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■ They may not be duplicated under different conditions. (room temperature, workpiece materials, tool material, cutting conditions, etc.)

SLANT TURN 500,550,600 SERIES SmoothCNC 16.12.3000 S 99J198116E0 Ⓦ

SLANT TURN 500,550,600 SERIES

EE



SMOOTH TECHNOLOGY

SLANT TURN 500,550,600 SERIES

500 500M
550 550M
600 600M

Mazak

Advanced features of the MAZATROL SmoothC and SmoothG CNC

Fastest CNC in the world—Latest hardware and software for unprecedented speed and precision

Operation control panel layout and process support home screen designed for unsurpassed ease of operation

CNC system with the essentials for your programming requirements [MAZATROL SmoothC]

Smooth graphical user interface allows operation similar to your smart phone / tablet for unsurpassed ease of operation [MAZATROL SmoothG]

PC with Windows® 8 embedded OS [MAZATROL SmoothG]

Windows is a registered trademark of Microsoft Corporation in the United States and other countries.



MAZATROL SMOOTH C

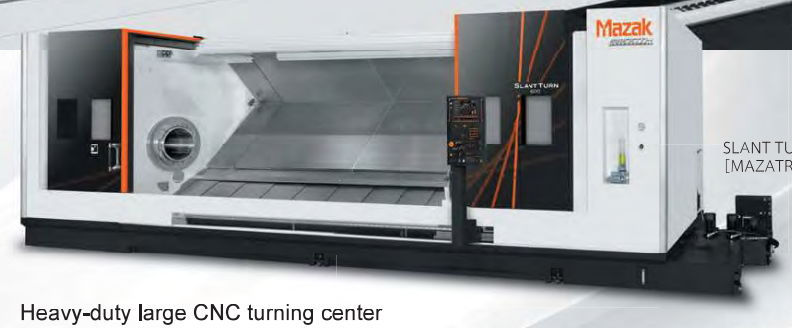
MAZATROL SMOOTH G

Standard CNC system varies by market.

Designed for heavy-duty machining of large, long shaft workpieces

- Wide range of spindle bore up to Φ375 mm
- Max. swing : Φ1040 mm, max. machining diameter : Φ910 mm, spindle output : 45 kW (40% ED) and spindle torque : 7000 N•m
- Linear roller guides provide improved positioning accuracy with lower friction
- The maximum available steady rest size is Φ410 mm- largest for this turning center class
- The rotary tool spindle has a maximum speed of 4000 rpm and output of 7.5 kW (10 HP)





SLANT TURN 600 (4000U)
[MAZATROL SmoothC]

INTELLIGENT MACHINE®

Innovative support for operator

ergonomics

Ease of operation

eco-friendly

Designed with environmental considerations

Heavy-duty large CNC turning center

SLANT TURN 500,550,600 SERIES

Higher Productivity

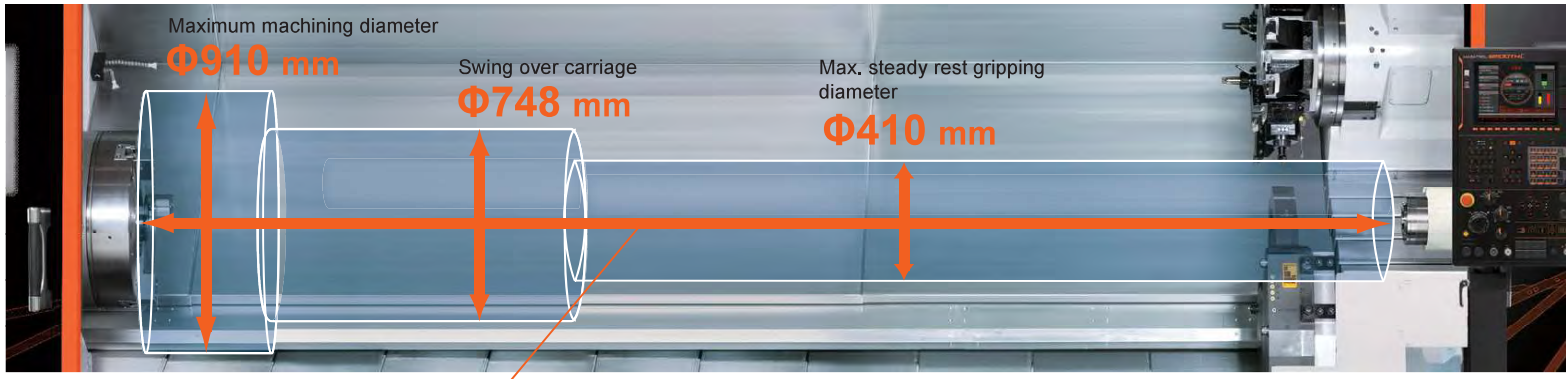
Extensive series range

Maximum swing **Φ1040 mm**

Maximum machining diameter **Φ910 mm**

Swing over carriage **Φ748 mm**

Large steady rest for long shaft workpieces up to maximum diameter of **Φ410 mm**



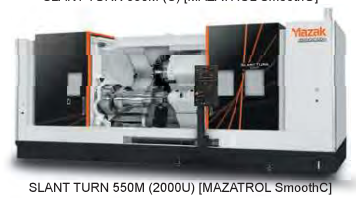
Above specification is limited depending on workpiece

Maximum machining length* **1016 mm / 2009 mm / 3144 mm / 4033 mm**
(C/1000U) (2000U) (3000U) (4000U)

*SLANT TURN 550
Maximum machining length depends on machine type and chuck

Model	Chuck size	Spindle	Turret	Tailstock	Universal
500	18" 21"	Spindle bore **Φ185 mm** Max. spindle speed **1600 rpm** Max. torque **7000 N·m** Max. power **45 kW (60 HP) / 40% ED**	12D bolt-on □32 mm / Φ50 mm (option:Φ80 mm)	–	C (Chucker)
500M			12D VDI type □32 mm / Φ50 mm (option:Φ80 mm)	Two position tailstock quill (manual quill positioning) 〈Max. thrust〉 • 25 kN:1000U/2000U/3000U • 30 kN:4000U	1000U 2000U 3000U 4000U
550	21"~	Spindle bore **Φ275 mm** Max. spindle speed **1000 rpm** Max. torque **7000 N·m** Max. power **45 kW (60 HP) / 40% ED** OPTION Spindle bore **Φ320 mm** Max. spindle speed **750 rpm** Max. torque **7000 N·m** Max. power **45 kW (60 HP) / 40% ED**	12D bolt-on □32 mm /Φ50 mm (option:Φ80 mm)		
550M			12D VDI type □32 mm / Φ50 mm (option:Φ80 mm)		
600	21"~	Spindle bore **Φ375 mm** Max. spindle speed **500 rpm** Max. torque **7000 N·m** Max. power **45 kW (60 HP) / 40% ED**	12D bolt-on □32 mm / Φ50 mm (option:Φ80 mm)	Two position tailstock quill (manual quill positioning) 〈Max. thrust〉 • 25 kN:2000U/3000U • 30 kN:4000U	2000U 3000U 4000U
600M			12D VDI type □32 mm / Φ50 mm (option:Φ80 mm)		


SLANT TURN 550M (C) [MAZATROL SmoothG]


SLANT TURN 550M (2000U) [MAZATROL SmoothC]


SLANT TURN 500M (3000U) [MAZATROL SmoothG]

Higher Productivity

Wide range of spindle bores up to Φ375 mm





Powerful main spindle



Spindle torque **7000** N·m

Spindle output **45** kW (60 HP)

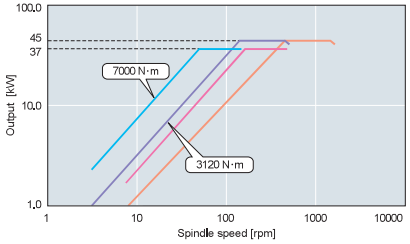
The SLANT TURN 500,550,600 rigid spindles are designed for an exceptional range of applications- both high-speed and heavy duty-cutting, thanks to the AC inverter motor and two ranges. To ensure high accuracy, the spindle can be indexed in 0.0001 degree increments.

