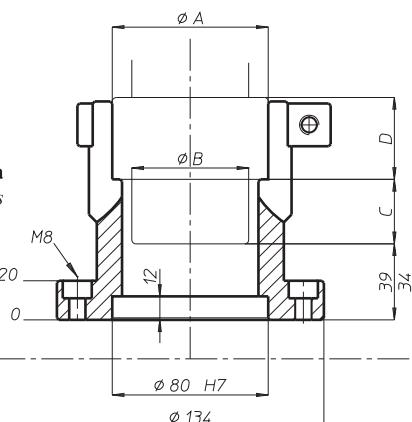
## MANICOTTO DI COLLEGAMENTO - CONNECTION COLLAR

**NOTA:** A.B.C.D. dati macchina  
**NOTE:** A.B.C.D. machine features

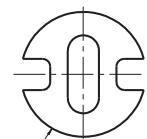
DIN 238	CODICE
B 16	011279
B 18	011280
B 22	011281
B 24	011282

DIN 55058	CODICE
16	525405
20	525406
28	525407
36	525408

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



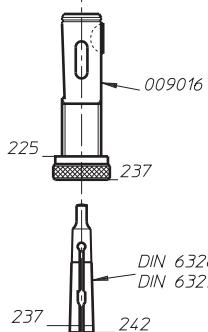
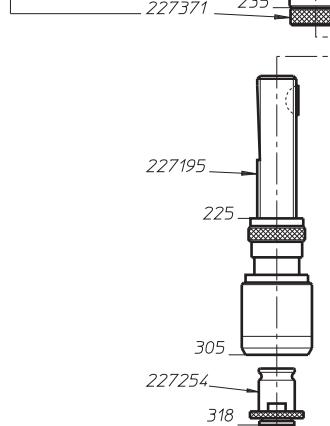
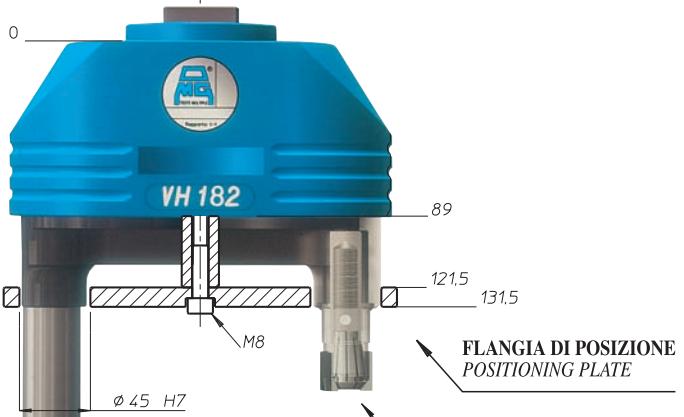
Vista da A  
View from A



CONO ISO	CODICE
30 - 40	525402
50	525403

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

**NOTE:**  
The length of this accessories with quick connection sleeve increases of mm 10.



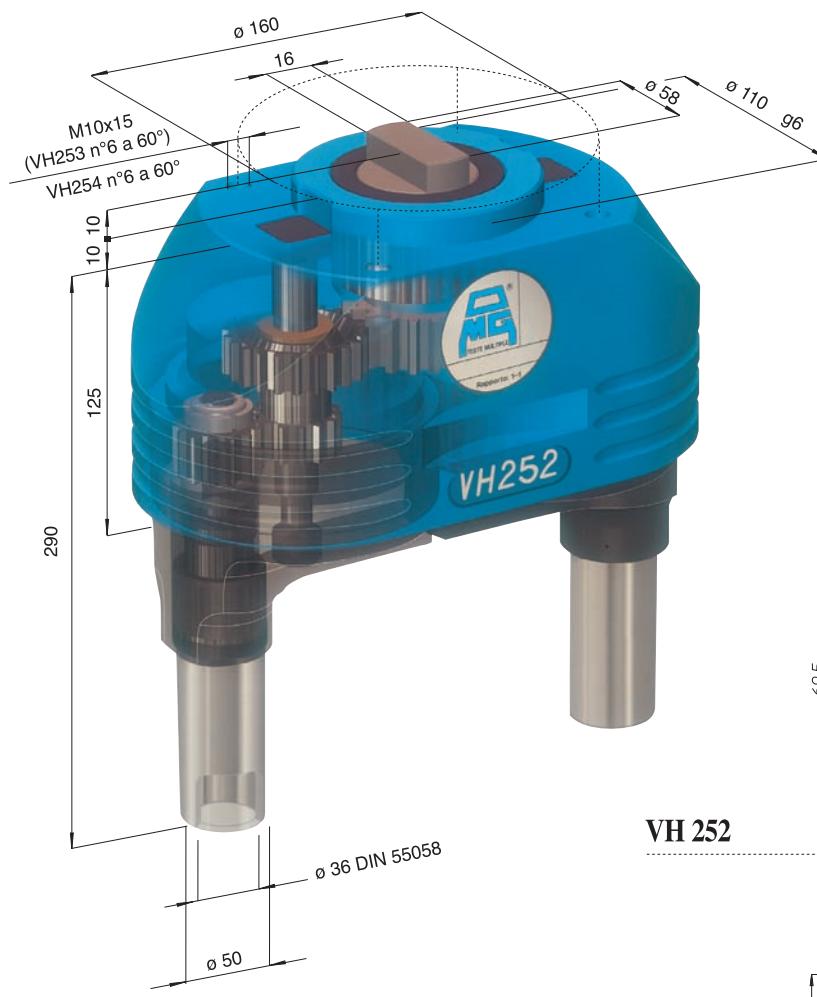
## ACCESSORI PER TESTE MULTIPLE MULTISPINDLE HEADS ACCESSORIES

# Teste multiple ad assi variabili Variable axis heads

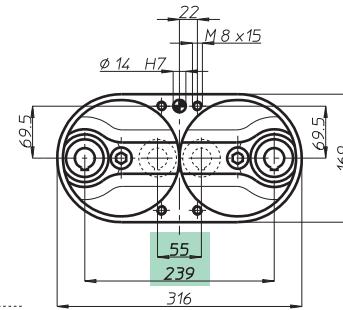
CAPACITA' FORATURA DRILLING CAPACITY **ø28**

**VH**

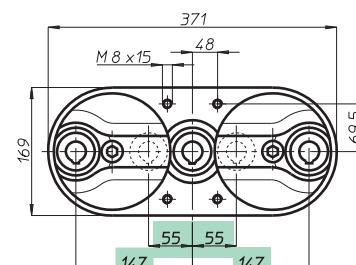
**modello 25**



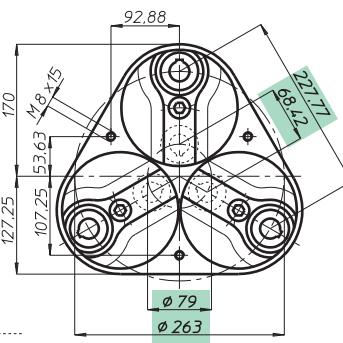
**VH 252**



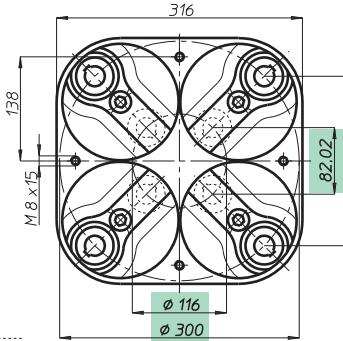
**VH 253 L**



**VH 253**



**VH 254**



Testa modello Head type	<b>VH 252</b>	<b>VH 253 L</b>	<b>VH 253</b>	<b>VH 254</b>
Articolo Article				
Attacco utensile Type of spindle				
Articolo Article	VH 252 D	VH 253 LD	VH 253 D	VH 254 D
Attacco utensile Type of spindle	DIN 55058 - ø 36			
N. mandrini Spindles nr.	2	3	3	4
Campo di lavoro min. Centre distances min.	55	55 + 55	ø 79	ø 116
Centre distances max. Centre distances max.	239	147 + 147	ø 263	ø 300
Capacità foratura Drilling capacity	Acciaio Rm 500 N/mm <sup>2</sup> - ø 25 Ghisa GG25 - ø 28			
Maschiatura Tapping	M 20			
Rapporto Ratio	1 - 1			
Velocità RPM RPM	2000			
Peso Weight	Kg.	27	32	39,5
				52

# Teste multiple ad assi variabili o Variable axis heads

## MANICOTTO DI COLLEGAMENTO - CONNECTION COLLAR

**NOTA:** A.B.C.D. dati macchina  
**NOTE:** A.B.C.D. machine features

### DIN 238 CODICE

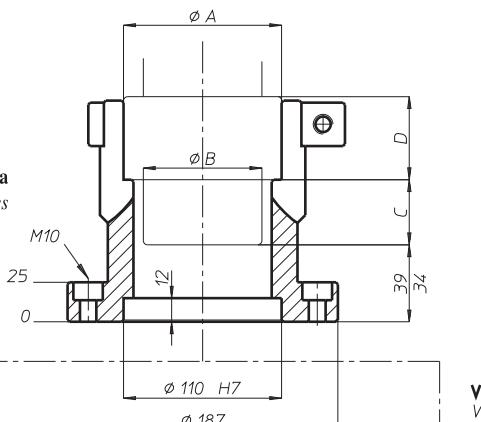
B 18	011280
B 22	011281
B 24	011282

### DIN 55058 CODICE

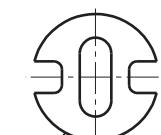
16	525405
20	525406
28	525407
36	525408

### DIN 228 CODICE

CM 3	011125
CM 4	011130
CM 5	011135



Vista da A  
 View from A



CONO ISO CODICE

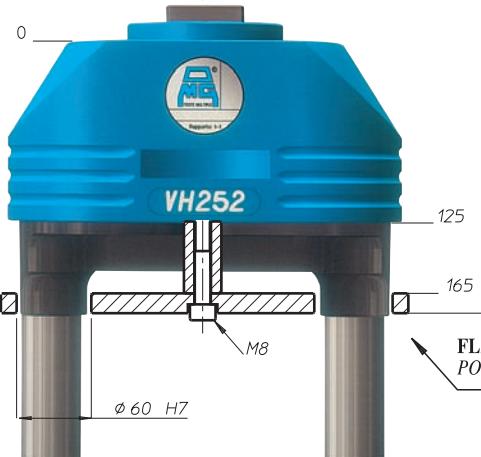
50 525403

### NOTA:

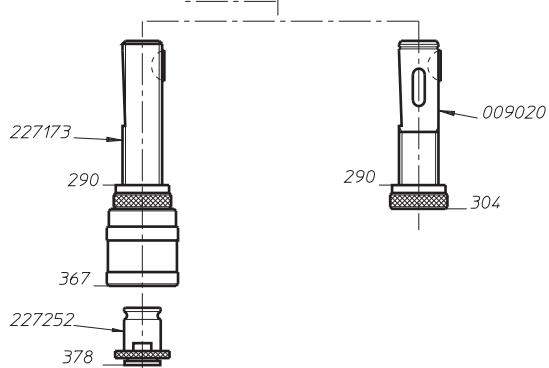
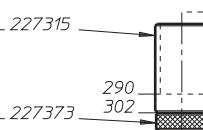
La lunghezza degli accessori, comprensivi di manicotto attacco rapido, aumenta di mm 12.

### NOTE:

The length of this accessories with quick connection sleeve increases of mm 12.



FLANGIA DI POSIZIONE  
 POSITIONING PLATE



**ACCESSORI PER  
 TESTE MULTIPLE**  
**MULTISPINDLE  
 HEADS ACCESSORIES**

# Teste multiple ad assi variabili o Variable axis heads

**CAPACITA' FORATURA Ø12**  
DRILLING CAPACITY Ø12



**VH**

**modello 101**

**Testa modello**  
Head type

**VH  
101**

**Articolo**  
Article

**VH 101 W14**

**Attacco utensile**  
Type of spindle

**Ø 14**

**Articolo**  
Article

**VH 101 P**

**Attacco utensile**  
Type of spindle

**ER16 - Ø max 10**

**N. mandrini**  
Spindles nr.

**1**

**Campo di lavoro min.**  
Centre distances max.

**0**

**Campo di lavoro max.**  
Centre distances max.

**60**

**D**

**143**

**Capacità foratura**  
Drilling capacity

**Acciaio Rm 500 N/mm<sup>2</sup> - Ø 10**

**Maschiatura**  
Tapping

**Ghisa GG25 - Ø 12**

**Rapporto**  
Ratio

**M 10**

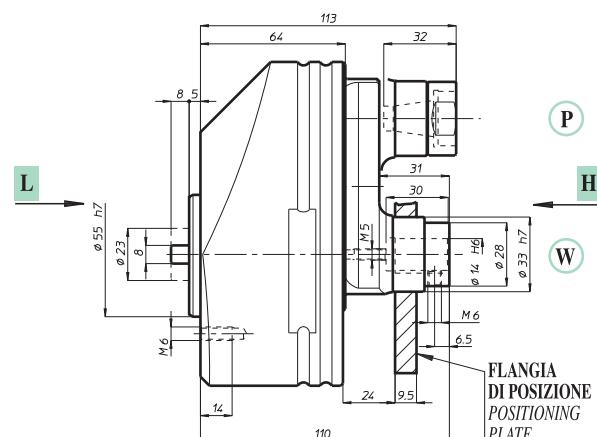
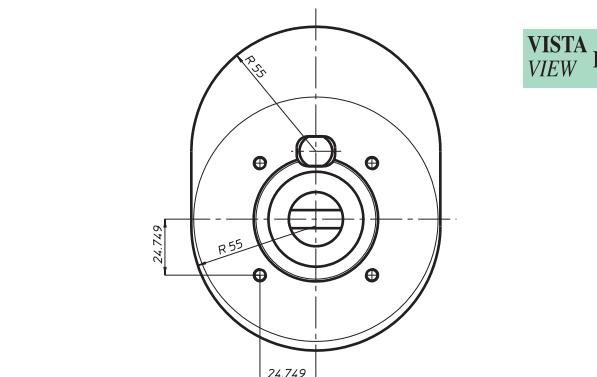
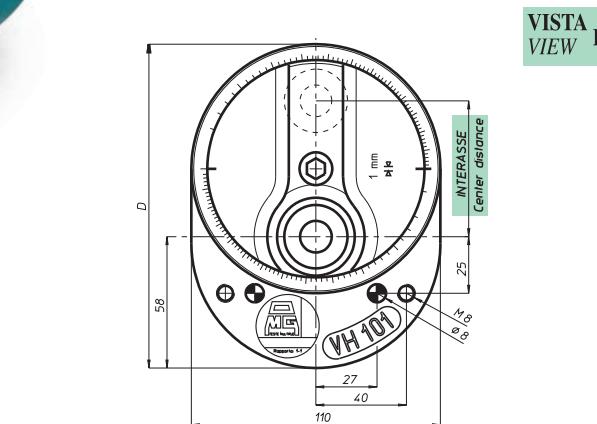
**Velocità RPM**

**3000**

**Peso**  
Weight

**Kg.**

<b>VH 101</b>	
<b>Articolo</b> Article	<b>VH 101 W14</b>
<b>Attacco utensile</b> Type of spindle	<b>Ø 14</b>
<b>Articolo</b> Article	<b>VH 101 P</b>
<b>Attacco utensile</b> Type of spindle	<b>ER16 - Ø max 10</b>
<b>N. mandrini</b> Spindles nr.	<b>1</b>
<b>Campo di lavoro min.</b> Centre distances max.	<b>0</b>
<b>Campo di lavoro max.</b> Centre distances max.	<b>60</b>
<b>D</b>	<b>143</b>
<b>Capacità foratura</b> Drilling capacity	<b>Acciaio Rm 500 N/mm<sup>2</sup> - Ø 10</b>
<b>Maschiatura</b> Tapping	<b>Ghisa GG25 - Ø 12</b>
<b>Rapporto</b> Ratio	<b>M 10</b>
<b>Velocità RPM</b>	<b>3000</b>
<b>Peso</b> Weight	<b>Kg.</b>



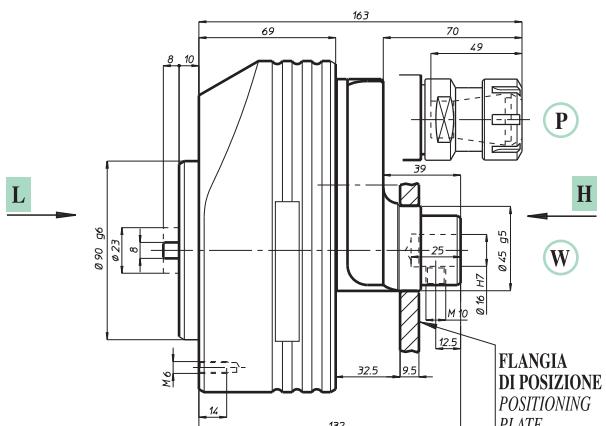
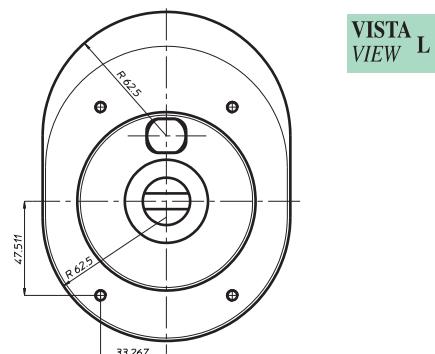
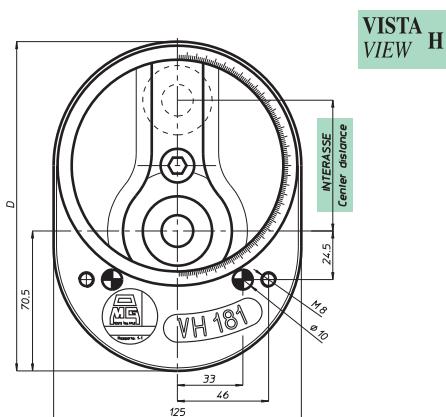
**CAPACITA' FORATURA  
DRILLING CAPACITY Ø20**

**VH**

**modello 181**



	<b>VH 181</b>	<b>VH 181-122</b>
Testa modello Head type		
Articolo Article	VH 181 W16	VH 181-122-W16
Attacco utensile Type of spindle	ø 16	
Articolo Article	VH 181 P	VH 181-122-P
Attacco utensile Type of spindle	ER25 - ø max 16	
N. mandrini Spindles nr.	1	1
Campo di lavoro min. Centre distances min.	0	56
Campo di lavoro max. Centre distances max.	66	122
D	166	222
Capacità foratura Drilling capacity	Acciaio Rm 500 N/mm <sup>2</sup> - ø 18 Ghisa GG25 - ø 20	
Maschiatura Tapping	M 14	
Rapporto Ratio	1 - 1	
Velocità RPM	2500	
Peso Weight	4,1	6,4
Kg.		



**Teste multiple ad assi Variabili o Variable axis heads**

**TA**

**MO**

**HT**

**VH**

**TSI/TSX**

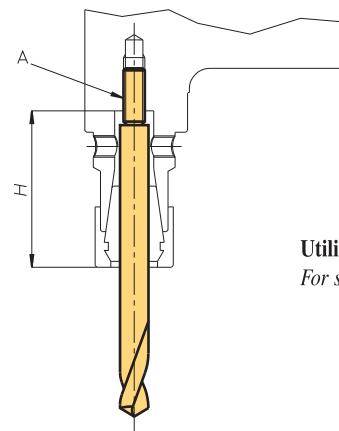
**MT-TC-TC3**

**Accessori  
Accessories**

**Appendice tecnica  
Technical supplement**

# Teste multiple ad assi variabili o Variable axis heads

## FORATURA CON PINZE ER DRILLING WITH ER COLLETS

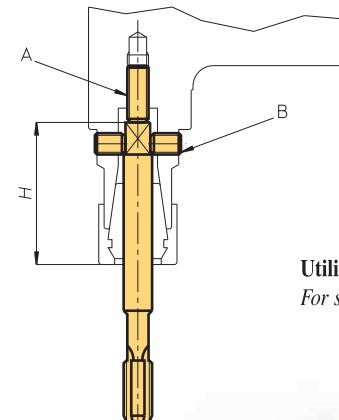


Testa Head	VH 04	VH 06	VH 08	VH 10	VH 13	VH 18
H max	23	27	44	44	52	49

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

Utilizzare la vite A sinistra per registrare l'altezza utensile  
For setting the tool lenght, use the left screw A

## MASCHIATURA CON PINZE ER TAPPING WITH ER COLLETS



Testa Head	VH 04	VH 06	VH 08	VH 10	VH 13	VH 18
H	23	27	38	38	44	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

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



## esecuzioni speciali

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

Teste multiple ad assi variabili o Teste multiple ad assi fissi heads

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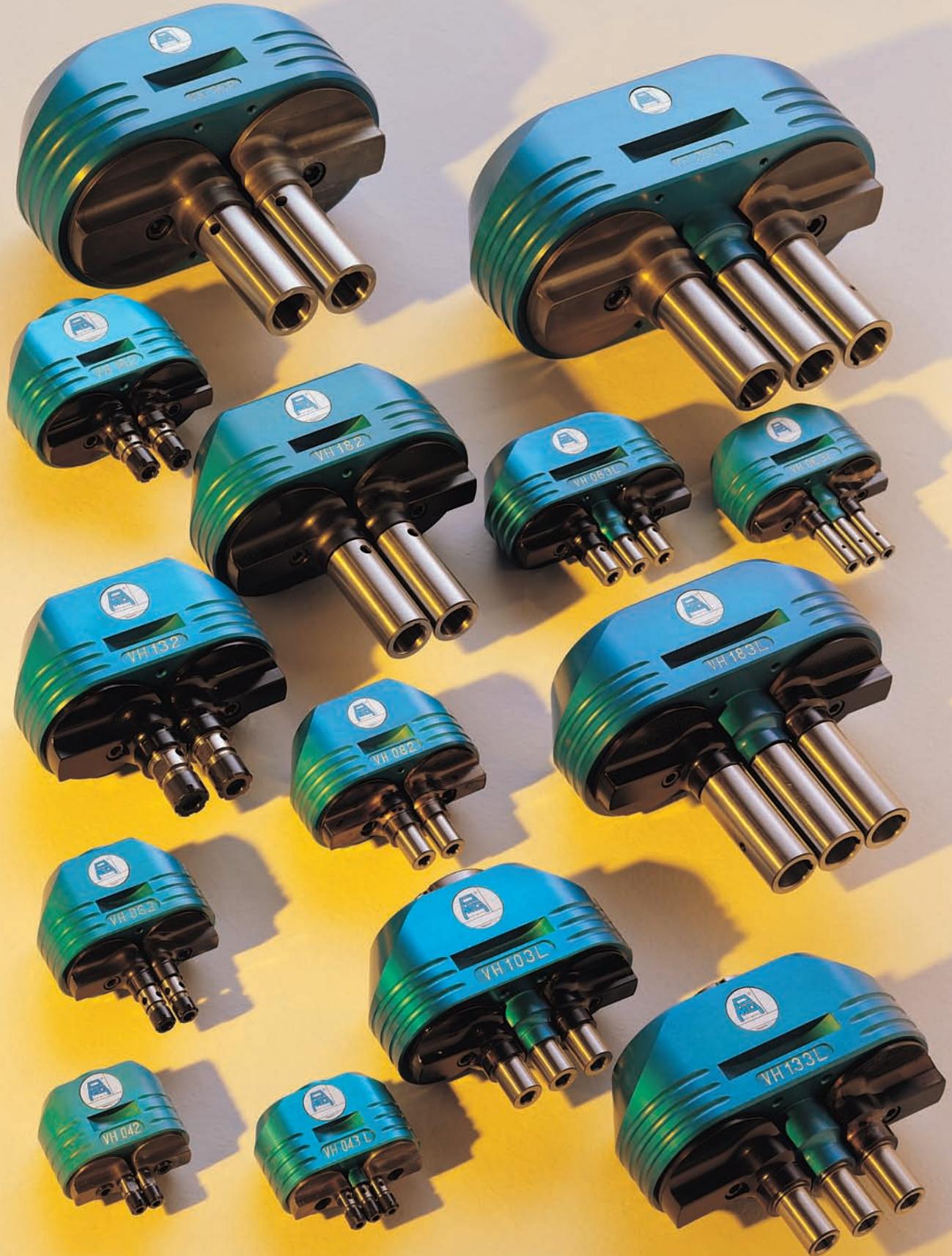
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*Teste multiple ad assi variabili o Variable axis heads*



*photographic  
gallery*



*Teste multiple ad assi variabili o Variable axis heads*

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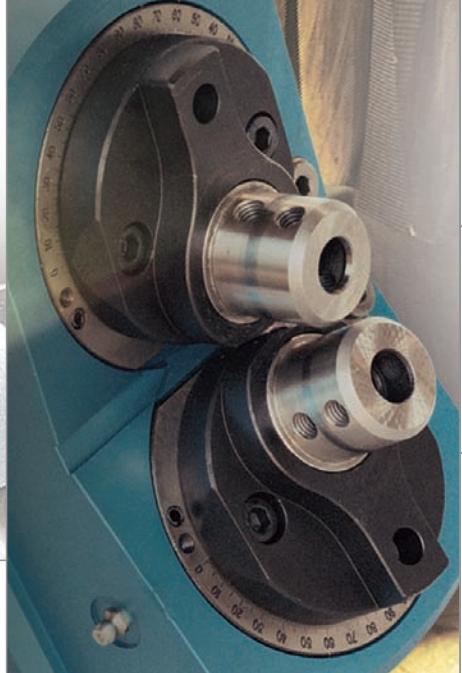
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## testa di fresatura *twin spindle milling heads*

Le teste **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. Durante lo studio di queste teste, la nostra attenzione si è concentrata sulla disposizione dei cuscinetti del mandrino, poichè nella smussatura si utilizzano anche utensili in metallo duro ed il tutto deve sopportare un elevato numero di urti. Ne è derivata una costruzione solida, compatta, affidabile e di aspetto gradevole. Varie sono le caratteristiche tecniche delle teste **TSI-TSX** e sintetizzandone 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, dalla conoscenza dei processi produttivi e dalla capacità di saper proporre, per ogni particolare esigenza, prodotti qualificati.

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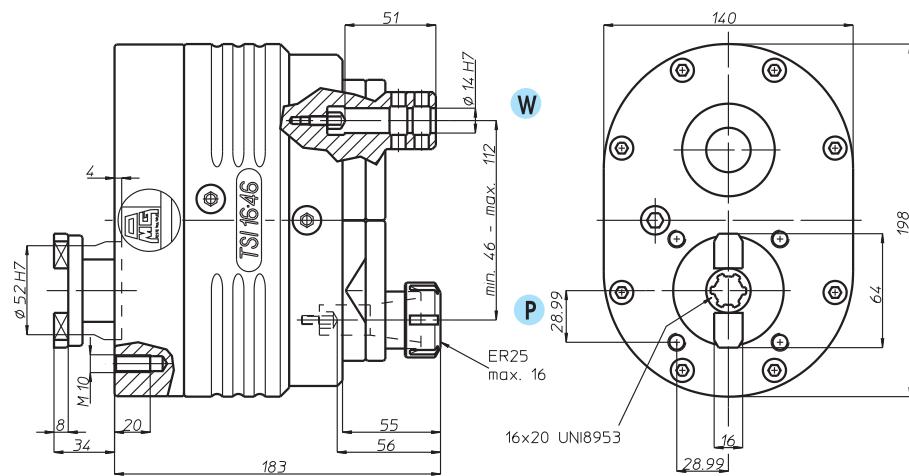
The **TSI** and **TSX** heads with 2 parallel or convergent spindles are suitable for milling and chamfering gear teeth. Special care has been taken with the position of the spindle bearing, because hard metal tools are also used for chamfering and the entire machine has to withstand many knocks and bumps. The result is a solid, compact, reliable unit that also has an appealing look. The **TSI** and **TSX** heads have many different features among which: an aluminium alloy body, cast iron spindle supports, simply and easily adjusted by the operator. The spindles may turn in the same direction or in opposite directions and the head is lubricated with grease. The production of these heads was made possible thanks to the experience acquired in the construction of multisindle heads, our knowledge of production processes and our ability to know how to cater for individual requirements with qualified products.

testa di fresatura - twin spindle milling head



# TSI 1646

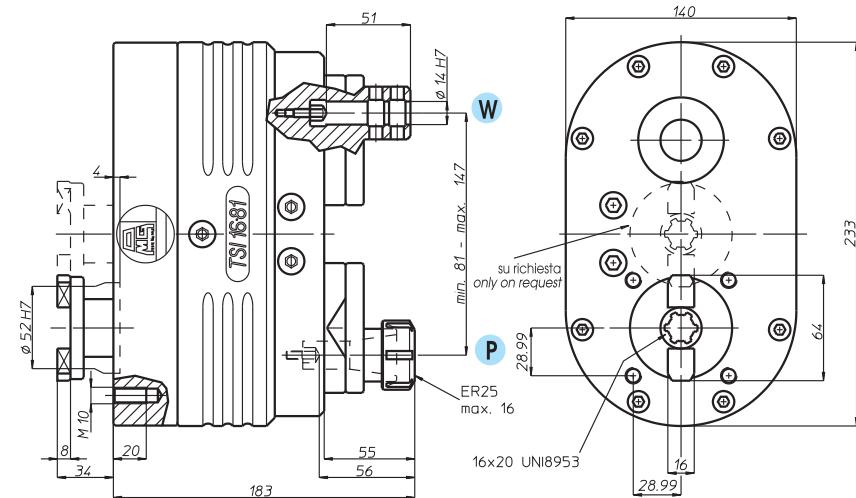
	TSI 16-46C-P TSI 16-46C-W	TSI 16-46D-P TSI 16-46D-W
rotazione mandrini spindle rotation	1-2	1-2
rapporto ratio	3.000	3.000
giri max rpm	12 kg	12 kg



testa di fresatura - twin spindle milling head

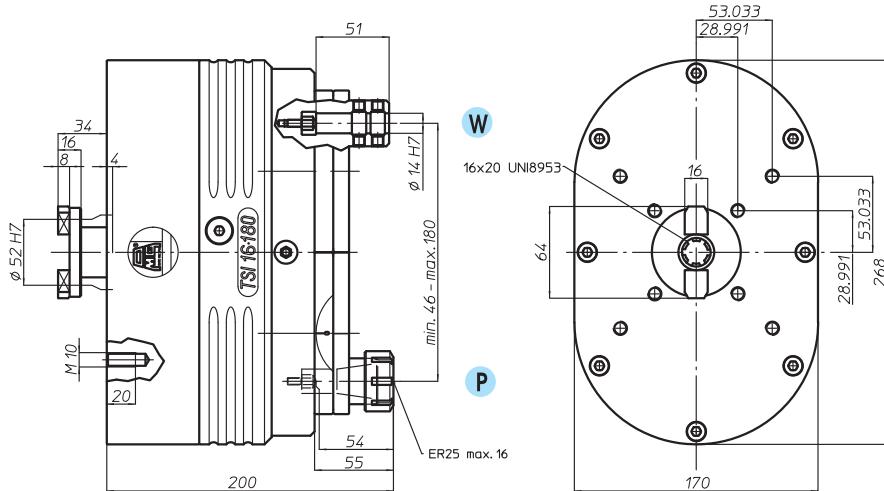
# TSI 1681

	TSI 16-81C-P TSI 16-81C-W	TSI 16-81D-P TSI 16-81D-W
rotazione tecnica spindle rotation	1-2	1-2
rapporto ratio	3.000	3.000
giri max rpm	13,5 kg	13,5 kg



testa di fresatura - twin spindle milling head

# TSI 16180

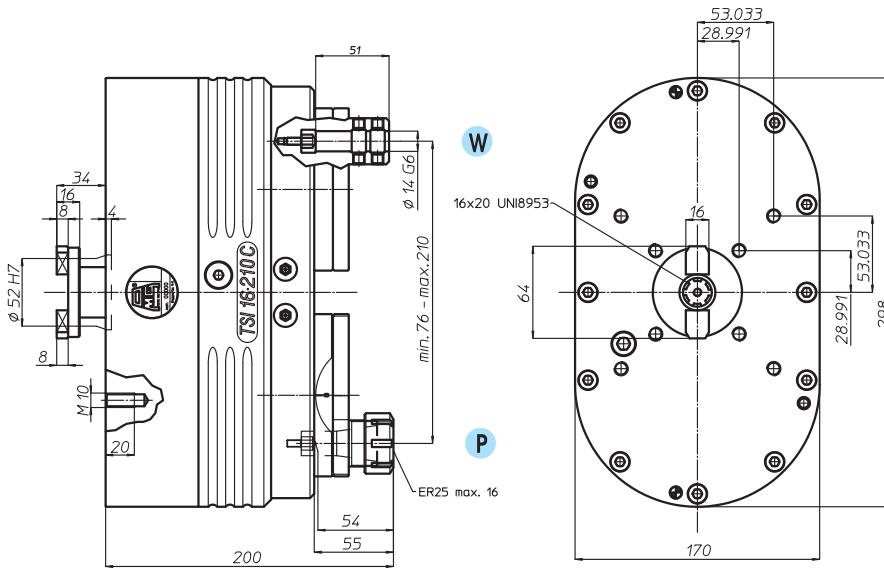


TSI 16-180C-P TSI 16-180C-W	TSI 16-180D-P TSI 16-180D-W
rotazione mandrini spindle rotation	
rapporto ratio	
giri max rpm	
peso weight	

1-1	1-1
3.000	3.000
22,5 kg	22,5 kg

testa di fresatura - twin spindle milling head

# TSI 16210



TSI 16-210C-P TSI 16-210C-W	TSI 16-210D-P TSI 16-210D-W
rotazione mandrini spindle rotation	
rapporto ratio	
giri max rpm	
peso weight	

