

## CENTRI DI TORNITURA CNC - CNC TURNING CENTRES

**B545-M-S-SM-Y-YS**

**B565-M-S-SM-Y-YS**



**Biglia**

**B545**  
**B565**

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## L'affidabilità e la tradizione Biglia per la tornitura efficiente

I rinnovati modelli B545 / B565 nascono sulla base della sperimentata serie B510, di cui costituiscono la naturale evoluzione. BIGLIA ha così ottenuto una gamma di torni universali di qualità elevata che, grazie alla robusta struttura e alla nuova torretta BIGLIA, offre all'utilizzatore finale:

- RIGIDEZZA
- PRECISIONE
- VELOCITÀ NELLE LAVORAZIONI
- il tutto combinato con
- GRANDE AFFIDABILITÀ
- PREZZO MOLTO COMPETITIVO.

L'applicazione del concetto di costruzione modulare consente di offrire una vasta gamma di possibilità e di funzioni, dalla tornitura universale alla lavorazione completa con utensili motorizzati, contromandrino ed assi C/Y.

La serie B545 / B565 è disponibile in 6 versioni con passaggio barra 45 mm o 65 mm e permette di scegliere la soluzione "su misura" per ogni specifica applicazione.



## *Biglia reliability and tradition for the efficient turning*

The new B545 / 565 models are the latest evolution of the established B510 series.

BIGLIA now offers a range of high quality universal lathes that, thanks to the sturdy bed and the new BIGLIA turret, deliver:

- **THE NECESSARY RIGIDITY**
- **ACCURACY**
- **RAPIDITY IN MACHINING**  
all of this combined with
- **GREAT RELIABILITY**
- **VERY COMPETITIVE PRICES.**

The modular concept enables a wide range of alternative specifications and functions, from simple turning to complete machining using live tools, sub-spindle and C/Y axis.

The new B545 / B565 models are available in 6 versions with bar capacity of 45 mm or 65 mm allowing to meet your every requirement in every application.

### **VERSIONI DISPONIBILI**

#### **B545 / B565**

- Macchina base con contropunta automatica

#### **B545 M / B565 M**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Contropunta automatica

#### **B545 S / B565 S**

- Torretta a 12 posizioni
- Contromandrino

#### **B545 SM / B565 SM**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Contromandrino con asse C

#### **B545 Y / B565 Y**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Asse Y
- Contropunta automatica

#### **B545 YS / B565 YS**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Asse Y
- Contromandrino con asse C

### **MODELS AVAILABLE**

#### **B545 / B565**

- Automatic tailstock

#### **B545 M / B565 M**

- Rotary tools (12)
- Main spindle with C-axis
- Automatic tailstock

#### **B545 S / B565 S**

- Tools (12)
- Sub-spindle

#### **B545 SM / B565 SM**

- Rotary tools (12)
- Main spindle with C-axis
- Sub-spindle with C-axis

#### **B545 Y / B565 Y**

- Rotary tools (12)
- Main spindle with C-axis
- Y axis
- Automatic tailstock

#### **B545 YS / B565 YS**

- Rotary tools (12)
- Main spindle with C-axis
- Y axis
- Sub-spindle with C-axis

**B545**  
**B565**

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## Asse Y: Lavorazione completa in un solo ciclo

### UN ALTRO PASSO AVANTI NELLA LAVORAZIONE COMBINATA TORNITURA - FRESATURA SU TORNI CNC

L'asse C con gli utensili motorizzati su torni CNC sono una tecnologia consolidata, ma con alcuni limiti di lavorazione. Infatti, tagli di chiavetta con tolleranze precise, fresature piane, minima rugosità, planarità perfetta e forature - maschiature radiali fuori centro non possono essere eseguite con asse C ed utensili motorizzati. Nelle versioni Y e YS l'asse Y combina tutti i vantaggi di un tornio CNC e un centro di lavorazione a 4 assi rendendo realizzabili, facili e precise, tutte le lavorazioni di foratura maschiatura e fresatura in asse e fuori asse. La corsa di 105 mm e la rigidità della struttura sono ai vertici della sua categoria. Nella versione YS la presenza del contromandrino con l'asse C permette la lavorazione completa in automatico di entrambi i lati del pezzo. I principali vantaggi conseguibili con un centro di tornitura multifunzione sono:

- MAGGIORE PRECISIONE
- RIDUZIONE DEI COSTI
- RIDUZIONE DEI TEMPI IMPRODUTTIVI
- MAGGIORE FLESSIBILITÀ PER AFFRONTARE LE RICHIESTE DI UN MERCATO IN CONTINUA EVOLUZIONE.



## *Y-Axis: Complete machining in one set-up*

### **ANOTHER LEAP FORWARD IN INTEGRATED MACHINING PROCESSES ON CNC-LATHES**

The rotary tools with C-axis is a proven technology for simple milling and drilling operations, but with some limitations.

Actually, machinings like accurate key-ways, flat-milling with high surface finish and perfect flatness as well as radial off-centre drilling and tapping cannot be satisfactorily completed without the Y-axis. The Y and YS versions with vertical Y-axis overcome these limitations combining in a single machine turning and milling capability of a 4 axis machining centre (X, Z, C and Y).

The generous stroke of 105 mm and the rigidity of the Y axis frame are at the top of its class. The YS version features a second spindle with C-axis enabling automatic complete machining of the parts.

The main performance benefits achievable with the Y and YS version multifunction turning centres are:

- **IMPROVE PARTS ACCURACY**
- **REDUCTION OF COSTS**
- **REDUCTION OF NON-PRODUCTIVE TIME**
- **INCREASED FLEXIBILITY TO COUNTER CONSTANTLY CHANGING MARKET DEMAND.**

### **VERSIONI DISPONIBILI**

#### **B545 Y / B565 Y**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Asse Y
- Contropunta automatica

#### **B545 YS / B565 YS**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Asse Y
- Contromandrino

### **MODELS AVAILABLE**

#### **B545 Y / B565 Y**

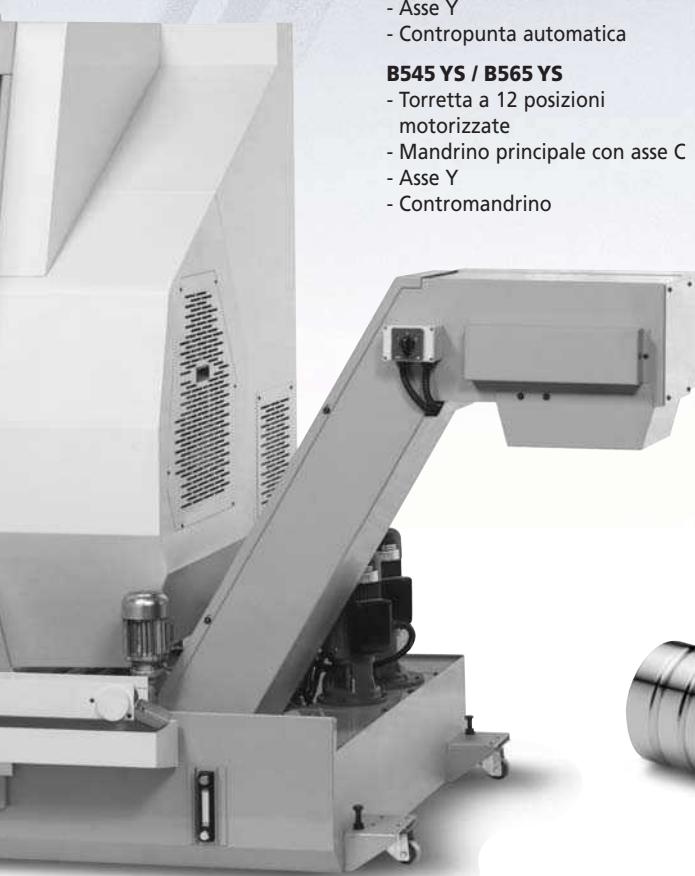
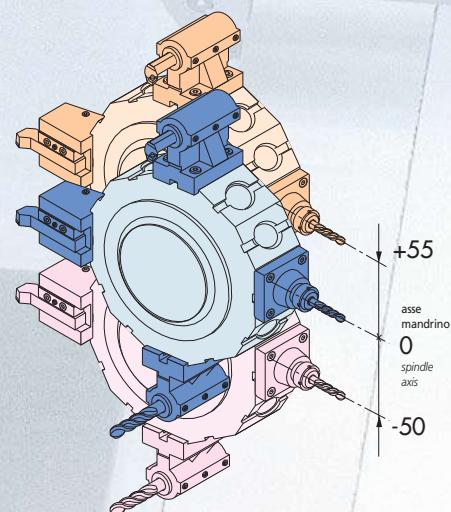
- Rotary tools (12)
- Main spindle with C-axis
- Y axis
- Automatic tailstock

#### **B545 YS / B565 YS**

- Rotary tools (12)
- Main spindle with C-axis
- Y axis
- Sub-spindle with C-axis

### **Operazioni ottenibili con l'asse Y Operations performed with the Y-axis**

- 1 Fresatura del piano con più passate  
Flat milling in repeated cuts
- 2 Fresatura cava irregolare (sgrossatura-finitura)  
Irregular slot milling (roughness - finishing)
- 3 Fresatura a foro e sede  
Key-way milling
- 4 Fresatura filetto  
Thread milling
- 5 Foratura e filettatura serie di fori a reticolato  
Drilling and milling grid holes
- 6 Fresatura di una chiaffetta precisa  
Milling of an accurate keyway



**B545**  
**B565**

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## Tornire con più velocità e più profitto

*Designed to assure more speed and more profit*

### ALLESTIMENTO STANDARD

- Basamento in ghisa stabilizzata
- Mandrino a cartuccia
- Torretta servoazionata a 12 posizioni
- Mano raccoglipezzo e predisposizione spingibarra
- Serie di portautensili e boccole di riduzione
- Trasportatore trucioli
- Lampada stato macchina
- Impianto refrigerante media pressione
- Armadio elettrico climatizzato

### STANDARD FEATURES

- Cast iron machine bed
- Cartridge spindle
- 12 position BIGLIA servo-turret
- Parts catcher & bar-feeder interface
- Tooling kit (tool holders & bushings)
- Chip conveyor
- Two color alarm lamp
- Coolant supply
- Electrical cabinet air conditioned

### OPZIONI PRINCIPALI

- Azzeratore utensili
- Refrigerante ad alta pressione
- Filtro refrigerante
- Nastro convogliatore pezzi finiti
- Disoleatore
- Aspiratore fumi
- Monitoraggio sforzo utensili SBS
- Porta automatica

### OPTIONAL FEATURES

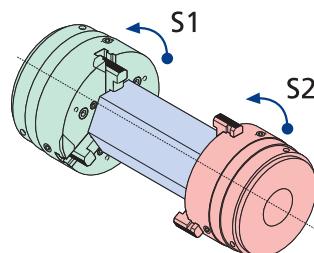
- Tool setter
- High pressure coolant
- Coolant filter
- Finished parts conveyor
- Oil skimmer
- Moist exhauster
- SBS tool load monitoring system
- Automatic door

### SINCRONIZZAZIONE DEI DUE MANDRINI

Indispensabile per eseguire il taglio della barra senza lasciare testimone e per ridurre il tempo di lavorazione. È possibile sincronizzare angolarmente i due mandrini per bloccare in rotazione pezzi tondi o poligonali. In sincronizzazione è possibile fermare, ripartire o invertire la rotazione.

### SPINDLE SYNCHRONISATION

The ability to part off bar without leaving a pip reduces cycle time. Not only can the spindle speeds be synchronized, but angular displacement can be oriented so that round or polygonal parts are clamped without stopping spindle rotation. It is possible to start, stop and change rotation of both spindles while maintaining synchronisation.



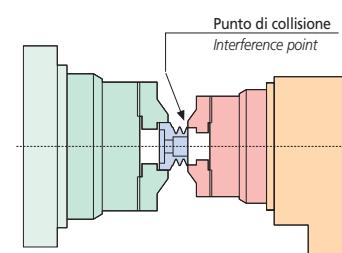
### SFORZO CONTROLLATO DEL CONTROMANDRINO

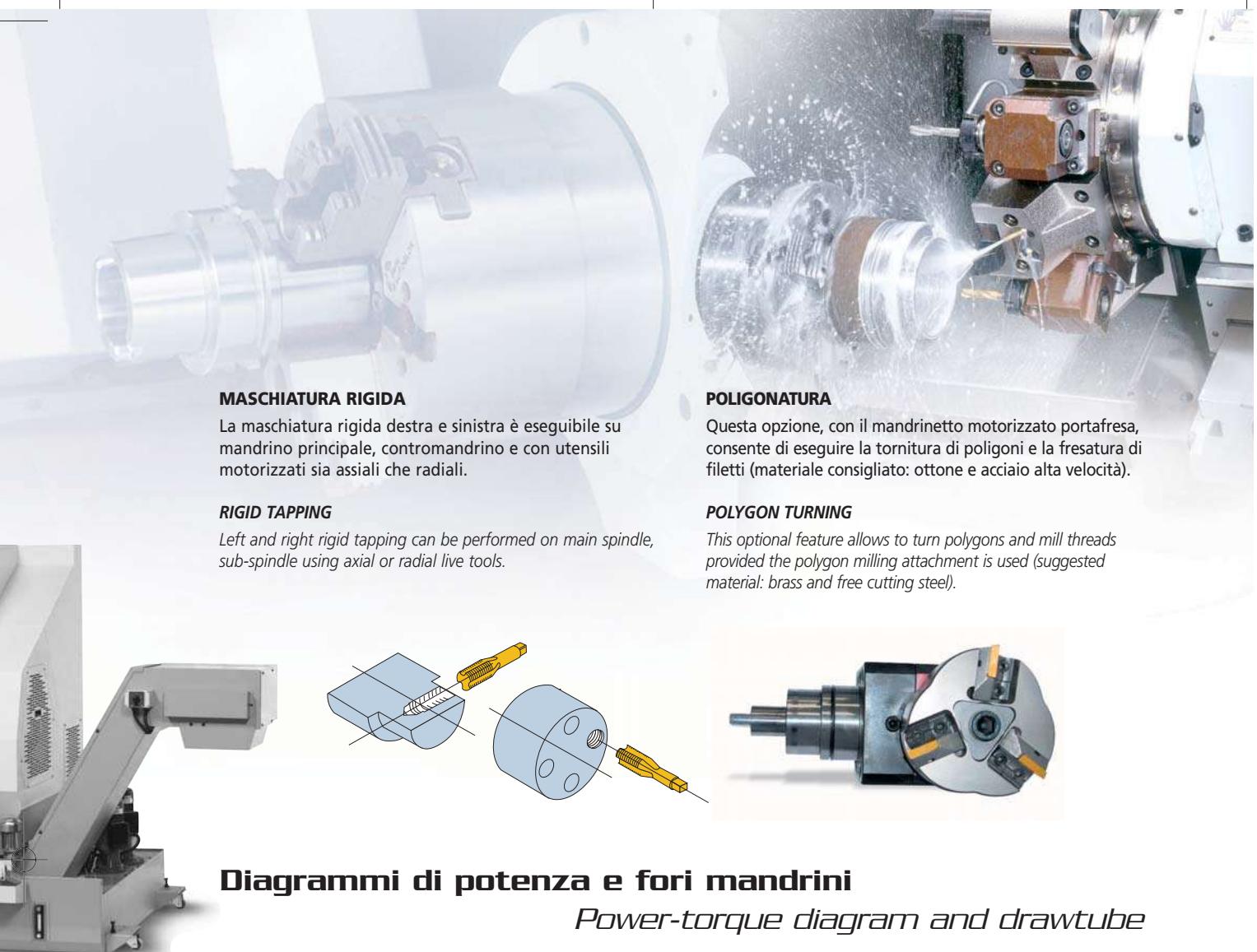
Controllando lo sforzo del motore asse B è possibile trasferire il pezzo dal mandrino principale al contromandrino in piena sicurezza. Serve quando ci sono trucioli nella pinza del contromandrino, quando il pezzo da prelevare è più grande della pinza oppure quando il pezzo non è stato tagliato.

### SUB-SPINDLE LOAD MONITORING

While monitoring B-axis motor load, the workpiece can be transferred from main to sub-spindle.

This feature is important if there is any swarf in the sub-spindle collet or if the workpiece to be transferred is larger than the collet or has not been parted off correctly from the main spindle.





### MASCHIATURA RIGIDA

La maschiatura rigida destra e sinistra è eseguibile su mandrino principale, contromandrino e con utensili motorizzati sia assiali che radiali.

### RIGID TAPPING

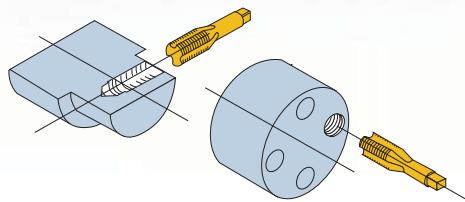
*Left and right rigid tapping can be performed on main spindle, sub-spindle using axial or radial live tools.*

### POLIGONATURA

Questa opzione, con il mandrinetto motorizzato portafresa, consente di eseguire la tornitura di poligoni e la fresatura di filetti (materiale consigliato: ottone e acciaio alta velocità).

### POLYGON TURNING

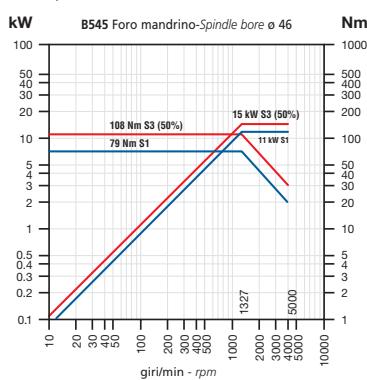
*This optional feature allows to turn polygons and mill threads provided the polygon milling attachment is used (suggested material: brass and free cutting steel).*



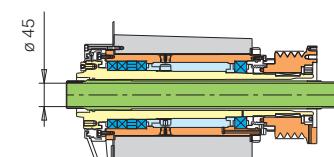
## Diagrammi di potenza e fori mandrini

*Power-torque diagram and drawtube*

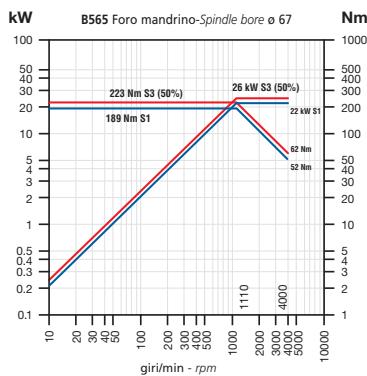
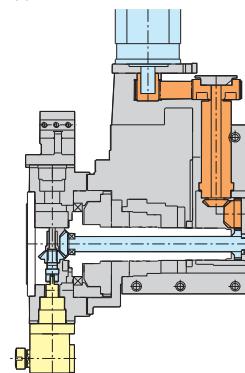
Mandrino principale  
Main spindle



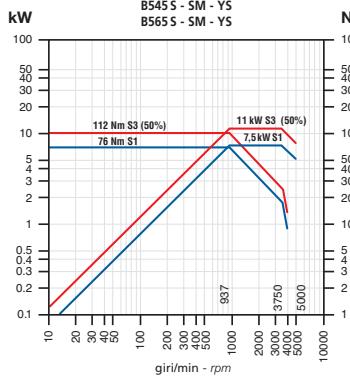
Contromandrino  
Sub-spindle



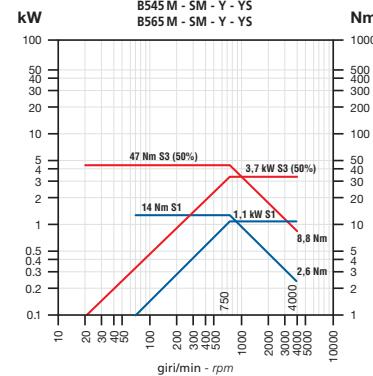
Utensili motorizzati  
Live tools



B545 S - SM - YS  
B565 S - SM - YS



B545 M - SM - Y - YS  
B565 M - SM - Y - YS



# B545

# B565

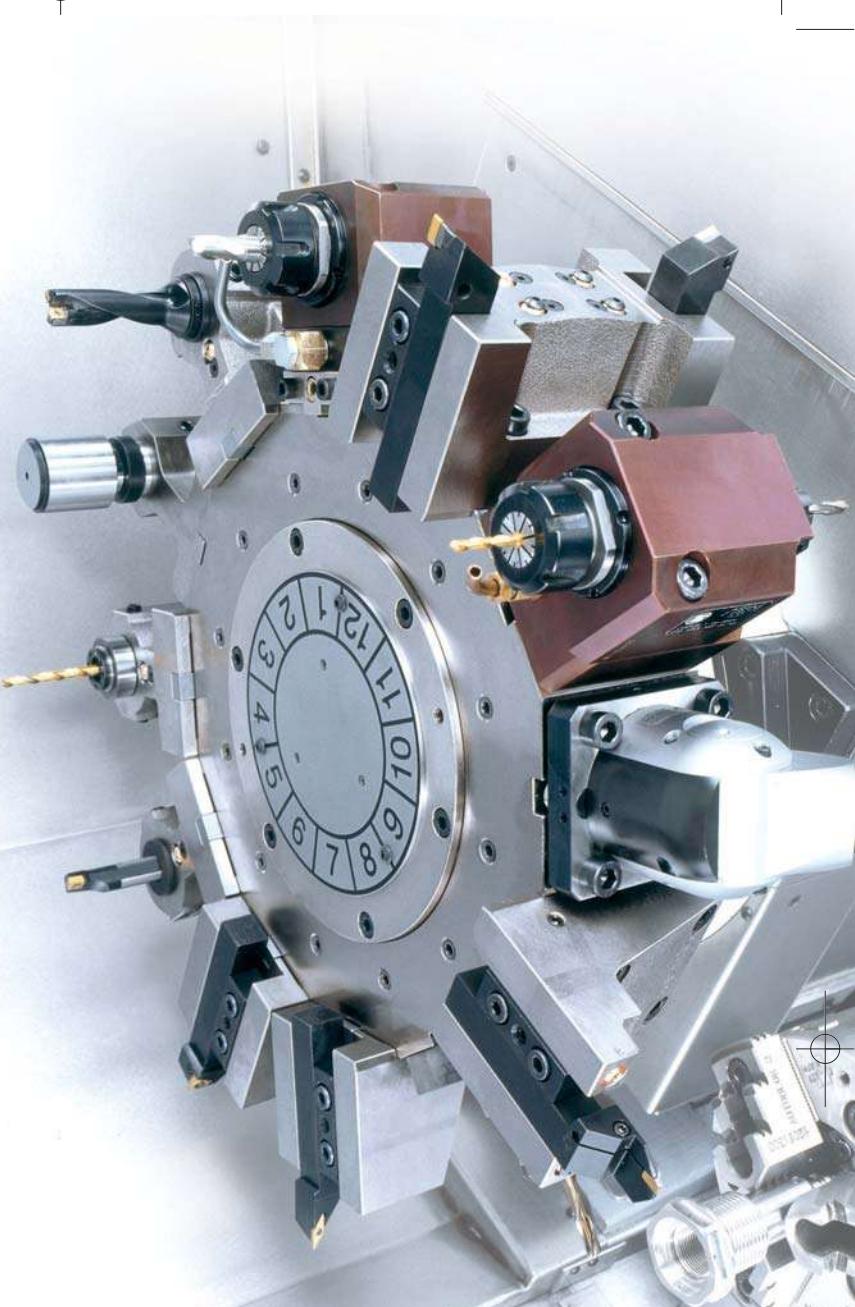
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## Torretta ed accessori

### *Turret and tooling*

La robusta torretta BIGLIA a 12 posizioni è azionata da un servomotore: la rotazione è bidirezionale con tempo di indexaggio pari a 0,15 sec. La rigidezza in lavorazione è assicurata da una dentatura Hirth generosamente dimensionata. Nella versione motorizzata tutte e 12 le stazioni possono ricevere portautensili rotanti in grado di lavorare sia sul mandrino principale che sul contromandrino.

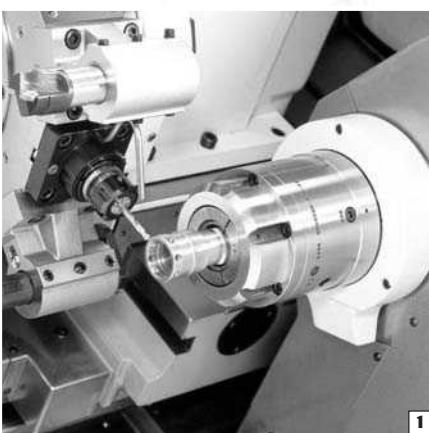
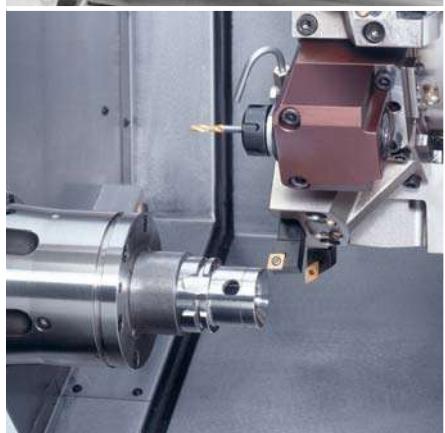
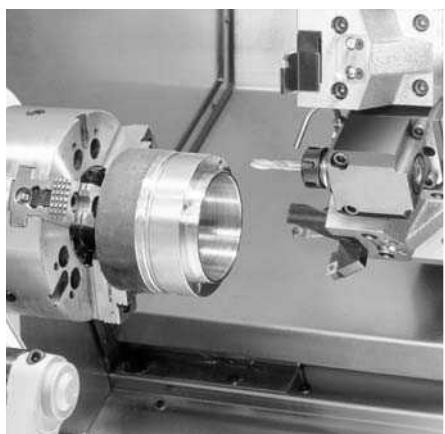
The rugged BIGLIA 12-station turret operates via a servo-motor delivering bi-directional rotation and an indexing time of 0.15 second. And the use of a precisely dimensioned Hirth gear ensures machining rigidity. The live tool version each of the 12 stations can accept rotating toolholders to machine parts from both the main and sub-spindle.



1 2

Lavorazioni sul contromandrino dotato di asse C con utensili fissi e motorizzati, con pinza/autocentrante.

Machining on sub-spindle with C-axis, with fixed and rotary tools with collet/chuck.



1



2

## Produttività ottimale

### *Increased productivity*

#### AZZERATORE UTENSILI

Questo dispositivo facilita l'azzeramento degli utensili, rendendolo rapido e preciso. Toccando il sensore con la punta dell'utensile, il valore della correzione viene memorizzato automaticamente nella tabella dei correttori; si riduce così il tempo di attrezzaggio (opzione).

#### TOOL-SETTER

*This device makes tool-setting simple, fast and accurate. The tool tip is brought into contact with the probe and the tool offset value is automatically stored into relevant table of the CNC control. This reduces setting-up time (option).*

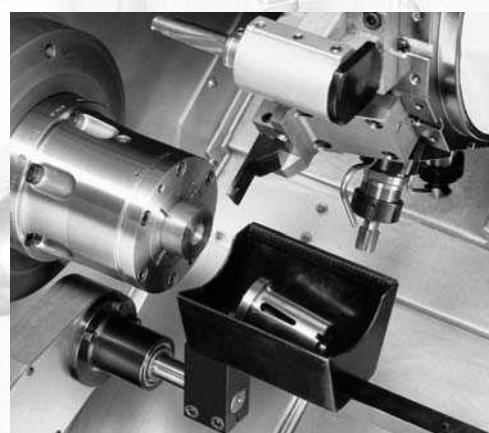


#### NUOVO SCARICATORE, ESPULSORE

Lo scaricatore automatico dei pezzi, di nuova generazione, consente lo scarico del pezzo finito sia sul mandrino principale sia sul contromandrino. Sul contromandrino lo scarico avviene in tempo mascherato.

#### NEW PARTS-CATCHER, EJECTOR

*The new parts-catcher, ejector enable unloading of finished parts both from main spindle and sub-spindle. On sub-spindle unloading is performed in idle time.*

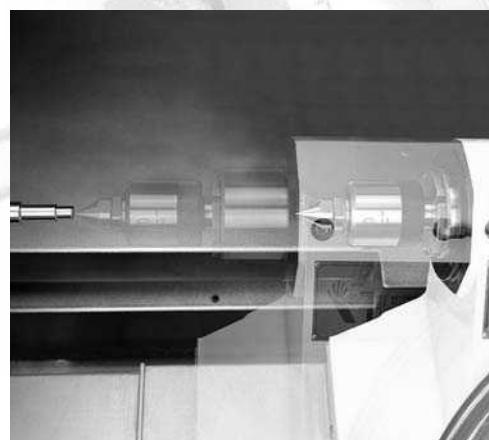


#### CONTROPUNTA AUTOMATICA: RIDUZIONE DEL TEMPO CICLO

Il corpo della contropunta scorre su una slitta indipendente ed è comandato da un gruppo motore vite (asse B). È ideale nella lavorazione da barra di alberi che devono essere prima centrati-forati e poi sostenuti dalla contropunta per la tornitura. Può essere utilizzato anche come asse di lavoro per eseguire una foratura in contemporanea alla tornitura (standard per: B545-M-Y / B565-M-Y).

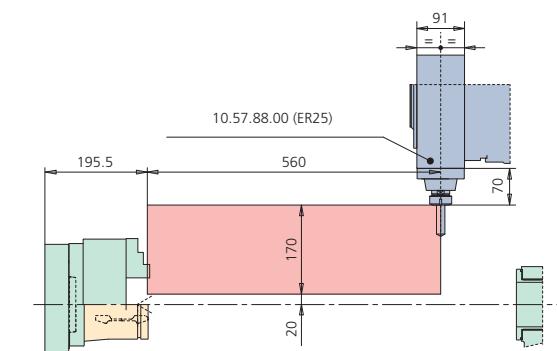
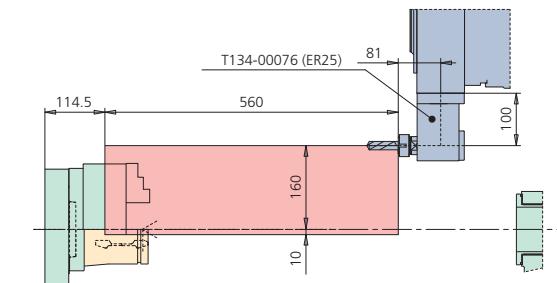
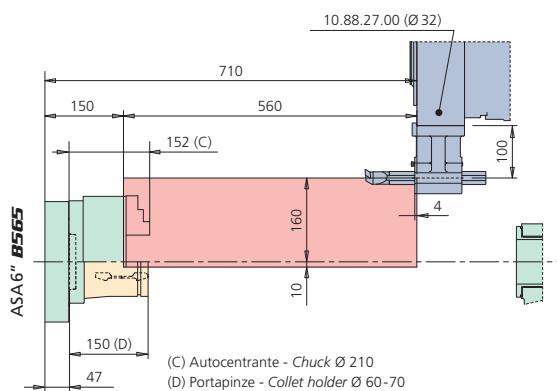
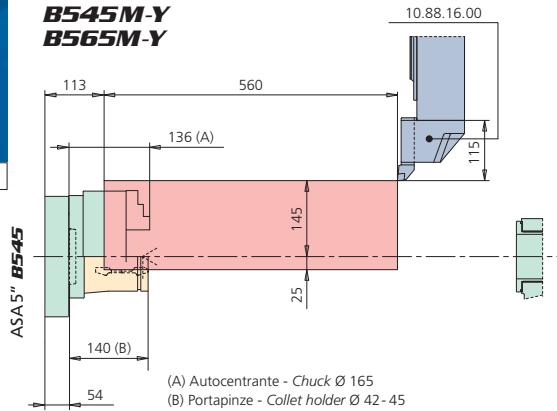
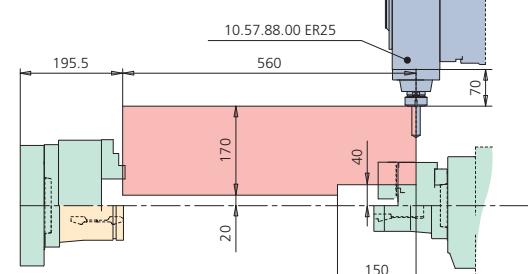
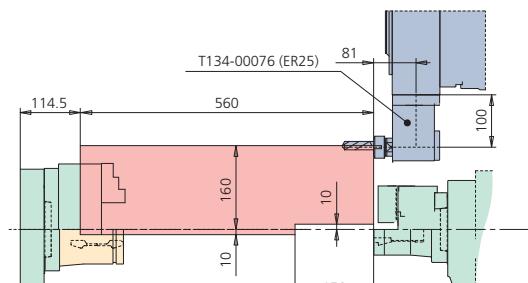
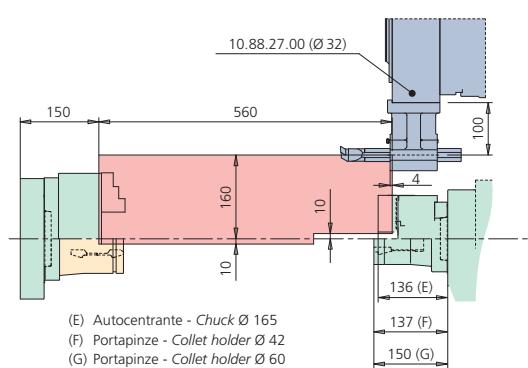
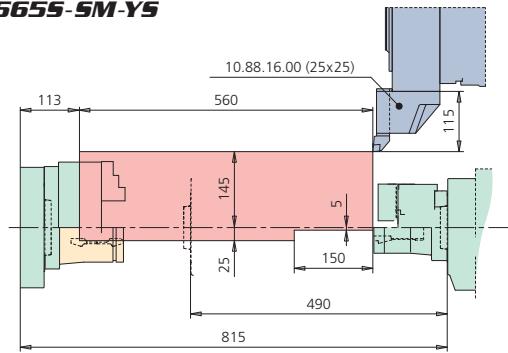
#### AUTOMATIC TAILSTOCK FOR REDUCED CYCLE TIME

*The tailstock body is mounted on an independent slideway and is operated by a servo motor (B-axis). It is particularly suitable for the machining of shafts that must be centre-drilled first and then supported by the tailstock for turning operations. It can also be used to perform simultaneously both drilling and turning (standard for: B545-M-Y / B565-M-Y).*



**B545****Campo di lavoro** *Machining field*

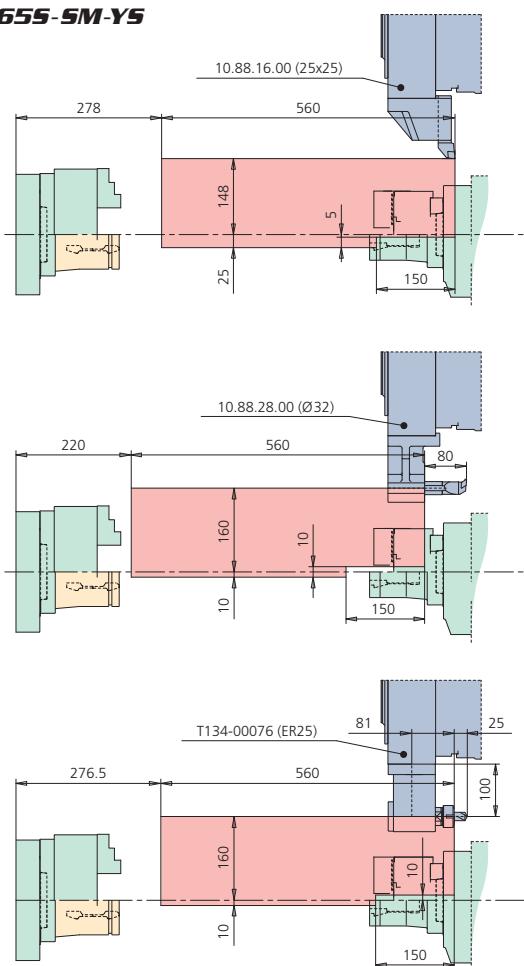
10 - 11

**CAMPO DI TORNITURA / FRESATURA**  
**TURNING FIELD / MILLING FIELD****B545M-Y**  
**B565M-Y****CAMPO DI TORNITURA / FRESATURA**  
**TURNING FIELD / MILLING FIELD****B545S-SM-YS**  
**B565S-SM-YS**CAM  
TURBS  
BSCAM  
Y-A

**B565**

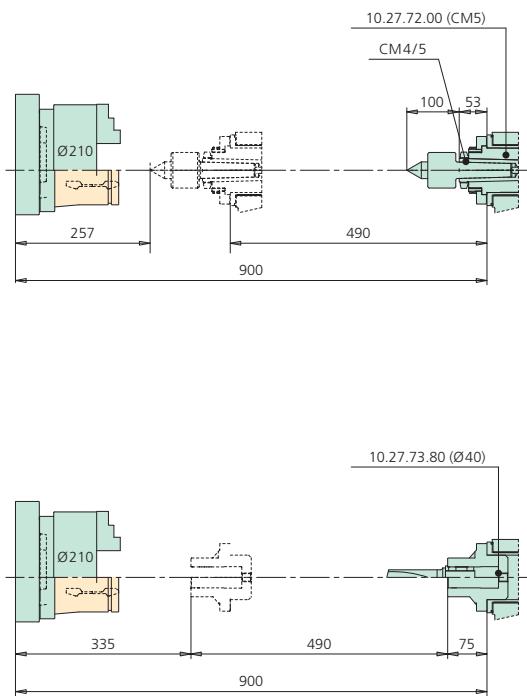
**CAMPO DI TORNITURA VERSO CONTROTESTA**  
TURNING FIELD TOWARDS SUB-SPINDLE

**B545S-SM-Y5**  
**B565S-SM-Y5**



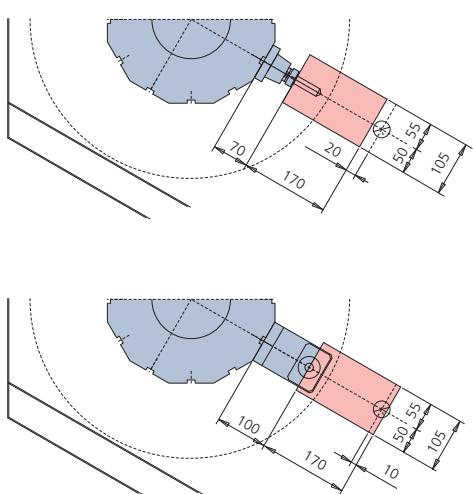
**CONTROPUNTA AUTOMATICA**  
AUTOMATIC TAILSTOCK

**B545M-Y**  
**B565M-Y**

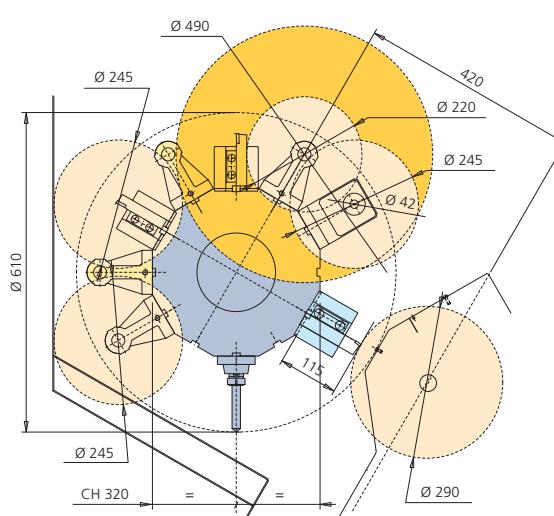


**CAMPO ASSE Y**  
Y-AXIS FIELD

**B545-B565**



**B545-B565**

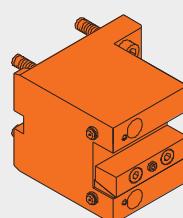
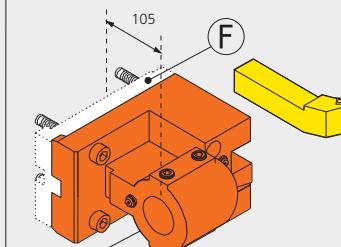
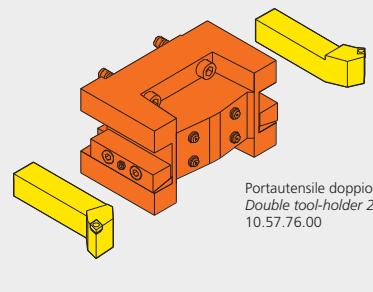
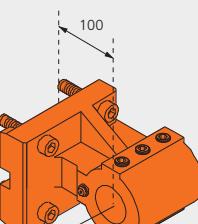
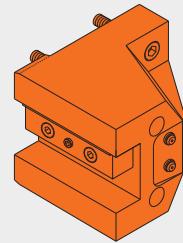
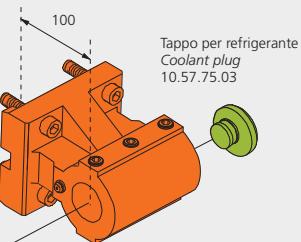
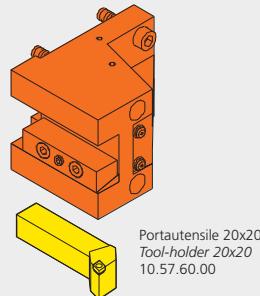
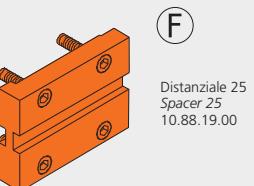
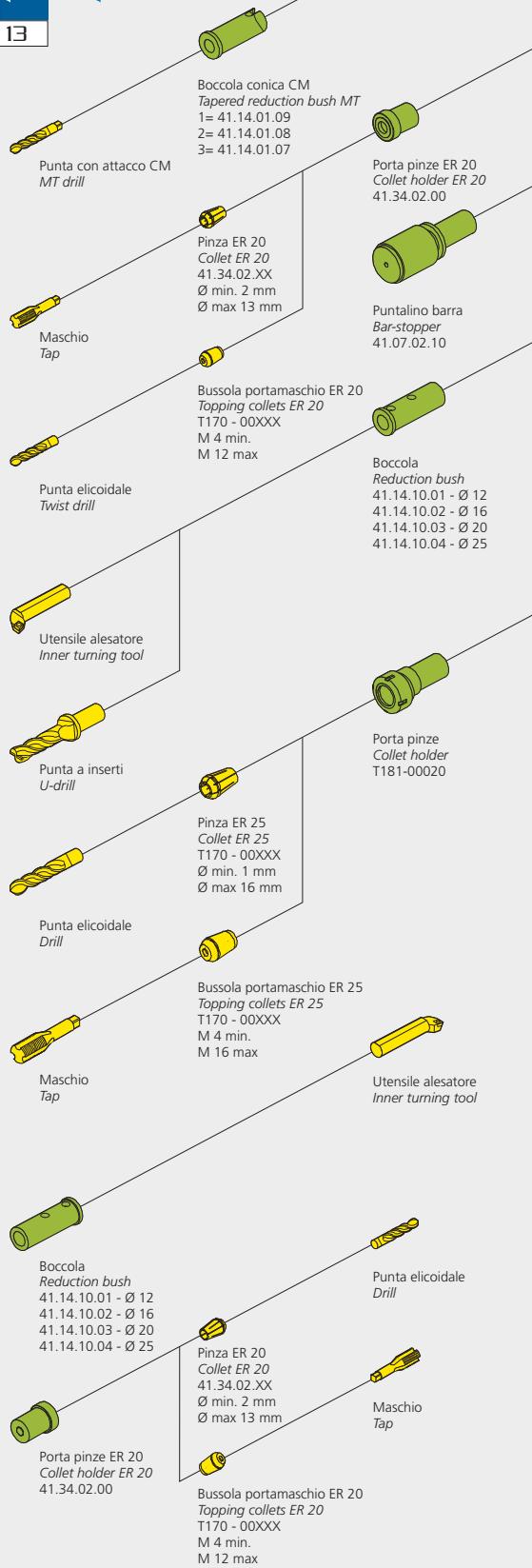


**Campo di lavoro** *Machining field*

# B545

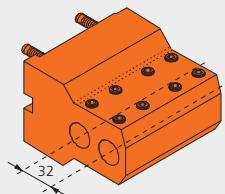
# B565

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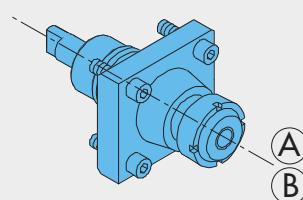


E

# Portautensili e accessori Tooling system



Portabareno doppio ø 25  
Double boring bars ø 25  
10.88.43.00



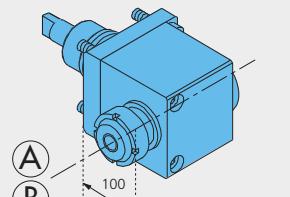
Mandrinetto radiale  
Radial live-spindle  
10.57.88.00 ER25  
T134-00061 ER32  
● T134-00071 ER32  
■ T134-00089 ER32



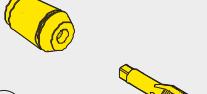
Pinza ER32  
Collet ER32  
T170-00XXX  
Ø min. 1 mm  
Ø max 20 mm



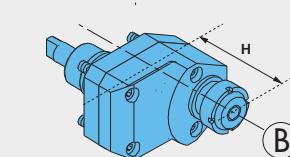
Bussola portamaschio ER32  
Tapping collets ER32  
T170-00XXX  
M 4 min.  
M 20 max



Mandrinetto assiale  
Axial live-spindle  
T134-00076 ER25  
T134-00077 ER32  
● T134-00088 ER32



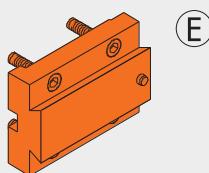
Pinza ER25  
Collet ER25  
T170-00XXX  
Ø min. 1 mm  
Ø max 10 mm



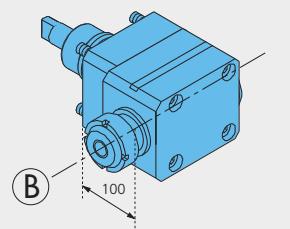
Mandrinetto radiale  
Radial live-spindle  
8000 giri/min - rpm  
**H=108** T134-00026  
12000 giri/min - rpm  
**H=70** T134-00060



Bussola portamaschio ER25  
Tapping collets ER25  
T170-00XXX  
M 3 min.  
M 10 max



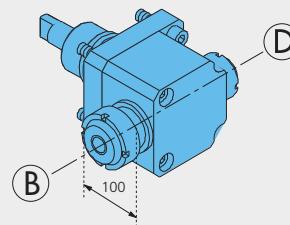
Supporto a coda di rondine  
Base for multiple-holder  
10.57.92.00



Mandrinetto assiale  
Axial live-spindle  
12000 giri/min - rpm  
● T134-00111



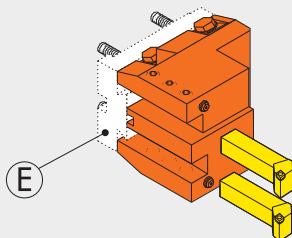
Pinza ER20  
Collet ER20  
T170-00XXX  
Ø min. 1 mm  
Ø max 13 mm



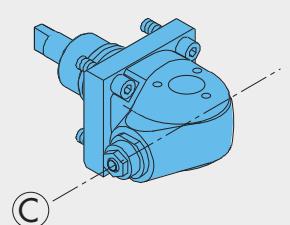
Mandrinetto assiale doppio  
Axial live spindle, double  
T134-00094



Bussola portamaschio ER20  
Tapping collets ER20  
T170-00XXX  
M 3 min.  
M 13 max



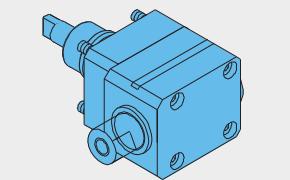
\* Portautensile verticale doppio  
Vertical double tool-holder  
41.03.25.00



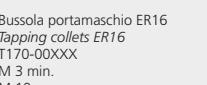
Mandrinetto orientabile  
Adjustable live-spindle  
3000 giri/min - rpm  
T134-00057  
● 8000 giri/min - rpm  
T134-00099



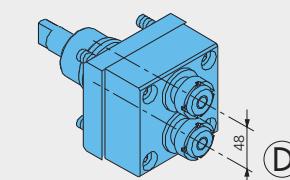
Pinza ER16  
Collet ER16  
T170-00XXX  
Ø min. 1 mm  
Ø max 10 mm



Mandrinetto poligonatore  
Polygon live-spindle  
42.47.10.43



Bussola portamaschio ER16  
Tapping collets ER16  
T170-00XXX  
M 3 min.  
M 10 max



\* Mandrinetto radiale doppio  
Radial live spindle, double  
8000 giri/min - rpm  
41.32.30.00



Pinza ER16  
Collet ER16  
T170-00XXX  
Ø min. 1 mm  
Ø max 10 mm

- \* Solo per versioni Y - YS  
Only for Y - YS
- Con refrigerante interno  
With internal coolant
- Tipo maggiorato  
With stronger bearings

**B545**  
**B565**

14 - 15

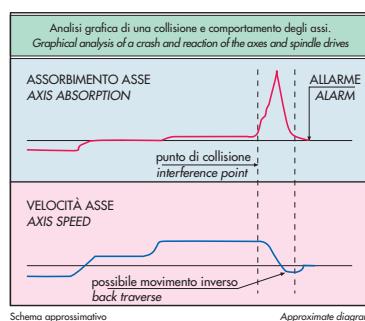
## Automazione di processo

*Automated process*



### ATTENUATORE DI COLLISIONE (air bag)

Questo speciale software rivelà istantaneamente un assorbimento anomalo causato da una collisione sia durante un movimento rapido sia durante la lavorazione. Ne consegue che, in caso di collisione, la rotazione del mandrino si arresta ed il



Schema approssimativo

Approximate diagram

movimento dell'asse viene invertito o bloccato (in base alla velocità di movimento) per qualche millimetro e poi arrestato, riducendo gli effetti della collisione. NOTA: questa funzione non evita la collisione.

### DAMAGE PROTECTION (air bag)

This special software detects the abnormal load created by a collision during rapid traverse or within the machining process. When a collision occurs, spindle rotation is stopped and the axis movement is halted thus damping the interference and limiting damage to the tooling. NOTE: this function does not prevent from collision.

### MANUAL GUIDE: FACILITÀ, RAPIDITÀ E SICUREZZA DI PROGRAMMAZIONE

L'innovativo software MANUAL GUIDE, con un'interfaccia grafica semplice ed intuitiva, con potenti funzioni di "editing" ed una vasta scelta di cicli di lavorazione (tornitura, fresatura e foratura), consente di eseguire anche i programmi più complessi con facilità e rapidità. Dotato di una realistica simulazione grafica 3D, esso permette di verificare in sicurezza il programma realizzato (opzione).



CNC Fanuc 31 i-T con video a colori 10.4" a cristalli liquidi  
CNC unit mod. Fanuc 31 i-T, 10.4" colour liquid crystal display

Tastiera alfanumerica  
Alphanumeric full-keyboard

Pannello operativo BIGLIA con tasti a membrana  
Biglia operator panel featuring softkeys

### SBS: MONITORAGGIO SFORZO UTENSILI

Questo dispositivo controlla gli utensili che sono fortemente impegnati e sono quindi soggetti a rottura (taglio, sgrossatura, punte ad inserto o elicoidali, ecc.) consentendo la lavorazione automatica in sicurezza con una sorveglianza ridotta (opzione).

### SBS: BIGLIA SAFETY SOFTWARE TOOL LOAD MONITORING

This system monitors the loading of the most heavily used tools: e.g. 1st op. cutting tools, roughening tools, drills or U-drills. It ensures safe automatic machining with limited operator presence (option).



### MANUAL GUIDE: QUICK AND EASY FOR PROGRAM RELIABILITY

The innovative MANUAL GUIDE software package provides operators with access to a very simple and user-friendly graphics interface, strong "editing" functions and offers a wide selection of machining cycles (turning, milling and drilling). This system allows the execution of even the most complex programs with ease of operation. The 3D simulation facilitates the checking of programmes before machining operations (option).