SLANT TURN 500,500M

Spindle bore Φ185 mm, 1600 rpm top speed

Max. torque	7000 N·m
Main spindle power	AC 45 kW (60 HP) / 40% ED AC 37 kW (50 HP) / Cont. rating

Low speed winding: Low range — Low speed winding: High range
High speed winding: Low range — High speed winding: High range

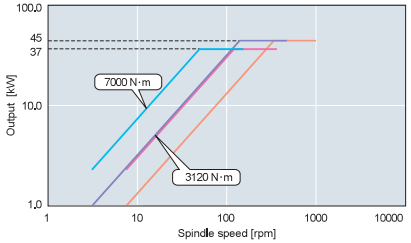


SLANT TURN 550,550M

Spindle bore Φ275 mm, 1000 rpm top speed

Max. torque	7000 N·m
Main spindle power	AC 45 kW (60 HP) / 40% ED AC 37 kW (50 HP) / Cont. rating

Low speed winding: Low range — Low speed winding: High range
High speed winding: Low range — High speed winding: High range

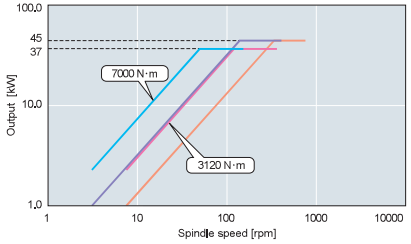


SLANT TURN 550,550M

Spindle bore Φ320 mm, 750 rpm top speed OPTION

Max. torque	7000 N·m
Main spindle power	AC 45 kW (60 HP) / 40% ED AC 37 kW (50 HP) / Cont. rating

Low speed winding: Low range — Low speed winding: High range
High speed winding: Low range — High speed winding: High range

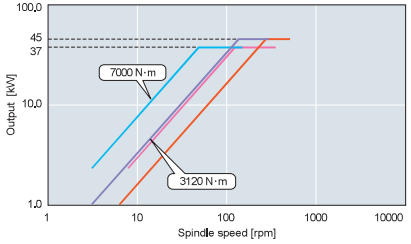


SLANT TURN 600,600M

Spindle bore Φ375 mm, 500 rpm top speed

Max. torque	7000 N·m
Main spindle power	AC 45 kW (60 HP) / 40% ED AC 37 kW (50 HP) / Cont. rating

Low speed winding: Low range — Low speed winding: High range
High speed winding: Low range — High speed winding: High range



Higher Productivity

Turret

Bolt-on

500, 550, 600

The turret is rigidity clamped by a high-index coupling for high-performance machining.

Tool capacity	12 tools
O.D Facing	□32 mm × 150 mm
Boring bar	Φ50 mm (Option : Φ80 mm)
Turret indexing method	Random selection, shortest path (Automatic mode) Uni-directional selectable (Manual mode)
Turret indexing time	0.5 sec / 1 step



VDI-type turret

500M, 550M, 600M

The rotary tool spindle of the SLANT TURN 500M,550M,600M has a maximum speed of 4000 rpm and output of 7.5 kW (10 HP) to provide performance comparable to a small machining center, which ensures high efficiency milling. A high-torque version with a top speed of 3000 rpm and output of 11 kW is optionally available.



Tool capacity		12 tools
Tool dimensions	O.D Facing	□ 32 mm ×150 mm
	Boring bar	Φ50 mm (Option : Φ80 mm)
Turret indexing method		Random selection, shortest path (Automatic mode) Uni-directional selectable (Manual mode)
Turret indexing time		0.4 sec / 1step

		Standard	Option*
Max. rotary tool spindle speed		4000 rpm	3000 rpm
Rotary tool spindle		AC 7.5 kW (10 HP)(4 min. rating) AC 1.5 kW (2 HP)(cont. rating)	AC 11 kW (15 HP)(40% ED) AC 7.5 kW (10 HP)(cont. rating)
Max. torque		95 N·m (4 min. rating)	140 N·m (40% ED)
Machining capability	Drill	Φ25 mm	
	Endmill	Φ25 mm	
	Tap	M24	M30

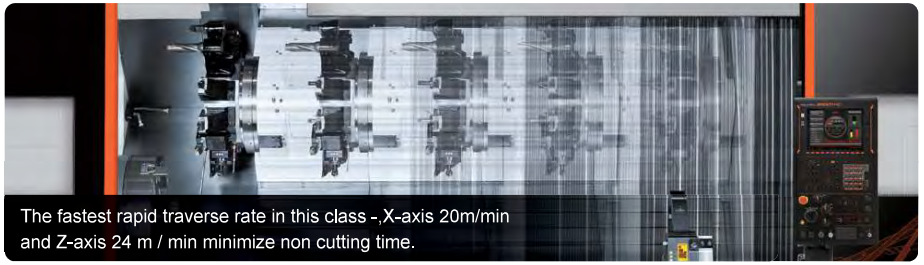
* High torque milling holder required

VDI-type turret holders

The tool holders can be quickly loaded / unloaded by turning a single bolt for minimum tool set up time.



The fastest rapid traverse rate in this class



The fastest rapid traverse rate in this class -,X-axis 20m/min and Z-axis 24 m / min minimize non cutting time.

Steady rest Option

Automatic steady rest

2000U, 3000U, 4000U

The maximum available steady rest size is Φ410mm- largest for this turning center class. Positioning time is considerably reduced thanks to operation by CNC. Additionally, the tailstock can approach much closer to the steady rest for an expanded machining area.

Steady rest model	Gripping range
SMW K5.1	Φ100 ~ 410 mm
SMW SLU-X5	Φ45 ~ 310 mm
SMW SLU-X4	Φ30 ~ 245 mm



Double base steady rests

4000U

Double base steady rests are available for supporting long shaft workpieces. Maximum support diameter is Φ410 mm.



Tailstock (1000U, 2000U, 3000U, 4000U)



Two position tailstock quill (manual quill positioning) for supporting short workpieces

The tailstock quill can extend 250 mm making it possible to support both short and long shaft workpieces.

