SMOOTH
TECHNOLOGY

Mega Turn 900
SERIES

900

900M

900S

900MS

Advanced features of the MAZATROL SmoothG CNC

Touch screen operation similar to your smartphone/tablet

PC with Windows® 8 embedded OS

Fastest CNC in the world with latest hardware and software for unprecedented speed and precision

Easy conversational programming of multiple-surface machining

Smooth graphical user interface and support functions for unsurpassed ease of operation

MTConnect® ready for convenient networking

Easily configure machine parameters for different workpiece materials and application requirements

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

MTConnect is a registered trademark of AMT in the United States and other countries.

MAZATROL
SMOOTHG

MAZATROL SmoothC is optionally available

High-torque and heavy-duty machining

Max. swing/Max. workpiece size

ø1000 mm/ø920 mm x 800 mm (ø39.37"/ø36.22" x 31.5")
maximum swing over column is ø940 mm (ø37.01")

Designed for heavy-duty machining of large work pieces
Max output/30 kW (40HP) <30-min. rating>
Max torque/3655 N • m (2696 ft • lbs) <30-min. rating>
Max loading capacity/3000 kg (6614 lbs) <including chuck weight>

Two-pallet changer and Automatic Tool Changer (ATC) are optionally available for increased productivity.

Mirror-image version available for multiple maching layouts with smaller floor space requirements.

MEGA TURN 900M (MAZATROL SmoothG)
Shown with optional status light and ATC

MEGA TURN 900 (MAZATROL SmoothG)
Shown with optional status light and ATC

INTELLIGENT MACHINE®

Innovative support for operators

ergonomics

Ease of operation

eco-friendly

Designed with environmental considerations

Mega Turn 900 series

Higher Productivity

Powerful cutting capability for high productivity

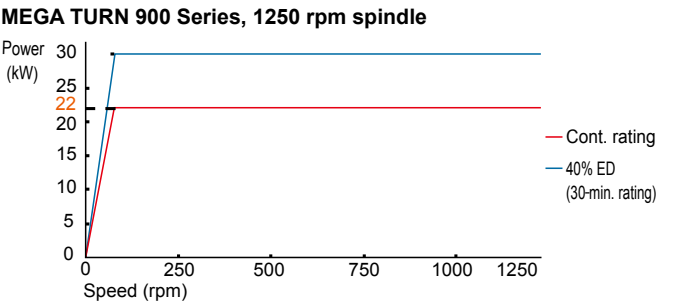### High-rigidity spindle for heavy-duty machining of large workpieces

Max. material removal rate: 690 cm³/min (58.6 in³/min)
(1.4 times higher than comparable VTLs)
Material: S45C   Spindle speed: 80 rpm   Feedrate: 0.8 mm/rev (0.03 IPR)   DOC: 8 mm (0.315")

Max. workpiece weight: 3000 kg (6614 lbs)

Output: 30 kW (40 HP) [30-min. rating] Max. Torque: 3655 N • m (2696 ft • lbs)

The high-rigidity spindle, with a maximum output of 30 kW (40 HP) [30-min. rating], has a maximum torque of 3655 N • m (2696 ft • lbs) for the heavy-duty cutting of cast iron and steel workpieces.

MEGA TURN 900 Series, 1250 rpm spindle

Power (kW) vs Speed (rpm)

- Cont. rating
- 40% ED (30-min. rating)

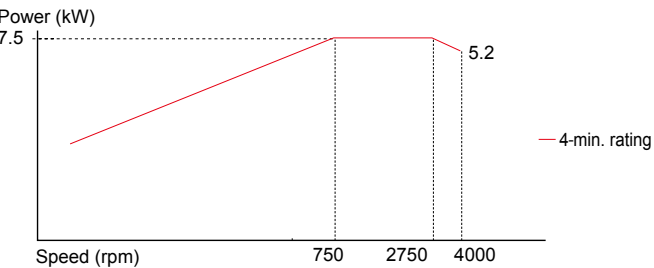### Powerful rotary tool spindle for improved accuracy and productivity
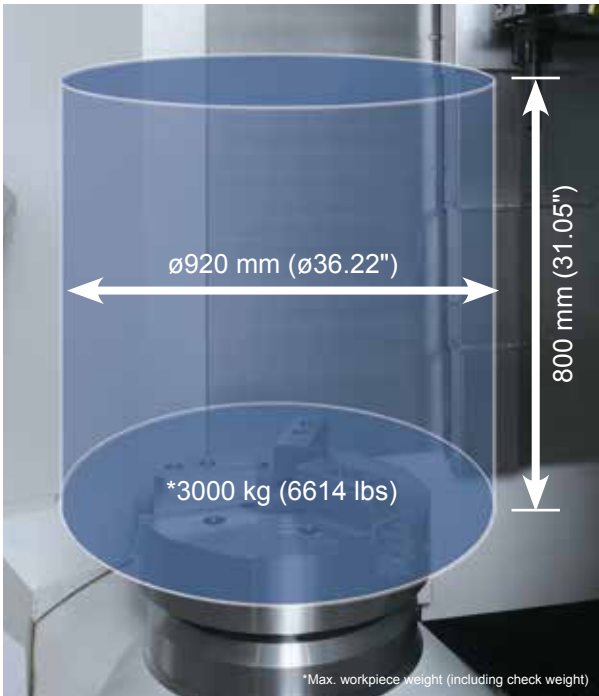
MEGA TURN 900M, 900MS

The MEGA TURN 900M/900MS is designed to combine turning and milling operations in a single workpiece setup. As a result, machining accuracy is improved while workpiece handling and setup time, as well as overall cycle time, are reduced to realize considerable improvement in productivity. The C axis can be indexed in 0.0001°

Milling capability

Spindle speed		4000 rpm
Spindle output		AC 7.5 kW (10 HP) [4-min. rating]
		AC 1.5 kW (2 HP) [Cont. rating]
Max. Torque		95 N • m [4-min. rating]
Milling capability	Drill	ø25 mm (ø1")
	End mill	ø25 mm (ø1")
	Tap	M24 (1-8 UNC)

