



Shibaura Machine

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GOTEMBA plant

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* We reserve the right to change any of specifications in this catalog without notice in order to effect improvements.

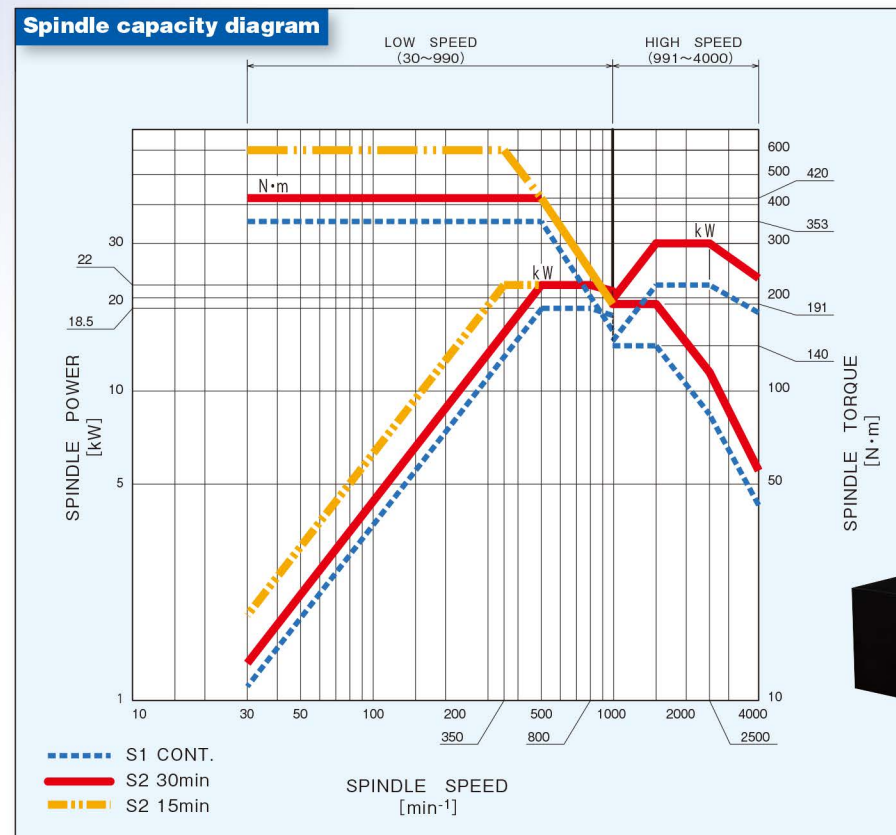
Flexibility satisfying global demand!

Double Column Type
Machining Center

MPJ

series

- Gearless Direct Drive system powers the spindle, providing high torque and high power for the newest cutting technology.
- Twin-Motor Drive System performs the Z-axis producing high accuracy and high rigidity under demanding cutting conditions.
- Multiple attachments with Automatic Attachment indexing provide flexible access to the workpiece. "5 face head" allows access to all five sides, snout 220 allows access to tight spaces, and 90 degree angle head equals the vertical spindle performance on all sides of the workpiece
- Standby power and lower Air consumption reduce operating costs and lower environmental impact.

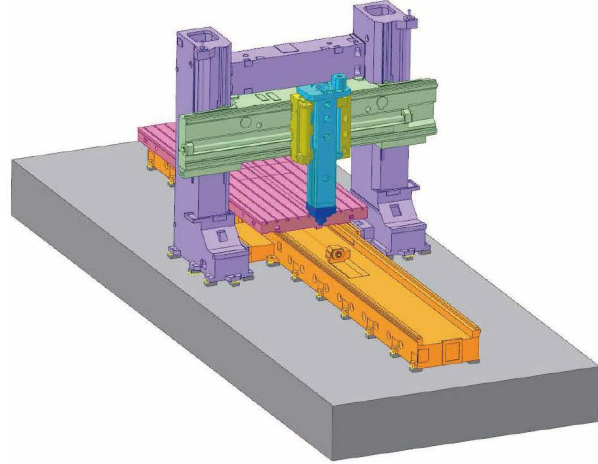


The illustration shows Model MPJ-2650
(NC: FANUC Series 31i-MODEL B5)

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Decades of design tradition are combined with the latest technology in the newest generation machine

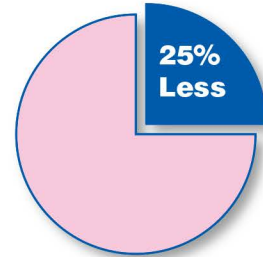
- Realize the optimum structural analysis by the latest CAE based on Toshiba Machine original design technique.