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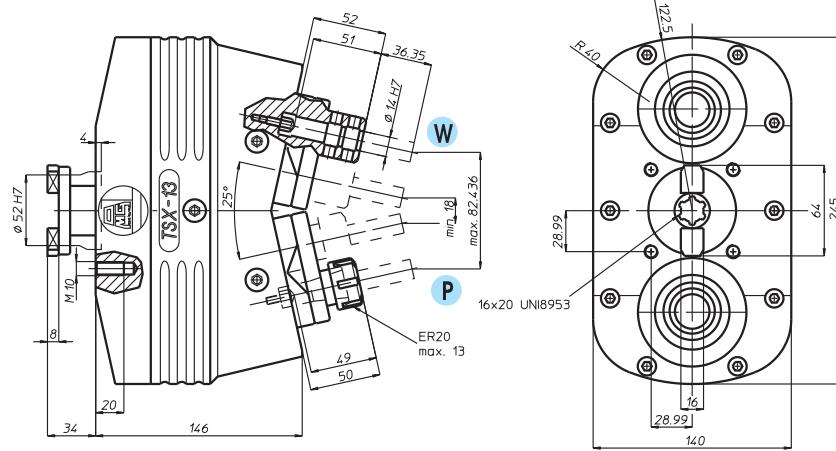
VH

testa di fresatura - twin spindle milling head



# TSX 13C

TSX 13C-P TSX 13C-W	
rotazione mandrini spindle rotation	1-1
rapporto ratio	3.000
giri max rpm	15,5 kg



TSI/TSX



testa di fresatura - twin spindle milling head

# TSX 13D

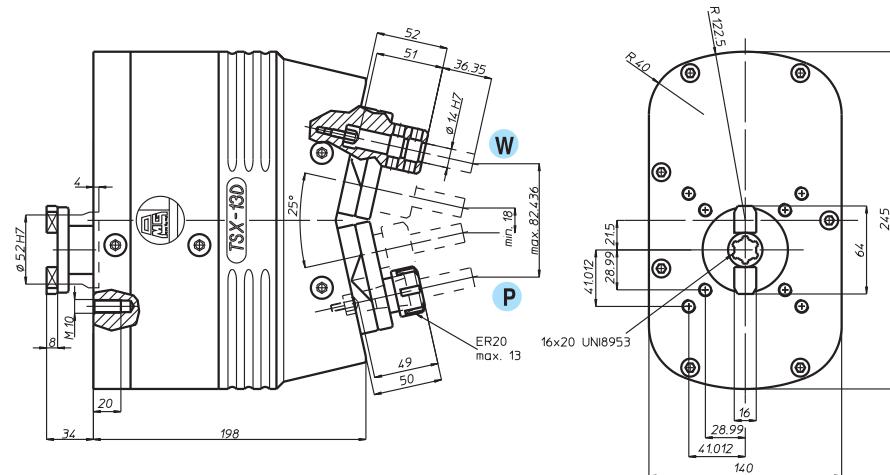
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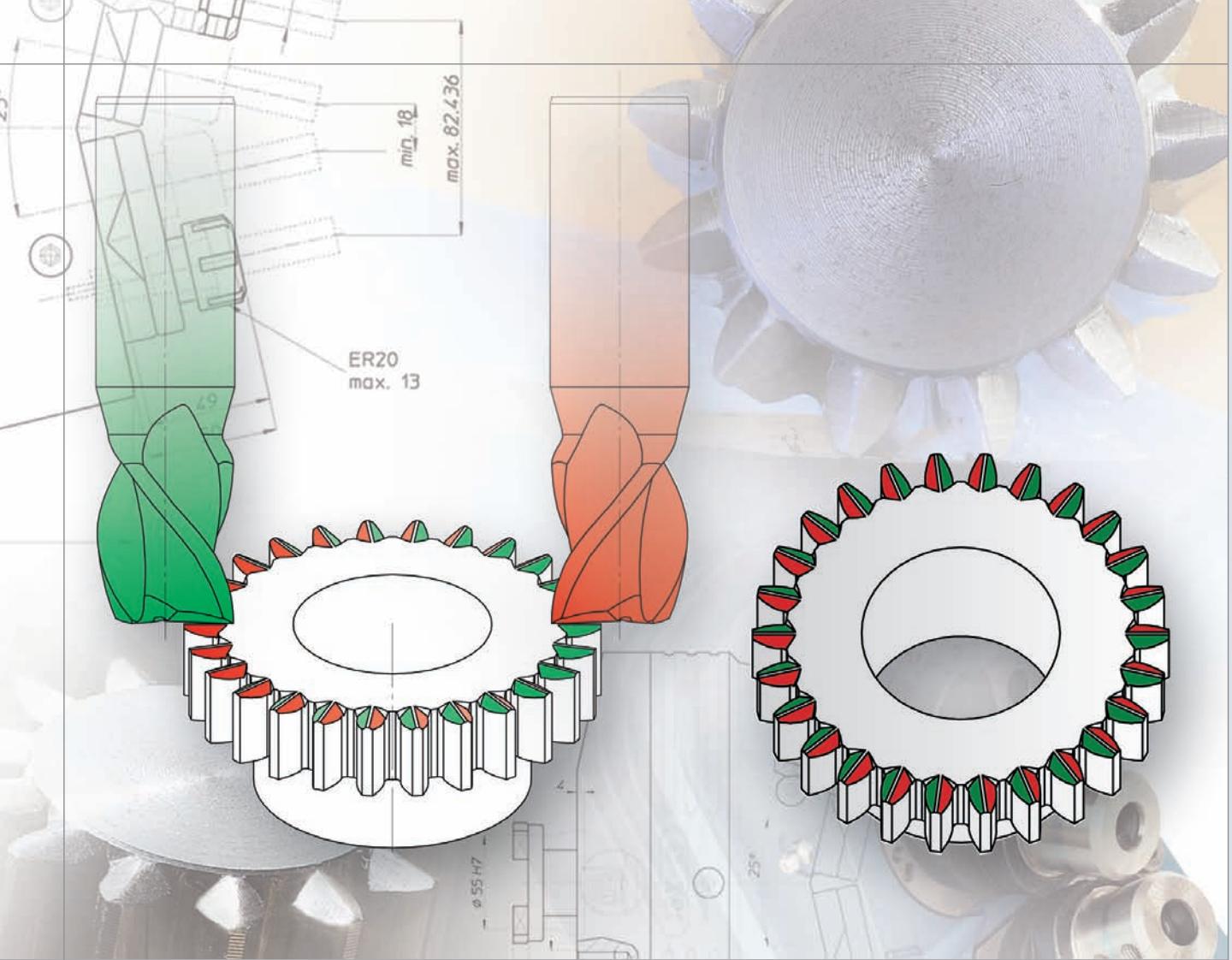
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TSX 13D-P TSX 13D-W	
rotazione mandrini spindle rotation	1-1
rapporto ratio	3.000
giri max rpm	21 kg
peso weight	





esecuzioni speciali - *special executions*



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## teste multiple a giunti universali *adjustable joint multisindle heads*

Le teste multiple a giunti universali sono in produzione dal 1961; nel corso degli anni hanno subito modifiche e aggiornamenti, confermando però la validità dell'idea e 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.

Il catalogo è concegnato per avere un preciso riscontro delle caratteristiche di tutte le teste a giunti universali e delle varie soluzioni possibili con esse; le nuove schede tecniche, gli esempi di attrezzature, gli accessori e le tabelle Vi guideranno nella scelta opportuna. Qualora il Vs. lavoro non sia eseguibile con questa serie di teste, il Ns. ufficio tecnico Vi fornirà la soluzione alternativa con la serie VH ad interassi variabili o con teste ad assi fissi appositamente disegnate e costruite.

*The universal joint multisindle 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.

*The catalogue is compiled so as to provide a precise reference for all the adjustable joint heads and the various possible solutions these offer. Thanks to the new technical sheets, equipment examples, accessories and charts, you will find making the right choice much easier.*

*In the event of this series of heads not providing the solution for your job, our technical department can provide alternative solutions with the variable centre distance VH series or fixed-axis heads, specially designed and made for you.*

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# T2



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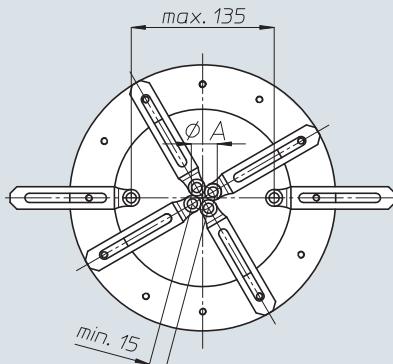
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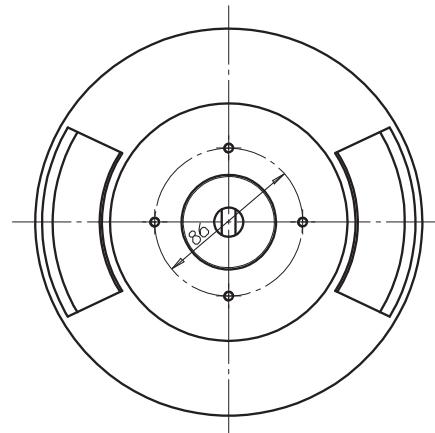
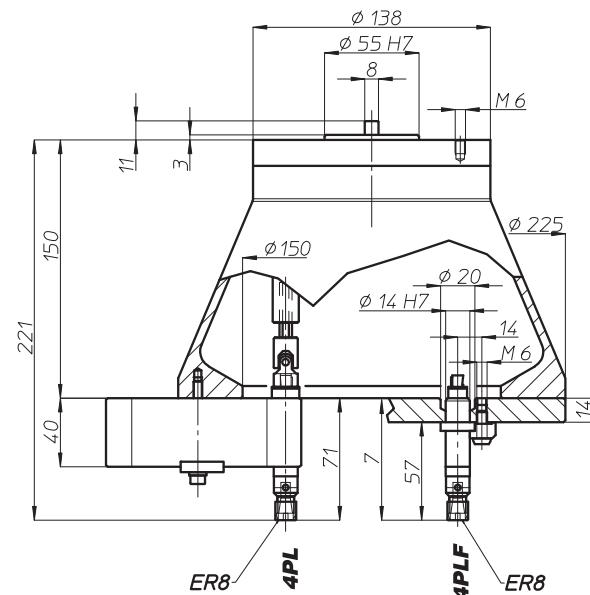
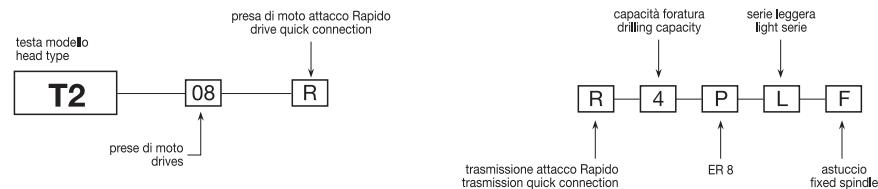
	N° prese di moto Nr. spindle drives	08
	Rapporto Ratio	1-1
	Capacità di foratura Drilling capacity	4
	Maschiatura Tapping	M4
	Attacco utensile Type of spindle	ER 8
	Peso gruppo testa Head weight	Kg 3,25
	Peso gruppo mandrino Spindle-set weight	Kg 0,3

## area di lavoro working area

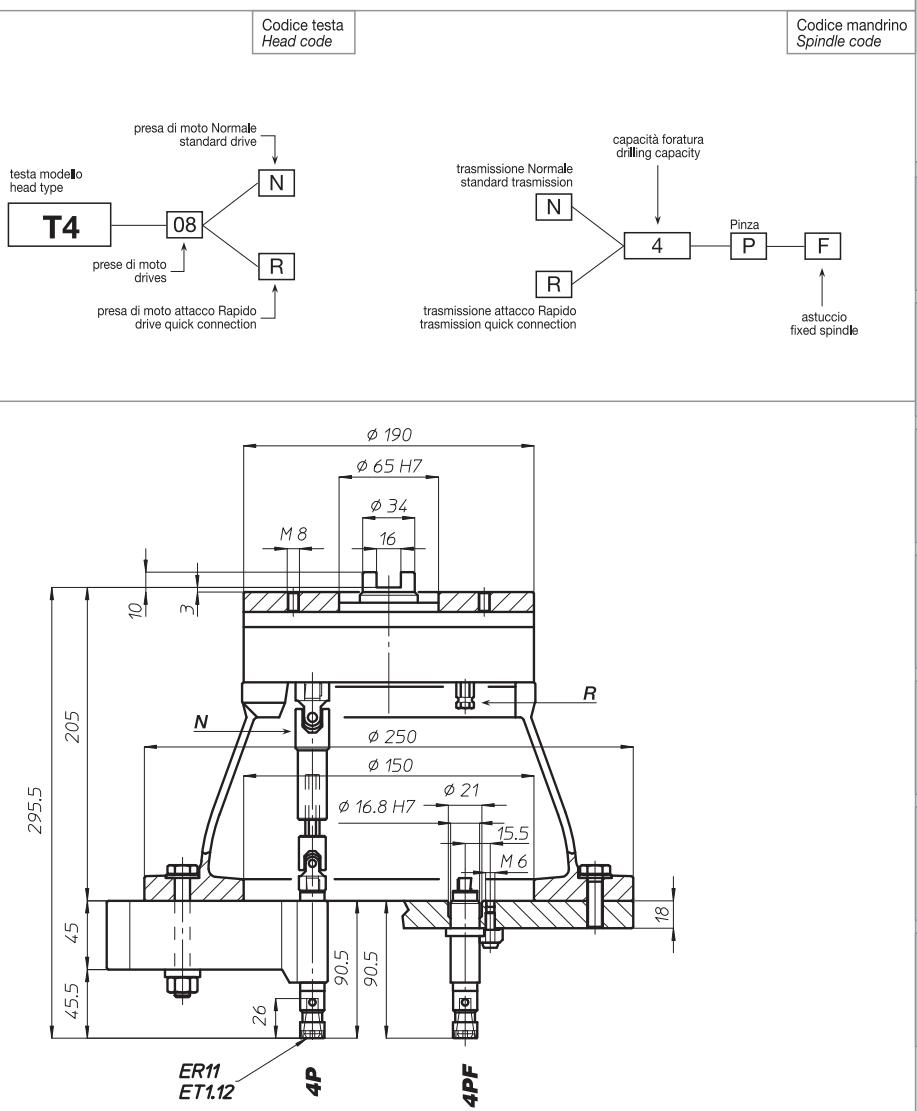


Ø A	n° mandrini n° spindles
15	2
17,5	3
21,5	4
26	5
30	6
35	7
39,5	8

Codice testa Head code	Codice mandrino Spindle code
---------------------------	---------------------------------

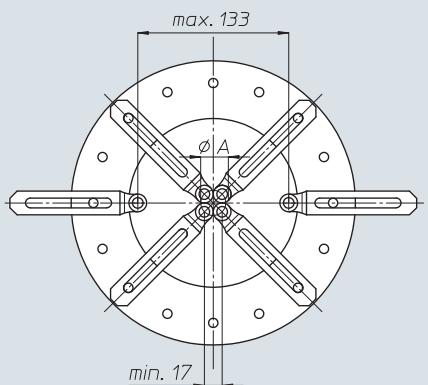


# T4

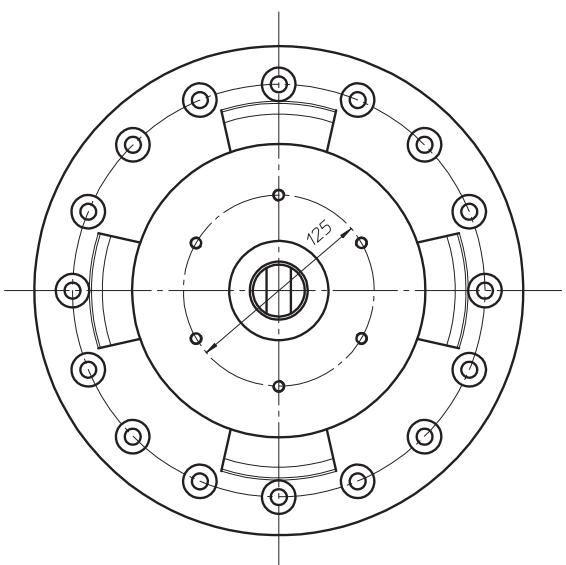


	N° prese di moto Nr. spindle drives	08-12
	Rapporto Ratio	1-1
	Capacità di foratura Drilling capacity	acciaio R=500 N/mm <sup>2</sup> ghisa: GG25
	Maschiatura Tapping	M4
	Attacco utensile Type of spindle	P ER11
	Peso gruppo testa Head weight	Kg 9,5
	Peso gruppo mandrino Spindle-set weight	Kg 1

area di lavoro  
working area



Ø A	n° mandrini n° spindles
20	3
24,5	4
29,5	5
34,5	6
39,5	7
45	8



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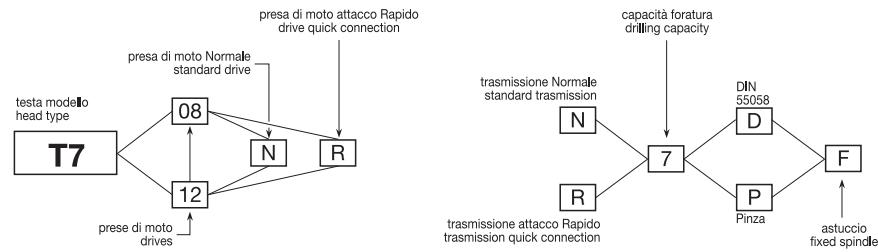
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# T7

Codice testa  
Head codeCodice mandrino  
Spindle code

N° prese di moto  
Nr. spindle drives 08-12

Rapporto  
Ratio 1-1

Capacità di foratura  
Drilling capacity  
acciaio R=500 N/mm<sup>2</sup>  
ghisa: GG25 6 7

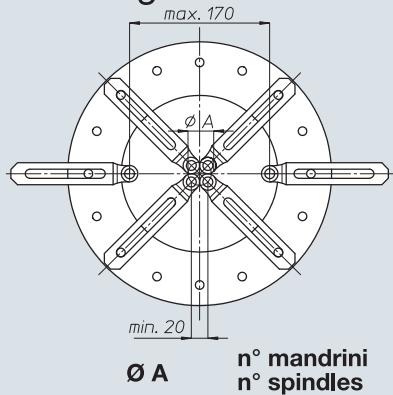
Maschiatura  
Tapping M5

Attacco utensile  
Type of spindle  
D DIN 55058 Ø10  
P ER11

Peso gruppo testa  
Head weight Kg 10

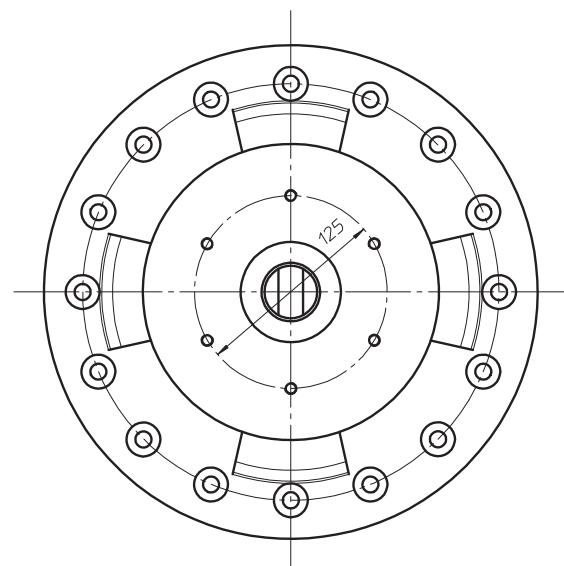
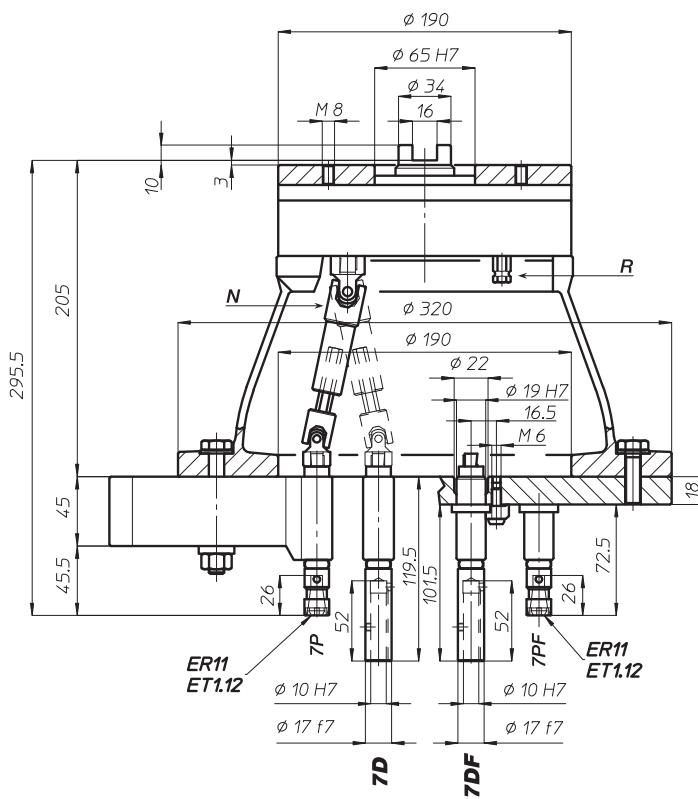
Peso gruppo mandrino  
Spindle-set weight Kg 1,1

## area di lavoro working area

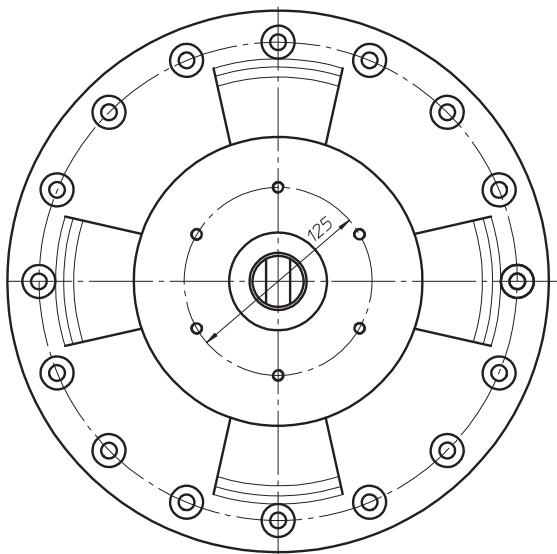
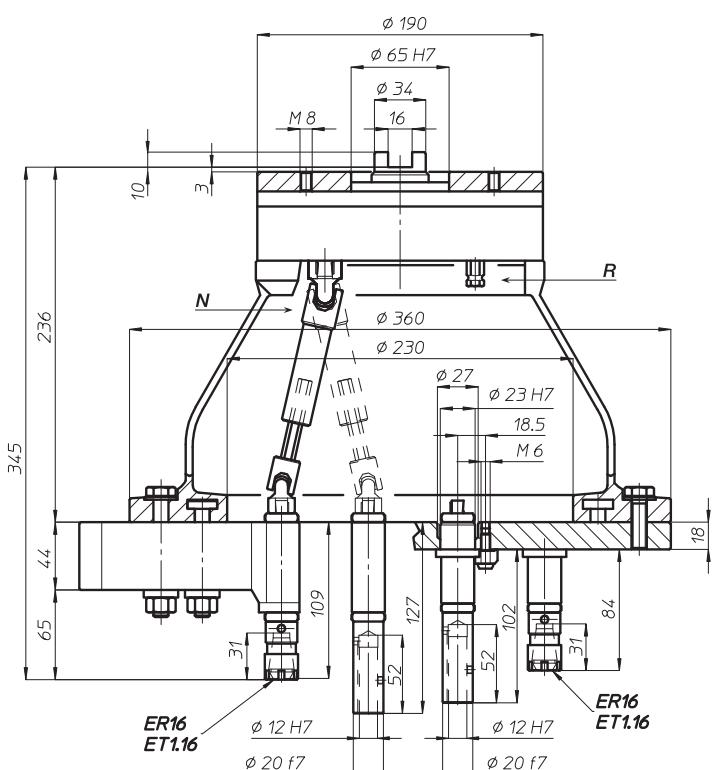
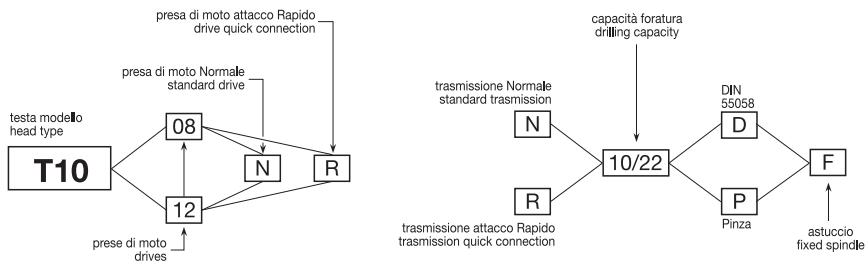


Ø A n° mandrini  
n° spindles

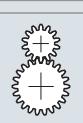
23,5	3
28,5	4
34,5	5
40,5	6
46,5	7
52,5	8
59	9
65,5	10
71,5	11
77,5	12



# T10

Codice testa  
Head codeCodice mandrino  
Spindle codeN° prese di moto  
Nr. spindle drives

08-12

Rapporto  
Ratio

1-1

Capacità di foratura  
Drilling capacityacciaio R=500 N/mm<sup>2</sup>  
ghisa: GG25 8 10Maschiatura  
Tapping

M6

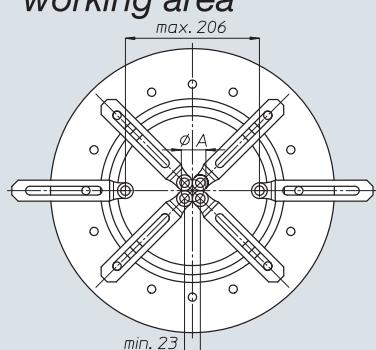
Attacco utensile  
Type of spindleD DIN 55058 Ø12  
P ER16Peso gruppo testa  
Head weight

Kg 12

Peso gruppo mandrino  
Spindle-set weight

Kg 1,5

## area di lavoro working area

Ø A n° mandrini  
n° spindles

27	3
33	4
39,5	5
46,5	6
53,5	7
60,5	8
67,5	9
75	10
82	11
89,5	12

# T12-TS12



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

	N° prese di moto Nr. spindle drives	08-12
--	--	-------

	Rapporto Ratio	1-1
--	-------------------	-----

	Capacità di foratura Drilling capacity	
	acciaio R=500 N/mm <sup>2</sup> ghisa: GG25	10 12

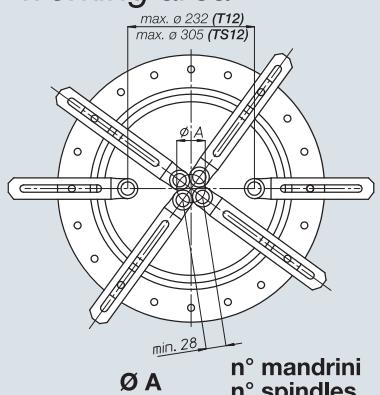
	Maschiatura Tapping	M8
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	Attacco utensile Type of spindle	D P
		DIN 55058 Ø16 ER20

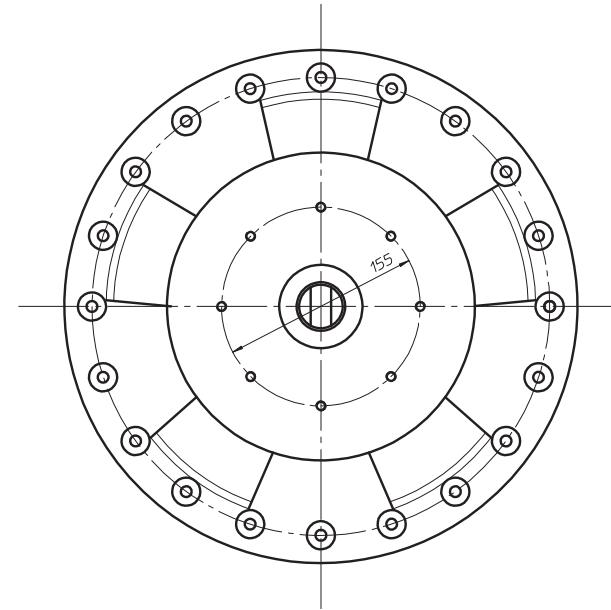
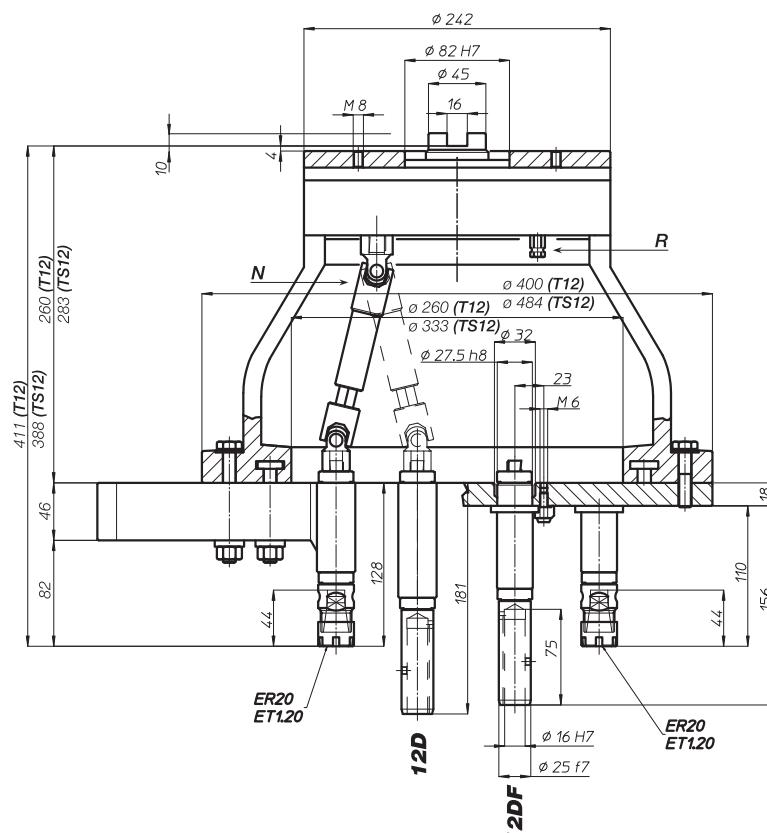
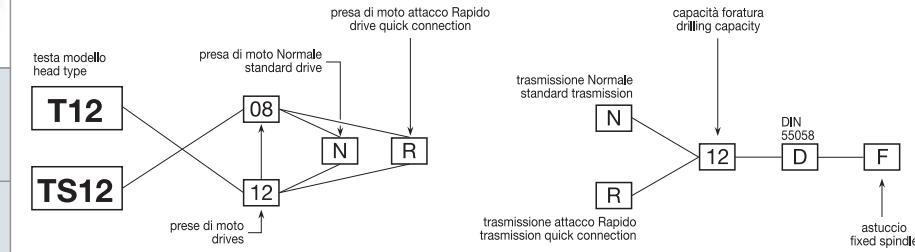
	Peso gruppo testa Head weight	T12: Kg 20 TS12: Kg 22,5
--	----------------------------------	-----------------------------

	Peso gruppo mandrino Spindle-set weight	Kg 2
--	--	------

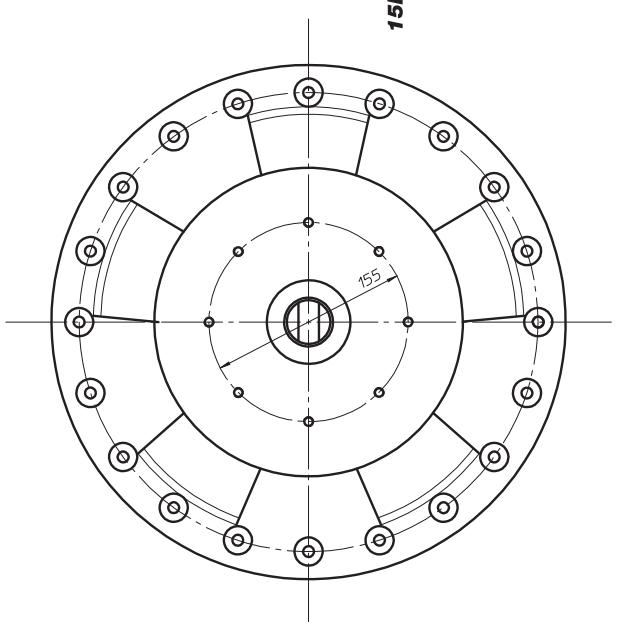
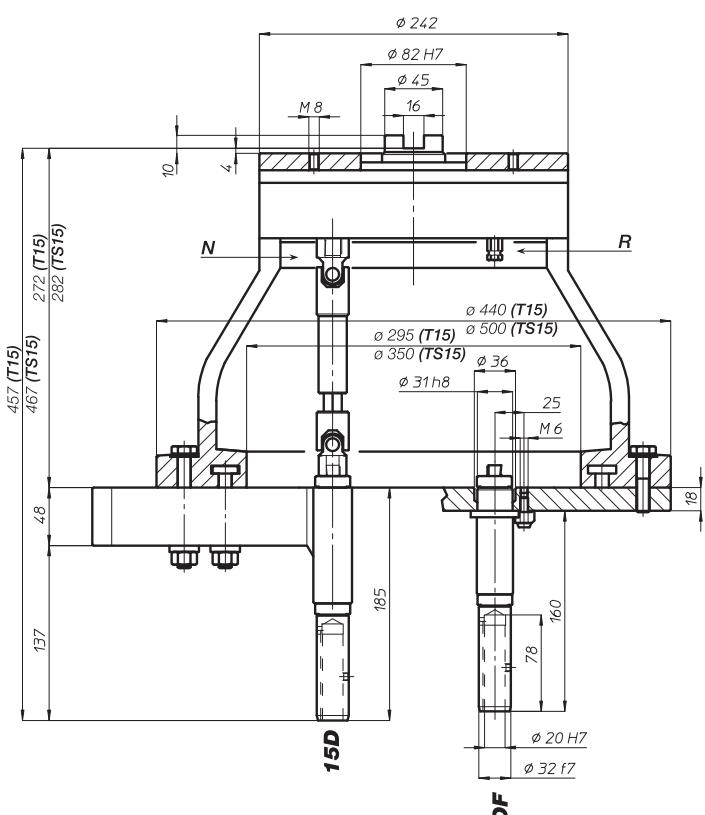
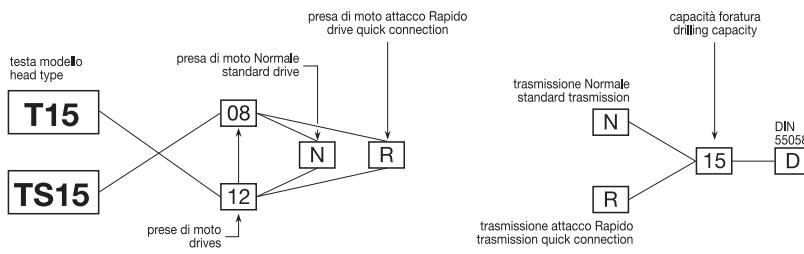
## area di lavoro working area



