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# Horizontal Machining Center TMH-400/500

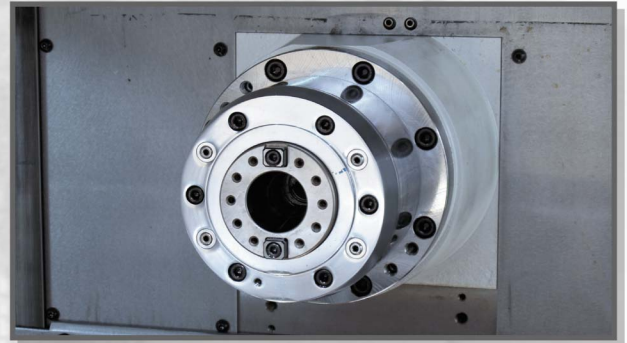
High ■ Quality ■ Precision ■ Efficiency ■ Economy



# Horizontal Machining Center **TMH-400**

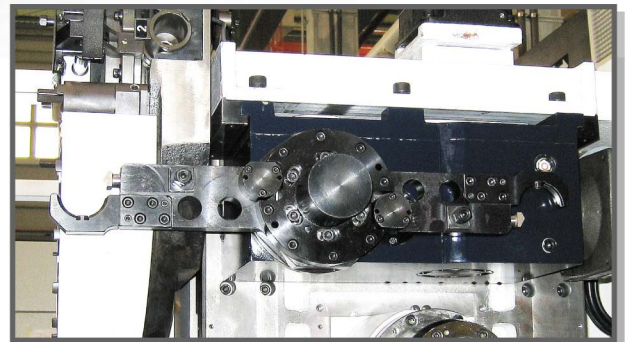


## ■ Spindle



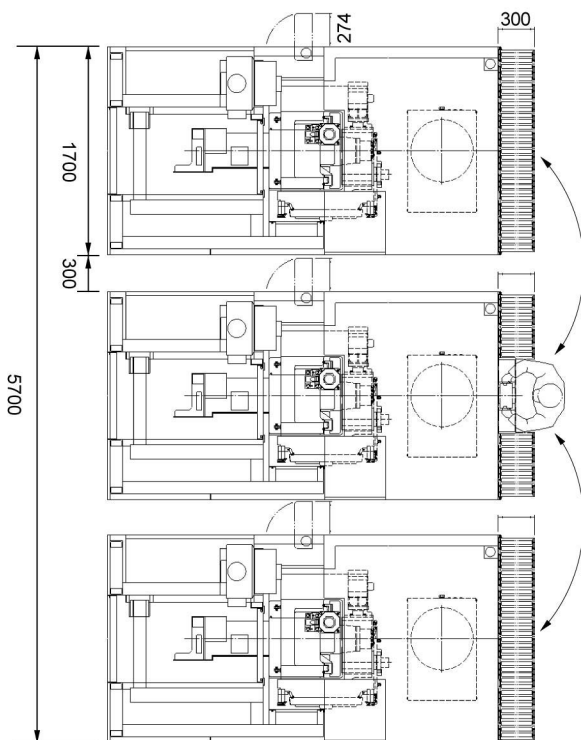
- Spindle Taper : 7/24 Taper No.40
- Spindle Speed : 8000 rpm  
(Opt. 10000/12000/15000 rpm)
- Spindle Motor : 9/7.5 kw (Opt. 11/7.5,18.5/15 kw)

## ■ ATC

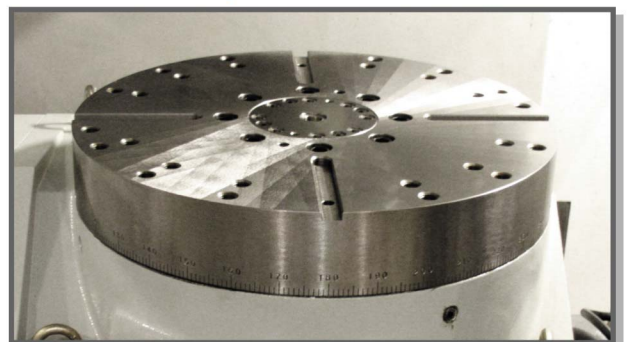


- Tool Capacity : 24 Tools (Opt. 30 Tools)
- Disc type magazine with changing arm.
- Radom tool selection reduces tool changing time.

