

Turning Centers

SBL 300

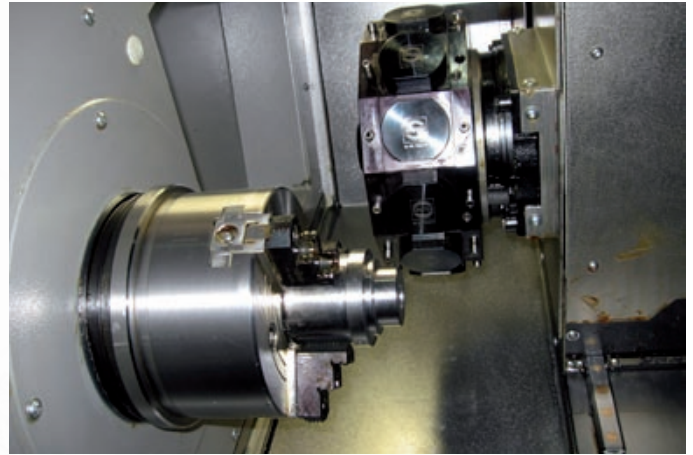


- Machine designed for medium to large-series production for machining simple as well as complex shape workpieces. Execution with movable counter spindle allows complete workpiece machining and finishing at single machine which shortens production time and increases workpiece accuracy. This machine significantly contributes to increased productivity while considerably decreases investment costs. High variability of modular concept allows to build up optimal customized configuration from simple 3-axis lathe up to high productive 9-axis turning center for automated mode.



