

CNC SWISS TYPE AUTOMATIC LATHE

SR-16/20

CE marked

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Star's user-friendly SR Ser

With the real needs of the operator in mind

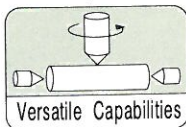
The technology in this new range of machines is advanced. Knowing that, your operators may get concerned – but, when they know that Star's development philosophy recognizes that, regardless of how high the technology, the product still has to be put to work by a human-being, your people will be comforted. The needs of the user have also been thoroughly researched by us and combined with our design expertise to offer these machines which have 3-main benefits:

- Operators will be keen to work with them.
- The long-term operational stability that precision turned-parts manufactures demand, is built in.
- They will contribute to a cleaner working environment.



Product Planning Concept

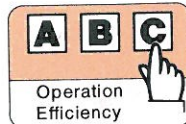
1



Versatile Capabilities

High power technology to shorten further the machining time of both simple and complex parts.

2



Operation Efficiency

Optimization of tool installation and adjustment efficiency plus a coolant system to remove cutting chips from the work area, will please any operator.

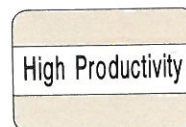
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Safety

Safety of both the operator and the machine is managed by the many functions incorporated to prevent damage.

4



High Productivity

The ultimate has been achieved by combining high speed machining while maintaining the highest degree of reliability and precision.

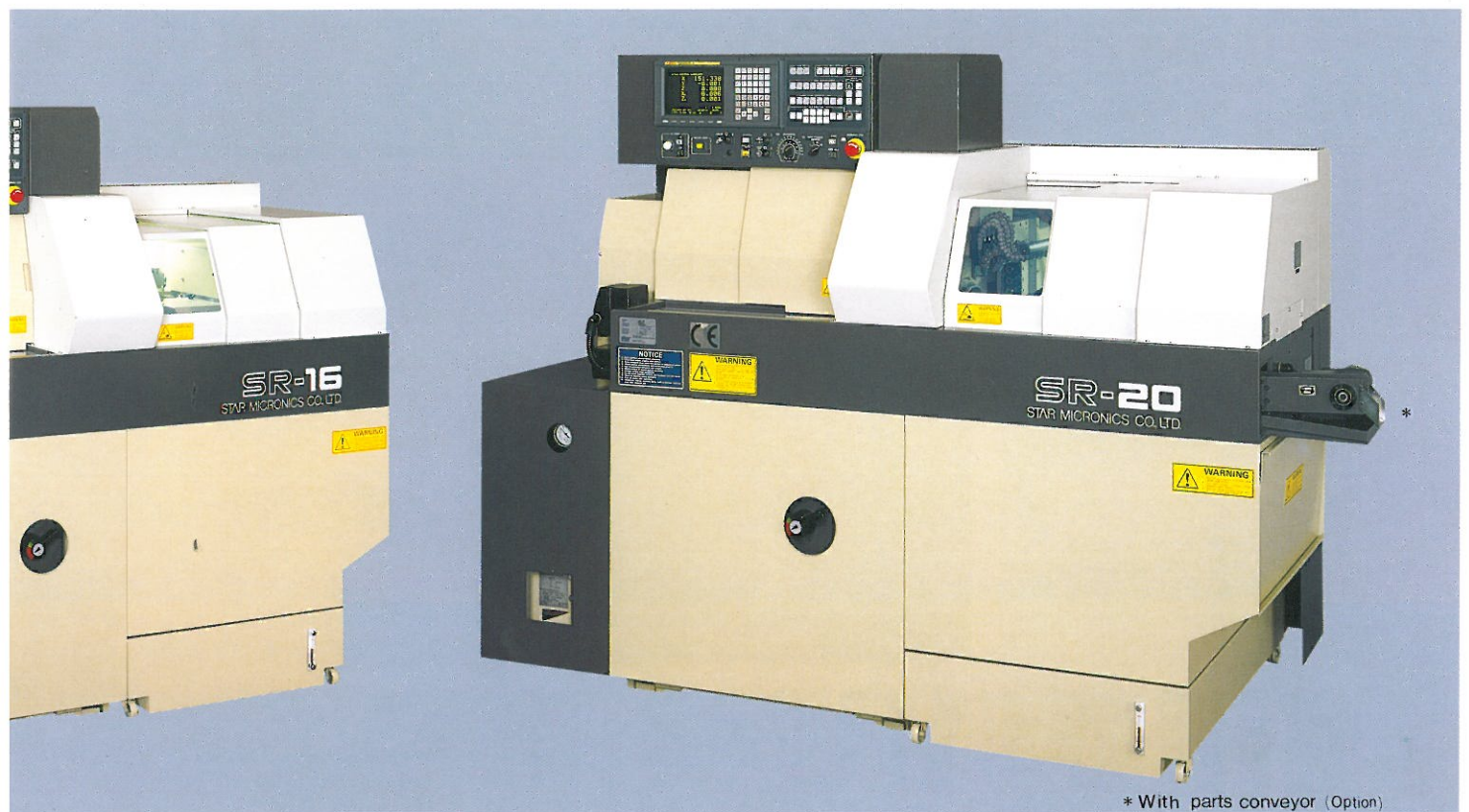
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User Support Software

