CNC SWISS TYPE AUTOMATIC LATHE

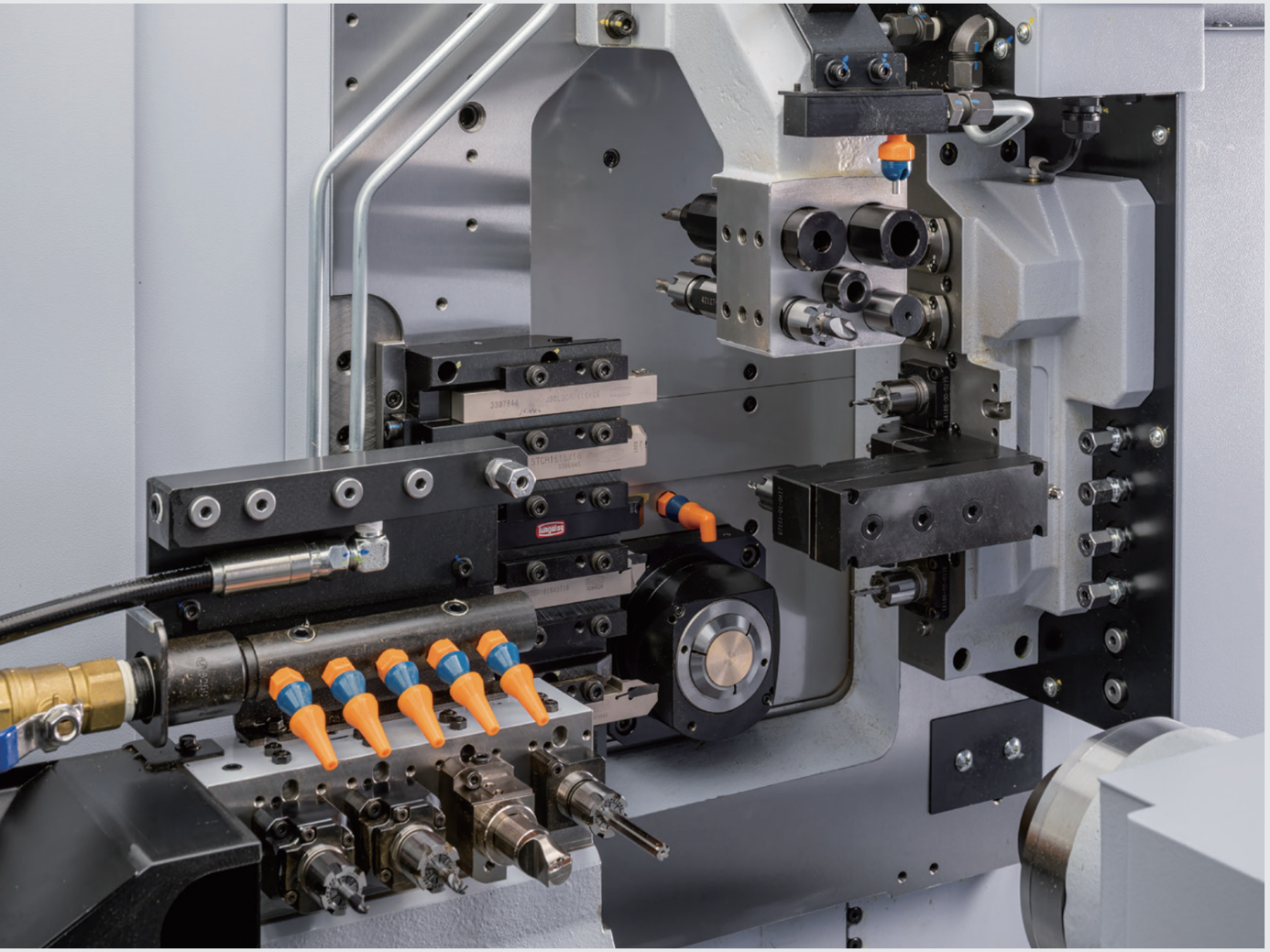
SP-32

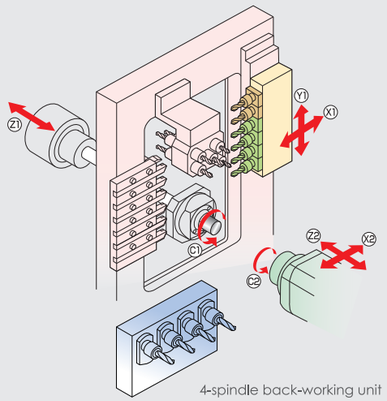


ECO

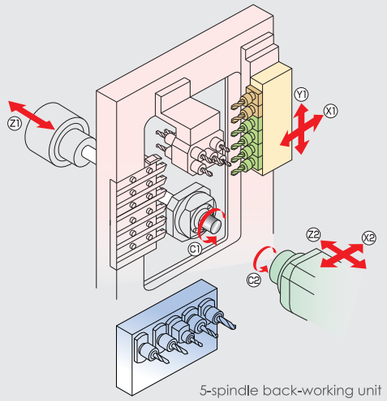
STAR Environmental Standards Conformity models :

By pursuing a balance between functionality and size, we have found the optimal solution for large-diameter machining.





4-spindle back-working unit



5-spindle back-working unit

Just the right amount of multifunctional machining performance packed into a φ32-class frame
The perfect combination for large-diameter machining is here

CNC SWISS TYPE AUTOMATIC LATHE

SP-32

Our latest model, the SP-32, was created to make the truly sufficient multifunctional machining performance required for large-diameter machining performance more accessible.
With this machine, we sought to achieve the optimal balance between functionality and size, and further refined it by focusing on factors related to productivity and workability.
For φ32-class parts machining, here is our realistic answer to the latest industry needs.

- ○ **Machine composition that pursues the optimal balance between functionality and size**
- ○ **Improved drilling capacity with increased torque specification of the main/sub spindles**



Machine composition

- ● Main spindle
- ● Sub spindle
- ● Front-side gate-shaped tool post
  - ■ 6-station tool holder
  - ■ 5-spindle sleeve holder
  - ■ Cartridge-type 6-spindle cross drilling unit
- ● Tool post specifically designed for back working (4-spindle type / 5-spindle type)