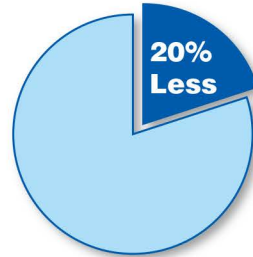
Smaller environmental impact produce larger cost savings

- Compact machine footprint, smaller 5.5kW hydraulic unit and energy efficient solenoid valves reduce operating cost.
- 20% less air consumption than previous models

Energy consumption



Compressed air



Standard accessories

- * (1) Automatic attachment indexing unit (AAI): Four (4)-position indexing by every 90°.
- (2) Snout 220
- * (3) Automatic tool changer (36-tool)
- (4) Telescopic bed steel cover
- (5) Crossrail bellows cover
- (6) Telescopic lower side column steel cover
- (7) Servicing (or maintenance) tools (attached with electric grease gun)
- (8) Tool clamping/unclamping unit
- (9) Oil mist lubrication unit (for gears)
- (10) Hydraulic unit
- (11) Ram cooling oil temperature regulator proportionate to room (or ambient) temperature (i.e., ram cooling unit)
- (12) Plug receptacle for connecting an external device (single phase, 100 V, with grounding pole, capacity 3 A)
- * (13) Balancing type pendant operation box
- (14) W-axis NC positioning
- (15) CNC system: FANUC Series 31i-B5

Note 1: For the items marked *, optional specifications can be selected. When this happens, relevant optional accessory is mounted in lieu of the standard accessory.

Note 2: The plug receptacle in Item 12 above is as per the JIS C8303. (It is used when the electric grease gun in Item 7 above is used.)

Optional accessories

- Auto power OFF unit •Work light •Operator call lamp (LED lamp)
- Automatic tool changer (ATC) •Maximum ATC tool length 600 mm [23.6 in] •Type of retention knob: MAS P50T-2 (30°)
- Automatic workpiece changer (AWC) •External program number search function •Automatic attachment changer (AAC)
- Hyper angle head •Five (5)-face cutter head •Snout 190 •30° Head •45° Head •Incremental 5° automatic attachment indexing unit
- Installation parts (with leveling blocks) •Chip conveyor •Coolant recovery chute •Block for coolant-through tool •Coolant-through spindle
- Coolant unit •Chip bucket •Air blower function •Mist coolant unit •Automatic measuring unit •Feedback system for closed-loop control
- Air compressor •Air dryer •Customer's designated machine exterior painting color •Free-arm pendant operation panel
- Stanchion type CNC operation box •Preheat timer •Pit type machine foundation (FL - 525 mm [- 20.7 in]) •Spindle designed for BIG-PLUS
- Power supply of different voltages •Machining of reference slots on table surface •Automatic greasing •ATC splash cover
- Chip splash preventing half cover •High-speed spindle •Automatic tool length measuring unit •Standard height + 500 mm [19.7 in]
- Cooler for machine control unit (MCU) •Work light in MCU •Earth leakage circuit breaker attached to main breaker
- Two (2) kinds of external M codes •Z-axis thermal displacement compensation •Additional axis control •Spare elements

