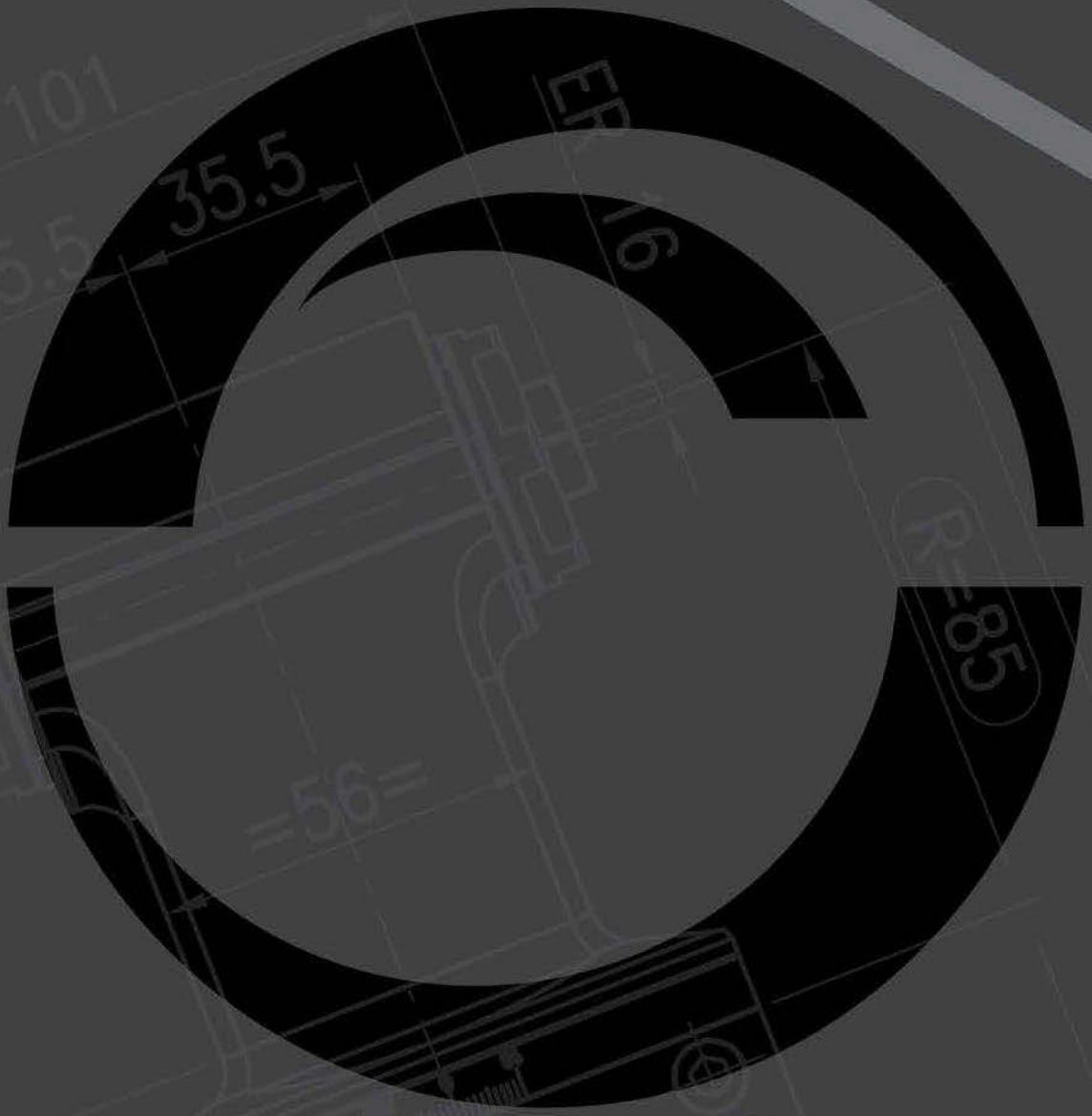
Alberti



CATALOGO GENERALE
General Catalogue

2020

TESTE ANGOLARI *ANGLE HEADS*
MOTORIZZATI LIVE TOOLS
CAMBIO RAPIDO SMART CHANGE
ALTA VELOCITÀ HIGH SPEED

WWW.ALBERTIUMBERTO.COM



Teste angolari / Angle heads

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1970 Umberto rileva l'azienda del padre, improntata dapprima sulla costruzione di modelli per fonderia e poi successivamente si specializza negli stampi per materie plastiche. Per esigenze lavorative progetta e costruisce la sua prima testa angolare. Il prodotto funziona e si rende estremamente utile per diminuire i tempi di lavorazione. Dato che in commercio non esiste nulla di simile, Umberto capisce l'importanza di questo tipo di mercato e comincia a realizzare i primi modelli: Serie L (Leggera), Serie M Media), e Serie P (Pesante).

Umberto took over his father's company that used to manufacture moulds for the metal foundry industry, then he specialized in the production for moulds for plastic components. The first angle head had been designed and assembled mainly for this machining needs. The idea worked very well and helped in reducing the machining time. Being the product unique in its kind, Umberto immediately understood the potential and began producing the first models: L line (Light), M line (Medium), P line (Heavy).

1980 La moglie Franca si unisce all'attività del marito, dirigendone l'amministrazione. Vengono introdotti i modelli orientabili TCU e TDU, perfezionati quelli esistenti e acquistati i primi macchinari: il primo centro di lavoro Olivetti, e i primi torni Biglia e Mori Seiki. Per poter ampliare le vendite in Italia e all'estero, si appoggia ad una rete distributiva internazionale che comincerà a commercializzare le teste Alberti in tutto il mondo.

His wife Franca joined the company as CFO. Umberto developed the adjustable heads: TCU and TDU models and improved the existing models. He bought the first CNC machine by Olivetti and the first Biglia and Mori Seiki lathes. In order to improve sales in Italy and especially abroad Umberto decided to rely on an international sales network which began to sell Alberti heads worldwide.



MISSION

Diventare partner ufficiale per tutti i clienti che hanno bisogno di soluzioni complete di alta qualità dalla fase del progetto a quella del prodotto finito.

Alberti aims at becoming a reliable partner for all customers who are looking for a complete high quality solution from design to simulation to finished products.







1990 L'azienda si trasferisce a Saronno. Aumenta il personale a 15 dipendenti e viene rinnovato l'intero parco macchine: vengono introdotte la 1° Makino, il 1° tornio Nakamura e la 1° rettifica Studer. Alberti comincia a diversificare la produzione introducendo la produzione dei motorizzati e di altri modelli di teste speciali, quali la linea inclinata TA e arretrata TR.

Alberti moved to Saronno. The company increased its number of employee to 15 people and renewed its machines: 1° Makino, 1° Nakamura lathe and the 1° Studer grinding.Alberti started to diversify its production by introducing other products such as live tools. He also introduced other special angle heads models, such as TA tilted serie and TR offset serie

2000 Vengono introdotte nuove linee di prodotti come la linea di teste ad alta velocità con motori ad aria ed elettromandrini. Grazie alle figlie Nadia ed Elisa l'azienda riesce a consolidare una rete distributiva affidata esclusivamente ai propri rivenditori e collaboratori e a commercializzare i propri prodotti in tutto il mondo.

New products have been projected, such as the high speed range of heads with air spindle motor. Thanks also to Nadia and Elisa , the company has developed its own worldwide sales network which relies on own exclusive dealers and partners.

2010 Nonostante alcuni anni difficili di crisi economica globale, l'azienda Alberti è in continua crescita. Attualmente si contano più di 30 persone impiegate tra produzione e ufficio tecnico e un ampliamento della sede con consistente rinnovamento del parco macchine, tra cui un'altra rettifica, un nuovo sistema integrato FMS 4.0 e una macchina di misura di alta precisione.

Despite the global crisis, Alberti grew in terms of employees, production plant and number of machines. At the moment there are more than 30 people hired among the production and technical department. The new building includes another grinding machine, 2 other lathes, a new FMS 4.0 integrated system and a high precision 3D measuring machine inside a controlled room temperature.

CHI SIAMO

Alberti ha iniziato a produrre teste angolari a fine anni Settanta e in brevissimo tempo le sue soluzioni si sono affermate in tutto il mondo per qualità, funzionalità e affidabilità ma anche per il raffinato design. Obiettivo dell'azienda è rispondere alle esigenze di un mercato di fascia alta, ovunque nel mondo, con tutte le soluzioni - di serie sviluppate ad hoc - necessarie per raggiungere i traguardi produttivi più ambiti. Grazie a questo approccio, Alberti si è affermato come il marchio dei prodotti "made in Italy", sia per la loro carica innovativa sia per i benchmark di comparazione prestazionale con gli altri competitor presenti sul mercato. Ogni singolo prodotto viene progettato realizzato interamente all'interno dell'azienda. La passione, il coinvolgimento e la cura dei particolari costituiscono apetti essenziali del modo di lavorare dell'azienda Alberti, che fa di essi un elemento di forza al di là di ogni altra logica puramente di mercato. In funzione dello scopo che il cliente deve raggiungere e del tipo di sforzo e di sollecitazione richiesti, i tecnici Alberti studiano la soluzione più adatta. A questa fase di ricerca applicativa e progettuale segue la realizzazione del prototipo e la sua sperimentazione in opera. Con il consueto servizio post-vendita, il prodotto viene poi supportato da Alberti durante tutto il ciclo di vita, con ogni intervento che si renda necessario.

Alberti started the production of angle heads at the end of the Seventies. In few years its solutions have come to dominate the international market thanks to huge quality, functionality, reliability as well as balanced design of its products. Aim of the company is to meet the demands of a discerning market niche worldwide and to offer optimum standard or custom-made solutions. Thanks to constant innovation and its modern solutions, Alberti is now leader among the manufacturers of the products "Made in Italy". Passion, involvement and great attention to details are the main features of Alberti philosophy and imply a point of strength in addition to market indicators. Every single internal part is designed and manufactured 100% inside the company. On the basis of the customers' information about the machining to be performed, the mechanical stress and the tools to be used, Alberti's technical department studies the most suitable solution. This stage of research and design is followed by the manufacturing and testing of the prototype in order to check real performances. All products are supported by an efficient after- sales service that allows Alberti to track back product life and repair history.

CARATTERISTICHE TECNICHE TESTE ALBERTI
TECHNICAL DATA

ALBERO CON CONO
SPINDLE W/ARBOR

Albero con cono in acciaio cementato e temperato. Realizzato in un solo pezzo per aumentare il carico alla flessione del 25%, interamente rettificato ed equilibrato a 6,3G. Riesce a raggiungere alte velocità senza vibrazioni.

Spindle with arbor made as one solid piece of hardened steel to increase resistance to bending stress up to 25%. Completely ground and balanced at 6,3G. Possibility to reach higher RPM without vibrations



CORPO TESTA
BODY

Corpo testa in ghisa sferoidale GS-600 stabilizzata per un assorbimento totale delle vibrazioni. Stabilità termica e rigidità superiori ad altri materiali (es. acciaio e alluminio). Cromatura opaca sul corpo e sedi dei cuscinetti interamente rettificate.

Casting made of GS 600 stabilized spheroidal cast iron to better absorb vibrations. Increased thermal stability and rigidity compared to materials such as steel and aluminum. Mat chromed finishing outside and ground bearing housing



MANDRINO
SPINDLE

Albero porta-utensile in acciaio legato, temperato e con doppio labirinto. Completamente rettificato, con tolleranze inferiori ai 5 micron, per garantire una durata maggiore dell'utensile in lavorazione.

Output spindle made of hardened alloyed steel with double labyrinth seal. Completely ground with tolerance lower than 5 micron to ensure a longer tool life.



FLANGIA INDEX
INDEXING FLANGE

Flangia di indexaggio monolitica per garantire un'iterasse preciso. Il perno cilindrico assicura una notevole stabilità durante le lavorazioni.

Flange arm and pin as monolitic piece to grant an increased rigidity and stability to the whole structure whilst machining. Very precise pitch dimension and perfect match of the cylindrical pin with the Stop Block sleeve.



FASCE LAPPATE
LAPPED SURFACE

Fascie lappate per il corretto allineamento dell'utensile

Lapped side surface for correct alignment of the tool.





Tutti i particolari sono caratterizzati da nostro logo e codice per garantirne l'autenticità del prodotto e facilitare la ricerca dei particolari di ricambio. Tutti i controlli sono affidati alla macchina di misura di alta precisione in camera controllata.

All spare parts are laser marked with Alberti logo to guarantee the authenticity and simplify the recognition of each single item. All parts are measured with our new high precision 3D measuring machine inside a controlled room temperature.

Le nostre teste dispongono di un QR Code per consentirne una facile e rapida identificazione.
Our angular heads have a QR Code that enables an easy and quick identification.







CUSCINETTI
BEARINGS

Cuscinetti a contatto obliquo precaricati in ABEC7-ABEC9. Con le sedi rettificate del corpo permettono una perfetta concentricità e stabilità di tutti gli organi rotanti, necessaria per raggiungere performance di lavorazioni superiori.

Angular contact super precision bearings with ABEC 7 and 9 accuracy rate. Mounted in ground bearing housing inside of the body, they ensure a perfect concentricity and stability during machining.



INGRANAGGI
GEARS

Ingranaggi realizzati in superleghe di acciaio, temperati e interamente rettificati. Vengono trattati con lucidatura isotropica che conferisce loro una rugosità pari a 0,01 Ra e un abbattimento notevole delle vibrazioni e dell'attrito.

Gears made of steel superalloy. They are hardened, completely ground and treated with isotropic polishing which allows to reach 0,01Ra roughness with a dramatic reduction of the vibrations and friction.



TENUTE MECCANICHE
MECHANICAL SEALS

Tenute meccaniche studiate appositamente per sopportare alte pressioni fino a 100 bar e alti numeri di giri.

Mechanical seal specially studied to reach high pressure up to 100 bar and higher RPM.

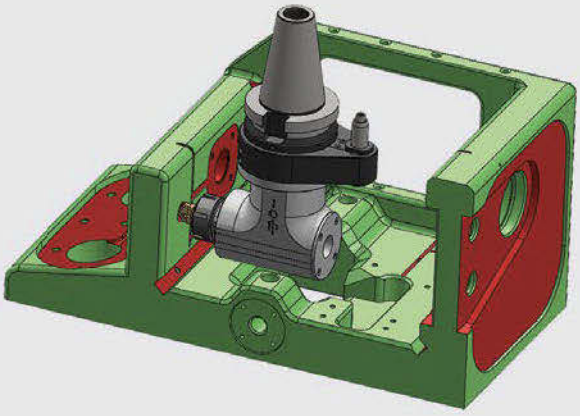


GUARNIZIONI
SEALS

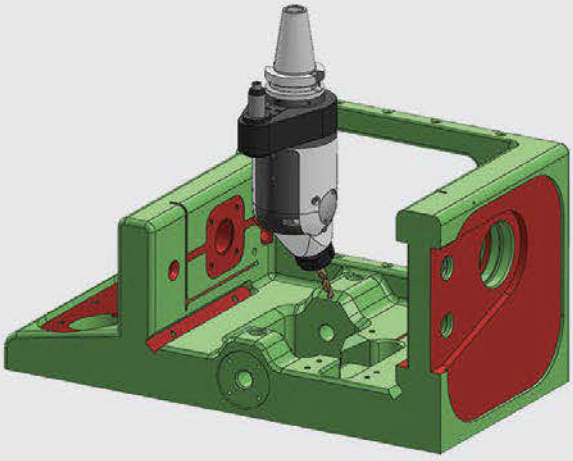
Tenute a bassissimo coefficiente d'attrito progettate dall'azienda con mescola particolare. Per le alte velocità sono previste tenute senza contatto con sistemi di pressurizzazioni.

Low-friction seals made of a special composition. All studied and developed by Alberti.

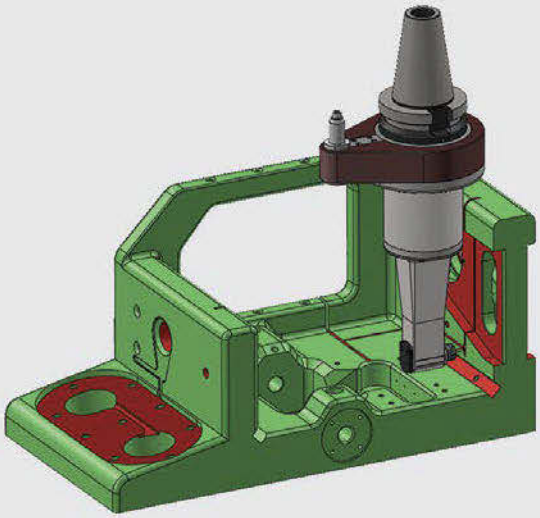
ESEMPI DI LAVORAZIONI STANDARD
EXAMPLES OF STANDARD MACHINING



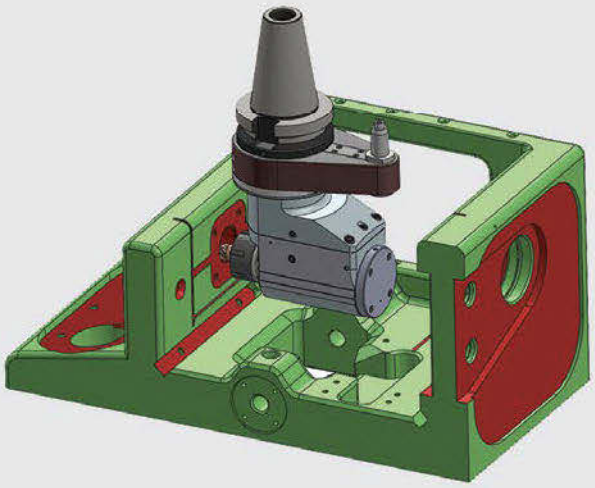
Testa a 90°
90° Head



Testa ad inclinazione regolabile
Head with adjustable angle +/- 90°

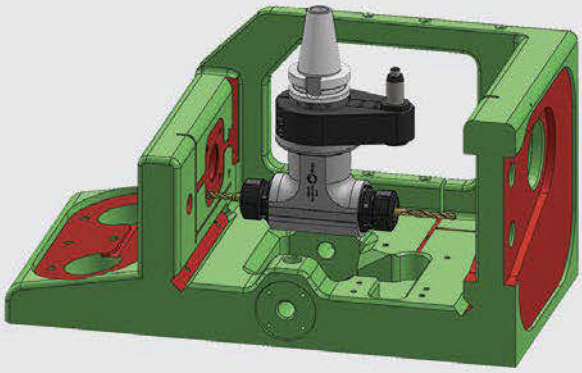


Testa a 90° prolungata
Extended lenght head

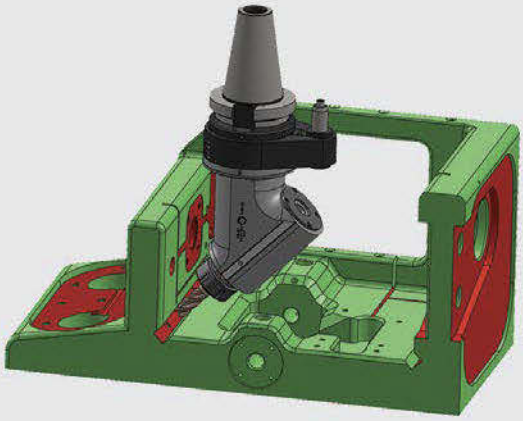


Testa con refrigerante
Head with internal coolant

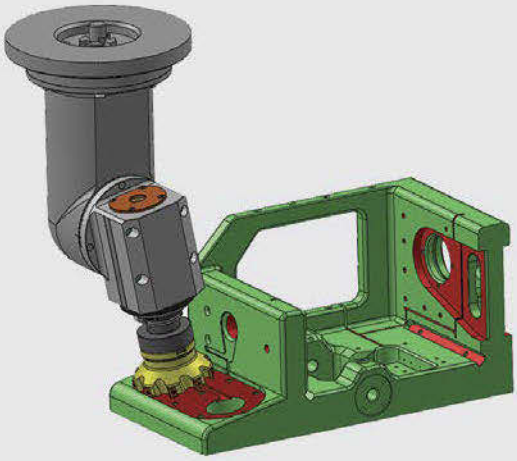
ESEMPI DI LAVORAZIONI STANDARD
EXAMPLES OF STANDARD MACHINING



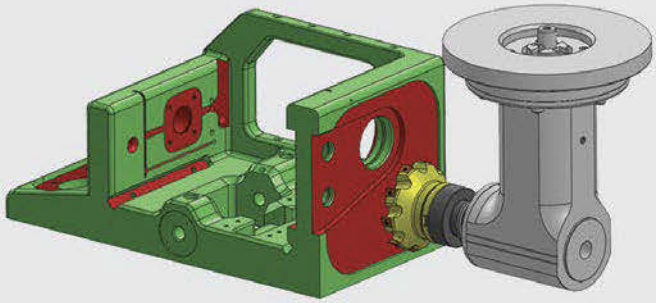
Testa con uscita doppia (180°)
Dual output head (180°)



Testa ad inclinazione fissa
Head with special fixed angle

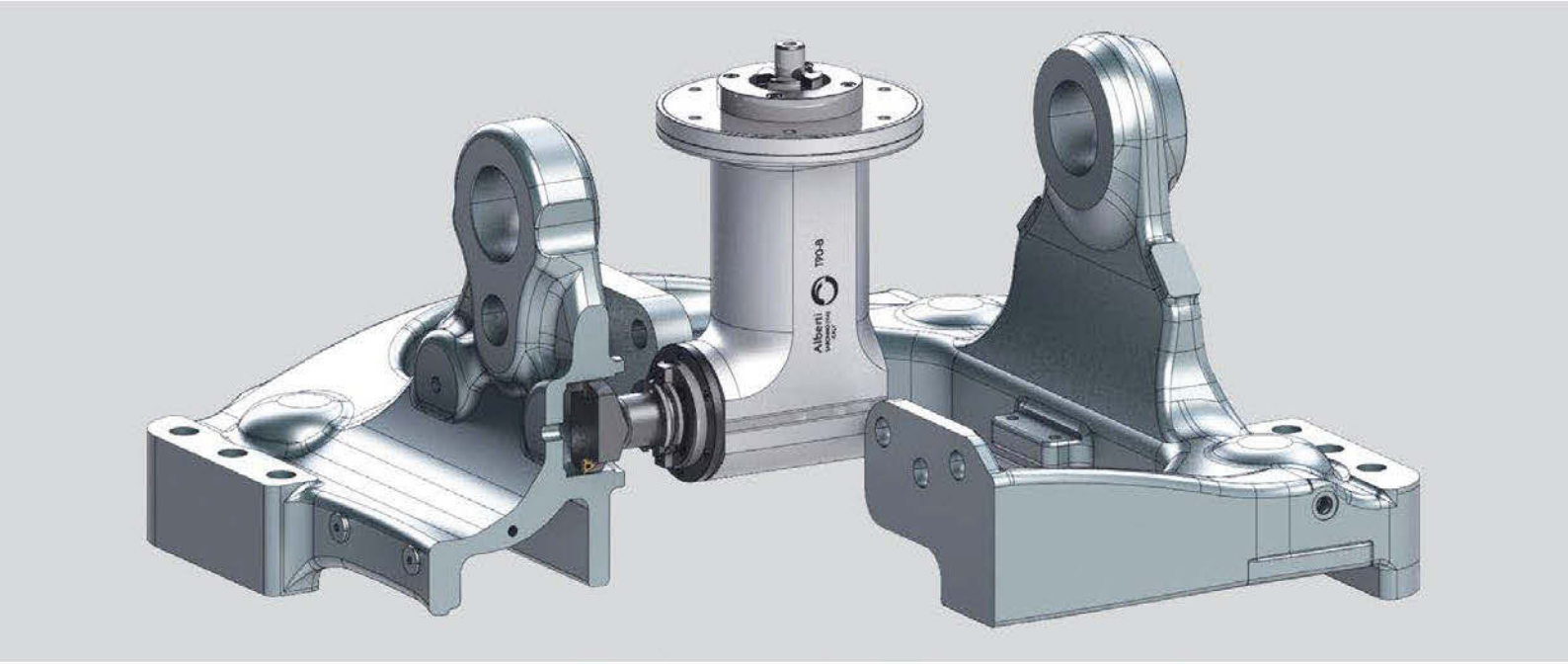


Testa orientabile di grosse dimensioni con montaggio manuale
Big sized adjustable head with manual mounting

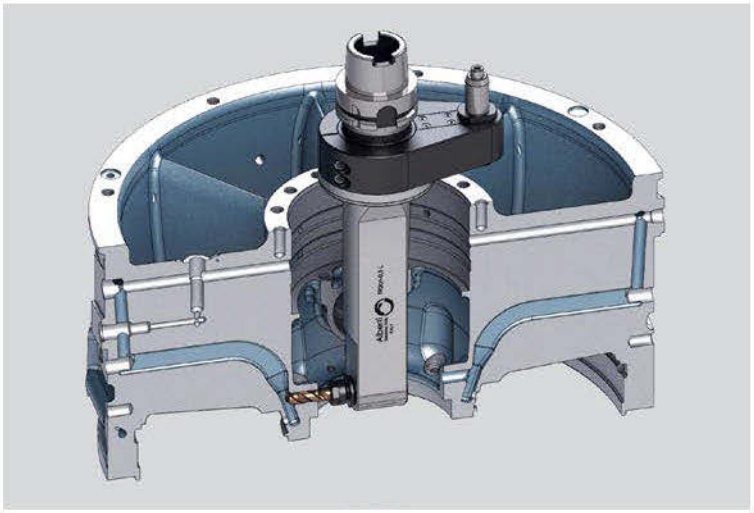


Testa fissa di grosse dimensioni con montaggio manuale
Big sized fixed head with manual mounting

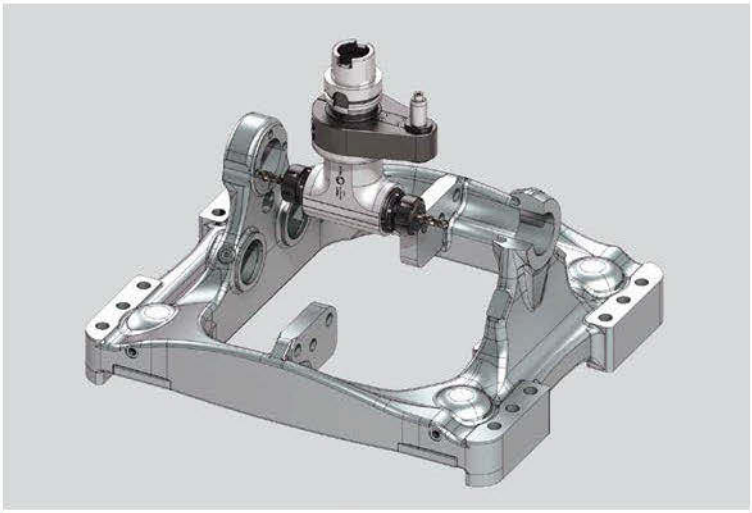
LA TESTA PIÙ IDONEA PER OGNI APPLICAZIONE
THE MOST SUITABLE HEAD FOR EACH APPLICATION



Testa a 90° con o senza flangia per pezzi grossi
90° Head with or without flange for big workpiece



Testa a 90° prolungata
90° head with extended lenght



Testa a 2 uscite contrapposte
Head with dual output opposite



Testa fissa ad angolo variabile
Head with variable fixed angle



Testa rinviata per spazi ristretti
Offset head for reduced spaces

ADDUZIONE REFRIGERANTE
COOLANT OPTIONS

LOW PRESSURE

COOLANT INPUT



Refrigerante attraverso il perno
e l'utensile
Pressione max 12 bar
Rotazione a secco NON possibile

Coolant through pin and spindle
Max pressure 12 bar
Dry running NOT possible

COOLANT INPUT



Refrigerante attraverso il cono
Pressione max 12 bar
Rotazione a secco NON possibile

Coolant through main spindle
Max pressure 12 bar
Dry running NOT possible

COOLANT INPUT



Refrigerante attraverso il perno
Pressione max 12 bar
Rotazione a secco possibile

Coolant through main spindle
Max pressure 12 bar
Dry running possible

HIGH PRESSURE

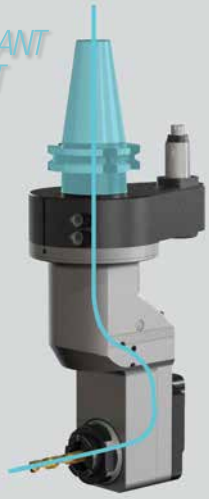
COOLANT INPUT



Refrigerante attraverso il cono
e l'utensile
Pressione max 100 bar
Rotazione a secco possibile

Coolant through main spindle and tool
Max pressure 100 bar
Dry running possible

COOLANT INPUT



Refrigerante attraverso cono
Pressione max 100 bar
Rotazione a secco possibile

Coolant through main spindle
Max pressure 100 bar
Dry running possible

COOLANT INPUT



Refrigerante attraverso ghiera reCOOL
Max pressure 15 bar
Rotazione a secco possibile

Coolant through reCOOL Nuts
Max pressure 15 bar
Dry running possible

COME SCEGLIERE LA TESTA IN BASE ALLA GRANDEZZA DEL PORTAUTENSILE

HOW TO CHOOSE YOUR HEAD ACCORDING TO THE SIZE OF THE TOOLHOLDER

		SHAUBLIN
PINZA / COLLET ER-8	WELDON Ø 6 mm	P6 (0,5-4,5 mm)
Testa/Head		Pag
T90cn-0,4		20
TR90cn-0,4		21
T90-0,4		70

PINZA/COLLET ER-11	WELDON Ø 6 mm
Testa/Head	Pag
T90cn-0,5C	22
T90cn-0,5L	23
T90cn-0,5M	24
TCUcn-0,5M	25
TR90cn-0,5	26
T90-0,5C	71
T90-0,5L	72

PINZA/COLLET ER-16	WELDON Ø 10 mm	PORTAFRESA/SHELL MILL HOLDER 10 mm
Testa/Head		Pag
T90cn-1,5		27
T90cn-1,5L		28
T90cn-1,5 2U		29
TH90cn-1,5 100 bar		30
TH90cn-1,5L 100 bar		31
TR90cn-1,5		32
TCUcn-1,5		33
T90cn-1,5M		34
T90-1,5		73
T90-1,5L		74
T90-1,5 2U		75
PINZA/COLLET ER-25	WELDON Ø 16 mm	PORTAFRESA/SHELL MILL HOLDER 16 mm
T90cn-2,5		35
T90cn-2,5L		36
T90cn-2,5 2U		37
TH90cn-2,5 100 bar		38
TH90cn-2,5L 100 bar		39
TR90cn-2,5		40
TCUcn-2,5		41
T90cn-2,5M		42
T90-2,5		76
T90-2,5L		77
T90-2,5 2U		78
TCU-2,5		79

PINZA/COLLET ER-32	WELDON Ø 20 mm	PORTAFRESA/SHELL MILL HOLDER 27 mm
Testa/Head		Pag
T90cn-3,5		43
T90cn-3,5L		44
T90cn-3,5 2U		45
TH90cn-3,5 100 bar		46
TH90cn-3,5L 100 bar		47
TR90cn-3,5		48
TCUcn-3,5		49
T90cn-3,5M		50
T90-3,5		80
T90-3,5L		81
T90-3,5 2U		82
TCU-3,5		83
T90cn-3,5 SC		124
T90cn-3,5M SC		125
TH90cn-3,5 SC		126
TCUcn-3,5 SC		127
PINZA/COLLET ER-40	WELDON Ø 25 mm	PORTAFRESA/SHELL MILL HOLDER 27 mm
T90cn-4,5		51
T90cn-4,5L		52
T90cn-4,5 2U		53
TH90cn-4,5 100 bar		54
TH90cn-4,5L 100 bar		55
TR90cn-4,5		56
T90-4,5		84
T90-4,5L		85

PINZA/COLLET ISO40 DIN69871 - BT40 - CAT40	CAPTO C4	HSK63
Testa/Head		Pag
T90cn-5		57
T90cn-5 HP		58
T90cn-5L		59
T90-5		86
T90-5 HP		87
T90-5L		88
T90-8 HS		89
T90-8 HP		90
TDU-8		91
T90-8 XL		92
TCU-8 RI 15 bar		94
PINZA/COLLET ISO50 DIN69871 - BT50 - CAT50		HSK63
T90-10		95
TDU-10		96
TCU-10 RI 15 bar		97
TR90-15		98
TR90-8 AUTO		101
TR90-15 AUTO		102
T90-15 AUTO		103

COME SCEGLIERE LA TESTA IN BASE ALLA GRANDEZZA DEL CONO
HOW TO CHOOSE YOUR HEAD ACCORDING TO THE SIZE OF THE SHANK

CONO/SPINDLE ISO/BT 30	
Testa/Head	Pag
T90cn-0,5M	24
TCUcn-0,5M	25
T90cn-1,5M	34
Turbodrill	116

CONO/SPINDLE ISO/BT/CAT 40	
Testa/Head	Pag
T90cn-0,4	20
TR90cn-0,4	21
T90cn-0,5C	22
T90cn-0,5L	23
TR90cn-0,5	26
T90cn-1,5	27
T90cn-1,5L	28
T90cn-1,5 2U	29
TH90cn-1,5 100 bar	30
TH90cn-1,5L 100 bar	31
TR90cn-1,5	32
TCUcn-1,5	33
T90cn-2,5	35
T90cn-2,5L	36
T90cn-2,5 2U	37
TH90cn-2,5 100 bar	38
TH90cn-2,5L 100 bar	39
TR90cn-2,5	40
TCUcn-2,5	41
T90cn-2,5M	42
T90cn-3,5	48
Tutte le teste Modular All modular heads	70-103
High Speed Line	104-118

CONO/SPINDLE HSK63	
Testa/Head	Pag
T90cn-0,4	20
TR90cn-0,4	21
T90cn-0,5C	22
T90cn-0,5L	23
TR90cn-0,5	26
T90cn-1,5	27
T90cn-1,5L	28
T90cn-1,5 2U	29
TH90cn-1,5 100 bar	30
TH90cn-1,5L 100 bar	31
TR90cn-1,5	32
TCUcn-1,5	33
T90cn-2,5	35
T90cn-2,5L	36
T90cn-2,5 2U	37
TH90cn-2,5 100 bar	38
TH90cn-2,5L 100 bar	39
TR90cn-2,5	40
TCUcn-2,5	41
T90cn-2,5M	42
T90cn-3,5	43

CONO/SPINDLE HSK63	
Testa/Head	Pag
T90cn-3,5L	44
T90cn-3,5 2U	45
TH90cn-3,5 100 bar	46
TH90cn-3,5L 100 bar	47
TR90cn-3,5	48
TCUcn-3,5	49
T90cn-3,5M	50
T90cn-3,5 SC	124
T90cn-3,5M SC	125
TH90cn-3,5 SC	126
TCUcn-3,5 SC	127
Tutte le teste Modular All modular heads	70-103
High Speed Line	104-118

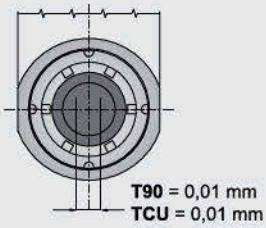
CONO/SPINDLE ISO/BT/CAT 50	
Testa/Head	Pag
T90cn-0,4	20
TR90cn-0,4	21
T90cn-0,5C	22
T90cn-0,5L	23
TR90cn-0,5	26
T90cn-1,5	27
T90cn-1,5L	28
T90cn-1,5 2U	29
TH90cn-1,5 100 bar	30
TH90cn-1,5L 100 bar	31
TR90cn-1,5	32
TCUcn-1,5	33
T90cn-2,5	35
T90cn-2,5L	36
T90cn-2,5 2U	37
TH90cn-2,5 100 bar	38
TH90cn-2,5L 100 bar	39
TR90cn-2,5	40
TCUcn-2,5	41
T90cn-2,5M	42
T90cn-3,5	43
T90cn-3,5L	44
T90cn-3,5 2U	45
TH90cn-3,5 100 bar	46
TH90cn-3,5L 100 bar	47
TR90cn-3,5	48
TCUcn-3,5	49
T90cn-3,5M	50
T90cn-4,5	51
T90cn-4,5L	52
T90cn-4,5 2U	53
TH90cn-4,5 100 bar	54
TH90cn-4,5L 100 bar	55
TR90cn-4,5	56
T90cn-5	57
T90cn-5 HP	58
T90cn-5L	59

CONO/SPINDLE ISO/BT/CAT 50	
Testa/Head	Pag
T90cn-3,5 SC	124
T90cn-3,5M SC	125
TH90cn-3,5 SC	126
TCUcn-3,5 SC	127
Tutte le teste Modular All modular heads	70-103
High Speed Line	104-118

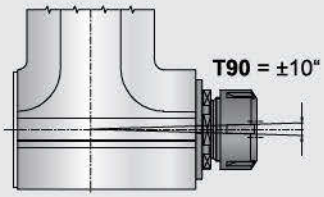
CONO/SPINDLE HSK 80/100	
Testa/Head	Pag
T90cn-0,4	20
TR90cn-0,4	21
T90cn-0,5C	22
T90cn-0,5L	23
TR90cn-0,5	26
T90cn-1,5	27
T90cn-1,5L	28
T90cn-1,5 2U	29
TH90cn-1,5 100 bar	30
TH90cn-1,5L 100 bar	31
TR90cn-1,5	32
TCUcn-1,5	33
T90cn-2,5	35
T90cn-2,5L	36
T90cn-2,5 2U	37
TH90cn-2,5 100 bar	38
TH90cn-2,5L 100 bar	39
TR90cn-2,5	40
TCUcn-2,5	41
T90cn-2,5M	42
T90cn-3,5	43
T90cn-3,5L	44
T90cn-3,5 2U	45
TH90cn-3,5 100 bar	46
TH90cn-3,5L 100 bar	47
TR90cn-3,5	48
TCUcn-3,5	49
T90cn-3,5M	50
T90cn-4,5	51
T90cn-4,5L	52
T90cn-4,5 2U	53
TH90cn-4,5 100 bar	54
TH90cn-4,5L 100 bar	55
TR90cn-4,5	56
T90cn-5	57
T90cn-5 HP	58
T90cn-5L	59
T90cn-3,5 SC	124
T90cn-3,5M SC	125
TH90cn-3,5 SC	126
TCUcn-3,5 SC	127
Tutte le teste Modular All modular heads	70-103
High Speed Line	104-118



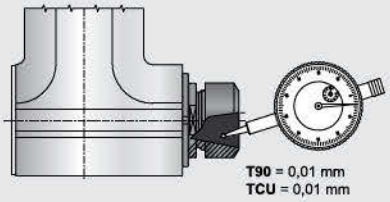
DATI TECNICI
TECHNICAL DATA



Disassamento tra albero in entrata e mandrino portautensile
Maximum misalignment of input and output drive spindle



Errore angolare del mandrino portautensile rispetto ai 90° teorici
Tool spindle angular variation relative to 90° (theoretical value)

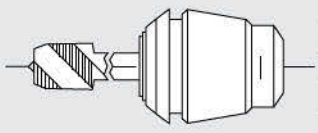


Oscillazione mandrino portautensile con testa in rotazione
Maximum runout of output spindle

MASCHIATURA
TAPPING

Per le operazioni di maschiatura, tutte le teste standard possono utilizzare le pinze compensate. Queste pinze sono perfettamente intercambiabili con le normali pinze elastiche utilizzate per le altre operazioni, e permettono ai maschi di avere una corsa assiale di compensazione per eventuali errori di avanzamento e per l'inversione della rotazione.
La stessa testa, quindi, può essere impiegata sia per forare che per maschiare compatibilmente alla capacità della relativa pinza.

For tapping operations, all standard heads can be equipped with axially-compensating collets. These collets are fully interchangeable with the normal collets and allow the tap to move axially thereby compensating for any feed error and facilitating reversal of direction of rotation.
A single head can therefore be used for both drilling and tapping, up to the diameter allowed by the collet.



Head / Tipo testa	Collet / Tipo Pinza	Capacity / Capacità	Shift / Corsa
T90-1,5	ET-1-16	M1-M6	7 mm
T90/TCU-2,5	ET-1-25	M1-M12	8 mm
T90/TCU-3,5	ET-1-32	M4-M16	10 mm
T90-4,5	ET-1-40	M6-M20	13 mm

NOTE: Ogni pinza può portare una sola grandezza di maschio. Perciò sarà necessario specificare, in sede di ordine, il diametro del gambo del maschio che si intende utilizzare.
Each collet is designed to accommodate an individual tap size. Therefore, please specify the tap shank diameter when ordering collets.

TESTA PER CAMBIO UTENSILE AUTOMATICO
ANGLE HEAD FOR AUTOMATIC TOOL CHANGE



1. Tipo di portautensile e diametro utensile
   Type of tool holder and cutitng tool diameter

   .....

2. Cono di attacco alla macchina
   Machine spindle

   .....

3. Distanza tra perno e cono attacco testa
   Distance between pin and spindle

   .....

4. Tipo di macchina e peso al cambio utensile
   Type of the machine and weight at tool change

   .....

5. **Stop Block**
   Già presente in macchina oppure da realizzare
   Already installed or to be manufactured

   .....

OPTION

Refrigerante interno *Internal coolant*	☐
Doppia uscita *Dual output*	☐
Portautensile diverso *Different tool holder*	☐
Lunghezza extra *Extra length*	☐

TESTA PER MONTAGGIO MANUALE
ANGLE HEAD FOR MANUAL MOUNTING



1. Tipo di portautensile e diametro utensile
   Type of tool holder and cutitng tool diameter

   .....

2. Cono di attacco alla macchina
   Machine spindle

   .....

OPTION

Refrigerante interno *Internal coolant*	☐
Doppia uscita *Dual output*	☐
Portautensile diverso *Different tool holder*	☐
Lunghezza extra *Extra length*	☐



LINEA CONTROL

La LINEA CONTROL comprende una serie di teste angolari adatte ad essere montate nel magazzino utensile e quindi essere scambiate automaticamente. La corretta installazione prevede il montaggio di uno stop block a bordo macchina. Per una maggior rigidità il cono di attacco alla macchina è realizzato in un unico pezzo con l'albero principale.

CONTROL LINES include a wide range of angle heads to be used on machining centres with ATC and therefore can be mounted in the tool magazine and automatically exchanged in the machine spindle. A stop block mounted on the machine spindle ensure a correct positioning and prevents rotation. The input spindle is one solid piece with the main shaft to grant a higher rigidity.

SCANNERIZZA IL QR CODE
per le istruzioni di montaggio

SCAN THE QR CODE
for the set-up instructions

Dimensioni STOP BLOCK per teste
Dimensions STOP BLOCK for heads

T90cn-0,4 / 0,5 / 1,5 / 2,5 / 3,5 / 4,5



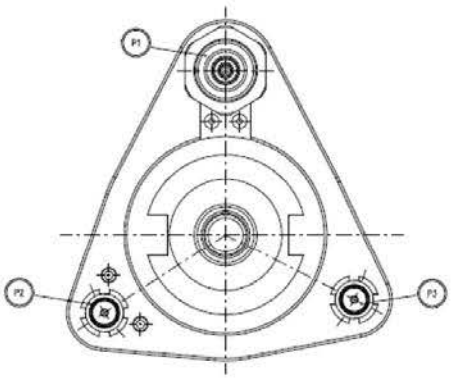
Dimensioni STOP BLOCK per teste
Dimensions STOP BLOCK for heads

T90cn-5

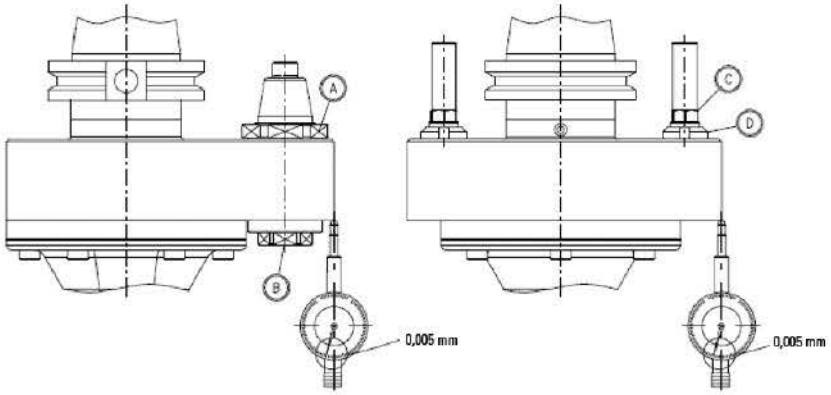


SUPPORTO 3 PUNTI
3 POINT SUPPORT

Per aumentare la rigidità e stabilità durante la lavorazione, è possibile realizzare una flangia con 3 punti di supporto. La flangia viene realizzata su misura a seconda delle dimensioni del mandrino macchina. Solitamente per questo tipo di realizzazione si prevede un magazzino esterno o una stazione pick up per accogliere la testa.
Ogni flangia con 3 punti di appoggio viene realizzata ad hoc in base al mandrino macchina pertanto non esiste uno standard. I punti di appoggio sono tutti regolabili e devono essere registrati durante la prima installazione.



In order to increase rigidity and stability during machining, Alberti can build a special flange with 3 point support system. The flange is custom-made according to the dimension of the machine spindle. With this system the head cannot be loaded into the tool magazine but requires an external uploading or pick up station.

















ESEMPI DI STOP BLOCK E PERNO
EXAMPLES OF STOP BLOCKS AND PINS

In caso non fosse possibile utilizzare uno dei perni o stop block già disponibili, Alberti fornisce tutta l'assistenza necessaria per realizzare uno stop block ad hoc per la propria macchina.
Di seguito alcuni esempi.

In case the customer cannot use any of the pins or stop block aready available, Alberti will help in finding the correct solution and provide the customized stop block for the machine. Following few examples.