Advanced machine functions are simple to use with Star's completely new user-support software system.

ies automatic lathes make machining easy, effective and pleasant to use.

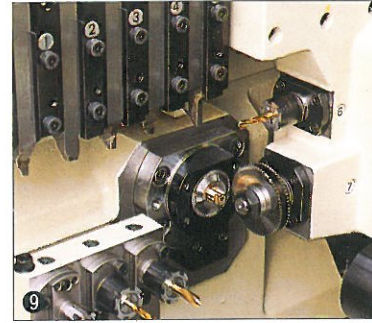
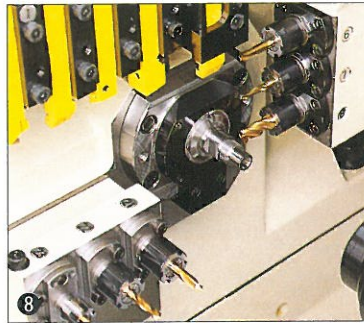
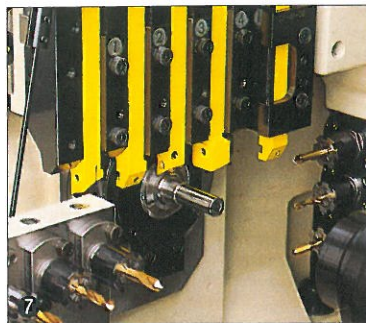
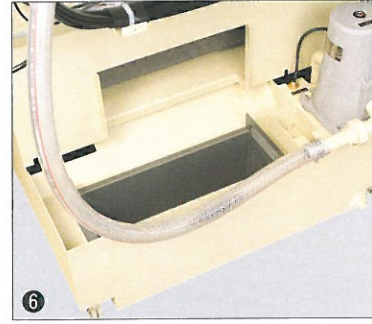
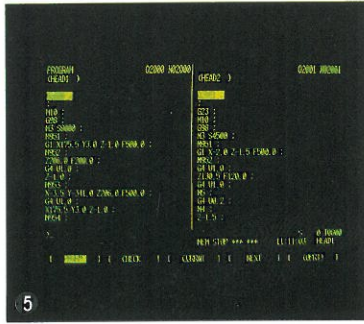
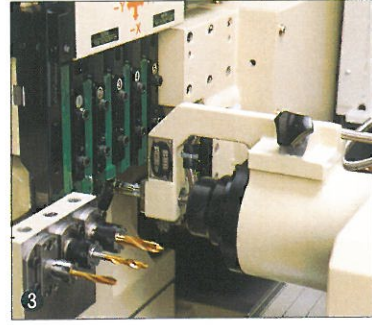
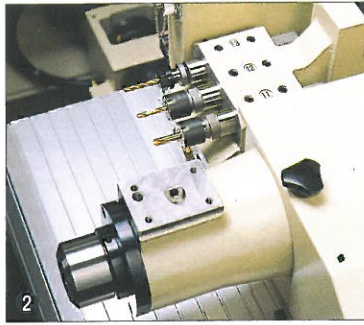
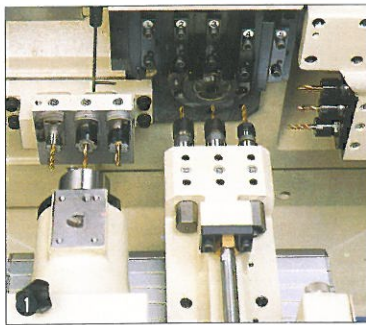