Power (kW) vs Speed (rpm)
7.5
5.2

- 4-min. rating

750   2750   4000

Larger machining area by eliminating interference

ø920 mm (ø36.22")
800 mm (31.05")
*3000 kg (6614 lbs)

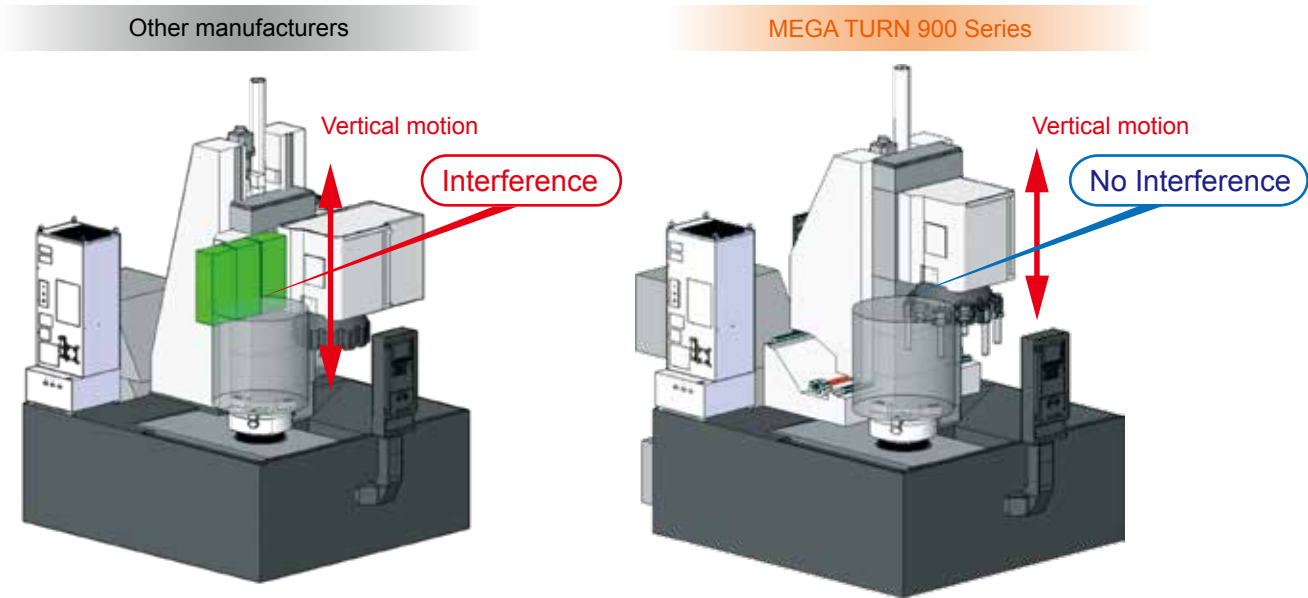*Max. workpiece weight (including check weight)

Unique MAZAK mechanical design has a maximum workpiece size of ø920 mm x 800 mm (ø36.22" x 31.50"). The machine base is designed for heavy-duty cutting by using structural analysis to ensure maximum rigidity. By utiizing roller linear guides on the X and Z axes, high rigidity and smooth cutting is ensured even at high-speed feedrates.

Note: Maximum swing is ø1000 mm (39.37"). Maximum swing over column is ø940 mm (ø37.01").

Machine design comparison

The MEGA TURN 900 has no crossrail for a larger machining area.

Other manufacturers

Vertical motion
Interference

MEGA TURN 900 Series

Vertical motion
No Interference

▌Higher Productivity

12-position drum turret for heavy-duty machining

12-position drum turret

MEGA TURN 900, 900

The turret is rigidly clamped by 162.79 kN (36597 lbf) of force on a ø330 mm (12.99") high-index coupling for high-performance machining, including intermittent cutting. Additionally, the turret can hold 12 tools, and is designed for the minimum workpiece interference with boring bias turning.

Number of tools	12 tools (bolt-on)
Turning and facing tool shank size	□32 mm x 170 mm (1.25" x 6.69")
Boring bar shank diameter	ø50 mm (ø2")
Tool selection method	Shortest path, random selection
Turret indexing time	0.4 sec/1 step
Turret clamping force	162.79 kN (36597 lbf)

Position drum turret with rotary tools
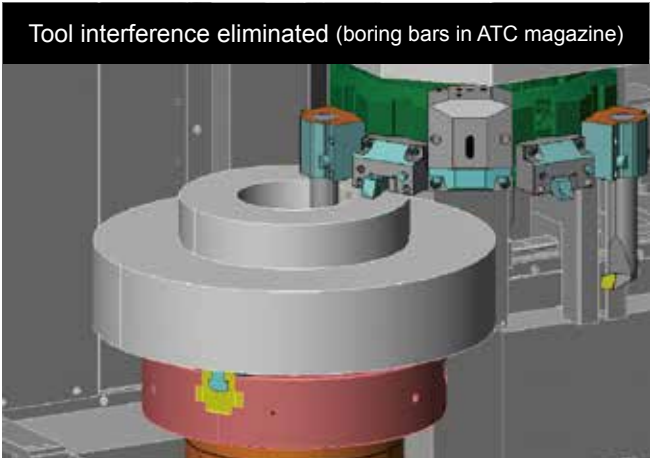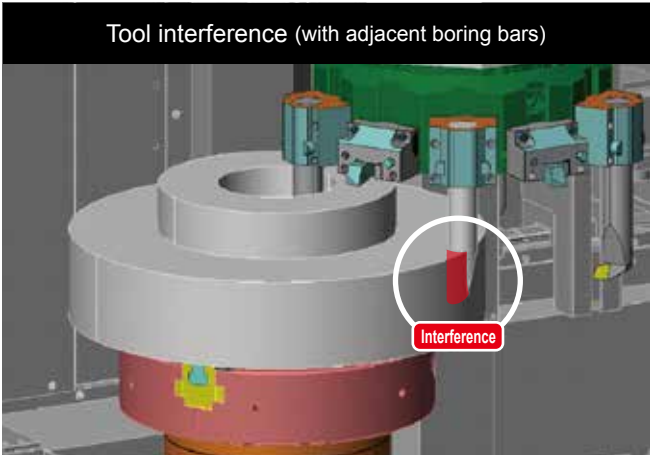
MEGA TURN 900M, 900MS

The MEGA TURN 900M and 900MS can combine turning and secondary machining operations for efficient machining of large workpieces like those found in the construction machinery and jet engine industries.