## ■ Multi-machine Line



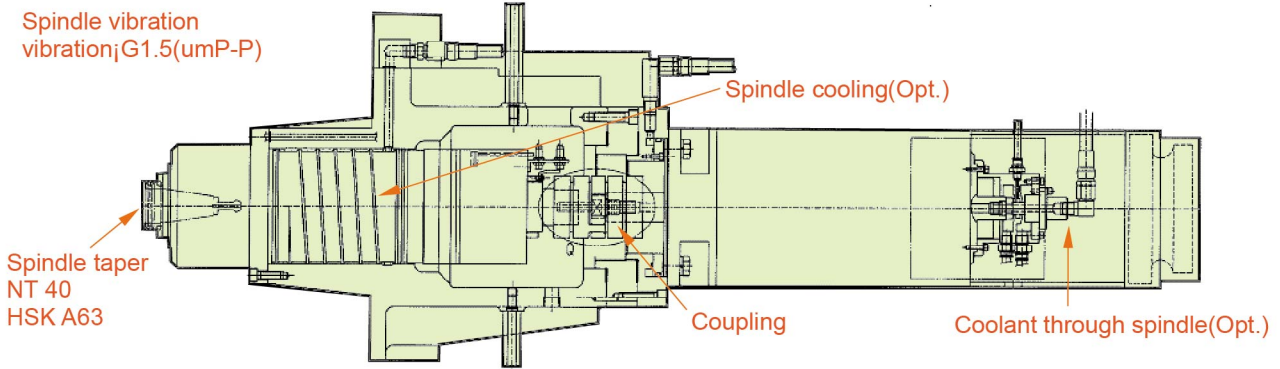
## ■ NC Rotary Table



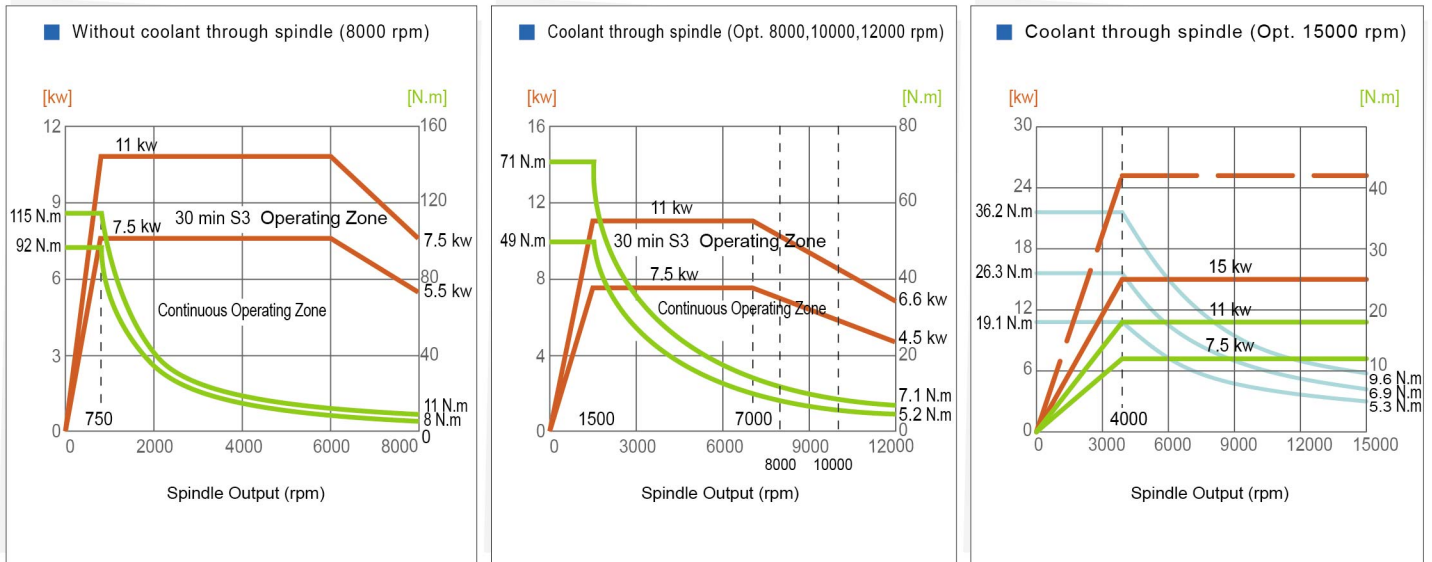
- $\varnothing 400$  mm B-Axis  $0.001^\circ$  (Opt.  $1^\circ$ )
- 4+4 in/out hydraulic manifold & 1 air hole.
- Available with hydraulic jig & fixture.
- Possible to intall 4th/5th axis tilting rotary table.

