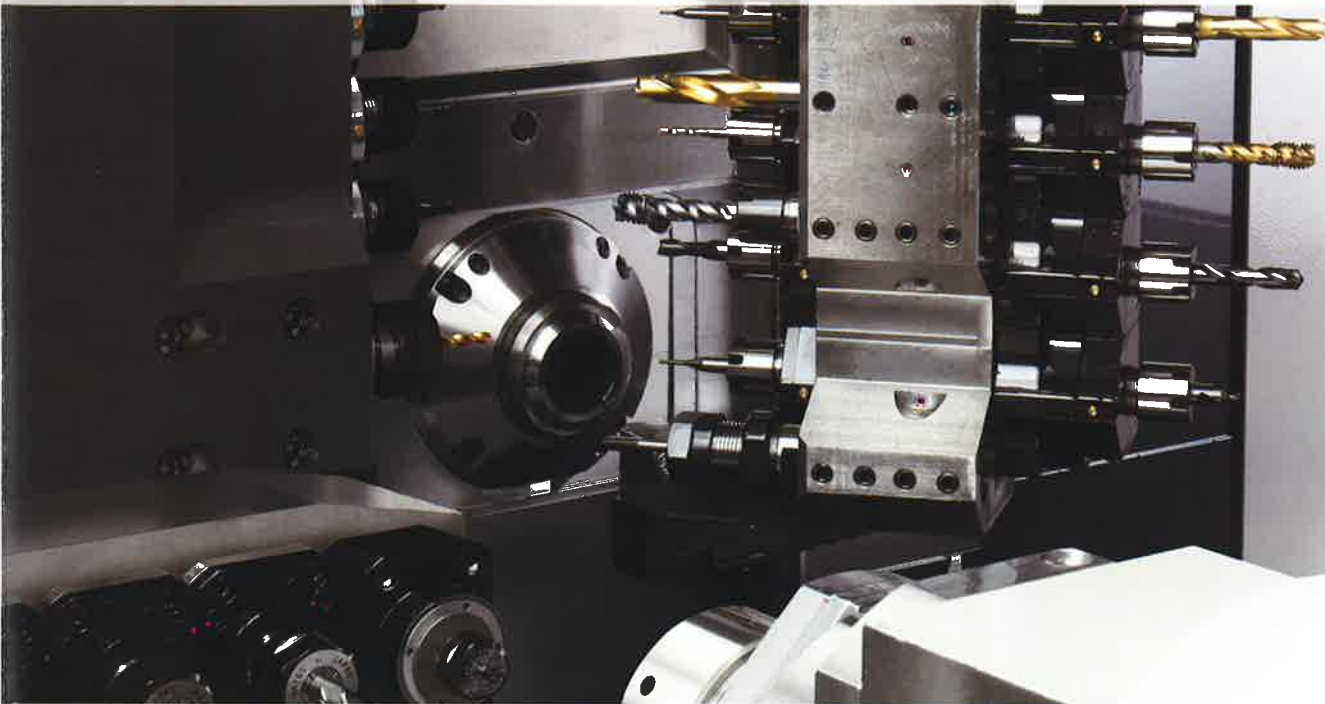


TSUGAMI

CNC Precision Automatic Lathe

SS267/SS327 SS267-5AX/SS327-5AX



Continuous B-axis swiveling tool post
Ultimate swissturn for complex-machining



Machine standard specifications

Name	SS267	SS327
Bar stock chucking diameter	φ8 to φ26 mm	φ8 to φ32 mm
Max. machining length	320 mm (Direct-drive rotary guide bushing (Option))	
Guide bush-less (Option)	50 mm	70 mm
Max. main spindle drilling diameter		φ12
Max. main spindle tapping diameter		M10
Max. back spindle chucking diameter	φ26	φ32
Max. back spindle drilling diameter		φ8
Max. back spindle tapping diameter		M8
Max. cross drilling diameter		φ8
Max. cross tapping diameter		φ6
Max. drilling diameter		φ8
Max. tapping diameter		M6
Max. spindle speed		5,000 min ⁻¹
Main spindle speed	200 to 10,000 min ⁻¹	200 to 8,000 min ⁻¹
Back spindle speed	200 to 10,000 min ⁻¹	200 to 8,000 min ⁻¹
Total tool storage capacity		38
Tool size	□16 mm x 100 mm	
Rapid traverse rate	32 m/min (X1, Y1, Y2: 24 m/min)	
Main spindle	3.7/5.5 kW	
Back spindle	2.2/3.7 kW	
Cross drill of front tool post	1.0 kW	
B-axis tool spindle	1.0 kW	
Weight	3,600 kg	
Power source requirement	21 KVA	
Width x depth x height	2,150 x 1,280 x 2,010 mm	

