CNC TURNING CENTRES

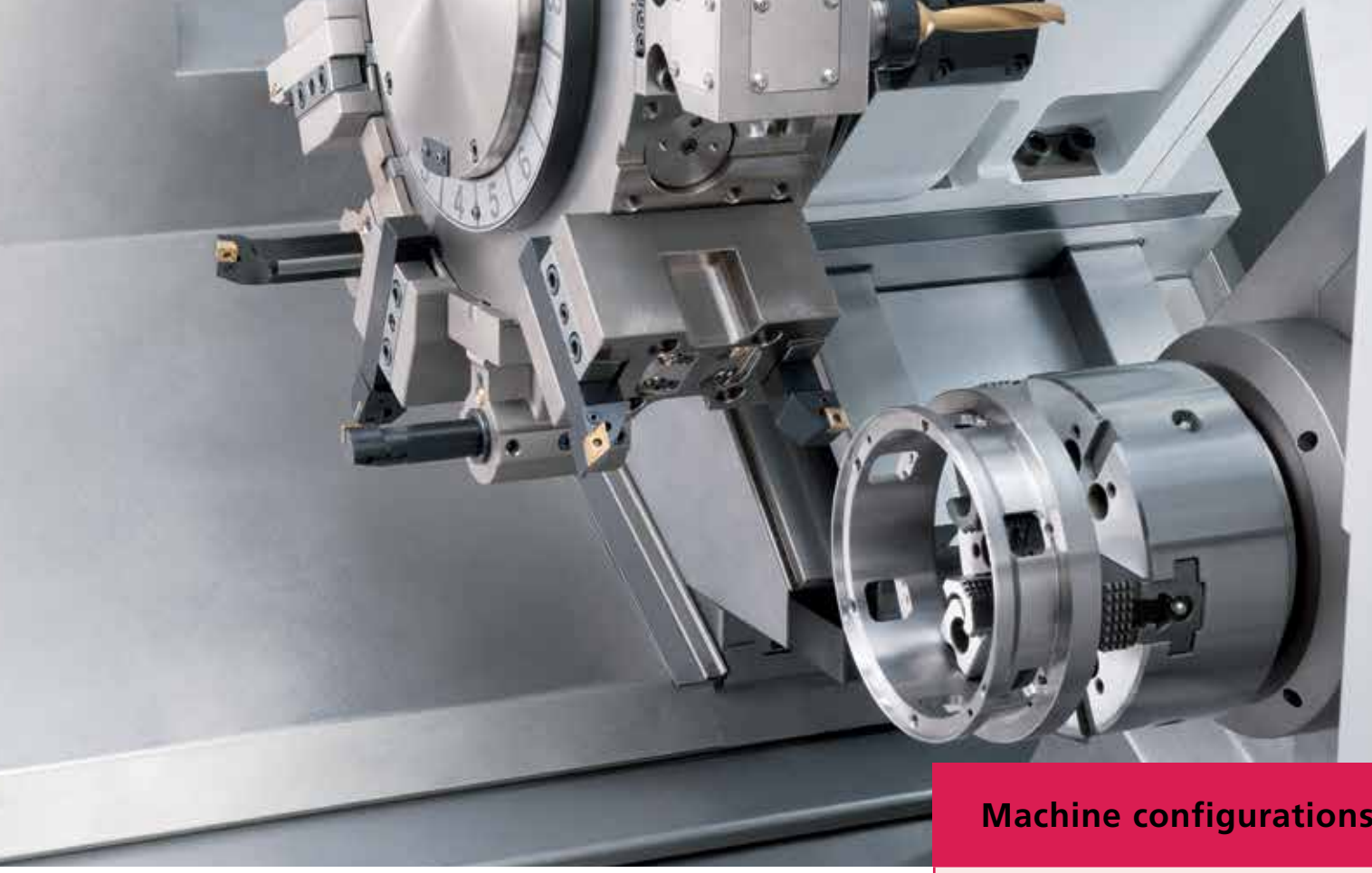
B750 | B1250

Biglia

Cutting edge technology and unequalled productivity.

B750

Biglia



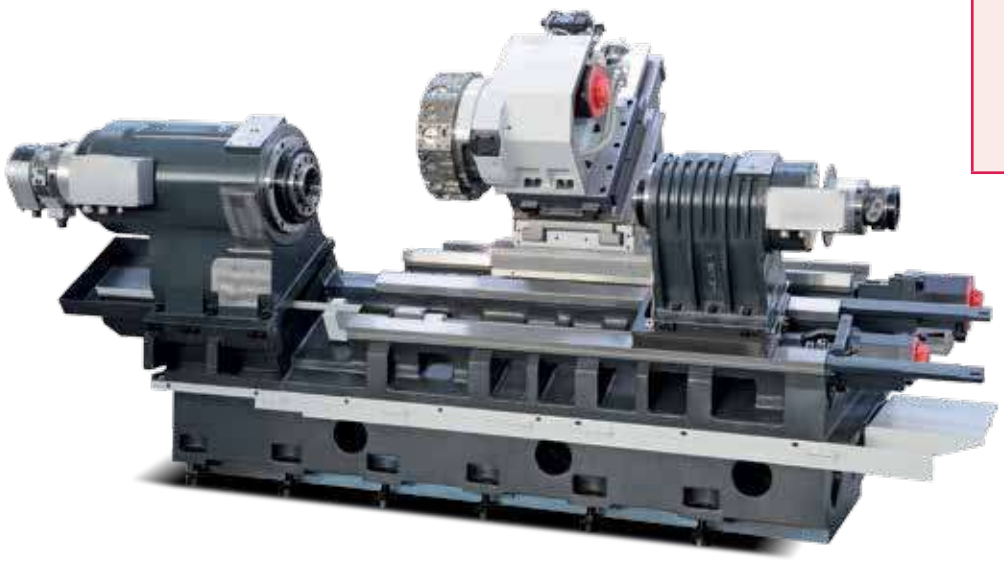
The new B750/B1250 series represents the “state of the art” of multifunction turning centres. The new turret with direct drive built-in motor is the heart of this range of machines. Available in 10 versions featuring 750 mm or 1250 mm turning length, this line of machines provides a wide spectrum of machining possibilities ranging from universal turning to complete machining of complex parts thanks to the CNC automatic tailstock, sub-spindle, rotary tools and C/Y axis.

More accuracy

Delivered by the rugged bed designed for higher heat stability, and the thermal stabilisation of the main heat sources such as spindles, turret and hydraulic unit.

More productivity

Thanks to the massive rigid cast-iron machine bed and the flat hardened and ground slide-ways on all axes ensuring high rigidity and exceptional vibration dampening. The fast indexing, sturdy BIGLIA servo-turret, and the high capability of chip removal in both turn and mill operations is enabled by the new powerful servo motors.



Machine configurations

B750 / B1250
- Standard machine with CNC automatic tailstock

B750M / B1250M
- Rotary tools (12/16)
- C-axis
- CNC automatic tailstock

B750SM / B1250SM
- Rotary tools (12/16)
- C-axis on the main spindle
- C-axis on the second spindle

B750Y / B1250Y
- Rotary tools (12/16)
- C-axis
- Y-axis
- CNC automatic tailstock

B750YS / B1250YS
- Rotary tools (12/16)
- C-axis on the main spindle
- Y-axis
- C-axis on the second spindle

Great versatility and superb chip removal.

B1250

Biglia

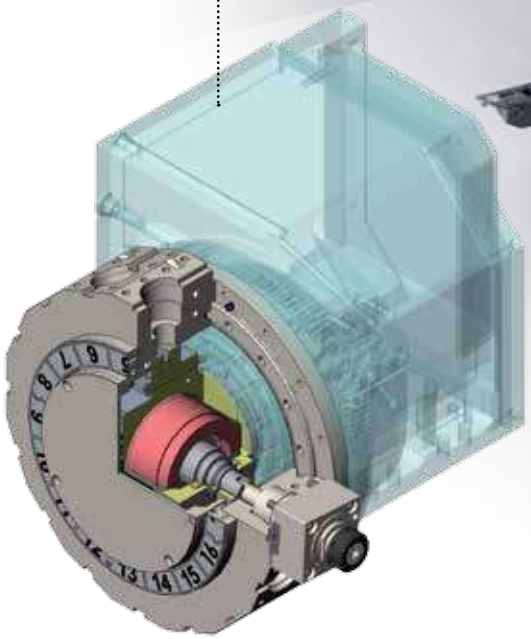
Both B1250 and B750 machines are equipped with the same turrets and X/Y slides. The B1250 is particularly suitable for the machining of long shafts. This machine features a long bed with a longitudinal stroke of 1310 mm and a sturdy CNC automatic tailstock with a 115 mm hydraulic quill. The B1250 can accept two versions of automatic steady-rests: "in-cycle" version with positioning by the Z-axis slide; "travelling" version operated by the axis motor.

Thermal stability

To minimize dimensional changes and maintain the accuracy in the long-run, the temperature of the main heat sources (integral motor-spindles, hydraulic unit) is controlled by a cooling unit.

Servo-turret with built-in motor.