## Direct drive spindle

- Spindle and motor are coupled directly.
- Spindle speed 8000rpm(Opt. 10000 & 12000 & 15000 rpm )



## TMH-400/Spindle Output and Torque Chart



## Real Cutting Data

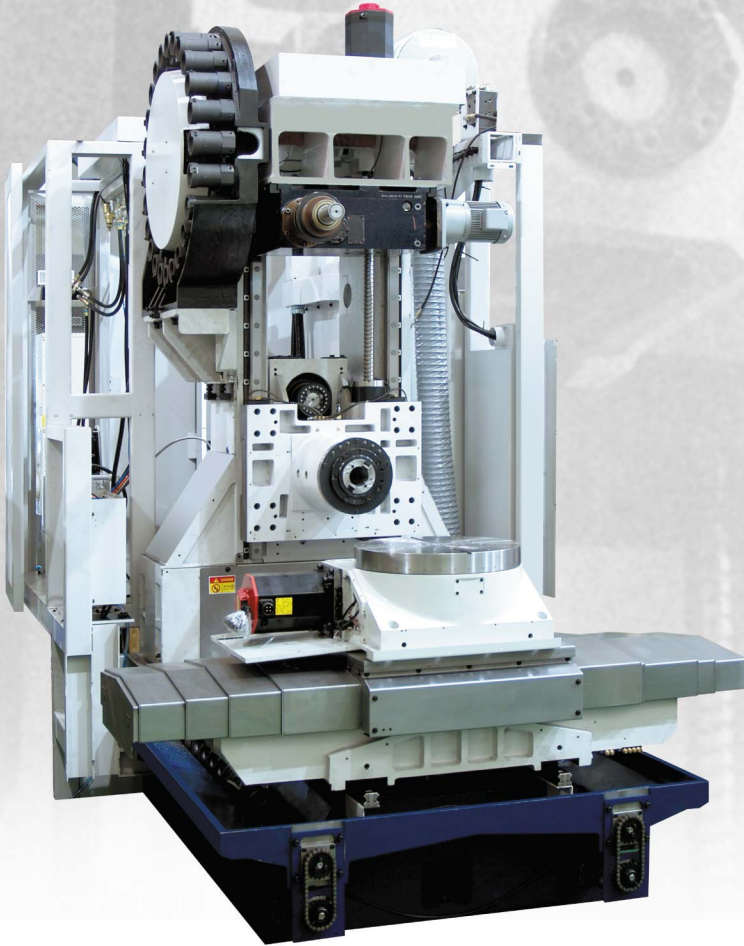
### High Speed

• Rapid Traverse (X/Y/Z)	36 m/min.
• Cutting Feedrate (Max.)	10 m/min.
• ATC (T-T)*1	2.0 sec.
(C-C)	5.4 sec.
• Spindle Start-up (0→Max.)	2.3 sec.
• Spindle Orientation (1000 min <sup>-1</sup> →0)	0.2 sec.
• Table Indexing 90° (Max. Loaded)	1.4 sec.

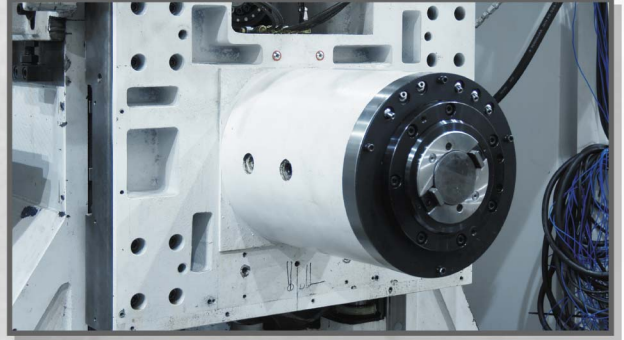
### Cutting Capabilities

Cutter	Face Milling	End Milling	Drilling (Dia.xFeed)	Tapping Large(Steel)
Material				
Steel (S50C)	273 cc	252 cc	∅32 mmx0.2mm	M24 x P3
Aluminum (A 5052)	1024 cc	787.5 cc	—	—

