

Machine Specifications

			MA-600HⅢ	
Travels	Item	Unit	No.50	[No.40] ^{*1}
	X-axis (column left/right)	mm (in)	1,050 (41.34)	
	Y-axis (spindle up/down)	mm (in)	900 (35.43)	
	Z-axis (table front/back)	mm (in)	1,000 (39.37)	
	Spindle center to pallet top	mm (in)	50 to 950 (1.97 to 37.40)	
	Spindle nose to pallet center	mm (in)	70 to 1,070 (2.76 to 42.13)	
Pallet	Work area	mm (in)	630 × 630 (24.80 × 24.80)	
	Max load capacity	kg	1,200 [1,400]	
	Indexing angle	deg	1 [0.001]	
	Max workpiece dimensions ^{*2}	mm (in)	ø1,050 × 1,200 (ø41.34 × 47.24)	
Spindle	Speed	min ⁻¹	50 to 6,000 [50 to 10,000, 50 to 12,000, 50 to 6,000 (high-torque spindle)]	50 to 15,000, [50 to 20,000]
	Tapered bore		7/24 taper No. 50 [HSK-A100]	HSK-A63 [7/24 taper No. 40] ^{*3}
	Bearing dia	mm (in)	ø100 (ø3.94)	ø70 (ø2.76)
Feed rate	Rapid traverse	m/min (ipm)	X, Y, Z: 60 (2,362)	
	Cutting feed rate	mm/min (ipm)	X, Y, Z: 1 to 60,000 (0.04 to 2,362)	
Motors	Spindle	kW (hp)	30/22 (40/30) (10 min/cont) [10,000 min ⁻¹ : 45/30 (60/40) (20 min · 60 %ED/cont), 12,000 min ⁻¹ : 45/30 (60/40) (10 min · 25 %ED/cont), High-torque spindle: 45/37 (60/50) (20 min/cont)]	26/18.5 (35/25) (10 min/cont) [20,000 min ⁻¹ : 30/22 (40/30) (10 min/cont)]
	Feed axes	kW (hp)	X: 4.6 (6.13), Y: 4.6 (6.13) × 2, Z: 5.2 (6.93)	
	Table indexing	kW (hp)	3.5 (4.67)	
ATC	Tool shank		MAS403 BT50 [CAT50, DIN50, HSK-A100]	HSK-A63 [MAS403 BT40, CAT40, DIN40] ^{*3}
	Pull stud		MAS2 [MAS1, CAT, DIN, JIS]	— [MAS2, MAS1, CAT, DIN, JIS] ^{*3}
	Magazine capacity	tools	60 [40 (chain magazine type)] [81, 111, 141, 171, 195, 225, 255, 285 (matrix magazine type)] [100, 150, 200, 240, 320, 400 (multiple magazine system)]	
	Max tool dia (w/o adjacent tool) ^{*4}	mm (in)	ø140 (5.51) / ø240 (9.45)	ø100 (3.94) / ø150 (5.91)
	Max tool length	mm (in)	450 (17.72) [600 ^{*5} , 630 ^{*6} (23.62, 24.80)]	
	Max tool mass	kg (lb)	25 (55)	10 (22)
	Tool selection		Memory random [fixed address for 81 or more tools]	
Machine size	Height	mm (in)	3,174 (124.96)	
	Floor space; width × depth	mm (in)	3,435 × 7,068 (135.24 × 278.27) ^{*7}	
	Mass	kg (lb)	25,000 (55,000) ^{*8}	
Controller			OSP-P500M	

[] : Option

*1. No. 40 spindle is option.

*2. Standard 2-pallet APC. Multi-pallet APC and FMS: ø1,000 × 1,000 mm, hydraulic fixtures (link): ø1,000 × 900 mm.

*3. Selectable for 15,000min⁻¹ spindle. (20,000min⁻¹ is HSK only.)

*4. Values differ with a matrix magazine. Please inquire.

*5. This is a special specification with matrix and multiple magazine specifications. (For multiple magazines, only the front row supports special maximum tool length.)

*6. Chain magazines.

*7. Off-machine chip discharge; hinge + scraper (with drum filter) (recommended). Depth with chip pan is 6,418mm.

*8. Workpieces and tools not included.