* With parts conveyor (Option)

3-Spindle cross drilling / milling unit	Slotting unit *	Main spindle 1° /15° indexing *	Sub-spindle 1° /15° indexing *	Sub-spindle threading	Main / sub-spindle synchro. control
Tool setter *	Separate type coolant tank	Front chip tank	Removable chip filter	Adequate operation space	Sheet key panel for each function
Spindle speed fluctuation detection	Broken cut-off tool detector	Parts ejection detector	Oil level detector	Coolant control system	Door interlock unit
Simultaneous interpolation	Simultaneous front and back drilling	Collet open / close	High speed tool selection	Rapid feed	32 bit CNC
Main / back same screen	Servo monitor function	Indexing angle direct input	Cutting off processing	Automatic power supply shut-off *	Machining data display

* Option

The SR Series combines easy operation with high productivity to achieve high-precision machining with a comfortable feel.



① Tool Post With 5 turning tools, 3 power-driven cross working tools and 3 tools each for front and back end machining, a high degree of flexibility can be achieved for versatile machining.

② Sub-Spindle It's easy to pick up small or short parts by moving the sub-spindle up to 13 mm from the end surface of cutting-off tool. Moreover, parts up to 80 mm in length and with a maximum projection length of 30 mm can be accommodated with forward ejection. For long parts machining, use of "Long part ejector with guide tube" is recommended.

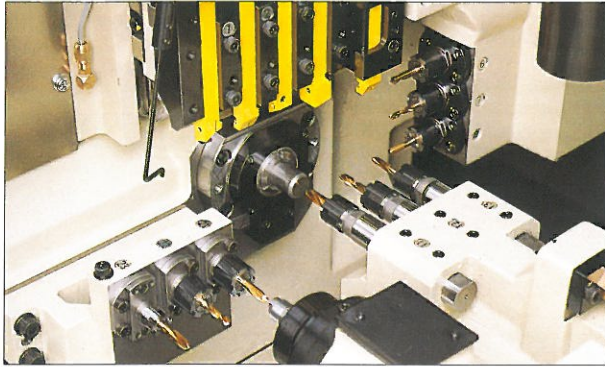
③ New Tool Setter (Option) Star's new tool setter (pat. pending) makes possible a remarkable reduction in tool setting time. When a tool is clamped in its approximate position, a touch sensor automatically measures the cutting edge position with micron-order precision.

④ NC Unit ⑤ CRT Screen Star has included a wide range of original functions in the software to make it easy to perform versatile high-level machining. Less demand on the skill of the operator.

⑥ Coolant Tank & Filter The filter on the coolant tank is especially positioned for easy access and removal.

⑦⑧⑨ Cutting Process Scenes A variety of processes can be performed employing cutting tools (Picture ⑦), a 3-spindle cross drilling / milling unit (Picture ⑧) or slotting unit (Picture ⑨), etc. Moreover, the machining pattern range can be further expanded using the simultaneous interpolation function.

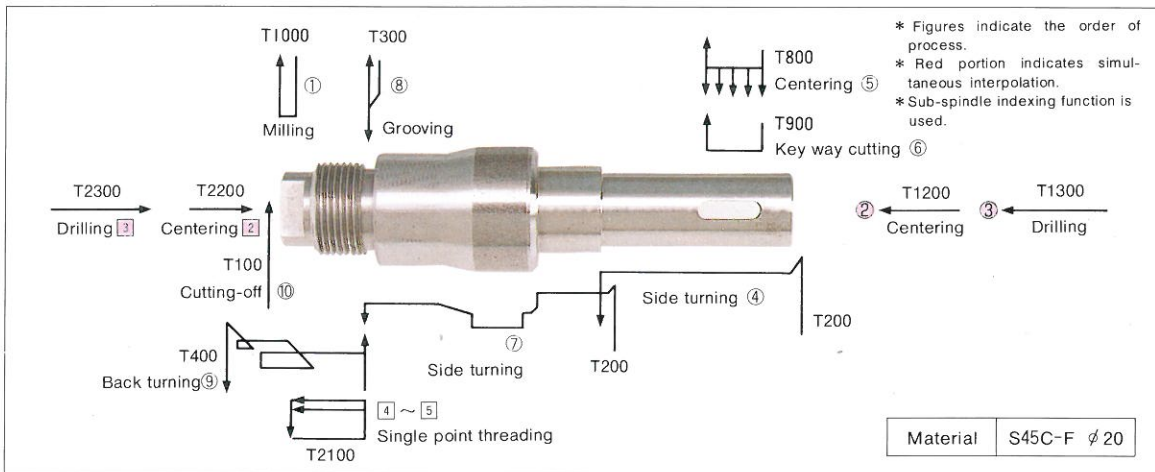
1 Star introduces simultaneous front and back end machining to the industry.