# Horizontal Machining Center **TMH-500**

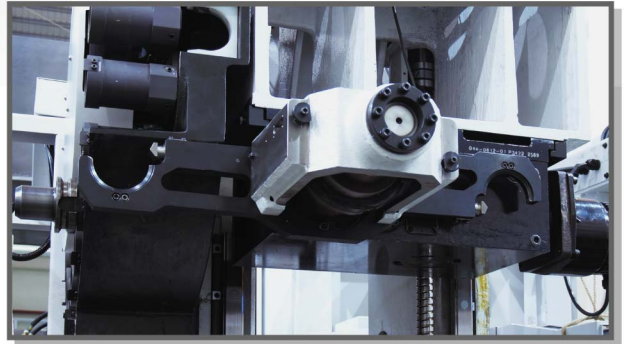


## ■ Spindle



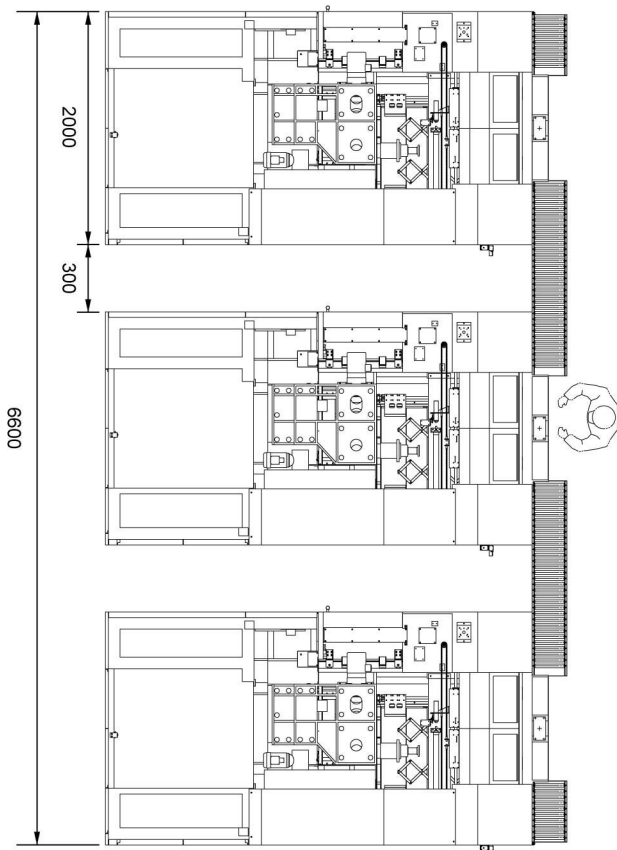
- Spindle Taper : 7/24 Taper No.50
- Spindle Speed : 3500 rpm (Opt.6000 rpm)
- Spindle Motor : 15/11 kw

## ■ ATC

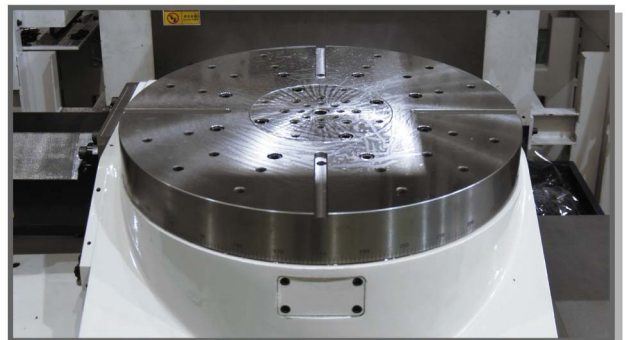


- Tool Capacity : 24 Tools
- Disc type magazine with changing arm.
- Radom tool selection reduces tool changing time.