Ø A	n° mandrini n° spindles
33	3
40	4
48	5
56,5	6
65	7
74	8
82,5	9
91	10
100	11
108,5	12

Codice testa  
Head codeCodice mandrino  
Spindle code

# T15-TS15

Codice testa  
Head codeCodice mandrino  
Spindle code

TA

MO

HT

VH

TSI/TSX

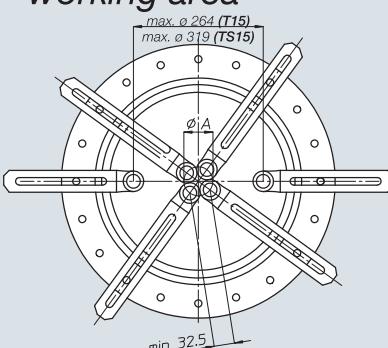
T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

	N° prese di moto Nr. spindle drives	08-12
	Rapporto Ratio	1-1
	Capacità di foratura Drilling capacity acciaio R=500 N/mm <sup>2</sup> ghisa: GG25	13 15
	Maschiatura Tapping	M12
	Attacco utensile Type of spindle D DIN 55058 Ø20	D DIN 55058 Ø20
	Peso gruppo testa Head weight T15: Kg 21,5 TS15: Kg 24,5	Kg 21,5 Kg 24,5
	Peso gruppo mandrino Spindle-set weight	Kg 2,6

## area di lavoro working area

Ø A  
n° mandrini  
n° spindles

38	3
46,5	4
56	5
65,5	6
75,5	7
85,5	8
95,5	9
105,5	10
116	11
126	12

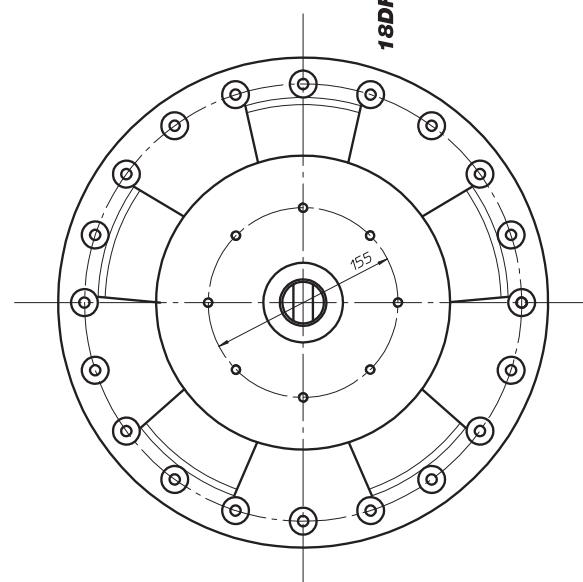
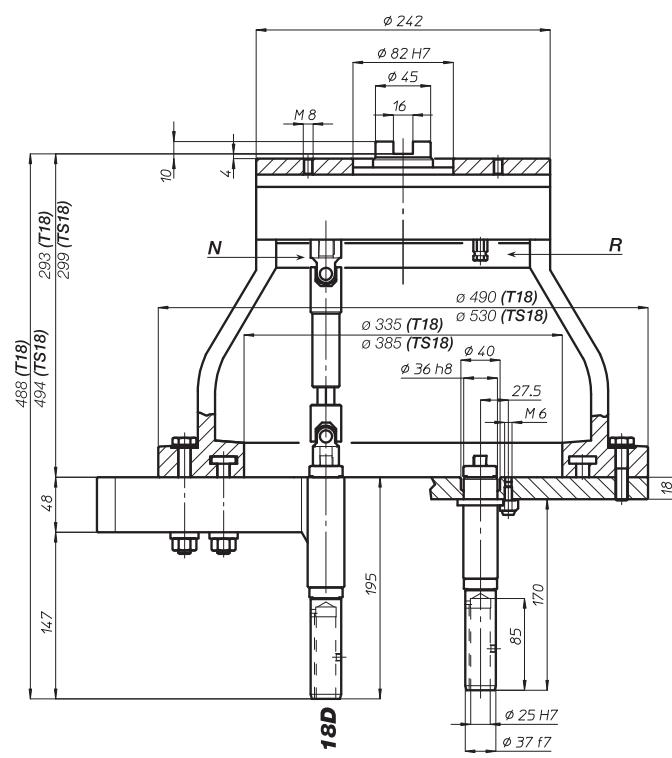
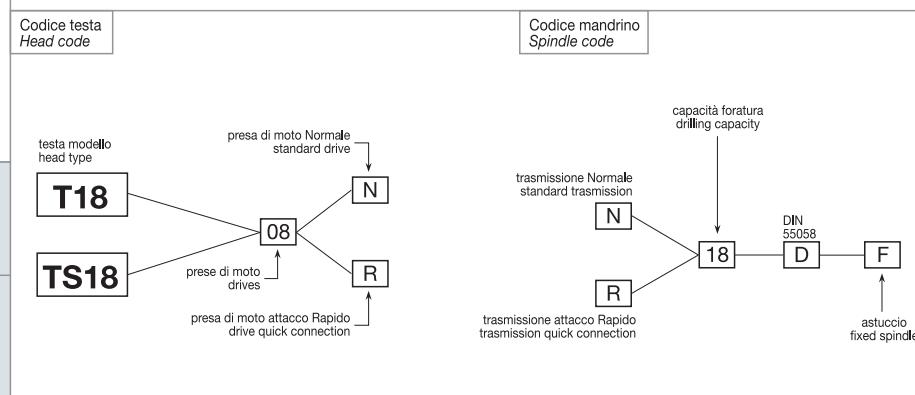
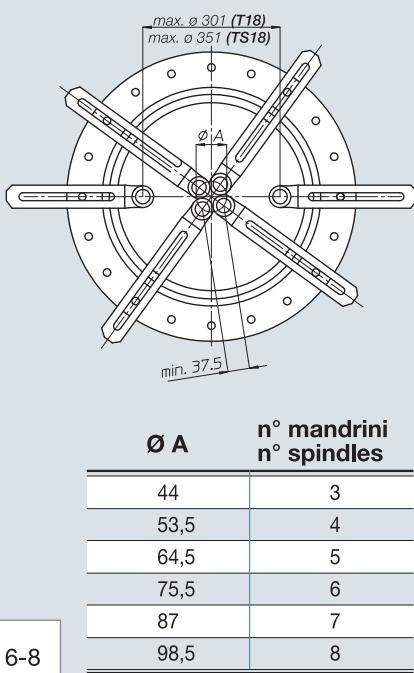


# T18- TS18

TA  
MO  
HT  
VH  
TSI/TSX  
T  
MT-TC-TC3  
Accessori  
Technical supplement

	N° prese di moto Nr. spindle drives	08
	Rapporto Ratio	1-1
	Capacità di foratura Drilling capacity	
	acciaio R=500 N/mm <sup>2</sup>	16
	ghisa: GG25	18
	Maschiatura Tapping	M14
	Attacco utensile Type of spindle	D DIN 55058 025
	Peso gruppo testa Head weight	T18: Kg 25 TS18: Kg 26,5
	Peso gruppo mandrino Spindle-set weight	Kg 3,3

## area di lavoro working area



# T22-TS22

Codice testa Head code	Codice mandrino Spindle code															
<p>testa modello head type</p> <p>T22</p> <p>TS22</p> <p>presa di moto Normali standard drive</p> <p>08</p> <p>N</p> <p>R</p> <p>presi di moto drives</p> <p>presi di moto attacco Rapido drive quick connection</p> <p>trasmmissione Normale standard transmission</p> <p>N</p> <p>R</p> <p>trasmmissione attacco Rapido transmission quick connection</p> <p>capacità foratura drilling capacity</p> <p>DIN 55058</p> <p>D</p> <p>F</p> <p>astuccio fixed spindle</p>	<p>capacità foratura drilling capacity</p> <p>N</p> <p>22</p> <p>D</p> <p>F</p>															
<p>Ø 242</p> <p>Ø 82 H7</p> <p>Ø 45</p> <p>16</p> <p>Ø 490 (T22)</p> <p>Ø 535 (TS22)</p> <p>Ø 330 (T22)</p> <p>Ø 382 (TS22)</p> <p>Ø 39 h8</p> <p>Ø 44</p> <p>29</p> <p>M 6</p> <p>10</p> <p>41</p> <p>512</p> <p>317</p> <p>60</p> <p>135</p> <p>195</p> <p>170</p> <p>22</p> <p>Ø 28 H7</p> <p>Ø 40 f7</p> <p>22D</p> <p>22DF</p>	<p>N° prese di moto Nr. spindle drives</p> <p>08</p> <p>Rapporto Ratio</p> <p>1-1</p> <p>Capacità di foratura Drilling capacity</p> <p>acciaio R=500 N/mm<sup>2</sup> ghisa: GG25</p> <p>20 22</p> <p>Maschiatura Tapping</p> <p>M16</p> <p>Attacco utensile Type of spindle</p> <p>D DIN 55058 028</p> <p>Peso gruppo testa Head weight</p> <p>T22: Kg 38,5 TS22: Kg 41</p> <p>Peso gruppo mandrino Spindle-set weight</p> <p>Kg 5,5</p>															
		<p>area di lavoro working area</p> <p>max. Ø 291 (T22) max. Ø 343 (TS22)</p> <p>Ø A</p> <p>min. 40,5</p>														
	<table border="1"> <thead> <tr> <th>Ø A</th> <th>n° mandrini n° spindles</th> </tr> </thead> <tbody> <tr> <td>47,5</td> <td>3</td> </tr> <tr> <td>58</td> <td>4</td> </tr> <tr> <td>69,5</td> <td>5</td> </tr> <tr> <td>81,5</td> <td>6</td> </tr> <tr> <td>94</td> <td>7</td> </tr> <tr> <td>106,5</td> <td>8</td> </tr> </tbody> </table>	Ø A	n° mandrini n° spindles	47,5	3	58	4	69,5	5	81,5	6	94	7	106,5	8	
Ø A	n° mandrini n° spindles															
47,5	3															
58	4															
69,5	5															
81,5	6															
94	7															
106,5	8															

TA

MO

HT

VH

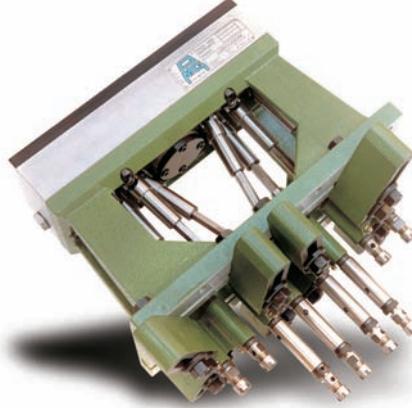
TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# TL20/4



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplementN° prese di moto  
Nr. spindle drives

08

Rapporto  
Ratio

1-1

Capacità di foratura  
Drilling capacityacciaio R=500 N/mm<sup>2</sup>  
ghisa: GG254  
5Maschiatura  
Tapping

M4

Attacco utensile  
Type of spindle

P ER11

Peso gruppo testa  
Head weight

Kg 13,5

Peso gruppo mandrino  
Spindle-set weight

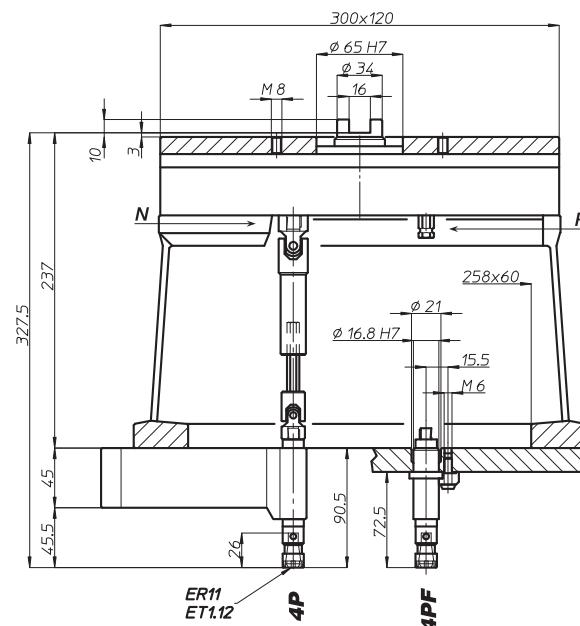
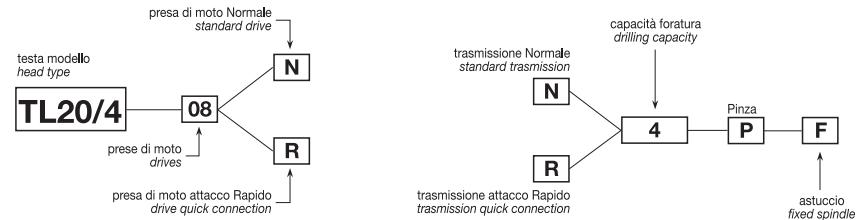
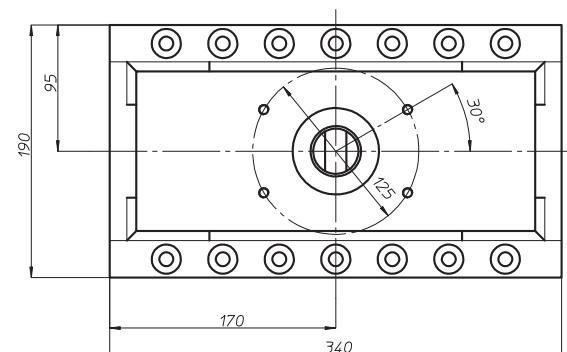
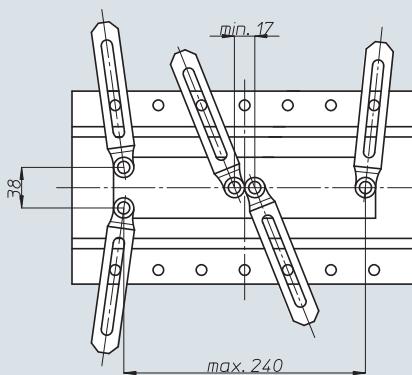
Kg 1

Codice testa  
Head code

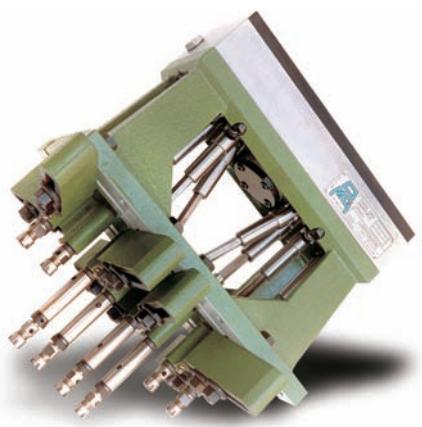
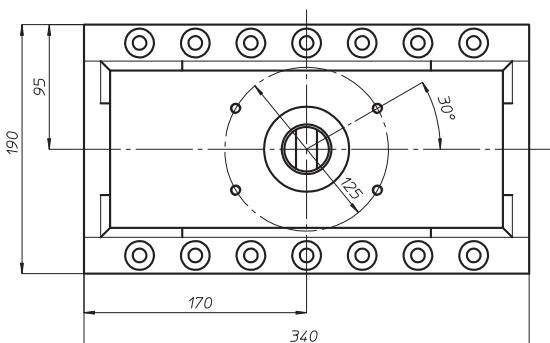
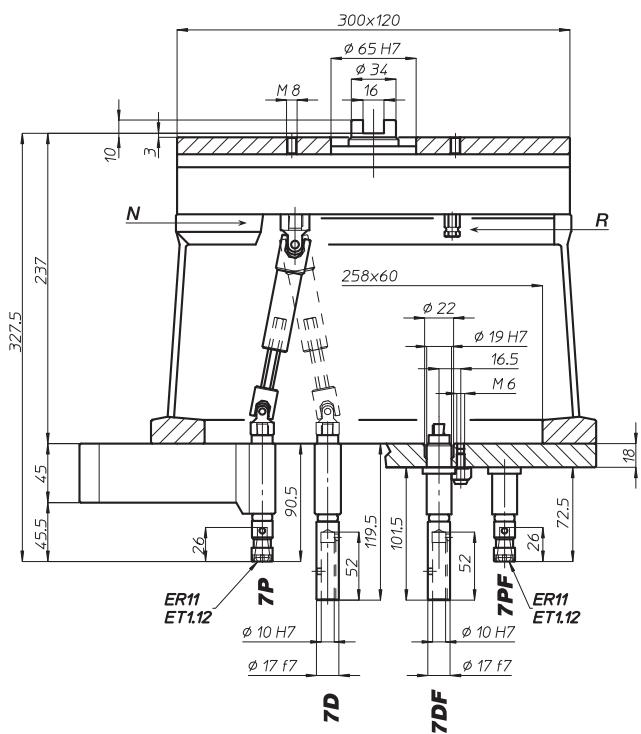
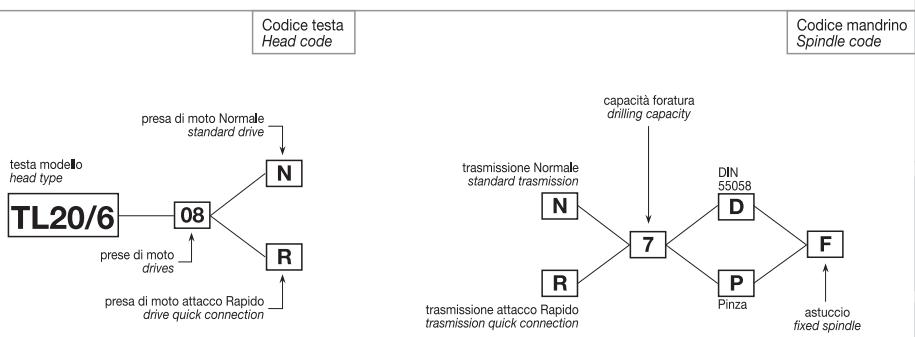
Head code

Codice mandrino  
Spindle code

Spindle code

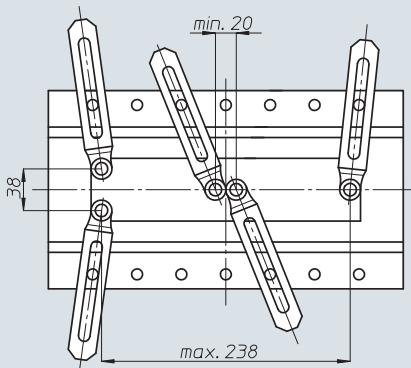
area di lavoro  
working area

# TL20/6



N° prese di moto / Nr. spindle drives	08
Rapporto / Ratio	1-1
Capacità di foratura / Drilling capacity	acciaio R=500 N/mm <sup>2</sup> ghisa: GG25
Maschiatura / Tapping	M5
Attacco utensile / Type of spindle	D DIN 55058 Ø10 ER11 P
Peso gruppo testa / Head weight	Kg 13,5
Peso gruppo mandrino / Spindle-set weight	Kg 1

area di lavoro  
working area



TA

MO

HT

VH

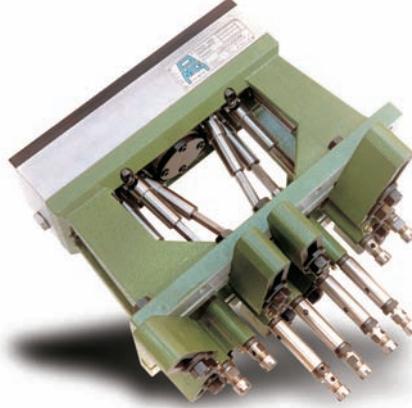
TSI/TSX

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MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# TL20/8



TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

N° prese di moto  
Nr. spindle drives **08**

Rapporto  
Ratio **1-1**

Capacità di foratura  
Drilling capacity  
acciaio R=500 N/mm<sup>2</sup>  
ghisa: GG25 **8** **10**

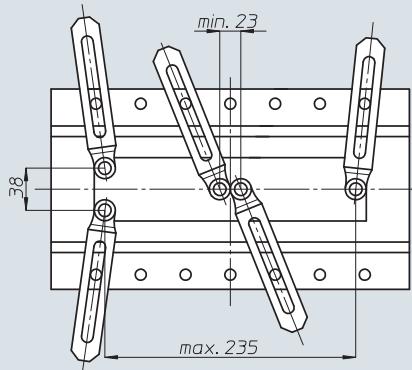
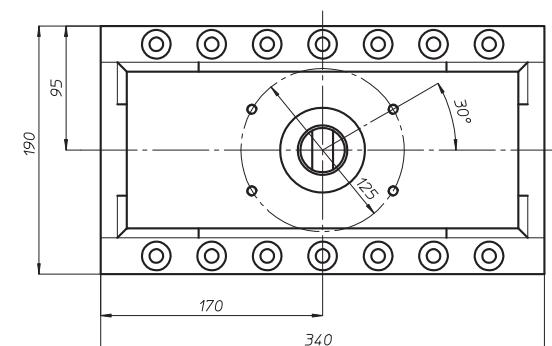
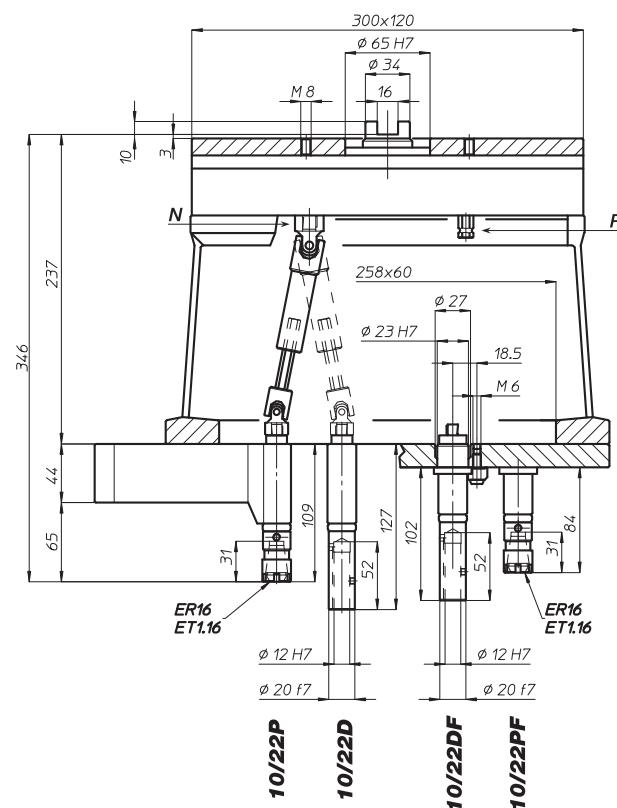
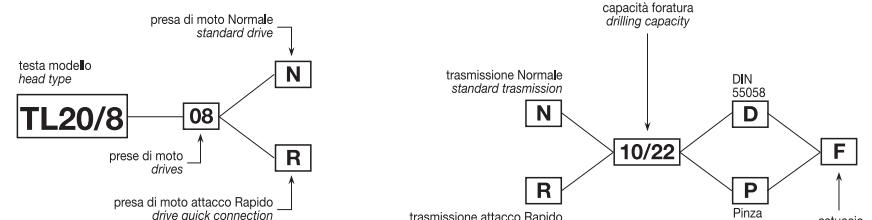
Maschiatura  
Tapping **M6**

Attacco utensile  
Type of spindle  
**D** DIN 55058 Ø12  
**P** ER16

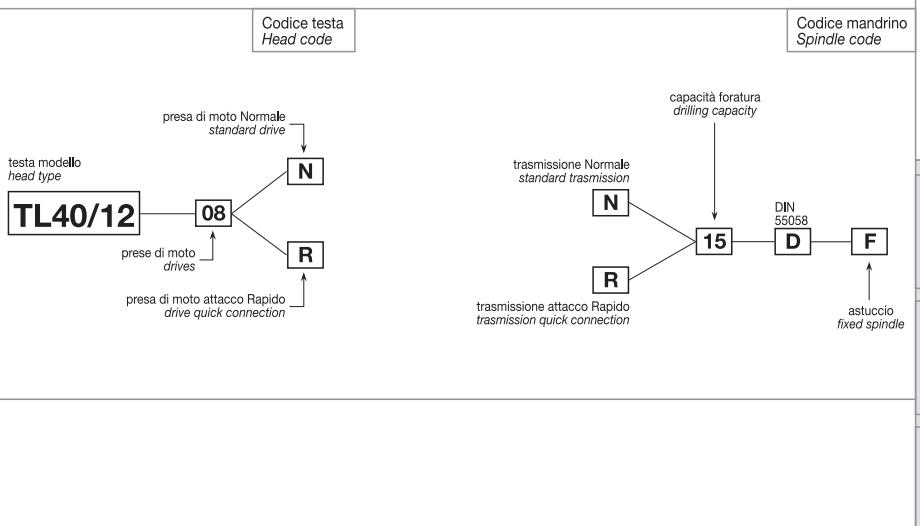
Peso gruppo testa  
Head weight **Kg 13,5**

Peso gruppo mandrino  
Spindle-set weight **Kg 1,5**

area di lavoro  
working area

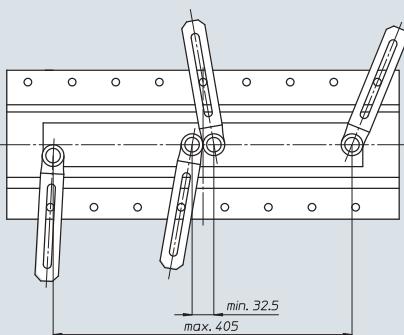
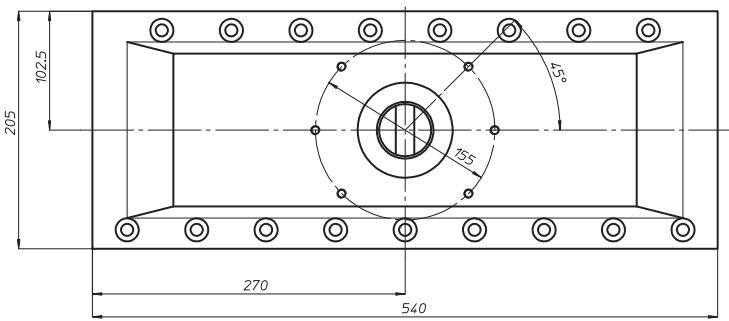
Codice testa  
Head codeCodice mandrino  
Spindle code

# TL40/12



	N° prese di moto <i>Nr. spindle drives</i>	08
	Rapporto <i>Ratio</i>	1-1
	Capacità di foratura <i>Drilling capacity</i>	
	acciaio R=500 N/mm <sup>2</sup> ghisa: GG25	13 15
	Maschiatura <i>Tapping</i>	M12
	Attacco utensile <i>Type of spindle</i>	D DIN 55058 Ø20
	Peso gruppo testa <i>Head weight</i>	Kg 25
	Peso gruppo mandrino <i>Spindle-set weight</i>	Kg 2,5

**area di lavoro**  
*working area*



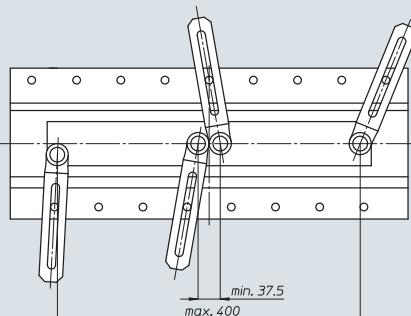


# TL 40/16

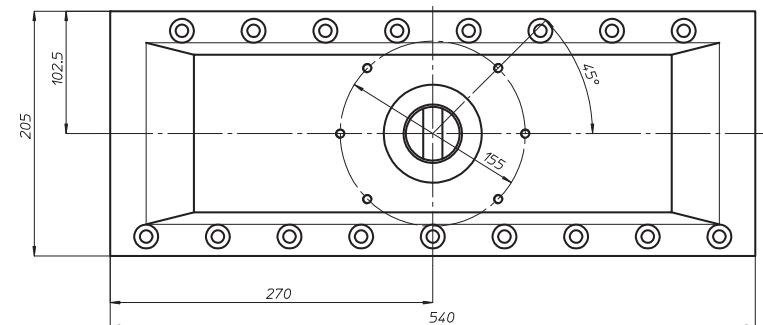
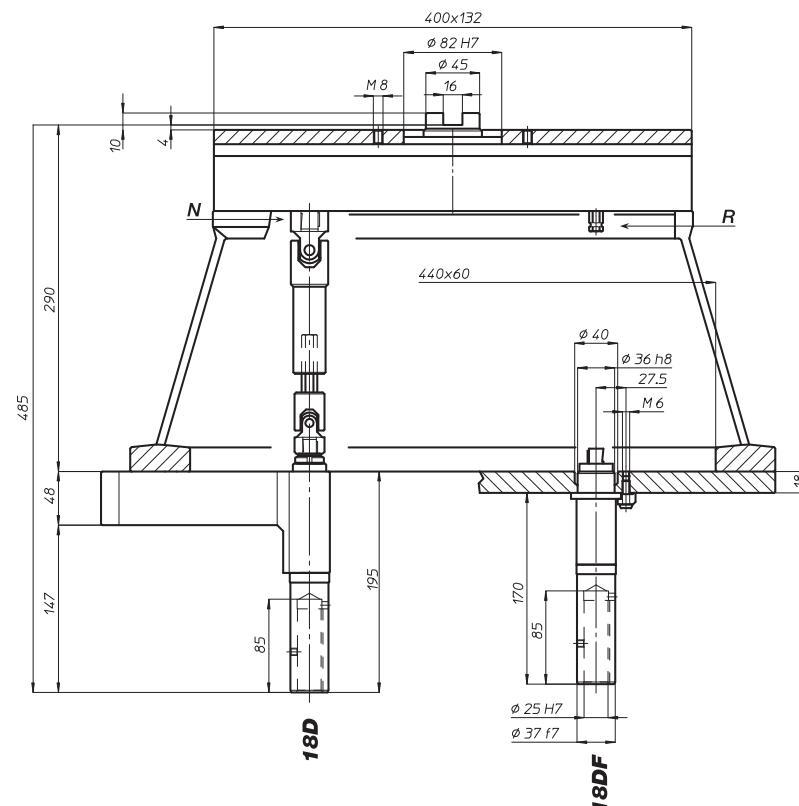
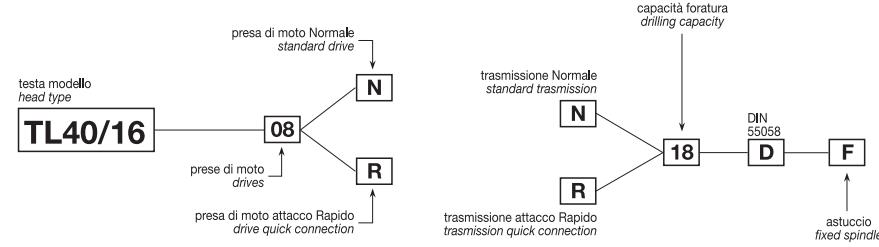
TA  
MO  
HT  
VH  
TSI/TSX  
T  
MT-TC-TC3  
Accessories  
Appendice tecnica  
Technical supplement

	N° prese di moto Nr. spindle drives	08
	Rapporto Ratio	1-1
	Capacità di foratura Drilling capacity	acciaio R=500 N/mm <sup>2</sup> ghisa: GG25
	Maschiatura Tapping	M14
	Attacco utensile Type of spindle	D DIN 55058 Ø25
	Peso gruppo testa Head weight	Kg 26
	Peso gruppo mandrino Spindle-set weight	Kg 2,5

## area di lavoro working area



Codice testa Head code	Codice mandrino Spindle code
---------------------------	---------------------------------



# TL40/22

Codice testa Head code	Codice mandrino Spindle code	area di lavoro working area
<p>testa modello head type</p> <p><b>TL40/22</b></p> <p>prese di moto drives</p> <p>pres di moto Normale standard drive</p> <p>pres di moto attacco Rapido drive quick connection</p> <p>N</p> <p>R</p>	<p>capacità foratura drilling capacity</p> <p>trasmmission Normale standard transmission</p> <p>trasmmission attacco Rapido transmision quick connection</p> <p>N</p> <p>R</p> <p>22</p> <p>SD</p> <p>DIN 55058</p> <p>F</p>	<p>astuccio fixed spindle</p>
<p>N° prese di moto Nr. spindle drives</p> <p>06</p>		
<p>Rapporto Ratio</p> <p>1-1</p>		
<p>Capacità di foratura Drilling capacity</p> <p>acciaio R=500 N/mm<sup>2</sup> ghisa: GG25</p> <p>20 22</p>		
<p>Maschiatura Tapping</p> <p>M6</p>		
<p>Attacco utensile Type of spindle</p> <p>D DIN 55058 Ø28</p>		
<p>Peso gruppo testa Head weight</p> <p>Kg 37</p>		
<p>Peso gruppo mandrino Spindle-set weight</p> <p>Kg 5</p>		
<p>Technical drawing of the TL40/22 head showing dimensions and mounting details. Key dimensions include: overall height 313, base height 318, base width 60, base thickness 135, side height 195, side thickness 85, side width 440x60, top width 400x132, top thickness 10, top height 4, and various internal clearances and hole sizes.</p>		
<p>Technical drawing of the working area (area di lavoro) showing a circular workpiece with a diameter of 540 mm. The distance from the center to the bottom edge is 155 mm. The angle between the vertical axis and the horizontal projection of the center is 51°.</p>		
<p>Technical drawing of the technical supplement (Appendice tecnica) showing a side view of the head with dimensions: min. 40.5 and max. 398.</p>		



