

Turning centers

SBX 500

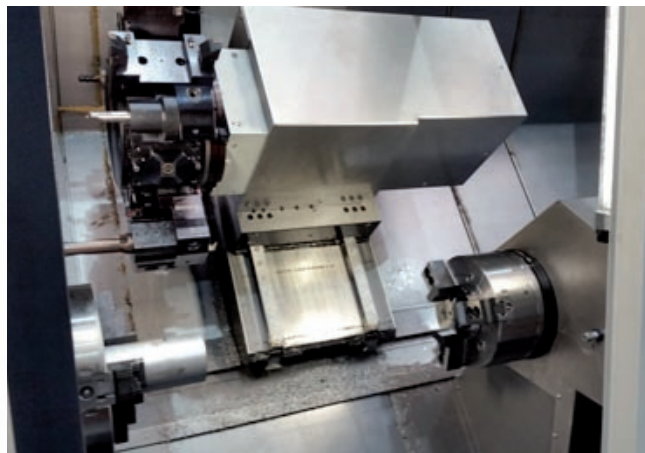


➤ Turning center for effective production and high productivity achievement. Optimized design of the machine carrier structure, Y axis on saddle wedge principle in combination with linear roller guide ways guarantee high rigidity, constant repeatable precision and maximum machining stability. The variability of the modular conception allows flexible adaptation of the machine configuration to customers' demands.