## ■ Multi-machine Line



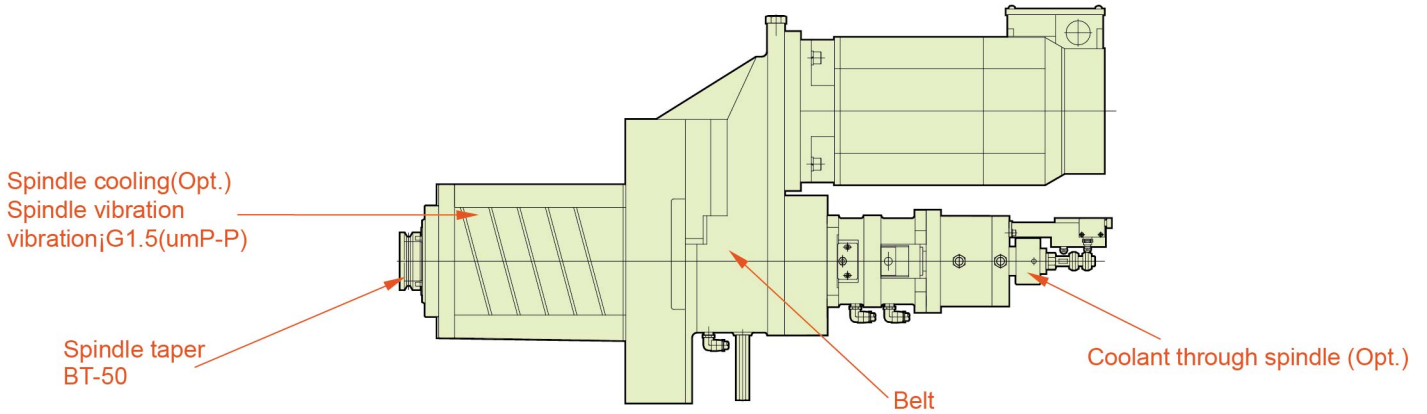
## ■ NC Rotary Table



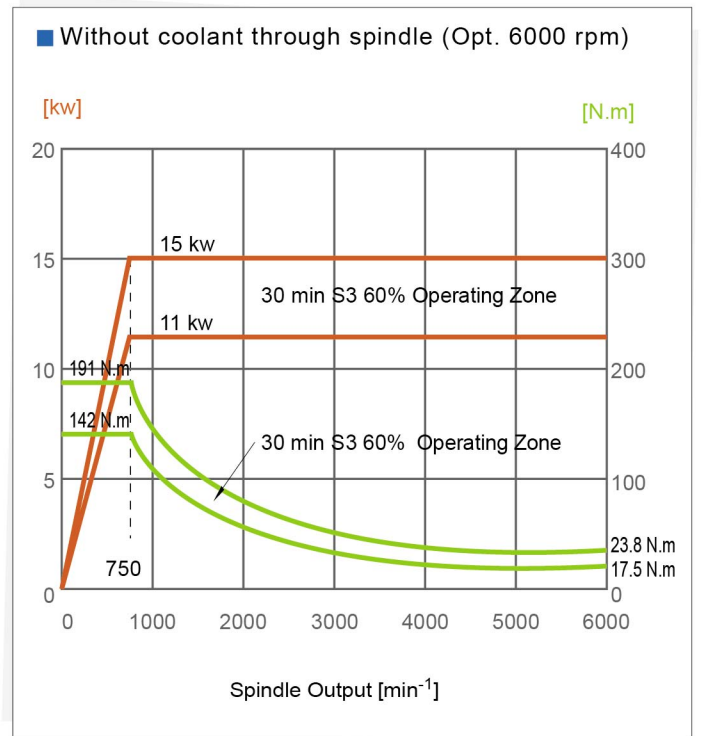
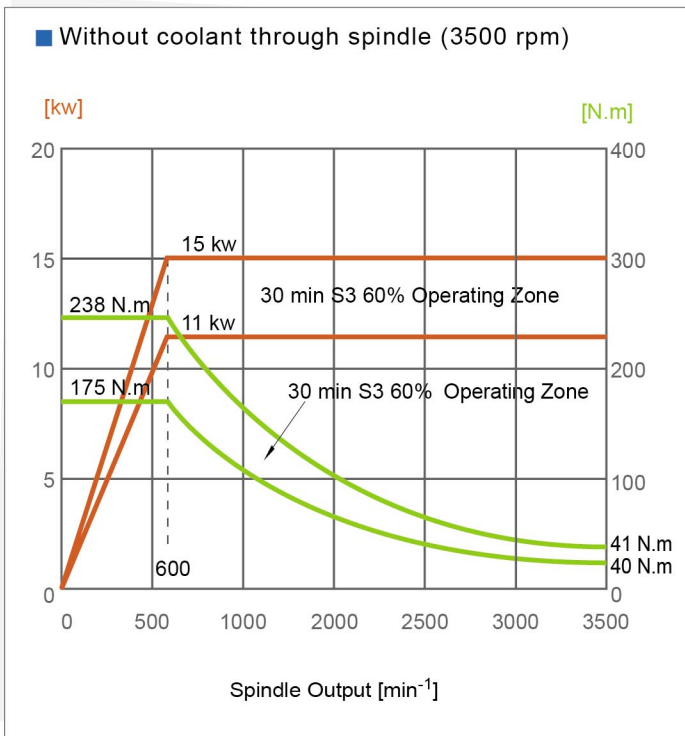
- $\varnothing 500$  mm  $1^\circ$  B-Axis (Opt. 0.001 $^\circ$ )
- 4+4 in/out hydraulic manifold & 1 air hole.
- Available with hydraulic jig & fixture.
- Possible to intall 4th/5th axis tilting rotary table.