TOOLING SYSTEM

▪ Tool holder	Turning tool	6 tools (□16)
▪ 5-spindle sleeve holder	Front-end stationary tool	5 tools (φ32mm×2 tools φ22mm×3 tools)
	Rear-end stationary tool	5 tools (φ32mm×2 tools φ22mm×3 tools)
▪ Power driven tool	Cross drilling : 2 tools (ER16)	
	Cartridge type : 4 pos.	
▪ Tool post specifically designed for back working unit	Stationary tool	4-spindle type : max.4 tools
		5-spindle type : max.5 tools
	Power driven tool	max.4 tools

Designed for optimal precision, functionality, and productivity

BENEFIT
01

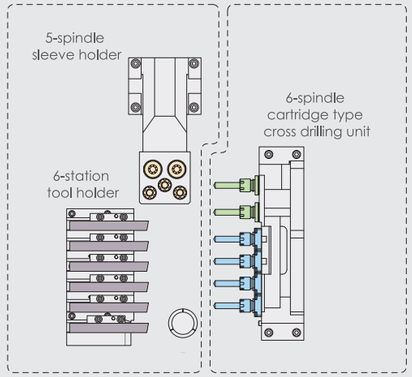
Improved machining capability

A gate-shaped gang tool post is employed on the front side, enabling the maximum number of tools to be mounted within the optimal machine size. A wide variety of tooling accommodates multifunctional machining needs.

Composition of the front-side tool post

- 6-station tool holder (□16 mm)
- 5-spindle sleeve holder (ϕ32 mm × 2 / ϕ22mm × 3)
- 6-spindle cartridge type cross drilling unit (cross drilling: ER16 × 2)

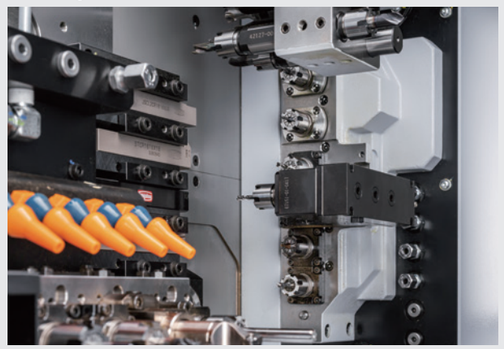




Front-side tool post

○ Employs a 5-spindle sleeve holder with two positions for handling large diameter drilling. In addition, main spindle torque-up specification increases the drilling capacity to ϕ14 mm. (Standard Specification: ϕ13 mm)

○ 6-spindle cross drilling unit is equipped with the tool post. Four cartridge-type positions realize a wide variety of tooling variations.

