

## Machine Specifications

	Item	Unit	MA-500HII		MA-600HII	
			No. 50	No. 40*1	No. 50	No.40*1
Travels	X-axis travel (column left/right)	mm (in.)	700 (27.56)		1,000 (39.37)	
	Y-axis travel (spindle up/down)	mm (in.)	900 (35.43)			
	Z-axis travel (table front/back)	mm (in.)	780 (30.71)		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 850 (2.76 to 33.46)		70 to 1,070 (2.76 to 42.13)	
Pallet	Work area	mm (in.)	500 × 500 (19.69 × 19.69)		630 × 630 (24.80 × 24.80)	
	Max load	kg	800 [1,000]		1,200 [1,400]	
	Indexing angle	deg	1 [0.001]			
	Max workpiece dimensions	mm (in.)	ø800 × 1,000 (ø31.50 × 39.37)		ø1,000 × 1,000 (ø39.37 × 39.37)	
Spindle	Spindle speed	min <sup>-1</sup>	50 to 6,000 [50 to 6,000 (Super-heavy spindle), 50 to 12,000]	50 to 15,000, 50 to 20,000	50 to 6,000, (Super-heavy spindle), 50 to 12,000, 20,000]	50 to 15,000, 50 to 20,000
	Tapered bore		7/24 taper No. 50 [HSK-A100]	7/24 taper No. 40, HSK-A63*2	7/24 taper No. 50 [HSK-A100]*3	7/24 taper No. 40, HSK-A63*2
	Bearing dia	mm (in.)	ø100 (ø3.94)	ø70 (ø2.76)	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 (10 min/cont) *4	kW (hp)	30/22 [45/37*4, 37/26] (40/30 [60/50, 50/35])	26/18.5, 30/22 (35/25, 40/30)	30/22 [45/37*4, 37/26, 55/50*5] (40/30 [60/50, 50/35, 75/66])	26/18.5, 30/22 (35/25, 40/30)
	Feed axis	kW (hp)	X: 4.6 (6.13), Y: 4.6 (6.13) × 2, Z: 4.6 (6.13)		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 [HSK-A100]	MAS 403 BT40, HSK-A63*2	MAS403 BT50 [HSK-A100]*3
Pull stud			MAS-2 [-]			
Magazine capacity		tools	40 [60, 81, 111, 141, 171, 195, 225, 255, 285, 320, 400]			
Max tool dia (w/ adjacent) *6		mm (in.)	ø140 (5.51)	ø100 (3.94)	ø140 (5.51)	ø100 (3.94)
Max tool dia (w/o adjacent) *6		mm (in.)	ø240 (9.45)	ø150 (5.91)	ø240 (9.45)*7	ø150 (5.91)
Max tool length		mm (in.)	450 (17.72)	450 (17.72)	450 [600] (17.72 [23.62])	450 (17.72)
Max tool weight		kg (lb)	25 (55)	10 (22)	25 (55)	10 (22)
Tool selection			Memory random (Fixed with 81 or more tools)			
Machine size	Height	mm (in.)	3,174 (124.96)			
	Floor space; width x depth	mm (in.)	3,110 × 5,971 (122.44 × 235.08)		3,410 × 6,495 (134.25 × 255.71)	
	Weight	kg (lb)	21,500 (47,300)		24,500 (53,900)	
Controller		OSP-P300MA				

[ ]: Optional

\*1. No. 40 spindle is optional.

\*2. 20,000 min<sup>-1</sup> with HSK-A63 only

\*3. 20,000 min<sup>-1</sup> with HSK-A100 only

\*4. Super-heavy spindle motor rating is 20 min/cont (for heavy-duty cutting)

\*5. 20,000 min<sup>-1</sup> spindle motor rating is 30 min/cont

\*6. Values differ with a matrix magazine. Please inquire.

\*7. With MA-600HII 20,000 min<sup>-1</sup>, the maximum tool diameter is limited depending on the spindle speed used.

