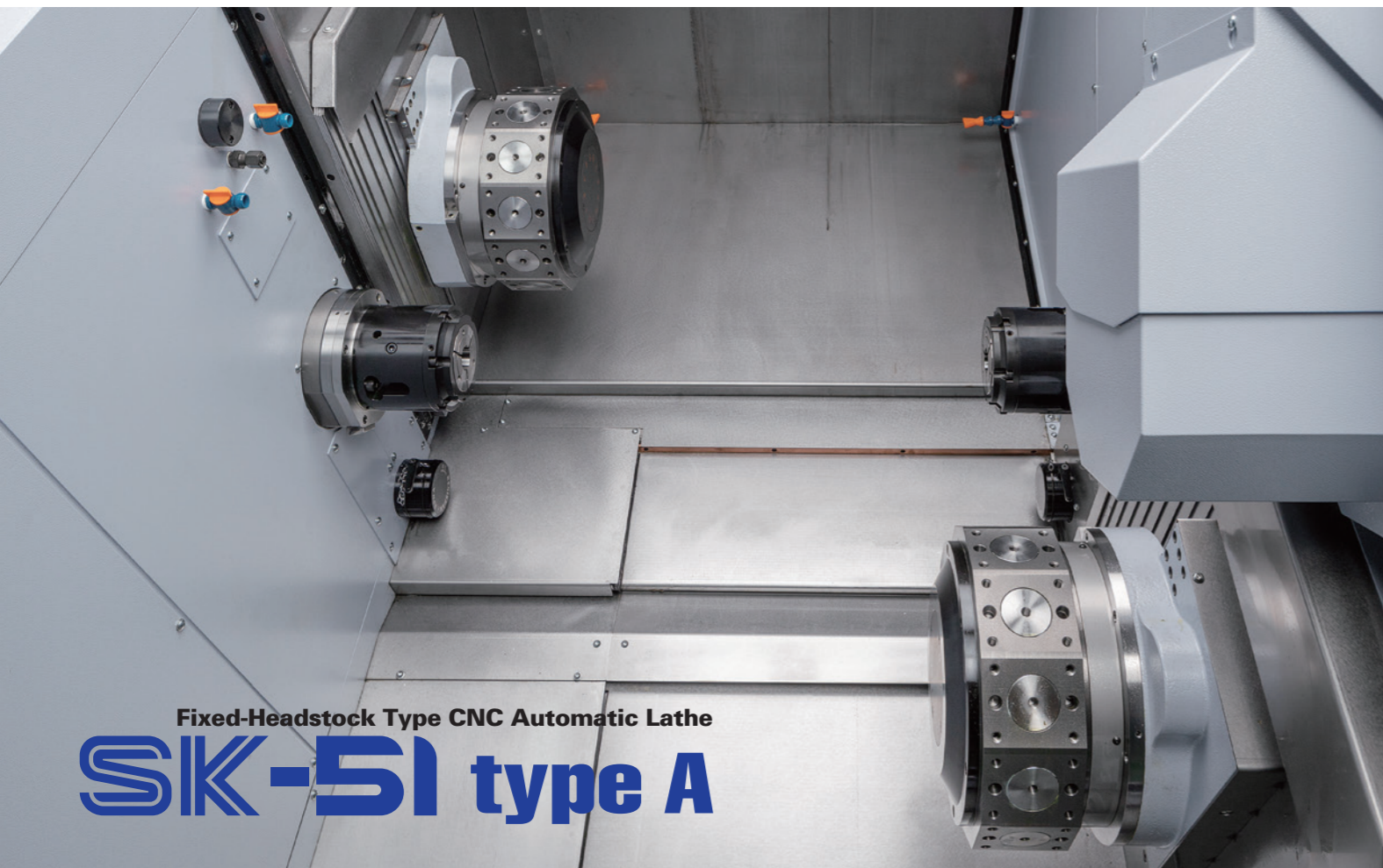




Fixed-Headstock Type CNC Automatic Lathe

# SK-51 type A





## A new era of fixed-headstock lathes has begun.

A new Star product lineup that responds to the needs of fixed-headstock lathe users. In pursuit of the highest level of functionality, rigidity, and operability in the category, SK-51 suggests innovations in 51 mm diameter-class bar stock processing with confidence.