## Caratteristiche tecniche

*Technical specifications*

<b>CARATTERISTICHE TECNICHE</b>		<b>TECHNICAL SPECIFICATIONS</b>		
<b>TORNO MODELLO</b>	<b>MACHINE TYPE</b>		<b>B545</b>	<b>B565</b>
<b>CAPACITA'</b>		<b>MACHINING CAPACITY</b>		
Max. diam. lavorabile da barra	Bar capacity	mm	45	65
Max. diam. lavorabile da ripresa	Max. machining diameter	mm	220	290
Max. lunghezza lavorabile	Max. machining length	mm	560	560
Max. diametro rotante	Max. swing over diameter	mm	580	580
<b>MANDRINO PRINCIPALE</b>		<b>MAIN SPINDLE</b>		
Velocità di rotazione max	Max. speed	giri/min - rpm	5000	4000
Naso mandrino	Spindle nose	ASA	5"	6"
Foro mandrino	Spindle bore	mm	55	76
Diametro interno cuscinetti	Inside diam. of bearings	mm	90	110
Autocentrante diametro	Chuck diameter	mm	165 / 210	210 / 250
Potenza motore	Motor power	kW	11 / 15	22 / 26
Coppia motore	Motor torque	Nm	79 / 108	189 / 223
<b>CONTROTESTA</b>		<b>SUB-SPINDLE</b>		
Velocità di rotazione max	Max. speed	giri/min - rpm	5000	5000
Naso mandrino	Spindle nose	ASA	5"	5"
Foro mandrino	Spindle bore	mm	55	55
Foro passante utile	Drawtube inside diameter	mm	45	45
Diametro interno cuscinetti	Inside diam. of bearings	mm	90	90
Autocentrante diametro	Chuck diameter	mm	140 / 165	140 / 165
Potenza motore	Motor power	kW	7,5 / 11	7,5 / 11
Coppia motore	Motor torque	Nm	70 / 100	76 / 112
Rapido asse B	B-axis rapid traverse	m/min	30	30
<b>TORRETTA</b>		<b>TURRET</b>		
Numero posizioni	No of tools	N°	12	12
Stelo utensile per esterno/interno	Tool shank for OD/ID turning	mm	20 x 20 - 25 x 25 - Ø 32	20 x 20 - 25 x 25 - Ø 32
Tempo rotazione (1 pos)	Turret indexing (1 pos)	sec	0,15	0,15
<b>UTENSILI MOTORIZZATI</b>		<b>LIVE TOOLING</b>		
Numero posizioni	No of live tools	N°	12	12
Velocità di rotazione max	Max. speed	giri/min - rpm	3000 (4000)*	3000 (4000)*
Potenza motore	Motor power	kW	3,7	3,7
Coppia motore	Motor torque	Nm	47	47
<b>ASSE C</b>		<b>C-AXIS</b>		
Minimo valore programmabile	Min. programmable value	°	0,001	0,001
Max. velocità rapida	Max. rapid traverse	giri/min - rpm	100	100
<b>ASSI</b>		<b>AXES</b>		
Corsa asse X	X-axis stroke	mm	170	170
Corsa asse Z	Z-axis stroke	mm	560	560
Corsa asse Y	Y-axis stroke	mm	+55 / -50	+55 / -50
Corsa asse B	B-axis stroke	mm	490	490
Rapido asse X	X-axis rapid traverse	m/min	20	20
Rapido asse Z	Z-axis rapid traverse	m/min	24	24
Rapido asse Y	Y-axis rapid traverse	m/min	6	6
<b>CONTROPUNTA</b>		<b>TAILSTOCK</b>		
Cono portapunta	Morse taper	C.M.	5 / 4	5 / 4
Rapido asse B	B-axis rapid traverse	m/min	15	15
<b>REFRIGERANTE</b>		<b>COOLING SYSTEM</b>		
Capacità vasca	Tank capacity	l	250	250
Portata pompa	Pump nominal displacement	l/min	230	230
Potenza motore pompa	Electropump motor rating	kW	1,5	1,5
<b>DIMENSIONI - PESO</b>		<b>DIMENSIONS AND WEIGHT</b>		
Ingombro con trasportatore trucioli	Machine with swarf conveyor	mm	4240 x 2000 x 1900 h*	4240 x 2000 x 1900 h*
Altezza centro mandrino	Spindle centre height	mm	1000	1000
Peso con trasportatore trucioli	Machine weight with swarf conv.	kg	4900**	5050***

(\* ) versione / version Y-Y5    (\*) 2020 h: per / for B545Y-Y5    (\*\*) versione / version B545YS    (\*\*\*) versione / version B565YS

## PROGRAMMA DI PRODUZIONE      *PRODUCTION PROGRAM*

### » CENTRI DI TORNITURA CNC    *CNC TURNING CENTRES*

	B545	B545M	B545S	B545SM	B545Y	B545YS
	B565	B565M	B565S	B565SM	B565Y	B565YS
	B650	B650M	B650SM	B650Y	B650YS	
	B658	B658M	B658SM	B658Y	B658YS	
	B1200	B1200M	B1200Y	B1200B	B1200MB	B1200YB
	B1200S	B1200SM	B1200YS			

### » TORNITURA DA BARRA MULTITORRETTA    *MULTITURRET BAR TURNING*

	B436Y2					
	B446S	B446S2M	B446Y	B446Y2		
	B465S	B465S2M	B465Y	B465Y2		
	B745Y3					
	B765Y3					

### » TORNITURA FRESATURA INTEGRATA    *INTEGRATED TURN-MILL OPERATIONS*

	SMART TURN	SMART TURN S				

### » TORNI VERTICALI CNC    *CNC VERTICAL LATHES*

	BV210	BV210M	BV210Y			
	BV315	BV315M	BV315Y			



# Biglia

THE TURNING TECH

## CENTRI DI TORNITURA CNC - CNC TURNING CENTRES

**B545-M-S-SM-Y-YS**

**B565-M-S-SM-Y-YS**



**Biglia**

**B545**  
**B565**

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## L'affidabilità e la tradizione Biglia per la tornitura efficiente

I rinnovati modelli B545 / B565 nascono sulla base della sperimentata serie B510, di cui costituiscono la naturale evoluzione. BIGLIA ha così ottenuto una gamma di torni universali di qualità elevata che, grazie alla robusta struttura e alla nuova torretta BIGLIA, offre all'utilizzatore finale:

- RIGIDEZZA
- PRECISIONE
- VELOCITÀ NELLE LAVORAZIONI
- il tutto combinato con
- GRANDE AFFIDABILITÀ
- PREZZO MOLTO COMPETITIVO.

L'applicazione del concetto di costruzione modulare consente di offrire una vasta gamma di possibilità e di funzioni, dalla tornitura universale alla lavorazione completa con utensili motorizzati, contromandrino ed assi C/Y.

La serie B545 / B565 è disponibile in 6 versioni con passaggio barra 45 mm o 65 mm e permette di scegliere la soluzione "su misura" per ogni specifica applicazione.



## *Biglia reliability and tradition for the efficient turning*

The new B545 / 565 models are the latest evolution of the established B510 series.

BIGLIA now offers a range of high quality universal lathes that, thanks to the sturdy bed and the new BIGLIA turret, deliver:

- **THE NECESSARY RIGIDITY**
- **ACCURACY**
- **RAPIDITY IN MACHINING**  
all of this combined with
- **GREAT RELIABILITY**
- **VERY COMPETITIVE PRICES.**

The modular concept enables a wide range of alternative specifications and functions, from simple turning to complete machining using live tools, sub-spindle and C/Y axis.

The new B545 / B565 models are available in 6 versions with bar capacity of 45 mm or 65 mm allowing to meet your every requirement in every application.

### **VERSIONI DISPONIBILI**

#### **B545 / B565**

- Macchina base con contropunta automatica

#### **B545 M / B565 M**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Contropunta automatica

#### **B545 S / B565 S**

- Torretta a 12 posizioni
- Contromandrino

#### **B545 SM / B565 SM**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Contromandrino con asse C

#### **B545 Y / B565 Y**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Asse Y
- Contropunta automatica

#### **B545 YS / B565 YS**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Asse Y
- Contromandrino con asse C

### **MODELS AVAILABLE**

#### **B545 / B565**

- Automatic tailstock

#### **B545 M / B565 M**

- Rotary tools (12)
- Main spindle with C-axis
- Automatic tailstock

#### **B545 S / B565 S**

- Tools (12)
- Sub-spindle

#### **B545 SM / B565 SM**

- Rotary tools (12)
- Main spindle with C-axis
- Sub-spindle with C-axis

#### **B545 Y / B565 Y**

- Rotary tools (12)
- Main spindle with C-axis
- Y axis
- Automatic tailstock

#### **B545 YS / B565 YS**

- Rotary tools (12)
- Main spindle with C-axis
- Y axis
- Sub-spindle with C-axis

**B545**  
**B565**

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## Asse Y: Lavorazione completa in un solo ciclo

### UN ALTRO PASSO AVANTI NELLA LAVORAZIONE COMBINATA TORNITURA - FRESATURA SU TORNI CNC

L'asse C con gli utensili motorizzati su torni CNC sono una tecnologia consolidata, ma con alcuni limiti di lavorazione. Infatti, tagli di chiavetta con tolleranze precise, fresature piane, minima rugosità, planarità perfetta e forature - maschiature radiali fuori centro non possono essere eseguite con asse C ed utensili motorizzati. Nelle versioni Y e YS l'asse Y combina tutti i vantaggi di un tornio CNC e un centro di lavorazione a 4 assi rendendo realizzabili, facili e precise, tutte le lavorazioni di foratura maschiatura e fresatura in asse e fuori asse. La corsa di 105 mm e la rigidità della struttura sono ai vertici della sua categoria. Nella versione YS la presenza del contromandrino con l'asse C permette la lavorazione completa in automatico di entrambi i lati del pezzo. I principali vantaggi conseguibili con un centro di tornitura multifunzione sono:

- MAGGIORE PRECISIONE
- RIDUZIONE DEI COSTI
- RIDUZIONE DEI TEMPI IMPRODUTTIVI
- MAGGIORE FLESSIBILITÀ PER AFFRONTARE LE RICHIESTE DI UN MERCATO IN CONTINUA EVOLUZIONE.



## *Y-Axis: Complete machining in one set-up*

### **ANOTHER LEAP FORWARD IN INTEGRATED MACHINING PROCESSES ON CNC-LATHES**

The rotary tools with C-axis is a proven technology for simple milling and drilling operations, but with some limitations.

Actually, machinings like accurate key-ways, flat-milling with high surface finish and perfect flatness as well as radial off-centre drilling and tapping cannot be satisfactorily completed without the Y-axis. The Y and YS versions with vertical Y-axis overcome these limitations combining in a single machine turning and milling capability of a 4 axis machining centre (X, Z, C and Y).

The generous stroke of 105 mm and the rigidity of the Y axis frame are at the top of its class. The YS version features a second spindle with C-axis enabling automatic complete machining of the parts.

The main performance benefits achievable with the Y and YS version multifunction turning centres are:

- **IMPROVE PARTS ACCURACY**
- **REDUCTION OF COSTS**
- **REDUCTION OF NON-PRODUCTIVE TIME**
- **INCREASED FLEXIBILITY TO COUNTER CONSTANTLY CHANGING MARKET DEMAND.**

### **VERSIONI DISPONIBILI**

#### **B545 Y / B565 Y**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Asse Y
- Contropunta automatica

#### **B545 YS / B565 YS**

- Torretta a 12 posizioni motorizzate
- Mandrino principale con asse C
- Asse Y
- Contromandrino

### **MODELS AVAILABLE**

#### **B545 Y / B565 Y**

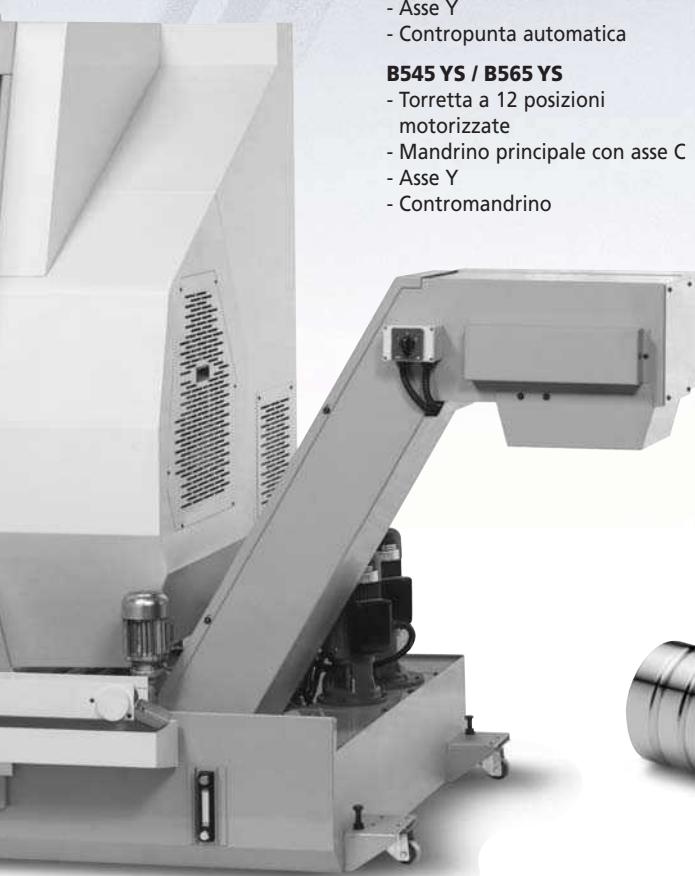
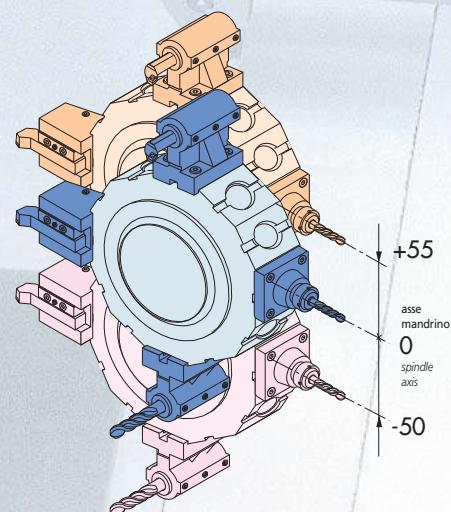
- Rotary tools (12)
- Main spindle with C-axis
- Y axis
- Automatic tailstock

#### **B545 YS / B565 YS**

- Rotary tools (12)
- Main spindle with C-axis
- Y axis
- Sub-spindle with C-axis

### **Operazioni ottenibili con l'asse Y Operations performed with the Y-axis**

- 1 Fresatura del piano con più passate  
Flat milling in repeated cuts
- 2 Fresatura cava irregolare (sgrossatura-finitura)  
Irregular slot milling (roughness - finishing)
- 3 Fresatura a foro e sede  
Key-way milling
- 4 Fresatura filetto  
Thread milling
- 5 Foratura e filettatura serie di fori a reticolato  
Drilling and milling grid holes
- 6 Fresatura di una chiaffetta precisa  
Milling of an accurate keyway



**B545**  
**B565**

6 - 7

## Tornire con più velocità e più profitto

*Designed to assure more speed and more profit*

### ALLESTIMENTO STANDARD

- Basamento in ghisa stabilizzata
- Mandrino a cartuccia
- Torretta servoazionata a 12 posizioni
- Mano raccoglipezzo e predisposizione spingibarra
- Serie di portautensili e boccole di riduzione
- Trasportatore trucioli
- Lampada stato macchina
- Impianto refrigerante media pressione
- Armadio elettrico climatizzato

### STANDARD FEATURES

- Cast iron machine bed
- Cartridge spindle
- 12 position BIGLIA servo-turret
- Parts catcher & bar-feeder interface
- Tooling kit (tool holders & bushings)
- Chip conveyor
- Two color alarm lamp
- Coolant supply
- Electrical cabinet air conditioned

### OPZIONI PRINCIPALI

- Azzeratore utensili
- Refrigerante ad alta pressione
- Filtro refrigerante
- Nastro convogliatore pezzi finiti
- Disoleatore
- Aspiratore fumi
- Monitoraggio sforzo utensili SBS
- Porta automatica

### OPTIONAL FEATURES

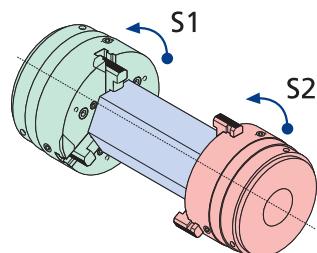
- Tool setter
- High pressure coolant
- Coolant filter
- Finished parts conveyor
- Oil skimmer
- Moist exhauster
- SBS tool load monitoring system
- Automatic door

### SINCRONIZZAZIONE DEI DUE MANDRINI

Indispensabile per eseguire il taglio della barra senza lasciare testimone e per ridurre il tempo di lavorazione. È possibile sincronizzare angolarmente i due mandrini per bloccare in rotazione pezzi tondi o poligonali. In sincronizzazione è possibile fermare, ripartire o invertire la rotazione.

### SPINDLE SYNCHRONISATION

The ability to part off bar without leaving a pip reduces cycle time. Not only can the spindle speeds be synchronized, but angular displacement can be oriented so that round or polygonal parts are clamped without stopping spindle rotation. It is possible to start, stop and change rotation of both spindles while maintaining synchronisation.



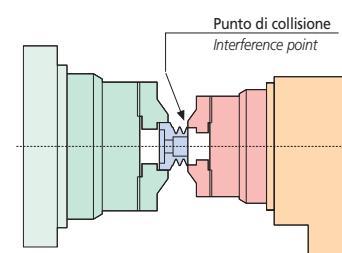
### SFORZO CONTROLLATO DEL CONTROMANDRINO

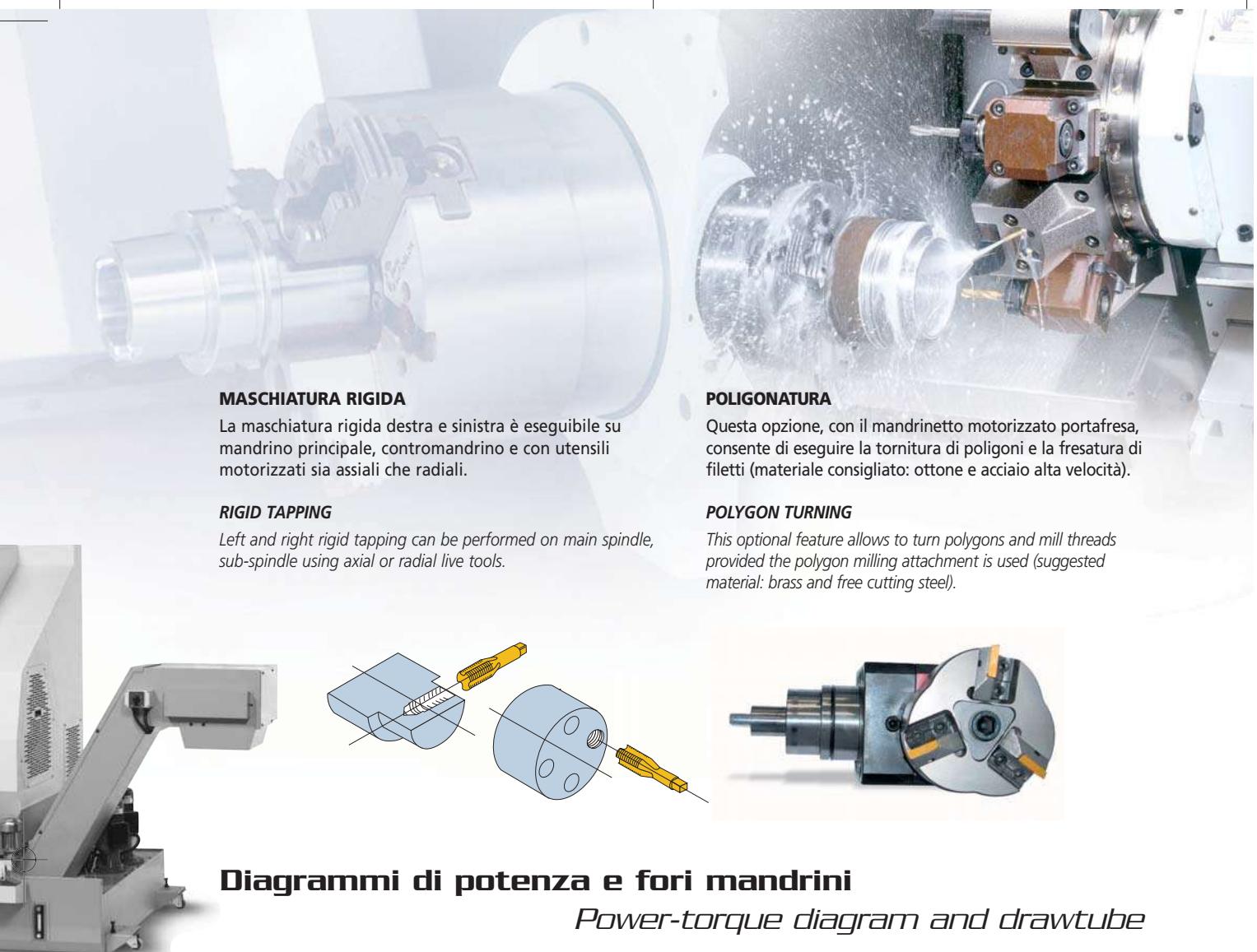
Controllando lo sforzo del motore asse B è possibile trasferire il pezzo dal mandrino principale al contromandrino in piena sicurezza. Serve quando ci sono trucioli nella pinza del contromandrino, quando il pezzo da prelevare è più grande della pinza oppure quando il pezzo non è stato tagliato.

### SUB-SPINDLE LOAD MONITORING

While monitoring B-axis motor load, the workpiece can be transferred from main to sub-spindle.

This feature is important if there is any swarf in the sub-spindle collet or if the workpiece to be transferred is larger than the collet or has not been parted off correctly from the main spindle.





### MASCHIATURA RIGIDA

La maschiatura rigida destra e sinistra è eseguibile su mandrino principale, contromandrino e con utensili motorizzati sia assiali che radiali.

### RIGID TAPPING

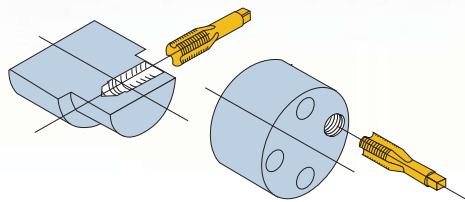
*Left and right rigid tapping can be performed on main spindle, sub-spindle using axial or radial live tools.*

### POLIGONATURA

Questa opzione, con il mandrinetto motorizzato portafresa, consente di eseguire la tornitura di poligoni e la fresatura di filetti (materiale consigliato: ottone e acciaio alta velocità).

### POLYGON TURNING

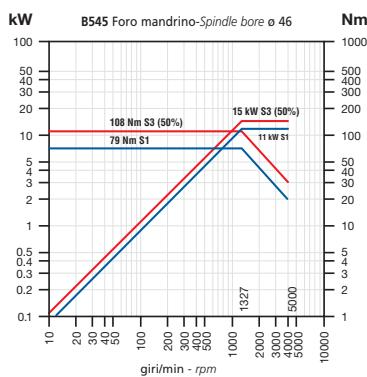
*This optional feature allows to turn polygons and mill threads provided the polygon milling attachment is used (suggested material: brass and free cutting steel).*



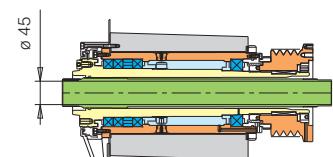
## Diagrammi di potenza e fori mandrini

*Power-torque diagram and drawtube*

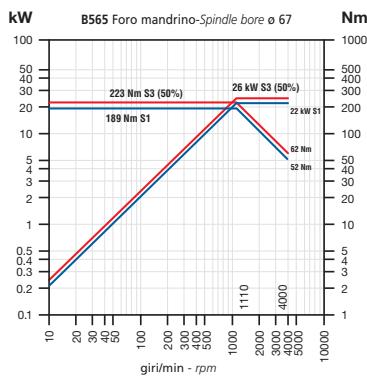
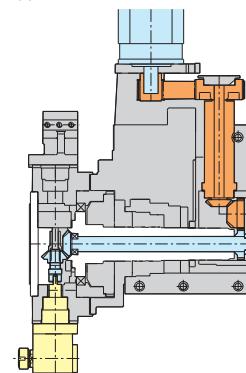
Mandrino principale  
Main spindle



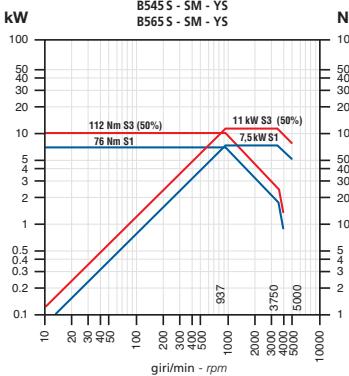
Contromandrino  
Sub-spindle



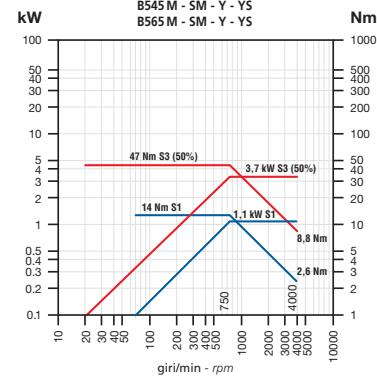
Utensili motorizzati  
Live tools



B545 S - SM - YS  
B565 S - SM - YS



B545 M - SM - Y - YS  
B565 M - SM - Y - YS



# B545

# B565

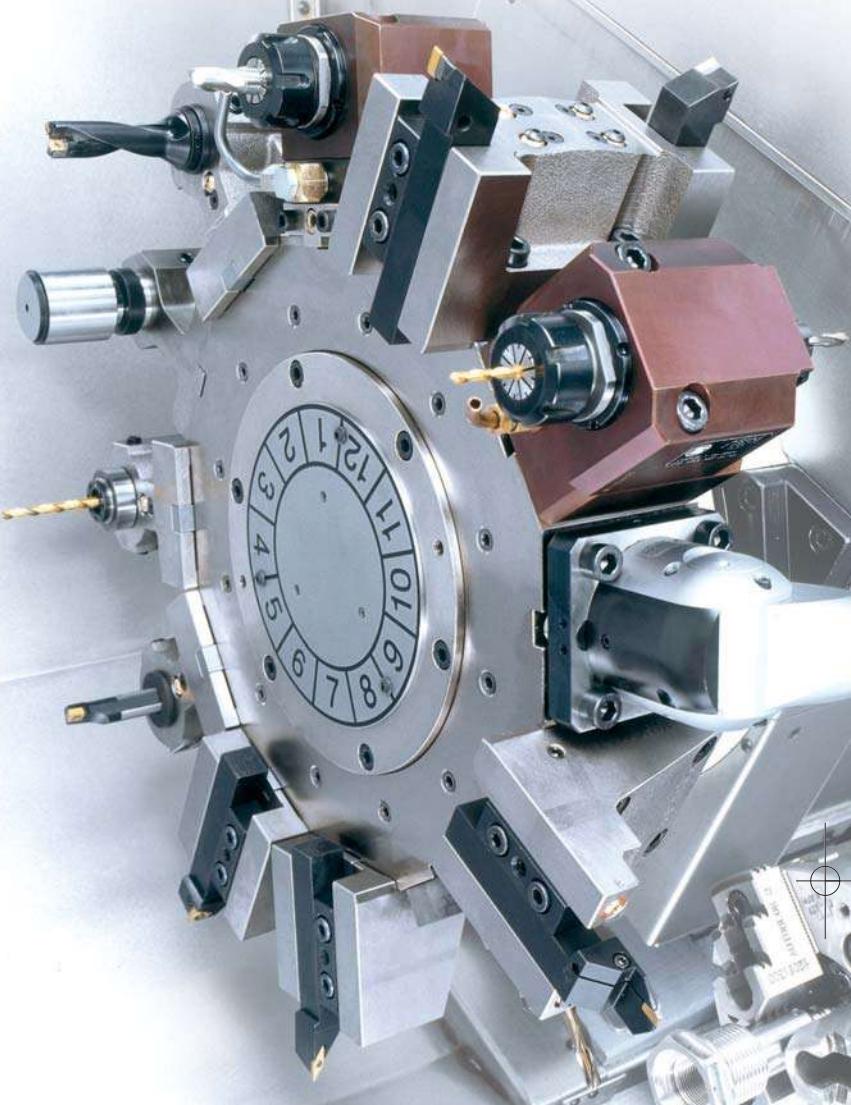
8 - 9

## Torretta ed accessori

### *Turret and tooling*

La robusta torretta BIGLIA a 12 posizioni è azionata da un servomotore: la rotazione è bidirezionale con tempo di indexaggio pari a 0,15 sec. La rigidezza in lavorazione è assicurata da una dentatura Hirth generosamente dimensionata. Nella versione motorizzata tutte e 12 le stazioni possono ricevere portautensili rotanti in grado di lavorare sia sul mandrino principale che sul contromandrino.

The rugged BIGLIA 12-station turret operates via a servo-motor delivering bi-directional rotation and an indexing time of 0.15 second. And the use of a precisely dimensioned Hirth gear ensures machining rigidity. The live tool version each of the 12 stations can accept rotating toolholders to machine parts from both the main and sub-spindle.



1 2

Lavorazioni sul contromandrino dotato di asse C con utensili fissi e motorizzati, con pinza/autocentrante.

Machining on sub-spindle with C-axis, with fixed and rotary tools with collet/chuck.



1

2

## Produttività ottimale

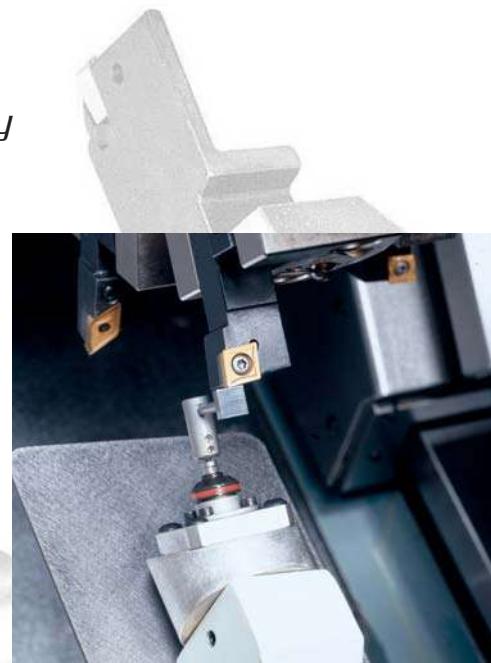
### *Increased productivity*

#### AZZERATORE UTENSILI

Questo dispositivo facilita l'azzeramento degli utensili, rendendolo rapido e preciso. Toccando il sensore con la punta dell'utensile, il valore della correzione viene memorizzato automaticamente nella tabella dei correttori; si riduce così il tempo di attrezzaggio (opzione).

#### TOOL-SETTER

*This device makes tool-setting simple, fast and accurate. The tool tip is brought into contact with the probe and the tool offset value is automatically stored into relevant table of the CNC control. This reduces setting-up time (option).*

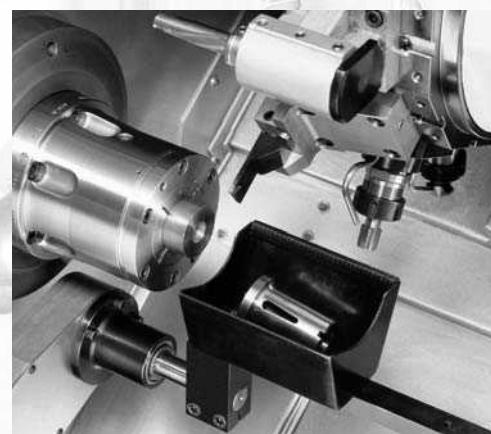


#### NUOVO SCARICATORE, ESPULSORE

Lo scaricatore automatico dei pezzi, di nuova generazione, consente lo scarico del pezzo finito sia sul mandrino principale sia sul contromandrino. Sul contromandrino lo scarico avviene in tempo mascherato.

#### NEW PARTS-CATCHER, EJECTOR

*The new parts-catcher, ejector enable unloading of finished parts both from main spindle and sub-spindle. On sub-spindle unloading is performed in idle time.*



#### CONTROPUNTA AUTOMATICA: RIDUZIONE DEL TEMPO CICLO

Il corpo della contropunta scorre su una slitta indipendente ed è comandato da un gruppo motore vite (asse B). È ideale nella lavorazione da barra di alberi che devono essere prima centrati-forati e poi sostenuti dalla contropunta per la tornitura. Può essere utilizzato anche come asse di lavoro per eseguire una foratura in contemporanea alla tornitura (standard per: B545-M-Y / B565-M-Y).

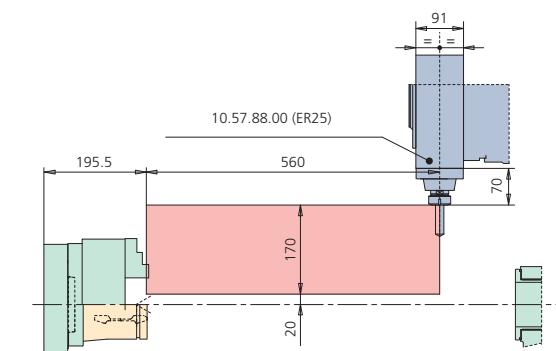
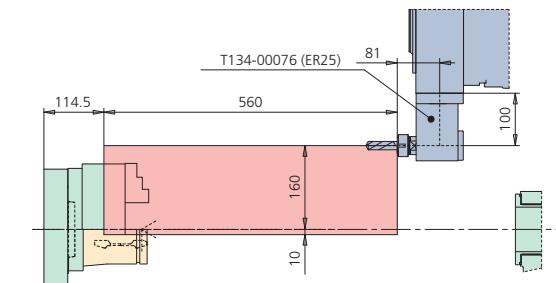
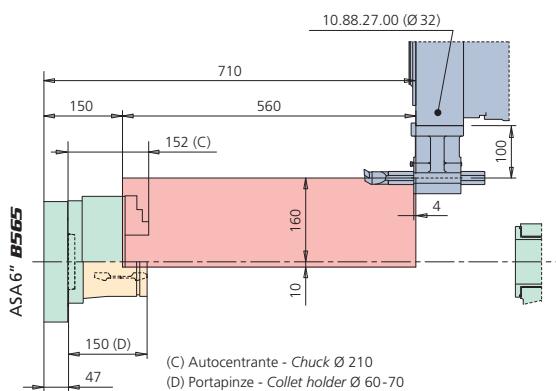
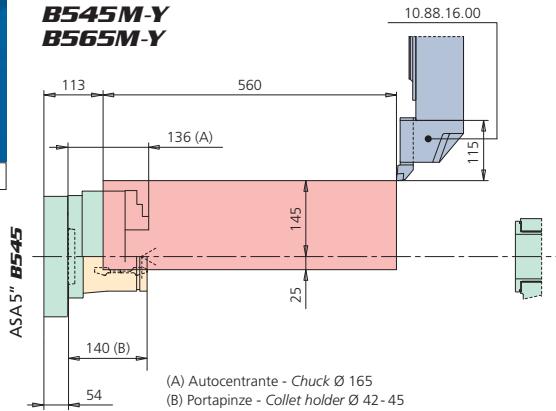
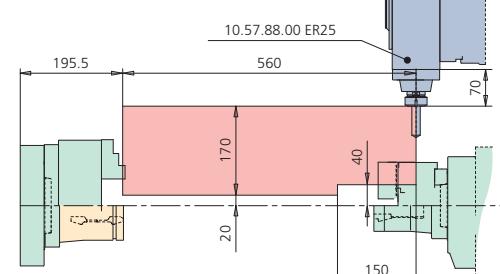
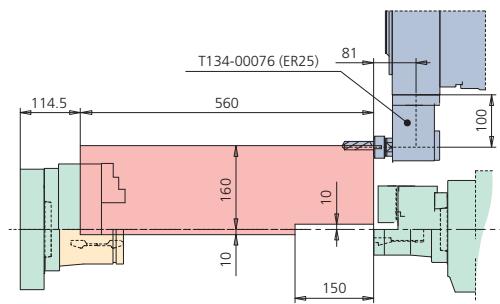
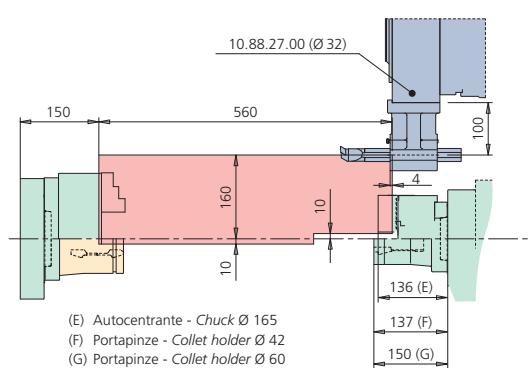
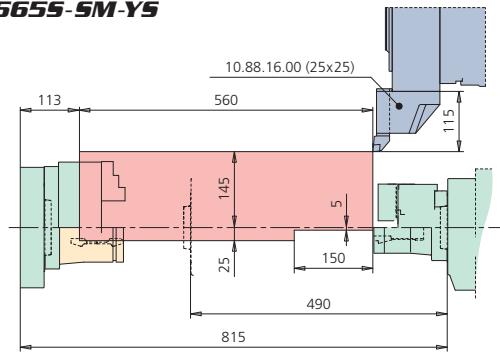
#### AUTOMATIC TAILSTOCK FOR REDUCED CYCLE TIME

*The tailstock body is mounted on an independent slideway and is operated by a servo motor (B-axis). It is particularly suitable for the machining of shafts that must be centre-drilled first and then supported by the tailstock for turning operations. It can also be used to perform simultaneously both drilling and turning (standard for: B545-M-Y / B565-M-Y).*



**B545****Campo di lavoro** *Machining field*

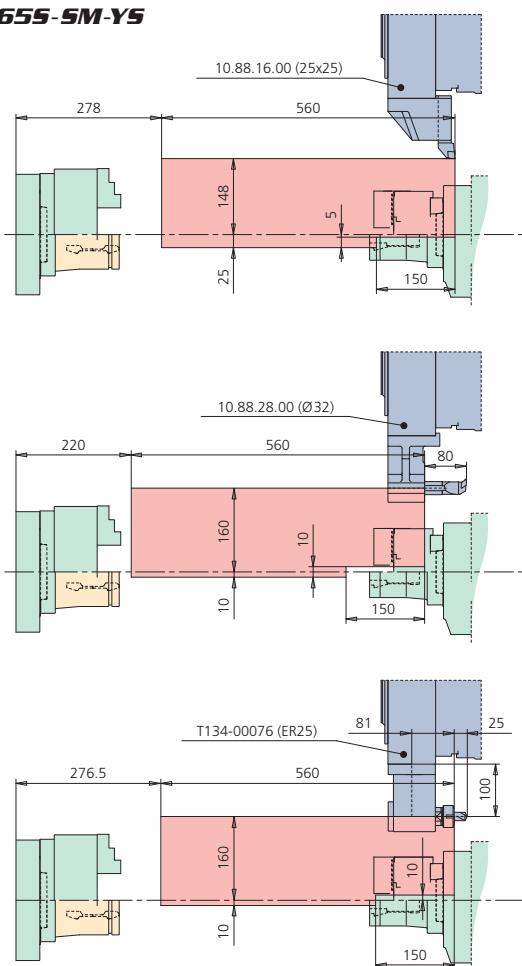
10 - 11

**CAMPO DI TORNITURA / FRESATURA**  
**TURNING FIELD / MILLING FIELD****B545M-Y**  
**B565M-Y****CAMPO DI TORNITURA / FRESATURA**  
**TURNING FIELD / MILLING FIELD****B545S-SM-YS**  
**B565S-SM-YS**CAM  
TURBS  
BSCAM  
Y-A

**B565**

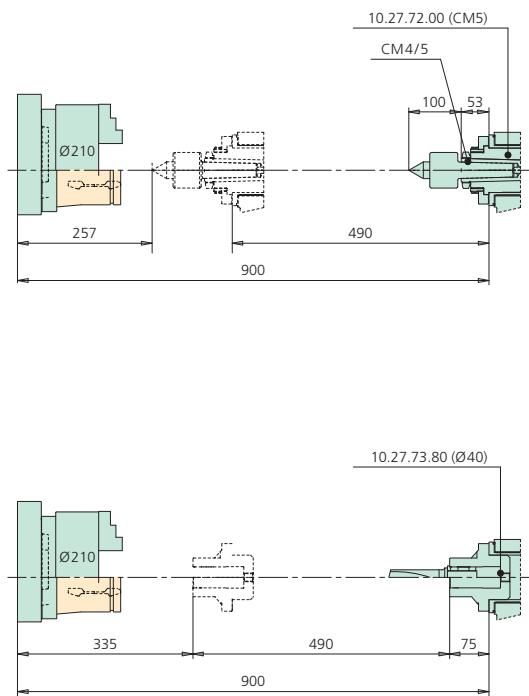
**CAMPO DI TORNITURA VERSO CONTROTESTA**  
TURNING FIELD TOWARDS SUB-SPINDLE

**B545S-SM-Y5**  
**B565S-SM-Y5**



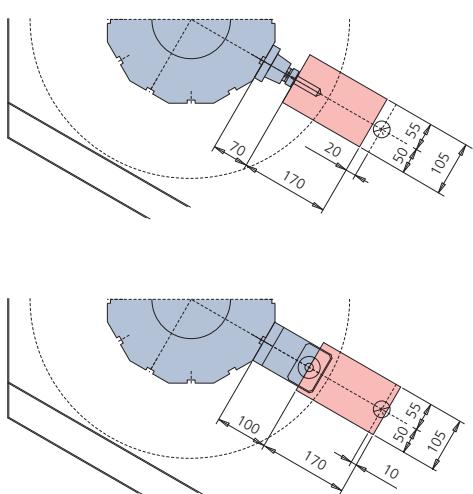
**CONTROPUNTA AUTOMATICA**  
AUTOMATIC TAILSTOCK

**B545M-Y**  
**B565M-Y**

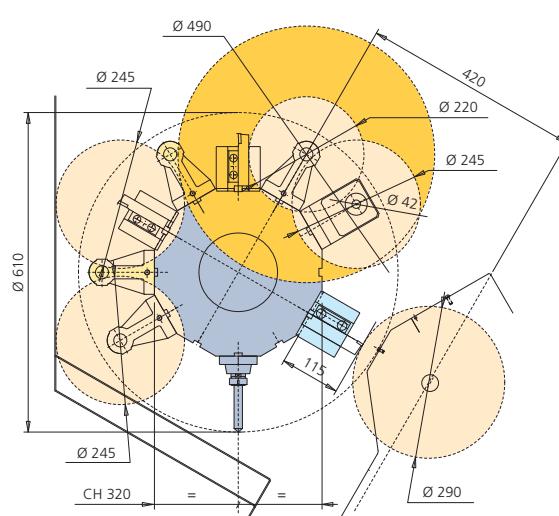


**CAMPO ASSE Y**  
Y-AXIS FIELD

**B545-B565**



**B545-B565**

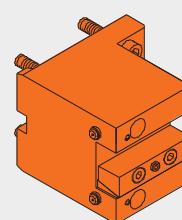
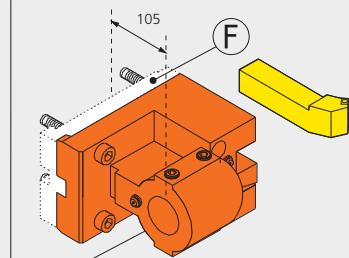
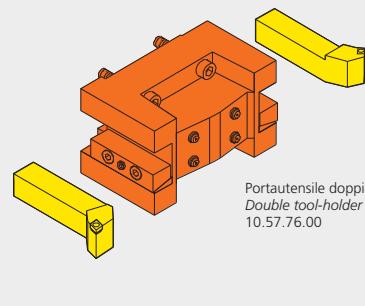
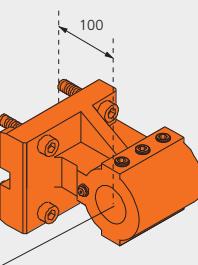
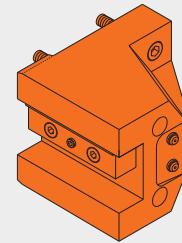
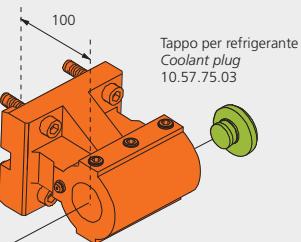
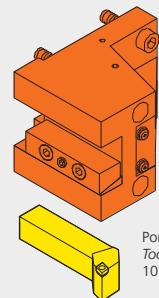
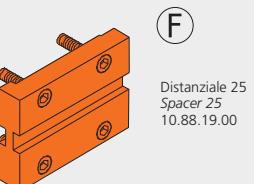
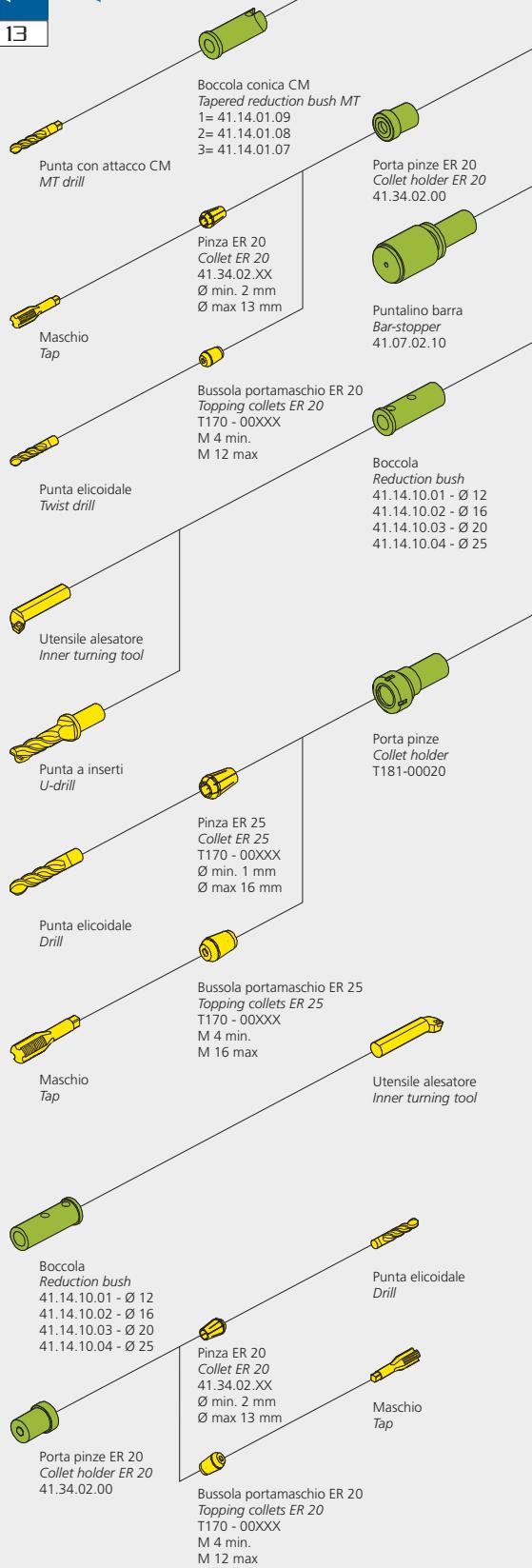


**Campo di lavoro** *Machining field*

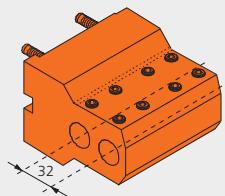
# B545

# B565

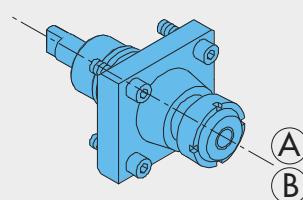
12 - 13



# Portautensili e accessori Tooling system



Portabareno doppio ø 25  
Double boring bars ø 25  
10.88.43.00



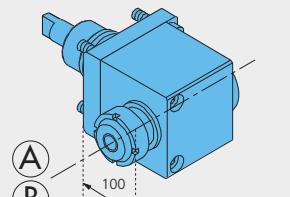
Mandrinetto radiale  
Radial live-spindle  
10.57.88.00 ER25  
T134-00061 ER32  
● T134-00071 ER32  
■ T134-00089 ER32



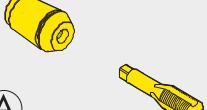
Pinza ER32  
Collet ER32  
T170-00XXX  
Ø min. 1 mm  
Ø max 20 mm



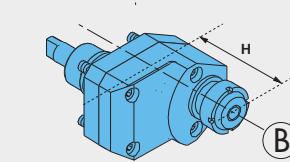
Bussola portamaschio ER32  
Tapping collets ER32  
T170-00XXX  
M 4 min.  
M 20 max



Mandrinetto assiale  
Axial live-spindle  
T134-00076 ER25  
T134-00077 ER32  
● T134-00088 ER32



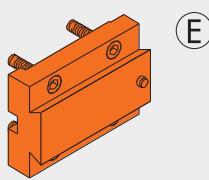
Pinza ER25  
Collet ER25  
T170-00XXX  
Ø min. 1 mm  
Ø max 10 mm



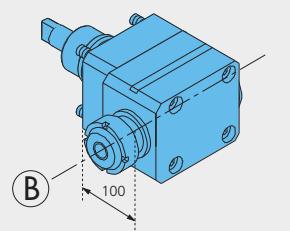
Mandrinetto radiale  
Radial live-spindle  
8000 giri/min - rpm  
**H=108** T134-00026  
12000 giri/min - rpm  
**H=70** T134-00060



Bussola portamaschio ER25  
Tapping collets ER25  
T170-00XXX  
M 3 min.  
M 10 max



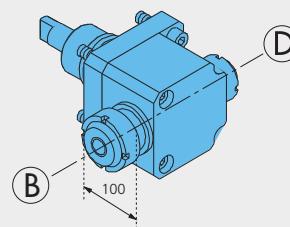
Supporto a coda di rondine  
Base for multiple-holder  
10.57.92.00



Mandrinetto assiale  
Axial live-spindle  
12000 giri/min - rpm  
● T134-00111



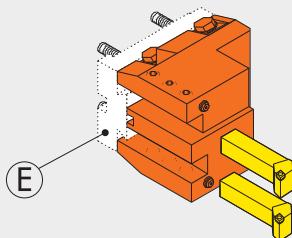
Pinza ER20  
Collet ER20  
T170-00XXX  
Ø min. 1 mm  
Ø max 13 mm



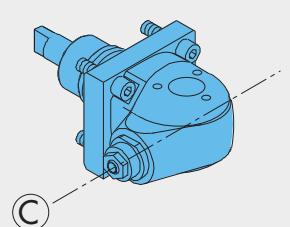
Mandrinetto assiale doppio  
Axial live spindle, double  
T134-00094



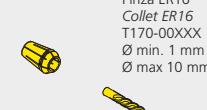
Bussola portamaschio ER20  
Tapping collets ER20  
T170-00XXX  
M 3 min.  
M 13 max



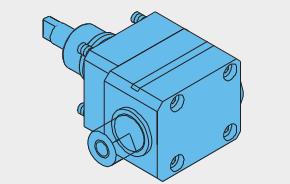
\* Portautensile verticale doppio  
Vertical double tool-holder  
41.03.25.00



Mandrinetto orientabile  
Adjustable live-spindle  
3000 giri/min - rpm  
T134-00057  
● 8000 giri/min - rpm  
T134-00099



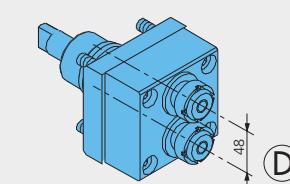
Pinza ER16  
Collet ER16  
T170-00XXX  
Ø min. 1 mm  
Ø max 10 mm



Mandrinetto poligonatore  
Polygon live-spindle  
42.47.10.43



Bussola portamaschio ER16  
Tapping collets ER16  
T170-00XXX  
M 3 min.  
M 10 max



\* Mandrinetto radiale doppio  
Radial live spindle, double  
8000 giri/min - rpm  
41.32.30.00



Pinza ER16  
Collet ER16  
T170-00XXX  
Ø min. 1 mm  
Ø max 10 mm

- \* Solo per versioni Y - YS  
Only for Y - YS
- Con refrigerante interno  
With internal coolant
- Tipo maggiorato  
With stronger bearings

**B545**  
**B565**

14 - 15

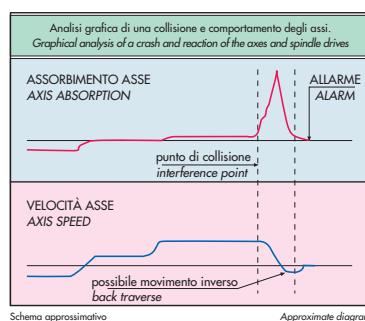
## Automazione di processo

*Automated process*



### ATTENUATORE DI COLLISIONE (air bag)

Questo speciale software rivelà istantaneamente un assorbimento anomalo causato da una collisione sia durante un movimento rapido sia durante la lavorazione. Ne consegue che, in caso di collisione, la rotazione del mandrino si arresta ed il



movimento dell'asse viene invertito o bloccato (in base alla velocità di movimento) per qualche millimetro e poi arrestato, riducendo gli effetti della collisione. NOTA: questa funzione non evita la collisione.

### DAMAGE PROTECTION (air bag)

This special software detects the abnormal load created by a collision during rapid traverse or within the machining process. When a collision occurs, spindle rotation is stopped and the axis movement is halted thus damping the interference and limiting damage to the tooling. NOTE: this function does not prevent from collision.

### MANUAL GUIDE: FACILITÀ, RAPIDITÀ E SICUREZZA DI PROGRAMMAZIONE

L'innovativo software MANUAL GUIDE, con un'interfaccia grafica semplice ed intuitiva, con potenti funzioni di "editing" ed una vasta scelta di cicli di lavorazione (tornitura, fresatura e foratura), consente di eseguire anche i programmi più complessi con facilità e rapidità. Dotato di una realistica simulazione grafica 3D, esso permette di verificare in sicurezza il programma realizzato (opzione).