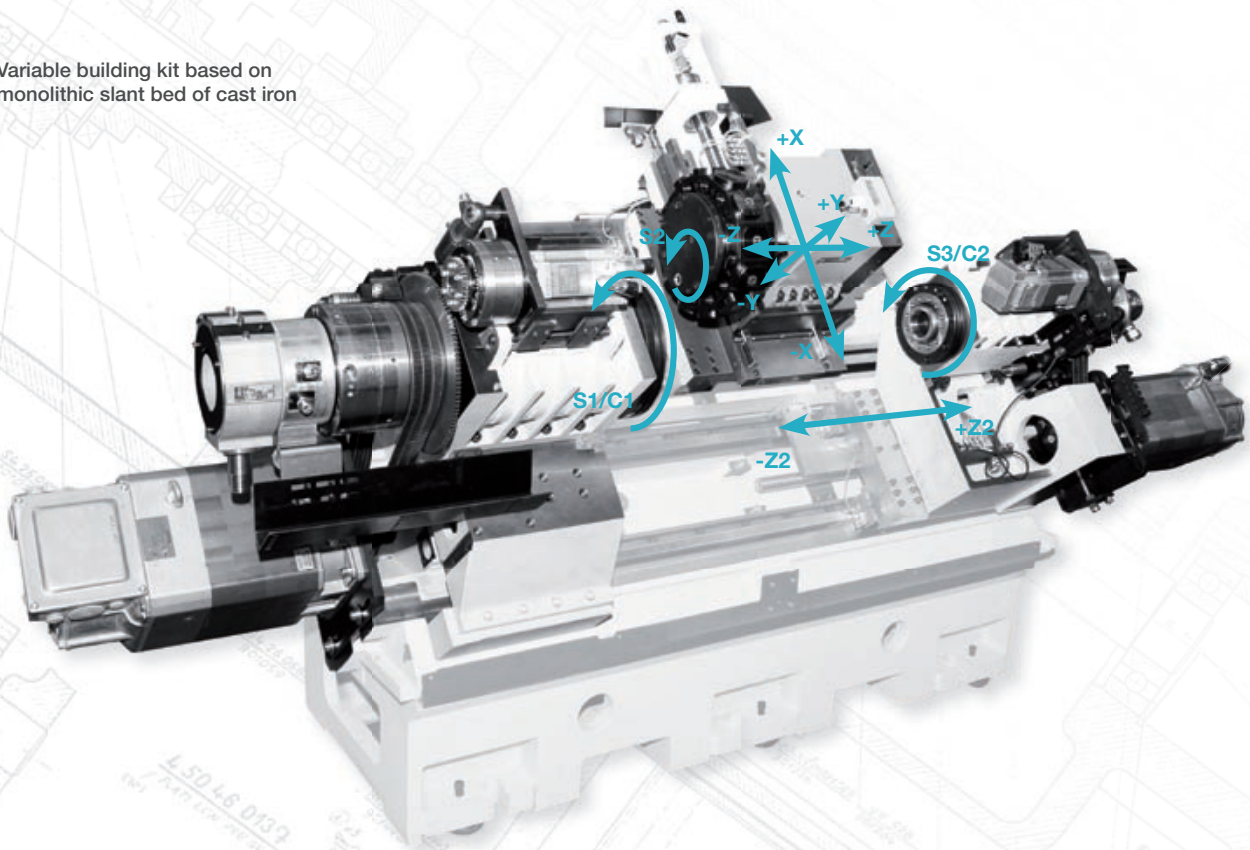
➤ MAIN ADVANTAGES

- High precision and productive machining of simple as well as complex shape workpieces
- **Stable cutting process with high repeatable accuracy of machining**
- Remote diagnostics and data management
- **Modular concept of the machine allows configuration tailored to the customer's individual requirements**
- Variety of turrets with VDI couplings with or without live tools and optional Y-axis
- **Wide scope of executions and accessories – counter spindle, clamping devices, bar feeders, part catchers, tool probes, automatic door opening, vapour exhaust system**
- The newest technologies in the field of drives bring savings of electrical energy



▲ Automatic turret with radial disc and Y-axis

▼ Variable building kit based on monolithic slant bed of cast iron

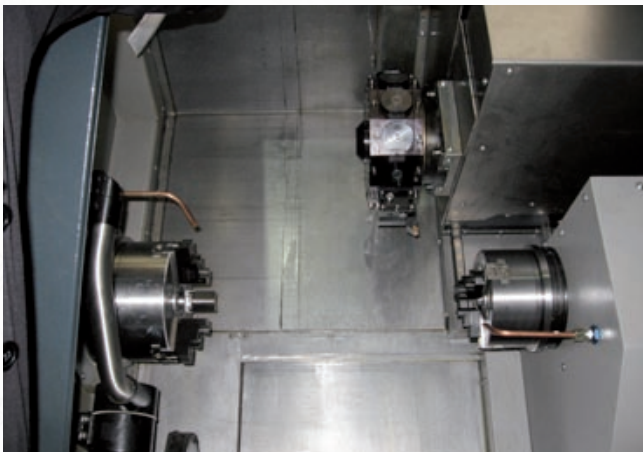


STANDARD – SINGLE SPINDLE EXECUTION

- Control system SIEMENS 840D, software ShopTurn
- **Drives Simodrive with energy recovery**
- Vector controlled asynchronous motor for main spindle drive 7 kW
- **Direct angle and rotation measuring through magnetic disc sensor integrated in spindle**
- C-axis of the main spindle positioned through the motor of the main spindle
- **Spindle bore 57 mm**
- Hydraulic 3-jaw chuck dia. \varnothing 170 mm with passing hole dia. 43 mm max. 4000 RPM
- **Electronic check of hydraulic clamping limit positions**
- Security locking system for hydraulic clamping systems and tailstock sleeve
- **Double foot switch to open/close jaws of chuck**
- Without spindle brake
- **Turning length between chuck and tailstock 500 mm**
- Without tailstock
- **Linear rolling guideways**
- Direct X axis measurement by linear scale
- **Automatic lubrication with controlled distribution of lubricant**
- 12-position axial turret SAUTER, VDI30 without live tools
- **Chip pan**
- Complete cooling aggregate, pressure 0,3 MPa
- **Manual door opening**
- Positionable control panel
- **Entering input and output parameters in metric/imperial units**
- Input power 3x400 V/50 Hz
- **Transporting device**
- Operating manual
- **CE execution**

OPTIONAL EXECUTIONS – SINGLE SPINDLE EXECUTION

- Control system SIEMENS Sinumeric 840D SolutionLine, software Operate 4.5, TCU
- **Drives SIEMENS Sinamics S120 with energy recovery**
- Control system FANUC Oi-TD, software Manual Guide i
- **Increased main spindle output 9/11/15 kW**
- Electrospindle 18 kW
- **Increased spindle speed from 4000 to 5000 RPM**
- C-axis of the main spindle positioned through servomotor connected through bearing reducer
- **Increased spindle bore 65 mm, hydraulic 3-jaw chuck, \varnothing 210 mm with inner passing hole 52 mm**
- Increased spindle bore 92 mm, hydraulic 3-jaw chuck, \varnothing 254 mm with inner passing hole 75 mm, max. 3500 RPM
- **Hydraulic collet clamping of various dimensions for all sizes of spindle bore**
- Pneumatic blow-out for chuck
- **Main spindle brake**
- Programmable tailstock
- **Hydraulic programmable steady rest with clamping range 8–105 mm**
- Direct axis Z measurement by linear scale
- **Axial tool with driven tools VDI 30**
- Radial tool with driven tools VDI 30
- **Y-axis 12-position radial turret SAUTER with live tools, VDI 25, stroke \pm 40 mm with spindle brake**
- Chip conveyor on the right
- **Higher pressure cooling system 0,7 MPa**
- Coolant filtration device
- **Manual wash**
- Oil mist collector
- **Pneumatic door opening**
- Airconditioning for electrocabinet
- **Preparation for bar feeder**
- Bar feeder
- **Parts catcher**
- Tool probe
- **Autotransformer for 220 V or 575 V**
- 3-color warning light (operation signalization)



