

TSUGAMI
AMERICA

SS20MH-III-5AX

CNC MULTIFUNCTION LATHE

- 20mm Capacity Chucker Convertible Multifunction Swissturn
- Simultaneous Five Axis Contouring Capability
- 25,000 rpm B-Axis Tool Spindle with 30 Tool Magazine
- Sub Side Y-Axis with 6 Live Tool Positions
- Direct Drive Guide Bushing
- Fanuc 31i-B5 Plus CNC Control

tsugamiamerica.com

SS20MH-III-5AX

MULTIFUNCTION LATHE WITH B-AXIS

SPEED

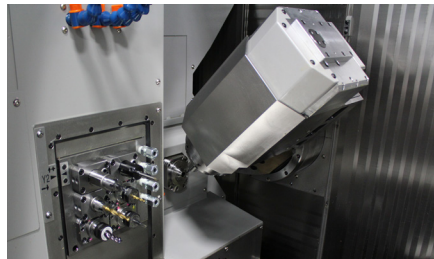
- The SS20MH-III-5AX's backworking overlap with live tool capability allows for multiple tools in the cut, and shorter cycle times.
- Equipped a 30 position tool magazine and 6 modular type live tools on back tool post for optimum allocation of machining capability.

ACCURACY

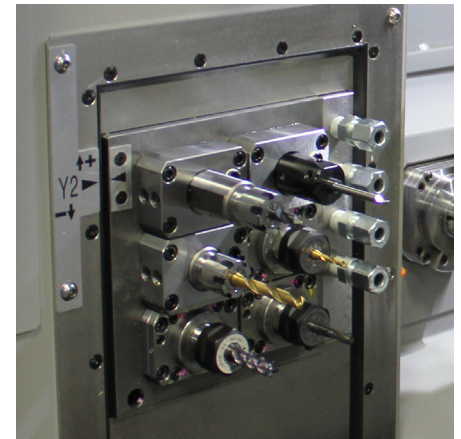
- Add a Chucker Kit to convert from a traditional sliding headstock to standard lathe-type chucker mode.
- High efficiency toggle clamp type collet actuator reduces cycle time and eliminates expensive chucks and actuators.
- The CAPTO C3 tooling can be either fixed (for turning) or driven (for drills, mills, taps, etc.) in all tool magazine locations.
- The linear scales on the X1, X2, Y1, and Z1 axis slide ensure high accuracy machining and repeatability.

RIGIDITY

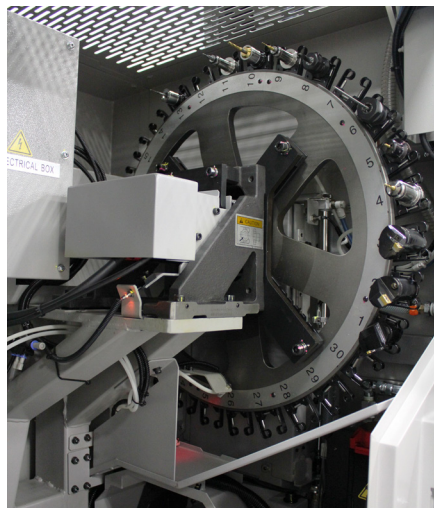
- The SS20MH-III-5AX is built on a heavy duty one piece cast iron base with thermally symmetrical construction. A more rigid platform allows higher speeds and feeds, and heavier depth of cut.
- Compact machine with high productivity per space: 4.76mm²
- For extra peace of mind, the machines, motors, and Fanuc controls are covered by an industry leading two-year parts and service warranty.



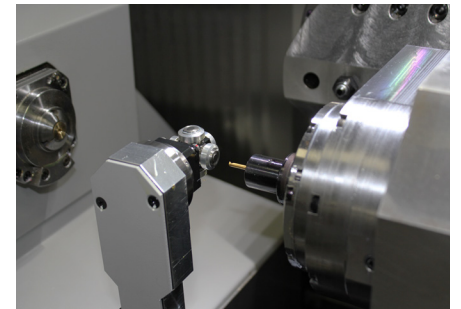
SS20MH-III-5AX Tool Zone



SS20MH-III-5AX Back Tool Post



SS20MH-III-5AX Tool Magazine



SS20MH-III-5AX Tool Presetter

ACCESSORIES

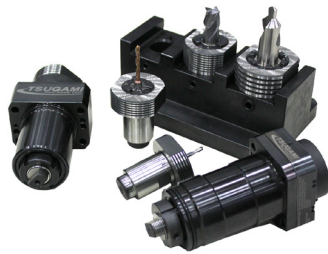
The SS20MH-III-5AX can be accessorized with various tooling options. Some of these options include:



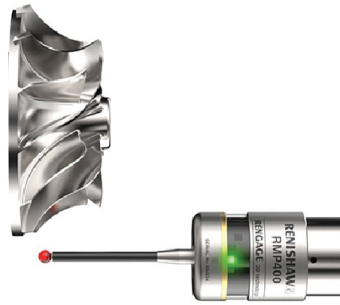
Back Tool Spindle



Static Adapter



Quick Change Tooling



High-Accuracy Reinshaw Machine Probe

Our team can create anything needed to transform the tool zone to fit the application.

NEED SOMETHING CUSTOM?

From the machine Make Ready process, to integrating mechanical and robotic loading and unloading systems to custom tool creation and spindle repair, IMG is dedicated to supporting all Tugami users in North America!



Grinding Room



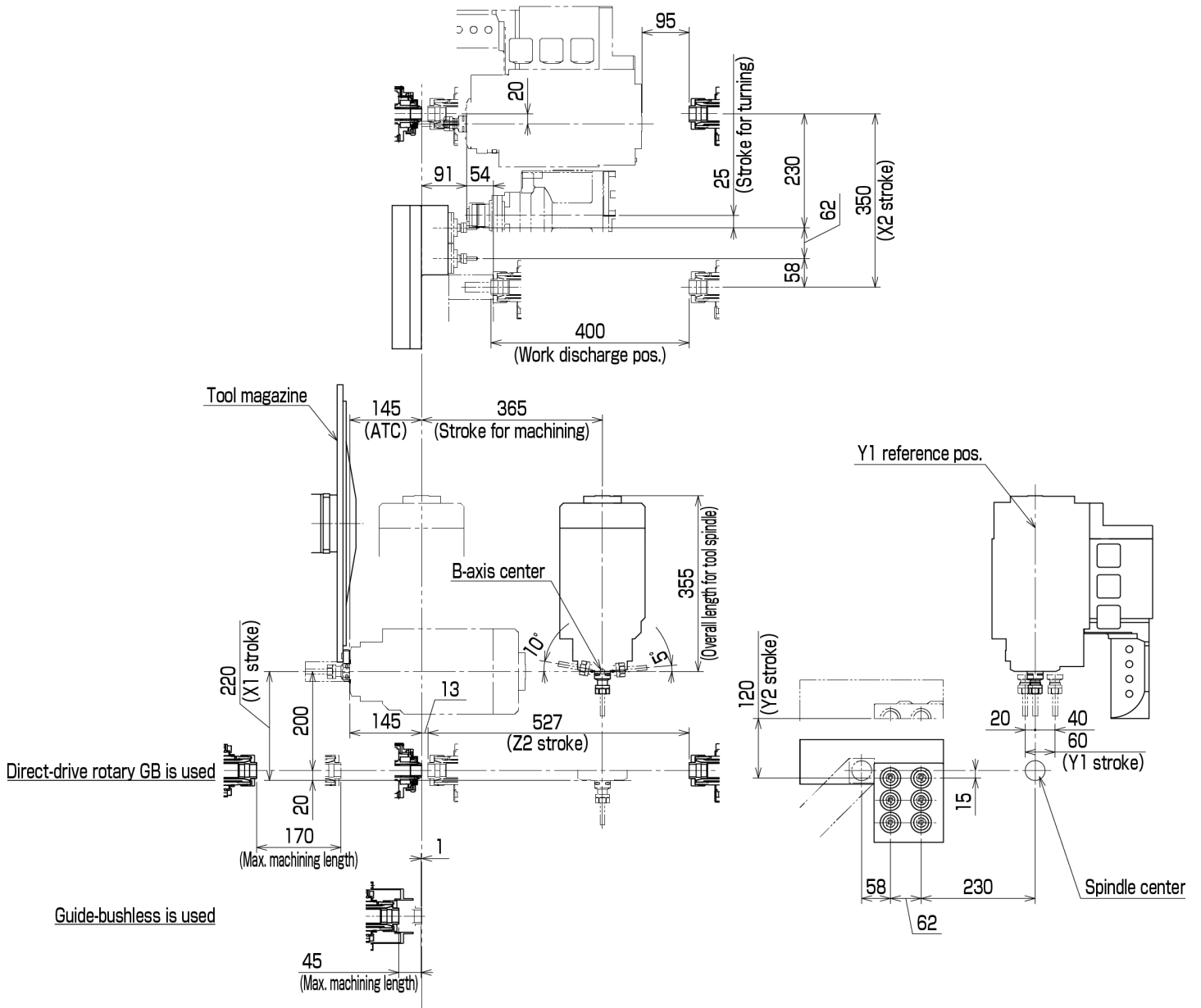
Make Ready Facility

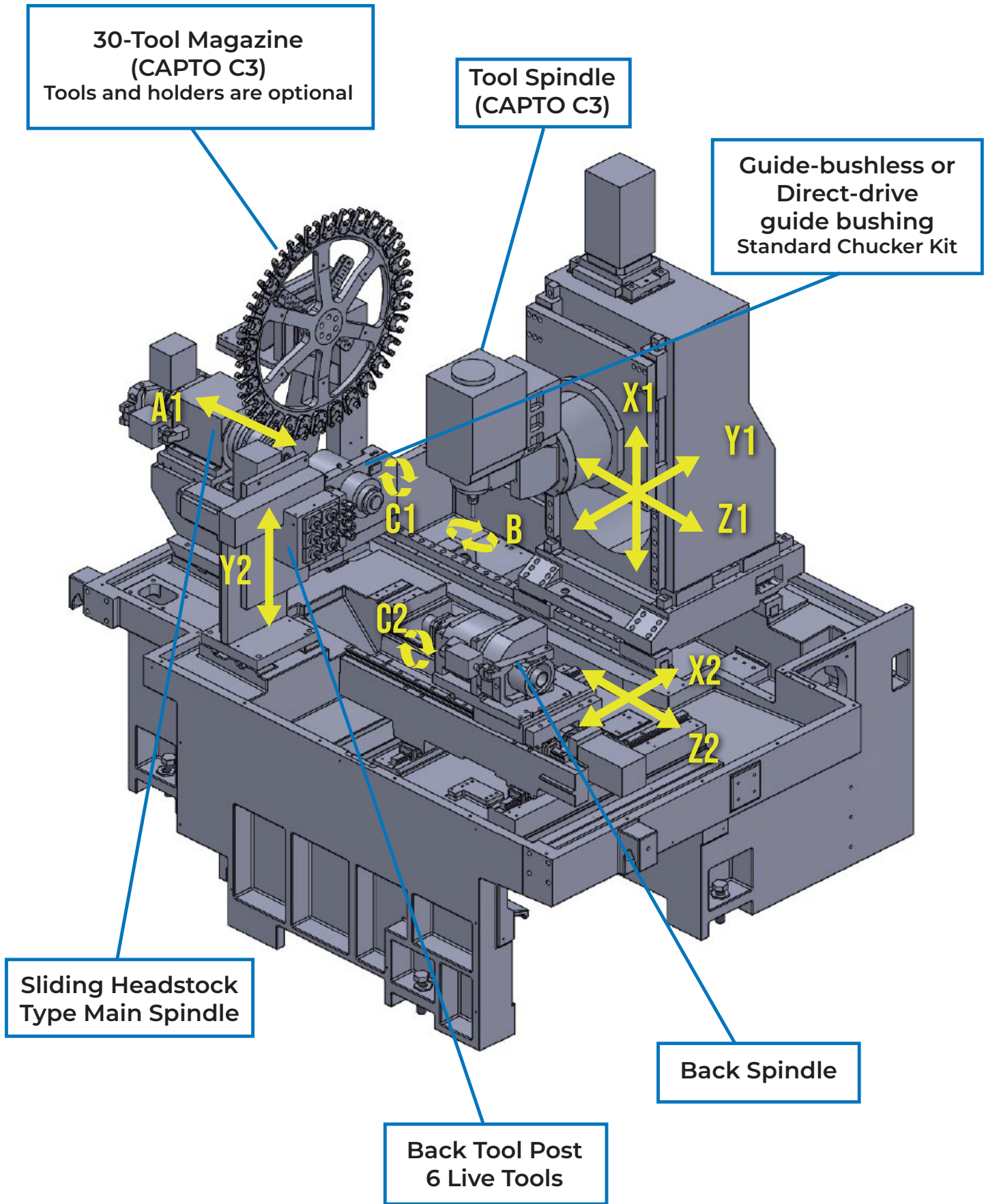


Milling Room

WORK ZONE

SS20MH-III-5AX





MACHINE STANDARD SPECIFICATIONS

STANDARD SPECIFICATIONS

ITEMS	SS20MH-III-5AX
Bar Stock Chucking Diameter	Ø3mm to Ø20mm (Ø.12in to Ø.79in)
Max. Back Spindle Chucking Diameter	0.78 in / Ø20mm
Max. Machining Length	6.7 in/ 170 mm (Direct-drive rotary guide bushing) 1.8in/ 45mm (Guide-bushless)
Max. Main Spindle Drilling Diameter	0.39in/ Ø10 mm
Max. Main Spindle Tapping Diameter	M10
Max. Tool Spindle Drilling Diameter	0.32 in / Ø8mm
Max. Tool Spindle Tapping Diameter	M8