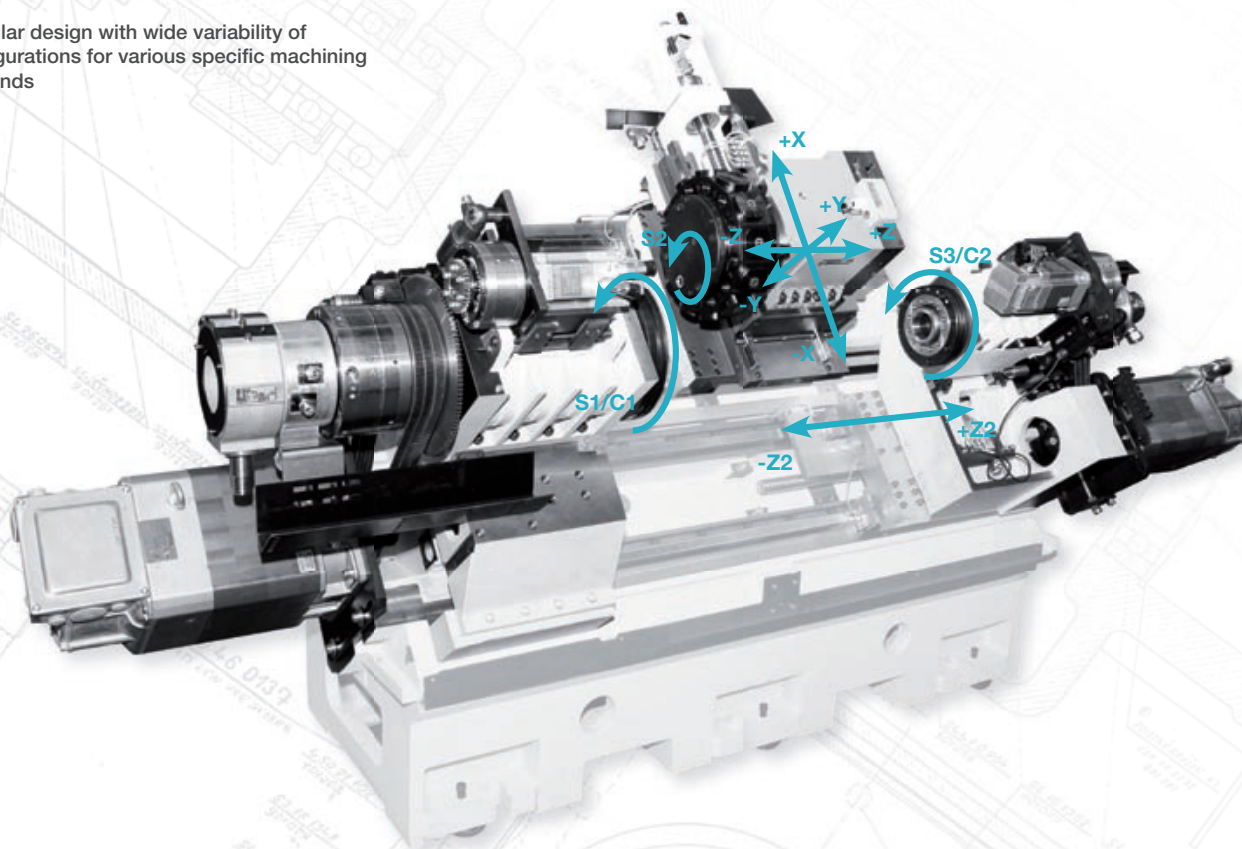
> MOST IMPORTANT FEATURES

- Modular conception allows configuring the machine for a wide range of technologies and materials
- **Counter spindle with passing hole clamping allows complete machining**
- Y axis with saddle wedge contributes to increased stability of the cutting process
- **Fast turret with 12 live tools size VDI 40**
- C-axes with independent servomotors for achieving precise and stable work piece position during cutting forces loading
- **Linear roller guideways with bearing capacity dimensioned for hard roughing but also precision of finishing operations**
- Increased spindle bores extend the machining possibilities for wider assortment of work pieces
- **Integrated control panel improves machine control ergonomics for operator**
- Programming in 3D through cycles
- **Technology of servo drives with electric energy saving**
- Option of industrial robot integration for manipulation of raw material and work pieces
- **Coolant aggregate pressure from 0.7 MPa (7 bar) up to 2.0 MPa (20 bar)**



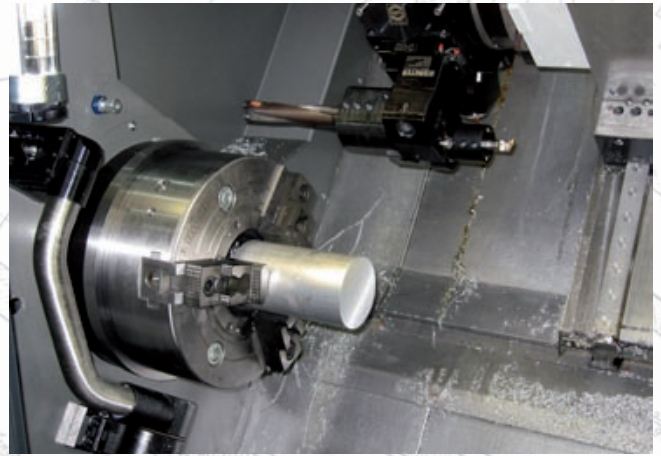
▲ Dimensions of the work area allow turning of the larger work pieces

- > Modular design with wide variability of configurations for various specific machining demands



> BASIC EXECUTION

- Control system SIEMENS Sinumeric 840D SolutionLine, software Operate
- **Digital servo drives SIEMENS Sinamics S120 with energy recovery**
- Vector controlled asynchronous motor for main spindle drive 22 kW
- **Direct angle and rotation measuring through magnetic disc sensor integrated in the main spindle**
- C-axis of the main spindle positioned through the motor of the main spindle
- **Main spindle bore 92 mm**
- Hydraulic 3-jaw chuck dia. 254 mm, with through hole dia. 75 mm max. 4000 RPM for main spindle
- **Electronic check of hydraulic clamping limit positions**
- Security locking system for hydraulic clamping systems of the main spindle
- **Double foot switch to open/close chuck of the main spindle**
- Main spindle brake
- **Programmable tailstock**
- Turning length between chuck and tailstock 800 mm
- **Y-axis travel ± 60 mm**
- Linear rolling guide ways
- **Direct X-axis measurement by linear scale**
- Automatic lubrication with controlled distribution of lubricant
- **12-position fast axial turret, VDI40 with live tools**
- Chip conveyor to the right side
- **Complete cooling aggregate pressure 0,7 MPa (7 bar)**
- Manual door opening
- **Positionable control panel**
- Entering input and output parameters in metric/imperial units
- **Voltage 3x400V /50Hz**
- Transporting device
- **Operating manual**
- CE execution