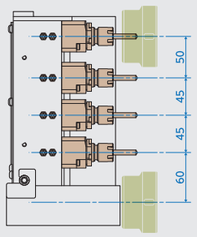


Rear-side tool post

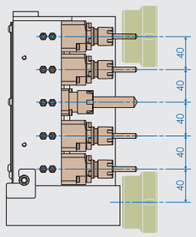
○ Up to four power-driven tools can be installed on the tool post specifically designed for back working. Handles a diverse range of multifunctional machining on the rear side.

○ Sub spindle torque-up specification increases the drilling capacity to ϕ14 mm. (Standard Specification: ϕ13 mm)

○ The tool post specifically designed for back working provides tool-to-tool pitch that takes into account constraints from adjacent tools, in both the 4-spindle type and 5-spindle type.



4-spindle back-working unit



5-spindle back-working unit

BENEFIT
02

Realization of high precision

○ Both Main/sub spindles are equipped with a C-axis control function.
Both have built-in sensors to achieve high-precision spindle indexing.

○ Oil mist cooling of the power driven tool gear box on the front-side tool post suppresses excessive heat generation.

○ Thermal sensors installed on various parts of the machine body achieve highly accurate and flexible thermal displacement correction.

BENEFIT
03

Improved expandability

○ Optional torque-up specifications are available for both main and sub spindles, expanding the handling range to accommodate large-diameter parts.

○ G.B./N.G.B. switching function is equipped on the main spindle, enabling machining at optimal specifications according to the full dimensions of the machined parts.

○ 4-spindle / 5-spindle types are available for the tool post specifically designed for back working, enabling selection of the optimal specification for the machined part.



BENEFIT
04

Enhanced workability

○ Cutting room has been redesigned, greatly improving visibility and accessibility to the guide bush and tool post.

○ Exterior design takes workability into consideration, incorporating features such as a storage mechanism* for the chip scraping port cover. By keeping covers off the floor, contamination caused by coolant and chips is prevented.

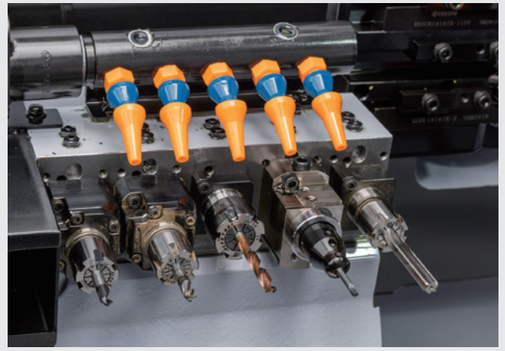
○ Improved work efficiency through the adoption of a structure* that facilitates changeover of the parts ejector.

*Chip scraping port cover storage mechanism (patent pending)
*Mechanism for simplifying parts ejector changeover (patent pending)

○ By supplying a sufficient flow of coolant, chip removal by coolant discharge is greatly improved.

○ By employing an armor-type cover on the sliding section of the X2 axis, chip collection rates are improved.

○ Equipped with a large-capacity 230 L coolant tank. Simplifies coolant management and extends change cycle, reducing the workload.



The tool mounting station has been enhanced with a focus on multifunctional machining for large-diameter workpieces. A wide range of attachable tool units are available, including milling and front-side drilling, thread whirling, slotting, and polygon machining units.
The optimal layout can be selected from a wide range of tooling systems to suit different needs, greatly expanding the possibilities for machining variations.