CNC Fanuc 31 i-T con video a colori 10.4" a cristalli liquidi  
CNC unit mod. Fanuc 31 i-T, 10.4" colour liquid crystal display

Tastiera alfanumerica  
Alphanumeric full-keyboard

Pannello operativo BIGLIA con tasti a membrana  
Biglia operator panel featuring softkeys

### SBS: MONITORAGGIO SFORZO UTENSILI

Questo dispositivo controlla gli utensili che sono fortemente impegnati e sono quindi soggetti a rottura (taglio, sgrossatura, punte ad inserto o elicoidali, ecc.) consentendo la lavorazione automatica in sicurezza con una sorveglianza ridotta (opzione).

### SBS: BIGLIA SAFETY SOFTWARE TOOL LOAD MONITORING

This system monitors the loading of the most heavily used tools: e.g. 1st op. cutting tools, roughening tools, drills or U-drills. It ensures safe automatic machining with limited operator presence (option).



### MANUAL GUIDE: QUICK AND EASY FOR PROGRAM RELIABILITY

The innovative MANUAL GUIDE software package provides operators with access to a very simple and user-friendly graphics interface, strong "editing" functions and offers a wide selection of machining cycles (turning, milling and drilling). This system allows the execution of even the most complex programs with ease of operation. The 3D simulation facilitates the checking of programmes before machining operations (option).



## Caratteristiche tecniche

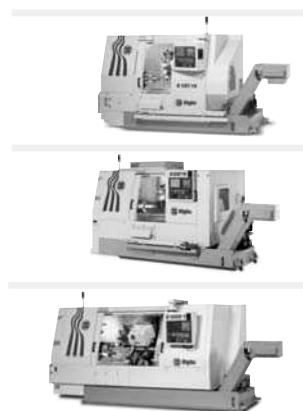
*Technical specifications*

<b>CARATTERISTICHE TECNICHE</b>		<b>TECHNICAL SPECIFICATIONS</b>		
<b>TORNO MODELLO</b>		<b>MACHINE TYPE</b>		<b>B545</b>
<b>CAPACITA'</b>		<b>MACHINING CAPACITY</b>		
Max. diam. lavorabile da barra	Bar capacity	mm	45	65
Max. diam. lavorabile da ripresa	Max. machining diameter	mm	220	290
Max. lunghezza lavorabile	Max. machining length	mm	560	560
Max. diametro rotante	Max. swing over diameter	mm	580	580
<b>MANDRINO PRINCIPALE</b>		<b>MAIN SPINDLE</b>		
Velocità di rotazione max	Max. speed	giri/min - rpm	5000	4000
Naso mandrino	Spindle nose	ASA	5"	6"
Foro mandrino	Spindle bore	mm	55	76
Diametro interno cuscinetti	Inside diam. of bearings	mm	90	110
Autocentrante diametro	Chuck diameter	mm	165 / 210	210 / 250
Potenza motore	Motor power	kW	11 / 15	22 / 26
Coppia motore	Motor torque	Nm	79 / 108	189 / 223
<b>CONTROTESTA</b>		<b>SUB-SPINDLE</b>		
Velocità di rotazione max	Max. speed	giri/min - rpm	5000	5000
Naso mandrino	Spindle nose	ASA	5"	5"
Foro mandrino	Spindle bore	mm	55	55
Foro passante utile	Drawtube inside diameter	mm	45	45
Diametro interno cuscinetti	Inside diam. of bearings	mm	90	90
Autocentrante diametro	Chuck diameter	mm	140 / 165	140 / 165
Potenza motore	Motor power	kW	7,5 / 11	7,5 / 11
Coppia motore	Motor torque	Nm	70 / 100	76 / 112
Rapido asse B	B-axis rapid traverse	m/min	30	30
<b>TORRETTA</b>		<b>TURRET</b>		
Numero posizioni	No of tools	N°	12	12
Stelo utensile per esterno/interno	Tool shank for OD/ID turning	mm	20 x 20 - 25 x 25 - Ø 32	20 x 20 - 25 x 25 - Ø 32
Tempo rotazione (1 pos)	Turret indexing (1 pos)	sec	0,15	0,15
<b>UTENSILI MOTORIZZATI</b>		<b>LIVE TOOLING</b>		
Numero posizioni	No of live tools	N°	12	12
Velocità di rotazione max	Max. speed	giri/min - rpm	3000 (4000)*	3000 (4000)*
Potenza motore	Motor power	kW	3,7	3,7
Coppia motore	Motor torque	Nm	47	47
<b>ASSE C</b>		<b>C-AXIS</b>		
Minimo valore programmabile	Min. programmable value	°	0,001	0,001
Max. velocità rapida	Max. rapid traverse	giri/min - rpm	100	100
<b>ASSI</b>		<b>AXES</b>		
Corsa asse X	X-axis stroke	mm	170	170
Corsa asse Z	Z-axis stroke	mm	560	560
Corsa asse Y	Y-axis stroke	mm	+55 / -50	+55 / -50
Corsa asse B	B-axis stroke	mm	490	490
Rapido asse X	X-axis rapid traverse	m/min	20	20
Rapido asse Z	Z-axis rapid traverse	m/min	24	24
Rapido asse Y	Y-axis rapid traverse	m/min	6	6
<b>CONTROPUNTA</b>		<b>TAILSTOCK</b>		
Cono portapunta	Morse taper	C.M.	5 / 4	5 / 4
Rapido asse B	B-axis rapid traverse	m/min	15	15
<b>REFRIGERANTE</b>		<b>COOLING SYSTEM</b>		
Capacità vasca	Tank capacity	l	250	250
Portata pompa	Pump nominal displacement	l/min	230	230
Potenza motore pompa	Electropump motor rating	kW	1,5	1,5
<b>DIMENSIONI - PESO</b>		<b>DIMENSIONS AND WEIGHT</b>		
Ingombro con trasportatore trucioli	Machine with swarf conveyor	mm	4240 x 2000 x 1900 h*	4240 x 2000 x 1900 h*
Altezza centro mandrino	Spindle centre height	mm	1000	1000
Peso con trasportatore trucioli	Machine weight with swarf conv.	kg	4900**	5050***

(\* ) versione / version Y-Y5    (\*) 2020 h: per / for B545Y-Y5    (\*\*) versione / version B545YS    (\*\*\*) versione / version B565YS

## PROGRAMMA DI PRODUZIONE      *PRODUCTION PROGRAM*

### » CENTRI DI TORNITURA CNC    *CNC TURNING CENTRES*



B545	B545M	B545S	B545SM	B545Y	B545YS
B565	B565M	B565S	B565SM	B565Y	B565YS
B650	B650M	B650SM	B650Y	B650YS	
B658	B658M	B658SM	B658Y	B658YS	
B1200	B1200M	B1200Y	B1200B	B1200MB	B1200YB
B1200S	B1200SM	B1200YS			

### » TORNITURA DA BARRA MULTITORRETTA    *MULTITURRET BAR TURNING*



B436Y2					
B446S	B446S2M	B446Y	B446Y2		
B465S	B465S2M	B465Y	B465Y2		
B745Y3					
B765Y3					

### » TORNITURA FRESATURA INTEGRATA    *INTEGRATED TURN-MILL OPERATIONS*



SMART TURN		SMART TURN S			

### » TORNI VERTICALI CNC    *CNC VERTICAL LATHES*



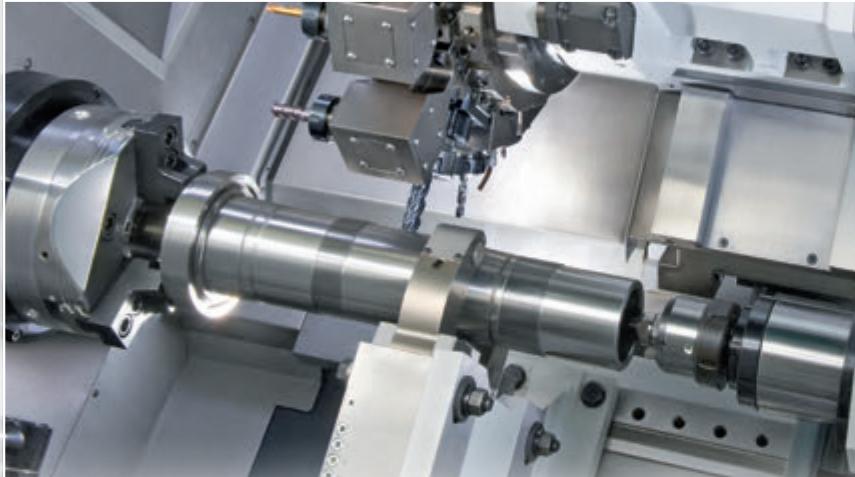
BV210	BV210M	BV210Y		
BV315	BV315M	BV315Y		



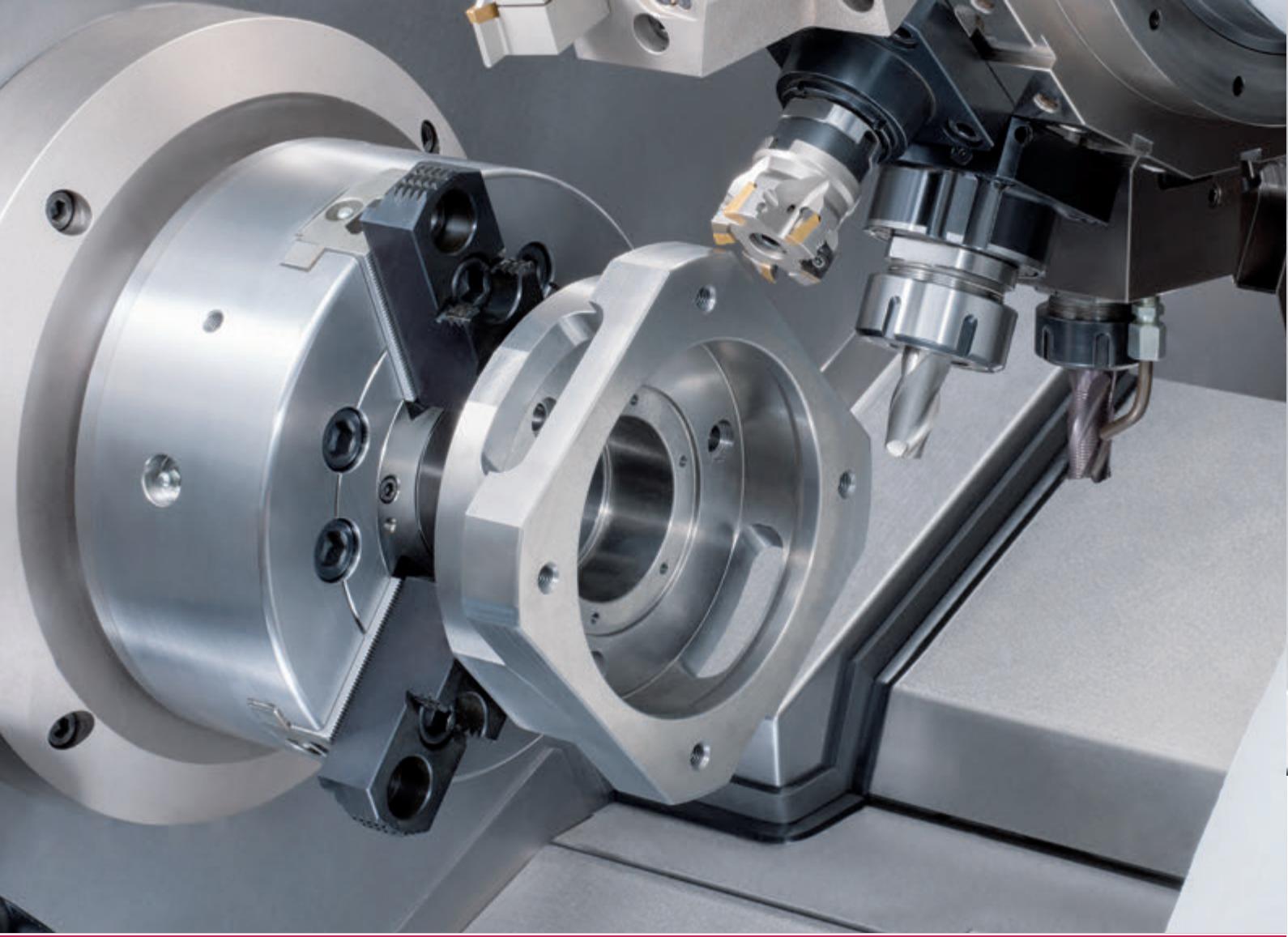
# Biglia

THE TURNING TECH

# B750 | B1250



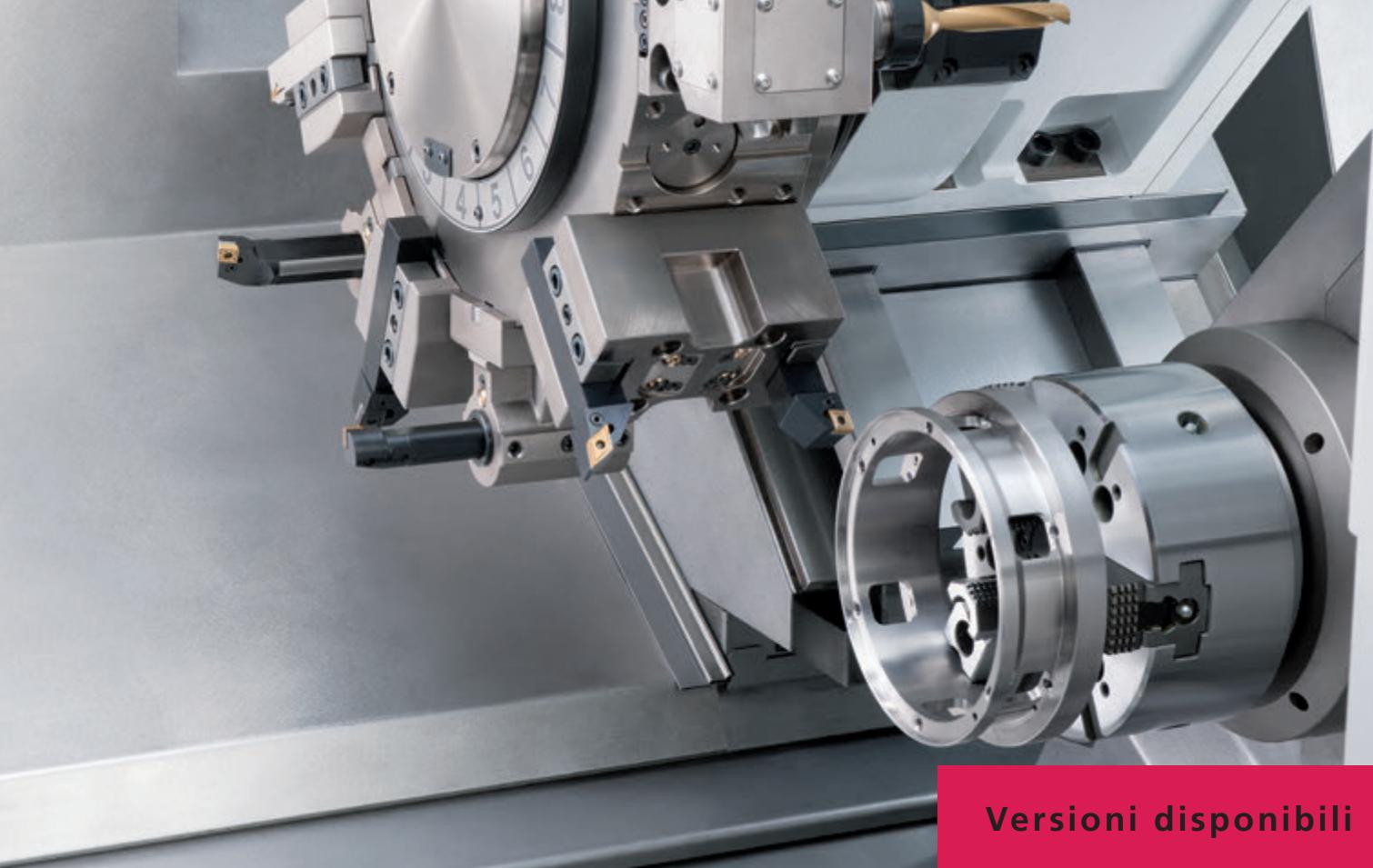
**Biglia**



Tecnologia all'avanguardia: produttività insuperabile.

## B750





## Versioni disponibili

La nuova serie B750/B1250 costituisce lo "stato dell'arte" dei centri di tornitura polifunzionali. Il cuore di questa serie di torni è rappresentato dalla nuova torretta con motore integrato e trasmissione diretta agli utensili motorizzati. Disponibile in due modelli con lunghezza di 750 e 1250 e 10 versioni, la gamma B750/B1250 offre un ampio ventaglio di possibilità produttive: dalla tornitura universale alla lavorazione completa di pezzi complessi grazie alla contropunta automatica CN, il contromandrino, gli utensili motorizzati, l'asse C e l'asse Y.

### Maggiore precisione

ottenuta mediante la struttura termo simmetrica e la stabilizzazione delle fonti di calore (mandrini, torretta e olio idraulico).

### Maggiore produttività

grazie al massiccio basamento in ghisa con guide prismatiche su tutti gli assi caratterizzato da elevata stabilità e assorbimento ottimale delle vibrazioni, alla robusta torretta BIGLIA con ridotti tempi di indexaggio (0,3 sec.) e alla notevole capacità di asportazione in tornitura e fresatura dei nuovi motori potenziati.

### B750 / B1250

- Macchina base con contropunta automatica a CN

### B750M / B1250M

- Torretta a 12/16 posizioni motorizzate
- Asse C
- Contropunta automatica a CN

### B750SM / B1250SM

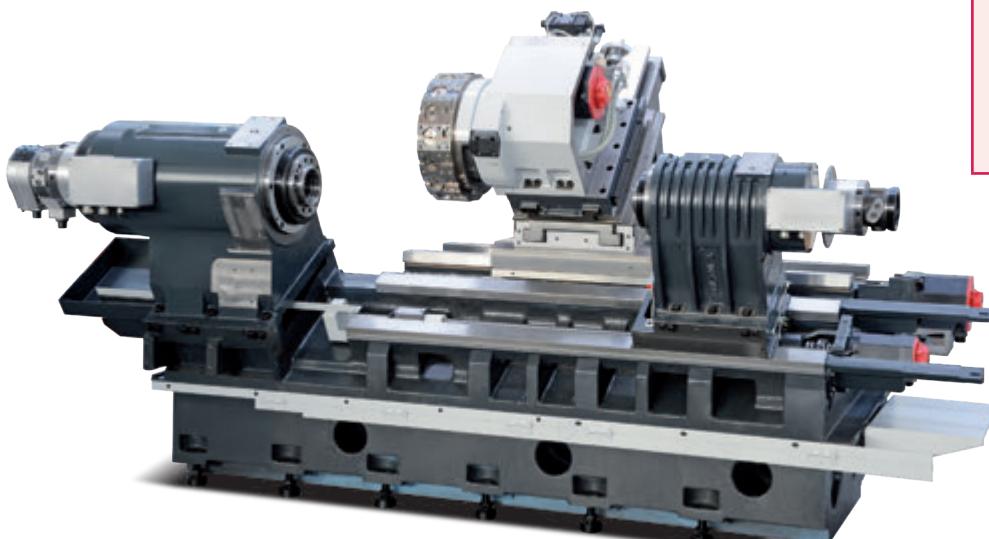
- Torretta a 12/16 posizioni motorizzate
- Asse C mandrino principale
- Contromandrino con asse C

### B750Y / B1250Y

- Torretta a 12/16 posizioni motorizzate
- Asse C
- Asse Y
- Contropunta automatica a CN

### B750YS / B1250YS

- Torretta a 12/16 posizioni motorizzate
- Asse C mandrino principale
- Asse Y
- Contromandrino con asse C





Ampia configurabilità e grande capacità di asportazione.

## B1250

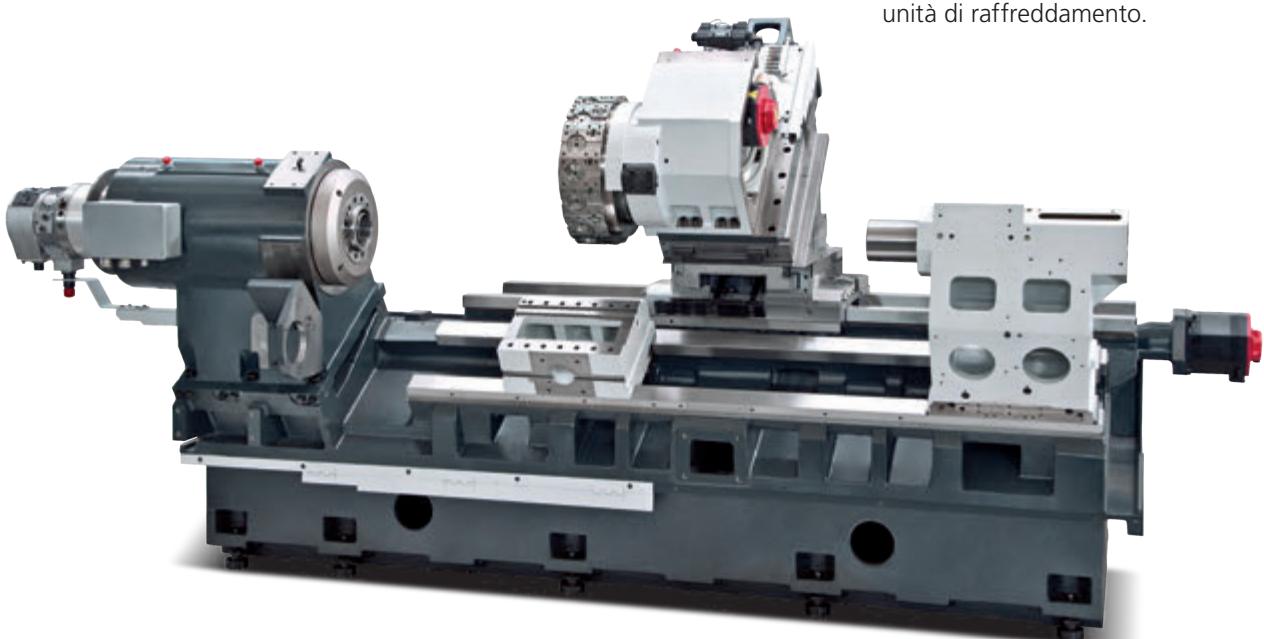




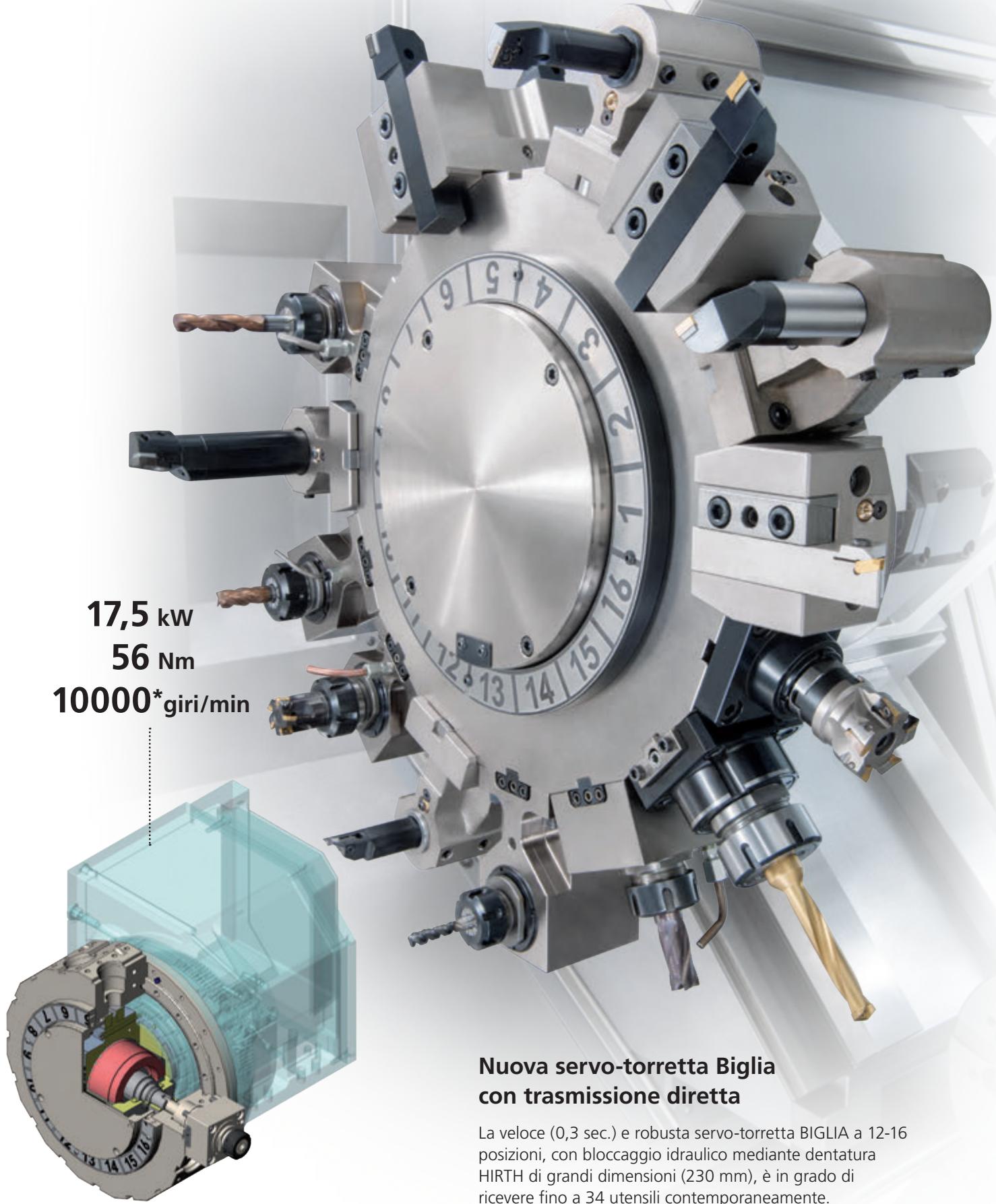
Il modello B1250 ha in comune con il B750 la torretta ed i carri X/Y. La versione B1250, pensata per la lavorazione di alberi, è caratterizzata da 1310 mm di corsa longitudinale, da una robusta contropunta programmabile con canotto idraulico diametro 115 mm e dalla possibilità di montare una lunetta automatica "a seguire" con movimento indipendente azionato da un motore asse.

## Stabilità termica

Al fine di minimizzare le variazioni di temperatura e mantenere la precisione, la temperatura delle principali fonti di calore viene mantenuta costante mediante una unità di raffreddamento.

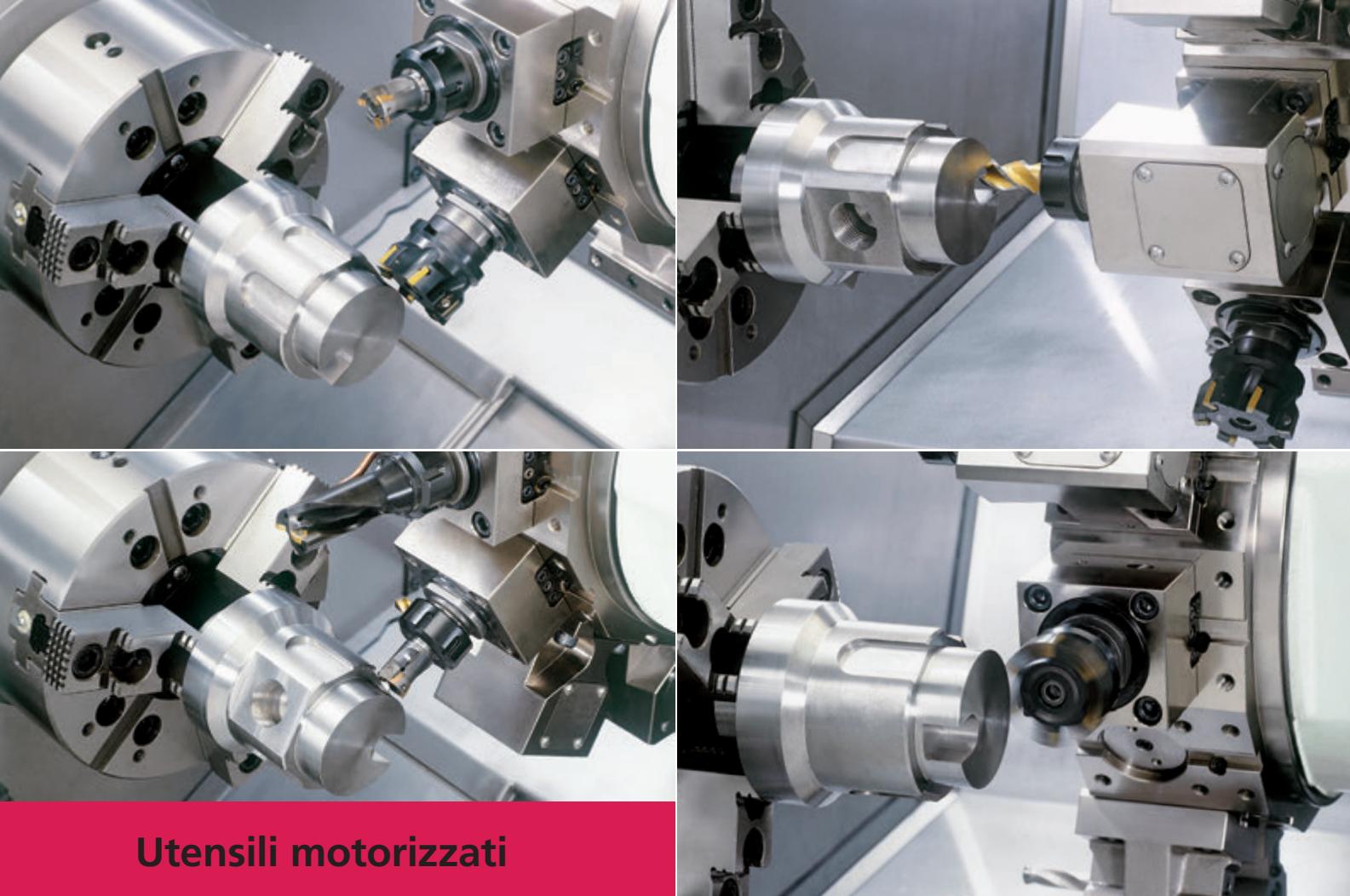


# Torretta con motore integrato.



## Nuova servo-torretta Biglia con trasmissione diretta

La veloce (0,3 sec.) e robusta servo-torretta BIGLIA a 12-16 posizioni, con bloccaggio idraulico mediante dentatura HIRTH di grandi dimensioni (230 mm), è in grado di ricevere fino a 34 utensili contemporaneamente. La principale novità è costituita dalla trasmissione tramite la quale il moto di rotazione viene trasmesso direttamente dal motore integrato al portautensili rotante.



## Utensili motorizzati

Il cuore di questa nuova torretta è il potente motore integrato nel disco portautensili (10-17,5 kW, max. 10000\* giri/min) raffreddato e stabilizzato termicamente che aziona gli utensili motorizzati.

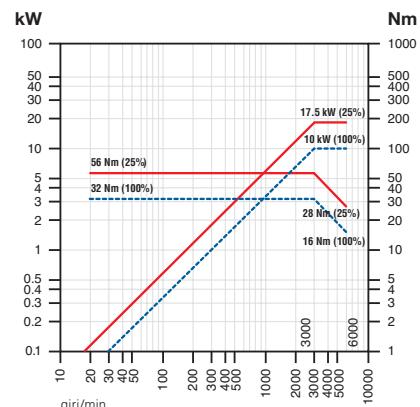
La catena cinematica è stata eliminata e la trasmissione del moto avviene con accoppiamento diretto tra il motore integrato ed il portautensile.

I principali vantaggi di questa soluzione sono:

- **MINIMIZZAZIONE VIBRAZIONI**
- **ELIMINAZIONE DELLE PERDITE DI POTENZA E DEI GIOCHI DOVUTI ALLA TRASMISSIONE MECCANICA**
- **RIDUZIONE DELLA GENERAZIONE DI CALORE**

Il tutto si traduce in migliore finitura superficiale, aumentata rigidità e capacità di asportazione, maggiore silenziosità.

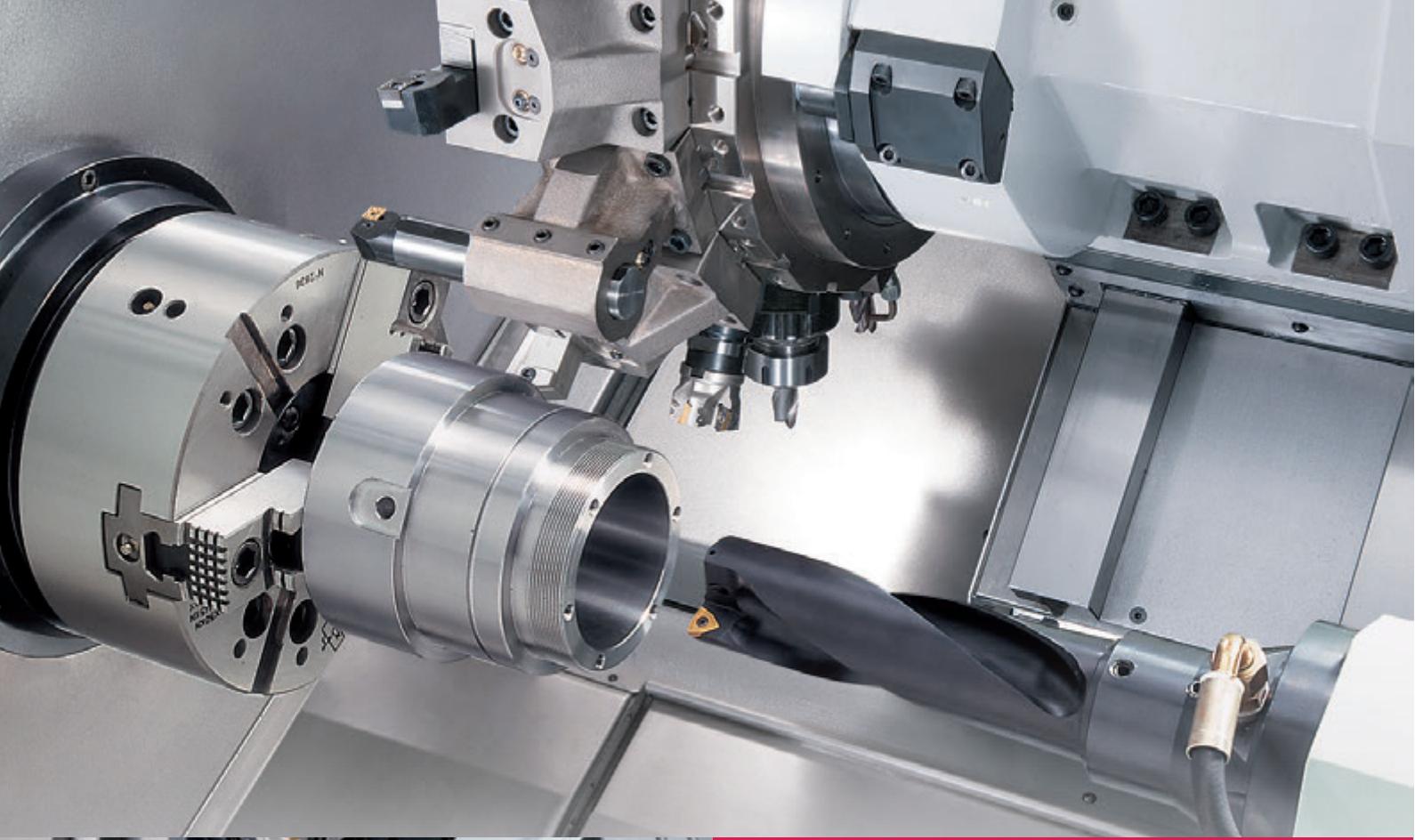
### Utensili motorizzati



## Capacità di lavorazione - Materiale C40 (versioni M-SM-Y-YS)

LAVORAZIONE CON UTENSILI MOTORIZZATI					
FRESATURA			FORATURA		
Diametro fresa a spianare	mm	40	Diametro punta ad inserti	mm	30
Numero inserti a 45°	N°	4	Giri mandrino	giri/min	800
Giri mandrino	giri/min	1600	Velocità di taglio	m/min	85
Profondità di passata assiale	mm	3	Avanzamento	mm/min	120
Profondità di passata radiale	mm	32	Avanzamento	mm/giro	0,1
Velocità di taglio	m/min	200	Volume di truciolo asportato	cm³/min	56,5
Avanzamento	mm/min	765	MASCHIATURA		
Volume di truciolo asportato	cm³/min	73	Maschio	mm	20x1,5

\* Velocità max. limitata a 6000 giri/min per limitazione portautensili rotanti.



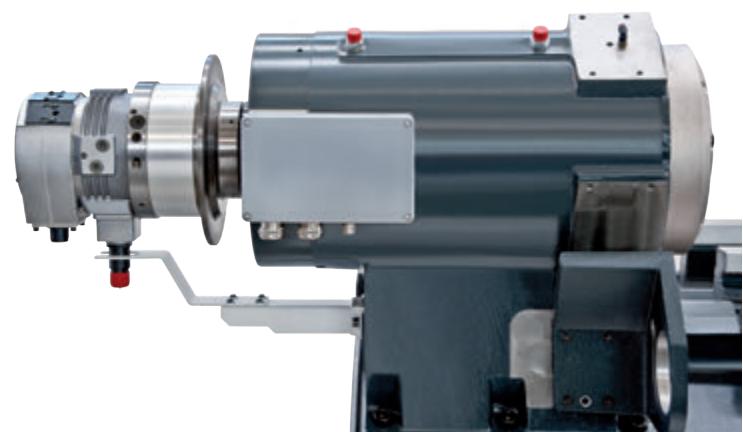
## Mandrini

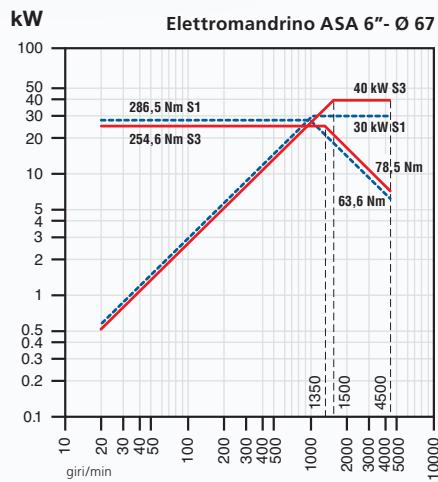
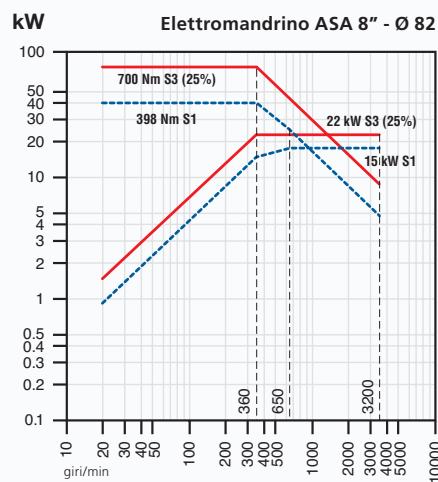
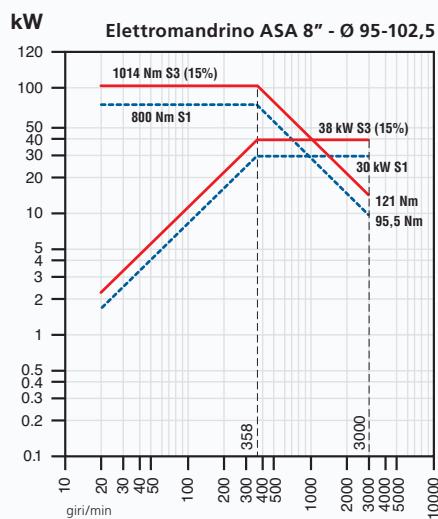
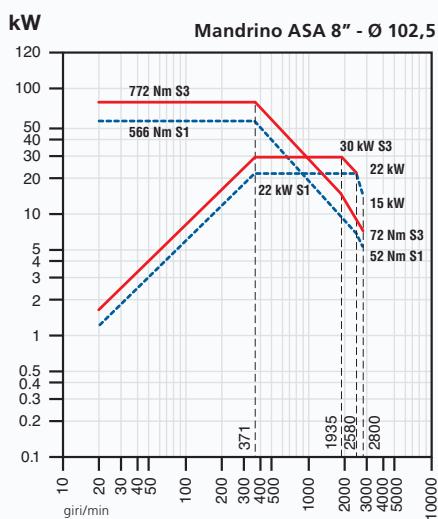
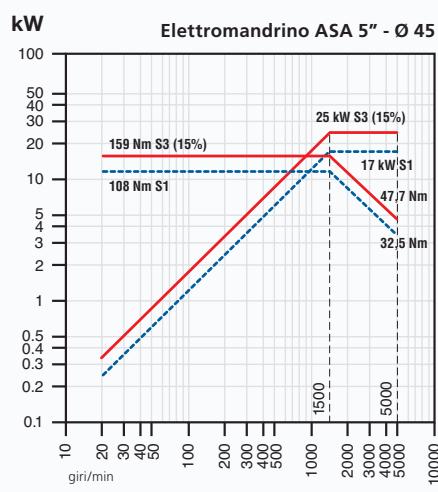
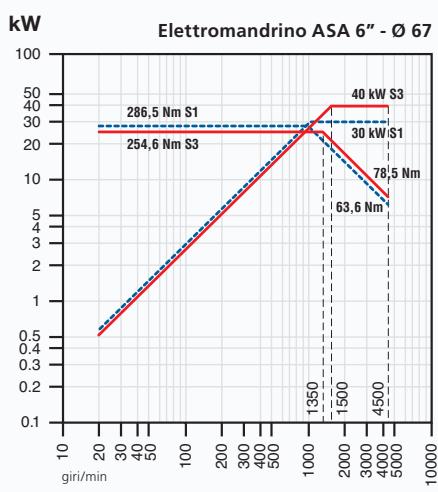
I mandrini della serie B750/1250 (tutti elettromandrini raffreddati a liquido ad eccezione del B1250 in equipaggiamento standard), disponibili con passaggi barra da 70 mm fino a 102 mm, sono azionati da motori ad altissime prestazioni con potenze da 22 kW a 38 kW e coppia da 286 Nm a 1014 Nm disponibili ad un basso numero di giri. Essi sono realizzati con una combinazione di cuscinetti a rulli cilindrici e sfere e consentono notevoli asportazioni così come l'ottenimento di elevati valori di finitura superficiale e rotondità.

### TAGLIE DISPONIBILI

Elettromandrini	Foro (mm)	giri/min*	kW*	Nm*
ASA 6"	71	4500	40	286
ASA 8"	82	3200	22	700
ASA 8"	95/102,5	3000	38	1014
Mandrini	Foro (mm)	giri/min*	kW*	Nm*
ASA 8"	102,5	2800	30	772

\* Prestazioni max.



**D I A G R A M M I      C O P P I A      P O T E N Z A**

**B750**

**B750-B1250**
**M A N D R I N I   P R I N C I P A L I**

**B750-B1250**

**B1250**
**C O N T R O M A N D R I N I**

**B750**

**B750-B1250**

# Ampia dotazione di allestimenti e accessori.

## Allestimento standard

- Basamento monolitico in ghisa stabilizzata
- Torretta servo azionata a 12/16 posizioni
- Dotazione completa di portautensili
- Sistema di raffreddamento
- Trasportatore trucioli
- Lampada stato macchina
- Impianto refrigerante media pressione con filtro
- Armadio elettrico climatizzato

## Opzioni principali

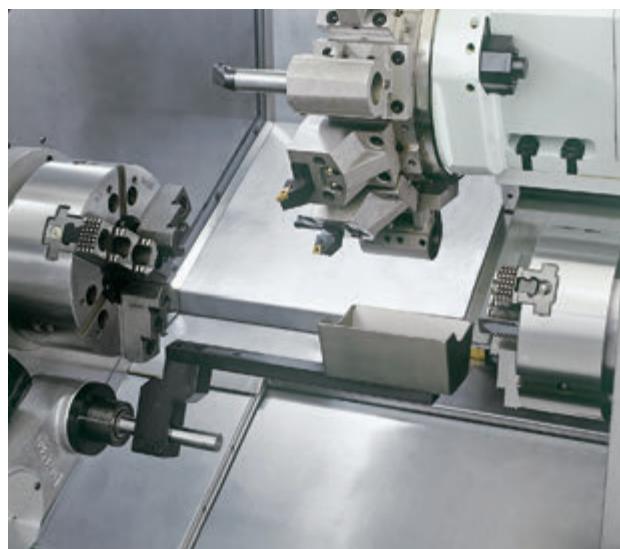
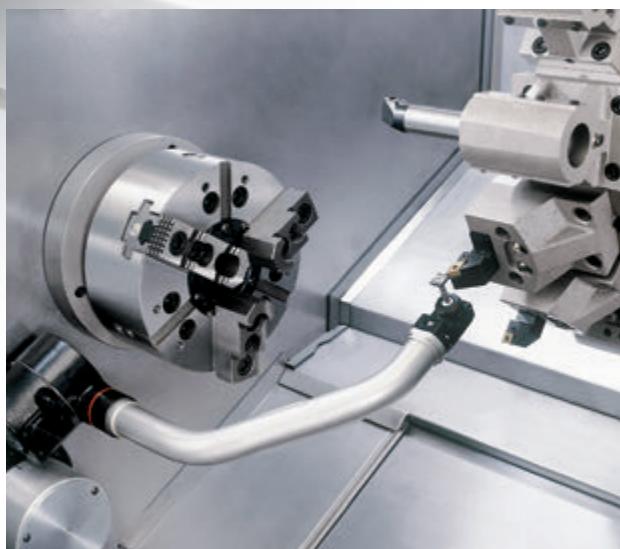
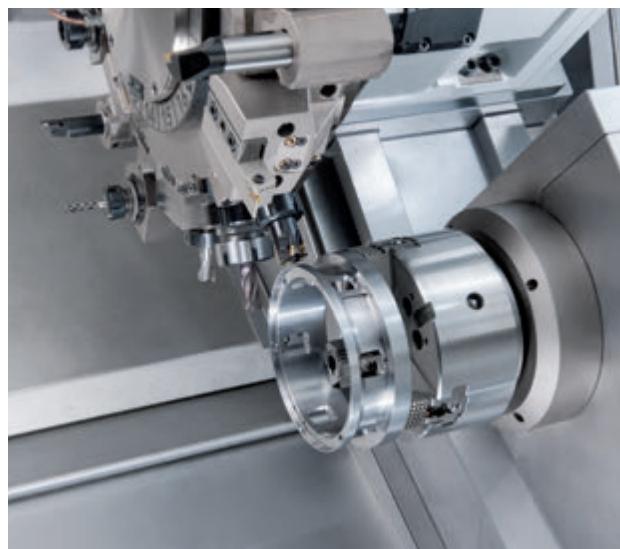
- Azzeratore utensili
- Refrigerante ad alta pressione
- Contropunta girevole
- Filtro refrigerante
- Kit per lavorazione da barra
- Nastro convogliatore pezzi finiti
- Disoleatore
- Aspiratore fumi
- Monitoraggio sforzo utensili SBS
- Porta automatica



## Contromandrino

Il contromandrino effettua il trasferimento del pezzo e la lavorazione della seconda faccia in automatico.

È dotato di controllo di spinta dell'asse B e espulsore pneumatico con verifica presenza pezzo (opzione in abbinamento al kit per lavorazione da barra) che consentono di lavorare in massima sicurezza.



## Azzeratore utensili (opzionale)

Questo dispositivo facilita l'azzeramento degli utensili. Toccando il sensore con la punta dell'utensile, il valore della correzione viene memorizzato automaticamente nella tabella dei correttori, rendendo rapido e sicuro l'attrezzaggio.

## Kit lavorazione da barra (opzionale)

È composto dallo scaricatore automatico che consente lo scarico del pezzo finito e, nelle versioni con contromandrino, dall'espulsore pneumatico con lavaggio per la pulizia dell'attrezzo di presa.

# Ampia dotazione di allestimenti e accessori.



Contropunta con canotto idraulico (B1250).

## Contropunta programmabile (standard su versione base, M ed Y)

La contropunta di entrambi i modelli scorre su guide prismatiche ed il posizionamento è automatico. Sul B750 è azionata da un gruppo motore-vite (asse B): questa soluzione aumenta la flessibilità operativa in quanto sia posizione che spinta sono facilmente impostabili dal CN. Può essere utilizzata anche come asse di lavoro per eseguire una foratura in contemporanea alla tornitura (opzionale). La contropunta del B1250 è invece posizionata dal carro Z della torretta: essa è provvista di un canotto idraulico diametro 115 mm con corsa di 150 mm. Per entrambi i modelli è disponibile come opzionale una contropunta girevole in cartuccia integrata.



Controllo della spinta contropunta da programma.



Contropunta "asse B" standard su B750, opzionale su B1250.

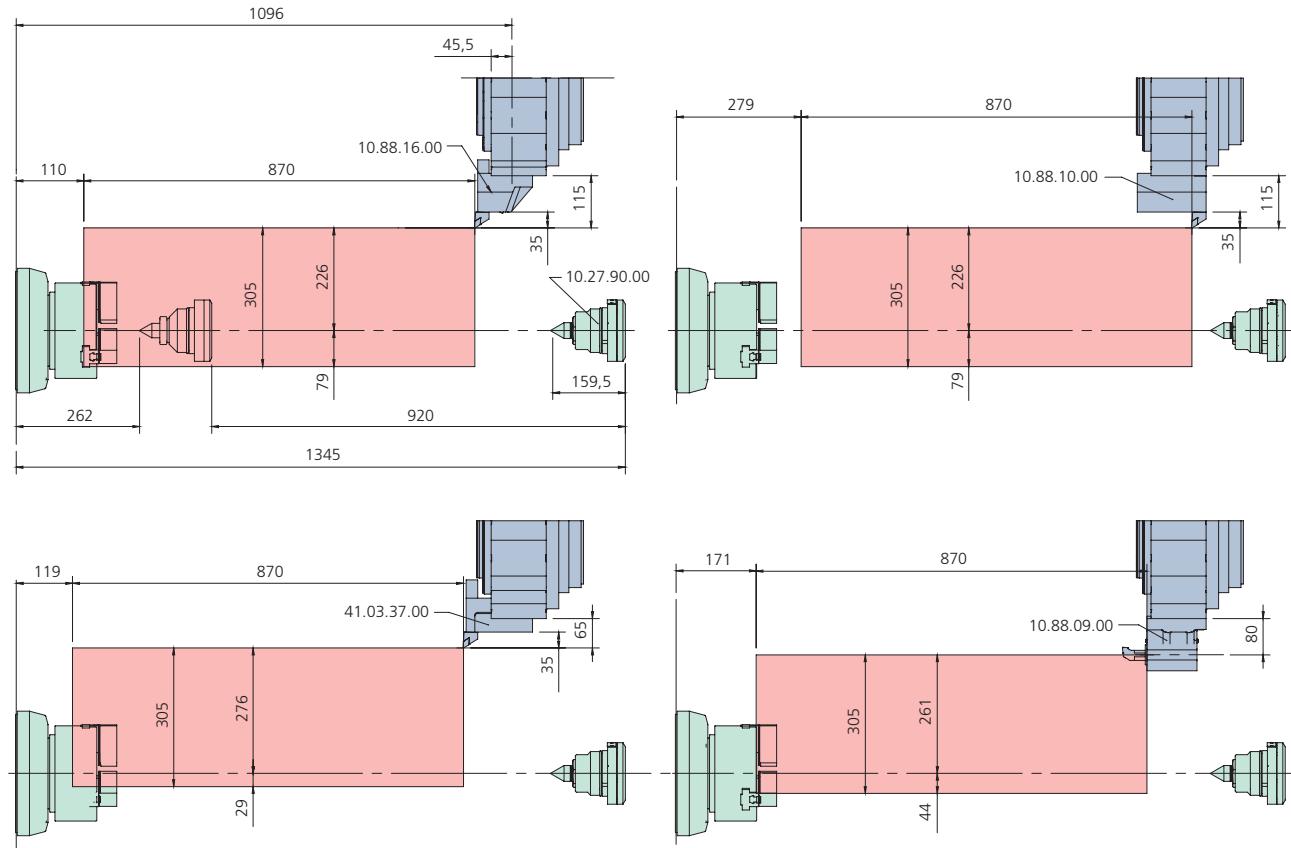
### Lunetta automatica (opzionale solo su B1250)

La lunetta autocentrante automatica nella versione a seguire è azionata da un motore asse; il movimento può essere sincronizzato o indipendente rispetto all'asse Z. È in grado di sostenere alberi fino a 235 mm. Il posizionamento così come l'apertura e la chiusura dei bracci sono programmabili.