Star has made possible simultaneous machining from both the front and the back of the material by controlling the relative finishing positions of the front and the back 3-spindle end working units with extremely high precision. In combination with the simultaneous interpolation function, the SR Series can meet versatile machining patterns such as external diameter + front boring, front boring (tap) + back boring (tap), etc. Also, the back 3-spindle unit is positioned to allow tool setting to be performed with ease by an operator standing at the front of the machine.

● Front / Back Simultaneous Machining Example

The picture below shows a machining procedure in which the simultaneous interpolation function is employed. As the tooling figure shows the lathe is executing centering and drilling simultaneously on main and back sides. Furthermore, overlap machining is available conventionally. As the figure shows, back threading is being carried out by the back 3-spindle unit while side turning and key way cutting are executed on main side.

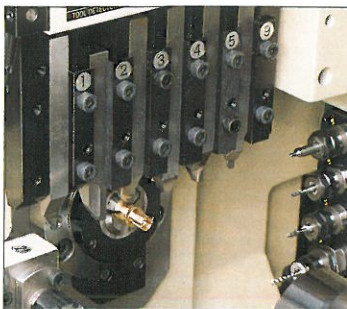


2 An attractive offer that only Star can make -the upgraded- specification SR Series.

For machining applications that can't be met by the standard SR Series, Star also offers models with the following upgraded specifications.

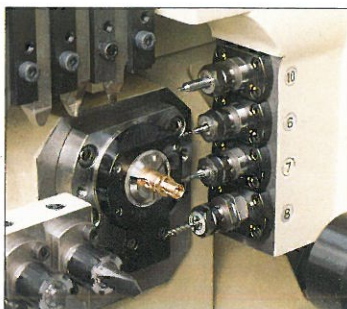
● 6-Station Toolholder

For customers who require a wide choice of turning tools



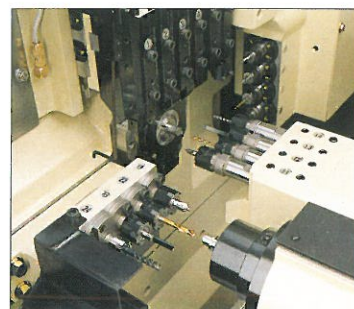
● 4-Spindle Cross Drilling / Milling Unit

For customers who require more driven tools



● 4-Spindle Endworking / Backworking Attachment

For customers who need to perform more versatile machining



The SR Series' specifications are packed with real user advantages, while Star's line up of options provides plenty of scope to expand your creative potential.

