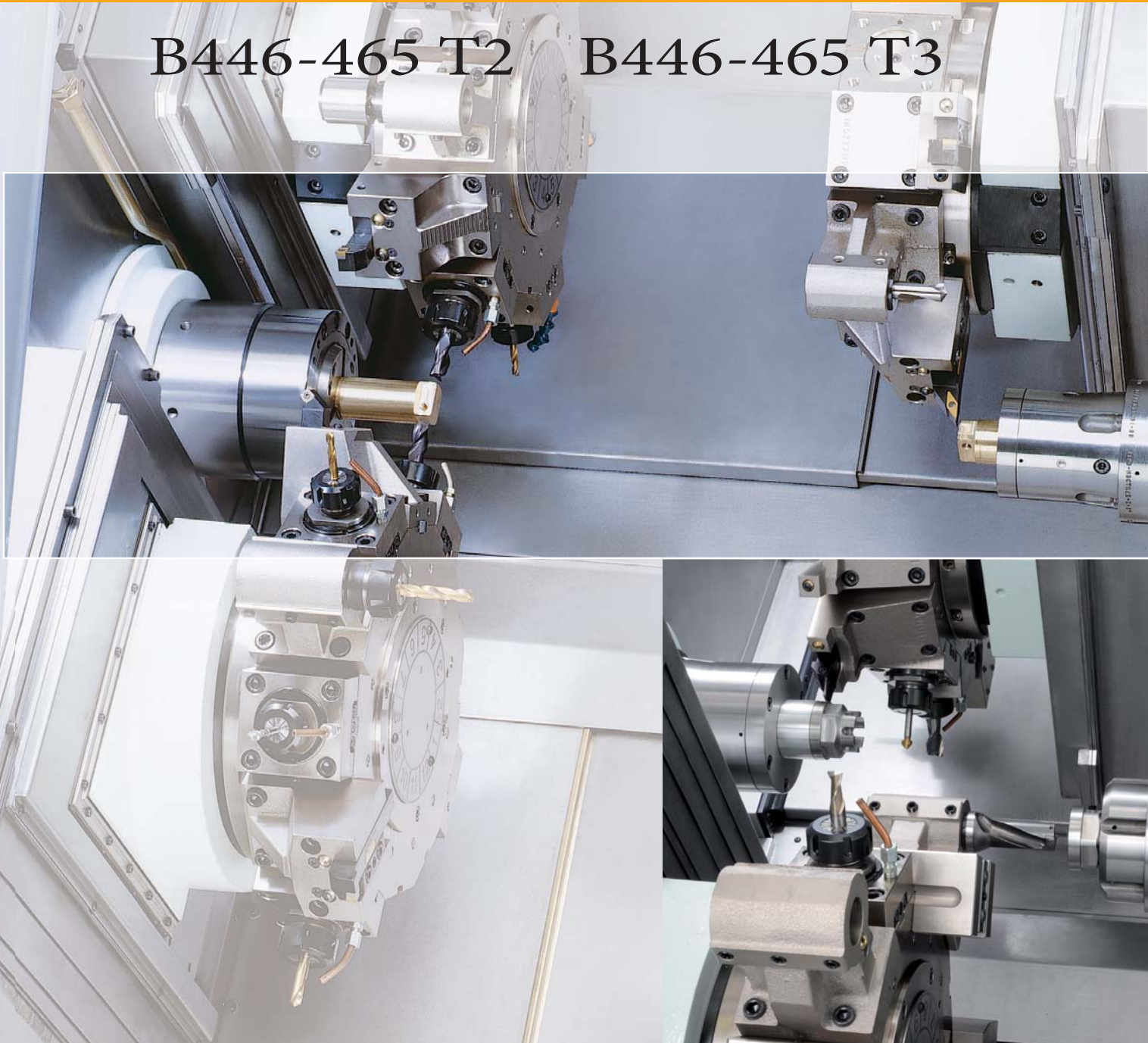


MULTITURRET BAR TURNING

B446-465 T2 B446-465 T3





Double-spindle and double-turret turning centres featuring two Y-axes:
high productivity in machining complex parts

B446-465 T2



- Quick cycles
- From bar to the finished part in one set-up
- Higher productivity (up to 50%)



es from bar.

20 years after the launch of the first QUATTRO machine, this range of double-spindle and double-turret turning centres for bar machining celebrating the third generation is now further enhanced by the new range of QUATTRO Y2.

The main performance benefits offered by the 30-degree slant bed and the robust machine components such as the structure, guides and turrets are:

- Great rigidity allowing to machine tough materials
- Perfect removal of chippings
- Reduction of cycle times and longer tool service life

- Up to 30 tools available for machining of complex parts and reduced set-up times
 - Ergonomics and easy access for retooling operations.
- The modular design allows a wide range of customized configurations to be offered, resulting in extremely efficient and flexible production of simple to complex parts using live tools, C-axis and Y-axis.

The QUATTRO Y2 turning centres are available in four configurations featuring 45-52-65 and 70 mm bar capacity.

