AW MILLER
TECHNICAL SALES, INC.

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Mazak

FJV

SERIES

FJV SERIES

Designed for high accuracy and high efficiency machining of large workpieces

Double column construction and table specification for large workpieces

Linear roller guides and ball screws directly connected with the servo motors on X-, Y- and Z-axis reduce idle time significantly

Spindle specifications to meet a wide variety of machining requirements

FJV 5 Face series with 5 face machining system enhances process integration

High accuracy, high productivity
double column machining centers

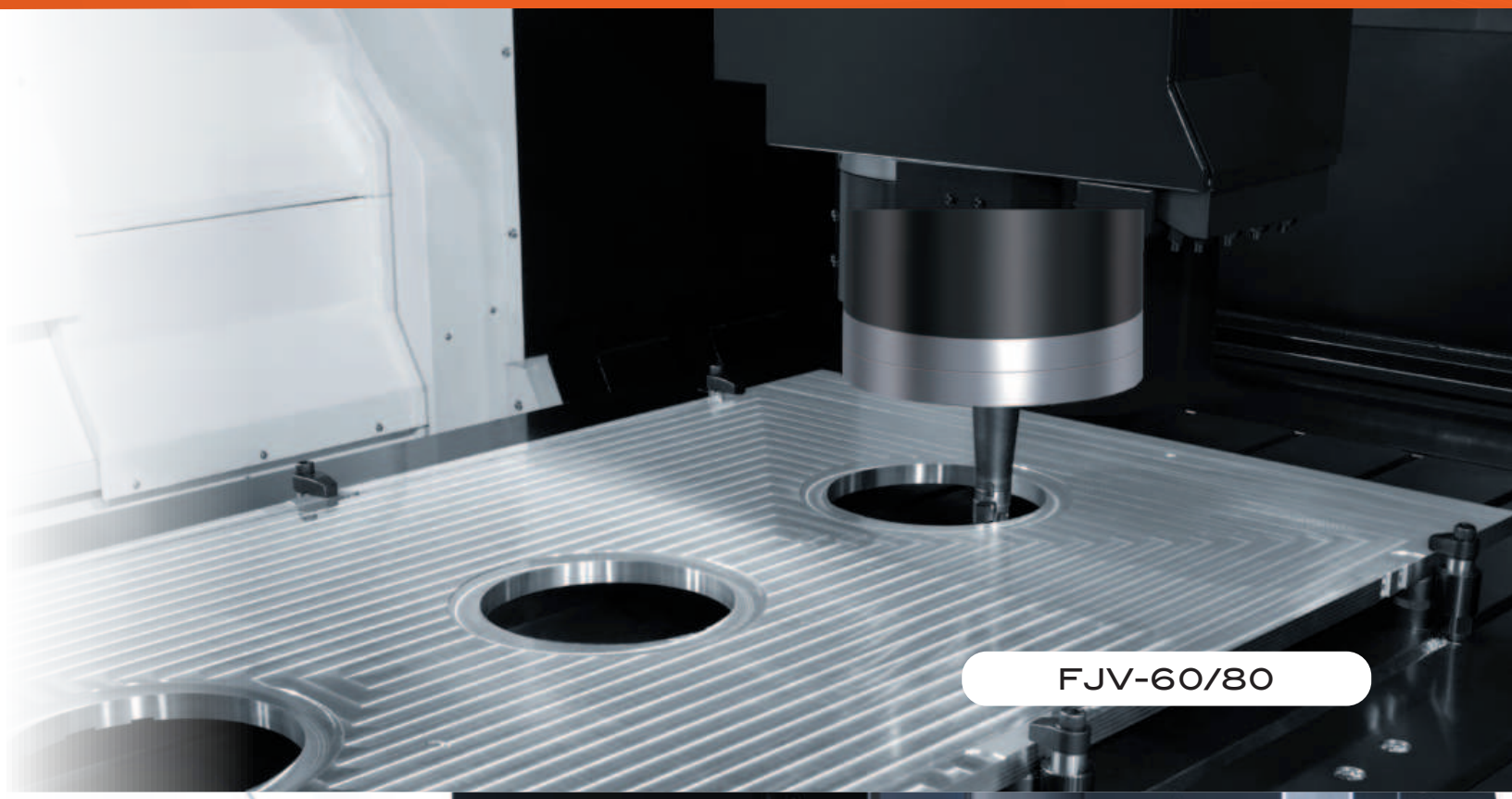
FJV SERIES

FJV-60/80
Shown with optional equipment

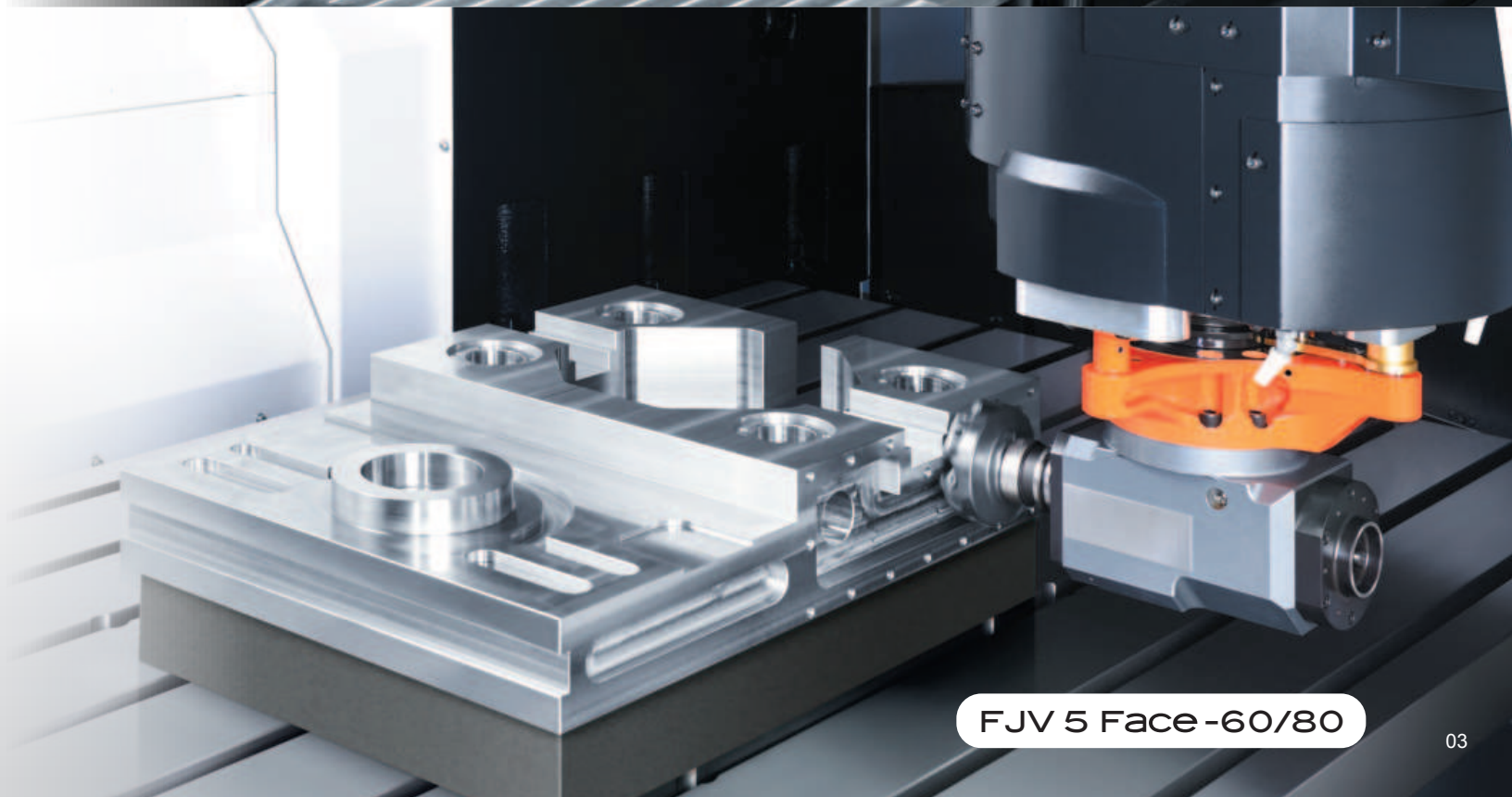
5 Face high accuracy, high productivity
double column machining centers

FJV 5 Face SERIES

FJV 5 Face-60/80
Shown with optional equipment



FJV-60/80



FJV 5 Face-60/80

Extensive Series Range

No.50 taper spindle vertical machining centers for large workpieces

FJV SERIES

FJV-35/60

		35/60
Table	Length	1740 mm (68.5")
	Width	
	Table load capacity	2500 kg (5512 lbs)
Travel	X-axis	1500 mm (59.06")
	Y-axis	
	Z-axis	
Effective width between columns		

FJV-60/80

		60/80
Table	Length	2240 mm (88.19")
	Width	
	Table load capacity	4000 kg (8818 lbs)
Travel	X-axis	2000 mm (78.74")
	Y-axis	
	Z-axis	
Effective width between columns		

FJV-100/120

		100/120
Table	Length	3000 mm (118.11")
	Width	
	Table load capacity	5000 kg (11023 lbs)
Travel	X-axis	3200 mm (125.98")
	Y-axis	
	Z-axis	
Effective width between columns		

FJV 5 Face SERIES

35/80	35/120
2240 mm (88.19")	3240 mm (127.56")
750 mm (29.53")	
3000 kg (6614 lbs)	
2000 mm (78.74")	3000 mm (118.11")
800 mm (31.5")	
660 mm (25.98")	
860 mm (33.86")	

FJV 5 Face-35/60

60/120	60/160
3000 mm (118.11")	4000 mm (157.48")
1250 mm (49.21")	
5000 kg (11023 lbs)	
3200 mm (125.98")	4200 mm (165.35")
1400 mm (55.12")	
660 mm (25.98")	
1500 mm (59.06")	

FJV 5 Face-60/80

	100/160
	4000 mm (157.48")
2000 mm (78.74")	
	10000 kg (22046 lbs)
	4200 mm (165.35")
2450 mm (96.46")	
660 mm (25.98")	
2500 mm (98.43")	

FJV 5 Face-100/120

High rigidity construction for high accuracy machining

Mazak has produced double column vertical machining centers (the VQC, AJV and FJV series) since 1982. The extensive experience accumulated well over the past forty years is incorporated in every vertical machining center manufactured today. The FJV series features symmetrical machine design, integral spindle / motors, linear roller guides, ball screw core cooling and the Ai THERMAL SHIELD heat displacement control to ensure high accuracy.

High accuracy machine construction

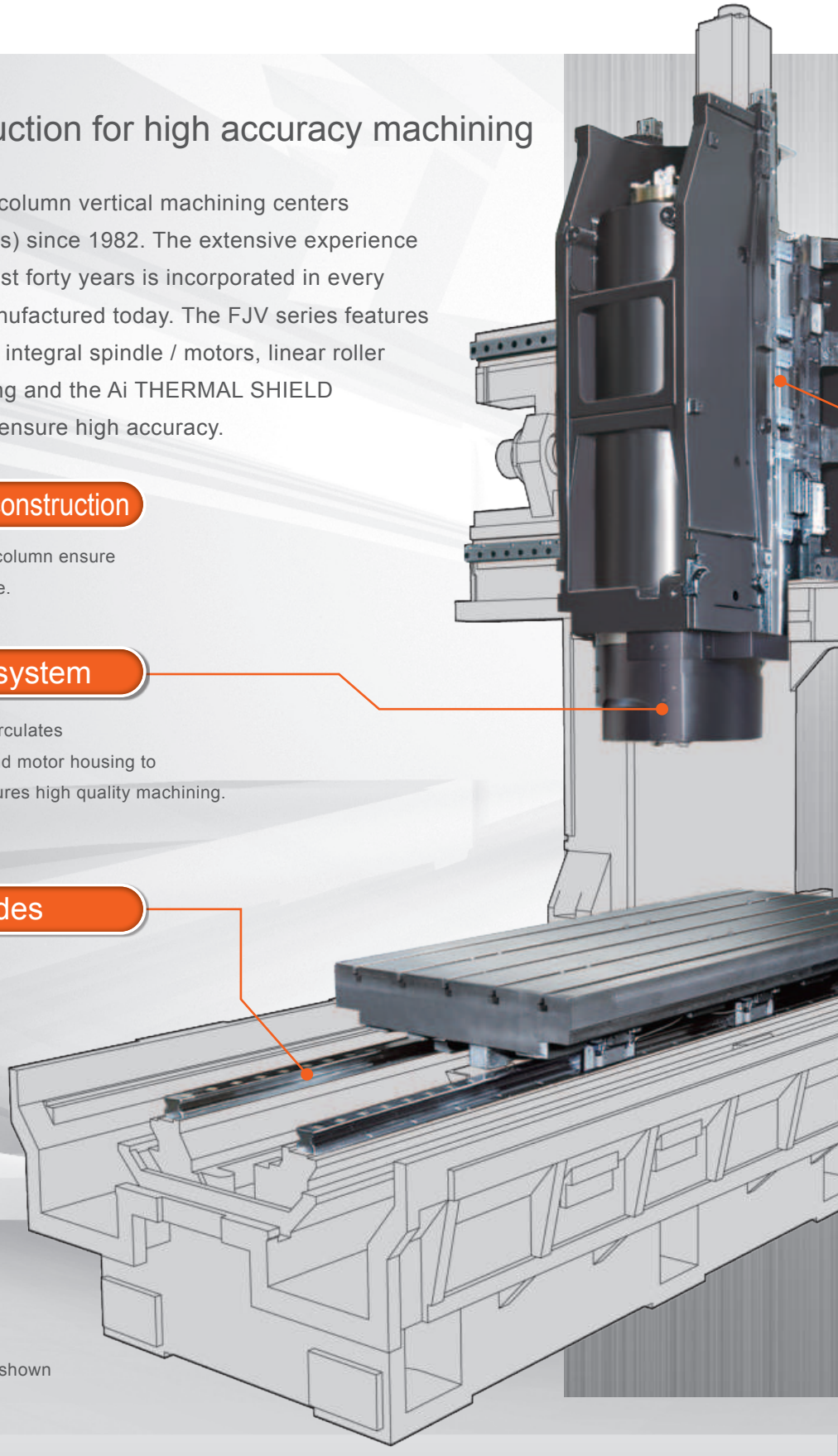
The high rigidity machine base and column ensure high accuracy over a long service life.

Headstock cooling system

Temperature controlled cooling oil circulates through the outside of the spindle and motor housing to eliminate thermal distortion and ensures high quality machining.

Linear roller guides

The linear roller guides on the X-, Y- and Z-axis utilized by the FJV series provide high accuracy positioning. Additionally, with their high rigidity and considerably lower friction, high speed feedrates can be used over a wide range of machining, from heavy duty to high speed cutting.



