Machine Specifications

	Item	Unit	MA-12500H	MA-12500H W *1
Travel	X-axis travel (table L/R)	mm (in.)	2,200 (86.61)	
	Y-axis travel (spindlehead vertical)	mm (in.)	1,600 (62.99)	1,475 (58.07)
	Z-axis travel distance (column front/back)	mm (in.)	1,650 (64.96)	
	W-axis travel distance	mm (in.)	–	500 (19.69)
	B axis (pallet swivel)	deg	±360	
	Pallet top to spindle centerline	mm (in.)	Tapping specs: 50 to 1,650 (1.97 to 64.96), [T-slot specs: 20 to 1,620 (0.79 to 63.78)]	Tapping specs: 50 to 1,525 (1.97 to 60.04), T-slot specs: 20 to 1,495 (0.79 to 58.86)
	Pallet centerline to spindle nose	mm (in.)	225 to 1,875 (8.86 to 73.82)	–
	Pallet centerline to W-axis spindle nose	mm (in.)	–	-275 to 1,875 (-10.83 to 73.82)
Pallet	Pallet dimensions	mm (in.)	□1,250 (49.21)	
	Max load capacity	kg (lb)	Tapping specs: 5,000 (11,000), [T-slot specs: 4,600 (10,120)]	
	Indexing angle	deg	0.001	
	Max workpiece dimensions	mm (in.)	Tapping specs: ø2,000 (78.74) × h1, 600 (62.99) [T-slot specs: ø2,000 (78.74) × h1, 570 (61.81)]	
Spindle	Spindle speed	min^{-1}	50 to 6,000 [10 to 4,500 <gear spindle>] [50 to 12,000 <integral motor/spindle>]	3,000 <gear spindle>
	Spindle speed ranges		Stepless [2 <gear spindle>, Stepless <integral motor/spindle>]	
	Tapered bore		7/24 taper No. 50 [HSK-100, HSK-A125]	
	Bearing dia (front bearing)	mm (in.)	ø100 (3.94) [ø110 (4.33) <gear spindle>]	ø200 (7.87)
	W-axis feed spindle diameter (Quill dia)	mm (in.)	–	ø130 (5.12)
Feed	Rapid traverse	m/min (ipm)	X-Y-Z: 42 (1,654)	X-Y-Z: 42 (1,654), W: 8 (315)
		deg/min	B: 3,240	
	Cutting feedrate	mm/min (ipm)	X-Y-Z: 1 to 42,000 (0.04 to 1,654)	
		deg/min	B: 3,240	
Motors	Spindle drive	kW (hp)	45/37 (60/50) (20 min/cont) [40/37/30 (55/50/40) (15 min/30 min/cont) <gear spindle>] [37/26 (50/35) (10 min/cont) <integral motor/spindle>]	37/30 (50/40) (30 min/cont) <gear spindle>
	Feed axes	kW (hp)	X-Z: 5.2 (7) × 2, Y: 5.1 (7) × 2, B: 4.6 (6) × 2	X-Z: 5.2 (7) ×2, Y: 5.1 (7) ×2, B: 4.6 (6) ×2, W: 3.5 (4.7)
ATC	Tool capacity	tools	[81, 129, 177]	
	Tool shank		MAS BT50 [CAT No. 50, DIN No. 50, HSK-A100, HSK-A125*2]	
	Pull stud		MAS-2 [MAS-1, CAT, CAT Special, DIN, JIS]	
	Max tool dia (w/ adjacent tool)	mm (in.)	ø130 (5.12)	
	Max tool dia (w/o adjacent tool)	mm (in.)	ø315 (12.40)	
	Max tool length	mm (in.)	600 (23.62)	
	Max tool weight	kg (lb)	30 (66)	
	Max tool moment	N-m (ft-lbf)	37 (27)	
	Tool selection		Fixed address	
APC	No. of pallets		2 [6]	
	Pallet change system		2-pallet parallel shuttle	
Machine size	Height	mm (in.)	3,781 (148.86)	
	Floor space W x D	mm (in.)	6,880 × 12,512 (270.87 × 492.60) (81-tool ATC magazine), × 13,214 (520.24) (129-tool ATC magazine), × 14,137 (556.57) (177-tool ATC magazine)	
	Weight	kg (lb)	63,100 (138,820) (81-tool ATC magazine), 63,700 (140,140) (129-tool ATC magazine), 64,000 (140,800) (177-tool ATC magazine)	
CNC			OSP-P300M	

[ ] Optional *1. W-axis specs are Optional. *2. HSK-A125 shank not available for 6,000 and 12,000 min^{-1} spindles.