Application

Designed for machining large, long shaft workpieces

Energy



Construction machinery

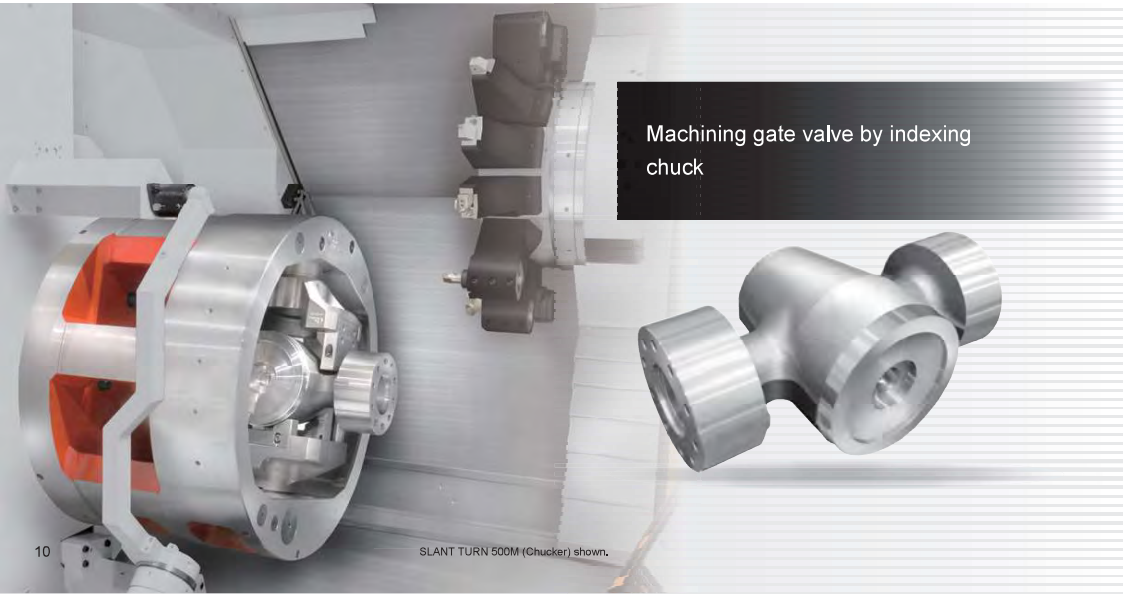


Power generation



Marine





Machining gate valve by indexing chuck

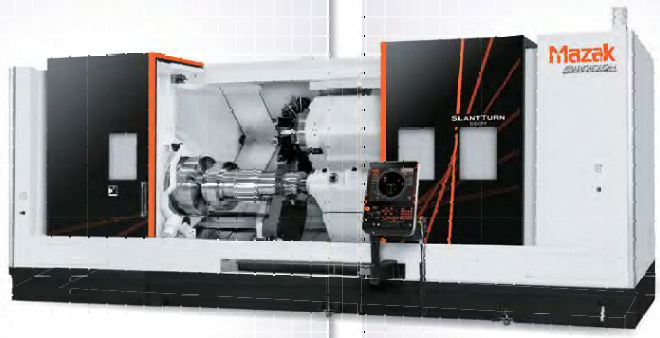
SLANT TURN 500M (Chucker) shown.

Higher Accuracy

Roller guides on all linear axes

By utilizing linear roller guides on the X-and Z-axes, not only is high rigidity realized but also smooth cutting even at high speed feedrates.

High rigidity bed



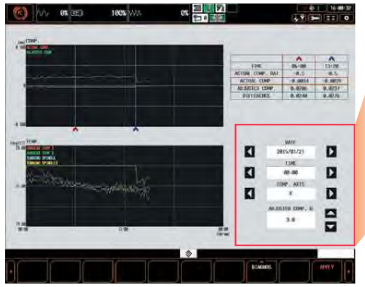
The machine base is designed for heavy duty cutting by using structural analysis to ensure the maximum rigidity.

Heat Displacement Control

INTELLIGENT THERMAL SHIELD

ITS+

The SLANT TURN 500,550,600 series is equipped with automatic compensation for room temperature changes, the INTELLIGENT THERMAL SHIELD, to realize enhanced continuous machining accuracy. MAZAK has performed extensive testing in a variety of environments in a temperature controlled room and has used the results to develop a control system that automatically compensates for temperature changes in the machining area.





Temperature and compensation is displayed on screen. Operator can adjust compensation by looking at the data

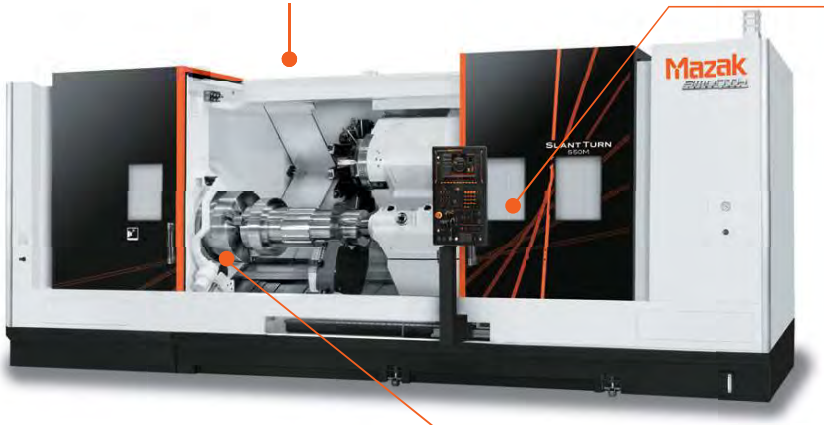
Ergonomics

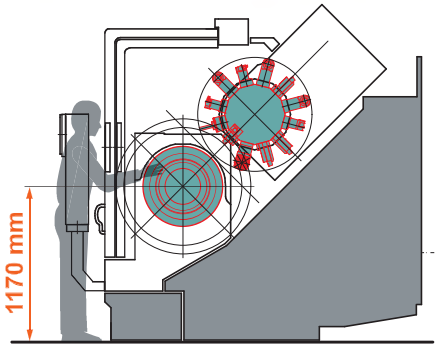
Designed for Convenient Operation

ergonomics

Large door opening

Thanks to its large door opening, workpieces can easily be loaded / unloaded by using an overhead crane.





Note:The distance from the spindle center-line to the floor depends on chip conveyor specifications.

Turret access

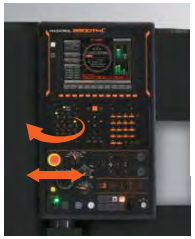
The turret features excellent accessibility for convenient tool setup.

MAZATROL SMOOTH C

Movable, rotating operation panel

The operation panel easily rotates to each operator's preferred position.

Chucker / 1000U rotation only



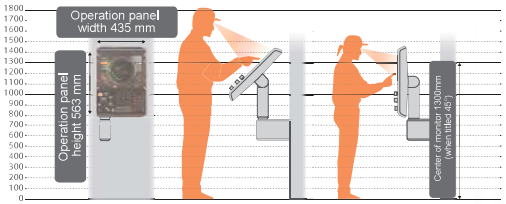
MAZATROL SMOOTH G

Movable, adjustable CNC touch panel



Operation touch panel can be tilted to the optimum position for any operator's height to ensure ease of operation.

Chucker / 1000U adjustable only



Tool eye OPTION

The automatic tool eye registers tool data by simply bringing the tool tip into contact with the tool eye during tool setup or changing inserts to considerably reduce the time required for tool setup.



Maintenance area

Items requiring frequent access for machine maintenance are arranged in one central location.



Color coded cables

Cables have a standard color coding for easy identification and convenient maintenance.



Intelligent Machine

Yamazaki Mazak has developed a variety of functions for the improvement of productivity, high accuracy machining and operator support. A variety of unique technologies has been developed that incorporates the expertise of experienced machine operators that realizes unsurpassed productivity and higher accuracy machining.

INTELLIGENT MACHINE®

Advanced Intelligent+ Functions

A variety of Intelligent+ Functions provides incomparable operator support for exceptional ease of operation and optimum machine efficiency.