Various types of attachments

Multiple attachments allow variety of machining operations

Standard accessories



Snout 220

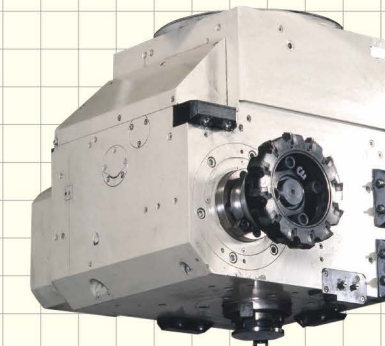
Optional accessories



Hyper angle head



Snout 190

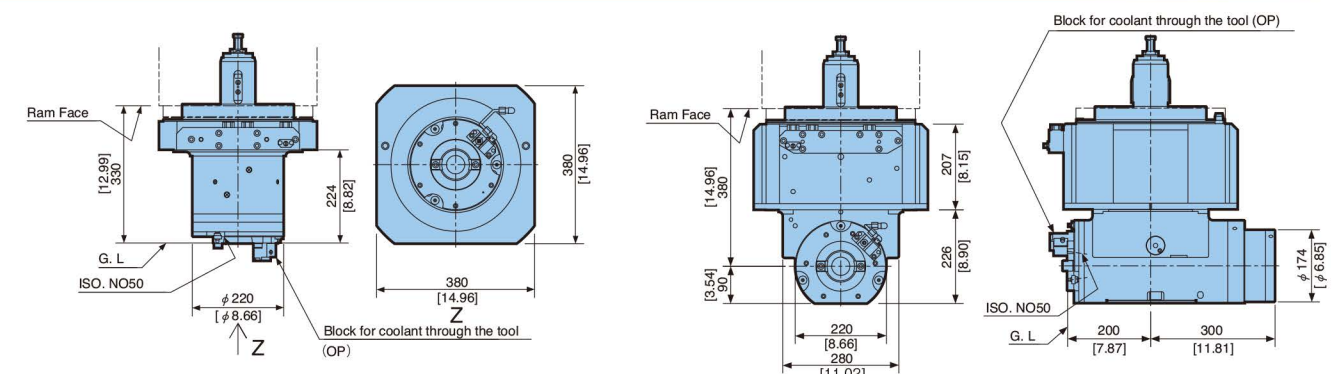


Five (5)-face cutter head



30° head

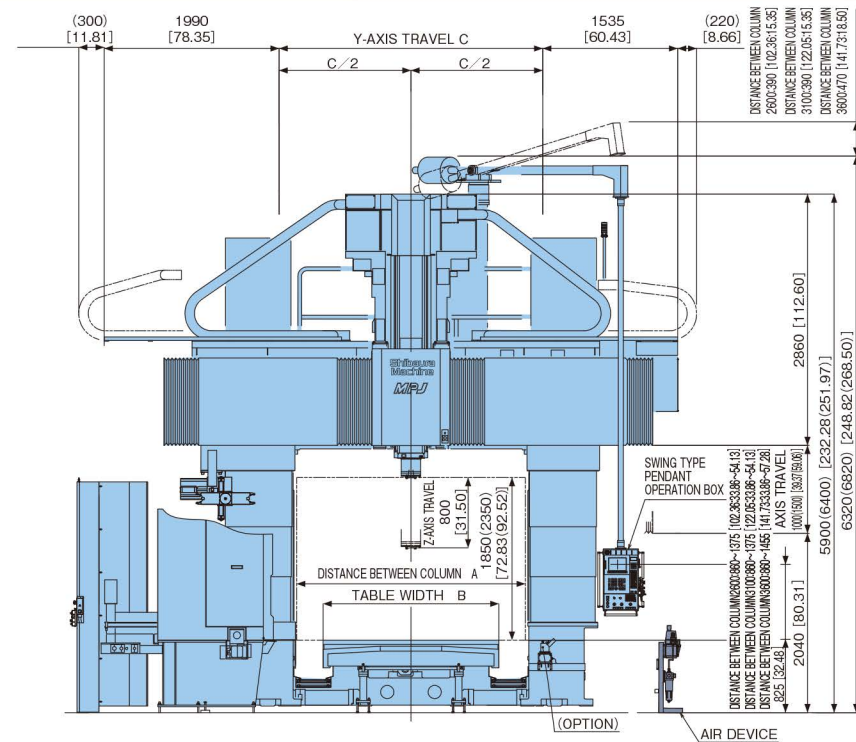