A
Cod: 5951800001
Perno e Stop Block Alberti standard
Alberti standard Pin and Block

B
Cod: 59518006
Perno e Stop Block Alberti standard
Adjustable conical pin and stop block

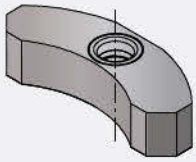
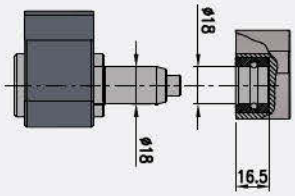
C
Cod: 5951800073
Perno e stop block conico regolabile
Conical pin and stop block

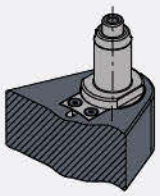
D
Cod: 4951800091
Perno e stop block prismatico
Prismatic pin and stop block

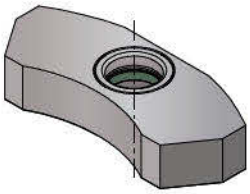
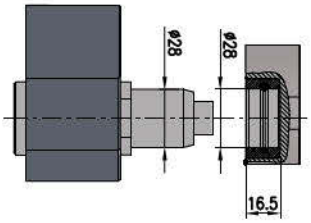
E
Perno flottante
Floating pin

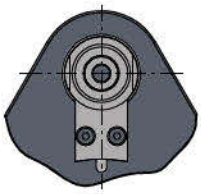
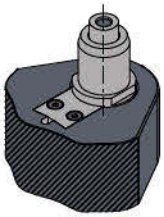
F
Perno maschio speciale
Special male pin

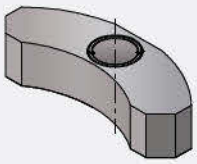
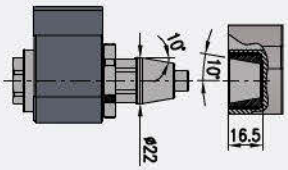
G
Perno femmina speciale
Special female pin

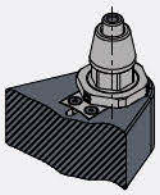



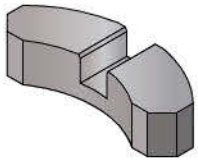
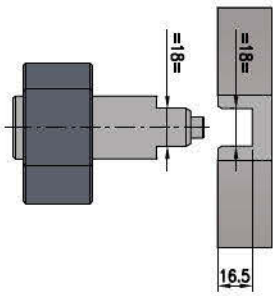



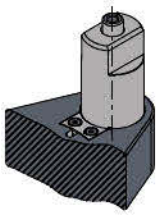



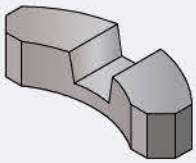
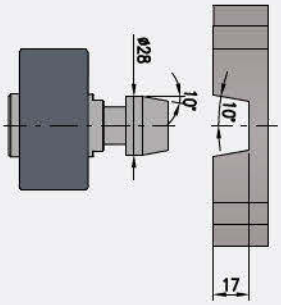



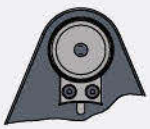
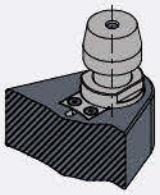



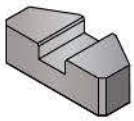
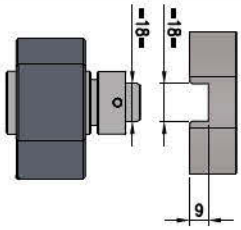

Perno regolabile
Adjustable pin


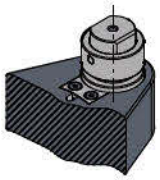



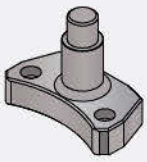
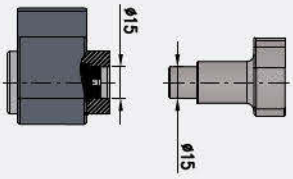



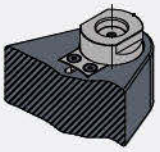





T90cn-0,4

ACTC9004C

Ratio
Rapporto
1:1

RPM
Velocità
10.000 min^{-1}

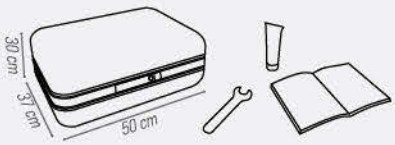
Max. axial load
Max. carico assiale
100 N

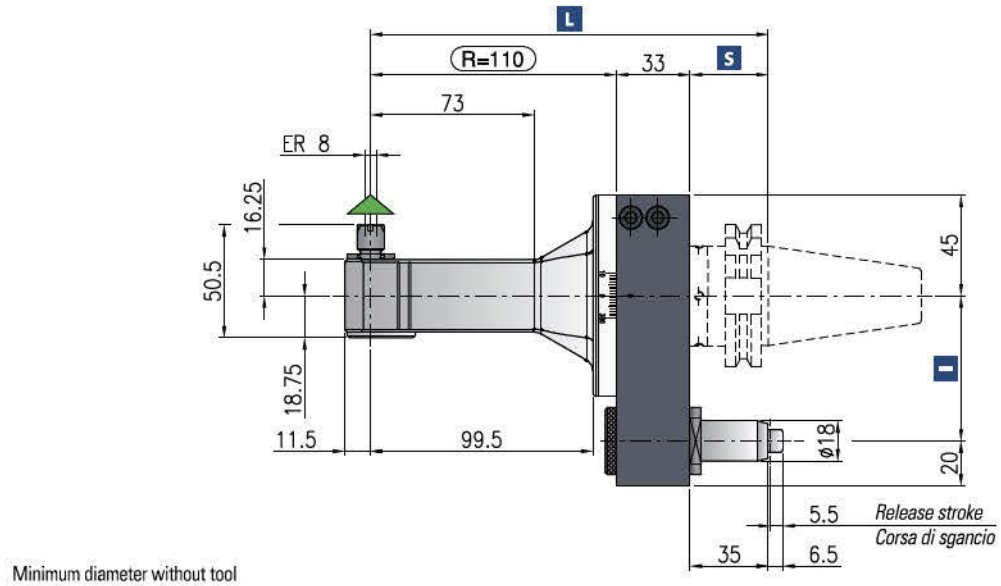
Torque
Momento torcente
4 Nm

Weight
Peso
4 kg

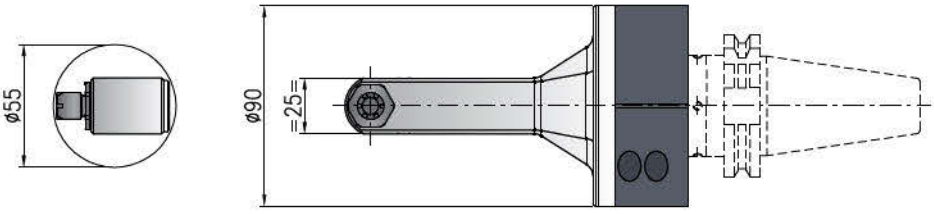
Collet
Pinza
ER-8 (ø 0,5/5 mm)

*** STANDARD EQUIPMENT INCLUDES:**





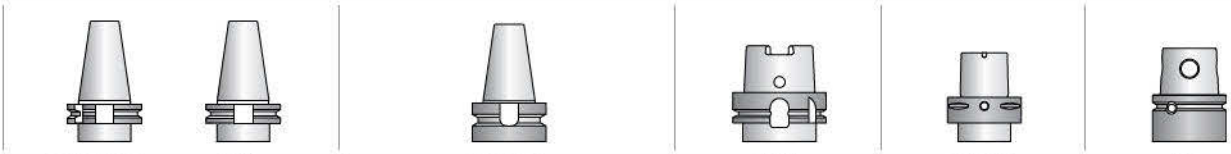
Minimum diameter without tool
Diametro minimo senza utensile



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	178	178	178	184	185	188	181	183	183

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



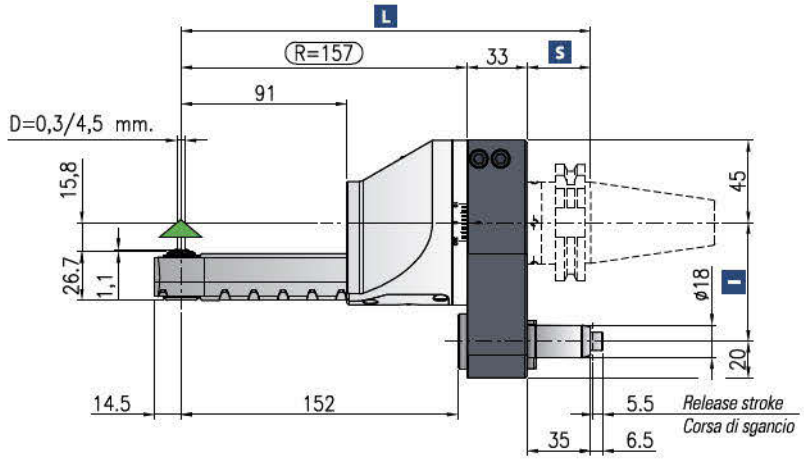
bar max
12
Coolant through pin
Adduzione refrigerante attraverso il perno



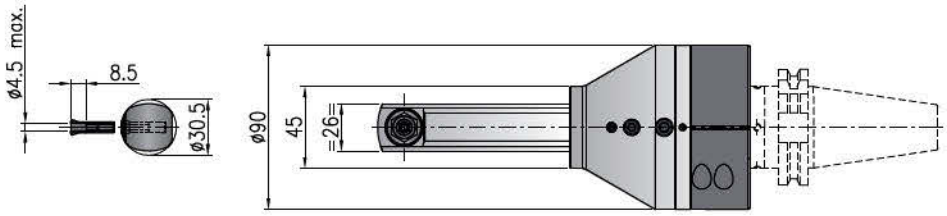
Ø mm max.
6
Weldon output
Weldon

TR90cn-0,4

ACTR904C



Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1: 2.375 SPEEDER

RPM
Velocità
8.000 min⁻¹ OUTPUT

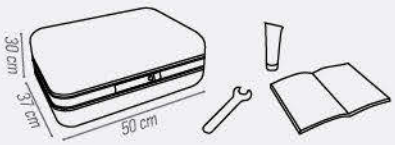
Max. axial load
Max. carico assiale
135 N

Torque
Momento torcente
8 Nm

Weight
Peso
4.5 kg

Collet
Pinza
SCHAUBLIN P6

*** STANDARD EQUIPMENT INCLUDES:**





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	225	225	225	231	232	235	228	230	230

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



bar max
12

Coolant through pin
Adduzione refrigerante attraverso il perno



T90cn-0,5C

ACT9005C

Ratio
Rapporto
1:1

RPM
Velocità
10.000 min^{-1}

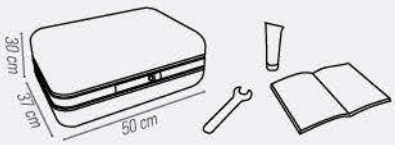
Max. axial load
Max. carico assiale
150 N

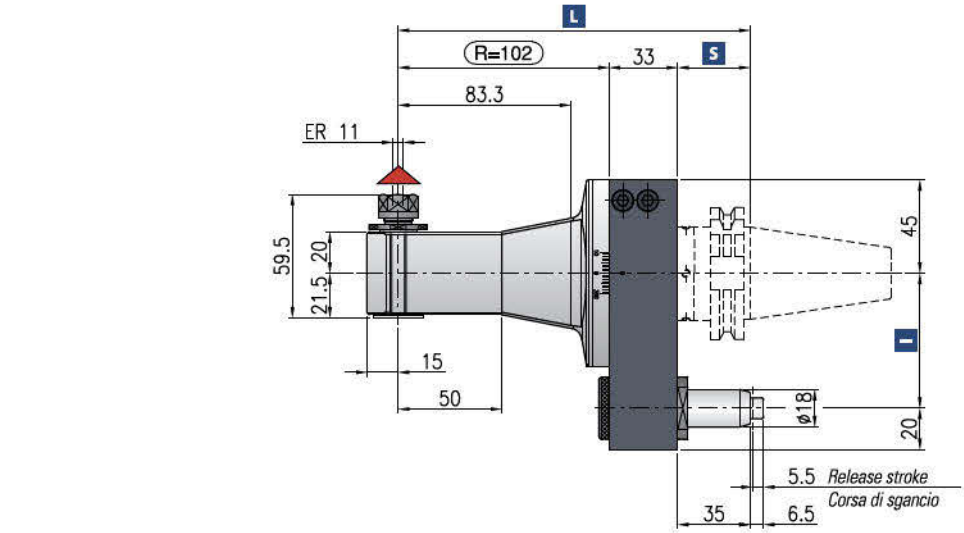
Torque
Momento torcente
8 Nm

Weight
Peso
4 kg

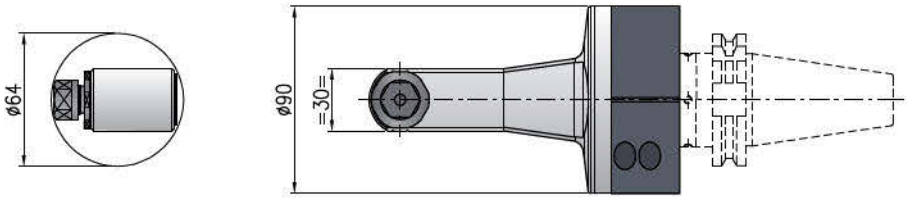
Collet
Pinza
ER-11 (ø 0,5/7 mm)

*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	170	170	170	176	177	180	173	175	175

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

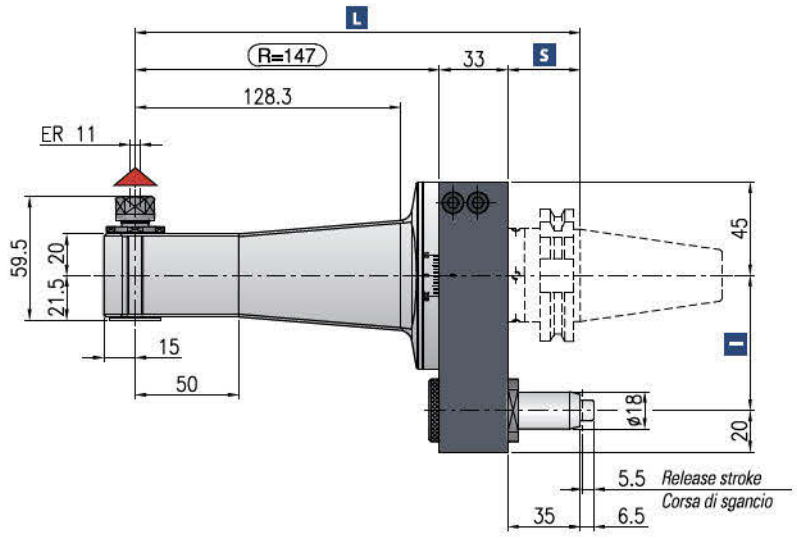
Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

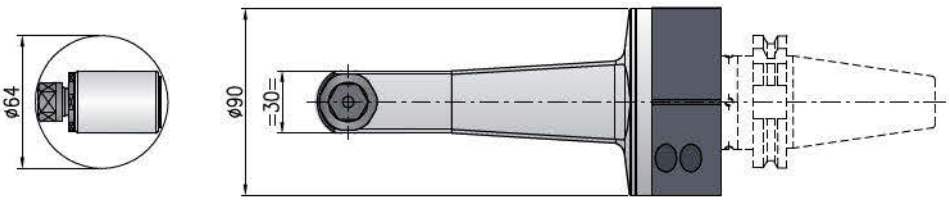
bar max	Ø mm max.	Ø mm max.
12	**Ø 0,5 / 7mm**	**6**
Coolant through pin *Refrigerante attraverso il perno*	*ERAX-11*	*Weldon output* *Weldon*

T90cn-0,5L

ACT9005L



Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Ratio
Rapporto
1:1

RPM
Velocità
10.000 min⁻¹

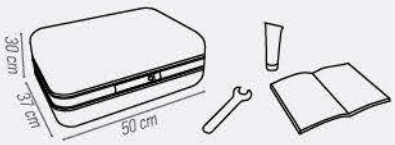
Max. axial load
Max. carico assiale
150 N

Torque
Momento torcente
8 Nm

Weight
Peso
4,3 kg

Collet
Pinza
ER-11 (ø 0,5/7 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	215	215	215	221	222	225	218	220	220

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	Ø mm max.	Ø mm max.
12	Ø 0,5 / 7mm	6
Coolant through pin *Adduzione refrigerante attraverso il perno*	*ERAX-11*	*Weldon output* *Weldon*



T90cn-0,5M Aluminum

ACT9005C.ALU

Ratio
Rapporto
1:1

RPM
Velocità
10.000 min^{-1}

Max. axial load
Max. carico assiale
120 N

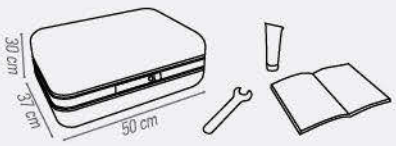
Torque
Momento torcente
8 Nm

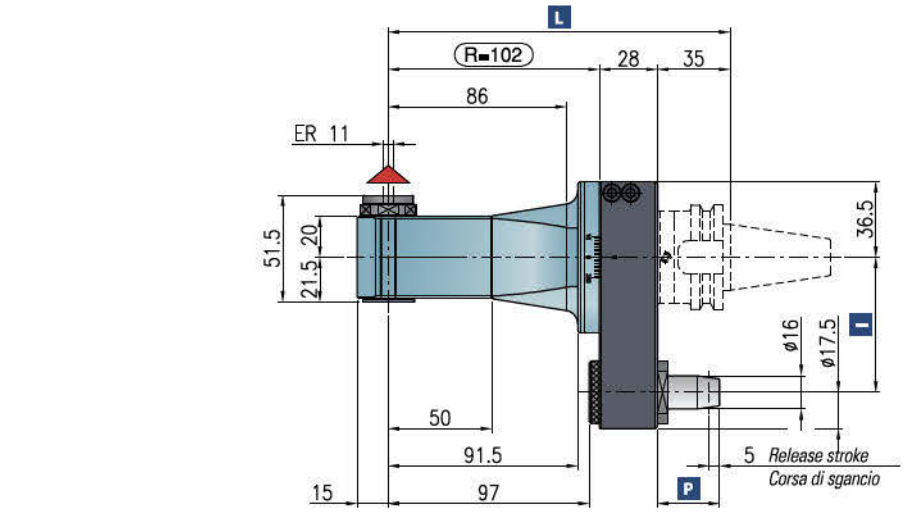
Weight
Peso
2,7 Kg

Collet
Pinza
ERAX-11 (ø 0,5/7 mm)

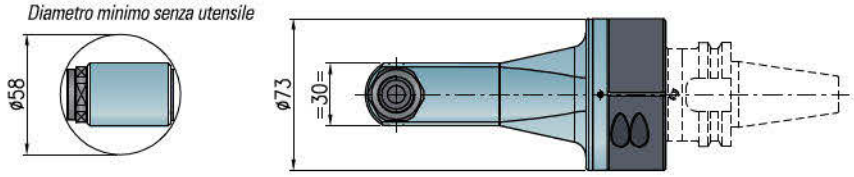
Shank
Cono
ISO 30DIN-69871/BT-30

*** STANDARD EQUIPMENT INCLUDES:**

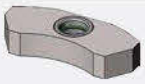




Minimum diameter without tool
Diametro minimo senza utensile



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



	FANUC ROBODRILL	BROTHER S2D	BROTHER TC-32	BROTHER R450X1	BROTHER S500 S700 S1000	DMG MORI MILLTAP 700
I	65	80	80	50	80	65
P	24	24	30	24	25,75	24
L	165	165	165	165	165	165

Dual contact spindles available / Disponibilità coni a doppio contatto

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

Opzione / Option

AIR/OIL

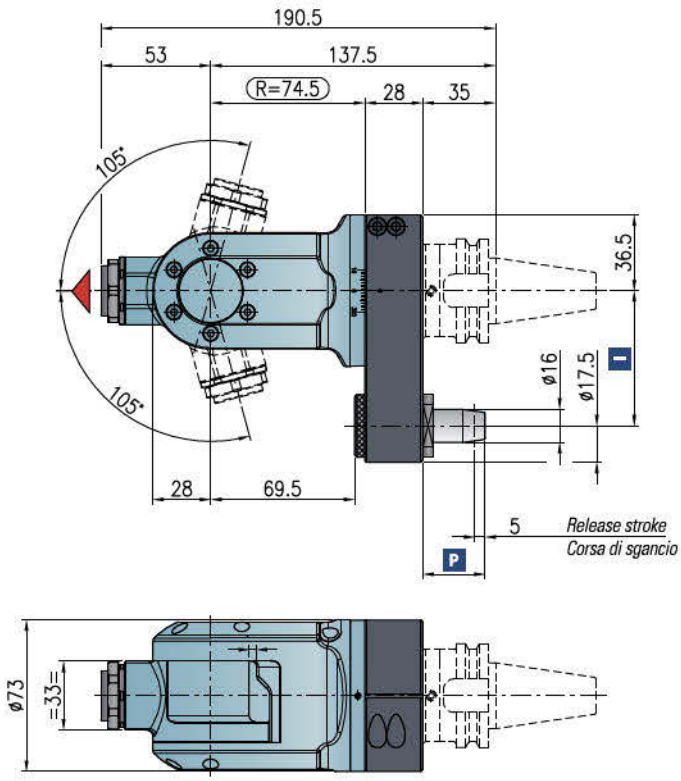
Air / oil lubrication
Lubrificazione aria / olio

bar max
12

Coolant through pin
Refrigerante attraverso il perno

TCUcn-0,5M Aluminum

ACTCU05C.ALU



Ratio
Rapporto
1:1.5 (Speeder)

RPM OUTPUT
Velocità
6.000 min⁻¹

Max. axial load
Max carico assiale
215N

Torque
Momento torcente
8 Nm

Weight
Peso
2,8 Kg

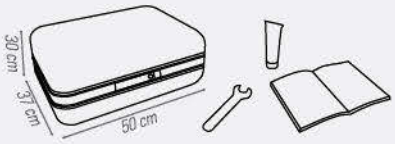
Collet
Pinza
ERAX-11 (ø 0,5/7 mm)

Shank
Cono
ISO 30DIN-69871/BT-30



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

*** STANDARD EQUIPMENT INCLUDES:**



	FANUC ROBODRILL	BROTHER S2D	BROTHER TC-32	BROTHER R450X1	BROTHER S500 S700 S1000	DMG MORI MILLTAP 700
I	65	80	80	50	80	65
P	24	24	30	24	25,75	24

Dual contact spindles available / Disponibilità coni a doppio contatto

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

Opzione / Option

bar max
12

Coolant through pin
Refrigerante attraverso il perno



TR90cn-0,5

ACTR905C

Ratio OUTPUT
Rapporto
1:2 speeder

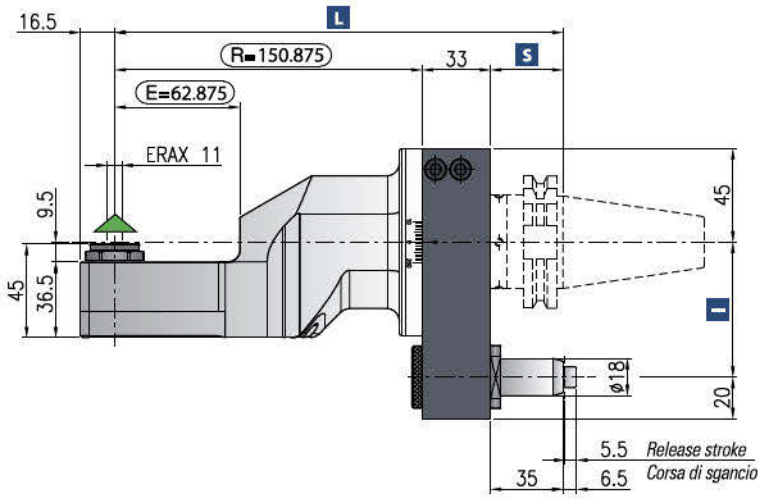
RPM OUTPUT
Velocità
8.000 min^{-1}

Max. axial load
Max. carico assiale
200 N

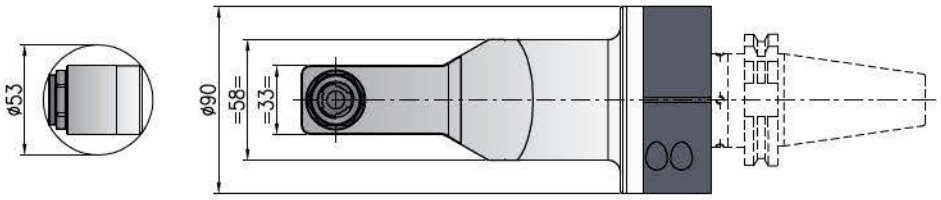
Torque
Momento torcente
8 Nm

Weight
Peso
6 kg

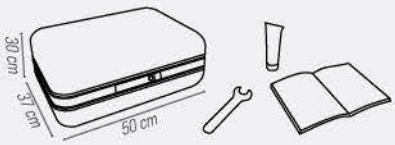
Collet
Pinza
ER-AX-11 (ø 0,5/7 mm)



Minimum diameter without tool
Diametro minimo senza utensile



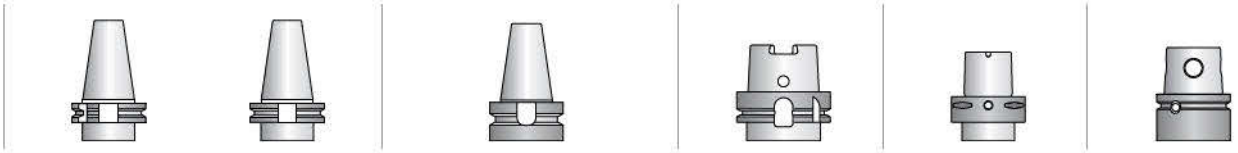
*** STANDARD EQUIPMENT INCLUDES:**



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871		CAT		MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	63		
I	65-80	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)		
S	35	35	35	41	42	45	38	40	40		
L	218,875	218,875	218,875	224,875	225,875	228,875	221,875	223,875	223,875		

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

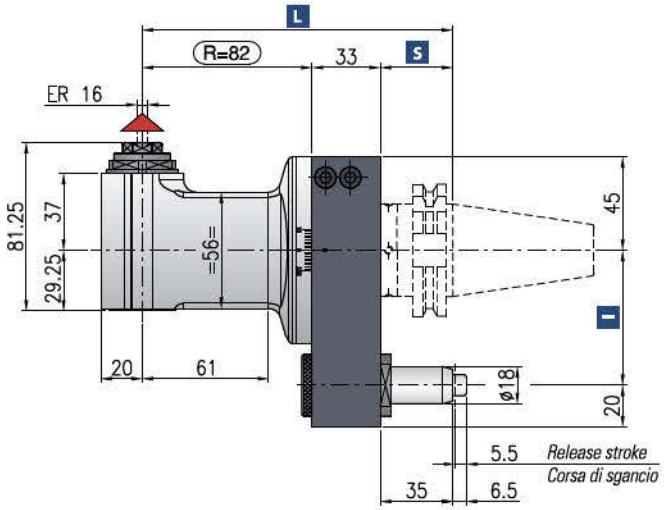


bar max
12

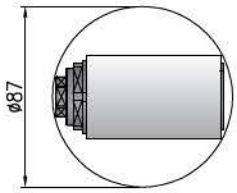
Coolant through pin
Adduzione refrigerante attraverso il perno

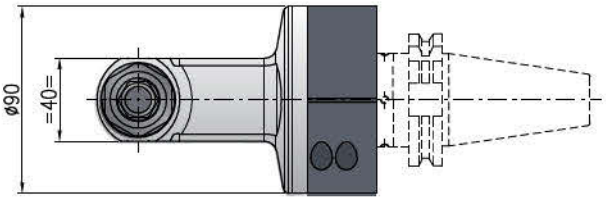
T90cn-1,5

ACT9015C



Minimum diameter without tool
Diametro minimo senza utensile







Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Ratio
Rapporto
1:1

RPM
Velocità
8.000 min⁻¹

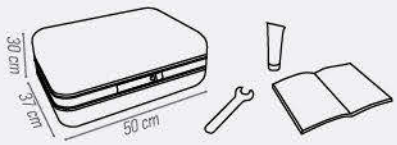
Max. axial load
Max. carico assiale
250 N

Torque
Momento torcente
15 Nm

Weight
Peso
4,3 kg

Collet
Pinza
ER-16 (ø 1/10 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	150	150	150	156	157	160	153	155	155

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	Ø mm	Ø mm max.	
12	13	10	ER-16/ER-11
Coolant through pin and spindle *Refrigerante interno attraverso utensile*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Double output* *Doppia uscita*



T90cn-1,5L

ACT9015L

Ratio
Rapporto
1:1

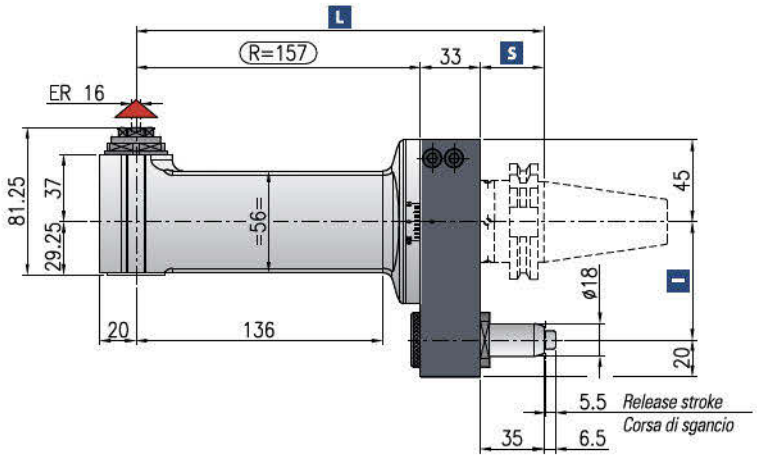
RPM
Velocità
8.000 min^{-1}

Max. axial load
Max. carico assiale
250 N

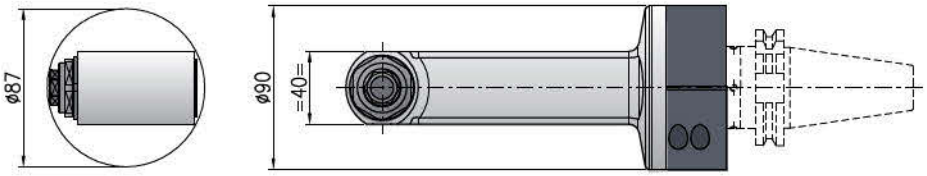
Torque
Momento torcente
15 Nm

Weight
Peso
5,2 kg

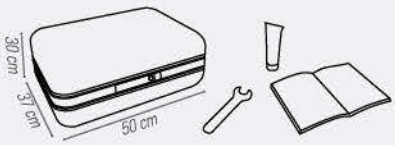
Collet
Pinza
ER-16 (ø 1/10 mm)



Minimum diameter without tool
Diametro minimo senza utensile



*** STANDARD EQUIPMENT INCLUDES:**



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	225	225	225	231	232	235	228	230	230

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / *Opzione*



bar max
12
Coolant through pin and spindle
Refrigerante interno attraverso utensile



Ø mm
13
Arbor output
Porta fresa



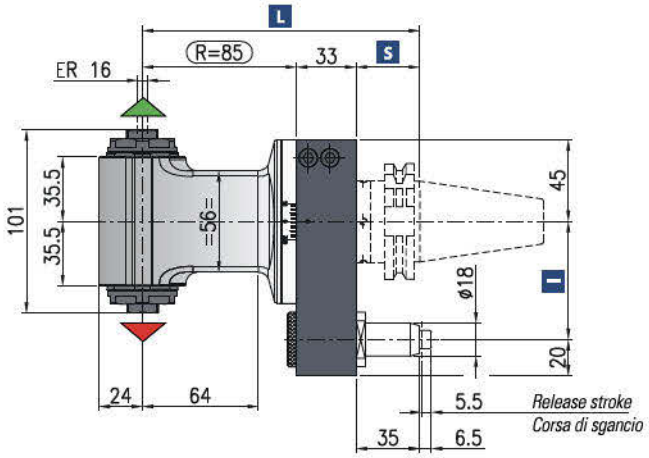
Ø mm max.
10
Weldon output
Weldon



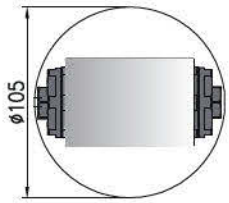
ER-16/ER-11
Double output
Doppia uscita

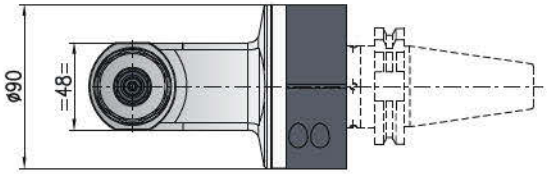
T90cn-1,5 2U

ACT9015D



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
8.000 min⁻¹

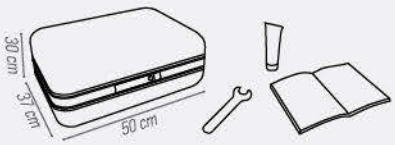
Max. axial load
Max. carico assiale
250 N

Torque
Momento torcente
15 Nm

Weight
Peso
4,3 kg

Collet
Pinza
ER-16 (ø 1/10 mm)

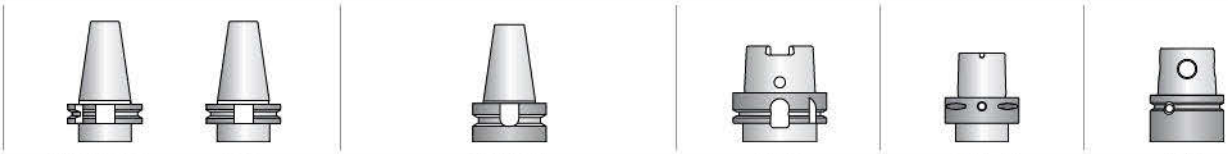
*** STANDARD EQUIPMENT INCLUDES:**





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*
Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871		CAT		MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40		50		40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)		80-(110*)		65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35		35		35	41	42	45	38	40	40
L	153		153		153	159	160	163	156	158	158

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



Ø mm
13
Arbor output
Porta fresa



Ø mm max.
10
Weldon output
Weldon



ER-16/ER-11
Double output
Doppia uscita



TH90cn-1,5 100 BAR

ACTH915C

Ratio
Rapporto
1:1

RPM
Velocità
10.000 min^{-1}

RPM Dry running
Velocità a secco
8.000 min^{-1}

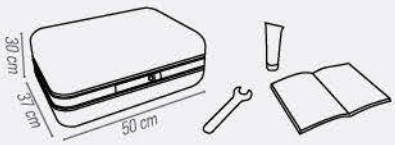
Max. axial load
Max. carico assiale
250 N

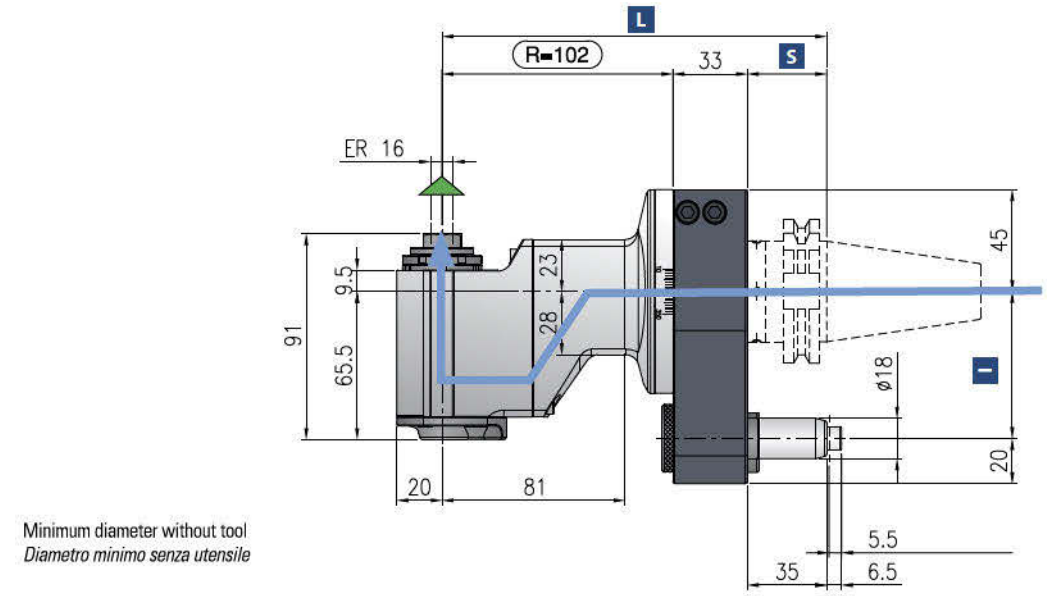
Torque
Momento torcente
15 Nm

Weight
Peso
4,5 kg

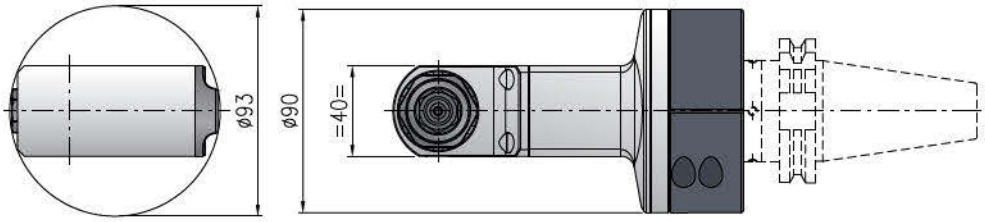
Collet
Pinza
ER-16 (ø 1/10 mm)

*** STANDARD EQUIPMENT INCLUDES:**

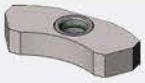




Minimum diameter without tool
Diametro minimo senza utensile



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Dry running also possible / Rotazione a secco possibile

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	170	170	170	176	177	180	173	175	175

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / ***Opzione***

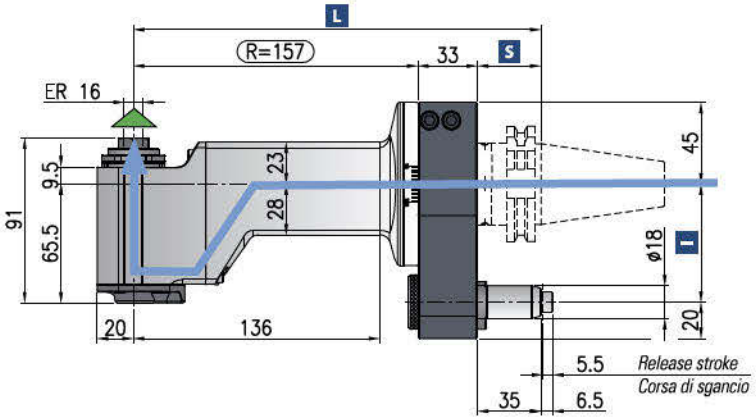


Ø mm max.
10

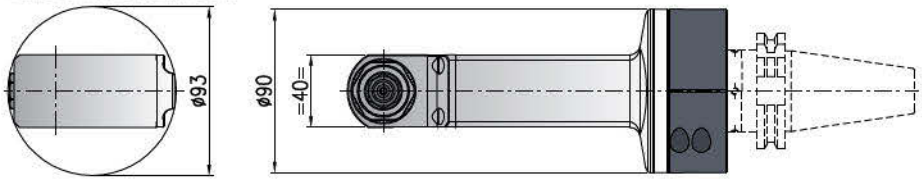
Weldon output
Weldon

TH90cn-1,5L 100 BAR

ACTH915L



Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

RPM
Velocità
10.000 min^{-1}

RPM Dry running
Velocità a secco
8.000 min^{-1}

Max. axial load
Max. carico assiale
250 N

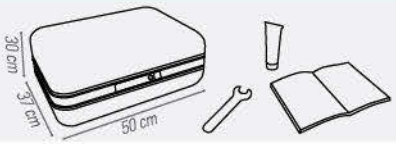
Torque
Momento torcente
15 Nm

Weight
Peso
5,2 kg

Collet
Pinza
ER-16 (ø 1/10 mm)

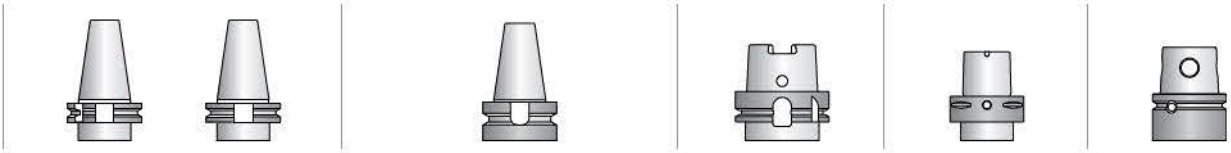
Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO





Dry running also possible / Rotazione a secco possibile

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	225	225	225	231	232	235	228	230	230

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / ***Opzione***



Ø mm
13
Arbor output
Porta fresa



Ø mm max.
10
Weldon output
Weldon



ER-16/ER-11
Double output
Doppia uscita



TR90cn-1,5

ACTR915C

Ratio
Rapporto
1: 1,5 speeder

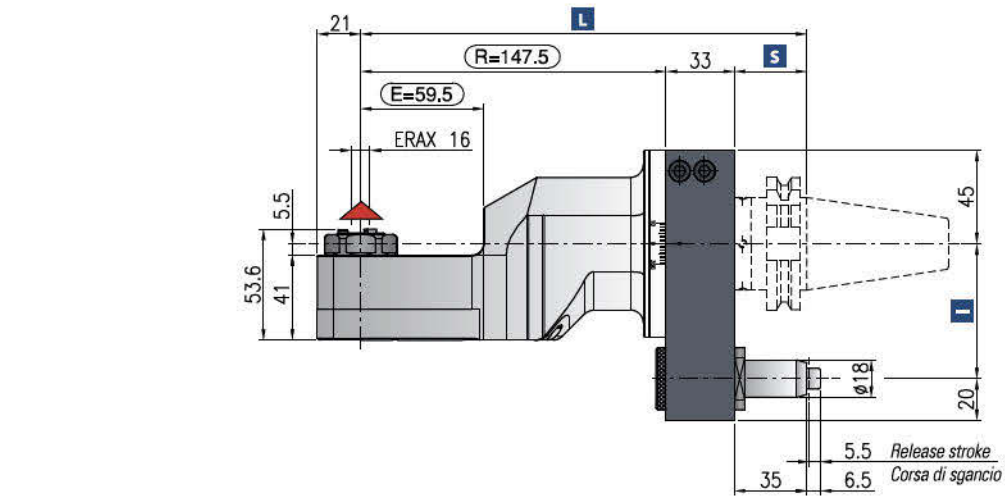
RPM OUTPUT
Velocità
8.000 min⁻¹

Max. axial load
Max. carico assiale
350 N

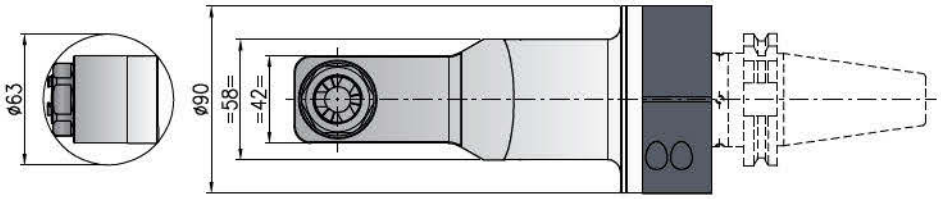
Torque
Momento torcente
15 Nm

Weight
Peso
7 kg

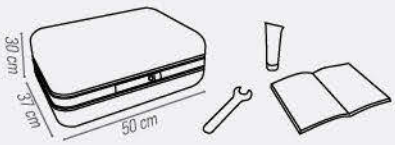
Collet
Pinza
ER-AX 16 (ø1/10 mm)



Minimum diameter without tool
Diametro minimo senza utensile



*** STANDARD EQUIPMENT INCLUDES:**





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Dry running also possible / Rotazione a secco possibile

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	63
I	65-80	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	215,5	215,5	215,5	221,5	222,5	222,5	218,5	220,5	220,5

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / *Opzione*



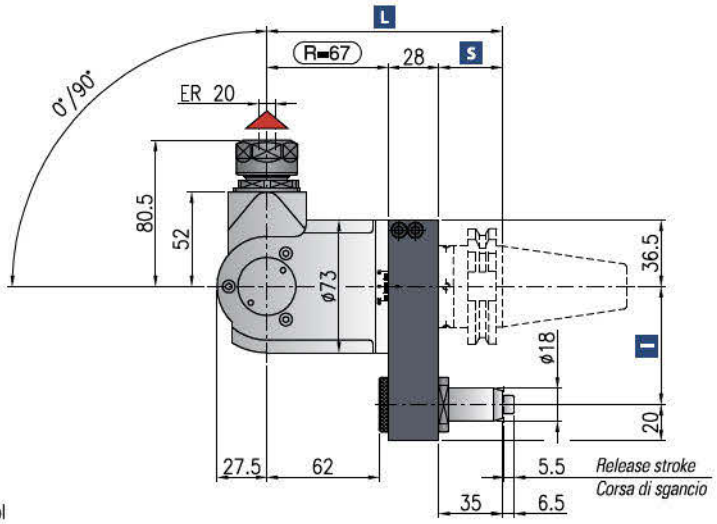
bar max
12
Coolant through pin
Refrigerante attraverso il perno



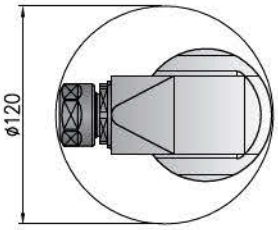
bar max
100
Coolant through spindle
Refrigerante attraverso il cono

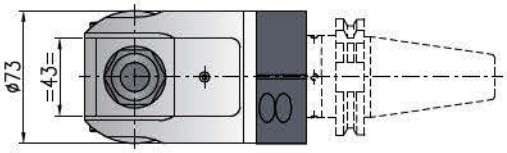
TCUcn-1,5

ACTCU15C



Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

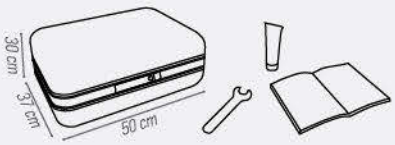
Max. axial load
Max. carico assiale
450 N

Torque
Momento torcente
6 Nm

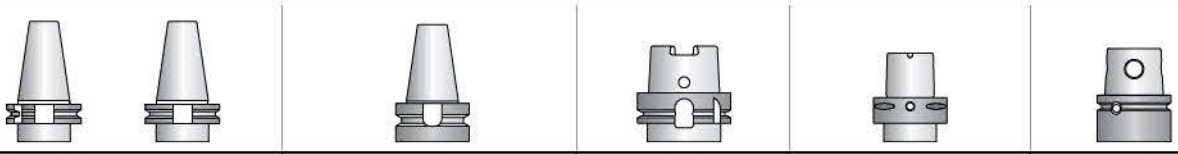
Weight
Peso
4.2 kg

Collet
Pinza
ER-20 (ø 1/13 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	42	40	40
L	130	130	130	136	137	140	133	135	220,5

Dual contact spindles available/Disponibilità coni a doppio contatto

*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	min⁻¹	Ø mm max.
12	8.000	10
Coolant through pin *Adduzione refrigerante attraverso il perno*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Weldon output* *Weldon*



T90cn-1,5M Aluminum

ACT9015C.ALU

Ratio
Rapporto
1:1

RPM
Velocità
8.000 min⁻¹

Max. axial load
Max. carico assiale
250 N

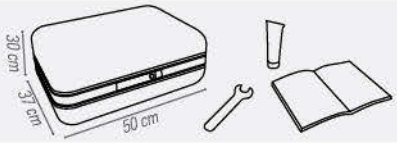
Torque
Momento torcente
15 Nm

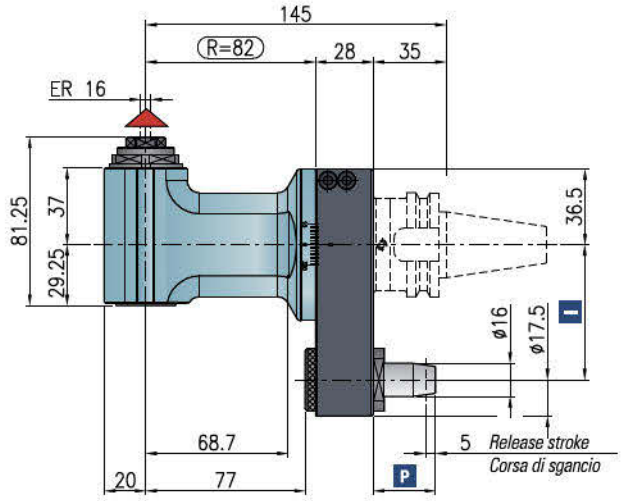
Weight
Peso
2,9 kg

Collet
Pinza
ER 16 (ø 1-10 mm)

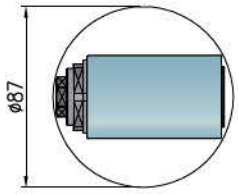
Shank
Cono
ISO 30DIN-69871/BT-30

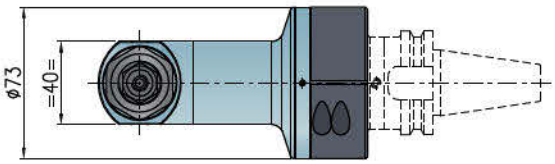
*** STANDARD EQUIPMENT INCLUDES:**



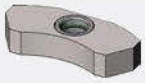


Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Possibilità refrigerante / Internal coolant

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

	FANUC ROBODRILL	BROTHER S2D	BROTHER TC-32	BROTHER R450X1	BROTHER S500 S700 S1000	DMG MORI MILLTAP 700
I	65	80	80	50	80	65
P	24	24	30	24	25,75	24

Dual contact spindles available/Disponibilità coni a doppio contatto

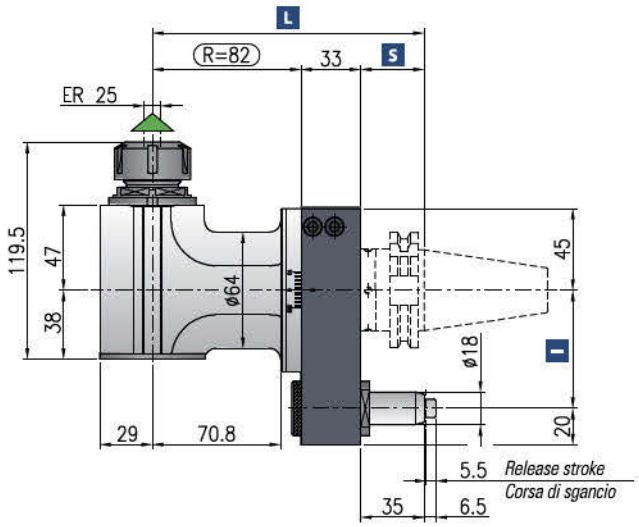
Opzione / Option

AIR/OIL
Air / oil lubrication
Lubrificazione aria / olio

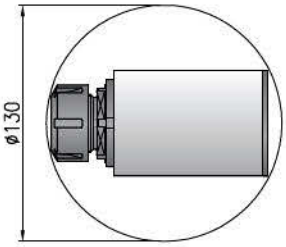
bar max
40
Coolant through spindle
Refrigerante attraverso il cono

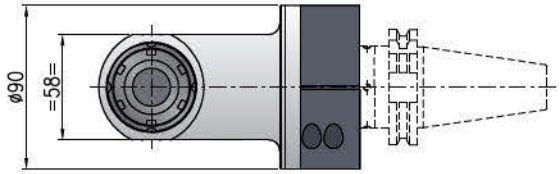
T90cn-2,5

ACT9025C



Minimum diameter without tool
Diametro minimo senza utensile







Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Ratio
Rapporto / Verhältnis
1:1

RPM
Velocità / Drehzahl max.
6.000 min⁻¹

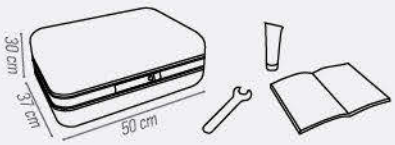
Max. axial load
Max. carico assiale / Max. Axialbelastung
510 N

Torque
Momento torcente / Drehmoment
30 Nm

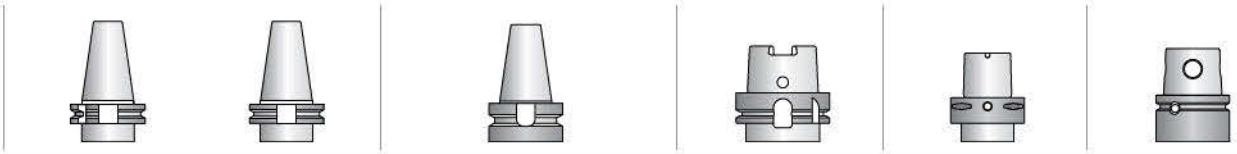
Weight
Peso / Gewicht
5,4 kg

Collet
Pinza / Spannzange
ER-25 (ø 1/16 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871		CAT		MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40		50		40	50	63-80	100	C5-C6	C8	63
I	65-80		80-(110*)		65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35		35		35	41	42	45	38	40	40
L	150		150		150	156	157	160	153	155	155