FJV 5 Face-35/60 shown

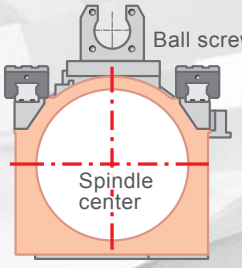
Ball screw core cooling

Temperature controlled cooling oil circulates through the ball screw cores to ensure stable machining accuracy over extended periods of high speed operation.

Ball screw / servo motor

The X-, Y- and Z-axis ball screws directly connected with the servo motors minimize backlash and provide high accuracy positioning when compared to gear train or timing belt drives.

Symmetrical machine design



Symmetrical structure in Y-axis direction

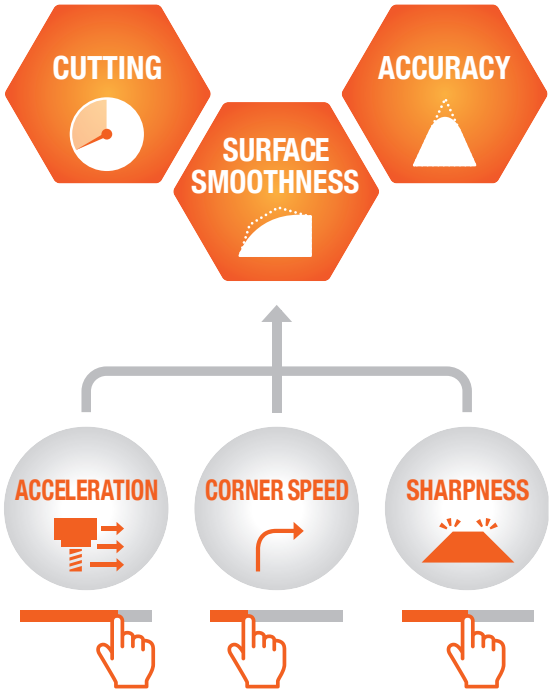
The headstock features symmetrical construction. Since the integral spindle / motor does not utilize a transmission which would have a symmetrical construction, any heat generated by high speed operation will result in uniform thermal displacement of the headstock to ensure high accuracy machining.

Ai THERMAL SHIELD

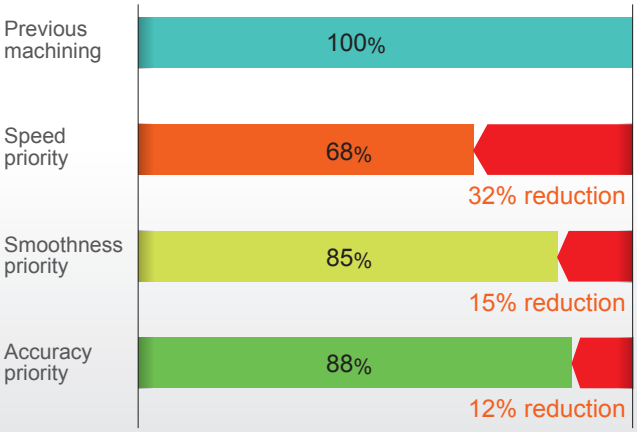
New algorithms automatically determine the amount of compensation to be applied according to changes in the temperature to ensure even higher machining accuracy.

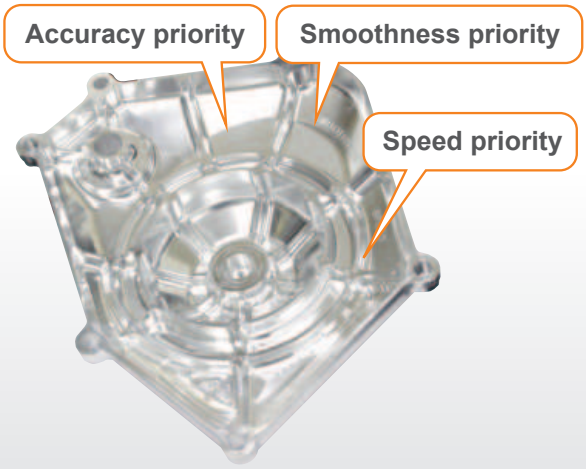
SMOOTH MACHINING CONFIGURATION

NOW – Optimize programs just by using a touchscreen slider



Finishing time comparison





When a machine tool is shipped from the factory where it was manufactured, all of the CNC parameter settings are made for all around general purpose machining. In most cases, these settings are satisfactory for a large percentage of users and will rarely be changed.

However, for aerospace workpieces or workpieces with complex surfaces, such as dies and molds, these machine parameter settings must be manually changed in order to produce workpieces with their required accuracy as well as the minimum cycle time. To optimize these settings, they must be changed according to the type of material, the type of tooling and the type of machining process. This is a complex procedure and a skilled technician is required to perform this efficiently.

As the parameter settings are changed, the default settings for acceleration, electrical gain, tolerances and other items will be modified. As one is changed, it will have a corresponding impact on others which must also change. For instance, if acceleration is increased in order to reduce the cycle time, the accuracy and surface finish may be impacted (corners may not be sharp, gouges may occur in surfaces).

One must know which settings to change, how much to change each setting, and the corresponding effect on other settings for each change in order to tune a machine efficiently. After the workpiece machining is completed, all settings should then be returned to their default settings.

These complicated procedures are eliminated by the MAZATROL SMOOTH MACHINING CONFIGURATION

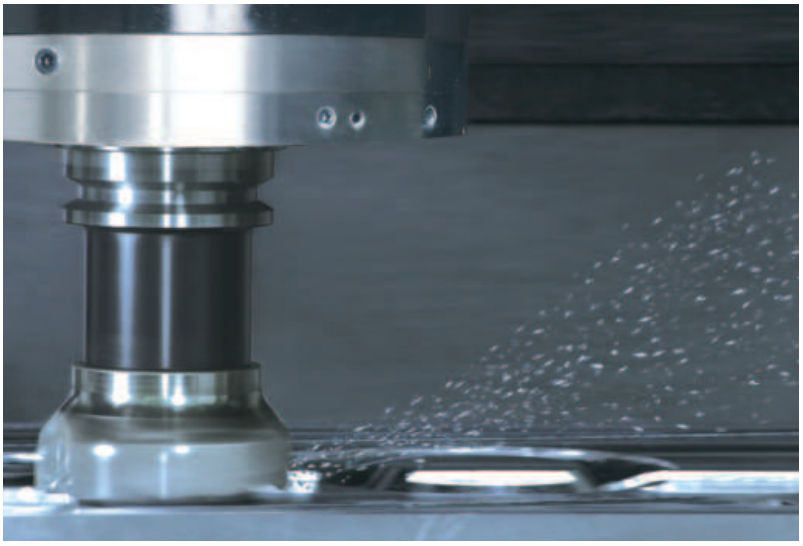
While watching the machining of a complex surface, just use the touchscreen slider switch to change the settings for accuracy, speed or smoothness. As changes in one factor are made, you can see the automatic changes in others. For example, if accuracy is increased, there will be a corresponding decrease in speed.

When the optimum cutting conditions are obtained, these settings can be easily stored in the CNC memory. The next time the same type of material is machined by the same type of tool, these settings can be easily called up by M/G code. Several different settings can be used in a single program. Conventionally, the same parameter settings are used for the entire program.
7 different settings are registered in the CNC memory at the factory (shown to the left). You are able to add your own settings with a maximum storage capacity of 20 settings in total.

Spindle specifications available to meet a wide variety of production requirements

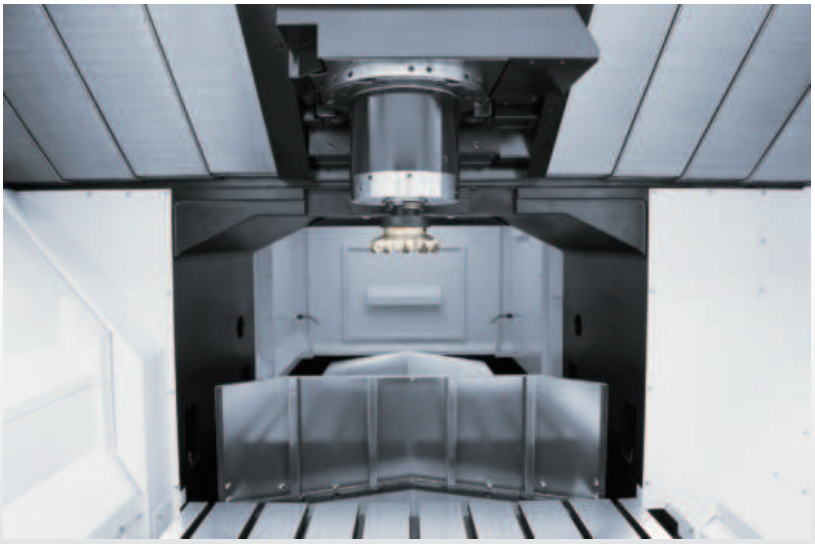
Powerful, high speed integral spindle / motor

Thanks to the integral spindle / motor, vibration is minimized during high speed operation to ensure exceptional surface finishes and maximum tool life.



Minimum interference

The compact spindle cartridge is designed for the minimum interference.
This provides a wider machining area as well as the ability to use shorter tools for improved machining performance and accuracy.



9 different spindles available including tool shanks

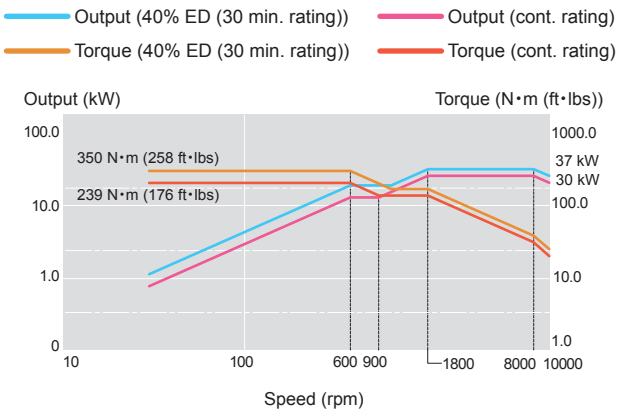
Standard 10000 rpm spindle

FJV series *FJV 5 Face series*

The standard 10000 rpm spindle has the speed and power for the machining of a wide variety of workpiece materials, from cast iron and steel to aluminum and other non-ferrous materials.

Max. speed		10000 rpm
Motor output	40% ED (30 min. rating)	37 kW (50 HP)
	cont. rating	30 kW (40 HP)
Tool shank		CAT No.50, BIG-PLUS No.50*, HSK-A100*

*Option

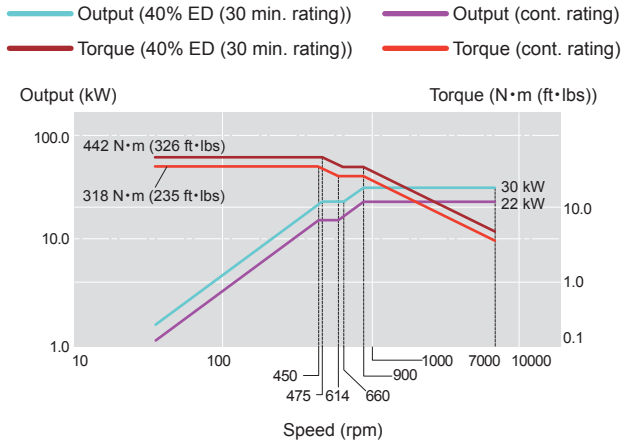


High torque 7000 rpm spindle

FJV series *FJV 5 Face series* OPTION

Optional 7000 rpm high torque (442 N • m (326 ft • lbs) (40 % ED / 30 min. rating)) spindle for the heavy duty machining of steel or cast iron material.

Max. speed		7000 rpm
Motor output	40% ED (30 min. rating)	30 kW (40 HP)
	cont. rating	22 kW (30 HP)
Tool shank		CAT No.50, BIG-PLUS No.50*, HSK-A100

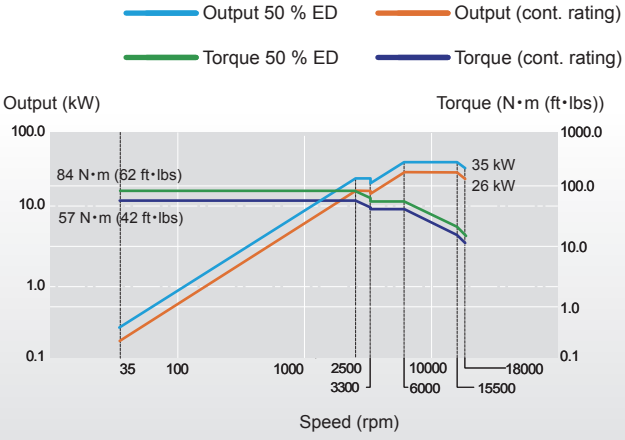


High speed 18000 rpm No.40 spindle

FJV series OPTION

The high speed 18000 rpm No.40 spindle performs high speed machining of aluminum and other non-ferrous materials for enhanced efficiency.

Max. speed		18000 rpm
Motor output	50% ED	35 kW (47 HP)
	cont. rating	26 kW (35 HP)
Tool shank		CAT No.40, BIG-PLUS No.40*, HSK-A63

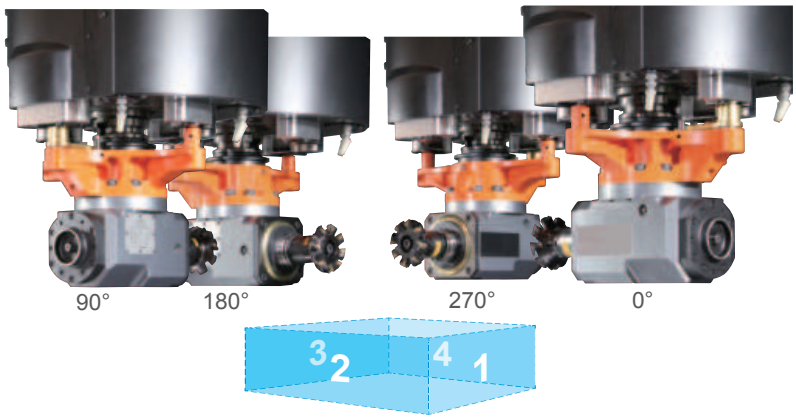


5 Face machining system for FJV 5 Face series

MAZAK 5 Face Angle Head

Four face machining with one angle tool

The Mazak angle head is tightly clamped by the unique Mazak four hydraulic clamping units on the spindle housing surface.
The angle head can be indexed to four positions, every 90°, to minimize the number of required tools.



High efficiency cutting of 4 side surfaces

Unlike conventional angle tools, the angle head is strongly clamped by three of the clamping units. Heavy-duty cutting can be performed thanks to this rigid construction.