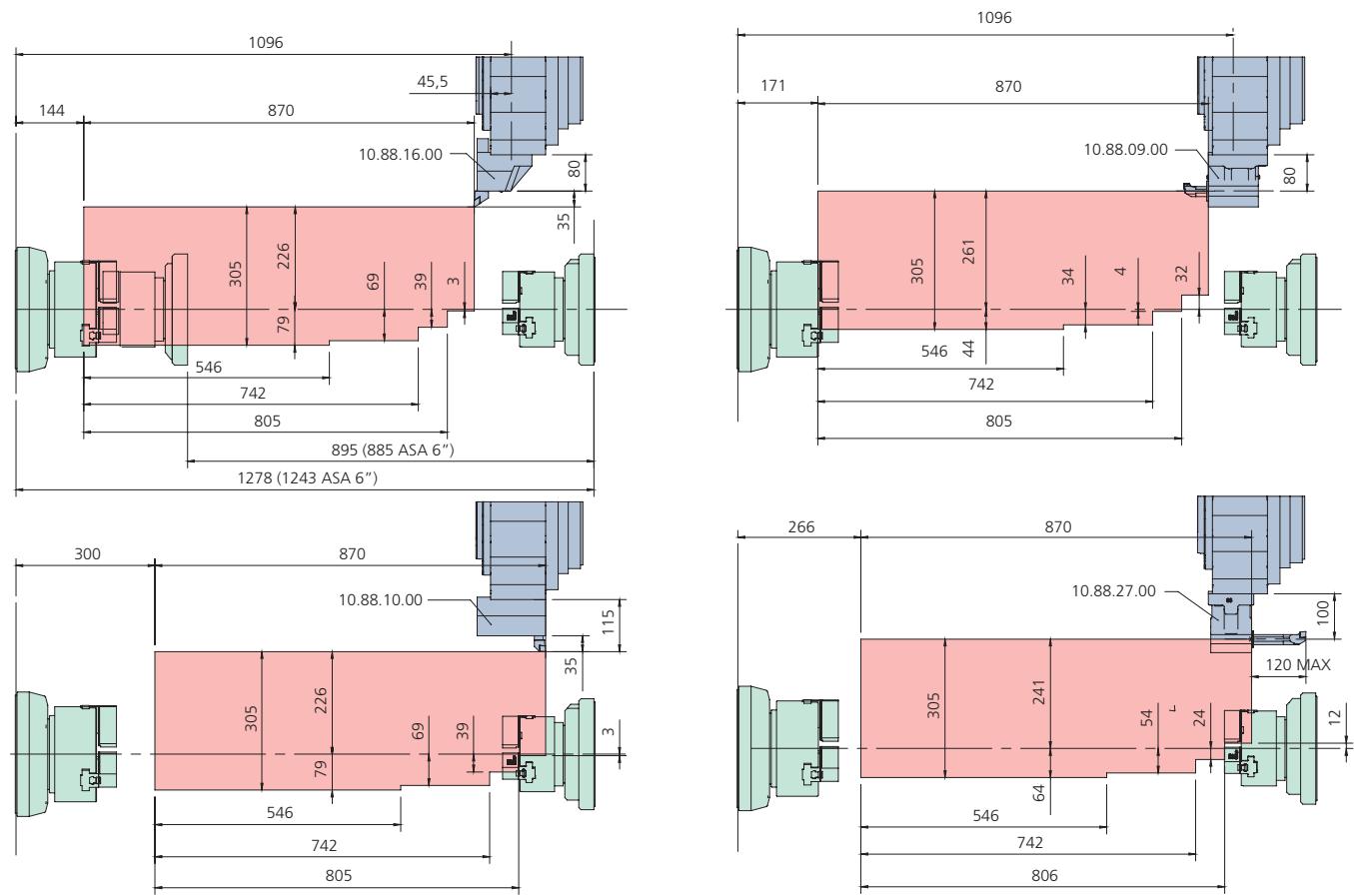


**C A M P O D I L A V O R O**

**CAMPO DI TORNITURA CON CONTROPUNTA B750 - Torretta 16 posizioni**

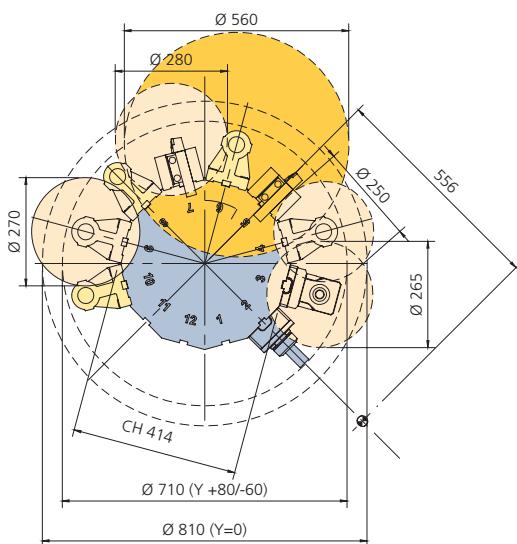


**CAMPO DI TORNITURA CON CONTROTESTA B750 - Torretta 16 posizioni**

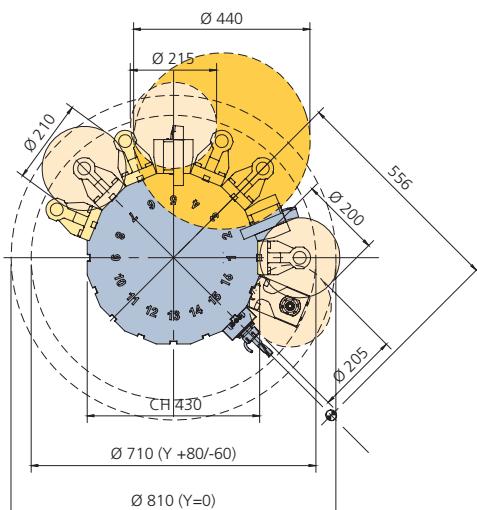


# B750 - B1250

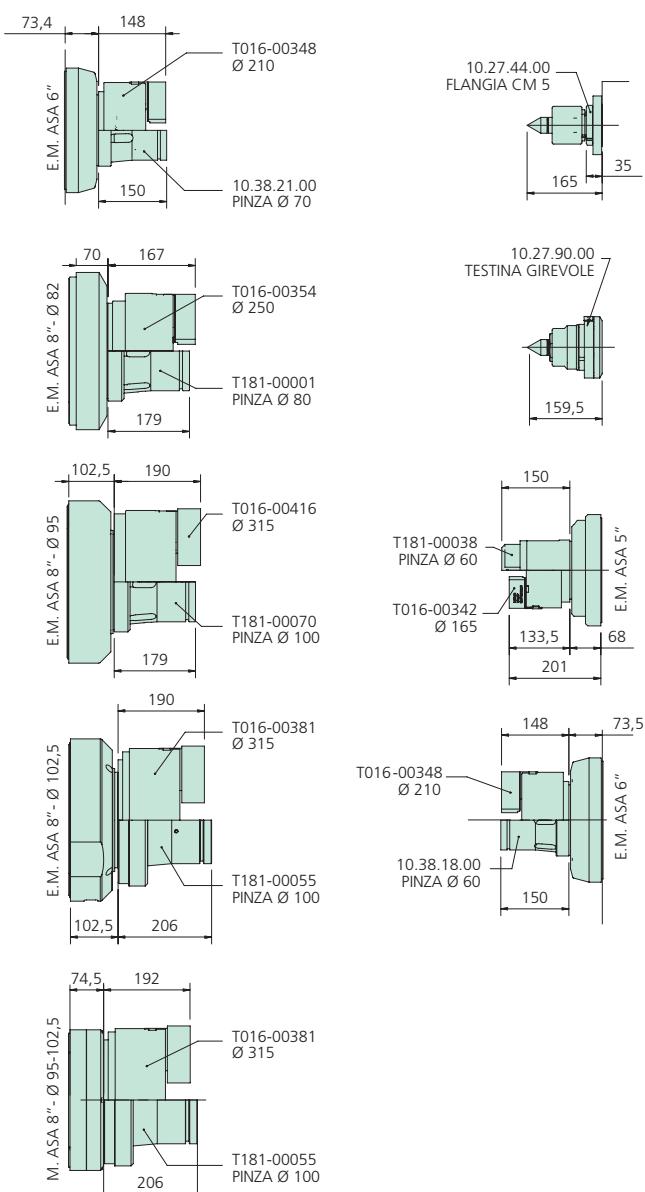
## TORRETTA 12 POSIZIONI B750 - B1250



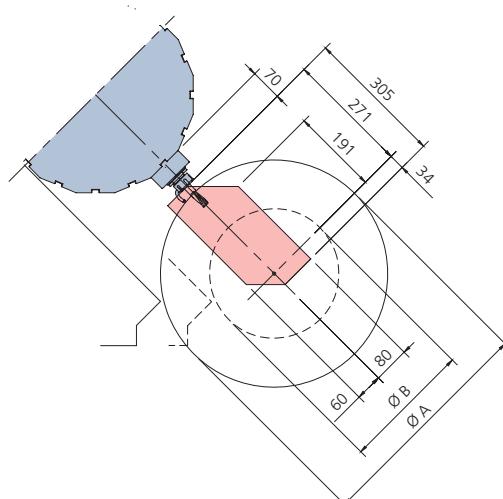
## TORRETTA 16 POSIZIONI B750 - B1250



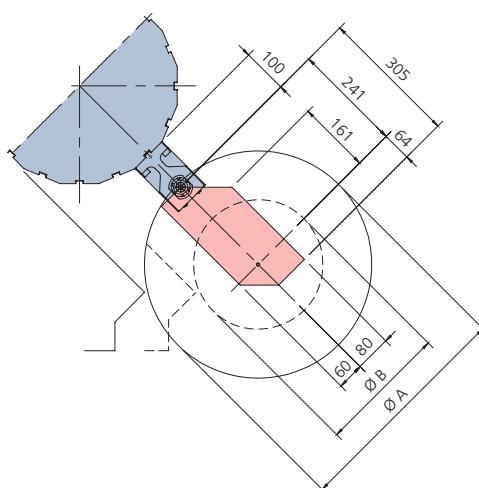
## INGOMBRO PARTE ANTERIORE MANDRINO B750 - B1250



## CAMPO DI FRESATURA MANDRINO B750 - B1250

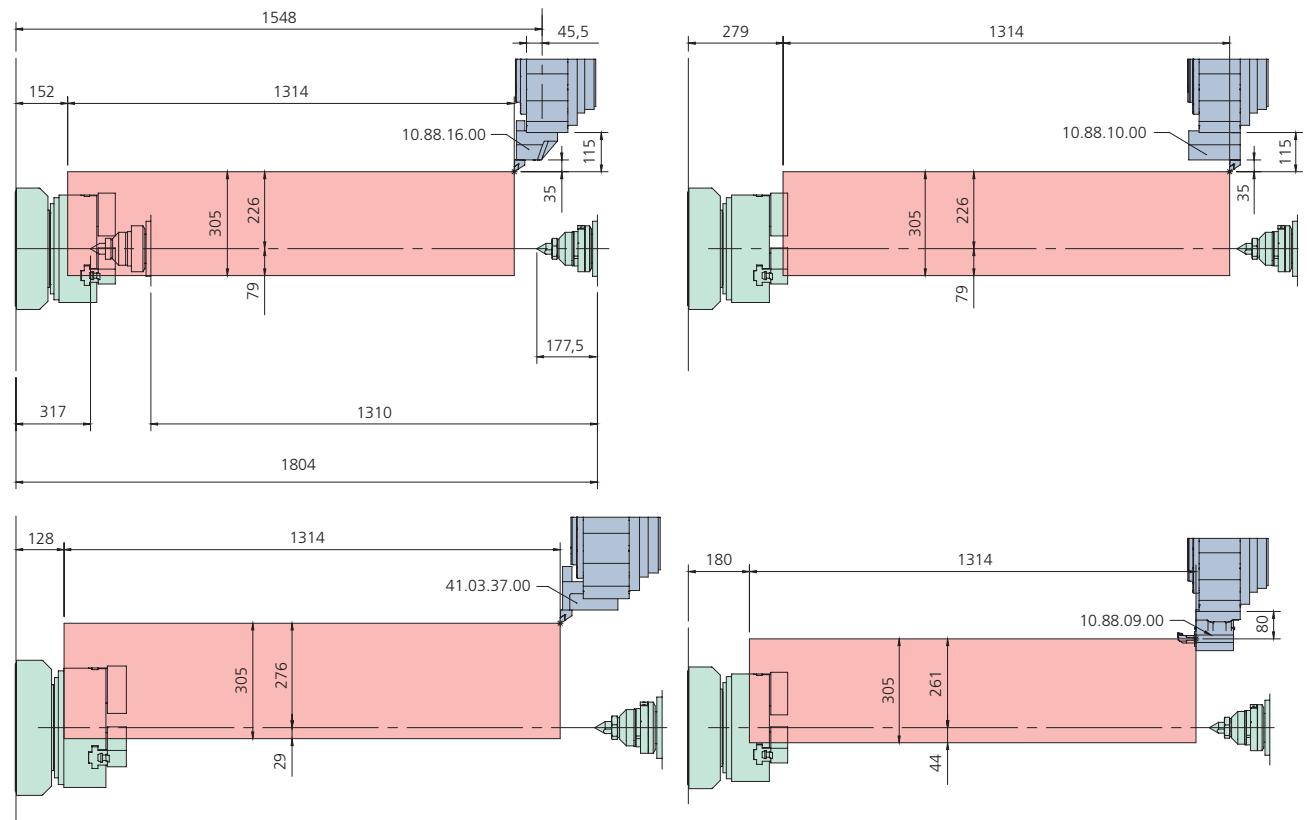


A= 500 mm Diametro max rotante  
rispetto al carro Y con torretta in asse  
B= 285 mm Diametro max rotante rispetto  
al carro Y con torretta +Y = 80 mm

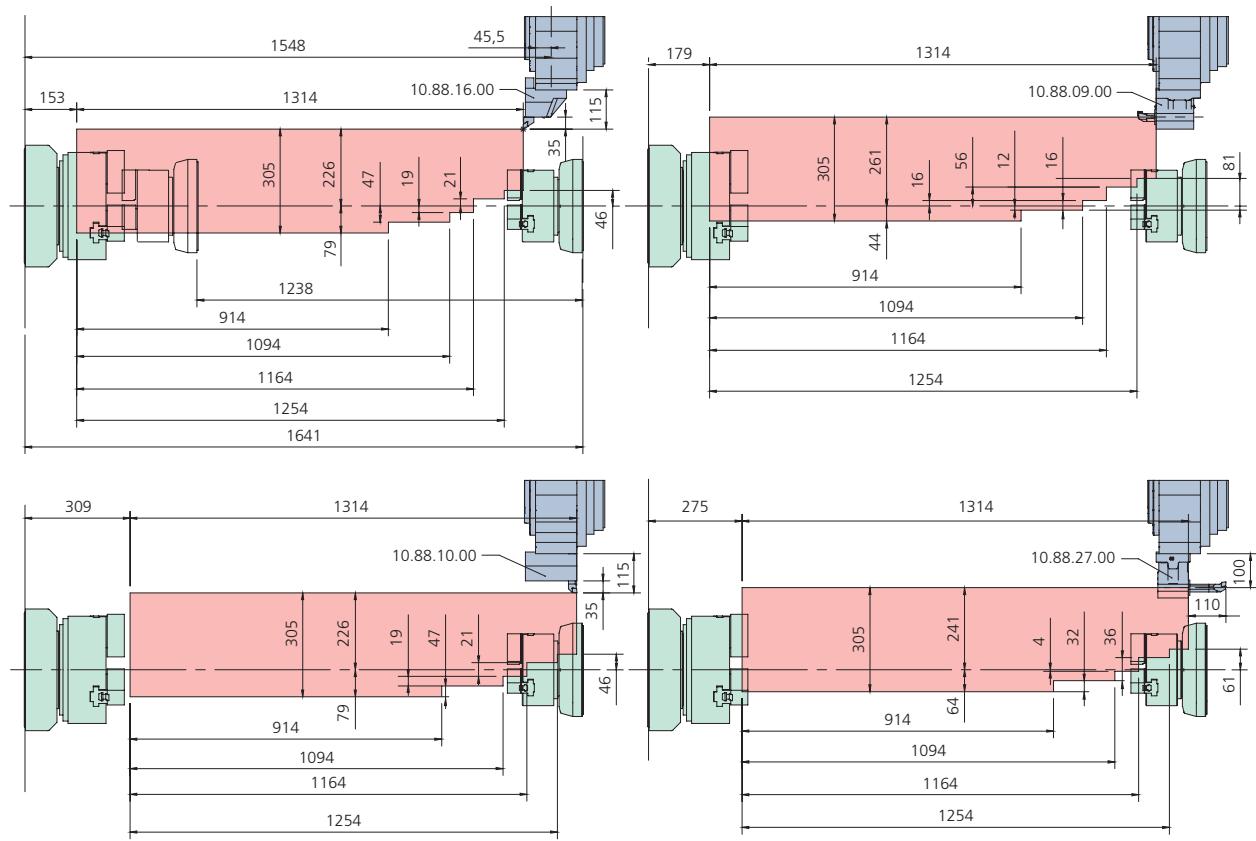


**C A M P O D I L A V O R O**

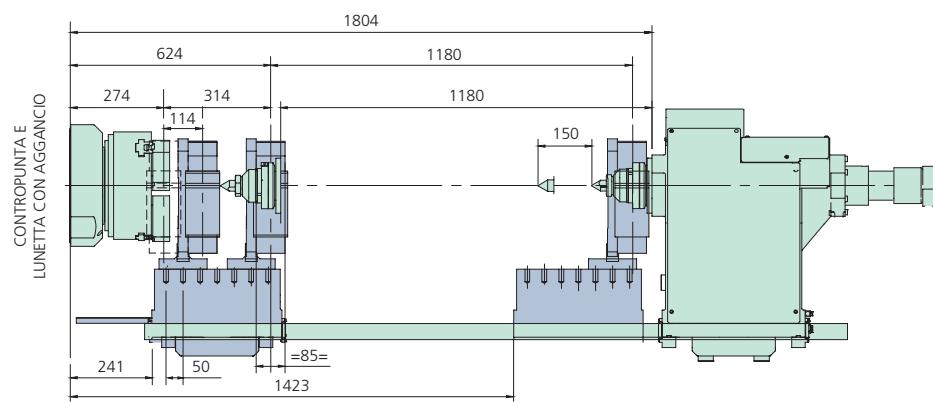
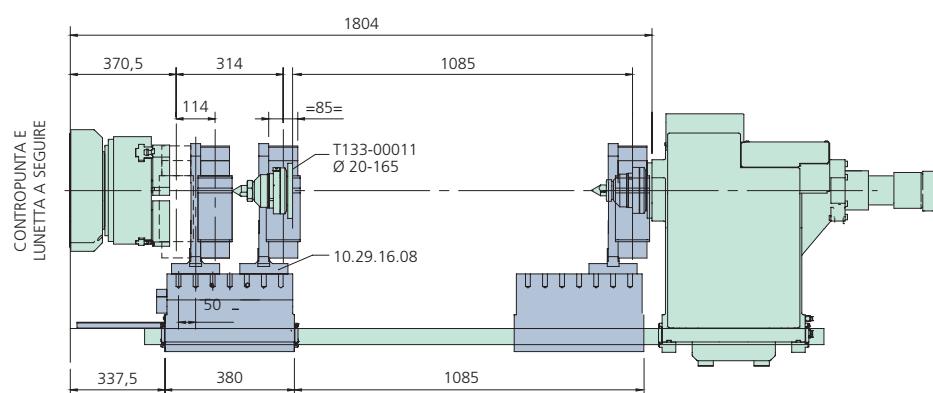
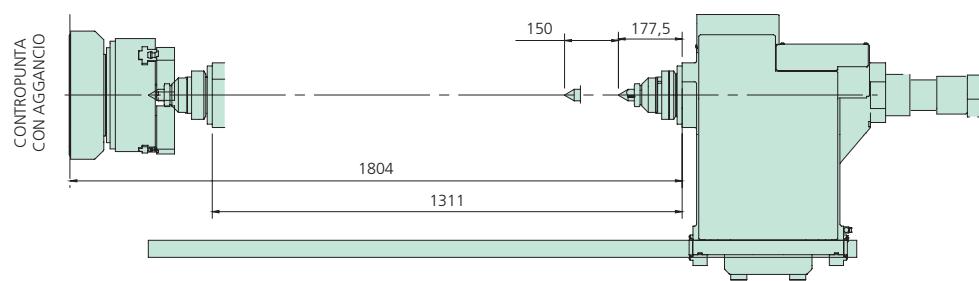
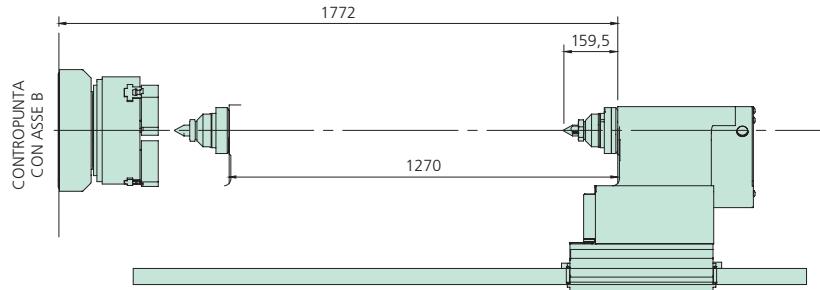
**CAMPO DI TORNITURA CON CONTROPUNTA - Torretta 16 posizioni**



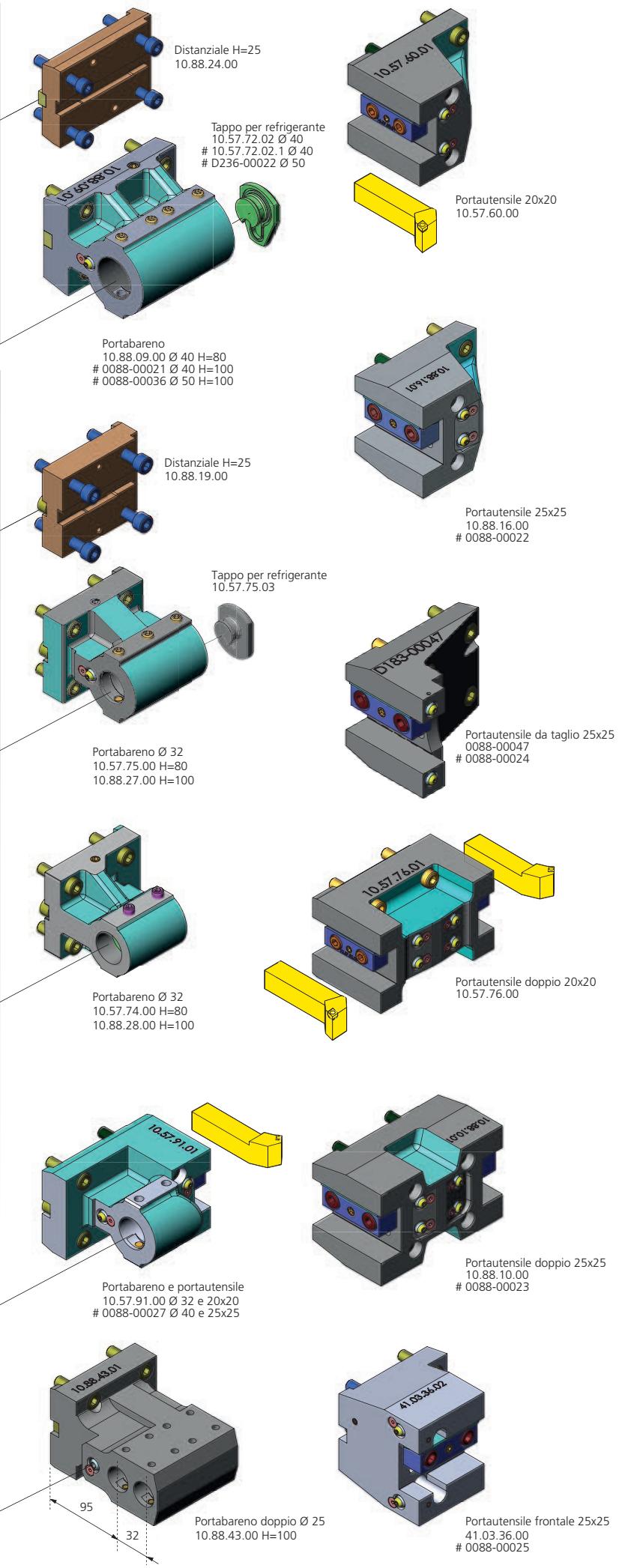
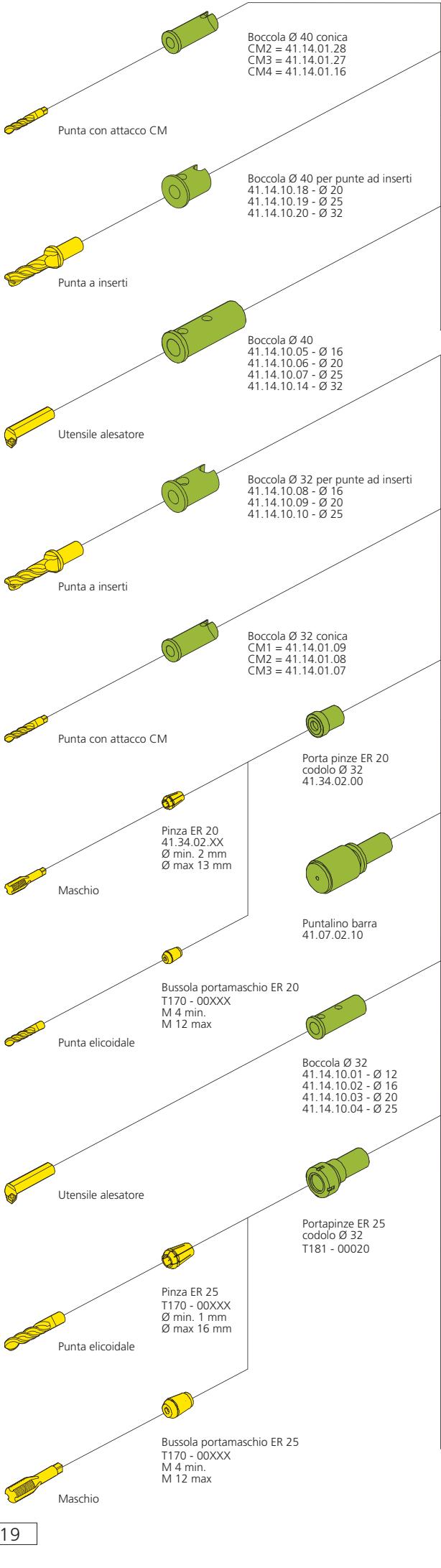
**CAMPO DI TORNITURA CON CONTROTESTA - Torretta 16 posizioni**



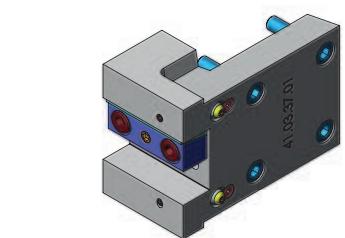
B1250



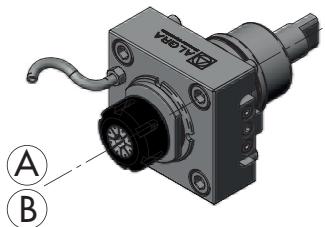
PORTAUTENSILI E ACCESSORI



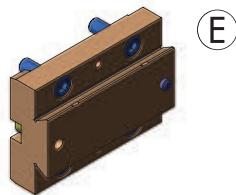
# B750 - B1250



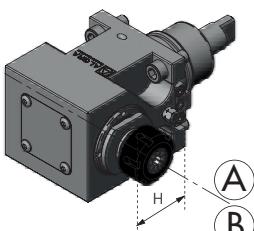
Portautensile radiale corto 25x25  
41.03.37.00  
# 0088-00026



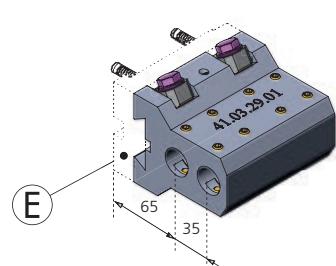
Mandrinetto radiale  
10.57.88.00 ER25  
T134-00061 ER32  
● T134-00092 ER32  
■ T134-00089 ER32  
# T134-00139 ER32  
# T134-00140 ER40



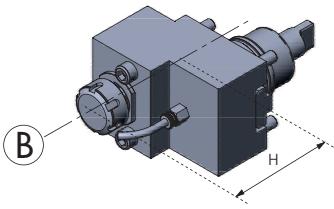
Supporto a coda di rondine  
10.57.92.00



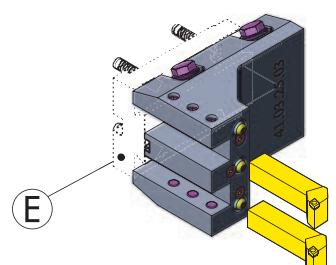
Mandrinetto assiale  
H=70 10.57.87.00 ER25  
H=70 T134-00062 ER32  
H=100 T134-00076 ER25  
H=100 T134-00077 ER32  
● H=100 T134-00088 ER32  
■ H=100 T134-00178 ER32  
# H=90 T134-00141 ER32  
# H=90 T134-00142 ER40



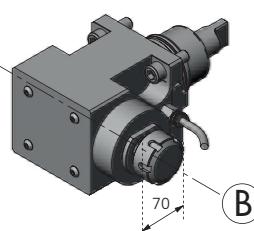
Portabareno doppio Ø25  
41.03.29.00



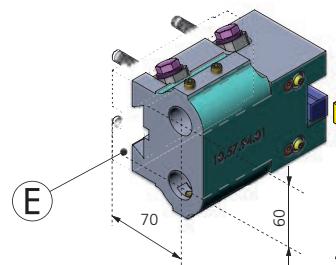
Mandrinetto radiale  
8000 giri/min  
H=108 T134-00026  
12000 giri/min  
H=70 T134-00060



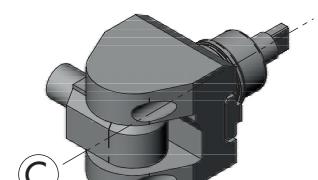
\* Portautensile verticale doppio  
41.03.25.00



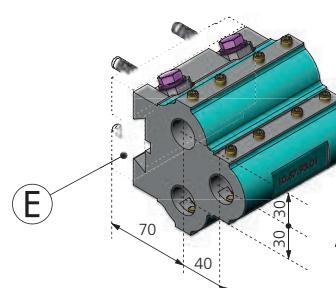
Mandrinetto assiale  
8000 giri/min  
T134-00027  
12000 giri/min  
T134-00070



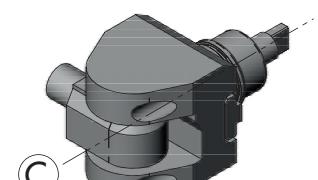
\* Portabareno doppio Ø25  
e portautensile 20x20  
10.57.94.00



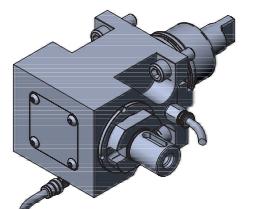
Mandrinetto assiale doppio  
H=70 T134-00024  
H=100 T134-00094



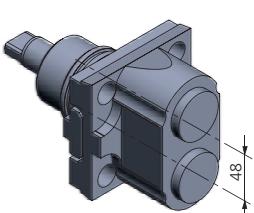
\* Portabareno triplo Ø 25  
10.57.93.00



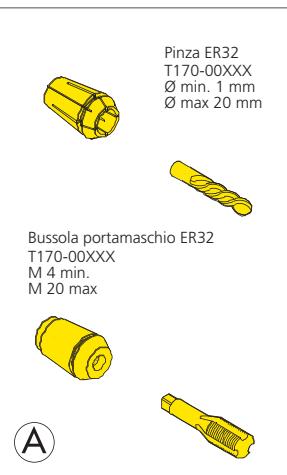
Mandrinetto orientabile  
T134-00025 ER16  
T134-00057 ER20



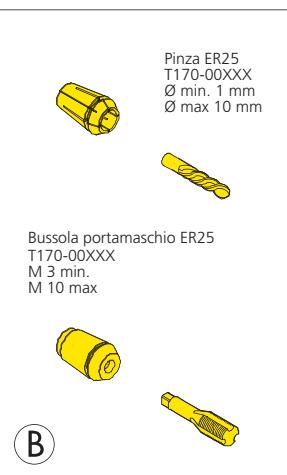
Mandrinetto poligonatore  
42.47.10.43



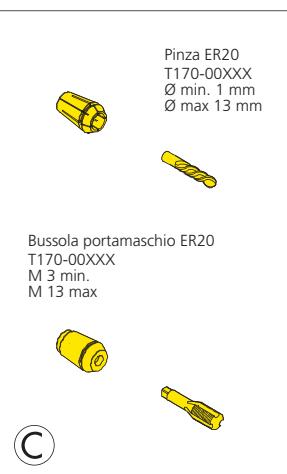
\* Mandrinetto radiale doppio  
41.32.30.00



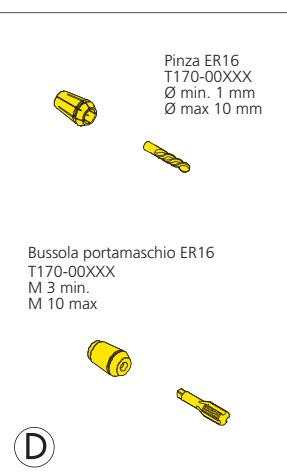
Pinza ER32  
T170-00XXX  
Ø min. 1 mm  
Ø max 20 mm



Pinza ER25  
T170-00XXX  
Ø min. 1 mm  
Ø max 10 mm



Bussola portamaschio ER20  
T170-00XXX  
M 3 min.  
M 13 max



Bussola portamaschio ER16  
T170-00XXX  
M 3 min.  
M 10 max

- \* Solo con asse Y
- Con refrigerante interno
- Tipo maggiorato
- # Solo con torretta a 12 posizioni



### PANNELLO DI CONTROLLO ERGONOMICO

CNC Fanuc I-HMI:  
 - Video a colori 15"  
 touch screen  
 - Tastiera "QWERTY"

- Pannello operativo BIGLIA
- Trasmissione dati:  
 porta ethernet,  
 memory card, USB,  
 porta RS 232.



### INTUITIVITÀ, SEMPLICITÀ

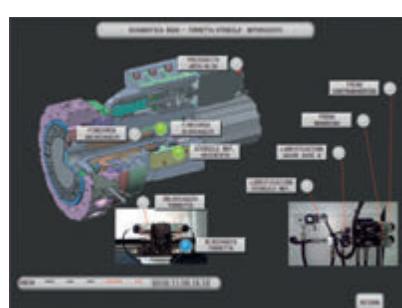
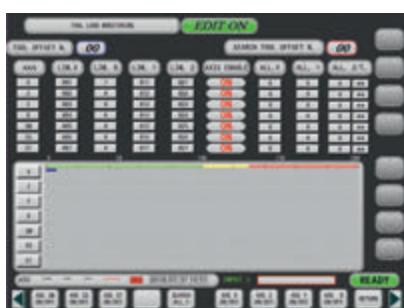
i-HMI è la nuova interfaccia uomo–macchina, video a colori 15" touch screen. Con il nuovo i-HMI l'operatore può con un semplice tocco accedere a tutte le funzioni che il CNC mette a disposizione. Dalla pianificazione del lavoro, alle pagine personalizzate dalla BIGLIA, alla visualizzazione in tempo reale delle condizioni di lavoro, per arrivare all'inserimento della documentazione tecnica specifica.

### MANUAL GUIDE: FACILITÀ, RAPIDITÀ E SICUREZZA DI PROGRAMMAZIONE (Standard)

L'innovativo software MANUAL GUIDE, con un'interfaccia grafica semplice ed intuitiva, con potenti funzioni di "editing" ed una vasta scelta di cicli di lavorazione (tornitura, fresatura e foratura), consente di eseguire anche i programmi più complessi con facilità e rapidità. Dotato di una realistica simulazione grafica 3D, esso permette di verificare in sicurezza il programma realizzato.

### NUOVO PANNELLO OPERATORE

In fase di attrezzaggio e set-up macchina l'operatore può con un semplice tocco selezionare, attivare e disattivare tutte le principali funzioni. I colori verde e rosso contribuiscono ad una maggiore immediatezza e velocità di esecuzione, il tutto tradotto in una riduzione dei tempi di set-up, influendo positivamente sulla redditività.



### SBS: MONITORAGGIO SFORZO UTENSILE (Opzione)

Questo dispositivo controlla gli utensili che sono fortemente impegnati e sono quindi soggetti a rotture (taglio, sgrossatura, punte ad inserto o elicoidali, ecc.) consentendo la lavorazione automatica in sicurezza con una sorveglianza ridotta.

### OPZIONI DI RAPIDA VISUALIZZAZIONE

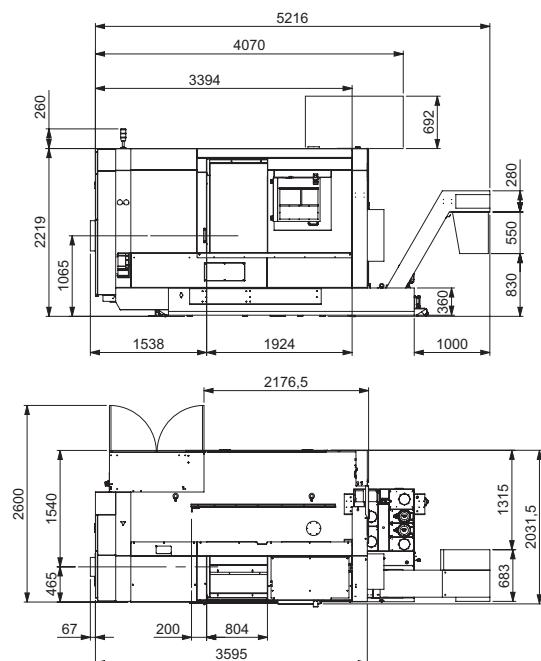
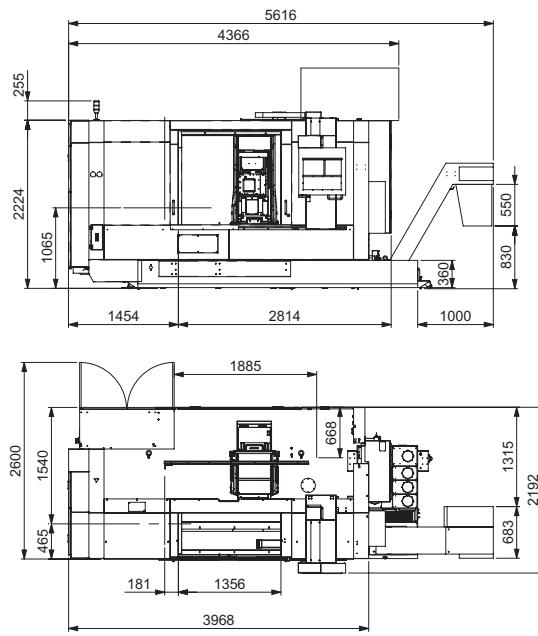
Possibilità di utilizzo dell'opzione con documentazione digitale inserita nella pagina appropriata. Set-Up contropunta, vita utensile personalizzata dalla BIGLIA, monitoraggio sforzo utensile SBS, variazione di velocità mandrino CSS, il tutto in modalità semplice e interattiva.

### GESTIONE, DIAGNOSTICA e MANUTENZIONE

Monitoraggio costante delle condizioni di lavoro dei principali organi di funzionamento. Pressioni di esercizio, motori, usure, livelli oli con semplici istruzioni relative alle modalità e le tempistiche di manutenzione.





**B750****B1250**

**Biglia**

THE TURNING TECH

**DOOSAN**



# Lynx 220 series

High Productivity Turning Center



**Lynx 220 series**

Lynx 220A/LA/B/LB  
Lynx 220C/LC/MA/LMA  
Lynx 220MC/LMC  
Lynx 220LMSA/LMSC

**MACHINE  
GREATNESS™**

# Lynx 220 series



# High Productivity Turning Center

The Lynx 220 series is a accurate, high productivity turning center designed with ultra fast rapids and high-speed turret indexing providing greater value and cost performance.



# High Speed

## Structure



• Core machine Lynx 220



FEM analysis used to design a stable body.  
(FEM : Finite Element Method)

### Max. turning dia. X length

Lynx 220A [LA]	<b>Ø 320 x 322 [ 542 ] mm</b> (Ø 12.6 x 12.7 [ 21.3 ] inch)
Lynx 220B [LB] / 220C [LC]	<b>Ø 320 x 305 [ 525 ] mm</b> (Ø 12.6 x 12.0 [ 20.7 ] inch)
Lynx 220M [LM]	<b>Ø 250 x 290 [ 510 ] mm</b> (Ø 9.8 x 11.4 [ 20.1 ] inch)
Lynx 220LMSA / LMSC	<b>Ø 300 x 510 mm</b> (Ø 11.8 x 20.1 inch)



The heavily ribbed torque tube design prevents twisting and deformation. All guideways are wide wrap-around rectangular type for unsurpassed long-term rigidity and accuracy.

## Rapid Traverse



Roller-type LM Guide is mounted on the machine to improve rigidity and feedrates. Each axis is powered by a maintenance free digital AC servo motor. These high torque drive motors are connected to the ball screws without intermediate gears for quiet and responsive slide movement with virtually no backlash.

	X-axis	Z-axis	B-axis
Lynx 220 / M	<b>30 m/min (1181 ipm)</b>	<b>36 m/min (1417 ipm)</b>	-
Lynx 220LMS			<b>30 m/min (1181 ipm)</b>

## Main Spindle

The C-axis is positioned in degree increments of 0.001. Through spindle synchronization with the X and Z axes, three dimensional contouring, complex and prismatic machining can be accomplished.



### Max. spindle speed

Lynx 220A / B / C  
**6000 / 5000 / 4000 r/min**

Lynx 220MA / C  
**6000 / 4500 r/min**

Lynx 220LMSA / C  
**6000 / 4500 r/min**

### Max. bar working dia.

Lynx 220A / B / C  
**Ø 45 / 51 / 65 mm**  
(Ø 1.8 / 2.0 / 2.6 inch)

Lynx 220MA / C  
**Ø 51 / 65 mm**  
(Ø 2.0 / 2.6 inch) [ Main / Sub ]

Lynx 220LMSA / C  
**Ø 51 / 65 mm**  
(Ø 2.0 / 2.6 inch) [ Main / Sub ]

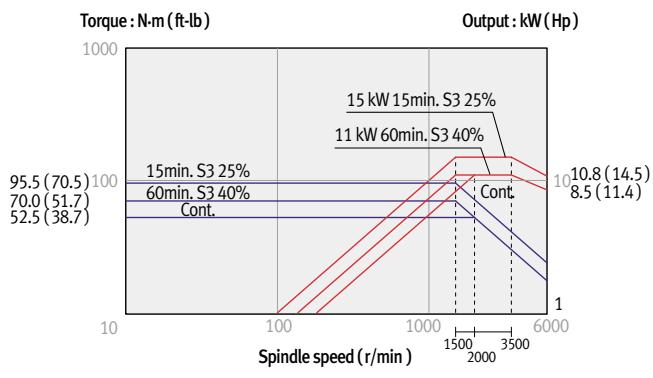
## Headstock and spindle



The headstock and main spindle are manufactured in a temperature controlled environment then assembled and tested in our clean room. The heavy duty cartridge type spindle is supported by a triple row angular ball bearing in the front, with a row cylindrical roller bearing in the rear. This combination of bearings is very effective in refraining from thermal displacement of its front nose and improving high speed performance and its rotational precision.

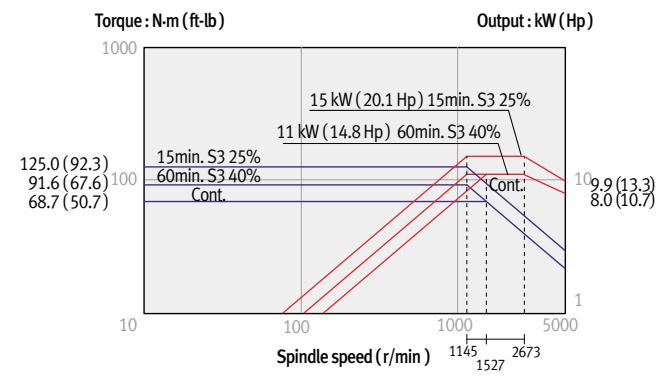
## Main Spindle Power-torque Diagram

### Lynx 220A / LA



**6000 r/min, 15 / 11 kW (20.1 / 14.8 Hp)**

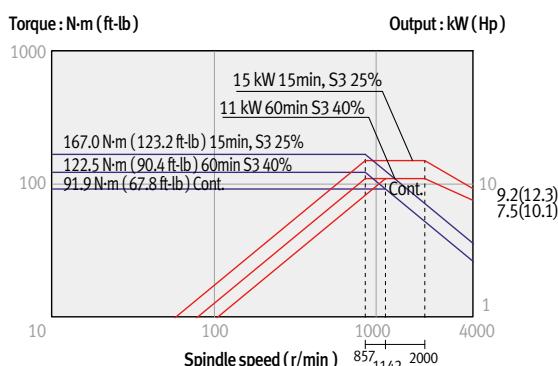
### Lynx 220B / LB



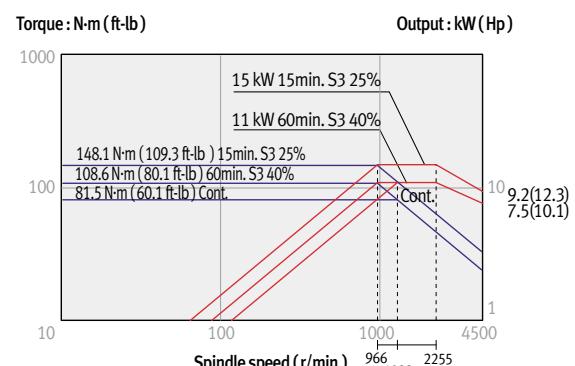
**5000 r/min, 15 / 11 kW (20.1 / 14.8 Hp)**

## Main Spindle Power-torque Diagram

### Lynx 220C / LC

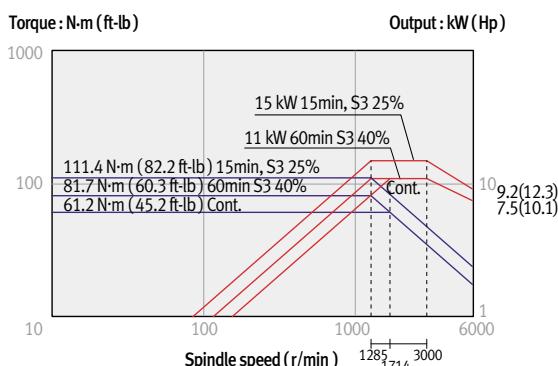


**4000 r/min, 15 / 11 kW (20.1 / 14.8 Hp)**



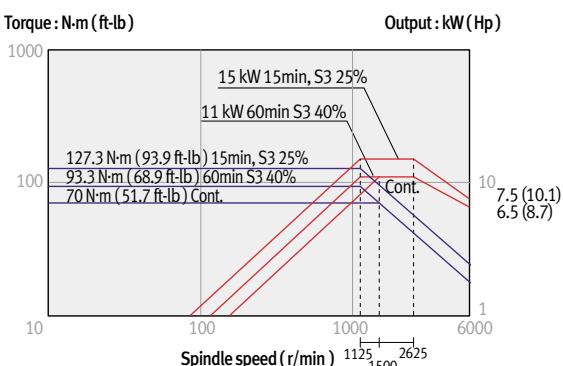
**4500 r/min, 15 / 11 kW (20.1 / 14.8 Hp) opt.**

### Lynx 220MA / LMA



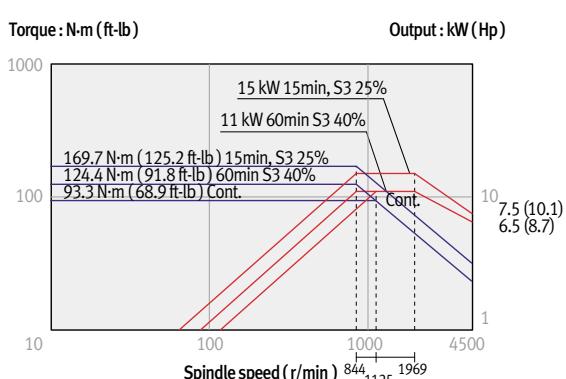
**6000 r/min, 15 / 11 kW (20.1 / 14.8 Hp)**

### Lynx 220LMSA



**6000 r/min, 15 / 11 kW (20.1 / 14.8 Hp)**

### Lynx 220MC / LMC / LMSC



**4500 r/min, 15 / 11 kW (20.1 / 14.8 Hp)**

# High Productivity

## 2 axis Servo Turret (A / B / C)

Rigidity and efficiency provide increased machine performance.



heavy duty turret features a large 210mm diameter curvic coupling and 39 kN of hydraulic clamp force. The heavy duty design provides unsurpassed rigidity for heavy stock removal, fine surface finishes, long boring bar overhang ratios, and extended tool life.

All turret rotations are controlled by high torque servo motor and turret indexing is non-stop bi-directional, with a 0.11 second station to station index time.

Index time (1-station index)

**0.11 s**

No. of tool stations

**12 ea**

## BMT Turret (MA / MC / LMA / LMC / LMSA / LMSC)

BMT turret makes it possible to complete complicated parts requiring many tools in just one set-up. Reliable servo driven turret reduces the total cycle time required to machine parts.



Index time  
(1-station index)

**0.11s**

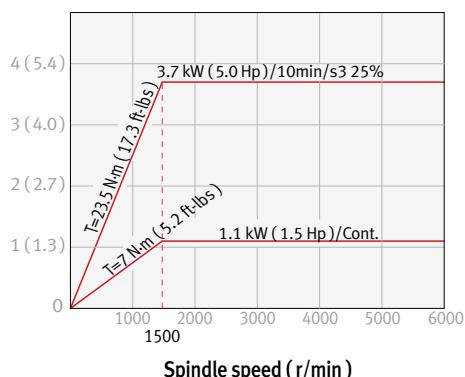
No. of tool stations

Lynx 220MA / MC / LMA /  
LMC / LMSA / LMSC

**12 ea (24 position index)**

## Rotary tool spindle power -torque diagram

Power : kW ( Hp )



Lynx 220M / LM / LMS (BMT45P)

## Tailstock

Widely spaced guideways and heavy-duty design of the tailstock body ensure ample rigidity. The tailstock body is positioned by traction bar, which engages with the carriage. The traction bar movement and hydraulic body clamping are manual.

Tailstock specification		{ } : option
Tailstock travel	mm (inch)	550 (21.7), { 330 (13.0) }
Tailstock quill diameter	mm (inch)	65 (2.6)
Taper hole of tailstock quill		MT4 «Live center»
Tailstock quill travel	mm (inch)	80 (3.1)

Note ) Tail Stock

**std.** Lynx 220LA / LB / LC / LMA / LMC  
**opt.** Lynx 220A / B / C  
**N.A.** Lynx 220MA / MC / LMS

**std.** Standard  
**opt.** Optional  
**N.A.** Not Available



## Sub Spindle (LMSA / LMSC)

The travel time of the workpiece is minimized, because the travel of workpiece between both spindles is carried out under a state of revolution through the synchronized control of revolution speed. In addition, the cutting performance is enhanced because the cross-sectional adhesion of the workpiece at the axis of the servo spindle is secured by the use of a torque skip function when travelling to the B axis.



Max. spindle speed

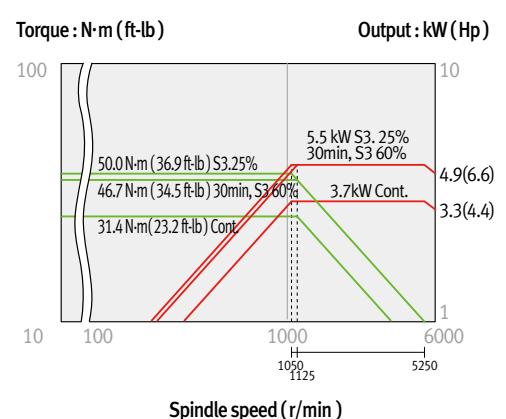
**6000 r/min**

C1, C2-axis index

**360°**

(in 0.001 increment)

### Sub-spindle power -torque diagram



**6000 r/min, 5.5 / 3.7 kW (7.4 / 5.0 Hp)**

# Operation Convenience

## Doosan's New Operation Panel

New Doosan operation panel designed ergonomically and 10.4" color\* LCD provide convenient operation for operators



1. 10.4" color\* LCD : Easy to control and programming
  2. Unique operator panel of Doosan Infracore designed with membrane switches
  3. New operator panel for all the models with enhanced accessibility
  4. User configurable, detachable buttons to set up customized options
- ① Doosan-Fanuc i series**
- ② 10.4" color\* TFT LCD monitor**  
Large 10.4" LCD screen showing error messages of the machine and controller improves operator's work convenience.
- ③ PCMCIA Card**
- ④ USB Port**
- ⑤ Ethernet Connectivity (embedded)**
- ⑥ Swing-type Panel**  
The operation panel can swing up to 88° to provide the operator with convenience during work.

\* 10.4" color LCD : it can be an optional feature for parts of models

**SKETCH-TURN opt.**

**DOOSAN Conversational programming software for PC**

- Easy to learn for beginners
- Time savings in programming
- Reduce processing cycle time

## Optional Equipment

Chuck air (or coolant) blower



Collet chuck



Chip conveyor



Tool pre-setter



Signal tower



Work measurement



Oil skimmer



Part catcher



Part conveyor



Quick change CAPTO



# High Performance & Accuracy

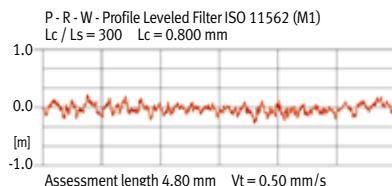
More powerful revolving motor is adapted to improve the productivity.