MA-600HⅢ Standard Specifications

Spindle speed	6,000 min ⁻¹ , 30/22 kW (10 min/cont)	Air filter and oiler	
ATC magazine capacity	60 tools	Telescopic cover	
Spindlehead cooling system		Hydraulic unit	
Simple ball-screw cooler	X-Y-Z axes	Automatic 1° indexing table	
Centralized lubrication	Oil level alarm and pressure alarm	2-pallet rotary-shuttle APC	Pallet top surface M16 tap
Coolant supply system	Tank: 1,144 L (Dirty tank: 1,018 L (effective: 696 L) Clean tank: 126 L Pump: 3.0 kW, 1.5 kW, 0.55 kW (50 Hz)/0.75 kW (60 Hz)	Full enclosure shielding	2-pallet pivoted type for APC
		Operation panel	15 inch
		ATC operation panel	For manual operation
		NC (OSP) control cabinet ventilation fan	
		Work lamp	LED
In-machine chip discharge	Hinge	Status indicator	3 phase C type
Chip pan for above		Foundation washers, jack bolts	
Thru-spindle coolant*	1.5 MPa	Slip stoppers and chemical anchors	
Suction of excess coolant in spindle		Tool release lever	
ATC air blower (blast)		Tapered bore cleaning bar	
Chip air blower (blast)	Nozzle type	Hand tools	
Coil conveyor under APC		Tool box	
In-machine chip washer		TAS-S	Thermo Active Stabilizer—Spindle
APC fork washer		TAS-C	Thermo Active Stabilizer—Construction

* Okuma pull stud required with thru-spindle coolant.

MA-600HⅢ Optional Specifications

Spindle speed *See p4 for details.	No. 50	50 to 10,000 min ⁻¹ , 45/30 kW	Oil mist lubricator	
	No. 40	50 to 12,000 min ⁻¹ , 45/30 kW	Chip air blower (blast)	Adapter
	HSK-A63	50 to 15,000 min ⁻¹ , 26/18.5 kW	Coolant system	Sludgeless Tank (recommended option)
High-torque spindle	No. 50	50 to 20,000 min ⁻¹ , 30/22 kW	Off-machine chip discharge (lift-up chip conveyor types)	Refer to Recommended chip conveyors.
Dual contact spindle ^{*1}	No. 50	50 to 6,000 min ⁻¹ , 45/37 kW, 1,071 N·m		
ATC magazine capacity (tools)	40 tools (chain magazine type) 81, 111, 141, 171, 195, 225, 255, 285 tools (matrix magazine type) 100, 150, 200, 240, 320, 400 tools (multiple magazine system)	HSK, BIG-PLUS®	Chip bucket for above	Height 700 mm, 1,000 mm
			Hydraulic oil cooler	
			Coolant heater / cooler	
			Auto tool length comp/ breakage detection	Touch sensor
AbsoScale detection	X-Y-Z axes, X-Y axes		Auto zero offset/auto gauging	Touch probe
Auto 0.001° indexing table	Built-in NC table		Tool life management	By hour meter
APC	Parallel shuttle: 6P, 10P, 12P		Turn-Cut	AbsoScale detection and ball-screw cooling required.
Auto pallet changer	Tower: 12P		Pull stud bolt shape	MAS1, CAT, DIN, JIS
FMS 2-pallet APC	Wing block type, Under-pallet fork type		Pull stud bolt	MAS1, MAS2, CAT, DIN, JIS
Pallet top surface configuration	T-slot, Inch specifications		2-sided tooling block	Height: 825 mm, Pitch: 125 mm
Spare pallets			4-sided tooling block	Height: 825 mm, Pitch: 125mm
Edge locator			Ball-screw cooler	X-Y-Z axes
Oil-hole coolant system	1.5 MPa		Recommended for die machining	AbsoScale detection (X-Y-Z axes) Hyper-Surface II DNC-DT, 0.1 μm control
Thru-spindle coolant ^{*2}	7.0 MPa, large flow 1.5 MPa, large flow 7.0 MPa			
Shower coolant	10 nozzles			
Work wash gun				

*1. Be sure to select this specification when BIG-PLUS® holder is used.

*2. Okuma pull stud required with thru-spindle coolant.