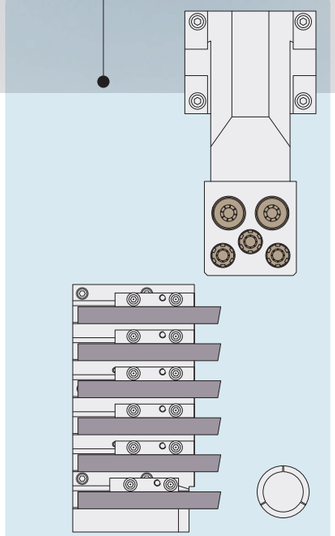
Tool holder / Sleeve holder

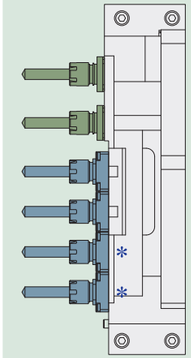
- 6-station stationary tool holder (□16 mm)
- 6-station stationary tool holder (□16 mm) through-type coolant
- 5-spindle sleeve holder (ϕ32 mm × 2 tools / ϕ22mm × 3 tools)

4-spindle / 5-spindle back-working unit

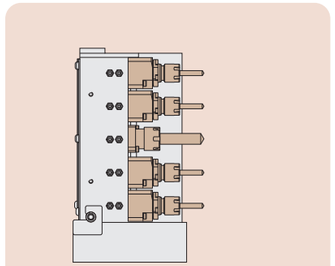


- Drill sleeve
- Boring sleeve
- Milling unit
- Quad-speed milling unit
- Oil-through type Back working drill unit
- Slotting unit





✻ Positions limited to milling units



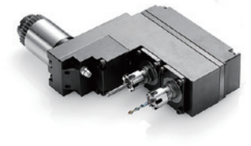
6-spindle type cross drilling unit

- Cross-drilling: 2-spindle (ER16)
- Cartridge: 4 pos.

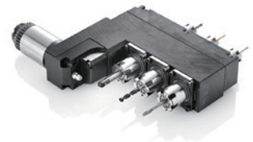
- Milling unit / Quad-speed milling unit



- 2-spindle face drilling unit / 2-spindle counterface drilling unit



- 3-spindle face drilling unit / 3-spindle counterface drilling unit



- 2-spindle front drilling adaptor



- Slotting unit



- Polygon machining unit



- Thread whirling unit



Standard Machine Specifications

OP : OPTION

Item		Specifications
Max. machining diameter		φ32mm（1-1/4in）
Max. headstock stroke	Standard	310mm（12-13/64in）
	N.G.B. type	Bar diameter×2.5（Max.80mm）(Max.3-5/32in)
Tool		6 tools（□16mm）
sleeve holder	Number of tools	5 tools（φ32mm×2 tools、φ22mm×3 tools）
	Max. drilling capability	φ13mm（33/64in）OP：φ14mm（35/64in）
	Max. tapping capability	M12×P1.75
Power driven attachment	Number of tools	Cross milling 2 tools ＋ Cartridge type 4 pos.
	Max. drilling capability	φ8mm（5/16in）
	Max. tapping capability	M6×P1.0
	Spindle speed	Max.5,000min^{-1}
	Drive motor	2.0kW
Rapid feed rate		35m/min（X1、Y1、Z1、X2、Z2）
Main spindle indexing angle		C-axis control
Main spindle speed		Max.7,000min^{-1}（OP：Max.5,600min^{-1}）
Main spindle motor		5.5kW（CONT.）／7.5kW（30min）
Coolant tank capability		230ℓ
Dimensions(W×D×H)		2,570×1,275×1,850mm
Weight		Approx. 3,000kg
Power consumption		6.84kVA
A-weighted sound pressure : note-1		Max.67dB（A）

Backworking Attachment Specifications

Item			Specifications	
			4-spindle back-working unit	5-spindle back-working unit
Max. chucking diameter			φ32mm（1-1/4in）	
Max. length for front ejection			125mm（4-59/64in）	
Max. parts projection length			45mm（1-49/64in）	
4-spindle backworking unit	Number of tools	Stationary tool	Max.4 tools	Max.5 tools
		Power driven tool	Max.4 tools	Max.4 tools
	Max. drilling capability	Stationary tool	φ13mm（33/64in）OP：φ14mm（35/64in）	
		Power driven tool	φ6mm（15/64in）	
	Max. tapping capability	Stationary tool	M10×P1.5	
		Power driven tool	M5×P0.8	
Power-driven att. spindle speed			Max.6,000min^{-1}	
Power-driven att. drive motor			0.75kW	
Sub spindle indexing angle			C-axis control	
Sub spindle speed			Max.7,000min^{-1}（OP：Max.5,600min^{-1}）	
Sub spindle motor			2.2kW（CONT.）／3.7kW（15min）	