ISS+

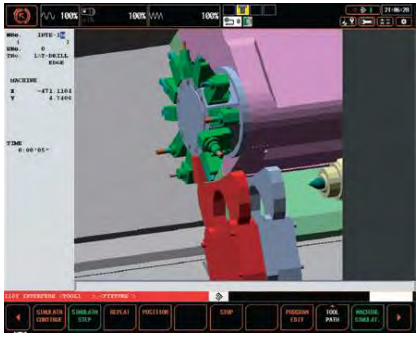
Machine Interference Prevention

INTELLIGENT SAFETY SHIELD

MAZATROL SMOOTH G

When an operator manually moves the machine axes for setup, tool measurement or changing inserts, the CNC shows a synchronized 3D model on the display for checking machine interference. If any machine interference occurs, the machine motion automatically stops. This function for use during automatic operation is optionally available.



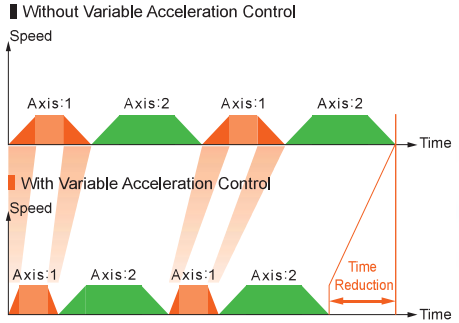


VAC

Variable Acceleration Control Function

VARIABLE ACCELERATION CONTROL (M only)

Variable acceleration control is a new function which permits the faster acceleration capability of linear axes to be used whenever possible. The slower acceleration of the rotary axes is not used for all program commands, resulting in faster machining cycle times



MVA+

Verbal Message System

MAZAK VOICE ADVISER

MAZATROL SMOOTH G

Verbal support for machine setup and safe conditions confirmation

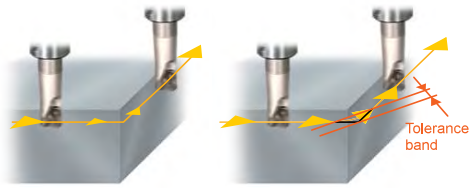


SCC

Seamless Corner Control

SMOOTH CORNER CONTROL

Improved finished surfaces and reduced cycle times by optimized acceleration/deceleration when machining corners.



IMS+

Comprehensive Maintenance Monitor

INTELLIGENT MAINTENANCE SUPPORT

Useful information for improved preventative maintenance to prevent unexpected machine downtime



MAZATROL CNC System

MAZATROL SMOOTHC

Simplified display and key input operation
Following traditional conversational MAZATROL programming, this new system is designed for ease of operation by simplified key operation.



- USB interface
  Transfer program and tool data.
  Connect peripheral equipment
- SD card slot
  Transfer program and tool data
- Menu keys under the display can be pressed to go to other pages for program data input and editing
- Compact keypad with unique design for ease of operation
- Home screen key goes to the home screen from any display

Home screen

The home screen displays overall process status in an easy to understand manner.

Comprehensive status display on one screen

Machining
Displays axes in operation and load on motors

Programming
Displays the simulation time and machining time

Tool data
Displays status of tool layout

Setup
Displays status of workpiece coordinate setting

Maintenance
Overview of the status of items requiring maintenance



MAZATROL conversational programming

MAZATROL interactive programming uses conversational language and automatically determines cutting conditions, M codes, and G codes. Even a beginner operator can quickly make programs.



3D machine model

A 3D machine model is available to perform program interference checks with other CAD / CAM simulation software. (MAZATROL SmoothG, MAZATROL SmoothC)



MAZATROL CNC System

The seventh generation MAZATROL CNC system — the core of Smooth Technology

MAZATROL SMOOTH G

From setup to machining — designed for unsurpassed ease of operation



19" touch panel

Touch panel operation
— similar to your smartphone or tablet

USB port

Interface for peripheral equipment
USB-1.0+2.0

SD card slot

Transfer program and tool data

Operation switch

Large switches
— color changes from orange to green when turned on

Dials

For frequently-used axes selection and feedrate changes

New interface with touch operation ensures convenient data processing — programming, confirmation, editing, and tool data registration

Process home screens

Five different home process screens — each home screen displays the appropriate data in an easy-to-understand manner. Icons can be touched in each process display for additional screen displays.

Programming



Tool data



Setup



Machining



Maintenance



Pop-up windows

Values and items can easily be input/selected on pop-up windows.

Side menu



List menu



Screen key board

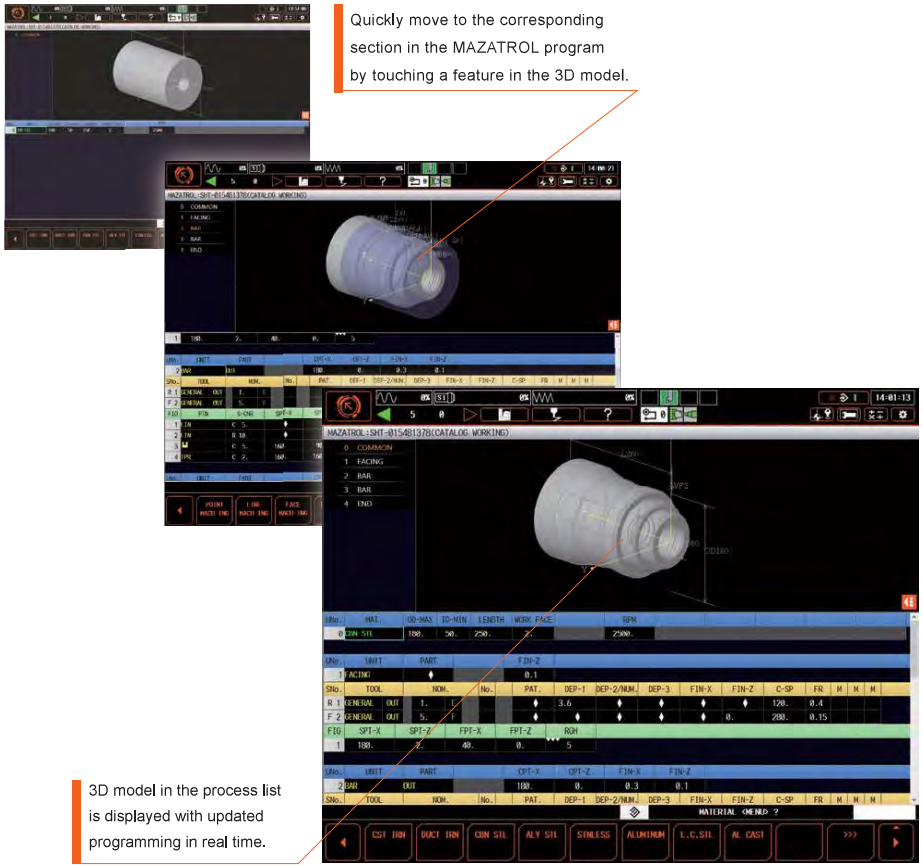


Ease of Programming

Visible programming screen

QUICK MAZATROL

MAZATROL program, unit list and 3D workpiece shape are linked to each other. After defining a machining unit in a MAZATROL program, the 3D shape is immediately displayed to easily and quickly check for any programming error.



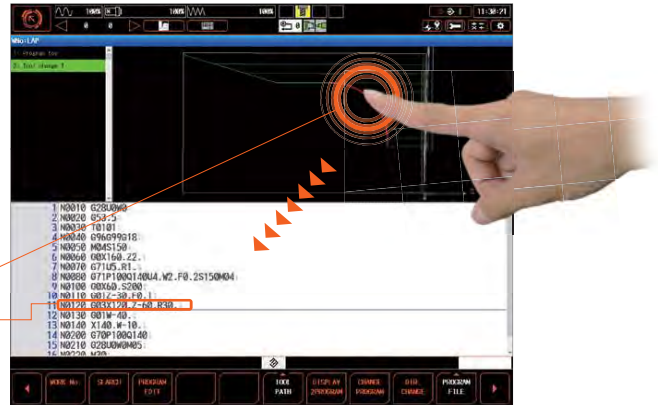
3D ASSIST

Workpiece and coordinates data can be imported from 3D CAD data to a MAZATROL program.
No coordinate value inputs are required. Can reduce input errors and time for program checking.