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	min⁻¹	Ø mm	Ø mm max.		
12	8.000	16	16	HSK-32	ER-25/ER-16
Coolant through pin and spindle *Refrigerante interno attraverso utensile*	*High speed RPM max.* *Alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*



T90cn-2,5L

ACT9025L

Ratio
Rapporto
1:1

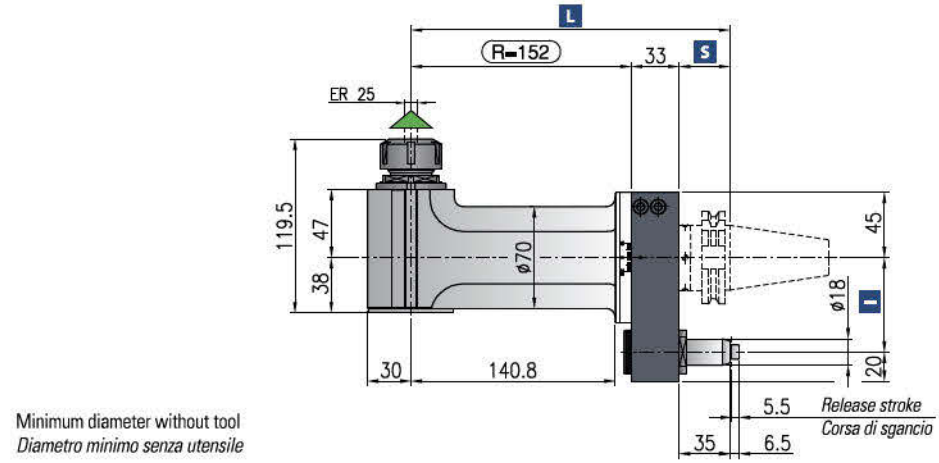
RPM
Velocità
6.000 min^{-1}

Max. axial load
Max. carico assiale
510 N

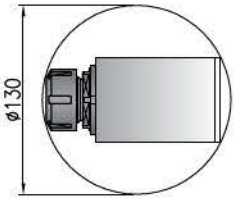
Torque
Momento torcente
30 Nm

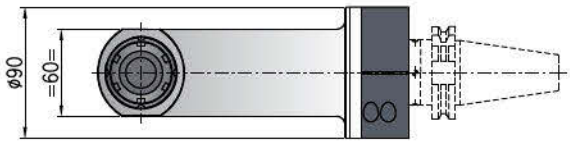
Weight
Peso
6,7 kg

Collet
Pinza
ER-25 (ø 1/16 mm)

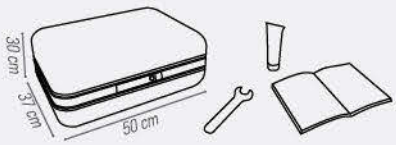


Minimum diameter without tool
Diametro minimo senza utensile





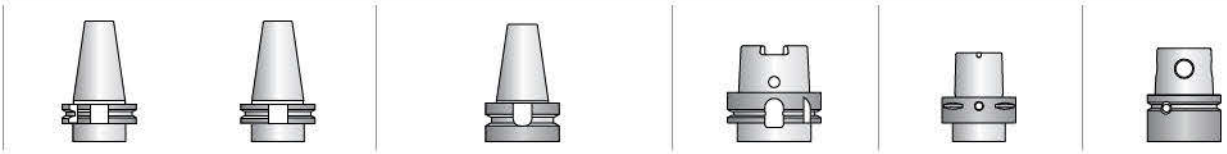
*** STANDARD EQUIPMENT INCLUDES:**



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871		CAT		MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40		50	40		50	63-80		100	C5-C6	C8	63
I	65-80		80-(110*)	65-80-(110*)		80-(110*)	65-80-(110*)		80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35		35	35		41	42		45	38	40	40
L	220		220	220		226	227		230	223	225	225

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

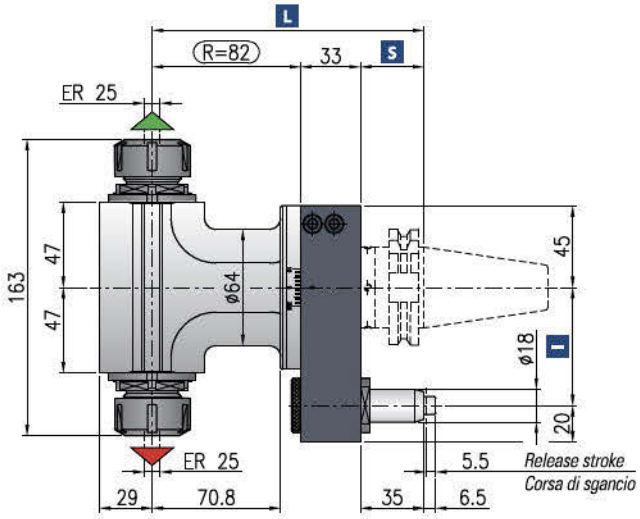
Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

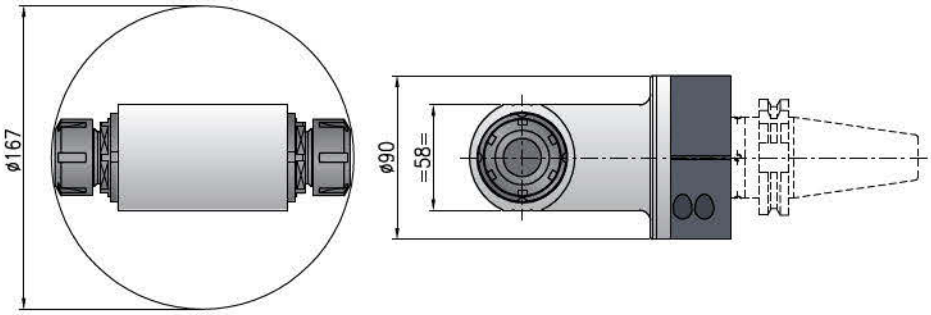
bar max	min^{-1}	Ø mm	Ø mm max.		
12	8.000	16	16	HSK-32	ER-25/ER-16
Coolant through pin and spindle *Refrigerante interno attraverso utensile*	*High speed RPM max.* *Alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

T90cn-2,5 2U

ACT9025D



Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Ratio
Rapporto
1:1

RPM
Velocità
9.000 min⁻¹

RPM Dry running
Velocità a secco
6.000 min⁻¹

Max. axial load
Max. carico assiale
510 N

Torque
Momento torcente
30 Nm

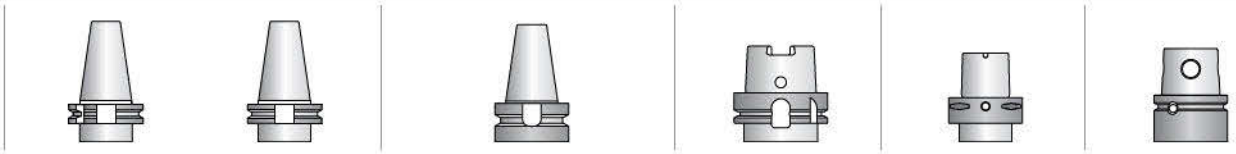
Weight
Peso
6,4 kg

Collet
Pinza
ER-25 (ø 1/16 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*
Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871		CAT		MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40		50	40		50	63-80		100	C5-C6	C8	63
I	65-80		80-(110*)	65-80-(110*)		80-(110*)	65-80-(110*)		80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35		35	35		41	42		45	38	40	40
L	150		150	150		156	157		160	153	155	155

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	*min⁻¹*	*Ø mm*	*Ø mm max.*
12	**8.000**	**16**	**16**
Coolant through pin *Refrigerante attraverso il perno*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*



TH90cn-2,5 100 BAR

ACTH925C

Ratio
Rapporto
1:1

RPM
Velocità
9.000 min^{-1}

RPM Dry running
Velocità a secco
6.000 min^{-1}

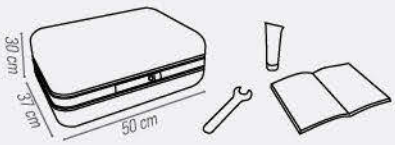
Max. axial load
Max. carico assiale
510 N

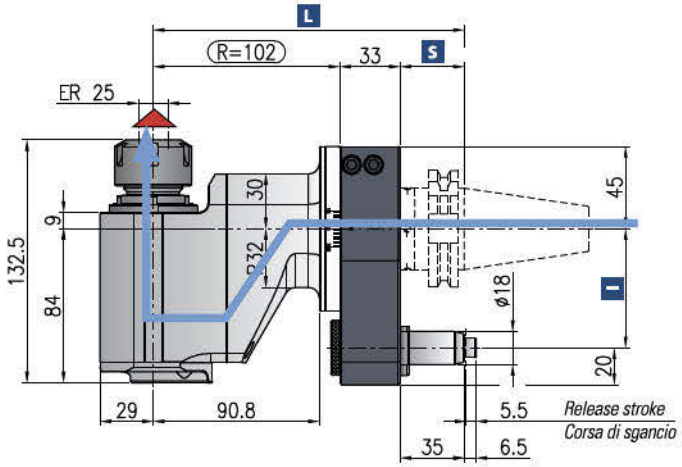
Torque
Momento torcente
30 Nm

Weight
Peso
5,5 kg

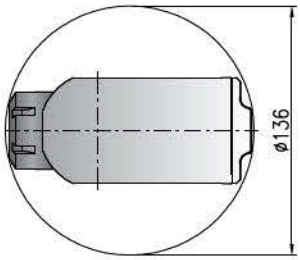
Collet
Pinza
ER-25 (ø 1/16 mm)

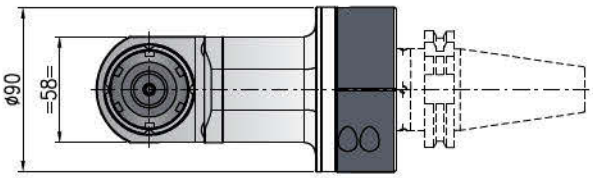
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile



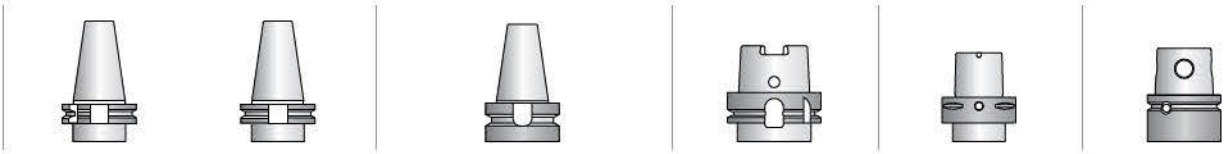


Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Dry running also possible / *Rotazione a secco possibile*

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871		CAT		MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40		50	40		50	63-80		100	C5-C6	C8	63
I	65-80		80-(110*)	65-80-(110*)		80-(110*)	65-80-(110*)		80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35		35	35		41	42		45	38	40	40
L	170		170	170		176	177		180	173	175	175

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

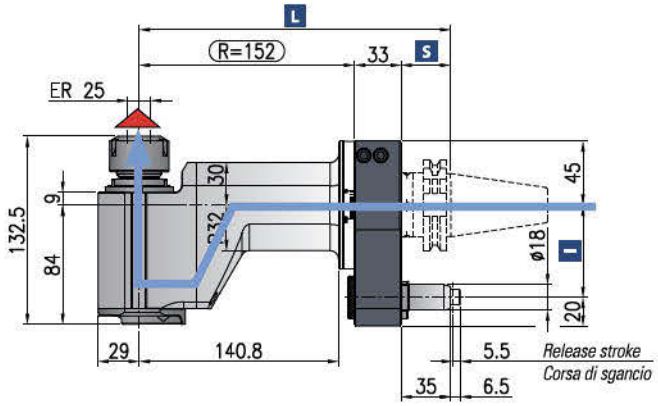


Ø mm max.
16

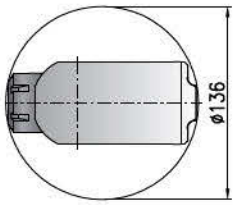
Weldon output
Weldon

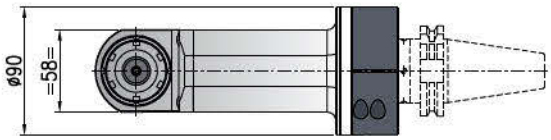
TH90cn-2,5 L 100 BAR

ACTH925L



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

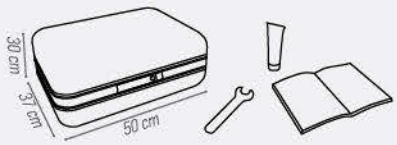
Max. axial load
Max. carico assiale
510 N

Torque
Momento torcente
30 Nm

Weight
Peso
6,8 kg

Collet
Pinza
ER-25(ø2/16mm)

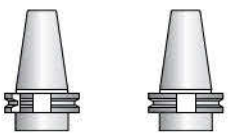
*** STANDARD EQUIPMENT INCLUDES:**

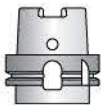




Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*





Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	250		256	257	260	253	255	255

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



Ø mm max.
16

Weldon output
Weldon



TR90cn-2,5

ACTR925C

Ratio
Rapporto
1:1

RPM OUTPUT
Velocità
6000 min^{-1}

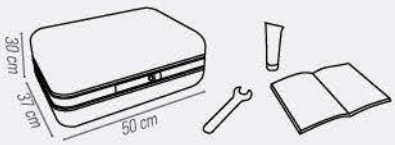
Max. axial load
Max. carico assiale
510 N

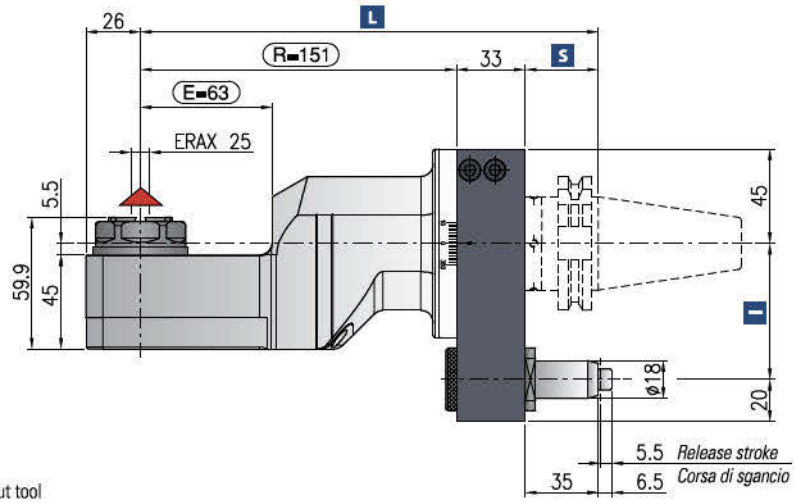
Torque
Momento torcente
30 Nm

Weight
Peso
7.5 kg

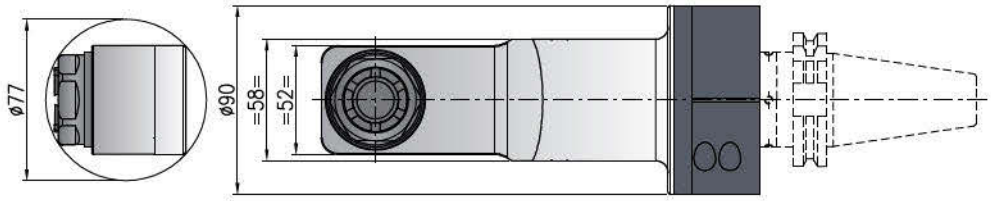
Collet
Pinza
ER-AX 25 (ø1-16mm)

*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile

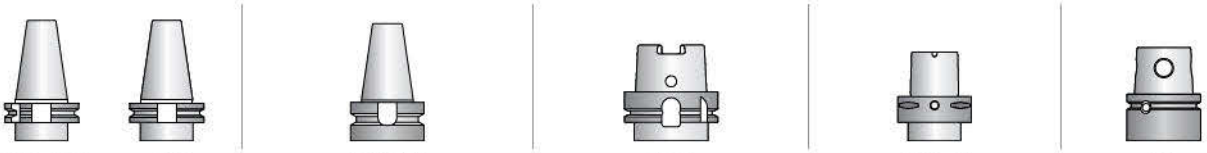




Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Dry running also possible / *Rotazione a secco possibile*

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-(110*)	65-80 -(110*)	80-(110*)	65-80 -(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	219	219	219	225	226	229	222	224	224

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



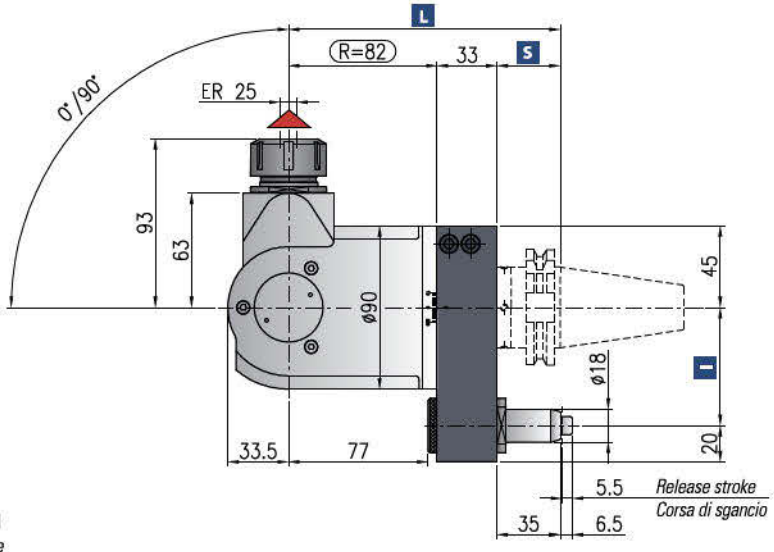
bar max
12
Coolant through pin
Adduzione refrigerante attraverso il perno



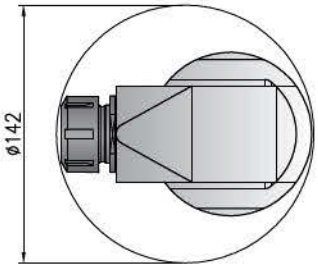
bar max
100
Coolant through spindle
Refrigerante attraverso il cono

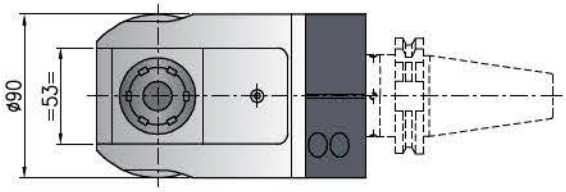
TCUcn-2,5

ACTCU25C



Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

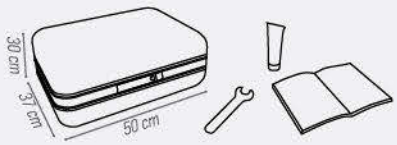
Max. axial load
Max. carico assiale
480 N

Torque
Momento torcente
18 Nm

Weight
Peso
7 kg

Collet
Pinza
ER-25 (ø 1/16 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza/Größe*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80 - (110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)	80-(110*)	65-80-(110*)
S	35	35	35	41	42	45	38	40	40
L	150	150	150	156	157	160	153	155	155

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	min⁻¹	Ø mm max.
12	6.000	16
Coolant through pin *Adduzione refrigerante attraverso il perno*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Weldon output* *Weldon*



T90cn-2,5M Aluminum

ACT9025C.ALU

Ratio
Rapporto
1:1

RPM
Velocità
6.000 min^{-1}

Max. axial load
Max. carico assiale
510 N

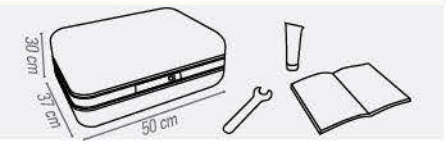
Torque
Momento torcente
20 Nm

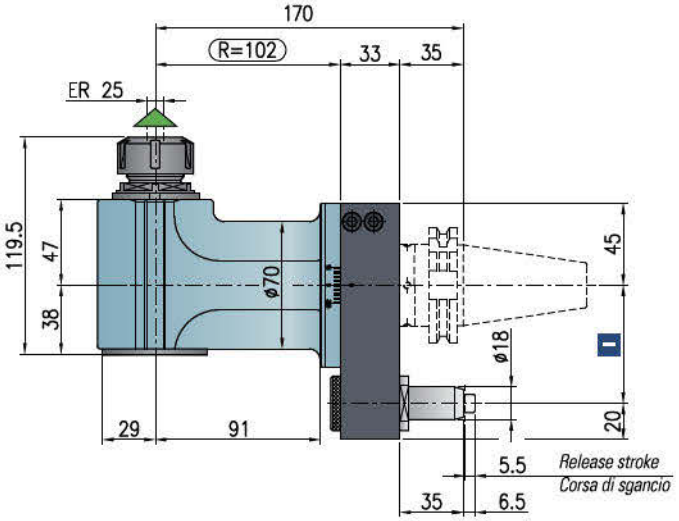
Weight
Peso
4,9 kg

Collet
Pinza
ER 25 - Ø1-16 mm

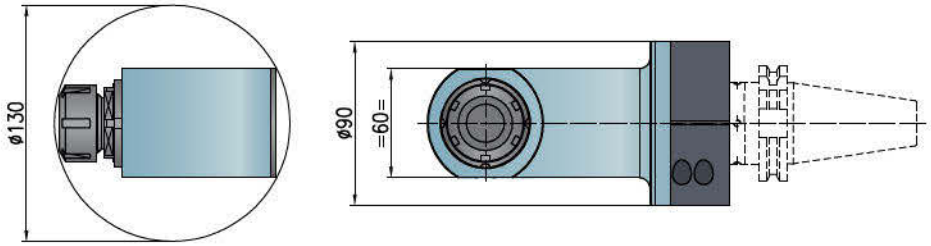
Shank
Cono
ISO40 DIN-69871/BT-40

*** STANDARD EQUIPMENT INCLUDES:**





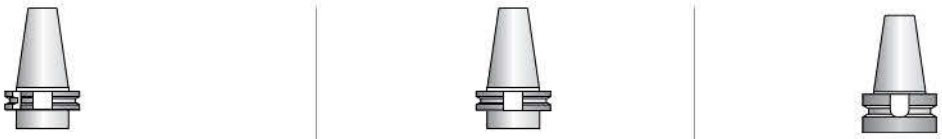
Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT
Size/*Grandezza*	40	40	40
I	65-80	80-(110*)	65-80-(110*)

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

AIR/OIL

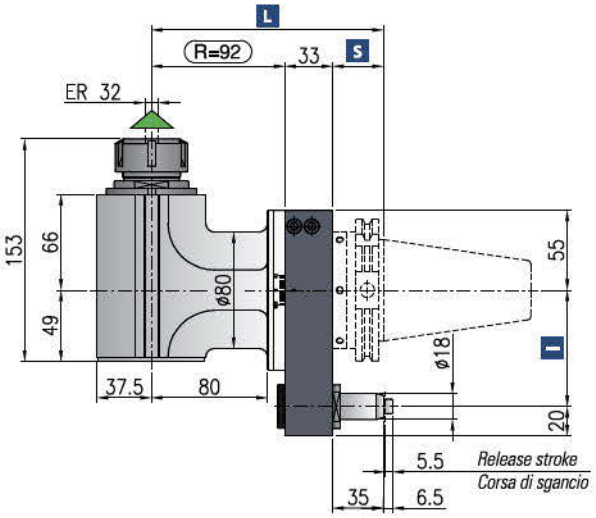
Air / oil lubrication
Lubrificazione aria / olio

bar max
40

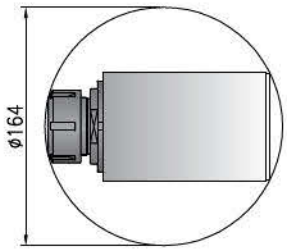
Coolant through spindle
Refrigerante attraverso il cono

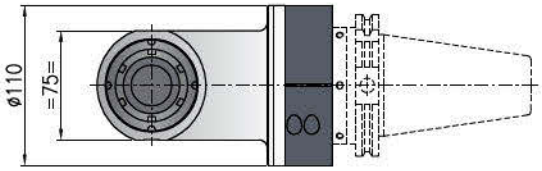
T90cn-3,5

ACT9035C



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

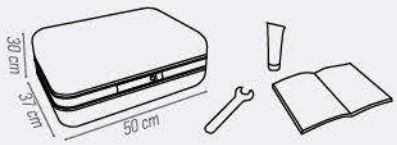
Max. axial load
Max. carico assiale
1.250 N

Torque
Momento torcente
50 Nm

Weight
Peso
11 kg

Collet
Pinza
ER-32 (ø 2/20 mm)

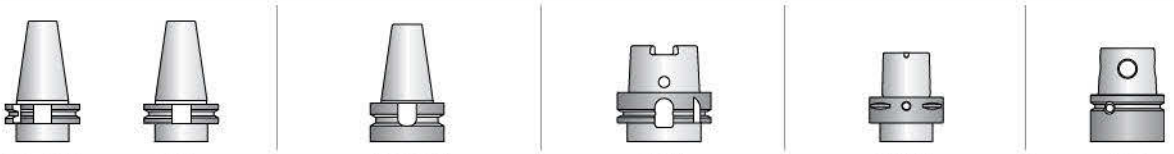
*** STANDARD EQUIPMENT INCLUDES:**



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	160		166	167	170	163	165	165

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	min⁻¹	Ø mm	Ø mm max.		
12	6.000	27	20	ISO-30 HSK-40	ER-32/ER-20
Coolant through pin *Refrigerante attraverso il perno*	*High speed RPM max.* *Alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*



T90cn-3,5 L

ACT9035L

Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

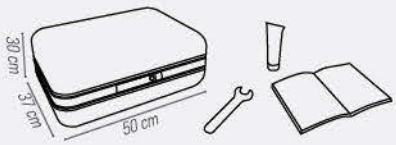
Max. axial load
Max. carico assiale
1.250 N

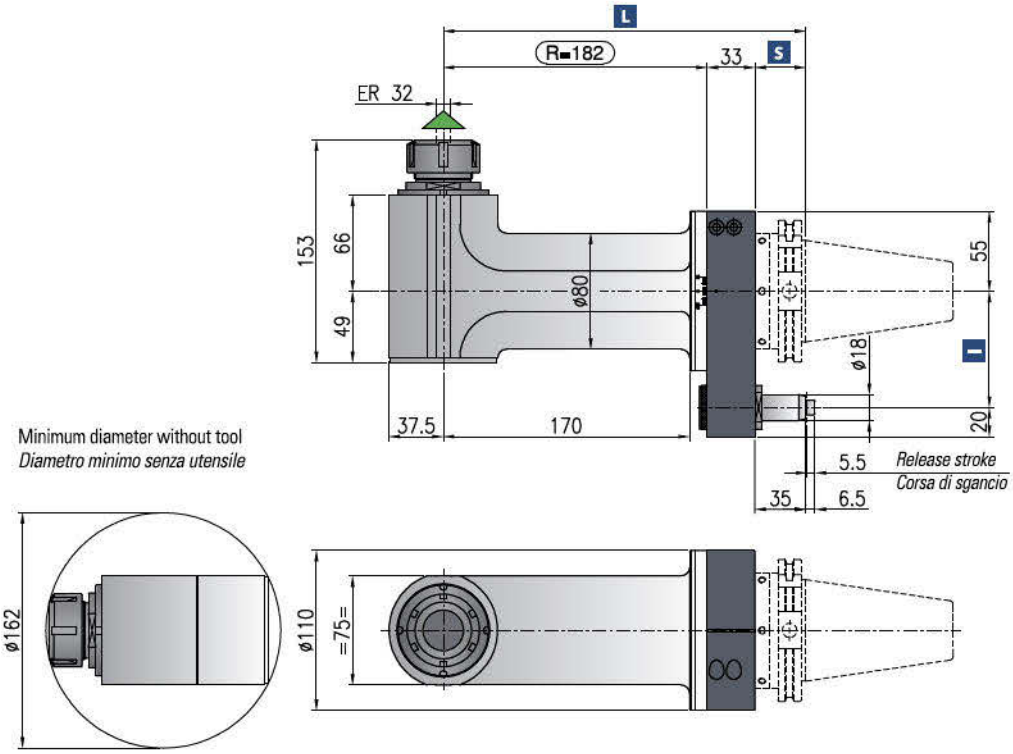
Torque
Momento torcente
50 Nm

Weight
Peso
13,2 kg

Collet
Pinza
ER-32 (ø 2/20 mm)

*** STANDARD EQUIPMENT INCLUDES:**

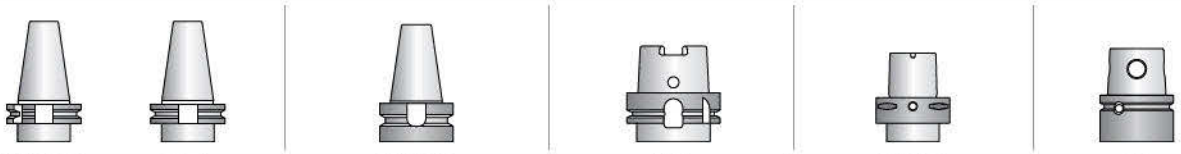






Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	250		256	257	260	253	255	255

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

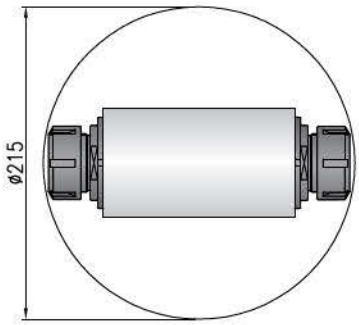
Opzione / Option

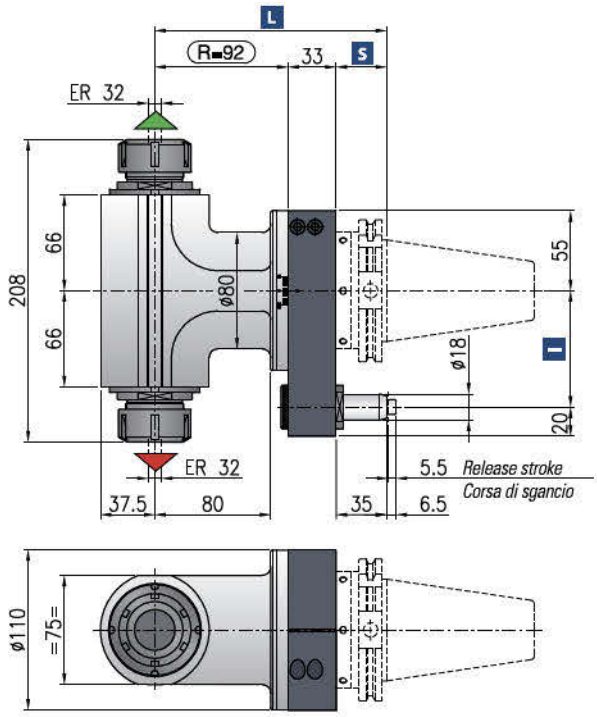
bar max	min⁻¹	Ø mm	Ø mm max.		
12	6.000	27	20	ISO-30 HSK-40	ER-32/ER-20
Coolant through pin and spindle *Refrigerante interno attraverso utensile*	*High speed RPM max.* *Alta velocità RPM max*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

T90cn-3,5 2U

ACT9035D

Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Ratio
Rapporto
1.1

RPM
Velocità
4.000 min⁻¹

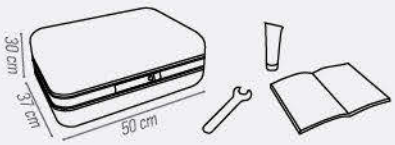
Max. axial load
Max. carico assiale
1.250 N

Torque
Momento torcente
50 Nm

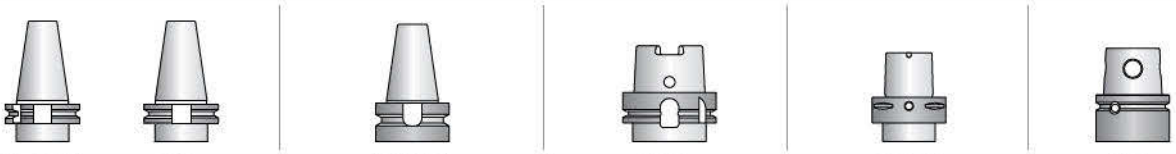
Weight
Peso
12 kg

Collet
Pinza
ER-32 (ø 2/20 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*
Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	160		166	167	170	163	165	165

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	min⁻¹	Ø mm	Ø mm max.	
12	6.000	27	20	HSK-40
Coolant through pin *Refrigerante attraverso il perno*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*



TH90cn-3,5 100 BAR

ACTH935C

Ratio
Rapporto
1:1

RPM
Velocità
8.000 min⁻¹

RPM Dry running
Velocità a secco
4.000 min⁻¹

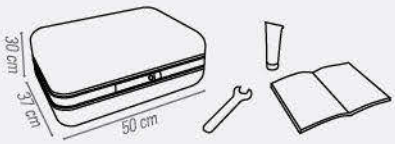
Max. axial load
Max. carico assiale
1.250 N

Torque
Momento torcente
50 Nm

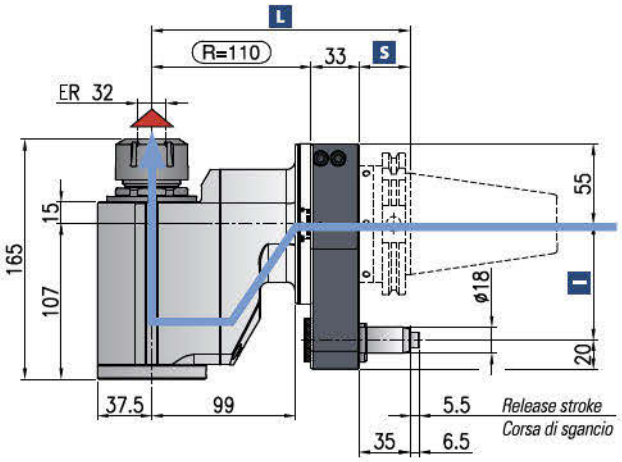
Weight
Peso
12 kg

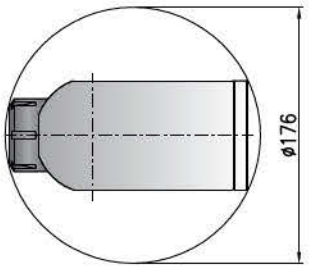
Collet
Pinza
ER-32 (ø 2/20 mm)

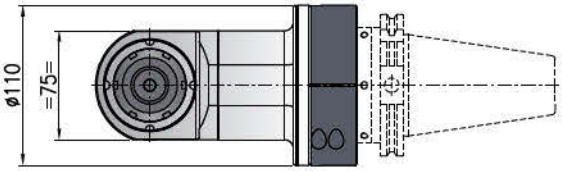
*** STANDARD EQUIPMENT INCLUDES:**

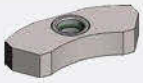


Minimum diameter without tool
Diametro minimo senza utensile





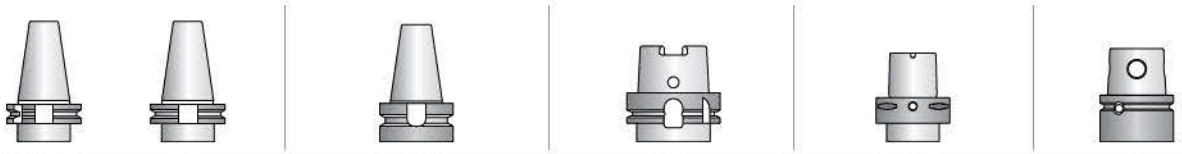




Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Dry running also possible / *Rotazione a secco possibile*

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	178		184	185	188	181	183	183

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



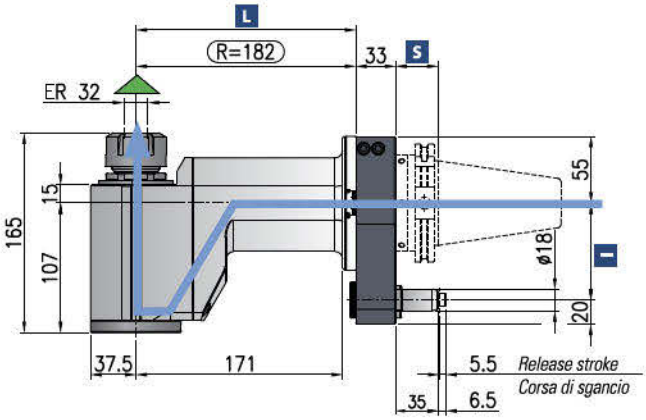
Ø mm max.
20

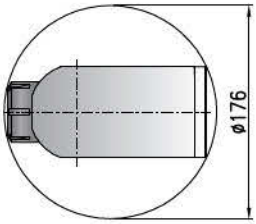
Weldon output
Weldon

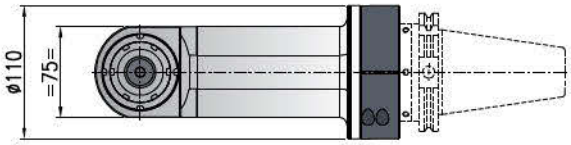
TH90cn-3,5 L 100 BAR

ACTH935L

Minimum diameter without tool
Diametro minimo senza utensile







Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Dry running also possible / Rotazione a secco possibile

Ratio
Rapporto
1.1

RPM
Velocità
8.000 min^{-1}

RPM Dry running
Velocità a secco
4.000 min^{-1}

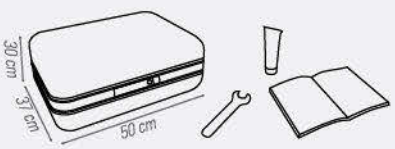
Max. axial load
Max. carico assiale
1.250 N

Torque
Momento torcente
50 Nm

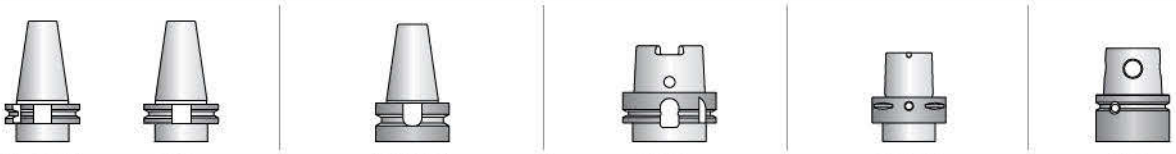
Weight
Peso
12 kg

Collet
Pinza
ER-32 (ø 2/20 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	160		166	167	170	163	165	165

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



Ø mm max.
20

Weldon output
Weldon



TR90cn-3,5

ACTR935C

Ratio
Rapporto
1: 1

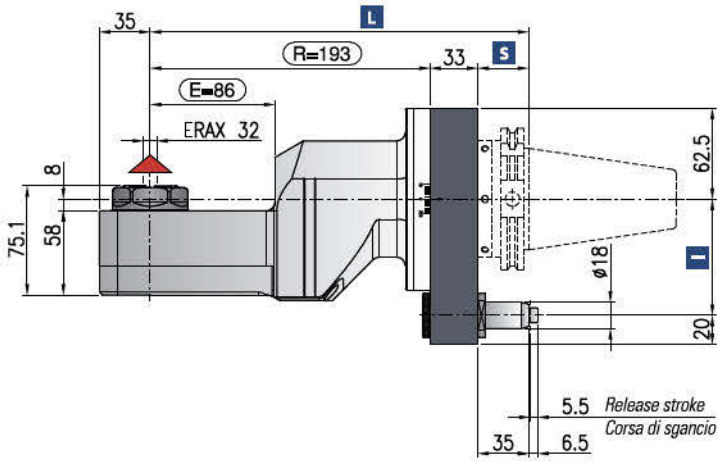
RPM
Velocità
4.000 min^{-1}

Max. axial load
Max. carico assiale
910 N

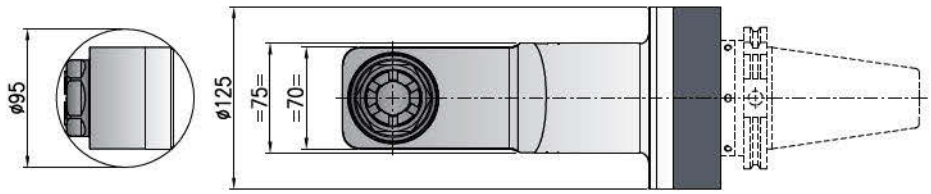
Torque
Momento torcente
50 Nm

Weight
Peso
10 kg

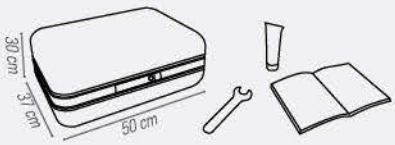
Collet
Pinza
ER-AX 32 (ø2-20 mm)



Minimum diameter without tool
Diametro minimo senza utensile



*** STANDARD EQUIPMENT INCLUDES:**



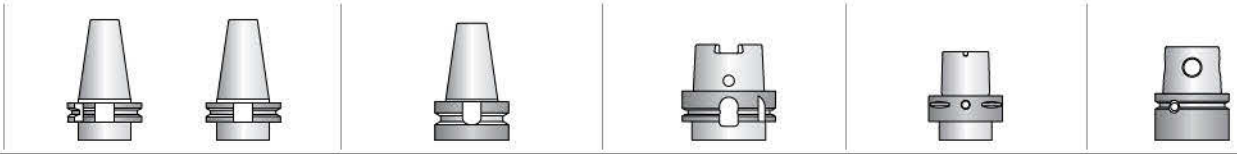
Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Possibilità refrigerante / Internal coolant / Max. 100 bar

Dry running also possible / *Rotazione a secco possibile*

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	261		267	268	271	264	266	266

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

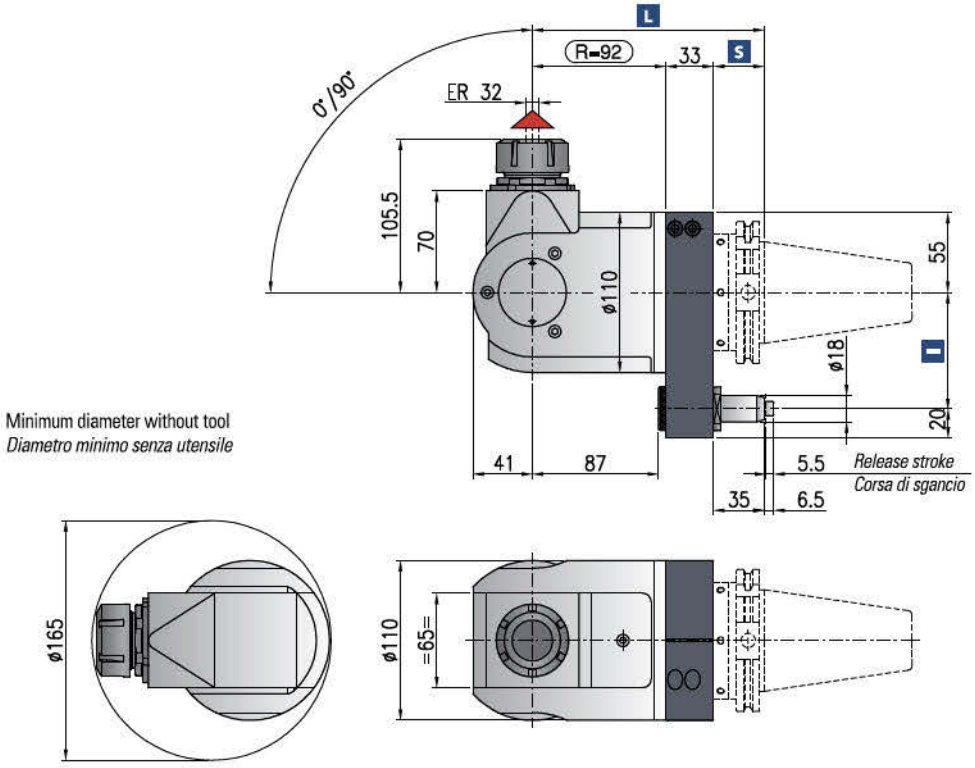
Opzione / Option

bar max
100

Coolant through spindle
Refrigerante attraverso il cono

TCUcn-3,5

ACTCU35C





Retaining block / Tassello di ritegno / Stop-Block

NOT INCLUDED - NON INCLUSO

Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

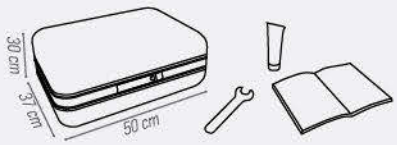
Max. axial load
Max. carico assiale
715 N

Torque
Momento torcente
32 Nm

Weight
Peso
13 kg

Collet
Pinza
ER-32 (ø 2/20 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-(110*)	80-(110*)	80-(110*)	80-(110*)	80-(110*)	80-(110*)
S	35		41	42	45	38	40	40
L	160		166	167	170	163	165	165

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / *Opzione*

bar max	min⁻¹	Ø mm max.
12	6.000	20
Coolant through pin *Adduzione refrigerante attraverso il perno*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Weldon output* *Weldon*



T90cn-3,5M Aluminum

ACT9035C.ALU

Ratio
Rapporto
1:1

RPM
Velocità
4.000 min^{-1}

Max. axial load
Max. carico assiale
1250 N

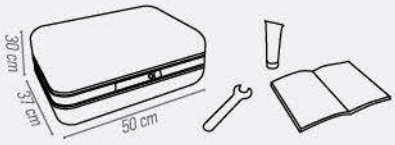
Torque
Momento torcente
40 Nm

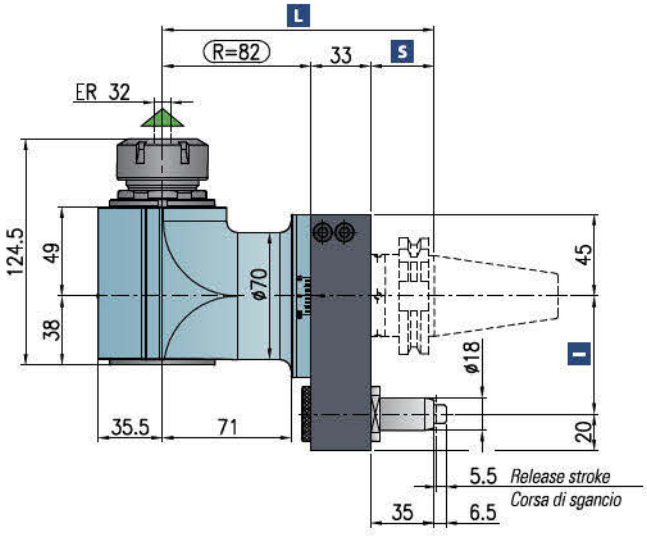
Weight
Peso
5,5 kg

Collet
Pinza
ER 32 - (ø2-20 mm)

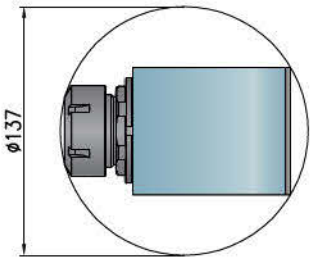
Shank
Cono
ISO40 DIN-69871/BT-40

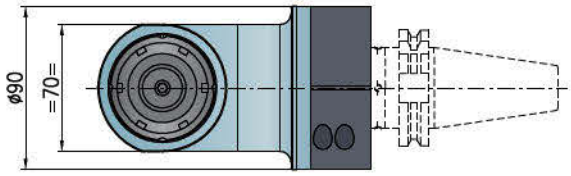
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*





Shank/*Cono*	DIN-69871	CAT	MAS-BT
Size/*Grandezza*	40	40	40
I	65-80	80-(110*)	65-80-(110*)
S	35	35	35
L	150	150	150

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



AIR/OIL

Air / oil lubrication
Lubrificazione aria / olio

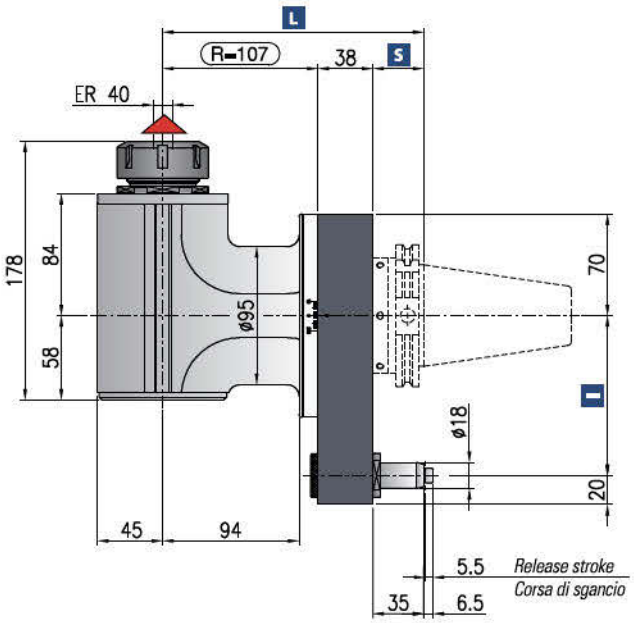


bar max
40

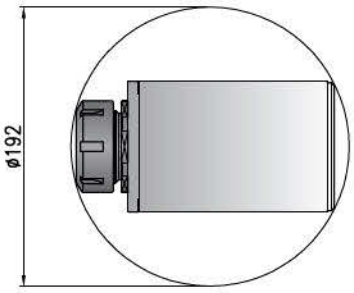
Coolant through spindle
Refrigerante attraverso il cono