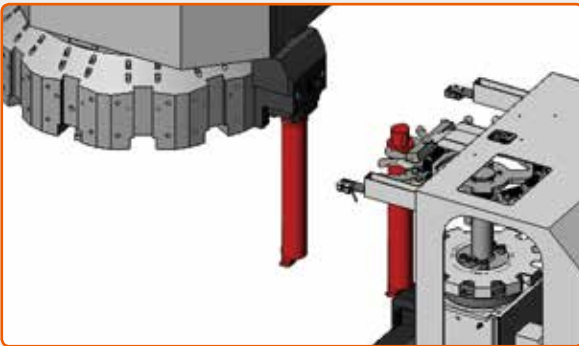| Number of tools	12 tools (VDI type)
Turning and facing tool shank size	□32 mm x 170 mm (1.25" x 6.69")
Boring bar shank diameter	ø50 mm (ø2")
Tool selection method	Shortest path, random selection
Turret indexing time	0.45 sec/1 step
Turret clamping force	162.79 kN (36597 lbf)

Automatic Tool Changer for turning tools (OPTION)

Tool interference (with adjacent boring bars)

Interference

Tool interference eliminated (boring bars in ATC magazine)

The ATC system eliminates interference with adjacent tools for extremely convenient tool setup. By increasing the number of tools that can be stored, a set of tooling can be used that meets the requirements of a wider variety of workpieces. Higher productivity is realize by minimizing tool setup when changing workpieces.

Automatic Tool Changer

The boring tools can be automatically stored in the adjacent tool magazine. (Turning tools only)

Two types of Automatic Tool Changers are available

Tool shank	CAPTO C6	CAPTO C8
Number of tools	12 tools	8 tools
Max. tool length (from gauge line)	410 mm (16.14")	
Max. tool weight	10 kg (22 lbs)	15 kg (33 lbs)
Tool selection method	Shortest path, random selection	
Magazine indexing time (1 pocket)	0.8 sec	0.9 sec

Max. tool length: 410 mm (16.14")

Higher Productivity

Obtain different machine layouts by combining standard and mirror-image versions

A combination of machine layouts allows for reductions in operator movement and required floor space.
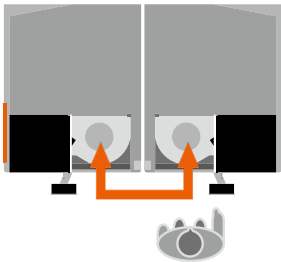
900S, 900MS (Mirror-image version)
MEGA TURN 900MS shown with optional status light and ATC

900, 900M (Standard)
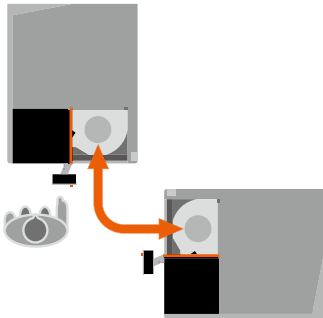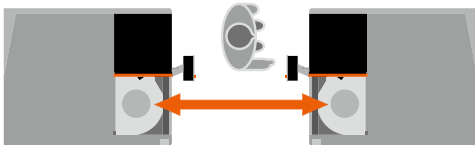MEGA TURN 900 shown with optional status light and ATC

Available machine layouts

Adjacent layout

L-shaped layout

Opposed machines

Higher efficiency

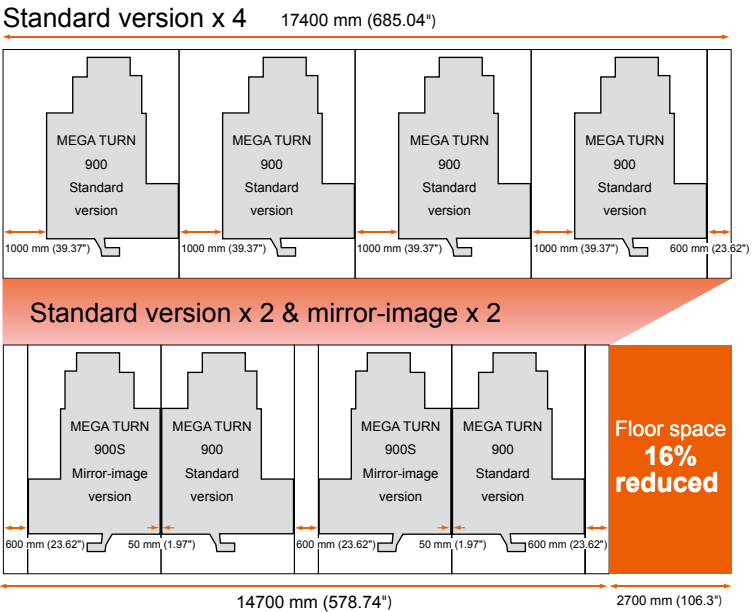3315 mm (130.51")

1580 mm (62.2")

Standard version x 2

Standard version & mirror-image version

Distance covered by operator is reduced 52% to ease the transfer of workpieces from machine to machine.

Space-saving design

Standard version x 4   17400 mm (685.04")

MEGA TURN 900 Standard version	MEGA TURN 900 Standard version	MEGA TURN 900 Standard version	MEGA TURN 900 Standard version
1000 mm (39.37")	1000 mm (39.37")	1000 mm (39.37")	1000 mm (39.37") 600 mm (23.62")

Standard version x 2 & mirror-image x 2

MEGA TURN 900S Mirror-image version	MEGA TURN 900 Standard version	MEGA TURN 900S Mirror-image version	MEGA TURN 900 Standard version	Floor space **16% reduced**
600 mm (23.62") 50 mm (1.97")		600 mm (23.62") 50 mm (1.97") 600 mm (23.62")		

14700 mm (578.74")

2700 mm (106.3")

Floor space reduced 16%* with two standard versions and two mirror-image versions.

*With Automatic Tool Changer

High Accuracy

Positioning accuracy: two times better than ISO

MEGA TURN 900 series ensures powerful machining and high-accuracy machining.