▲ Work area view



▲ Machine design is based on solid castings ensuring extreme rigidity during machining



▲ Modern control system is easy and intuitive to control

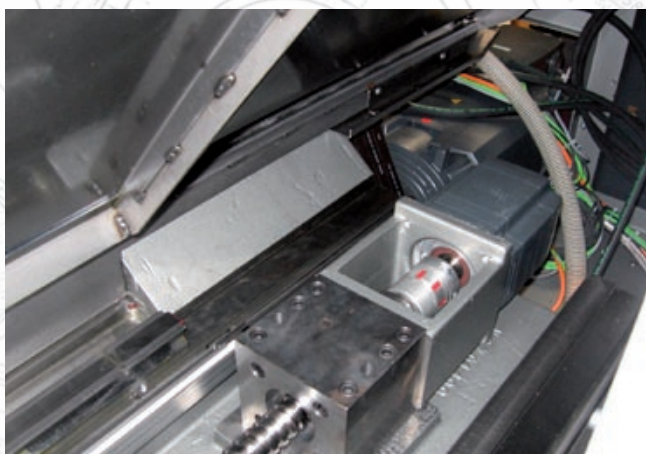
MODULAR EXECUTIONS

- C-axis of the main spindle positioned by separate servomotor connected through reduction gear
- **Increased main spindle bore 133 mm, hydraulic 3-jaw chuck, dia. 315 mm with through hole 117 mm, max. 2800 RPM**
- Pneumatic blow-out for chuck
- **Direct measuring of Z-axis by linear scale**
- Direct measuring of Y-axis by linear scale
- **Counter spindle execution, C-axis for counter spindle positioned by counter spindle motor**
- Vector controlled asynchronous motor for counter spindle 9 kW
- **Direct angle and rotation measuring through magnetic disc sensor integrated in the counter spindle**
- Electronic check of hydraulic clamping limit positions
- **Security locking system for hydraulic clamping systems of the counter spindle**
- Double foot switch to open/close chuck of the counter spindle
- **Counter spindle brake**
- Turning length between main and counter chuck 650 mm
- **Counter spindle bore 65 mm, hydraulic 3-jaw chuck, dia. 210 mm, with through hole 51 mm, max. 4000 RPM**
- Increased counter spindle bore 92 mm, hydraulic 3-jaw chuck, dia. 254 mm, with through hole 75 mm, max. 3500 RPM
- **C-axis of the counter spindle positioned by separate servomotor connected through reduction gear**
- Direct measuring of Z2 axis by linear scale (counter spindle travel)
- **Hydraulic collet clampings of various sizes for both spindle bore sizes of main and counter spindle**
- 12-position fast radial turret, size VDI40 with live tools
- **Coolant filtration**
- Manual wash
- **Oil mist filtration**
- Automatic door opening (pneumatic)
- **Air conditioning for electrocabinet**
- Preparation for bar feeder

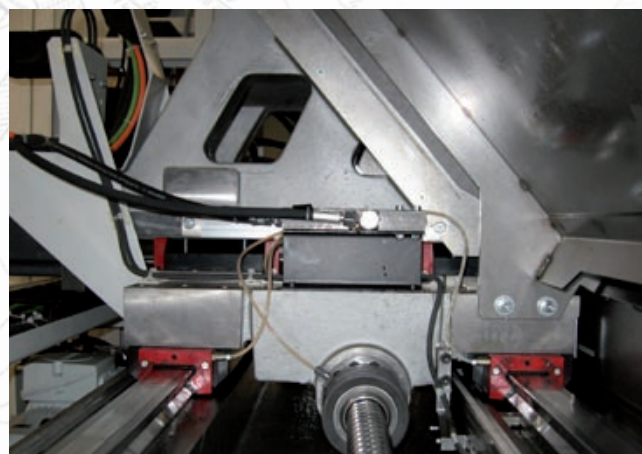
- **Bar feeder**
- Parts catcher
- **Tool probe**
- Work piece probe
- **Remote diagnostics**
- Autotransformer for 220 V or 575 V
- **3-colour warning light (machine process stage signalization)**
- Chip conveyor to the rear side of the machine