Size of attachment



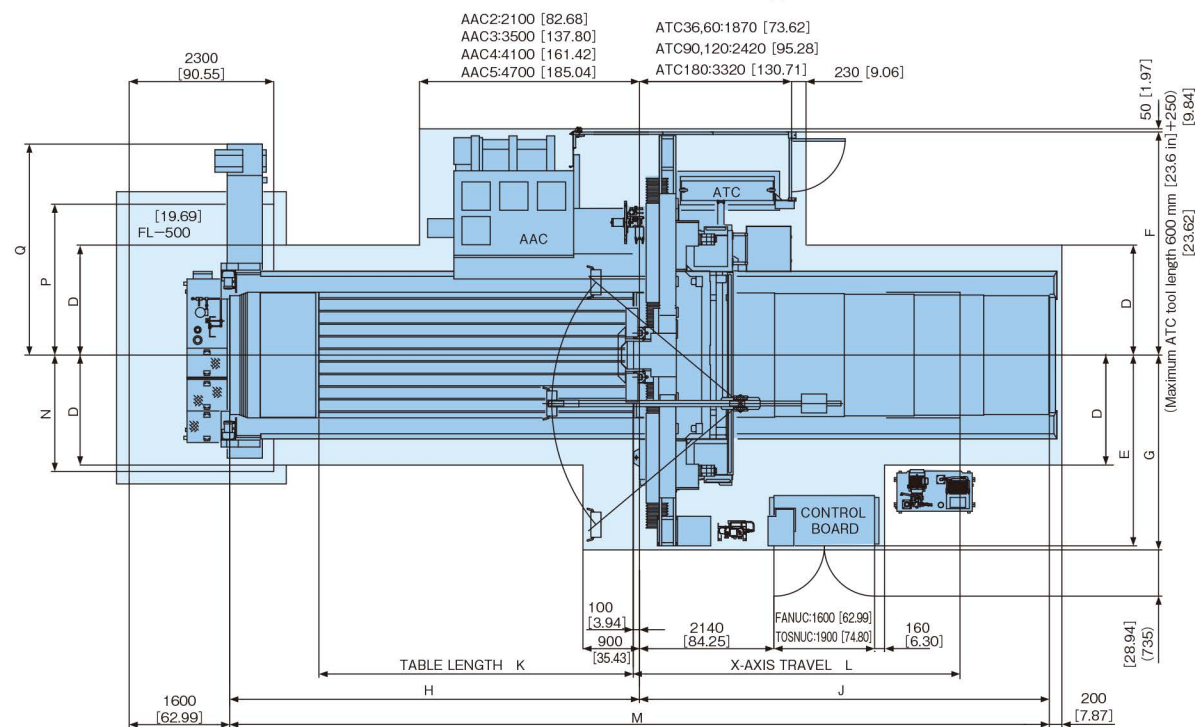
- Snout 220
- Max. output: 30/22kW
- Max. torque: 600N·m
- Max. spindle speed: 4,000min⁻¹

- Hyper angle head (Option)
- Max. output: 30/22kW
- Max. torque: 600N·m
- Max. spindle speed: 4,000min⁻¹
- Automatic Attachment Indexing (AAI): 90 degree or 5 degree (Option)