Models available

B446-465 S

- 2 turrets
- 2 spindles

B446-465 S2M

- 2 turrets equipped with live tooling
- 2 spindles featuring C-axis

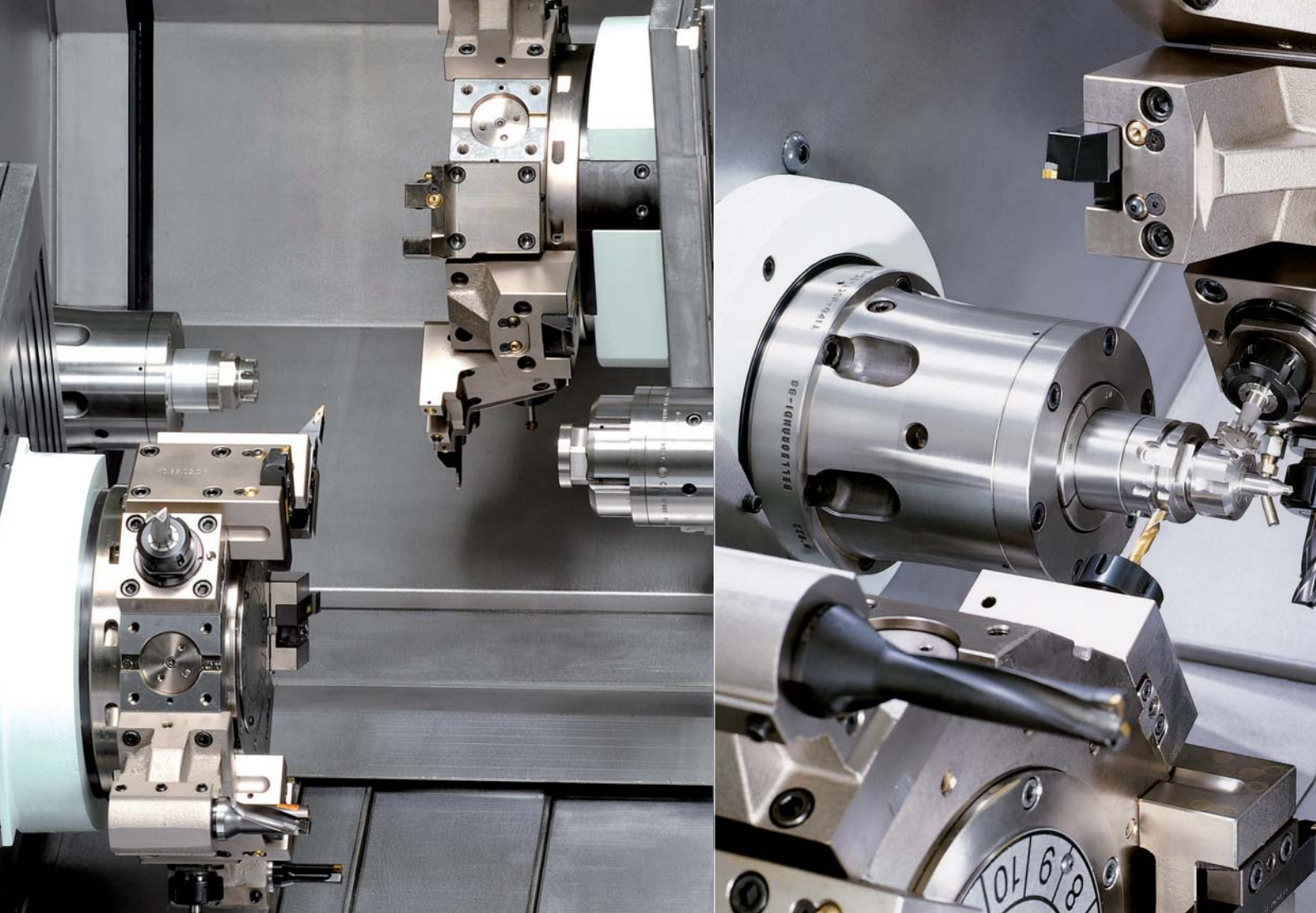
B446-465 Y

- 2 turrets equipped with live tooling
- 1 Y-axis
- 2 spindles featuring C-axis

B446-465 Y2

- 2 turrets equipped with live tooling
- 2 Y-axes
- 2 spindles featuring C-axis

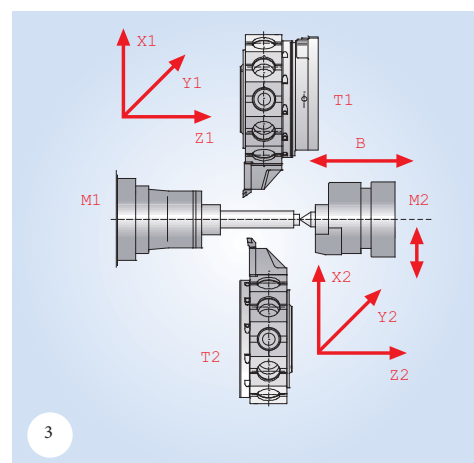
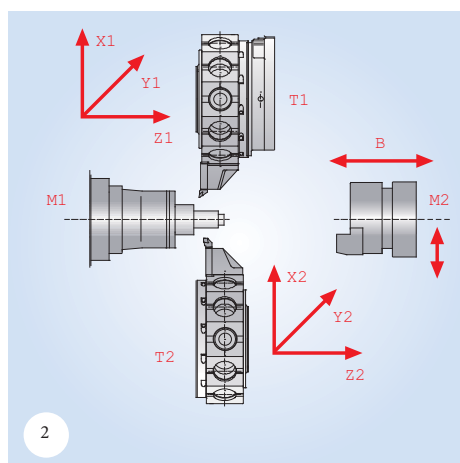
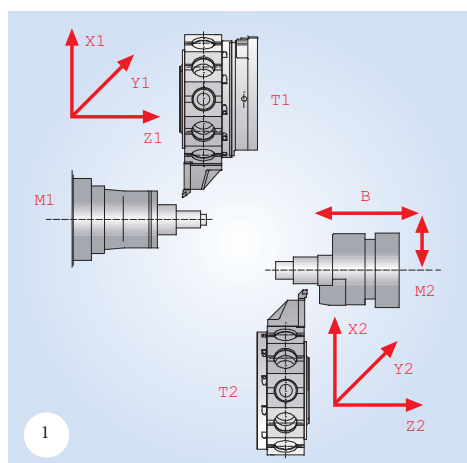




Generous machining area to achieve top-level performance.

- ① Simultaneous machining of T1 on M1 and T2 on the offset M2
- ② Simultaneous machining of T1 and T2 on M1
- ③ Simultaneous machining of T1 and T2 on M1 using M2 as regular tailstock

Legend = M1: main spindle • M2: sub-spindle • T1: upper turret • T2: lower turret





MACHINING CAPABILITY

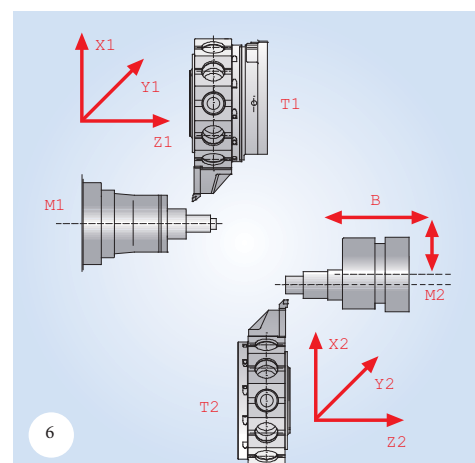
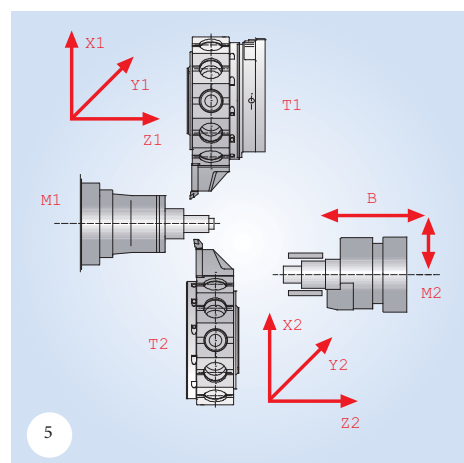
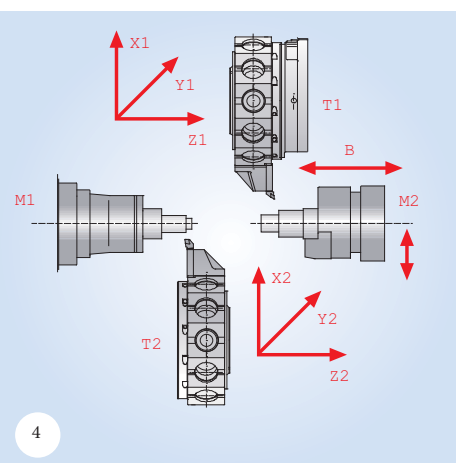
The position of the turrets and the sub-spindle featuring a double movement (longitudinal and transversal) enables reliable and flexible machining operations on both spindles.