- Max. speed : 2000 rpm
- Max. input power : 12 kW (16 HP)
- Material removal rate : **418** cc / min (25 in³/min)

(Workpiece material : C45)

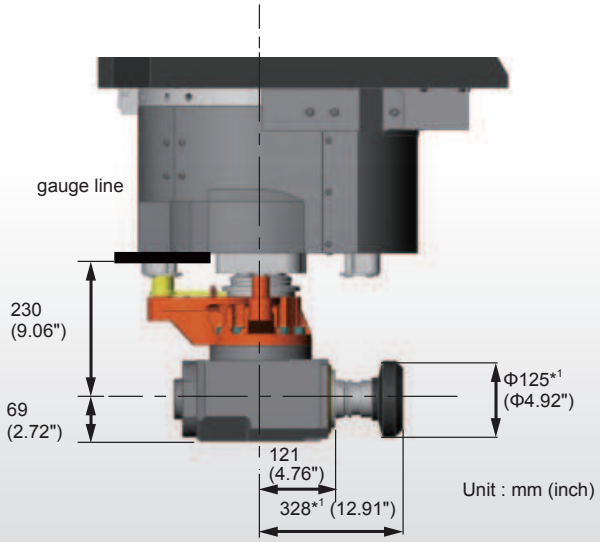
Cutting conditions	Depth of cut	5 mm (0.197")
	Feedrate (per tooth)	0.30 mm/tooth (0.0118 inch/tooth)
	Cutting width	70 mm (2.76")
Cutting tool	Tool dia.	Φ100 mm (Φ3.94")
	Number of teeth	5 teeth
	Holder type	A63-FMA31.75-60
	Tool type	HSG45-5100R
	Insert	SGHN1504AZN-44

Wide angle head cutting range

Compact angle head reduces interference with workpiece for large machining area.

Angle head dimensions

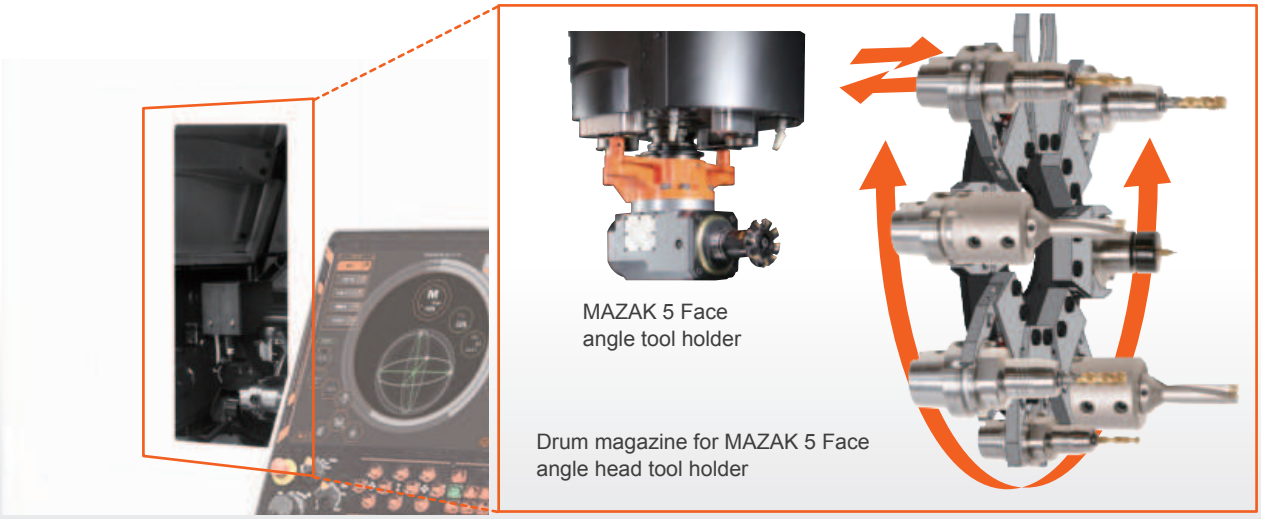
*[1]When tool diameter is Φ125 mm (Φ4.92"), max. tool length is 328 mm (12.91").



Dedicated magazine for angle head tool

Enhanced versatility

The dedicated angle tool magazine has a storage capacity of 8 tools, as a result, multiple angle tools are not required.



MAZAK 5 Face
angle tool holder

Drum magazine for MAZAK 5 Face
angle head tool holder

Tool shank : HSK-A63
Capacity : 8 tools

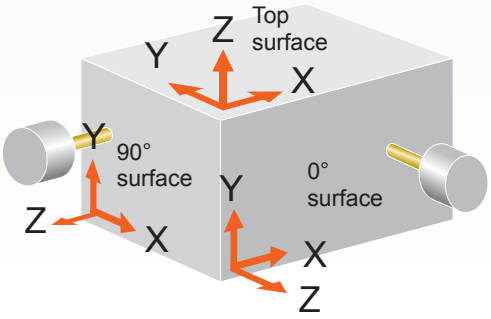
Max. tool size (face mill) : Φ125 mm × 207 mm (Φ4.92" × 8.15")
Max. tool size (drill) : Φ40 mm × 250 mm (Φ1.57" × 9.84")

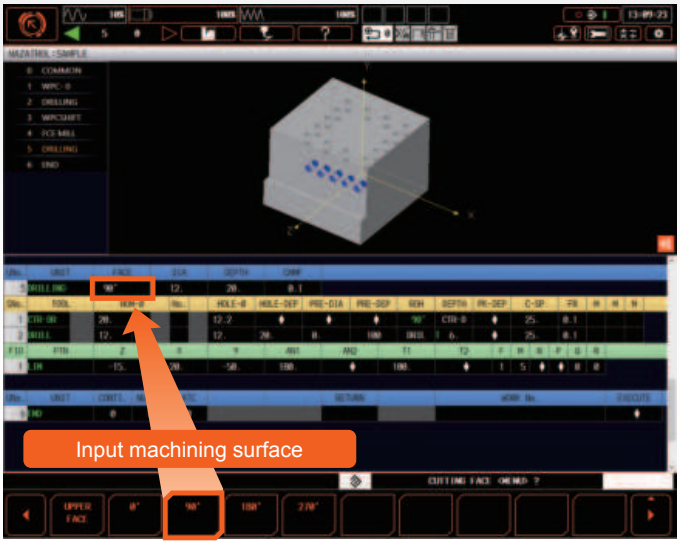
Simplified programming of machining by angle head

Convenient programming even for 5 face machining

Can be performed by both MAZATROL and EIA programs. Side-surface machining is easily programed using the conversational MAZATROL format. All that is required is to enter which surface is to be machined followed by normal data entry.

Coordinate system and machining surface





EIA / ISO program format

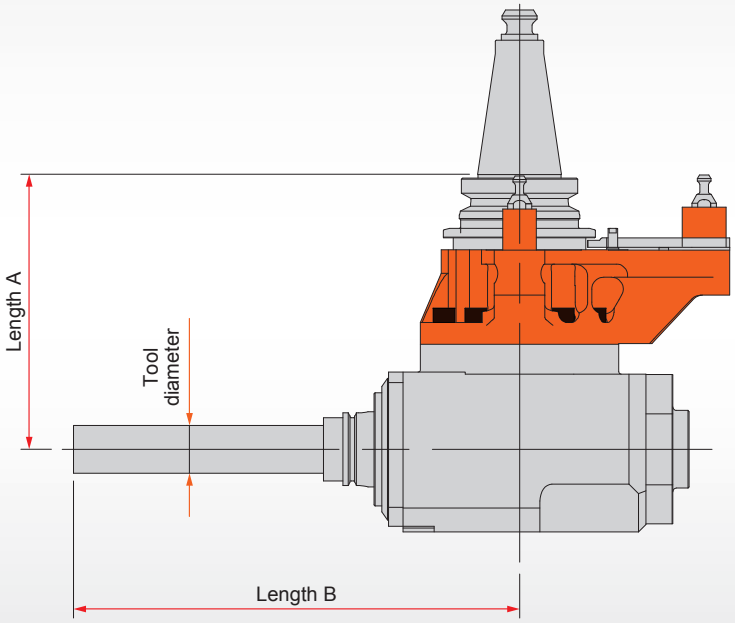
G-code coordinate conversion is used for EIA / ISO programs.

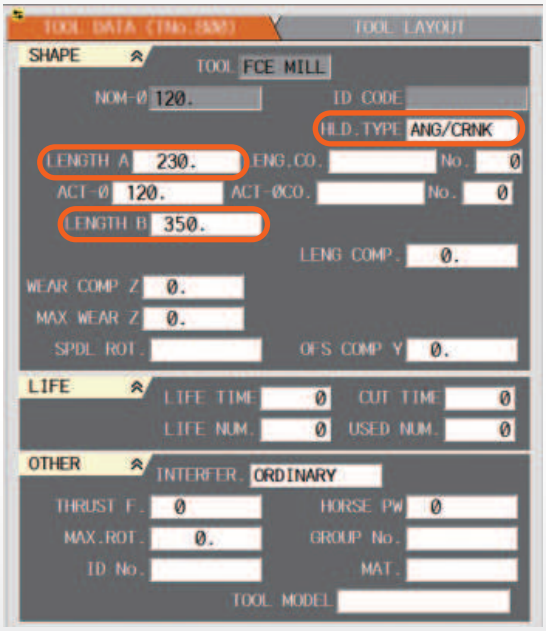
G-code for 5 face programming

5 face machining	Top surface mode	G17.1
5 face machining	0° surface mode	G17.2
5 face machining	90° surface mode	G17.3
5 face machining	180° surface mode	G17.4
5 face machining	270° surface mode	G17.5
5 face machining	Cancel	G17.9

Tool data entry for angle head (tool data screen)

Tool data for tools used with the angle head are input the same way as data for other tools.

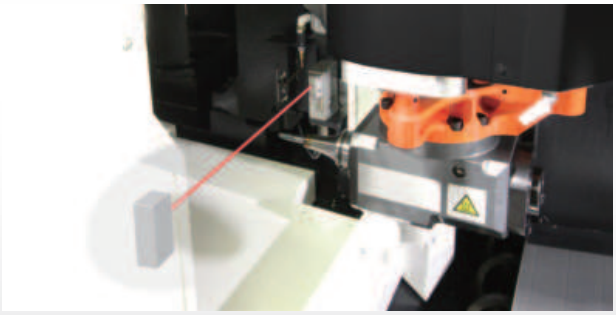




Laser tool measurement system

OPTION

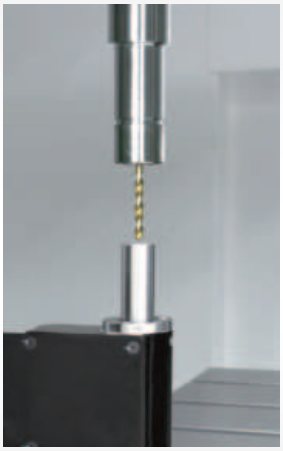
The laser tool measurement system measures lengths A and B as shown above as well as the tool diameter of the tool mounted in the angle head up to Φ 210mm (Φφ8.27") which cannot be done by conventional measurement systems.
To ensure stable accuracy, tool measurement can be performed with the tool rotating.



Automatic tool length measurement & tool breakage detection

OPTION

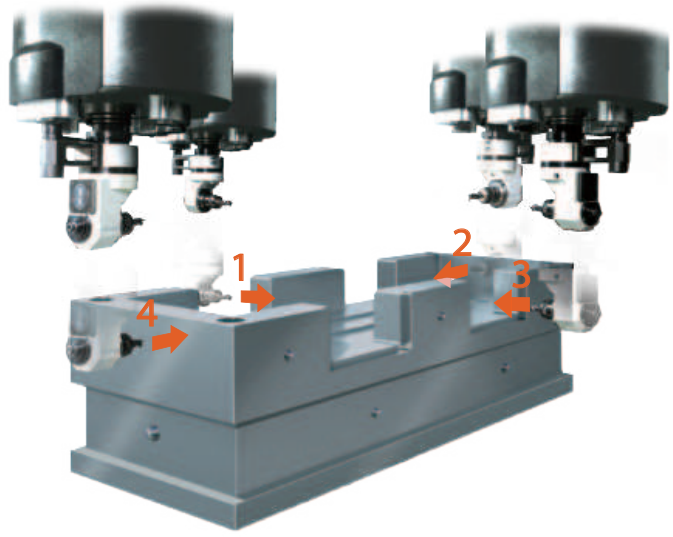
Tool length is automatically measured and registered in CNC system. Tool breakage can be detected during automatic operation.



These systems are located behind the ATC cover when not in use. Thanks to this feature, they are protected from chips and coolant during machining.

Multi-surface attachment

OPTION



Side-surface machining can be performed by just changing the spindle index angle of the special clamping unit and angle tool mounted on the machine spindle. The ability to machine multiple surfaces of large workpieces in a single setup realizes unsurpassed productivity.

*Option for 10000 rpm and 7000 rpm No.50 spindle.

Angle holder for multi-surface machining attachment

OPTION

Standard angle holder

The maximum speed of the standard angle tool is 3000 rpm. The angle tool can be stored in the 30-tool, 60-tool and 120-tool magazines.

High speed angle holder

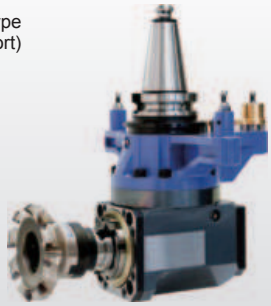
The maximum speed of the high speed angle tool is 5000 rpm. The high speed angle tool can be stored in the 30-tool, 60-tool and 120-tool magazines.

Heavy duty angle holder

The heavy duty angle tool has a top speed of 2000 rpm. The angle tool can be stored in a special tool magazine for heavy-duty tools.

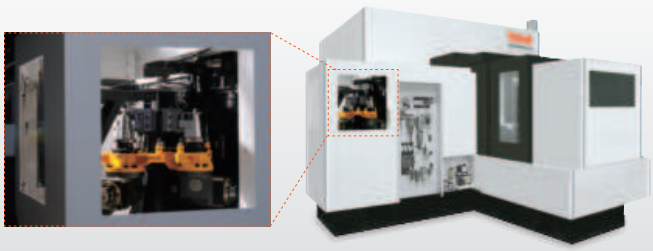
A-type (long)

B-type (short)



Special tool magazine for heavy-duty angle holders

The magazine has a storage capacity of 3 heavy duty angle holders which can be automatically loaded / unloaded to / from the spindle.