QUICK EIA

Program, process list and 3D tool path display are linked to each other. Visible search on touch screen can reduce the time for program checking.



MAZATROL SmoothC Specifications

	MAZATROL	EIA
Number of controlled axes	Simultaneous 4 axes	
Least input increment	0.0001 mm, 0.00001 inch, 0.0001 deg	
High speed, high precision control	Shape error designation, Smooth corner control, Rapid traverse overlap	
Interpolation	Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Cylindrical coordinate interpolation, Polar coordinate interpolation, Equal pitch threading, Re-threading*, Override threading*, Override variable threading*, Synchronized milling spindle tapping*	Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Spiral interpolation, Helical interpolation, Equal pitch threading, Variable pitch threading, Threading (C-axis interpolation type), Cylindrical coordinate interpolation*, NURBS interpolation*, Polar coordinate interpolation*, Re-threading*, Override threading*, Override variable threading*, Synchronized milling spindle tapping*
Feedrate	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp, Variable acceleration / deceleration control, Constant control for G0 tilting*	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Inverse time feed, Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp, Time constant changing for G1, Variable acceleration / deceleration control, Constant control for G0 tilting*
Program registration	Max. number of programs : 960, Program storage : 2 MB, Program storage expansion : 8 MB*, Program storage expansion : 32 MB*	
Control display	Display : 10.4" touch panel, Resolution : VGA	
Spindle functions	S code output, Spindle speed clamp, Spindle speed override, Spindle speed reaching detection, Multiple position orient, Constant surface speed, Spindle speed command with decimal digits, Synchronized spindle control, Max. speed control for spindle	
Tool functions	Tool offset pairs : 4000, T code output for tool number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)	Tool offset pairs : 4000, T code output for tool number, T code output for group number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)
Miscellaneous functions	M code output, Simultaneous output of multiple M codes	
Tool offset functions	Tool position offset, Tool length offset, Tool diameter / tool nose R offset, Tool nose shape offset, Tool wear offset, Fixed amount offset, Simple wear offset	
Coordinate system	Machine coordinate system, Work coordinate system, Local coordinate system, MAZATROL coordinate system, Additional work coordinates (300 set)	
Machine functions		Polygon cutting*, Hobbing*
Machine compensation	G0 / G1 independent backlash compensation, Pitch error compensation	
Protection functions	Emergency stop, Interlock, Stroke check before travelling, Barrier	
Automatic operation mode	Memory operation	Memory operation, Tape operation, MDI operation, Ethernet operation*
Automatic operation control	Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Single process, Machine lock	Optional block skip, Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Restart 2, Collation stop, Machine lock
Manual measuring functions	Tool-setting data teach, Tool length and tip teach, Touch sensor coordinates measurement, Workpiece offset measurement, Tool eye measurement	Tool-setting data teach, Tool length and tip teach, Tool offset teach, Touch sensor coordinates measurement, Workpiece offset measurement, Tool eye measurement
Automatic measuring functions	Workpiece measurement , Sensor calibration , Tool eye auto tool measurement, Tool breakage detection	
Interface	PROFIBUS-DP*, EtherNET I/P*, CC-Link*, USB	
Card interface	SD card interface	
EtherNet	10 M / 100 M / 1 Gbps	

* : Option

MAZATROL SmoothG Specifications

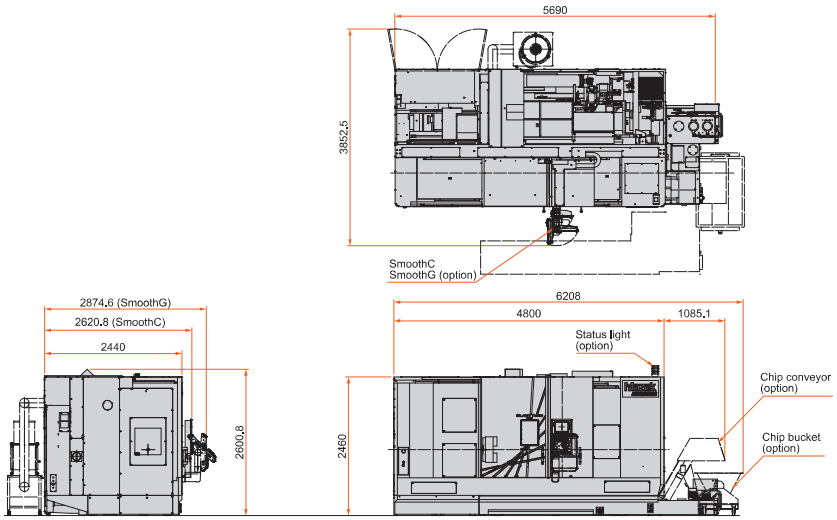
	MAZATROL	EIA
Number of controlled axes	Simultaneous 4 axes	
Least input increment	0.0001 mm, 0.00001 inch, 0.0001 deg	
High speed, high precision control	Shape error designation, Smooth corner control, Rapid traverse overlap	
Interpolation	Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Cylindrical coordinate interpolation, Polar coordinate interpolation, Equal pitch threading, Re-threading*, Override threading*, Override variable threading*, Synchronized milling spindle tapping*	Positioning (Linear interpolation), Positioning (Independent interpolation), Linear interpolation, Circular interpolation, Spiral interpolation, Helical interpolation, Equal pitch threading, Variable pitch threading, Threading (C-axis interpolation type), Cylindrical coordinate interpolation*, NURBS interpolation*, Polar coordinate interpolation*, Re-threading*, Override threading*, Override variable threading*, Synchronized milling spindle tapping*
Feedrate	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp, Variable acceleration / deceleration control, Constant control for G0 tilting*	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Inverse time feed, Dwell (specified time, specified number of rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate clamp, Time constant changing for G1, Variable acceleration / deceleration control, Constant control for G0 tilting*
Program registration	Max. number of programs : 960, Program storage : 2 MB, Program storage expansion : 8 MB*, Program storage expansion : 32 MB*	
Control display	Display : 19" touch panel, Resolution : SXGA	
Spindle functions	S code output, Spindle speed clamp, Spindle speed override, Spindle speed reaching detection, Multiple position orient, Constant surface speed, Spindle speed command with decimal digits, Synchronized spindle control, Max. speed control for spindle	
Tool functions	Tool offset pairs : 4000, T code output for tool number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)	Tool offset pairs : 4000, T code output for tool number, T code output for group number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)
Miscellaneous functions	M code output, Simultaneous output of multiple M codes	
Tool offset functions	Tool position offset, Tool length offset, Tool diameter / tool nose R offset, Tool nose shape offset, Tool wear offset, Fixed amount offset, Simple wear offset	
Coordinate system	Machine coordinate system, Work coordinate system, Local coordinate system, MAZATROL coordinate system, Additional work coordinates (300 set)	
Machine functions		Polygon cutting*, Hobbing*
Machine compensation	G0 / G1 independent backlash compensation, Pitch error compensation	
Protection functions	Emergency stop, Interlock, Stroke check before travelling, Barrier, INTELLIGENT SAFETY SHIELD (manual mode), INTELLIGENT SAFETY SHIELD (automatic mode)*, MAZAK VOICE ADVISER	
Automatic operation mode	Memory operation	Memory operation, Tape operation, MDI operation, Ethernet operation*
Automatic operation control	Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Single process, Machine lock	Optional block skip, Optional stop, Dry run, Automatic handle control, MDI control, TPS, Restart, Restart 2, Collation stop, Machine lock
Manual measuring functions	Tool-setting data teach, Tool length and tip teach, Touch sensor coordinates measurement, Workpiece offset measurement, Tool eye measurement	Tool-setting data teach, Tool length and tip teach, Tool offset teach, Touch sensor coordinates measurement, Workpiece offset measurement, Tool eye measurement
Automatic measuring functions	Workpiece measurement , Sensor calibration, Tool eye auto tool measurement, Tool breakage detection	
Interface	PROFIBUS-DP*, EtherNET I/P*, CC-Link*, USB	
Card interface	SD card interface	
EtherNet	10 M / 100 M / 1 Gbps	