## Standard Specifications

Spindle speed	6,000 min <sup>-1</sup> (30/22 kW [10 min/cont])	Hydraulic unit	
ATC magazine capacity	40 tools	Automatic 1° indexing table	
Spindlehead cooling system		2-pallet rotary-shuttle APC	Pallet top surface M16 tap
Simple ball screw cooler	X-Z axes	Full enclosure shielding	2-pallet pivoted type for APC
Centralized lubrication	Oil level alarm and pressure alarm	Operation panel	
Coolant supply system	Tank 1,070 L (Effective: 520 L), pump 390 W (50 Hz), 620 W (60 Hz)	ATC operation panel	For manual operation
		NC (OSP) control cabinet ventilation fan	Heavy current systems
In-machine chip discharge	Hinge	Status indicator	3 phase C type
Chip pan for above		Foundation washers, jack bolts	
ATC air blower (blast)		Slip stoppers and chemical anchors	
Chip air blower (blast)	Nozzle type	Tool release lever	
Coil conveyor under APC		Tapered bore cleaning bar	
In-machine chip washer		Hand tools	
APC fork washer		Tool box	
Air filter and oiler			
Telescopic cover			

## Optional Specifications

Spindle speeds	50 to 12,000 min <sup>-1</sup> , 37/26 kW, No. 50	Chip air blower (blast)	Adapter
	50 to 15,000 min <sup>-1</sup> , 26/18.5 kW, No. 40	Off-machine chip discharge (Lift-up chip conveyor types)	Refer to Recommended chip conveyors on page 11.
	50 to 20,000 min <sup>-1</sup> , 30/22 kW, HSK-A63 only (MA-600HII) 20,000 min <sup>-1</sup> , 55/50 kW, HSK-A100 only	Chip bucket for above	Height 700 mm (27.56 in.), 1,000 mm (39.37 in.)
Super-heavy spindle*1	6,000 min <sup>-1</sup> , 45/37 kW, 1,071 N-m, No.50	Hydraulic oil cooler	
Dual contact spindle	HSK-A63, HSK-A100, BIG-PLUS®	Coolant heater / cooler	
ATC magazine capacity (tools)	60 tool (chain magazine type)	Auto tool length comp/ breakage detection	Touch sensor
	81, 111, 141, 171, 195, 225, 255, 285 tool (matrix magazine type) 320, 400 tool (multiple magazine system)	Auto zero offset/ auto gauging	Touch probe
AbsoScale detection	X-Y-Z axes, X-Y axes	Tool life management	By hour meter
Auto 0.001° indexing table	Built-in NC table	Turn-Cut	
APC	Multi-pallet APC 6, 10, 12	Pull stud bolt shape	MAS-1, CAT, DIN, JIS
FMS 2-pallet APC	Wing block type, Under-pallet fork type	Pull stud bolt	MAS-1, MAS-2, CAT, DIN, JIS
Pallet top surface configuration	T-slot	Standard T-column fixture	Height: 850/825 mm, Pitch: 100/125 mm (MA-500HII/MA-600HII)
Spare pallets		Standard square-column fixture	Height: 850/825 mm, Pitch: 100/125mm (MA-500HII/MA-600HII)
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) Super-NURBS DNC-DT, 0.1 μm control
Thru-spindle coolant*2	1.5 MPa, 7.0 MPa, large flow 1.5 MPa, large flow 7.0 MPa	TAS-S	Thermo Active Stabilizer—Spindle
Shower coolant	10 nozzles	TAS-C	Thermo Active Stabilizer—Construction
Work wash gun			
Oil mist lubricator			

\*1. For heavy-duty cutting \*2. Okuma pull studs required.

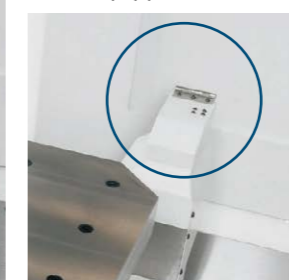
## Major options

- Auto tool length compensation/breakage detection



Measurement time

Probe type sensor  
Detection increment: 1 μm  
Auto-measure aligning air  
blower equipped



Non-measurement time

- Auto zero offset / Auto gauging



Optical signal messaging  
type touch probe  
Detection increment: 1 μm