Automation

Automatic tool changer

Automatic tool changer (max. tool weight : 20 kg (44 lbs)) ensures stable operation over extended periods of time. The standard 30 tool magazine is located at the rear of the machine. (standard tool magazine for FJV-100, FJV 5 Face-100 is 60 tools)

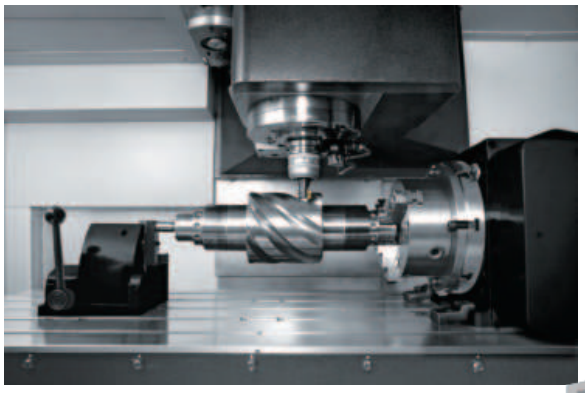
Specifications

[ ] : Option

Machine model	FJV-35 FJV 5 Face-35	FJV-60 FJV 5 Face-60	FJV-100 FJV 5 Face-100
Tool change time (chip-to-chip)	5.0 s	6.2 s	8.5 s
Tool storage capacity	30 tools [60, 120 tools]		60 tools [120 tools]
Max. tool diameter	Φ125 mm (Φ4.92")		
Max. tool diameter with adjacent pockets empty	Φ210 mm (Φ8.27")		
Max. tool length	380 mm (14.96")		
Max. tool weight	20 kg (44 lbs)		

NC Rotary Table

OPTION



The optional NC rotary table and additional axis provide the ability to machine complex contours by interpolating the linear and rotary axes.

2-pallet changer

OPTION

The next workpiece can be loaded during the machining of the current workpiece for increased productivity.

Specifications

Machine model	FJV-35/60 FJV 5 Face-35/60	FJV-35/80 FJV 5 Face-35/80	FJV-35/120 FJV 5 Face-35/120	FJV-60/80 FJV 5 Face-60/80	FJV-60/120 FJV 5 Face-60/120	FJV-60/160 FJV 5 Face-60/160	FJV-100/120 FJV 5 Face-100/120
Pallet change time	45 s	51 s	70 s	65 s	73 s	90 s	59 s
Max. workpiece size (X-axis)	1740 mm (68.5")	2240 mm (88.19")	3240 mm (127.56")	2240 mm (88.19")	3000 mm (118.11")	4000 mm (157.48")	3000 mm (118.11")
Max. workpiece size (Y-axis)	750 mm (29.53"")			1250 mm (49.21")	1500 mm (59.06")	1250 mm (49.21")	2000 mm (78.74")
Max. workpiece size (Z-axis)	650 mm (25.59")						
Max. workpiece weight	1600 kg (3527 lbs)	3000 kg (6614 lbs)		4000 kg (8818 lbs)	5000 kg (11023 lbs)		

Ergonomics

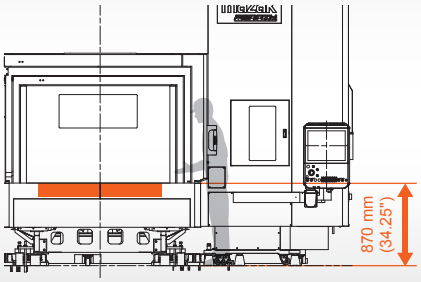
Design focus on ergonomics provides unsurpassed ease of operation

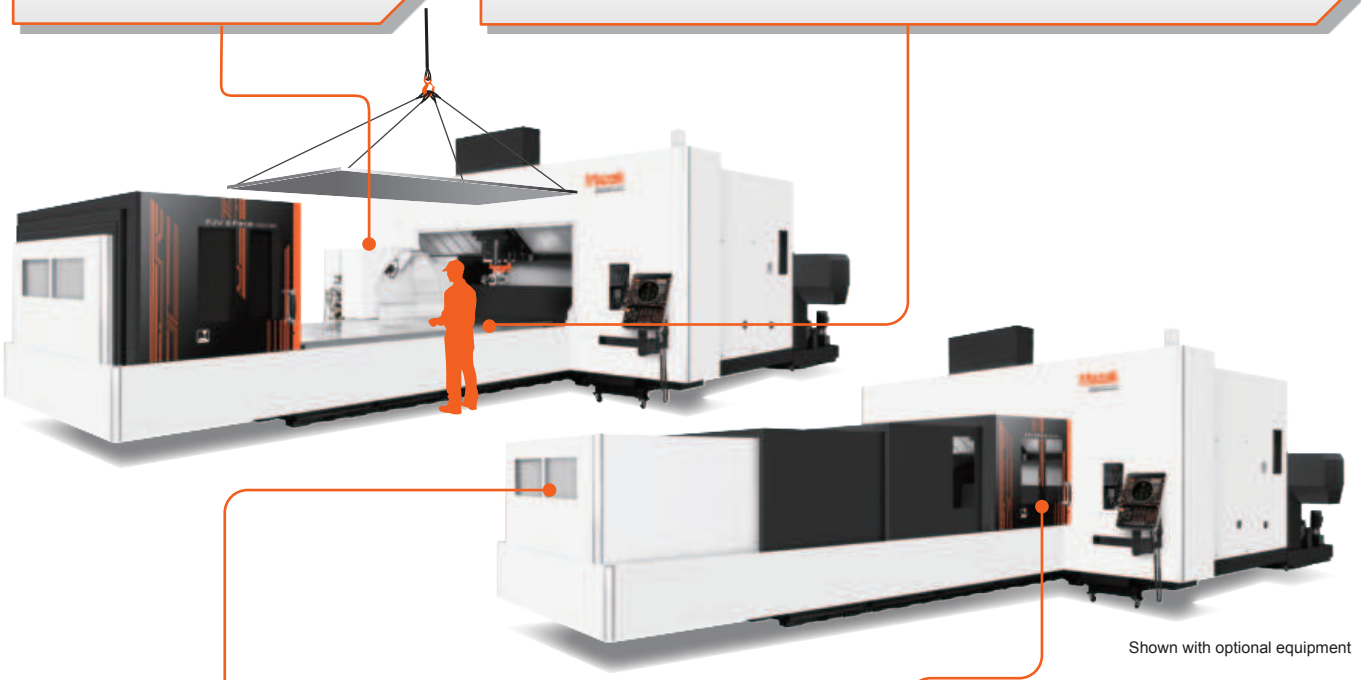
Large door opening

The telescoping front cover provides an extremely wide opening for the convenient loading and unloading of large workpieces.

Table height : 870 mm (34.25")

Designed for convenient setup of fixtures and loading / unloading of workpieces. (FJV-100, FJV 5 Face-100 : 970 mm (37.01"))





Shown with optional equipment

End cover window*

Windows on end cover allows operator to easily monitor machining.

*Option for FJV-35 series, FJV 5 Face-35 series.

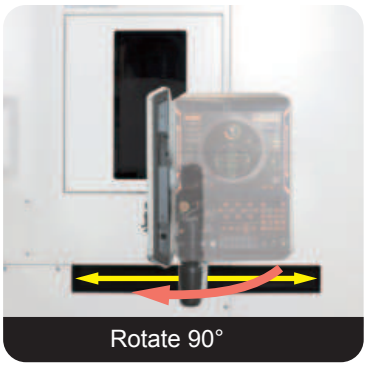
Large window

Large window on the operator door allow workpiece machining to be easily monitored by the operator.

Adjustable CNC operation panel

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

Note: CNC sliding stroke 690 mm (27.17”) is only available for the FJV 5 Face series.


Rotate 90°


Tilt 45°

Remote manual pulse generator

The remote manual pulse generator provides convenient operation when the operator is not close to the CNC operation panel. Its display shows the position display and the machine coordinate values. 4 different positions can be registered in memory by the remote manual pulse generator. A wireless version, with the same functions, is optionally available.

(Note: The wireless remote manual pulse generator is not available in some countries.)

Tool magazine operation panel

The tool magazine operation panel is designed for increased ease of operation. Instead of having just a forward / reverse button for indexing the tool magazine and manually positioning the desired tool pocket, the pocket number or tool number can be input into the operation panel numeric keyboard and the desired pocket will be automatically brought into position.
This is standard equipment for the different capacity tool magazines.

Ease of Maintenance

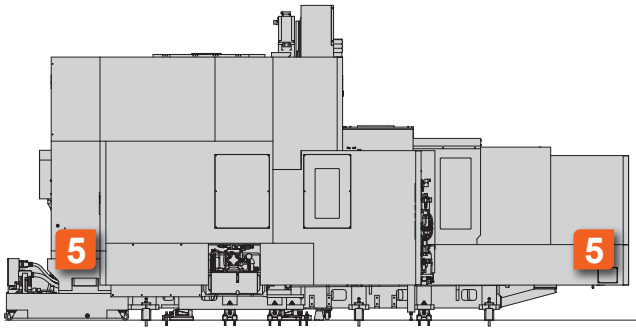
Simplified daily checking for convenient maintenance to minimize machine down-time

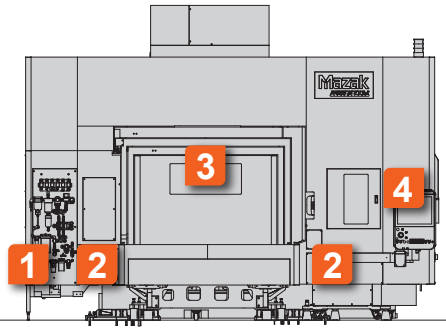
1 Central maintenance area

Items requiring frequent access for machine maintenance are conveniently located on a single panel.

2 Large capacity spiral conveyors

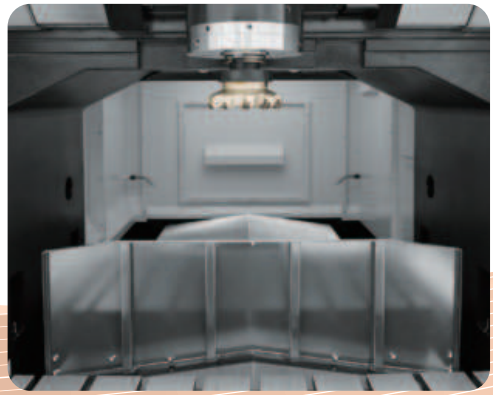
Spiral conveyors on both sides of the machine table smoothly remove machined chips. In case a higher machined chip removal capacity is required, hinge type chip conveyors on both sides of the machine table are optionally available.





5 Designed for the smooth flow of machined chips

The inner walls of the machine coolant cover are angled more than 45 degrees to prevent the accumulation of machined chips, so that the time required for cleaning the machining area is considerably reduced.



Inner wall cover

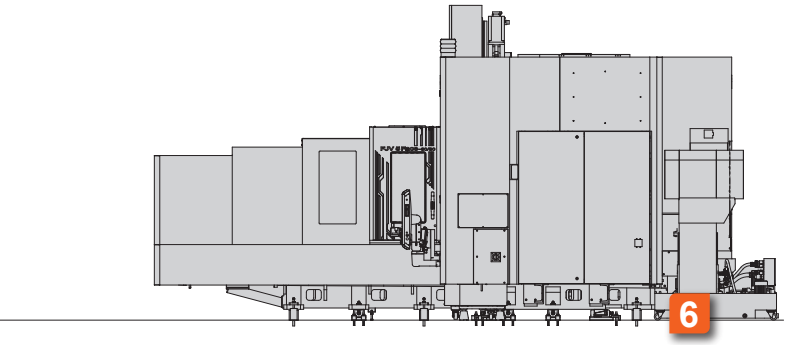
Enlarged chip ducts for smooth chip disposal

3 Automatic Z-axis retraction

The Z-axis retraction automatically pulls up the spindle from the machining surface to prevent workpiece damage in the case of sudden electrical power blackout.

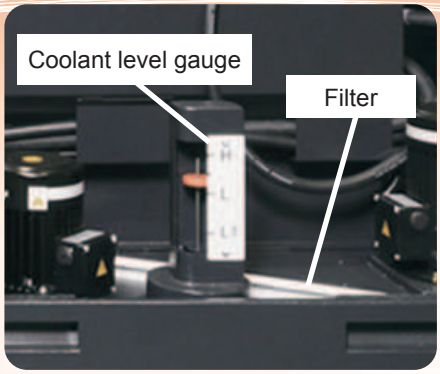
4 Maintenance screen

A graphical display shows the status of changing and refilling time such as for coolant, lubrication oil and filters. Ensures machine operation by providing a convenient maintenance schedule.



6 Coolant level gauge and filter designed for convenient checking

A white float type level gauge is used to indicate the level of coolant in the coolant tank. Additionally, the coolant hoses are easily removed for maintenance thanks to quick connect / disconnect couplings.



4 axes simultaneous CNC

MAZATROL SMOOTH G

Advanced CNC control

Latest hardware and software for unprecedented speed and precision.

Smooth graphical user interface

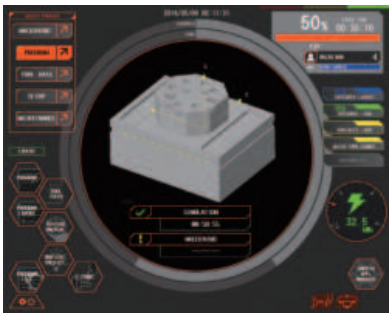
MAZATROL Smooth graphical user interface for unsurpassed ease of operation.
Touch screen operation - operate similar to your smartphone / tablet.

Ease of operation

Designed for unsurpassed ease of operation with advanced functions.

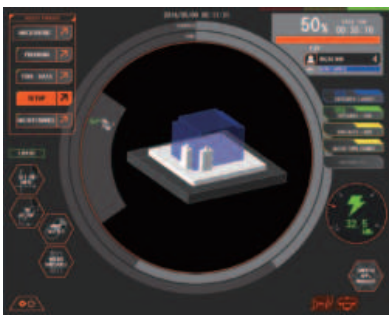
Process home screens

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



Set up

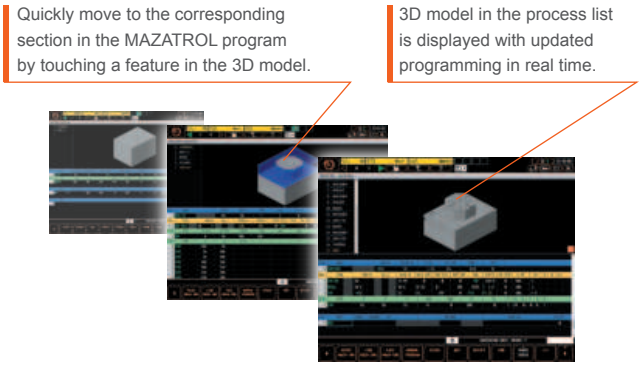
Machining

Maintenance

Programming screen links tool path, workpiece shape and programming to reduce programming time

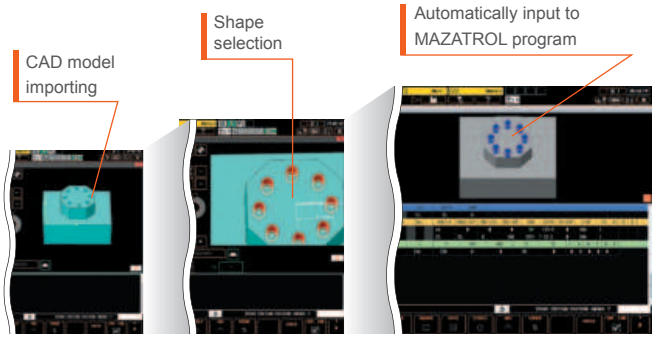
QUICK MAZATROL

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.