# TL60/12

TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

N° prese di moto  
Nr. spindle drives **08-12**

Rapporto  
Ratio **1-1**

Capacità di foratura  
Drilling capacity  
acciaio R=500 N/mm<sup>2</sup> **13**  
ghisa: GG25 **15**

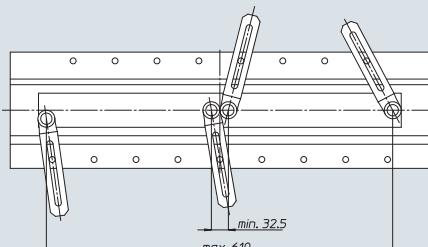
Maschiatura  
Tapping **M12**

Attacco utensile  
Type of spindle  
**D DIN 55058 Ø20**

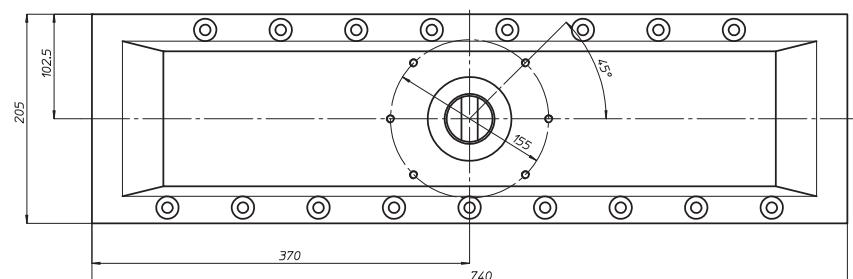
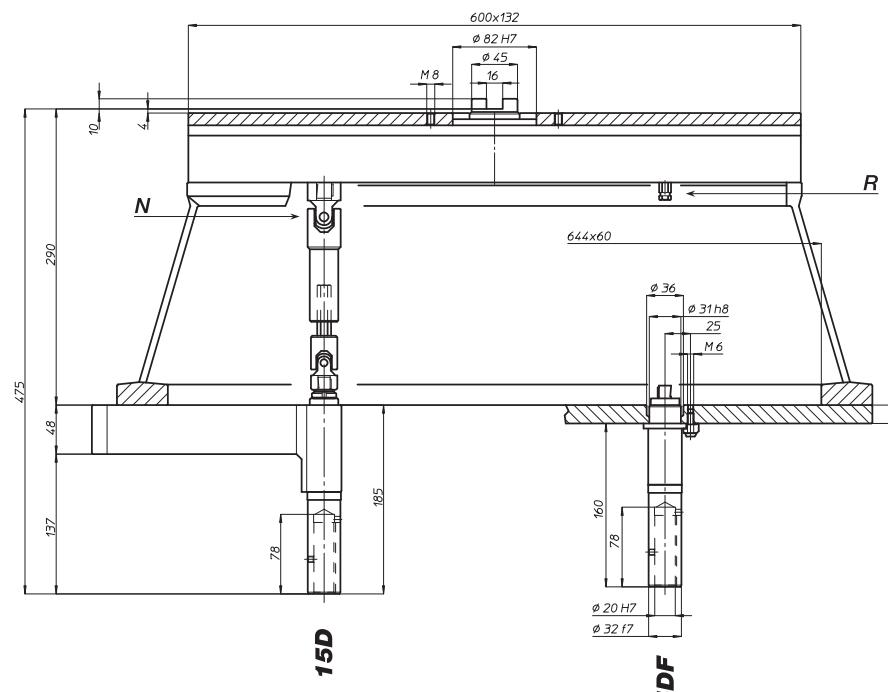
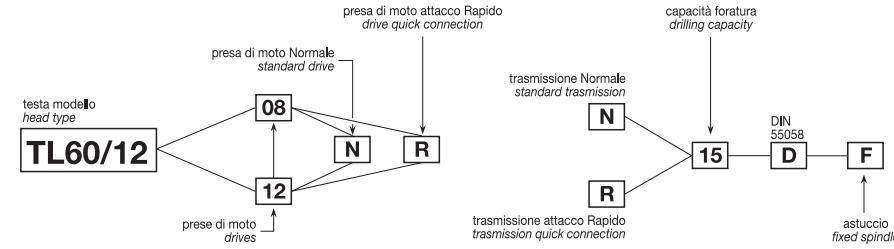
Peso gruppo testa  
Head weight **Kg 34,5**

Peso gruppo mandrino  
Spindle-set weight **Kg 2,5**

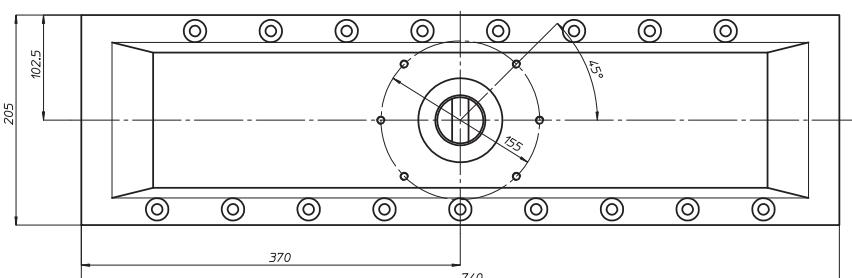
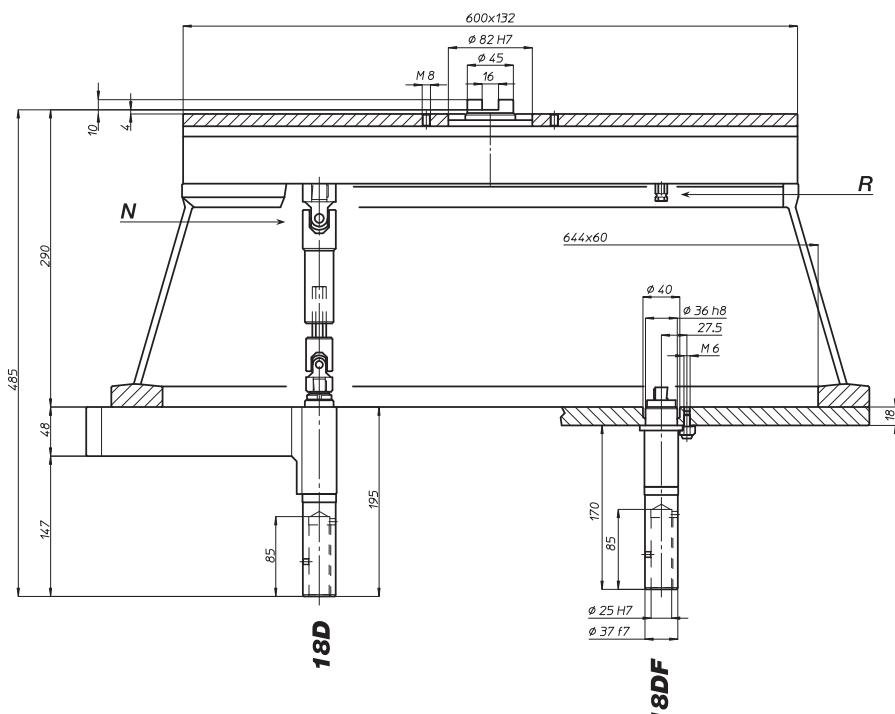
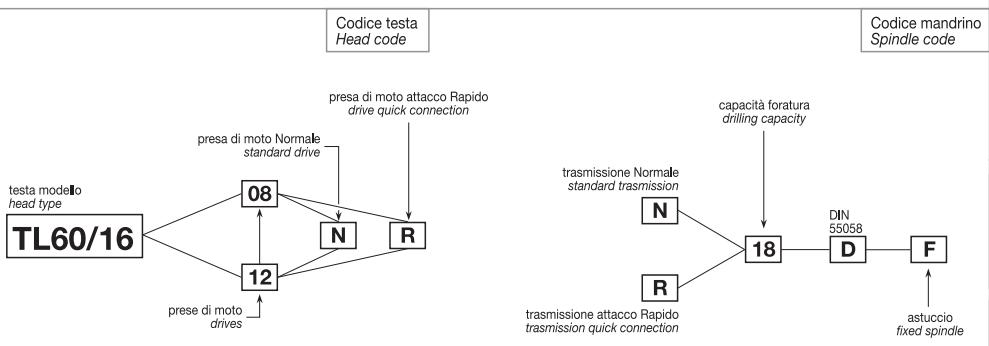
area di lavoro  
working area



Codice testa Head code	Codice mandrino Spindle code
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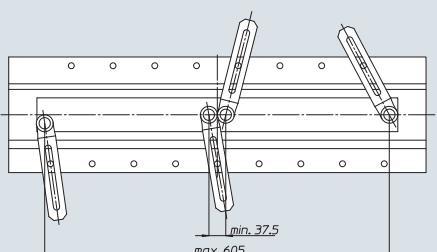


# TL 60/16



	N° prese di moto Nr. spindle drives	08-12
	Rapporto Ratio	1-1
	Capacità di foratura Drilling capacity	acciaio R=500 N/mm <sup>2</sup> 16 ghisa: GG25 18
	Maschiatura Tapping	M14
	Attacco utensile Type of spindle	D DIN 55058 Ø 25
	Peso gruppo testa Head weight	Kg 36
	Peso gruppo mandrino Spindle-set weight	Kg 2,5

area di lavoro  
working area



TA

MO

HT

VH

TSI/TSX

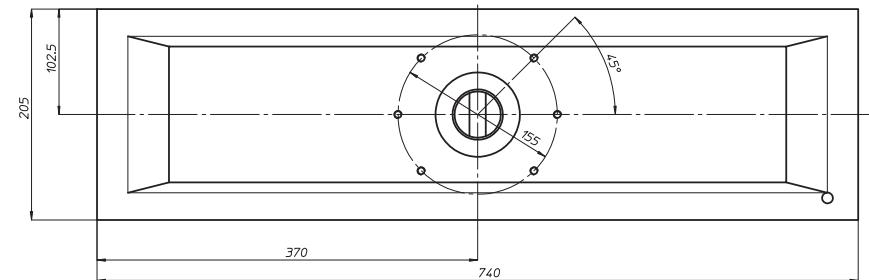
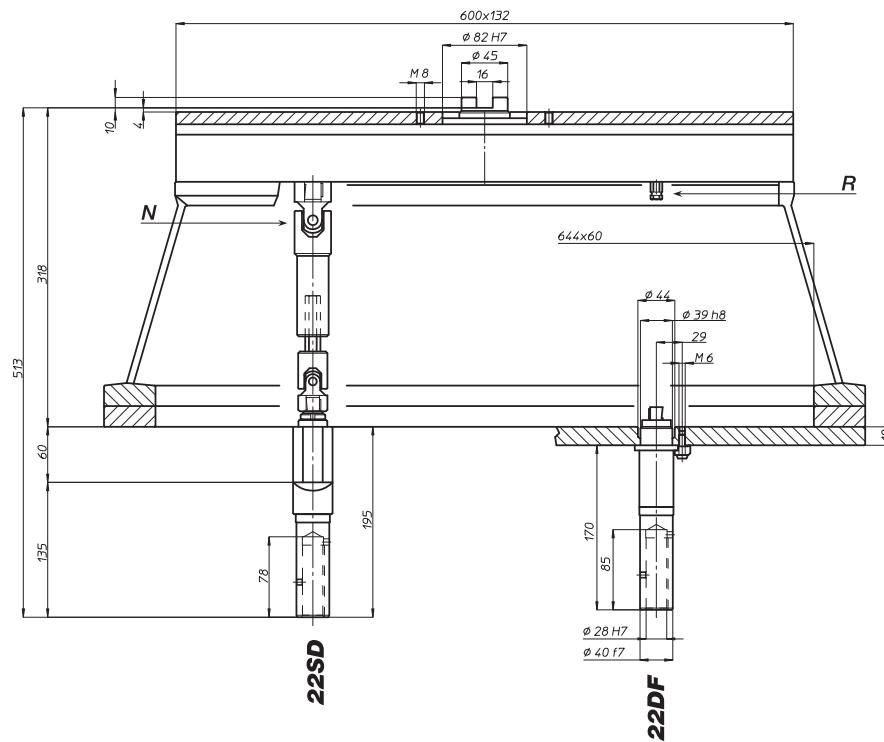
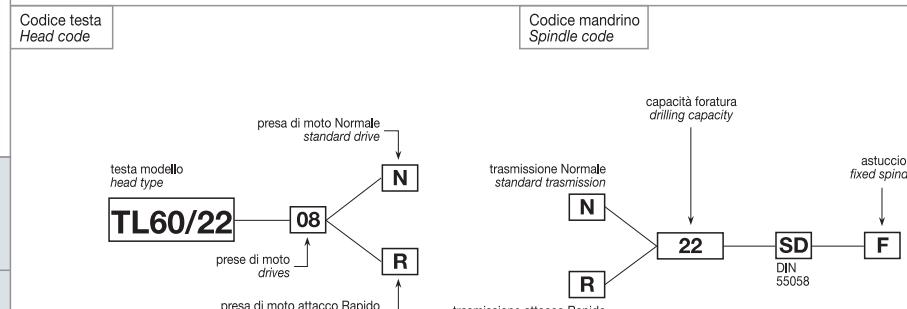
T

MT-TC-TC3

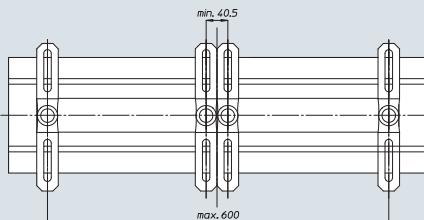
Accessori  
AccessoriesAppendice tecnica  
Technical supplement



# TL60/22



## area di lavoro working area



TA

MO

HT

VH

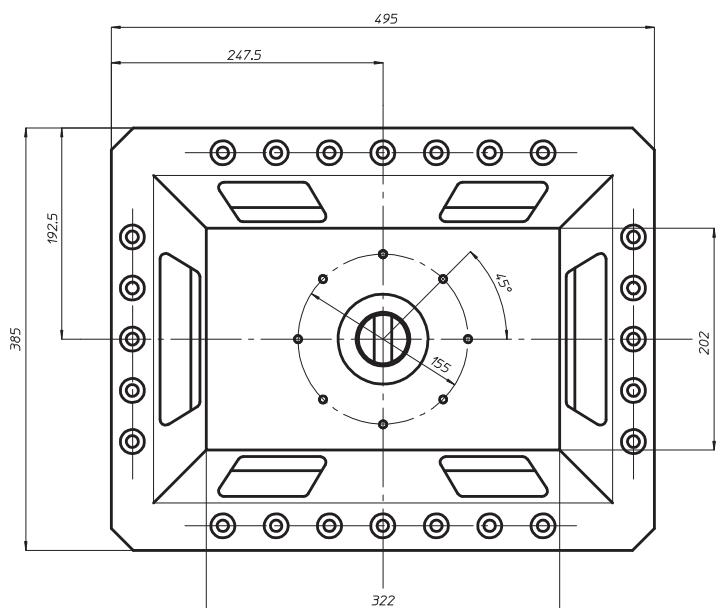
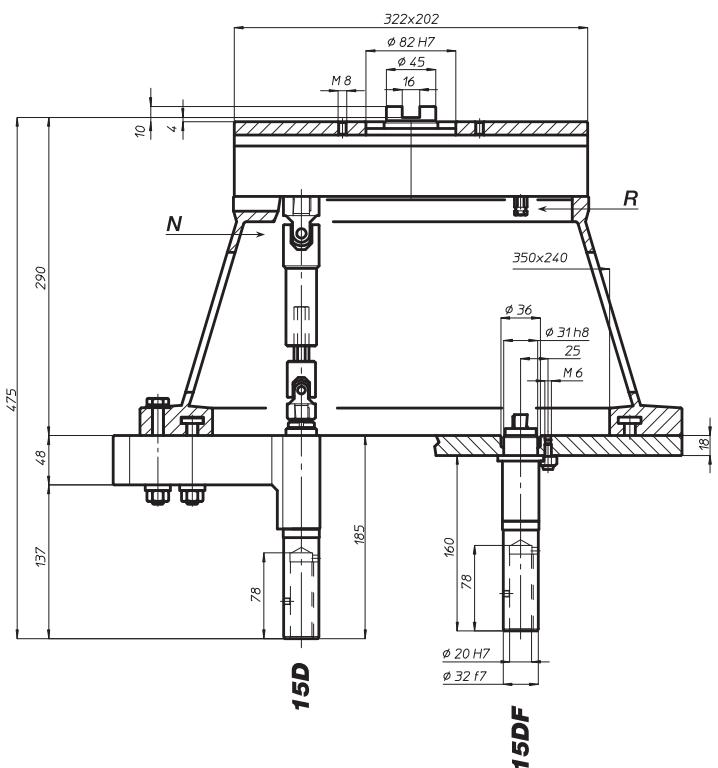
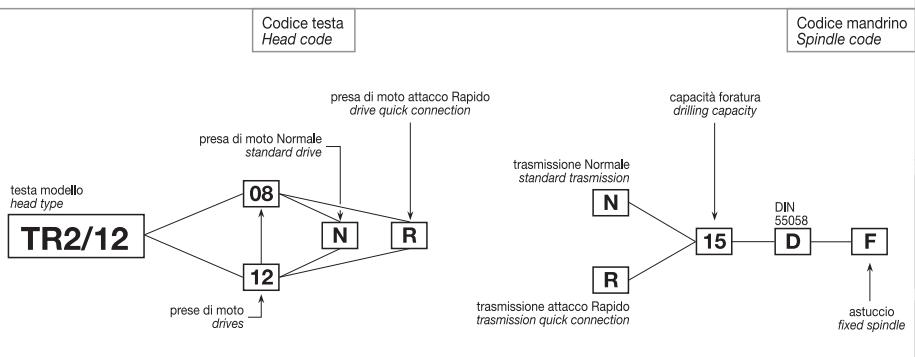
TSI/TSX

T

MT-TC-TC3

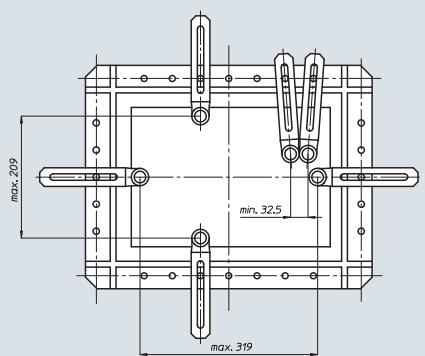
Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# TR2/12



	N° prese di moto Nr. spindle drives	8-12
	Rapporto Ratio	1-1
	Capacità di foratura Drilling capacity acciaio R=500 N/mm <sup>2</sup> ghisa: GG25	13 15
	Maschiatura Tapping	M12
	Attacco utensile Type of spindle D DIN 55058 Ø20	D DIN 55058 Ø20
	Peso gruppo testa Head weight	Kg 30
	Peso gruppo mandrino Spindle-set weight	Kg 2,6

area di lavoro  
working area



TA

MO

HT

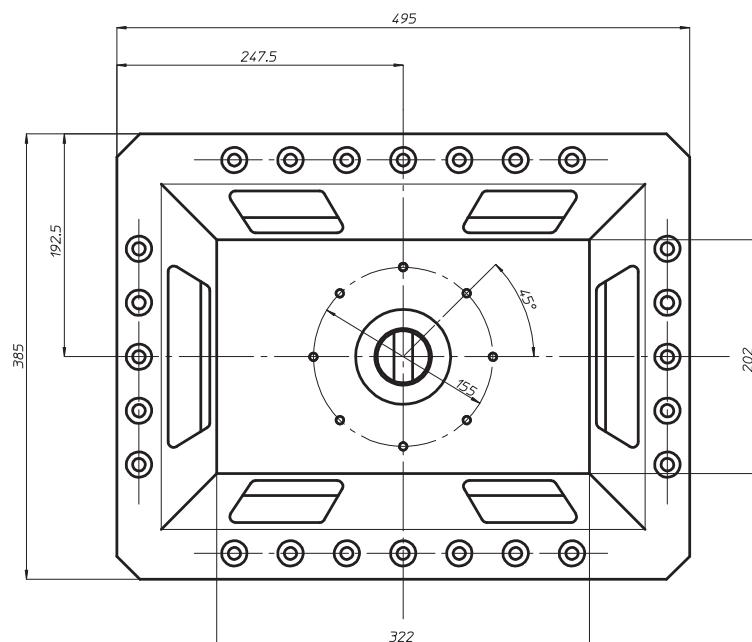
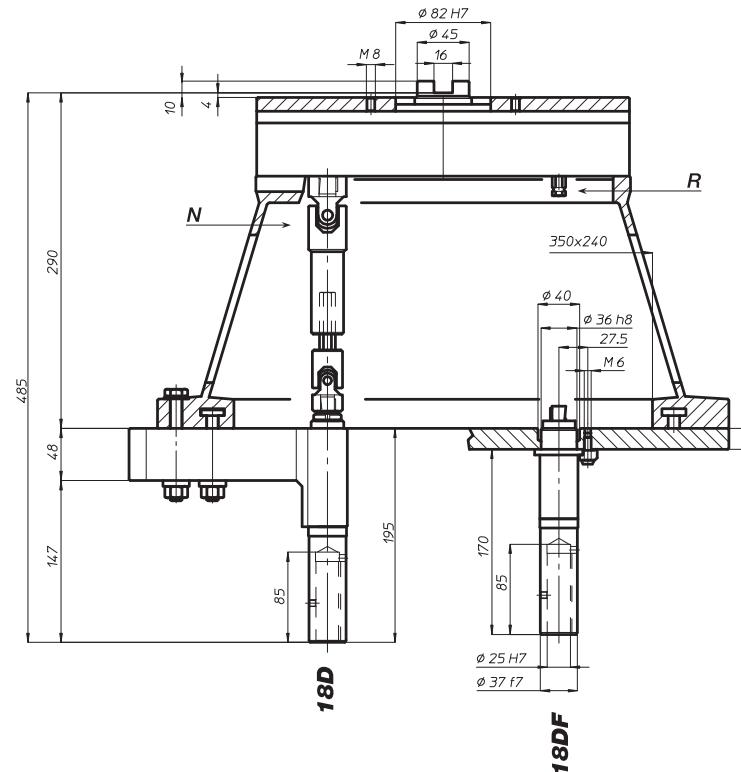
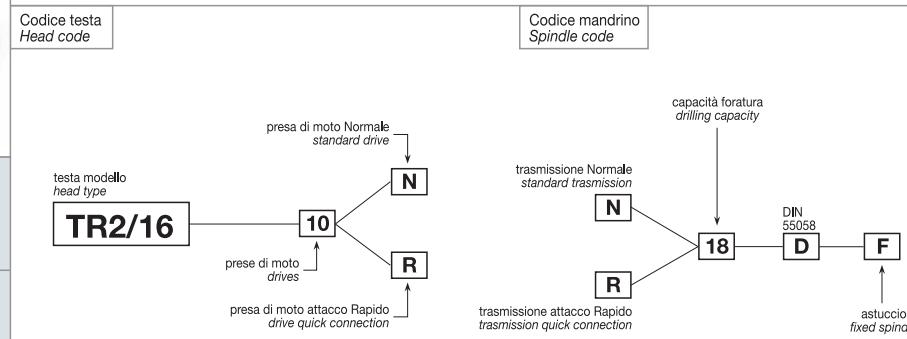
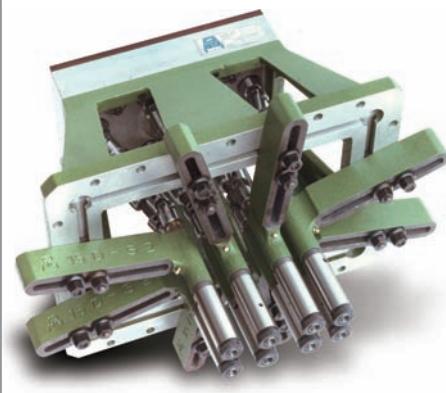
VH

TSI/TSX

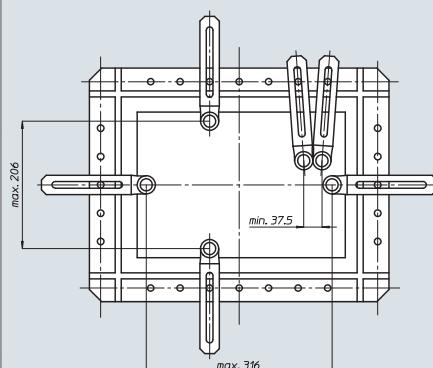
MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

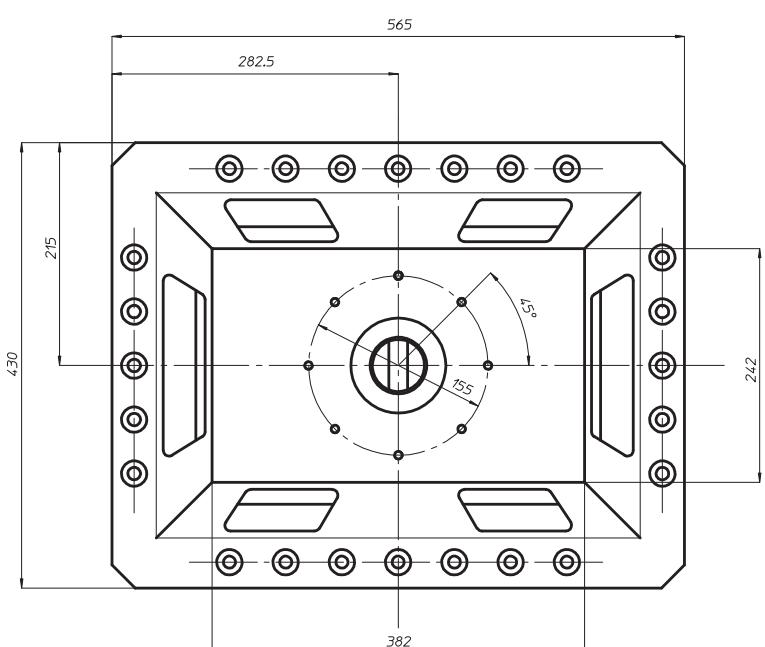
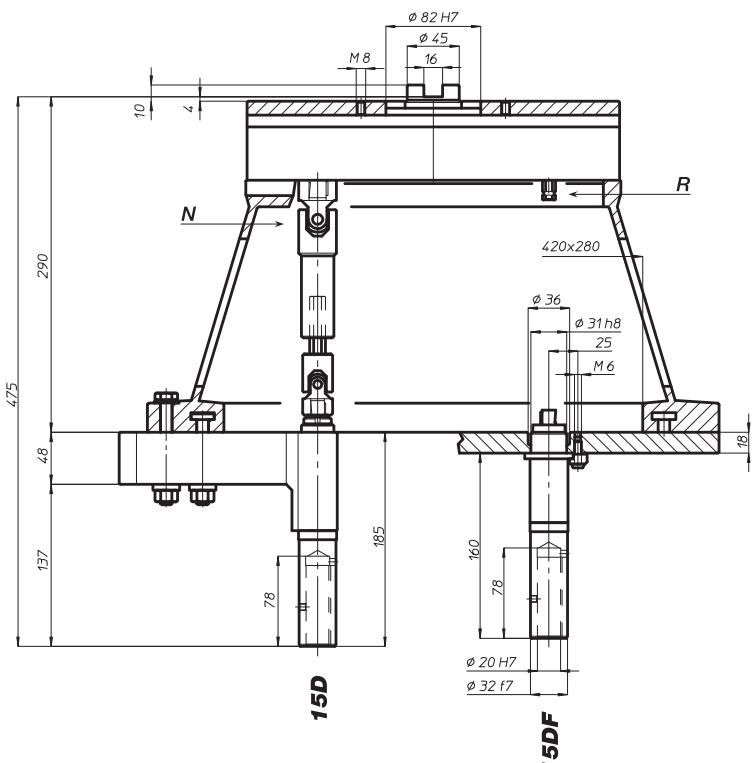
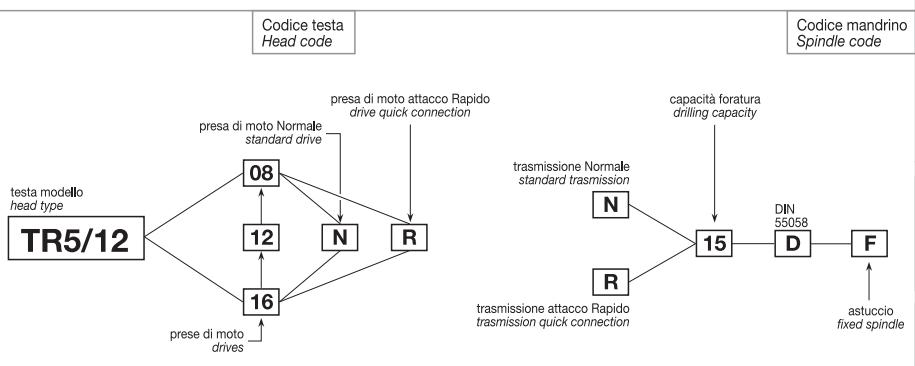
# TR2/16



## area di lavoro working area

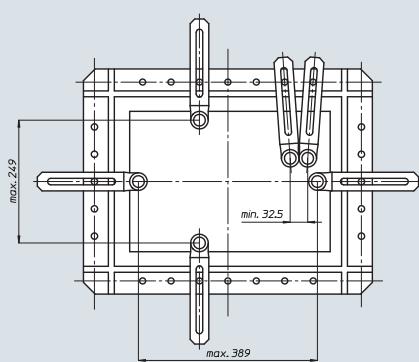


# TR5/12



	N° prese di moto Nr. spindle drives	08-12-16
	Rapporto Ratio	1-1
	Capacità di foratura Drilling capacity	acciaio R=500 N/mm <sup>2</sup> ghisa: GG25
	Maschiatura Tapping	M12
	Attacco utensile Type of spindle	D DIN 55058 Ø20
	Peso gruppo testa Head weight	Kg 34,5
	Peso gruppo mandrino Spindle-set weight	Kg 2,6

area di lavoro  
working area



# TR5/16



TA

MO

HT

VH

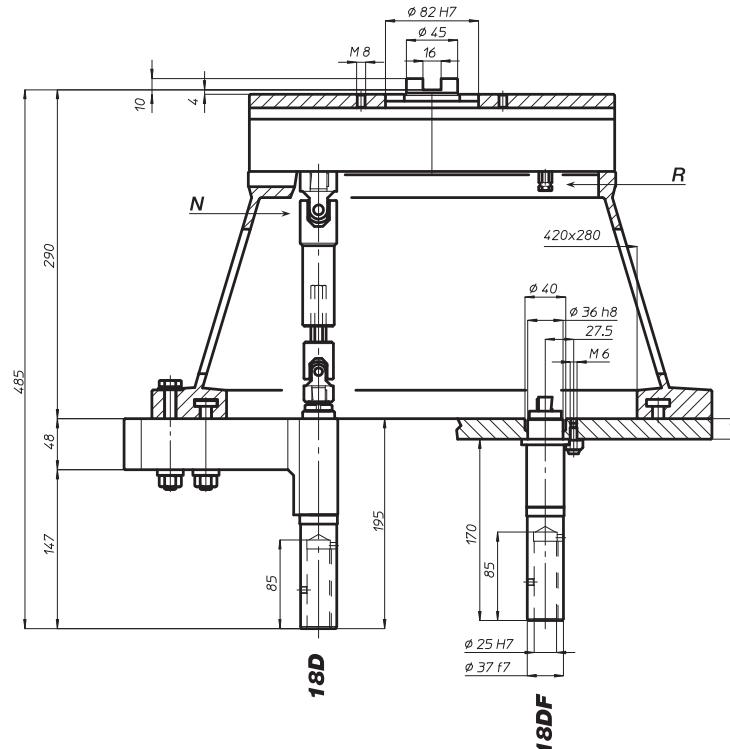
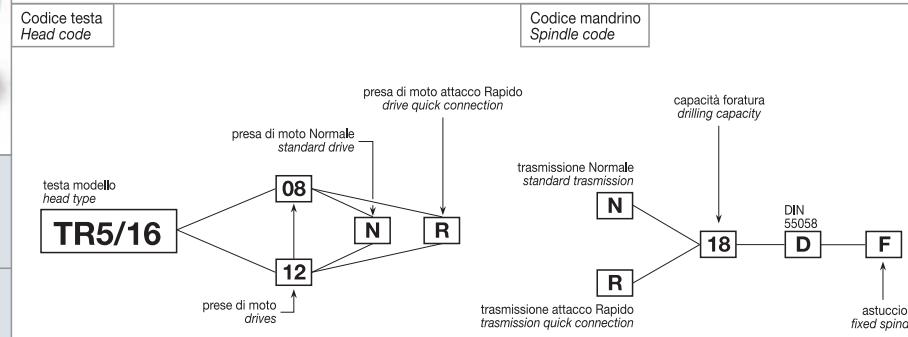
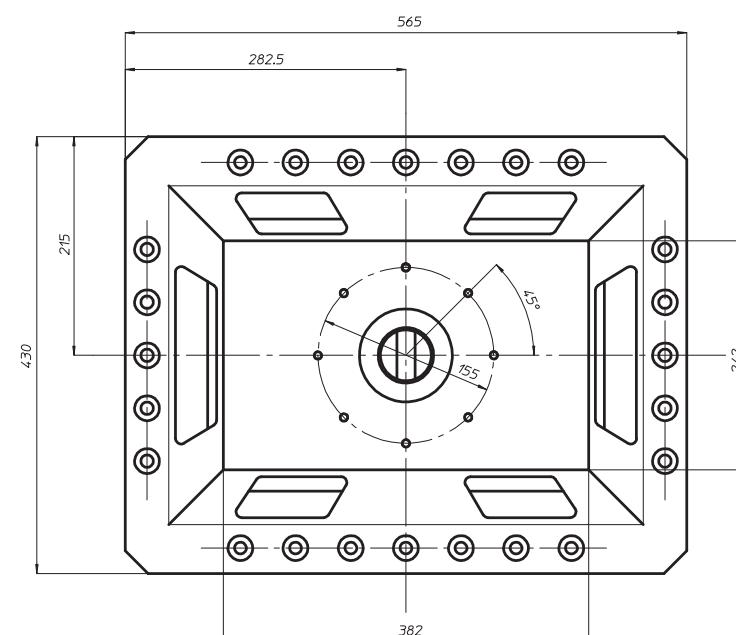
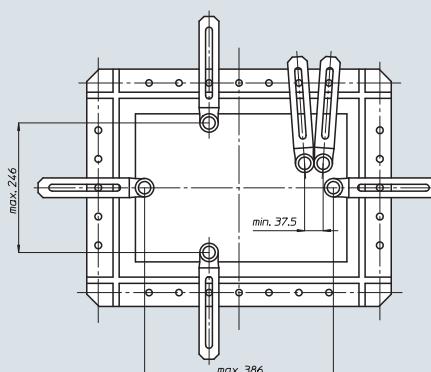
TSI/TSX