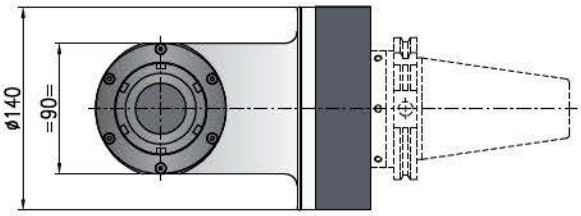
T90cn-4,5

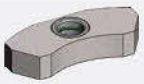
ACT9045C



Minimum diameter without tool
Diametro minimo senza utensile







Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

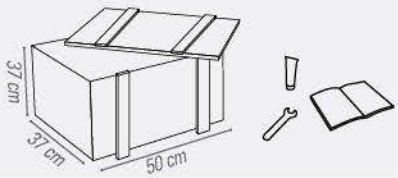
Max. axial load
Max. carico assiale
1.750 N

Torque
Momento torcente
75 Nm

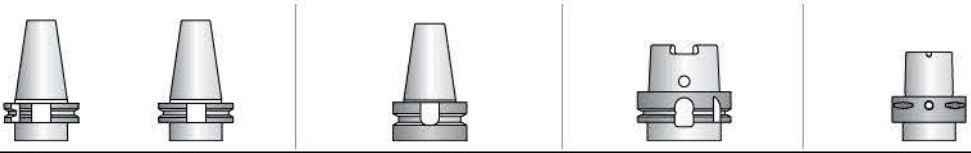
Weight
Peso
17 kg

Collet
Pinza
ER-40 (ø 3/30 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO
Size/*Grandezza*	50		50	80	100	C8
I	110		110	110	110	110
S	35		41	42	45	40
L	180		186	187	190	185

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	min⁻¹	Ø mm	Ø mm max.	ISO-30 HSK-40 CAPTO C4	ER-40/ER-25
12	6.000	27	25		
Coolant through pin and spindle *Refrigerante interno attraverso utensile*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*



T90cn-4,5 L

ACT9045L

Ratio
Rapporto
1:1

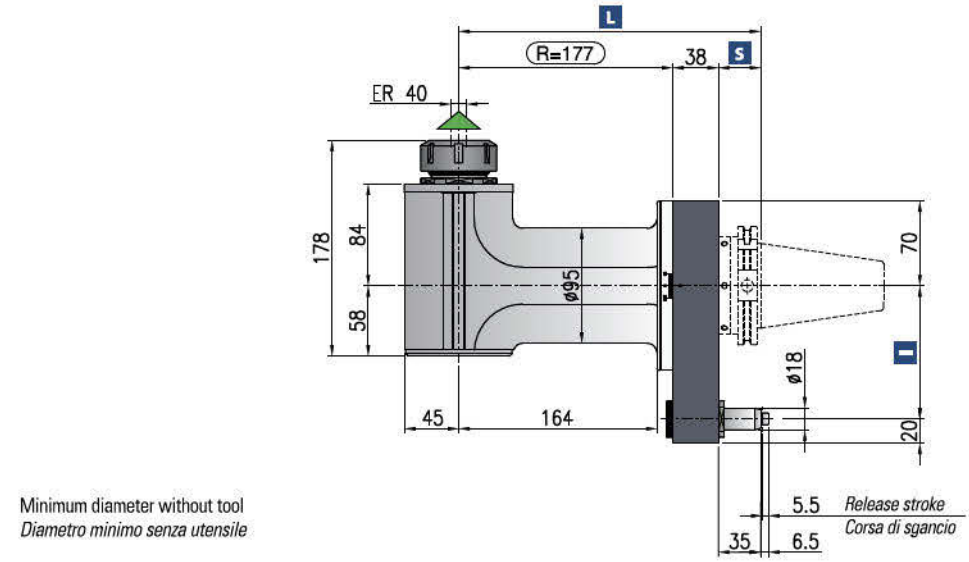
RPM
Velocità
4.000 min^{-1}

Max. axial load
Max. carico assiale
1.750 N

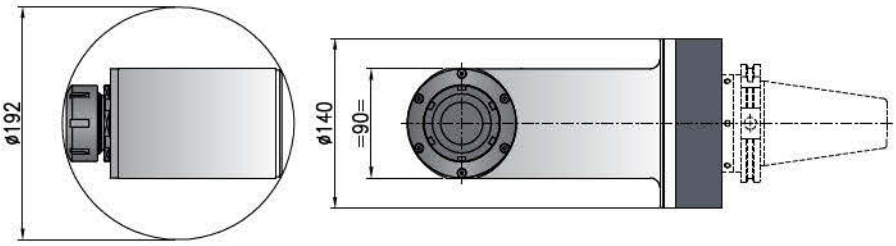
Torque
Momento torcente
75 Nm

Weight
Peso
20 kg

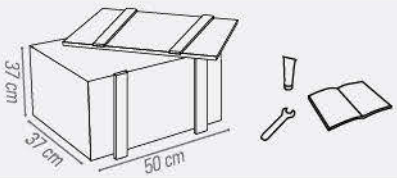
Collet
Pinza
ER-40 (ø 3/30 mm)



Minimum diameter without tool
Diametro minimo senza utensile



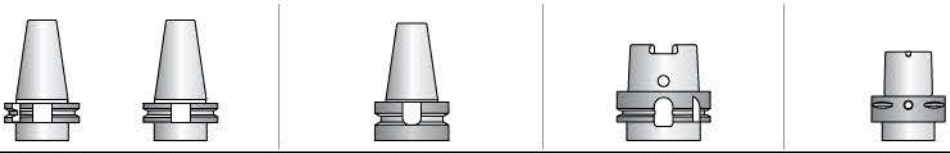
*** STANDARD EQUIPMENT INCLUDES:**



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO
Size/*Grandezza*	50		50	80	100	C8
I	110		110	110	110	110
S	35		41	42	45	40
L	250		256	257	260	255

Dual contact spindles available/Disponibilità coni a doppio contatto
***optional**

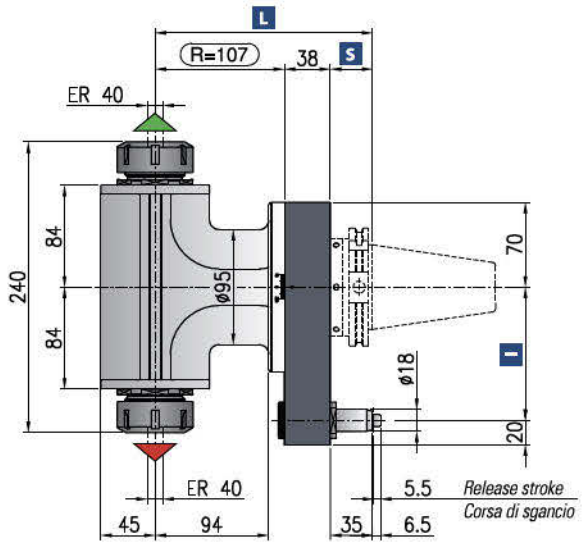
Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

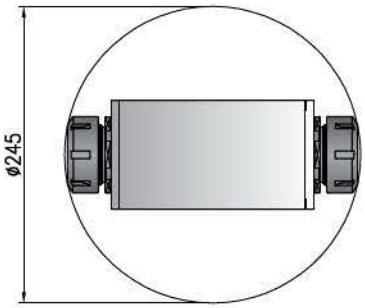
bar max	*min^{-1}*	Ø mm	Ø mm max.	ISO-30 HSK-40 CAPTO C4	ER-40/ER-25
12	6.000	27	25		
Coolant through pin and spindle *Refrigerante interno attraverso utensile*	*High speed RPM max.* *Alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

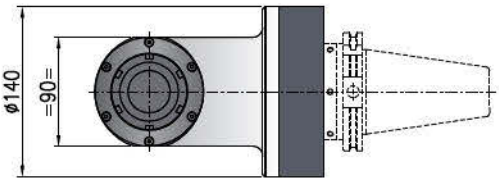
T90cn-4,5 2U

ACT9045D



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

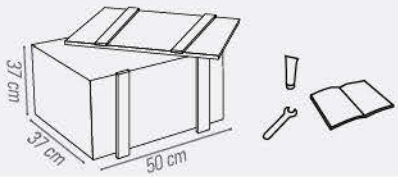
Max. axial load
Max. carico assiale
1.750 N

Torque
Momento torcente
75 Nm

Weight
Peso
20 kg

Collet
Pinza
ER-40 (ø 3/30 mm)

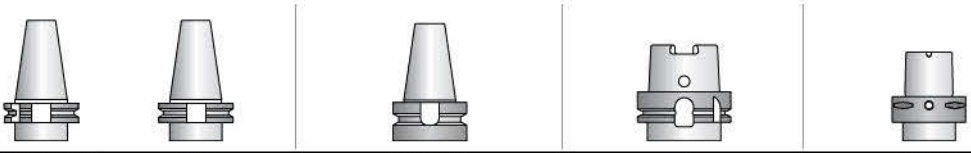
*** STANDARD EQUIPMENT INCLUDES:**





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*
Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO
Size/*Grandezza*	50		50	80	100	C8
I	110		110	110	110	110
S	35		41	42	45	40
L	180		186	187	190	185

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

min⁻¹	Ø mm	Ø mm max.	
6.000	27	25	HSK-40
High speed optional RPM max. *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*



TH90cn-4,5 100 BAR

ACTH945C

Ratio
Rapporto
1:1

RPM
Velocità
6.000

RPM Dry Running
Funz. a secco
4.000 min^{-1}

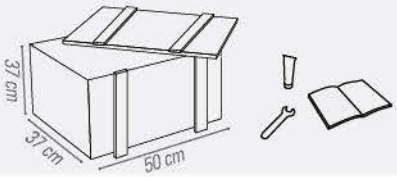
Max. axial load
Max. carico assiale
1.750 N

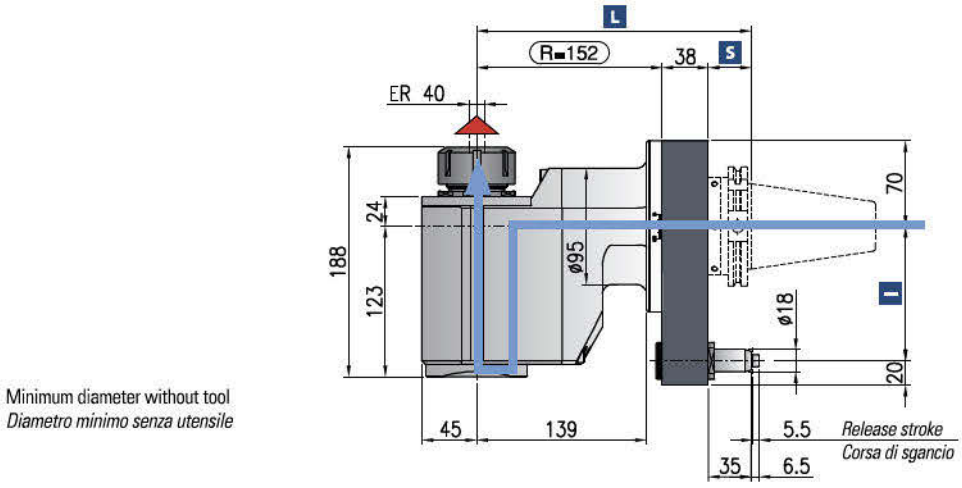
Torque
Momento torcente
75 Nm

Weight
Peso
21 kg

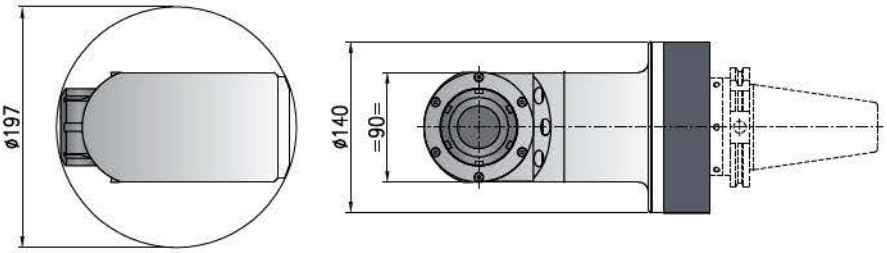
Collet
Pinza
ER-40 (ø 3/30 mm)

*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile

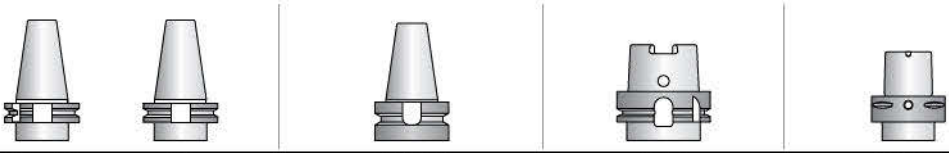


Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Dry running also possible / Rotazione a secco possibile

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO
Size/*Grandezza*	50		50	100	C8
I	110		110	110	110
S	35		41	45	40
L	225		231	235	230

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

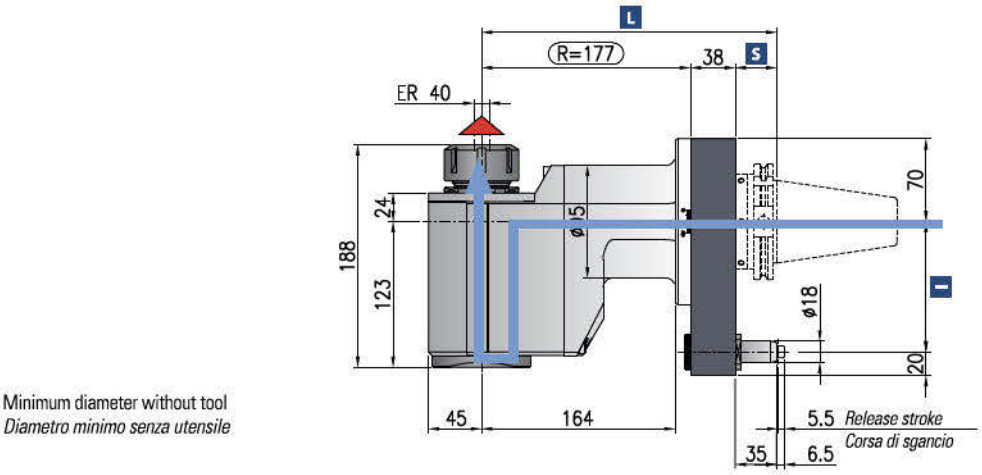
Opzione / Option

Ø mm max.
25
Weldon output
Weldon

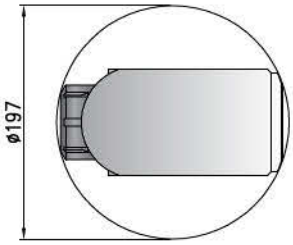
ISO-30
HSK-40 CAPTO C4
Quick Change
Attacco rapido

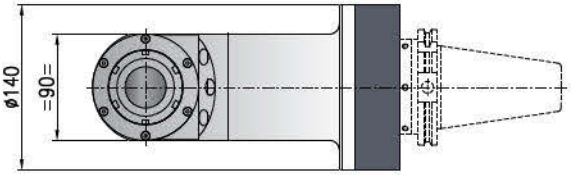
TH90cn-4,5 L 100 BAR

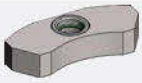
ACTH945L



Minimum diameter without tool
Diametro minimo senza utensile







Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Dry running also possible / Rotazione a secco possibile

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

Ratio
Rapporto
1:1

RPM
Velocità
6.000 min⁻¹

RPM Dry running
Velocità a secco
4.000 min⁻¹

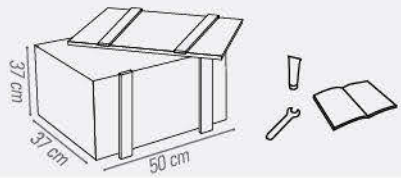
Max. axial load
Max. carico assiale
1.750 N

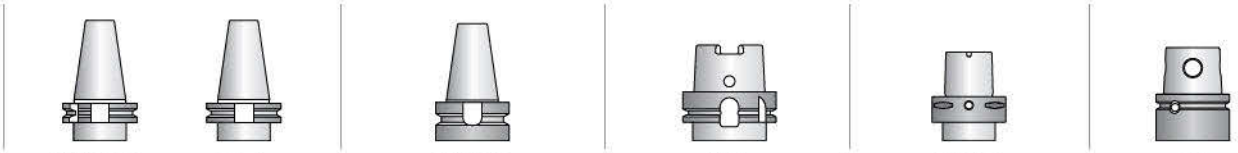
Torque
Momento torcente
75 Nm

Weight
Peso
26 kg

Collet
Pinza
ER-40 (ø 3/30 mm)

*** STANDARD EQUIPMENT INCLUDES:**





Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	250		256	257	260	253	255	255

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



Ø mm max.
25
Weldon output
Weldon



ISO-30
HSK-40 CAPTO C4
Quick Change
Attacco rapido



TR90cn-4,5

ACTR945C

Ratio
Rapporto
1:1

RPM
Velocità
4.000 min^{-1}

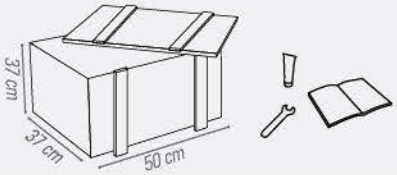
Max. axial load
Max. carico assiale
1.200 N

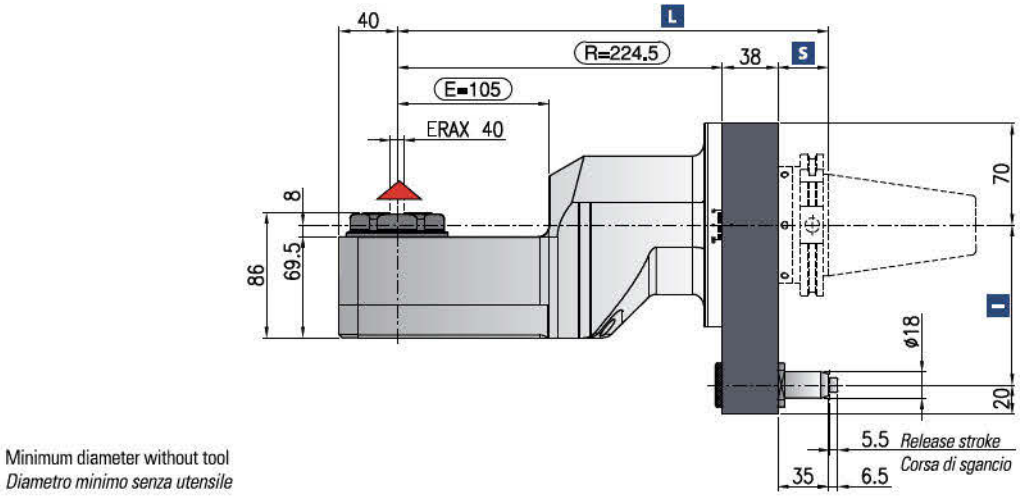
Torque
Momento torcente
75 Nm

Weight
Peso
20 kg

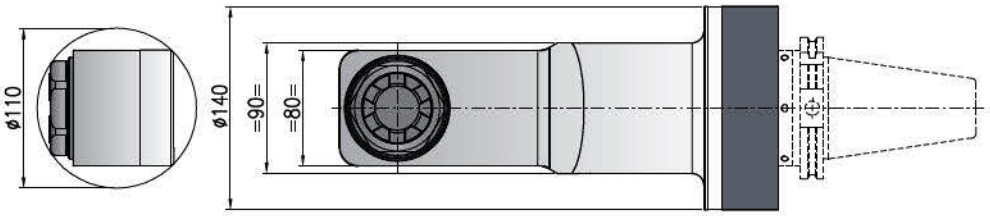
Collet
Pinza
ER-AX 40 (ø3/30 mm)

*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Dry running also possible / Rotazione a secco possibile

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO
Size/*Grandezza*	50		50	80	100	C8
I	110		110	110	110	110
S	35		41	42	45	40
L	297,5		303,5	304,5	307,5	302,5

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

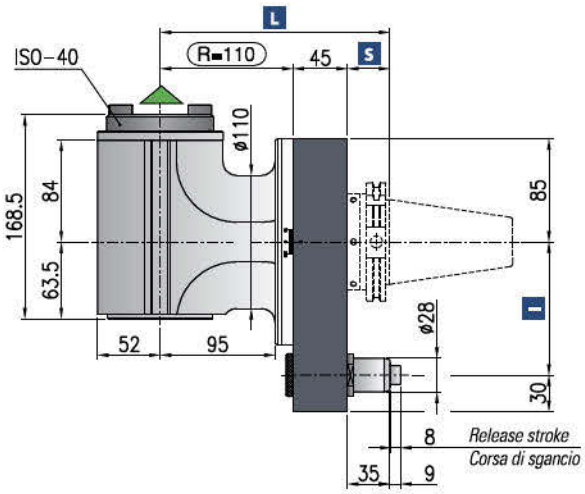


bar max
100

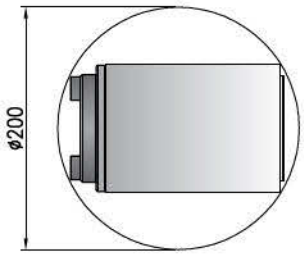
Coolant through spindle
Refrigerante attraverso il cono

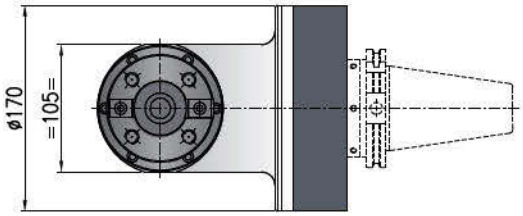
T90cn-5

ACT905C



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
3.000 min⁻¹

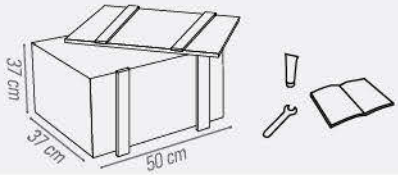
Max. axial load
Max. carico assiale
1.800 N

Torque
Momento torcente
100 Nm

Weight
Peso
22 kg

Collet
Pinza
ISO 40

*** STANDARD EQUIPMENT INCLUDES:**



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Possibilità refrigerante / Internal coolant - Max. 12 bar

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO
Size/*Grandezza*	50		50	100	C8
I	110		110	110	110
S	35		41	45	40
L	190		196	200	195

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option

bar max	*min⁻¹*	
12	6.000	HSK-63 CAPTO C4 C5
Coolant through pin and spindle *Refrigerante interno attraverso utensile*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Quick Change* *Attacco rapido*



T90cn-5 HP

ACT905HP

Ratio
Rapporto
1:1

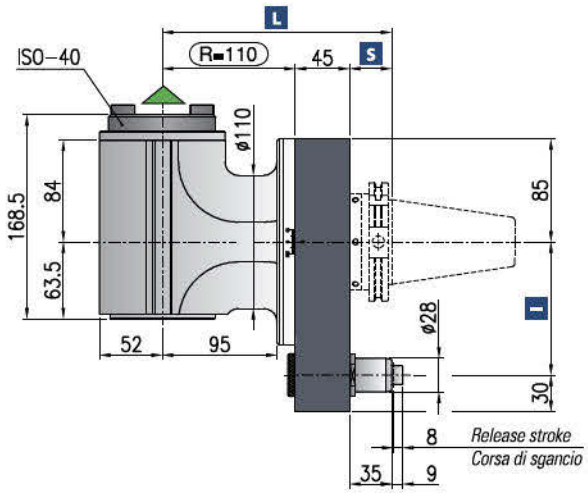
RPM
Velocità
3.000 min^{-1}

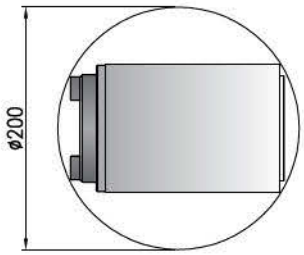
Max. axial load
Max. carico assiale
1.800 N

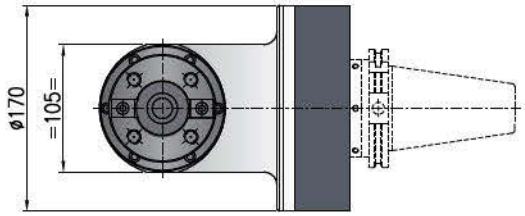
Torque
Momento torcente
160 Nm

Weight
Peso
22 kg

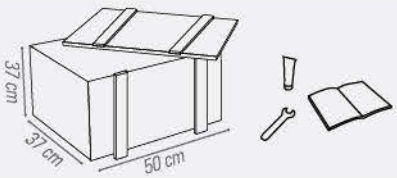
Collet
Pinza
ISO 40







*** STANDARD EQUIPMENT INCLUDES:**

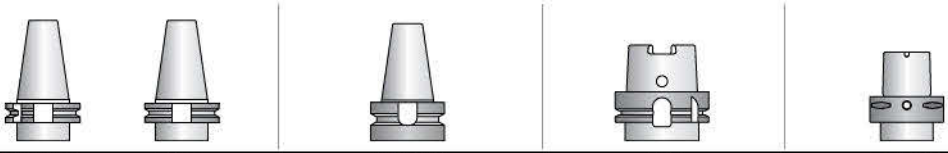


Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Possibilità refrigerante / Internal coolant - Max. 100 bar

Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO
Size/*Grandezza*	50		50	100	C8
I	110		110	110	110
S	35		41	45	40
L	190		196	200	195

Dual contact spindles available/Disponibilità coni a doppio contatto
***optional**

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



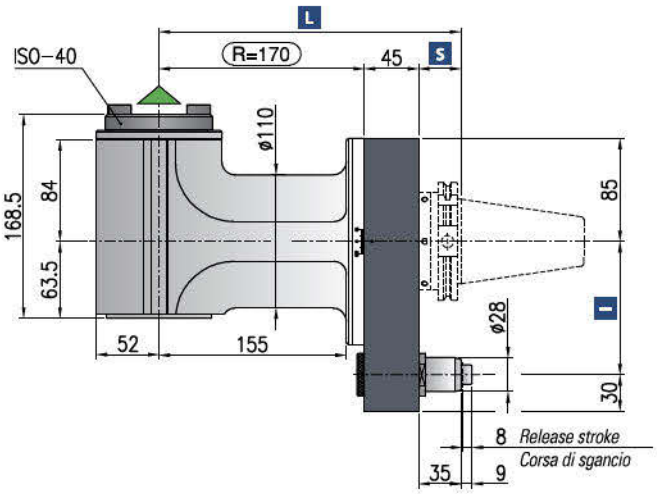
bar max
12
Coolant through pin and spindle
Refrigerante interno attraverso utensile



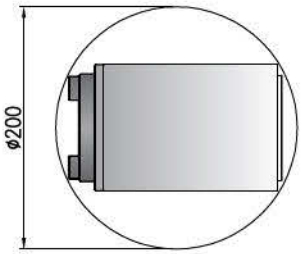
HSK-63 CAPTO C4 C5
Quick Change
Attacco rapido

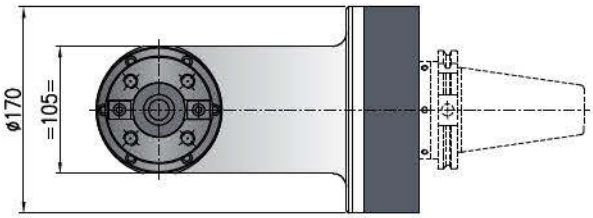
T90cn-5L

ACT905L



Minimum diameter without tool
Diametro minimo senza utensile







Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Ratio
Rapporto
1:1

RPM
Velocità
3.000 min⁻¹

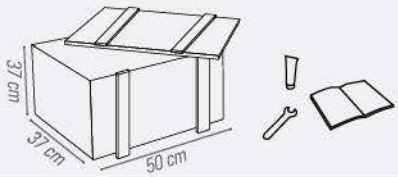
Max. axial load
Max. carico assiale
1.800 N

Torque
Momento torcente
100 Nm

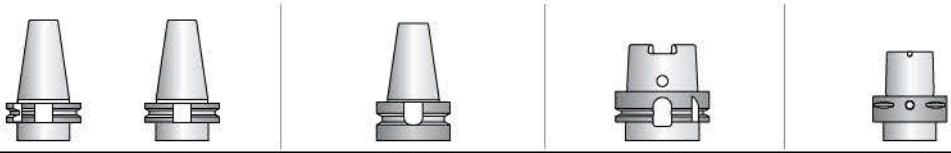
Weight
Peso
26,2 kg

Collet
Pinza
ISO 40

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO
Size/*Grandezza*	50		50	100	C8
I	110		110	110	110
S	35		41	45	40
L	250		256	260	255

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Opzione / Option



bar max
12
Coolant through pin and spindle
Refrigerante interno attraverso utensile



min⁻¹
6.000
High speed optional RPM max.
Opzione alta velocità RPM max



HSK-63 CAPTO C4 C5
Quick Change
Attacco rapido



TA *LINEA TA*
TESTE SPECIALI / SPECIAL HEADS

Ratio
Rapporto
1:1

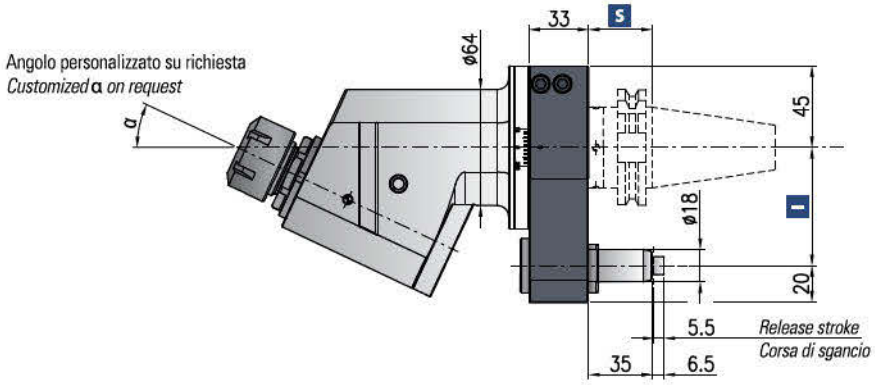
RPM up to
Velocità fino
10.000 min^{-1}

Angle
Angolo
A richiesta da
On request from
15°

Collet
Pinza
ER-16(ø1/10mm)
ER-25(ø2/16mm)
ER-32(ø3/20mm)

Per richieste speciali di teste con angoli superiori a 15°, Alberti ha studiato una Linea TA con possibilità di adduzione refrigerante interna alta pressione. Tra i modelli più richiesti e standardizzati ci sono TA 30° - TA45° - TA60°

For all special inquiries of fixed angle heads with angles bigger than 15°, Alberti has developed a separate line of heads type TA with internal coolant possibility. Among the most requested, hence standardized items are TA30° - TA45° and TA60°



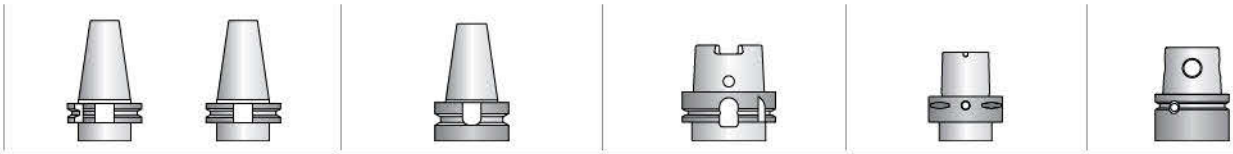
*** STANDARD EQUIPMENT INCLUDES:**



Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO



Possibilità refrigerante / Internal coolant



Shank/*Cono*	DIN-69871		CAT		MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63		
I	65-80-(110°)	80-(110°)	65-80-(110°)	80-(110°)	65-80-(110°)	80-(110°)	65-80-(110°)	80-(110°)	65-80-(110°)		
S	35	35	35	41	42	45	38	40	40		

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili



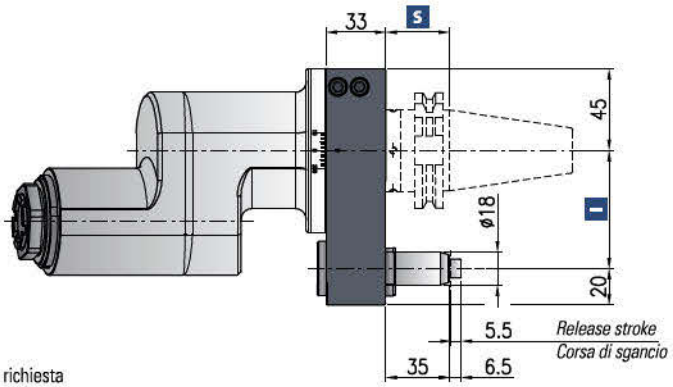




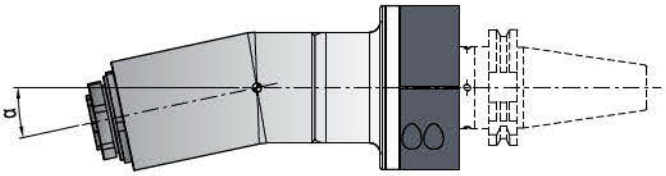
TDA *LINEA TDA TESTE SPECIALI / SPECIAL HEADS*

Per richieste speciali di teste con angoli inferiori a 15°, Alberti ha studiato una Linea TDA con possibilità di adduzione refrigerante interna alta pressione.

For all special inquiries of fixed angle heads with angles smaller than 15°, Alberti has developed a separate line of heads type TDA with internal coolant possibility.



Angolo personalizzato su richiesta
Customized α on request



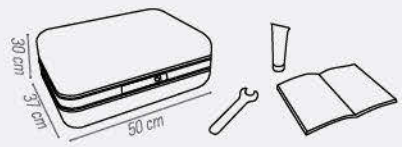
Ratio
Rapporto
1:1

RPM up to
Velocità fino
10.000 min^{-1}

Angle
Angolo
A richiesta da
On request from
15°

Collet
Pinza
ER-16(ø1/10mm)
ER-25(ø2/16mm)
ER-32(ø3/20mm)

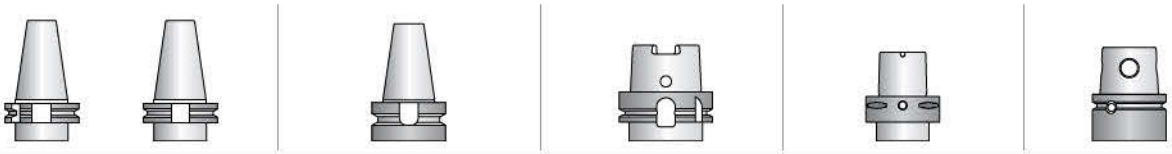
*** STANDARD EQUIPMENT INCLUDES:**





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Possibilità refrigerante / Internal coolant



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110°)	80-(110°)	65-80-(110°)	80-(110°)	65-80-(110°)	80-(110°)	65-80-(110°)	80-(110°)	65-80-(110°)
S	35	35	35	41	42	45	38	40	40

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili



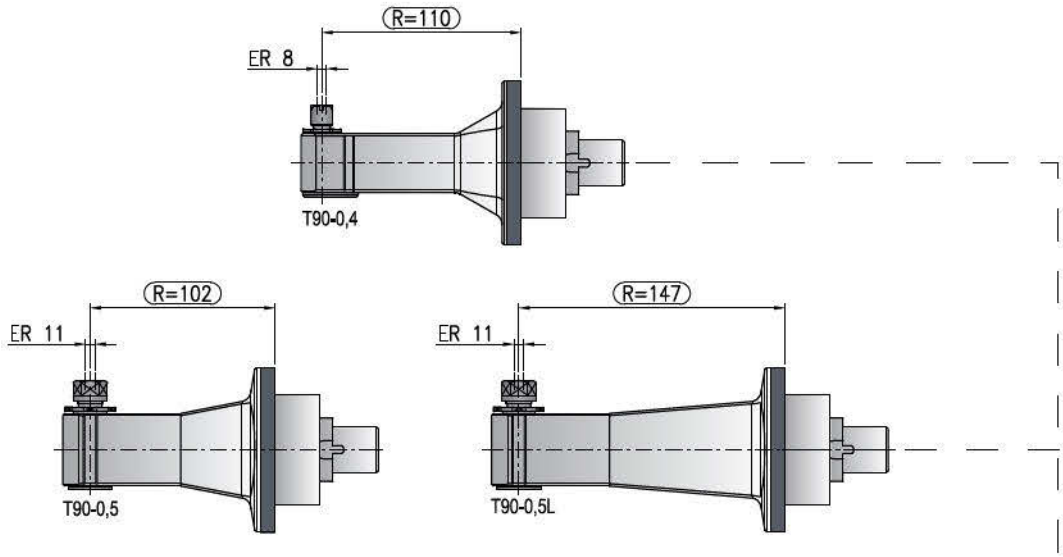




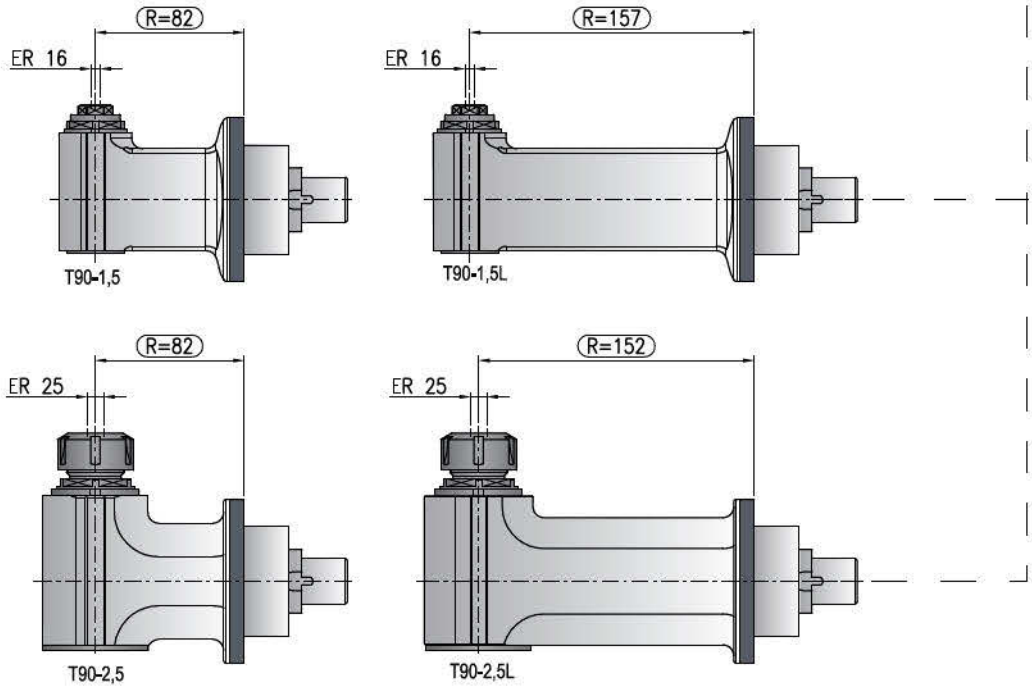
LINEA CONTROL

TESTE CON PROLUNGA
EXTENDED HEADS

8000 Rpm



6000 Rpm



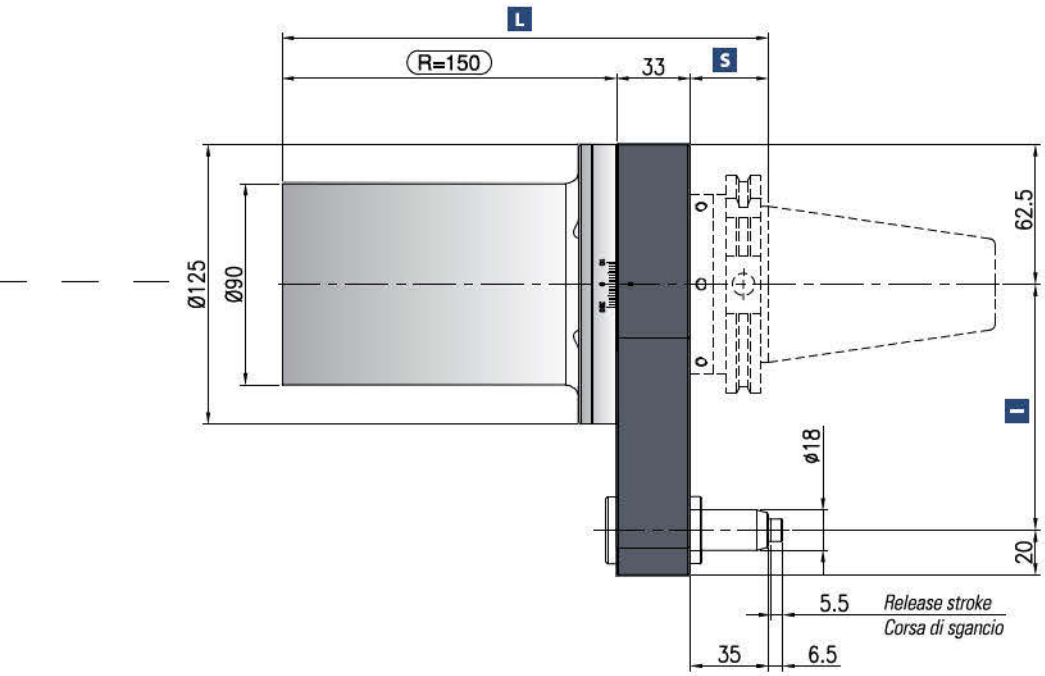
Caratteristiche tecniche a pagina/ Technical data page



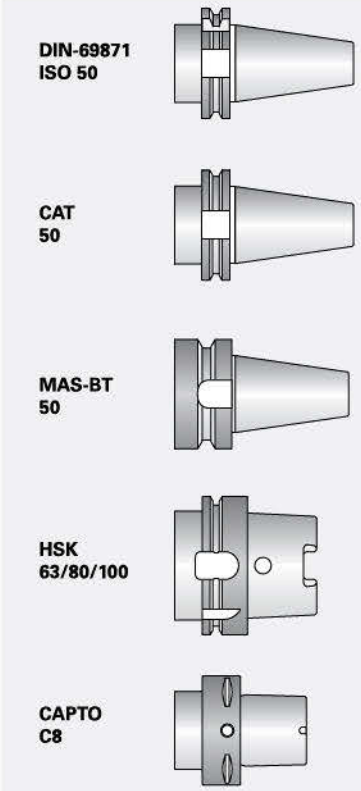
Testa/*Head*	Pagina/*Page*
T90-0,4	62
T90-0,5	63
T90-0,5L	64
T90-1,5	65
T90-1,5L	66
T90-2,5	67
T90-2,5L	68

Le teste con prolunga sono composte da un blocco modulo di prolunga sul quale vengono montate una selezione di teste standard.

The extended heads are made up by a portion of extension spacer where it is possible to mount different standard heads.

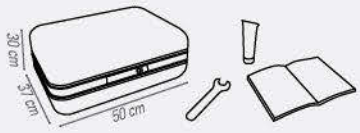


OPTIONAL DRIVE SHANK*
Non interchangeable input drive shank
Coni non intercambiabili



Weight
Peso / Gewicht
10 kg

*** STANDARD EQUIPMENT INCLUDES:**





Retaining block / Tassello di ritegno / Stop-Block
NOT INCLUDED - NON INCLUSO

Shank/*Cono*	DIN-69871 CAT	MAS-BT	HSK		CAPTO	
Size/*Grandezza*	50	50	63-80	100	C6	C8
I	80-110	80-110	80-(110*)	80-110	80-(110*)	80-110
S	35	41	42	45	38	40
L	218	224	225	228	221	223

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

Lunghezza totale testa/ Total length (R+L)

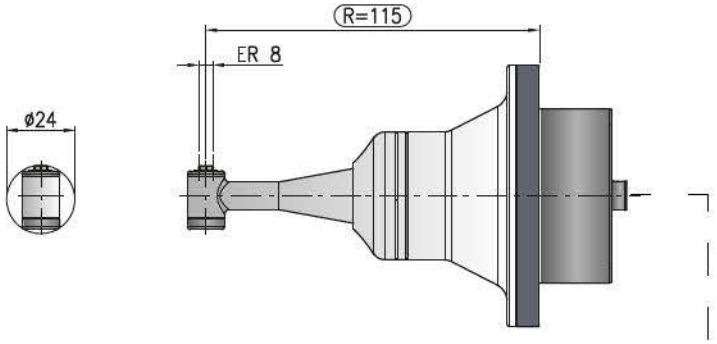
Shank/*Cono*		DIN-69871 CAT	MAS-BT	HSK		CAPTO	
Size/*Grandezza*		50	50	63-80	100	C6	C8
T90-0.4	mm	328	334	335	338	331	333
T90-0.5C	mm	320	326	327	330	323	325
T90-0.5L	mm	365	371	372	375	368	370
T90-1.5	mm	300	306	307	310	303	305
T90-1.5L	mm	375	381	382	385	378	380
T90-2.5	mm	300	306	307	310	303	305
T90-2.5L	mm	370	376	377	380	373	375



LINEA INDEX
INDEX LINE

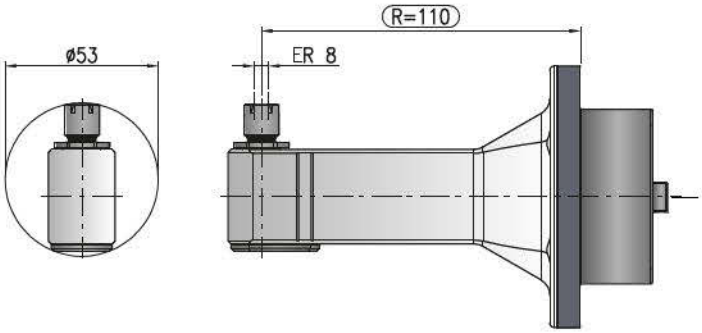
T90-0,3 SLIMLINE

Technical Data / Dati Tecnici		**T90-0,3**
RPM max input. / Max. Velocità input min $^{-1}$		15.000
Ratio (reduction)		3:4
Weight / Peso	kg	3
Collet / Pinza		3mm



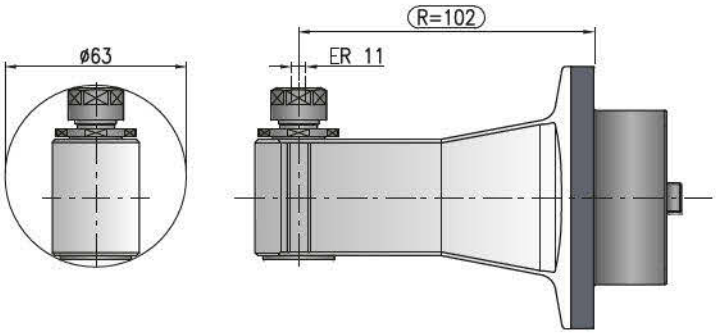
T90-0,4

Technical Data / Dati Tecnici		**T90 0,4**
RPM max input. / Max. Velocità input min $^{-1}$		10.000
Ratio		1:1
Weight / Peso	kg	4
Collet / Pinza		ER8 0,5/5mm



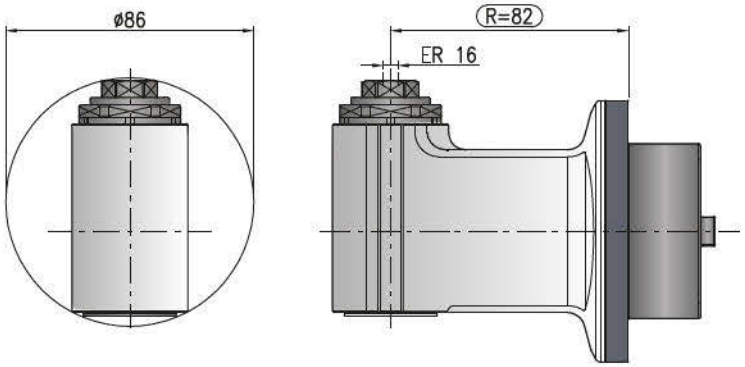
T90-0,5

Technical Data / Dati Tecnici		**T90-0,5**
RPM max input. / Max. Velocità input min $^{-1}$		10.000
Ratio		1:1
Weight / Peso	kg	4
Collet / Pinza		ER-11 0,5/7mm



T90-1,5

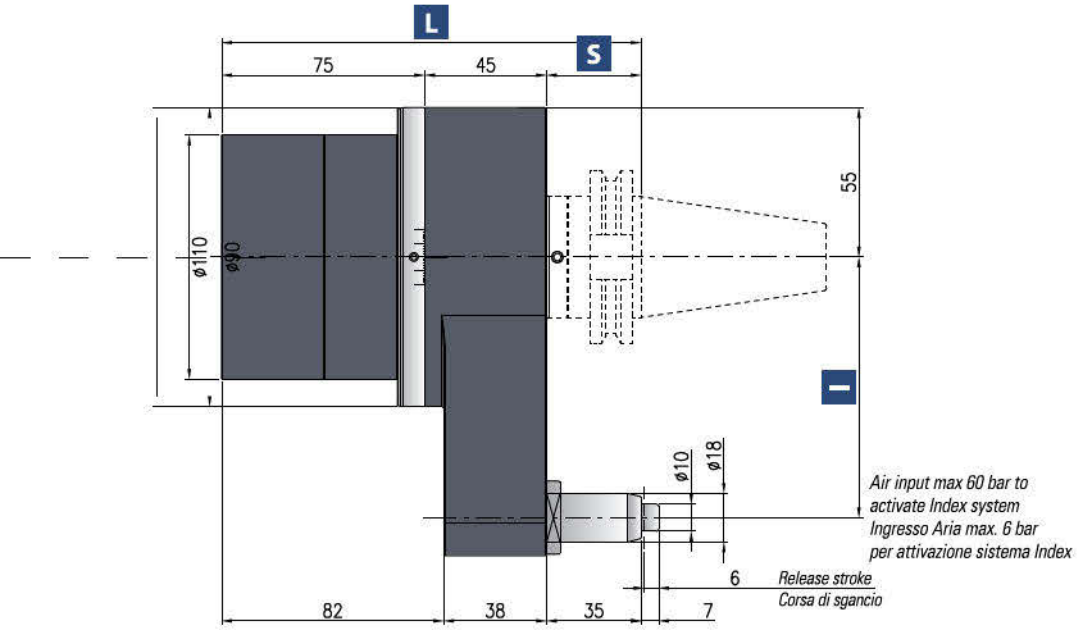
Technical Data / Dati Tecnici		**T90-1,5**
RPM max input. / Max. Velocità input min $^{-1}$		8.000
Ratio		1:1
Weight / Peso	kg	4,3
Collet / Pinza		ER-16 1/10mm





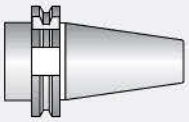
Posizionamento automatico del portautensile su 360° tramite mandrino macchina tramite un sistema di frizione interno attivato da aria compressa max 6 bar. NESSUNA POSIZIONE FISSA. ORIENTAMENTO SU TUTTI GLI ANGOLI.