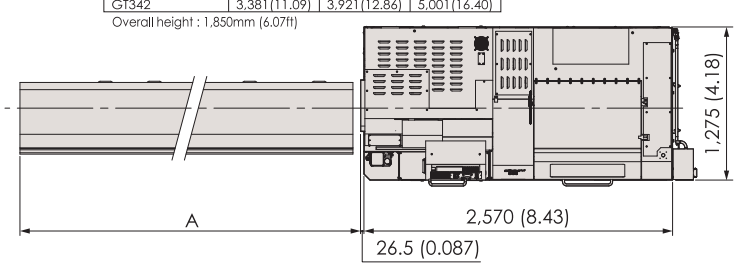
External Dimensions and Floor Space

unit : mm(ft)

●Bar Feeder

Type \ Length	Amm(ft)		
	2.5M	3.0M	4.0M
ASR RX32Ev	3,835(12.58)	4,335(14.22)	5,335(17.50)
OS32RE II	3,625(11.89)	4,115(13.50)	5,115(16.78)
OS32VS II	3,565(11.69)	4,065(13.33)	5,065(16.61)
GT342	3,381(11.09)	3,921(12.86)	5,001(16.40)

Overall height : 1,850mm (6.07ft)



Standard Accessories and Functions

1. CNC Unit FANUC 0i-TF Plus
2. 10.4-inch color display
3. Pneumatic unit
4. Separate coolant tank
5. Coolant level detector
6. Automatic centralized lubrication unit
7. Door interlock system
8. Spindle clamp unit (main/sub)
9. Cs contouring control (main/sub)
10. Drive unit for revolving guide bush
11. Revolving guide bush unit
12. Air purge for revolving guide bush
13. Broken cut-off tool detector
14. Main/sub collet sleeve
15. 6-station stationary tool holder □16 mm
16. 5-spindle sleeve holder
17. 6-spindle cartridge type cross drilling unit
18. Tool post specifically designed for back working (4-spindle type / 5-spindle type)
19. Sub spindle air purge unit
20. Sub spindle air blow unit
21. Tool rotation drive unit B
22. Parts ejection detector
23. Parts conveyor
24. Water removal unit
25. Work light
26. Earth leakage breaker

Optional Accessories and Functions

1. Beacon
2. Beacon interface
3. Oil mist filter
4. Main spindle torque-up specification
5. Sub spindle torque up specification
6. X2-axis feed unit oil air specification
7. Main spindle inner tube
8. Automatic bar feeder interface
9. Rotary magic guide bush unit
10. Non-guide bush version
11. Parts ejector with spring
12. Parts ejector with air cylinder
13. Parts ejector with guide tube
14. Parts stopper unit
15. Coolant flow detector
16. Coolant unit (0.7MPa/2.5MPa/6.9MPa)
17. Coolant unit signal cable
18. Coolant unit power cable
19. Coolant valve (2.5MPa/6.9MPa)
20. Coolant unit piping
21. Expanded I/O module unit
22. Chip conveyor hinge-type
23. Chip conveyor hinge-type long length
24. Mist collector mounting adaptor
25. LAN/RS232C interface specification
26. Transformer
27. Transformer, CE marking version

Note)
The machining capacities apply to SUS303 material. The machining capacities may differ from listed values depending on the machining conditions, such as the material to be machined or the tools to be used.

note-1 :
- Measures conforming to ISO standard.
- A-weighted sound pressure is a general assessment standard characteristic that corrected the sound level to human acoustic sense.

※Design features, specifications and technical execution are subject to change without prior notice.
※This product is an export control item subject to the foreign exchange and foreign trade laws. Thus, before exporting this product, or taking it overseas, contact your STAR MICRONICS dealer.

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