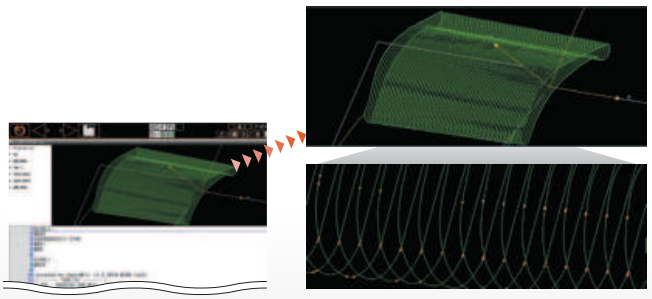


QUICK EIA

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.

VIEW SURF

By analyzing tool path, any predictable failure on the finished surface can be visualized. Program modification can be done before machining to minimize the time for test cutting.



Coolant • Chip Disposal

Coolant system for longer tool life and higher productivity

- Reduces tool wear by temperature control of tool tip
- Higher quality surface and machining performance thanks to lubrication of tool and workpiece
- Prevents tool damage by removing long chips from tool and workpiece

SUPERFLOW coolant system — OPTION

The SUPERFLOW coolant system features lower tool tip temperatures, improved coolant lubrication and chip disposal by supplying a maximum 7.0 MPa (1015 PSI) coolant pressure.
- Adjustable coolant pressure
- High performance cyclone filter with minimum maintenance requirements to reduce running cost.

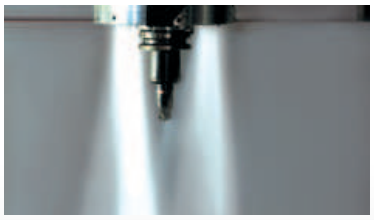
High pressure pump unit

Coolant through spindle — OPTION

Coolant is fed to the tool tip by passages through the tool.
2 pump pressure specifications are available : 0.5 MPa (73 PSI) [standard], 1.5 MPa (218 PSI) [option]

Flood coolant

Coolant is discharged from nozzles on spindle housing to cool workpiece and remove chips.



Niagara coolant — OPTION

Large volume of coolant is discharged from the nozzles mounted on the machine top cover to flush chips from the workpiece to conveyors on both sides the table. Machined chips that accumulate on the workpiece and fixture can be flushed off by the large volume of coolant discharged by the Niagara coolant system. Coolant nozzles are mounted around the spindle on the FJV series and under the Y-axis slideway cover on the FJV 5 face series.

FJV series

FJV 5 Face series

Environmentally Friendly

Designed with environmental considerations

Mazak Go GREEN

The environment and our impact on natural surroundings have always been important concerns of Yamazaki Mazak. This is shown by the fact that all factories in Japan 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 air, water or land.

Extended coolant service life

Reduction of lubrication consumption

Reduction of electrical power consumption

Auto-power off

When the machine is not operated for a pre-registered period of time, the machine worklights and the CNC backlight are turned off automatically. They are automatically turned on when the motion sensor detects the return of the operator.

Chip conveyor stop

After the passing of a pre-registered period of time after automatic machine operation stops, the chip conveyor automatically stops to reduce electrical power consumption. (Chip conveyor is optional equipment)

Grease lubrication

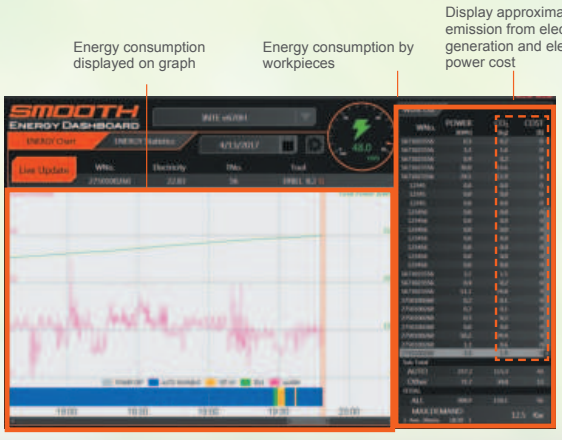
The linear roller guides and ball screws are lubricated by grease which eliminates tramp oil in the coolant resulting in a much longer service life for the coolant.

Energy Dashboard OPTION

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

Process screen display

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



FJV series Standard Machine Specifications

		FJV-35/60	FJV-35/80	FJV-35/120
Stroke	X-axis (table left / right)	1500 mm (59.06")	2000 mm (78.74")	3000 mm (118.11")
	Y-axis (spindle head back / forth)	800 mm (31.5")		
	Z-axis (spindle head up / down)	660 mm (25.98")		
Table	Distance from table top to spindle nose	160 mm ~ 820 mm (6.3" ~ 32.28")		
	Effective width between columns	860 mm (33.86")		
	Table size	1740 mm × 750 mm (68.5" × 29.53")	2240 mm × 750 mm (88.19" × 29.53")	3240 mm × 750 mm (127.56" × 29.53")
	Table load capacity (evenly distributed)	2500 kg (5512 lbs)	3000 kg (6614 lbs)	
	Table top surface	18 mm (0.71") T-slot × 5, 150 mm (5.91") pitch		
Spindle	Spindle speed	35 ~ 10000 rpm		
	Gear ranges	2-step (electric)		
	Spindle taper	7/24 taper No. 50		
	Spindle bearing ID	Φ100 mm (Φ3.94")		
	Spindle acceleration time to top speed	3.0 s (0 →10000 rpm)		
Feedrate	Rapid traverse rate (X-axis)	40000 mm/min (1575 IPM)		32000 mm/min (1260 IPM)
	Rapid traverse rate (Y-, Z-axis)	40000 mm/min / 30000 mm/min (1575 / 1181 IPM)		
	Cutting feedrate (X-, Y-, Z-axis)	1 ~ 30000 mm/min (0.03 ~ 1181 IPM)		1 ~ 20000 mm/min (0.03 ~ 787 IPM)
Automatic tool changer	Tool shank	CAT No.50		
	Tool storage capacity	30		
	Max. tool diameter / length (from gauge line) / weight	Φ125 mm / 380 mm / 20 kg (Φ4.92" / 14.96" / 44 lbs)		
	Max. tool diameter with adjacent pockets empty	Φ210 mm (Φ8.27")		
	Tool selection method	Random selection, shortest path (fixed pocket assignment)		
	Tool change time (chip-to-chip)	5.0 s		
Motors	Spindle motor (40 % ED (30 min. rating) / cont. rating)	AC37 kW (50 HP) / 30 kW (40 HP)		
	Flood coolant pump motor (50 Hz / 60 Hz)	730 W / 1210 W		
Power requirement	Required power capacity (30min. rating / cont. rating)	75.59 kVA / 65.84 kVA		76.29 kVA / 66.54 kVA
	Air supply	More than 0.5 MPa (73 PSI) / 650 NL/min (22.95 ft³/min)		
Machine size	Machine height	3500 mm (137.8")		
	Floor space requirement	3595 mm × 5637 mm (141.54" × 221.93")	3595 mm × 6863 mm (141.54" × 270.2")	3595 mm × 9315 mm (141.54" × 366.73")
	Machine weight	17600 kg (38800 lbs)	19100 kg (42110 lbs)	23100 kg (56926 lbs)

FJV-60/80	FJV-60/120	FJV-60/160	FJV-100/120	FJV-100/160
2000 mm (78.74")	3200 mm (125.98")	4200 mm (165.35")	3200 mm (125.98")	4200 mm (165.35")
1400 mm (55.12")			2450 mm (96.46")	
660 mm (25.98")			660 mm (25.98")	
160 mm ~ 820 mm (6.3" ~ 32.28")			160 mm ~ 820 mm (6.3" ~ 32.28")	
1500 mm (59.06")			2500 mm (98.43")	
2240 mm × 1250 mm (88.19" × 49.21")	3000 mm × 1250 mm (118.11" × 49.21")	4000 mm × 1250 mm (157.48" × 49.21")	3000 mm × 2000 mm (118.11" × 78.74")	4000 mm × 2000 mm (157.48" × 78.74")
4000 kg (8818 lbs)	5000 kg (11023 lbs)		5000 kg (11023 lbs)	10000 kg (22046 lbs)
22 mm (0.87") T-slot × 9, 140 mm (5.51") pitch			22 mm (0.87") T-slot × 9, 200 mm (7.87") pitch	
35 ~ 10000 rpm			35 ~ 10000 rpm	
2-step (electric)			2-step (electric)	
7/24 taper No. 50			7/24 taper No. 50	
Φ100 mm (Φ3.94")			Φ100 mm (Φ3.94")	
3.0 s (0 → 10000 rpm)			3.0 s (0 → 10000 rpm)	
40000 mm/min (1575 IPM)	32000 mm/min (1260 IPM)	22000 mm/min (866 IPM)	30000 mm/min (1181 IPM)	
40000 mm/min / 30000 mm/min (1575 / 1181 IPM)			40000 mm/min / 30000 mm/min (1575 / 1181 IPM)	
1 ~ 30000 mm/min (0.03 ~ 1181 IPM)	1 ~ 19000 mm/min (0.03 ~ 748 IPM)	1 ~ 11000 mm/min (0.03 ~ 433 IPM)	1 ~ 19000 mm/min (0.03 ~ 748 IPM)	
CAT No.50			CAT No.50	
30			60	
Φ125 mm / 380 mm / 20 kg (Φ4.92" / 14.96" / 44 lbs)			Φ125 mm / 380 mm / 20 kg (Φ4.92" / 14.96" / 44 lbs)	
Φ210 mm (Φ8.27")			Φ210 mm (Φ8.27")	
Random selection, shortest path (fixed pocket assignment)			Random selection, shortest path (fixed pocket assignment)	
6.2 s			8.5 s	
AC 37 kW (50 HP) / 30 kW (40 HP)			AC37 kW (50 HP) / 30 kW (40 HP)	
730 W / 1210 W			730 W / 1210 W	
75.65 kVA / 65.90 kVA		76.21 kVA / 66.46 kVA	79.72 kVA / 69.80 kVA	73.73 kVA / 63.99 kVA
More than 0.5 MPa (73 PSI) / 650 NL/min (22.95 ft³/min)			More than 0.5 MPa (73 PSI) / 650 NL/min (22.95 ft³/min)	
3500 mm (137.8")			3600 mm (141.73")	
4085 mm × 6895 mm (160.83" × 271.46")	4085 mm × 9030 mm (160.83" × 355.51")	4085 mm ×11451 mm (160.83" × 450.83")	5217.35 mm × 9372 mm (205.41" × 368.98")	5217.35 mm × 12044 mm (205.41" × 474.17")
26000 kg (57320 lbs)	31000 kg (68340 lbs)	35000 kg (77160 lbs)	44600 kg (98325 lbs)	45900 kg (101190 lbs)

FJV 5 Face series Standard Machine Specifications

		FJV 5 Face-35/60	FJV 5 Face-35/80	FJV 5 Face-35/120
Stroke	X-axis (table left / right)	1500 mm (59.06")	2000 mm (78.74")	3000 mm (118.11")
	Y-axis (spindle head back / forth)	800 mm (31.5")		
	Z-axis (spindle head up / down)	660 mm (25.98")		
Table	Distance from table top to spindle nose	160 mm ~ 820 mm (6.3" ~ 32.28")		
	Effective width between columns	860 mm (33.86")		
	Table size	1740 mm × 750 mm (68.5" × 29.53")	2240 mm × 750 mm (88.19" × 29.53")	3240 mm × 750 mm (127.56" × 29.53")
	Table load capacity (evenly distributed)	2500 kg (5512 lbs)	3000 kg (6614 lbs)	
	Table top surface	18 mm (0.71") T-slot × 5, 150 mm (5.91") pitch		
Spindle	Spindle speed	35 ~ 10000 rpm		
	Gear ranges	2-step (electric)		
	Spindle taper	7/24 taper No. 50		
	Spindle bearing ID	Φ100 mm (Φ3.94")		
	Spindle acceleration time to top speed	3.0 s (0 → 10000 rpm)		
Feedrate	Rapid traverse rate (X-axis)	40000 mm/min (1575 IPM)		32000 mm/min (1260 IPM)
	Rapid traverse rate (Y-, Z-axis)	40000 mm/min / 30000 mm/min (1575 / 1181 IPM)		
	Cutting feedrate (X-, Y-, Z-axis)	1 ~ 30000 mm/min (0.03 ~ 1181 IPM)		1 ~ 20000 mm/min (0.03 ~ 787 IPM)
Automatic tool changer	Tool shank	CAT No.50		
	Tool storage capacity	30		
	Max. tool diameter / length (from gauge line) / weight	Φ125 mm / 380 mm / 20 kg (Φ4.92" / 14.96" / 44 lbs)		
	Max. tool diameter with adjacent pockets empty	Φ210 mm (Φ8.27")		
	Tool selection method	Random selection, shortest path (fixed pocket assignment)		
	Tool change time (chip-to-chip)	5.0 s		
Automatic tool changer for 5 Face Angle Tool	Tool shank	HSK-A63		
	Tool storage capacity	8		
	Max. tool diameter / length (from gauge line) / weight	Φ125 mm / 207 mm*/ 5 kg (Φ4.92" / 8.15"* / 11 lbs)		
	Tool selection method	Random selection, shortest path (fixed pocket assignment)		
	Tool change time	30 s		
	5 Face Angle Head	1		
	Magazine capacity Tool change time (V-tool to 5 Face Angle Head)	27 s		
Motors	Spindle motor (40 % ED (30 min. rating) / cont. rating)	AC37 kW (50 HP) / 30 kW (40 HP)		
	Flood coolant pump motor (50 Hz / 60 Hz)	730 W / 1210 W		
Power requirement	Required power capacity (30min. rating / cont. rating)	75.59 kVA / 65.84 kVA		76.29 kVA / 66.54 kVA
	Air supply	More than 0.5 MPa (73 PSI) / 1200 NL/min (22.95 ft³/min)		
Machine size	Machine height	3500 mm (137.8")		
	Floor space requirement	3931 mm × 5742 mm (154.76" × 226.06")	3931 mm × 6863 mm (154.76" × 270.2")	3931 mm × 9315 mm (154.76" × 366.73")
	Machine weight	18700 kg (41226 lbs)	20200 kg (44533 lbs)	24200 kg (53351 lbs)