### High Functionality and Productivity

#### High Functionality and Productivity ① Supports heavy cutting

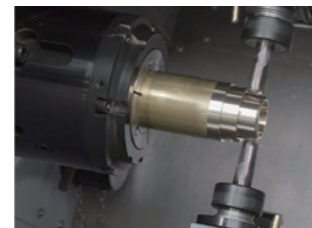
The main and sub spindles are equipped with a spindle motor of the same output. A high-output motor is employed to drive the main spindle and power driven tools to support heavy cutting of large-diameter workpieces.

Spindle motor 7.5/15kW

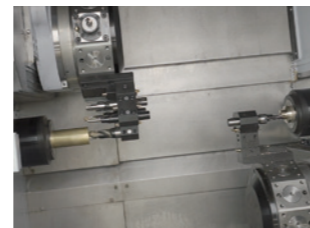
Power driven tool motor 4.5kW

#### High Functionality and Productivity ② Reduced cutting time

The tool post employs twin, 12-station turrets equipped with a Y-axis function. Through various machining that utilizes the machine configuration of the turret-type tool posts positioned facing each other, cutting time is reduced.



Simultaneous machining (balance cut)



Front/rear overlap machining

#### High Functionality and Productivity ③ Reduced idle time

By equipping the machine with a dedicated hydraulic device for Path 1 and 2 respectively, and optimizing the piping route, idle time associated with clamping/unclamping of the main spindle and tool posts is reduced.

#### High Functionality and Productivity ④ Supports raw materials

Options such as collet chuck, Hainbuch chuck, 6-inch power chuck, etc., are available for clamping materials. It is capable of supporting a wide range of machining uses, not only of bar materials, but also raw materials including forged parts.

NEWEST DESIGN for NEW GENERATION

## High Rigidity and Accuracy

#### High Rigidity and Accuracy ① Enhanced tool post rigidity

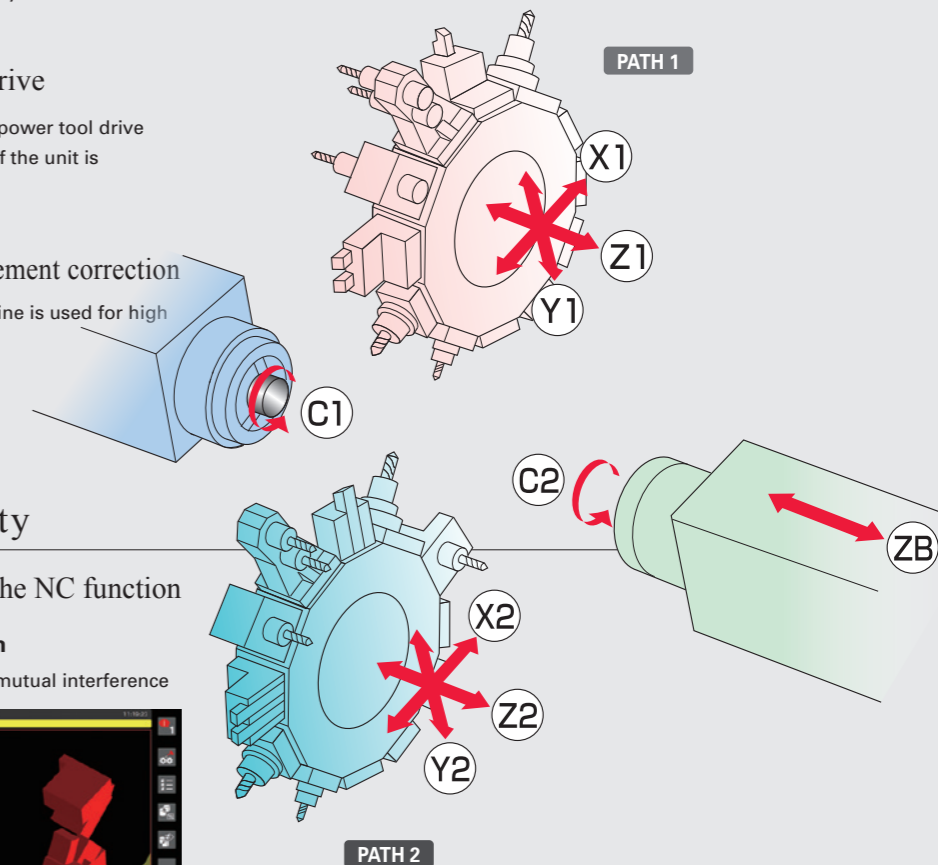
A "square type slide guideway" is employed on the sliding section of the X-axis on each tool post for enhanced tool post rigidity.