Standard Machine Specifications

Item		Specifications		SR-16	SR-20
Max. turning diameter		φ 16 mm (5/8 in)		●	
		φ 20 mm (25/32 in)			○
Max. headstock stroke		205 mm (8 in)	1 Chuck stroke	●	○
Max. drilling capacity	Stationary tool	φ 8 mm (5/16 in)	Max. chucking diameter ER16 : φ 10 ET-1-16 : φ 5.5 (In case of tapping)	●	○
	Power-driven attachment	φ 5 mm (3/16 in)		●	○
Max. tapping capacity	Stationary tool	M8 × P1.25		●	○
	Power-driven attachment	M5 × P0.8		●	○
Max. milling capacity		φ 10 mm (25/64 in)		●	○
Max. die cutting capacity		M8 × P1.25	Die O. D. : φ 20, φ 25	●	○
Max. slotting capacity		1.5 mm (W) × 4 mm (D) Cutter : φ 50 × φ 12.7		●	○
Main spindle speed		500~10,000 rpm		●	
		400~8,000 rpm			
Main spindle min. indexing angle		1°	Main spindle indexing	●	○
Main spindle motor		2.2 kw (continuous) / 3.7 kw (30min.)		●	○
Main spindle bore		φ 20 mm (25/32 in)		●	
		φ 24 mm (15/16 in)			○
Number of tools		5 tools + 3 power-driven tools		●	○
Tool shank		□ 12 × 95~120 mm		●	○
		□ 12.7 × 95~120 mm		●	○
Power-driven attachment spindle speed	Cross milling	350~5,000 rpm		●	○
	Slotting	60~900 rpm		●	○
Power-driven attachment motor		0.4 kw		●	○
Servo motor		All axes absolute pulse coder		●	○
Dimension (Length × Width × Height)		2,200 × 1,255 × 1,735 mm	Except for	●	○
Main spindle center height		1,060 mm	leveling pads & outer transformer	●	○
Weight		1,700 kg		●	○
3-Spindle endworking attachment	Number of tools		3 tools	●	○
	Max. drilling capacity	φ 8 mm~(5/16 in)	Max. chucking diameter	●	○
	Max. tapping capacity	M8 × P1.25	ER16 : φ 10	●	○
	Max. die cutting capacity	M8 × P1.25	Max. die diameter : φ 25	●	○
Coolant tank capacity		100 ℓ		●	○
Coolant motor		0.18 kw		●	○
Hydraulic tank capacity		20 ℓ		●	○
Hydraulic pump motor		0.75 kw		●	○
Power consumption		5.0 KVA		●	○

Optional Accessories

Door interlock unit with locking system 53456
Main spindle inner tube 6.5mm 53446
Slotting unit 53151
Long parts ejector with guide tube 50472(SR-16)·53472(SR-20)
Air blow version A 53474
Air blow version B 50475(SR-16)·53475(SR-20)
Barstock gripping unit 53418
Parts separator 328
Tool setter 53421
Parts stocker base 39119
Parts conveyor 53412
Main spindle 15° indexing unit 50454(SR-16)·53454(SR-20)
Sub-spindle 1° indexing unit 50482(SR-16)·53482(SR-20)
Sub-spindle 15° indexing unit 50484(SR-16)·53484(SR-20)
6-station toolholder 53109
4-spindle cross drilling / milling unit 53163·53164
4-spindle endworking / backworking attachment 50200D(SR-16)·53200D(SR-20)

Standard Accessories

	SR-16	SR-20		SR-16	SR-20		
Machine body	●	○	Work light (Fluorescent bulb AC230V, 18W)	●	○		
External transformer (incoming : AC380/400/415V, outgoing : AC230V)	●	○	Backworking attachment	●	○		
Numerical controller	●	○	Parts ejection detector	●	○		
Operation panel and CRT display	●	○	Tool kit	●	○		
Hydraulic unit (with pressure switch & oil level detector)	●	○	Operation manual, Installation manual, Parts list, Electric circuit diagram	●	○		
Air unit	●	○	Tool holder (1 set)	Tool holder	500-62 (1pce.)	●	
Separate type coolant oil tank (with oil level detector)	●	○			530-62 (1pce.)		○
Coolant oil flow control sensor	●	○		Drill sleeve (For front end machining)	301-24 (3pcs.)	●	○
Automatic centralized lubrication unit (with oil level detector)	●	○		Drill sleeve (For back end machining)	311-23 (3pcs.)	●	○
Revolving guide bushing unit	●	○		3-spindle cross drilling /milling unit	500-63 (1pce.)	●	
Door interlock unit	●	○		530-63 (1pce.)		○	
Main spindle 1° indexing unit	●	○					
Broken cut-off tool detector	●	○					
Leveling bolts and leveling pads	●	○					
Main spindle inner tube 11.7mm	●	○					