## Accuracy

Doosan offers its customers unsurpassed levels of accuracy by applying the latest design techniques and rigorous testing processes.

### Roughness

**0.07 µm  
(Ra)**

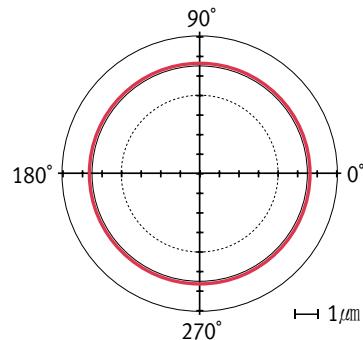


Material	Brass
Cutting Feed	mm/rev (ipr)
Cutting Depth	mm (inch)
Cutting Speed	m/mm (ipm)
Tool	Diamond (Nose R0.1)

\* This is actual cutting result. It might be not available under certain circumstances

### Roundness

**0.3µm**

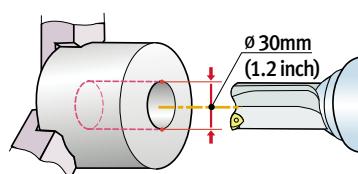


## Machine Capacity

### Heavy duty cutting

Making full use of the high output motor, heavy-duty O.D. cutting is powerful and precise even with large workpieces.

### Center drilling



Chip removal rate

**320 cm³/min (19.5 m³/inch)**

Cutting depth

**4 mm (0.16 inch)**

#### Carbon steel, SM45C

Cutting speed Feedrate

**200 m/min (7874.0 ipm)**

**0.4 mm/rev (0.0 ipr)**

Chip removal rate

**168 cm³/min (10.25 m³/inch)**

#### Carbon steel, SM45C

Cutting speed Feedrate

**80 m/min (3149 ipm)**

**0.28 mm/rev (0.011 ipr)**

### Productivity

Machining times can be reduced.

- Productivity gains can be achieved through Lynx series.



Material : Carbon steel, SM45C  
Size : Ø 62 x 66mm  
(Ø2.4 x 2.6 inch)

Process	Cutting time s	Cutting speed m/min (ipm)	Feed rate m/rev
U-drilling (Ø30 mm)	18.1	120 (4724.4)	0.2
O.D. cutting (Rough)	9.2	200 (7874.0)	0.45
O.D. cutting (Finish)	18.2	250 (9842.5)	0.2
O.D. grooving1 (4 mm)	3.5	140 (5511.8)	0.2
O.D. grooving2 (8 mm)	5.8	140 (5511.8)	0.17
O.D. threading (M45 x P1.5)	10.4	201 (7913.4)	1.5
Cut-off cutting (4 mm)	15.1	120 (4724.4)	0.1

\* Cutting time table shown above is the results from real test cutting. The results can be different on cutting condition and strategy.

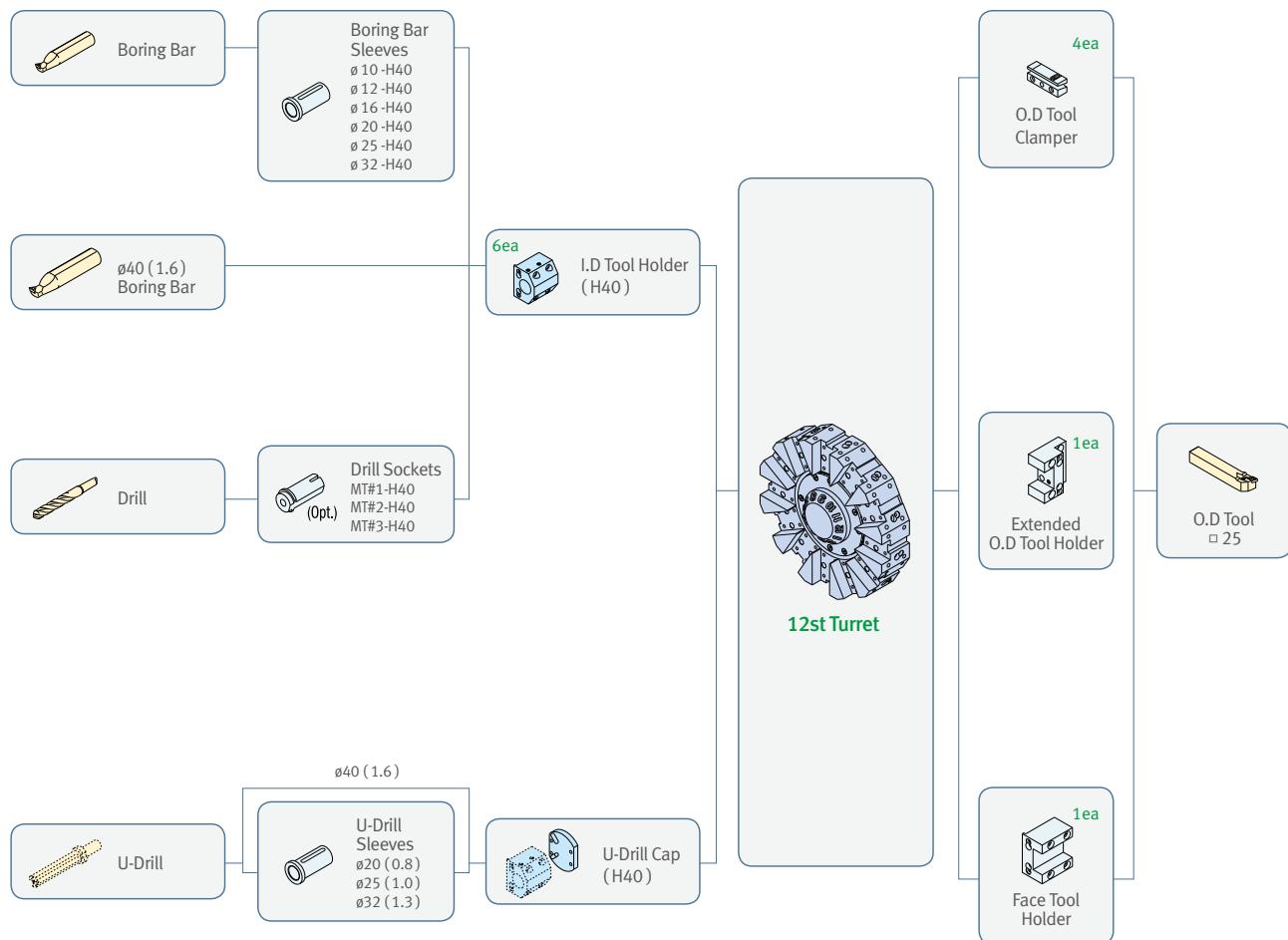
Total cutting time **80.3 s**

in heavy cutting conditions

# Tooling system

## Lynx 220A / B / C [LA / LB / LC] series

Unit : mm (inch)

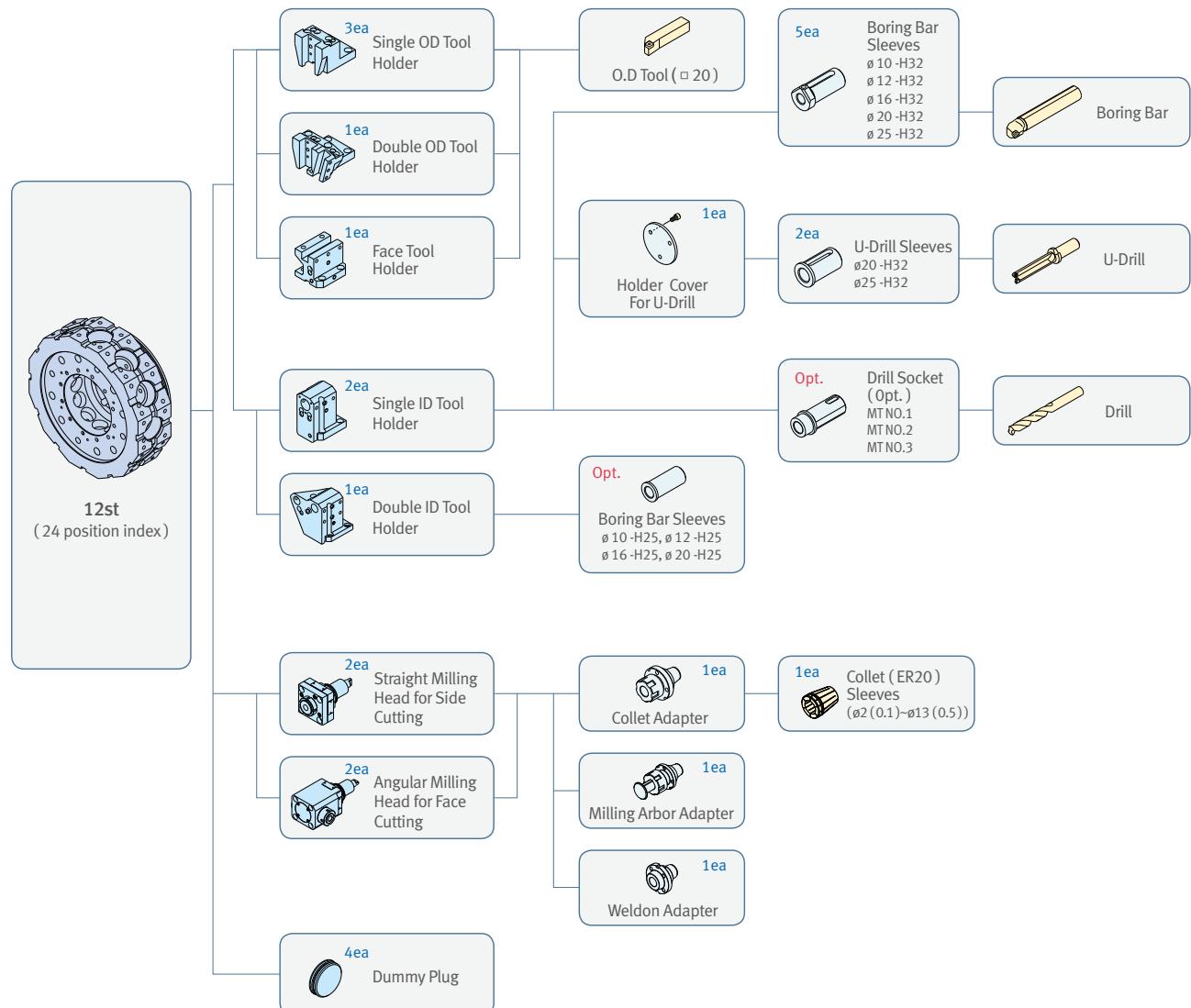


Note ) Above tooling system is our recommendation.  
Depending on export condition, the standard tooling packed with the machine can be different.

# Tooling System

## Lynx 220MA / MC [LMA / LMC]

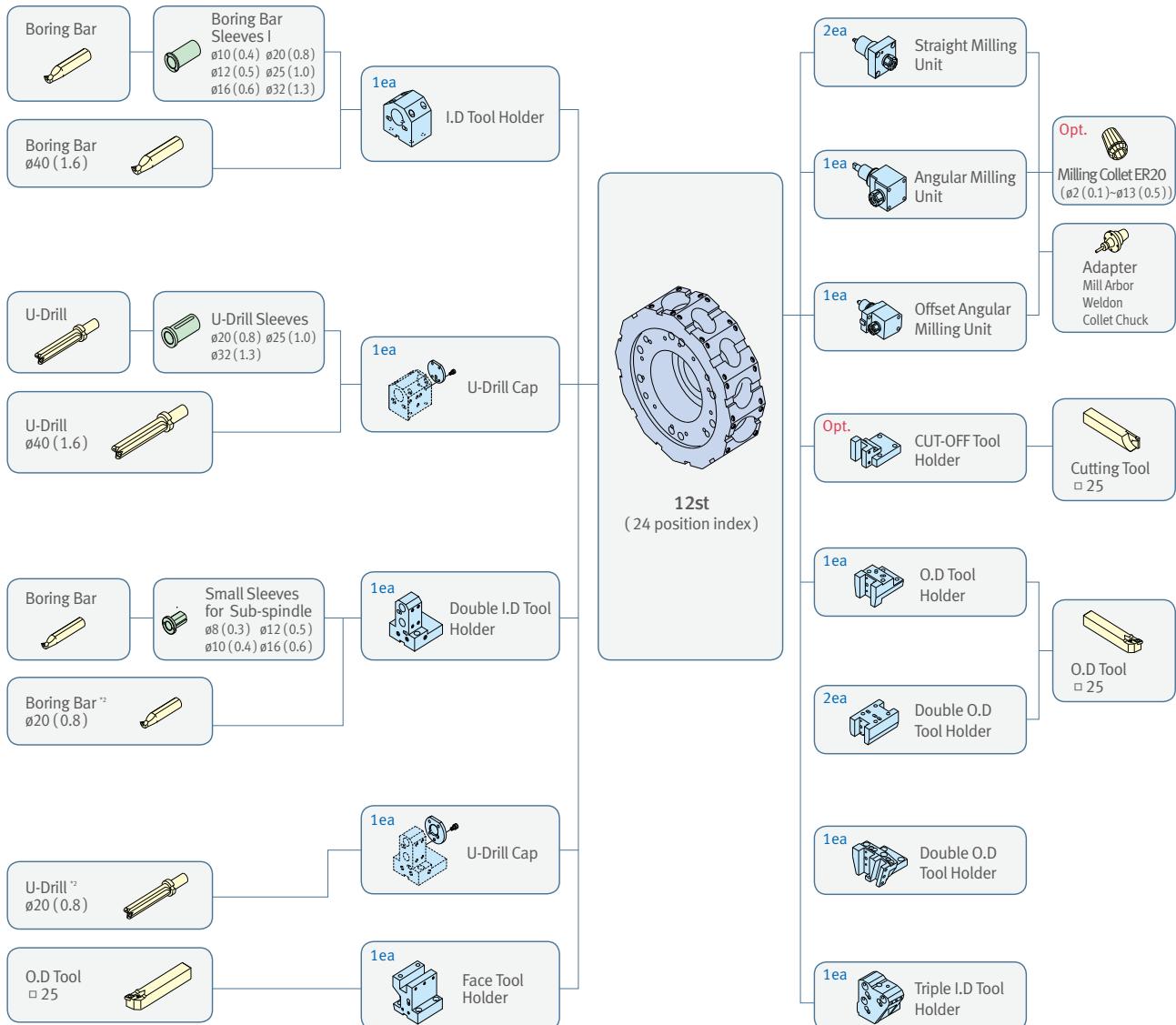
Unit : mm (inch)



Note) Above tooling system is our recommendation.  
 Depending on export condition, the standard tooling packed with the machine can be different.

# Lynx 220LMSA / LMSC

Unit : mm (inch)



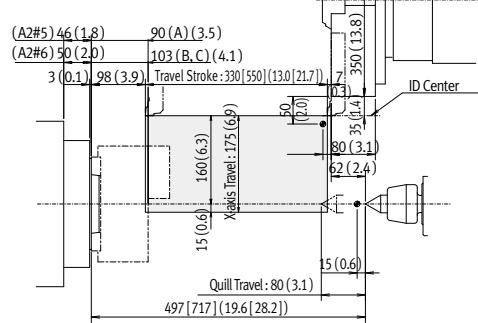
Note) Above tooling system is our recommendation.  
Depending on export condition, the standard tooling packed with the machine can be different.

# Working Range

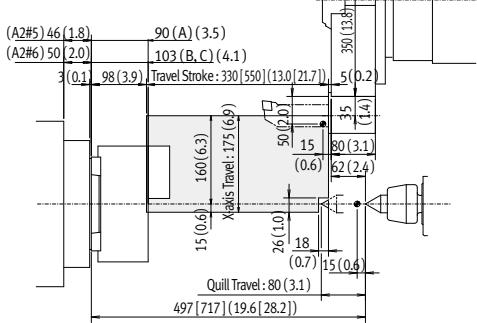
## Lynx 220A / B / C series

Unit : mm (inch)

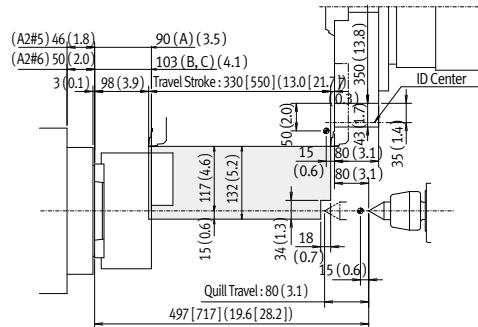
### OD Tool Holder



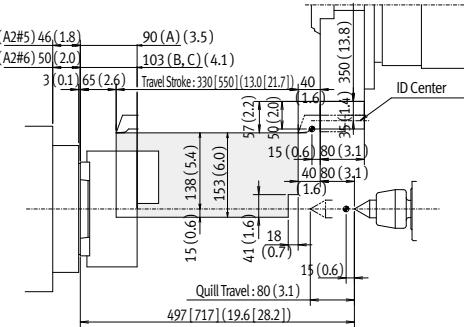
### ID Tool Holder



### Extended OD Tool Holder



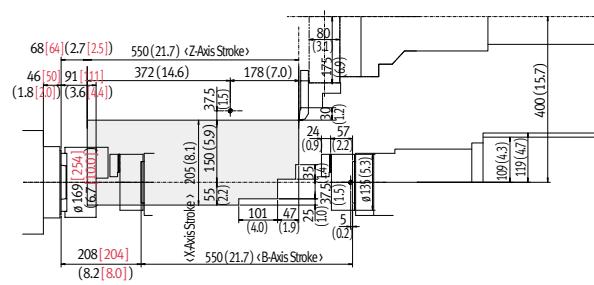
### Face Tool Holder



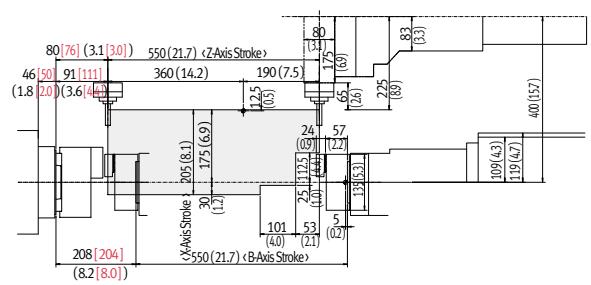
## Lynx 220LMSA [LMSC]

Unit : mm (inch)

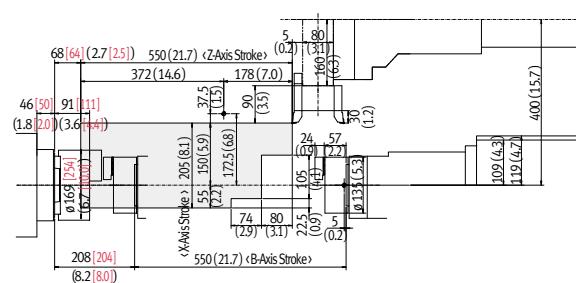
### Single OD Tool Holder



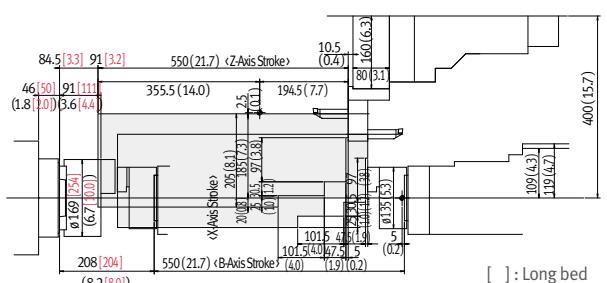
### Single ID Tool Holder



### Double OD Holder



### Double ID Tool Holder

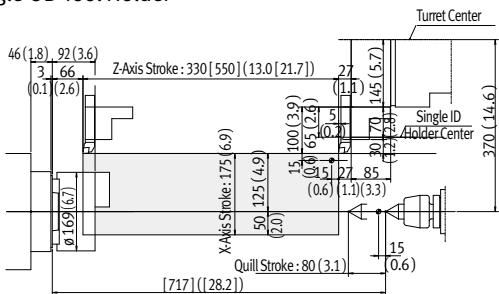


[ ] : Long bed

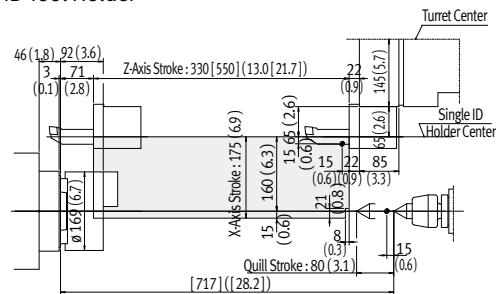
## Lynx 220M [LM]

Unit : mm ( inch )

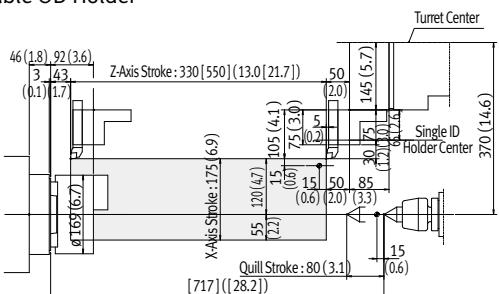
### Single OD Tool Holder



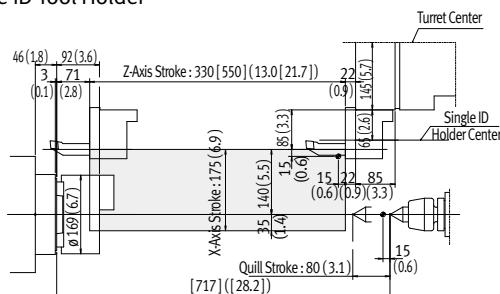
### Single ID Tool Holder



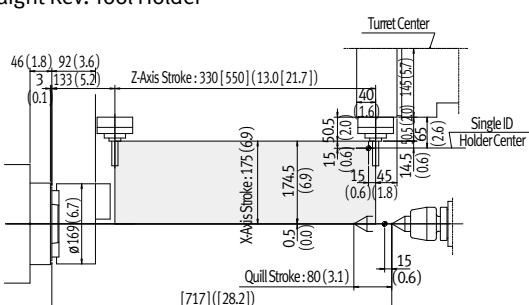
### Double OD Holder



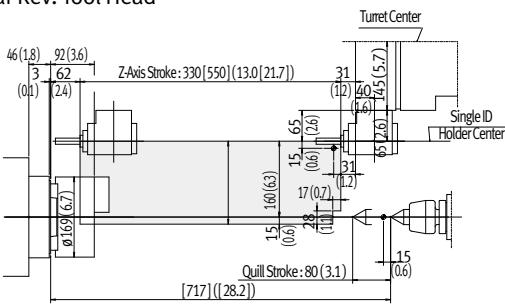
### Double ID Tool Holder



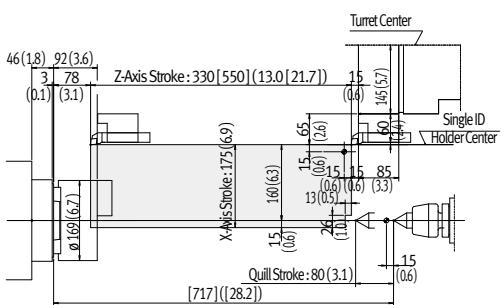
### Straight Rev. Tool Holder



### Angular Rev. Tool Head



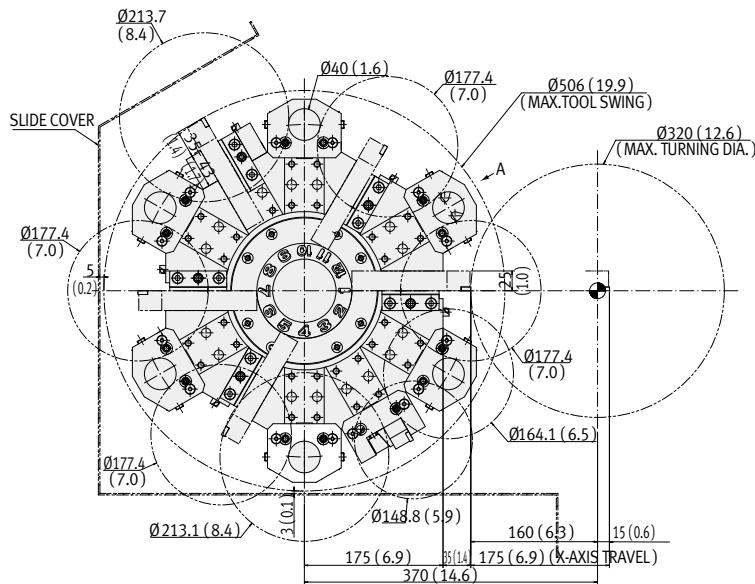
### Face Tool Holder



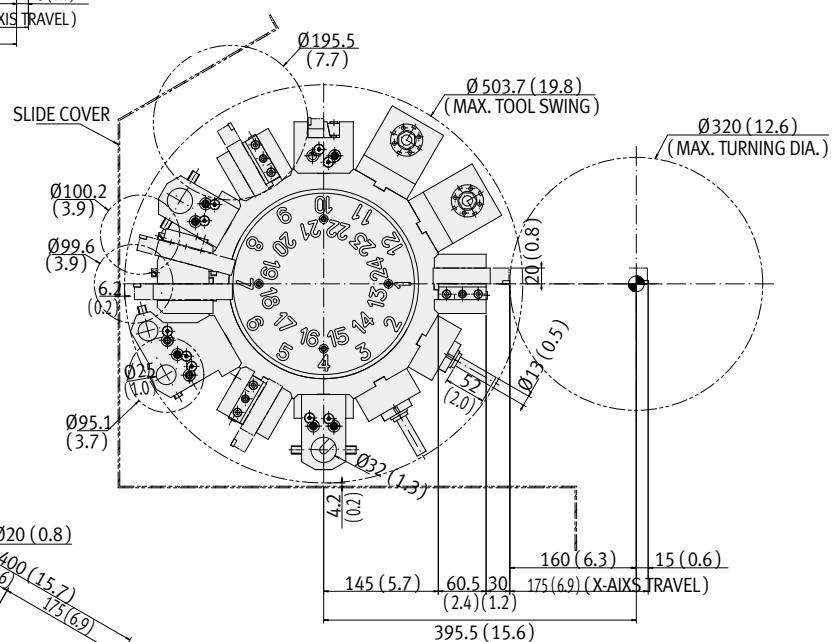
# Tool Interference Diagram

## Lynx 220A / B / C / LA / LB / LC

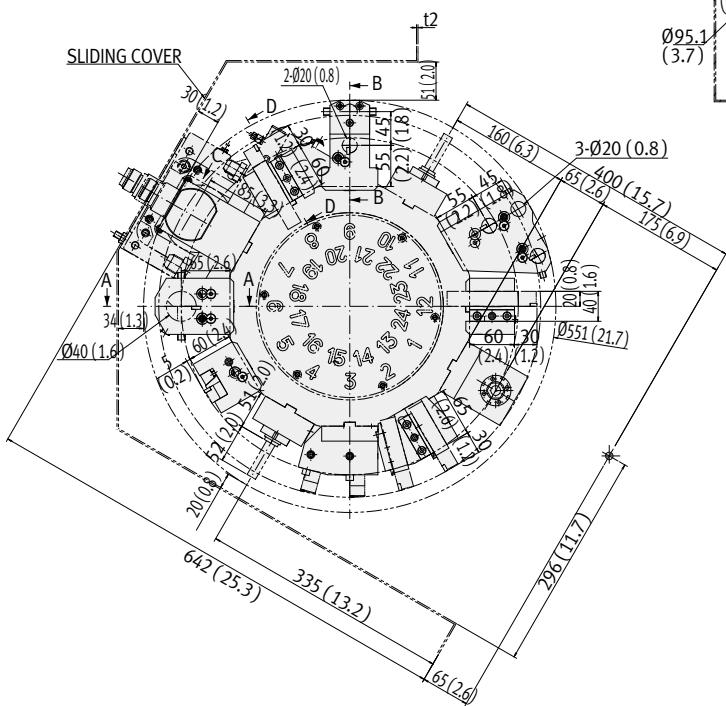
Unit : mm (inch)



## Lynx 220MA / MC / LMA / LMC



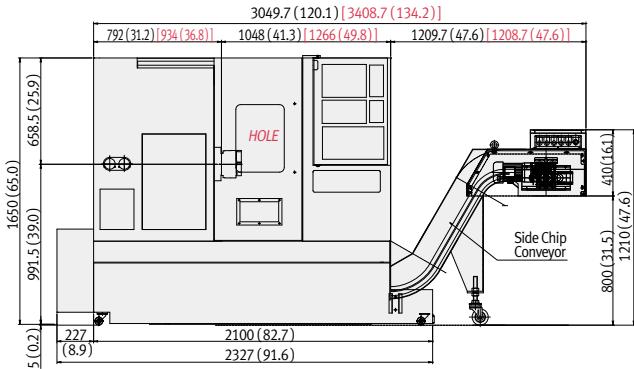
## Lynx 220LMSA / LMSC



# External Dimensions

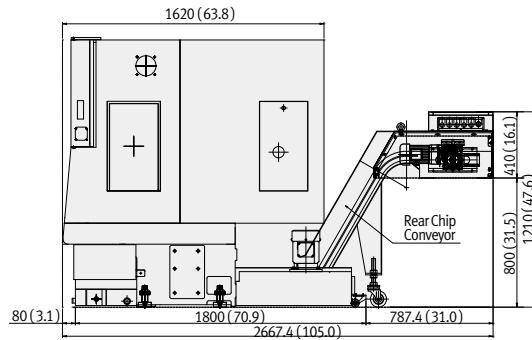
## Lynx 220A / B / C [LA / LB / LC]

Front View



Unit : mm (inch)

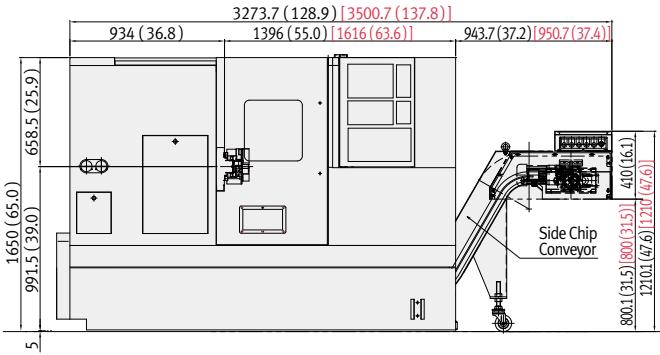
Side View



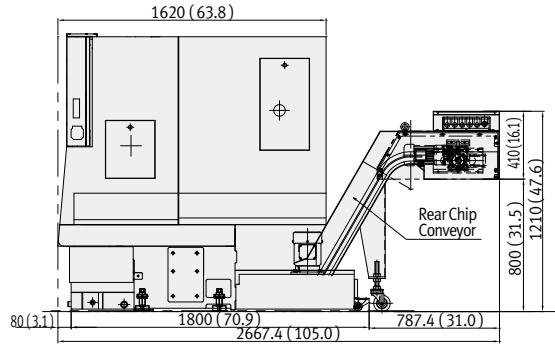
Unit : mm (inch)

## Lynx 220MA / MC [LMA / LMC]

Front View

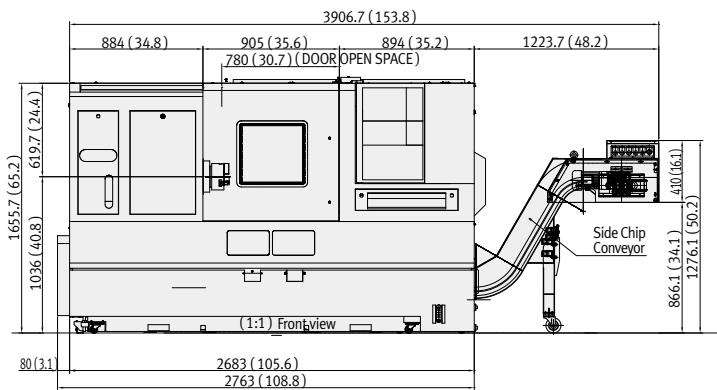


Side View

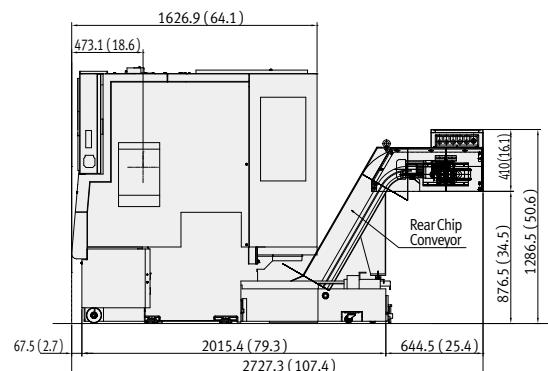


## Lynx 220LMSA / LMSC

Front View



Side View



# Machine Specifications

Features		Unit	Lynx 220A [LA]	Lynx 220B [LB]	Lynx 220C [LC]	Lynx 220MA [LMA]	Lynx 220MC [LMC]	Lynx 220LMSA	Lynx 220LMSC		
Capacity	Swing over bed	mm (inch)	510 (20.1)			600 (23.6)					
	Swing over saddle	mm (inch)	290 (11.4)			400 (15.7)					
	Recom. Turning diameter	mm (inch)	170 (6.7)	210 (8.3)	170 (6.7)	210 (8.3)	170 (6.7)	210 (8.3)			
	Max. Turning diameter	mm (inch)	320 (12.6)			250 (9.8)	300 (11.8)				
	Max. Turning length	mm (inch)	322 [542] (12.7 [21.3])	305 [525] (12.0 [20.7])	290 [510] (11.4 [20.1])	510 (20.1)					
	Chuck size	inch	6	8	8	6	8	6	8		
	Bar working diameter	mm (inch)	45 (1.8)	51 (2.0)	65 (2.6)	51 (2.0)	65 (2.6)	51 (2.0)	65 (2.6)		
Travels	Travel distance	X-axis	mm (inch)	175 (6.9)			205 (8.1)				
		Z-axis	mm (inch)	330 [550] (13.0 [21.7])			550 (21.7)				
		B-axis	mm (inch)	-			550 (21.7)				
Feedrate	Rapid Traverse Rate	X-axis	m/min (ipm)	30 (1181.1)			-				
		Z-axis	m/min (ipm)	36 (1417)			-				
		B-axis	m/min (ipm)	-			30 (1181.1)				
Main spindle	Cutting feedrate		m/min (ipm)	500 / 500 (19.7 / 19.7)			-				
	Max. Spindle speed		r/min	6000	5000	4000	6000	4500	6000		
	Spindle nose		ASA	A2 #5	A2 #6	A2 #6	A2 #6	A2 #5	A2 #6		
	Spindle bearing diameter (Front)	mm (inch)	90 (3.5)	100 (3.9)	110 (4.3)	90 (3.5)	110 (4.3)	90 (3.5)	110 (4.3)		
	Spindle through hole	mm (inch)	53 (2.1)	61 (2.4)	76 (3.0)	61 (2.4)	76 (3.0)	61 (2.4)	76 (3.0)		
Turret	Min. spindle indexing angle (C-axis)	deg		0.001			-				
	No. of tool stations	ea		12			12 (24 POSITION INDEX)				
	OD tool size	mm (inch)		25 x 25 (1.0 x 1.0)			20 x 20 (0.8 x 0.8)				
	Max. boring bar size	mm (inch)		40 (1.6)			32 (1.3) (SINGLE ID) / 25 (1.0) (DOUBLE ID)	40 (1.6) (MAIN) / 20 (0.8) (SUB)			
Tail Stock	Turret Indexing time (1 station swivel)	s		0.11			-				
	Max. Rotary tool speed	r/min		-			6,000				
	Quill diameter	mm (inch)		65 (2.6)			-				
Sub spindle	Quill bore taper		MT	MT#4			-				
	Quill travel	mm (inch)		80 (3.1)			-				
	Spindle speed	r/min		-			6,000				
	Spindle nose	FLAT		-			0.0110				
	Spindle bearing diameter (Front)	mm (inch)		-			75 (3.0)				
Motors	Spindle through hole	mm (inch)		-			43 (1.7)				
	Min. spindle indexing angle (C-axis)	deg		0.001			-				
	Main spindle motor power (30min./ cont.)	kW (Hp)		15 / 11 (20.1 / 14.8)			-				
	Sub spindle motor power	kW (Hp)		-			5.5 / 3.7 (7.4 / 5.0)				
Power source	Rotary tool motor power	kW (Hp)		-			3.7 (5.0)				
	Coolant pump motor power	kW (Hp)		0.4 (0.5)			1.1 (1.5)				
Machine Dimensions	Electric power supply (rated capacity)	kVA		23.7			31.71				
	Height	mm (inch)		1655 (65.2)			-				
	Length	mm (inch)	2325 [2560] (91.5 [100.8])	2410 [2630] (94.9 [103.5])			2763 (108.8)				
	Width	mm (inch)	1600 (63.0)	1627 (64.1)			-				
	Weight	kg (lb)	2900 [3100] (6393.3 [6834.2])	3100 [3300] (6834.2 [7275.1])			3400 (7495.6)	3500 (7716.1)			

## Standard feature

- Coolant supply equipment
- Foot switch
- Front door interlock
- Full enclosure chip and coolant shield
- Hand tool kit (including small tool for operations)
- Hydraulic chuck and actuating cylinder (tool holders & boring sleeves)
- Hydraulic power unit
- Levelling jack screw and plates
- Lubrication equipment
- Soft jaws
- Standard tooling kit
- Tail stock (Lynx 220LA / LB / LC / LMA / LMC)
- Work light

## Optional feature

- Additional tool holders & sleeves
- Air blast for chuck jaw cleaning
- Air gun
- Automatic door
- Automatic measuring system (in process touch probe)
- Automatic power off
- Automatic work loading
- Bar feeder interface
- Chip conveyor
- Chip bucket
- Hardened & ground jaws
- Oil skimmer
- Parts catcher (Lynx 220 : ø 65 x L140)
- Pressure switch for chucking pressure check
- Proximity switches for chuck clamp detection
- Proximity switches for tail stock quill position detection\*<sup>1</sup>
- Signal tower (yellow, red, green)
- Special chucks
- Tool pre-setter (hydraulic type)
- Tool pre-setter (manual type)
- Coolant level switch : Sensing level - Low
- Quick change tooling(CAPTO)
- Sketch-turn S/W

\*<sup>1</sup> : This is available as option when tail stock is applied to the machine.

- The specifications and information above-mentioned may be changed without prior notice.
- For more details, please contact Doosan



## Major Specifications

Lynx 220 series	Description	Unit	Lynx 220 [L]	Lynx 220M [LM] [LMS]
	Max. turning dia.	mm (inch)	Ø320 (Ø12.6)	Ø250 [250] [300] (Ø9.8 [9.8] [11.8])
	Max. turning length	mm (inch)	322 [542] (12.7 [21.3]) *1	290 [510] [510] (11.4 [20.1] [20.1])
	Standard chuck size	inch	6 / 8	
	Max. spindle speed	r/min	6000 / 4000	6000 / 4500
	Max. spindle power	kW (Hp)	15 (20.1)	

\*1: Lynx 220A[LA]

## Doosan Machine Tools

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There is a high risk or fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting use coolants and modifying the machine without the consent of the manufacturer. Please check the SAFETY GUIDANCE carefully before using the machine.

ver. EN 190613 SU



8/10/12 INCH GLOBAL STANDARD TURNING CENTER

# PUMA GT

**2100 · 2600 · 3100**



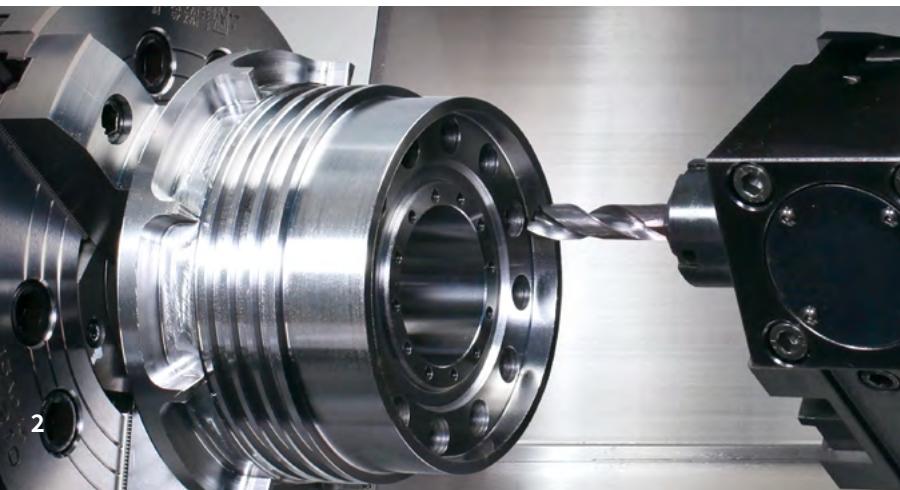
**DN SOLUTIONS**

# PUMA GT2100 • 2600 • 3100

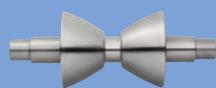
The PUMA GT Series is an 8/10/12-inch chuck size turning center range that sets new global standards. The Series is equipped with the most powerful spindle in its class and an innovative tool post concept that guarantees powerful and precise machining and exceptional productivity. The design of the GT Series focuses on convenient operation and easy maintenance.



PUMA GT2600M



Sample





PUMA GT2600XL

PUMA GT3100M

### POWERFUL AND PRECISE CUTTING CAPABILITY

PUMA GT Series ensures stability and has powerful cutting capabilities and features a box guideway structure and the highest spindle power in its class.

### OUTSTANDING PRODUCTIVITY

Compared to previous models, the Series has faster rapid traverse rates and optimised control functions that ensure the highest productivity.

### IMPROVED USABILITY

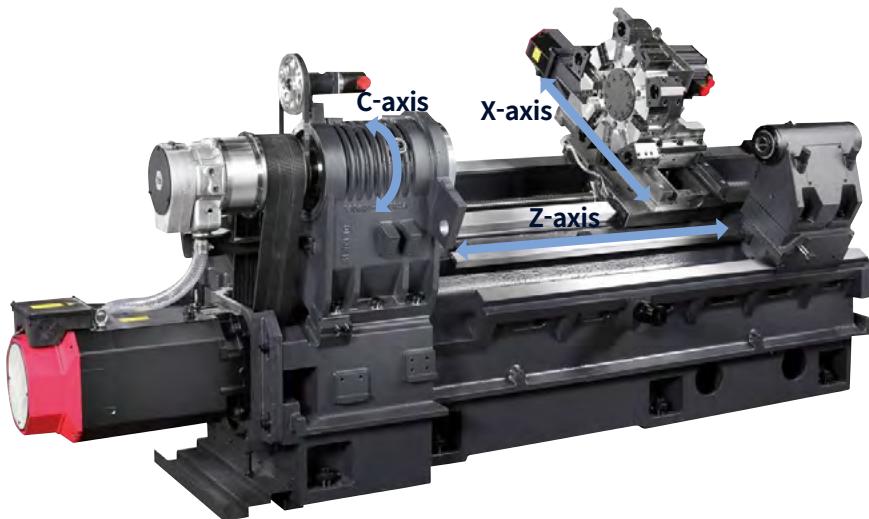
Usability of GT Series is maximized through a user-friendly operation panel, and simple maintenance functions.

# BASIC STRUCTURE

Box guideways are applied to all axes to prevent vibration, ensure dynamic rigidity, and deliver powerful and precise machining.

## A diverse line-up that meets all customer requirements

The PUMA GT Series comprises 20 different machine models which have different configurations and specifications (i.e., chuck size, machine length, and operation of rotating tools).

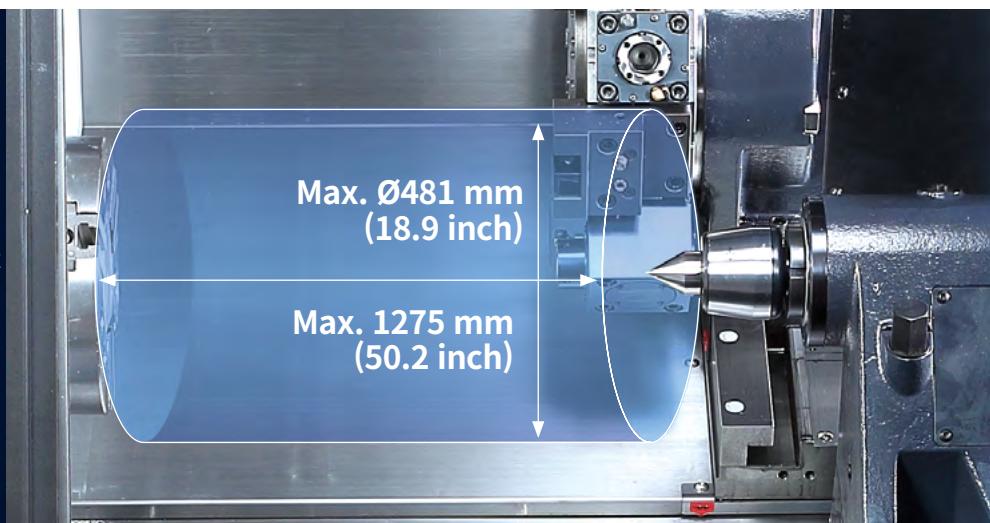


Model group	Standard chuck size (inch)
PUMA GT2100	8
PUMA GT2100B	10
PUMA GT2600	10
PUMA GT2600XLB	12
PUMA GT3100A	10
PUMA GT3100	12

Model group	Travel (mm (inch))		Rapid traverse rate (m/min (ipm))	
	X-Axis	Z-Axis	X-Axis	Z-Axis
PUMA GT2100	230 (9.1)	580 (22.8)	24 (945)	30 (1181)
PUMA GT2100B		680 (26.8)		
PUMA GT2600		1100 (43.3)		
PUMA GT2600L		1625 (64.0)		
PUMA GT2600XL/XLB		830 (32.7)		
PUMA GT3100/A		1350 (53.1)		
PUMA GT3100/LA				

## MACHINING AREA

PUMA GT Series machines have the largest machining areas their class and deliver maximum productivity with minimum cost.



Model group (unit : mm (inch))	Max. turning dia. (2axis/M)	Bar working dia.	Max. turning length (2axis/M)
PUMA GT2100	390 / 300 (15.4 / 11.8)	65 (2.6)	562 / 513 (22.1 / 20.2)
PUMA GT2100B			550 / 501 (21.7 / 19.7)
PUMA GT2600		81 (3.2)	658 / 610 (25.9 / 24.0)
PUMA GT2600L	460 / 410 (18.1 / 16.1)		1078 / 1030 (42.4 / 40.6)
PUMA GT2600XL			1603 / 1555 (63.1 / 61.2)
PUMA GT2600XLB		102 (4.0)	1573 / 1525 (61.9 / 60.0)
PUMA GT3100A		81 (3.2)	790/760 (31.1 / 29.9)
PUMA GT3100LA	481 / 376 (18.9 / 14.8)		1310/1280 (51.6 / 50.4)
PUMA GT3100		102 (4.0)	755 / 725 (29.7 / 28.5)
PUMA GT3100L			1275 / 1245 (50.2 / 49.0)

# SPINDLE INFORMATION

Design and use of a low inertia spindle improves acceleration /deceleration rates while at the same time increasing productivity and delivering powerful cutting performance.

## Max. spindle speed

**3500 r/min**

## Max. spindle power

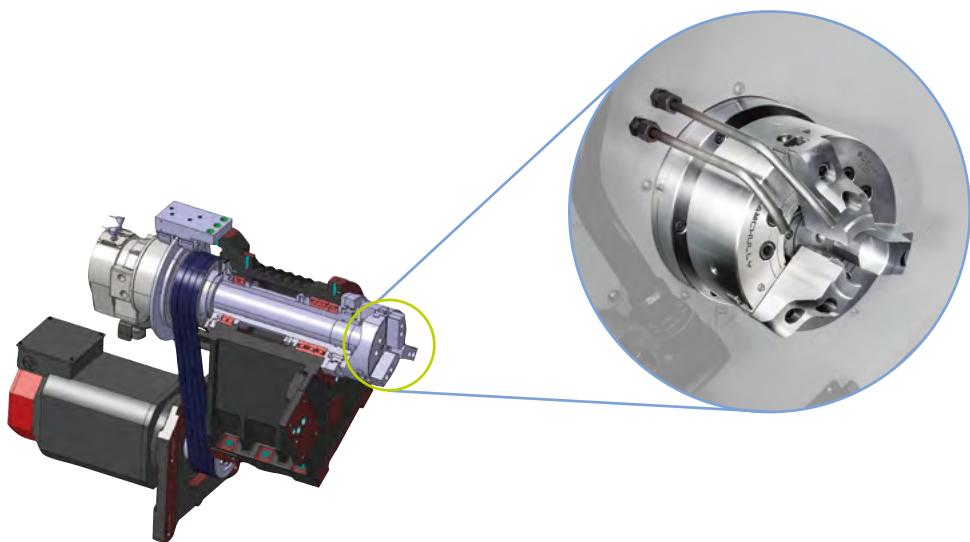
**26 kW (34.9 Hp)**

(S6 25%)

## Max. spindle torque

**735 N·m (542.4 lbf·ft)**

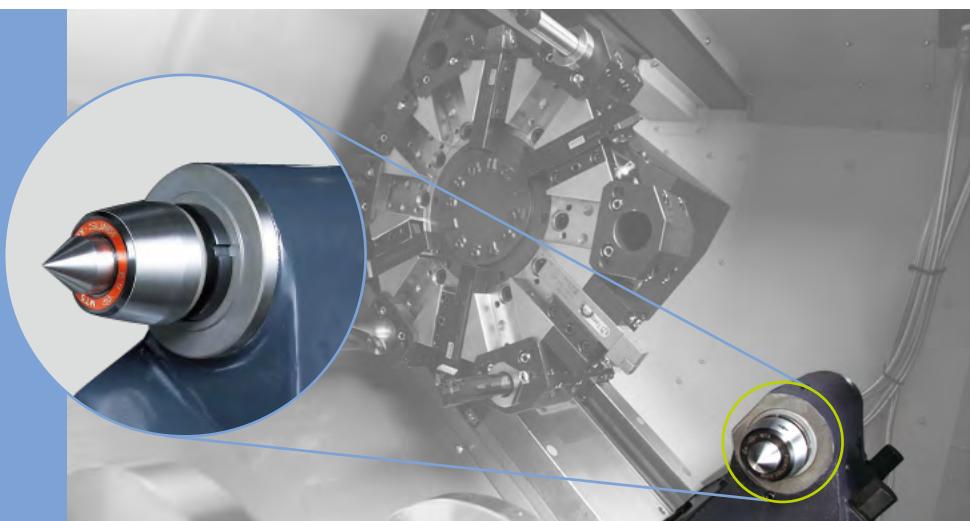
\* PUMA GT2600 specification



Model group	Spindle speed (r/min)	Power (kW (hp))	Torque (N·m (lbf ft))	Condition
PUMA GT2100	4500	18.5 / 15 / 15 (24.8 / 20.1 / 20.1)	313 (230)	S6 25% / S6 40% / S1 Cont.
PUMA GT2100B	3500	18.5 / 15 / 15 (24.8 / 20.1 / 20.1)	400 (295.2)	S6 25% / S6 40% / S1 Cont.
PUMA GT2600	3500	26 / 22 / 18.5 (34.9 / 29.5 / 24.8)	622 (459.0)	S6 25% / S6 60% / S1 Cont.
PUMA GT2600XLB	2500	22 / 13 (29.5 / 17.4) (Low winding) 26 / 22 / 18.3 (34.9 / 29.5 / 24.8) (High winding)	992 (732.1)	S6 15% / S1 Cont. S6 25% / S6 60% / S1 Cont.
PUMA GT3100A	3500	35/26/22 (46.9 / 34.9 / 29.5)	1122 (828.0)	S3 25%/S3 60% / Cont.
PUMA GT3100MA	3500	22/18.5 (29.5 / 24.8)	622 (459.0)	S3 60% / Cont.
PUMA GT3100	2800	35 / 26 / 22 (46.9 / 34.9 / 29.5)	1613 (1190.4)	S3 25% / 30min / Cont.
PUMA GT3100M	2800	22 / 18.5 (29.5 / 24.8)	1123 (828.8)	30min / Cont.

# TAILSTOCK

A highly-rigid tailstock is used to support the machining of long and thin workpieces.



Model group (mm (inch))	Tailstock travel	Quill dia	Quill travel
PUMA GT2100/B	580 (22.8)	80 (3.1)	80 (3.1)
PUMA GT2600	680 (26.8)		
PUMA GT2600L	1100 (43.3)		
PUMA GT2600XL	1625 (64.0)		
PUMA GT2600XLB	1595 (62.8)	100 (3.9)	100 (3.9)
PUMA GT3100/A	830 (32.7)		
PUMA GT3100L/LA	1350 (53.1)		

# TURRET

Turret rotation is controlled by a servo motor for prompt and correct selection of tools.