Max. Back Tool Post Drilling Diameter	0.4 in / 10 mm
Max. Back Tool Post Tapping Diameter	M8
Max. Back Live Tool Drilling Diameter	Ø6mm
Max. Back Tool Spindle Tapping Diameter	M6
Main Spindle Rotation Speed	Max. 10,000 min-1 (Rated speed: 8,000 min-1)
Main Spindle C1-Axis Index Angle	0.001 deg (Continuous control)
Main Spindle Rotary Guide Bushing Speed	Max.10,000 min-1 (Rated speed: 8,000 min-1)
Back Spindle Rotation Speed	Max.12,000 min-1 (Rated speed: 8,000 min-1)
Back Spindle C2-Axis Index Angle	0.001 deg (Continuous control)
Tool Spindle Rotation Speed	Max.25,000 min-1 (Rated speed: 20,000 min-1)
Tool Spindle B-Axis Index Angle	0.001 deg (Continuous control)
Tool Spindle B-Axis Index Range	-10 to 185 deg
Tool Sp Index Angle/ Position	180 deg / 2 positions
Back Tool Post Live Tool Speed	Max.10,000 min-1 (Rated speed: 6,000 min-1)
Number Of Tools	6 tools: Live (Modular type)
Tool Storage Capacity	30
Tool Shank Configuration	CAPTO C3
Rapid Traverse Rate	X1: 30, Y1: 20, Z1: 30, A1: 32 X2: 35, Y2: 24, Z2: 35 m/min
Main Spindle	5/7.4 Hp (3.7/5.5 kW)
Back Spindle	3/5 Hp (2.2/3.7 kW)