General View and Floor Plan

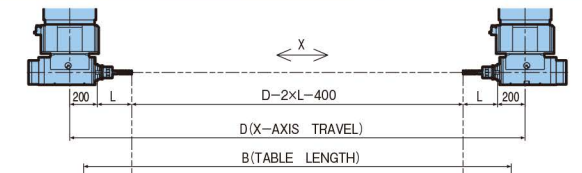
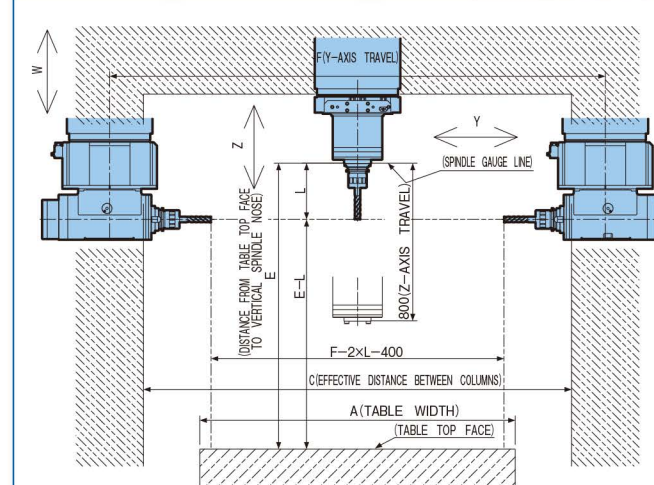


() a size shows the case of SUPER-HIGH COLUMN SPEC



Model	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
MPJ-2640						3 550 [139.76]	3 100 [122.05]	5 500 [216.54]	5 500 [216.54]	4 000 [157.48]	4 200 [165.35]	11 000 [433.07]		2 400 [94.49]	3 460 [136.22]
MPJ-2650	2 600 [102.36]	2 000 [78.74]	3 000 [118.11]	1 750 [68.90]	3 035 [119.49]	*3 800 [149.61]	3 100 [122.05]	6 500 [255.91]	6 500 [255.91]	5 000 [196.85]	5 200 [204.72]	13 000 [511.81]	1 850 [72.83]	*2 650 [104.33]	*3 760 [148.03]
MPJ-2660								7 500 [295.28]	7 500 [295.28]	6 000 [236.22]	6 200 [244.09]	15 000 [590.55]			
MPJ-3140						3 800 [149.61]	3 350 [131.89]	5 500 [216.54]	5 500 [216.54]	4 000 [157.48]	4 200 [165.35]	11 000 [433.07]		2 650 [104.33]	3 860 [151.97]
MPJ-3150	3 100 [122.05]	2 500 [98.43]	3 500 [137.80]	2 000 [78.74]	3 285 [129.33]	*4 050 [159.45]	3 350 [131.89]	6 500 [255.91]	6 500 [255.91]	5 000 [196.85]	5 200 [204.72]	13 000 [511.81]	2 100 [82.68]	*2 900 [114.17]	*4 010 [157.87]
MPJ-3160								7 500 [295.28]	7 500 [295.28]	6 000 [236.22]	6 200 [244.09]	15 000 [590.55]			
MPJ-3650						4 050 [159.45]	3 600 [141.73]	6 500 [255.91]	6 500 [255.91]	5 000 [196.85]	5 200 [204.72]	13 000 [511.81]	2 300 [90.55]	3 000 [118.11]	4 280 [168.50]
MPJ-3660	3 600 [141.73]	3 100 [122.05]	4 000 [157.48]	2 000 [78.74]	3 535 [139.17]	*4 300 [169.29]	3 600 [141.73]	7 500 [295.28]	7 500 [295.28]	6 000 [236.22]	6 200 [244.09]	15 000 [590.55]		*3 150 [124.02]	*4 410 [173.62]

Working Area Diagram



Model	A	B	C	D	E	F
MPJ-2640				4 000 [157.48]		
MPJ-2650	2 000 [78.74]	5 000 [196.85]	2 600 [102.36]	5 200 [204.72]		3 000 [118.11]
MPJ-2660		6 000 [236.22]		6 200 [244.09]		
MPJ-3140		4 000 [157.48]		4 200 [165.35]	1 850 [72.84]	
MPJ-3150	2 500 [98.43]	5 000 [196.85]	3 100 [122.05]	5 200 [204.72]	(2 350) [92.52]	3 500 [137.80]
MPJ-3160		6 000 [236.22]		6 200 [244.09]		
MPJ-3650	3 100 [122.05]	5 000 [196.85]	3 600 [141.73]	5 200 [204.72]		4 000 [157.48]
MPJ-3660		6 000 [236.22]		6 200 [244.09]		