T

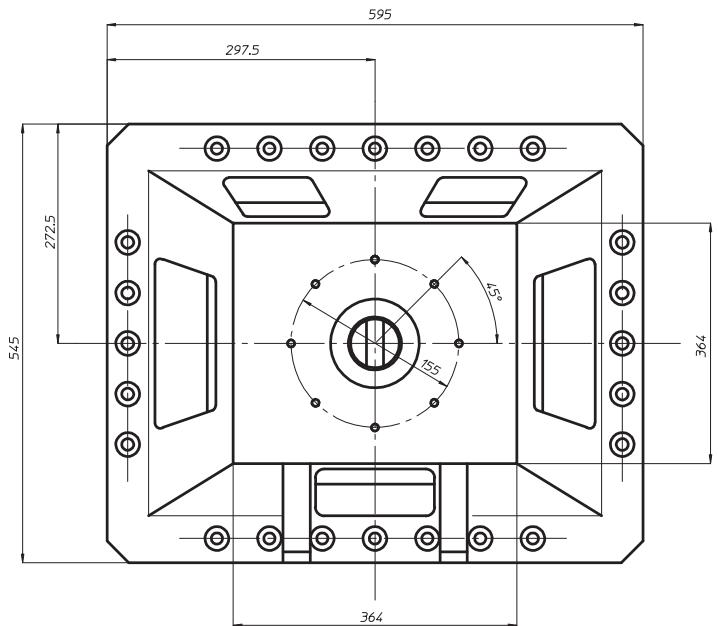
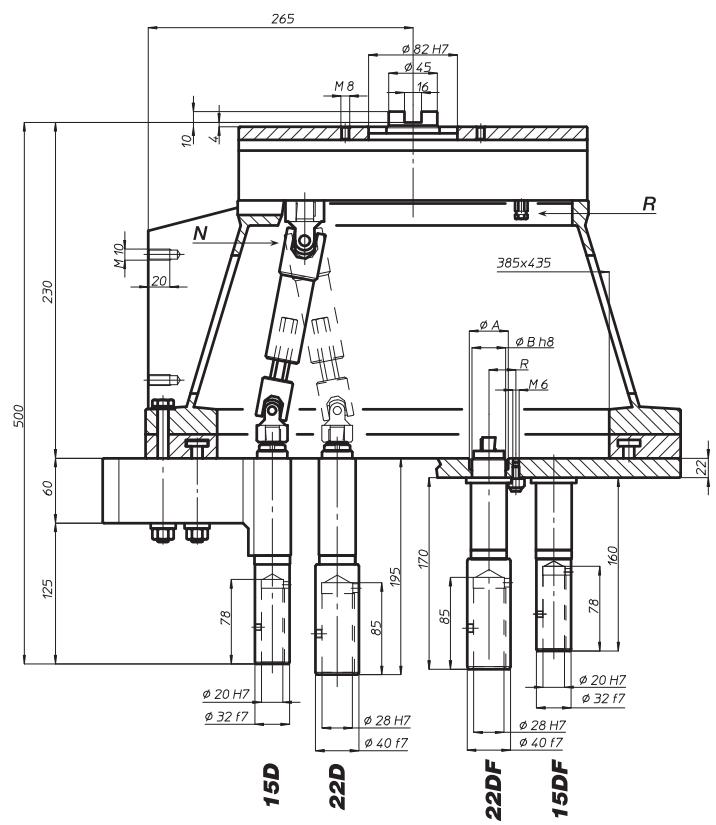
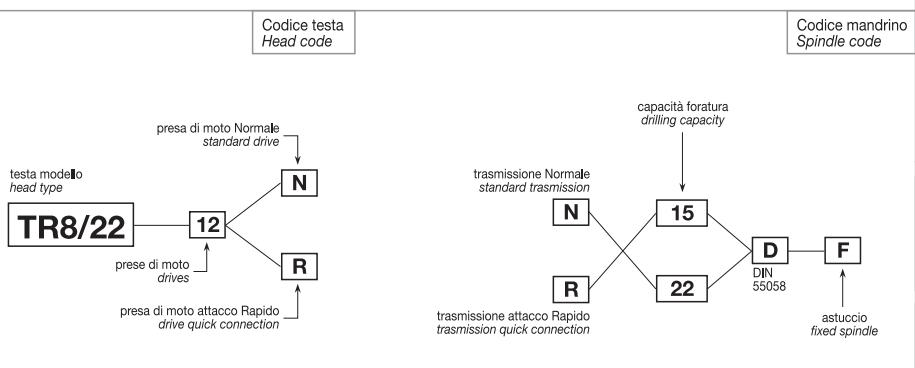
MT-TC-TC3

Accessori  
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6-22

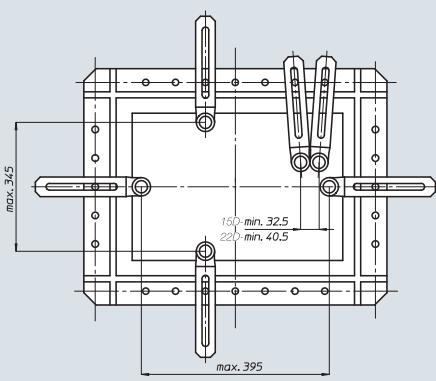
area di lavoro  
working area

# TR8/22



	N° prese di moto Nr. spindle drives	12
	Rapporto Ratio	1-1,5
	Capacità di foratura Drilling capacity acciaio R=500 N/mm <sup>2</sup> 15D: 13 22D: 20 ghisa: 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	Kg 86
	Peso gruppo mandrino Spindle-set weight	15D: Kg 4 22D: Kg 5,5

area di lavoro  
working area



TA

MO

HT

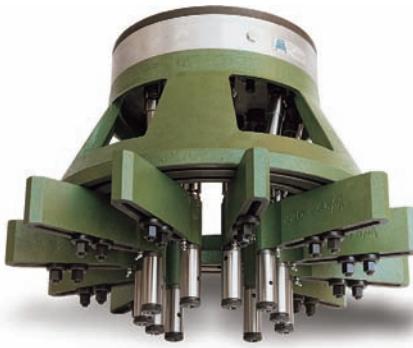
VH

TSI/TSX

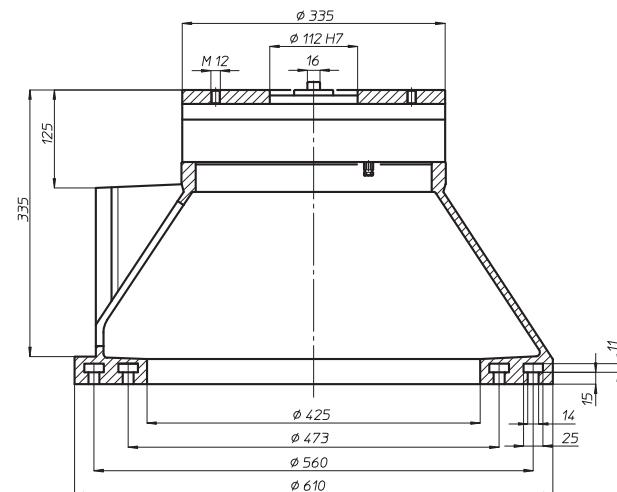
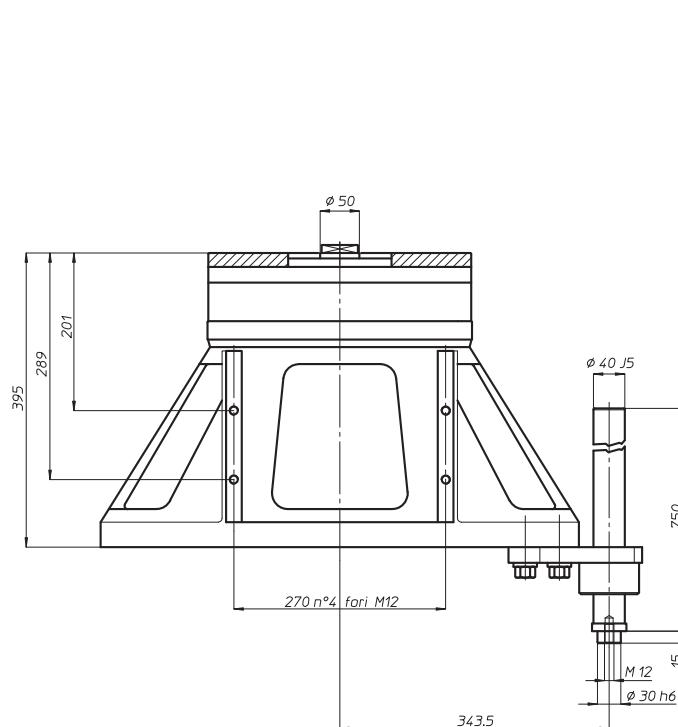
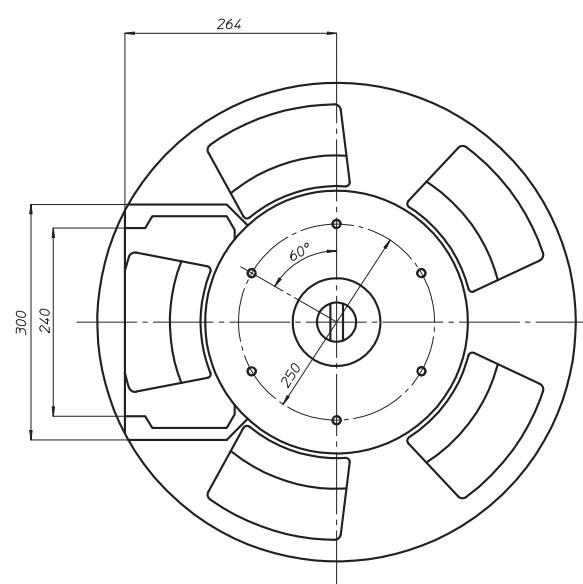
T

MT-TC-TC3

Accessori  
AccessoriesAppendice tecnica  
Technical supplement



# TM400

Codice testa  
Head codetesta modello  
head type**TM400****12****R**prese di moto  
drivespresa di moto attacco Rapido  
drive quick connectionN° prese di moto  
Nr. spindle drives**12**Rapporto  
Ratio**1-1**Peso  
Weight**Kg 105**area di lavoro  
working area**Ø 385**

# TM500

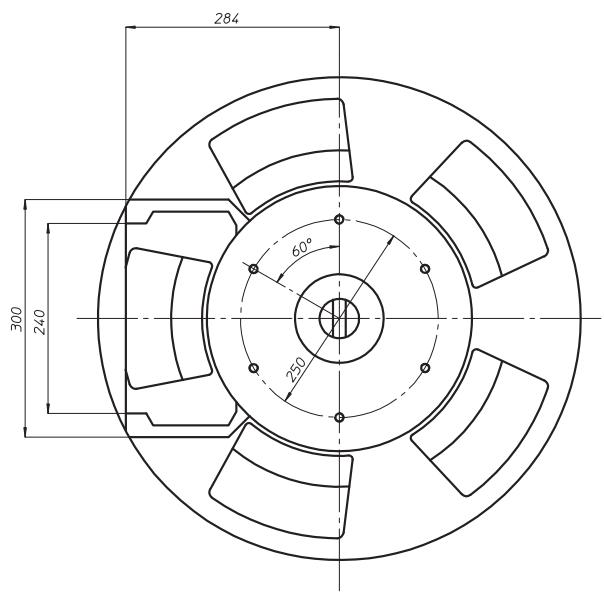
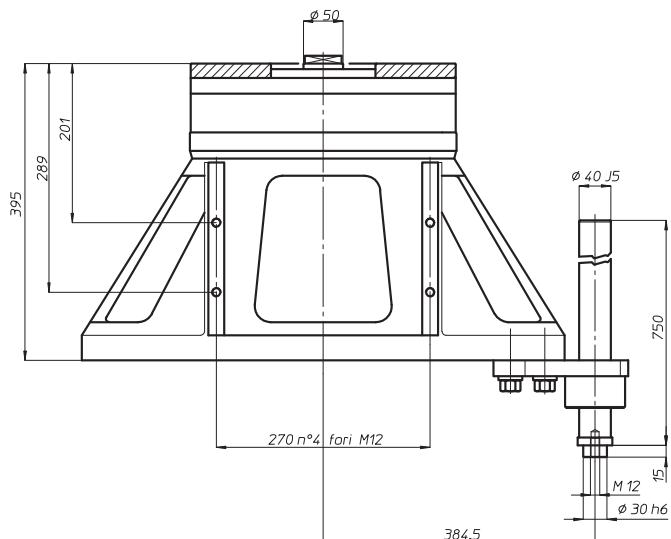
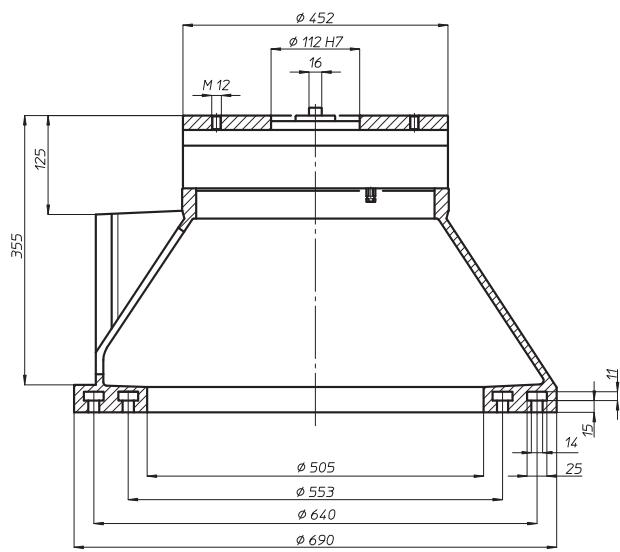
testa modello  
head type

**TM500** — 18 — R

prese di moto  
drives

drive quick connection

Codice testa  
Head code



	N° prese di moto Nr. spindle drives	18
	Rapporto Ratio	1-1
	Peso Weight	Kg 145

area di lavoro  
working area

Ø 465

TA

MO

HT

VH

TSI/TSX

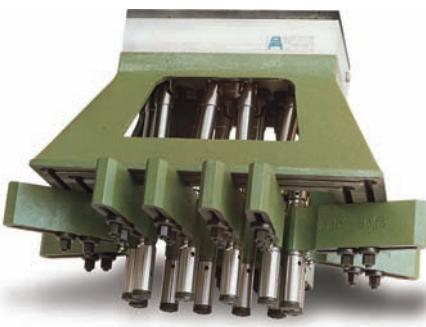
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MT-TC-TC3

Accessori  
Accessories

Appendice tecnica  
Technical supplement

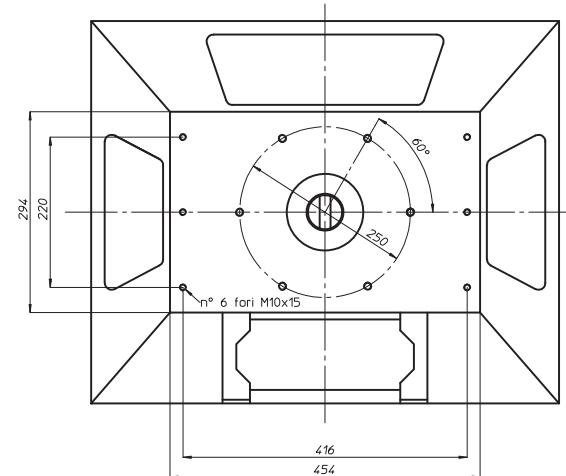
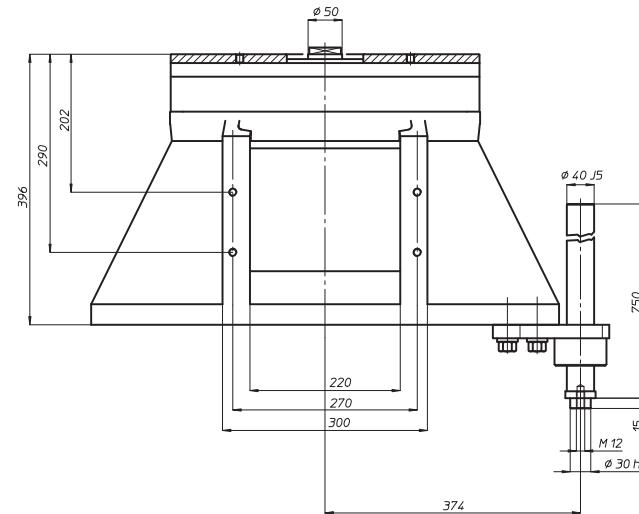
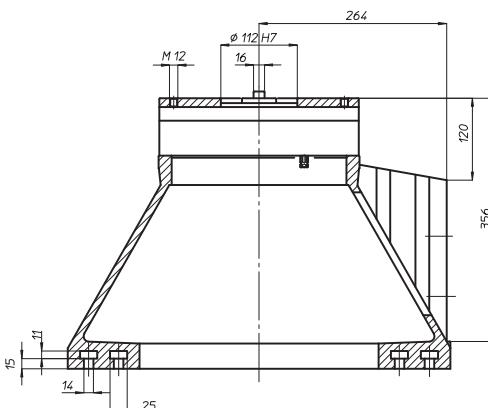
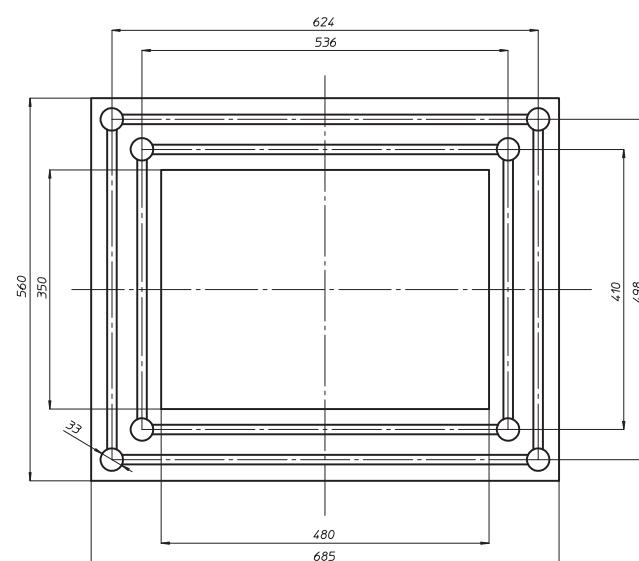
# TRM43

Codice testa  
Head code

testa modello  
head type  
**TRM43**

**16****R**prese di moto  
drivespresa di moto attacco Rapido  
drive quick connection

	N° prese di moto Nr. spindle drives	<b>16</b>
	Rapporto Ratio	<b>1-1</b>
	Peso Weight	<b>Kg 135</b>

area di lavoro  
working area**300 x 440**

TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

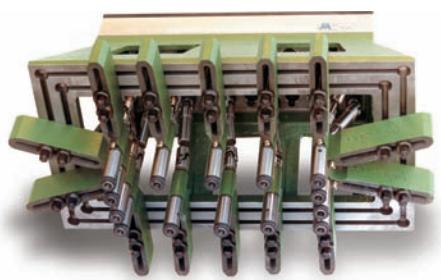
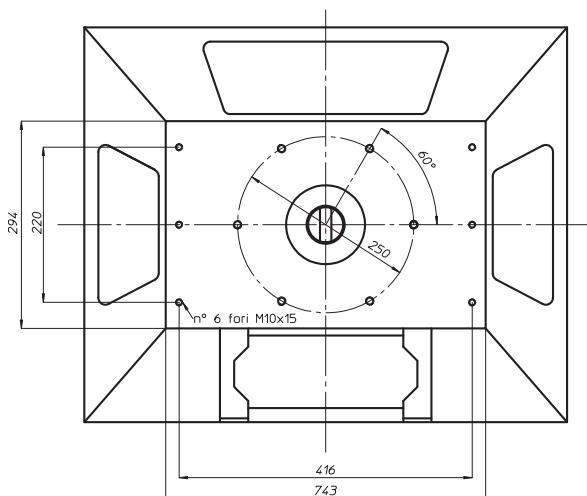
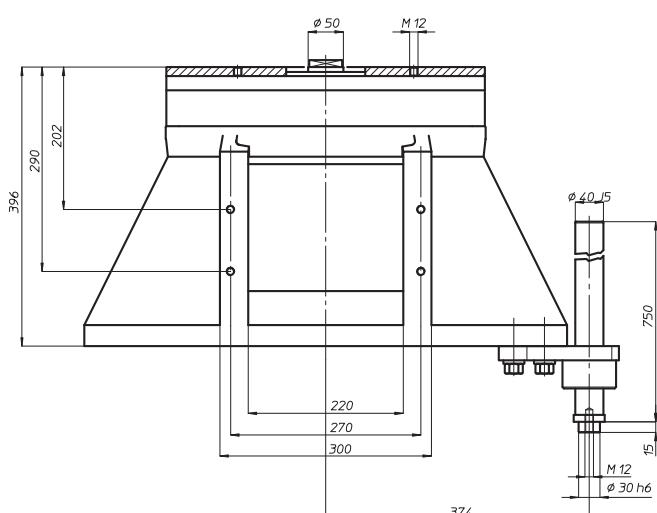
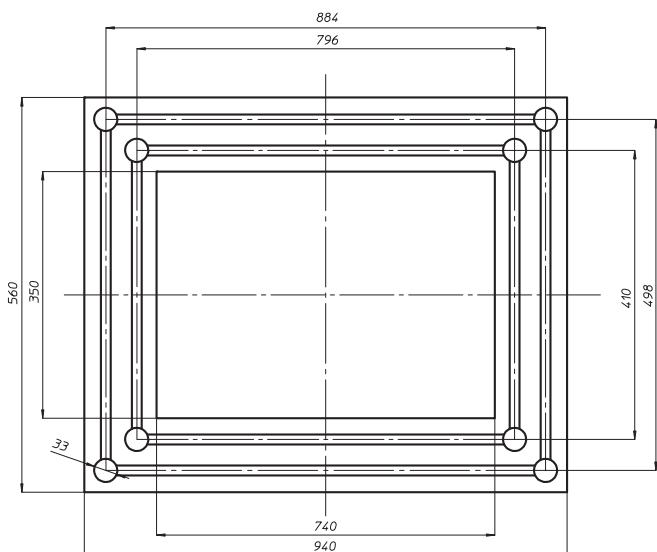
Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# TRM73

testa modello  
head type**TRM73**

26

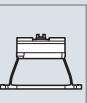
R

prese di moto  
drivespresa di moto attacco Rapido  
drive quick connectionCodice testa  
Head codeN° prese di moto  
Nr. spindle drives

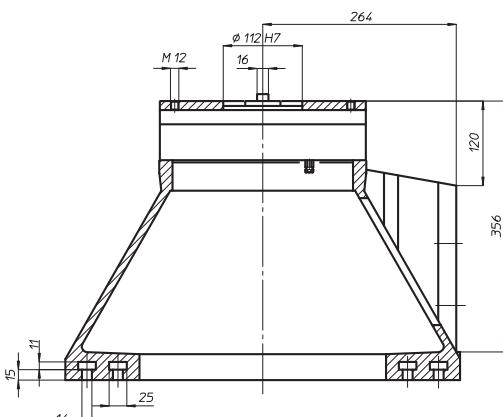
26

Rapporto  
Ratio

1-1

Peso  
Weight

Kg 210

area di lavoro  
working area

300 x 700

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

TA

MO

HT

VH

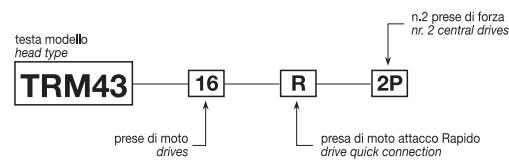
TSI/TSX

T

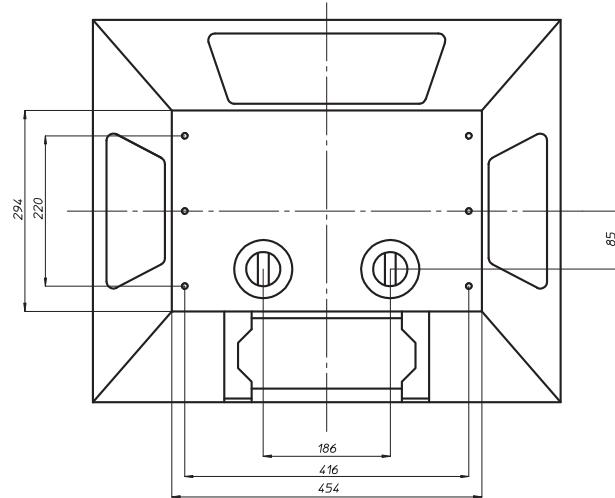
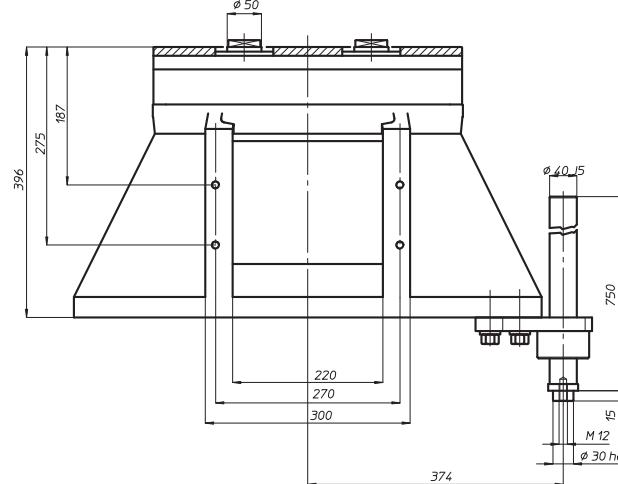
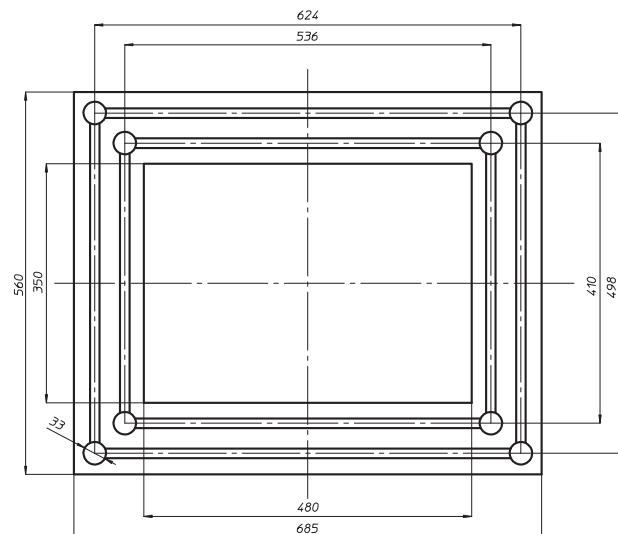
MT-TC-TC3



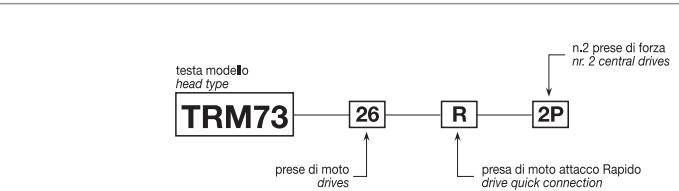
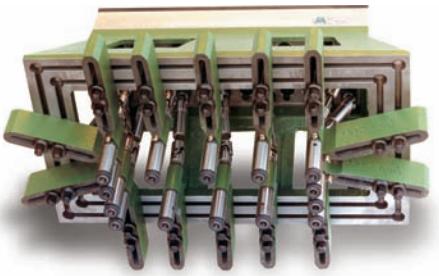
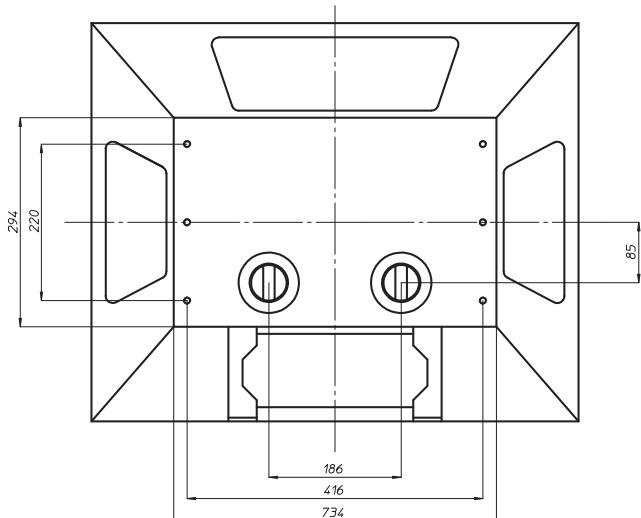
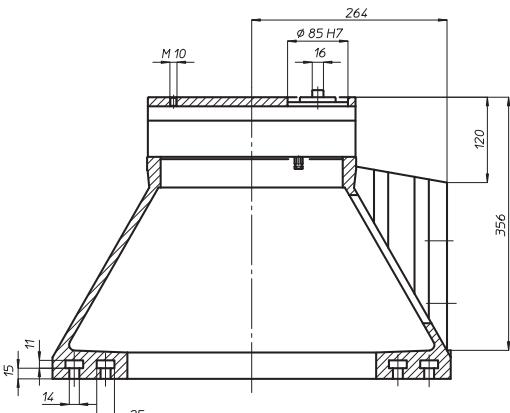
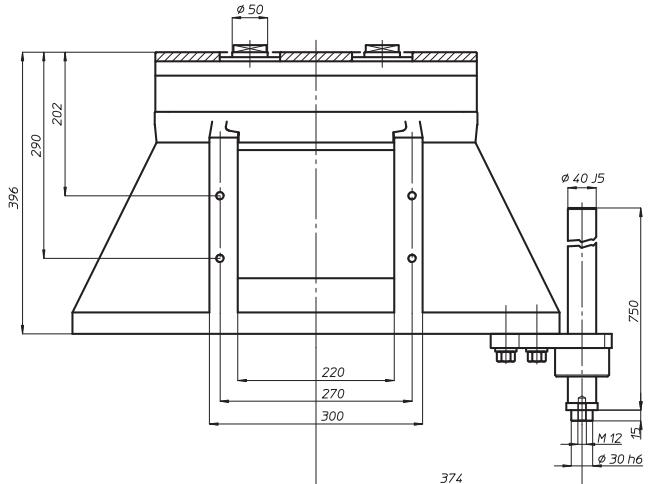
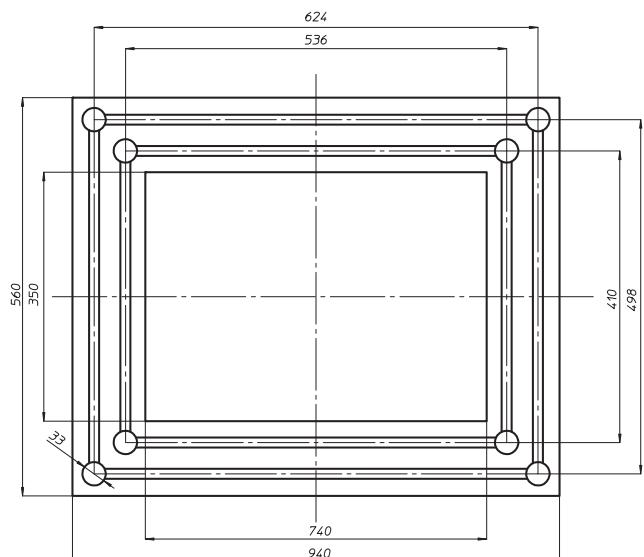
# TRM43-2P

Codice testa  
Head code

N° prese di moto Nr. spindle drives	8+8
Rapporto Ratio	1-1
Peso Weight	Kg 140

area di lavoro  
working area**300 x 440**TA  
MO  
HT  
VH  
TSI/TSX  
**T**MT-TC-TC3  
Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# TRM73-2P