Automatic positioning of the cutting holder around 360° by using machine spindle through an internal clutch mechanism activated by compressed air max 6 bar. NO FIXED POSITION. ANY ANGLE POSSIBLE.

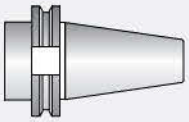


OPTIONAL DRIVE SHANK*
Non interchangeable input drive shank
Coni non intercambiabili

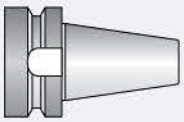
DIN-69871 ISO 40/50



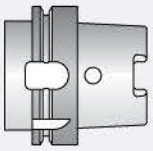
CAT 40/50



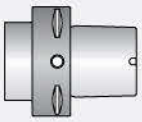
MAS-BT 40/50



HSK 63/80/100



CAPTO C5/C6/C8



Weight
Peso / Gewicht
7,5 kg

*** STANDARD EQUIPMENT INCLUDES:**



Shank/*Cono*		DIN-69871	CAT	MAS-BT		HSK		CAPTO	
Size/*Grandezza*		40	50	40	50	63-80	100	C5-C6	C8
I		80-(110*)	80-110	80-(110*)	80-110	80-(110*)	80-110	80-(110*)	80-110
S		35	35	35	41	42	45	38	40
L		155	155	155	161	162	165	158	160

Dual contact spindles available/Disponibilità coni a doppio contatto
*optional

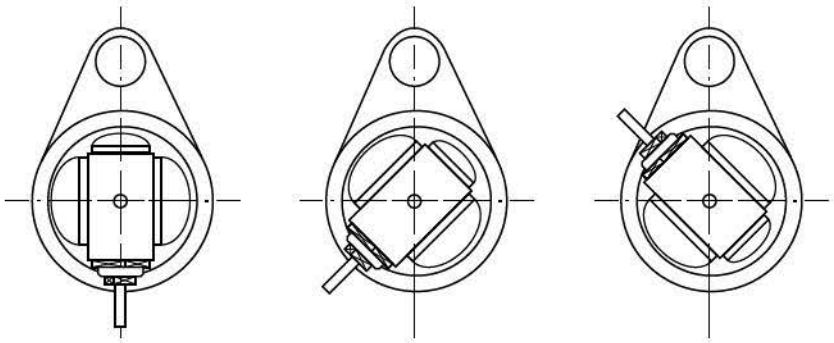
Lunghezza totale testa/ Total length (R+L)

Shank/*Cono*		DIN-69871	CAT	MAS-BT		HSK		CAPTO	
Size/*Grandezza*		40	50	40	50	63-80	100	C5-C6	C8
T90-0.3 SLIMLINE	mm	270	270	270	276	277	280	273	275
T90-0.4	mm	265	265	265	271	272	275	268	270
T90-0.5	mm	257	257	257	263	264	267	260	262
T90-1.5	mm	237	237	237	243	244	247	240	242

TESTE INDEX
INDEX HEADS

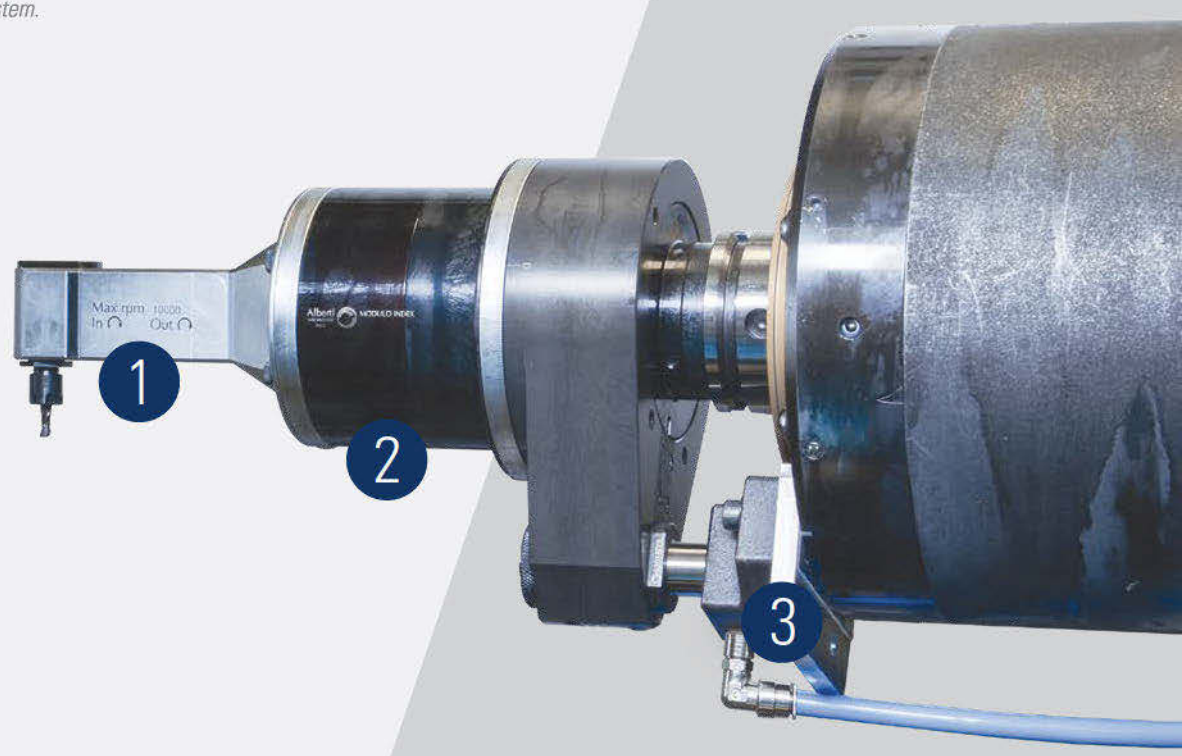
Le teste della Linea INDEX consentono di posizionare il portautensile in modo automatico sui 360° utilizzando l'asse controllato della macchina utensile. Possono quindi essere montate SOLAMENTE su macchine con asse controllato e aria esterna (max 6 bar) tramite lo Stop Block.

With the INDEX Line it is possible to orientate and position automatically over 360° the output of the head by using the controlled axis of the machine center. This line CAN ONLY be mounted on machines with controlled C axis and external air through the Stop Block (max 6 bar).





1. Porzione di testa modular standard posizionabile su 360°.
   Portion of the standard modular. Head to be oriented over 360°.
2. Porzione di testa con sistema INDEX.
   Portion of the head with INDEX system.
3. Aria dallo Stop Block (6 bar).
   Air trough the Stop Block (6 bar).





LINEA MODULAR



Le teste della linea MODULAR sono adatte ad essere montate su macchine utensili tradizionali da fissare al mandrino tramite apposita flangia. Sono dotate di un cono intercambiabile, una flangia universale e la possibilità di avere alcuni moduli di prolunga per variarne la lunghezza. Per un corretto montaggio, è necessario realizzare una flangia di adattamento da interporre tra la testa e il mandrino.

Angle heads of the MODULAR line are suitable to be mounted on traditional machine tools and are attached to the spindle through a flange. They are sold together with an interchangeable shank and a universal flange and they can extend the total length thanks to extension spacers. For a correct mounting, it is necessary to build an adapting flange to be screwed between the head and the machine spindle.

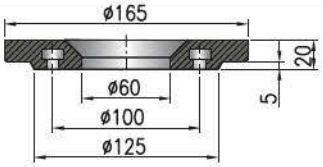
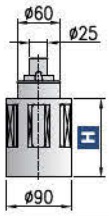
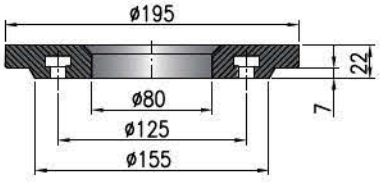
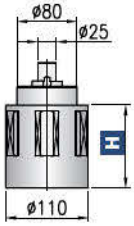
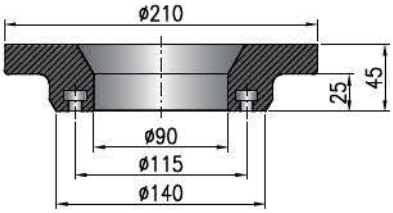
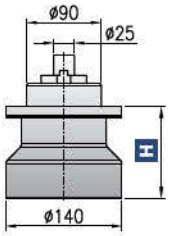
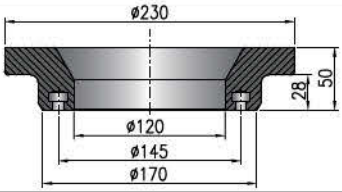
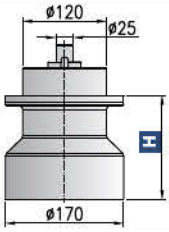


***Esempio di montaggio in macchina** / Example of mounting the head*

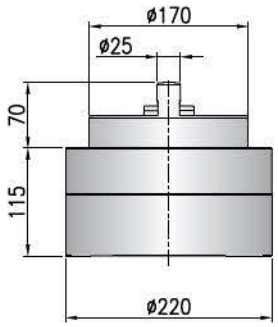
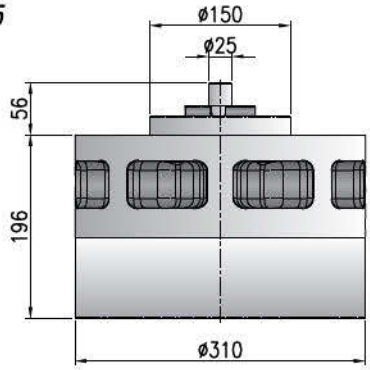
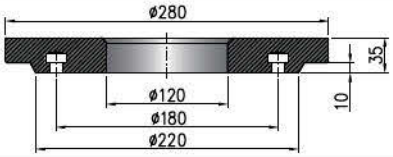
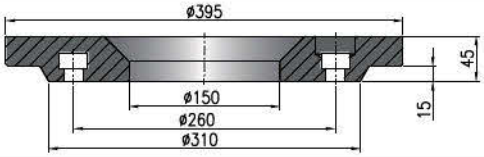
FLANGIA UNIVERSALE - MODULI DI PROLUNGA
UNIVERSAL FLANGE - EXTENSION SPACER

Un sistema modulare componibile, rende possibile variare la lunghezza del corpo testa aggiungendo l'elemento di prolunga. Modulo, coni e flangia sono modulari e quindi intercambiabili su tutti i corpi testa appartenenti allo stesso ordine di grandezza.

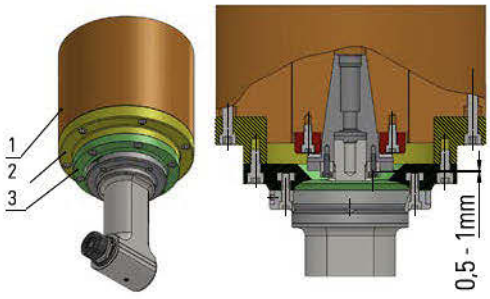
The modular system makes it possible to extend the lenght of the body by adding a spacer. The extension spacer, drive tapers and universal flange are modular and therefore interchangeable among all the heads of similar size.

	Flangia *Flange*	**Moduli di prolunga** *Extension Spacer*	**H**	**Codici** *Part number*
T90-0,5 T90-1,5 T90-2,5 TCU-2,5 TCU-3,5	 54206000	A 	55 mm	90006010
			110 mm	90006A11
			150 mm	90006A15
			250 mm	90006A25
T90-3,5	 54208000	B 	55 mm	90008010
			110 mm	90008A11
			150 mm	90008A15
			250 mm	90008A25
			360 mm	90008A36
			450 mm	90008A45
T90-4,5	 54209001	C 	110 mm	90009000
			150 mm	90009050
T90-5	 54212004	D 	150 mm	90012005

MODULI DI PROLUNGA PER TESTE LINEA P MOLTIPLICATI
EXTENSION SPACERS FOR HEADS LINEA P WITH SPEED INCREASE

R = 1:2,25 	*R = 1:2,25* 
T90-8 / TDU-8	T90-10 / TDU-10
	
54212000	54215000

ESEMPIO DI MONTAGGIO DI UNA TESTA TIPO MODULAR
EXAMPLE OF FLANGE MOUNTING FOR MODULAR HEAD



1 Spindle
Mandrino

2 Flangia di interfaccia
Interface flange

3 Flangia universale
Universal flange

Per il corretto montaggio della testa in macchina, una volta avvitato il cono e la flangia universale sulla testa, è necessario realizzare un ulteriore flangia di adattamento tra la testa e il mandrino della macchina seguendo attentamente le istruzioni sul libretto in dotazione.

For a correct flange mounting on the machine, once you fix the shank and the universal flange on the head, it's necessary to make an adapting spacer between the head and the machine spindle and follow carefully the instruction on the given manual.

Esempio di montaggio testa modular con flangia universale standard e moduli di prolunga

Example of flange mounting for modular heads including extension spacers



T90-0,4

AMT9004C

Ratio
Rapporto
1:1

RPM
Velocità
10.000 min^{-1}

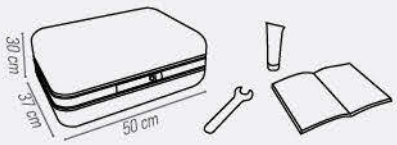
Max. axial load
Max. carico assiale
100 N

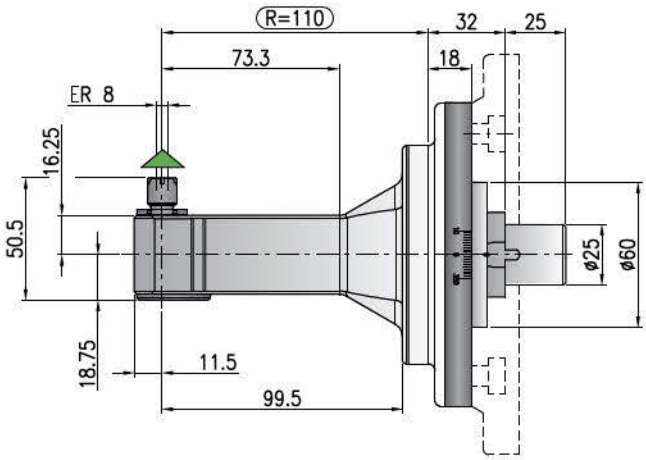
Torque
Momento torcente
4 Nm

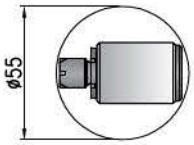
Weight
Peso
4 kg

Collet
Pinza
ER-8 (ø 0,5/5 mm)

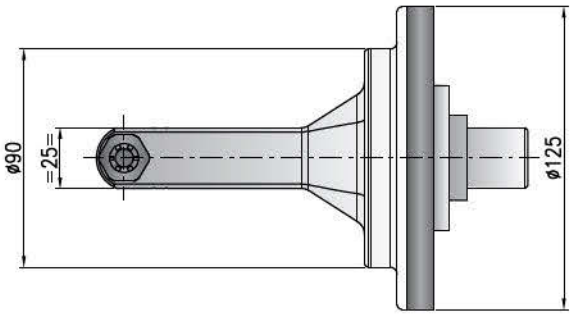
*** STANDARD EQUIPMENT INCLUDES:**







Minimum diameter without tool
Diametro minimo senza utensile



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

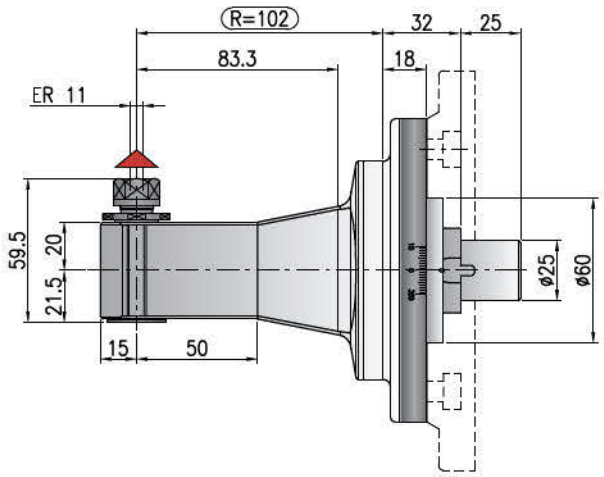
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

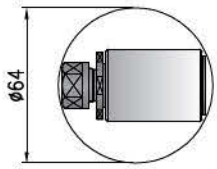
Option / *Opzione*

bar max	Ø mm max.
12	6
Coolant through spindle *Adduzione refrigerante interna*	*Weldon output* *Weldon*

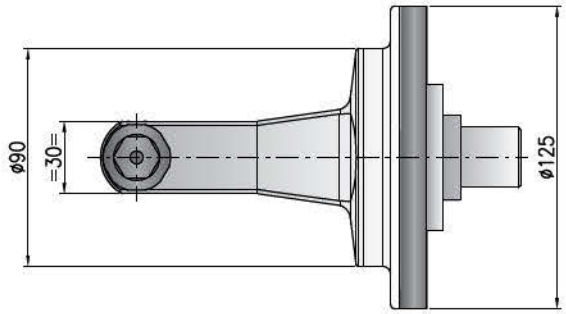
T90-0,5C

AMT9005C





Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

RPM
Velocità
10.000 min⁻¹

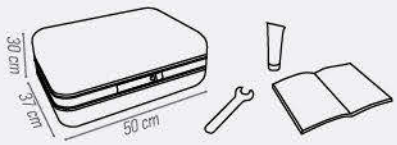
Max. axial load
Max. carico assiale
150 N

Torque
Momento torcente
8 Nm

Weight
Peso
4 kg

Collet
Pinza
ER-11 (ø 0,5/7 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	Ø mm max.
12	6
Coolant through spindle *Adduzione refrigerante interna*	*Weldon output* *Weldon*

T90-0,5L

AMT9005L

Ratio
Rapporto
1:1

RPM
Velocità
10.000 min^{-1}

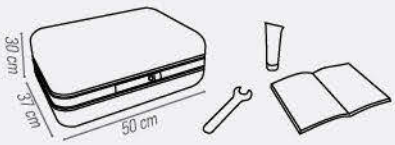
Max. axial load
Max. carico assiale
150 N

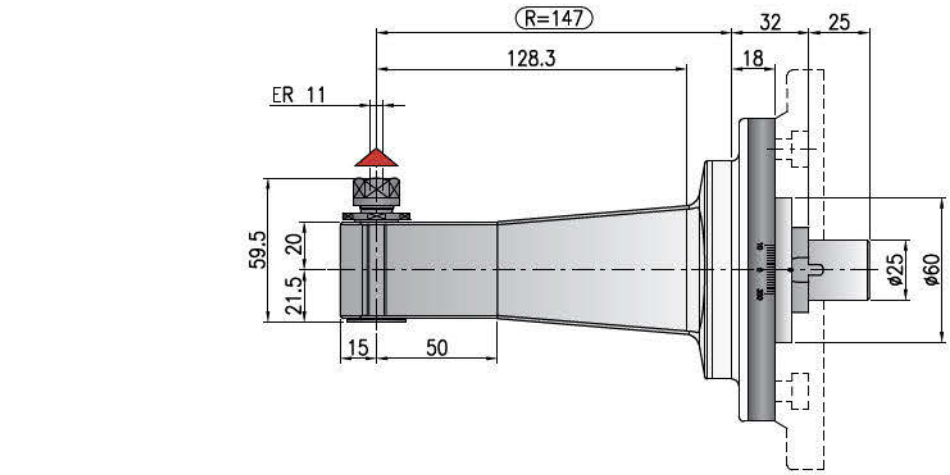
Torque
Momento torcente
8 Nm

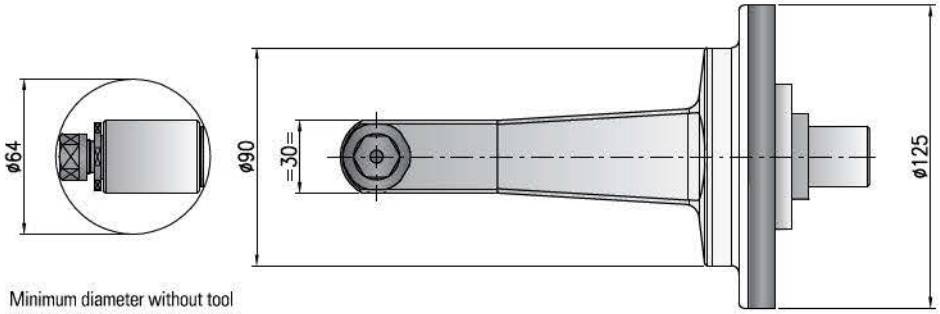
Weight
Peso
4,3 kg

Collet
Pinza
ER-11 (ø 0,5/7 mm)

*** STANDARD EQUIPMENT INCLUDES:**







Minimum diameter without tool
Diametro minimo senza utensile

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

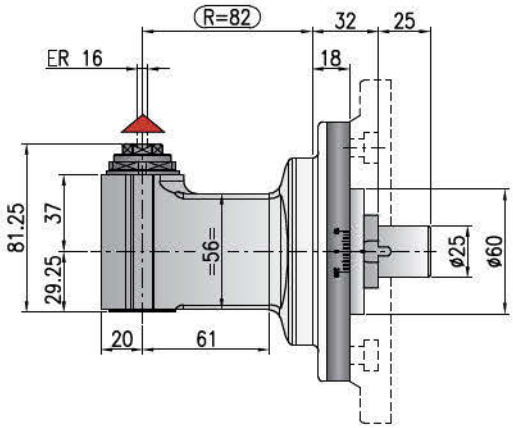
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

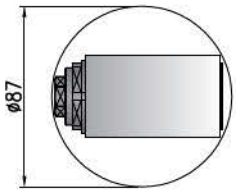
Option / *Opzione*

bar max	Ø mm max.
12	6
Coolant through spindle *Adduzione refrigerante interna*	*Weldon output* *Weldon*

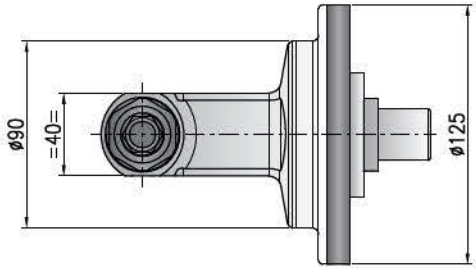
T90-1,5

AMT9015C





Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

RPM
Velocità
8.000 min⁻¹

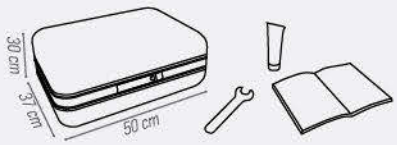
Max. axial load
Max. carico assiale
250 N

Torque
Momento torcente
15 Nm

Weight
Peso
4,3 kg

Collet
Pinza
ER-16 (ø 1/10 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	min⁻¹	Ø mm	Ø mm max.	
12	10.000	13	10	ER-16/ER11
Coolant through spindle *Adduzione refrigerante interna*	*High speed optional RPM max.* *Opzione alta velocità RPM max*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Double output* *Doppia uscita*

T90-1,5L

AMT9015L

Ratio
Rapporto
1:1

RPM
Velocità
8.000 min^{-1}

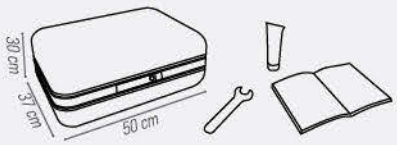
Max. axial load
Max. carico assiale
250 N

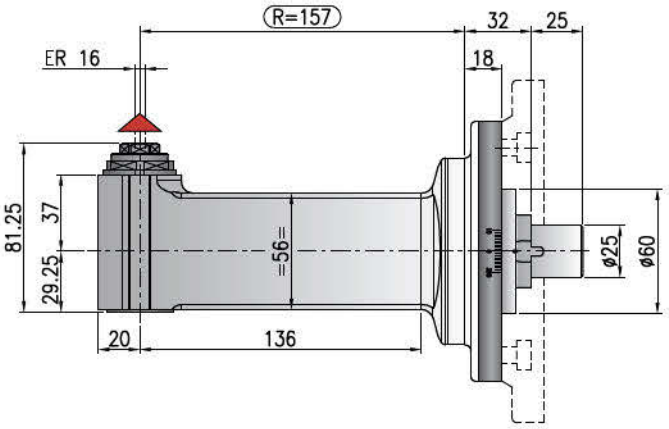
Torque
Momento torcente
15 Nm

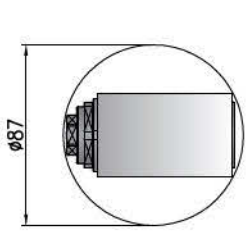
Weight
Peso
5,2 kg

Collet
Pinza
ER-16 (ø 1/10 mm)

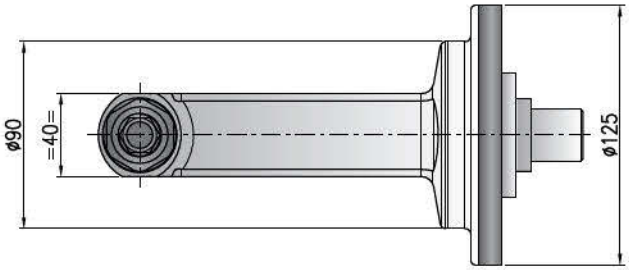
*** STANDARD EQUIPMENT INCLUDES:**







Minimum diameter without tool
Diametro minimo senza utensile



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

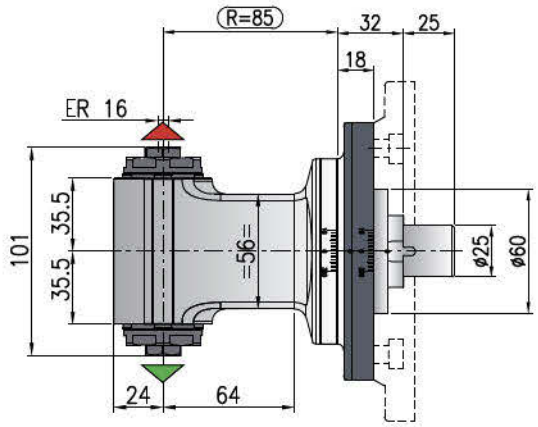
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / ***Opzione***

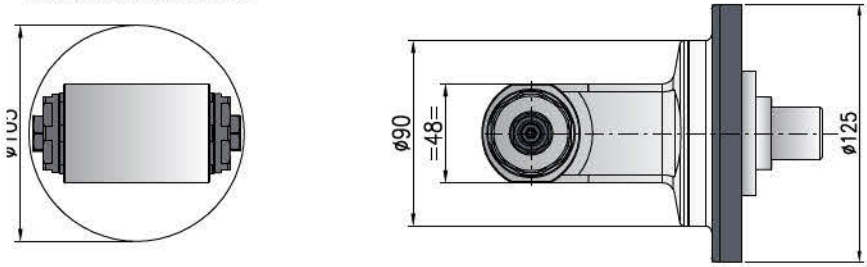
bar max	*min^{-1}*	Ø mm	Ø mm max.	
12	10.000	13	10	ER-16/ER11
Coolant through spindle *Adduzione refrigerante interna*	*High speed optional RPM max.* *Opzione alta velocità RPM max*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Double output* *Doppia uscita*

T90-1,5 2U

AMT9015D



Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

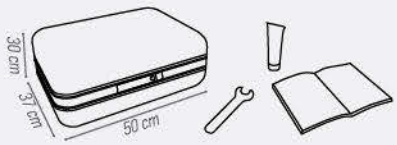
RPM
Velocità
6.000 min⁻¹

Max. axial load
Max. carico assiale
510 N

Torque
Momento torcente
30 Nm

Weight
Peso
5,4 kg

Collet
Pinza
ER-25 (ø 1/16 mm)



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*
Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / ***Opzione***

bar max	min⁻¹	Ø mm	Ø mm max.		
12	8.000	16	16	HSK-32	ER-25/ER-16
Coolant through spindle *Adduzione refrigerante interna*	*High speed RPM max.* *Alta velocità RPM max..*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

T90-2,5

AMT9025C

Ratio
Rapporto
1:1

RPM
Velocità
6.000 min⁻¹

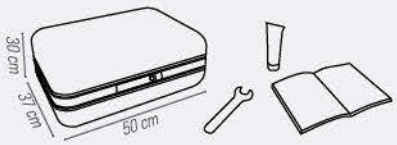
Max. axial load
Max. carico assiale
510 N

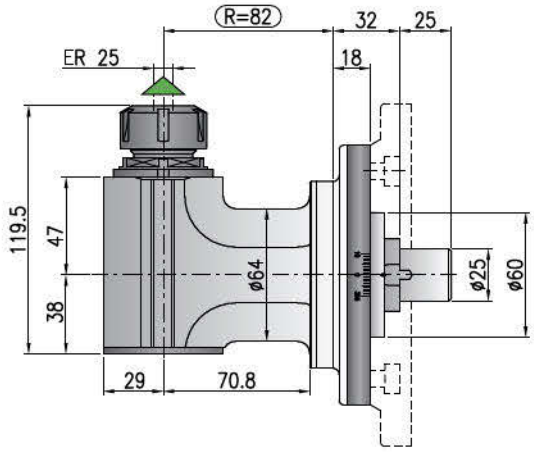
Torque
Momento torcente
30 Nm

Weight
Peso
5,4 kg

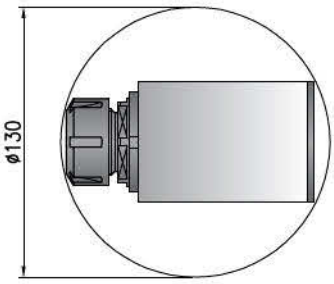
Collet
Pinza
ER-25 (ø 1/16 mm)

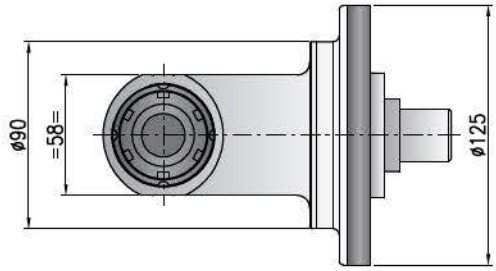
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

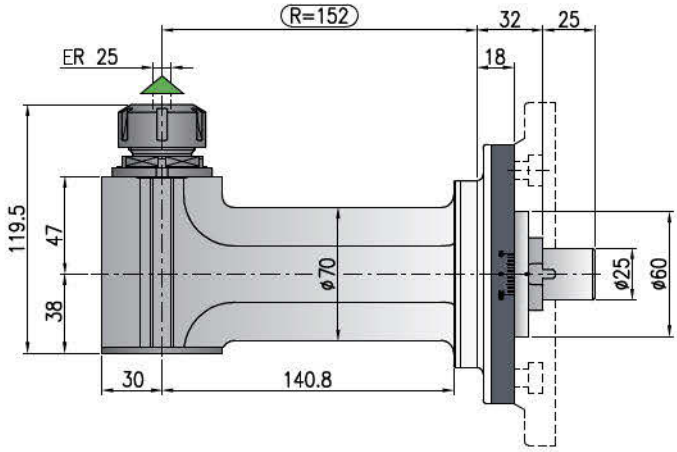
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

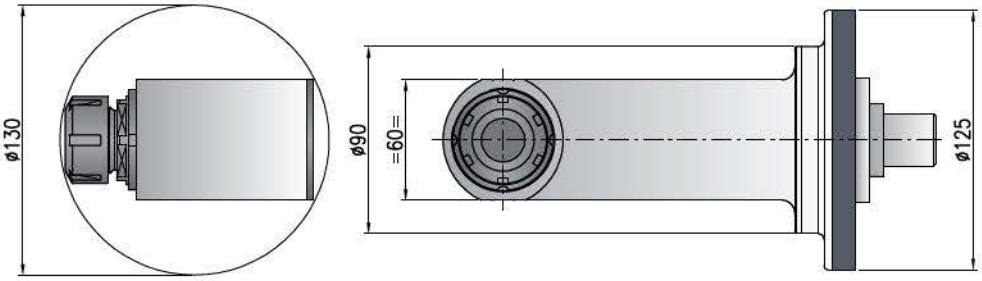
bar max	*min⁻¹*	*Ø mm*	*Ø mm max.*		
12	8.000	16	16	HSK-32	ER-25/ER-16
Coolant through spindle *Adduzione refrigerante interna*	*High speed RPM max.* *Alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

T90-2,5L

AMT9025L



Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

RPM
Velocità
6.000 min⁻¹

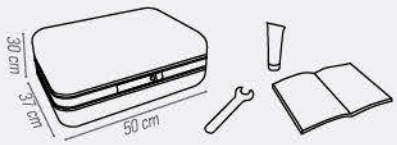
Max. axial load
Max. carico assiale
510 N

Torque
Momento torcente
30 Nm

Weight
Peso
6,7 kg

Collet
Pinza
ER-25 (ø 1/16 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	*min⁻¹*	*Ø mm*	*Ø mm max.*		
12	8.000	16	16	HSK-32	ER-25/ER-16
Coolant through spindle *Adduzione refrigerante interna*	*High speed RPM max.* *Alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

T90-2,5 2U

AMT9025D

Ratio
Rapporto
1:1

RPM
Velocità
6.000 min^{-1}

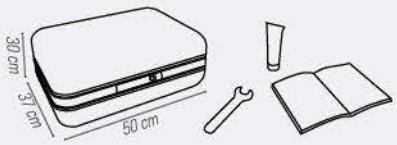
Max. axial load
Max. carico assiale
510 N

Torque
Momento torcente
30 Nm

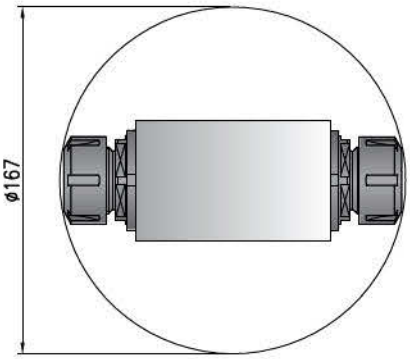
Weight
Peso
6,4 kg

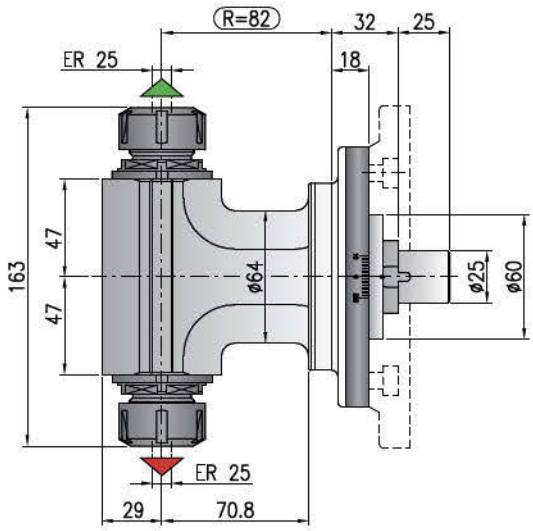
Collet
Pinza
ER-25 (ø 1/16 mm)

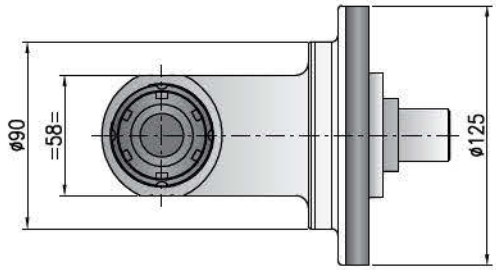
*** STANDARD EQUIPMENT INCLUDES:**



Minimum diameter without tool
Diametro minimo senza utensile







Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*
Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

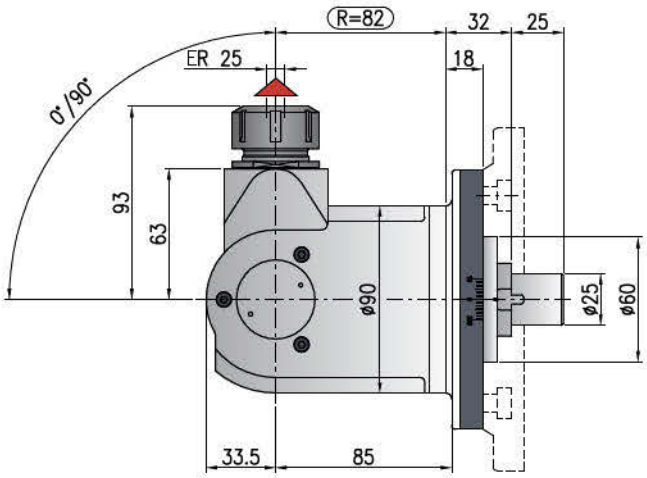
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

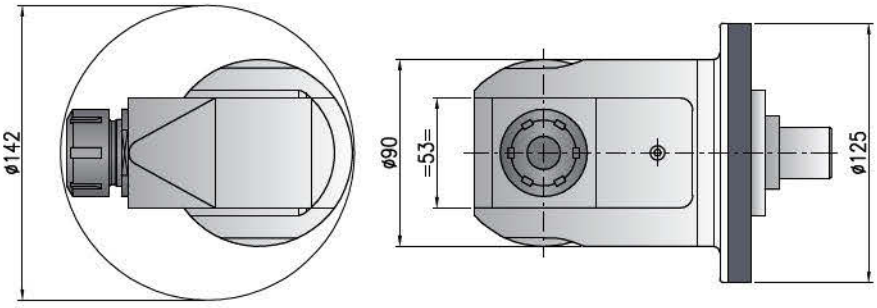
min^{-1}	Ø mm	Ø mm max.
8.000	**16**	**16**
High speed optional RPM max. *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*

TCU-2,5

AMTCU25C



Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

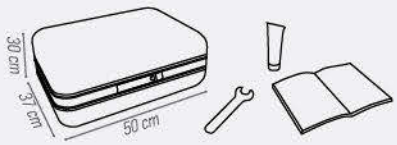
Max. axial load
Max. carico assiale
480 N

Torque
Momento torcente
18 Nm

Weight
Peso
7 kg

Collet
Pinza
ER-25 (ø 1/16 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

Shank/***Cono***	**DIN-69871**	**CAT**	**MAS-BT**	**HSK**	**CAPTO**	**KM**

Option / *Opzione*

min⁻¹
6.000
High speed optional RPM max.
Opzione alta velocità RPM max.

Ø mm max.
16
Weldon output
Weldon

T90-3,5

AMT9035C

Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

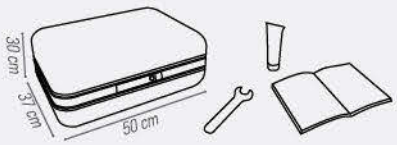
Max. axial load
Max. carico assiale
1.250 N

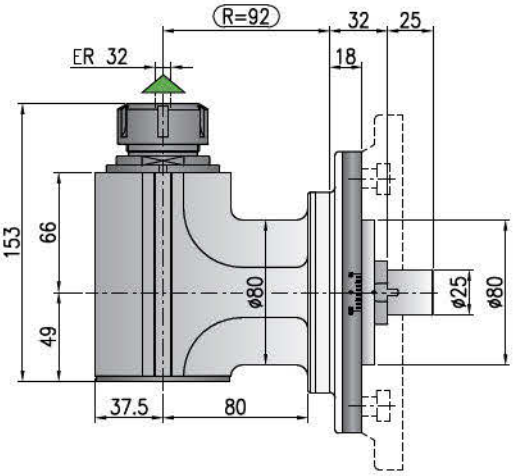
Torque
Momento torcente
50 Nm

Weight
Peso
11 kg

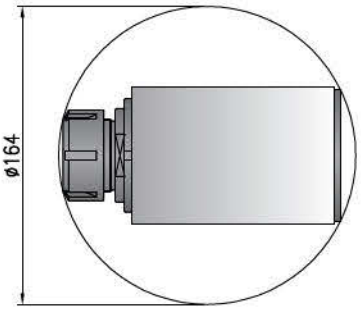
Collet
Pinza
ER-32 (ø 2/20 mm)

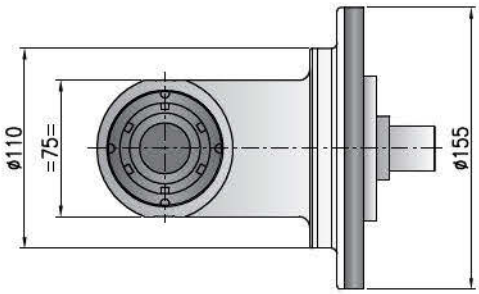
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

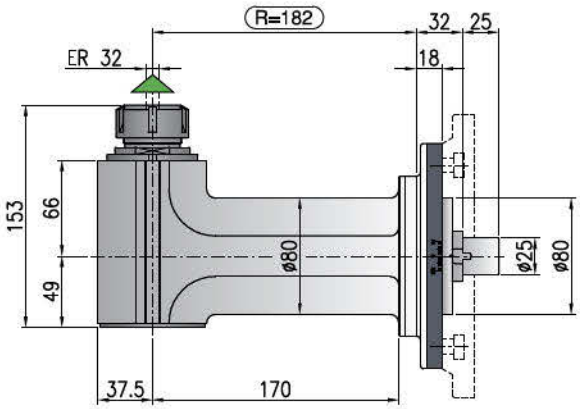
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

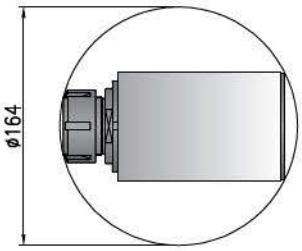
bar max	*min⁻¹*	Ø mm	Ø mm max.		
12	6.000	27	20	ISO-30 HSK-40	ER-32/ER-20
Coolant through spindle *Adduzione refrigerante interna*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

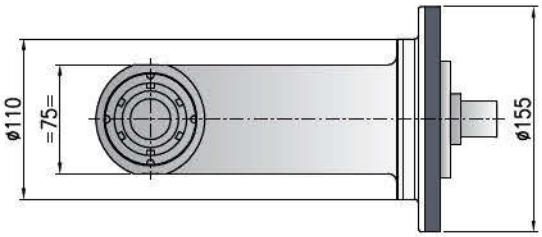
T90-3,5L

AMT9035L



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
4.000 min^{-1}

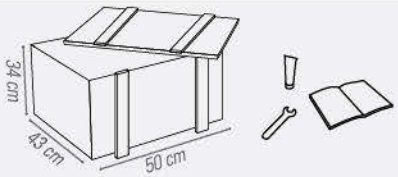
Max. axial load
Max. carico assiale
1.250 N

Torque
Momento torcente
50 Nm

Weight
Peso
13,2 kg

Collet
Pinza
ER-32 (ø 2/20 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	*min^{-1}*	*Ø mm*	*Ø mm max.*		
12	6.000	27	20	ISO-30 HSK-40	ER-32/ER-20
Coolant through spindle *Adduzione refrigerante interna*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

T90-3,5 2U

AMT9035D

Ratio
Rapporto
1.1

RPM
Velocità
4.000 min^{-1}

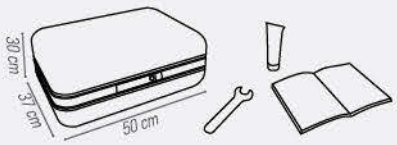
Max. axial load
Max. carico assiale
1.250 N

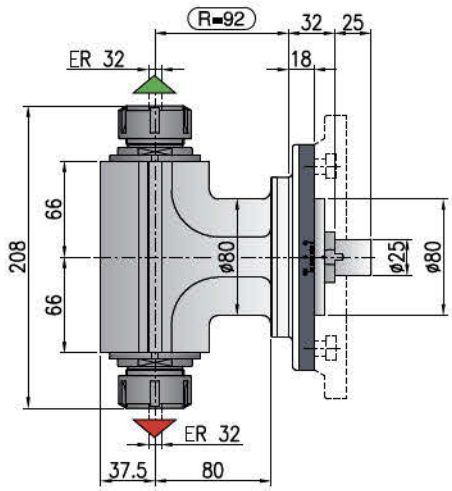
Torque
Momento torcente
50 Nm

Weight
Peso
12 kg

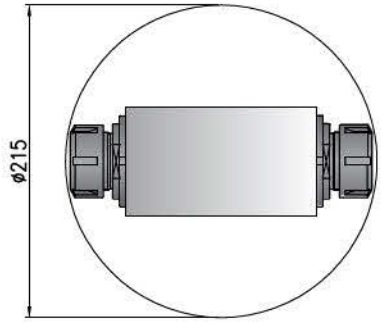
Collet
Pinza
ER-32 (ø 2/20 mm)

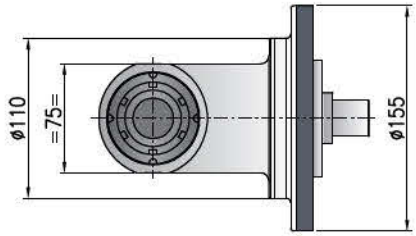
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*
Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

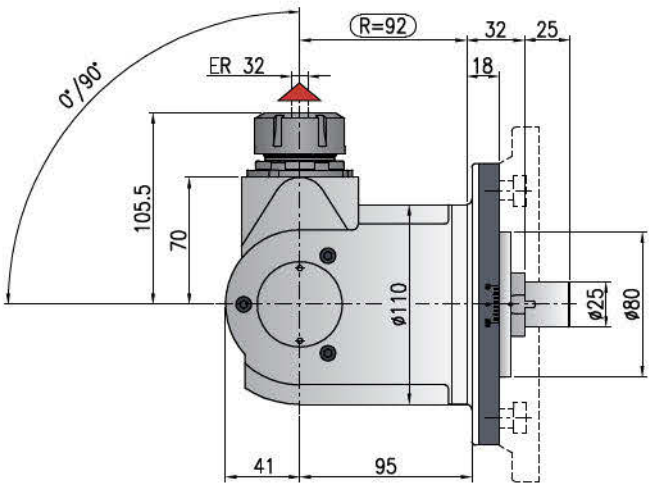
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

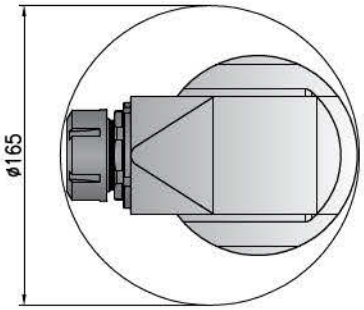
min^{-1}	Ø mm	Ø mm max.	
6.000	**27**	**20**	**HSK-40**
High speed optional RPM max. *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*

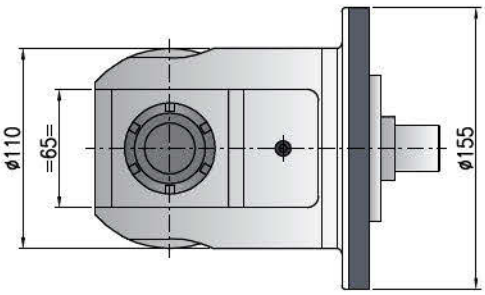
TCU-3,5

AMTCU35C



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

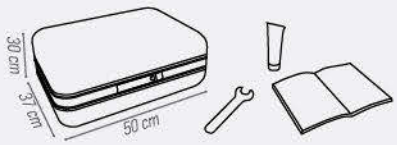
Max. axial load
Max. carico assiale
715 N

Torque
Momento torcente
32 Nm

Weight
Peso
13 kg

Collet
Pinza
ER-32 (ø 2/20 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*

Shank/***Cono***	**DIN-69871**	**CAT**	**MAS-BT**	**HSK**	**CAPTO**	**KM**

Option / *Opzione*

min⁻¹
6.000
High speed optional RPM max.
Opzione alta velocità RPM max.