* Depends on the tool diameter

FJV 5 Face-60/80	FJV 5 Face-60/120	FJV 5 Face-60/160	FJV 5 Face-100/120	FJV 5 Face-100/160
2000 mm (78.74")	3200 mm (125.98")	4200 mm (165.35")	3200 mm (125.98")	4200 mm (165.35")
1400 mm (55.12")			2450 mm (96.46")	
660 mm (25.98")			660 mm (25.98")	
160 mm ~ 820 mm (6.3" ~ 32.28")			160 mm ~ 820 mm (6.3" ~ 32.28")	
1500 mm (59.06")			2500 mm (98.43")	
2240 mm × 1250 mm (88.19" × 49.21")	3000 mm × 1250 mm (118.11" × 49.21")	4000 mm × 1250 mm (157.48" × 49.21")	3000 mm × 2000 mm (118.11" × 78.74")	4000 mm × 2000 mm (157.48" × 78.74")
4000 kg (8818 lbs)	5000 kg (11023 lbs)		5000 kg (11023 lbs)	10000 kg (22046 lbs)
22 mm (0.87") T-slot × 9, 140 mm (5.51") pitch			22 mm (0.87") T-slot × 9, 200 mm (7.87") pitch	
35 ~ 10000 rpm			35 ~ 10000 rpm	
2-step (electric)			2-step (electric)	
7/24 taper No. 50			7/24 taper No. 50	
Φ100 mm (Φ3.94")			Φ100 mm (Φ3.94")	
3.0 s (0 → 10000 rpm)			3.0 s (0 → 10000 rpm)	
40000 mm/min (1575 IPM)	32000 mm/min (1260 IPM)	22000 mm/min (866 IPM)	30000 mm/min (1181 IPM)	
40000 mm/min / 30000 mm/min (1575 / 1181 IPM)			40000 mm/min / 30000 mm/min (1575 / 1181 IPM)	
1 ~ 30000 mm/min (0.03 ~ 1181 IPM)	1 ~ 19000 mm/min (0.03 ~ 748 IPM)	1 ~ 11000 mm/min (0.03 ~ 433 IPM)	1 ~ 19000 mm/min (0.03 ~ 748 IPM)	
CAT No.50			CAT No.50	
30			60	
Φ125 mm / 380 mm / 20 kg (Φ4.92" / 14.96" / 44 lbs)			Φ125 mm / 380 mm / 20 kg (Φ4.92" / 14.96" / 44 lbs)	
Φ210 mm (Φ8.27")			Φ210 mm (Φ8.27")	
Random selection, shortest path (fixed pocket assignment)			Random selection, shortest path (fixed pocket assignment)	
6.2 s			8.5 s	
HSK-A63			HSK-A63	
8			8	
Φ125 mm / 207 mm*/ 5 kg (Φ4.92" / 8.15"* / 11 lbs)			Φ125 mm / 207 mm*/ 5 kg (Φ4.92" / 8.15"* / 11 lbs)	
Random selection, shortest path (fixed pocket assignment)			Random selection, shortest path (fixed pocket assignment)	
34 s			36 s	
1			1	
27 s			27 s	
AC 37 kW (50 HP) / 30 kW (40 HP)			AC 37 kW (50 HP) / 30 kW (40 HP)	
730 W / 1210 W			730 W / 1210 W	
75.65 kVA / 65.90 kVA		76.21 kVA / 66.46 kVA	79.72 kVA / 69.80 kVA	73.73 kVA / 63.99 kVA
More than 0.5 MPa (73 PSI) / 1200 NL/min (22.95 ft³/min)			More than 0.5 MPa (73 PSI) / 1400 NL/min (22.95 ft³/min)	
3500 mm (137.8")			3600 mm (141.73")	
4532 mm × 6895 mm (178.43" × 271.46")	4532 mm × 9030 mm (178.43" × 355.51")	4532 mm × 11451 mm (178.43" × 450.83")	5738 mm × 9372 mm (225.91" × 368.98")	5738 mm × 12044 mm (225.91" × 474.17")
27100 kg (59744 lbs)	32100 kg (70767 lbs)	36100 kg (79586 lbs)	45700 kg (100750 lbs)	47000 kg (103616 lbs)

FJV series Standard and Optional Equipment

● : Standard ○ : Option – : N/A

Machine model		35/60	35/80	35/120	60/80	60/120	60/160	100/120	100/160
Spindle	10000 rpm (CAT No.50)	●	●	●	●	●	●	●	●
	10000 rpm (BIG-PLUS No.50, HSK-A100)	○	○	○	○	○	○	○	○
	7000 rpm (CAT No.50, BIG-PLUS No.50, HSK-A100)	○	○	○	○	○	○	○	○
	18000 rpm (CAT No.40, BIG-PLUS No.40, HSK-A63)	○	○	○	○	○	○	○	○
Table	Y-axis reference slot	○	○	○	○	○	○	○	○
	Auxiliary table	○	○	○	○	○	○	—	—
Factory automation	30 tool chain type magazine	●	●	●	●	●	●	—	—
	30 tool chain type magazine (HSK)	○	○	○	○	○	○	—	—
	60 tool chain type magazine	○	○	○	○	○	○	●	●
	60 tool chain type magazine (HSK)	○	○	○	○	○	○	○	○
	120 tool chain type magazine	○	○	○	○	○	○	○	○
	Multi-surface machining attachment*1	○	○	○	○	○	○	○	○
	Multi-surface machining angle tool holder (heavy duty)*1	○	○	○	○	○	○	○	○
	Multi-surface machining angle tool holder (standard)*1	○	○	○	○	○	○	○	○
	Multi-surface machining angle tool holder (high speed)*1	○	○	○	○	○	○	○	○
	2-pallet changer (with safety cover)	○	○	○	○	○	○	○	□
	Preparation for hydraulic fixtures 2 ports × 2 M code (one side)	○	○	○	○	○	○	○	○
	Preparation for hydraulic fixtures 2 ports × 4 M code (both sides)	○	○	○	○	○	○	○	○
	Preparation for pneumatic fixtures 2 ports × 2 M code (one side)	○	○	○	○	○	○	○	○
	Preparation for pneumatic fixtures 2 ports × 4 M code (both sides)	○	○	○	○	○	○	○	○
	Fixture seating confirmation 1 port × M code	○	○	○	○	○	○	○	○
	One additional axis (including servo motor amplifier)	○	○	○	○	○	○	○	○
	2-pallet changer preparation for pneumatic 2 ports × 2 M code (one side)	○	○	—	○	○	○	—	—
	2-pallet changer preparation for pneumatic 2 ports × 4 M code (both sides)	○	○	—	○	○	○	—	—
	2-pallet changer preparation for hydraulic 2 ports × 2 M code (one side)	○	○	—	○	○	○	—	—
	2-pallet changer preparation for hydraulic 2 ports × 4 M code (both sides)	○	○	—	○	○	○	—	—
	One additional axis for 2-pallet changer (including servo motor amplifier)	○	○	—	○	○	○	—	—
	Print out function for workpiece measuring (without printer)	○	○	○	○	○	○	○	○
Setup	Automatic power ON / OFF + warm-up operation	●	●	●	●	●	●	●	●
	Automatic tool length measurement & tool breakage detection	●	●	●	●	●	●	●	●
	Laser tool measurement (up to Φ210 mm (Φ8.27"))	○	○	○	○	○	○	○	○
	Mazak monitoring system B OMP60	○	○	○	○	○	○	○	○
	Preparation for Mazak monitoring system B OMP60	○	○	○	○	○	○	○	○
	Absolute position detection	●	●	●	●	●	●	●	●
	End cover window	○	○	○	●	●	●	●	●
	Remote manual pulse generator (wired)	○	○	○	●	●	●	●	●
	Remote manual pulse generator (wireless)	○	○	○	○	○	○	○	○

*1 Option for 10000 rpm (No.50) and 7000 rpm (No.50) spindle
Required air supply : (FJV-35 and FJV-60) more than 0.5 MPa (73 PSI) / 1200 NL/min, (FJV-100) 0.5 MPa (73 PSI) / 1400 NL/min

● : Standard ○ : Option – : N/A

Machine model		35/60	35/80	35/120	60/80	60/120	60/160	100/120	100/160
Safety equipment	Float-type coolant level gauge	●	●	●	●	●	●	●	●
	ATC automatic recover function	●	●	●	●	●	●	●	●
	Automatic fire extinguisher	○	○	○	○	○	○	○	○
	Pressure switch for coolant through spindle	○	○	○	○	○	○	○	○
	Operator door interlock	●	●	●	●	●	●	●	●
	Fully enclosed cover	○	○	○	○	○	○	○	○
High accuracy	Ball screw core cooling (X-, Y-, Z-axis)	●	●	●	●	●	●	●	●
	Spindle chiller unit	●	●	●	●	●	●	●	●
	Scale feedback (X-, Y-axis)	○	○	○	○	○	○	○	○
	Scale feedback (X-, Y-, Z-axis)	○	○	○	○	○	○	○	○
	Coolant temperature control	○	○	○	○	○	○	○	○
Coolant / Chip disposal	Flood coolant	●	●	●	●	●	●	●	●
	Coolant for angle tool	○	○	○	○	○	○	○	○
	Preparation for chip conveyor (rear discharge)	●	●	●	●	●	●	●	●
	Coolant tank (550 L) (145 gal)	●	●	●	—	—	—	—	—
	Coolant tank (700 L) (184 gal)	—	—	—	●	●	●	—	—
	Large capacity coolant tank (900 L) (237 gal)	○	○	○	—	—	—	—	—
	Large capacity coolant tank (1000 L) (264 gal)	—	—	—	○	○	○	—	—
	Coolant tank (1100 L) (290 gal)	—	—	—	—	—	—	●	●
	Niagara coolant*2	○	○	○	○	○	○	○	○
	Cover coolant*3	○	○	○	○	○	○	●	●
	Coolant through spindle 0.5 MPa (73 PSI) with cyclone filter*4	●	●	●	●	●	●	●	●
	Coolant through spindle 1.5 MPa (218 PSI) with cyclone filter*4	○	○	○	○	○	○	○	○
	SUPERFLOW coolant system (7.0 MPa (1015 PSI)) *4	○	○	○	○	○	○	○	○
	Hand held coolant nozzle	○	○	○	○	○	○	○	○
	Workpiece air blast	●	●	●	●	●	●	●	●
	Air through spindle (available during spindle rotation)*4	○	○	○	○	○	○	○	○
	Oil skimmer	○	○	○	○	○	○	○	○
	Mist collector (fully enclosed cover recommended)	○	○	○	○	○	○	○	○
	Internal spiral conveyor (inverter system)	●	●	●	●	●	●	—	—
	Internal chip conveyor (hinge)	○	○	○	○	○	○	●	●
	Inverter system for internal hinge type chip conveyor	○	○	○	○	○	○	○	○
	Chip conveyor (rear discharge, ConSep)	○	○	○	○	○	○	○	○
	Chip conveyor (rear discharge, hinge, abrasion resistant)	○	○	○	○	○	○	○	○
	Chip pan	○	○	○	○	○	○	—	—
	Inverter system for chip conveyor	○	○	○	○	○	○	○	○
Others	Dual monitor for MAZATROL SmoothG CNC	○	○	○	○	○	○	○	○

*2 With Multi-Face machining attachment, coolant nozzles will be equipped below column. Large coolant tank required for all machines except FJV-100.
*3 Large coolant tank required for all machines except FJV-100.
*4 Not available with angle head and angle tool.

FJV 5 Face series Standard and Optional Equipment

● : Standard ○ : Option – : N/A

Machine model		35/60	35/80	35/120	60/80	60/120	60/160	100/120	100/160
Spindle	10000 rpm (CAT No.50)	●	●	●	●	●	●	●	●
	7000 rpm (CAT No.50)	○	○	○	○	○	○	○	○
Table	Y-axis reference slot	○	○	○	○	○	○	○	○
Factory automation	30 tool chain type magazine	●	●	●	●	●	●	—	—
	60 tool chain type magazine	○	○	○	○	○	○	●	●
	120 tool chain type magazine	○	○	○	○	○	○	○	○
	8 tool drum type magazine for MAZAK 5 Face Angle Tool Holder (HSK-63)	●	●	●	●	●	●	●	●
	Multi-surface machining attachment	●	●	●	●	●	●	●	●
	MAZAK 5 Face angle holder and tool magazine	●	●	●	●	●	●	●	●
	Multi-surface machining angle tool holder (standard)	○	○	○	○	○	○	○	○
	Multi-surface machining angle tool holder (high speed)	○	○	○	○	○	○	○	○
	2-pallet changer (with safety cover)	○	○	○	○	○	○	○	—
	Preparation for hydraulic fixtures 2 ports × 2 M code (one side)	○	○	○	○	○	○	○	○
	Preparation for hydraulic fixtures 2 ports × 4 M code (both sides)	○	○	○	○	○	○	○	○
	Preparation for pneumatic fixtures 2 ports × 2 M code (one side)	○	○	○	○	○	○	○	○
	Preparation for pneumatic fixtures 2 ports × 4 M code (both sides)	○	○	○	○	○	○	○	○
	Fixture seating confirmation 1 port × M code	○	○	○	○	○	○	○	○
	One additional axis (including servo motor amplifier)	○	○	○	○	○	○	○	○
	2-pallet changer preparation for pneumatic 2 ports × 2 M code (one side)	○	○	—	○	○	○	—	—
	2-pallet changer preparation for pneumatic 2 ports × 4 M code (both sides)	○	○	—	○	○	○	—	—
	2-pallet changer preparation for hydraulic 2 ports × 2 M code (one side)	○	○	—	○	○	○	—	—
	2-pallet changer preparation for hydraulic 2 ports × 4 M code (both sides)	○	○	—	○	○	○	—	—
	One additional axis for 2-pallet changer (including servo motor amplifier)	○	○	—	○	○	○	—	—
	Print out function for workpiece measuring (without printer)	○	○	○	○	○	○	○	○
Setup	Automatic power ON / OFF + warm-up operation	●	●	●	●	●	●	●	●
	Automatic tool length measurement & tool breakage detection	●	●	●	●	●	●	●	●
	Laser tool measurement (up to Φ210 mm (Φ8.27"))	○	○	○	○	○	○	○	○
	Mazak monitoring system B OMP60	○	○	○	○	○	○	○	○
	Preparation for Mazak monitoring system B OMP60	○	○	○	○	○	○	○	○
	Absolute position detection	●	●	●	●	●	●	●	●
	End cover window	○	○	○	●	●	●	●	●
	Remote manual pulse generator (wired)	○	○	○	●	●	●	●	●
	Remote manual pulse generator (wireless)	○	○	○	○	○	○	○	○
Safety equipment	Float-type coolant level gauge	●	●	●	●	●	●	●	●
	ATC automatic recover function	●	●	●	●	●	●	●	●
	Automatic fire extinguisher	○	○	○	○	○	○	○	○