* : Option

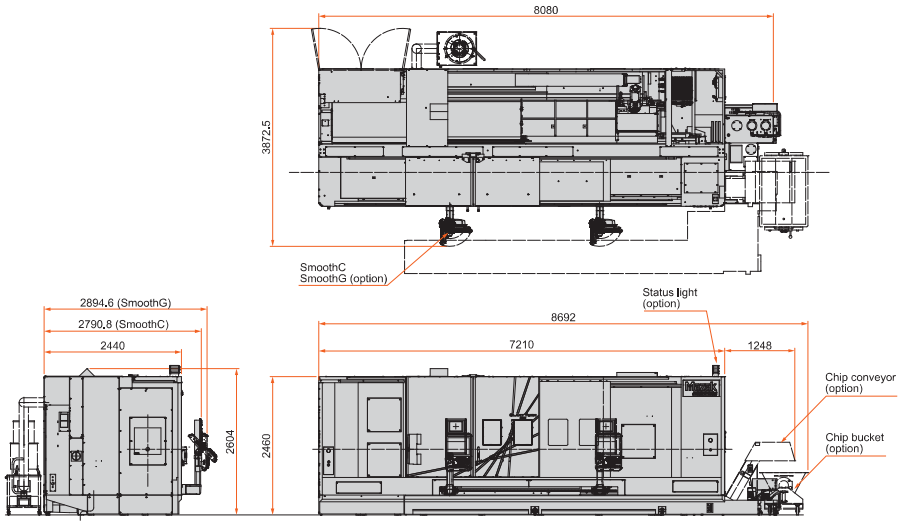
Machine dimensions

Unit : mm

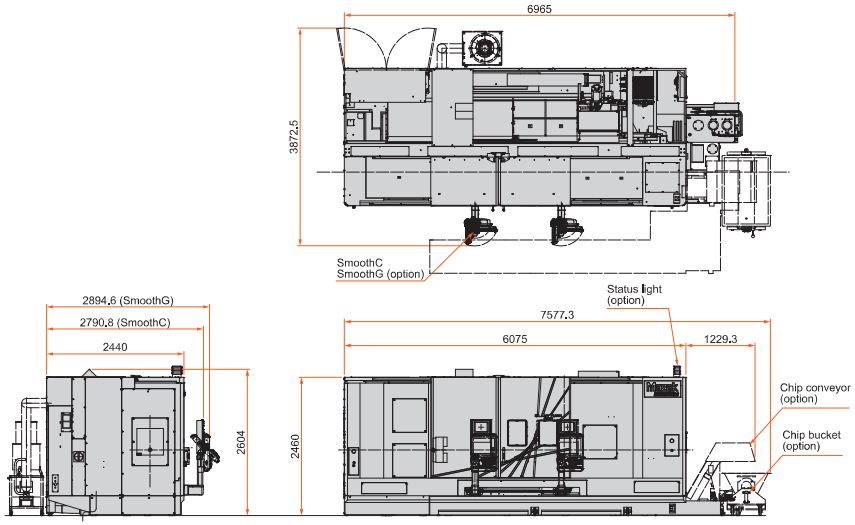
SLANT TURN 500 / 500M / 550 / 550M (C) Chucker / 1000U



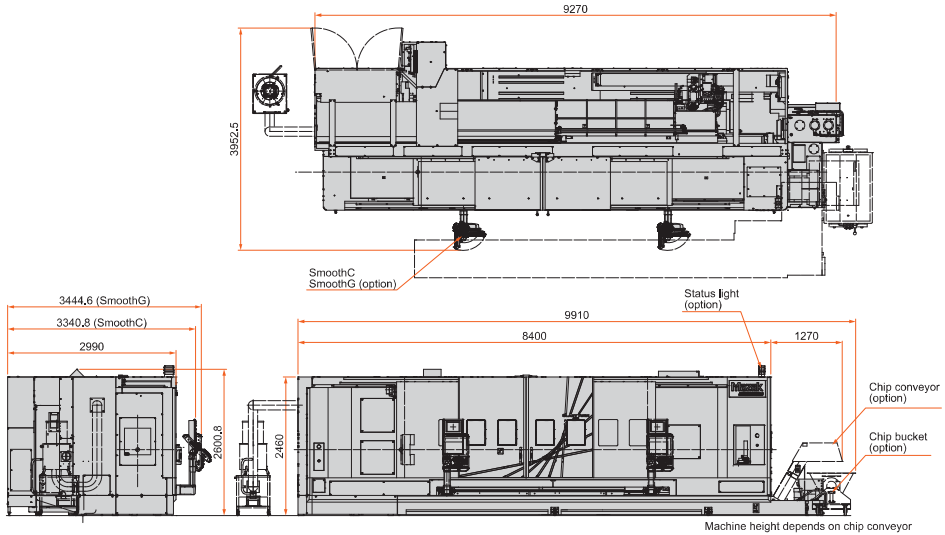
SLANT TURN 500 / 500M / 550 / 550M / 600 / 600M 3000U