Unit: µm/inch

		X axis			Z axis		
		ISO	Mazak standard	Results	ISO	Mazak standard	Results
Positioning	A	22	11 (0.000433")	2.4 (0.000945")	32 (0.00126")	16 (0.00063")	4.8 (0.000189")
Unidirectional positioning accuracy	E ↑	10	5 (0.000197")	1 (0.0000945")	15 (0.000591")	7.5 (0.000295")	1.6 (0.0000630")
	E ↓	10	5 (0.000197")	0.9 (0.000354")	15 (0.000591")	7.5 (0.000295")	2.7 (0.000106")
Unidirectional positioning repeatability	R ↑	6	3 (0.000118")	1.8 (0.0000709")	10 (0.000394")	5 (0.000197")	3.6 (0.000142")
	R ↓	6	3 (0.000118")	1.5 (0.0000591")	10 (0.000394")	5 (0.000197")	2.7 (0.000106")
Reversal Value	B	10	5 (0.000197")	0.4 (0.0000157")	12 (0.000472")	6 (0.000236")	1.6 (0.0000630")

The above measured results are for reference only.

Heat Displacement Control
INTELLIGENT THERMAL SHIELD

ITS+

The INTELLIGENT THERMAL SHIELD automatically compensates for room temperature changes to realize enhanced continuous machining accuracy. Mazak has performed extensive testing in a variety of temperature-controlled manufacturing environments and has used the results to develop a control system that compensates automatically for temperature changes in the machining area. Changes in room temperature and compensation data are tracked and graphed.

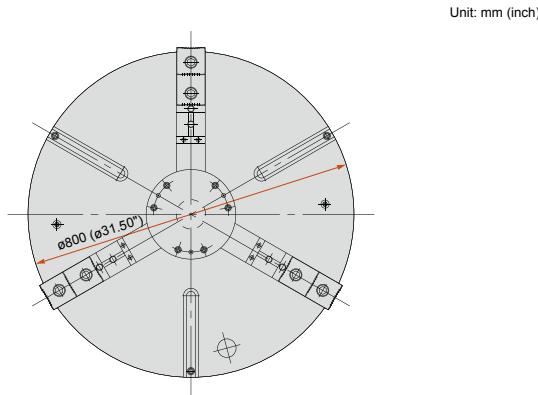# Automation

Two-pallet changer   OPTION

Productivity is increased by the ability to set up one workpiece while machining another.

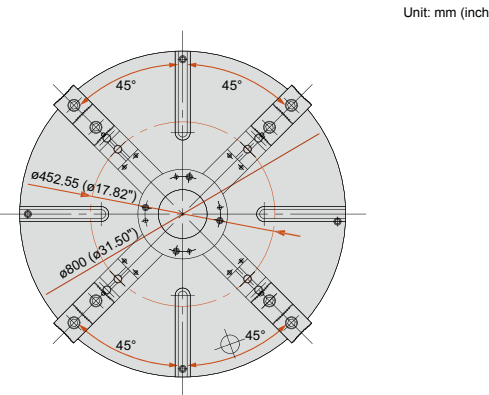| Max. workpiece size	ø920 mm x H750 mm (ø36.22" x H29.53")
Max. workpiece weight (pallet weight included)	1800 kg (3968 lbs)
Pallet change time	90 sec

Note:
*Max. workpiece height depends on chuck specification.
*Specifications are different when equipped with two-pallet changer.
*Two-pallet changer is not available for the MEGA TURN 900S 900MS.

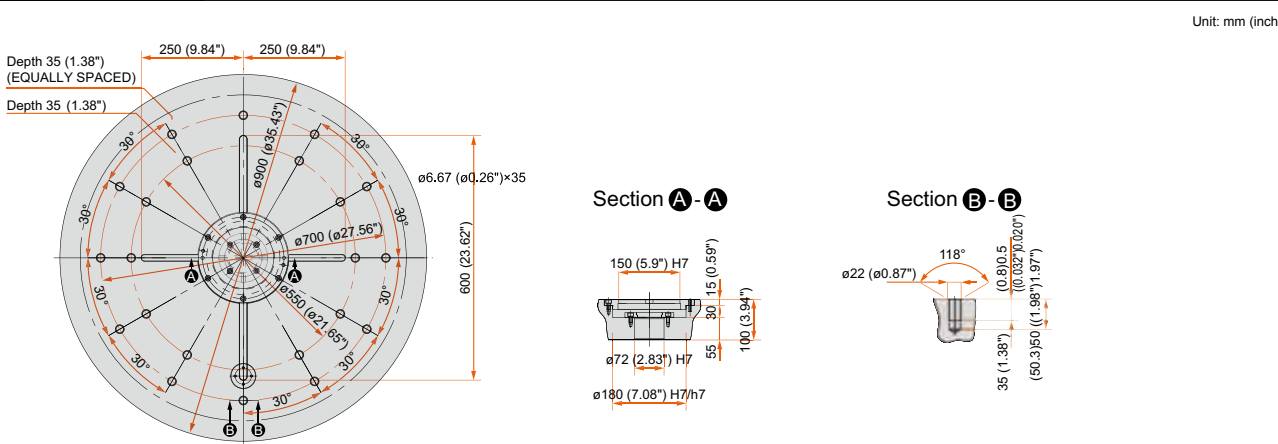## Pallet dimensions (two-pallet changer)

3-jaw scroll chuck

Unit: mm (inch)

ø800 (ø31.50")

4-jaw independent chuck

Unit: mm (inch)

ø452.55 (ø17.82")
ø800 (ø31.50")
45°

ø900 mm (ø35.43") pallet

Unit: mm (inch)

Depth 35 (1.38")
(EQUALLY SPACED)
Depth 35 (1.38")
250 (9.84")   250 (9.84")
ø900 (ø35.43")
ø700 (ø27.56")
ø550 (ø21.65")
ø6.67 (ø0.26")×35
600 (23.62")
30°

Section Ⓐ-Ⓐ
150 (5.9") H7
30 (1.18")   15 (0.59")
55
100 (3.94")
ø72 (2.83") H7
ø180 (7.08") H7/h7

Section Ⓑ-Ⓑ
118°
ø22 (ø0.87")
(0.8)0.5 (0.032")0(0.020")
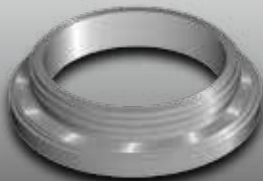35 (1.38")
(50.3)50 (1.98")1.97")

Applications

Marine

Energy

Construction

Aerospace

Intelligent Machine

Mazak has developed a variety of functions for the improvement of productivity, accuracy machining and operator support. Unique technologies have been developed that incorporate the expertise of experienced machine operators for unsurpassed productivity and higher accuracy.