17,5 kW
56 Nm
10000*rpm

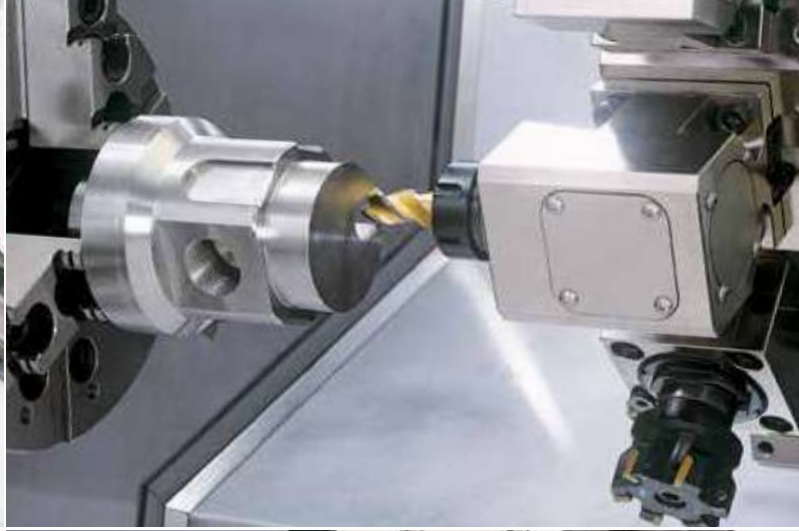


New Biglia servo-turret with direct drive.

The quick BIGLIA 12- or 16-station servo-turret (index time 0,3 sec.), featuring a large HIRTH coupling (230 mm diam.), can accept up to 34 tools that can work simultaneously. The new live tooling system is the main feature of this new turret, with the rotary motion being transmitted by the built-in motor, integrated in the tool plate, directly to the rotary tool.

* Max. spindle speed limited to 6000 rpm by standard rotary tools.

Biglia



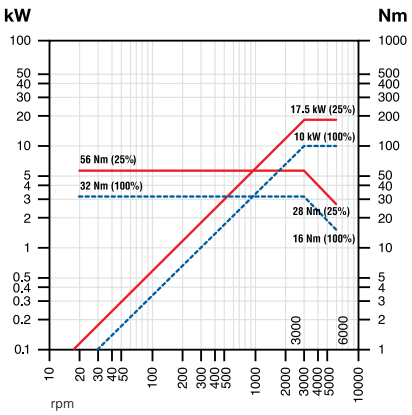
Live tools

This new turret equipped with a cooled direct drive built-in spindle motor (10-17,5 kW - max. 10000* rpm) to drive the rotary tools represents the main feature of the new B750/B1250 series.
The kinematic chain has been eliminated. The motion is now transmitted by a direct coupling between the integrated motor and the rotary tool.
The main advantages are:

- REDUCTION OF VIBRATION DAMPENING
- ELIMINATION OF POWER LOSS AND MECHANICAL PLAY
- REDUCTION OF HEAT

This innovative concept ensures high rigidity, exceptional surface finish, superb chip removal and restricted noise.

Live tools



Machining capability - Material C40 (M-SM-Y-YS versions)

MACHINING WITH LIVE TOOLS					
MILLING			**DRILLING**		
Face mill diameter	mm	40	Insert drill diameter	mm	30
No. of 45° inserts	N°	4	Spindle speed	rpm	800
Spindle speed	rpm	1600	Cutting speed	m/min	85
Axial cutting depth	mm	3	Feed rates	mm/min	120
Radial cutting depth	mm	32	Feed rates	mm/rew	0,1
Cutting speed	m/min	200	Volume of swarf removal	cm^3/min	56,5
Feed rate	mm/min	765	**TAPPING**		
Volume of swarf removal	cm^3/min	73	Tap	mm	20x1,5

* Max. spindle speed limited to 6000 rpm by standard rotary tools.

Spindles

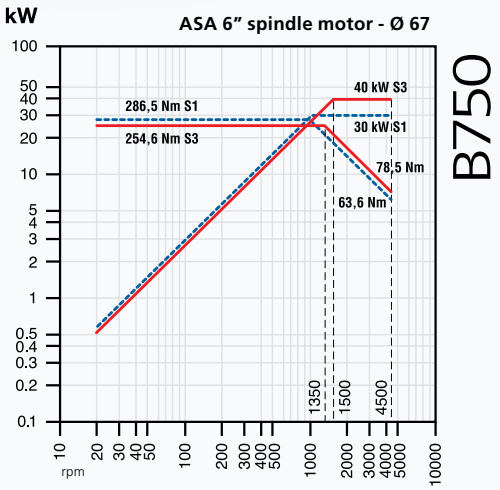
The B750/B1250 range of machines is equipped with liquid cooled built-in motor spindles, with the exception of the B1250, this machine comes with the standard spindle configuration. Available with bar capacity of 65 up to 102 mm, the BIGLIA integral motor-spindles are driven by powerful (22 to 38 kW) and high torque (286 to 1014 Nm) motors.
Also, the combination of the roller and ball bearings plus the high torque and power range available at low rpm allow superb chip removal rates as well as exceptional surface finish and roundness accuracy.

AVAILABLE SPINDLE SIZES				
Motor spindles	Bore (mm)	rpm*	kW*	Nm*
ASA 6"	67	4500	40	286
ASA 8"	82	3500	22	700
ASA 8"	95/102,5	3000	38	1014
Belt-type spindle	Bore (mm)	rpm*	kW*	Nm*
ASA 8"	102,5	2800	30	772

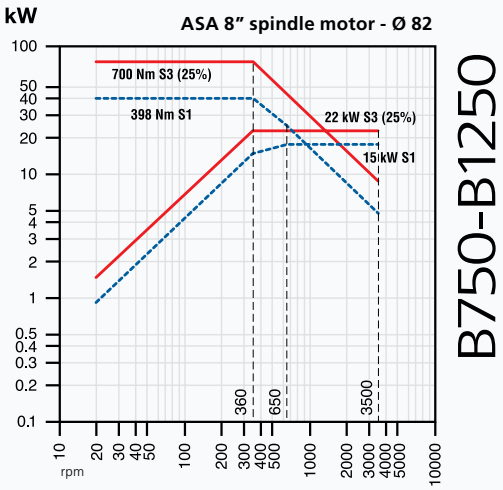
* Max. performance

P O W E R T O R Q U E D I A G R A M

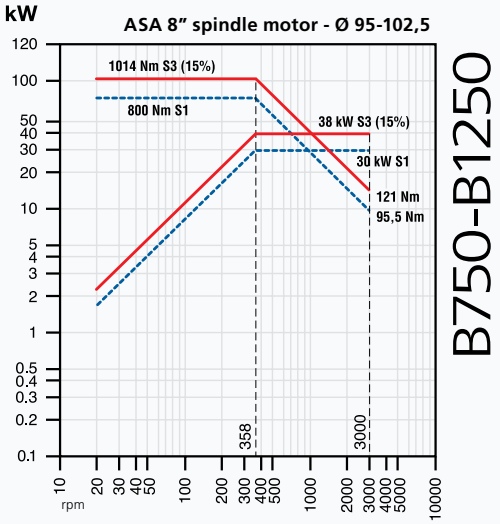
MAIN SPINDLES



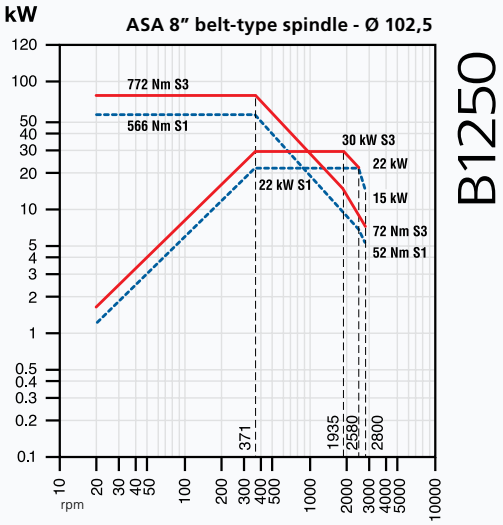
B750



B750-B1250

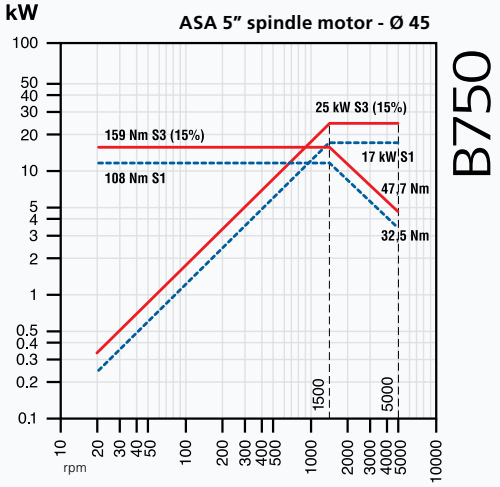


B750-B1250

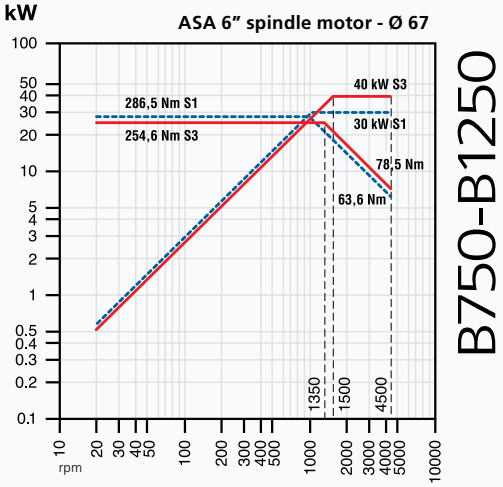


B1250

SUB-SPINDLES



B750



B750-B1250

Wide range of equipment and optionals.