Standard Specifications

Spindle speed	6,000 min^{-1} (45/37 kW [20 min/cont])	2-pallet parallel shuttle APC	Pallet top: M20 tap
Spindle/spindlehead cooler	Oil controller	Full enclosure shielding	
Ball screw cooler	X-Y-Z axes	Operation panel	
B axis cooler	Oil controller	Operator platform	
Centralized lube auto unit	With oil level and pressure alarms	ATC manual operation panel	
Coolant system	Tank: 1,400 L (Effective 1,000 L)	Work lamp	LED
	Pump: 555/885 W (50/60Hz)	Status indicator	3-color C type
In-machine chip discharge	Chip conveyor below X-axis telescopic cover	Air filter and oiler	
	Center trough chip conveyor	Hydraulic unit	
In-machine chip washer	1,100 W	Foundation blocks, jack bolts	
ATC air blower (blast)		Tool release lever	
Chip air blower (blast)	Nozzle	Tapered bore cleaning bar	
Table washer		Hand tools	
Telescopic cover	And in-machine washer	Tool box	
Auto 0.001° indexing table	Built-in NC table	Thermo Active Stabilizer—Spindle	TAS-S

Optional Specifications

Spindle speed	4,500 min^{-1}, 40/37/30 kW, No. 50*1 12,000 min^{-1}, 37/26 kW, No. 50*2	Off machine chip discharge	Drum filter type lift-up conveyor Mosnic RDF
Spindle speed W-axis	3,000 min^{-1}, 37/30 kW (Gear spindle)	Chip bucket for above	Height 700 mm, 1,000 mm
Dual contact spindle	HSK, BIG-PLUS®	Hydraulic unit cooler	
ATC tool magazine capacity	81, 129, 177 tools (matrix)	Coolant heater/cooler	
AbsoScale detection	X, Y, Z axes	ATL*4 comp/breakage detect	Laser sensor
Automatic pallet changer	FMS	Auto zero offset/gauging	Touch probe
Pallet upper surface shape	T groove specs	In-magazine tool breakage detection	Touch sensor
Spare pallet		Tool life management	Time counter, etc.
Edge locator		Operation panel	Link arm type
Oil-hole coolant system	1.5 MPa	Pull stud shape	MAS-1, CAT, DIN, JIS
Thru-spindle coolant*3	1.5, 7.0 MPa Large flow specs: 1.5, 7.0 MPa	Pull studs	MAS-2, MAS-1, CAT, DIN, JIS
		Machine anchoring	Chemical anchors, foundation bolts
Shower coolant system		B-axis hydraulic clamp	
Workpiece washing gun		High-precision B-axis indexing	
Chip air blower (blast)	Adapter type	Thermo Active Stabilizer—Construction	TAS-C

*1. Gear spindle *2. Integral motor/spindle *3. Okuma pull stud required *4. ATL: auto tool length

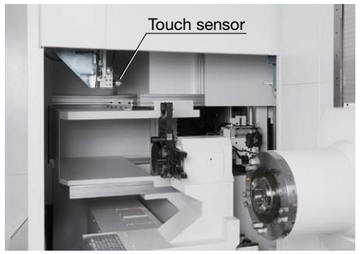
Main special specifications

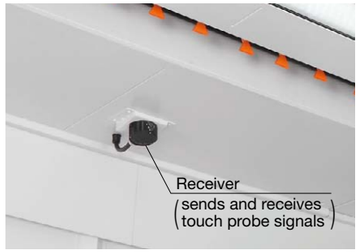
● Shower coolant, coolant nozzle

● Auto tool length compensation, breakage detection (laser sensor)

● Auto zero offset, auto gauging (wireless touch probe)

● In-magazine tool breakage detection





Machine tool idling stop

ECO Idling Stop

ECO suite

Only the necessary units run

Accuracy ensured, cooler off

ECO Idling Stop

Intelligent energy-saving function with the Thermo-Friendly Concept.
The machine itself determines whether or not cooling is needed and cooler idling is stopped with no loss to accuracy. (Standard application on machines with Thermo-Active Stabilizer—Spindle)

On-the-spot check of energy savings

ECO Power Monitor

Power is shown individually for spindle, feed axes, and auxiliaries on the OSP operation screen. The energy-saving benefits from auxiliary equipment stopped with ECO Idling Stop can be confirmed on the spot.

ECO suite benefits

Electricity consumption during non-machining time greatly reduced with “ECO Idling Stop”, which shuts down each piece of auxiliary equipment not in use.

ECO suite provides a suite of energy-saving functions that can be used on machines

- **“ECO Idling Stop”** for operation of necessary units only
- **“ECO Power Monitor”** for visual graphics of power
- Intermittent/continuous operation of chip conveyor and mist collector during operation — **“ECO Operation”** (Optional)
- Energy-saving hydraulic unit using servo control technology — **“ECO Hydraulics”** (Optional)