The main advantages are:

- Reduction of non-productive times
- Automatic and simultaneous machining on both sides of any workpiece
- 4-axis turning using both turrets on main spindle for simultaneous operation
- Parts unloading performed in idle time.

The sub-spindle featuring a double movement is offset from the main spindle eliminating interference problems between the two turrets.

- 4 Simultaneous machining of T2 on M1 and T1 on M2. Sub-spindle (M2) coaxial to the main spindle (M1)
- 5 As per picture 2, but with offset M2 to unload the parts in idle time
- 6 Simultaneous machining of T1 on M1 and T2 on the offset M2 for turning an eccentric with an eccentric collet. For unloading, the sub-spindle orientates the collet and the E axis remains in the offset position according to eccentric value (option).



Wide range of equipment and optionals.

PROGRAMMABLE AUTOMATIC PARTS-CATCHER

The automatic parts-catcher may be programmed through M-functions and allows the unloading of finished parts up to 250 mm long in automatic mode or idle time directly on to the parts conveyor.

A kit is available on request to unload longer shafts (up to 1 meter) through the sub-spindle.



STANDARD FEATURES

- 30° slant cast-iron bed
- 12-station Biglia servo-turrets
- Sub-spindle with axial traverse, equipped with ejector and air blow
- Bar-feeder interface
- Rigid tapping
- Automatic parts-catcher
- Finished parts conveyor
- Chip conveyor

- Coolant system featuring 7 bar pumps and filters
- Wash-down system to eliminate chippings
- Two colour alarm lamp
- Electrical cabinet - air conditioned

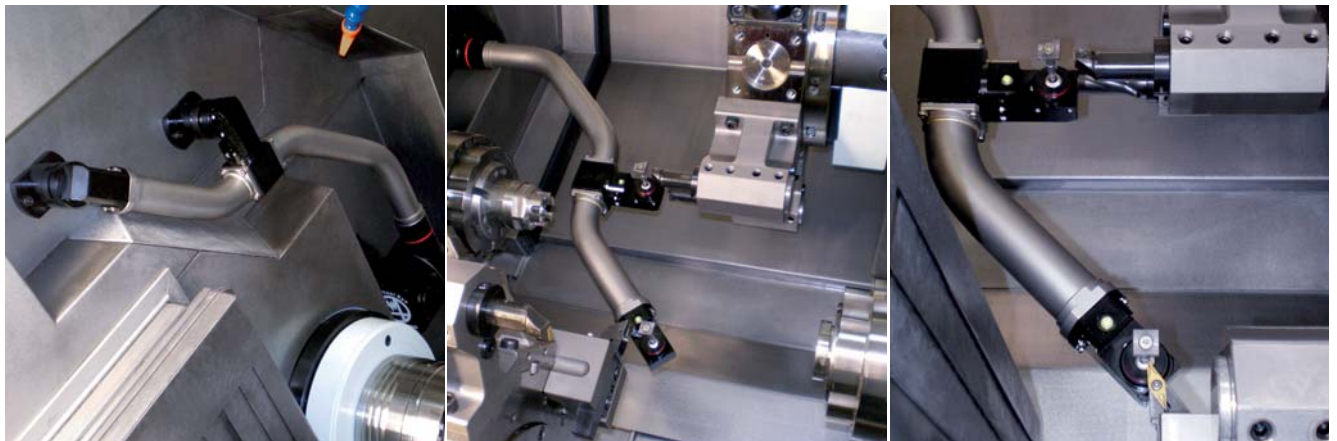
OPTIONAL MAIN FEATURES

- Tool probing system
- High-pressure pump (18/25 bar)
- Fume exhauster
- Manual Guide
- Polygon turning
- Biglia "Easy Cycles"
- SBS tool load monitoring system (sister tooling)

TOOL-SETTER

This device makes tool-setting faster and easier.

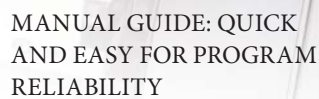
The two sensors allow to offset tools on both turrets, reducing setting-up time.



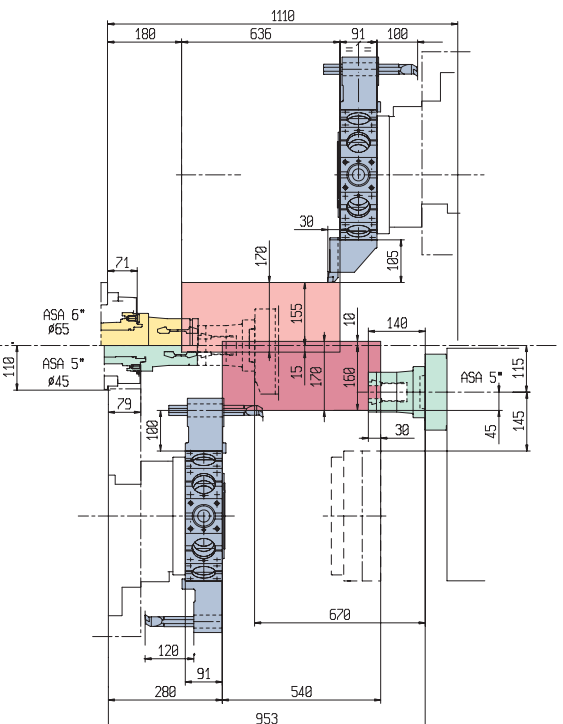
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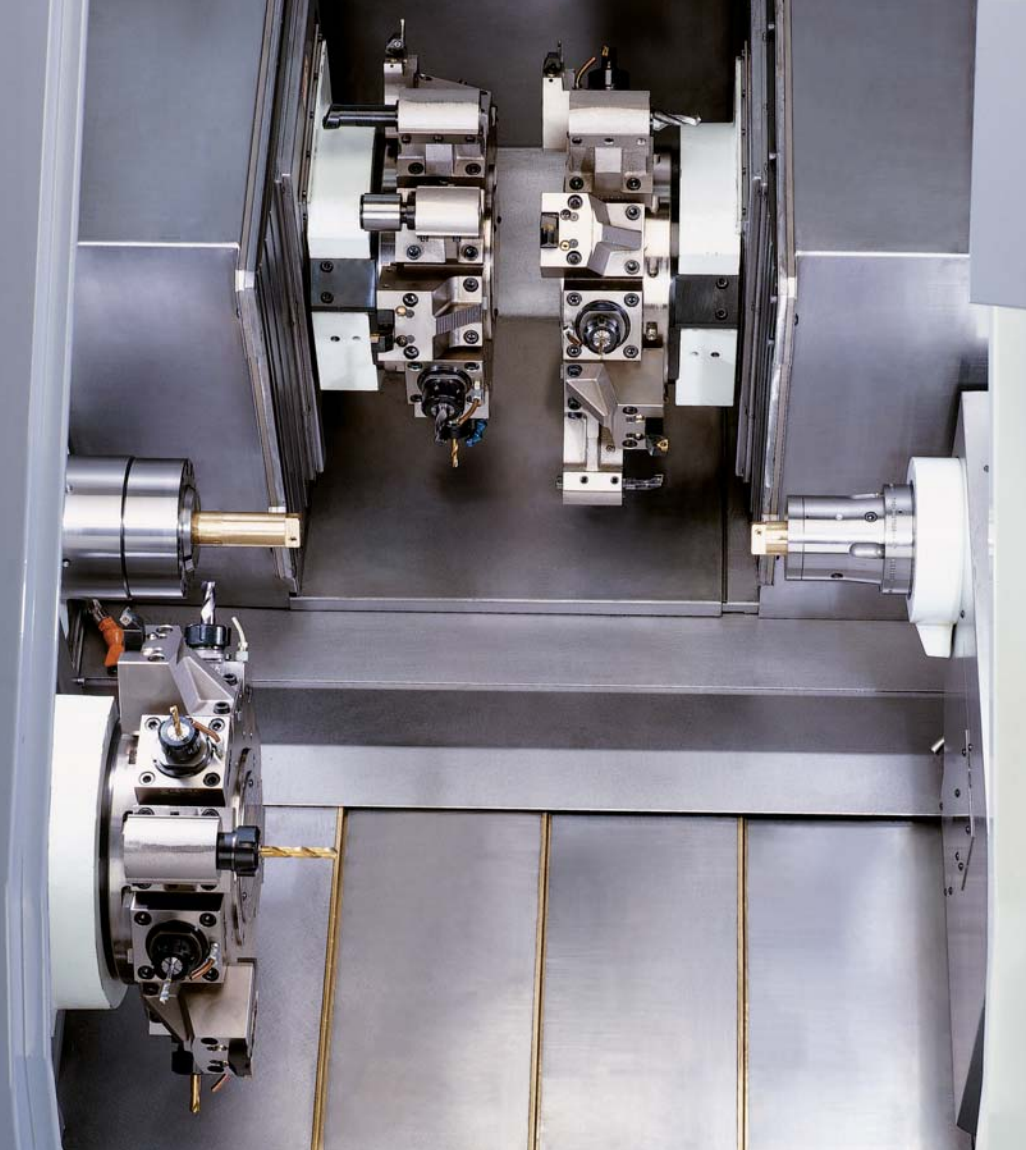
MANUAL GUIDE: QUICK
AND EASY FOR PROGRAM
RELIABILITY