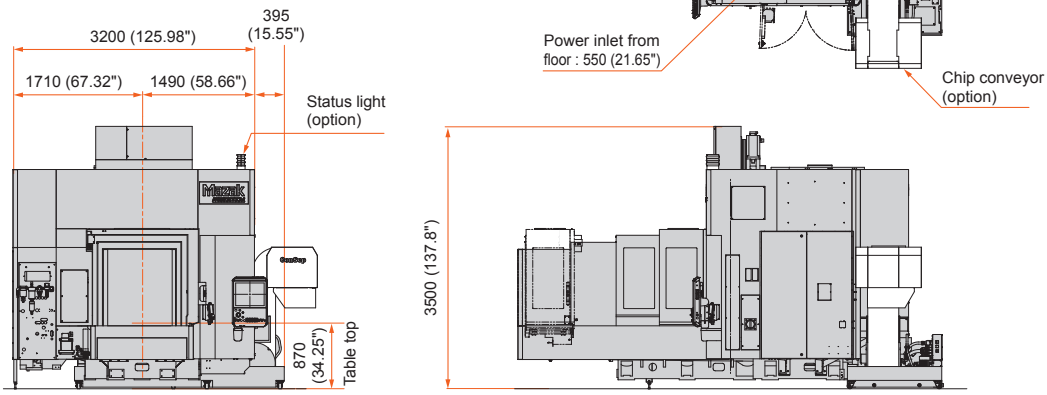
● : Standard ○ : Option – : N/A

Machine model		35/60	35/80	35/120	60/80	60/120	60/160	100/120	100/160
Safety equipment	Pressure switch for coolant through spindle	○	○	○	○	○	○	○	○
	Operator door interlock	●	●	●	●	●	●	●	●
	Fully enclosed cover	○	○	○	○	○	○	○	○
High accuracy	Ball screw core cooling (X-, Y-, Z-axis)	●	●	●	●	●	●	●	●
	Spindle chiller unit	●	●	●	●	●	●	●	●
	Scale feedback (X-, Y-axis)	○	○	○	○	○	○	○	○
	Scale feedback (X-, Y-, Z-axis)	○	○	○	○	○	○	○	○
	Coolant temperature control	○	○	○	○	○	○	○	○
Coolant / Chip disposal	Flood coolant	●	●	●	●	●	●	●	●
	Coolant for angle tool	○	○	○	○	○	○	○	○
	Preparation for chip conveyor (rear discharge)	●	●	●	●	●	●	●	●
	Coolant tank (550 L) (145 gal)	●	●	●	—	—	—	—	—
	Coolant tank (700 L) (184 gal)	—	—	—	●	●	●	—	—
	Large capacity coolant tank (900 L) (237 gal)	○	○	○	—	—	—	—	—
	Large capacity coolant tank (1000 L) (264 gal)	—	—	—	○	○	○	—	—
	Coolant tank (1100 L) (290 gal)	—	—	—	—	—	—	●	●
	Niagara coolant*1	○	○	○	○	○	○	○	○
	Cover coolant*2	○	○	○	○	○	○	●	●
	Coolant through spindle 0.5 MPa (73 PSI) with cyclone filter*3	●	●	●	●	●	●	●	●
	Coolant through spindle 1.5 MPa (218 PSI) with cyclone filter*3	○	○	○	○	○	○	○	○
	SUPERFLOW coolant system (7.0 MPa (1015 PSI))*3	○	○	○	○	○	○	○	○
	Hand held coolant nozzle	○	○	○	○	○	○	○	○
	Workpiece air blast	●	●	●	●	●	●	●	●
	Air through spindle (available during spindle rotation)*3	●	●	●	●	●	●	●	●
	Oil skimmer	○	○	○	○	○	○	○	○
	Mist collector (fully enclosed cover recommended)	○	○	○	○	○	○	○	○
	Internal spiral conveyor (inverter system)	●	●	●	●	●	●	—	—
	Internal chip conveyor (hinge)	○	○	○	○	○	○	●	●
	Inverter system for internal hinge type chip conveyor	○	○	○	○	○	○	○	○
	Chip conveyor (rear discharge, ConSep)	○	○	○	○	○	○	○	○
	Chip conveyor (rear discharge, hinge, abrasion resistant)	○	○	○	○	○	○	○	○
	Chip pan	○	○	○	○	○	○	—	—
	Inverter system for chip conveyor	○	○	○	○	○	○	○	○
Others	Dual monitor for MAZATROL SmoothG CNC	○	○	○	○	○	○	○	○

*1 Coolant nozzles located under Y-axis slideway cover. Large coolant tank required for all machines except FJV 5 Face-100.
*2 Large coolant tank required for all machines except FJV 5 Face-100.
*3 Not available with angle head and angle tool.

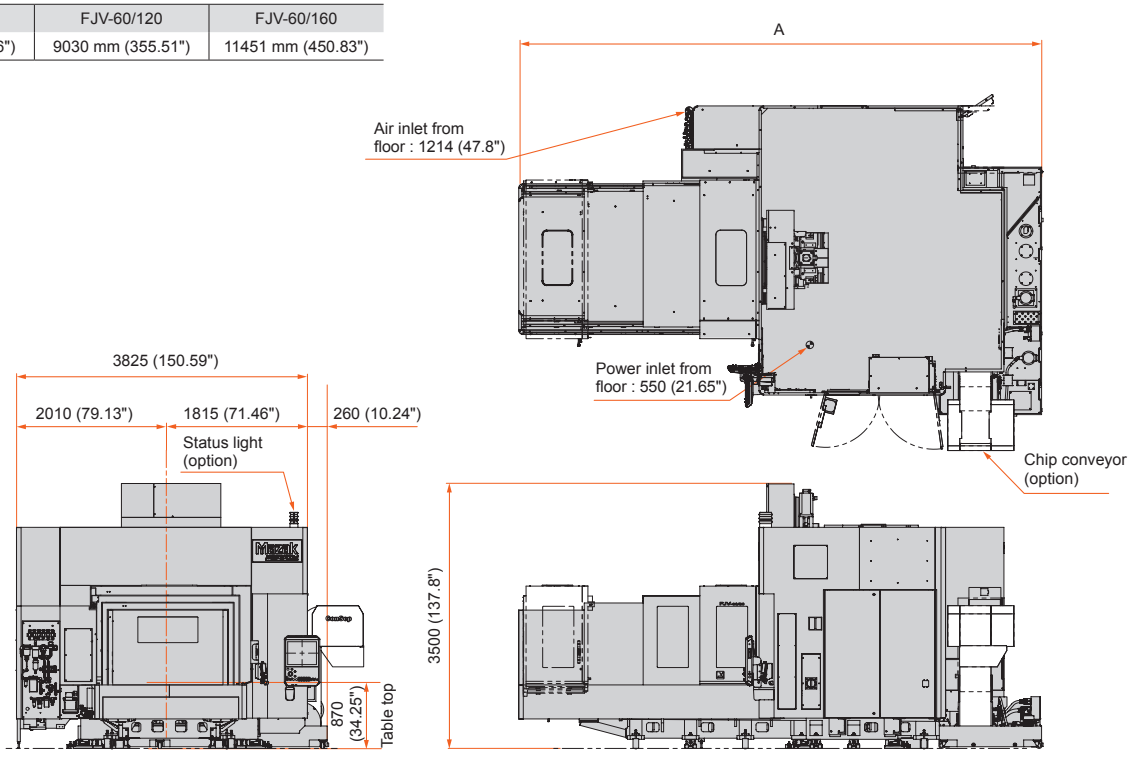
FJV-35 series

A		
FJV-35/60	FJV-35/80	FJV-35/120
5637 mm (221.93")	6863 mm (270.2")	9315 mm (366.73")



FJV-60 series

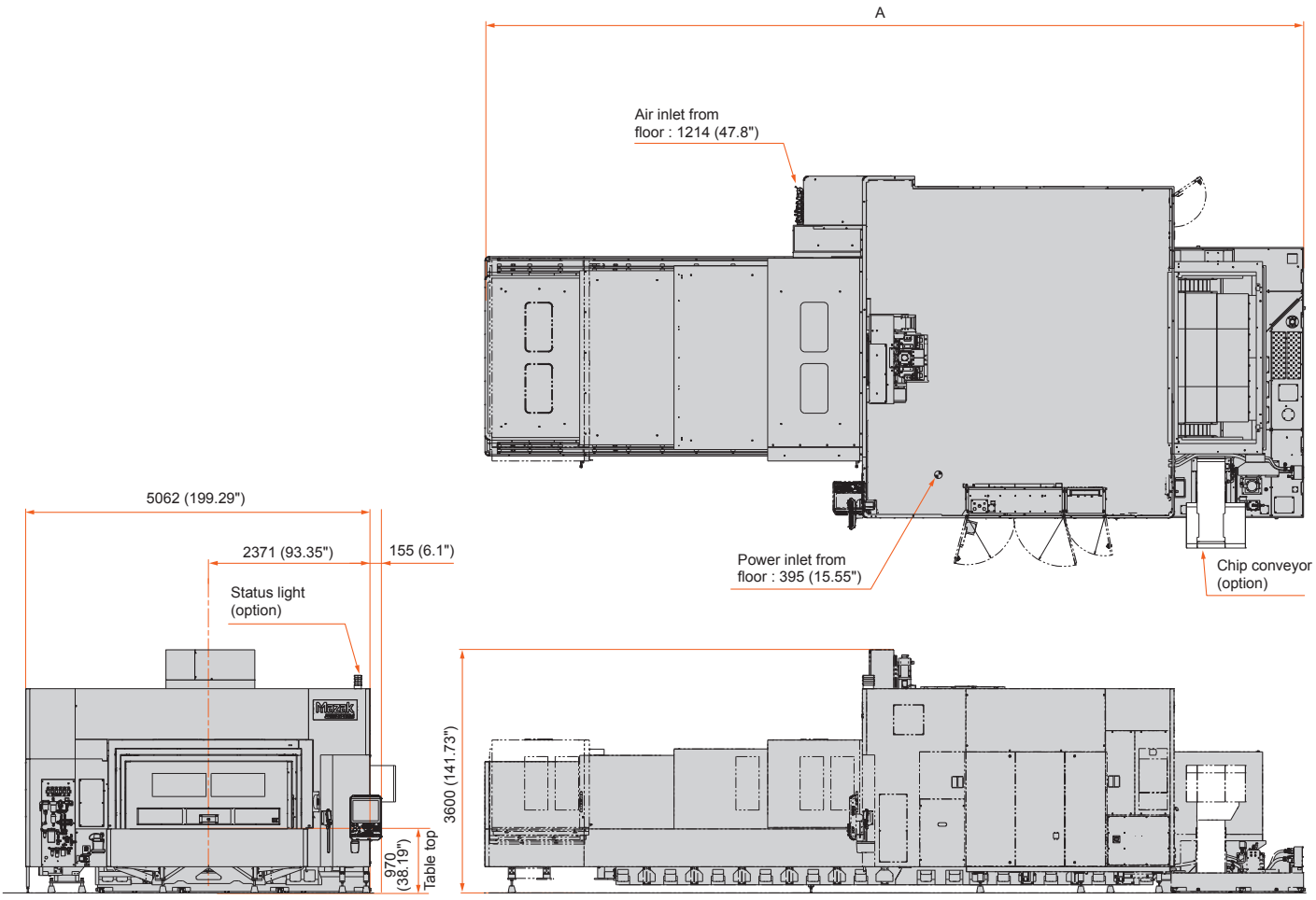
A		
FJV-60/80	FJV-60/120	FJV-60/160
6895 mm (271.46")	9030 mm (355.51")	11451 mm (450.83")



Unit : mm (inch)

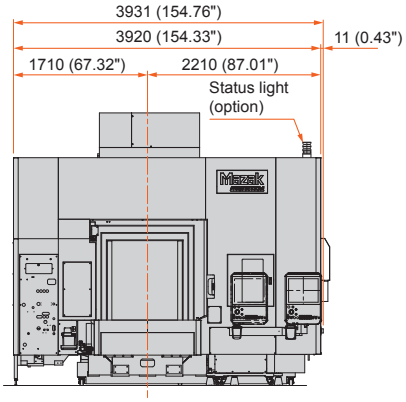
FJV-100 series

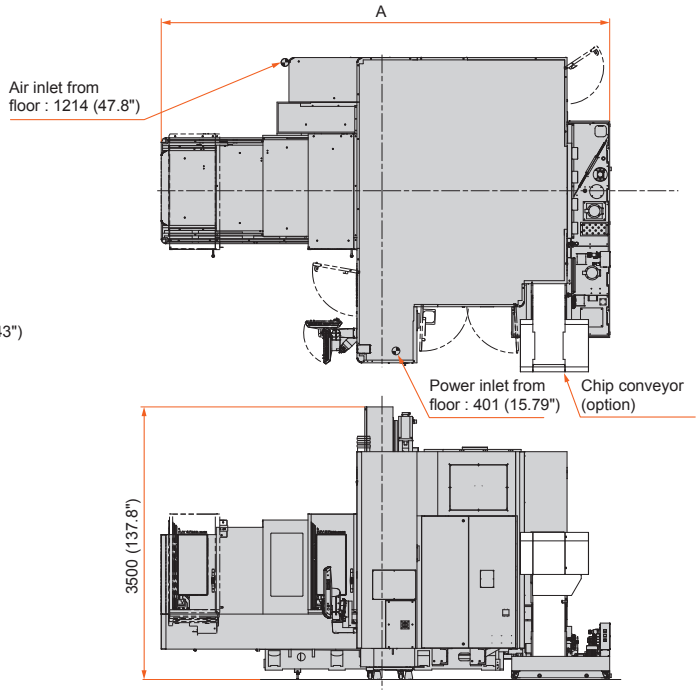
A	
FJV-100/120	FJV-100/160
9372 mm (368.98")	12044 mm (474.17")



FJV 5 Face-35 series

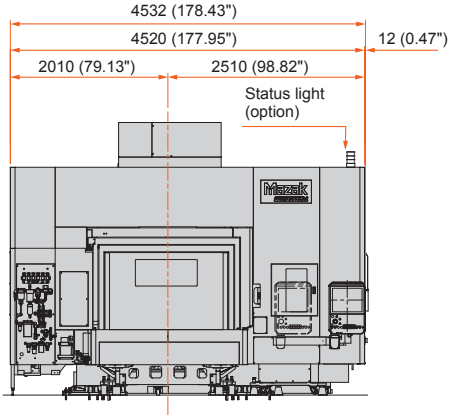
A		
FJV 5 Face-35/60	FJV 5 Face-35/80	FJV 5 Face-35/120
5742 mm (226.06")	6863 mm (270.2")	9315 mm (366.73")