Advanced Intelligent Functions

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

Machining

Heat Displacement Control
INTELLIGENT THERMAL SHIELD
ITS+
Unique Mazak heat displacement compensation system ensures the highest level of accuracy.

Variable Acceleration Control Function
VARIABLE ACCELERATION CONTROL (900M/900MS)
VAC
This new function permits the faster acceleration capability of linear axes to be used whenever possible. The slower accelration of the rotary axes is not used for all program commands, resulting in faster machining cycle times.

Seamless Corner Control
SMOOTH CORNER CONTROL
SCC
Improves finished surfaces and reduces cycle times by optimizing acceleration/deceleration when machining corners.

Setup
MAZATROL SMOOTH G   MAZATROL SMOOTH G

Machine Interference Prevention
INTELLIGENT SAFETY SHIELD
ISS+
Ensures safe operation.
(Optionally, this function is available during automatic operation.)

Verbal Message System
MAZAK VOICE ADVISOR
MVA+
Verbal support for machine setup and confirmation of safe conditions.

Maintenance

Comprehensive Maintenance Monitor
INTELLIGENT MAINTENANCE SUPPORT
IMS+
Useful information to improve preventive maintenance and prevent unexpected machine downtime.

Ergonomics

Ergonomic design for convenient operation

ergonomics

Tool eye

The automatic tool eye registers tool data by simply bringing the tool tip into contact with the tool eye during tool setup or while changing inserts, considerably reducing required time.
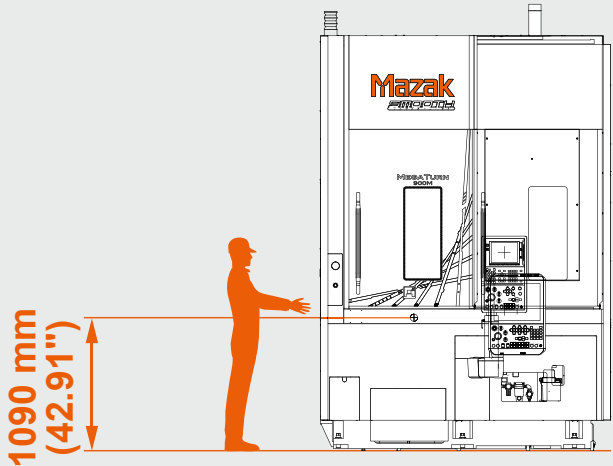
Turret access

The turret features excellent accessibility for convenient tool setup.
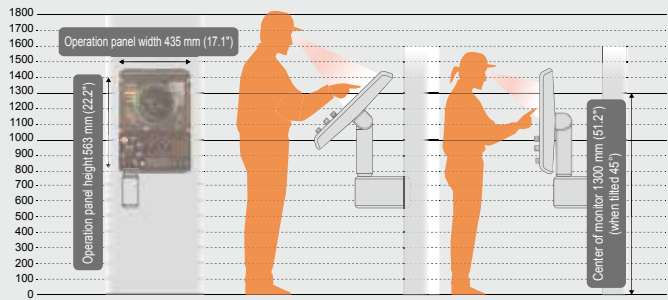
Designed for convenient operation

The distance from the spindle nose to the floor is just 1090 mm (42.91"). As a result, workpiece loading and unloading is extremely convenient.

1090 mm (42.91")

MAZATROL SMOOTH G

Adjustable CNC touch panel

The operational touch panel can be tilted to the optimal position to ensure ease of operation.

MAZATROL SMOOTH C

Rotating operation panel

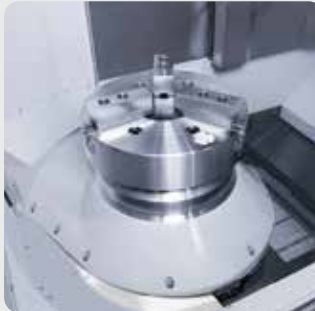The panel easily rotates to each operator's preferred position.

Color-coded cables

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

Designed for the smooth flow of machined chips

The steeply sloping machine base provides a smooth flow of machined chips flushed by the cover coolant into the coolant tank. This prevents the accumulation of machined chips, which can affect machine operation.

Way covers designed for long service life

The unique MEGA TURN series' mechanical design includes way covers made with the minimum number of parts for simplified construction. This allows for convenient maintenance of the wipers to remove jammed machined chips.

MAZATROL CNC System

The seventh generation MAZATROL CNC system and the core of SMOOTH TECHNOLOGY

Interface with touch operation ensures convenient data processing, programming, confirmation, editing and tool data registration.

MAZATROL SMOOTH G

From setup to machining, designed for unsurpassed ease of operation

Process home screens

Each home screen displays the appropriate data in an easy-to-understand manner. Touch icons in each process display for additional screen displays.

Programming

Tool data

Setup

Machining

Maintenance

19" touch panel
Touch panel operation similar to your smartphone or tablet

USB port
Interface for peripheal equipment USB 1.0+2.0

SD card slot
Transfer programs and tool data

Operation switches
Large switches change color from orange to green when activated

Dials
For selection of frequently used axes and feedrate changes

Pop-up windows

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

Side menu

List menu

Screen keyboard

Ease of Programming

Innovative programming screen links tool path, workpiece shape and
EIA code to reduce programming time

QUICK MAZATROL

The 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 displayed immediately so an operator may check for any programming error quickly and easily.

Touch a feature in the 3D model to move quickly to the corresponding section in the MAZATROL program.

3D model in the process list is displayed with updated programming in real time.