SLANT TURN 500 / 500M / 550 / 550M / 600 / 600M 2000U



SLANT TURN 500 / 500M / 550 / 550M / 600 / 600M 4000U



Machine height depends on chip conveyor

Standard Machine Specifications

		SLANT TURN 500					SLANT TURN 500M				
		C	1000U	2000U	3000U	4000U	C	1000U	2000U	3000U	4000U
Capacity	Max. swing	Φ1040 mm									
	Max. machining diameter	Φ910 mm									
	Swing over carriage*1	Φ748 mm									
	Max. machining length*2	1047 mm		2040 mm	3175 mm	4064 mm	1082 mm		2075 mm	3210 mm	4099 mm
Travel	X-axis travel	465 mm									
	Z-axis travel	1175 mm		2165 mm	3300 mm	4190 mm	1175 mm		2165 mm	3300 mm	4190 mm
Spindle	Chuck size	18"~									
	Spindle speed*3	1600 rpm									
	Number of spindle speed range	2 steps									
	Spindle nose*4	A2-15									
	Spindle bore	Φ185 mm									
Turret	Turret type	Bolt-on					VDI-type				
	Number of tools	12									
	Tool shank height	□32 mm									
	Boring bar shank diameter	Φ50 mm (option : Φ80 mm)									
	Turret indexing time	0.5 s / 1 step					0.4 s / 1 step				
Rotary tool spindle	Spindle speed	-					4000 rpm (option : 3000 rpm)				
	Milling capacity	-					Drill : Φ25 mm, Endmill : Φ25 mm, Tap : M24(Optional tap : M30)				
Feedrate	Rapid traverse rate:X-axis	20000 mm/min									
	Rapid traverse rate:Z-axis	24000 mm/min									
Tailstock	Tailstock stroke	-	870 mm	2083 mm	3218 mm	3890 mm	-	870 mm	2083 mm	3218 mm	3890 mm
	Taper	-	MT-NO.6				-	MT-NO.6			
Motors	Spindle motor (40% ED / cont. rating)	45 kW (60 HP) / 37 kW (50 HP)									
	Milling spindle motor (4 min. / cont. rating)	-					7.5 kW (10 HP) / 1.5 kW (2 HP) (Option 11 kW (15 HP) / 7.5 kW (10 HP))				
	Coolant pump motor	0.52 kW (0.7 HP)									
Power requirement	Required power capacity (cont. rating)	75.3 kVA									
	Air source*5	0.5 MPa(5 kgf/cm²) 25 L/min				0.5 MPa (5 kgf/cm²) 35 L/min	0.5 MPa(5 kgf/cm²) 60 L/min				0.5 MPa (5 kgf/cm²) 70 L/min
Machine size	Machine height*6	2605 mm									
	Floor space requirement*7	5690 mm × 2440 mm		6965 mm × 2440 mm	8080 mm × 2440 mm	9270 mm × 2990 mm	5690 mm × 2440 mm		6965 mm × 2440 mm	8080 mm × 2440 mm	9270 mm × 2990 mm
	Machine weight*8	13800 kg	15100 kg	16900 kg	18900 kg	22400 kg	13800 kg	15100 kg	16800 kg	18800 kg	22300 kg
Sound	Equivalent continuous sound pressure level at operator position (dependent on equipment options)	Less than 80db (A)									

*1 Without steady rest
*2 Max. machining length varies according to the type of chuck.
*3 Spindle speed depends on chuck specifications.
*4 B6109-1 : 2005
*5 Optional air consumption not included
*6 Machine height depends on chip conveyor
*7 CNC panel not included
*8 Chip conveyor weight not included

		SLANT TURN 550					SLANT TURN 550M				
		C	1000U	2000U	3000U	4000U	C	1000U	2000U	3000U	4000U
Capacity	Max. swing	Φ1040 mm									
	Max. machining diameter	Φ910 mm									
	Swing over carriage*1	Φ748 mm									
	Max. machining length*2	1016 mm		2009 mm	3144 mm	4033 mm	1051 mm		2044 mm	3179 mm	4068 mm
Travel	X-axis travel	465 mm									
	Z-axis travel	1175 mm		2165 mm	3300 mm	4190 mm	1175 mm		2165 mm	3300 mm	4190 mm
Spindle	Chuck size	21"~									
	Spindle speed*3	1000 rpm/ 750 rpm [option]									
	Number of spindle speed range	2 steps									
	Spindle nose*4	A2-20									
	Spindle bore	Φ275 mm / Φ320 mm [option]									
Turret	Turret type	Bolt-on					VDI-type				
	Number of tools	12									
	Tool shank height	□32 mm									
	Boring bar shank diameter	Φ50 mm (option : Φ80 mm)									
	Turret indexing time	0.5 s / 1 step					0.4 s / 1 step				
Rotary tool spindle	Spindle speed	-					4000 rpm(option : 3000 rpm)				
	Milling capacity	-					Drill: Φ25 mm, Endmill : Φ25 mm, Tap : M24 (Optional tap : M30)				
Feedrate	Rapid traverse rate:X-axis	20000 mm/min									
	Rapid traverse rate:Z-axis	24000 mm/min									
Tailstock	Tailstock stroke	-	870 mm	2083 mm	3218 mm	3890 mm	-	870 mm	2083 mm	3218 mm	3890 mm
	Taper	-	MT-NO.6				-	MT-NO.6			
Motors	Spindle motor (40% ED/ cont. rating)	45 kW (60 HP) / 37 kW (50 HP)									
	Milling spindle motor (4 min. / cont. rating)	-					7.5 kW(10 HP)/ 1.5 kW (2 HP) (Option 11 kW (15 HP) / 7.5 kW (10 HP))				
	Coolant pump motor	0.52 kW									
Power requirement	Required power capacity (cont. rating)	75.3 kVA									
	Air source*5	0.5 MPa (5 kgf/cm²) 25 L/min				0.5 MPa (5 kgf/cm²) 35 L/min	0.5 MPa (5 kgf/cm²) 60 L/min				0.5 MPa (5 kgf/cm²) 70 L/min
Machine size	Machine height*6	2605 mm									
	Floor space requirement*7	5690 mm × 2440 mm		6965 mm × 2440 mm	8080 mm × 2440 mm	9270 mm × 2990 mm	5690 mm × 2440 mm		6965 mm × 2440 mm	8080 mm × 2440 mm	9270 mm × 2990 mm
	Machine weight*8	14000 kg	15300 kg	17100 kg	19100 kg	22600 kg	14000 kg	15300 kg	17000 kg	19000 kg	22500 kg
Sound	Equivalent continuous sound pressure level at operator position (dependent on equipment options)	Less than 80db (A)									

*1 Without steady rest
*2 Max. machining length varies according to the type of chuck.
*3 Spindle speed depends on chuck specifications.
*4 B6109-1 : 2005
*5 Optional air consumption not included
*6 Machine height depends on chip conveyor
*7 CNC panel not included
*8 Chip conveyor weight not included

Standard Machine Specifications

		SLANT TURN 600			SLANT TURN 600M		
		2000U	3000U	4000U	2000U	3000U	4000U
Capacity	Max. swing	Φ1040 mm					
	Max. machining diameter	Φ910 mm					
	Swing over carriage*1	Φ748 mm					
	Max. machining length*2	2009 mm	3144mm	4033mm	2044mm	3179mm	4068mm
Travel	X-axis travel	465 mm					
	Z-axis travel	2165 mm	3300 mm	4190 mm	2165 mm	3300 mm	4190 mm
Spindle	Chuck size	21"–					
	Spindle speed*3	500 rpm					
	Number of spindle speed range	2 steps					
	Spindle nose*4	A2-20					
	Spindle bore	Φ375 mm					
Turret	Turret type	Bolt-on			VDI-type		
	Number of tools	12					
	Tool shank height	□32 mm					
	Boring bar shank diameter	Φ50 mm (option : Φ80 mm)					
	Turret indexing time	0.5 s / 1 step			0.4 s / 1 step		
Rotary tool spindle	Spindle speed	–			4000 rpm (option : 3000 rpm)		
	Milling capacity	–			Drill : Φ25 mm, Endmill : Φ25 mm, Tap : M24 (Optional tap : M30)		
Feedrate	Rapid traverse rate:X-axis	20000 mm/min					
	Rapid traverse rate:Z-axis	24000 mm/min					
Tailstock	Tailstock stroke	2083 mm	3218 mm	3890 mm	2083 mm	3218 mm	3890 mm
	Taper	MT-NO.6					
Motors	Spindle motor (40% ED/ cont. rating)	45 kW (60 HP) / 37 kW (50 HP)					
	Milling spindle motor (4 min. / cont. rating)	–			7.5 kW (10 HP)/ 1.5 kW (2 HP) (Option 11 kW (15 HP)/ 7.5 kW (10 HP))		
	Coolant pump motor	0.52 kW					
Power requirement	Required power capacity (cont. rating)	75.3 kVA					
	Air source*5	0.5 MPa (5 kgf/cm²) 25 L/min		0.5 MPa (5 kgf/cm²) 35 L/min	0.5 MPa (5 kgf/cm²) 60 L/min		0.5 MPa (5 kgf/cm²) 70 L/min
Machine size	Machine height*6	2605 mm					
	Floor space requirement*7	6965 mm × 2440 mm	8080 mm × 2440 mm	9270 mm × 2990 mm	6965 mm × 2440 mm	8080 mm × 2440 mm	9270 mm × 2990 mm
	Machine weight*8	17800 kg	19800 kg	23300 kg	17800 kg	19800 kg	23300 kg
Sound	Equivalent continuous sound pressure level at operator position (dependent on equipment options)	Less than 80db (A)					