Codice testa  
Head code

	N° prese di moto Nr. spindle drives	13+13
	Rapporto Ratio	1-1
	Peso Weight	Kg 210

area di lavoro  
working area

300 x 700

Accessori  
AccessoriesAppendice tecnica  
Technical supplement

TA

MO

HT

VH

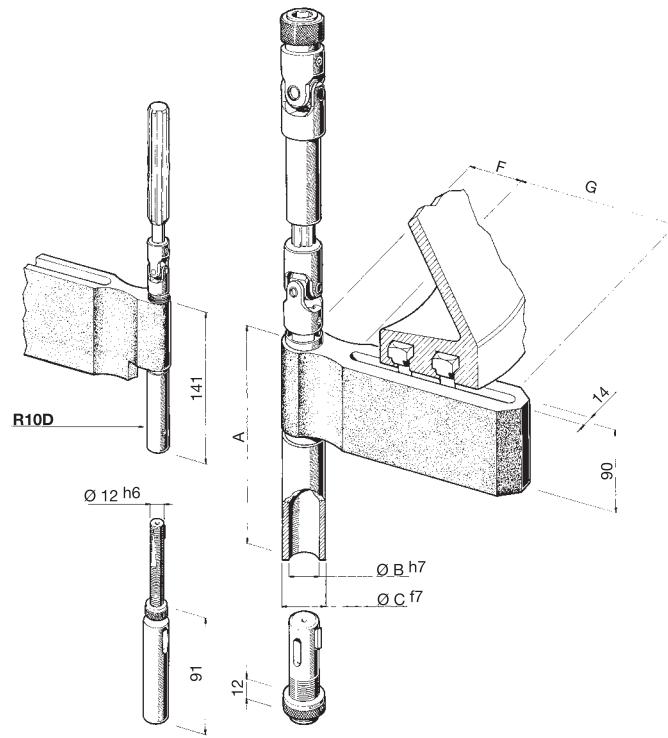
TSI/TSX

T

MT-TC-TC3

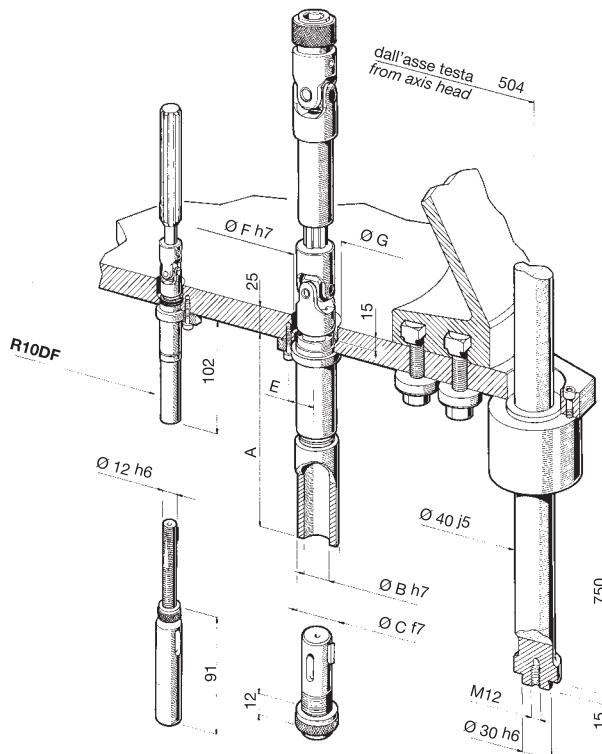
# solo per teste TM-TRM for TM-TRM heads only

## su staffa - on arm



Tipi mandrini spindles type	10D	12D	15D	18D	22D	25D
Codice code	R10D-S5 R10D-S6	R12D-S5 R12D-S6	R15D-S5 R15D-S6	R18D-S5 R18D-S6	R22D-S5 R22D-S6	R25D-S5 R25D-S6
Capacità foratura drilling capacity acciaio R=500 N/mm	8	10	13	16	20	22
ghisa: GG25	10	12	15	18	22	25
Capacità maschiatura tapping	M6	M8	M12	M14	M16	M18
A	127	181	185	194	195	232
$\varnothing B\text{ h}7$	12	16	20	25	28	32
$\varnothing C\text{ f}7$	20	25	32	37	40	45
F	59	55	55	55	55	60
G	200 270	200 270	200 270	200 270	200 270	200 270
Interasse minimo center distance	23	28	32,5	37,5	40,5	50
Peso weight kg	4,0 4,5	4,7 5,2	5,2 5,7	5,5 6,3	6,6 7,4	8,6 9,5

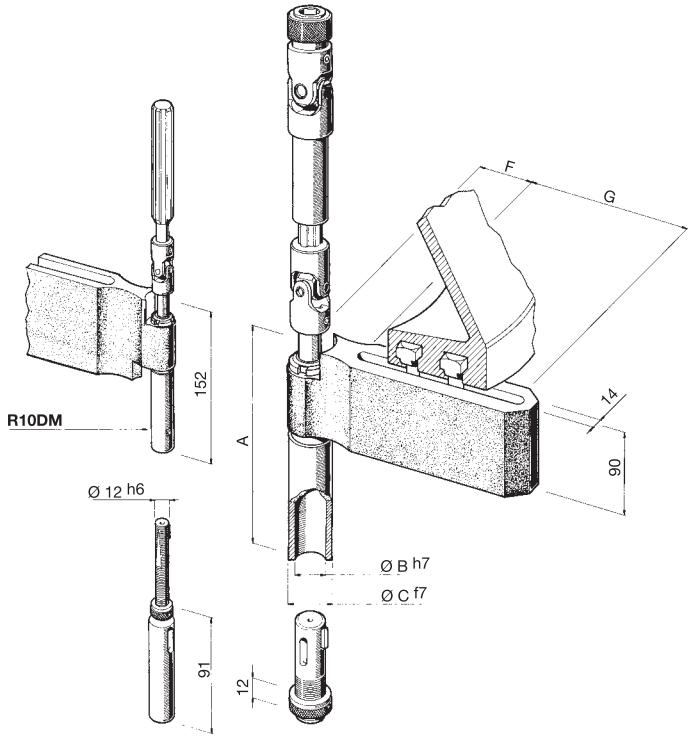
## su astuccio per flangia fissa - fixed plate spindle



Tipi mandrini spindles type	10D	12D	15D	18D	22D	25D
Codice code	R10DF	R12DF	R15DF	R18DF	R22DF	R25DF
Capacità foratura drilling capacity acciaio R=500 N/mm	8	10	13	16	20	22
ghisa: GG25	10	12	15	18	22	25
Capacità maschiatura tapping	M6	M8	M12	M14	M16	M18
A	102	156	160	169	170	207
$\varnothing B\text{ h}7$	12	16	20	25	28	32
$\varnothing C\text{ f}7$	20	25	32	37	40	45
E Interasse vite M6 distance screw M6	18,5	23	25	27,5	29	34
$\varnothing F\text{ h}7$	23	27,5	31	36	39	50
$\varnothing G$	27	32	36	40	44	56
Interasse minimo center distance	23,5	28	32,5	37,5	40,5	50,5
Peso weight kg	2,0	2,3	2,6	3,4	3,8	5,2

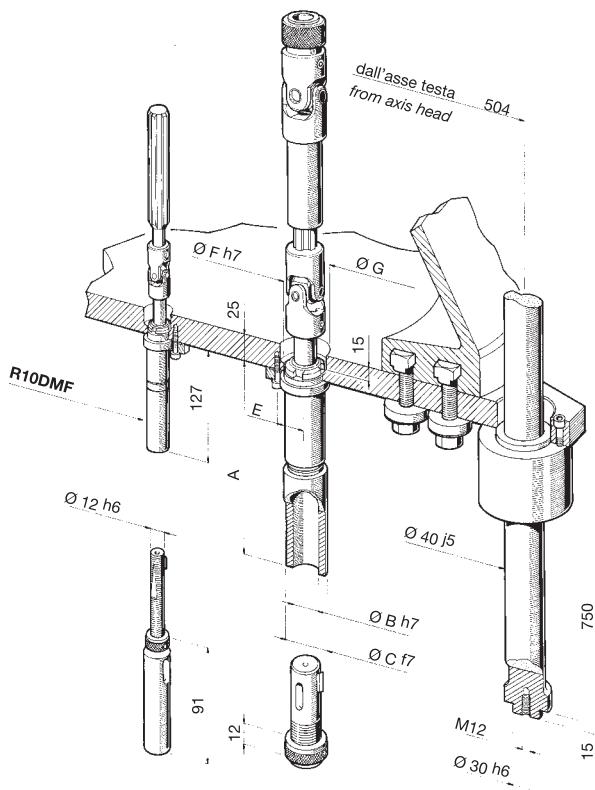
# solo per teste TM-TRM for TM-TRM heads only

## su staffa - on arm



Tipi mandrini spindles type	10DM	15DM	22DM
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 4,5	5,2 5,7	6,6 7,4

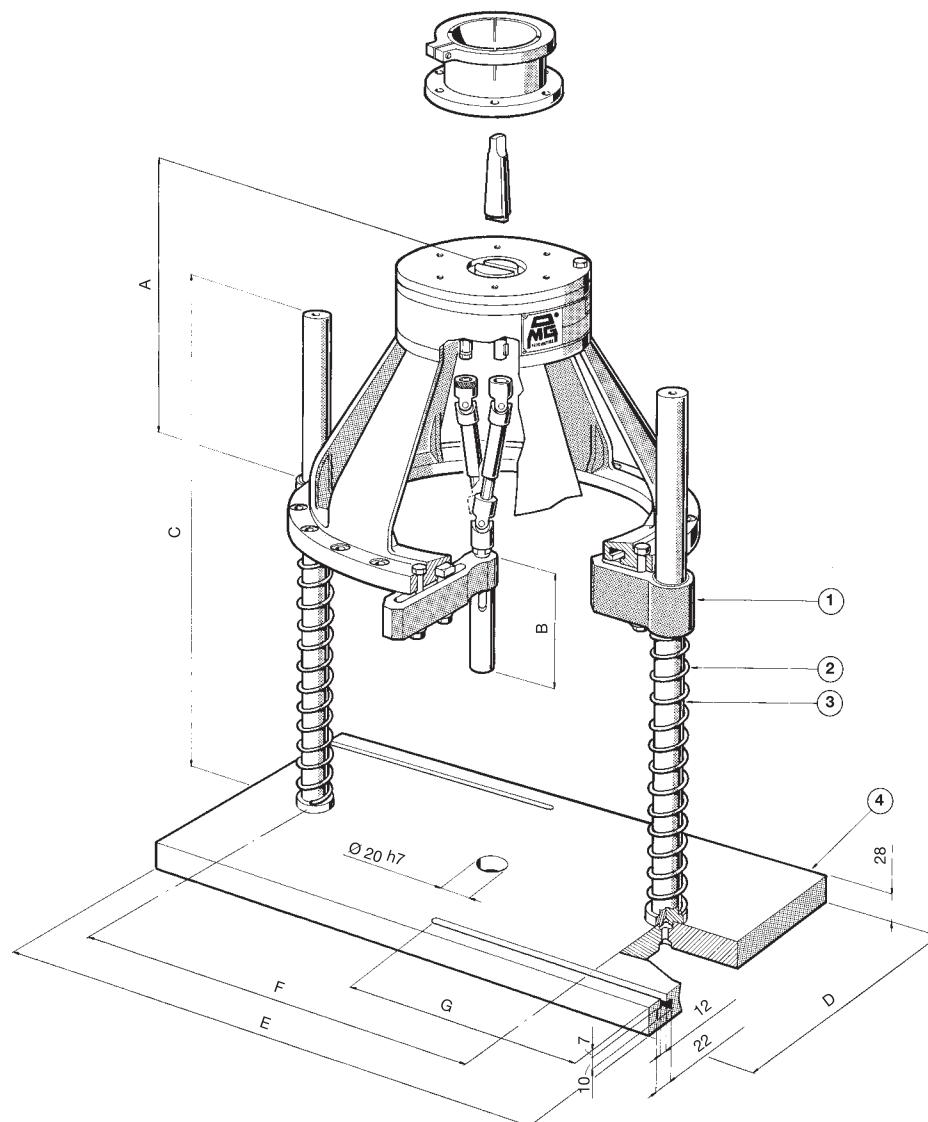
## su astuccio per flangia fissa - fixed plate spindle



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 Interasse vite M6 distance crew M6	18,5	25	29
ØF h7	23	31	39
ØG	27	36	44
Interasse minimo center distance	23,5	32,5	40,5
Peso weight	2,0	2,6	3,8

# attrezzature per teste multiple *multispindle heads equipment*

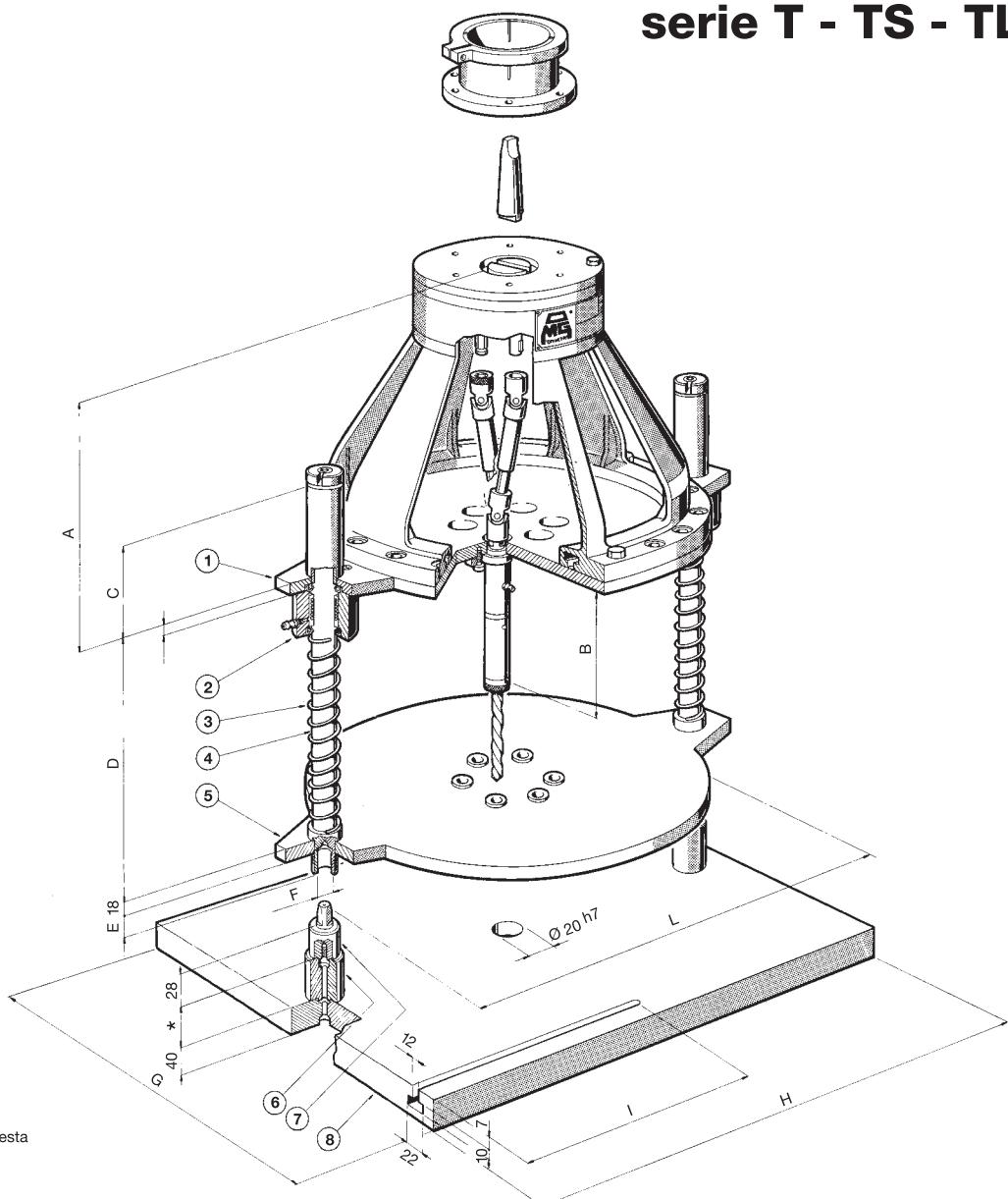
## serie T - TS - TL - TR



Modello testa head type	A DIN 55058	B Pinza ER	C	D	E	F	G	1 supporto di guida guide bush	2 molla spring	3 colonna column	4 base base
T4	205	91,5	76			280					076081
T7	205	101,5	76	500	250	500	350	076123	076126	076120	076082
T10	236	109	94,5				404				076083
T12	260	172					454				076084
TS12	283	172					542				076088
T15	272	175					492				076085
TS15	282	175					552	076133	076136	076130	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								
TL20/6	237	101,5	76	500	250	500	400	076123	076126	076120	076092
TL20/8	237	109	94,5								
TL40/12	290	175									
TL40/16	290	185									
TL40/22	318	185									
TL60/12	290	175									
TL60/16	290	185									
TL60/22	318	185									
TR2/12	290	175									
TR2/16	290	185									076095
TR5/12	290	175						076133	076136	076130	076096
TR5/16	290	185									

# attrezzature per teste multiple multispindle heads equipment

serie T - TS - TL - TR



\* a richiesta

Modello testa head type	A DIN 55058	B Pinza ER	C	D	E	$\varnothing F^{h7}$	G	H	I	L	1 flangia fissa fixed flange	2 cartuccia di guida guide bush	3 molla spring	4 colonna column	5 maschera drilling jig	6 distanziale spacer	7 puntale push-rod	8 base base			
T4	205	91,5	76							280	076001			076051			076081				
T7	205	101,5	76	70	280	22	10	250	500	300	350	076002	076122	076126	076121	076052	-	076127	076082		
T10	236	109	94,5							404	076003			076053				076083			
T12	260	172									454	076004			076054			076084			
TS12	283	172									542	076005			076055			076085			
T15	272	175									492	076006			076056			076086			
TS15	282	175		100	405	27	18	300	650	350	552	076007	076132	076136	076131	076057	-	076137	076087		
T18	293	185									540	076008			076058			076088			
TS18	299	185									582	076009			076059			076089			
T22	317	185									540	076010			076060			076090			
TS22	317	185									582	076011			076061			076091			
TL20/4	237	91,5	76							280	076012	076122	076126	076121	076062	-	076127	076092			
TL20/6	237	101,5	76	70	280	22	10	250	500	300	400	076013									
TL20/8	237	109	94,5												076063			076093			
TL40/12	290	175									650	350	604	076014	076132	076136	076131	076064	-	076137	076094
TL40/16	290	185																			
TL60/22	318	185		100	405	27	18	300	850	450	804	076015			076065			076095			
TL60/12	290	175													076066			076096			
TR2/12	290	175																			
TR2/16	290	185																			
TR5/12	290	175																			
TR5/16	290	185																			

TA

MO

HT

VI

TSI/TSX

MT-TC-TC3

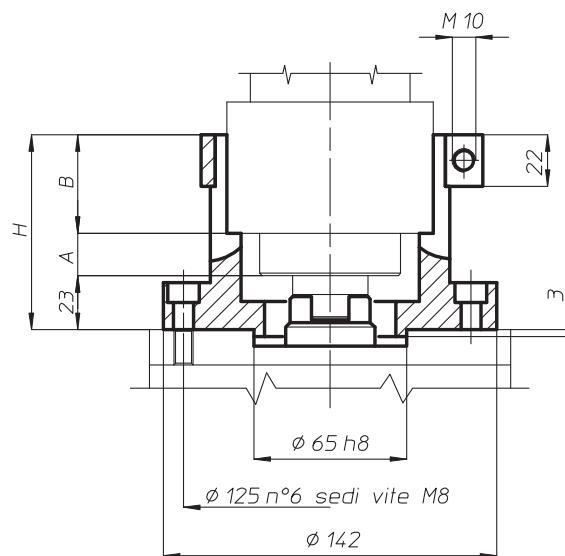
Accessori  
Accessories

Appendice tecnica  
Technical supplement

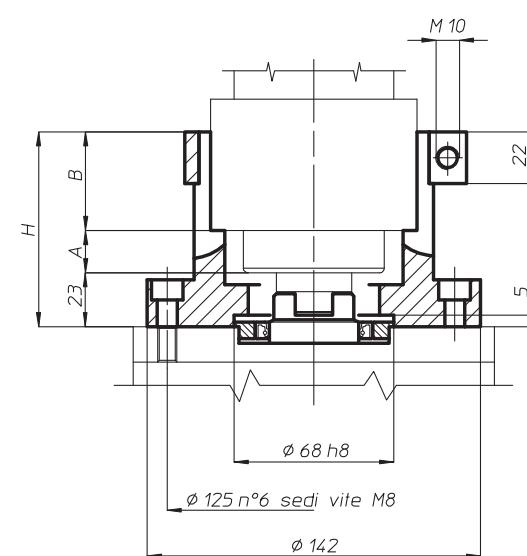
# Attacco Cono Morse trascinatore Morse Taper with driving dog

T4 - T7 - T10 - TL20...

**Versione standard**  
**Standard version**

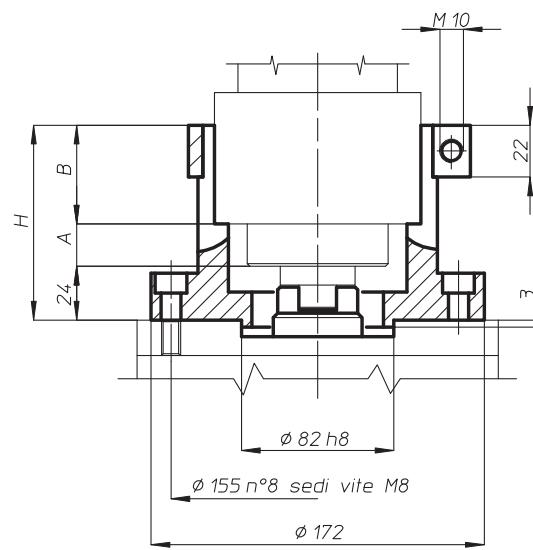


**Solo versione orizzontale**  
**For horizontal use only**

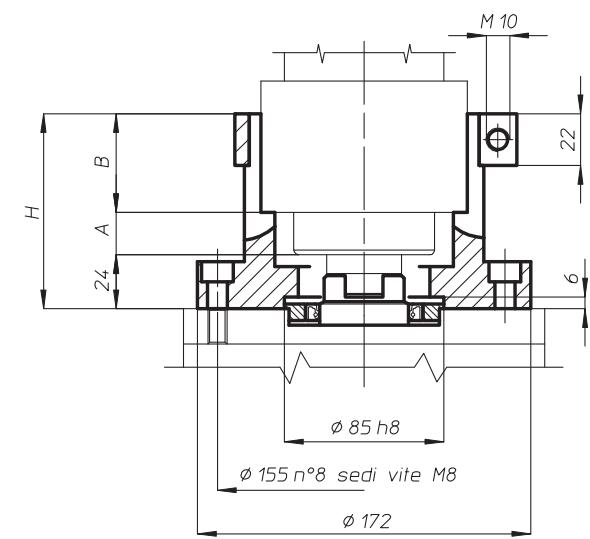


T12 - T15 - T18 - T22 - TL40... - TL60... - TR2... - TR5...

**Versione standard**  
**Standard version**



**Solo versione orizzontale**  
**For horizontal use only**



# note

# notes

**Accessori**  
**Accessories**

**Appendice tecnica**  
**Technical supplement**

MT-TC-TC3

14

11

Mo

TA



# teste multiple ad assi fissi *fixed multispindle heads*

system **MT**



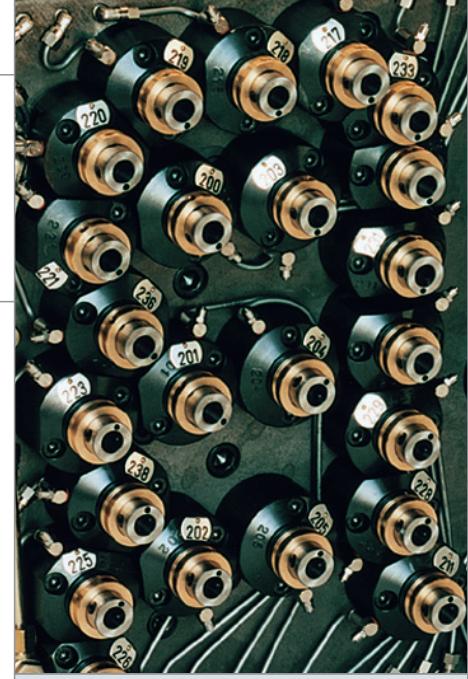
system **TC**



system **TC3**



serie **TFS**



MT .....	7-2
TC .....	7-3
TC3 .....	7-4
TFS .....	7-5

Galleria fotografica/Photographic gallery .....	7-6
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system

MT

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.*



**system**

**TC**

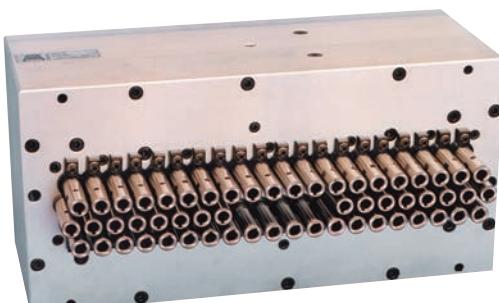
Migliaia di realizzazioni sia per trapani, unità, macchine combinate, centri di lavorazione con cambio automatico dell'utensile sono state costruite con il sistema TC, la serie di media capacità. La sua caratteristica principale sta nell'essere la più grande normalizzazione in materia di teste multiple oggi sul mercato. Corpi testa in 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 sfera a contatto obliqui 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 bases for tool guidance are available when required. When the tools or work demand. TC series head spindles can be run excess of 10.000 rpm.*



TA

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TSI/TSX

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**MT-TC-TC3**

Accessori  
Accessories

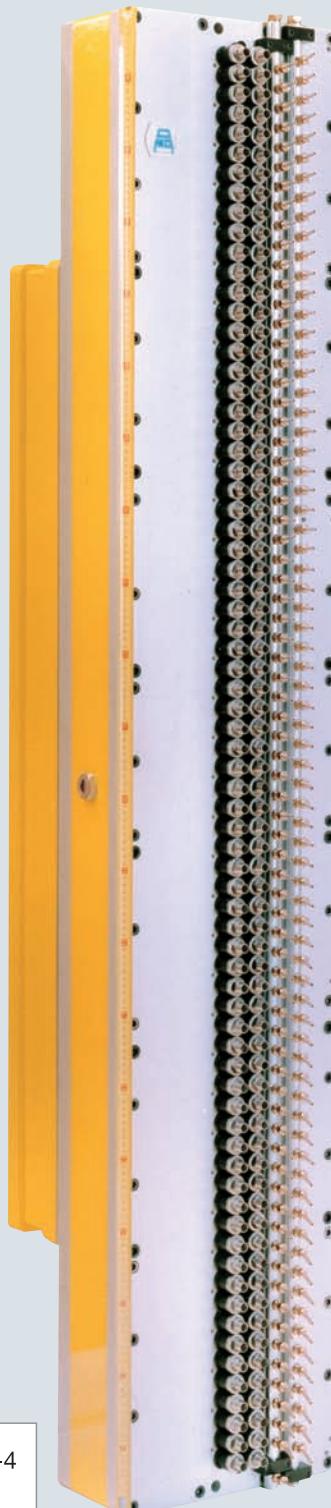
Appendice tecnica  
Technical supplement

system

# TC3



TA  
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MT-TC-TC3  
Accessori  
Technical supplement



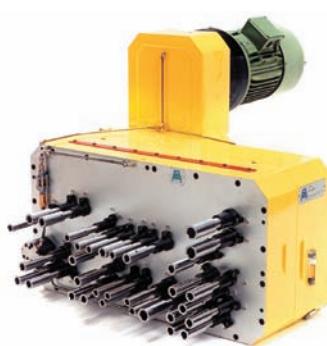
La serie TC3 è l'espressione dell'alta tecnologia O.M.G.. È il sistema di teste utilizzato per trasmettere elevate potenze su grosse unità, rototraslanti, macchine col cambio automatico delle teste. Massicce, solide, dal peso elevato (anche kg 900) non hanno limiti di utilizzo che non siano quelli della macchina utensile. Il corpo, normalmente in fusione di ghisa sferoidale, racchiude tutto il kinetismo rettificato, con lubrificazione forzata e pressurizzata. Vari tipi di mandrini sono disponibili su questo tipo di teste e tra essi particolarmente indicati sono quelli supportati da cuscinetti a contatto obliqui 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 evolente 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.*



**serie**

# TFS

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.

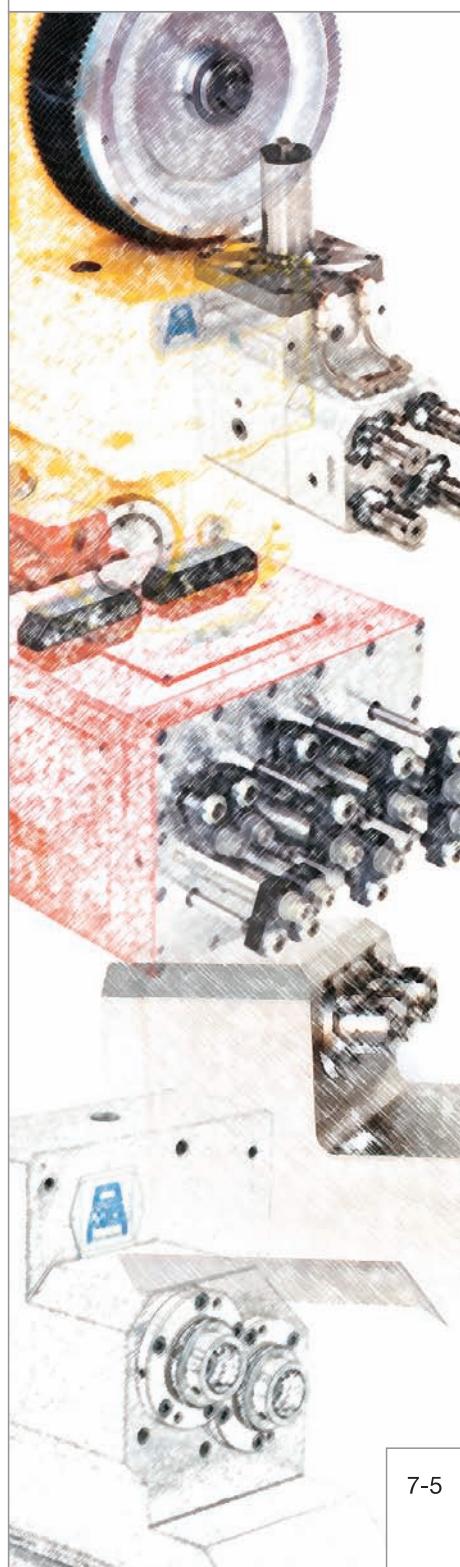
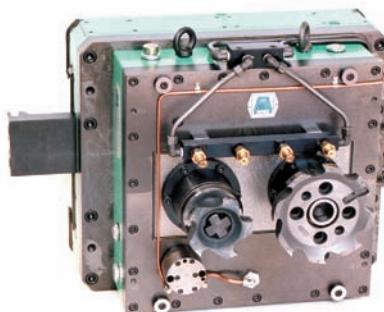
Tutta la testa ed i suoi componenti sono studiati propriamente per soddisfare le caratteristiche di lavorazione che il pezzo, gli utensili e il cliente richiede.

*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.*



**MT 38098**

Testa multipla per rivettatura componenti in plastica.

Peso Kg 22.

Rivet multisindle head for plastic components.

Weight Kg 22.