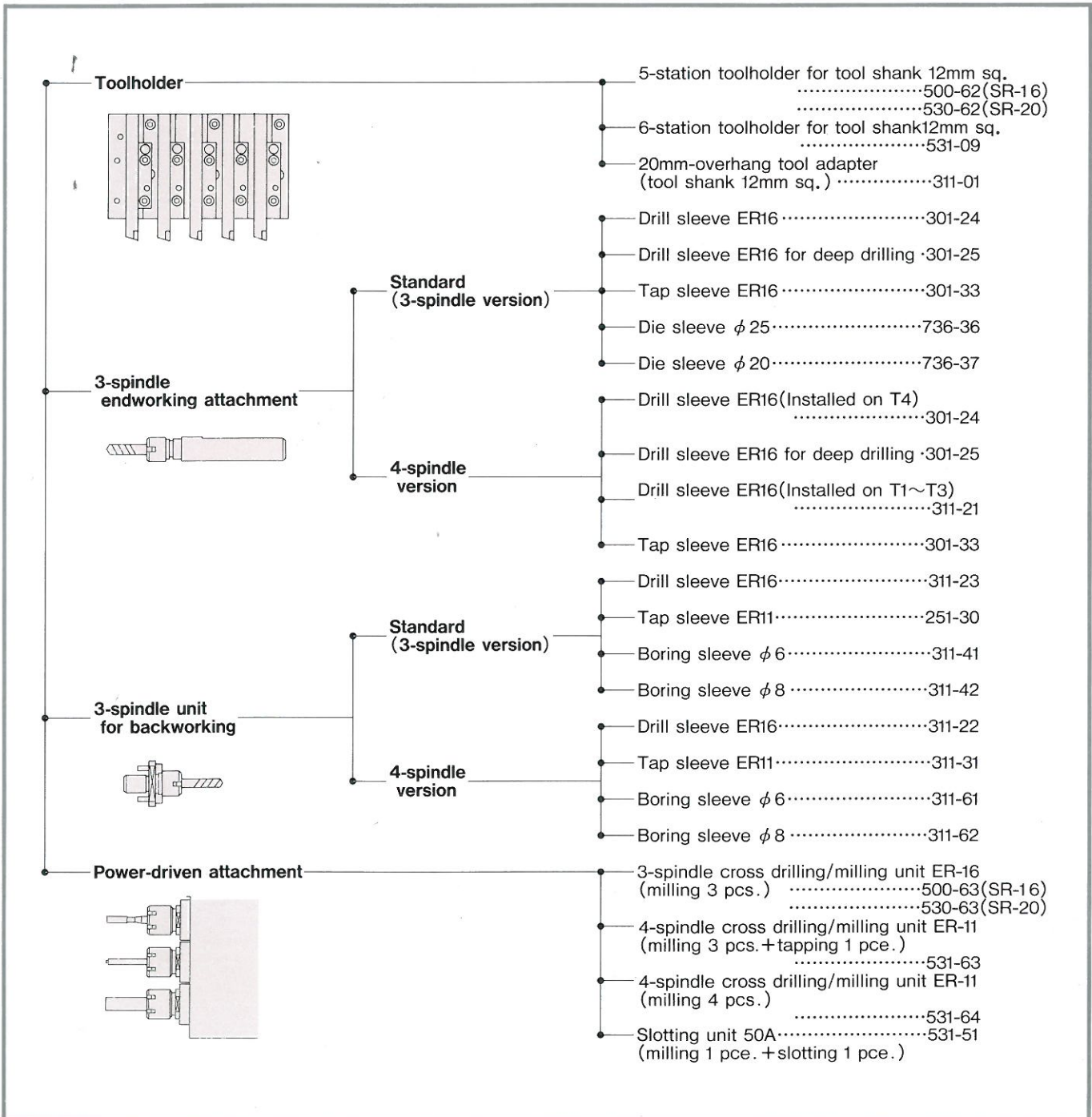
■ Backworking Attachment Specifications

Item		Specifications	SR-16	SR-20
Max. chucking diameter		φ 16 mm (5/8 in)	●	
		φ 20 mm (25/32 in)		●
Max. length for front ejection		80 mm (3.15/32 in)	●	●
Max. parts projection length		30 mm (1.13/16 in) Distance from collet end	●	●
3-Spindle unit for backworking	Number of tools	3 tools	●	●
	Max. drilling capacity	φ 7 mm (9/32 in) Max. chucking diameter ER16: φ 10	●	●
	Max. tapping capacity	M6×P1.0 Max. chucking diameter ER11: φ 7	●	●
Sub-spindle speed	Standard version	400~6,000 rpm	●	
		300~4,500 rpm		●
	Torque-up version	230~3,500 rpm	●	
		180~2,700 rpm		●
Sub-spindle motor		0.55 kw (continuous) / 1.1 kw (30min.)	●	●

Note):

The above machining capacities apply to S45C (AISI 1045, DIN C45) material. The machining capacities may differ from the listed values depending on the machining conditions, such as the material to be machined or the tools to be used.