3D ASSIST

Import workpiece and coordinate data from a 3D CAD file to a MAZATROL program. No coordinate value inputs are required, which can reduce input errors and time needed for program checking.

CAD model importing

Shape selection

Automatic input to MAZATROL program

3D ASSIST

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

Selecting tool path by touching the screen

Moving to the corresponding EIA program line

MAZATROL CNC System

MAZATROL SMOOTH C

Following traditional conversational MAZATROL programming, this system is designed for ease of operation with simplified key input operation and classic display style.

USB interface allows users to transfer program and tool data and connect peripheal equipment

SD card slot enables program and tool data transfer

Press menu keys under the display to go to other pages for program data input and editing

Home screen key goes to the home screen from any display

Compact keypad with unique design for ease of operation

Home screen

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

Comprehensive status display on one screen

Machining
Axes in operation and load on motors

Programming
Simulation time and machining time

Tool data
Status of tool layout

Setup
Status of workpiece coordinate setting

Maintenance
Overview of the status of items requiring maintenance

MAZATROL conversational programming

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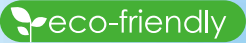

3D machine model

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

Environmentally Friendly

Designed with environmental considerations
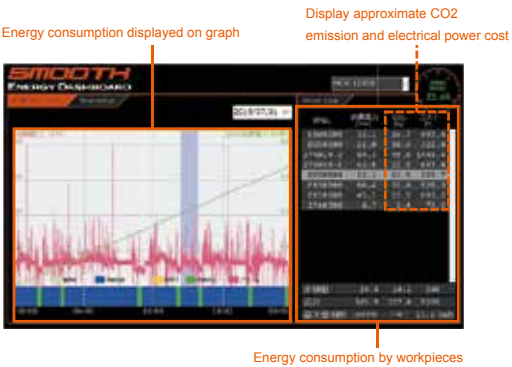
eco-friendly

Te environment and our impact on it have always been important concerns to MAZAK.
To demonstrate this commitment, the factories where MAZAK machine tools are produced are ISO 14001 certified, an international standard confirming that the operation of our production facilities does not adversely affect the environment.

To help ensure our customers protect our natural surroundings and conserve power, LED worklights are standard equipment, while the chip conveyor automatically stops operation five minutes after cycle completion.

Energy Dashboard (MAZATROL SmoothG)   OPTION

The energy dashboard provides a convenient monitoring of energy consumption and analysis visually.

Energy consumption displayed on graph

Display approximate CO2 emission and electrical power cost

Energy consumption by workpieces

Process screen display

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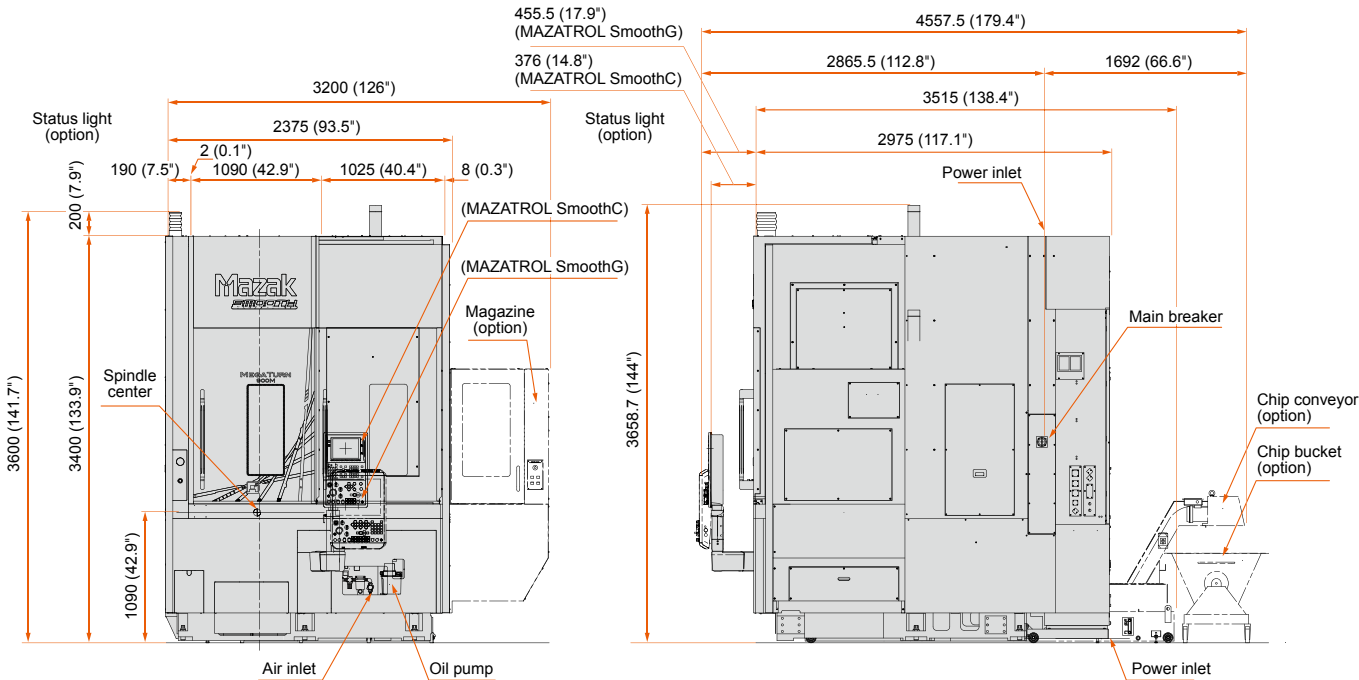• Current energy consumption