▲ Machining area

> STANDARD – EXECUTION WITH COUNTER SPINDLE

- Control system SIEMENS 840D, software ShopTurn
- **Drives Simodrive with energy recovery**
- Vector controlled asynchronous motor for main spindle drive 7 kW
- **Vector controlled asynchronous motor for counter spindle drive 7 kW**
- Direct angle and rotation measuring through magnetic disc sensor integrated in the main spindle
- **Direct angle and rotation measuring through magnetic disc sensor integrated in the counter spindle**
- C-axis of the main spindle positioned through the motor of the main spindle
- **C-axis of the counter spindle positioned through the motor of the counter spindle**
- Main spindle bore 57 mm
- **Second spindle bore 57 mm**
- Hydraulic 3-jaw chuck dia. \varnothing 170 mm with passaging hole dia. 43 mm max. 4000 RPM
- **Hydraulic 3-jaw chuck dia. \varnothing 170 mm with non-passaging hole max. 4000 RPM for counter spindle**
- Electronic check of hydraulic clamping limit positions
- **Security locking system for hydraulic clamping systems**
- Double foot switch to open/close main spindle jaw chuck
- **Double foot switch to open/close counter spindle jaw chuck**
- Main spindle brake
- **Counter spindle brake**
- Length of turning between main and counter spindle chucks 485 mm
- **Linear rolling guideways**
- Direct X axis measurement by linear scale
- **Automatic lubrication with controlled distribution of lubricant**
- 12-position radial turret SAUTER, VDI30 with live tools
- **Chip pan**
- Complete cooling aggregate, pressure 0,7 MPa
- **Manual door opening**
- Positionable control panel
- **Entering input and output parameters in metric/imperial units**
- Input power 3×400 V/50 Hz
- **Transport device**
- Operating manual
- **CE execution**

> OPTIONAL EXECUTIONS – EXECUTION WITH COUNTER SPINDLE

- Control system SIEMENS Sinumeric 840D SolutionLine, software Operate 4.5, TCU
- **Drives SIEMENS Sinamics S120 with energy recovery**
- Control system FANUC Oi-TD, software Manual Guide i
- **Increased main spindle output 9/11/15 kW**
- Main electrospindle 18 / counterspindle 26 kW
- **Increased spindle speed from 4000 to 5000 RPM**
- C-axis of the main spindle positioned through servomotor connected through bearing reducer
- **C-axis of the counter spindle positioned through servomotor connected through bearing reducer**
- Increased spindle bore 65mm, hydraulic 3-jaw chuck, \varnothing 210 mm with inner passaging hole 52 mm
- **Increased spindle bore 92 mm, hydraulic 3-jaw chuck, \varnothing 254 mm with inner passaging hole 75 mm, max. 3500 RPM**
- Hydraulic collet clamping of various dimensions for all sizes of spindle bore
- **Pneumatic blow-out for chuck**
- Main spindle brake
- **Programmable tailstock**
- Direct axis Z measurement by linear scale
- **Direct axis Z2 measurement by linear scale (counter spindle movement)**
- Axial turret with live tools, VDI 30 with spindle brake
- **Radial turret with live tools, VDI 30 with spindle brake**
- Y-axis 12-position radial turret SAUTER with live tools, Y-axis stroke \pm 40 mm, VDI 25, with spindle brake
- **Chip conveyor on the right**
- Cooling system with increased pressure 0,7 MPa
- **Coolant filtration device**
- Manual wash
- **Oil mist collector**
- Pneumatic door opening
- **Airconditioning for electrocabinet**
- Preparation for bar feeder
- **Bar feeder**
- Parts catcher
- **Tool probe**
- Autotransformer for 220 V or 575 V
- **3-color warning light (operation signalization)**



▲ Paddle part catcher

Machine type	Unit	SBL 300
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Working range

Max. swing over bed	mm	530
Max. turning diameter	mm	260
Max. turning length	mm	500
Turning length between chucks	mm	485
Max. bar diameter	mm	42/51*/74*
Max bar diameter with bar feeder reduction bushing	mm	34/43*/66*