NC standard specifications

Item	SS267/327	SS267-5AX/327-5AX
NC unit	FANUC 32i-B	FANUC 31i-B5
Axis names	X1, Z1, Y1, X2, Z2, Y2, C1, C2, B1	
Least input increment	0.001 mm (diameter value for X1/X2-axis)	
Least command increment	X1/X2 axis: 0.0005 mm, others: 0.001 mm	
Max. programmable value	±8 digit	
Interpolation method	Linear/Circular	
Feedrate	1 to 6,000 mm/min	
Feedrate override	0 to 150%, 10% increments	
Dwell	G04 0 to 99999.999	
ABS/INC command	X,Z,Y,C,B: Absolute, U,V,W,H: Incremental	
Tool offset value	±6 digit	
Tool offset pairs	99	
LCD/MDI	10.4" color LCD	
Display language	English	
Part program storage size	256 kbytes (equivalent to 320 m tape length for each path)	
Number of register programs	63	
Auxiliary functions	Main: M5-digit, Back: M3-digit	
Spindle functions	S5-digit	
Tool functions	T4 digit	

Options

Name	
Guide bushing	Direct-drive rotary guide bushing Guide-bushless kit Back spindle brake
Advanced function system	Back spindle 15-degree Index Rotary tool beside the back spindle 0.1 μm resolution
Live tools & adapter (Back tool post)	Tool spindle Back cross tool spindle Back tool adapter
Coolant system	High-pressure pump (2MPa) M code oil blow Mist collector Work conveyor
Work discharge system	Work catcher Front discharge Rear discharge
Chip disposal	Chip conveyor
Operation support functions	Tool set gauge Tap breakage detector Signal indicator
Machine maintenance and monitoring functions	Thread whirling holder Hob cutter arbor Drill holder
Tooling equipments	Part program storage size 512 Kbyte Direct drawing dimension program Variable-lead thread cutting Thread cutting cycle retract Number of register program extension 1 (256 KB: 500 programs) (512 KB: 1000 programs) Polar coordinate interpolation Cylindrical interpolation Display language (Simplified Chinese)
NC function	Internal illumination Automatic fire extinguisher Manual pulse generator with program check function RS232C interface Inch/metric conversion Abnormal load detection
Safety and others	

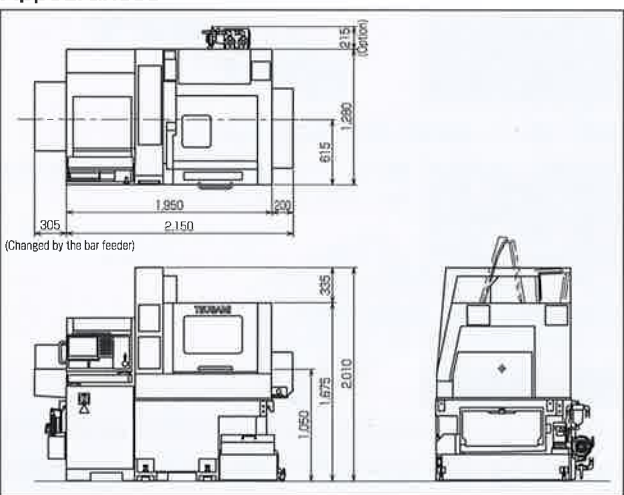
Machine standard accessories

Name	Name	Name
Front tool post : 4-spindle cross drill	Main spindle adapter	Transit clamps
Deep hole drill holder (φ25 mm x 2 holes)	Back spindle adapter	Automatic power shut-off
Automatic programming software	Automatic cutting-off function / automatic facing function	Back spindle air purge
Tool-height compensation function	Door interlock (Tooling zone side door/Main spindle side door)	Cross drill air purge
Tool counter	Coolant level switch	Main spindle brake
Periodic maintenance screen	Spindle cooling unit	
Main spindle C-axis / Back spindle C-axis	Standard tools	