#### High Rigidity and Accuracy ② One-position drive

A one-position drive mechanism is employed as the power tool drive method of the turret-type tool post. The service life of the unit is extended by turning the selected tool only.

#### High Rigidity and Accuracy ③ Thermal displacement correction

The thermal data from various locations of the machine is used for high accuracy and flexible correction.

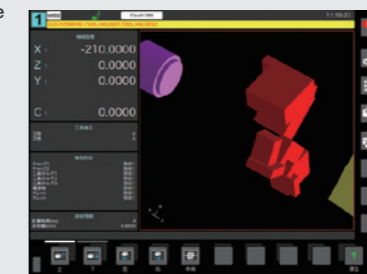


## Operability and Workability

#### Operability and Workability ① Support using the NC function

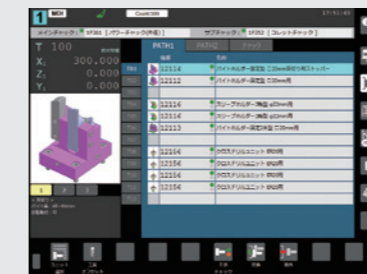
##### NC function ① Interference check function

The 3D interference check function is used to detect mutual interference of tools and chucks in advance and stop the machine during program or handle operation.



##### NC function ② Tooling screen

Realizes on-screen selection of tool units and chucks and input and management of correction values for each tool.



##### NC function ③ Manual viewer function

The NC screen has a function that allows management and viewing of PDF manuals that are registered in advance.

#### Operability and Workability ② Utilization of commands

The utilization of various commands that were developed through control of Swiss-type automatic lathes realizes simplified machining programs and reduced cycle times.

- Through Star's original "Tool selection commands using T codes", appropriate positioning is performed for the selected tool unit.
- Overlap of operations such as unclamping and retracting when selecting turret tools reduces idle time.
- Automatic cut-off function performs automatic top cutting during replacement of bar materials.

## □ Standard Machine Specifications

Item		SK-51 type A	
Main spindle	Max. machining diameter	φ51mm(2in)	
	Main spindle speed	Max.5,000min <sup>-1</sup>	
	Main spindle motor	7.5kW(continuous)/15kW(10min./15%ED)	
	Main spindle indexing angle	C-axis control	
	Through-spindle hole diameter	φ52.5mm(2-1/16in)	
	Chucking type	Hydraulic rotary cylinder	
	Collet chuck type	H-S22 / S51 / S38	
	Power chuck type	6inch	
Sub spindle	Max. machining diameter	φ51mm(2in)	
	Max. length for front ejection	125mm(4-59/64in)	
	Max. parts projection length	80mm(3-5/32in)	
	Main spindle speed	Max.5,000min <sup>-1</sup>	
	Main spindle motor	7.5kW(continuous)/15kW(10min./15%ED)	
	Main spindle indexing angle	C-axis control	
	Through-spindle hole diameter	φ52.5mm(2-1/16in)	
	Chucking type	Hydraulic rotary cylinder	
PATH 1 Tool post	Collet chuck type	H-S22 / S51 / S38	
	Power chuck type	6inch	
	Type	12-stationed turret	
	Number of tools	Tool	□20mm(25/32in)
		Sleeve	Max. 2 tools/station
		Power driven tool	Max. 2 tools/station
	Power driven tool	Spindle speed	Max.6,000min <sup>-1</sup>
		Drive motor	4.5kW(continuous)/7.5kW(5min./30%ED)
PATH 2 Tool post	Type	12-stationed turret	
	Number of tools	Tool	□20mm(25/32in)
		Sleeve	Max. 2 tools/station
		Power driven tool	Max. 2 tools/station
	Power driven tool	Spindle speed	Max.6,000min <sup>-1</sup>
		Drive motor	4.5kW(continuous)/7.5kW(5min./30%ED)
	Rapid feed rate	X1, X2	20m/min
		Y1, Y2	15m/min
Z1, Z2, ZB		40m/min	
Coolant tank		458 ℓ	
Coolant pump	1.5kW(2.5MPa)×1, 0.4kW×1		
Dimensions (W×D×H)	2,800×2,070×2,130mm		
Weight	6,600kg		