# Belt Type Spindle

- Spindle and motor can connect by timing belt.
- Spindle speed 3500 rpm. (Opt. 6000 rpm)



## TMH-500/Spindle Output and Torque Chart



## Real Cutting Data

High Speed	
• Rapid Traverse(X/Y/Z)	48 m/min.
• Cutting Feedrate(Max.)	10 m/min.
• ATC(T-T)*1 (C-C)	3.1 sec. 7 sec.
• Spindle Start-up (0→Max.)	1.66 sec.
• Spindle Orientation (1000 min <sup>-1</sup> →0)	0.38 sec.
• Table Indexing 90° (Max. Loaded)	1.5 sec.

Cutting Capabilities				
Cutter	Face Milling Ø125	End Milling Ø80	Drilling (Dia.xFeed)	Tapping Large(Steel)
Material				
Steel (S50C)	300 cc	415 cc	Ø40 mmx0.3 mm	36 mmx P4
Aluminum (A 5052)	1160 cc	1152 cc	—	—

# Advantages of Machine

## Advantages of Production Line

- Simple structure, easy to maintain.
- Chip conveyor can adjust to rear side according to production space.
- Various options available: Carrier, Area Sensor, Start Button, Oil mist collector. (Opt.)

## Enhance Precision: Spindle Cooler (Opt.)

- Machine temperature coherent control.
- Reduce heat transfer from motors to the machine body.
- Reduce heat deformation.
- Strongly recommended using with spindle more than 10000 rpm.

## High Rigidity, High Precision, High Efficiency

- Coolant through spindle for easy chip flow.
- High efficiency cutting performance.
- Double chip augers.
- High speed tool change, 24-pc random selection tool magazine.

## High Precision Linear Guides

Big diameter ball screws and pre-loaded mechanism to prevent heat expansion. Direct couplings for servo motors and ball screws ensure transmission precision and avoid clamping error.

## Standard & Optional Accessories



Chip Augers



Overhead Coolant Flushing



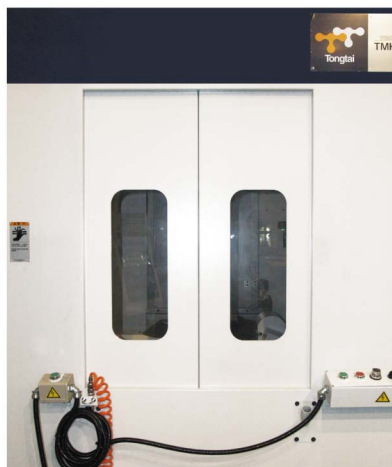
Light Curtain (Opt.)



Spindle Cooler (Opt.)



Swivel Control Panel



Auto Door



Motor for Spindle Central Coolant (Opt.)