Tool Spindle	3/5 Hp (2.2/3.7 kW)
B Axis	4.3 Hp (3.2 kW)
Linear X1	2.4 Hp (1.8 kW)
Linear Y1, Z1	1.6 Hp (1.2 kW)
Linear X2, Z2, A1	1 Hp (0.75 kW)
Linear Y2	0.7 Hp (0.5 kW)
Live tool of back tool post	1.3 Hp (1.0 kW)
Coolant pump	0.73 Hp (0.55 kW)
Lubricating oil pump	50 W

Weight	11,660 lbs (5,300 kg)
Power Source Requirement	34 kVA
Compressed Air Requirement	0.4 MPa or more
Air Discharge Rate	280 NL/min
Coolant Tank Capacity	196 L
Width × Depth × Height	98.4" × 75" × 75.75" (2,500×1,905×1,920 mm)

MACHINE ACCESSORIES

ITEMS	SS20MH-III-5AX
Tool Life Management	Standard
Periodic Maintenance Screen	Standard
Main/Back Spindle Adapter	Standard
Door Interlock (Tooling Zone/Headstock Area)	Standard
Coolant Flow Switch	Standard
Spindle Cooling Unit	Standard
Standard Tools/Transit Clamps	Standard
Automatic Power Shut Off	Standard
Air Purge For Main/Back/Tool Spindles	Standard
Air Purge For Back Tool Post	Standard
C-Axis Control For Main/Back Spindles	Standard
Shower Coolant (On Telescopic Cover)	Standard
Shut-Off Valve For Air Purge	Standard
Linear Scale On X1, Y1, Z1, X2-Axis	Standard