Ø mm max.
20
Weldon output
Weldon

T90-4,5

AMT9045C

Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

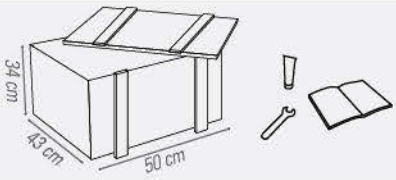
Max. axial load
Max. carico assiale
1.750 N

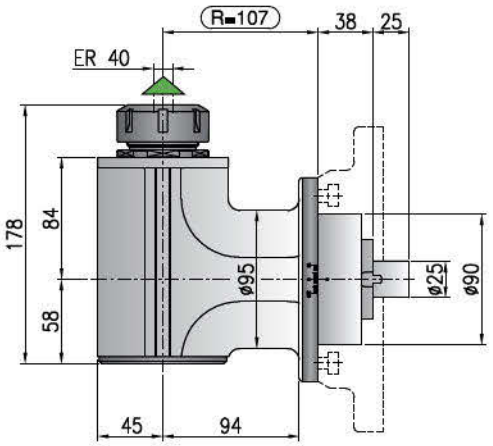
Torque
Momento torcente
75 Nm

Weight
Peso
17 kg

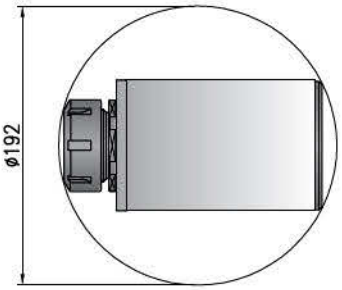
Collet
Pinza
ER-40 (ø 3/30 mm)

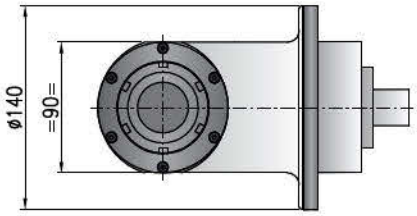
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

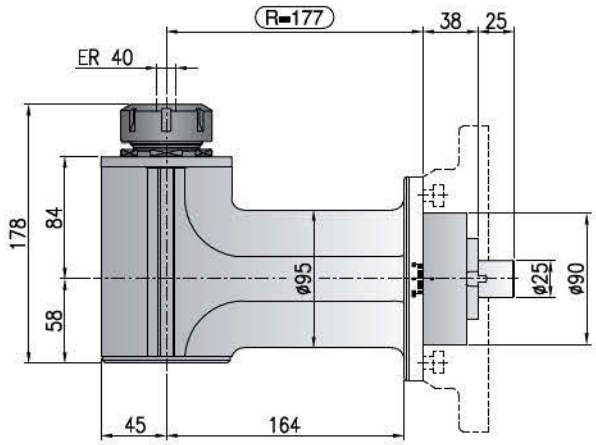
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

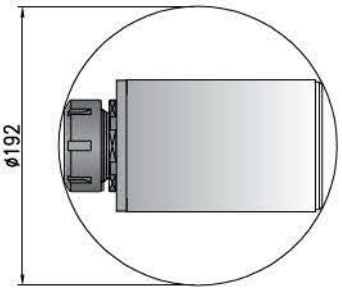
bar max	min⁻¹	Ø mm	Ø mm max.	ISO-30 HSK-40 CAPTO C4	ER-40/ER-25
12	6.000	27	25		
Coolant through spindle *Adduzione refrigerante interna*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

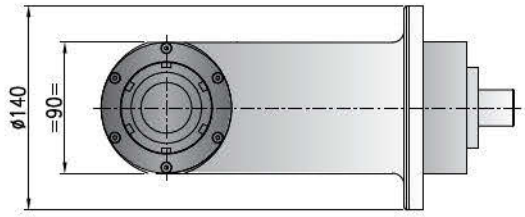
T90-4,5L

AMT9045L



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
4.000 min⁻¹

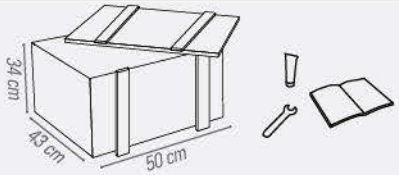
Max. axial load
Max. carico assiale
1.750 N

Torque
Momento torcente
75 Nm

Weight
Peso
20 kg

Collet
Pinza
ER-40 (ø 3/30 mm)

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/***Cono***	**DIN-69871**	**CAT**	**MAS-BT**	**HSK**	**CAPTO**	**KM**

Option / *Opzione*

bar max	*min⁻¹*	*Ø mm*	*Ø mm max.*	ISO-30 HSK-40 CAPTO C4	ER-40/ER-25
12	6.000	27	25		
Coolant through spindle *Adduzione refrigerante interna*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Arbor output* *Porta fresa*	*Weldon output* *Weldon*	*Quick Change* *Attacco rapido*	*Double output* *Doppia uscita*

T90-5

AMT9050C

Ratio
Rapporto
1:1

RPM
Velocità
3.000 min^{-1}

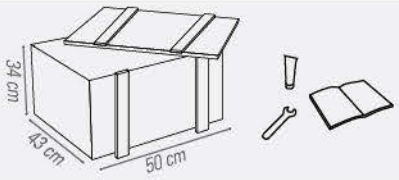
Max. axial load
Max. carico assiale
1.800 N

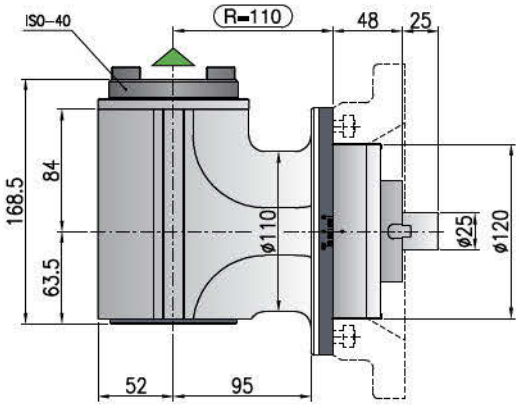
Torque
Momento torcente
100 Nm

Weight
Peso
22 kg

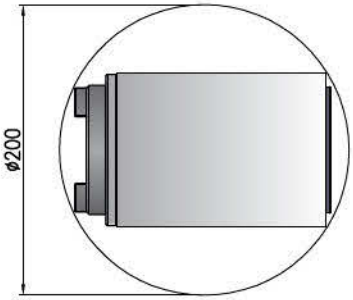
Collet
Pinza
ISO/BT 40

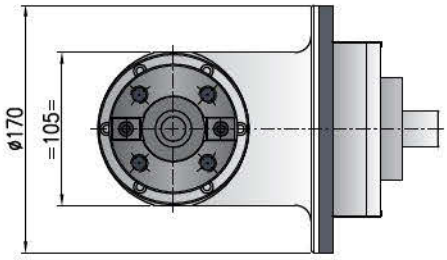
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

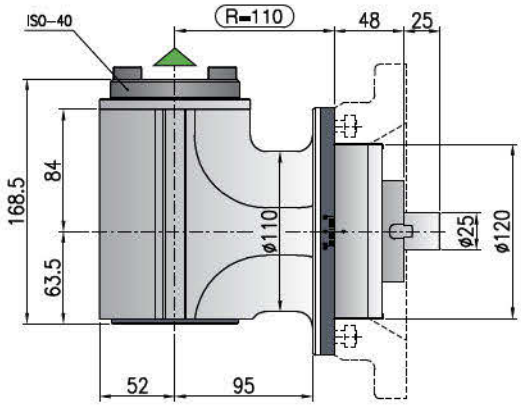
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

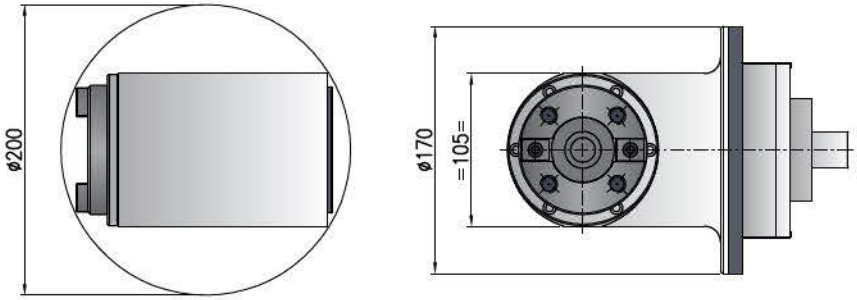
bar max	min^{-1}		
12	6.000	HSK-63 CAPTO C4 C5	AIR/OIL
Coolant through spindle *Adduzione refrigerante interna*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*

T90-5 HP

AMT9050HP



Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

RPM
Velocità
3.000 min⁻¹

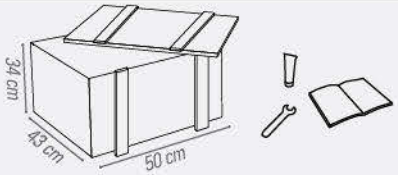
Max. axial load
Max. carico assiale
1.800 N

Torque
Momento torcente
160 Nm

Weight
Peso
22 kg

Collet
Pinza
ISO/BT 40

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	HSK-63 CAPTO C4 C5	AIR/OIL
12	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*
Coolant through spindle *Adduzione refrigerante interna*		

T90-5L

AMT9050L

Ratio
Rapporto
1:1

RPM
Velocità
3.000 min⁻¹

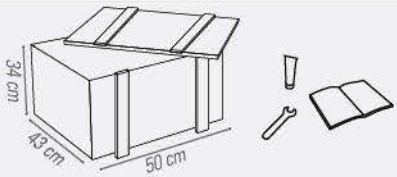
Max. axial load
Max. carico assiale
1.800 N

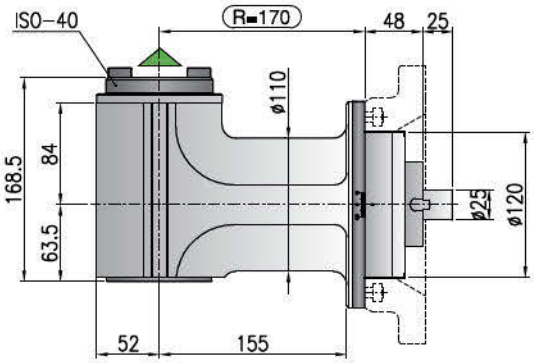
Torque
Momento torcente
100 Nm

Weight
Peso
26,2 kg

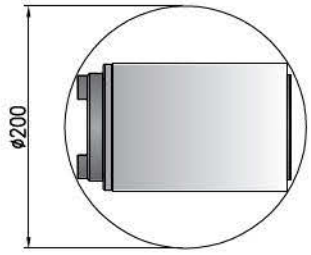
Collet
Pinza
ISO/BT 40

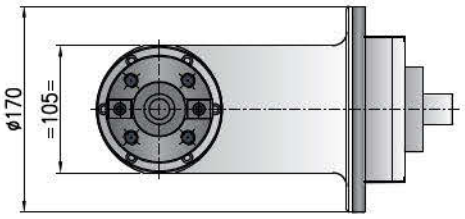
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

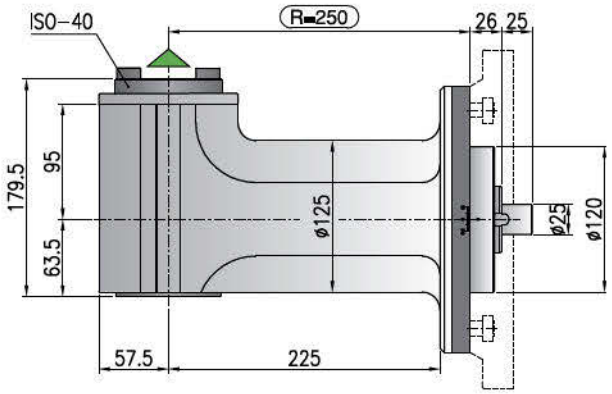
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

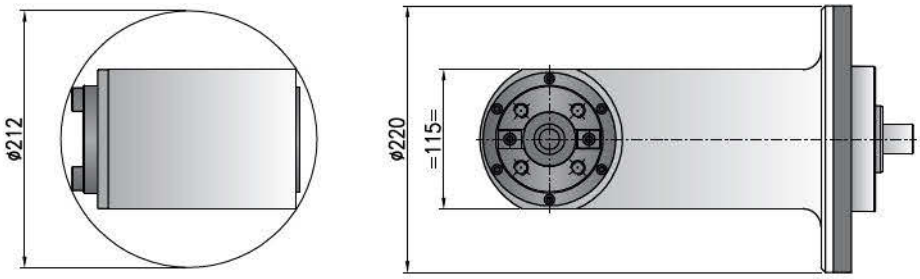
bar max	*min⁻¹*		
12	6.000	HSK-63 CAPTO C4 C5	AIR/OIL
Coolant through spindle *Adduzione refrigerante interna*	*High speed optional RPM max.* *Opzione alta velocità RPM max.*	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*

T90-8 HS

APT908HS



Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

RPM
Velocità
5.000 min^{-1}

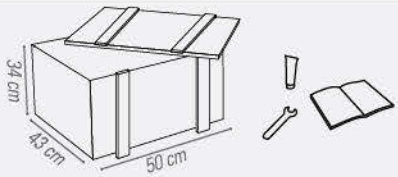
Max. axial load
Max. carico assiale
2.400 N

Torque
Momento torcente
100 Nm

Weight
Peso
33 kg

ISO/BT 40

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	HSK-63 CAPTO C4 C5	AIR/OIL
12	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*
Coolant through spindle *Adduzione refrigerante interna*		

T90-8 HP

APT908HP

Ratio
Rapporto
1:1

RPM
Velocità
3.000 min^{-1}

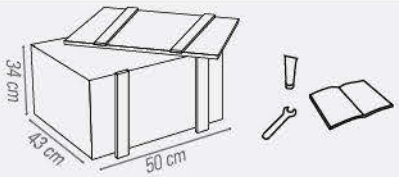
Max. axial load
Max. carico assiale
2.400 N

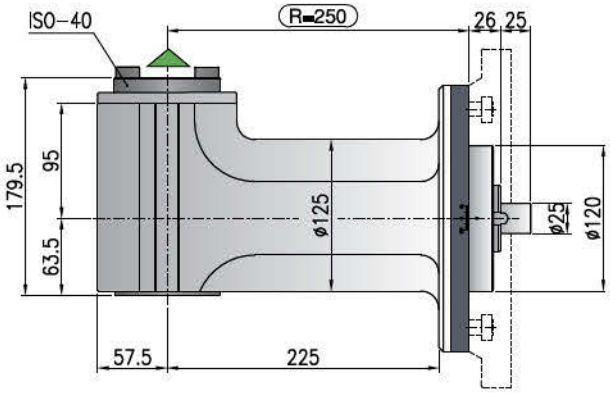
Torque
Momento torcente
200 Nm

Weight
Peso
33 kg

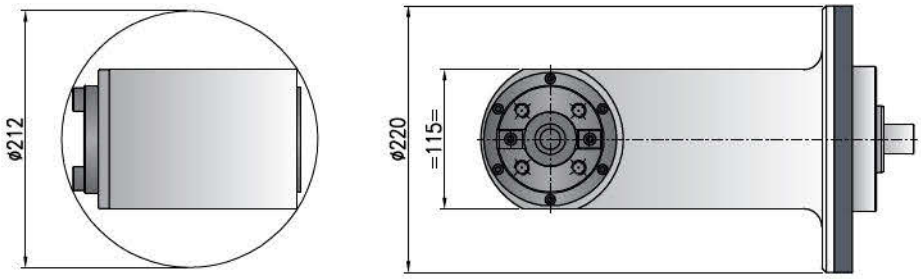
ISO/BT 40

*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

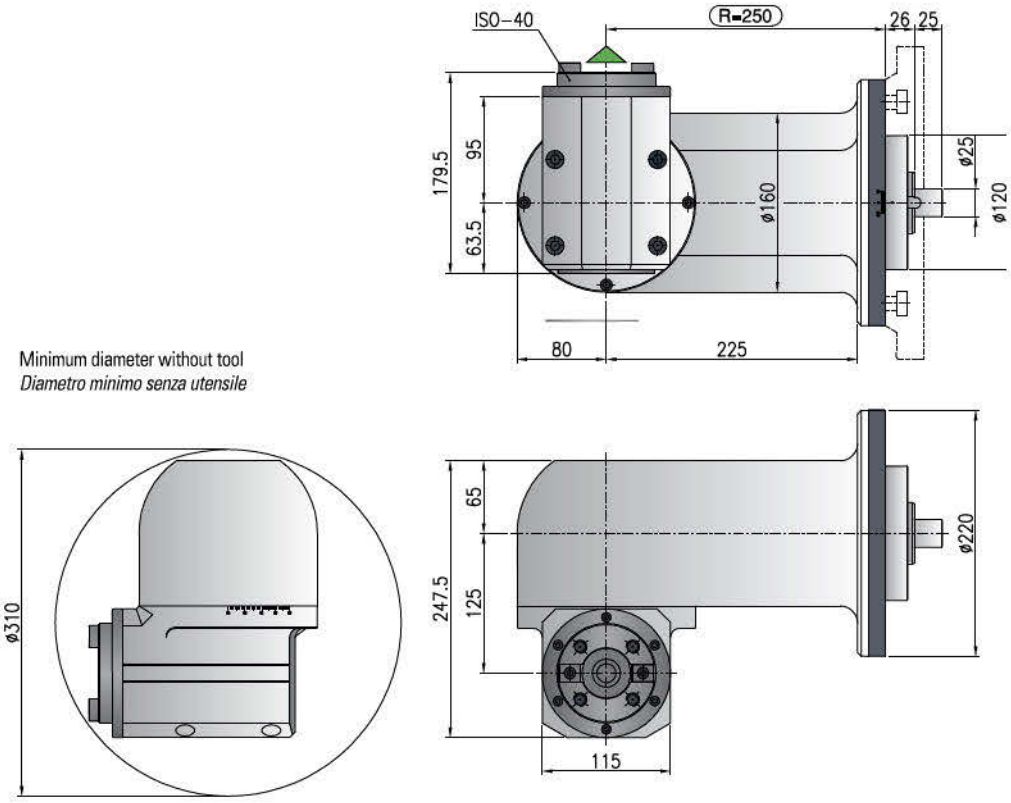
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max		
12	HSK-63A CAPTO C4 C5	AIR/OIL
Coolant through spindle *Adduzione refrigerante interna*	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*

TDU-8

APTDU80C



Ratio
Rapporto
1:1

RPM
Velocità
3.000 min^{-1}

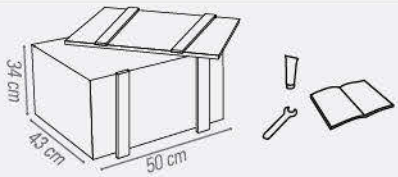
Max. axial load
Max. carico assiale
2.400 N

Torque
Momento torcente
100 Nm

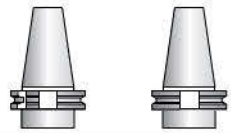
Weight
Peso
50 kg

Collet
Pinza

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*








Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max		
12	HSK-63A CAPTO C4 C5	AIR/OIL
Coolant through spindle *Adduzione refrigerante interna*	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*

T90-8 XL - R=450 / 650 / 850

Ratio
Rapporto
1:1

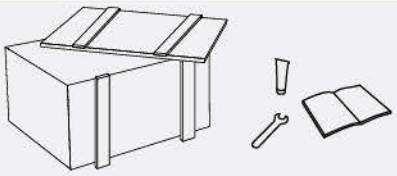
RPM
Velocità
3.000 min^{-1}

Max. axial load
Max. carico assiale
2.400 N

Torque
Momento torcente
100 Nm

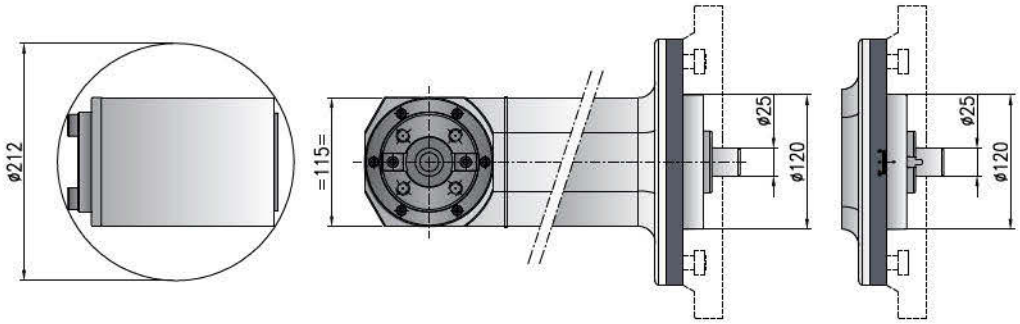
Collet
Pinza
ISO/BT 40

*** STANDARD EQUIPMENT INCLUDES:**

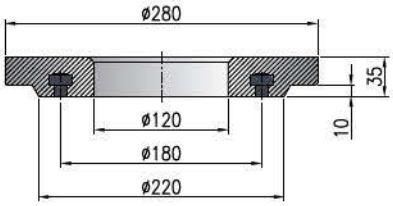


R= 450 / 650 R= 850

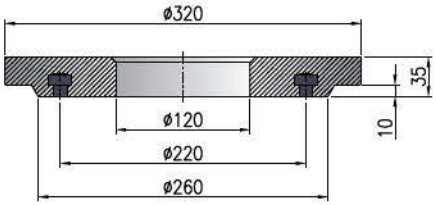
Minimum diameter without tool
Diametro minimo senza utensile



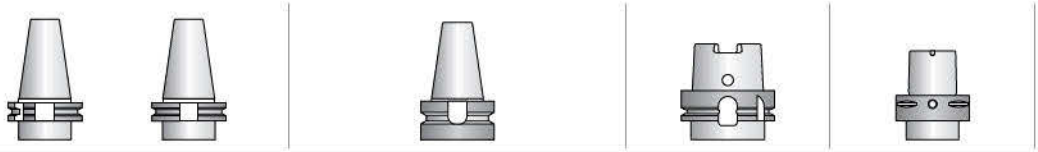
R= 450 / 650



R= 850



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



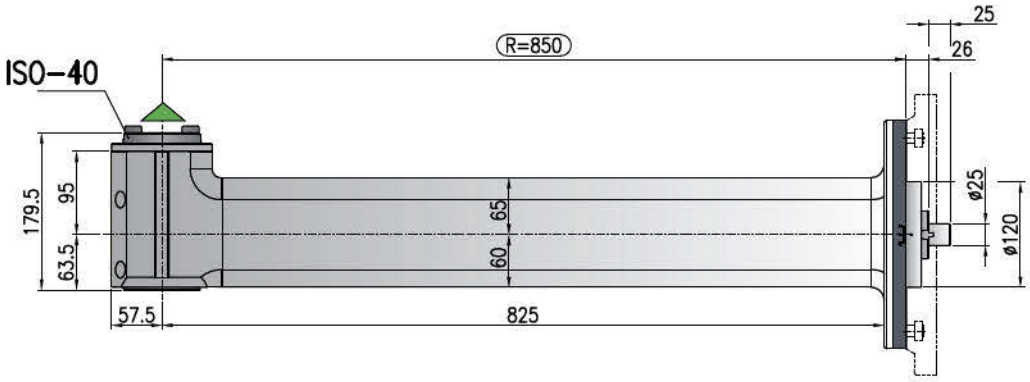
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

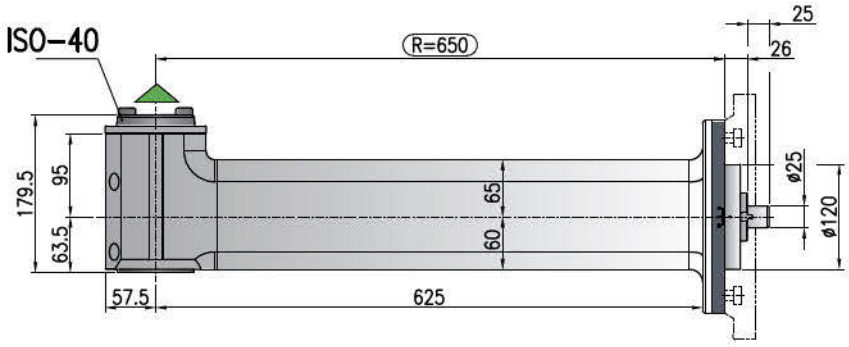
bar max		
12	HSK-63A CAPTO C4 C5	AIR/OIL
Coolant through spindle *Adduzione refrigerante interna*	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*

APT9080P.450 / APT9080S.650 / APT9080S.850

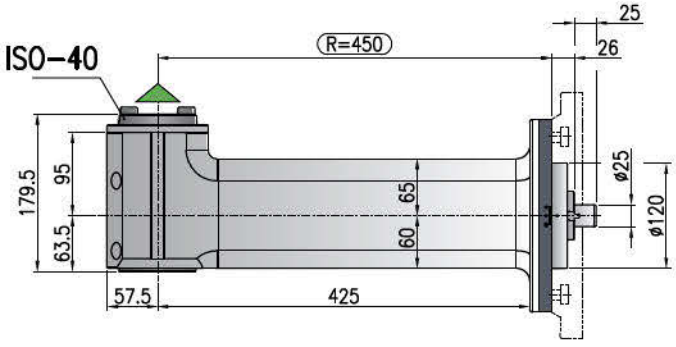
Weight
Peso
105 kg



Weight
Peso
75 kg



Weight
Peso
62 kg



TCU-8 R.I. 15 BAR

APTCU80C

Ratio
Rapporto
1:1

RPM
Velocità
3.000 min^{-1}

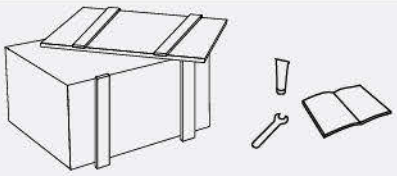
Max. axial load
Max. carico assiale
2.400 N

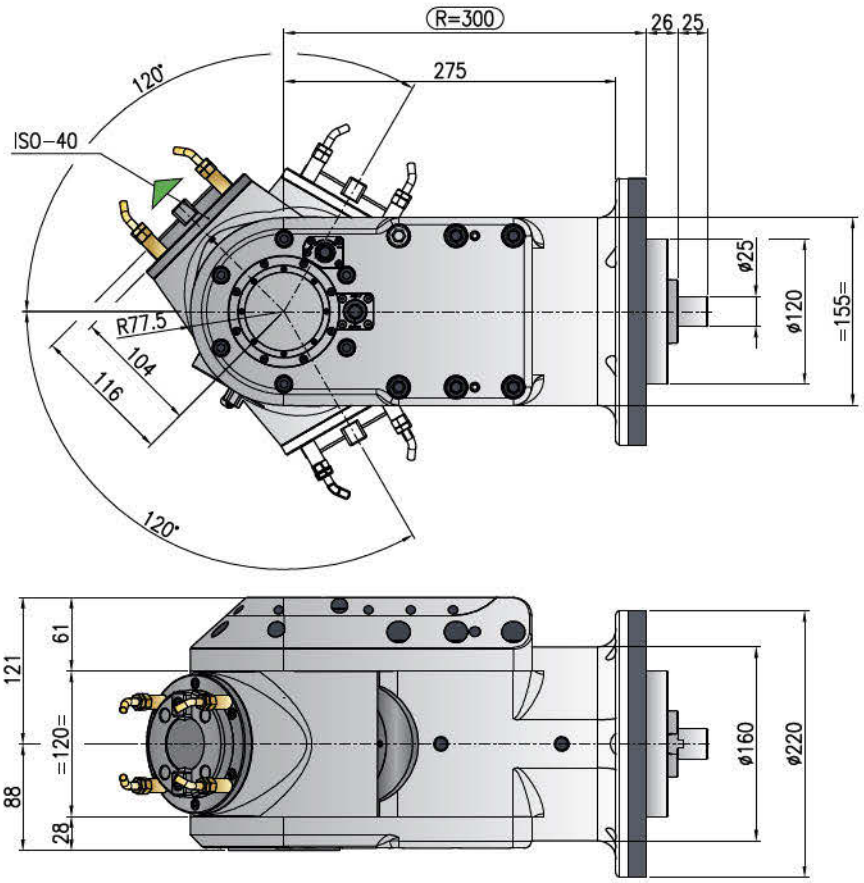
Torque
Momento torcente
100 Nm

Weight
Peso
72 kg

ISO/BT 40

*** STANDARD EQUIPMENT INCLUDES:**





Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

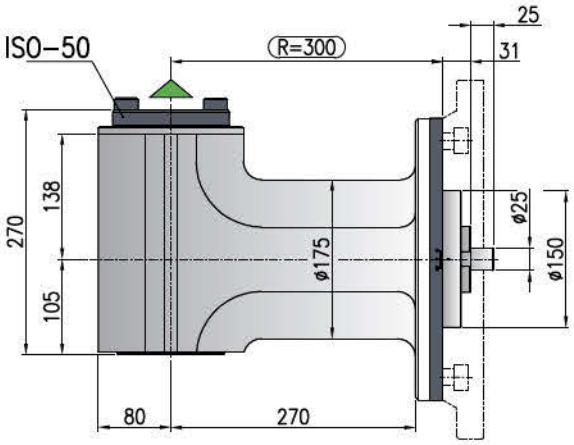
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

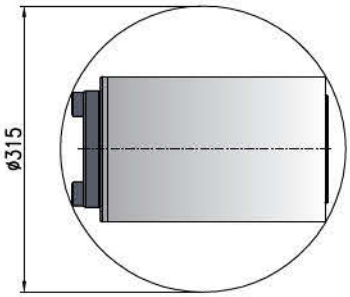
bar max	HSK-63	OIL
12		
Coolant through spindle *Adduzione refrigerante interna*	*Quick Change* *Attacco rapido*	*Oil lubrication* *Lubrificazione*

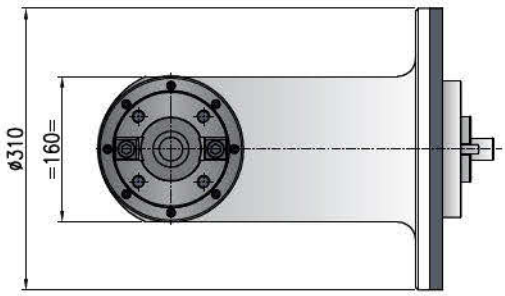
T90-10

APT9010C



Minimum diameter without tool
Diametro minimo senza utensile





Ratio
Rapporto
1:1

RPM
Velocità
3.000 min^{-1}

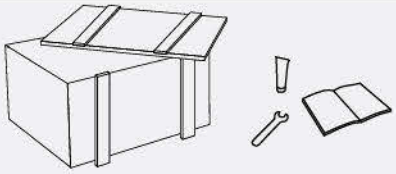
Max. axial load
Max. carico assiale
3.300 N

Torque
Momento torcente
250 Nm

Weight
Peso
77 kg

Collet
Pinza
ISO/BT 50

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max		
12	HSK-100	AIR/OIL
Coolant through spindle *Adduzione refrigerante interna*	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*

TDU-10

APTDU10C

Ratio
Rapporto
1:1

RPM
Velocità
3.000 min^{-1}

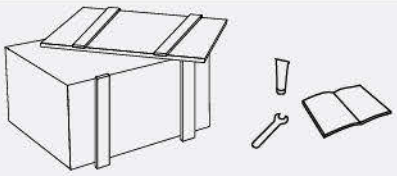
Max. axial load
Max. carico assiale
3.300 N

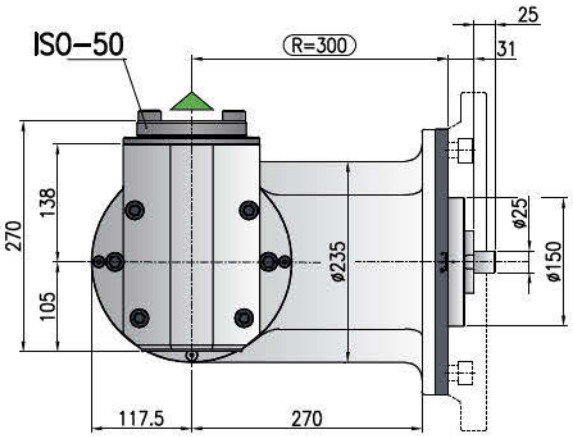
Torque
Momento torcente
250 Nm

Weight
Peso
121 kg

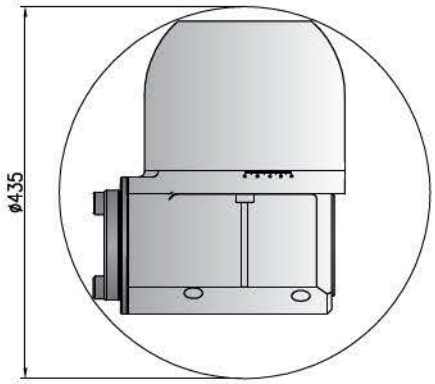
Collet
Pinza
ISO/BT 50

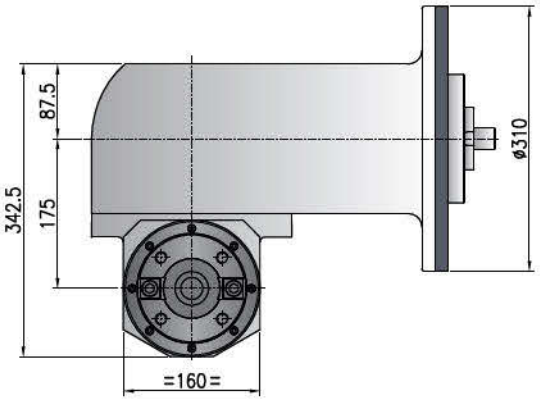
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Direction of rotation same as to machine spindle / *senso di rotazione uguale al mandrino*

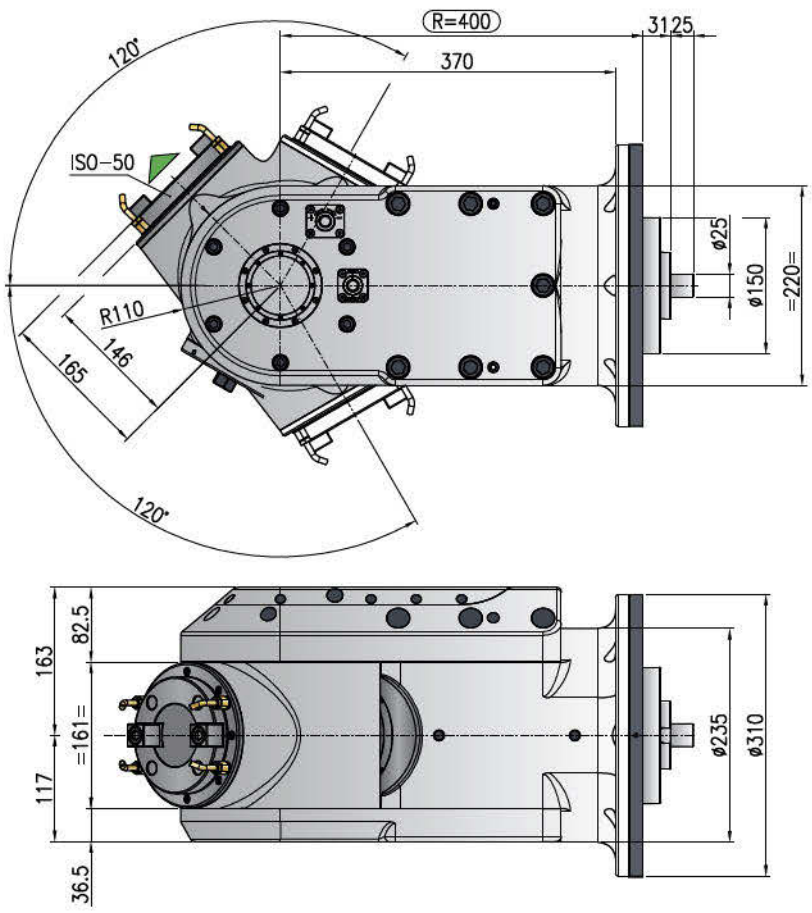
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	HSK-100	AIR/OIL
12		
Coolant through spindle *Adduzione refrigerante interna*	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*

TCU-10 R.I. 15 BAR

APTCU10C



Ratio
Rapporto
1:1

RPM
Velocità
3.000 min^{-1}

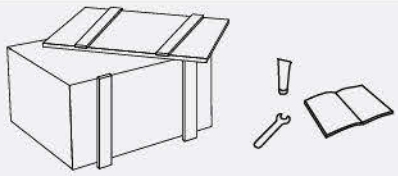
Max. axial load
Max. carico assiale
3.300 N

Torque
Momento torcente
250 Nm

Weight
Peso
194 kg

Collet
Pinza
ISO/BT 50

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max 12	HSK-100	OIL
Coolant through spindle *Adduzione refrigerante interna*	*Quick Change* *Attacco rapido*	*Oil lubrication* *Lubrificazione*

TR90-15

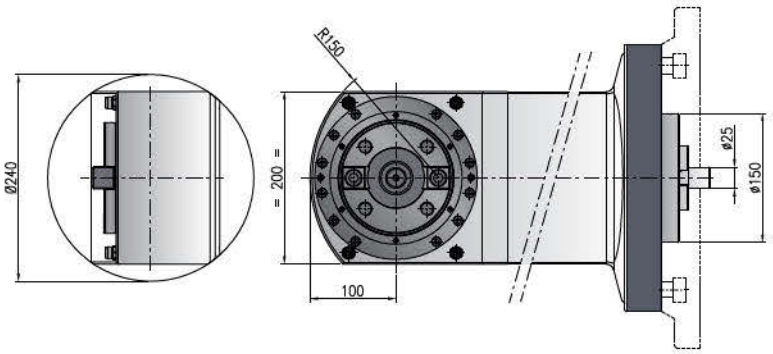
Ratio (riduzione)
Rapporto (reduction)
1.875:1

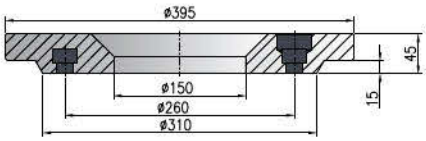
RPM
Velocità
2.500 min^{-1}

Max. axial load
Max. carico assiale
3.900 N

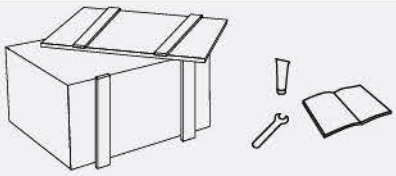
Torque
Momento torcente
600 Nm

Collet
Pinza
ISO/BT 50





*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

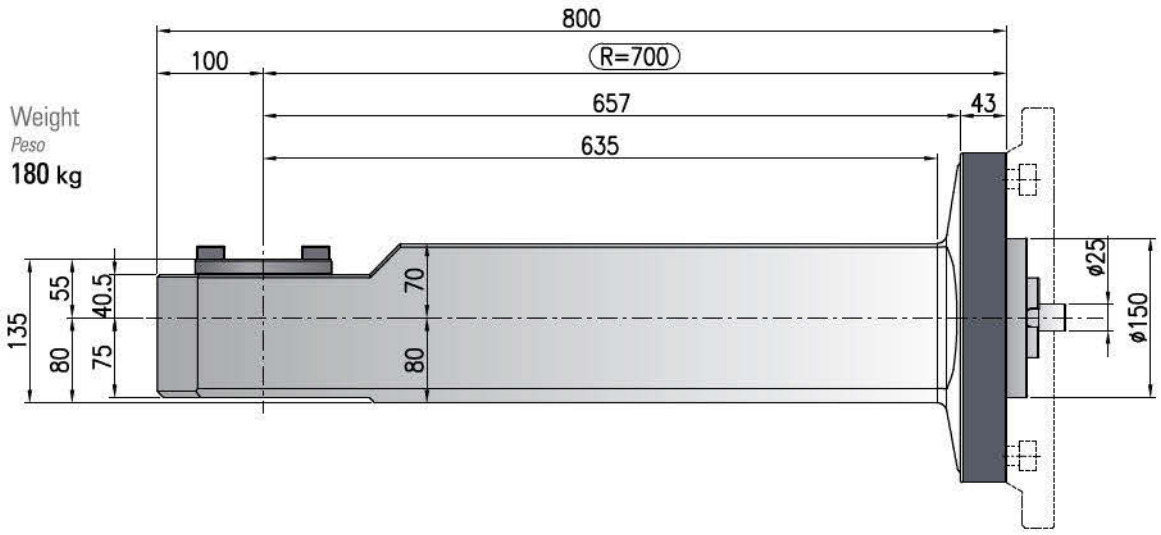
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

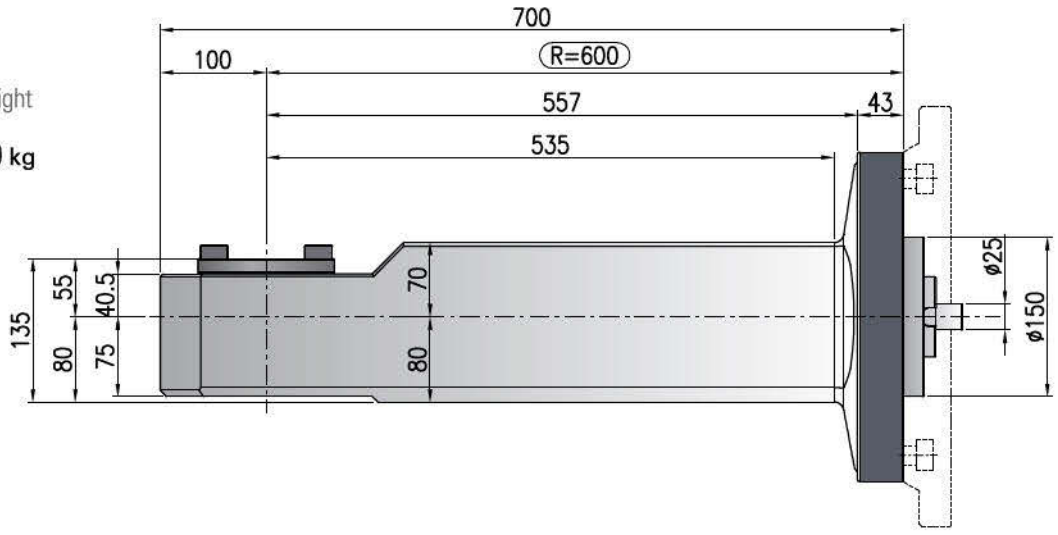
bar max		
12	HSK-63	AIR/OIL
Coolant through spindle *Adduzione refrigerante interna*	*Quick Change* *Attacco rapido*	*Air / oil lubrication* *Lubrificazione aria / olio*

APTTR9015C

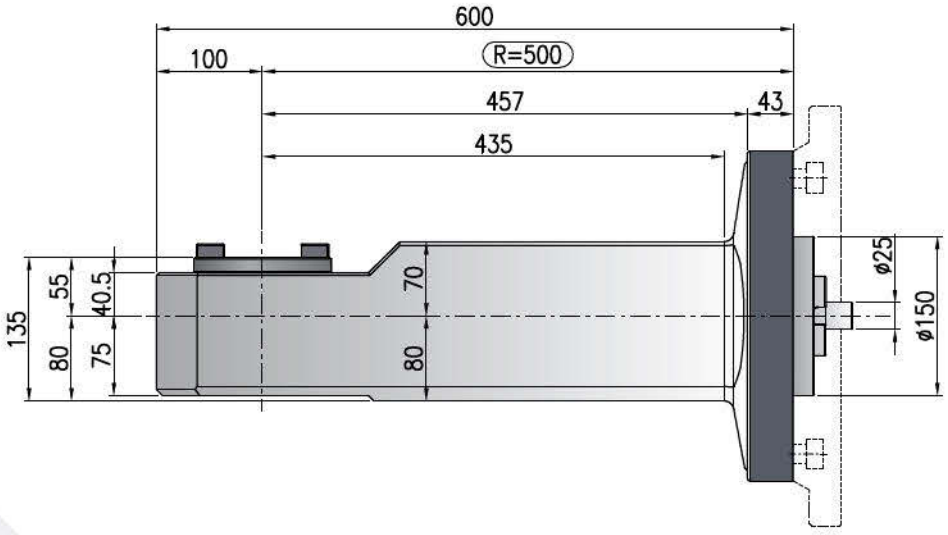
Weight
Peso
180 kg



Weight
Peso
140 kg



Weight
Peso
110 kg





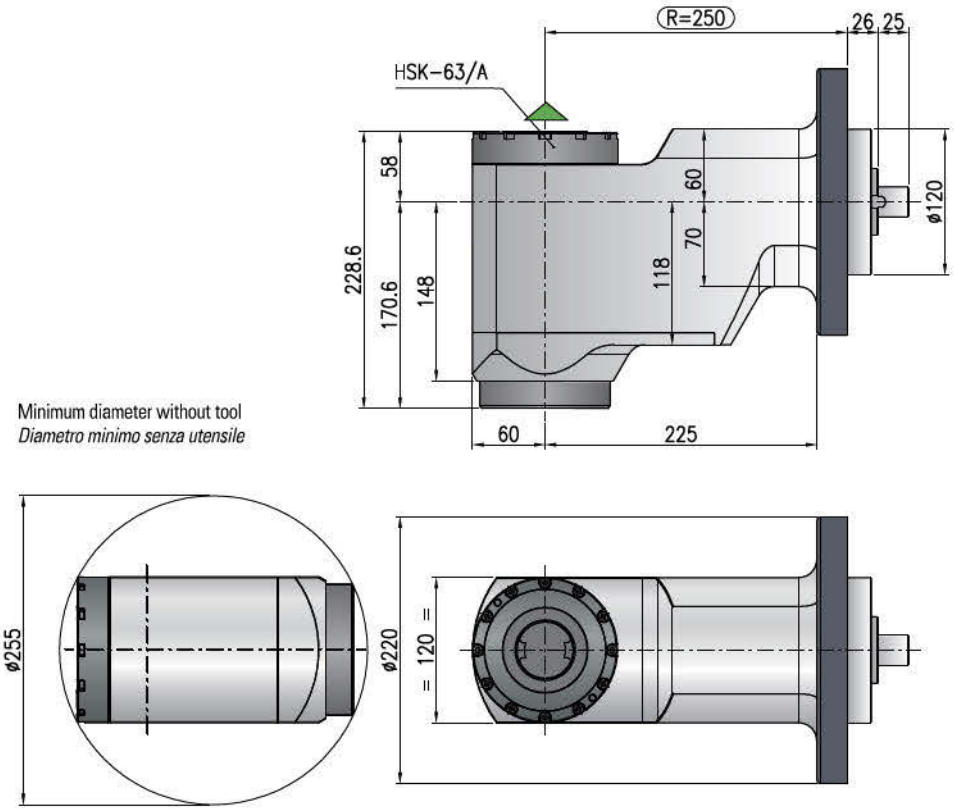
TESTE "AUTO" CON TIRANTE AUTOMATICO
"AUTO" ANGLE HEADS WITH AUTOMATIC CLAMPING TOOL

- Cono intercambiabile
  Interchangeable shank
- Flangia di interfaccia realizzata su misura con sistema indexaggio cono per ATC
  Customized connection flange including taper with indexing system for ATC
- Refrigerazione interna max. 70 bar
  Internal coolant max. 70 bar
- Refrigerazione esterna max 20 bar
  Low pressure external coolant max. 20 bar
- Refrigerazione esterna max 100 bar
  High pressure external coolant max 100 bar
- MQL max 10 bar
  MQL max 10 bar
- Pressurizzazione tenute
  Seal pressurization
- Aria pulizia cono
  Air for spindle cleaning
- Lubrificazione aria + olio
  Air + oil lubrication
- Aspirazione olio in eccesso
  Oil vacuum system
- Sensore di controllo cambio utensile
  Sensor to detect ATC
- *Pick up di stoccaggio unità su misura*
  Customized pick up station



TR90-8 AUTO

APTTR9080A



Ratio
Rapporto
1:1

Power
Potenza
25 kW

RPM
Velocità
3.000 min^{-1}

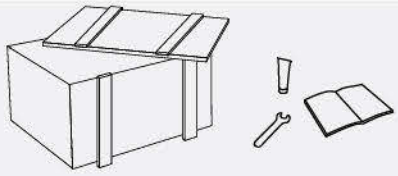
Max. axial load
Max. carico assiale
2.400 N

Torque
Momento torcente
200 Nm

Weight
Peso
55 kg

HSK/63A

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max **70**	*bar max* **100**	**AIR/OIL**
Coolant through spindle *Adduzione refrigerante interna*	*External coolant* *Adduzione refrigerante esterna*	*Air / oil lubrication* *Lubrificazione aria / olio*

TR90-15 AUTO

APTTR9015A

Ratio
Rapporto
1:1

Power
Potenza
25 kW

RPM
Velocità
2.500 min^{-1}

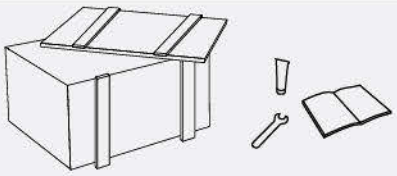
Max. axial load
Max. carico assiale
4.800 N