MEGA TURN 500 (MAZATROL Smooth G)
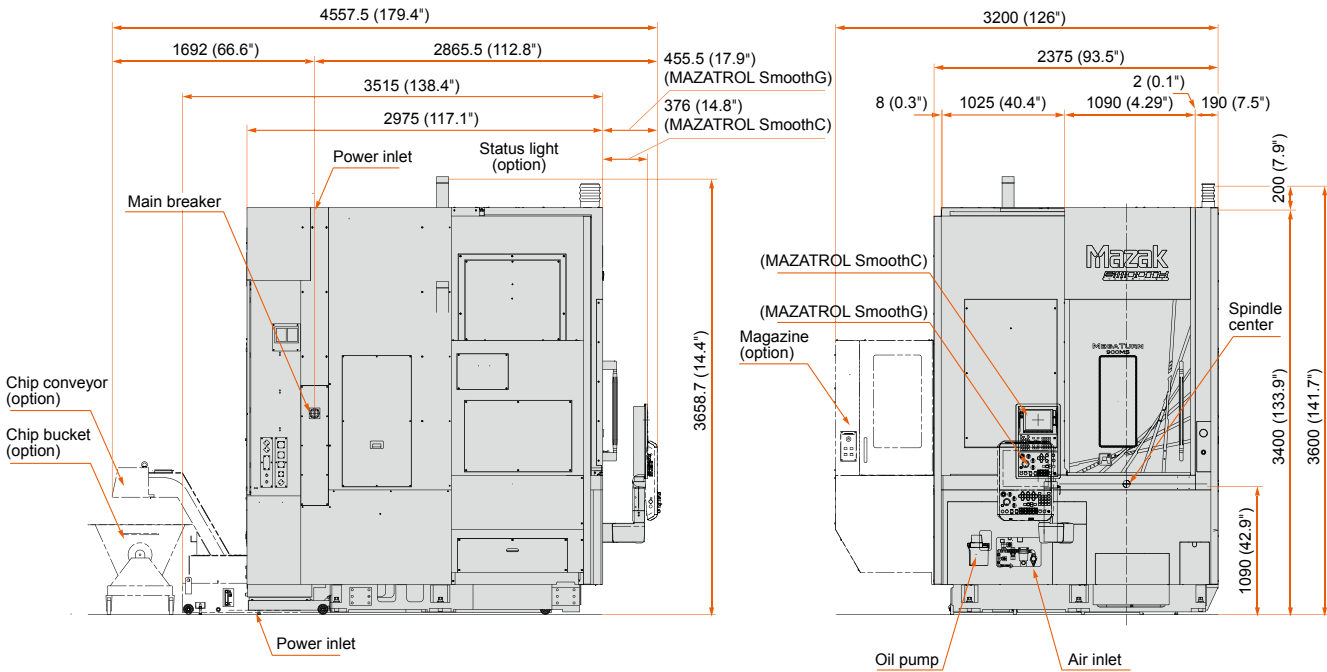Shown with optional status light and ATC

Machine Dimensions

Unit: mm (inch)

MEGA TURN 900, 900M

MEGA TURN 900S, 900MS

MAZATROL SmoothG Specifications

	MAZATROL	EIA
Number of controlled axes	Simultaneous 2 ~ 4 axes	
Least input increment	0.0001 mm, 0.00001 inch, 0.0001 deg	
High-speed, high-precision control	Shape of 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 (time/rotation), Rapid traverse override, Cutting feed override, GO speed variable control, Feedrate clamp, Variable acceleration/deceleration control, Constant control for GO tilting*	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Dwell (time/rotation), Rapid traverse override, Cutting feed override, GO speed variable control, Feedrate clamp, Time constant changing for G1, Variable acceleration/deceleration control, Constant control for GO tilting*
Program registration	Max. number of programs: 960, Program storage: 2MB, Program storage expansion: 8MB*, Prgoram storage expansion: 32MB*	
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, Tool 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 traveling, Barrier, INTELLIGENT SAFETY SHIELD (manual mode), INTELLIGENT SAFETY SHIELD (automatic mode)*, MAZAK VOICE ADVISOR	
Automatic operation mode	Memory operation	Memory operation, Tape operation, MDI operation, Ethernet operation*
Automatic operation mode	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 measurements, Workpiece offset measurement, Tool eye measurement	Tool-setting data teach, Tool length and tip teach, Touch sensor coordinates measurement, Workpiece offset measurement, Tool eye measurement
Automatic measuring functions	Workpiece measurement, Touch sensor orientation confirmation, Tool eye auto tool measurement, Tool breakage detection	
Interface	PROFIBUS-DP*, Ethernet I/P*, CC-Link*	
Card interface	SD card interface, USB	
Ethernet	10M/100M/1Gbps	

*: Option

MAZATROL SmoothC Specifications

	MAZATROL	EIA
Number of controlled axes	Simultaneous 2 ~ 4 axes	
Least input increment	0.0001 mm, 0.00001 inch, 0.0001 deg	
High-speed, high-precision control	Shape of 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 (time/rotation), Rapid traverse override, Cutting feed override, GO speed variable control, Feedrate clamp, Variable acceleration/deceleration control, Constant control for GO tilting*	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Dwell (time/rotation), Rapid traverse override, Cutting feed override, GO speed variable control, Feedrate clamp, Time constant changing for G1, Variable acceleration/deceleration control, Constant control for GO tilting*
Program registration	Max. number of programs: 960, Program storage: 2MB, Program storage expansion: 8MB*, Prgoram storage expansion: 32MB*	
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, Tool 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 traveling, Barrier	
Automatic operation mode	Memory operation	Memory operation, Tape operation, MDI operation, Ethernet operation*
Automatic operation mode	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 measurements, Workpiece offset measurement, Tool eye measurement	Tool-setting data teach, Tool length and tip teach, Touch sensor coordinates measurement, Workpiece offset measurement, Tool eye measurement
Automatic measuring functions	Worpiece measurement, Touch sensor orientation confirmation, Tool eye auto tool measurement, Tool breakage detection	
Interface	PROFIBUS-DP*, Ethernet I/P*, CC-Link*	
Card interface	SD card interface, USB	
Ethernet	10M/100M/1Gbps	