Standard features

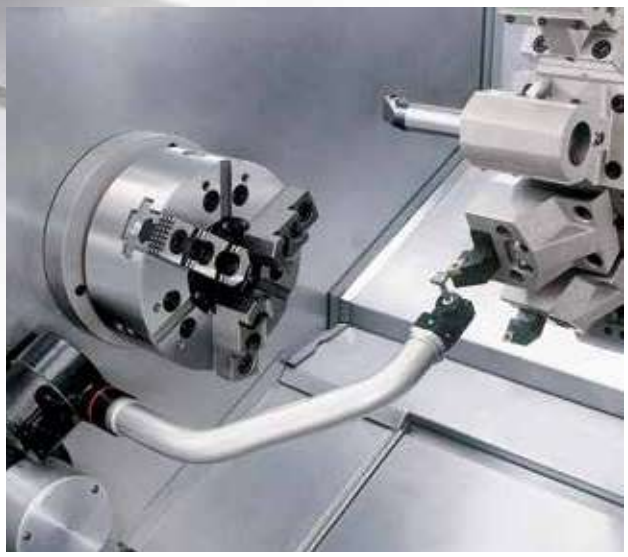
- Cast-iron machine bed
- 12/16 position BIGLIA servo-turret
- Tooling kit (toolholders & bushings)
- Cooling system
- Chip conveyor
- Two color alarm lamp
- Coolant supply (medium pressure) including filter
- Electrical cabinet air conditioned

Optional features

- Tool setter
- High pressure coolant
- Rotating tailstock
- Coolant filter
- Kit for bar machining
- Finished parts conveyor
- Oil skimmer
- Moist exhauster
- SBS tool load monitoring system
- Automatic door

Sub-spindle

The work-piece is automatically transferred from the main to the sub-spindle to allow the complete machining process on both sides. The sub-spindle is equipped with B-axis load detection system and pneumatic ejector to check presence of the component (option) which allows you to perform safe machining operations.



Tool-setter (option)

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.

Kit for bar machining (option)

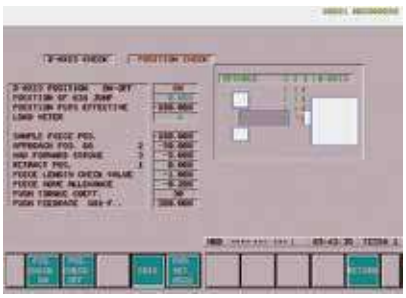
It includes the automatic parts-catcher to unload finished parts and the models equipped with the sub-spindle. Also feature the pneumatic ejector with wash-down system to clean the clamping device.

Wide range of equipment and optionals.

Tailstock with hydraulic quill (B1250).

CNC automatic tailstock
(standard feature on base, M and Y models)

Both B750 and B1250 range of machines are equipped with the tailstock body that slides on flat slide-ways. Positioning is fully automatic.
On the B750, the tailstock is operated by a servo motor and ballscrew (B axis). This solution improves operating flexibility since position and thrust are CNC-controlled. It can also be used to perform simultaneously both drilling and turning (option).
On the B1250, the tailstock is positioned by the turret-holding carriage (Z-axis). The stroke of the 115 mm diameter hydraulic quill is 150 mm.
A rotating tailstock integrated to the quill is offered as an option on both B750/B1250.



Tailstock thrust monitoring.

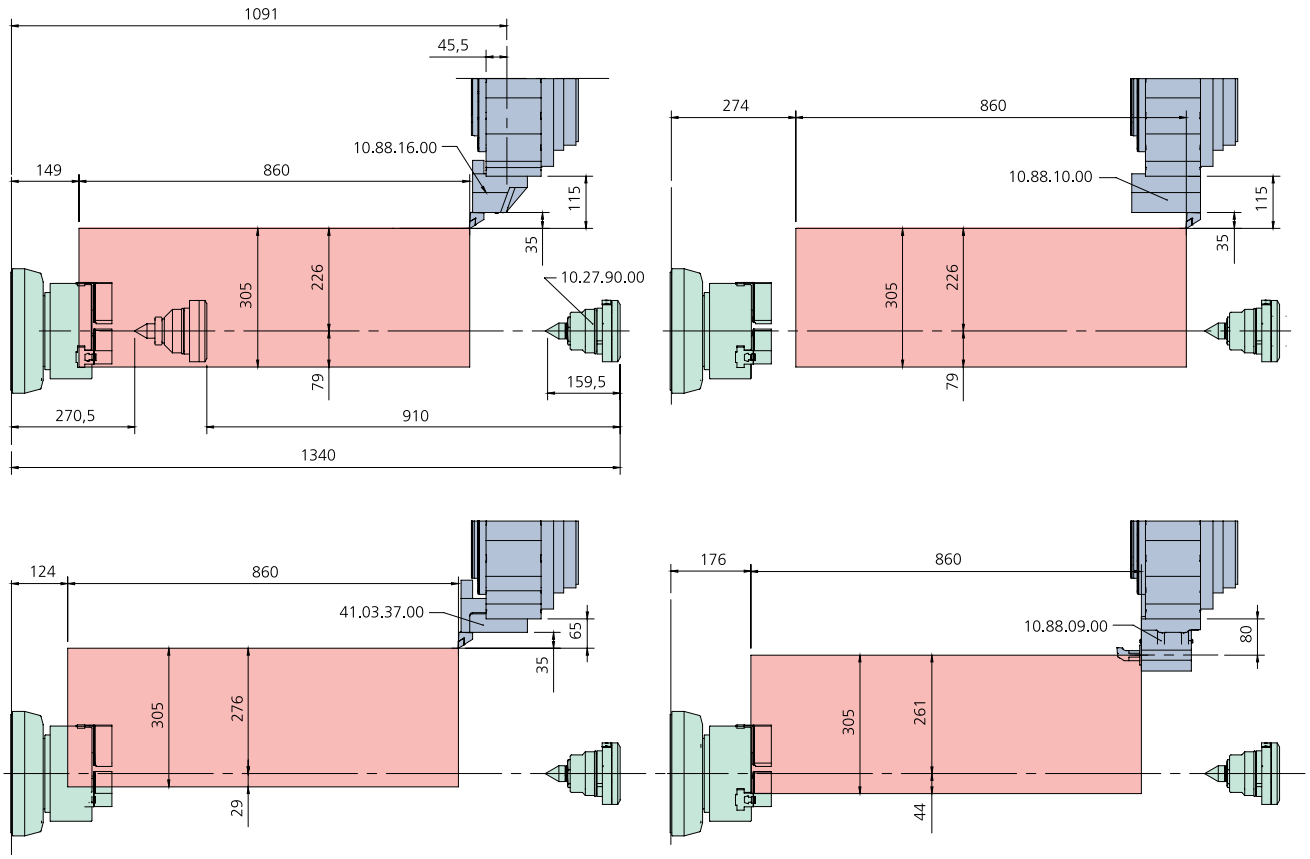
"B" axis tailstock (Standard on B750 / Option on B1250).

Automatic steady-rest
(option on B1250 only)

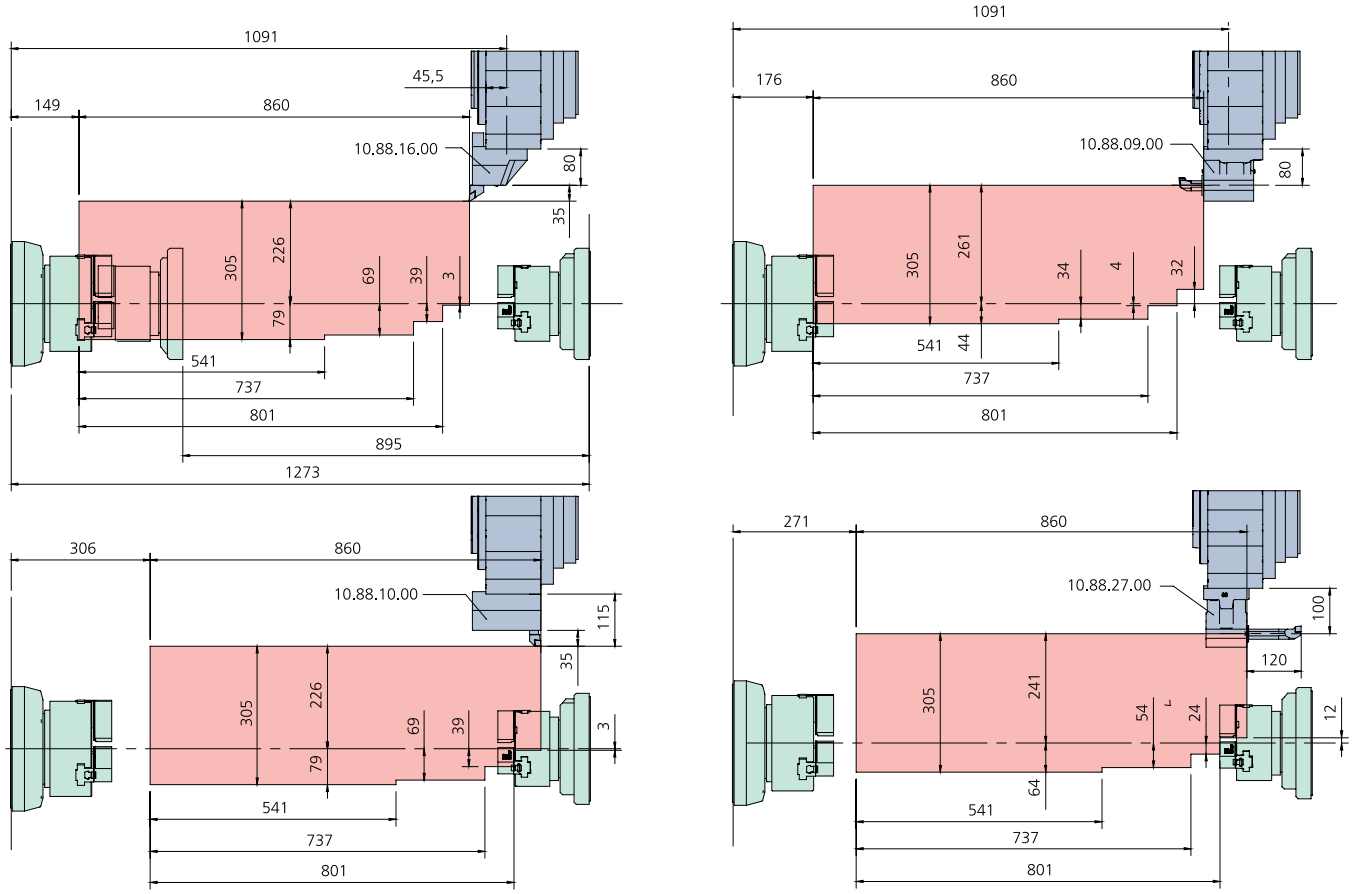
The automatic and self-centre steady-rest is suitable for shaft ranging up to 240 mm diameter.
Positioning as well as opening and closing of the arms is programmable.
The steady-rest can be single or double and is available in two versions:

- "in cycle" version with positioning by the Z-axis slide,
- "travelling" version operated by the axis motor. The movement can be synchronized or independent from the Z-axis slide.

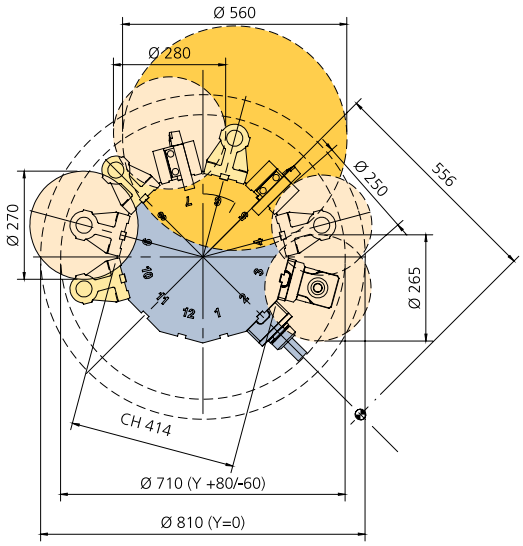
TURNING FIELD WITH TAILSTOCK B750 - 16-station turret



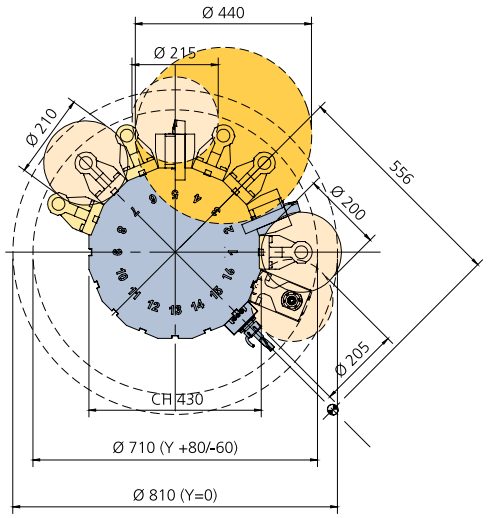
TURNING FIELD WITH SUB-SPINDLE B750 - 16-station turret



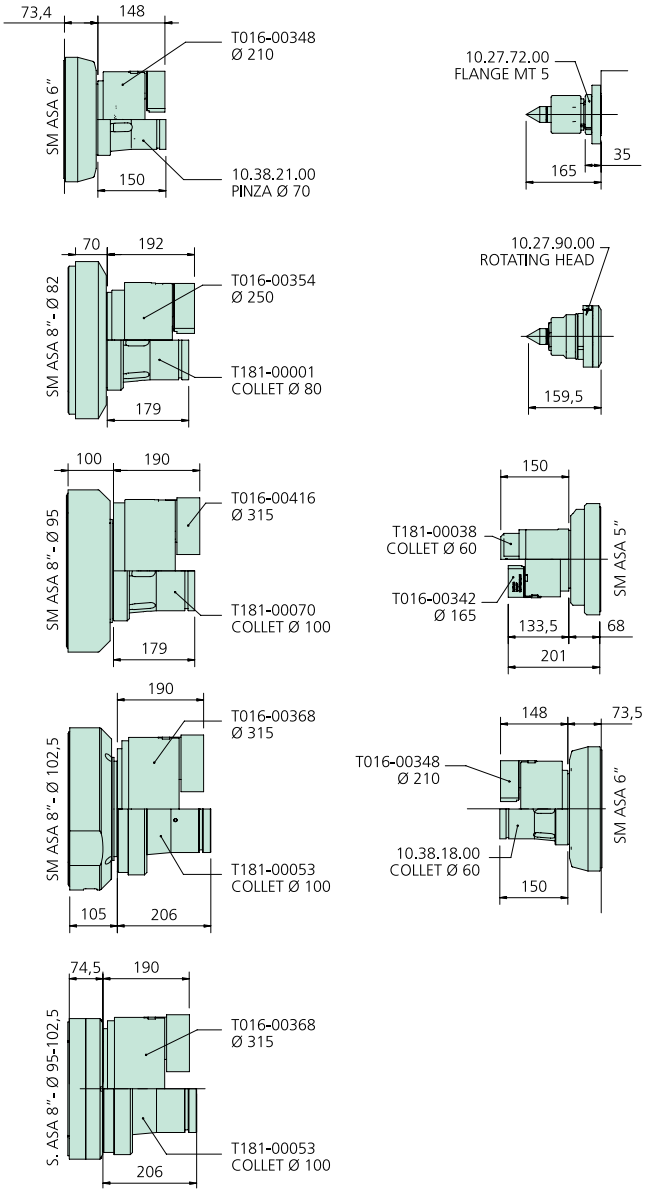
12-STATION TURRET B750 - B1250



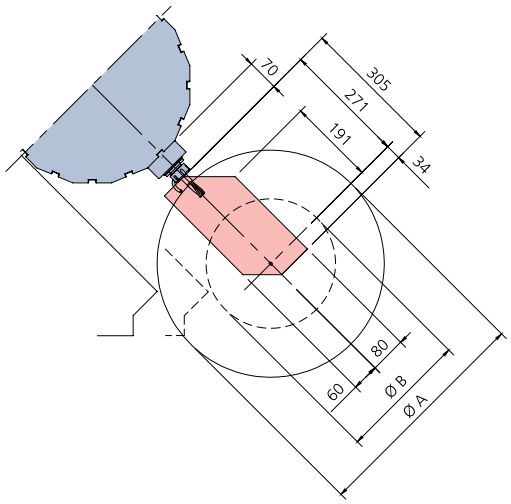
16-STATION TURRET B750 - B1250



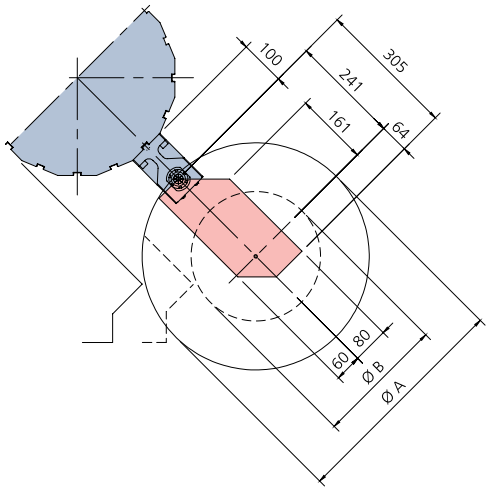
AREA OF FRONT PART OF THE SPINDLE B750 - B1250