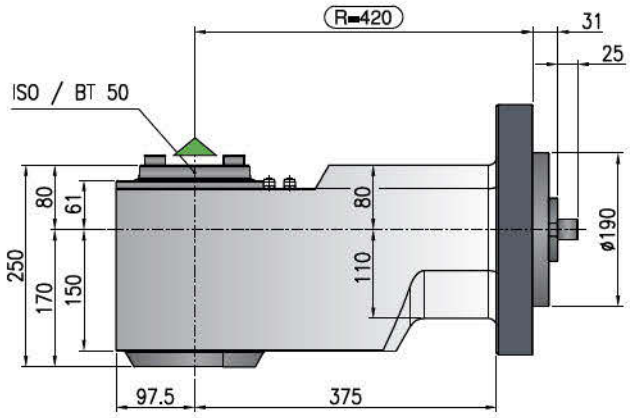
Torque
Momento torcente
600 Nm

Weight
Peso
180 kg

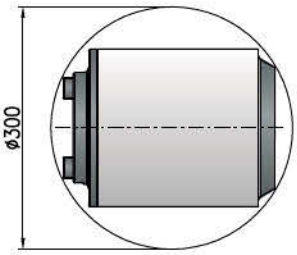
ISO/ BT50

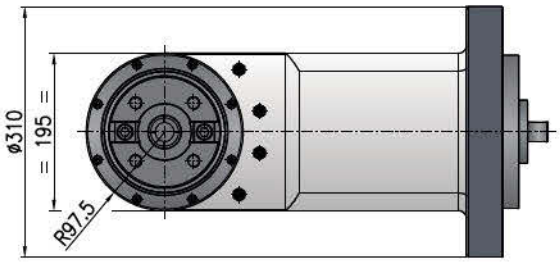
*** STANDARD EQUIPMENT INCLUDES:**





Minimum diameter without tool
Diametro minimo senza utensile





Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

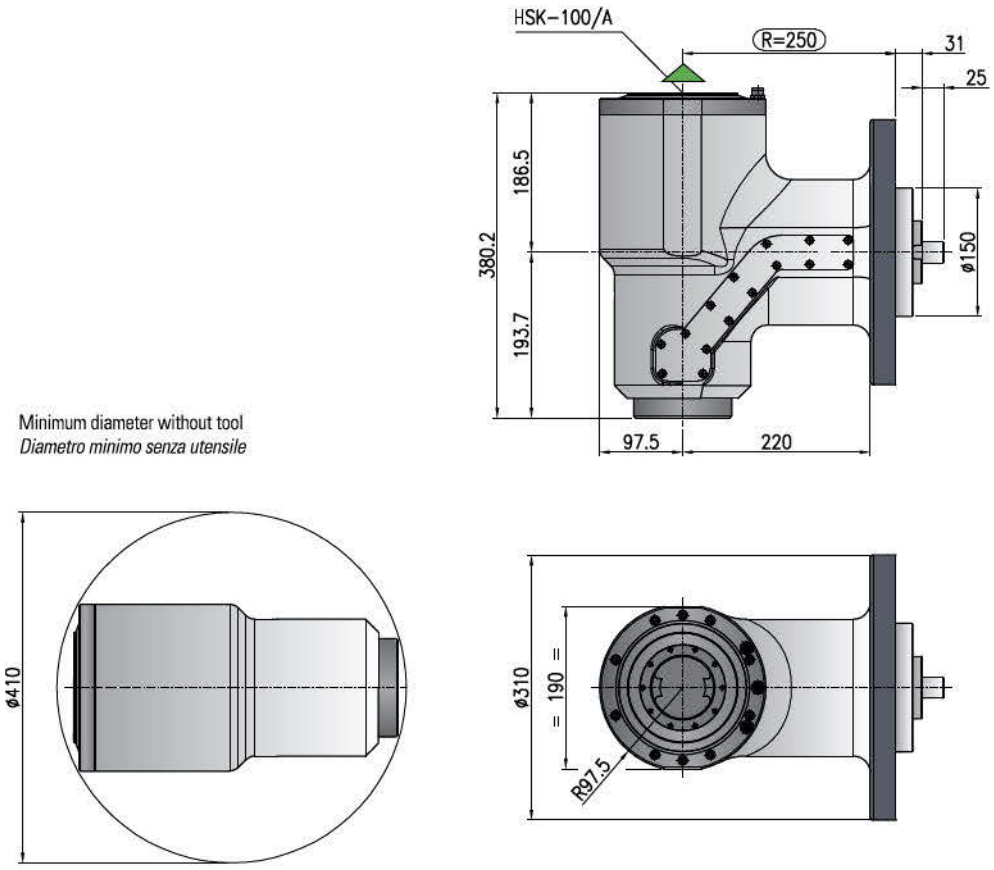
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	*bar max*	
70	100	AIR/OIL
Coolant through spindle *Adduzione refrigerante interna*	*External coolant* *Adduzione refrigerante esterna*	*Air / oil lubrication* *Lubrificazione aria / olio*

T90-15 AUTO

APT9015A



Minimum diameter without tool
Diametro minimo senza utensile

Ratio
Rapporto
1:1.5 (Reduction)

Power
Potenza
25 kW

RPM
Velocità
6.000 min^{-1}

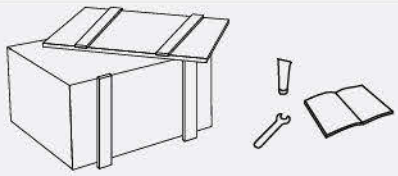
Max. axial load
Max. carico assiale
6.000 N

Torque
Momento torcente
600 Nm

Weight
Peso
100 kg

HSK/100A

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK	CAPTO	KM

Option / *Opzione*

bar max	bar max	AIR/OIL
70	100	
Coolant through spindle *Adduzione refrigerante interna*	*External coolant* *Adduzione refrigerante esterna*	*Air / oil lubrication* *Lubrificazione aria / olio*



LINEA HIGH SPEED
HIGH SPEED LINE

MOLTIPLICATORE
SPINDLE SPEEDER



MOLTIPLICATORE MECCANICO
MECHANICAL SPINDLE SPEEDER
Max 25.000 RPM



MOLTIPLICATORE AD ARIA
AIR DRIVEN SPEEDER
Max 60.000 RPM



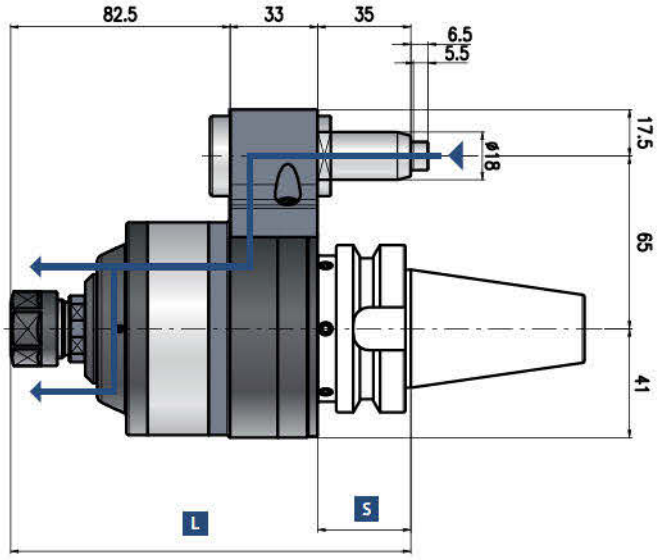
MOLTIPLICATORE ELETTRICO
ELECTROSPINDLE
Max 80.000 RPM

SLIMLINE

Rotazione tramite mandrino macchina
Rotation through machine spindle



MOLTIPLICATORE
SPEEDER





Ratio
Rapporto
1:5

RPM
Velocità.
25.000 min^{-1}

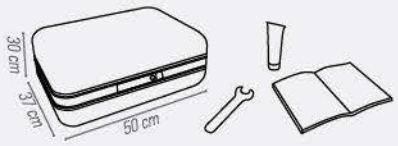
Max. axial load
Max. carico assiale
60 N

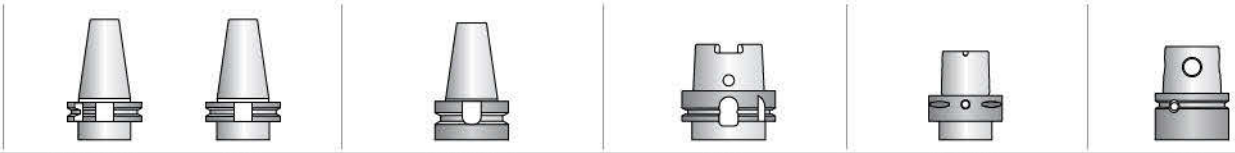
Torque
Momento torcente
4 Nm

Weight
Peso
4 kg

Collet
Pinza
ER-16 ø 1/10 mm

*** STANDARD EQUIPMENT INCLUDES:**





Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	40-50		40-50	63-80	100	C6	C8	63
I	80-100		80-100	80-100	80-100	80-100	80-100	80-100
S	35		41	42	45	38	40	40
L	150.5		156.5	157.5	160.5	153.5	155.5	155.5

*optional

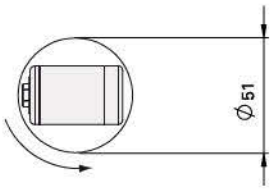
Non interchangeable input drive shank/ Coni di attacco non intercambiabili

ROTAZIONE CON MANDRINO MACCHINA - SLIMLINE
SPINDLE DRIVEN

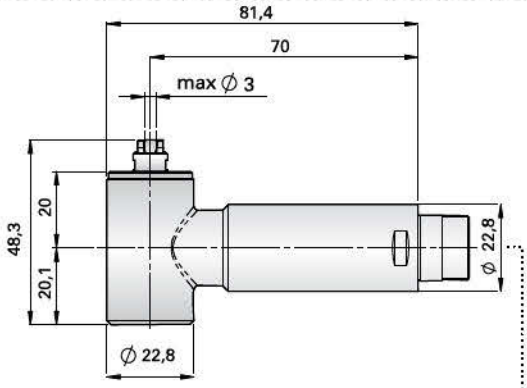
RA-100

Diameter without tool with RA-100
Diametro senza utensile con RA-100

RPM max. output
Max. Velocità output
5.620 rpm



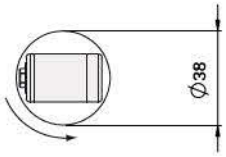
Technical Data / Dati Tecnici		**RA-100**
RPM max. input / Max. Velocità input		15.000
Rt. reduction / Rt. in riduzione		1/2,67
Weight / Peso	Kg	3,5



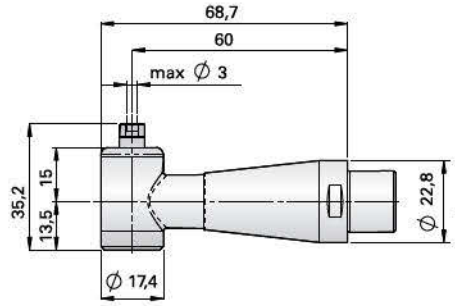
RA-200

Diameter without tool with RA-200
Diametro senza utensile con RA-200

RPM max. output
Max. Velocità output
10.000 rpm



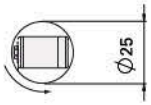
Technical Data / Dati Tecnici		**RA-200**
RPM max. input / Max. Velocità input		15.000
Rt. reduction / Rt. in riduzione		1/1,5
Weight / Peso	Kg	3,5



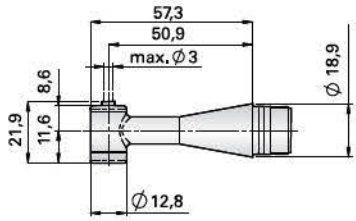
IC-300

Diameter without tool with IC-300
Diametro senza utensile con IC-300

RPM max. output
Max. Velocità output
11.250 rpm



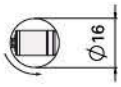
Technical Data / Dati Tecnici		**IC-300**
RPM max input. / Max. Velocità input		15.000
Rt. reduction / Rt. in riduzione		3/4
Weight / Peso	Kg	3



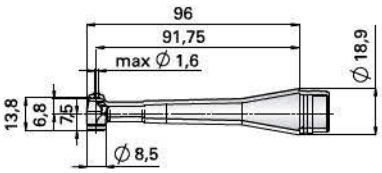
MFC-300 S

Diameter without tool with MFC-300
Diametro senza utensile con MFC-300

RPM max. output
Max. Velocità output
15.000 rpm



Technical Data / Dati Tecnici		**MFC-300**
RPM max input. / Max. Velocità input		15.000
Rt. reduction / Rt. in riduzione		1/1
Weight / Peso	Kg	3



Spindle Runout

Spindle accuracy *Precisione del Mandrino*	0,002 mm 0,00008 inch.

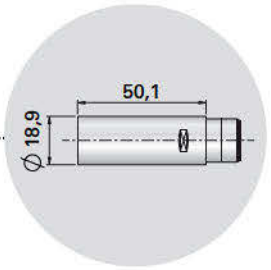
Coolant Option

It is possible to use external coolant during the machining.
Consentito usare refrigerante esterno durante la lavorazione.

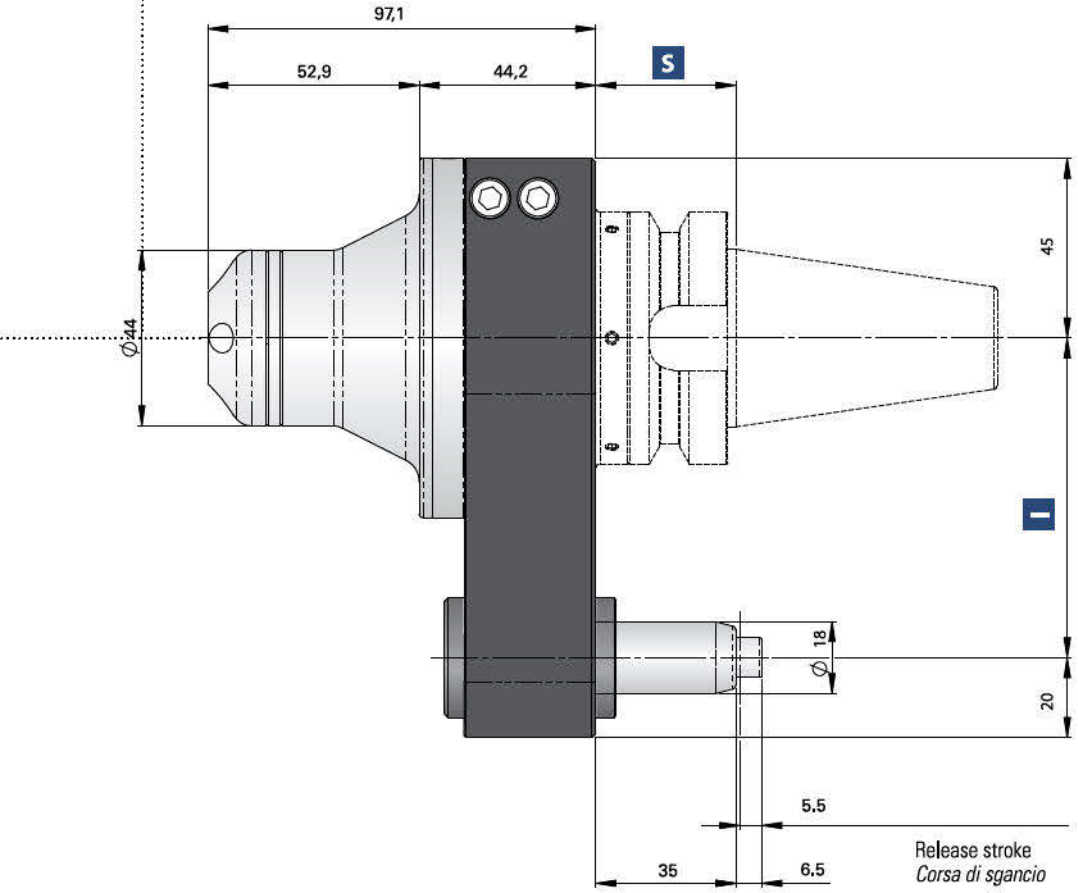
Collet

RA-100	mm	CH8: Ø3 mm every 0,1 mm Ø 3mm
RA-200	mm	CHS: Ø3mm, 2,35 every 1,6 and Ø2,35, Ø3,175
IC-300	mm	CHC: Ø3mm, Ø2,35mm, Ø1,6 mm, Ø2,00mm and Ø3,175 mm
MFC-300	mm	K252 Ø1,6mm

CN-01



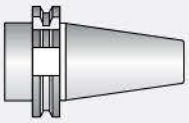
Extension between spindle and heads /
Prolunga da inserire tra il manipolo e la testa



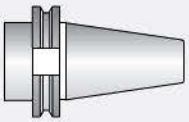
OPTIONAL DRIVE SHANK*

Non interchangeable input drive shank
Coni non intercambiabili

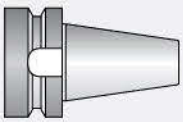
DIN-69871 ISO 40/50



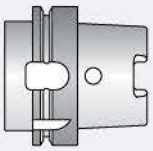
CAT 40/50



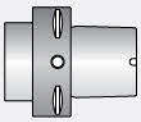
MAS-BT 40/50



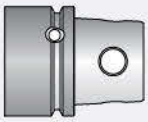
HSK 63/80/100



CAPTO C5/C6/C8



KM 50/63



Shank/*Cono*	DIN-69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/*Grandezza*	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-(110*)
S	35	35	35	41	42	45	38	40	40

*optional

Accessories / Accessori	RA-100	RA-200	IC-300	MFC-300
Retaining block / Tassello di ritegno	Ø18 mm	Ø18 mm	Ø18 mm	Ø18 mm
Extension / Prolunga	CN-01	CN-01	CN-01	CN-01

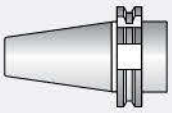
Retaining block / Tassello di ritegno / Stop-Block

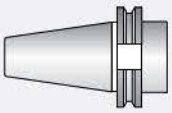


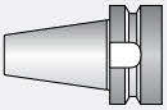
NOT INCLUDED
NON INCLUSO

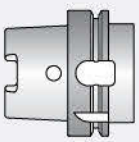
TESTE CON MOTORE AD ARIA
AIR DRIVEN ANGLE HEADS

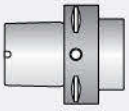
OPTIONAL DRIVE SHANK*
Non interchangeable input drive shank
Coni non intercambiabili


DIN-69871
ISO 40/50


CAT
40/50


MAS-BT
40/50


HSK
63/80/100


CAPTO
63/80/100

Air line kit / Filtro regolatore aria

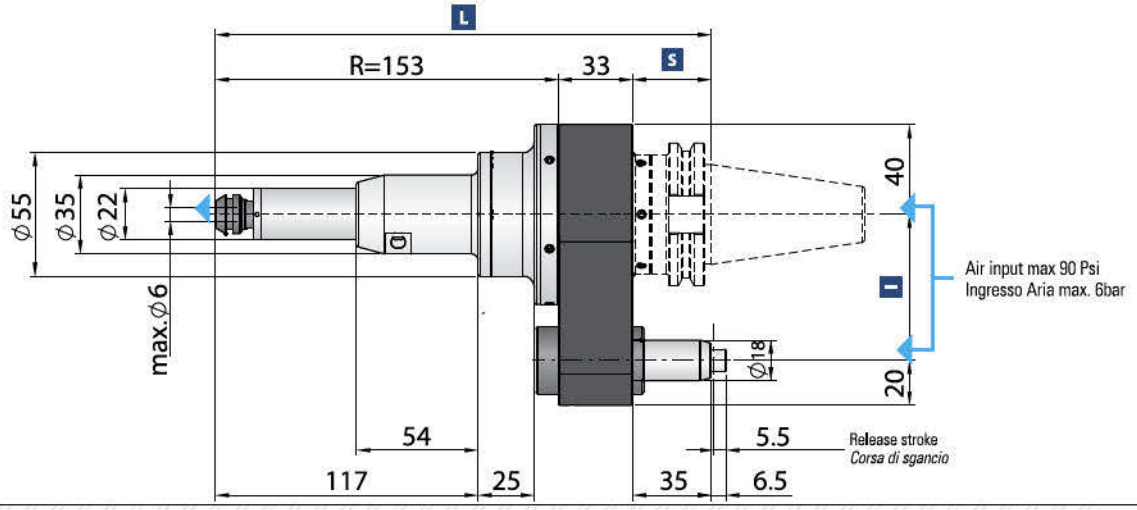


Retaining block /
Tassello di ritegno /
Stop-Block

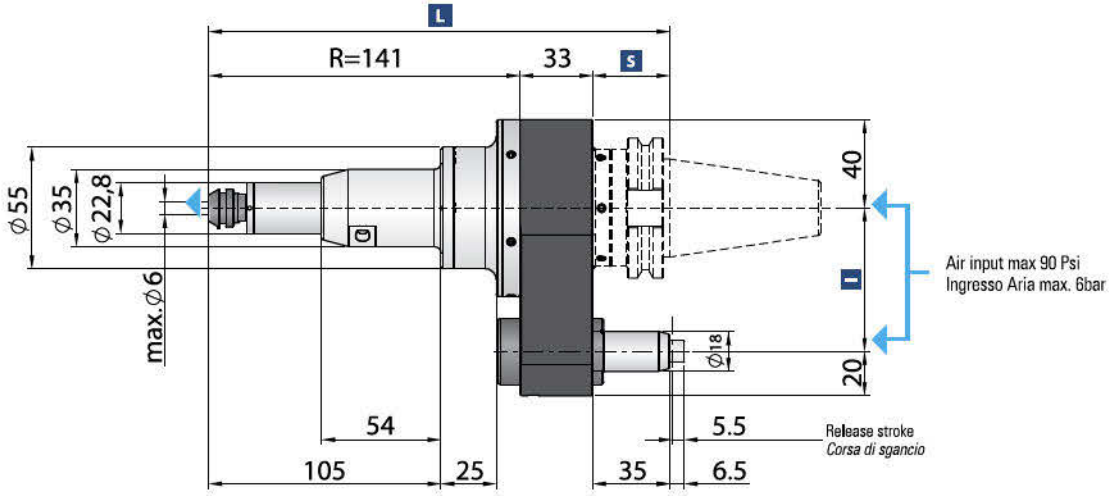


NOT INCLUDED
NON INCLUSO

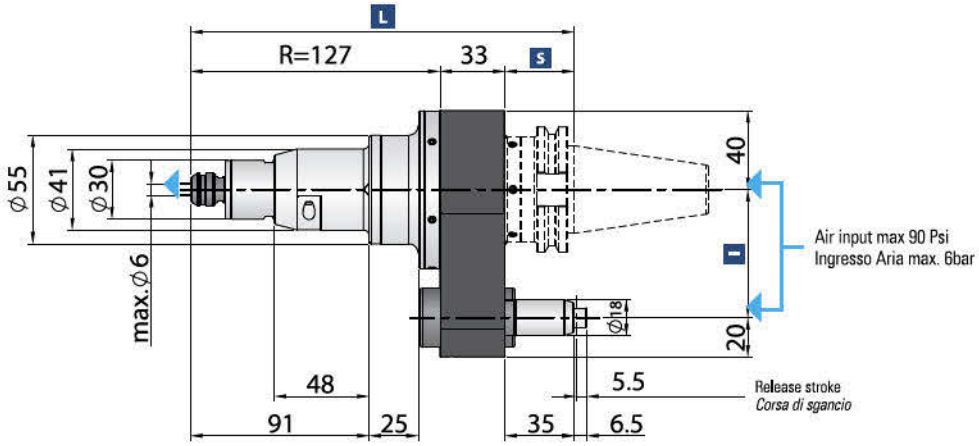
Turboflex 60.000 RPM



Turboflex 30.000 RPM



Turboflex 20.000 RPM



DATI TECNICI
TECHNICAL DATA

NR2351

Technical data / Dati tecnici		*NR-2351*
RPM max. / Max. Velocità	min^{-1}	60.000 ± 10%
Type motor / Tipo di motore		AM-600
Power / Potenza	W	76
Air pressure / Pressione aria	bar	max. 6 (max. 90 Psi)
Air consumption / Consumo aria	Nl/min	160
Weight / Peso	Kg	4

Disponibile anche senza flangia.
Also available without flange.



Shank/Cono	DIN 69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/Grandezza	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-110	80-110	65-80-110
S	35	35	35	41	42	42	38	40	40

**optional*

Collet
NR-2351
mm
CHK: ø 0,5 - max 6mm every 0,1

Coolant Option
Consentito usare refrigerante esterno durante la lavorazione.
It is possible to use external coolant during the machining.

Spindle Runout
Spindle accuracy / *Precisione del Mandrino* | 0,002 mm / 0,00008 inch.

È severamente vietato far ruotare il mandrino macchina causa danneggiamento della testa
It is strictly forbidden to rotate the machine spindle as it may cause damage to the head

NR303

Technical data / Dati tecnici		*NR-303*
RPM max. / Max. Velocità	min^{-1}	30.000 ± 10%
Type motor / Tipo di motore		AM-310
Power / Potenza	W	108
Air pressure / Pressione aria	bar	max. 6 (max. 90 Psi)
Air consumption / Consumo aria	Nl/min	226
Weight / Peso	Kg	4

Disponibile anche senza flangia.
Also available without flange.



Shank/Cono	DIN 69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/Grandezza	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-110	80-110	65-80-110
S	35	35	35	41	42	42	38	40	40

**optional*

Collet
NR-303
mm
CHK: ø 0,5 - max 6mm every 0,1

Coolant Option
Consentito usare refrigerante esterno durante la lavorazione.
It is possible to use external coolant during the machining.

Spindle Runout
Spindle accuracy / *Precisione del Mandrino* | 0,002 mm / 0,00008 inch.

È severamente vietato far ruotare il mandrino macchina causa danneggiamento della testa
It is strictly forbidden to rotate the machine spindle as it may cause damage to the head

NR3060

Technical data / Dati tecnici		*NR-3060*
RPM max. / Max. Velocità	min^{-1}	18.000 ± 10%
Type motor / Tipo di motore		AM-3020
Power / Potenza	W	125
Air pressure / Pressione aria	bar	max. 6 (max. 90 Psi)
Air consumption / Consumo aria	Nl/min	178
Output RPM / N° Giri in uscita		18.000
Rt. reduction / Rt. in riduzione		1/1
Weight / Peso	Kg	4

Disponibile anche senza flangia.
Also available without flange.



Shank/Cono	DIN 69871	CAT	MAS-BT		HSK		CAPTO		KM
Size/Grandezza	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-110	80-110	65-80-110
S	35	35	35	41	42	42	38	40	40

**optional*

Collet
NR-3060
mm
CHK: ø 0,8 - max 6mm every 0,1

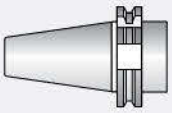
Coolant Option
Consentito usare refrigerante esterno durante la lavorazione.
It is possible to use external coolant during the machining.

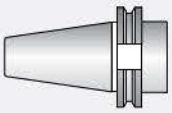
Spindle Runout
Spindle accuracy / *Precisione del Mandrino* | 0,002 mm / 0,00008 inch.

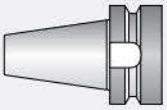
È severamente vietato far ruotare il mandrino macchina causa danneggiamento della testa
It is strictly forbidden to rotate the machine spindle as it may cause damage to the head

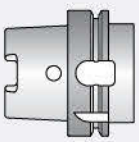
TESTE CON MOTORE AD ARIA
AIR DRIVEN ANGLE HEADS

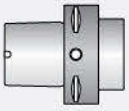
OPTIONAL DRIVE SHANK*
Non interchangeable input drive shank
Coni non intercambiabili


DIN-69871
ISO 40/50


CAT
40/50


MAS-BT
40/50


HSK
63/80/100


CAPTO
63/80/100

Air line kit / Filtro regolatore aria



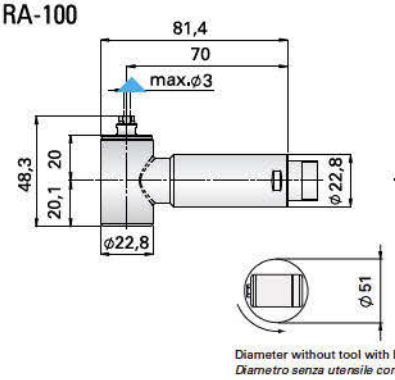
Retaining block /
Tassello di ritegno /
Stop-Block



NOT INCLUDED
NON INCLUSO

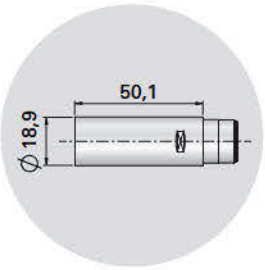
Turboflex 30.000 RPM

RA-100

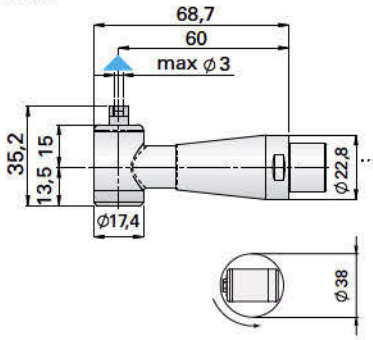


Diameter without tool with RA-100
Diametro senza utensile con RA-100

CN-01

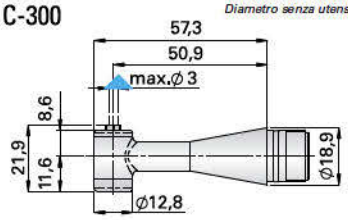


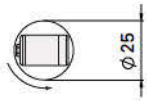
RA-200



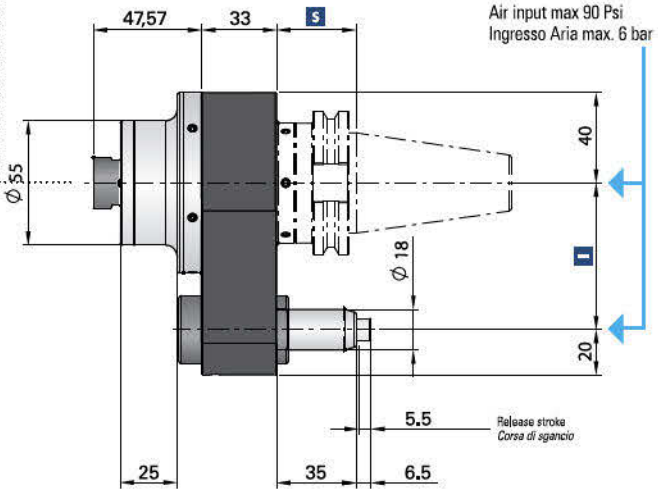
Diameter without tool with RA-200
Diametro senza utensile con RA-200

IC-300

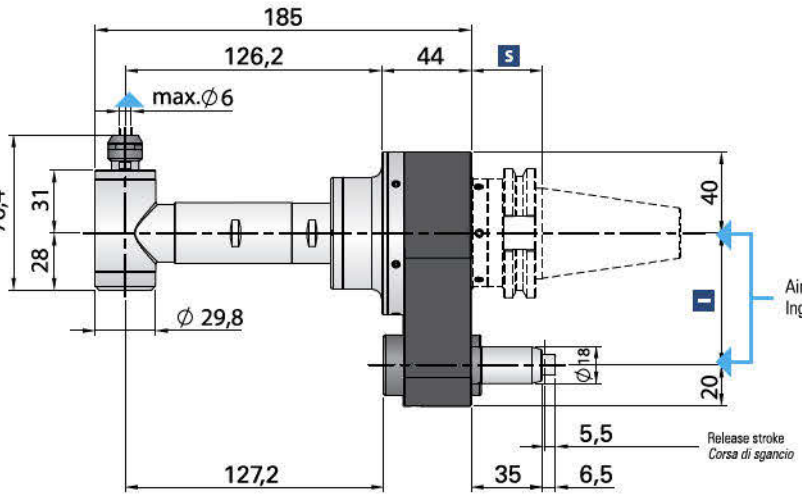




Diameter without tool with IC-300
Diametro senza utensile con IC-300



Turboflex 20.000 RPM



Possibilità di prolunga h = 35mm
Possibility for extension spaces h = 35mm

Air input max 90 Psi
Ingresso Aria max. 6 bar

DATI TECNICI
TECHNICAL DATA

Technical Data / Dati Tecnici		RA-100	RA-200	IC-300
RPM max. / Max. Velocità	min $^{-1}$	30.000 ± 10%	30.000 ± 10%	30.000 ± 10%
Type motor / Tipo di motore		AM-310	AM-310	AM-310
Power / Potenza	W	108	108	108
Air pressure / Pressione aria	bar	max. 6 (max. 90 Psi)	max. 6 (max. 90 Psi)	max. 6 (max. 90 Psi)
Air consumpion / Consumo aria	Nl/min	226	226	226
Output RPM / N° Giri in uscita	min $^{-1}$	11.230 ± 10%	20.000 ± 10%	22.000 ± 10%
Rt. reduction / Rt. in riduzione		1/2,67	1/1,5	3/4
Weight / Peso	Kg	4	4	4

Collet
RA-100 | mm | CH8: Ø0,8 Ø3 every 0,1 and Ø2,35 - Ø3,175 **RA-200** | mm | CHS: Ø0,8 Ø3 every 0,1 and Ø2,35 - Ø3,175 **IC-300** | mm | CH8: Ø0,8 Ø3 every 0,1 and Ø2,35 - Ø3,175

Spindle Runout
Spindle accuracy *Precisione del Mandrino* | 0,002 mm 0,00008 inch.

Coolant Option
Consentito usare refrigerante esterno durante la lavorazione.
It is possible to use external coolant during the machining.

È severamente vietato far ruotare il mandrino macchina causa danneggiamento della testa
It is strictly forbidden to rotate the machine spindle as it may cause damage to the head

Shank / Cono	DIN 69871	CAT	MAS-BT		HSK		CAPTO		KM
Size / Grandezza	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-110	80-110	65-80-110
S	35	35	35	41	42	42	38	40	40

**optional*

Disponibile anche senza flangia.
Also available without flange.



Technical Data / Dati Tecnici		RAX-271E
RPM max. / Max. Velocità	min $^{-1}$	18.000 ± 10%
Type motor / Tipo di motore		AM-3020
Power / Potenza / Leistung	W	125
Air pressure / Pressione aria	bar	max. 6 (max. 90 Psi)
Air consumpion / Consumo aria	Nl/min	178
Output RPM / N° Giri in uscita	min $^{-1}$	12.000
Rt. reduction / Rt. in riduzione		1/1,5
Weight / Peso	Kg	4

RAX-271 | mm | CHK: Ø 0,5 max 6mm every 0,1

Spindle Runout
Spindle accuracy *Precisione del Mandrino* | 0,002 mm 0,00008 inch.

Coolant Option
Consentito usare refrigerante esterno durante la lavorazione.
It is possible to use external coolant during the machining.

È severamente vietato far ruotare il mandrino macchina causa danneggiamento della testa
It is strictly forbidden to rotate the machine spindle as it may cause damage to the head

Shank / Cono	DIN 69871	CAT	MAS-BT		HSK		CAPTO		KM
Size / Grandezza	40	50	40	50	63-80	100	C5-C6	C8	50-63
I	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-(110*)	80-110	65-80-110	80-110	65-80-110
S	35	35	35	41	42	45	38	40	40

**optional*

TURBOFLEX CON FLANGIA INDEXATA
TURBOFLEX WITH INDEXING SYSTEM

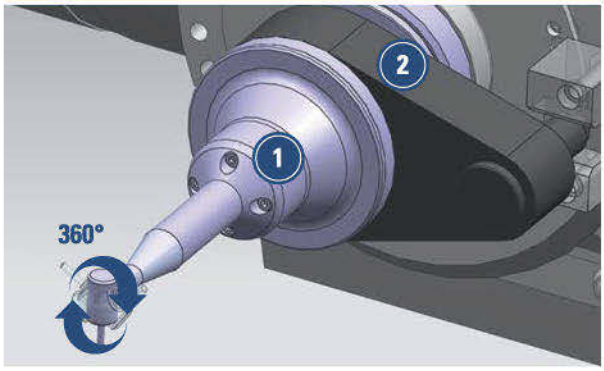
The cutting tool can be positioned over 360 degrees thanks to the indexing of the C axis of the machine while the rotation is given by the air motor mounted inside the head.

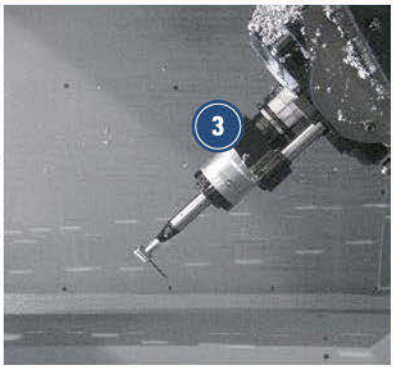
Il mandrino può essere posizionato su 360° grazie all'indexaggio dell'asse C della macchina, mentre la rotazione è assicurata dalla presenza del motore ad aria.

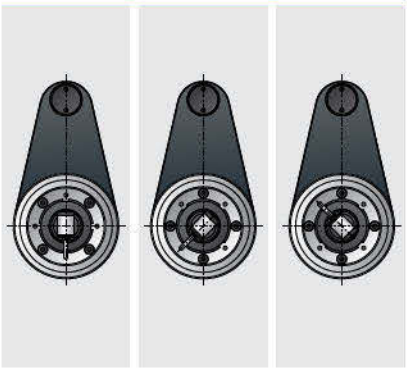
1. *This portion rotates.*
   Questa parte ruota.
2. *This portion remains fixed.*
   Questa parte resta ferma.
3. *Air input from the machine spindle gives the rotation to the motor inside of the body.*
   L'aria garantisce la rotazione del motore nel corpo.

The indexing system allows to self-position the tool without additional positioning.

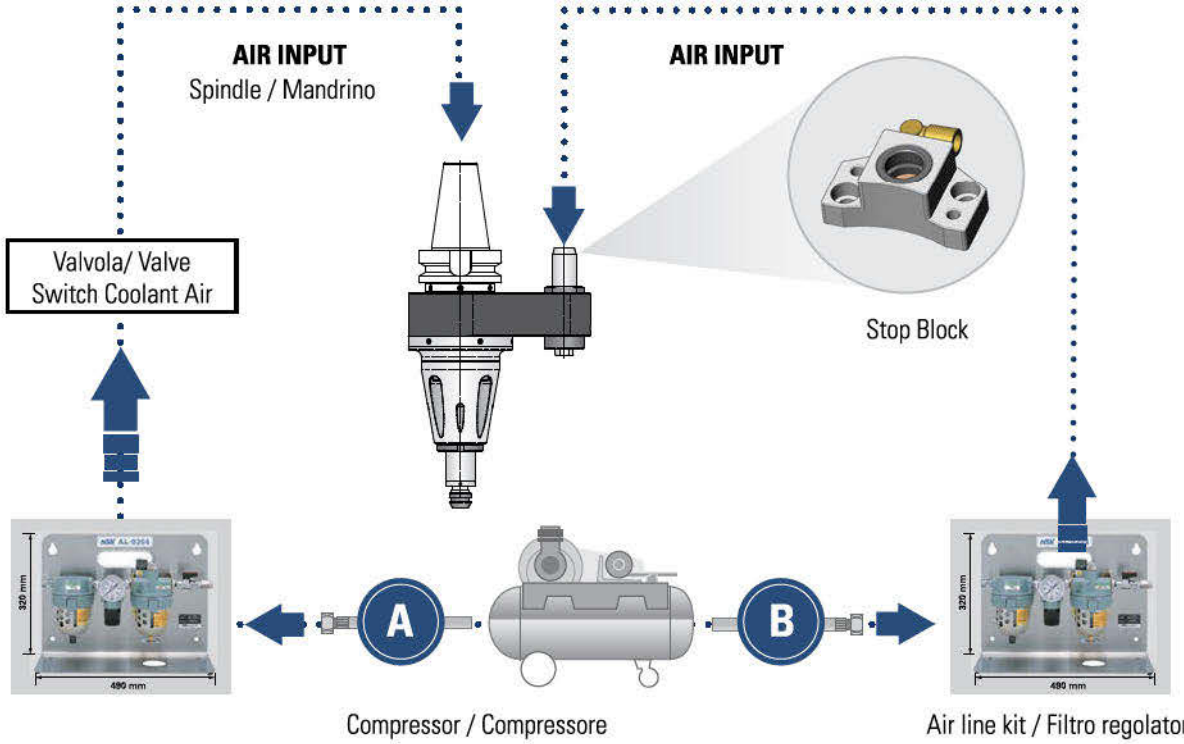
Il sistema di indexaggio permette il posizionamento del mandrino su 360°.







COME FUNZIONA TURBOFLEX
HOW IT WORKS



It is strictly forbidden to rotate the machine spindle as it may cause damage to the head
È severamente vietato far ruotare il mandrino macchina causa danneggiamento della testa



LINEA HIGH-SPEED - LEONARDO SYSTEM

Leonardo è un elettromandrino con cambio utensile automatico che viene montato sul mandrino macchina tramite Stop Block – da cui prende l'alimentazione – per poi essere scambiato automaticamente nel magazzino utensile. I grossi vantaggi sono la possibilità di regolare la velocità fino a 60.000RPM, l'integrazione completa con la macchina.

Leonardo System is an electrospindle with automatic tool change suitable to be mounted on the machine spindle with a Stop Block connected to the controller unit and power supply. Leonardo can be easily exchanged by the toolchanger and the main advantages are the possibility to adjust the RPM up to 60.000RPM and the interface with the machine.



Velocità fino a
80.000 RPM regolabile

Adjustable speed
up to 80.000RPM

Tassello con contatti elettrici completamente protetti da trucioli – Inclusi 10 mt di cavo

Stop Block with electric contacts completely protected from chips 10 mt cable included

Completamente integrato alla macchina utensile tramite codici M

Completely integrated with the machine tool with M code

Centralina Nakanishi con regolazione di giri e sensore per arresto mandrino

Nakanishi controller unit with adjustable RPM and sensor to stop machine spindle

ELETTROMANDRINO "LEONARDO" SYSTEM
ELECTROSPINDLE "LEONARDO" SYSTEM

ATC 40

Power
Potenza
350 Watt

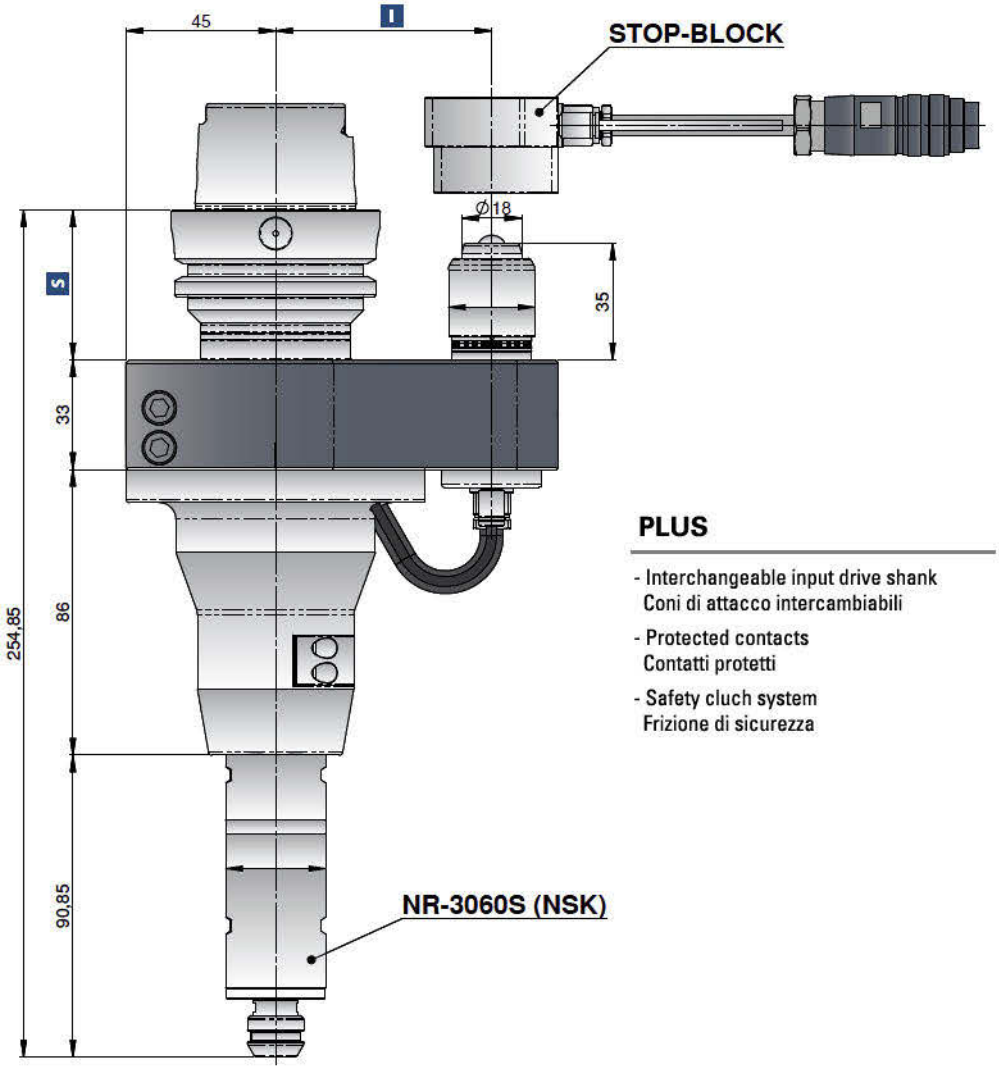
RPM
Velocità
60.000/80.000 min^{-1}

Weight
Peso
4,8 kg

Collet
Pinza
6 mm CHK
ø0,8- ø6 mm

Spindle accuracy
Precisione
0,002 mm

Controller unit
Centralina
ISPEED5



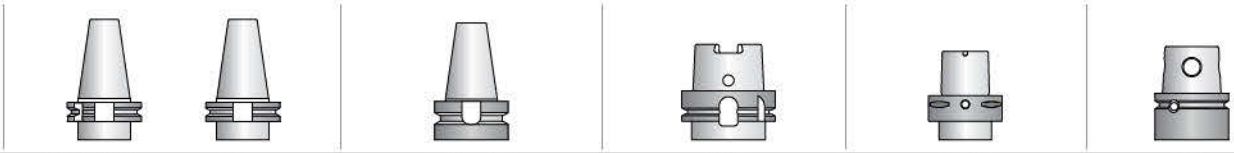
PLUS

- Interchangeable input drive shank
  Coni di attacco intercambiabili
- Protected contacts
  Contatti protetti
- Safety cluch system
  Frizione di sicurezza

*** STANDARD EQUIPMENT INCLUDES:**



It is strictly forbidden to rotate the machine spindle as it may cause damage to the head
È severamente vietato far ruotare il mandrino macchina causa danneggiamento della testa



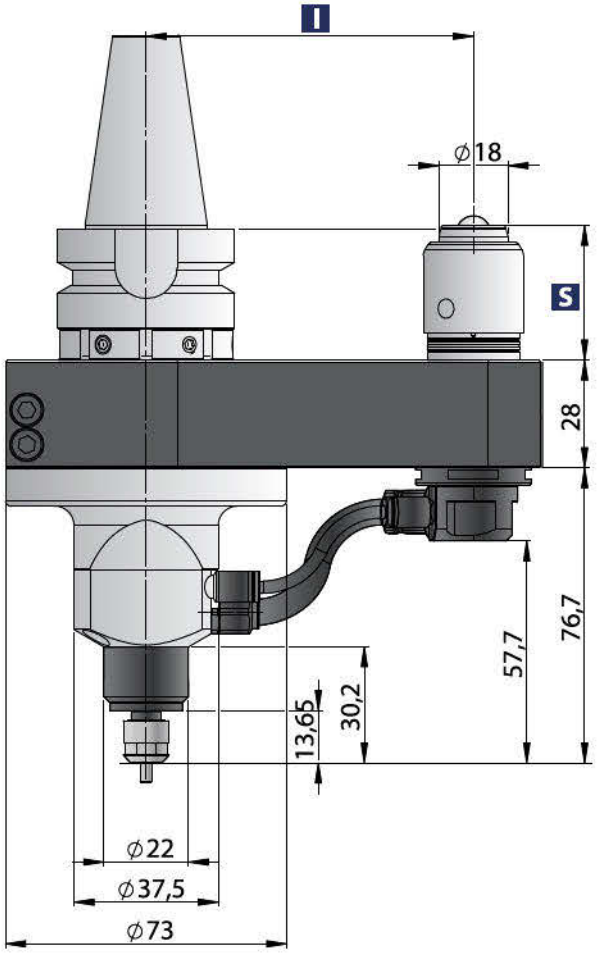
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-100		80-100	80-100	80-100	80-100	80-100	80-100
S	35		42	42	45	38	40	40
L	160		166	167	170	163	165	165

*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

ELETTROMANDRINO "LEONARDO" SYSTEM
ELECTROSPINDLE "LEONARDO" SYSTEM

ATC 30



PLUS

- Interchangeable input drive shank
  Coni di attacco intercambiabili
- Protected contacts
  Contatti protetti
- Safety cluch system
  Frizione di sicurezza

Power
Potenza
130 Watt

RPM up to
Velocità fino a
60.000/80.000 min⁻¹

Weight
Peso
3 kg

Collet
Pinza
4 mm CHA
ø0,8 - ø4 mm

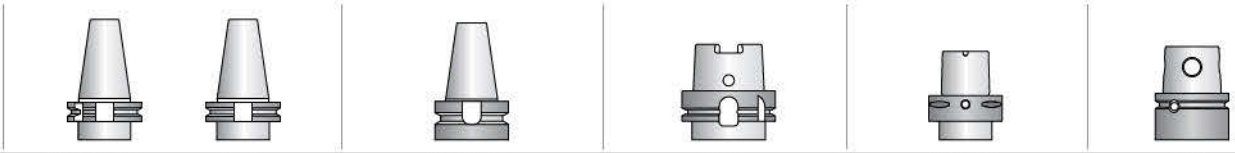
Spindle accuracy
Precisione
1 µ

Controller unit
Centralina
ISPEED3

*** STANDARD EQUIPMENT INCLUDES:**



It is strictly forbidden to rotate the machine spindle as it may cause damage to the head
È severamente vietato far ruotare il mandrino macchina causa danneggiamento della testa



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-100		80-100	80-100	80-100	80-100	80-100	80-100
S	35		42	42	45	38	40	40
L	160		166	167	170	163	165	165

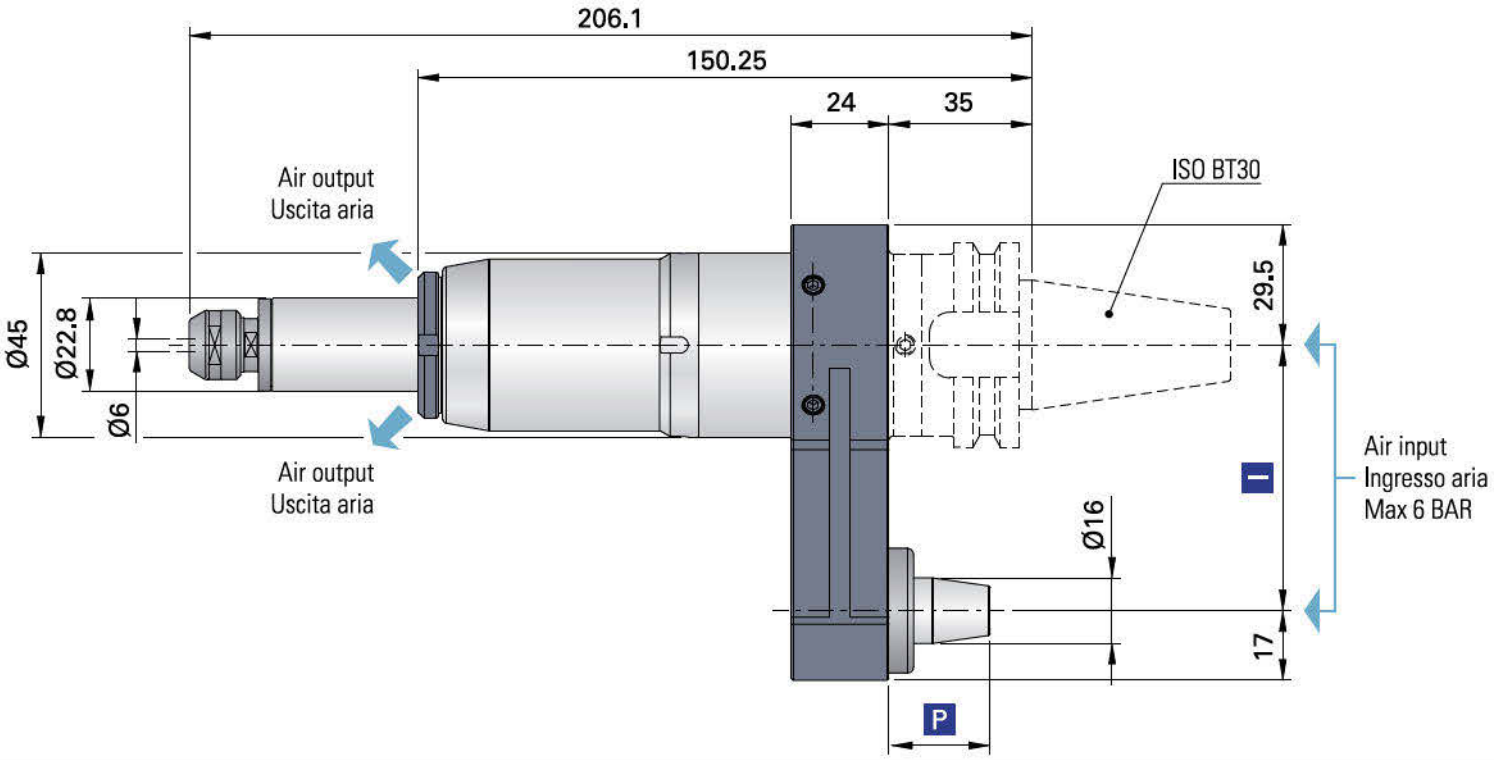
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

TURBODRILL NR-2351

Driven through air motor / Azionamento con motore ad aria

Machine spindle must not rotate
Il mandrino macchina non deve assolutamente girare



Possibility of order TURBODRILL without flange and pin with air through spindle
Possibilità di avere TURBODRILL senza flangia e perno con presa aria

Per other applications with air motor with ISO/BT 40-50 please refer to Slimline Catalogue
Per le soluzioni ad aria con coni ISO/BT 40-50 fare riferimento al catalogo Slimline

Air line kit / Filtro regolatore aria



STANDARD EQUIPMENT INCLUDES:

- NAKANISHI Kit / Angle head / Collet Ø 3 mm / Wrenches / Instruction book / Case
- Testa / Manipolo NAKANISHI / Pinza Ø 3 mm / Chiavi di servizio / Libro istruzioni / Bauletto

Performance / *Prestazioni*

Technical Data / Dati Tecnici		
RPM max. / *Max. Velocità*	min -1	58.000
Type motor / *Tipo di motore*		AM-600
Type spindle / *Tipo di manipolo*		NR-2351
Power / *Potenza*	W	76
Air pressure / *Pressione Aria*	Bar	max. 6 (max. 90 Psi)
Air consumption / *consumo d'aria*	Nl/min	160
Weight / *Peso*	Kg	2

CHK Ø 0,5 - max 6mm
every/ogni 0,1 mm
Collet
Pinza

Coolant option
Refrigerante opzional
It is possible to use coolant external during the machining.
Consentito usare refrigerante esterno durante la lavorazione.