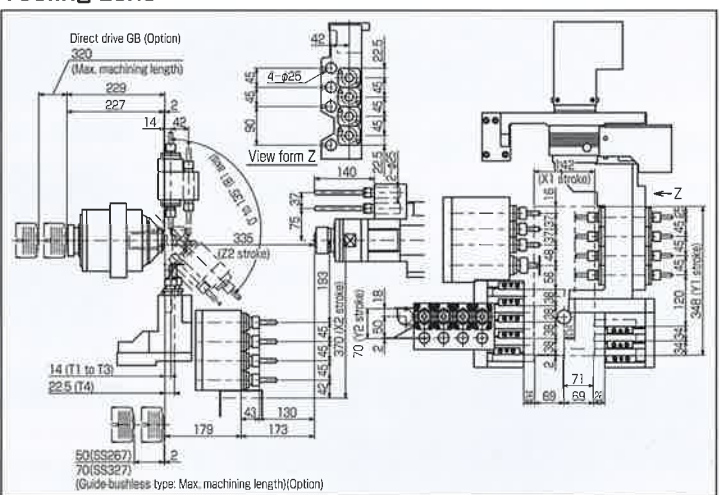
NC standard accessories

Name	Name	Name
Chasing function	Z1-Z2-axis synchronous control	Canned cycle for drilling
Continuous thread cutting	Tool geometry/wear offset	Rigid tap (main spindle, back spindle, cross/back tool)
Manual pulse generator	Programmable data input	Cut-off detection (differential speed detection)
Memory card I/O interface	Chamfering, corner R	Spindle speed fluctuation detection
Back ground editing	Tool nose radius compensation	Stored stroke check 2, 3
Run time/parts number display	HRV control	3-dimensional coordinate conversion
Custom macro	Multiple repetitive cycle	Hobbing function
Constant surface speed control	C1-C2 synchronous control	A1 contour control (only for SS267-5AX/327-5AX)
Spindle synchronous control (rotation, phase)	Expanded program editing	Data server function (only for SS267-5AX/327-5AX)