**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 38205**

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

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

**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.

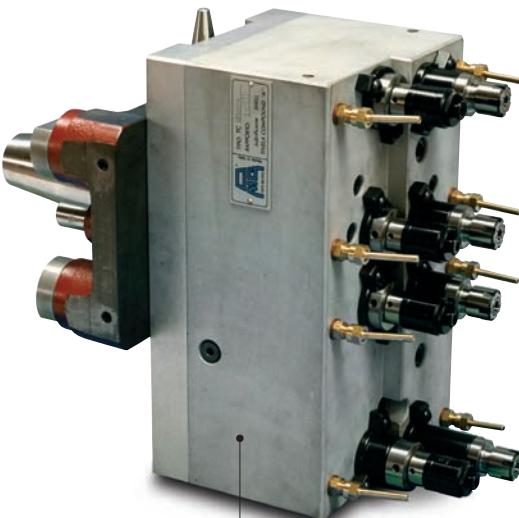
**MT 09305**

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 multisindle 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 multisindle head on  
aluminium for ATC. Weight Kg 33,5.*



**TC 40604**  
Testa di foratura su alluminio, punte in metallo  
duro, passaggio refrigerante centro utensile a  
50 Bar, 9500 giri/min. Peso Kg 26.  
*Drilling multisindle 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 multisindle 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 multisindle 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 26306**  
Testa di foratura, fresatura e alesatura di collettore di scarico motore automobile. Peso Kg 691.  
*Drilling, milling and boring head of exhaust manifold. Weight Kg 691.*

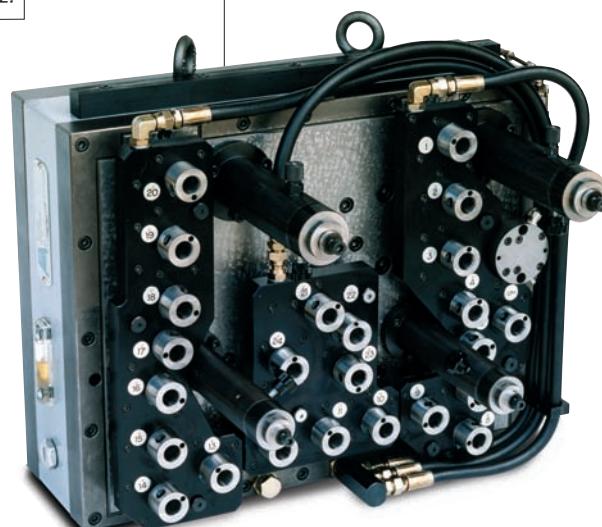
**TC3 33391**  
Testa di maschiatura a patrona di componente in ghisa per motore agricolo. Peso Kg 450.  
*Lead screw tapping head for tractor engine. Weight Kg 450.*



**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  $\phi 25$  con passaggio refrigerante per centro utensile a 50 Bar su componenti per desalatori. Peso Kg 322.  
*Drilling multisindle head  $\phi 25$  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.*



**TFS 38906**  
Testa di fresatura per biella in acciaio.  
Peso Kg 72,5.  
*Milling head for steel connecting rod.  
Weight Kg 72,5.*



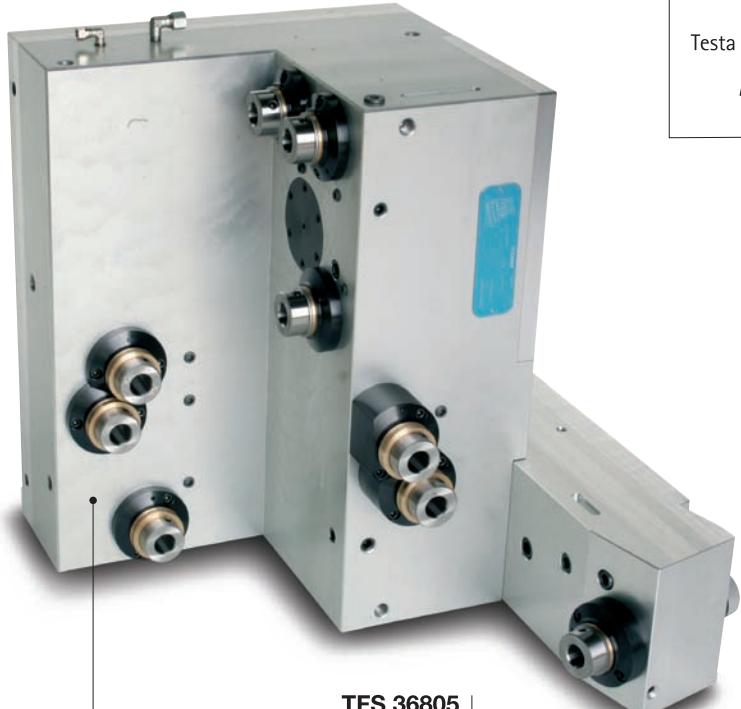
**TFS 34102**  
Testa di fresatura pendolare a 24°.  
Peso Kg 25,5.  
*Milling head with 24° pendular movement.  
Weight Kg 25,5.*



**TFS 06806**  
Testa di foratura con movimento  
assiale mandrino. Peso Kg 15.  
*Drilling head with axial spindle  
movement weight. Weight Kg 15.*



**TFS 30605**  
Testa di foratura su 4 lati di componente  
oleodinamico. Peso Kg 11.  
*Drilling head on 4 sides of hydraulic  
components. Weight Kg 11.*



**TFS 36805**  
Testa di lavorazione facce di motore  
automobile. Peso Kg 291.  
*Multispindle head for working on  
different car engine faces. Weight Kg 291.*



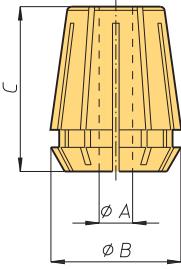
**TFS 21704**  
Testa con slitta movimentata  
idraulicamente. Peso Kg 6,5.  
*Head equipped with hydraulic  
slide. Weight Kg 6,5.*



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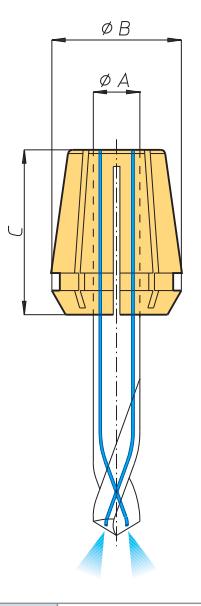




## Pinze DIN 6499 forma B - tipo ER

## Spring collets DIN 6499 form B - ER type

ER 8		$\phi B=8,5$		C=15													
Codice	Code	224400	224401	224402	224403	224404	224405	224406	224407	224408							
$\phi A$		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							
ER 11		$\phi B=11,5$		C=18													
Codice	Code	224411	224412	224413	224414	224415	224416	224417	224418	224419	224420	224421	224422	224423			
$\phi A$		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			
ER 16		$\phi B=17$		C=27,5													
Codice	Code	224426	224424	224425	224467	224436	224429	224430	224431	224432	224433	224434	224435				
$\phi A$		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				
ER 20		$\phi B=21$		C=31,5													
Codice	Code	224451	224437	224450	224409	224410	224440	224441	224442	224443	224444	224445	224446	224447	224448	224449	
$\phi A$		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	
ER 25		$\phi B=26$		C=34													
Codice	Code	224468	224469	224470	224471	224472	224454	224455	224456	224457	224458	224459	224460	224461	224462	224463	224464
$\phi A$		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														
$\phi A$		15 - 14	16 - 15														
ER 32		$\phi B=33$		C=40													
Codice	Code	224473	224474	224476	224477	224478	224479	224480	224481	224482	224483	224484	224485	224486	224487		
$\phi A$		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	16 - 15	15 - 14
Codice	Code	224488	224489	224490	224491	224492											
$\phi A$		16 - 15	17 - 16	18 - 17	19 - 18	20 - 19											
ER 40		$\phi B=41$		C=46													
Codice	Code	224499	224500	224501	224502	224503	224504	224505	224506	224507	224508	224509	224510	224511	224512	224513	
$\phi A$		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			
$\phi A$		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			
ER 50		$\phi B=52$		C=60													
Codice	Code	224530	224531	224532	224533	224534	224535	224536	224537	224538	224539	224540	224541	224542	224543	224544	224545
$\phi A$		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



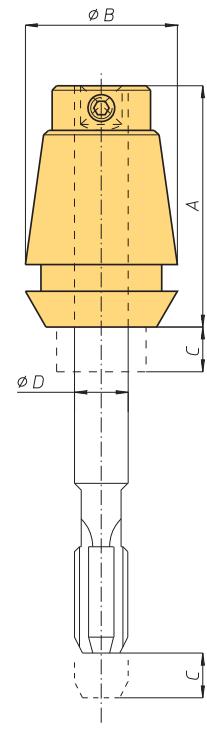
## Pinze DIN 6499

## Spring collets DIN 6499

ER 16 UPV		$\phi B=17$		C=27,5														
Codice	Code	235205	235206	235207	235208	235209	235210	235211	235212									
$\phi A$		3	4	5	6	7	8	9	10									
ER 20 UPV		$\phi B=17$		C=27,5														
Codice	Code	235215	235216	235217	235218	235219	235220	235221	235222	235223	235224	235225						
$\phi A$		3	4	5	6	7	8	9	10	11	12	13						
ER 25 UPV		$\phi B=26$		C=34														
Codice	Code	235228	235229	235230	235231	235232	235233	235234	235235	235236	235237	235238	235239	235240	235241			
$\phi A$		3	4	5	6	7	8	9	10	11	12	13	14	15	16			
ER 32 UPV		$\phi B=33$		C=40														
Codice	Code	235246	235247	235248	235249	235250	235251	235252	235253	235254	235255	235256	235257	235258	235259	235260		
$\phi A$		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
Codice	Code	235261	235262	235263														
$\phi A$		18	19	20														
ER 40 UPV		$\phi B=41$		C=46														
Codice	Code	235266	235267	235268	235269	235270	235271	235272	235273	235275	235276	235277	235278	235279	235280	235281		
$\phi A$		4	5	6	7	8	9	10	11	13	14	15	16	17	18	19		
Codice	Code	235282	235283	235284	235285	235286	235287	235288	235293	235294								
$\phi A$		20	21	22	23	24	25	26	31	32								

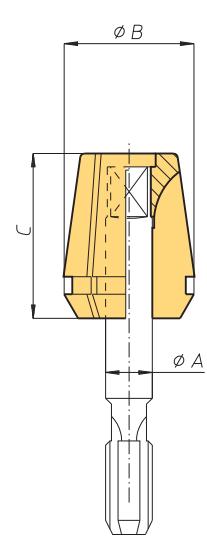
Pinze di maschiatura con compensazione - tipo ET1  
Tapping collets with compensation - ET1 type

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



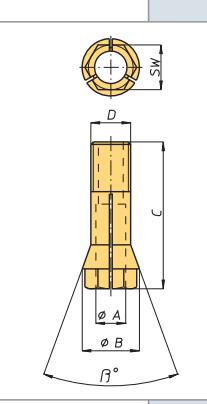
Pinze di maschiatura senza compensazione - tipo ER  
Tapping collets without compensation - ER type

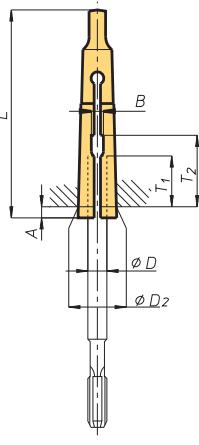
ER 16 GB		$\phi B=16$		C=27,5											
Codice	Code	224585	224587	224588	224589	224590									
$\phi A$		4,5	6	7	8	9									
ER 20 GB		$\phi B=20$		C=31,5											
Codice	Code	224593	224595	224596	224597	224598	224599	224600							
$\phi A$		4,5	6	7	8	9	10	11							
ER 25 GB		$\phi B=25$		C=34											
Codice	Code	224604	224606	224607	224608	224609	224610	224611	224612	224613	224614				
$\phi A$		4,5	6	7	8	9	10	11	12	14	16				
ER 32 GB		$\phi B=32$		C=40											
Codice	Code	224617	224619	224620	224621	224622	224623	224624	224625	224626	224627	224628	224629		
$\phi A$		4,5	6	7	8	9	10	11	12	14	16	18	20		
ER 40 GB		$\phi B=40$		C=46											
Codice	Code	224634	224635	224636	224637	224638	224639	224640	224641	224642	224643	224644	224645		
$\phi A$		6	7	8	9	10	11	12	14	16	18	20	22		



Pinze  
Collets

6023E		$\phi B=6,5$		C=20		D=M5 x0,6		SW=5,5		$\beta^{\circ}=20^{\circ}$		Coppia serraggio (Nm)=3			
Codice	Code	224740	224741	224742	224743	224746									
$\phi A$		1	1,5	2	2,5	3									
600E		$\phi B=9$		C=26,5		D=M6 x0,75		SW=7		$\beta^{\circ}=20^{\circ}$		Coppia serraggio (Nm)=5			
Codice	Code	224574	224575	224576	224577	224578	224579	224580							
$\phi A$		1,5	2	2,5	3	3,5	4	4,5							
601E		$\phi B=11$		C=33		D=M8 x0,75		SW=9		$\beta^{\circ}=20^{\circ}$		Coppia serraggio (Nm)=9			
Codice	Code	224728	224729	224730	224731	224732	224733	224734	224735	224736	224737				
$\phi A$		1,5	2	2,5	3	3,5	4	4,5	5	5,5	6				





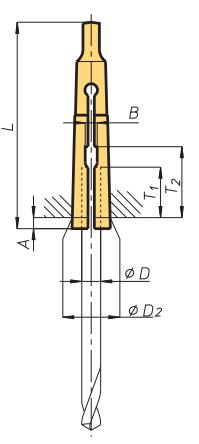
## Pinze porta maschi DIN 6328 Tapholder collets DIN 6328

DIN 6328 - CONO MORSE 1 D2 = 12.065A = 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	224024
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	3,7	4	4,2	4,5	4,7	5	5,2	5,5	5,7	6	6,2	6,5	6,7	7	7,2	7,5	7,7	7,5
Codice Code	224164	224166	224168	224170	224172	224174	224176	224178	224180	224182	224184	224186	224188	224190	224192	224194	224196	224198	224200	224202	224200
B	1,8		2,2		2,4			2,7				3,2						3,8			
T1				20								22						22			
T2		25				26						29						29			

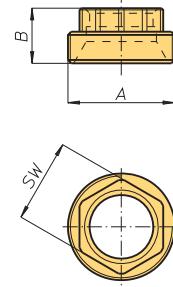


DIN 6329 - CONO MORSE 2 D2 = 17.78 A = 5 L = 80																
D	5,5	6	6,5	7	7,5	8	8,5	9	9,5	10	10,5	11	11,5	12	12,5	13
Codice Code	224260	224262	224264	224266	224268	224270	224272	224274	224276	224278	224280	224282	224284	224286	224288	224300
B	3,2			3,8			4,8			5,3			6,3			
T1		22			25			28								
T2		29			33			37			39					

## Ghiere esagonali per pinze DIN 6499 Exagon clamping nut for spring collets DIN 6499

Ghiera Nut	Codice Code	$\phi A$	B	SW	Coppia serraggio Clamping force (Nm)
ER 11AS	224951	M18 x1	10	13	24 (30)
ER 16AC	224950	M24 x1	11	19	40 (50)
ER 20AC	224952	M28 x1,5	14	22	52 (65)
ER 25AC	224953	M32 x1,5	14	27	80 (100)
ER 32AC	224954	M40x1,5	17,5	32	104 (130)

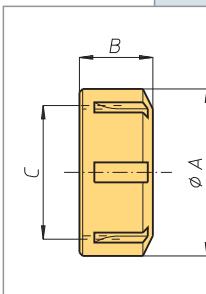
Tra parentesi valore massimo – Between brackets max. value



## Ghiere equilibrate per pinze DIN 6499 Balanced clamping nut for spring collets DIN 6499

Ghiera Nut	Codice Code	$\phi A$	B	C	Coppia serraggio Clamping force (Nm)	
					Pinze con scarico Spring collet with extractor	Pinze senza scarico Spring collet without extractor
ER 16MS	224921	22	17,8	M19 x1	40 (50)	56 (70)
EXE 20	224922	35	19	M25 x1,5	32 (40)	80 (100)
EXE 25	224923	42	20	M32 x1,5	104 (130)	104 (130)
EXE 32	224925	50	22,5	M40 x1,5	136 (170)	136 (170)

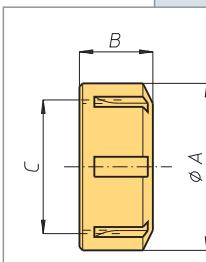
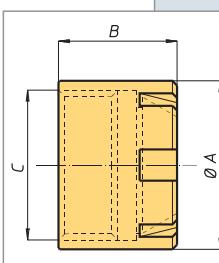
Tra parentesi valore massimo – Between brackets max. value

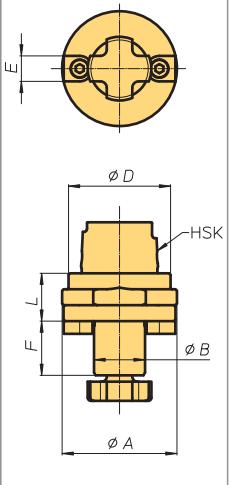


## Ghiere per pinze DIN 6499 Clamping nut for spring collets DIN 6499

Tipo Type	Codice Code	$\phi A$	B	C	Coppia serraggio Clamping force (Nm)	
					Pinze con scarico Spring collet with extractor	Pinze senza scarico Spring collet without extractor
ER 8M	224900	11,8	10,8	M10 x0,75	5 (6)	5 (6)
ER 11M	224902	16	12	M13 x0,75	12 (15)	16 (20)
ER 16M	224904	22	18	M19 x1	24 (30)	24 (30)
ER 20M	224906	28	21	M24 x1	28 (35)	28 (35)
ER 25M	224908	35	20	M30 x1	32 (40)	32 (40)
ER 20UM	224910	35	19	M25 x1,5	32 (40)	80 (100)
ER 25UM	224912	42	20	M32 x1,5	104 (130)	104 (130)
ER 32UM	224914	50	22,5	M40 x1,5	136 (170)	136 (170)
ER 40UM	224916	63	25,5	M50 x1,5	176 (220)	176 (220)
ER 50UM	224918	78	35	M64 x2	240 (300)	240 (300)

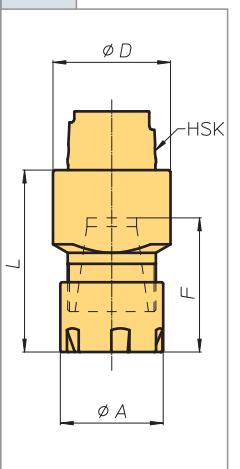
Tra parentesi valore massimo – Between brackets max. value





### Inserto HSK porta fresa HSK mill adapters

Codice-code	Grandezza-size	HSK	$\phi A$	$\phi B$	$\phi D$	E	F	L	Vite-screw
009401	HSK 32-16	32	36	16	32	8	17	15	M8
009404	HSK 40-16	40	40	16	40	8	17	15	M8
009405	HSK 40-22	40	54	22	40	10	19	22	M10
009416	HSK 50-22	50	54	22	50	10	19	23	M10
009406	HSK 50-27	50	64	27	50	12	21	23	M12
009417	HSK 63-27	63	64	27	64	12	21	25	M12
009408	HSK 63-32	63	74	32	63	14	24	25	M16
009414	HSK 80-32	80	80	32	80	14	24	35	M16
009413	HSK 80-40	80	80	40	80	16	27	35	M20

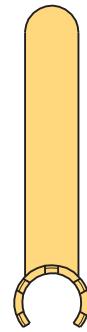


### Inserto HSK porta pinze per utensili a gambo cilindrico HSK adapters with collet for cylindrical shank tools

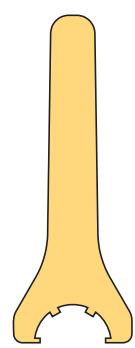
Codice-code	Grandezza-size	HSK	Pinza-collet	$\phi A$	$\phi D$	F	L	Ghiera-nut
009400	HSK 32-ER 20M	32	ER 20	28	32	37,5	49,5	ER 20M
009402	HSK 32-ER 25M	32	ER 25	35	32	41	53	ER 25M
009415	HSK 40-ER 20M	40	ER 20	28	40	37,5	49,5	ER 20M
009403	HSK 40-ER 25M	40	ER 25	35	40	41	54	ER 25M
009407	HSK 50-ER 32	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

## Chiavi per ghiere Clamping nuts spanner

Chiavi Keys	Codice Code	Per ghiera For clamping nut
CE 8M	231300	ER8M
CE 11M	231302	ER11M
CE 16M	231306	ER16M
CE 20M	231309	ER20M
CE 25M	231313	ER25M

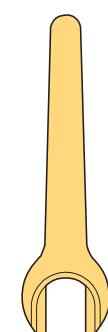


Chiavi Keys	Codice Code	Per ghiera For clamping nut
CE 20U	231315	ER20UM
CE 25U	231314	ER25UM
CE 32U	231320	ER32UM
CE 40U	231321	ER40UM
CE 50U	231323	ER50UM

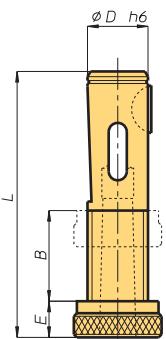


## Chiavi per ghiere Clamping nuts spanner

Chiavi Keys	Codice Code	Per ghiera For clamping nut
CE 16MB	231322	ER16MB

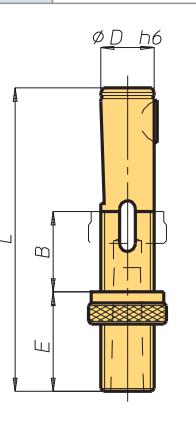


# accessori - accessories



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	$\phi D^{h6}$	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

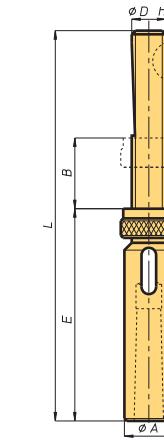


Inserti registrabili DIN 6327/2 porta utensili a cono Morse  
DIN 6327/2 adjustable adapters for morse taper shank tools

Codice-code	Grandezza-size	Cono Morse-Morse taper	$\phi D^{h6}$	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	138	
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	170	
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	

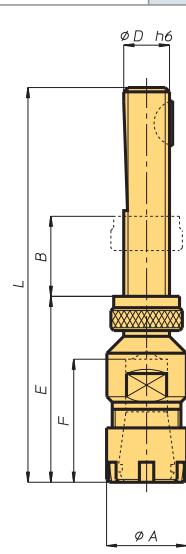
**Inserti registrabili porta utensili a cono Morse (Norma OMG)**  
**Adjustable adapters for morse taper shank tools (OMG norm)**

Codice-code	Grandezza-size	Cono Morse-Morse taper	$\phi D^{h6}$	Filettatura-Thread	$\phi A$	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



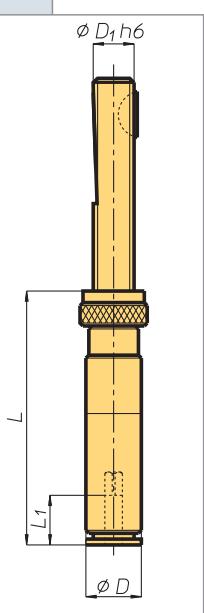
**Inserto porta pinze per utensili a gambo cilindrico (DIN 6327)**  
**DIN 6327 adjustable adapters for cylindrical shank tools**

Codice-code	Grandezza-size	$\phi D^{h6}$	Filettatura-Thread	$\phi A$	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

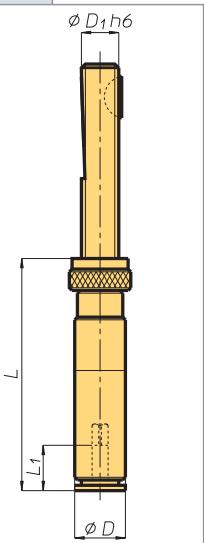
$\phi D_1 h6$



## Mandrini per maschiare con diametro ridotto Tapping spindles with reduced diameter

Codice code	Mandrino Spindle			$\phi D$	D <sub>1</sub>	L	L <sub>1</sub>
227015	MM. 15 D - 20.20 - 8x1 Tpz	M1 - M6	2.5 - 6	20	0	13.5	109
227016	MM. 15 D - 20.15 - 8x1 Tpz			15	5		104
227017	MM. 15 D - 20.10 - 8x1 Tpz			10	10		99
227018	MM. 15 D - 20.5 - 8x1 Tpz			5	15		94
227019	MM. 15 D - 20.0 - 8x1 Tpz			0	20		89
227020	MM. 16 D - 20.20 - 10x1,5 Tpz	M1 - M8	2.5 - 8	20	0	15.5	116
227021	MM. 16 D - 20.15 - 10x1,5 Tpz			15	5		111
227022	MM. 16 D - 20.10 - 10x1,5 Tpz			10	10		106
227023	MM. 16 D - 20.5 - 10x1,5 Tpz			5	15		101
227024	MM. 16 D - 20.0 - 10x1,5 Tpz			0	20		96
227025	MM. 17 D - 20.20 - 12x1,5 Tpz	M4 - M12	4.5 - 10	20	0	19	107
227026	MM. 17 D - 20.15 - 12x1,5 Tpz			15	5		102
227027	MM. 17 D - 20.10 - 12x1,5 Tpz			10	10		97
227028	MM. 17 D - 20.5 - 12x1,5 Tpz			5	15		92
227029	MM. 17 D - 20.0 - 12x1,5 Tpz			0	20		87

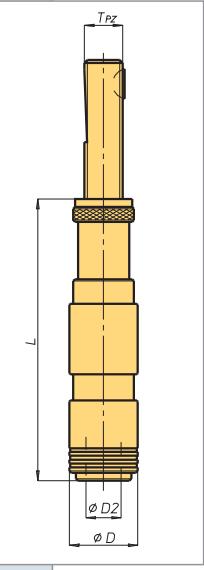
$\phi D_1 h6$



## Mandrini per maschiare con diametro ridotto Tapping spindles with reduced diameter

Codice code	Mandrino Spindle			$\phi D$	D <sub>1</sub>	L	L <sub>1</sub>
227030	MR. 0 - 10x1.5 Tpz	M1 - M10	2.5 - 7.2	14	10	44	15
227031	MR. 0 - 12x1.5 Tpz				12		
227032	MR. 1 - 12x1.5 Tpz	M4 - M14	4.5 - 11.3	19	12	52	17
227033	MR. 1 - 16x1.5 Tpz				16		
227034	MR. 2 - 20x2 Tpz	M8 - M24	7 - 18	31	20	77	30
227035	MR. 2 - 28x2 Tpz				28		
227036	MR. 3 - 28x2 Tpz	M14 - M36	11 - 28	48	28	95	44
227037	MR. 3 - 36x2 Tpz				36		
227038	MR. 4 - 36x2 Tpz	M22 - M48	18 - 36	60	36	132	71
227039	MR. 4 - 48x2 Tpz				48		

$\phi D_2$

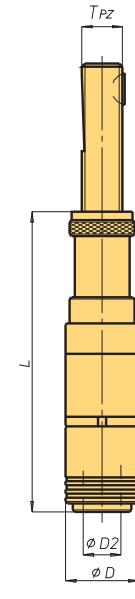


## Mandrini a cambio rapido per maschiare con compensazione assiale Quick change tapping chucks with axial compensation

Mandrino Spindle	D	D <sub>2</sub>		16x1,5 Tpz	Codice Code	20x2 Tpz	Codice Code	L	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
MF 2-4D-20-20				20	20				162	227078	162	227079
MF 2-4D- 0-40				0	40				142	227081	142	227082
MF 3-3D-30-10	M14 - M33	72	48	30	10	3				218	227084	220
MF 3-3D-20-20				20	20					208	227086	210
MF 3-3D- 0-40				0	40					188	227088	190
											227089	

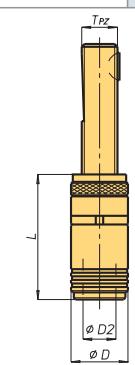
Mandrini a cambio rapido per maschiare con compensazione assiale e spostamento parallelo all'asse  
Quick change tapping chucks with axial compensation and radial parallel floating

Mandrino Spindle	D	D <sub>2</sub>	+	16x1,5 Tpz	Codice Code	20x2 Tpz	Codice Code	L 28x2 Tpz	Codice Code	36x2 Tpz	Codice Code	
MFC0-5D-20-10	M1 - M10	23	13	0.25	20	10	138	227090	138	227091		
MFC0-5D-15-15					15	15	0	133	227092	133	227093	
MFC0-5D- 0-30					0	30	118	227094	118	227095		
MFC1-5D-30-10	M3 - M12	35	19	0.5	30	10	163	227096	163	227097	163	
MFC1-5D-20-20					20	20	153	227099	153	227100	153	
MFC1-5D- 0-40					0	40	133	227102	133	227103	133	
MFC2-4D-30-10	M8 - M20	50	31	1	30	10		196	227105	196	227106	174
MFC2-4D-20-20					20	20	2	186	227108	186	227109	164
MFC2-4D- 0-40					0	40		166	227111	166	227112	144
MFC3-3D-30-10	M14 - M33	72	48	1.5	30	10			252	227084	220	227085
MFC3-3D-20-20					20	20	3		242	227116	210	227087
MFC3-3D- 0-40					0	40		222	227118	190	227089	



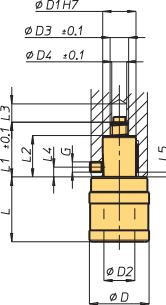
Mandrini a cambio rapido per maschiare con spostamento parallelo all'asse  
Quick change tapping chucks with radial parallel floating

Mandrino Spindle	D	D <sub>2</sub>	+	16x1,5 Tpz	Codice Code	20x2 Tpz	Codice Code	L 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	
MFC 3	M14 - M33	72	48	1,5	3				136	227139	138	227146



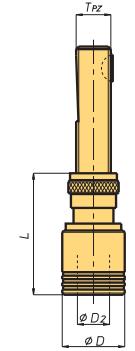
Mandrini a cambio rapido per maschiare con compensazione assiale  
Quick change tapping chucks with axial compensation

Codice Code	Mandrino Spindle	D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	G Chiavetta DIN 6885	
227185	MKD0.GC	M1 - M10	0	6,5	6,5	26	15	13	8,2	6	37	32	18,5	M5 5x3x12
227186	MKD1.GC	M3 - M12	1	7,5	7,5	36	20	19	11,2	9	39	33	24,5	M6 6x4x16
227187	MKD2.GC	M8 - M20	2	12,5	12,5	53	25	31	13,2	11	63	39	30,5	M8 6x6x20



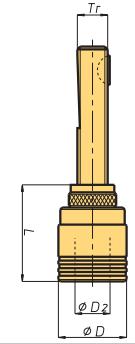
Mandrini a cambio rapido per maschiare con compensazione assiale  
Quick change tapping chucks with axial compensation

Mandrino Spindle	D	D <sub>2</sub>	+	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
AKD 2 - ..	M8 - M20	2	20	25	50	31			83	227193	87
AKD 40 - ..	M6 - M18	4	20	20	40	26	80	227195			

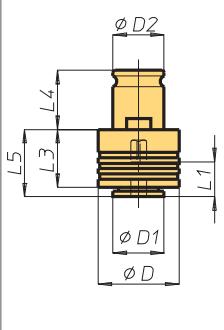


Mandrini a cambio rapido per maschiare con compensazione assiale  
Quick change tapping chucks with axial compensation

Mandrino Spindle	D	D <sub>2</sub>	+	16x1,5 Tpz	Codice Code	20x2 Tpz	Codice Code	L 28x2 Tpz	Codice Code	36 x2 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
MKD-2 - Tr..	M4 - M20	2	12,5	12,5	53	31		76	227171	76	227171
MKD-3 - Tr..	M4 - M33	3	20	20	78	48				78	227173
										111	227175

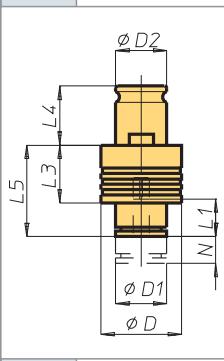


# accessori - accessories



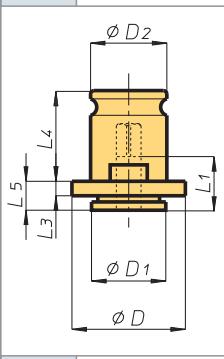
**Bussole porta maschio a cambio rapido con frizione destra e sfere**  
**Quick connection tap-holder bushes with ball right clutch**

Codice Code	Bussola Bush	φ Gambo maschio Tap shank diametre	N	φD	φD1	φD2	φI1	φI3	φI4	φI5
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



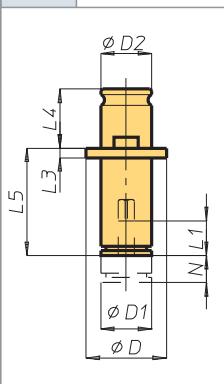
**Bussole porta maschio a cambio rapido con frizione destra e sfere**  
**Quick connection tap-holder bushes with ball right clutch**

Codice Code	Bussola Bush	φ Gambo maschio Tap shank diametre	N	φD	φD1	φD2	φI1	φI3	φI4	φI5	
227211	BFSR 0	M1 - M10	2,5 - 7,2	8	23	13	15	15	20	19,5	28
227212	BFSR 1	M2 - M12	3,5 - 11,3	10	32	19	17	17	25	21,5	33
227213	BFSR 2	M8 - M20	7 - 18	15	50	30	30	30	31	35	59
227214	BFSR 3	M14 - M33	11 - 28	25	72	48	44	44	41	55,5	82



**Bussole porta maschio a cambio rapido**  
**Quick connection tap-holder bushes**

Codice Code	Bussola Bush	φ Gambo maschio Tap shank diametre	N	φD	φD1	φD2	φI1	φI3	φI4	φI5
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

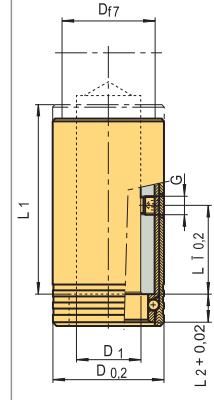


**Bussole porta maschio a cambio rapido**  
**Quick connection tap-holder bushes**

Codice Code	Bussola Bush	φ Gambo maschio Tap shank diametre	N	φD	φD1	φD2	φI1	φI3	φI4	φI5	
227255	BFCR 0	M1 - M10	2,5 - 7,2	8	22	13	13	15	4	19,5	28
227256	BFCR 1	M3 - 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

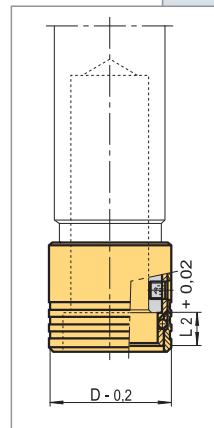
## Manicotti ad innesto rapido Quick connection sleeves

Codice Code	Manicotto Sleeve	$\phi D$	$\phi D_1$	$\phi D_3$	L	$L_1$	$L_2$	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



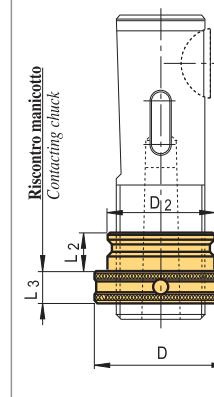
## Manicotti ad innesto rapido Quick connection sleeves

Codice Code	Manicotto Sleeve	$\phi D$	$\phi D_1$	$\phi D_3$	$\phi D_4$	L	$L_1$	$L_2$	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



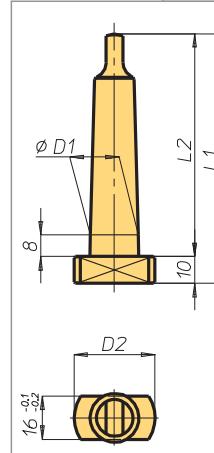
## Ghiere ad innesto rapido Ring nuts

Codice Code	Ghiera Nut	$\phi D$	$\phi D_2$	$L_2$	$L_3$
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	$l_1$	$l_2$	$l_3$	$D_1$	$D_2$	$D_3$	R	$\beta$
011120	2	8	6,3	93	83	16	17,78	28	13,5	6	$1^{\circ}25' 50''$
011125	3	8	7,9	112	102	20	23,825	30	18,5	7	$1^{\circ}26' 16''$
011130	4	8	11,9	135,5	125,5	24	31,267	42	24,5	8	$1^{\circ}29' 15''$
011135	5	8	15,9	167,5	157,5	29	44,399	50	35,7	10	$1^{\circ}30' 26''$
011136	6	8	19	228	218	40	63,348	62	51	13	$1^{\circ}29' 36''$





# Appendice tecnica

# Technical supplement

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TA

MO

HT

VH

TSI/TSX

T

MT-TC-TC3

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# calcolo momento torcente e potenza estimate torque and power

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. Sciegliendo l'appropriato avanzamento sull'ascissa, congiungendo con il relativo diametro di foratura, in ordinata si leggerà un determinato valore del "coefficente  $\beta$ "; moltiplicando questo per la resistenza del materiale si otterrà il momento torcente. Applicando poi la formula