CNC UNIT
CNC unit mod. Fanuc 31 i-T:
- 10.4" colour liquid crystal



- 10.4" colour liquid crystal display
- Alphanumeric full-keyboard
- Biglia operator panel featuring softkeys
- Data transmission: Ethernet gate, memory card, RS 232 port, USB.





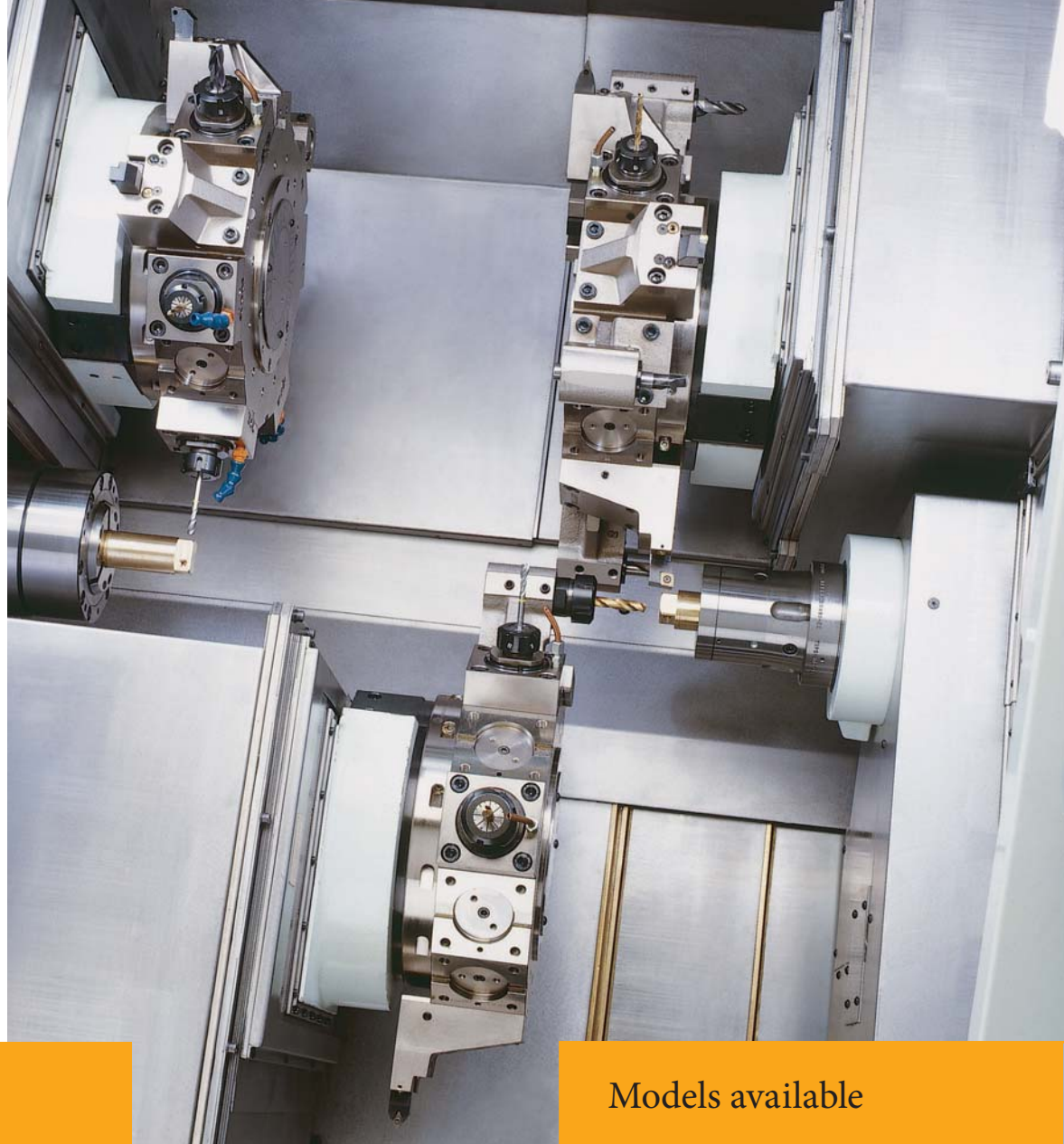
Double-spindle turning centres featuring three turrets and three Y-axes:
high productivity in machining complex parts

B446 T3 - B465 T3





ts from bar.