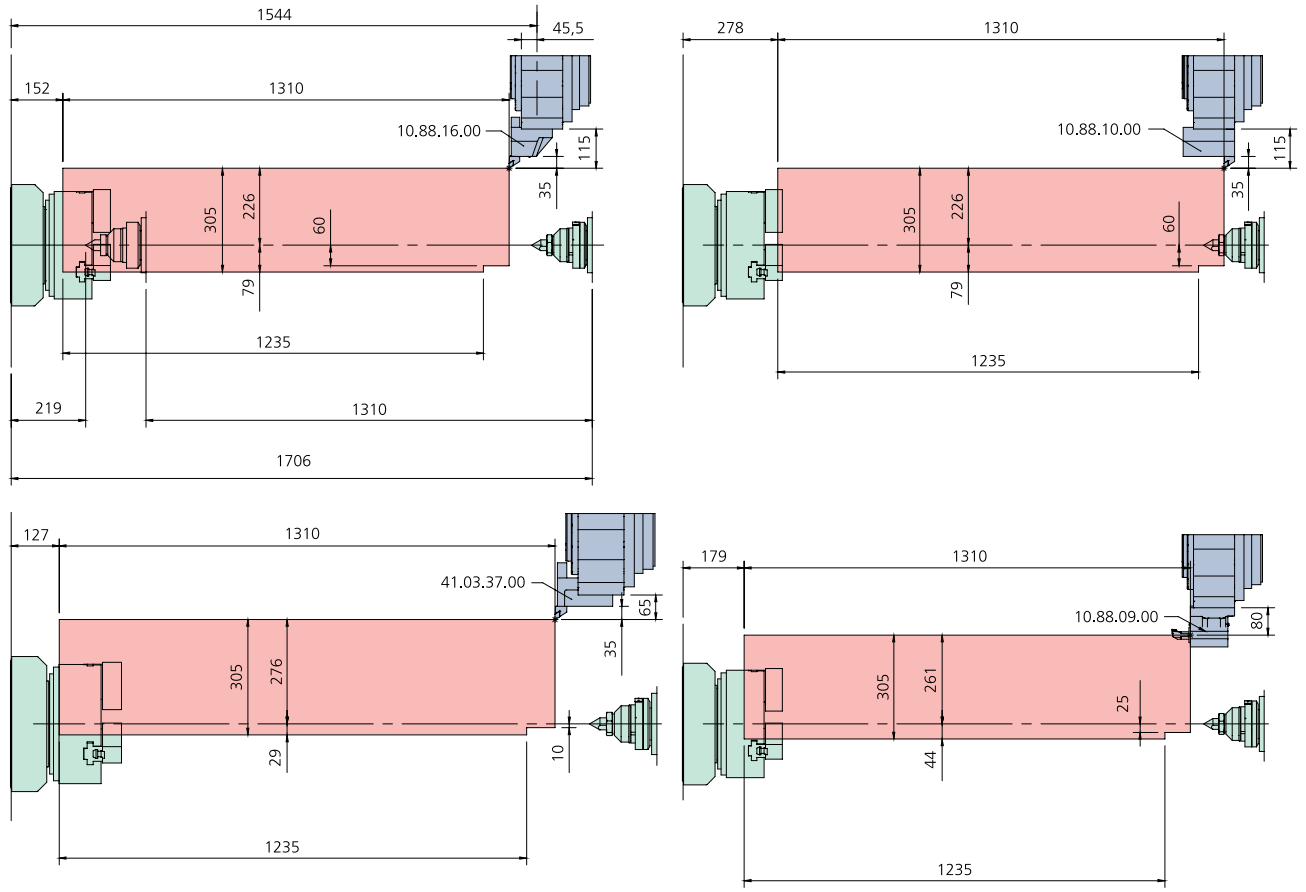
MILLING FIELD SPINDLE B750 - B1250



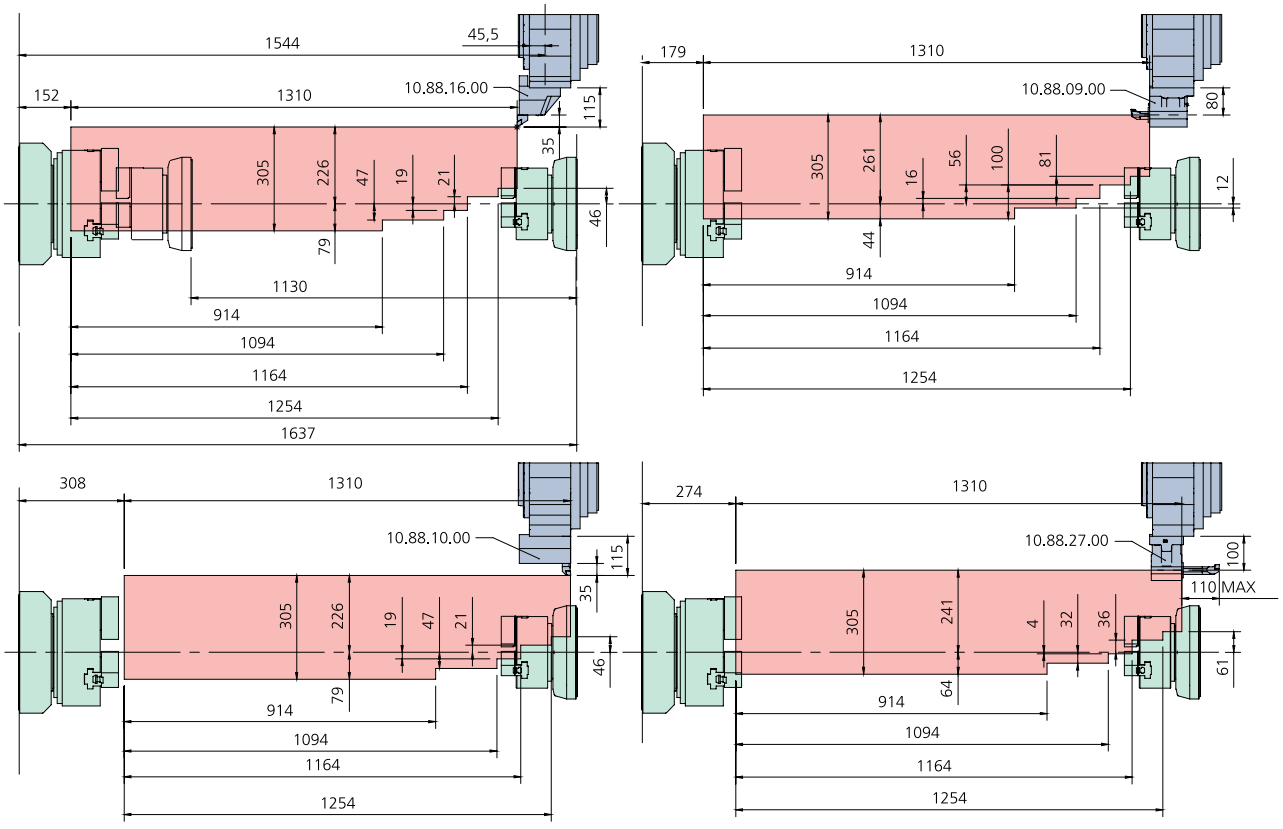
A= 500 mm max. swing diameter
with turret in Y0
B= 285 mm max. swing diameter
with turret in Y+= 80 mm



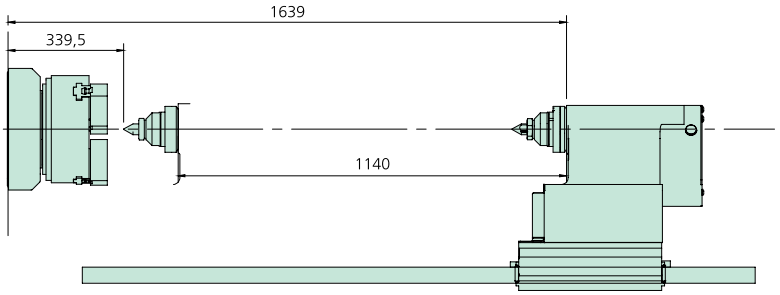
TURNING FIELD WITH TAILSTOCK - 16-station turret



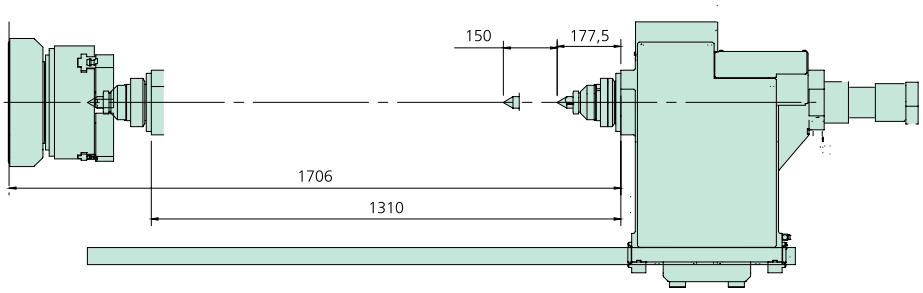
TURNING FIELD WITH SUB-SPINDLE - 16-station turret