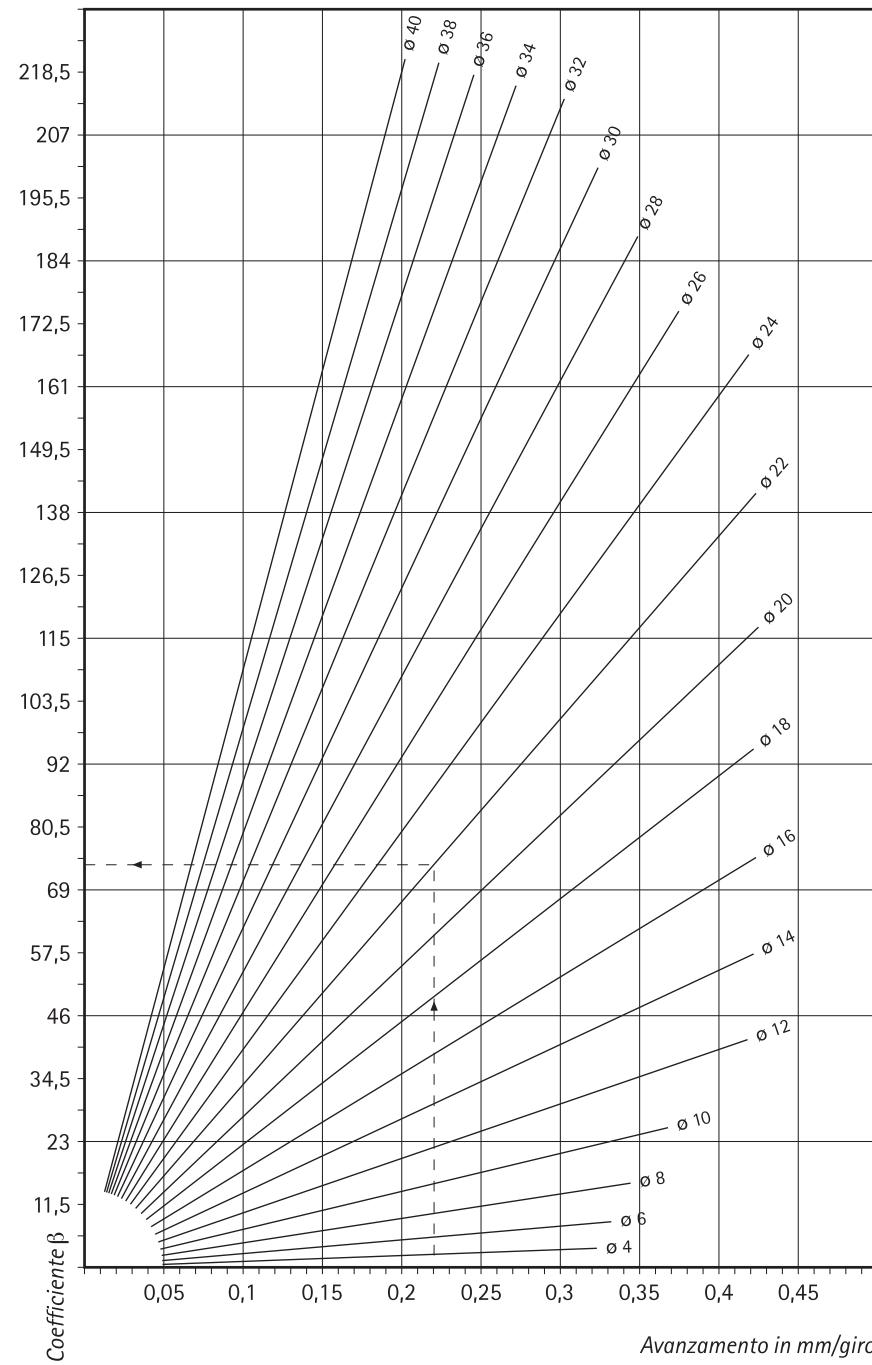
$$N = \frac{M_t \times n}{9549,3}$$

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  $\beta$ » 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.*



Es:

$a = 0,22 \text{ mm/giro}$   
punta Ø 22  
giri/1' = 230  
 $R = 500 \text{ N/mm}^2$   
coefficiente  $\beta = 73$

Ex:

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

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

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

# manicotti di collegamento

## connection collars

**Dimensioni estremità mandrini macchine utensili per la costruzione del manico di collegamento.**  
**Spindles dimensions off machine-tools to manufacture the connection collar.**

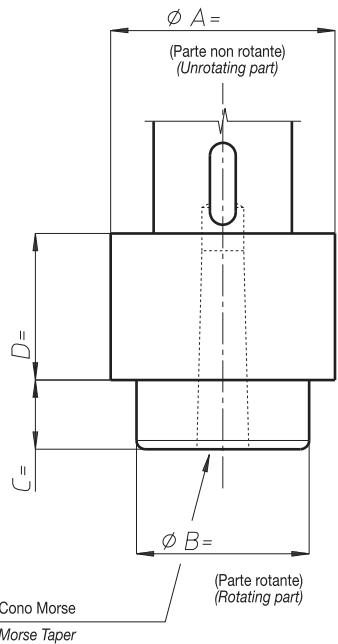


Fig. 1

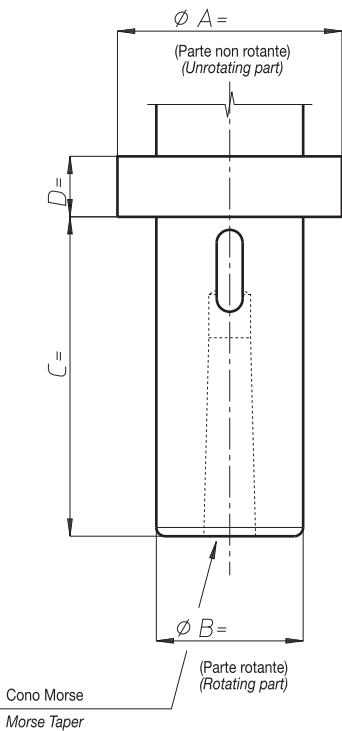


Fig. 2

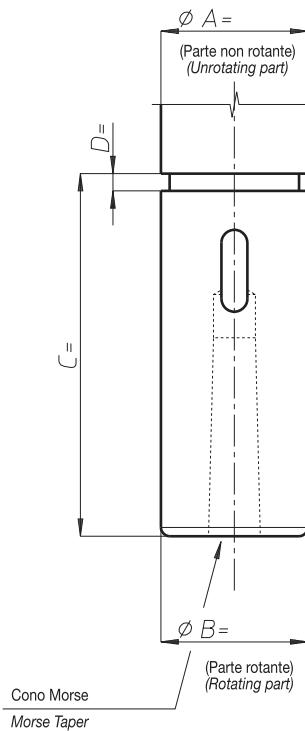


Fig. 3

**Se nessuna figura si adatta alla vostra macchina,  
disegnate qui l'estremità mandrino.**  
**If no picture fits your machine, draw here the spindle end.**

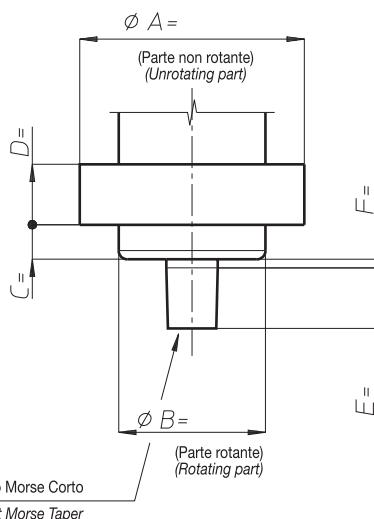
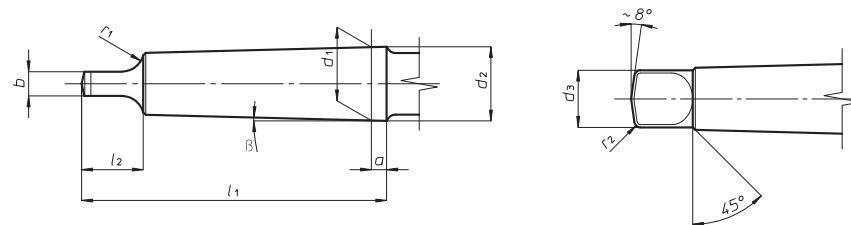


Fig. 4

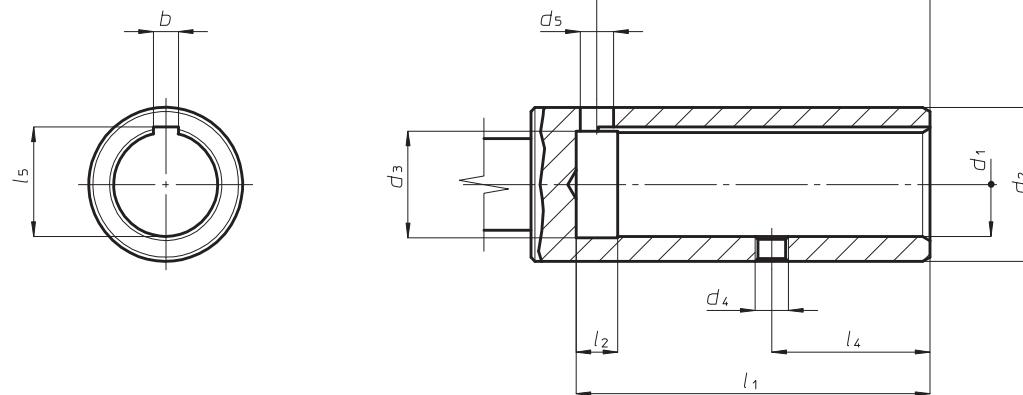
# DIN 228

Cono Morse  
Morse taper



Cono Morse Morse Taper	a	$b^{h13}$	d <sub>1</sub>	d <sub>2</sub>	d <sub>3max</sub>	l <sub>1max</sub>	l <sub>2max</sub>	r <sub>1</sub>	r <sub>2</sub>	β
0	3	3,9	9,045	9,2	6	59,5	10,5	4	1	$1^{\circ}29' 27''$
1	3,5	5,2	12,065	12,2	8,7	65,5	13,5	5	1,2	$1^{\circ}25' 43''$
2	5	6,3	17,780	18	13,5	80	16	6	1,6	$1^{\circ}25' 50''$
3	5	7,9	23,825	24,1	18,5	99	20	7	2	$1^{\circ}26' 16''$
4	6,5	11,9	31,267	31,6	24,5	124	24	8	2,5	$1^{\circ}29' 15''$
5	6,5	15,9	44,399	44,7	35,7	156	29	10	3	$1^{\circ}30' 26''$
6	8	19	63,348	63,8	51	218	40	13	4	$1^{\circ}29' 36''$

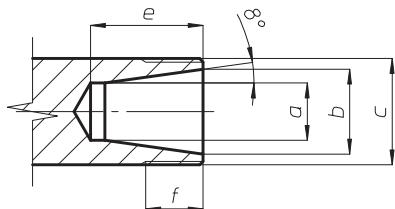
# DIN 55058



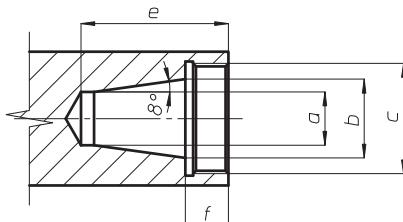
Grandezza Size d <sub>1</sub> H7	8	10	12	16	20	25	28	32	36	48
b	2	3	3	5	5	6	6	8	8	10
d <sub>2</sub> f7	15	18	20	25	32	37	40	45	50	67
d <sub>3</sub>	8,6	10,6	12,6	16,6	20,6	25,6	28,6	32,8	36,8	48,8
d <sub>4</sub>	M4	M5	M5	M6	M6	M8	M8	M8	M8	M10
d <sub>5</sub>	3,5	5	5	6	6	8	8	10	10	12
l <sub>1</sub> min	42	52	52	75	78	85	85	106	106	129
l <sub>2</sub>	8	8	8	8	8	10	10	10	10	12
l <sub>3</sub>	35	48	48	70	73	80	80	101	101	123
l <sub>4</sub> ±0,1	16	22	22	34	34	38	38	45	45	57
l <sub>5</sub> +0,3	9	11,1	13,1	17,3	21,3	26,7	29,7	33,7	37,7	50,1

Sedi delle pinze ER  
ER housing

# DIN 6499



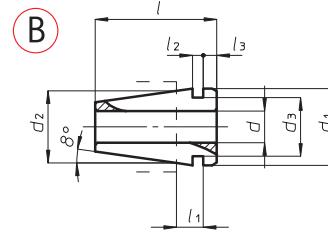
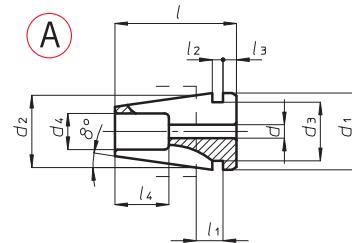
Grandezza Size	Serraggio Clamping	a	$b_{\pm 0,05}$	c	e	f
ER8	0,5... 5,0	5,2	8	M10x0,75	13,0	7,5
ER11	0,5... 7,0	7,5	11	M13x0,75	17,0	10,0
ER16	0,5... 10,0	10,5	16	M19x1,00	22,0	13,0
ER20	0,5... 13,0	13,5	20	M24x1,00	26,5	13,5
ER25	0,5... 16,0	18,0	25	M30x1,00	29,0	14,0
ER16	0,5... 10,0	10,5	16	M22x1,50	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



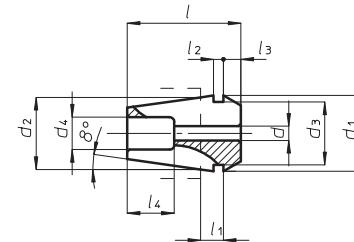
Grandezza Size	Serraggio Clamping	a	$b_{\pm 0,05}$	c	e	f
ER11	0,5... 7,0	7,5	11	M18x1,00	23,0	7,0
ER16	0,5... 10,0	10,5	16	M24x1,00	32,0	10,0
ER20	0,5... 13,0	13,5	20	M28x1,50	37,5	11,0
ER25	0,5... 16,0	18,0	25	M32x1,50	41,0	12,0
ER32	1,0... 20,0	23,5	32	M40x1,50	48,0	14,0

# DIN 6499-B

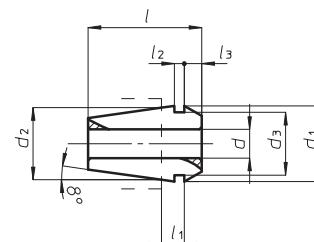
Pinze  
Collets



Grandezza Size	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	-	B

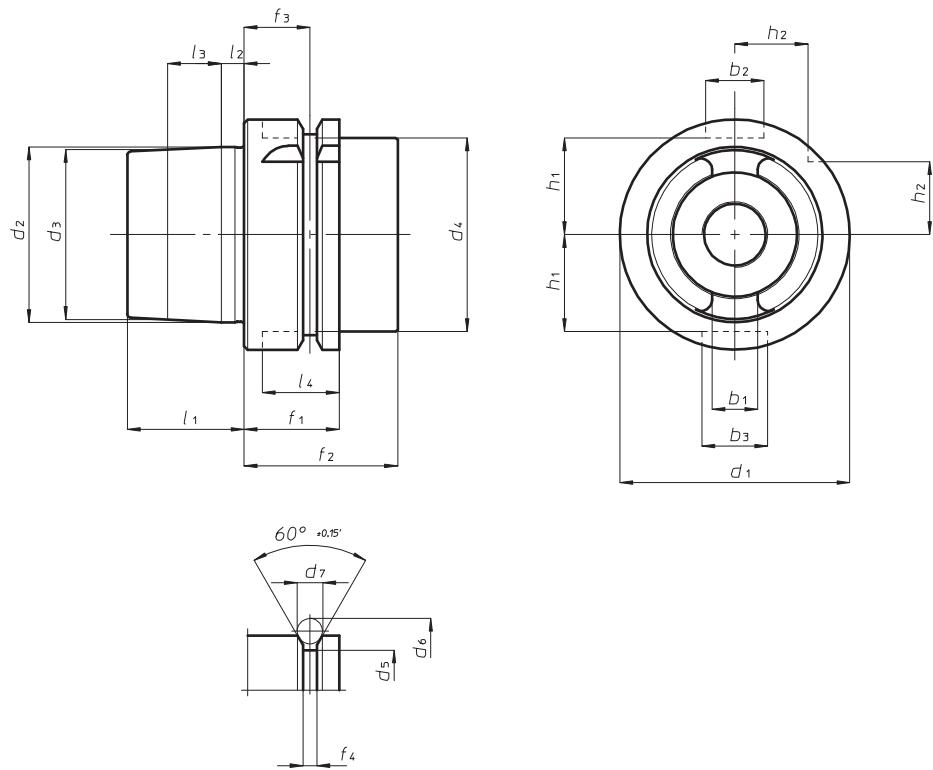


Grandezza Size	d	d1	d2	d3	d4	l	l1	l2	l3	l4
ER11	0,5... 2,5	11,5	11,0	9,5	5,0	18,0	3,80	2,0	2,5	9,0
ER16	0,5... 4,5	17,0	16,0	13,8	7,5	27,5	6,26	2,7	4,0	10,0
ER20	1,0... 6,5	21,0	20,0	17,4	9,0	31,5	6,36	2,8	4,8	13,0
ER25	1,0... 7,5	26,0	25,0	22,0	12,0	34,0	6,66	3,1	5,0	15,0
ER32	2,0... 3,5	33,0	32,0	29,2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



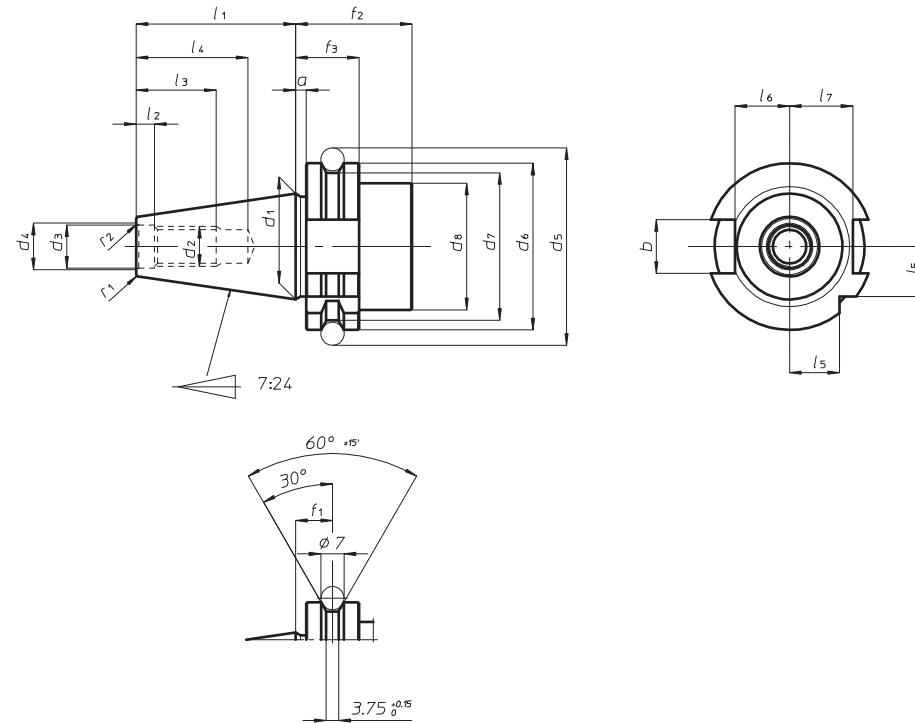
Grandezza Size	d	d1	d2	d3	l	l1	l2	l3
ER11	3,0... 7,0	11,5	11,0	9,5	18,0	3,80	2,0	2,5
ER16	5,0... 10,0	17,0	16,0	13,8	27,5	6,26	2,7	4,0
ER20	7,0... 13,0	21,0	20,0	17,4	31,5	6,36	2,8	4,8
ER25	8,0... 16,0	26,0	25,0	22,0	34,0	6,66	3,1	5,0
ER32	8,0... 20,0	33,0	32,0	29,2	40,0	7,16	3,6	5,5
ER40	9,0... 30,0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

# DIN 69893 Forma A



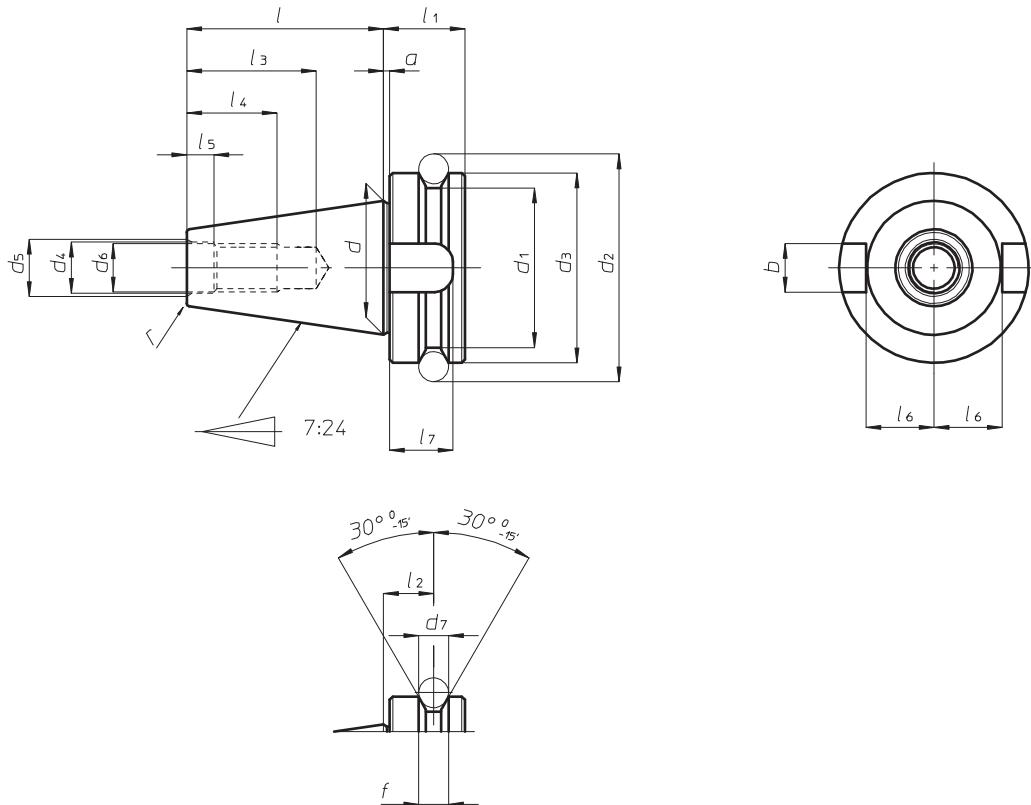
	HSK50	HSK63	HSK80	HSK100
$b_1$ H10	10,5	12,5	16	20
$b_2$ H10	12	16	18	20
$b_3$ H10	14	18	20	22
$d_1$ H10	50	63	80	100
$d_2$	$38^{+0,009}_{-0,006}$	$48^{+0,011}_{-0,007}$	$60^{+0,013}_{-0,008}$	$75^{+0,015}_{-0,009}$
$d_3$	$36,900^{+0,006}_{-0,003}$	$46,530^{+0,007}_{-0,003}$	$58,100^{+0,008}_{-0,003}$	$72,600^{+0,009}_{-0,003}$
$d_4$ max	42	53	67	85
$d_5$ $^0_{-0,1}$	43	55	70	92
$d_6$ $^0_{-0,1}$	59,3	72,3	88,8	109,75
$d_7$	7	7	7	7
$f_1$ $^0_{-0,1}$	26	26	26	29
$f_2$ min	42	42	42	45
$f_3$ $\pm 0,1$	18	18	18	20
$f_4$ $^{+0,15}_0$	3,75	3,75	3,75	3,75
$h_1$ $^0_{-0,2}$	21	26,5	34	44
$h_2$ $^0_{-0,3}$	15,5	20	25	31,5
$l_1$ $^0_{-0,2}$	25	32	40	50
$l_2$	5	6,3	8	10
$l_3$	11	14,7	19	24
$l_4$	19	21	22	24

# DIN 69871 Forma A



Grandezza Size	30	40	45	50
$a \pm 0,1$	3,2	3,2	3,2	3,2
$b h12$	16,1	16,1	19,3	25,7
$d_1$	31,75	44,45	57,15	69,85
$d_2$	M12	M16	M20	M24
$d_3 H7$	13	17	21	25
$d_4 \text{ max}$	14	19	23,4	28
$d_5 \pm 0,05$	59,3	72,3	91,35	107,25
$d_6 \pm 0,1$	50	63,55	82,55	97,50
$d_7 \pm 0,5$	44,3	56,25	75,25	91,25
$d_8 \text{ max}$	45	50	63	80
$f_1 \pm 0,1$	11,1	11,1	11,1	11,1
$f_2 \text{ min}$	35	35	35	35
$f_3 \pm 0,1$	19,1	19,1	19,1	19,1
$l_1 \pm 0,3$	47,8	68,4	82,7	101,75
$l_2 \pm 0,5$	5,5	8,2	10	11,5
$l_3 \text{ min}$	24	32	40	47
$l_4 \text{ min}$	33,5	42,5	52,5	61,5
$l_5 \pm 0,3$	15	18,5	24	30
$l_6 \pm 0,4$	16,4	22,8	29,1	35,5
$l_7 \pm 0,4$	19	25	31,3	37,7
$r_1$	$0,6 \pm 0,3$	$1,2 \pm 0,5$	$2 \pm 0,5$	$2,5 \pm 0,5$
$r_2 \pm 0,5$	0,8	1	1,2	1,5

# MAS 403



Grandezza Size	30	40	50
<b>a</b> ±0,4	2	2	3
<b>b</b> H8	16,1	16,1	25,7
<b>d</b>	31,75	44,45	69,85
<b>d</b> <sub>1</sub> <sup>-0,1</sup> <sub>-0,3</sub>	38	53	85
<b>d</b> <sub>2</sub>	56,144	75,679	119,019
<b>d</b> <sub>3</sub> H8	46	63	100
<b>d</b> <sub>4</sub> H8	12,5	17	25
<b>d</b> <sub>5</sub>	14,5	19	27
<b>d</b> <sub>6</sub>	M12	M16	M24
<b>d</b> <sub>7</sub>	8	10	15
<b>f</b> <sup>+0,1</sup> <sub>0</sub>	8	10	15
<b>l</b> ±0,15	48,4	65,4	101,8
<b>l</b> <sub>1</sub>	22	27	38
<b>l</b> <sub>2</sub> ±0,1	13,6	16,6	23,2
<b>l</b> <sub>3</sub>	34	43	62
<b>l</b> <sub>4</sub>	24	30	45
<b>l</b> <sub>5</sub> <sup>+0,5</sup> <sub>0</sub>	7	9	13
<b>l</b> <sub>6</sub> <sup>0</sup> <sub>-0,2</sub>	16,3	22,6	35,4
<b>l</b> <sub>7</sub>	17	21	31
<b>r</b>	0,5	1	1

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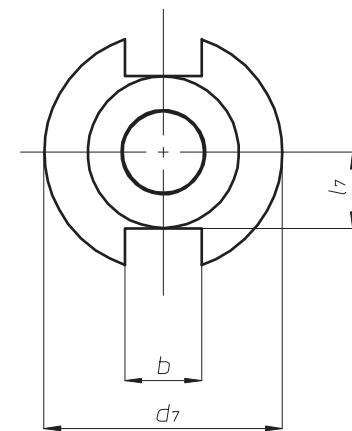
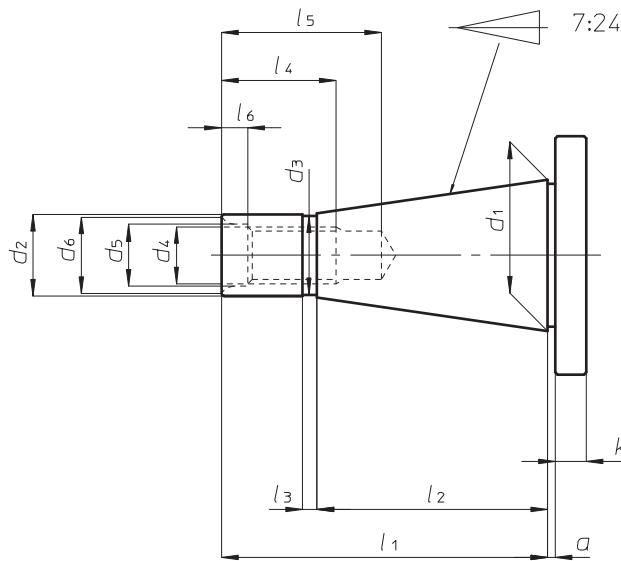
TSI/TSX

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MT-TC-TC3

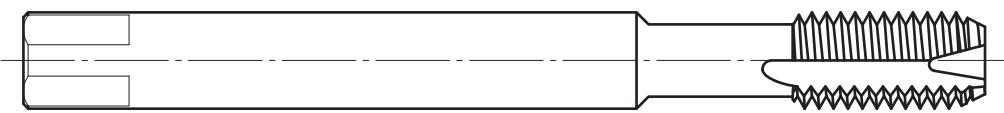
Accessori  
AccessoriesAppendice tecnica  
Technical supplement

# 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
d <sub>1</sub>	31,75	44,45	57,15	69,85
d <sub>2</sub> a10	17,4	25,3	32,4	39,6
d <sub>3</sub>	16,5	24	30	38
d <sub>4</sub>	M12	M16	M20	M24
d <sub>5</sub>	13	17	21	26
d <sub>6</sub> max	16	21,5	26	32
d <sub>7</sub> $^{+0,4}_{-0,4}$	50	63	80	97,5
k $\pm 0,15$	8	10	12	12
l <sub>1</sub>	68,4	93,4	106,8	126,8
l <sub>2</sub>	48,4	65,4	82,8	101,8
l <sub>3</sub>	3	5	6	8
l <sub>4</sub>	24	32	40	47
l <sub>5</sub> min	33,5	42,5	52,5	61,5
l <sub>6</sub> $^{+0,5}_0$	5,5	8,2	10	11,5
l <sub>7</sub> max	16,2	22,5	29	35,3

# MASCHI



Maschi (mm)	Maschi (pollici)	ISO 529 (Ø)	DIN 371 (Ø) (DIN 2181) (Ø)	DIN 371 (Ø)	DIN 371 (Ø)	DIN 376 (Ø)	DIN 376 (Ø)	JAPAN JIS (Ø)	US STANDARD (Ø)"	US STANDARD (Ø)"
M 1,0		2,50	2,10	-	-	2,50	2,10	-	-	-
M 1,1		2,50	2,10	-	-	2,50	2,10	-	-	-
M 1,2		2,50	2,10	-	-	2,50	2,10	-	-	-
M 1,4		2,50	2,10	-	-	2,50	2,10	-	-	-
M 1,6	1/16	2,50	2,10	-	-	2,50	2,10	-	-	0,141
M 1,7		2,50	2,10	-	-	2,50	2,10	-	-	0,110
M 1,8		2,50	2,10	-	-	2,50	2,10	-	-	0,141
M 2,0		2,80	2,10	2,50	2,00	2,50	2,10	-	-	0,141
M 2,2		2,80	2,10	2,80	2,24	2,50	2,10	-	-	0,141
M 2,3		2,80	2,10	2,80	2,24	2,50	2,10	-	-	0,110
M 2,5	3/32	2,80	2,10	2,80	2,24	2,50	2,10	-	-	0,141
M 2,6		2,80	2,10	2,80	2,24	2,50	2,10	-	-	0,110
M 3,0	1/8	3,15	2,50	3,15	2,50	3,50	2,70	3,00	-	0,141
M 3,5		3,55	2,80	3,55	2,80	4,00	3,00	2,50	2,10	0,110
M 4,0	5/32	4,00	3,15	-	-	4,50	3,40	2,80	2,10	0,168
M 4,5	3/16	4,50	3,55	-	-	6,00	4,90	3,50	2,70	0,194
M 5,0		5,00	4,00	-	-	6,00	4,90	3,50	2,70	0,152
M 6,0	1/4	6,30	5,00	-	-	6,00	4,90	4,50	3,40	0,255
M 7,0	5/16	7,10	5,60	-	-	7,00	5,50	5,50	4,30	0,191
M 8,0		8,00	6,30	-	-	8,00	6,20	6,00	4,90	0,318
M 9,0		9,00	7,10	-	-	9,00	7,00	7,00	5,50	0,238
M 10,0	3/8	10,00	8,00	-	-	10,00	8,00	7,00	5,50	0,381
M 11,0		8,00	6,30	-	-	-	8,00	6,20	8,00	0,286
M 12,0	1/2	9,00	7,10	-	-	-	9,00	7,00	8,50	0,367
M 14,0	9/16	11,20	9,00	11,20	-	-	11,00	9,00	10,50	0,322
M 16,0	5/8	12,50	10,00	12,50	-	-	12,00	9,00	12,50	0,360
M 18,0	11/16	14,00	11,20	14,00	-	-	14,00	11,00	14,00	0,429
M 20,0	13/16	14,00	11,20	14,00	-	-	16,00	12,00	15,00	0,322
M 22,0	7/8	16,00	12,50	16,00	-	-	18,00	14,50	17,00	0,523
M 24,0	15/16	18,00	14,00	18,00	-	-	18,00	14,50	19,00	0,570
M 27,0	1 1/16	20,00	16,00	20,00	-	-	20,00	16,00	20,00	0,896
M 30,0	1 3/16	20,00	16,00	20,00	-	-	22,00	18,00	23,00	0,652
									1,021	0,489
										0,766

US STANDARD: in pollici

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MT-TC-TC3

Accessori  
Accessories

Appendice tecnica  
Technical supplement

I dati del catalogo sono forniti a titolo indicativo; la OMG si riserva, per il continuo migliorare della propria produzione, di apportare modifiche senza preavviso.

Data and features are not binding. OMG has got the right to change them without notice, in order to continuously improve its production line.



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**MT-TC-TC3**

Catalogo 1108



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