▲ Direct linear measuring increases accuracy of each working axis



▲ Direct drive of the ball screws maximizes positioning accuracy



▲ Saddle and slides with high load preloaded linear roller guideways

Machine type	Unit	SBX 500
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Working Range

Max. swing over bed	mm	650
Max. turning diameter	mm	550
Max. turning length	mm	750/1500*
Turning length between chucks	mm	650*/1400*
Max. bar diameter	mm	74/117*
Max bar diameter with bar feeder reduction bushing	mm	66/103*

Main spindle

Spindle nose (DIN55026 A & ISO702-1 A2)		A2-8/A2-11*
Internal spindle taper		METRIC 100/ - *
Spindle bore	mm	92/133*
Spindle diameter in front bearing	mm	140/180*
Max. spindle speed	min ⁻¹	4000/2800*
Chuck diameters	mm	254/315*

Spindle drive

Main motor output S1	kW	22
Main motor output S6	kW	33
Torque (as per version) S1	Nm	355/490*

Carriages and drives

X-axis

Cross slide feed range	mm.min ⁻¹	1 ÷ 10000
Cross-slide rapid traverse	mm.min ⁻¹	24000
Working travel	mm	300

Y-axis

Feed range of Y-axis	mm.min ⁻¹	1 ÷ 10000
Y-axis rapid traverse	mm.min ⁻¹	24000
Working travel of Y-axis	mm	+/-60

C-axis of the main spindle with separate servomotor *

Continuous control	°	0-360 step 0,001
Max. spindle speed	min ⁻¹	50/45*
Torque (as per version) S1	Nm	337/380*

Z-axis

Longitudinal slide feed range	mm.min ⁻¹	1 ÷ 10000
Longitudinal slide rapid traverse	mm.min ⁻¹	30000
Working travel	mm	905/1655*

Z2-axis*

Counter spindle slide feed range	mm.min ⁻¹	1 ÷ 15000
Rapid traverse of counter spindle slide	mm.min ⁻¹	30000
Working travel of counter spindle slide	mm	770/1520*

Turrets

12-positional axial turret SAUTER with live tools

No. of tool positions		12
No. of driven tool positions		12
Tool shank diameter (according to DIN 69880)	mm	40
Coupling		20×0,8 DIN 5480
Max. tool cross-section	mm	25×25
Driven tools motor output	kW	10
Max. torque	Nm	63
Max. RPM	min ⁻¹	3000

TECHNICAL PARAMETERS

Machine type	Unit	SBX 500
12-positional radial turret SAUTER with live tools*		
No. of tool positions		12
No. of driven tool positions		12
Tool shank diameter (according to DIN 69880)	mm	40
Coupling		20×0,8 DIN 5480
Max. tool cross-section	mm	25×25
Driven tools motor output	kW	10
Max. torque	Nm	63
Max. RPM	min ⁻¹	3000

Tailstock

Tailstock sleeve internal taper		MORSE 5
Tailstock sleeve travel	mm	125
Tailstock travel	mm	800/1750*
Clamping force range	daN	80-820
Tailstock control		NC programmable travel

Counter spindle*

Spindle nose (DIN55026)		A2-6/A2-8*
Spindle bore	mm	65/92*
Spindle diameter in front bearing	mm	100/120*
Max. spindle speed	min ⁻¹	4000/3500*
Chuck diameter	mm	210/254*

Counter spindle drive*

Counter spindle motor output S1	kW	9
Counter spindle motor output S6	kW	13
Torque (as per version) S1	Nm	102/117*

C-axis of the counter spindle with separate servomotor*

Continuous control	°	0-360 step 0,001
Max. counter spindle speed	min ⁻¹	68/62*
Torque (as per version) S1	Nm	252/273*

Coolant capacity		150/210*
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Machine dimensions

Height	mm	2000
Width	mm	2095
Width with air conditioning for electrocabinet*	mm	2345*
Length with chip conveyor to the right side	mm	5050/5800*
Center height above floor	mm	1040

Weight

Weight – version with tailstock	kg	6800
Weight – version with counter spindle*	kg	7150

Control systems

SIEMENS 840D SolutionLine + Operate		yes
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* modular execution