Models available

446-465 T3 Y2

- 3 turrets equipped with live tooling
- 2 Y-axes
- 2 spindles featuring C-axis

446-465 T3 Y3

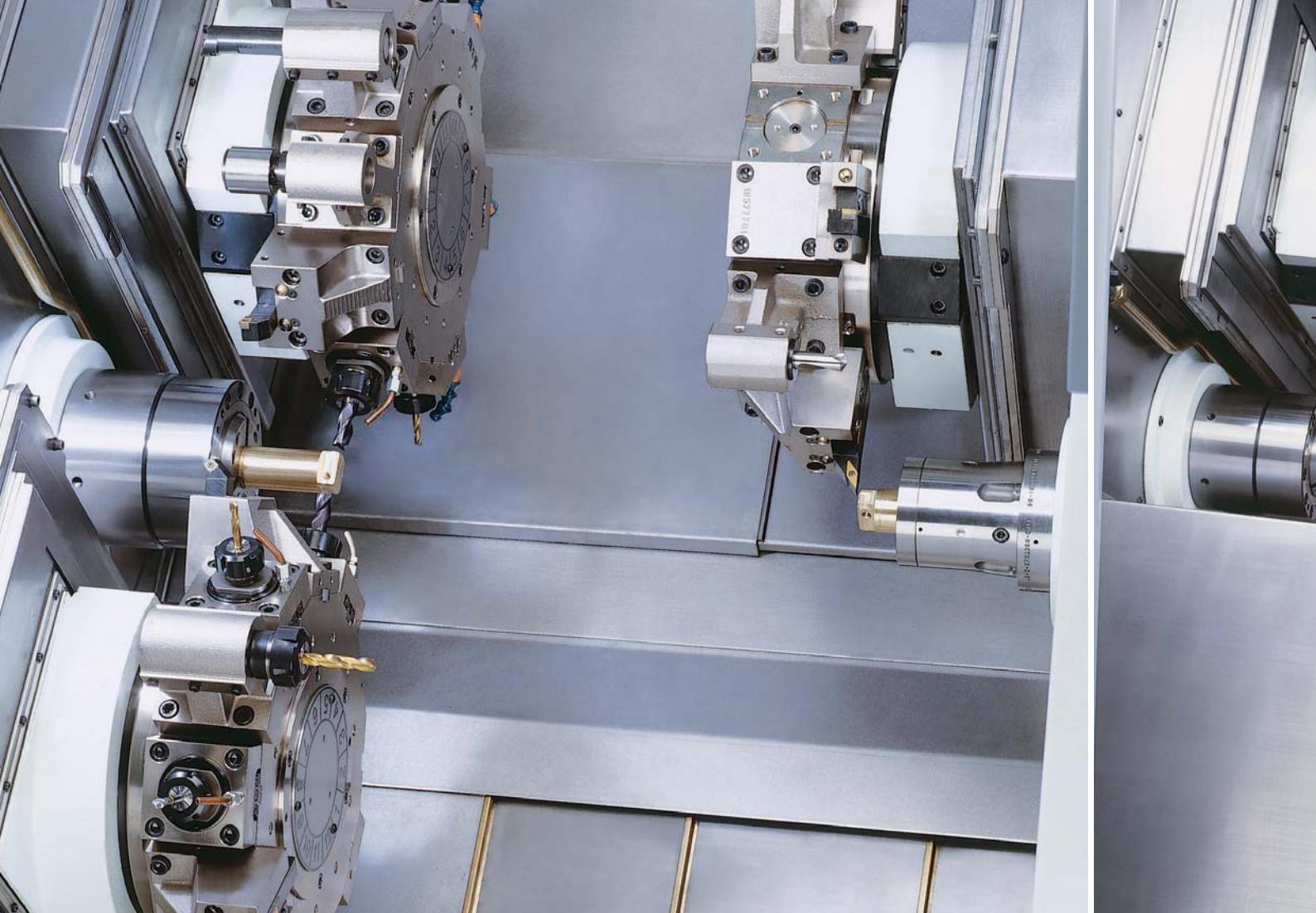
- 3 turrets equipped with live tooling
- 3 Y-axes
- 2 C-axes

The new QUATTRO T3 range of machines equipped with three turrets and fourteen axes is the latest product developed by Biglia in the field of high-performance twin-spindle bar turning centres. The three turrets can perform simultaneous machining using three tools at the same time, thus reducing cycle time drastically. Thanks to the design of the QUATTRO T3 range of machines, Biglia can achieve new competitive goals in bar machining of complex parts in medium-sized batches. The new QUATTRO T3 range comprises a wide range of alternative specifications and functions to match customers specific requirements and to enable flexible machining operations to be completed on a single machining centre. The main performance benefits

offered by the 30° slant bed and the robust machine components such as the structure, guides and turrets are:

- Great rigidity allowing to machine tough materials
- Reduction of cycle times and longer tool service life
- Up to 50 tools available for machining of complex parts and reduced set-up times
- Ergonomics and easy access for retooling operations
- Perfect removal of chippings.

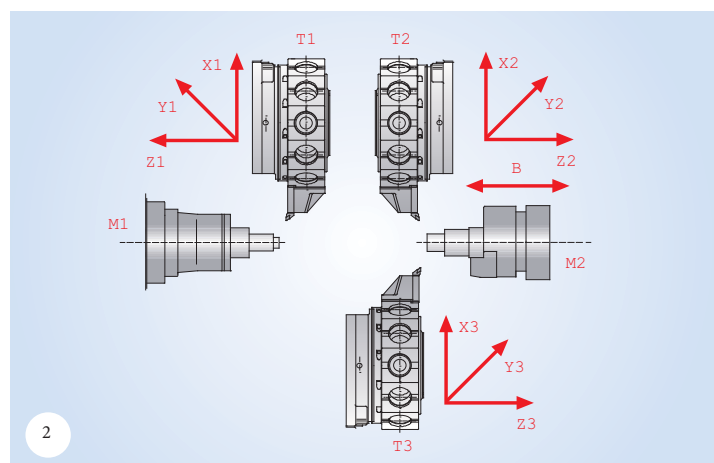
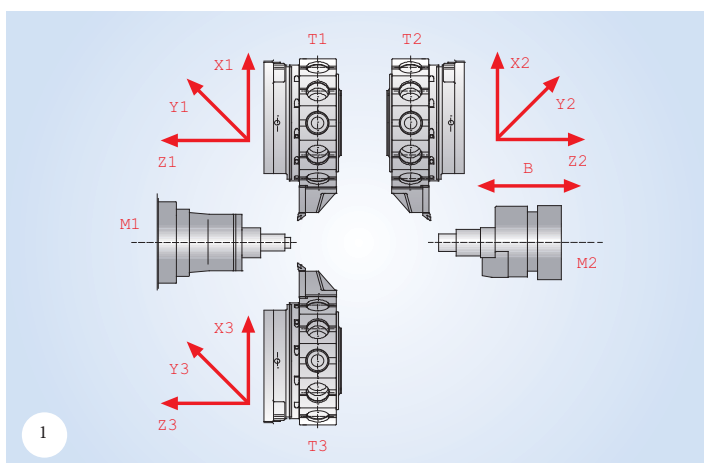