Main spindle

Spindle nose (DIN 55026)		A2-5/A2-6*/A2-8*
Spindle bore	mm	57/65*/92*
Spindle diameter in front bearing	mm	80/100*/120*
Max. spindle speed	min ⁻¹	4000/5000*/3500*
Chuck diameters	mm	170/210*/254*

Spindle drive

Main motor output S1	kW	7/9*/11*/15*
Main motor output S6	kW	10/13*/16,5*/23*
Torque (as per version) S1	Nm	79,7–215,7*

Carriages and drives

X-os

Cross slide feed range	mm.min ⁻¹	1÷10000
Cross-slide rapid traverse	mm.min ⁻¹	24000
Working travel	mm	198
Working travel with radial turret*	mm	168*

Y-os*

Feed range of Y-axis	mm.min ⁻¹	1÷5000
Y-axis rapid traverse	mm.min ⁻¹	7500
Working travel of Y-axis	mm	+/-40

C-os*

Continuous control	°	0-360 step 0,001
Max. spindle speed	min ⁻¹	40/36*/32*
Torque (as per version) S1	mm	410/450*/500*

Z-os

Longitudinal slide feed range	mm.min ⁻¹	1÷10000
Longitudinal slide rapid traverse	mm.min ⁻¹	30000
Working travel	mm	550
Working travel with radial turret*	mm	485*

Z2-os*

Counterspindle slide feed range*	mm.min ⁻¹	1÷10000
Rapid traverse of counterspindle slide*	mm.min ⁻¹	30000
Working travel of counterspindle slide*	mm	530

Turrets (VDI 30)

12-positional axial turret SAUTER

No. of tool positions		12
Tool shank diameter (according to DIN 69880)	mm	30
Max. tool cross-section	mm	20×16

12-positional axial turret SAUTER with live tools*

	No. of positions	12 positions / 12 driven
No. of tool positions		12
No. of driven tool positions		12
Tool shank diameter (according to DIN 69880)	mm	30
Coupling		B 15×12, DIN 5482
Max. tool cross-section	mm	20×16
Driven tools motor output	kW	4,5
Max. torque	Nm	17
Max. RPM	min ⁻¹	3000

TECHNICAL PARAMETRES

Machine type	Unit	SBL 300
12-positional radial turret SAUTER with live tools*	No. of positions	12 positions / 12 driven
No. of tool positions		12
No. of driven tool positions		12
Tool shank diameter (according to DIN 69880)	mm	30
Coupling		W16×0,8×30×18, DIN 5480
Max. tool cross-section	mm	20×16
Driven tools motor output	kW	7,5
Max. torque	Nm	20
Max. RPM	min ⁻¹	5000

12-positional radial turret SAUTER s Y-axis with live tools* (VDI 25)	No. of positions	12 positions / 12 driven
No. of tool positions		12
No. of driven tool positions		12
Tool shank diameter (according to DIN 69880)	mm	25
Coupling		W14×0,8×30×16, DIN 5480
Max. tool cross-section	mm	16×12
Driven tools motor output	kW	1,5
Max. torque	Nm	9,5
Max. RPM	min ⁻¹	6000

Tailstock

Tailstock sleeve internal taper		MORSE 4
Tailstock sleeve travel	mm	500
Clamping force range	daN	50–600
Tailstock control		NC programmable travel

Machine dimensions

Height	mm	1820
Width	mm	2020
Length with chip pan/with chip conveyor on the right*	mm	3320/4220*

Weight

Weight – execution with tailstock	kg	cca 3500*
Weight – execution with counterspindle*	kg	cca 4000*

Control systems

SIEMENS 840D SolutionLine + ShopTurn		yes
FANUC OiTD + Manual Guide i		yes

SBL 300 execution with counter spindle

Counterspindle

Spindle nose (DIN55026)		A2-5
Spindle bore	mm	57
Spindle diameter in front bearing	mm	80
Max. spindle speed	min ⁻¹	4000/5000*
Chuck diameter	mm	170

Counterspindle drive

Counterspindle motor output S1	kW	7/9*
Counterspindle motor output S6	kW	10/13*
Torque (as per version) S1	Nm	79,7–122,4*

Counterspindle C-os*

Continuous control	°	0-360 step 0,001
Max. Counterspindle speed	min ⁻¹	40
Torque (as per version) S1	mm	410

Turrets

12-positional radial turret SAUTER with live tools*		
12-positional radial turret SAUTER s Y-axis with live tools*		

* optional execution