Appearances



Tooling zone



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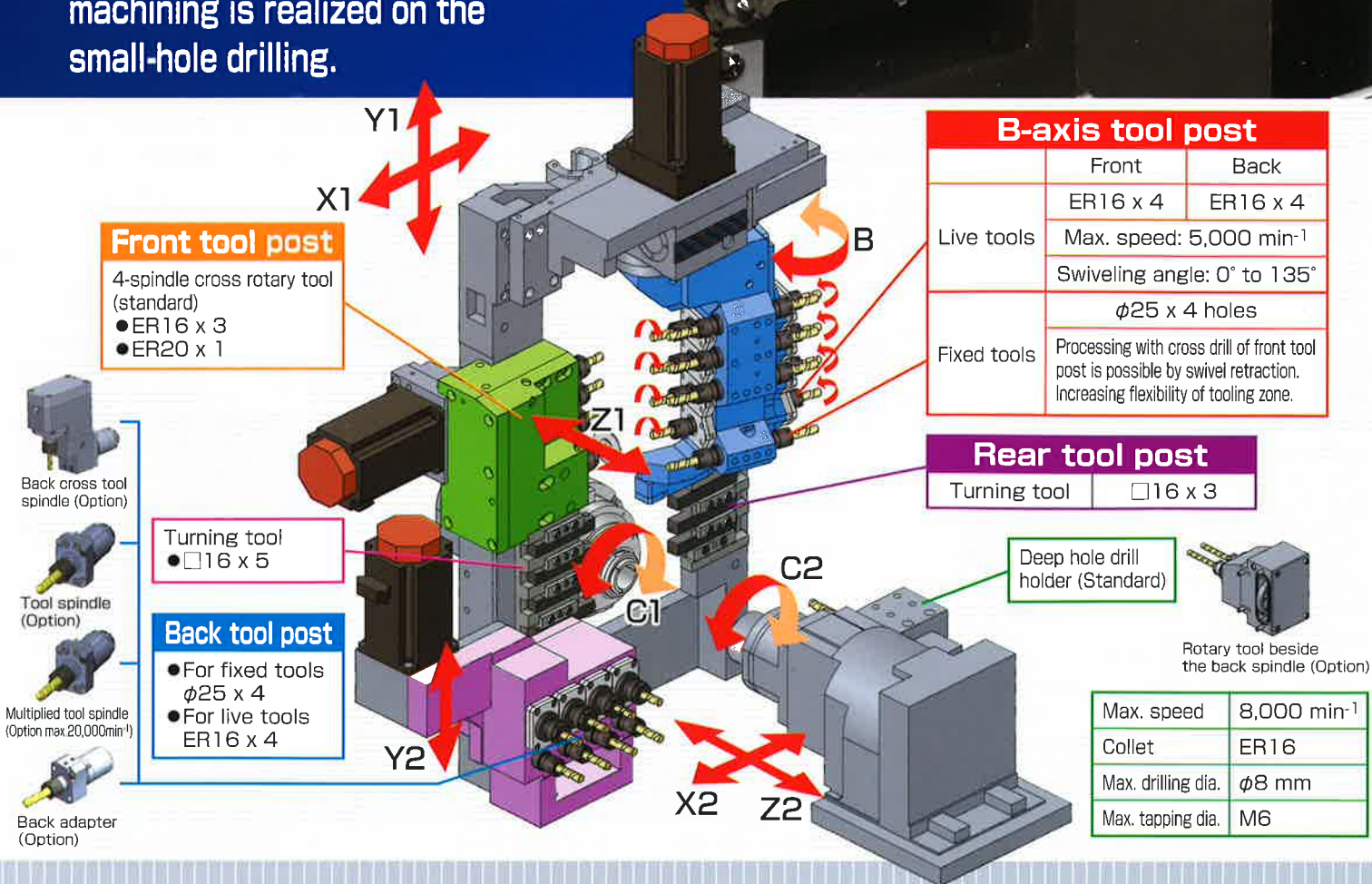
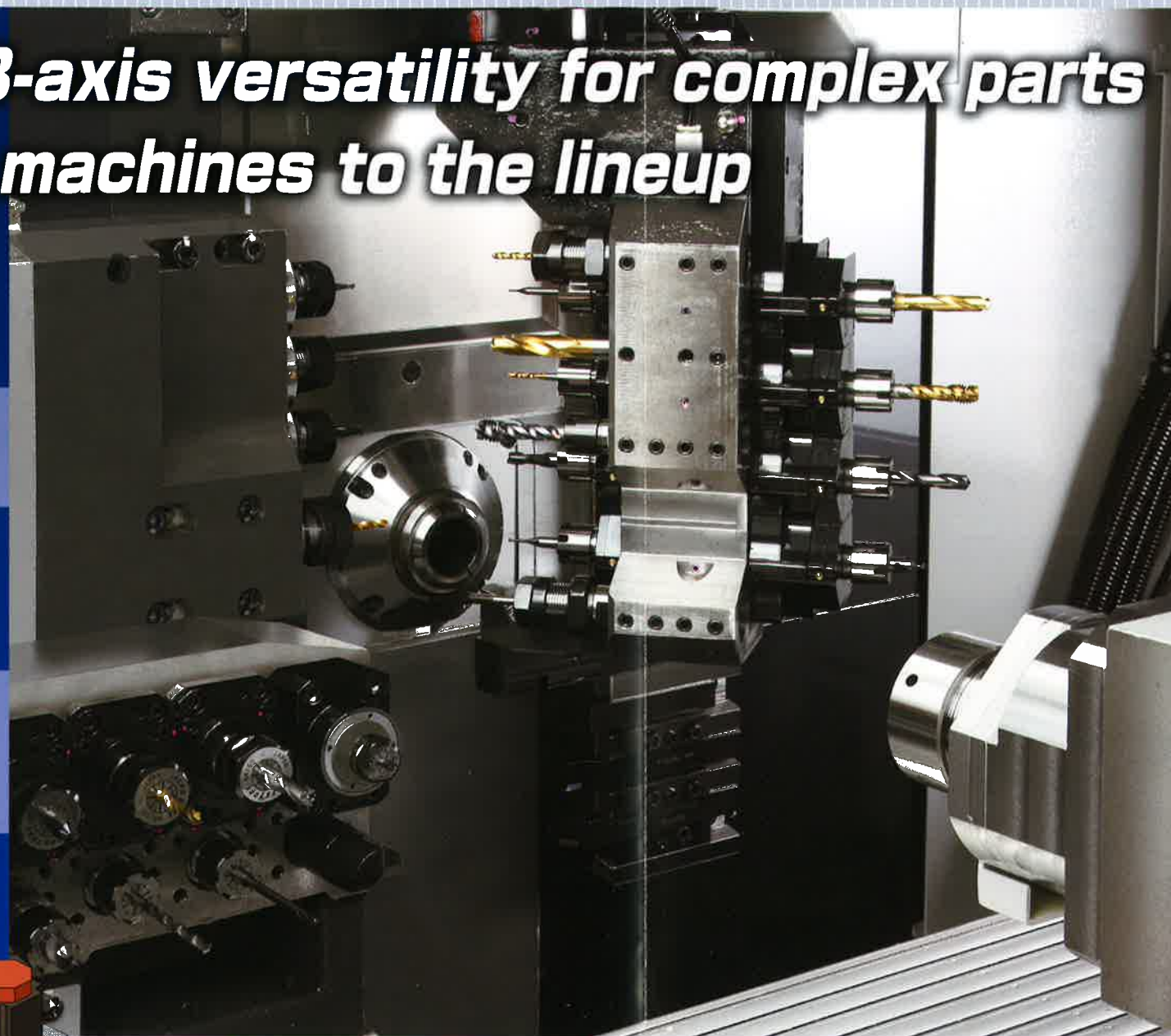
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New model with B-axis versatility for complex parts