*: Option

Standard Machine Specifications

		MEGA TURN 900, 900S	MEGA TURN 900M, 900MS
Capacity	Max. swing[*1]	ø1000 mm (ø39.37")	
	Max. machining diameter	ø920 mm (ø36.22")	
	Max. machining height[*2]	800 mm (31.50")	
	Max. workpiece weight (including chuck weight)	3000 kgf (6614 lbs)	
Stroke	X axis	470 mm (18.50")	
	Z axis	876 mm (34.25")	
	Distance from spindle face to turret face	154 mm ~ 1030 mm (6.06" ~ 40.55")	136 mm ~ 1039 mm (6.02" ~ 40.5")
Spindle	Chuck size	15" ~ 36"	
	Spindle speed[*3]	1250 rpm	
	Gear ranges	1-stepless	
	Max. torque	3655 N • m (2696 ft • lbs)	
	Min. indexing abgle increment (C axis)	–	0.0001°
	Spindle nose	A2-15	
Turret	Type	12-position drum turret (Bolt-on)	12-position drum turret (VDI type)
	Number of tools	12 tools	
	Tool shank height	32 mm (1.25")	
	Boring bar shank diameter	ø50 mm (ø2")	
	Turret indexing time	0.40 sec/1 step	0.45 sec/1 step
Rotary tool spindle	Spindle speed	–	4000 rpm
	Max. torque	–	95 N • m (70 ft • lbs)
	Max. capability	–	Drill: ø25 mm (ø1") Endmill: ø25 mm (ø1") Tap: M24x3 (1-8 UNC)
Feedrate	Rapid traverse rate: X axis	24000 mm/min (945 IPM)	
	Rapid traverse rate: Z axis	24000 mm/min (1181 IPM)	
	Rapid traverse rate: C axis	–	20 rpm
Motors	Spindle motor (30-min. rating/Cont. rating)	30/22 kW (40/30 HP)	
	Milling spindle motor (4-min. rating)	–	7.5 kW (10 HP)
	Coolant pump motor	1.04 kW (1.38 HP)	
Power requirement	Required power capacity (30-min. rating/Cont. rating)	58.9/47.4 kVA	
	Air supply	0.5 MPa (71 psi) 30 L/min (1.06 ft³/min)(ANR)	0.5 MPa (71 psi) 50 L/min (1.77 ft³/min)(ANR)
Coolant	Tank capacity	516 L (136 gal)	
Machine size	Height	3400 mm (133.86")	
	Floor space	2375 mm X 3515 mm (93.50" x 138.39")	
	Machine weight	14000 kg (30800 lbs)	

*1 Limitations with X axis stroke
*2 Max. machining height varies according to the type of chuck
*3 Spindle speed depends on chuck specifications.

Standard and Optional Equipment

● : Standard   ○ : Optional   – : N/A

		MEGA TURN 900	MEGA TURN 900S	MEGA TURN 900M	MEGA TURN 900MS
Machine	Work light	●	●	●	●
	15" non-through-hole chuck NV-15C1515	○	○	○	○
	18" non-through-hole chuck NV-18C1515	○	○	○	○
	21" non-through-hole chuck NV-21C1515	○	○	○	○
	24" non-through-hole chuck NV-24C1515	○	○	○	○
	28" non-through-hole chuck NV-28C1515	○	○	○	○
	32" non-through-hole chuck NV-32C1515	○	○	○	○
	36" non-through-hole chuck NV-36C1515	○	○	○	○
	24" 3-jaw scroll chuck	○	○	○	○
	32" 3-jaw scroll chuck	○	○	○	○
	36" 3-jaw scroll chuck	○	○	○	○
	24" 4-jaw independent chuck	○	○	○	○
	32" 4-jaw independent chuck	○	○	○	○
	36" 4-jaw independent chuck	○	○	○	○
	Spindle orient	○	○	○	○
	0.0001° - indexing	–	–	●	●
Factory Automation	Two-pallet changer	○	–	○	–
	Automatic Tool Changer CAPTO C6 (12-tool magazine)	○	○	○	○
	Automatic Tool Changer CAPTO C6 (8-tool magazine)	○	○	○	○
	Tool eye	●	●	●	●
	Automatic chuck jaw clamp/unclamp	○	○	○	○
	Chuck jaw air blast	○	○	○	○
	High/low chuck pressure	○	○	○	○
	Double foot pedal chuck switch	○	○	○	○
	Automatic front door	○	○	○	○
	Automatic power off	●	●	●	●
	Calendar type automatic power on/off and warm-up operation	○[*1]	○[*1]	○[*1]	○[*1]
	Machining end buzzer	○	○	○	○
	Status light (1 colors)	○	○	○	○
	Status light (3 colors)	○	○	○	○
Safety Equipment	Chuck open/close confirmation (when equipped with hydraulic chuck)	●	●	●	●
	Hydraulic pressure interlock	●	●	●	●
	Operator door interlock	●	●	●	●
	Overload detection system	○	○	○	○
Coolant/Chip disposal	Coolant system	●	●	●	●
	Mist collector	○	○	○	○
	Turret air blast	○	○	○	○
	Coolant temperature control	○	○	○	○
	High-power coolant 1.1 kW (1.2 kW for cover)	●	●	●	●
	1.5 MP a high-pressure coolant 2.2 kW (50Hz)/2.2 kW (60 Hz) (1.2 kW for cover)	○	○	○	○
	Rear discharge chip conveyor (hinge)	○	○	○	○
	Rear discharge chip conveyor (CONSEP2000WS)	○	○	○	○
	Chip bucket	○	○	○	○
NC	Absolute position detection	●	●	●	●
	Robot interface	○	○	○	○
	Detachable manual pulse generator	○	○	○	○
	CNC operation panel raised 300 mm (11.81")	○	○	○	○

*1 Standard equipment with MAZATROL SmoothG
Standard CNC system varies by market

MEGA TURN SERIES LINEUP

MEGA TURN 500 SERIES

Max. machining diameter   ø500 mm (ø19.69")
Max. workpiece height*   462 mm (18.19")

MEGA TURN 600 SERIES

Max. machining diameter   ø630 mm (ø24.75") (600, 600s)
                                ø600 mm (ø23.62") (600M, 600MS)
Max. workpiece height*   550 mm (21.65")

MEGA TURN 900 SERIES

Max. machining diameter   ø920 mm (ø36.2")
Max. workpiece height*   800 mm (31.5")

MEGA TURN 1600 SERIES

Max. machining diameter   ø1650 mm (ø64.96")
Max. workpiece height*   900 mm (35.43")

* Depends on chuck specifications

MEGA TURN 900 SERIES SmoothCNC 16.08.600 E 99J197416E0

MEGA TURN 900 SERIES

EA