## □ Standard Accessories and Functions

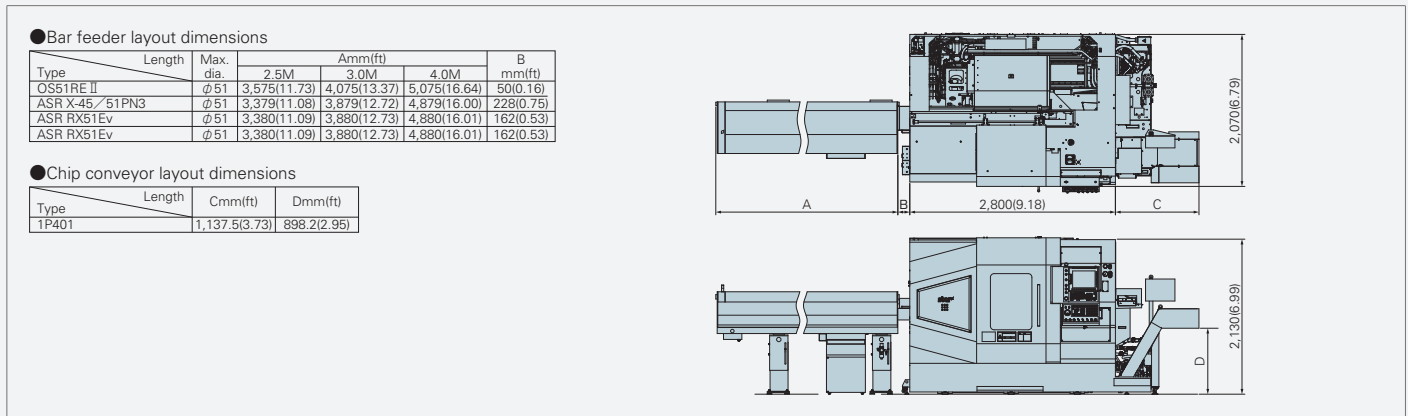
1. CNC unit FANUC 32i-B (iHMI)
2. Operation panel 15-inch color LCD display (with touch panel)
3. Manual pulse generator
4. Pneumatic unit
5. Hydraulic unit
6. Automatic centralized lubrication unit
7. Coolant level detector
8. Door interlock system
9. Cs contouring control (Main / Sub)
10. Spindle clamp unit (main/sub)
11. Spindle air purge system (Main/Sub)
12. Pneumatic cylinder type product ejection system (with ejection detection system)
13. Sub spindle mix blow system (Air & Coolant)
14. Tool drive unit (Turret type tool post)
15. Parts catcher
16. Parts conveyor
17. Automatic bar feeder interface
18. Work light
19. Leakage breaker

## □ Optional Accessories and Functions

1. Chip conveyor
2. Coolant flow detector
3. Water removal unit
4. Beacon
5. Cut-off tool breakage detection system (Mechanical type)
6. Main/Sub chuck (to be selected from the tooling system)
7. Main spindle inner tube
8. Main/Sub spindle upper air blow (for power chuck)
9. Foot switch (Main/Sub chuck opening and closing)
10. Coolant pump extension (2.5 MPa)
11. Coolant unit (6.9 MPa)
12. Coolant unit signal cable
13. Coolant system piping 6.9 MPa
14. Tool setter
15. LAN/RS232C interface
16. Transformer CE marking version
17. Transformer CE marking cable
18. CE marking version

## □ External Dimensions

unit : mm(ft)



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.

※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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