## Servo indexing turret

The servo motor controls the movement of the turret guaranteeing rapid rotation and correct positioning. The milling turret, including rotary tools, features the BMT design for higher rigidity. In addition, oil and air lubrication of the rotary tools reduced thermal displacements and ensures best-in-class milling, drilling and tapping.

## 2 axis turret

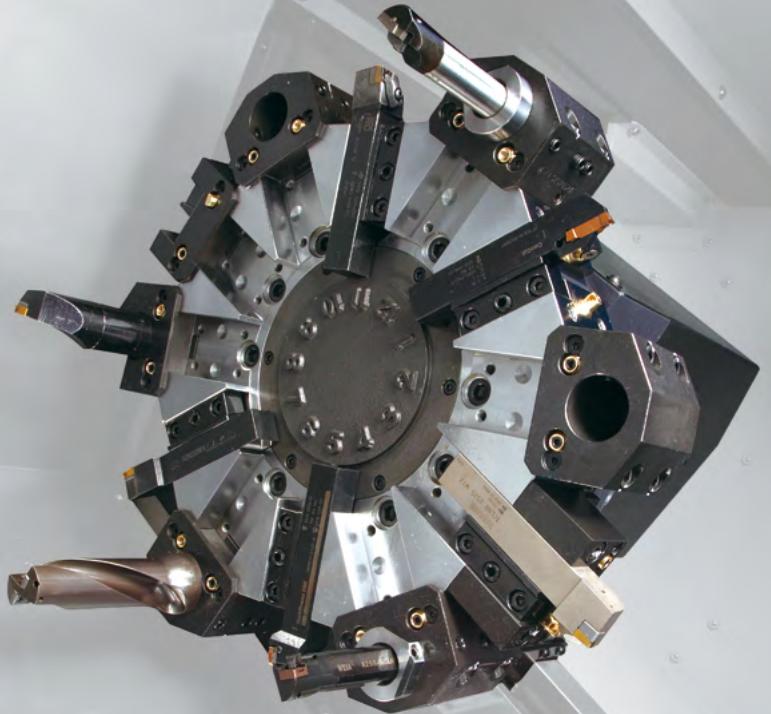
### Number of tool stations

PUMA GT2100

**12** st

PUMA GT2100B, PUMA GT2600, PUMA GT3100

**10** st / **12** st option



## BMT milling turret

PUMA GT2100M, PUMA GT2600M    PUMA GT3100M / LM

**BMT 55P**

**BMT65P**

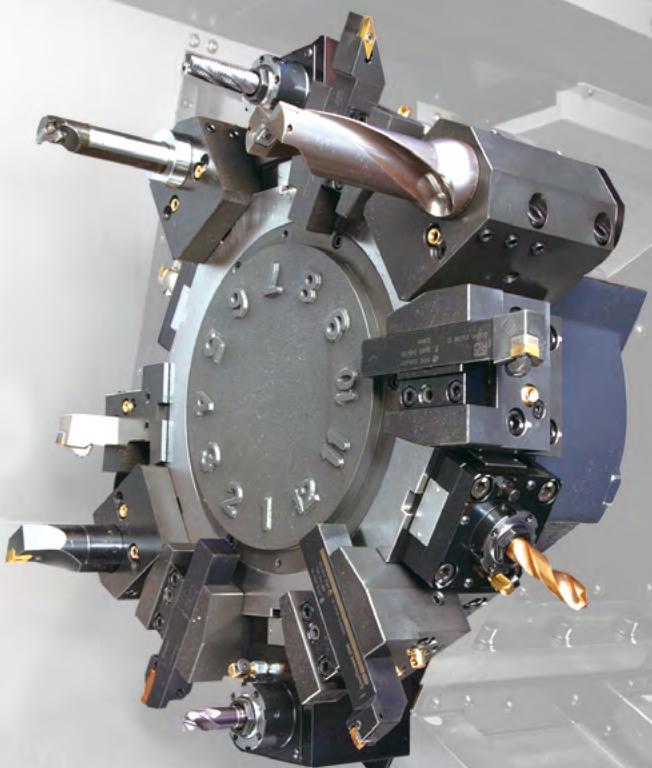
### Number of tool stations

PUMA GT2100M, PUMA GT2600M

**12** st

PUMA GT3100M / LM

**12** st / **24** st option



## Rotary tool motor power

PUMA GT2100M, PUMA GT2600M

**5.5** kW (7.4Hp)

PUMA GT3100M / LM

**7.5** kW (10Hp)

# CUTTING PERFORMANCE

Multi-functionality including end milling, face milling, drilling, tapping, etc. offers better machining performance while minimizing work setting.

OD turning				
	unit	PUMA GT2100	PUMA GT2600	PUMA GT3100
Chip removal rate	cm <sup>3</sup> /min (inch <sup>3</sup> /min)	551 (33.6)	693 (42.3)	1155 (70.5)
Cutting speed	m/min (ipm)	210 (8278)	210 (8278)	210 (8278)
Feedrate	mm/rev (ipr)	0.55 (0.02)	0.55 (0.02)	0.55 (0.02)
Spindle speed	r/min	965	338	207
Cutting depth	mm (inch)	4.5 (0.18)	6 (0.24)	10 (0.6)



ID turning (Rough cutting)				
	unit	PUMA GT2100	PUMA GT2600	PUMA GT3100
Cutting speed	m/min (ipm)	270 (10630)	270 (10630)	280 (11023.6)
Feedrate	mm/rev (ipr)	0.3 (0.01)	0.3 (0.01)	0.3 (0.01)
Spindle speed	r/min	1131	1131	849
Cutting depth	mm (inch)	3 (0.1)	3 (0.1)	3 (0.1)
Tool length	length / dia.	3.5D	3.5D	4.0D



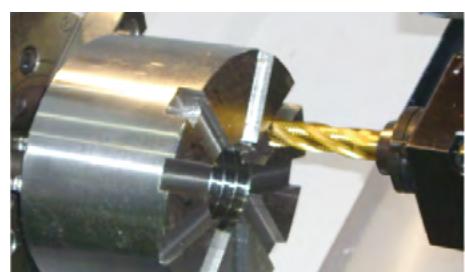
U drilling (2axis)				
	unit	PUMA GT2100	PUMA GT2600	PUMA GT3100
Chip removal rate	cm <sup>3</sup> /min (inch <sup>3</sup> /min)	567 (34.6)	914 (55.8)	1040 (63.5)
Cutting speed	m/min (ipm)	200 (7874)	200 (7874)	200 (7874)
Feedrate	mm/rev (ipr)	0.18 (0.007)	0.29 (0.011)	0.26 (0.01)
Spindle speed	r/min	1011	1011	796
U drill dia.	mm (inch)	63 (2.5)	63 (2.5)	80 (3.1)



Face milling				
	unit	PUMA GT2100M	PUMA GT2600M	PUMA GT3100M
Chip removal rate	cm <sup>3</sup> /min (inch <sup>3</sup> /min)		47.9 (2.9)	68 (4.1)
Cutting speed	m/min (ipm)		120 (4724)	280 (11023.6)
Feedrate	m/min (ipm)		190 (7481)	558 (21968.5)
Spindle speed	r/min		606	1115
Cutting depth	mm (inch)		4 (0.2)	2 (0.1)
Face mill dia.	mm (inch)		63 (2.5)	80 (3.1)



End milling				
	unit	PUMA GT2100M	PUMA GT2600M	PUMA GT3100M
Chip removal rate	cm <sup>3</sup> /min (inch <sup>3</sup> /min)		90 (5.5)	133.8 (8.2)
Cutting speed	m/min (ipm)		60 (2362)	70 (2755.9)
Feedrate	m/min (ipm)		250 (9843)	223 (8779.5)
Spindle speed	r/min		1060	1115
Cutting depth	mm (inch)		20 (0.7)	30 (1.2)
End mill dia.	mm (inch)		18 (0.7)	20 (0.7)



Tapping				
	unit	PUMA GT2100M	PUMA GT2600M	PUMA GT3100M
Tap size	-		M20 x P2.5	
Cutting speed	m/min (ipm)		15 (591)	
Feedrate	m/min (ipm)		2.5 (98.4)	
Spindle speed	r/min		240	



\* The results, indicated in this catalogue are provides as example. They may not be obtained due to differences in cutting conditions and environmental conditions during measurement.

# STANDARD | OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

Description	Features	PUMA GT2100 / M	PUMA GT2100B / MB
Chuck	8 inch	●	X
	10 inch	○	●
	12 inch	X	X
	15 inch	X	X
	No chuck	○	○
Jaw	Soft Jaw	●	●
	Hard jaw	○	○
Chucking Option	DUAL PRESSURE CHUCKING	○	○
	CHUCK CLAMP CONFIRMATION	●	●
Steady rest	Hydraulic	△	△
	Programmable	△	△
	Manual	△	△
V stand	V stand for shaft workpiece	△	△
	Manual	●	●
Tailstock	Programmable	○	○
	Live center	●	●
	Built-in dead center	○	○
Coolant Pump	1.5 bar	●	●
	Increase Power (4.5/7/10/14.5/70 bar)	○	○
Additional coolant pump (for option)	4.5 bar	○	○
	Oil skimmer	○	○
Coolant options	Coolant chiller	△	△
	Coolant pressure switch	○	○
	Chuck coolant	○	○
	Coolant gun	○	○
	Side type chip conveyor	○	○
Chip disposal options	Rear type chip conveyor	○	○
	Chip bucket	○	○
	Air blower	○	○
	Mist collector interface	○	○
	Integrated mist collector	○	○
	Tool setter (Manual)	○	○
Measuring & automation	Tool setter (Automatic)	○	○
	Part catcher with parts box	○	○
	Part catcher with parts conveyor	△	△
	Auto door	○	○
	Bar feeder interface	○	○
Others	Tool load monitoring system	●	●
	Linear scale (Xaxis /Zaxis)	○	○
	Signal tower	○	○
	Air gun	○	○
	Automatic power off	○	○
	Quick change tooling(CAPTO)	○	○
	Sketch-turn S/W	○	○
Customized Special Option	V STAND FOR SHAFT WORKPIECE_ON TAILSTOCK	X	X
	GUIDE WAY WIPER_FOR DRY CUTTING	X	X
	TAILSTOCK DEDUCTION	X	X
	MAIN/LEFT SPINDLE AIR CURTAIN	X	X
	AUTOMATIC TOP DOOR	○	○
	COOLANT TANK DIRECTION_REAR SIDE	X	X
	MAIN/LEFT CHUCK SIZE_170 MM (6 INCH)	○	○
	CHUCK PRESSURE SWITCH	○	○
	COOLANT CHILLER	○	○
	TOP PROTECTION COVER	X	X
	SHOWER COOLANT	X	X
	DOUBLE SAFETY EDGE FOR AUTO FRONT DOOR	X	X
	COOLANT LEVEL SWITCH_FLOATING	○	○
	AIR LIMIT SENSING ON CHUCK_PREPARATION	○	○
	TSC FOR MAIN/LEFT SPINDLE_PREPARATION	○	○
	AUTO. WORK MEASUREMENT_OLP40_RENISHAW	○	○
	AUTO. WORK MEASUREMENT_RLP40_RENISHAW	○	○
	COOLANT PUMP_4.0 KW_2.8 MPA	X	○
	Coolant level switch : Sensing level - Low	○	○

# STANDARD | OPTIONAL SPECIFICATIONS

Description	Features	PUMA GT2600 / M	PUMA GT2600L / LM	PUMA GT2600XL/ XLM	PUMA GT2600XLB/ XLM	PUMA GT3100/LA/ MA/LMA	PUMA GT3100 / M	PUMA GT3100 / LM
Chuck	8 inch	X	X	X	X	X	X	X
	10 inch	●	●	●	X	●	X	X
	12 inch	○	○	X	●	○	●	●
	15 inch	X	X	X	X	X	○	○
Jaw	No chuck	○	○	○	○	○	○	○
	Soft Jaw	●	●	●	●	●	●	●
Chucking Option	Hard jaw	○	○	○	○	○	○	○
	DUAL PRESSURE CHUCKING	○	○	○	○	○	○	○
Steady rest	CHUCK CLAMP CONFIRMATION	●	●	●	●	●	●	●
	Hydraulic	△	△	○	○	○	○	○
	Programmable	△	△	○	○	○	○	○
V stand	Manual	△	△	○	○	○	○	○
	V stand for shaft workpiece	△	△	△	△	△	△	△
Tailstock	Manual	●	●	●	●	●	○	○
	Programmable	○	○	○	○	○	●	●
	Live center	●	●	●	●	●	●	●
Coolant Pump	Built-in dead center	○	○	○	○	○	○	○
	1.5 bar	●	●	●	●	●	●	●
Additional coolant pump (for option)	Increase Power (4.5/7/10/14.5/70 bar)	○	○	○	○	○	○	○
	4.5 bar	○	○	○	○	○	○	○
Coolant options	Oil skimmer	○	○	○	○	○	○	○
	Coolant chiller	△	△	△	△	△	△	△
	Coolant pressure switch	○	○	○	○	○	○	○
	Chuck coolant	○	○	○	○	○	○	○
	Coolant gun	○	○	○	○	○	○	○
Chip disposal options	Side type chip conveyor	○	○	○	○	○	○	○
	Rear type chip conveyor	○	X	X	X	A/MA:△ LA/LMA:X	△	X
	Chip bucket	○	○	○	○	○	○	○
Measuring & automation	Air blower	○	○	○	○	○	○	○
	Mist collector interface	○	○	○	○	○	○	○
	Integrated mist collector	○	○	○	○	○	○	○
	Tool setter (Manual)	○	○	○	○	○	○	○
Measuring & automation	Tool setter (Automatic)	○	○	○	○	○	○	○
	Part catcher with parts box	○	○	○	○	○	○	○
	Part catcher with parts conveyor	△	△	○	○	○	○	○
	Auto door	○	○	○	○	○	○	○
Others	Bar feeder interface	○	○	○	○	○	○	○
	Tool load monitoring system	●	●	●	●	●	●	●
	Linear scale (Xaxis / Zaxis)	○	○	○	○	○	○	○
	Signal tower	○	○	○	○	○	○	○
	Air gun	○	○	○	○	○	○	○
	Automatic power off	○	○	○	○	○	○	○
	Quick change tooling(CAPTO)	○	○	○	○	○	○	○
Customized Special Option	Sketch-turn S/W	○	○	○	○	○	○	○
	V STAND FOR SHAFT WORKPIECE_ON TAILSTOCK	X	X	X	X	○	○	○
	GUIDE WAY WIPER_FOR DRY CUTTING	X	X	X	X	○	○	○
	TAILSTOCK DEDUCTION	X	X	X	X	○	○	○
	MAIN/LEFT SPINDLE AIR CURTAIN	X	X	X	X	○	○	○
	AUTOMATIC TOP DOOR	○	X	X	X	X	X	X
	COOLANT TANK DIRECTION_REAR SIDE	○	○	X	X	X	X	X
	MAIN/LEFT CHUCK SIZE_170 MM (6 INCH)	X	X	X	X	X	X	X
	CHUCK PRESSURE SWITCH	X	X	X	X	X	X	X
	COOLANT CHILLER	○	○	X	X	○	○	○
	TOP PROTECTION COVER	X	X	X	X	○	○	○
	SHOWER COOLANT	X	X	X	X	○	○	○
	DOUBLE SAFETY EDGE FOR AUTO FRONT DOOR	X	X	X	X	○	○	○
	COOLANT LEVEL SWITCH_FLOATING	○	○	X	X	X	X	X
	AIR LIMIT SENSING ON CHUCK_PREPARATION	○	○	X	X	X	X	X
	TSC FOR MAIN/LEFT SPINDLE_PREPARATION	○	○	X	X	X	X	X
	AUTO. WORK MEASUREMENT_OLP40_RENISHAW	○	○	X	X	X	X	X
	AUTO. WORK MEASUREMENT_RLP40_RENISHAW	○	○	○	○	X	X	X
	COOLANT PUMP_4.0 KW_2.8 MPa	○	○	X	X	X	X	X
	Coolant level switch : Sensing level - Low	○	○	○	○	○	○	○

Please contact your DN Solutions representative for detailed machine information.

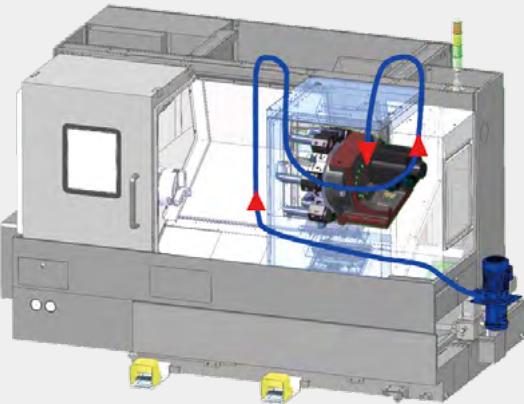
● standard features ○ option △ Pre-discussion is required X Not available



There is a high risk of fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting the controlled and careful use of coolants and modifying the machine without the consent of the manufacturer. Always check the SAFETY GUIDELINES carefully before using the machine.

# PERIPHERAL EQUIPMENT

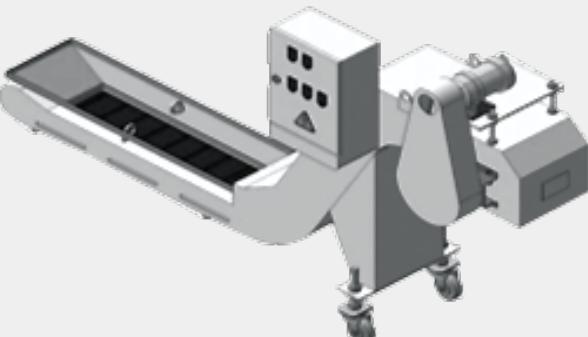
## Coolant system



Coolant pump	Output pressure (bar)		Filter	Std./Opt.
	60Hz	50Hz		
pump1	1.5	1		std.
pump2	4.5	3		
pump3	7	5		
pump4	10	7		
pump5	14.5	10		
pump6	28	10.5		
pump7	70	-	Dual bag filter	opt.
pump8	70	-	Paper filter	

## Chip conveyor option

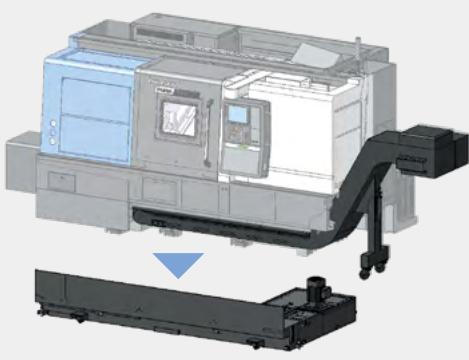
The conveyor provides a superior chip removal system and is designed with a stable structure for easy maintenance and reduced leakage. By selecting the correct type of conveyor, the efficiency of the machine is increased.



Chip conveyor type	Material	Description
Hinged belt	Steel	Most common type of chip conveyor. Appropriate for steel materials generating chips with a length of 30mm or more.
Screw	Steel	Chip conveyor with the smallest footprint and is 80% the size of the hinged belt option.
Magnetic scraper	Cast iron	Chip conveyor with magnet scraper : Appropriate for cast iron workpieces generating fine chips

## Easy-to-clean coolant tank

The coolant tank can be dismantled without disassembling the chip conveyor. Operating convenience is significantly enhanced.



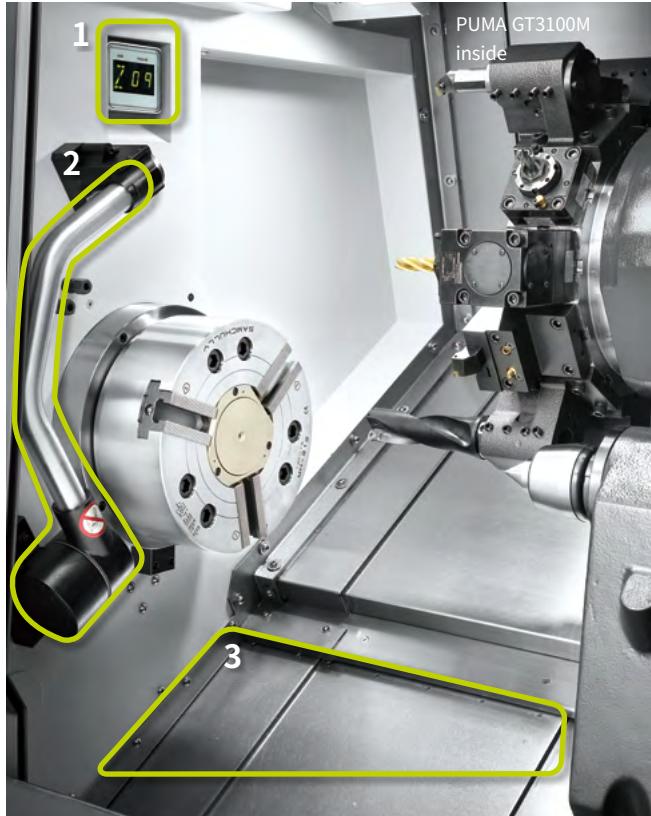
Model group	Coolant tank capacity (L (galon))
PUMA GT2100 [B]	190 [190] (50.2 [50.2])
PUMA GT2600 [L] [XL]	220 [268] [358] (58.1 [70.8] [94.6])
PUMA GT3100 [L]	235 [275] (62.1 [72.7])

## Quick change CAPTO option

The Quick Change Tool system simplifies tool change operations. It is recommended for users who need to change tools frequently or significantly reduce set-up times.



# PERIPHERAL EQUIPMENT



## 1. Axis and tool number display (only for PUMA GT3100)

Axis and tool number display highlights the selected axis and identifies the tool number.



## 2. Tool setter (Tool length measurement)<sup>option</sup>

The tool setter facilitates the setting of tools, and the fast and precise measurement of abraded tools.



## 3. Full sliding cover on tailstock guideway \*

Inclusion of a full cover prevents the heat from chips being transferred to the bed and guideway. The tailstock guideway can be protected and chips can be removed easily.

\* Exception models : PUMA GT2600XL / XLB / XLM / XLMB (for further information contact DN Solutions)

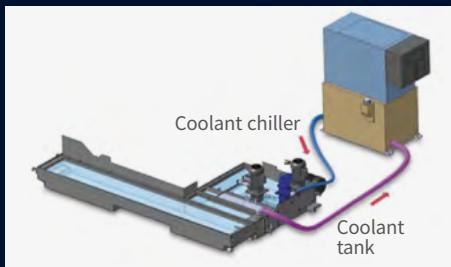
### Oil skimmer <sup>option</sup>

The oil skimmer keeps coolant and lubricant isolated from each other and extends the life cycle of the coolant.



### Coolant chiller <sup>option</sup>

When using a water-insoluble coolant or a high-pressure coolant system (where the power is over 1.5kW), a coolant chiller is highly recommended in order to prevent temperature rises and minimize thermal deformation.



### Part catcher <sup>option</sup>

The part catcher automatically catches machined parts and ejects them from the machining area.



### Mist collector <sup>option</sup>

The mist collector absorbs airborne oil vapor and fine dust particles in the system to improve the working environment.



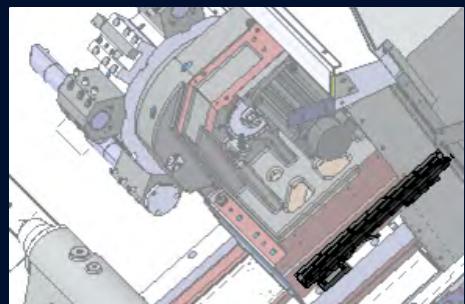
### Collet chuck <sup>option</sup>

The collet chuck is ideal for loading small diameter and light weight workpieces.



### Linear scale (X axis/Z axis) <sup>option</sup>

Linear scales are available for all axes and deliver increased accuracies.



# DN SOLUTIONS FANUC i PLUS

DN Solutions Fanuc i Plus maximizes customer productivity and convenience.

## 15" Screen + New OP

DN Solutions Fanuc i Plus' operation panel enhances operating convenience by incorporating common-design buttons and layout. It features a Qwerty keyboard for fast and easy data input and operation.

### DN Solutions Fanuc i Plus

- 15-inch color display
- Intuitive and user-friendly design

### USB and PCMCIA card

#### QWERTY Keyboard

- EZ-guide i standard
- Ergonomic operator panel
- 2MB Memory
- Hot keys



### iHMI touchscreen option

iHMI provides an intuitive interface that uses a touchscreen for quick and easy operation.

### Range of applications

Providing various applications related to planning, machining, improvement and utility, for customer convenience.



## SKETCH-TURN option

### DN Solutions Conversational programming software for PC

- Easy to learn for beginners
- Time savings in programming
- Reduce processing cycle time

## NUMERIC CONTROL SPECIFICATIONS

**FANUC**

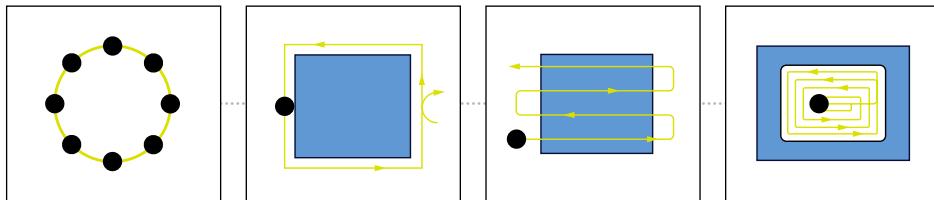
Division	Item	Specifications	2-Axis DN Solutions Fanuc i Plus	M DN Solutions Fanuc i Plus	Y DN Solutions Fanuc i Plus
Controlled axis	Controlled axes		2(X,Z)	3(X,Z,C)	4(X,Z,C,Y)
	Simultaneously controlled axes		2 axes	3 axes	4 axes
	Fast data server		○	○	○
Data input/output	Memory card input/output		●	●	●
	USB memory input/output		●	●	●
	Larger capacity memory_2GB	Available Option only with 15" Touch LCD (iHMI Only)	○	○	○
Interface function	Embedded Ethernet		●	●	●
	Fast Ethernet		○	○	○
	Enhanced Embedded Ethernet function		●	●	●
Operation	DNC operation	Included in RS232C interface.	●	●	●
	DNC operation with memory card		●	●	●
Program input	Workpiece coordinate system	G52 - G59	●	●	●
Feed function	AI contour control I	G5.1 Q_, 40 Blocks	○	○	●
	AI contour control II	G5.1 Q_, 200 Blocks	○	○	○
Operation Guidance Function	EZ Guidei (Conversational Programming Solution)		●	●	●
	iHMI with Machining Cycle	Only with 15" Touch LCD standard	○	○	○
	EZ Operation package		●	●	●
Setting and display	CNC screen dual display function		●	●	●
Network	FANUC MTConnect		✖	✖	✖
	FANUC OPC UA		✖	✖	✖
Others	Display unit	15" color LCD	●	●	●
		15" color LCD with Touch Panel	○	○	○
	Part program storage size & Number of registerable programs	640M(256KB)_500 programs 5120M(2MB)_1000 programs	X	X	X

# DN SOLUTIONS FANUC i PLUS

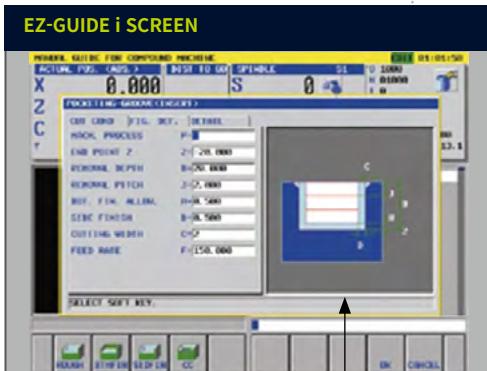
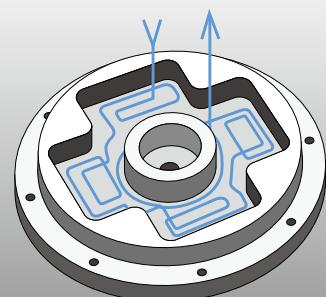
## EZ-Guide i

Using the DN Solutions EZ-Guide i, users can create a cutting program for any desired shape, including patterns, by entering just the dimensions.

### EXAMPLE PROGRAMMING : CUTTING SHAPE



### EXAMPLE PART



AUTOMATIC CREATION OF CUTTING PROGRAM

```
07000 (SAMPLE PROGRAM) ;  
...  
M3 S1500 ;  
G0 X50. Y125. ;  
G0 Z30. ;  
G1040 T0.5 J3. H0.2 K0.5 ... ;  
G1020 H120. V50. U37. W68. ... ;  
G0 Z80. ;  
M5 ;
```

A cutting program is automatically created with the entered values.

## EZ Work

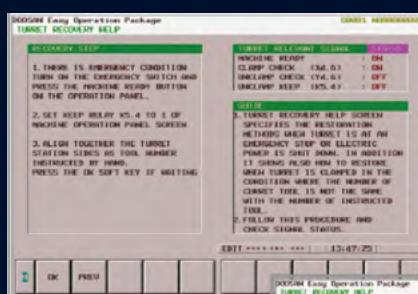
DN Solutions EZ Work supports the user with tool, help desk, operation, functionalities to maximize operational efficiency and user convenience.

## Operation / Maintenance



### Tool load monitoring option

During cutting operation, abnormal load caused by wear or damage of the tool is detected and an alarm is triggered to prevent further damage.



### Turret recovery help

The software is to help users recover turret step by step from trouble situation where it does not work. It can quickly recover your valuable machine.



### Work management

The function is capable of checking operation hours of the system, and quantity of finished workpieces.

# CONVENIENT OPERATION

**SIEMENS S828D**

## 21.5 inch display + New OP

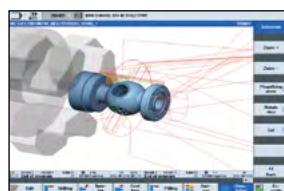
Two path programs are displayed simultaneously in the large 21.5-inch screen for enhanced user convenience.

- 21.5-inch display

- USB (standard)
- QWERTY keyboard



## Convenient conversational functionality



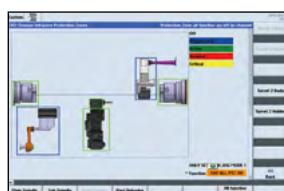
### Cutting and operation support function

This function shows a cutting and tool path simulation in real-time.



Shop-turn mode  
[various]  
↓  
[attachments]

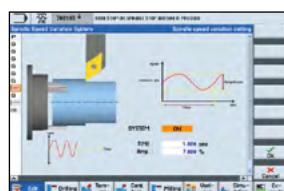
The automation elements (parts catcher, parts unloader etc.), can be easily controlled via interactive screens.



[Custom]  
↓  
[Protection zones]



[offset]  
↓  
[operating parameter]  
↓  
[TC service]



[various]  
↓  
[attachment]  
↓  
[DSSV]



Before applying the function  
After applying the function

### Operation safety function

Protection Zone Synchronized Actions checks the interference between the turret and the spindle to prevent collisions caused by operator error.

### Maintenance and service convenience function

Maintenance and service of major equipment and peripheral devices, including the timer and parts counter settings can be easily undertaken.

### Machining accuracy improvement

The NC controls spindle speed at an optimal level for precision threading and turning, making it possible to automatically improve surface roughness.

## NUMERIC CONTROL SPECIFICATIONS

**SIEMENS**

Division	Item	Specifications	MS		SY	
			S828D	S840D	S828D	S840D
<b>Controlled axis</b>	Controlled axes		X1,Z1,C1,X2,Z2,C2,Z3,C3,C4		X1,Z1,C1,X2,Z2,C2,Z3,C3,C4,Y	
	Simultaneously controlled axes		4 axes	4 axes	4 axes	4 axes
<b>Data input/output</b>	Memory card input/output		X	X	X	X
	USB memory input/output		●	●	●	●
<b>Interface function</b>	Ethernet	(X130)	○	●	○	●
	On network drive	(without EES option, Extcall)	○	●	○	●
<b>Operation</b>	On USB storage medium, e.g. memory stick	(without EES option, Extcall)	●	●	●	●
<b>Program input</b>	Workpiece coordinate system	G54 - G59, G507 - G599	●	●	●	●
<b>Feed function</b>	Advanced surface		X	●	X	●
	Top surface		X	X	X	X
	Look ahead number of block		1	1000	1	1000
<b>Programming &amp; Editing function</b>	3D simulation, finished part		●	●	●	●
	Simultaneous recording		●	●	●	●
	DXF reader for PC integrated in SINUMERIK operate		○	○	○	○
<b>Operation guidance function</b>	Shopturn		●	●	●	●
<b>Setting and display</b>	EZ operation package		●	●	●	●
	Operation via a VNC viewer		●	●	●	●
<b>Network</b>	MTConnect		⊕	⊕	⊕	⊕
	OPCUA		○	○	○	○
<b>Others</b>	Display unit	15.6" color display with touch screen(SW4.9) 21.5" color display with touch screen(SW4.9)	●	○	●	○
	Part program storage size	CNC user memory 10 MB CNC user memory 100 MB CNC user memory 6GB CNC user memory 40GB (with PCU or IPC) CNC user memory without limit(Execution from external storage devices)(EES / Using by USB or Network) HMI user memory for CNC part program 6GB	X	●	X	●

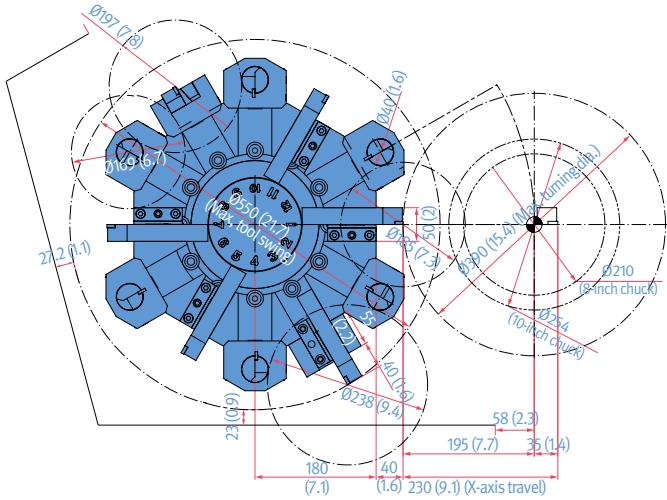
● Standard ○ Optional X N/A ⊕ Available

# TOOL INTERFACE

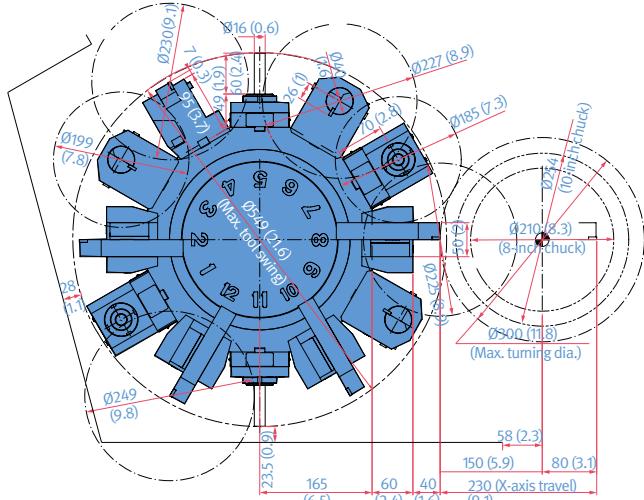
## PUMA GT2100

Units : mm (inch)

**PUMA** GT2100 (2axis, 12station)

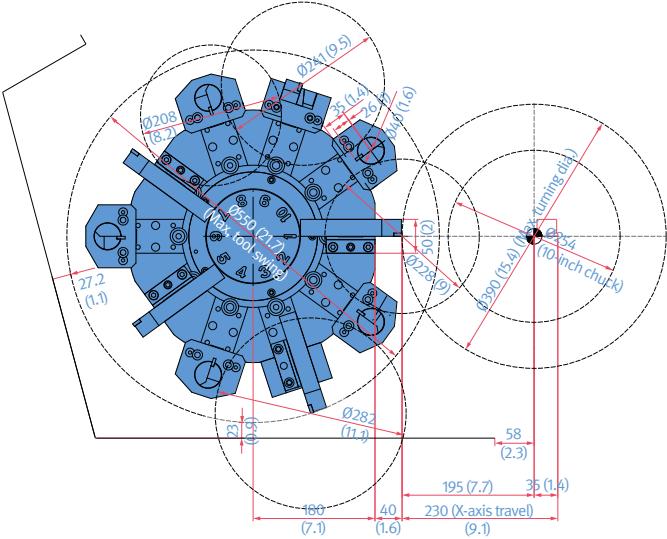


**PUMA** GT2100M (M, 12station, BMT55P)

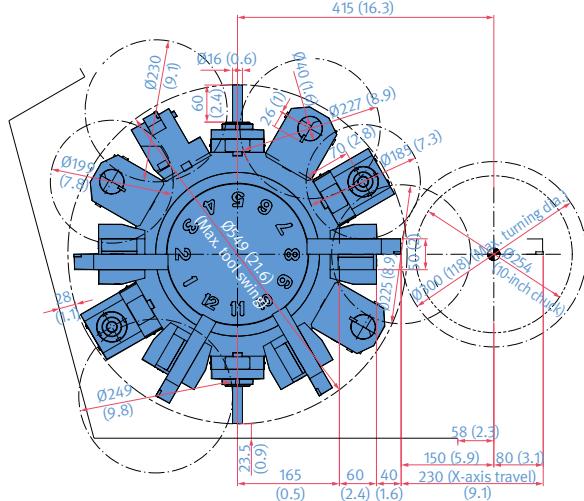


\*Special tool holder set is available for increasing tooling interference range on PUMA GT2100 & GT2600 series.  
Please contact DN Solutions for details.

**PUMA** GT2100B (2axis, 12station)



**PUMA** GT2100MB (M, 12station, BMT55P)



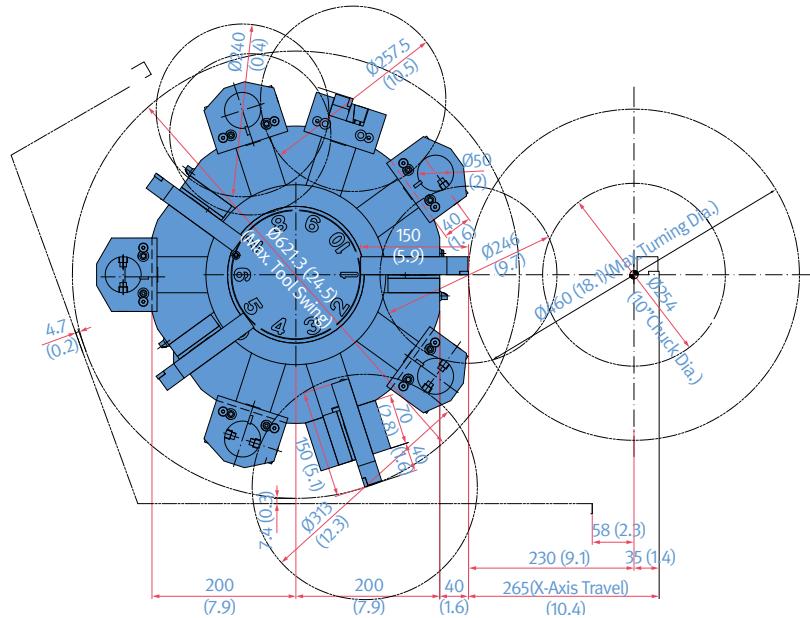
\*Special tool holder set is available for increasing tooling interference range on PUMA GT2100 & PUMA GT2600 series.  
Please contact DN Solutions for details.

# TOOL INTERFACE

## PUMA GT2600

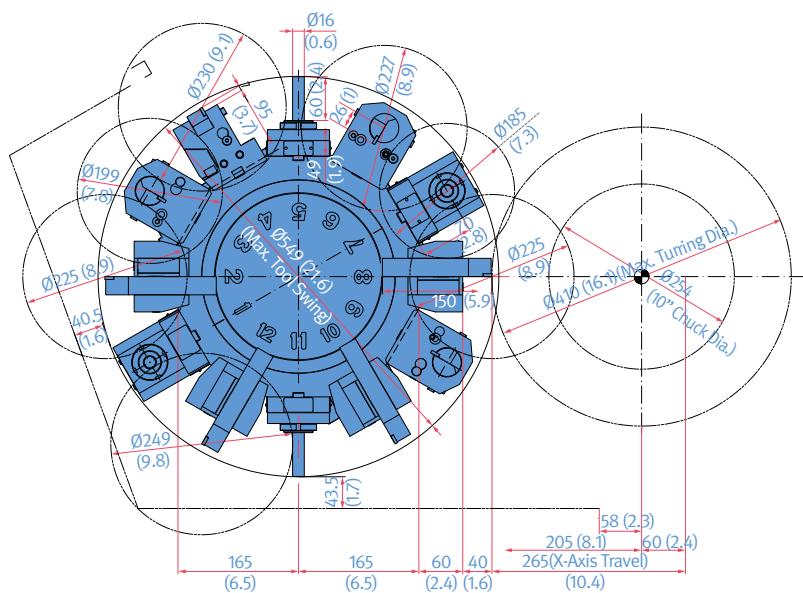
Units : mm (inch)

### PUMA GT2600 (2axis, 10station)



\*Special tool holder set is available for increasing tooling interference range on PUMA GT2100 & PUMA GT2600 series. Please contact DN Solutions for details.

### PUMA GT2600M (M, 12station, BMT55P)

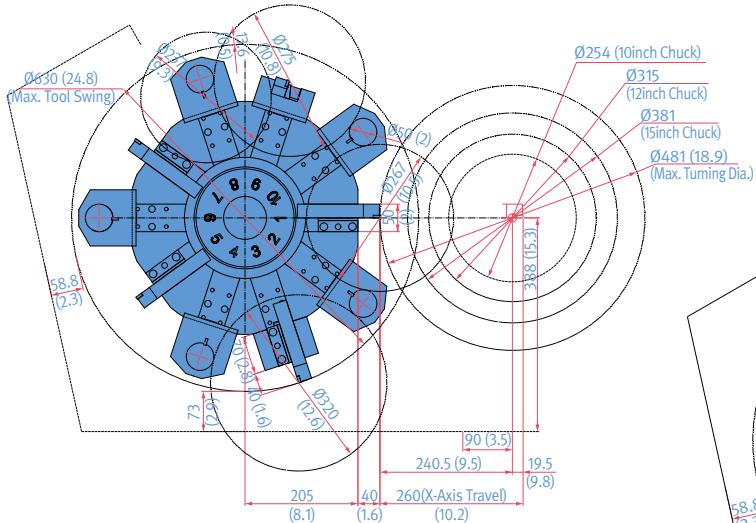


# TOOL INTERFACE

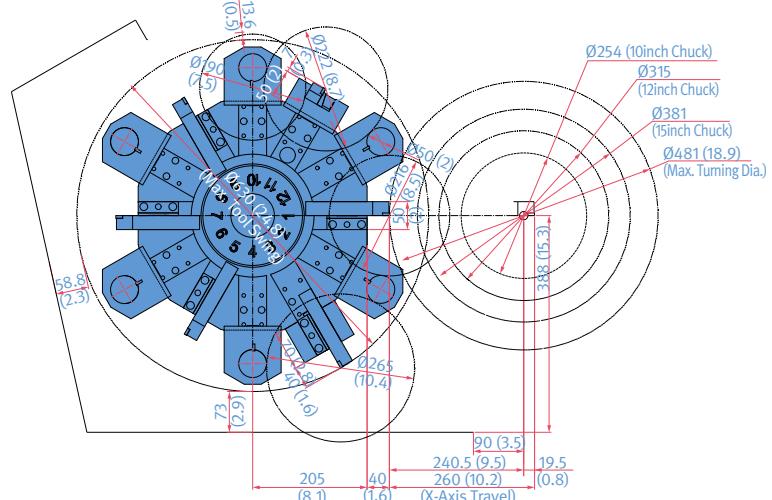
**PUMA** GT3100

Units : mm (inch)

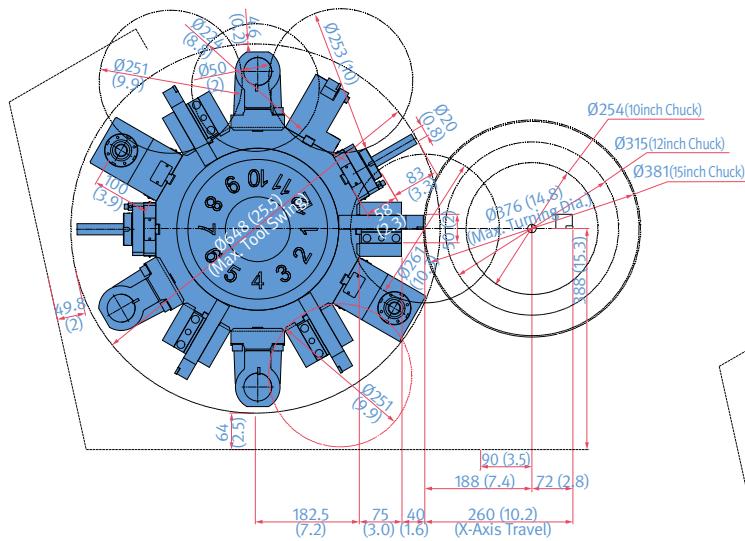
**PUMA** GT3100 (2axis, 10station)



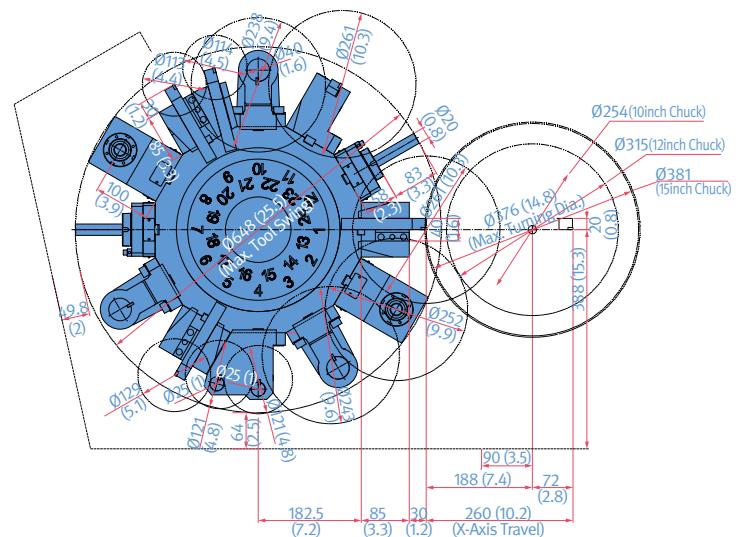
**PUMA** GT3100 (2axis, 12station, *option*)



**PUMA** GT3100M (M, 12station, BMT65P)

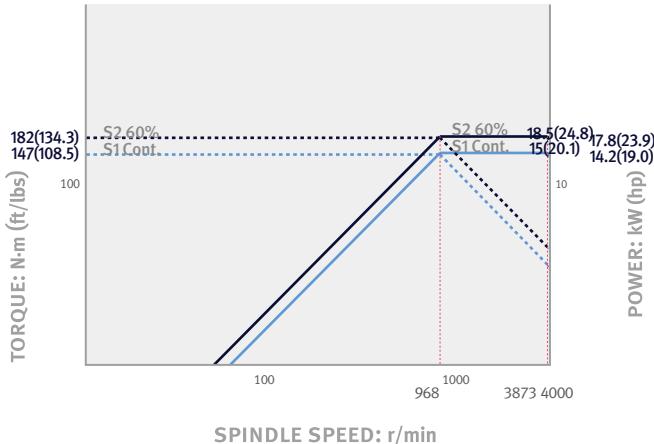


**PUMA** GT3100M (M, 24station, BMT65P, *option*)

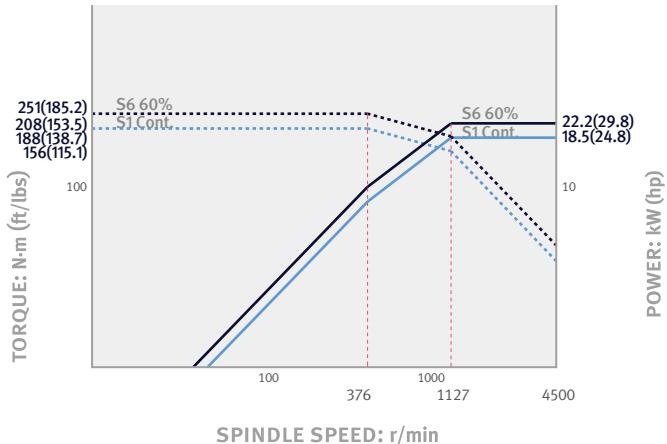


# POWER | TORQUE

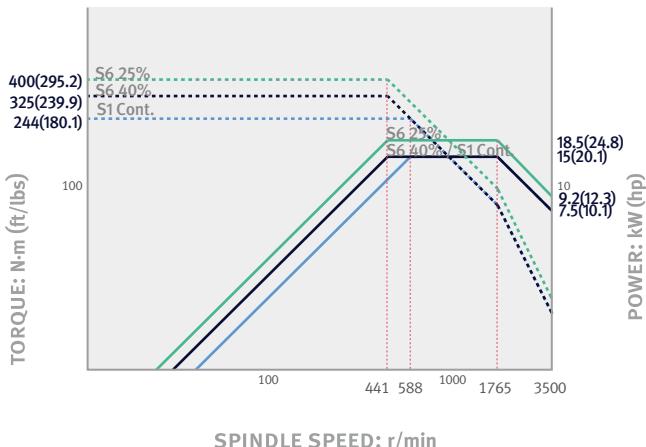
**PUMA GT**2100/2100M / DN Solutions FANUC i



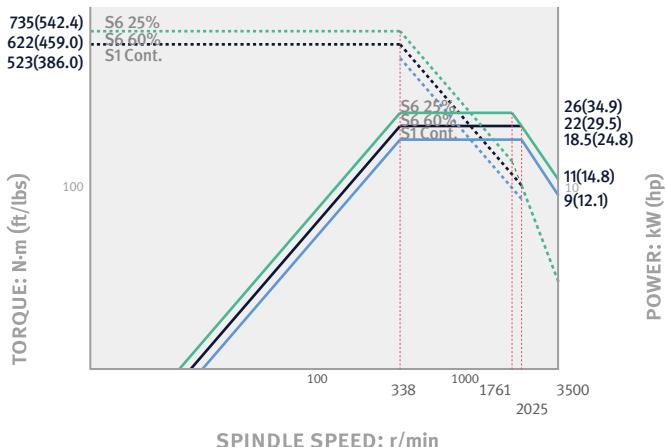
**PUMA GT**2100/2100M / SIEMENS S828D



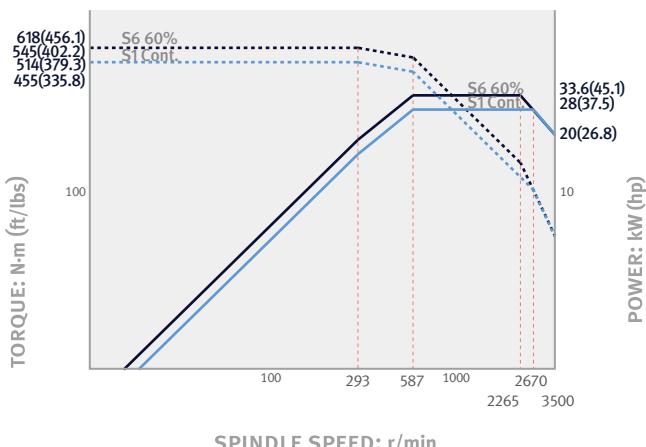
**PUMA GT**2100B/2100MB / DN Solutions FANUC i



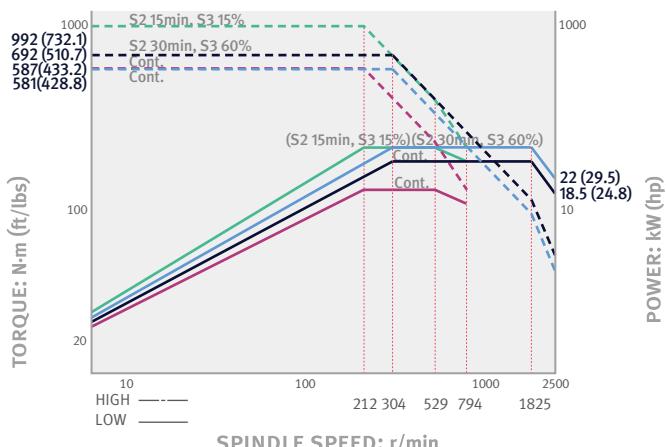
**PUMA GT**2600 series / DN Solutions FANUC i