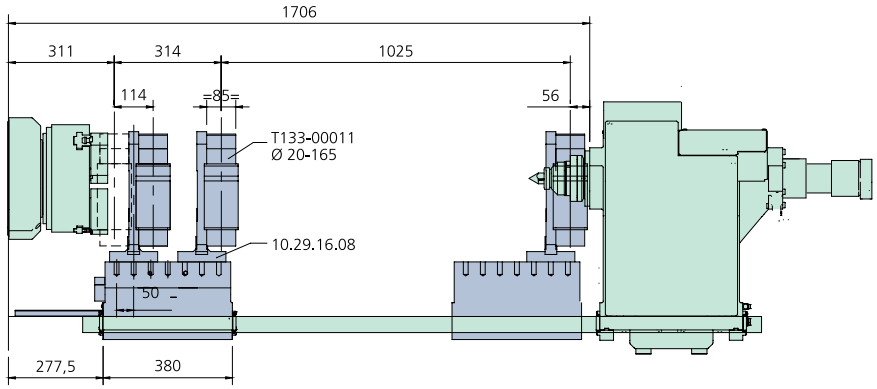
B-AXIS TAILSTOCK



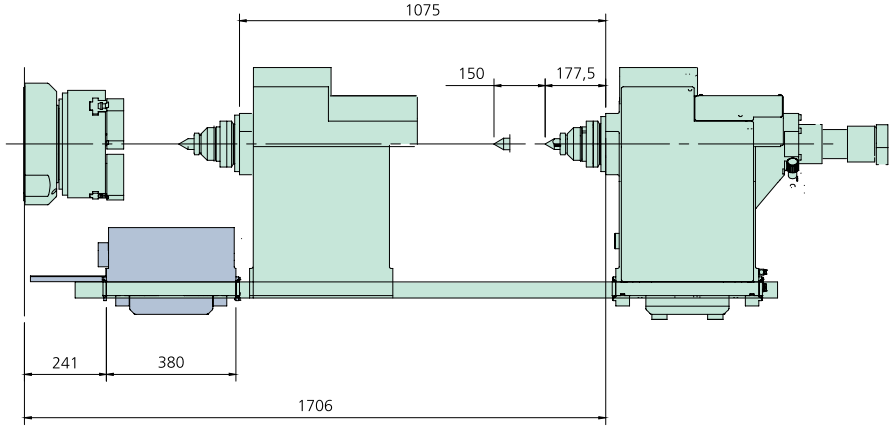
TAILSTOCK



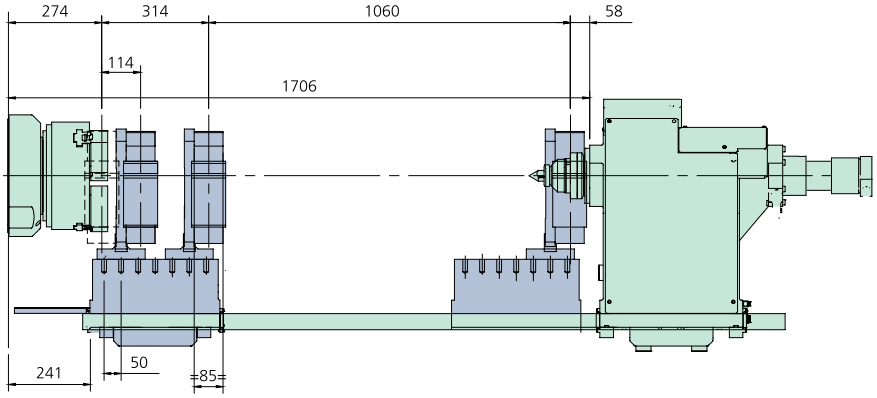
TRAVELLING STEADY-REST

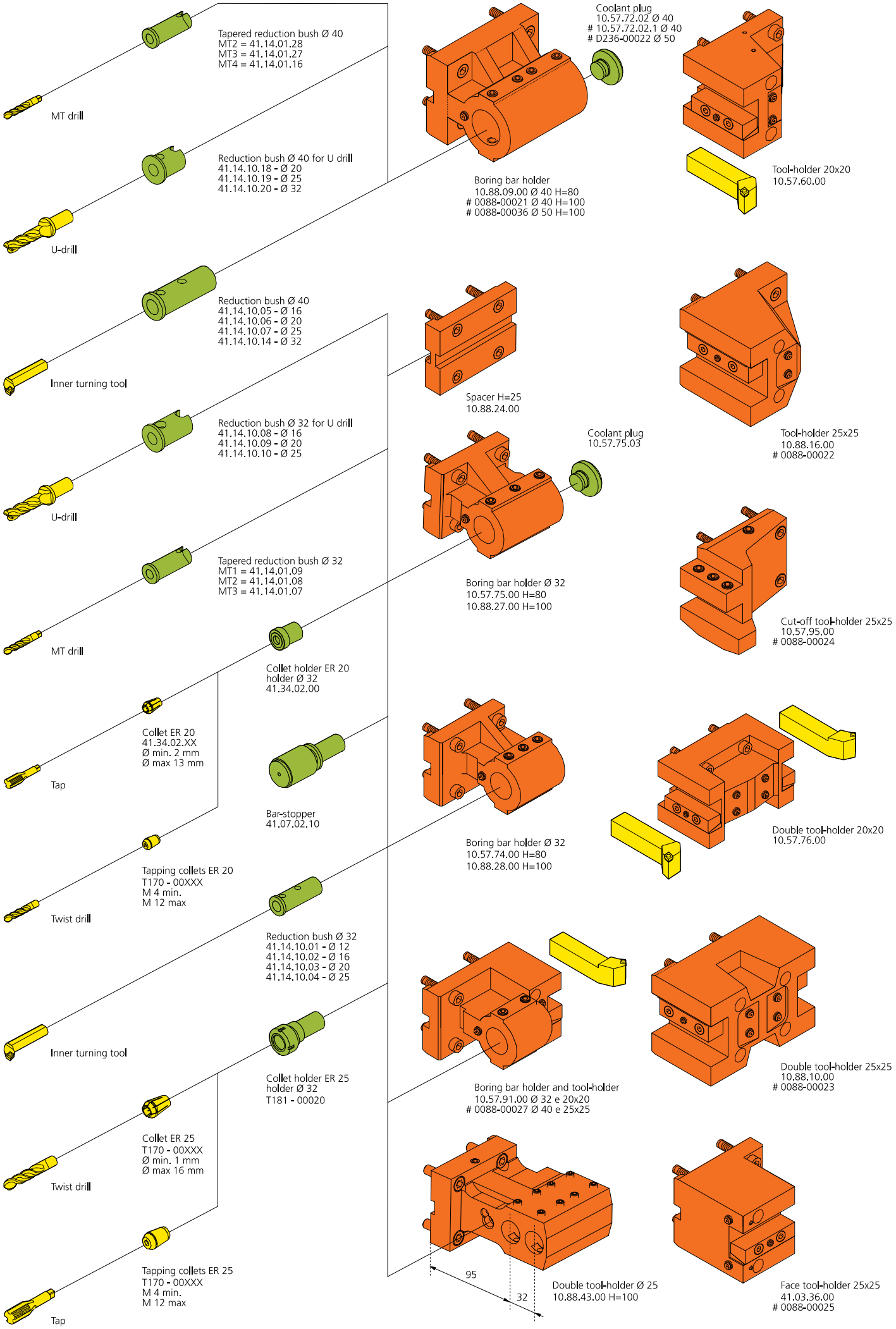


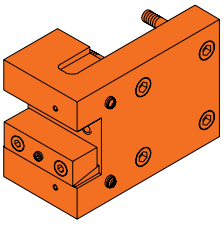
TAILSTOCK AND STEADY-REST



IN-CYCLE STEADY-REST




Tapered reduction bush Ø 40
MT2 = 41.14.01.28
MT3 = 41.14.01.27
MT4 = 41.14.01.16
MT drill
Reduction bush Ø 40 for U drill
41.14.10.18 - Ø 20
41.14.10.19 - Ø 25
41.14.10.20 - Ø 32
U-drill
Reduction bush Ø 40
41.14.10.05 - Ø 16
41.14.10.06 - Ø 20
41.14.10.07 - Ø 25
41.14.10.14 - Ø 32
Inner turning tool
Reduction bush Ø 32 for U drill
41.14.10.08 - Ø 16
41.14.10.09 - Ø 20
41.14.10.10 - Ø 25
U-drill
Tapered reduction bush Ø 32
MT1 = 41.14.01.09
MT2 = 41.14.01.08
MT3 = 41.14.01.07
MT drill
Collet holder ER 20
holder Ø 32
41.34.02.00
Collet ER 20
41.34.02.XX
Ø min. 2 mm
Ø max 13 mm
Tap
Bar-stopper
41.07.02.10
Tapping collets ER 20
T170 - 00XXX
M 4 min.
M 12 max
Twist drill
Reduction bush Ø 32
41.14.10.01 - Ø 12
41.14.10.02 - Ø 16
41.14.10.03 - Ø 20
41.14.10.04 - Ø 25
Inner turning tool
Collet holder ER 25
holder Ø 32
T181 - 00020
Collet ER 25
T170 - 00XXX
Ø min. 1 mm
Ø max 16 mm
Twist drill
Tapping collets ER 25
T170 - 00XXX
M 4 min.
M 12 max
Tap
Coolant plug
10.57.72.02 Ø 40
10.57.72.02.1 Ø 40
D236-00022 Ø 50
Boring bar holder
10.88.09.00 Ø 40 H=80
0088-00021 Ø 40 H=100
0088-00036 Ø 50 H=100
Tool-holder 20x20
10.57.60.00
Spacer H=25
10.88.24.00
Tool-holder 25x25
10.88.16.00
0088-00022
Coolant plug
10.57.75.03
Boring bar holder Ø 32
10.57.75.00 H=80
10.88.27.00 H=100
Cut-off tool-holder 25x25
10.57.95.00
0088-00024
Boring bar holder Ø 32
10.57.74.00 H=80
10.88.28.00 H=100
Double tool-holder 20x20
10.57.76.00
Boring bar holder and tool-holder
10.57.91.00 Ø 32 e 20x20
0088-00027 Ø 40 e 25x25
Double tool-holder 25x25
10.88.10.00
0088-00023
95
32
Double tool-holder Ø 25
10.88.43.00 H=100
Face tool-holder 25x25
41.03.36.00
0088-00025