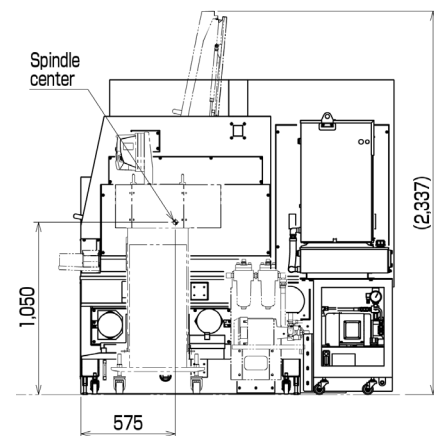
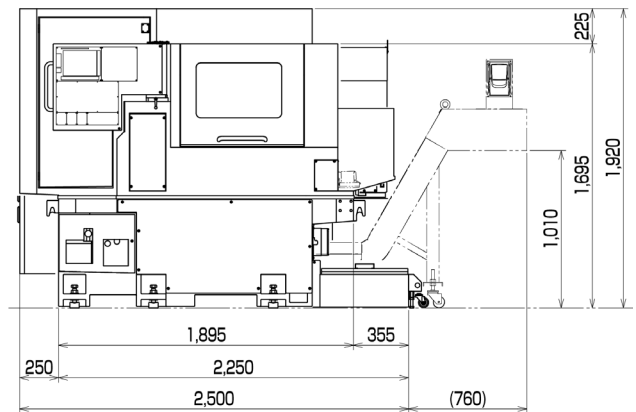
NC SPECIFICATIONS

NC ACCESSORIES

ITEMS	SS20MH-III-5AX
Chasing Function	Standard
Continuous Threading	Standard
Manual Pulse Generator	Standard
Memory Card Interface And USB	Standard
Background Editing	Standard
Run Time And Parts Number Display	Standard
Custom Macro	Standard
Constant Surface Speed Control	Standard
Synchronization Control (Rotation, Phase)	Standard
Tool Geometry / Wear Offset	Standard
Programmable Data Input	Standard
Chamfering Corner R	Standard
Tool Nose Radius Compensation	Standard
Multiple Repetitive Cycle	Standard
Expanded Program Editing	Standard
Canned Cycle For Drilling	Standard
Rigid Tap (Main Spindle, Back Spindle, Tool Spindle)	Standard
Spindle Speed Fluctuation Detection	Standard
Three-Dimensional Coordinate Conversion	Standard
Tool Load Monitor (Main, Back, Tool Spindles)	Standard
AI Contour Control	Standard
Data Server Function	Standard
High-Speed CPU	Standard
Tool Center Point Control	Standard
HRV Control	Standard
Manual Handle Retrace Function	Standard
Fixed Data Setting Screen	Standard
Direct Drawing Dimension Programming	Standard
Tool Nose Radius Compensation	Standard
Multiple Repetitive Cycle	Standard
Extended Program Editing	Standard
Rigid Tap (Main, Back, Tool Spindles)	Standard
Polar Coordinate Interpolation	Standard
Cylindrical Interpolation	Standard
Inch/ Metric Conversion	Standard
Abnormal Load Detection	Standard
Rs232c Input/Output Interface	Standard
Machining Condition Setting Function	Standard

NC UNIT

ITEMS	SS20MH-III-5AX
NC Unit	FANUC 31i-B5 Plus
Controllable Axes	X1, Y1, Z1, A1, X2, Y2, Z2, B, C1, C2
Least Input Increment	0.001 mm (X1/X2 axis in diameter) / 0.001 deg
Max. Programmable Value	± 8 digits
Interpolation Function	Linear / circular
Cutting Feed Rate	1 to 6,000 mm/min
Feed Rate Override	0 to 150 %, 10 % step
Dwell	G040 to 99999.99
Absolute/Incremental Command	X, Z, Y, A, C, B Absolute U, W, V, H Incremental
No. Of Tool Offsets	Main: 160, Back: 40
LCD/MDI	10.4"color LCD
Display Language	English
Part Program Storage Size	4 Mbyte (sum of main and back) and 4 GB Data Server
Miscellaneous Functions	M5 digits
Tool Function	Main: T5 digits Back: T4- digits
Spindle Function	S5 digits



Since 1978, Tsugami America (formerly known as Tsugami/Rem Sales) has been the exclusive source for Precision Tsugami CNC machine tools in North America. Headquartered in Windsor, CT, Tsugami America provides machine tools and engineering expertise through an extensive network of authorized distributors and technical centers. Technical support and customer service are available throughout North America. Our distributors' trained service personnel provide technical support throughout the long life-cycle of our Tsugami machine tools, and work hand-in-hand with Tsugami America's engineers to deliver common-sense solutions to everyday problems.

Our application engineers help customers tackle and solve the toughest high-precision manufacturing challenges, on-time and on-budget. We have a 35-year history and reputation of serving the needs of small parts manufacturers in North America with the highest level of expertise and customer care. Our industry-respected, knowledgeable staff is comprised of both long-time employees and fresh faces all who share a commitment to provide you, our customers, with the competitive advantage to "do more with less" every day.

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