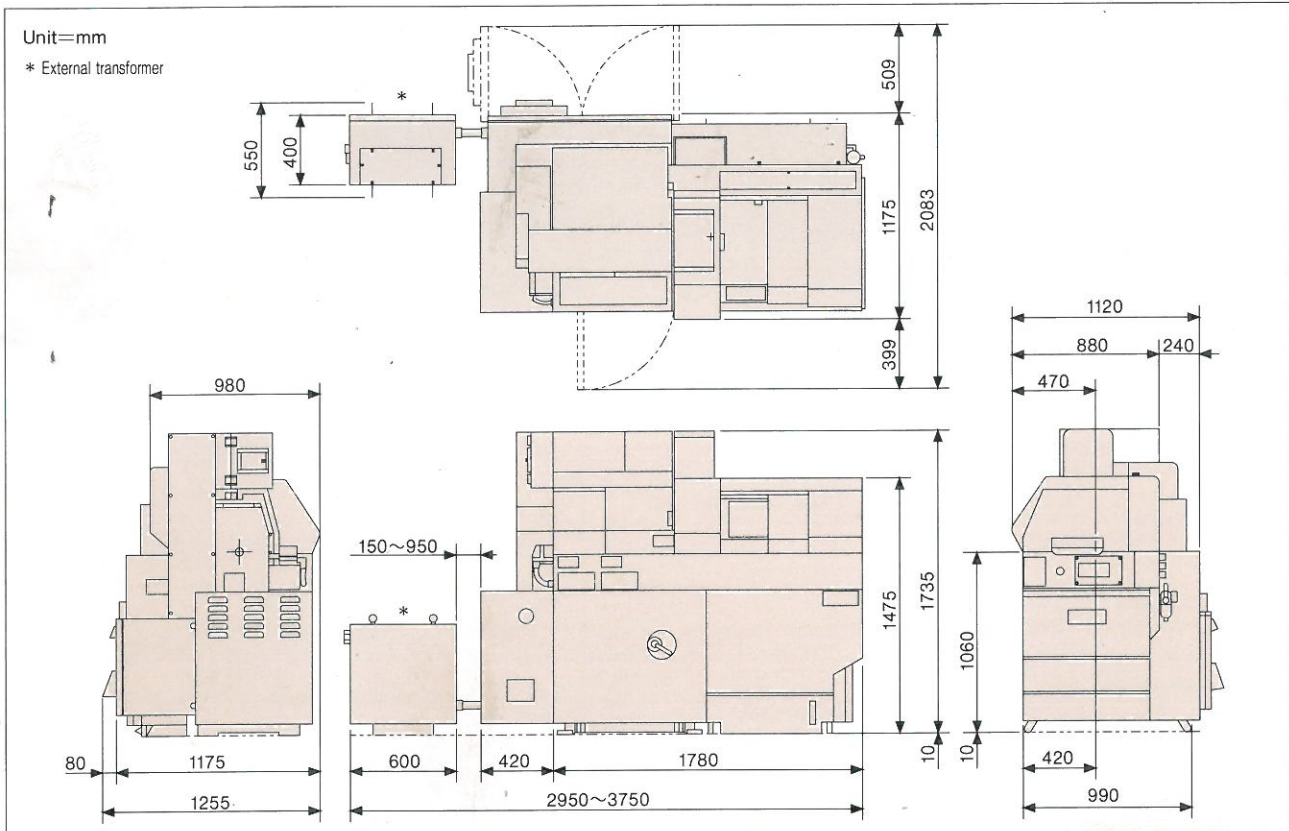
■ Tooling System Table



CNC SWISS TYPE AUTOMATIC LATHE

SR-16/20
CE marked

External Dimensions and Floor Space



- * Design features, specifications and technical execution are subject to change without prior notice.
- * This machine is controlled under foreign exchange and foreign trade control law.
- * This machine conforms to CE standards of safety. Both the operator and the machine are protected by the many functions incorporated to prevent accidents.

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