STOP BLOCK

PER MACCHINE BT-30
FOR BT-30 MACHINES

FANUC ROBODRILL





59516006

I	65
P	24

BROTHER S2D





59516003

I	80
P	24

BROTHER TC-32





59516008

I	80
P	30

BROTHER R450X1





59516009

I	50
P	24

BROTHER S500 S700 S1000





59516010

I	80
P	25,75

DMG MORI MILLTAP 700

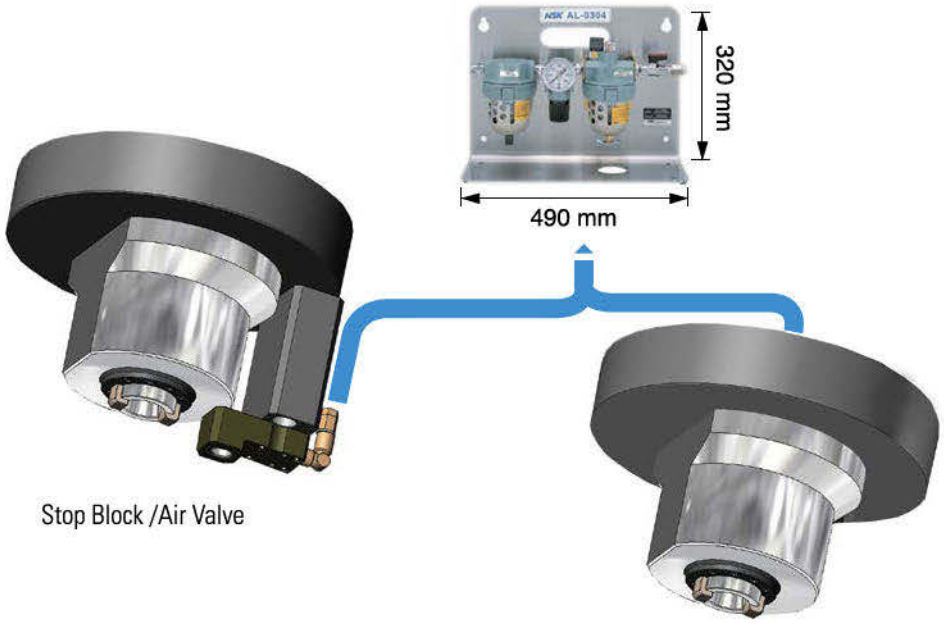




59516007

I	65
P	24

AIR LINE KIT For Turbodrill only ref. pag.6 / Solo per Turbodrill, rif. Pag 6






RA-100
0H502761


Alberti





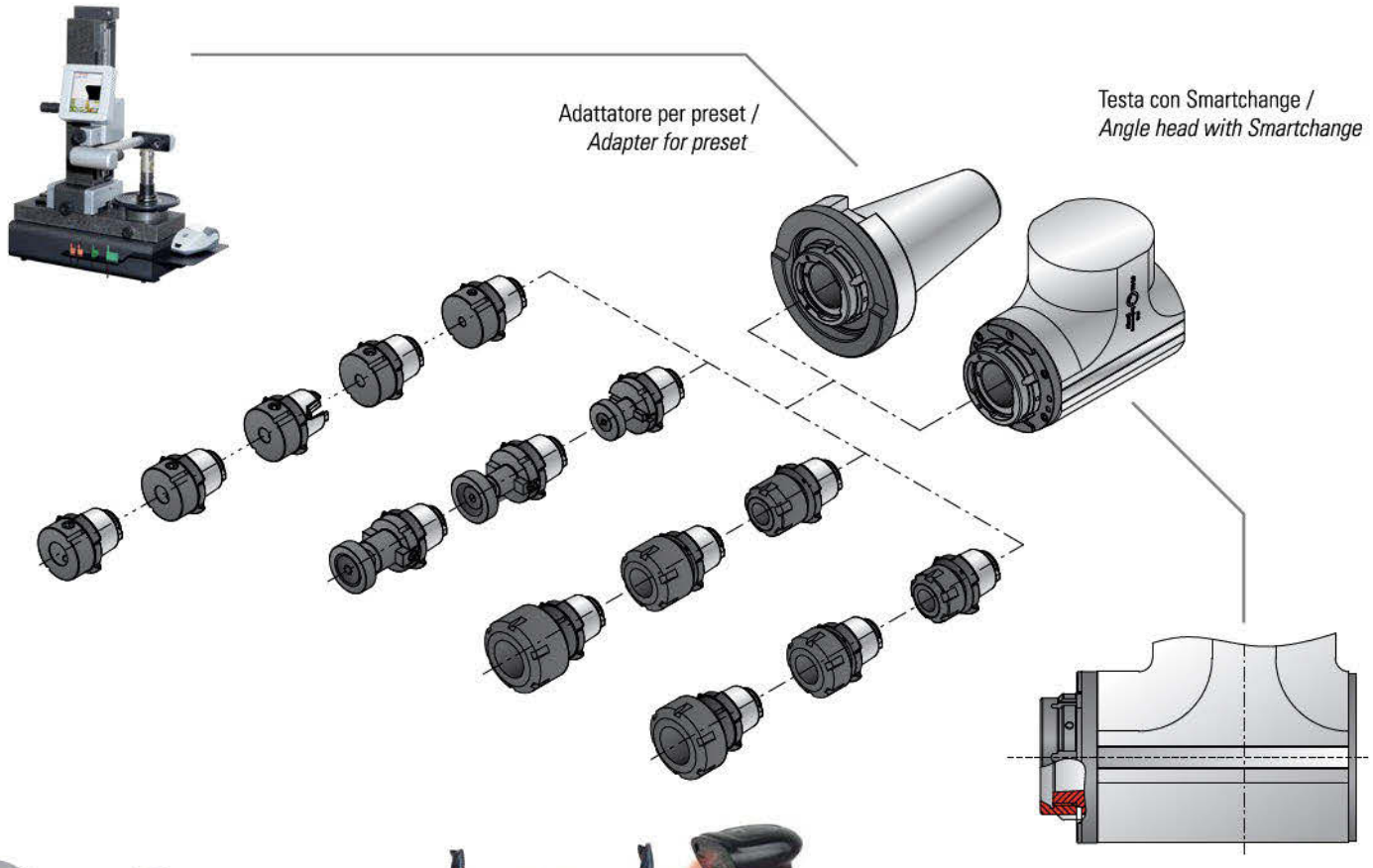



NAKANISHI
RA-100
MADE IN JAPAN
0H502761



LINEA Smart Change

Smart Change è un sistema facile e innovativo, compatto nel design e veloce da utilizzare, che, grazie ad un triplo contatto, riesce a garantire una maggior rigidità e permette una miglior precisione durante la lavorazione. La modularità del sistema dà quindi la possibilità all'utilizzatore di poter usufruire di un'ampia gamma di adattatori di diversa dimensione che possono essere presettati fuori macchina in tempo mascherato, aumentando così la produttività e diminuendo tempi e costi di attrezzamento macchina. Il sistema, già operativo su gran parte dei motorizzati, è stato adeguato anche per le teste angolari.



TOOL ID

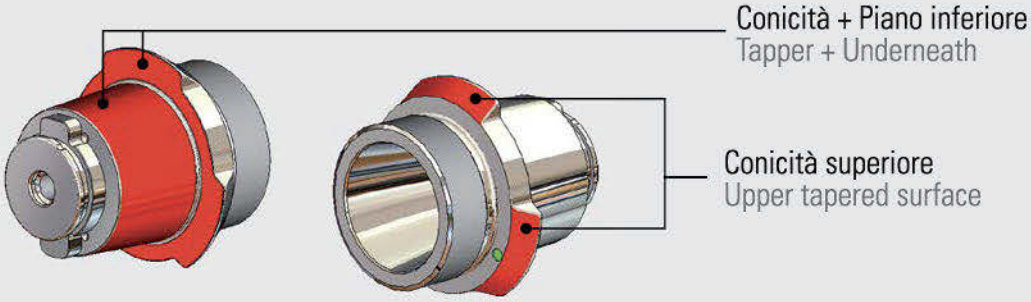


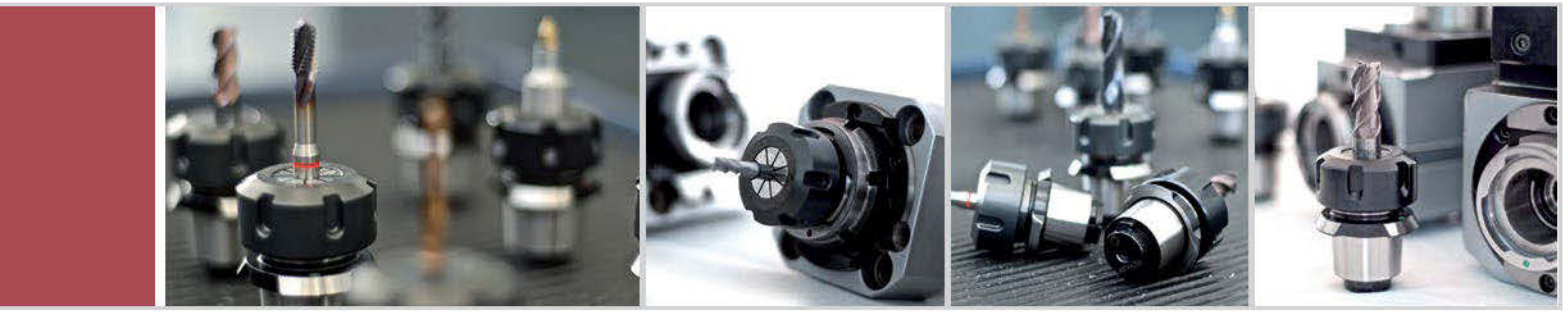
Le cartucce Smart Change sono provviste di DATAMATRIX per l'identificazione e la gestione utensile in modo automatico. Il codice univoco è identificativo della cartuccia con il suo utensile.

Smart Change adapters are marked with DATAMATRIX for the automatic tool identification and management. The unique code identify the adapter a long with its cutting tool.

PERCHÈ 3 VOLTE SMART...
WHY 3 TIMES SMART...

Il sistema Smart Change sfrutta ben 3 superfici di contatto per una maggior precisione e ripetibilità.
Our Smart Change system features 3 contact surfaces as shown for a higher precision and accuracy



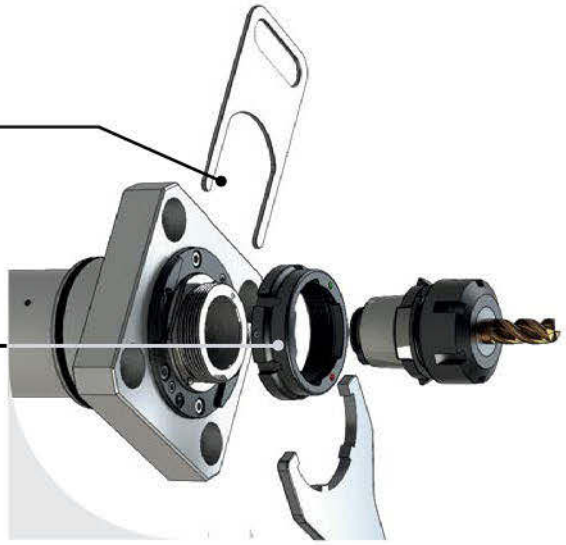


- Veloce — Quick
- Sistema modulare — Modular system
- Preset fuori macchina — Outside presettin
- Facile — Easy
- Totale sicurezza di utilizzo — Safe to use
- Ultra preciso — Ultra precise
- Minor costi e tempi di attrezzamento (-60%) — Lower costs and reduced set up time (-60%)

INCREMENTO DELLA PRODUTTIVITÀ
INCREASED PRODUCTIVITY

COME È FATTO
HOW IT IS MADE

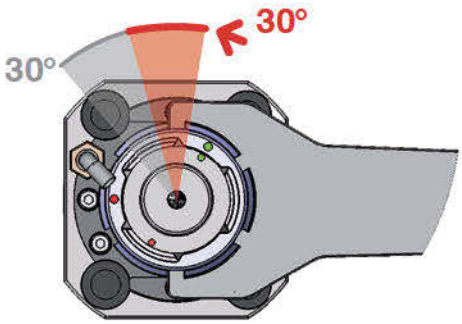
- Chiave di riscontro SmartChange (permette montaggio con una sola mano)
  SmartChange Wrench (one-hand handling)
- Ghiera SmartChange brevettata (fissata al corpo principale)
  Patented SmartChange nut (fixed on the main body)



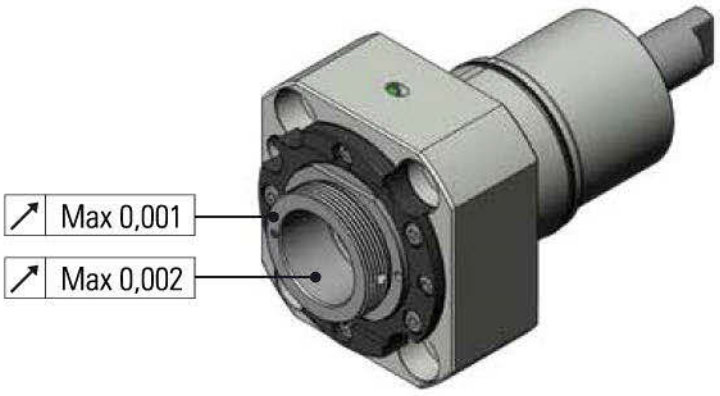
COME FUNZIONA
HOW IT WORKS

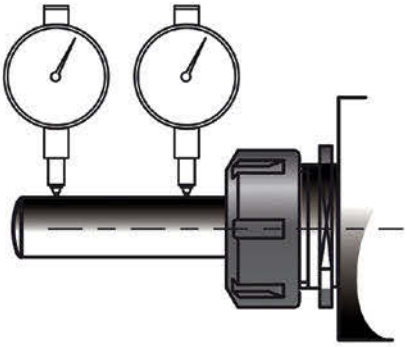
- Bloccaggio Ghiera
  Clamping nut
- Sbloccaggio
  Unclamping
- Estrazione
  Pull out





Tempo massimo di sostituzione cartucce Time to change front end	20"	Precisione con barra inserita nel mandrino Accuracy with gauge bar inserted in the collet chuck	
Ripetibilità / Repeatability	0,003 mm	a 40 mm = 0,008 mm a 120 mm = 0,01 mm	at 40 mm = 0,008 mm at 120 mm = 0,01 mm





LA GAMMA COMPLETA
THE COMPLETE SERIES



T90cn- 3,5



Porta pinza
Collet



TCUcn - 3,5



Blanks



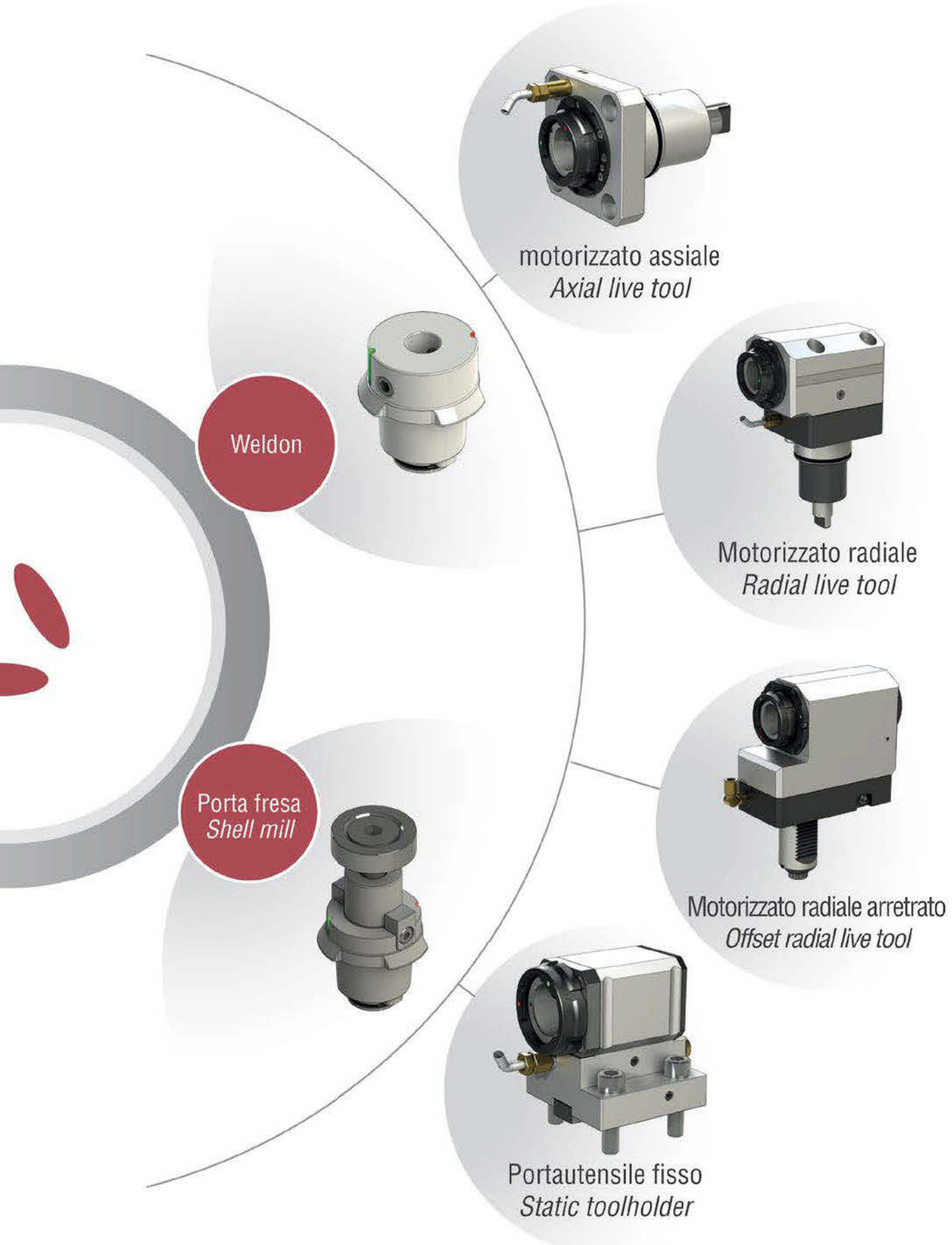
TH90cn - 3,5

Calettamento
Shrink fit





T90cn - 3,5M Aluminum


motorizzato assiale
Axial live tool
Weldon
Motorizzato radiale
Radial live tool
Porta fresa
Shell mill
Motorizzato radiale arretrato
Offset radial live tool
Portautensile fisso
Static toolholder

T90cn-3,5 Smart Change

Ratio
Rapporto
1:1

RPM
Velocità
4000 min^{-1}

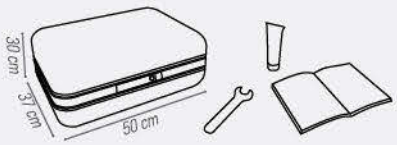
Max. axial load
Max. carico assiale
1.250 N

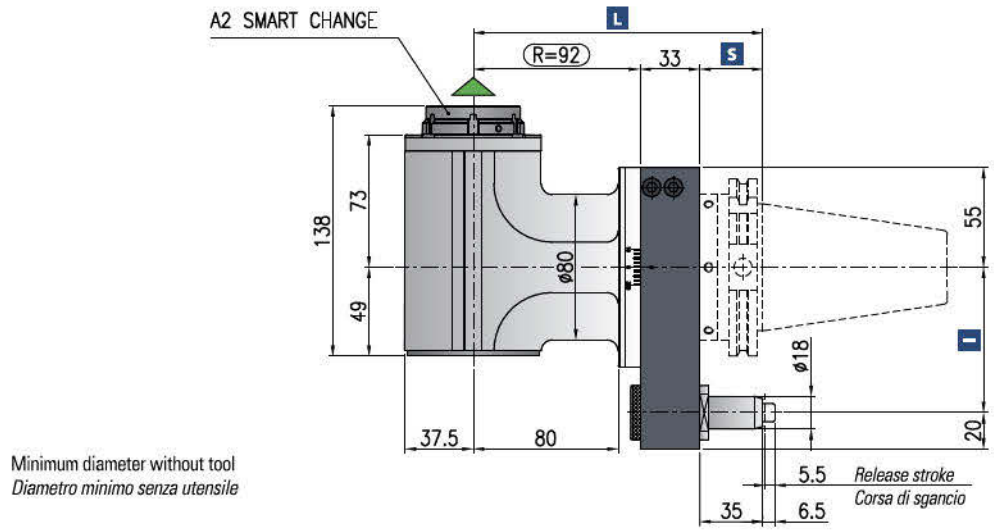
Torque
Momento torcente
50 Nm

Weight
Peso
11 kg

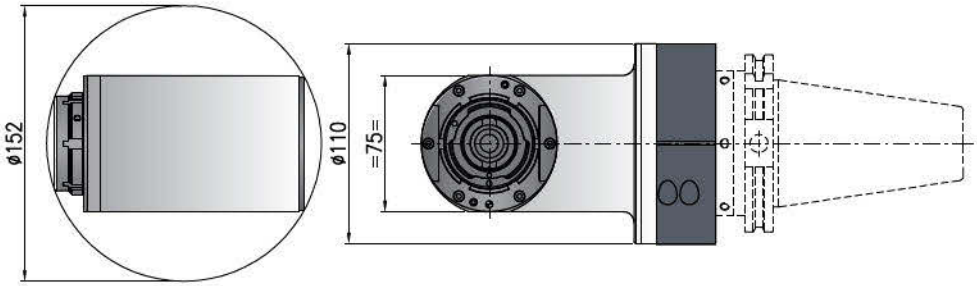
Collet
Pinza
SmartChange System

*** STANDARD EQUIPMENT INCLUDES:**

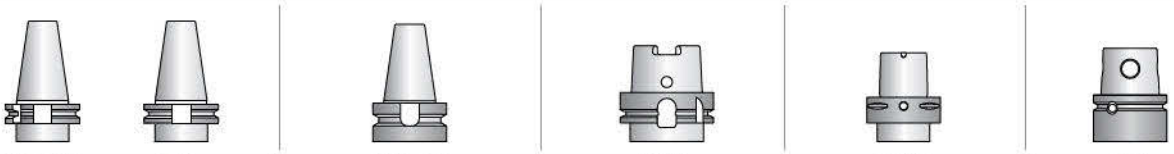




Minimum diameter without tool
Diametro minimo senza utensile



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-110		80-110	80-110	80-110	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	160		166	167	170	163	165	165

*optional

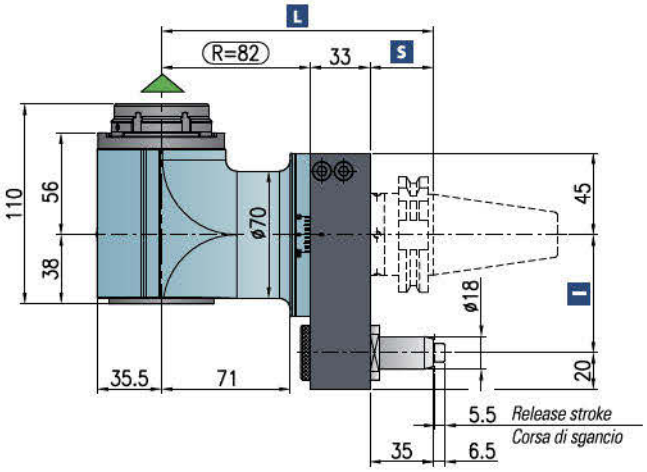
Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / *Opzione*

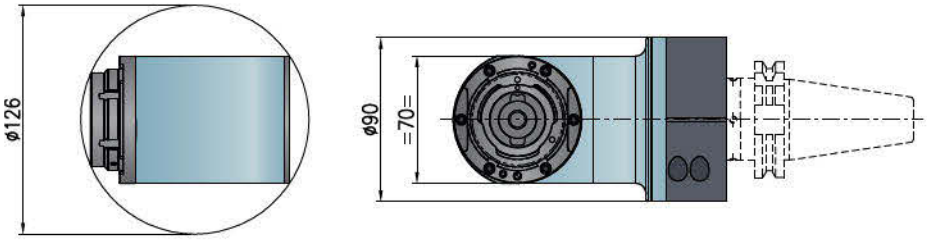
bar max
12
Coolant through pin and spindle
Refrigerante interno attraverso utensile

min^{-1}
6.000
High speed optional RPM max.
Opzione alta velocità RPM max.

T90cn-3,5 Aluminum Smart Change



Minimum diameter without tool
Diametro minimo senza utensile



Ratio
Rapporto
1:1

RPM
Velocità
4000 min^{-1}

Max. axial load
Max. carico assiale
1.250 N

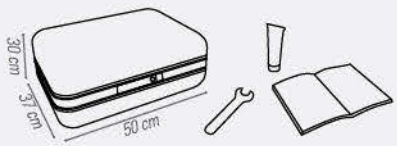
Torque
Momento torcente
40 Nm

Weight
Peso
5,5 kg

Collet
Pinza
Smart Change

Shank
Cono
ISO40 DIN-69871/BT-40

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation same as machine spindle / *senso di rotazione uguale al mandrino*

Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		
Size/*Grandezza*	40		40	63-80	100	C6		63
I	80-110		80-110	110	80	80-110	80-110	80-110
S	35		41	42	45	38	40	40
L	150		156	157	160	153	157	155

*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / *Opzione*

bar max
40
Coolant through pin
Refrigerante attraverso il perno

AIR/OIL
Air / oil lubrication
Lubrificazione aria / olio

TH90cn-3,5 Smart Change

Ratio
Rapporto
1:1

RPM
Velocità
8.000

RPM Dry Running
Funz. a secco
4.000 min^{-1}

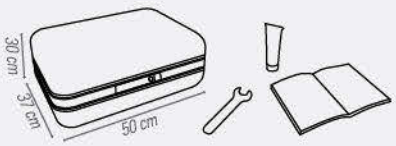
Max. axial load
Max. carico assiale
1.250 N

Torque
Momento torcente
50 Nm

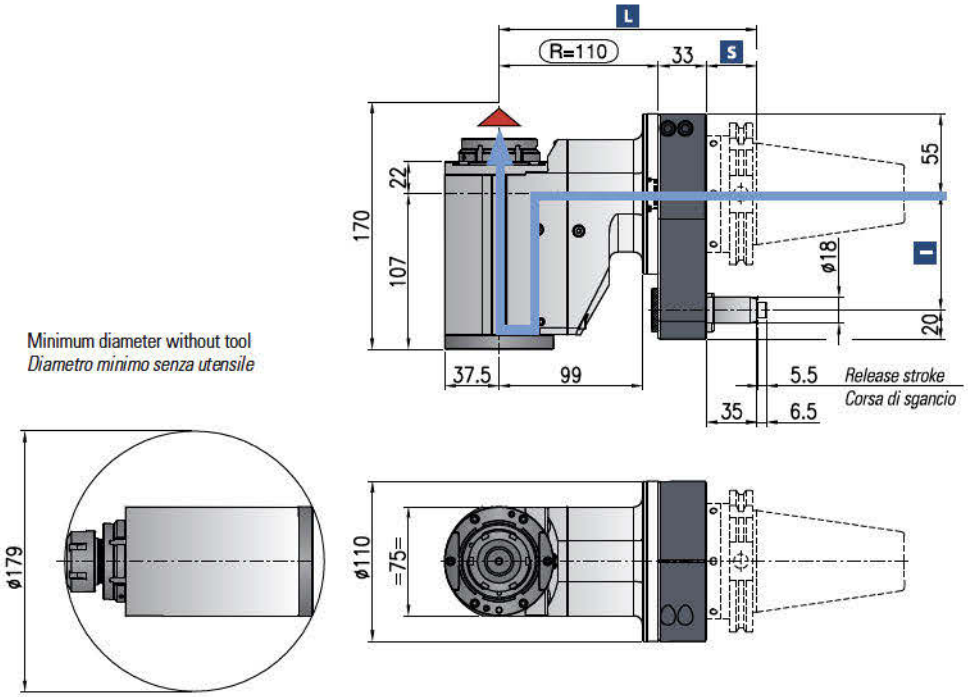
Weight
Peso
12 kg

Collet
Pinza
A2 Smart Change

*** STANDARD EQUIPMENT INCLUDES:**

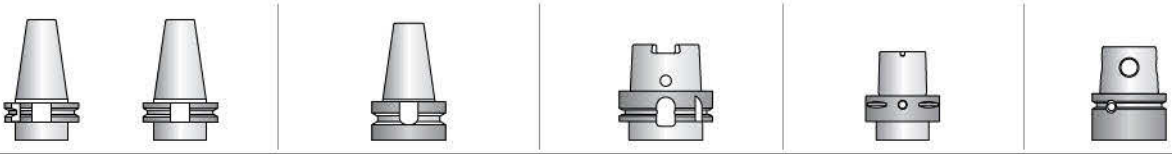


Minimum diameter without tool
Diametro minimo senza utensile



Dry running also possible / *Rotazione a secco possibile*

Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



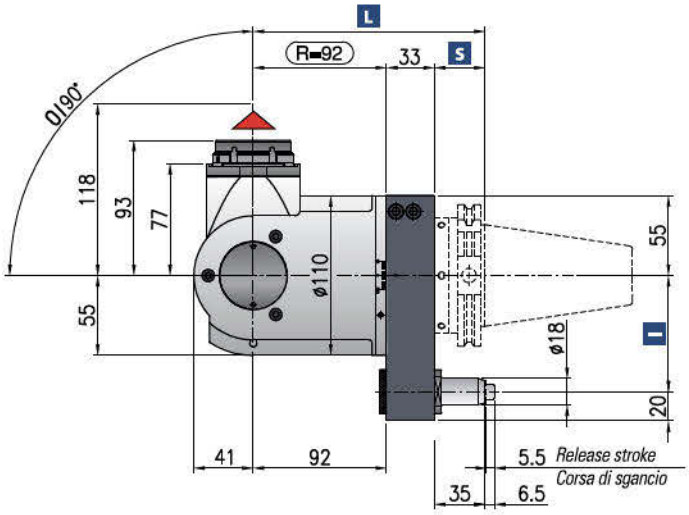
Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-100		80-100	80-100	80-100	80-100	80-100	80-100
S	35		41	42	45	38	40	40
L	178		184	185	188	181	183	183

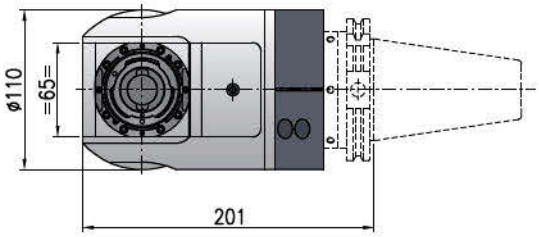
*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / ***Opzione***

TCUcn-3,5 Smart Change





Ratio
Rapporto
1:1

RPM
Velocità
4000 min^{-1}

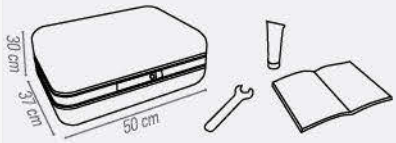
Max. axial load
Max. carico assiale
715 N

Torque
Momento torcente
32 Nm

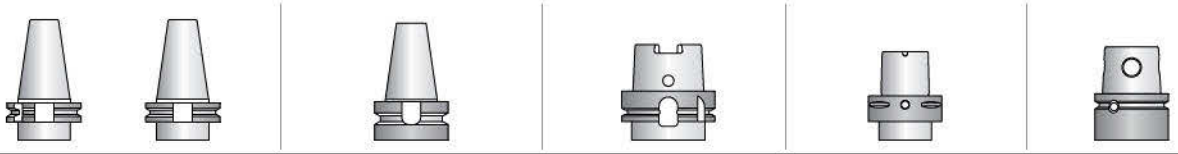
Weight
Peso
13 kg

Collet
Pinza
A2 Smart Change

*** STANDARD EQUIPMENT INCLUDES:**



Direction of rotation opposite to machine spindle / *senso di rotazione contrario al mandrino*



Shank/*Cono*	DIN-69871	CAT	MAS-BT	HSK		CAPTO		KM
Size/*Grandezza*	50		50	63-80	100	C6	C8	63
I	80-100		80-100	80-100	80-100	80-100	80-100	80-100
S	35		41	42	45	38	40	40
L	160		166	167	170	163	165	165

*optional

Non interchangeable input drive shank/ Coni di attacco non intercambiabili

Option / *Opzione*

bar max
12

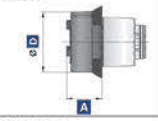
Coolant through pin
Adduzione refrigerante attraverso il perno

min $^{-1}$
6.000

High speed optional RPM max.
Opzione alta velocità RPM max.

DATI TECNICI
TECHNICAL DATA

PORTAPINZA INCASSATO
IN-BUILT COLLET



ER-20A (Ø1/13mm)			ER-25A (Ø1/16mm)		
Ø	A	D	Ø	A	D
1/13	21.5	36.8	1/16	32.4	41

PORTAPINZA / COLLET



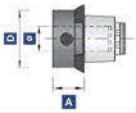
ER-20 (Ø1/13mm)			ER-25 (Ø1/17mm)			ER-32 (Ø2/22mm)		
Ø	A	D	Ø	A	D	Ø	A	D
1/13	28.5	34	1/16	30.5	42	2/20	41.5	50

PORTAPINZA / COLLET



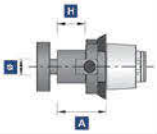
ERC20 (Ø1/13mm)			ERC25 (Ø1/16mm)			ERC32 (Ø2/20mm)		
Ø	A	D	Ø	A	D	Ø	A	D
1/13	33.5	34	1/16	35.5	42	2/20	46.5	50

WELDON



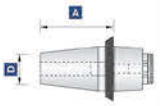
(Ø6)			(Ø5)			(Ø10)			(Ø12)			(Ø16)		
Ø	A	D	Ø	A	D	Ø	A	D	Ø	A	D	Ø	A	D
6	20	36.8	8	20	36.8	10	20	36.8	12	20	36.8	16	20	36.8

PORTAFRESA / SHELL MILL



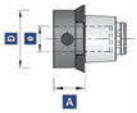
(Ø13)			(Ø16)			(Ø22)		
Ø	A	H	Ø	A	H	Ø	A	H
13	24.5	13	16	30.5	17	22	32.5	19

CALETTAMENTO / SHRINK FIT



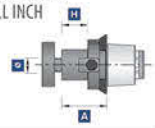
(Ø3mm)			(Ø4mm)			(Ø6mm)			(Ø8mm)			(Ø10mm)			(Ø12)			(Ø16)		
Ø	A	D	Ø	A	D	Ø	A	D	Ø	A	D	Ø	A	D	Ø	A	D	Ø	A	D
3	40	13	4	40	15	6	40	21	8	40	21	10	40	24	12	40	24	16	45	27

WELDON POLLICI / INCH



(Ø1/4")			(Ø3/8")			ER-20 (Ø1/2")			(Ø5/8")			(Ø3/4")		
Ø	A	D	Ø	A	D	Ø	A	D	Ø	A	D	Ø	A	D
1/4"	20	36,8	3/8"	20	36,8	1/2"	20	36,8	5/8"	20	36,8	3/4"	20	36,8

PORTAFRESA POLLICI
SHELL MILL INCH



(Ø3/4")			(Ø1")		
Ø	A	H	Ø	A	H
3/4"	31	17,5	1"	30,77	17,27

BLANK



BLANK		
Ø	A	D
/	81	52

Accessori
Accessories



Adattatore preset ISO/BT
Preset adapter ISO/BT



Adattatore preset HSK
Preset adapter HSK



Tool boy



Chiavi di servizio
Wrenches

PRESETTAGGIO FUORI MACCHINA
OUTSIDE PRESETTING

Una volta montato l'utensile è possibile presettare la cartuccia utilizzando l'apposito adattatore.
Once the cutting tool is mounted, it is possible to preset the adapter in the presetter thanks to the Smart Change adapter

Adattatori disponibili
ISO –BT 40 / 50 –HSK 63 / 100
Available adapters
ISO –BT 40 / 50 –HSK 63 / 100



Ciò permette di ridurre i tempi e i costi legati all'attrezzamento macchina che avverrà in tempo mascherato, aumentando notevolmente la produttività.
This system allows to reduce time and costs for the set up with tremendous increase in the productivity.

Grazie alla nuova applicazione è possibile presettare tutta la testa con una cartuccia montata. Una particolare attrezzatura su cui è fissato lo Stop Block permette di montare l'intera testa nel preset e rilevare le misure necessarie.

Thanks to the new application it is possible to preset the complete head with the adapter mounted. A special fixture with the Stop Block allows to install the head into the presetter to measure the needed dimensions.

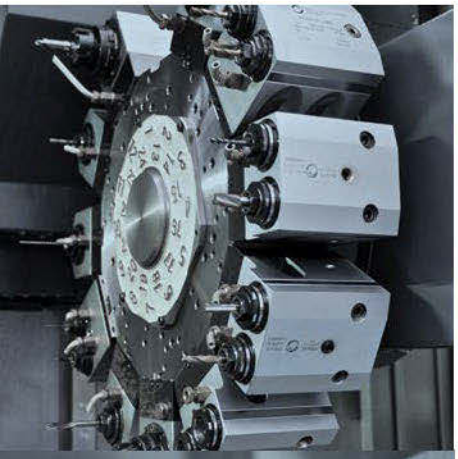
Immagine del presettaggio di una testa angolare regolabile: il preset misura l'angolo, dopo aver identificato i punti destro e sinistro, calcola in automatico il centro di rotazione dell'utensile e il suo diametro.

The picture shows the preset of an adjustable angle head: the preset measures the angle, after habving indentified the right and left points, it calculates autoimatically
the rotations centre of the tool and its diameter.





SCEGLI IL MODELLO DI PORTA UTENSILE
CHOOSE THE TYPE OF TOOLHOLDER

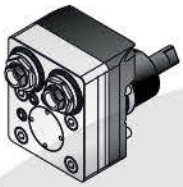




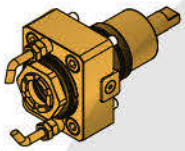




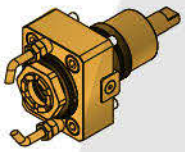
0120
ASSIALE
2 USCITE
STRAIGHT DUAL OUTPUT

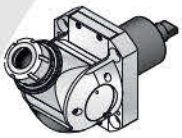


010C
ASSIALE
REFRIGERANTE
STRAIGHT + COOLANT



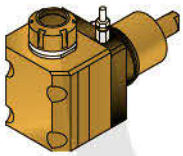
0100
ASSIALE
STRAIGHT



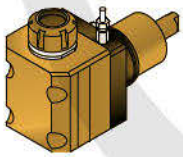


0500
ORIENTABILE
ADJUSTABLE

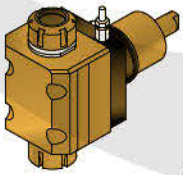
0200
RADIALE
90° TOOL



020C
RADIALE
REFRIGERANTE
90° TOOL + COOLANT



0300
RADIALE
2 USCITE
CONTRAPPOSTE
90° TOOL DUAL OPPOSITE OUTPUT





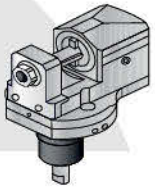
0220
RADIALE 2 USCITE
FRONTALE
90° TOOL DUAL FRONT OUTPUT



010S
ASSIALE MOLTIPLICATO
STRAIGHT SPEEDER



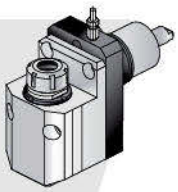
0400
ASSIALE DISASSATO
STRAIGHT OFFSET



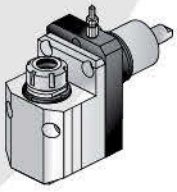


040C
ASSIALE DISASSATO REFRIGERANTE
STRAIGHT OFFSET + COOLANT

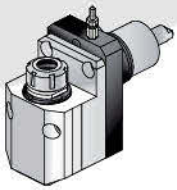
0900
PORTACREATORE
HOBBING HOLDER



070S
RADIALE MOLTIPLICATO
90° TOOL SPEEDER



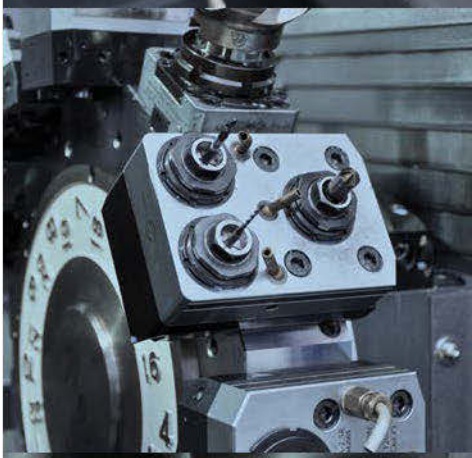
070C
RADIALE ARRETRATO REFRIGERATO
90° TOOL OFFSET + COOLANT



0700
RADIALE ARRETRATO
90° TOOL OFFSET









SCEGLI IL MODELLO DI TORNIO
CHOOSE THE TYPE OF LATHE



Tooling
DMG MORI



Tooling
MAZAK



Tooling
NAKAMURA



Tooling
OKUMA



Tooling
DOOSAN



Tooling
GOODWAY



Tooling
FEELER



Tooling
SAMSUNG



Tooling
HYUNDAI



Tooling
HWACHEON

ACCESSORI
ACCESSORIES







	GHIERA *Clamping nut*	PINZA *Collet*		DISCHETTO DI TENUTA *Sealing disk*		CHIAVE PER GHIERA *Pin wrench*	CHIAVE DI CONTRASTO *Spanner*
		Ø Serraggio min | max	Incremento increase	Ø Serraggio min | max	Incremento increase		
ER-8 Serie 0.4	ER-8 M	0,5 - 5,0	0,5 mm			30930800	40941700
	33212080						
ER-11 Serie 0.5	UM/ER-11	0,5 - 7,0	0,5 mm			40941700	40927000
	33213110						
ER-16 Serie 1.5	ER-16A	0,5 - 10,0	0,5 mm	2,5 - 10,0	0,5 mm	40941700	40932000
	43211161						
ER-20 TCU-1.5	UM/ER 20	0,5 - 13,0	0,5 mm	2,5 - 13,0	0,5 mm	40930000	40932000
	33214200						
ER-25 Serie 2.5	UM/ER 25	0,5 - 17,0	0,5 mm			40932500	40939000
	33214250						
	IC/ER 25	0,5 - 17,0	0,5 mm	2,5 - 16,0	0,5 mm	40932500	40939000
	33215250						
ER-32 Serie 3.5	UM/ER 32	1,0 - 22,0	0,5 mm			40933200	40946000
	33214320						
	IC/ER 32	1,0 - 22,0	0,5 mm	2,5 - 20,0	0,5 mm	40933200	40946000
	33215320						
ER-40 Serie 4.5	UM/ER 40	2,0 - 30,0	0,5 mm			30934000	40959000
	33214400						
	IC/ER 40	2,0 - 30,0	0,5 mm	2,5 - 26,0	0,5 mm	30934000	40959000
	3321540						

































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- ***Contatto diretto con cliente***
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- ***Più versatilità***
  Much flexibility

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- ***Database aggiornato con esempi di applicazioni, dettagli di lavorazione e parametri di taglio***
  Update database with examples of machining, working details and cutting data
- ***File multimediali (disegni 3D, libretti istruzione e video tutorial)***
  Multimedia files (3D drawings instruction books and videos)

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