Double-tool-holder 25x25
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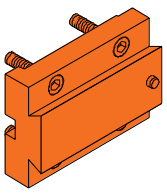
0088-00026



Base for multiple-holder
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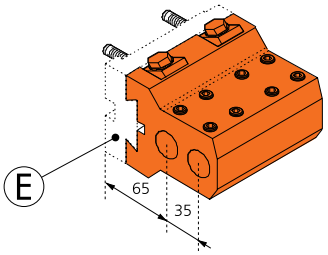
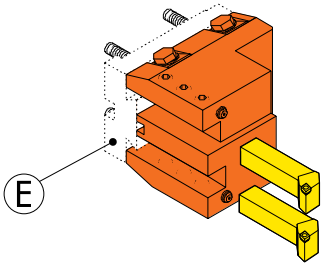
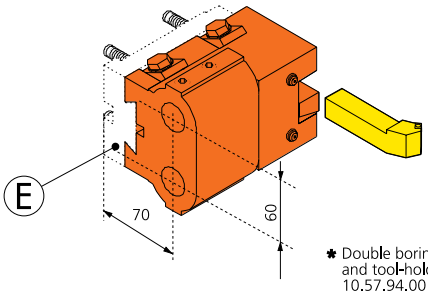


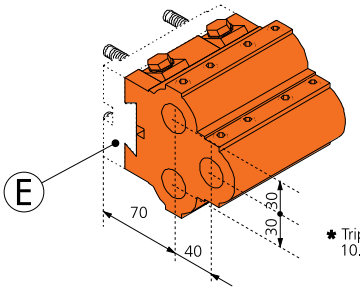
Double boring bars Ø25
41.03.29.00



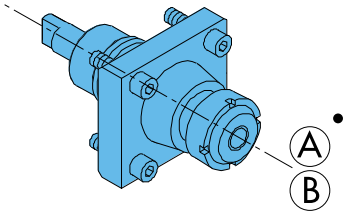
✱ Vertical double tool-holder
41.03.25.00



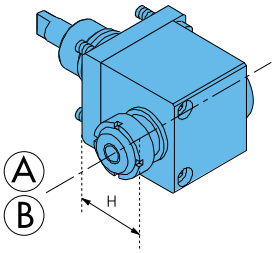
✱ Double boring bars Ø25
and tool-holder 20x20
10.57.94.00



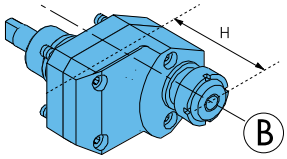
✱ Triple boring bar holder Ø 25
10.57.93.00



Radial live-spindle
10.57.88.00 ER25
T134-00061 ER32
● ■ T134-00092 ER32
■ T134-00089 ER32
T134-00139 ER32
T134-00140 ER40

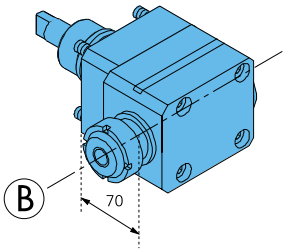


Axial live-spindle
H=70 10.57.87.00 ER25
H=70 T134-00062 ER32
H=100 T134-00076 ER25
H=100 T134-00077 ER32
● ■ H=100 T134-00088 ER32
■ H=70 T134-00093 ER32
H=90 T134-00141 ER32
H=90 T134-00142 ER40



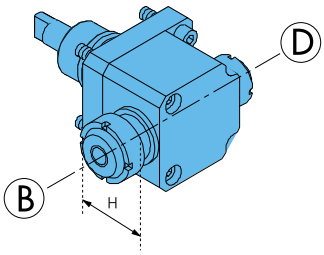
Radial live-spindle
8000 rpm
H=108 T134-00026

12000 rpm
H=70 T134-00060

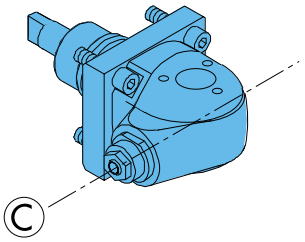


Axial live-spindle
8000 rpm
T134-00027

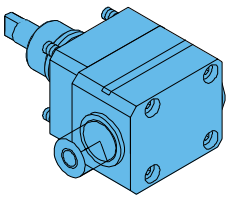
12000 rpm
T134-00070



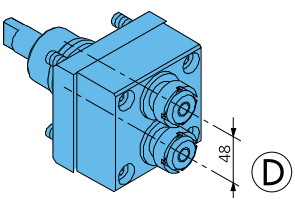
Axial live-spindle, double
H=70 T134-00024
H=100 T134-00094



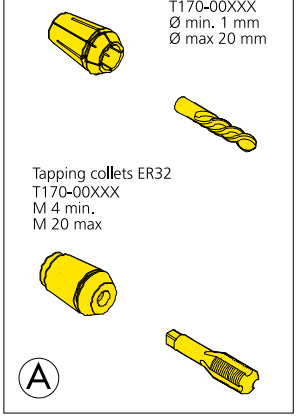
Adjustable live-spindle
T134-00025 ER16
T134-00057 ER20

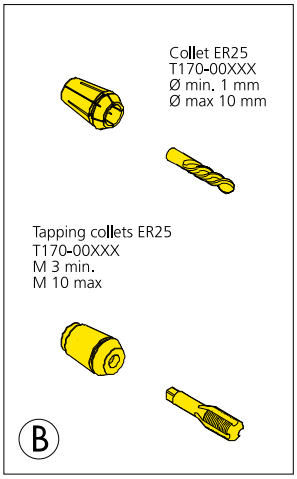


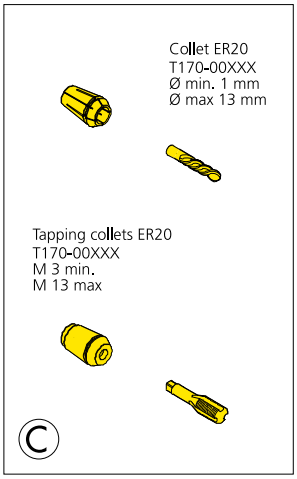
Polygon live-spindle
42.47.10.43

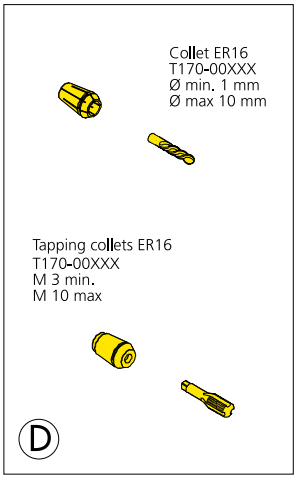


✱ Radial live-spindle, double
41.32.30.00









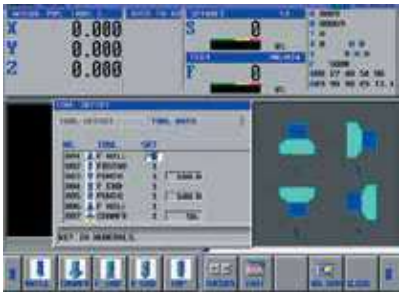
✱ Only with Y-axis
● With internal coolant
■ With stronger bearings
Only with 12 positions turret

CNC unit

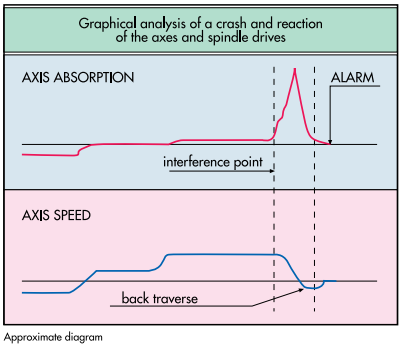
CNC Fanuc 32i-T:
- 10.4" (15" option) colour liquid crystal display
- Alphanumeric full-keyboard
- BIGLIA operator panel featuring softkeys
- Data transmission: Ethernet gate, memory card, USB, RS 232 port.

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).



Biglia



Approximate diagram

Tool life management (standard)

SBS: Biglia safety software tool load monitoring

This system monitors the loading of the most heavily used tools such as cutting tools, roughening tools, drills or U-drills. It ensures safe automatic machining with limited operator presence (option).

Damage protection (air bag)

This special software detects the abnormal load created by a collision. When a collision occurs, spindle rotation is stopped and the axis movement is halted thus damping the interference and limiting damage to the tooling.