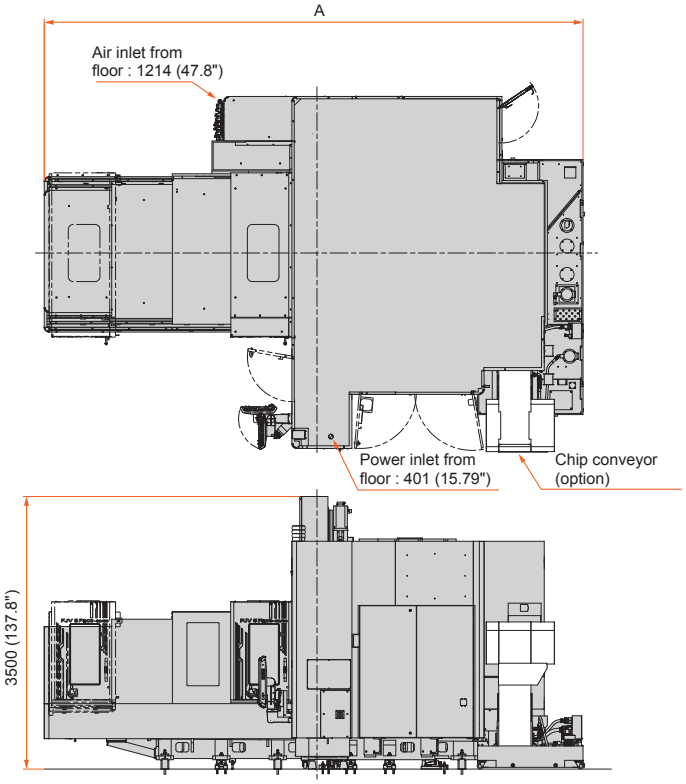




FJV 5 Face-60 series

A		
FJV 5 Face-60/80	FJV 5 Face-60/120	FJV 5 Face-60/160
6895 mm (271.46")	9030 mm (355.51")	11451 mm (450.83")





Unit : mm (inch)

FJV 5 Face-100 series

A	
FJV 5 Face-100/120	FJV 5 Face-100/160
9372 mm (368.98")	12044 mm (474.17")

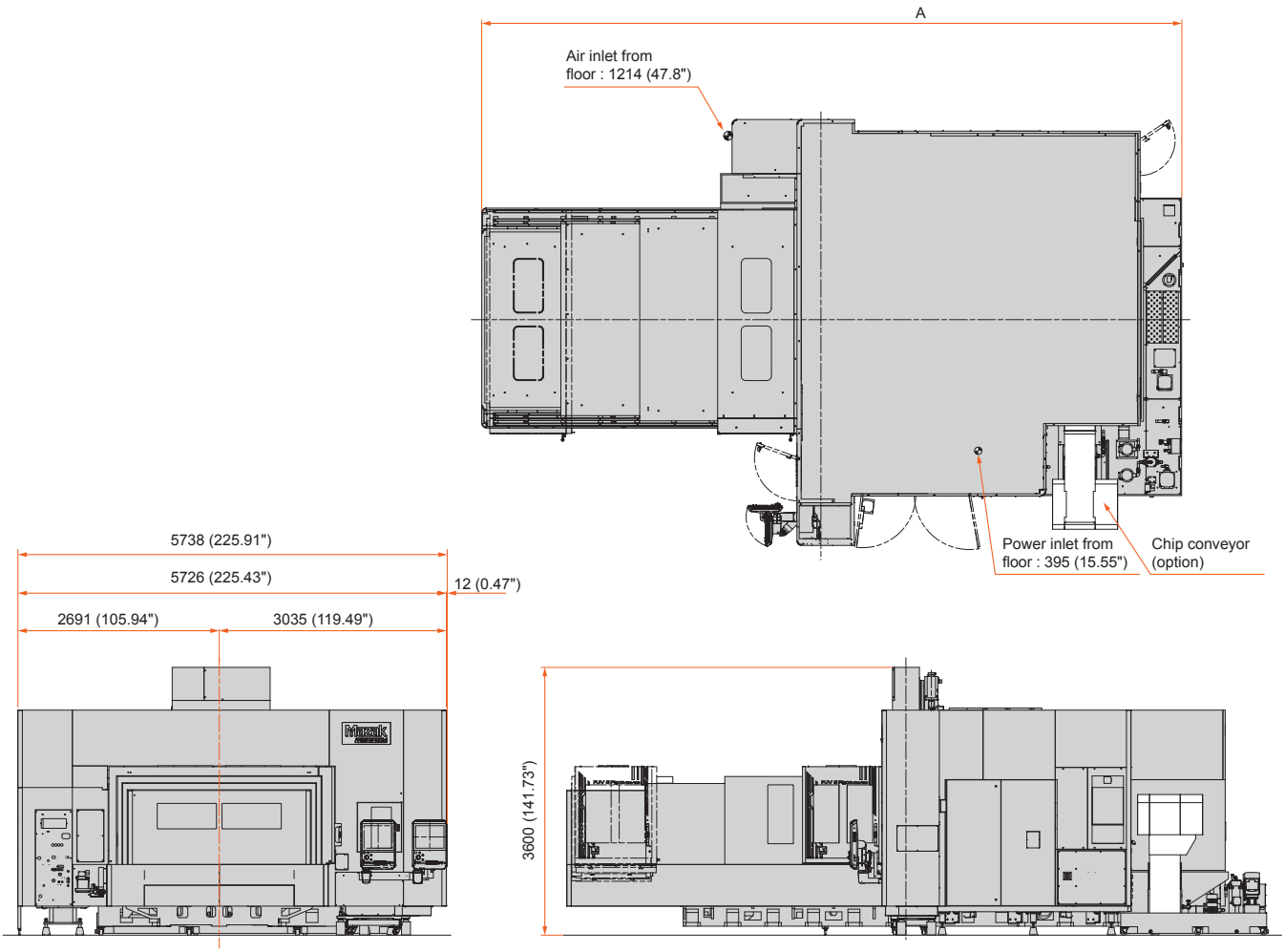
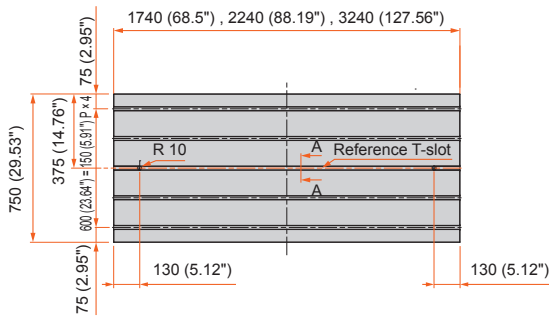
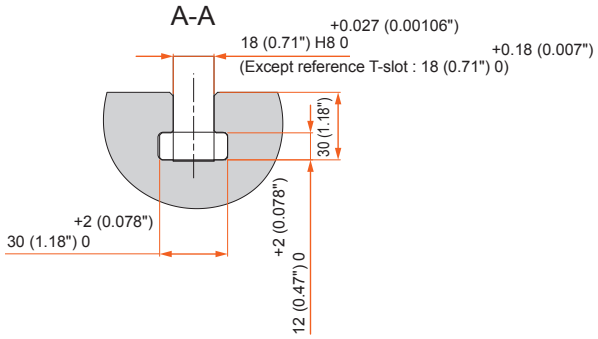


Table Dimensions

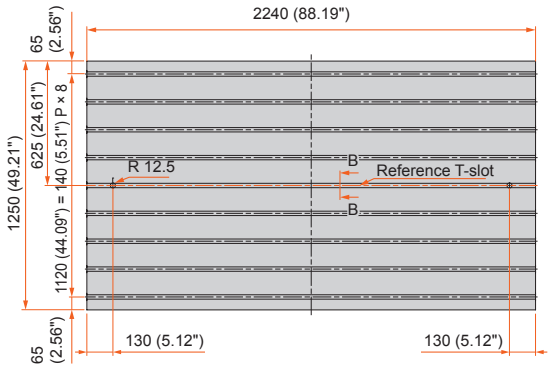
Unit : mm (inch)

FJV-35/60, FJV-35/80, FJV-35/120
FJV 5 Face-35/60, FJV 5 Face-35/80, FJV 5 Face-35/120

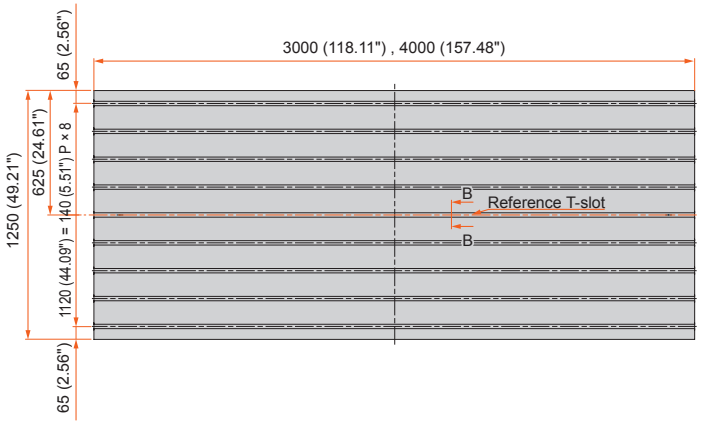




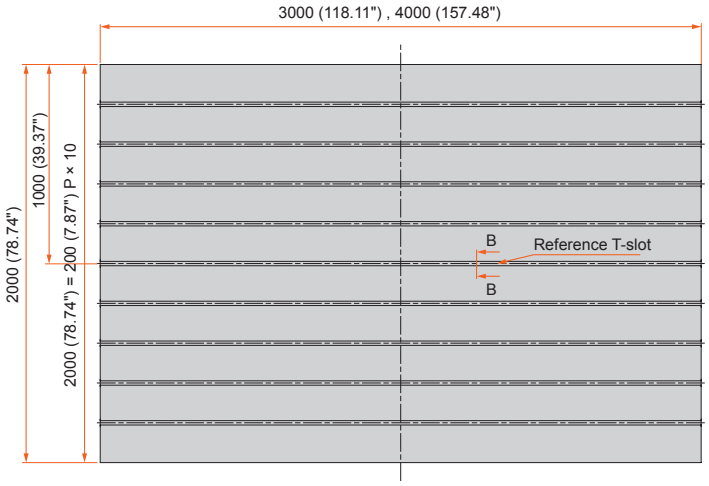
FJV-60/80
FJV 5 Face-60/80

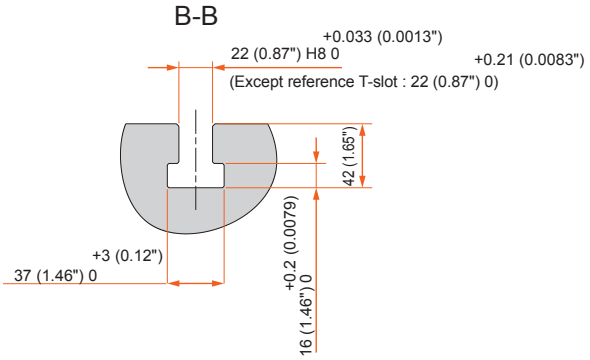


FJV-60/120, FJV-60/160
FJV 5 Face-60/120, FJV 5 Face-60/160



FJV-100/120, FJV-100/160
FJV 5 Face-100/120, FJV 5 Face-100/160





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 compensation, Smooth corner control, Rapid traverse overlap, Rotary axis shape compensation	Shape compensation, Smooth corner control, Rapid traverse overlap, Rotary axis shape compensation, High-speed machining mode, High-speed smoothing control
Interpolation	Positioning (interpolation), Positioning (non-interpolation), Linear interpolation, Circular interpolation, Synchronous tapping*	Positioning (interpolation), Positioning (non-interpolation), Linear interpolation, Circular interpolation, Spiral interpolation, Helical interpolation, Cylindrical interpolation*, Fine spline interpolation*,NURBS interpolation*, Polar coordinate interpolation*, Synchronous tapping*
Feedrate	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Dwell (time / rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate limitation, Variable acceleration control, G0 slope constant*	Rapid traverse, Cutting feed, Cutting feed (per minute), Cutting feed (per revolution), Inverse time feed, Dwell (time / rotation), Rapid traverse override, Cutting feed override, G0 speed variable control, Feedrate limitation, Time constant changing for G1, G0 speed variable control, G0 slope constant*
Program registration	Number of programs : 256(Standard) / 960(Max.), Program memory : 2 MB, Program memory expansion : 8 MB*, Program memory expansion : 32 MB*	
Control display	Display : 19" touch panel, Resolution : SXGA	
Spindle functions	S code output, Spindle speed limitation, Spindle speed override, Spindle speed reaching detection, Multiple position orient, Constant surface speed, Spindle speed command with decimal digits, Synchronized spindle control, Spindle Speed Range Setting	
Tool functions	Number of tool offset : 4000, T code output for tool number, Tool life monitoring (time), Tool life monitoring (number of machined workpieces)	Number of tool offset : 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 wear offset	
Coordinate system	Machine coordinate system, Work coordinate system, Local coordinate system, Additional work coordinates (300 set)	
Machine functions	–	Tilted working plane**, Shaping function*, Dynamic compensation II*, Tool center point control*,**, Workpiece positioning error compensation*,**
Machine compensation	Backlash compensation, Pitch error compensation, Ai Thermal shield	
Protection functions	Emergency stop, Interlock, Pre-move Stroke Check, SAFETY SHIELD (manual mode), SAFETY SHIELD (automatic mode)*, VOICE ADVISER	
Automatic operation mode	Memory operation	Memory operation, Tape operation, MDI operation, EtherNet operation*
Automatic operation control	Optional stop, Dry run, Manual handle interruption, MD interruption, TPS, Restart, Single process, Machine lock	Optional block skip, Optional stop, Dry run, Manual handle interruption, MD interruption, TPS, Restart, Restart 2, Collation stop, Machine lock
Manual measuring functions	Tool length teach, Touch sensor coordinates measurement, Workpiece offset measurement, WPC coordinate measurement, Measurement on machine	Tool length teach, Tool offset teach, Touch sensor coordinates measurement, Workpiece offset measurement, Measurement on machine
Automatic measuring functions	WPC coordinate measurement, Automatic tool length measurement, Sensor calibration, Tool breakage detection, External tool breakage detection*	Automatic tool length measurement, Sensor calibration, Tool breakage detection, External tool breakage detection*
MDI measurement	Semi automatic tool length measurement, Full automatic tool length measurement, Coordinate measurement	
Interface	PROFIBUS-DP*, EtherNet/IP*, CC-Link*, CC-Link IE Field Basic	
Card interface	SD card interface, USB	
EtherNet	10 M / 100 M / 1 Gbps	
Security	Security software*	

*Option
**Simultaneous 4-axis control

Mazak

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