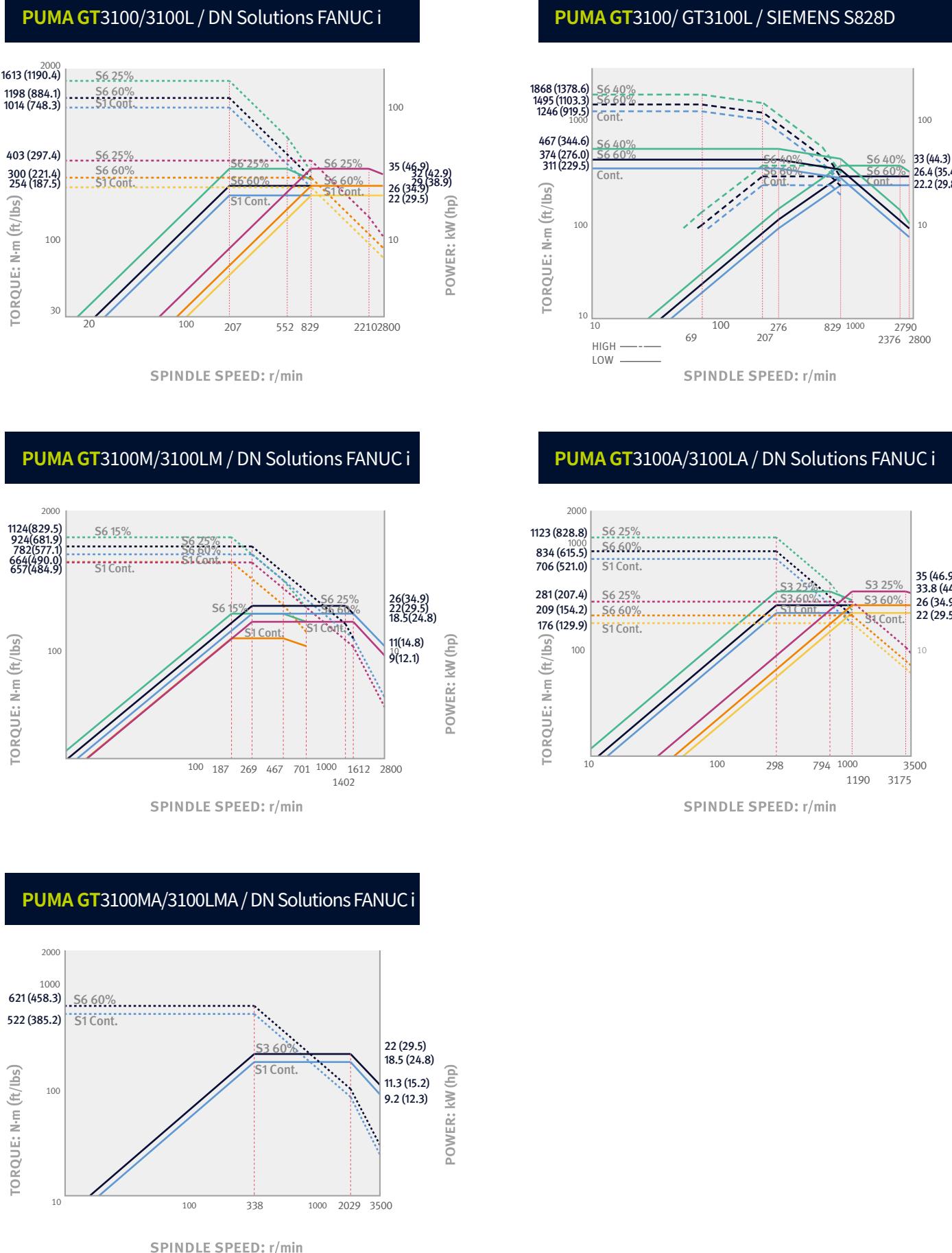
**PUMA GT**2600 series / SIEMENS S828D



**PUMA GT**2600XLB / DN Solutions FANUC i



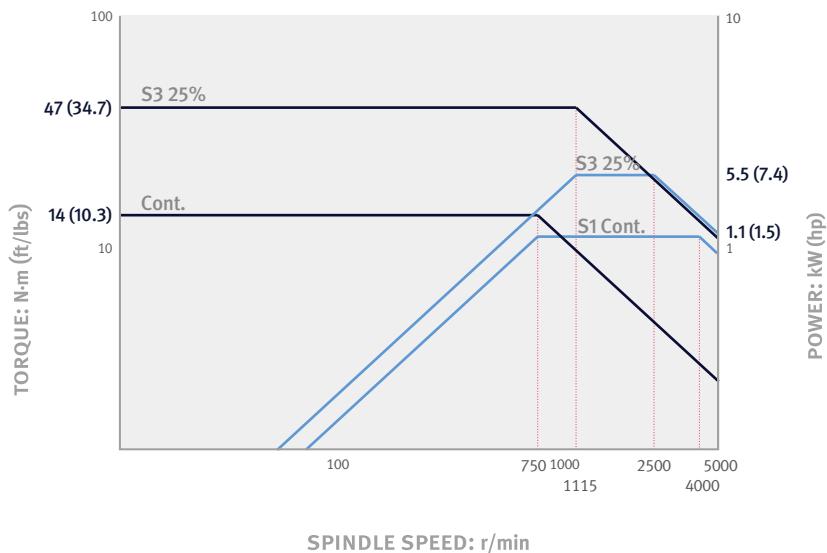
# POWER | TORQUE



# POWER | TORQUE

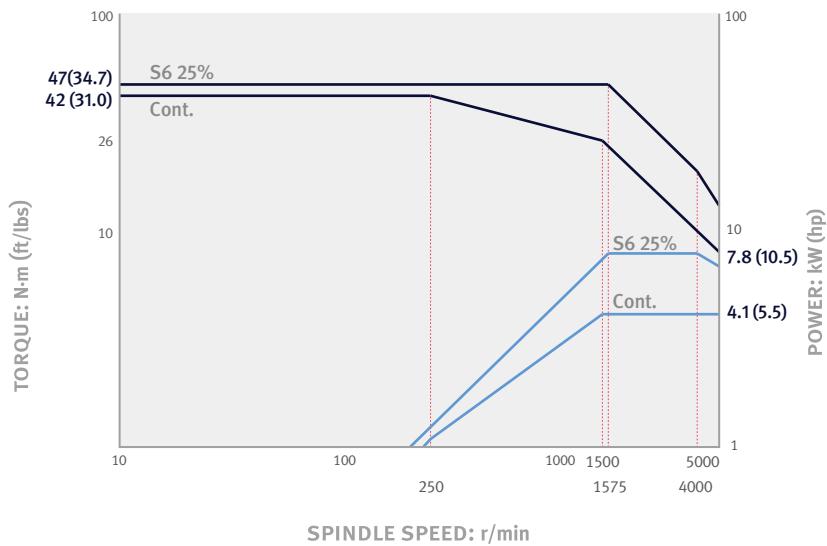
**Rotary tool** PUMA GT2100M/2100MB/2600M/2600LM /  
DN Solutions FANUC i

Rotary tool speed : **5000** r/min



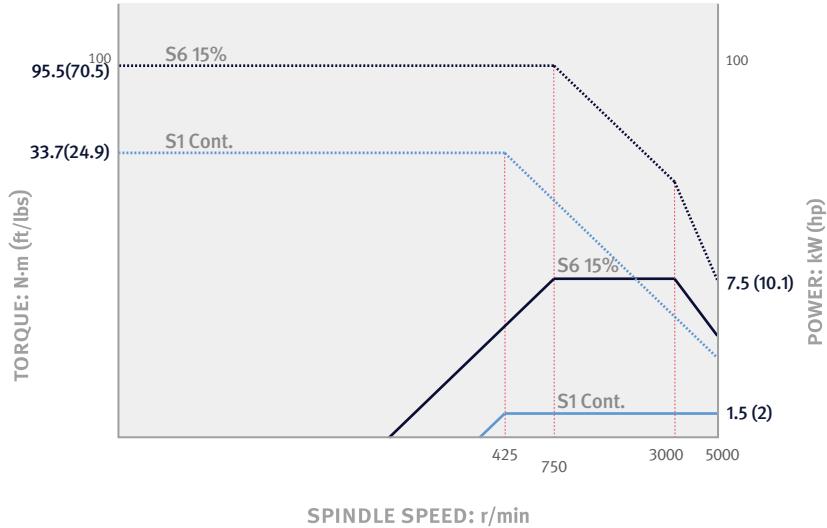
**Rotary tool** PUMA GT2100M/2100MB/2600M/2600LM /  
SIEMENS S828D

Rotary tool speed : **5000** r/min



**Rotary tool** PUMA GT3100M/3100LM  
/ DN Solutions FANUC i

Rotary tool speed : **5000** r/min

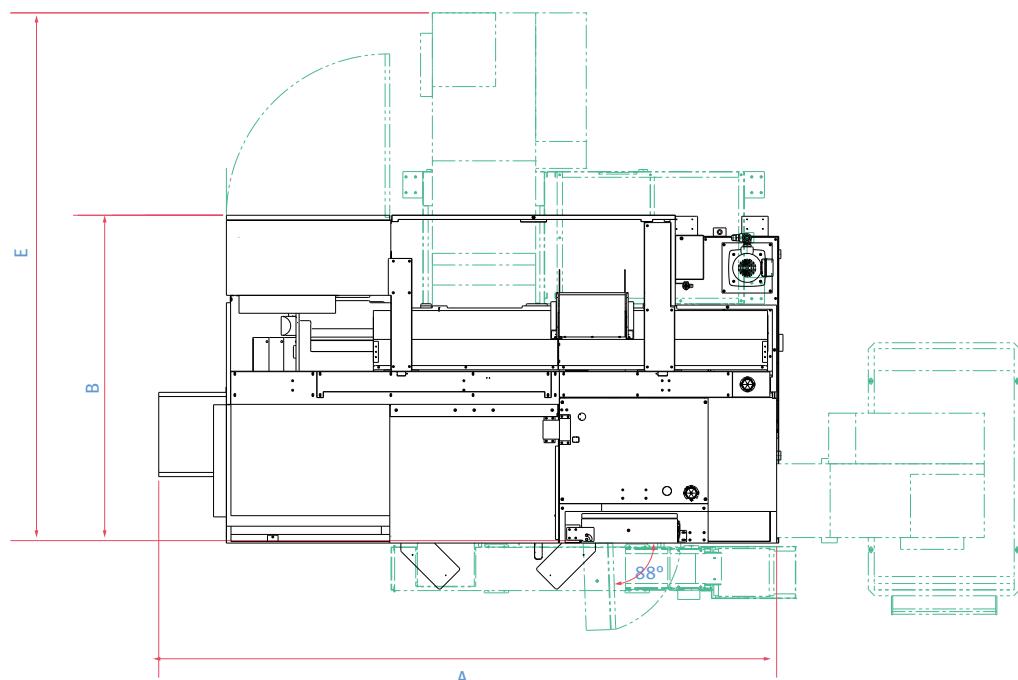


# PUMA GT SERIES DIMENSIONS

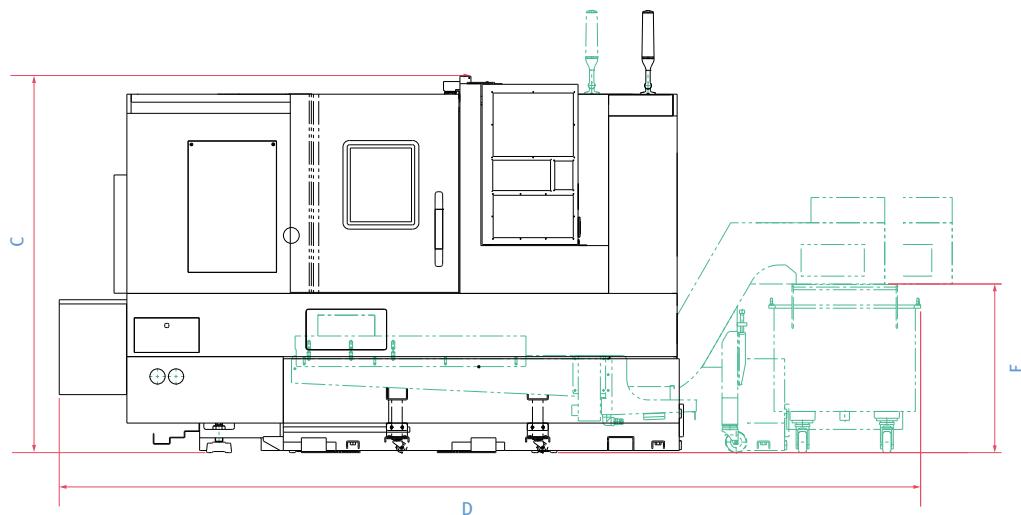
**PUMA** GT2100 / **PUMA** GT2600

Units : mm (inch)

TOP



FRONT



Model	A (Length)	B (Width)	C (Height)	D (Length with side type chip conveyor)		E (Width with rear type chip conveyor)		F (Height of chip outlet)**	
				Hinged belt	Screw	Hinged belt	Screw	Hinged belt	Screw
<b>PUMA GT2100</b>	2941 (115.8)	1632 (64.3)	1759 (69.3)	3895 (153.3)	3478 (136.9)	2588 (101.9)	2348 (92.4)	800 (31.5)	613 (24.1)
<b>PUMA GT2100B</b>	2991 (117.8)	1632 (64.3)	1759 (69.3)	3940 (155.1)	3523 (138.7)	2588 (101.9)	2348 (92.4)	800 (31.5)	613 (24.1)
<b>PUMA GT2600</b>	3396 (133.7)	1707 (67.2)	1779 (70.0)	4275 (168.3)	3847.5 (151.5)	2685 (105.7)	2348 (92.4)	800 (31.5)	628 (24.7)
<b>PUMA GT2600L</b>	3841(151.2)	1707 (67.2)	1830 (72.0)	4965 (195.5)	4542 (178.8)	(N/A)	(N/A)	800 (31.5)	628 (24.7)
<b>PUMA GT2600XLA</b>	4855 (191.1)	2198 (86.5)	2030 (79.9)	5724 (225.4)	(N/A)	(N/A)	(N/A)	940 (37.0)	(N/A)
<b>PUMA GT2600XLB</b>	4960 (195.3)	2198 (86.5)	2030 (79.9)	5829 (229.5)	(N/A)	(N/A)	(N/A)	940 (37.0)	(N/A)

\* Some peripheral equipment can be placed in other places

\* Specification with rear type coolant tank

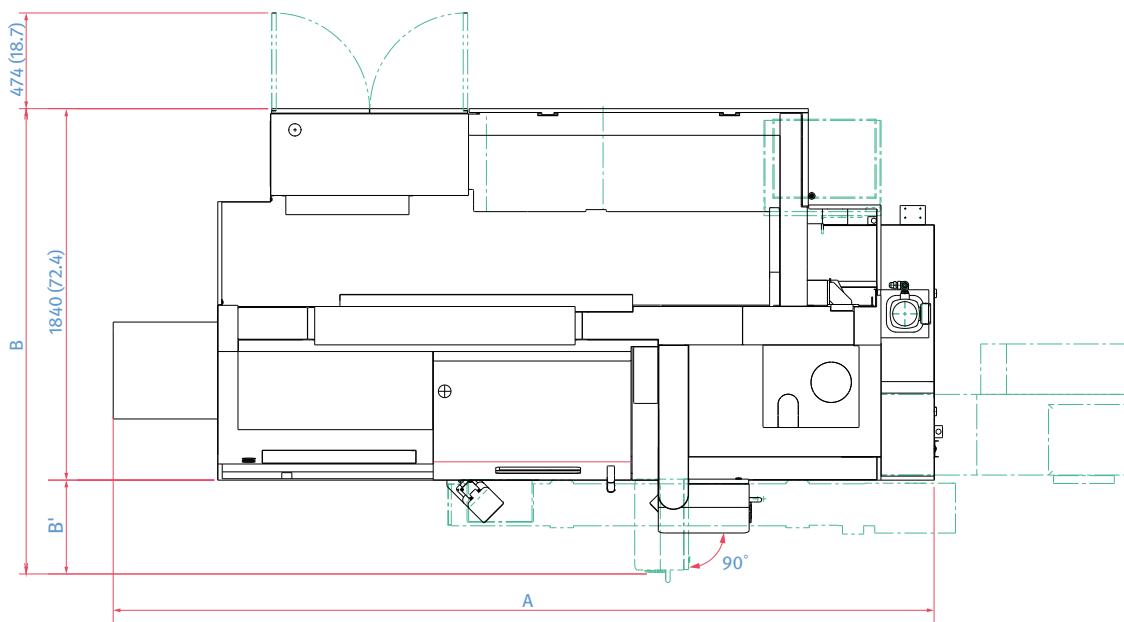
\*\* Specification with side type chip conveyor

# PUMA GT SERIES DIMENSIONS

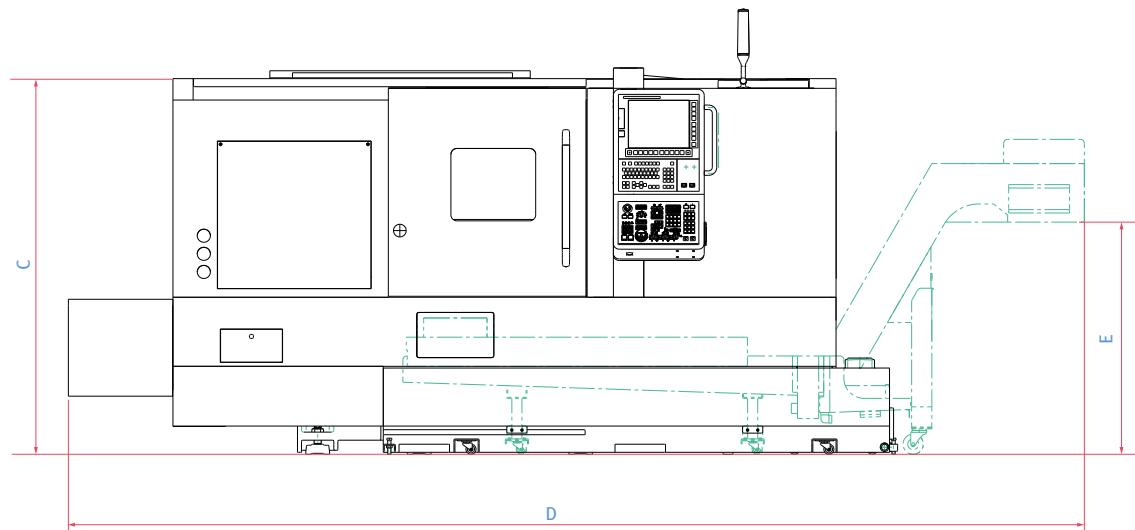
## PUMA GT3100

Units : mm (inch)

TOP



FRONT

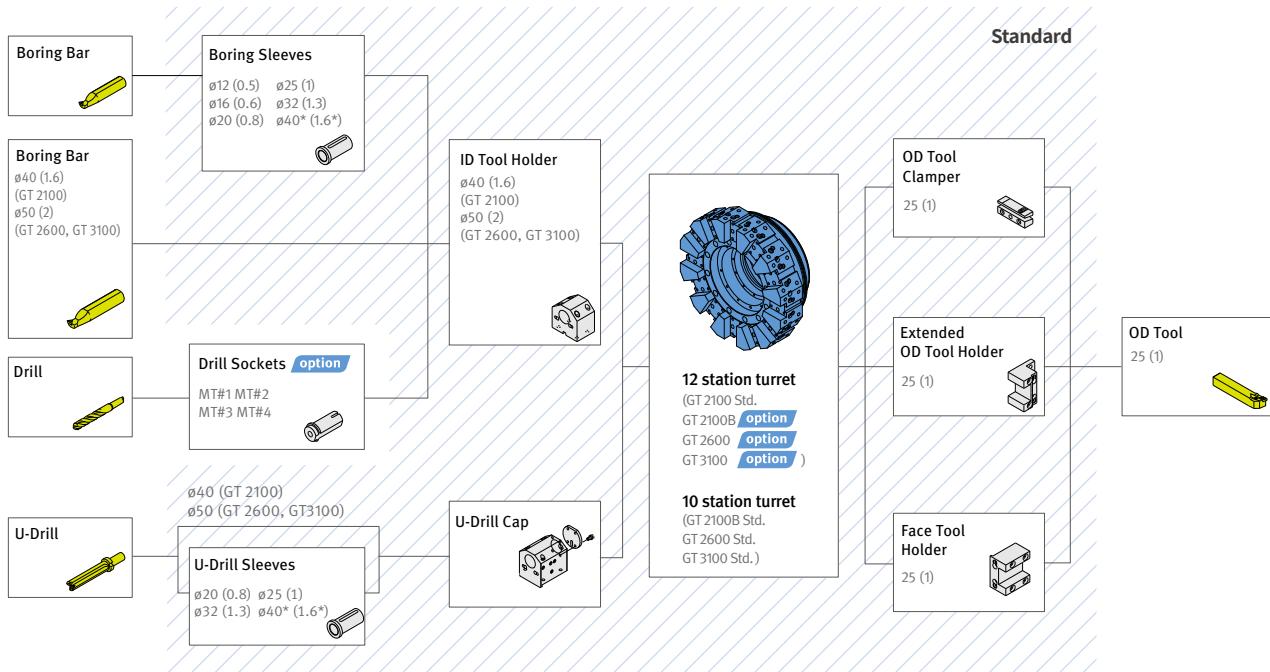


Model	A (Length)	B (Width)	B' (OP panel swivel range)	C (Height)	D (Length with side type chip conveyor)		E (Height of chip outlet)*		Width with rear type chip conveyor	
					Hinged belt	Screw	Hinged belt	Screw	Hinged belt	Screw
PUMA GT3100/3100A	4068/3960 (160.2/155.9)	2102 (82.8)	445 (17.5)	1915 (75.4)	5033/4925 (198.1/193.9)	4574/4466 (180.1/175.8)	1150 (45.3)	624 (24.6)	Pre-discussion is required	(N/A)
PUMA GT3100M/3100MA	3865/3800 (151.9/149.6)				4830/4765 (190.2/187.6)	4371/4306 (172.1/169.5)				
PUMA GT3100L/3100LA	4633/4525 (182.4/178.1)	2394 (94.3)	737 (29.0)	2110 (83.1)	5772/5604 (227.2/220.6)	(N/A)	5604 (220.6)	(N/A)	(N/A)	(N/A)
PUMA GT3100LM/3100LMA	4465 (175.8)									

# TOOLING SYSTEM

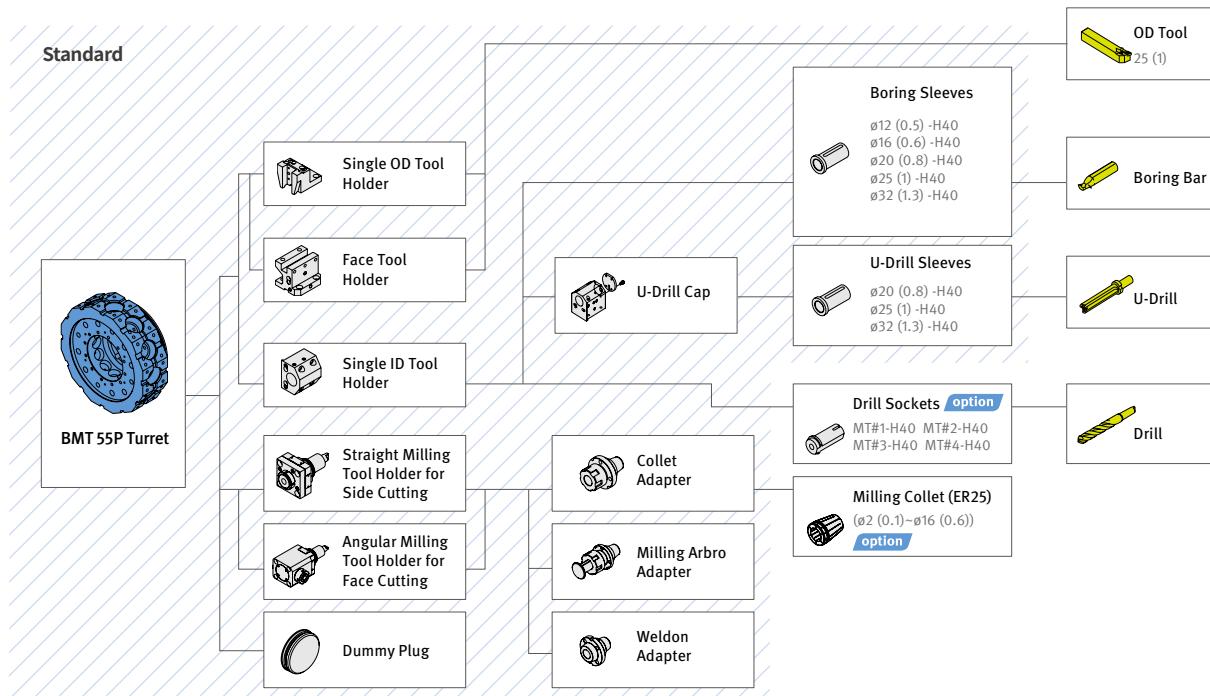
## PUMA GT2100 / 2600, PUMA GT3100 (2axis, 10/12station)

Units : mm (inch)



\*only for PUMA GT2600 / 3100

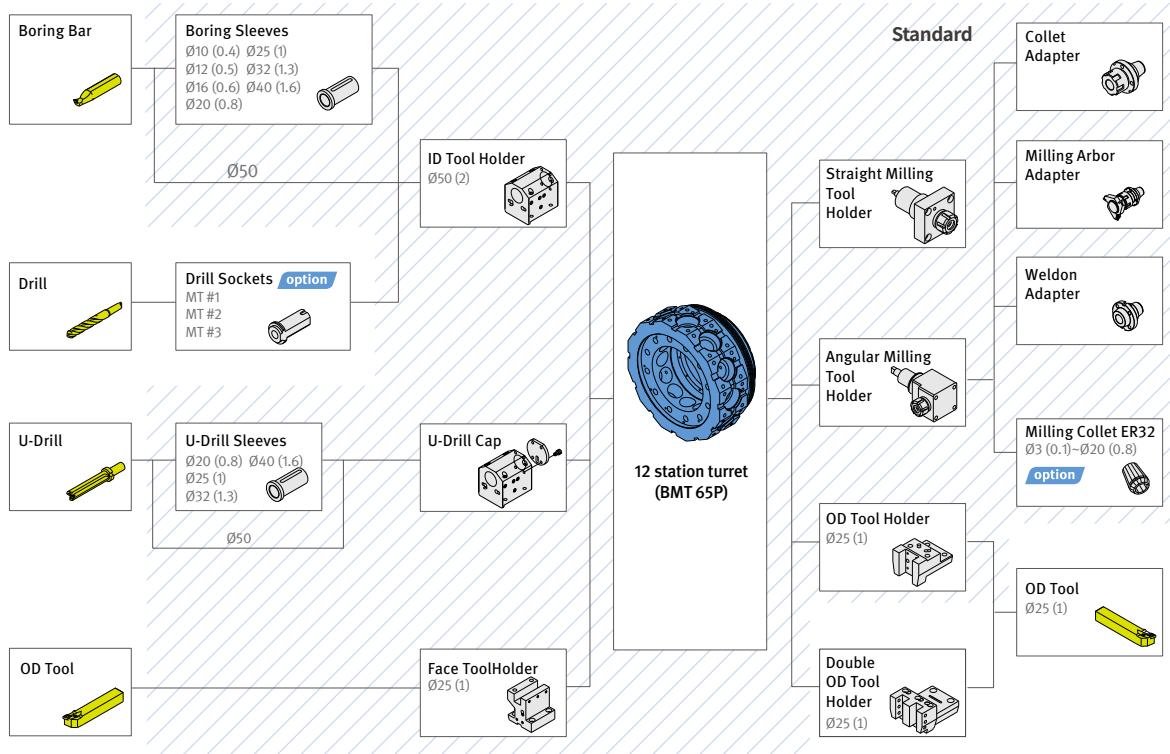
## PUMA GT2100 / 2600 (M, 12station, BMT55P)



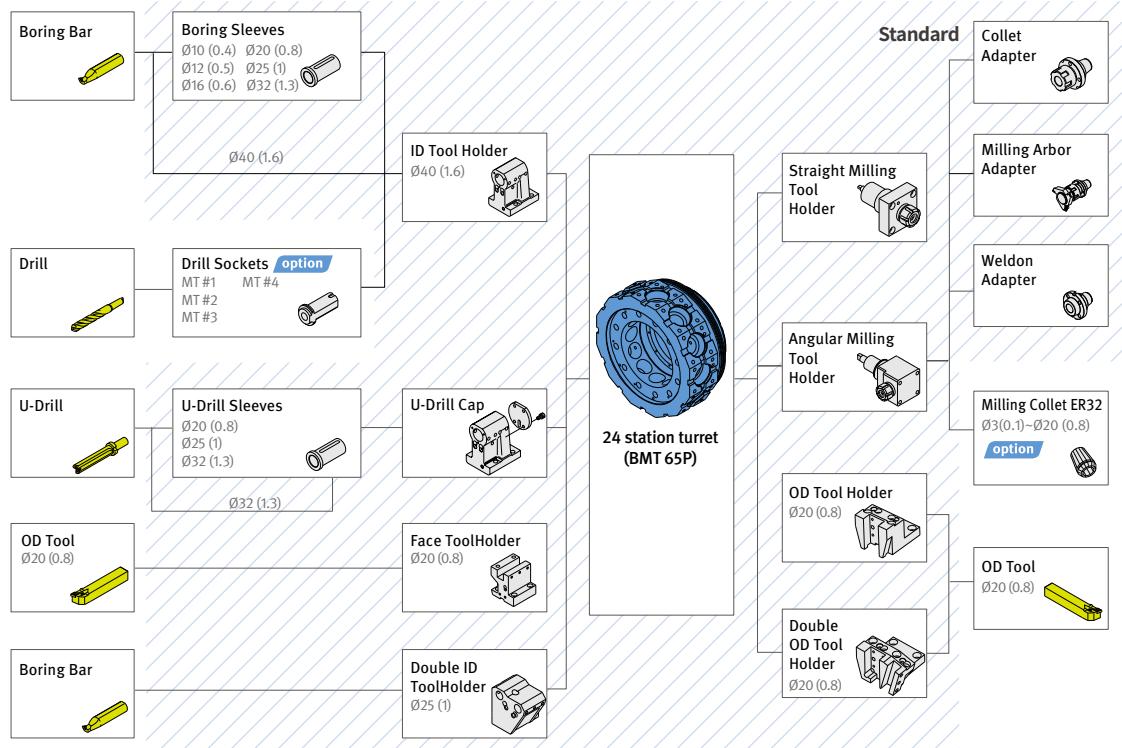
# TOOLING SYSTEM

## PUMA GT3100M / LM (12station, BMT65)

Units : mm (inch)



## PUMA GT3100M/LM (24station, BMT65P) option

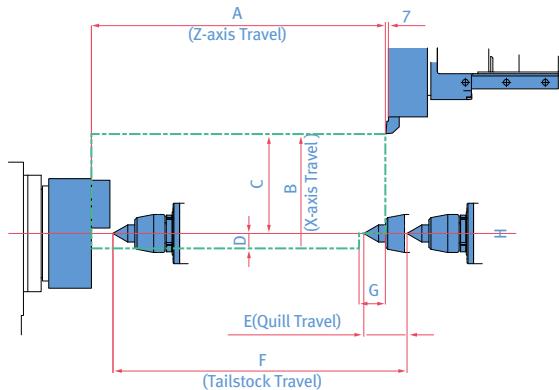


# WORKING RANGE

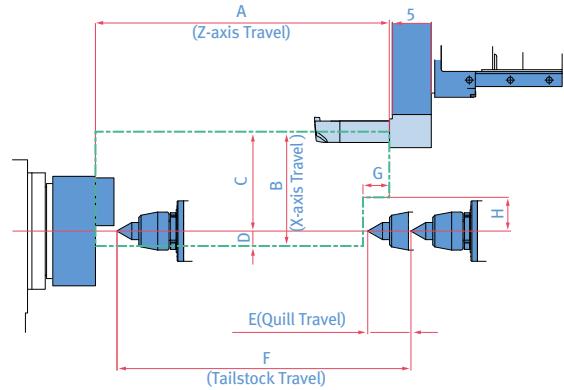
## PUMA GT2100 / 2600 (2axis)

Units : mm (inch)

### OD CLAMPER



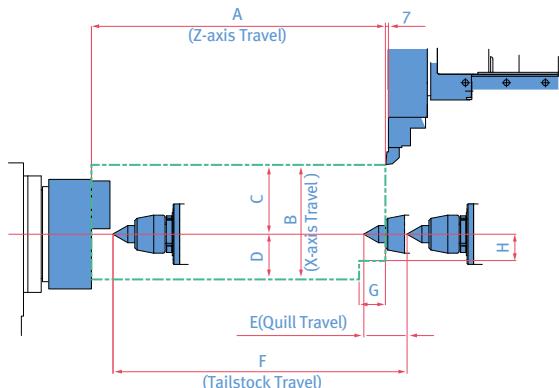
### ID HOLDER



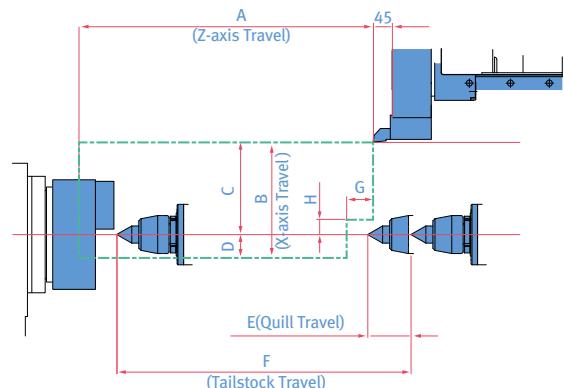
	A	B	C	D	E	F	G	H*
PUMA GT2100	580 (22.8)	230 (9.1)	195 (7.7)	35 (1.4)	80 (3.1)	580 (22.8)	63 (2.5)	-20 (0.8)
PUMA GT2100B								
PUMA GT2600	680 (26.8)					680 (26.8)		
PUMA GT2600L	1100 (43.3)	265 (10.4)	230 (9.1)	35 (1.4)	100 (3.9)	1100 (43.3)	61 (2.4)	0
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)		

	A	B	C	D	E	F	G	H*
PUMA GT2100	580 (22.8)	230 (9.1)	200 (7.9)	30 (1.2)	80 (3.1)	580 (22.8)	63 (2.5)	-15 (0.6)
PUMA GT2100B								
PUMA GT2600	680 (26.8)					680 (26.8)		
PUMA GT2600L	1100 (43.3)	265 (10.4)	230 (9.1)	35 (1.4)	100 (3.9)	1100 (43.3)	61 (2.4)	78 (3.1)
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)		

### EXTENDED OD HOLDER



### FACE TOOL HOLDER



	A	B	C	D	E	F	G	H*
PUMA GT2100	580 (22.8)	230 (9.1)	140 (5.5)	90 (3.5)	80 (3.1)	580 (22.8)	68 (2.7)	-75 (3.0)
PUMA GT2100B								
PUMA GT2600	680 (26.8)					680 (26.8)		
PUMA GT2600L	1100 (43.3)	265 (10.4)	160 (6.3)	105 (4.1)	100 (3.9)	1100 (43.3)	61 (2.4)	-62 (2.4)
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)		

	A	B	C	D	E	F	G	H*
PUMA GT2100	580 (22.8)	230 (9.1)	178 (7.0)	52 (2.0)	80 (3.1)	580 (22.8)	68 (2.7)	-37 (1.5)
PUMA GT2100B								
PUMA GT2600	680 (26.8)					680 (26.8)		
PUMA GT2600L	1100 (43.3)	265 (10.4)	213 (8.4)	52 (2.0)	100 (3.9)	1100 (43.3)	61 (2.4)	35 (1.4)
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)		

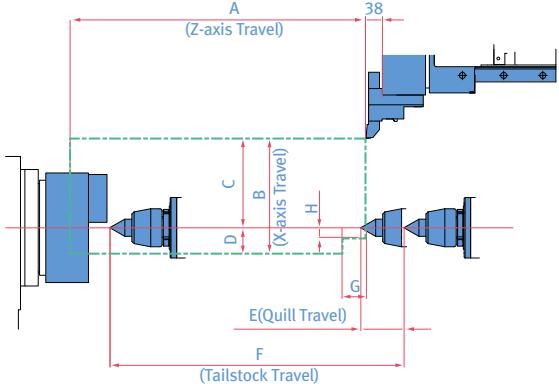
\* for H: (-) Downward direction of spindle center line / (+) Upward direction of spindle center line

# WORKING RANGE

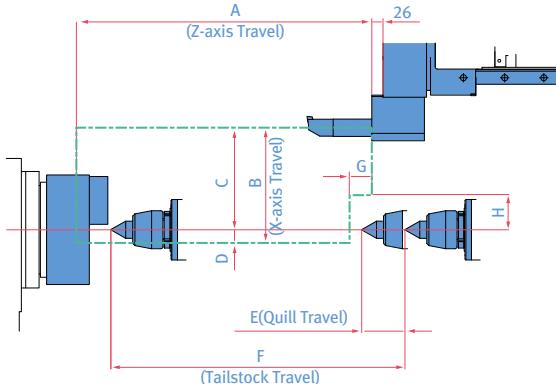
## PUMA GT2100M / 2600M (M, BMT65P)

Units : mm (inch)

OD HOLDER



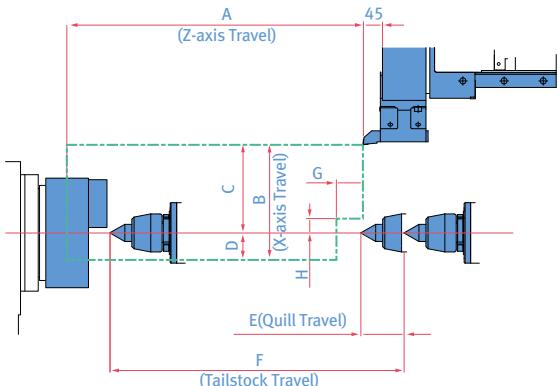
ID HOLDER



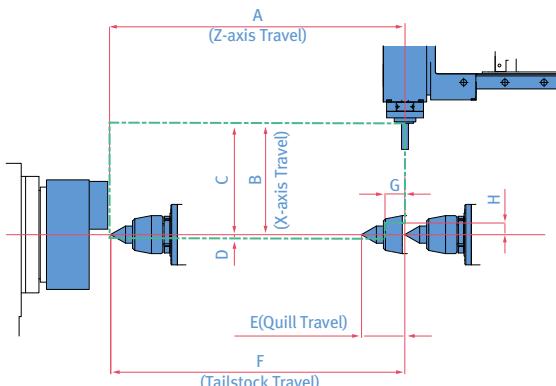
	A	B	C	D	E	F	G	H*
PUMA GT2100 M	580 (22.8)	230 (9.1)	150 (5.9)	80 (3.1)	80 (3.1)	580 (22.8)	77 (3.0)	-60 (2.4)
PUMA GT2100MB								
PUMA GT2600M	680 (26.8)					680 (26.8)	53 (2.1)	
PUMA GT2600LM	1100 (43.3)	265 (10.4)	205 (8.1)	60 (2.4)	100 (3.9)	1100 (43.3)		-25 (1.0)
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)	46 (1.8)	

	A	B	C	D	E	F	G	H*
PUMA GT2100 M	580 (22.8)	230 (9.1)	180 (7.1)	50 (2.0)	80 (3.1)	580 (22.8)	77 (3.0)	-30 (-1.2)
PUMA GT2100MB								
PUMA GT2600M	680 (26.8)					680 (26.8)		
PUMA GT2600LM	1100 (43.3)	265 (10.4)	235 (9.3)	30 (1.2)	100 (3.9)	1100 (43.3)	51 (2.0)	80 (3.1)
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)		

FACE TOOL HOLDER



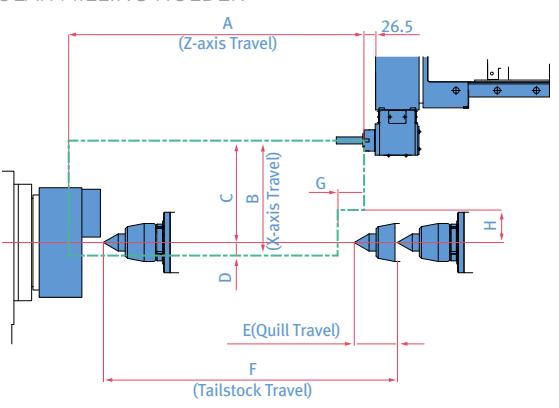
STRAIGHT MILLING HOLDER



	A	B	C	D	E	F	G	H*
PUMA GT2100 M	580 (22.8)	230 (9.1)	148 (5.8)	82 (3.2)	80 (3.1)	580 (22.8)	77 (3.0)	-65 (-2.6)
PUMA GT2100MB								
PUMA GT2600M	680 (26.8)					680 (26.8)		
PUMA GT2600LM	1100 (43.3)	265 (10.4)	203 (8.0)	62 (2.4)	100 (3.9)	1100 (43.3)	61 (2.4)	33 (1.3)
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)		

	A	B	C	D	E	F	G	H*
PUMA GT2100 M	580 (22.8)	230 (9.1)	201 (7.9)	29 (1.1)	80 (3.1)	580 (22.8)	77 (3.0)	-9 (-0.4)
PUMA GT2100MB								
PUMA GT2600M	680 (26.8)					680 (26.8)		
PUMA GT2600LM	1100 (43.3)	265 (10.4)	256 (10.1)	9 (0.4)	100 (3.9)	1100 (43.3)	46 (1.8)	26 (1.0)
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)		

ANGULAR MILLING HOLDER



	A	B	C	D	E	F	G	H*
PUMA GT2100 M	580 (22.8)	230 (9.1)	180 (7.1)	50 (2.0)	80 (3.1)	580 (22.8)	77 (3.0)	-33 (-1.3)
PUMA GT2100MB								
PUMA GT2600M	680 (26.8)					680 (26.8)		
PUMA GT2600LM	1100 (43.3)	265 (10.4)	235 (9.3)	30 (1.2)	100 (3.9)	1100 (43.3)	61 (2.4)	75 (3.0)
PUMA GT2600XL(B)	1625 (64.0)					1625 (64.0)		

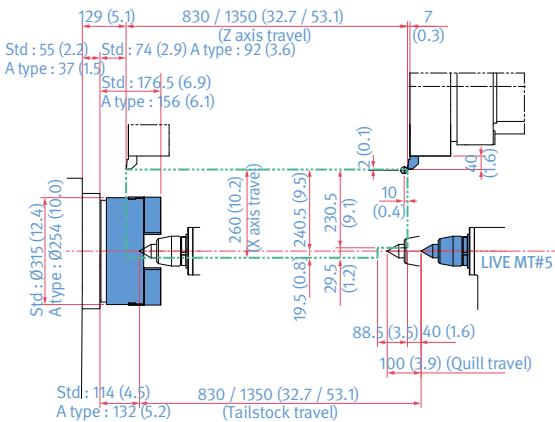
\* for H : (-) Downward direction of spindle center line / (+) Upward direction of spindle center line

# WORKING RANGE

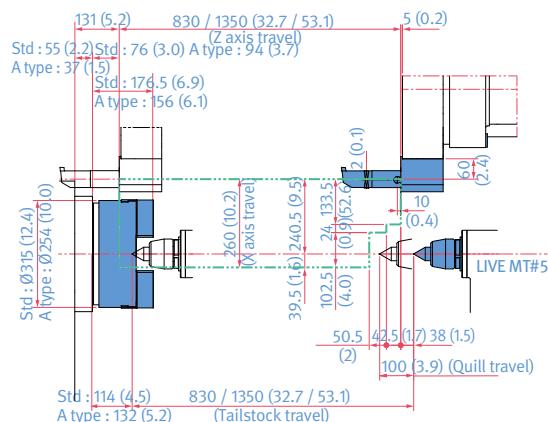
## PUMA GT3100 / 3100L (2axis)

Units : mm (inch)

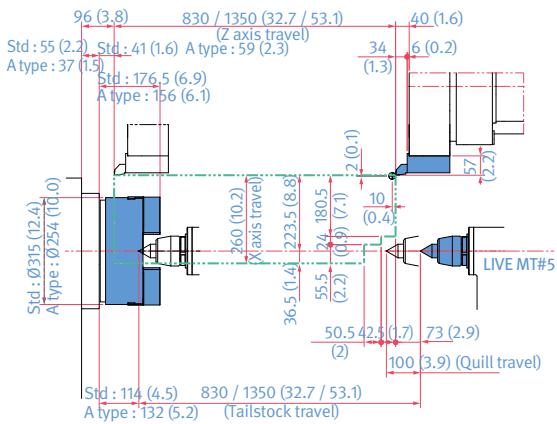
OD HOLDER



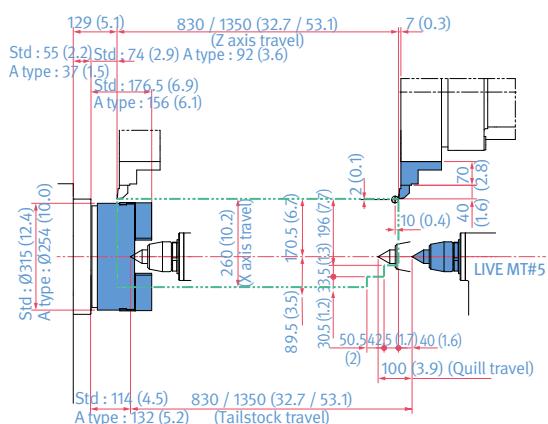
ID HOLDER



FACE TOOL HOLDER



EXTENDED OD HOLDER

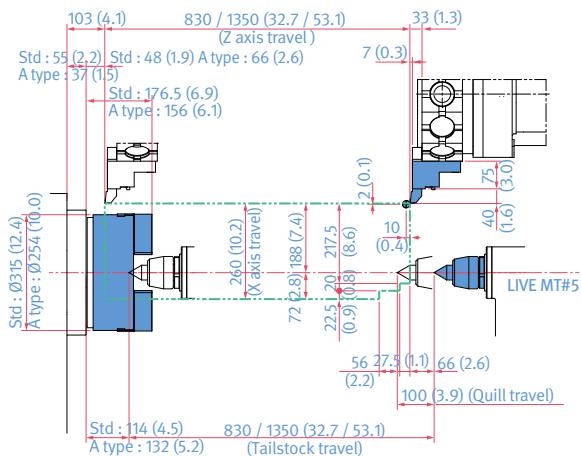


# WORKING RANGE

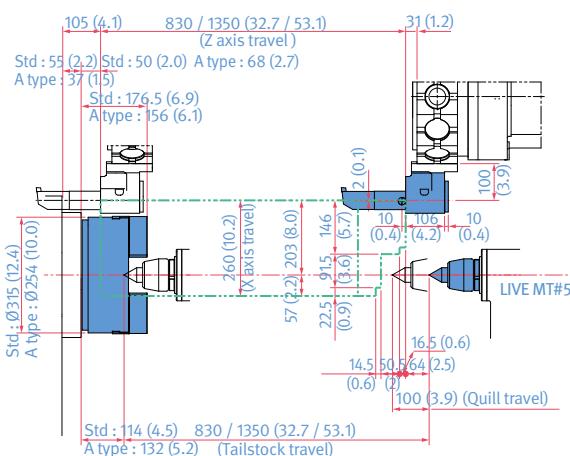
## PUMA GT3100M / 3100LM (M, BMT65P)

Units : mm (inch)

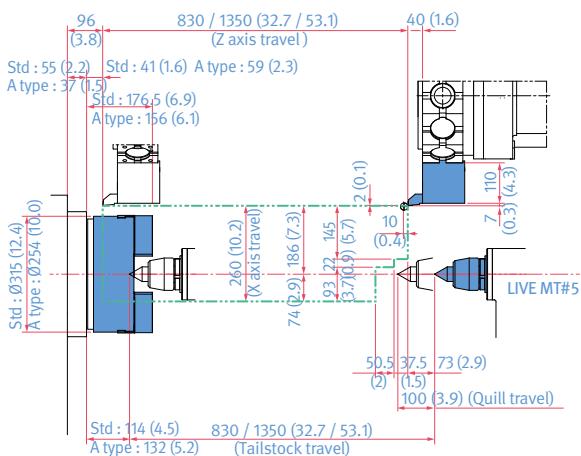
### OD HOLDER



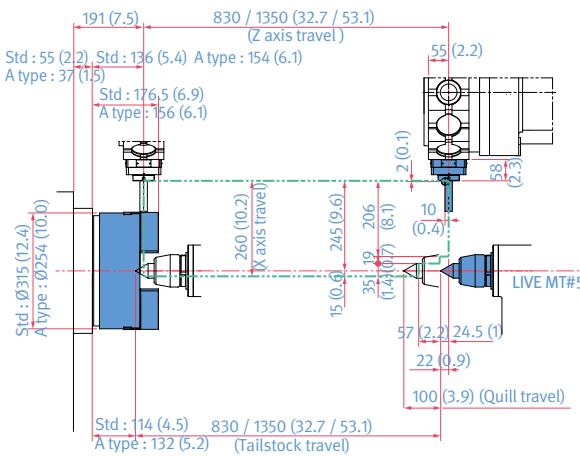
### ID HOLDER



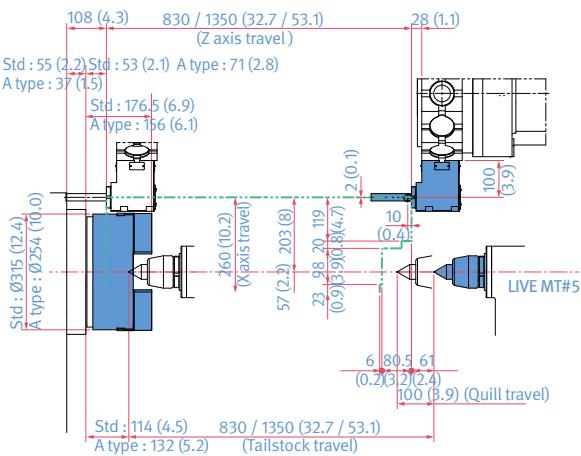
### FACE TOOL HOLDER



### STRAIGHT MILLING HOLDER



### ANGULAR MILLING HOLDER



# MACHINE SPECIFICATIONS

Description		mm (inch)	PUMA GT2100	PUMA GT2100M	PUMA GT2100B	PUMA GT2100MB
<b>Capacity</b>	Swing over bed	mm (inch)	600 (23.6)		600 (23.6)	
	Swing over saddle	mm (inch)	390 (15.4)		390 (15.4)	
	Recommended turning dia.	mm (inch)	210 (8.3)		255 (10.0)	
	Max. turning dia.	mm (inch)	390 (15.4)	300 (11.8)	390 (15.4)	300 (11.8)
	Max turning length	mm (inch)	562 [312] (22.1 [12.3])	513 [263] (20.2 [10.4])	550 (21.7)	501 (2.9)
	Chuck size	inch	8 {10}* 10 {12}*		10 {12}*	
	Bar working dia.	mm (inch)	65 (2.6)		81 (3.2)	
<b>Travels</b>	Travel distance	X-axis	230 (9.1)		230 (9.1)	
		Z-axis	580 (22.8)		580 (22.8)	
<b>Feedrates</b>	Rapid Traverse Rate	X-axis	24 (945)		24 (945)	
		Z-axis	30 (1181)		30 (1181)	
<b>Main spindle</b>	Max. Spindle speed	r/min	4500		3500	
	Main spindle motor power	kW (Hp)	18.5 / 15 / 15 (24.8 / 20.1 / 20.1) (S6 25% / S6 40% / S1 Cont.)		18.5 / 15 / 15 (24.8 / 20.1 / 20.1) (S6 25% / S6 40% / S1 Cont.)	
	Max. Spindle torque	N·m (lbf·ft)	313 (231)		400 (295.2)	
	Spindle nose	ASA	A2-6		A2-8	
	Spindle bearing diameter (Front)	mm (inch)	110 (4.3)		140 (5.5)	
	Spindle through hole	mm (inch)	76 (3.0)		91 (3.6)	
	Min. spindle Indexing angle (C-axis)	deg	-	0.001	-	0.001
<b>Turret</b>	No. of tool stations	ea	12	12	10 {12}	12
	OD tool size	mm (inch)	25 x 25 (1 x 1)		25 x 25 (1 x 1)	
	Max. boring bar size	mm (inch)	40 (1.6)		40 (1.6)	
	Turret Indexing time (1 station swivel)	s	0.15		0.15	
	Max. Rotary tool speed	r/min	-	5000	-	5000
	Rotary tool motor power	kW (Hp)	-	5.5 (7.4)	-	5.5 (7.4)
<b>Tailstock</b>	Tailstock travel	mm (inch)	580 (22.8)		580 (22.8)	
	Quill diameter	mm (inch)	80 (3.1)		80 (3.1)	
	Quill travel	mm (inch)	80 (3.1)		80 (3.1)	
	Quill bore taper	MT	MT#4 {#3 (Dead)}*		MT#4 {#3 (Dead)}*	
<b>Power source</b>	Electric power supply (rated capacity)	kVA	29.04		29.04	
<b>Machine Dimensions</b>	Length	mm (inch)	2941 (115.8)		2991 (117.8)	
	Width	mm (inch)	1632 (64.3)		1632 (64.3)	
	Height	mm (inch)	1759 (69.3)		1759 (69.3)	
	Weight	kg (lbf)	3700 (8157)	3800 (8377.4)	3800 (8377.4)	3900 (8597.9)
<b>Control</b>	NC system		DN Solutions Fanuc i Plus, SIEMENS S828D			

# MACHINE SPECIFICATIONS

Description		mm (inch)	PUMA GT2600 [L]	PUMA GT2600M [LM]	PUMA GT2600XL[XLB]	PUMA GT2600XLM[XLMB]	PUMA GT3100A[LA]	PUMA GT3100MA[LMa]	PUMA GT3100 [L]	PUMA GT3100M [LM]			
<b>Capacity</b>	Swing over bed	mm (inch)	630 (24.8)			630 (24.8)			720 (28.3)				
	Swing over saddle	mm (inch)	460 (18.1)			460 (18.1)			590 (23.2)				
	Recommended turning dia.	mm (inch)	255 (10.0)			255 (10.0)			255 (10.0)				
	Max. turning dia.	mm (inch)	460 (18.1)	410 (16.1)	460 (18.1)	410 (16.1)	481 (18.9)	376 (14.8)	481 (18.9)	376 (14.8)			
	Max turning length	mm (inch)	658 [1078] (25.9 [42.4])	610 [1030] (24.0 [40.6])	1603 [1573]	1555 [1525]	799 [1310] (31.1 [51.6])	760 [1280] (29.9 [50.4])	755 [1275] (2.9 [50.2])	725 [1245] (28.5 [49.0])			
	Chuck size	inch	10 {12}* [12]			10 [12]			10				
	Bar working dia.	mm (inch)	81 (3.2)			81 [102] (3.2 [4.0])			81 (3.2)				
<b>Travels</b>	Travel distance	X-axis	mm (inch)	265 (10.4)			265 (10.4)			260 (10.2)			
		Z-axis	mm (inch)	680 [1100] (26.8 [43.3])			1625 (26.8)			830 [1350] (32.7 [53.1])			
<b>Feedrates</b>	Rapid Traverse Rate	X-axis	m/min (ipm)	24 (945)			24 (945)			24 (945)			
		Z-axis	m/min (ipm)	30 (1181)			30 (1181)			30 (1181)			
<b>Main spindle</b>	Max. Spindle speed		r/min	3500		3500 [2500]	3500 [2500]	3500		2800			
	Main spindle motor power		kW (Hp)	26 / 22 / 18.5 (34.9 / 29.5 / 24.8) (S6 25% / S6 60% / S1 Cont.)		26 / 22 / 18.5 (34.9 / 29.5 / 24.8) (S6 25% / S6 60% / S1 Cont.) [LOW WINDING 22 / 13 (S6 15% / S1 Cont.)] [ HIGH WINDING 26 / 22 / 18.5 (S6 25% / S6 60% / S1 Cont.)]		35 / 26 / 22 (46.9 / 34.9 / 29.5) (S6 25% / S6 60% / S1 Cont.)	26 / 22 / 18.5 (34.9 / 29.5 / 24.8) (S6 25% / S6 60% / S1 Cont.)	35 / 26 / 22 (46.9 / 34.9 / 29.5) (S6 25% / S6 60% / S1 Cont.)	26 / 22 / 18.5 (34.9 / 29.5 / 24.8) (S6 25% / S6 60% / S1 Cont.)		
	Max. Spindle torque	N·m (lbf·ft)	735 (542.4)			735 [992] (542.4 [732.1])			622 (459.0)	1613 (1190.4)	1123 (828.8)		
	Spindle nose	ASA	A2-8			A2-8 [A2-11]			A2-8		A2-11		
	Spindle bearing diameter (Front)	mm (inch)	140 (5.5)			140 [160] (5.5 [6.3])			140 (5.5)		160 (6.3)		
	Spindle through hole	mm (inch)	91 (3.6)			91 [115] (3.6 [4.5])			91(3.6)		115 (4.5)		
	Min. spindle Indexing angle (C-axis)	deg	-	0.001	-	0.001	-	0.001	-	0.001			
<b>Turret</b>	No. of tool stations	ea	10 {12}* [12]	12	10 {12}* [12]	12	10 {12}* [12]	12 {24}* [12]	10 {12}	12 {24 position index}* [12]			
	OD tool size	mm (inch)	25 x 25 (1 x 1)			25 x 25 (1 x 1)			25 x 25 (1 x 1)		25 x 25 (1 x 1)		
	Max. boring bar size	mm (inch)	50 (2.0)	40 (1.6)	50 (2.0)	40 (1.6)	50 (2.0)			50 (2.0)			
	Turret Indexing time (1 station swivel)	s	0.15			0.15			0.15				
	Max. Rotary tool speed	r/min	-	5000	-	5000	-	5000	-	5000			
	Rotary tool motor power	kW (Hp)	-	5.5 (7.4)	-	5.5 (7.4)	-	7.5 (10.1)	-	7.5 (10.1)			
<b>Tailstock</b>	Tailstock travel	mm (inch)	680 [1100] (26.8 [43.3])			1625 [1595]			830 [1350] (26.8 [45.3])				
	Quill diameter	mm (inch)	100 (3.9)			100 (3.9)			100 (3.9)				
	Quill travel	mm (inch)	100 (3.9)			100 (3.9)			100 (3.9)				
	Quill bore taper	MT	MT#5 {#4 (Dead)}*			MT#5 {#4(Dead)}*			MT#5 {#4(Dead)}*				
<b>Power source</b>	Electric power supply (rated capacity)	kVA	34.58				36	34	36	34			
<b>Machine Dimensions</b>	Length	mm (inch)	3396 [3841] (133.7 [151.2])		4855 [4960] (191.1 [195.3])		3960[4525] (155.9[178.1])	3800[4465] (149.6[175.8])	4068[4633] (160.2[182.4])	3865[4465] (152.2[175.8])			
	Width	mm (inch)	1707 (67.2)			2198 (86.5)			2102 [2394] (82.8 [94.3])				
	Height	mm (inch)	1779 [1830] (70.0 [72.0])			2030 (79.9)			1915 (75.4)		2110 (83.1)		
	Weight	kg (lbf)	4300[4900] (9479.7 [10802.5])	4350[4950] (9590 [10912.7])	5900 [6050] (13007.1 [13337.8])	5950 [6100] (13117.3 [13448.0])	5450 [6850] (12015.0 [15101.4])	5600 [7000] (2345.7 [15432.1])	5500 [6900] (12125.2 [15211.7])	5650 [7050] (222.4 [277.6])			
<b>Control</b>	NC system		DN Solutions Fanuc i Plus, SIEMENS S828D										

\*{}: option \*\*\* The specifications and information above-mentioned may be changed without prior notice. For more details, please contact DN Solutions

# RESPONDING TO CUSTOMERS **ANYTIME, ANYWHERE**

## DN Solutions Global Network

DN Solutions provides systems-based professional support services, before and after the machine tool sale, by responding quickly and efficiently to customers. By supplying spare parts, product training, field service and technical support, we provide the expert care, attention and assistance our customers expect from a market leader.