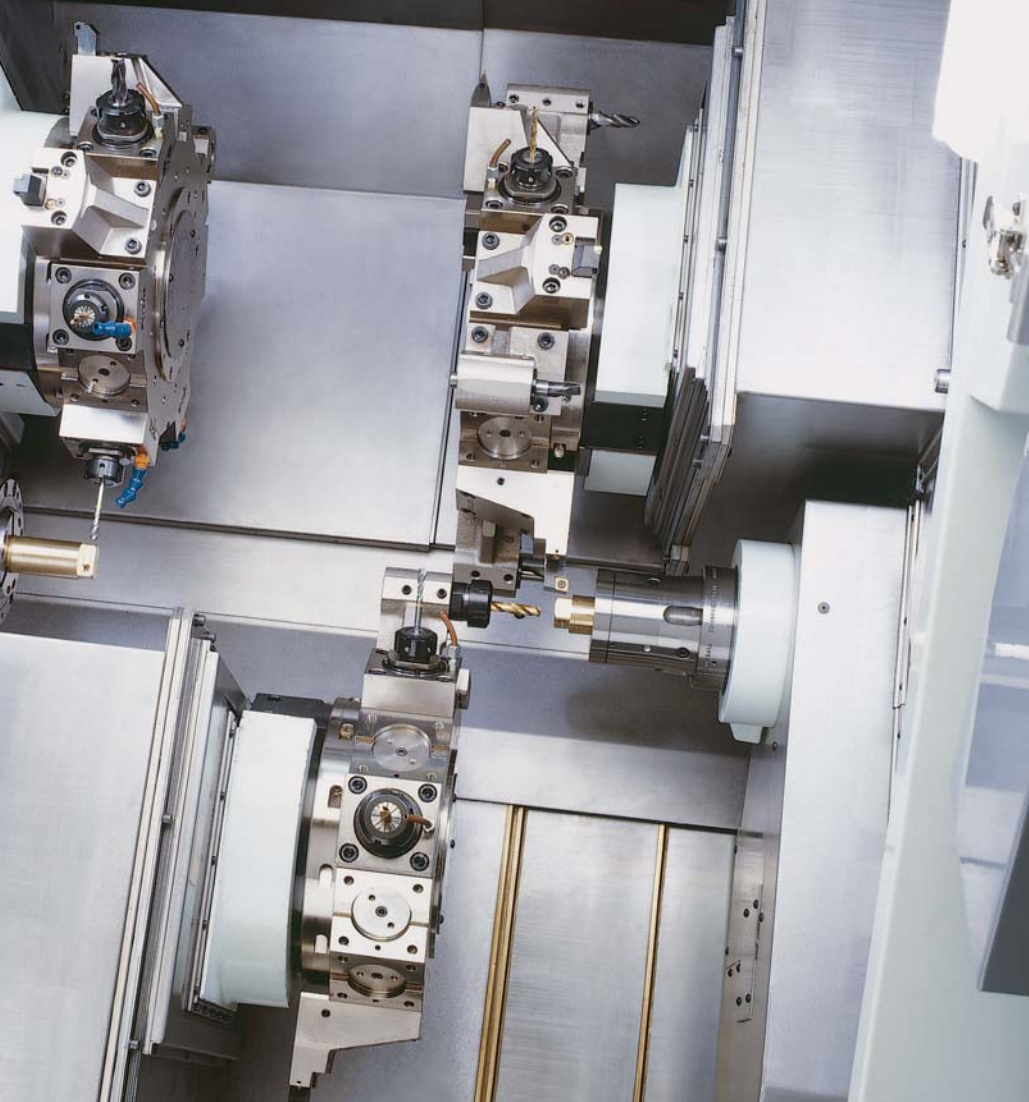


Generous machining area to achieve top-level performance.

- ① Simultaneous machining of T1 and T3 (four axis) on the main spindle and T2 on the sub-spindle
- ② Simultaneous machining of T1 on the main spindle and T2 and T3 (four axis) on the sub-spindle

Legend = M1: main spindle • M2: sub-spindle • T1: upper turret (left) • T2: upper turret (right) • T3: lower turret



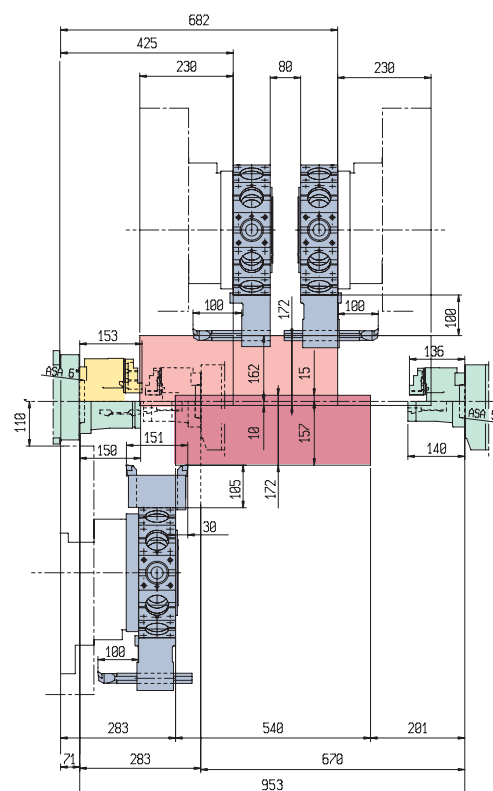


B446 T3 - B465 T3

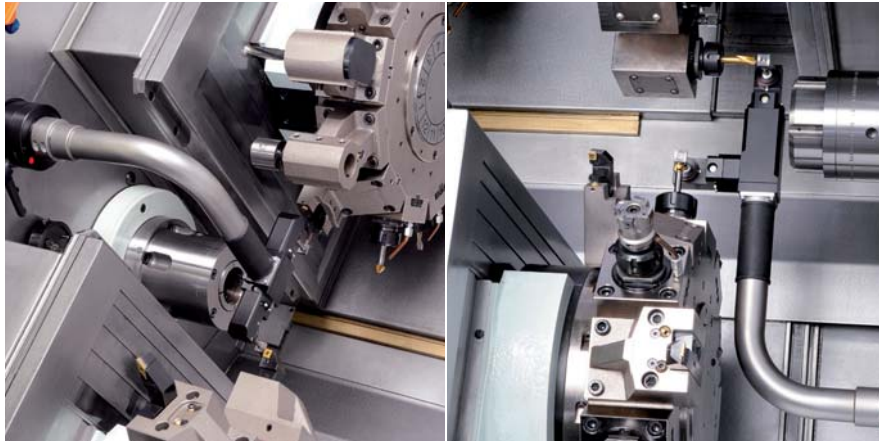
The main advantages are:

- Reduction of non-productive times up to 30% if compared to QUATTRO machines
- Automatic and simultaneous machining on both sides of any workpiece
- 4-axis turning using the third lower turret on main and sub-spindle for simultaneous operation
- Finished parts unloading is performed in idle time through both spindles.

The combination of 36 live tool stations, 3 Y-axes, 2 C-axes and the possibility to accept more than 50 tools enables the complete machining of complex parts with the highest flexibility.



Wide range
of equipment and optionals.



TOOL-SETTER

This device makes tool-setting faster and easier. The three sensors allow to offset tools on both turrets, reducing setting-up time.