() a size shows the case of SUPER-HIGH COLUMN SPEC

Machine Specifications

		2640	2650	2660	3140	3150	3160	3650	3660		
Travel	X-axis travel (Longitudinal movement of table)	4 200 [165.35]	5 200 [204.72]	6 200 [244.09]	4 200 [165.35]	5 200 [204.72]	6 200 [244.09]	5 200 [204.72]	6 200 [244.09]		
	Y-axis travel (Cross movement of spindle head)	3 000 [118.11]			3 500 [137.8]			4 000 [157.5]			
	Z-axis travel (Vertical movement of ram)	800 [31.50]									
	W-axis travel (Vertical movement of crossrail)	1 000 (250 pitches 5 positions) [39.37 (9.84 pitches 5 positions)]									
	Height (Distance from table top surface to vertical spindle nose)	1 850 [72.83]									
Table	Table working surface	2 000×4 000 [78.74×157.48]	2 000×5 000 [78.74×196.85]	2 000×6 000 [78.74×236.22]	2 500×4 000 [98.43×157.48]	2 500×5 000 [98.43×196.85]	2 500×6 000 [98.43×236.22]	3 100×5 000 [122.05×196.85]	3 100×6 000 [122.05×236.22]		
	Table loading capacity	20 000 [44 090]	25 000 [55 100]	28 000 [61 720]	25 000 [55 100]	28 000 [61 720]	30 000 [66 130]	30 000 [66 130]	33 000 [72 750]		
	Table T-slot size	24 [0.94]									
Spindle	Spindle speed range	30 ~ 4 000									
	No. of spindle speed ranges	2 ranges									
	Type of spindle taper hole	7/24 taper No.50									
	Maximum spindle torque	600 (61.2 kgf·m) [442.56]									
Spindle ram	Spindle bearing inner diameter	100 [3.94]									
	Type	Open ram type									
	Guideways	Rolling guide									
Feedrate	Section	380 × 380 [14.96 14.96]									
	Rapid traverse rate	X-axis	20 [65.62]								
		Y-axis	20 [65.62]								
		Z-axis	10 [32.81]								
	Feedrate	W-axis	1 [3.28]								
X-axis		1 ~ 10 000 [0.04 ~ 393.7]									
Y-axis		1 ~ 10 000 [0.04 ~ 393.7]									
Tool	Z-axis	1 ~ 10 000 [0.04 ~ 393.7]									
	Type of tool shank	MAS BT50									
	Type of retention knob	MAS P50T-1(45°)									
Motors	Spindle drive motor	AC30 kW (30-min. rating)/22 kW (continuous rating) [40 HP (30-min. rating)/29 HP (continuous rating)]									
	Feed motors	X-axis	AC11.0 kW [14.7 HP]			AC16.0 kW [21.4 HP]					
		Y-axis	AC6.0kW [8 HP]								
		Z-axis	AC 5.5 kW × 2 [7.4 HP × 2]								
		W-axis	AC 4.5 kW × 2 [6 HP × 2]								
Power sources	Electric power supply	AC200/220V±10% 50/60 Hz±1Hz									
	Power source requirement	85			89						
	Compressed air source	MPa [psi] 0.5 ~ 0.8 [72.5 ~ 116.0]									
Machine size	Machine height	6 320 [248.82]									
	Floor space	11 000×6 580 [433.1×259.1]	13 000×6 580 [511.8×259.1]	15 000×6 580 [590.6×259.1]	11 000×7 080 [433.1×278.7]	13 000×7 080 [511.8×278.7]	15 000×7 080 [590.6×278.7]	13 000×7 580 [511.8×298.4]	15 000×7 580 [590.6×298.4]		
Accuracy	Mass of machine	42 000 [92 600]	45 200 [99 650]	48 400 [106 700]	49 000 [108 100]	53 800 [118 600]	58 600 [129 200]	56 500 [116 850]	61 500 [135 600]		
	Positioning accuracy	±0.007 per 1 000 [±0.0003 per 40] (Z-axis: ±0.007 per 800 [±0.007 per 32])									
Repeatability	±0.003 [±0.00012]										