TECHNICAL SPECIFICATIONS

MACHINE TYPE		B750			B750 M			B750 SM			B750 Y		
MACHINING CAPACITY													
Max. bar machining diameter	mm	65	80	93/100	65	80	93/100	65	80	93/100	65	80	93/100
Max. suggested machining diameter	mm	552/350	552/450	552	552/350	552/450	552	552/350	552/450	552	552/350	552/450	552
Max. machining length	mm		765 (1)			765 (1)			765 (1)			765 (1)	
Max. swing over diameter	mm		680/500			680/500			680/500			680/500	
MAIN SPINDLE													
Max. speed	rpm	4500	3500	3000	4500	3500	3000	4500	3500	3000	4500	3500	3000
Spindle nose	ASA	6"	8"	8"	6"	8"	8"	6"	8"	8"	6"	8"	8"
Spindle bore	mm	76	91	106/111	76	91	106/111	76	91	106/111	76	91	106/111
Inside diam. of bearings	mm	110	130	150	110	130	150	110	130	150	110	130	150
Chuck diameter	mm	250	315	400	250	315	400	250	315	400	250	315	400
Motor power (S1-S3)	kW	30-40	15-22	30-38	30-40	15-22	30-38	30-40	15-22	30-38	30-40	15-22	30-38
Max. torque (S1-S3)	Nm	286	398-700	800-1014	286	398-700	800-1014	286	398-700	800-1014	286	398-700	800-1014
SUB-SPINDLE													
Max. speed	rpm		--			--			5000 - 4500			--	
Spindle nose	ASA		--			--			5" - 6"			--	
Spindle bore	mm		--			--			55 - 76			--	
Drawtube inside diameter	mm		--			--			45 - 67			--	
Inside diam. of bearings	mm		--			--			90 - 110			--	
Chuck diameter	mm		--			--			140-165 / 210-250			--	
Motor power	kW		--			--			17-25 / 30-40			--	
Max. torque	Nm		--			--			108-159 / 286			--	
B-axis automatic positioning	mm		--			--			895			--	
B-axis rapid traverse	m/min		--			--			24			--	
TURRET													
No of tools	N°		16/12			16/12			16/12			16/12	
Tool shank for OD turning	mm		25x25			25x25			25x25			25x25	
Tool shank for ID turning	mm		32-40 / 40-50			32-40 / 40-50			32-40 / 40-50			32-40 / 40-50	
Turret indexing (1 pos)	sec		0,3			0,3			0,3			0,3	
LIVE TOOLING													
No of live tools	N°		--			16/12			16/12			16/12	
Max. speed	rpm		--			6000			6000			6000	
Motor power	kW		--			10/17,5			10/17,5			10/17,5	
Max. torque	Nm		--			32/56			32/56			32/56	
C-AXIS													
Min. programmable value	°		--			0,001			0,001			0,001	
Max. rapid traverse	rpm		--			100			100			100	
AXES													
X-axis stroke	mm		305			305			305			305	
Y-axis stroke	mm		--			--			--			140	
Z-axis stroke	mm		860			860			860			860	
X-axis rapid traverse	m/min		18			18			18			18	
Y-axis rapid traverse	m/min		--			--			--			7,5	
Z-axis rapid traverse	m/min		24			24			24			24	
TAILSTOCK													
Automatic quill stroke	mm		--			--			--			--	
Quill diameter	mm		--			--			--			--	
Morse taper	MT		--			--			--			--	
Automatic positioning	mm		--			--			--			--	
B-AXIS TAILSTOCK													
Morse taper	MT		4-5			4-5			--			4-5	
B-axis automatic positioning	mm		910			910			--			910	
B-axis rapid traverse	m/min		15			15			--			15	
COOLING SYSTEM													
Tank capacity	l		300			300			300			300	
Pump nominal displacement	l/min		60			60			60			60	
Electropump motor rating	kW		1,1			1,1			1,1			1,1	
DIMENSIONS AND WEIGHT													
Machine with swarf conveyor	cm		507x203x222h			507x203x222h			507x203x222h			507x203x222h	
Spindle centre height	mm		1070			1070			1070			1070	
Machine weight with swarf conv.	kg		7250			7350			7500			7450	

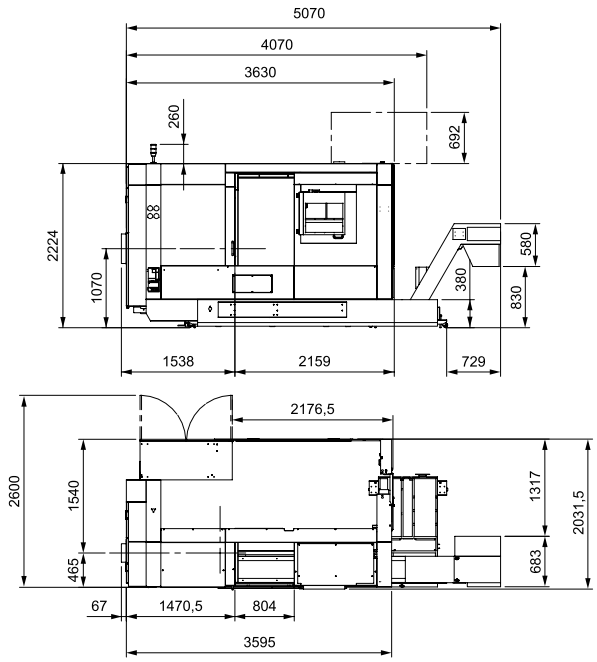
B750 - B1250

B750 YS			B1250			B1250 M			B1250 SM			B1250 Y			B1250 YS		
65	80	93/100	100	80	93/100	100	80	93/100	65	80	93/100	100	80	93/100	65	80	93/100
552/350	552/450	552	552	552/450	552	552	552/450	552	552	553/450	552	552	552/450	552	552/350	553/450	552
765 (1)			1195 (2)			1195 (2)			1195 (2)			1195 (2)			1195 (2)		
680/500			680/500			680/500			680/500			680/500			680/500		
2800	3500	3000	2800	3500	3000	2800	3500	3000	4500	3500	3000	2800	3500	3000	4500	3500	3000
6"	8"	8"	8"	8"	8"	8"	8"	8"	6"	8"	8"	8"	8"	8"	6"	8"	8"
76	91	106/111	111	91	106/111	111	91	106/111	76	91	106/111	111	91	106/111	76	91	106/111
110	130	150	150	130	150	150	130	150	110	130	150	150	130	150	110	130	150
250	315	400	400	315	400	400	315	400	250	315	400	400	315	400	250	315	400
30-40	15-22	30-38	22-30	15-22	30-38	22-30	15-22	30-38	30-40	15-22	30-38	22-30	15-22	30-38	30-40	15-22	30-38
286	398-700	800-1014	566-772	398-700	800-1014	566-772	398-700	800-1014	286	398-700	800-1014	566-772	398-700	800-1014	286	398-700	800-1014
5000 - 4500			--			--			4500			--			4500		
5" - 6"			--			--			6"			--			6"		
55 - 76			--			--			76			--			76		
45 - 67			--			--			67			--			67		
90 - 110			--			--			110			--			110		
140-165 / 210-250			--			--			210-250			--			210-250		
17-25 / 30-40			--			--			30-40			--			30-40		
108-159 / 286			--			--			286			--			286		
895			--			--			1130			--			1130		
24			--			--			24			--			24		
16/12			16/12			16/12			16/12			16/12			16/12		
25x25			25x25			25x25			25x25			25x25			25x25		
32-40 / 40-50			32-40 / 40-50			32-40 / 40-50			32-40 / 40-50			32-40 / 40-50			32-40 / 40-50		
0,3			0,3			0,3			0,3			0,3			0,3		
16/12			--			16/12			16/12			16/12			16/12		
6000			--			6000			6000			6000			6000		
10/17,5			--			10/17,5			10/17,5			10/17,5			10/17,5		
32/56			--			32/56			32/56			32/56			32/56		
0,001			--			0,001			0,001			0,001			0,001		
100			--			100			100			100			100		
305			305			305			305			305			305		
140			--			--			--			140			140		
860			1310			1310			1310			1310			1310		
18			18			18			18			18			18		
7,5			--			--			--			7,5			7,5		
24			24			24			24			24			24		
--			150			150			--			150			--		
--			115			115			--			115			--		
--			5			5			--			5			--		
--			1310			1310			--			1310			--		
--			5/4			5/4			--			5/4			--		
--			1140			1140			--			1140			--		
--			15			15			--			15			--		
300			300			300			300			300			300		
60			60			60			60			60			60		
1,1			1,1			1,1			1,1			1,1			1,1		
507x203x222h			543x219x233h			543x219x233h			543x219x233h			543x219x233h			543x219x233h		
1070			1070			1070			1070			1070			1070		
7600			7850			7950			8250			8100			8400		

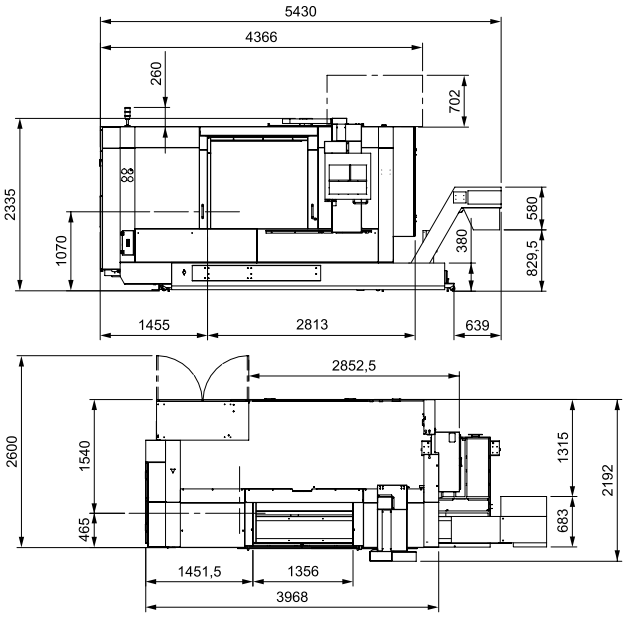
(1) Ø 250 Chuck - (2) Ø 315 Chuck Belt-type main spindle

MACHINE OVERALL DIMENSIONS

B750



B1250



Biglia

THE TURNING TECH

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