STANDARD FEATURES

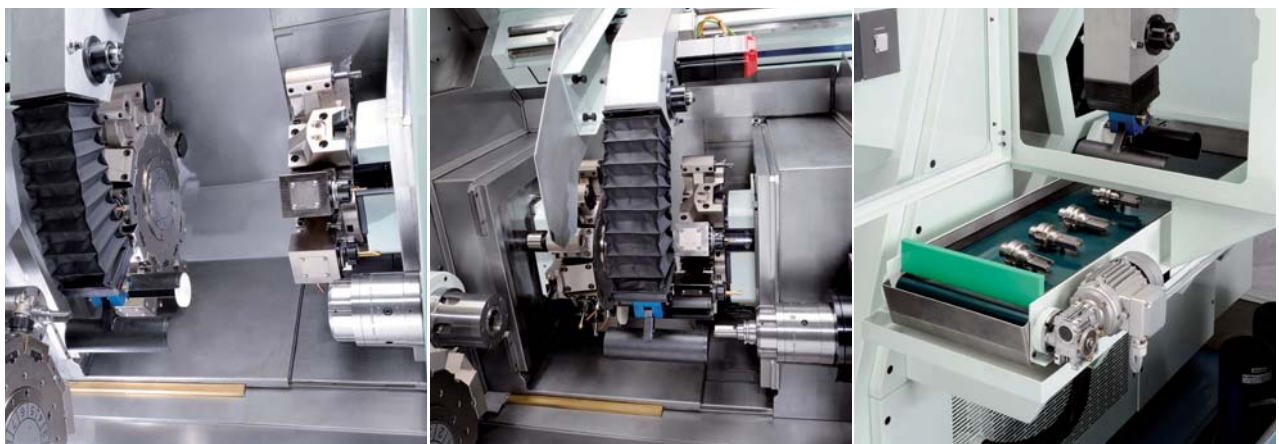
- 30° slant cast-iron bed
- 3x12-station Biglia servo-turrets
- Sub-spindle equipped with ejector and air blow
- Bar-feeder interface
- Rigid tapping
- CNC programmed automatic parts-catcher
- Finished parts conveyor
- Chip conveyor
- Coolant system featuring 7 bar pumps and filters
- Wash-down system to eliminate chippings
- Two colour alarm lamp
- Electrical cabinet - air conditioned

OPTIONAL MAIN FEATURES

- Tool probing system
- High-pressure pump (18/25/40 bar)
- Fume exhauster
- Manual Guide
- Polygon turning
- Biglia "Easy Cycles"
- SBS tool load monitoring system (sister tooling)

PROGRAMMABLE AUTOMATIC PARTS-CATCHER

The automatic parts-catcher may be programmed through M-functions and allows the unloading of finished parts up to 250 mm long in automatic mode or idle time directly on to the parts conveyor. A kit is available on request to unload longer shafts (up to 1 meter) through the sub-spindle.



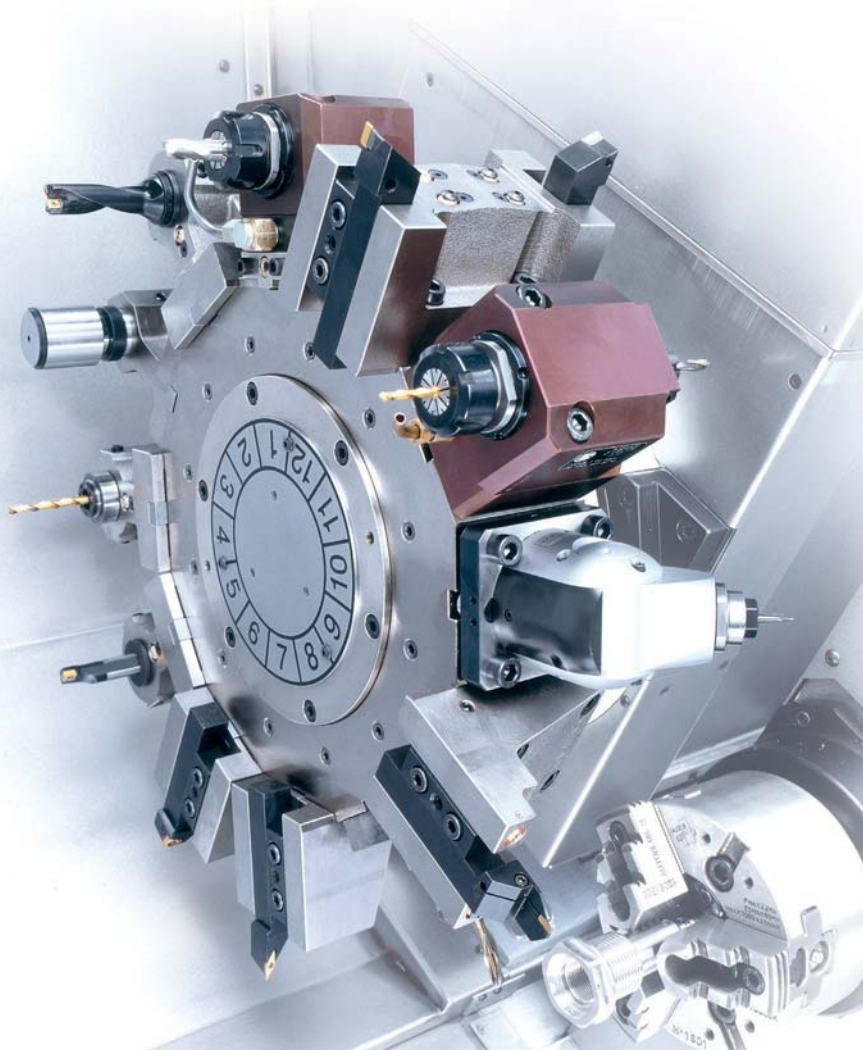
Automated process.



BIGLIA SERVO TURRETS

The rugged and quick Biglia 12-station turrets (index time 0.15 sec), all prepared to accept live tools, reduce idle-times and assure high rigidity and accuracy in machining.

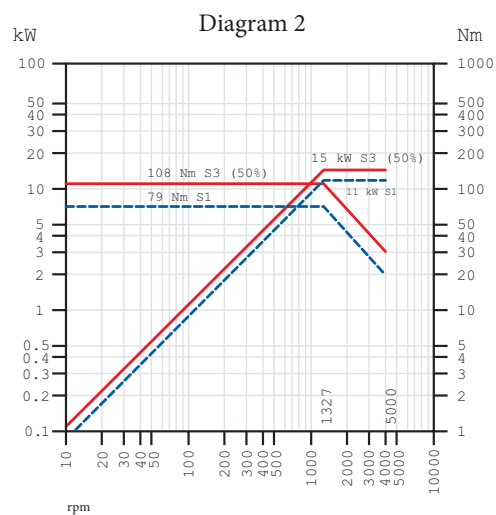
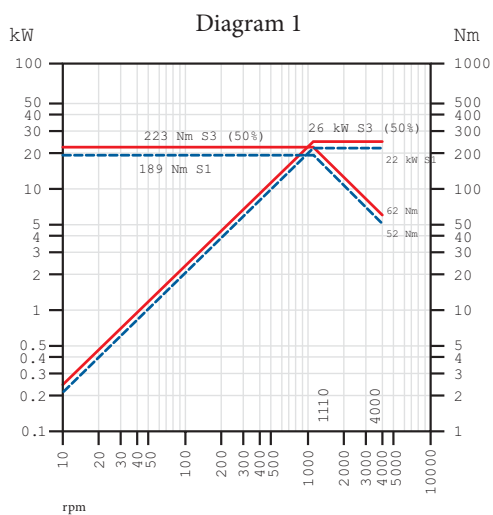
Up to 30 tools can be accepted for the simultaneous machining of complex parts.