*1 Without steady rest
*2 Max. machining length varies according to the type of chuck.
*3 Spindle speed depends on chuck specifications.
*4 B6109-1 : 2005
*5 Optional air consumption not included
*6 Machine height depends on chip conveyor
*7 CNC panel not included
*8 Chip conveyor weight not included

Standard and Optional Equipment

● : Standard ○ : Option – : N / A

		500	500M	550	550M	600	600M
Machine	Work light	●	●	●	●	●	●
	INTELLIGENT THERMAL SHIELD	●	●	●	●	●	●
	18" thru-hole chuck B-18	○	○	–	–	–	–
	18" Non thru-hole chuck N-18	○	○	–	–	–	–
	21" thru-hole chuck B-21	○	○	○	○	○	○
	21" one set of soft jaws	–	–	–	–	○	○
	21" one set of hard jaws	–	–	–	–	○	○
	21" one set of soft jaws 110 mm / B-21	–	–	–	–	○	○
	21" Non thru-hole chuck N-21	○	○	○	○	–	–
	24" thru-hole chuck B-24	○	○	○	○	○	○
	24" one set of soft jaws B-24	–	–	–	–	○	○
	24" one set of hard jaws	–	–	–	–	○	○
	24" one set of soft jaws 110 mm / B-24	–	–	–	–	○	○
	Main spindle motor AC45kW (60HP)	●	●	●	●	●	●
	Rotary-tool spindle speed 4000 rpm, 7.5kW (10HP) 95N·m	–	●	–	●	–	●
	Rotary-tool spindle speed 3000 rpm, 11kW (15HP) 140N·m	–	○	–	○	–	○
	Tailstock with manual 2 position quill *1	●	●	●	●	●	●
	0.0001°degree increment	–	●	–	●	–	●
	Spindle bore Φ185 mm /1600 rpm	●	●	–	–	–	–
	Spindle bore Φ275 mm / 1000 rpm	–	–	●	●	–	–
	Spindle bore Φ320 mm / 750 rpm	–	–	○	○	–	–
	Spindle bore Φ375 mm / 500 rpm	–	–	–	–	●	●
	Steady rest*2	○	○	○	○	○	○
Factory Automation	Automatic chuck jaw open /close	○	○	○	○	○	○
	Abosolute positioning system	●	●	●	●	●	●
	Auto power off (breaker trip)	●	●	●	●	●	●
	Auto power on / off+warm-up *3	○	○	○	○	○	○
	Operation end buzzer	○	○	○	○	○	○
	Status light (Operation end: yellow)	○	○	○	○	○	○
	Status light (3 colors)	○	○	○	○	○	○
Safety equipment	Chuck open / close confirmation	○	○	○	○	○	○
	Double foot-pedal switch	●	●	●	●	●	●
	Hydraulic pressure interlock	●	●	●	●	○	○
	Operation door interlock with lock-switch	●	●	●	●	●	●
	Overload detection system	○	○	○	○	○	○
Coolant / chip disposal	Coolant system	●	●	●	●	●	●
	Full coverage chip and coolant cover	●	●	●	●	●	●
	Mist collector (LOSMA G2000)	○	○	○	○	○	○
	High-power coolant (1.1 kW (1.5 HP))	○	○	○	○	○	○
	High-power coolant (2.2 kW (3 HP) /50 Hz, 2.2 kW (3 HP)/60 Hz)	○	○	○	○	○	○
	Magnum coolant	○	○	○	○	○	○
	Preparation for magnum coolant	○	○	○	○	○	○
	Chip conveyor side disposal (Hinge)	○	○	○	○	○	○
	Chip conveyor (CONSEP 2000WS)*1	○	○	○	○	○	○
	Chip bucket (swing type)	○	○	○	○	○	○
Tooling	Standard tooling package	●	●	●	●	●	●
Others	One set of manuals	●	●	●	●	●	●
	Additional set of manuals	○	○	○	○	○	○
	One set of adjusting tools	●	●	●	●	●	●
CNC	MAZATROL SmoothC	●	●	●	●	●	●
	MAZATROL SmoothG	○	○	○	○	○	○

*1 N/A chucker
*2 Option for 2000U/3000U/4000U. Double base steady rest is optionally available for 4000U.
*3 Standard equipment with MAZATROL SmoothG

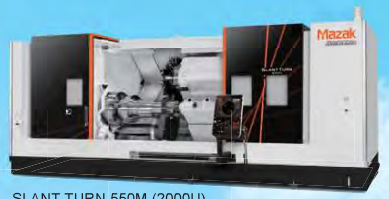
Above specifications are for European market.
Standard and optional equipment vary by market.

Environmentally Friendly

eco-friendly

Designed with environmental considerations

The environment and our impact on natural surroundings have always been important concerns of Yamazaki Mazak. LED worklight is standard equipment. The chip conveyor automatically stops operation 5 minutes after cycle completion for reduced electrical power consumption.



SLANT TURN 550M (2000U)

Previous Machine model

Lubricant consumption
150 L/year

(Operating time: 3000H/year, 2.5 cc per 3 minutes)

SLANT TURN 550M

Lubricant consumption
10.53 L/year

(Operating time: 3000H/year, 0.468 cc per 8 minutes)

Energy Dashboard (MAZATROL SmoothG) OPTION

The Energy Dashboard provides a convenient visual monitoring of energy consumption and analysis.

Energy consumption diplayed on graph

Display approximate CO_2 emission and electrical power cost



Energy consumption by workpieces

Process screen display

- Total energy consumption (of workpiece in operation)
- Current energy consumption



Total Support

Mazak Global Support Network

The worldwide production base and the worldwide network of more than 70 Technology Centers and Technical Centers provides technical support for higher productivity and timely service.



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<Japan>
Yamazaki Mazak Corporation

<China>
Ningxia Little Giant Machine Tool Co., Ltd.

<North, Central and South America>
Mazak Corporation

<Southeast Asia, India and Oceania>
Yamazaki Mazak Singapore Pte., Ltd.

<China>
Yamazaki Mazak Machine Tool (Liaoning) Co., Ltd.

Fast Spare Parts Delivery

To consistently achieve high machine up-time for the maximum performance, it is imperative that spare parts are available as quickly as possible when they are needed. The World Parts Center is designed to supply spare parts worldwide 24 hours a day, 365 days per year. The World Parts Center works closely with our regional parts centers all over the world to ensure that they are properly stocked to support the installed base of machines in each region.



Technology Centers and Technical Centers

Yamazaki Mazak has established more than 30 Technology Centers and 40 Technical Centers in more than 20 countries. In addition to providing machine demonstrations and introductions to advanced technology and concepts, our Technology and Technical Centers have been established to provide opportunities for our customers to learn how to improve productivity with their machine tools after they have been purchased and installed.The Technology and Technical Centers are the local bases for our team of highly skilled service engineers that provide service support to customers wherever their manufacturing facilities are located.