Added large size machines to the lineup

- B-axis swiveling tool spindle can be programmed to machine virtually any angle.
- Simultaneous 4-axis, 5-axis (SS267-5AX/SS327-5AX) machining with CAD/CAM
- Thanks to the Y-axis of the back tool post, even the milling process on back side can be overlapped with front side.
- Diverse B-axis milling operations with 4 tools on the B-axis swiveling tool spindles.
- Thanks to the multiplied tool spindle (option) on the back tool post, efficient machining is realized on the small-hole drilling.



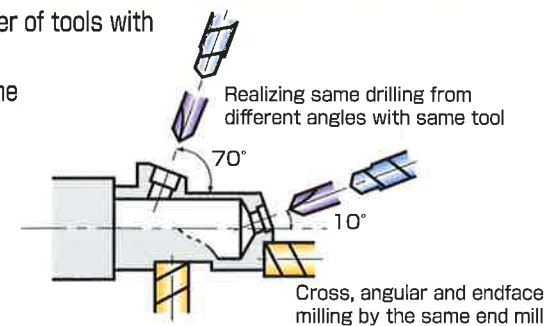
Versatile B-axis tool post

Improving the function of the B-axis tool post, and further improved machining capability



Mutual use of tool with the B-axis control

- Reducing the number of tools with mutual use of tool
- Shortened cycle time



Thanks to the B-axis control, virtually any angle can be indexed and processed by NC programs

- Drilling
- Tapping
- End milling (with Y-axis control)



Thread whirling or hobbing is possible without a dedicated attachment thanks to the B-axis control.

- Thread whirling (Lead angle is specified by B-axis control.)



- Holder (Non-through hole) (Option)
 - Max. barstock $\phi 6$ mm
 - Max. lead angle: 15 degree
 - Max. machining length 20 mm



- Hobbing (Lead angle is specified by B-axis control.)



- Max. machining module: 0.3 (0.5)*
- Cutter arbor: option

* Depends on materials and cutting conditions.



Smooth programming with standard automatic programming software (Application software running on PC)

Main- and back-spindle side machining motion can be checked from all points of view by 3D simulation.

Tsugami's machining know-how (machining processes, machining conditions, etc.) and software results in a system that enables novice programmers to create standardized, high quality programs.