T E C H N I C A L S P E C I F I C A T I O N S B446 T2 - B465 T2

		B446 T2	B465 T2
MACHINING CAPACITY			
Bar capacity	mm	45 (50)	65 (70)
Max. machining diameter	mm	230	230
Max. machining length	mm	250 (320)	250 (320)
Max. swing over diameter	mm	520	520
MAIN SPINDLE			
Max. speed	rpm	5000	4000
Spindle nose	ASA	5"	6"
Spindle bore	mm	55	80
Inside diameter of bearings	mm	80	110
Chuck diameter	mm	165/210	165/210
Motor power	kW	15 (diagram 2)	26 (diagram 1)
C axis: min. programmable value	°	0,001°	0,001°
SUB-SPINDLE			
Max. speed	rpm	5000	5000
Spindle nose	ASA	5"	5"
Spindle bore	mm	55	55
Drawtube inside diameter	mm	45	45
Inside diameter of bearings	mm	80	80
Chuck diameter	mm	165	165
Motor power (see diagram 3)	kW	11	11
C-axis: min. programmable value	°	0.001°	0,001°
Offset stroke	mm-m	115	115
B-axis: stroke - rapid traverse	mm-m/min	670 - 30	670 - 30
UPPER TURRET 1 - LOWER TORRET 2			
No of tools	N°	12	12
Turret indexing (1 pos)	sec	0,15	0,15
No of live tools	N°	12	12
Max. speed	rpm	4000	4000
Motor power (see diagram 4)	kW	3,7	3,7
X1-X2 axes: stroke - rapid traverse	mm-m/min	170 - 18	170 - 18
Z1-Z2 axes: stroke - rapid traverse	mm-m/min	636-540 - 30	636-540 - 30
Y1-Y2 axes: stroke - rapid traverse	mm-m/min	90 [-40/+50] - 9	90 [-40/+50] - 9
COOLING SYSTEM			
Tank capacity	l	400	400
Motor rating of 3 electropumps	kW	3,7	3,7
DIMENSIONS AND WEIGHT			
Machine with swarf conveyor	mm	4530 x 2110 x 2210 h	
Spindle centre height	mm	1060	1060
Machine weight with swarf conv.	kg	7900	8100

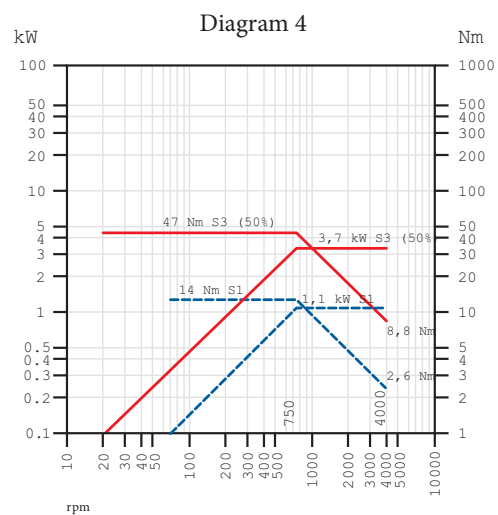
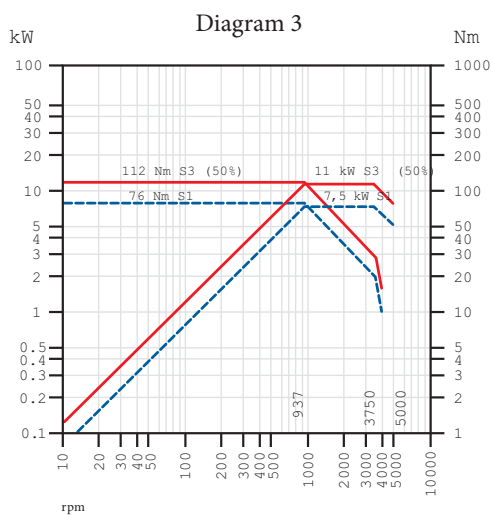
() Option






TECHNICAL SPECIFICATIONS - B446 T3 - B465 T3

		B446 T3	B465 T3
MACHINING CAPACITY			
Max. diam. lavorabile da barra	mm	45 (50)	65 (70)
Max. diametro lavorabile da ripresa	mm	230	230
Max. lunghezza lavorabile	mm	250 (320)	250 (320)
Max. diametro rotante	mm	520	520
MAIN SPINDLE			
Max. speed	rpm	5000	4000
Spindle nose	ASA	5"	6"
Spindle bore	mm	55	80
Inside diameter of bearings	mm	80	110
Chuck diameter	mm	165/210	165/210
Motor power	kW	15 (diagram 2)	26 (diagram 1)
C axis: min. programmable value	°	0,001°	0,001°
SUB-SPINDLE			
Max. speed	rpm	5000	5000
Spindle nose	ASA	5"	5"
Spindle bore	mm	55	55
Drawtube inside diameter	mm	45	45
Inside diameter of bearings	mm	80	80
Chuck diameter	mm	165	165
Motor power (see diagram 2)	kW	11	11
C-axis: min. programmable value	°	0,001°	0,001°
B-axis: stroke - rapid traverse	mm-m/min	670 - 30	670 - 30
UPPER TURRET (1-left)			
UPPER TURRET (2-right)			
LOWER TURRET 3			
No of tools	N°	12	12
Turret indexing (1 pos)	sec	0,15	0,15
No of live tools	N°	12	12
Max. speed	rpm	4000	4000
Motor power (see diagram 4)	kW	3,7	3,7
X1-X2-X3 axes: stroke - rapid traverse	mm-m/min	172 - 18	172 - 18
Z1-Z2 axes: stroke - rapid traverse	mm-m/min	230 - 30	230 - 30
Z3 axis: stroke - rapid traverse	mm-m/min	540 - 30	540 - 30
Y1-Y2-Y3 axes: stroke - rapid traverse	mm-m/min	90 [-40/+50] - 9	90 [-40/+50] - 9
COOLING SYSTEM			
Tank capacity	l	400	400
Motor rating of 4 electropumps	kW	4,8	4,8
DIMENSIONS AND WEIGHT			
Machine with swarf conveyor	mm	4530 x 2110 x 2210 h	
Spindle centre height	mm	1060	1060
Machine weight with swarf conveyor	kg	8200	8400

() Option




»» 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	B1200SM	B1200YS	
	B1700	B1700M	B1700Y			

»» MULTITURRET BAR TURNING

	B436Y2					
	B446T2S	B446T2S2M	B446T2Y	B446T2Y2	B446T3Y2	B446T3Y3
	B465T2S	B465T2S2M	B465T2Y	B465T2Y2	B465T3Y2	B465T3Y3

»» INTEGRATED TURN-MILL OPERATIONS

	SMART TURN		SMART TURN S			



THE TURNING TECH