Global sales and service support network	<b>51</b>	Technical centers <i>Technical center, Sales support, Service support, Parts support</i>
<b>4</b>	<b>Corporations</b>	<b>200</b>
<b>156</b>	<b>Dealer networks</b>	<b>3</b>
		<b>Factories</b>



## CUSTOMER SUPPORT AND SERVICES

**We're there for you whenever you need us.**

We help our customers operate at maximum efficiency by providing them with a range of tried, tested and trusted services - from pre-sales consultancy to post-sales support.



### Field services

- On-site service
- Machine installation and testing
- Scheduled preventive maintenance
- Machine repair service



### Parts supply

- Supplying a wide range of original DN Solutions spare parts
- Parts repair service



### Training

- Programming, machine setup and operation
- Electrical and mechanical maintenance
- Applications engineering



### Technical support

- Supports machining methods and technology
- Responds to technical queries
- Provides technical consultancy



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\* For more details, please contact DN Solutions.

\* Specifications and information contained within this catalogue may be changed without prior notice.

**TORNI CNC  
CNC LATHES**



**Biglia**



**B 501**



**B 501**

**B 501 M**

Potenza mandrino:  
15 kW (26kW opzione)  
Giri Max.: 4.000  
Rapidi X e Z: 20 m/min

Spindle motor:  
15 KW ( 26 KW optional)  
Max spindle speed: 4.000 rpm  
X and Z axis rapid traverse: 20m/min

Posizionamento angolare: 0.001°  
Potenza utensili motorizzati: 3.7 kW  
Foratura: 18 mm  
Maschiatura: M 16  
Fresatura: 20 mm

Angular positioning: 0.001°  
Live spindle motor: 3.7 KW  
Max. drilling dia.: 18 mm  
Max. tapping dia.: M 16  
Max milling cutter dia.: 20 mm

## GRANDI PRESTAZIONI ELEVATA VERSATILITÀ

- Rapidi assi X e Z: 20 m/min
- Rapido asse C: 80 giri/min
- Tempo truciolo truciolo con rotazione torretta di una posizione: 1.5 sec
- Tempo per passare dal modo tornitura al modo fresatura: 2 sec
- Possibilità di lavorare da barra e da ripresa
- Pezzo finito in una sola fase, utilizzando la controtesta per il trasferimento del pezzo
- Eccezionale rigidità utilizzando le guide in ghisa a "T" integrali su basamento inclinato a 30°



## HIGHER PERFORMANCE GREATER VERSATILITY

- X- and Z-axis rapid traverse:  
20 m/min
- C-axis rapid traverse: 80 rpm
- Chip-to-chip time for turret index:  
1.5 sec
- Turning to milling: 2 sec
- Bar and chuck machining
- Complete machining of part using  
main and sub-spindle
- 30° slant bed design incorporating  
exceptional rigidity utilizing "T"  
section guideways

**B 501 S**

**B 501 SM**

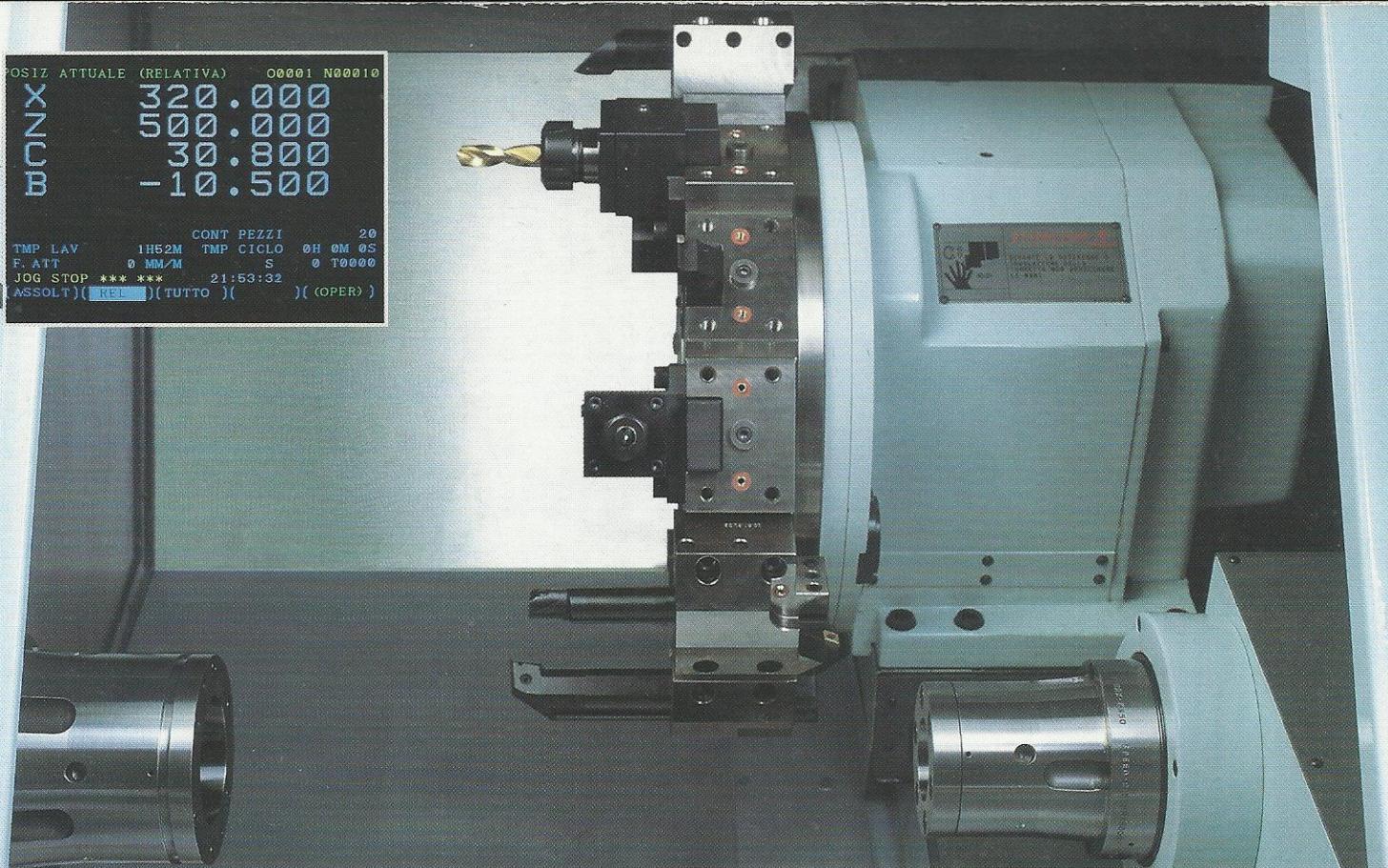
Potenza mandrino controtesta: 7.5 kW  
Giri Max.: 4.000  
Movimento rapido asse B: 24 m/min  
Rotazione sincronizzata

Sub-spindle motor power: 7.5 kW  
Max spindle speed: 4.000 rpm  
Rapid traverse: 24 m/min  
Synchronized spindles

Unisce in una sola macchina tutte le  
grandi potenzialità delle versioni M e S.

This model combines the exceptional  
flexibility of M and S versions in a single  
turning centre.

POSIZ ATTUALE (RELATIVA) 00001 N00010  
 X 320.000  
 Y 500.000  
 Z 30.800  
 B -10.500  
  
 CONT PEZZI 20  
 TMP LAV 1H52M TMP CICLO 0H 0M 0S  
 F. ATT 0 MM/M S 0 T0000  
 JOG STOP \*\*\* \*\*\* 21:53:32  
 ASSOLT)(HEL)(TUTTO )( (OPER )



## B 501 SM

CENTRO DI TORNITURA SEQUENZIALE: FRESATURA, FORATURE, MASCHIATURE PER OTTENERE IL PEZZO FINITO

Questo modello a 4 assi (X, Z, C e B) è caratterizzato dalla controtesta e dalla torretta con utensili motorizzati. Sono così riunite in una sola macchina le caratteristiche e la potenzialità dei mod. B501 M e B501 S (lavorazione con utensili motorizzati su mandrino principale).

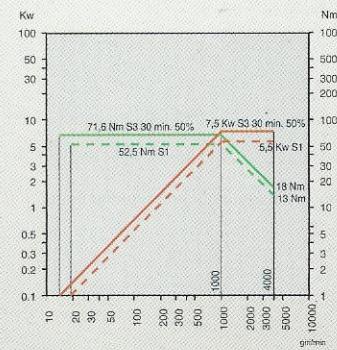


MILLING, DRILLING, TAPPING  
FACILITY ENABLING PRODUCTION  
OF FINISHED PARTS IN A SINGLE  
CYCLE

This 4-axis (X,Z,C and B) model is fitted with live tooling and sub-spindle, thus combining features and capacities of B501 M and B501 S models (machining with live tools on main spindle)

MOTORE CONTROTESTA,  
CURVE DI POTENZA,  
SUB SPINDLE MOTOR,  
POWER DIAGRAM.

In continuo / Continuous	Potenza (Kw) / Kw Power
<span style="color: green;">—</span>	<span style="color: red;">—</span>
30 min.di utilizzo	coppia(Nm)
<span style="color: green;">—</span>	<span style="color: green;">—</span>
30 min.rating	(Nm) torque
<span style="color: green;">—</span>	<span style="color: green;">—</span>



# TORNIRE CON PIÙ SICUREZZA, PIÙ VELOCITÀ, PIÙ PROFITTO

## CONCETTO ERGONOMICO

a costruzione con basamento inclinato a 30° e la completa protezione delle guide (asse Z) in acciaio inox garantiscono una totale evacuazione dei trucioli. La distanza tra la porta ed il centro mandrino è di appena 385 mm, per facilitare il cambio pezzo nel mandrino e utensili in torretta. Tutti i punti di controllo e le manopole di regolazione sono poste frontalmente o lateralmente per facilitare le operazioni manuali dell'operatore.

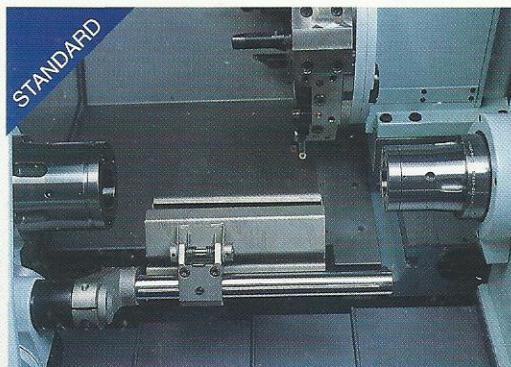


## ERGONOMIC CONCEPT

The construction, featuring 30° slant and the fully protected guideways (Z-axis) made out of stainless steel, allows for perfect swarf clearance.

The distance between the door and the spindle centre is only 385 mm, in order to make workpiece loading and tool changing quick and easy.

All checking and adjusting points are fitted in readily accessible positions at the front and side of the machine, allowing easier maintenance.



## SCARICATORE, ESPULSORE

Lo scaricatore automatico dei pezzi consente lo scarico del pezzo finito sia sul mandrino principale sia sulla controtesta

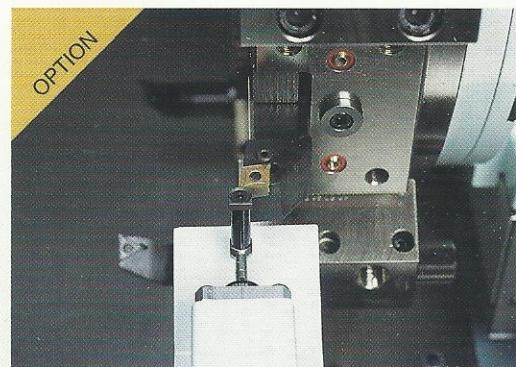
## PARTS-CATCHER, EJECTOR

The automatic parts-catcher enables unloading of finished parts both from main spindle and sub-spindle.

## AZZERATORE UTENSILI

Questo dispositivo facilita l'azzeramento degli utensili, rendendolo rapido e preciso.

Toccando il sensore con la punta dell'utensile, il valore della correzione viene memorizzato automaticamente nella tabella dei correttori; si riduce così il tempo di attrezzaggio.

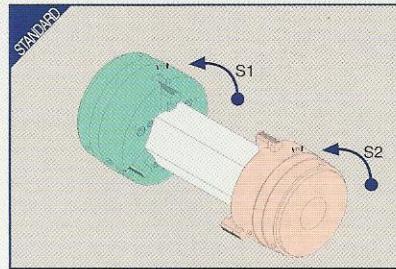


## TOOL-SETTER

This device makes tool-setting simple, fast and accurate. The tool tip is brought into contact with the probe and the tool offset value is automatically stored into relevant table of the CNC control.

This reduces setting up time.

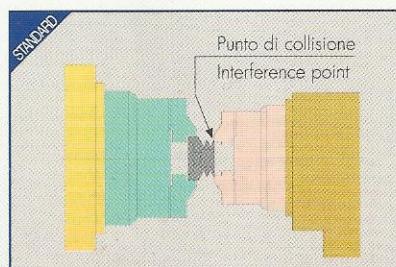
**SINCRONIZZAZIONE DEI DUE MANDRINI**  
 Indispensabile per eseguire il taglio della barra senza lasciare testimone e per ridurre il tempo di lavorazione. È possibile sincronizzare angolarmente i due mandrini per bloccare in rotazione pezzi tondi o poligonalni. In sincronizzazione è possibile fermare, ripartire o invertire la rotazione.



## SPINDLE SYNCHRONISATION

The ability to part off bar without leaving a pip reduces cycle time. Not only can the spindle speeds be synchronized, but angular displacement can be oriented so that round or polygonal parts are clamped without stopping spindle rotation. It is possible to start, stop and change rotation of both spindles whilst maintaining synchronisation.

**SFORZO CONTROLLATO DELLA CONTROTESTA**  
 Controllando lo sforzo del motore asse B è possibile trasferire il pezzo dal mandrino principale alla controtesta in piena sicurezza. L'entità dello sforzo è modificabile ed è attivabile con una funzione M. Serve quando ci sono trucioli nella pinza della controtesta, quando il pezzo da prelevare è più grande oppure quando il pezzo non è stato tagliato.



## SUB-SPINDLE LOAD MONITORING

While monitoring B-axis motor load, the workpiece can be transferred from main to sub-spindle. The load may be monitored and pre-set through a control M-function.

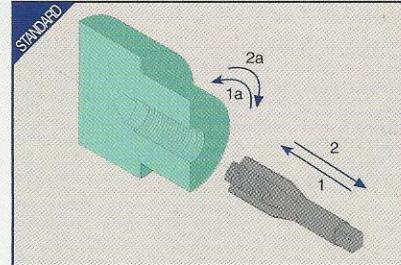
This feature is important if there is any swarf in the sub-spindle collet or if the workpiece to be transferred is too large or has not been parted off correctly from the main spindle.

## MASCHIATURA RIGIDA

La maschiatura rigida è facile, precisa e non richiede portamaschi con corsa compensata. Viene comandata con una semplice funzione M che sincronizza la rotazione del mandrino principale con l'avanzamento del carro.

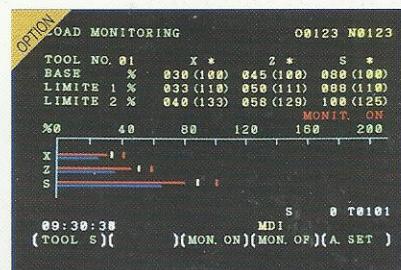
## RIGID TAPPING

Rigid tapping is easy, precise and does not require the use of tension and compression type tap holders. It is programmed through a control M-function, which synchronises the main spindle rotation with Z-axis feed.



## SBS: MONITORAGGIO SFORZO UTENSILI

Questo dispositivo controlla gli utensili che sono fortemente impegnati e sono quindi soggetti a rottura (taglio, sgrossatura, punte ad inserto o elicoidali, ecc.) consentendo la lavorazione automatica in sicurezza con una sorveglianza ridotta. Controlla l'assorbimento di corrente dei motori assi e mandrino in lavorazione ed imposta automaticamente due barriere: una gialla per l'utensile usurato, una rossa per la rottura utensili. Non è un dispositivo meccanico ma un software che lavora con i dati stessi del CNC.



## SBS: BIGLIA

**SAFETY SOFTWARE: TOOL LOAD MONITORING**  
 This system monitors the loading of the most heavily used tools e.g. 1st op cutting tools, roughening tools, drills or U-drills. It ensures safe automatic machining with limited operator presence. The power absorption of axis and spindle motors is checked and automatically displayed on two easily observed indicators, a yellow display for tool wear, and a red display for tool breakage. This is an electronic device that uses data previously entered into the Fanuc CNC control to calculate the correct display level.

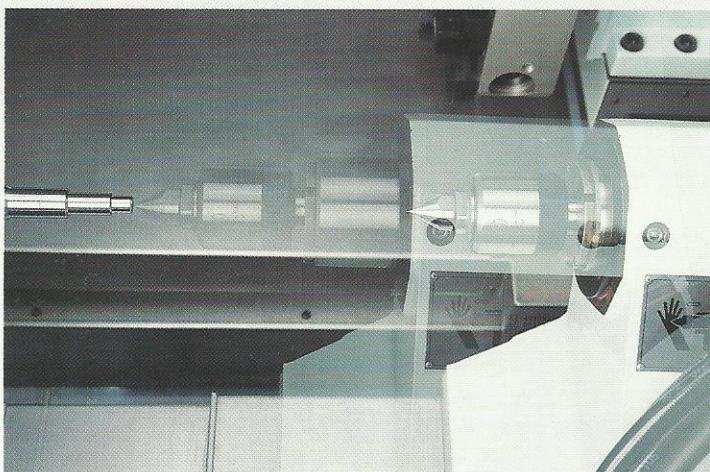
## OPZIONI/OPTIONS

### CONTROPUNTA AUTOMATICA: RIDUZIONE DEL TEMPO CICLO

Il corpo della contropunta scorre su una slitta indipendente ed è comandato da un gruppo motore vite (asse B) mentre la fuoriuscita del canotto è azionata idraulicamente tramite funzioni M. È ideale nella lavorazione da barra di alberi che devono essere prima centrat-forati e poi sostenuti dalla contropunta per la tornitura.

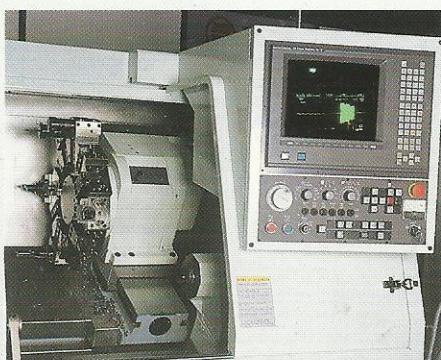
Può essere utilizzato anche come asse di lavoro per eseguire una foratura in contemporanea alla tornitura.

Disponibile solo su B501 - B501M - B501-8".



### FANUC 18T- SUPERCAP: FACILITÀ, RAPIDITÀ E SICUREZZA DI PROGRAMMAZIONE.

L'innovativo sistema conversazionale consente di effettuare il programma pezzo con una sequenza rapida e semplice. Dopo la programmazione è possibile eseguire direttamente la lavorazione senza passare il programma ISO oppure è possibile far generare automaticamente un programma ISO per memorizzarlo o utilizzarlo su un'altra macchina. Il sistema SUPERCAP, con video grafico a colori da 14", viene proposto standard nella versione B501-SUPERPACK unitamente ad un sistema modulare di cambio rapido delle griffe. Nelle altre versioni è offerto come opzionale.



The innovative conversational system makes programming quick and simple. This system enables component machining to commence immediately on completion of programming, alternatively if the program is to be stored or used on another machine an ISO program can be created. The Biglia model B501-SUPERPACK combines the SUPERCAP control with 14" colour graphic monitor along with a modular concept for quick tool changing and chuck jaw adjustment (optional equipment on other models).

### AUTOMATIC TAILSTOCK FOR REDUCED CYCLE TIME

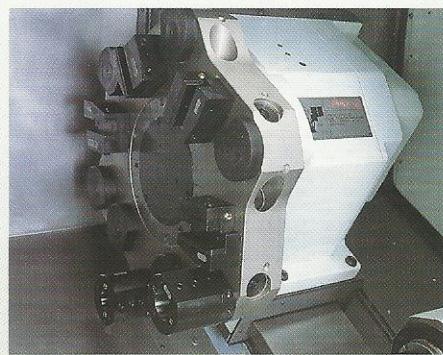
The tailstock body is mounted on an independent slideway and is operated by a servo motor (B-axis). The tailstock quill is hydraulically operated and programmed using M-functions.

It is particularly suitable for the machining of shafts that must be centre drilled first and then supported by the tailstock for turning operations. It can also be used to perform simultaneously both drilling and turning.

Available on B501 - B501M - B501-8".

### PLATORELLO VD40: RAPIDITÀ DI RIATTREZZAGGIO

E' possibile fornire, in alternativa alla versione standard, il platorello VD40 DIN 69880 (vedere foto sopra e caratteristiche a pag 14 e 15 ). È disponibile solo su modelli B501-B501M -B501-8"



### VDI 40 TOOL DISC: QUICK RE-TOOLING

VDI 40 tool disc DIN 69880 is available on request (see picture above and specifications on page n° 14 and 15 ) Available on mod. B501 - B501M - B501-8".

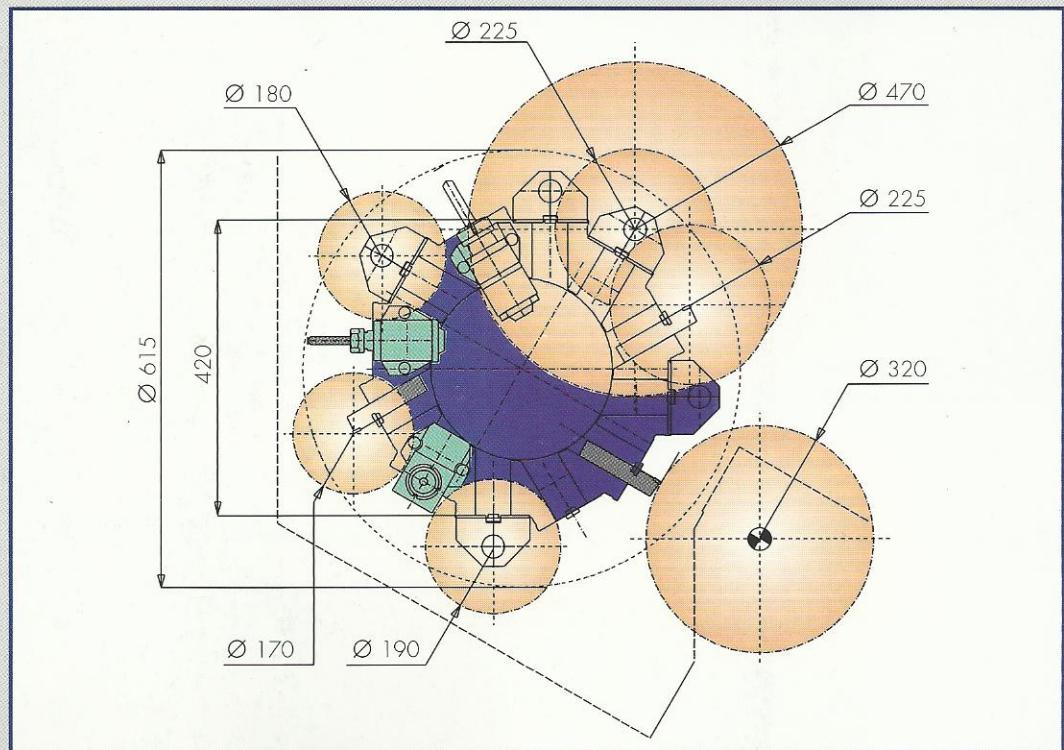
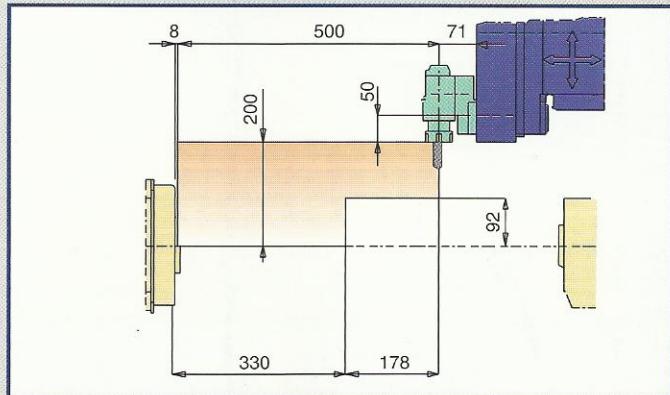
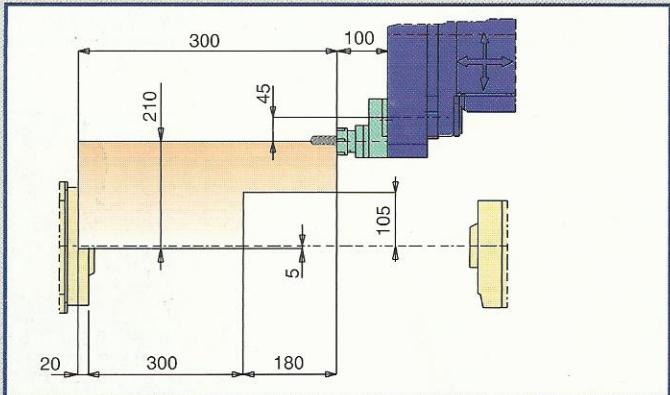
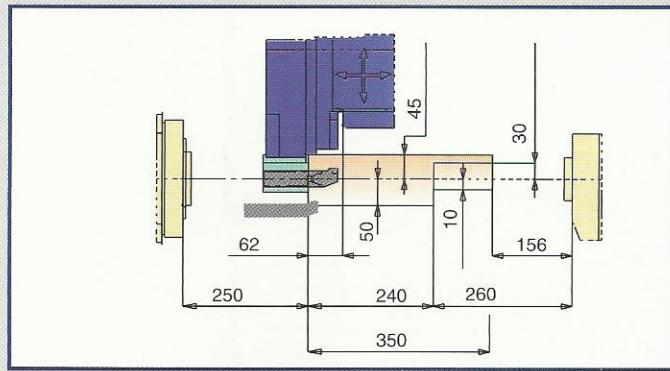
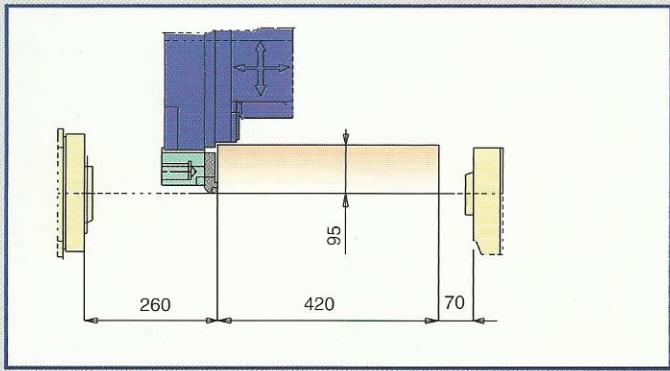
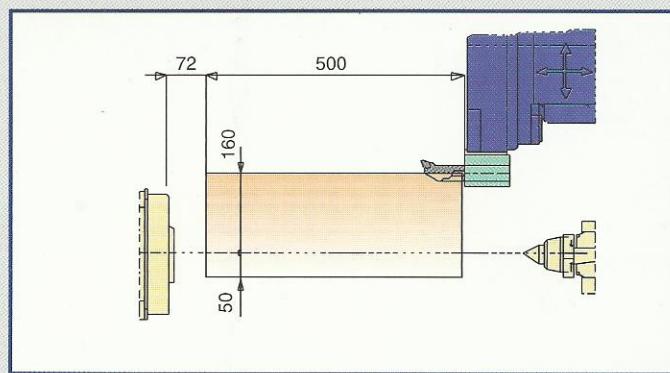
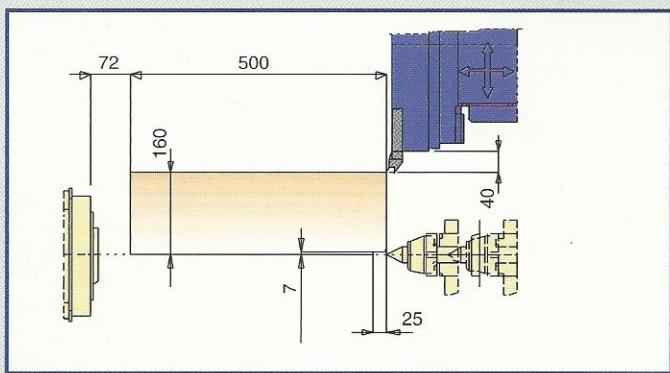
# CARATTERISTICHE TECNICHE/TECHNICAL SPECIFICATIONS



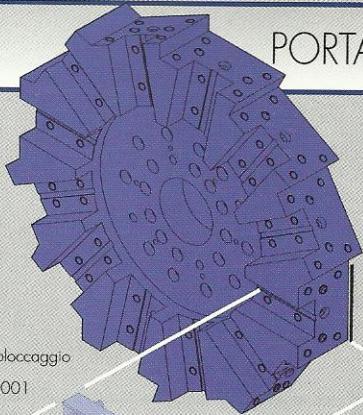
CAPACITA'		MACHINING CAPACITY	
Max. diam. lavorabile da barra mm.	Bar capacity	mm	54-68*
Max. diam. lavorabile da ripresa	Max. machining dia.	mm	250
Max. lunghezza lavorabile	Max. machining length	mm	500
Max. diametro rotante	Max swing over dia.	mm	520
MANDRINO PRINCIPALE		MAIN SPINDLE	
Gamma di rotazione	Speed range	giri/min-rpm	40-4000
Naso mandrino	Spindle nose		ASA 6"
Foro mandrino	Spindle bore	mm	80
Diametro interno cuscinetti	Inside dia. of bearings	mm	110
Autocentrante diametro	Chuck dia.	mm	210-250
Potenza motore	Motor power	kW	11/15 (50%) - 22/26 (50%)*
CONTROTESTA		SUB-SPINDLE	
Gamma di rotazione variabile	Variable speed range	giri/min-rpm	40-4000
Naso mandrino	Spindle nose		ASA 5"
Foro mandrino	Spindle bore	mm	52
Foro passante utile	Drawtube inside dia.	mm	43
Diametro interno cuscinetti	Inside dia. of bearings	mm	80
Autocentrante diametro	Chuck dia.	mm	165
Potenza motore	Motor power	kW	5.5/7,5(50%)
TORRETTA		TURRET	
Numero di posizioni	No of tools		12
Tipo	Type		bidirezionale/bidirectional
Stelo utensile per esterno-interno	Tool shank for OD/ID turning	mm	25 x 25 - ø32
Tempo di rotazione (1 pos.)	Turret indexing (1 pos.)	sec	0.6
UTENSILI MOTORIZZATI		LIVE TOOLING	
Numero di posizioni	No of live tools		6
Gamma di rotazione	Speed range giri/min. - rpm		50-3000
Potenza motore	Motor power kW	3,7 (50%)	3,7 (50%)
ASSE C		C-AXIS	
Tipo	Type	CS (direct)	CS (direct)
Minimo valore programmabile	Min. programmable value	0,001°	0,001°
Max. velocità rapida	Max. rapid traverse giri/min - rpm	80	80
ASSI		AXES	
Corsa asse X	X-axis stroke	mm	210 + 5
Corsa asse Z	Z-axis stroke	mm	500 + 10
Corsa asse B	B-axis stroke	mm	510 + 5
Rapido asse X	X-axis rapid traverse	m/min	20
Rapido asse Z	Z-axis rapid traverse	m/min	20
Rapido asse B	B-axis rapid traverse	m/min	24
CONTROPUNTA		TAILSTOCK	
Corsa automatica del cannotto	Automatic quill stroke	mm	100
Diametro cannotto	Quill dia.	mm	85
Cono portapunta	Morse taper		CM4/MT4
Posizionamento automatico/manuale	Automatic/manual positioning		510 - 440
REFRIGERANTE		COOLING SYSTEM	
Capacità vasca	Tank capacity l.		200
Portata pompa	Pump nominal displacement l./min		100
Potenza motore pompa	Electropump motor rating kW		0.5
DIMENSIONI - PESO		DIMENSIONS AND WEIGHT	
Ingombro con trasportatore trucioli	Machine with swarf conveyor	cm	400 x 190 x 180h
Altezza centro mandrino	Spindle centre height	mm	1000
Peso con trasportatore trucioli	Machine weight with swarf con.	Kg	4600 4700 4900 5000
Rumorosità	Noise	dB	72 max

\*Opzione/Option

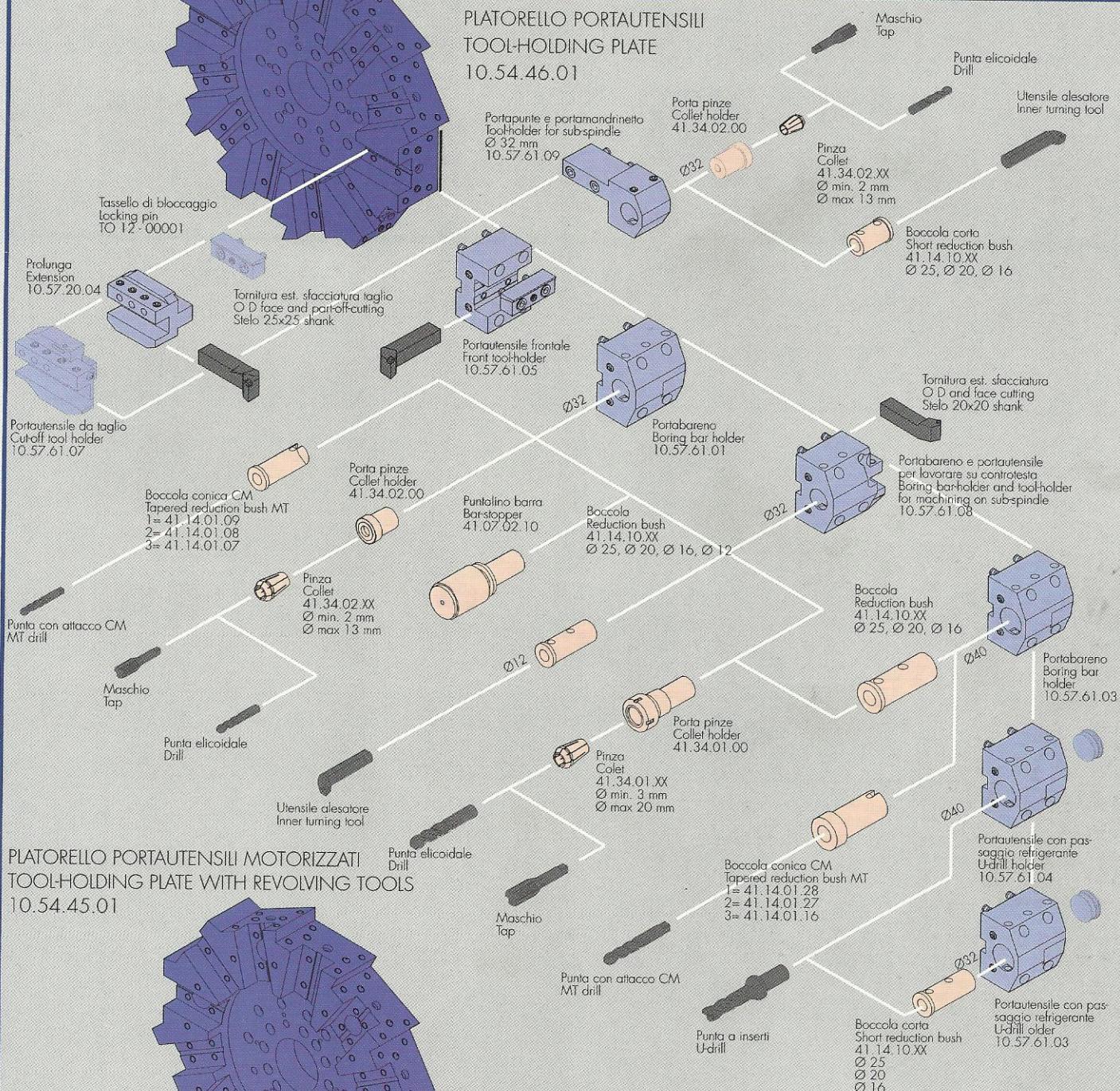
# CAMPO DI LAVORO / MACHINING FIELD



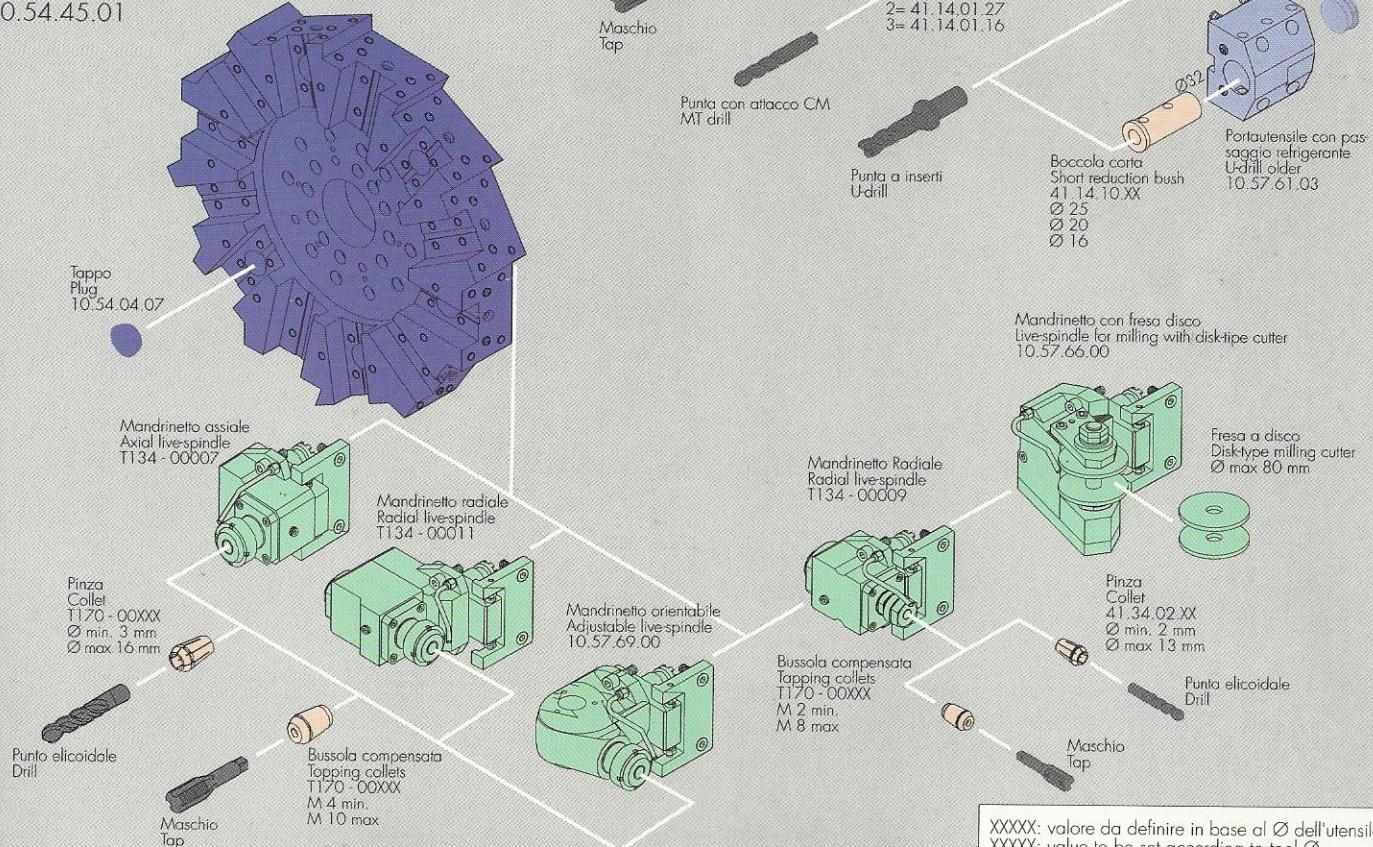
# PORTAUTENSILI STANDARD/STANDARD TOOL - HOLDERS



## PLATORELLO PORTAUTENSILI TOOL-HOLDING PLATE 10.54.46.01

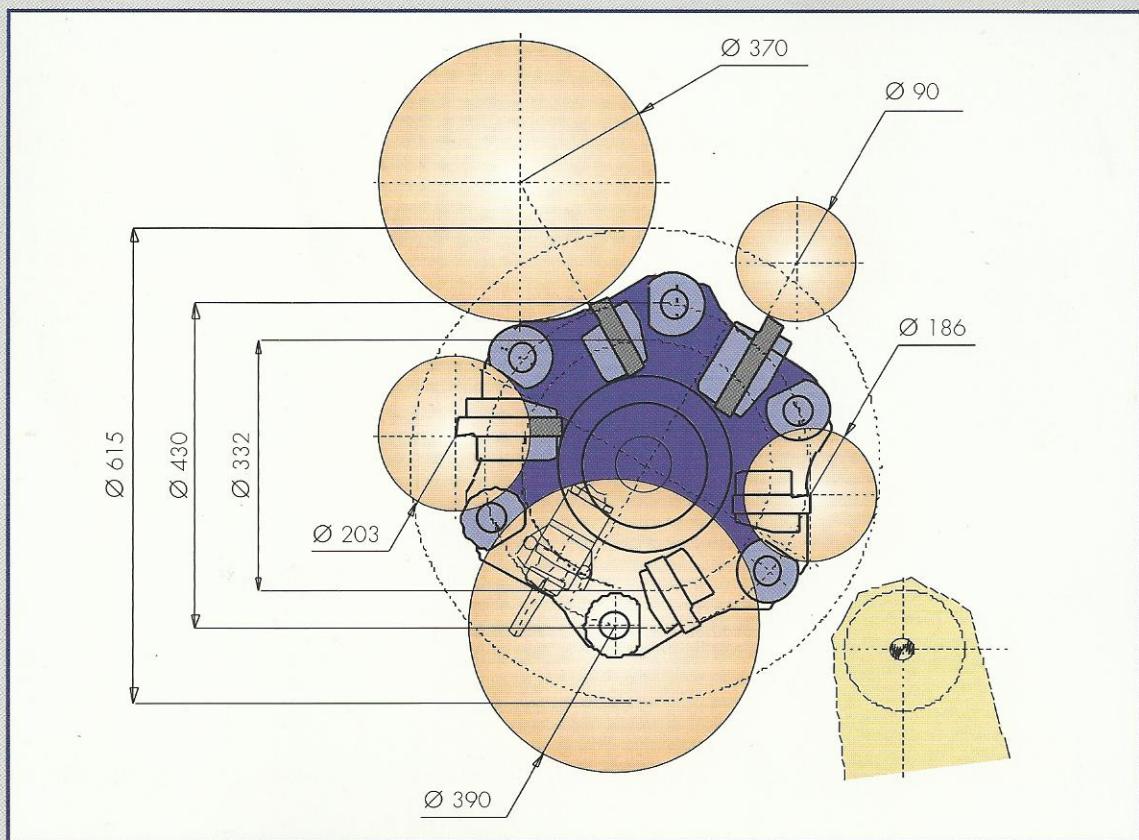
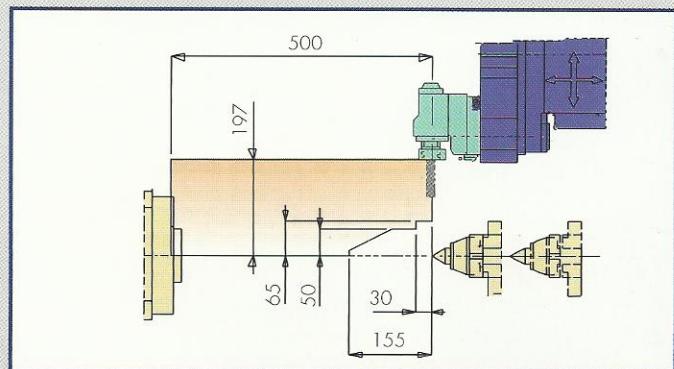
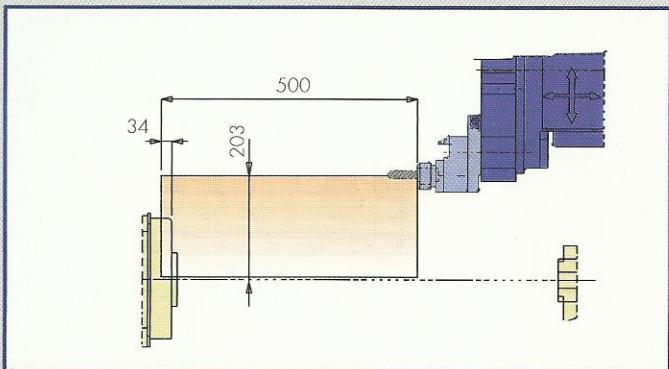
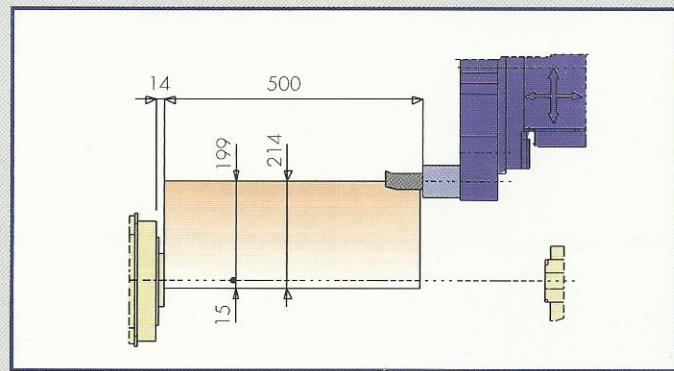
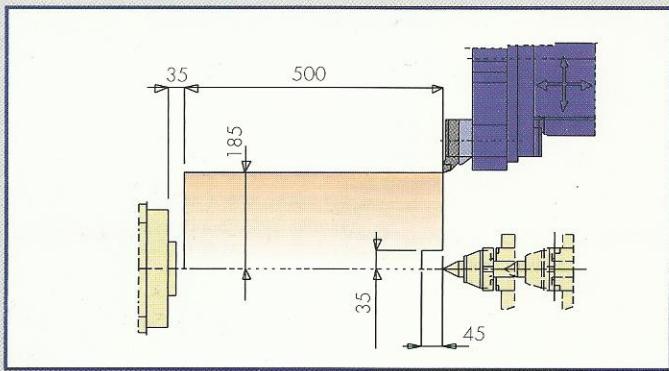


## PLATORELLO PORTAUTENSILI MOTORIZZATI TOOL-HOLDING PLATE WITH REVOLVING TOOLS 10.54.45.01



XXXX: valore da definire in base al Ø dell'utensile.  
XXXX: value to be set according to tool Ø

## CAMPO DI LAVORO/MACHINING FIELD



# PORTAUTENSILI MOTORIZZATI/REVOLVING TOOLS