# TMH-400/500 Standard Specifications

Item	Specification	Unit	TMH-400	TMH-500
TABLE	Table Size	mm	Ø400	Ø500
	Max. Workpiece Dimension(Dia. x Height)	mm	Ø510xH630	Ø700xH700
	Max. Load Capacity(Workpiece Load)	kg	350	700
	Index Positioning	deg	0.001°(Opt. 1°)	1°(Opt. 0.001°)
CAPACITY	X/Y/Z-Axis Stroke	mm	510/510/510	710/600/600
	Distance from Spindle Center to Table Top	mm	180-690	140-740
	Distance from Spindle Nose to Table Center	mm	50-560	70-670
	Table Height from Floor	mm	1150	1185
SPINDLE	Spindle Taper		7/24 Taper No.40	7/24 Taper No.50 (Opt. No.40)
	Spindle Speed	rpm	8000 (Opt. 10000/12000/15000)	3500 (Opt. 6000)
	Spindle Motor (50% ED)	kw	11/7.5	15/11
FEED	Rapid Traverse	m/min	36/36/36	48/48/48
	Cutting Feedrate	mm/min	1-10000	1-10000
ATC	Tool Shank		BT 40	BT 50
	Tool Capacity	pc	24 (Opt. 30)	24
	Max. Tool Diameter	mm	Ø89 (Opt. Ø75 30Tools)	Ø110
	Max. Tool Diameter(w/o Adjacent Tool)	mm	Ø140 (Opt. Ø125 30Tools)	Ø200
	Max. Tool Length	mm	300	350
	Max. Tool Weight	kg	7	7
MACHINE	L x W x H	mm	3200x1700x2790	3645x2000x3120
	Weight	kg	6500	9500

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## Optional Accessories

●Standard / ○Option

Item	Specification	TMH-400 (BT-40)	TMH-500 (BT-50)	ItemS	Specification	TMH-400 (BT-40)	TMH-500 (BT-50)	Item	Specification	TMH-400 (BT-40)	TMH-500 (BT-50)
Spindle Taper	BT40	●	-		Ø400 Round Pallet 1°	○	-	Other	Transformer	○	○
	BT50	-	●		Ø500 Round Pallet 0.001°	-	○		Stabilizer	○	○
	CAT 40	○	-		Ø500 Round Pallet 1°	-	●		Manual Pulse Generator	●	●
	CAT 50	-	○	Safety	CE	○	○		Linear Scale<Heidenhain>	○	○
	BBT 40	○	-		Regulations	EMC	○		○	Spindle Cooler	○
	BBT 50	-	○	Controller	FANUC 0i-MD	●	●		Auto Tool Length Detector & Tool Breakage Detector	○	○
	HSK-A63	○	-		Controller	FANUC 31i	○		○	Spindle Speed Meter(Outbound)	○
	HSK-A100	-	○	Coolant System	Coolant Gun	○	○		Spindle Load Meter(Outbound)	●	●
Spindle Speed	3500	-	●		Air Gun	○	○	Single-Color Warning Light	●	●	
	6000	-	○		Overhead Coolant	●	●	3-Color Warning Light	○	○	
	8000	●	-		Oil Skimmer	○	○	Auto Power Off Function	○	○	
	10000	○	-		Oil Mist Collector	○	○	Work Light	●	●	
	12000	○	-		Chip Auger × 2	●	●	Workpiece Counter	●	●	
	15000	○	-	Chip Conveyor	Scraper Type	●	●	Autodoor+Interlock	●	●	
CTS	A Type	○	○		Drum Type with Filter	○	○	Air Conditioner for Electrical Cabinet	○	○	
	ATC	24 Tools	●		●	Chain Type	○	○	Tool Life Management	○	○
30 Tools		○	-	Magnetic Scraper Type	○	○	Graphic Display Function	○	○		
B-Axis	Ø400 Round Pallet 0.001°	●	-	Chip Trolley	○	○	Big Dia. Tool Function(2 pcs)	○	○		

Item	Specification
Control axis	4 Axes
Parts program storage length	640 M
Setting/display unit	8.4" color LCD/MDI
Graphic function	Standard
Servo waveform display	Standard
HRV control	Standard
Inch/metric conversion	Standard
Stored stroke check	Standard
Stored pitch error compensation	Standard
Manual handle feed	Standard
Positioning	G00
Single direction positioning	G60
Linear interpolation	G01
Circular interpolation	G02/G03
Dwell	G04
Cylindrical interpolation	Standard
Threading, synchronous cutting	Standard
Advanced preview control	Standard
Max. programmable dimensions	8 digits
Program number	04
Polar coordinate command	Standard

Item	Specification
Workpiece coordinate system	G54-G59
Additional of workpiece coordinate system	48 pairs
Programmable data input	G10
Custom macro B	Standard
Canned cycles for drilling	Standard
Automatic corner override	Standard
Automatic corner deceleration	Standard
Scaling	Standard
Coordinate system rotation	Standard
Programmable mirror image	Standard
Rigid tapping	Standard
Tool function	Standard
Tool offset pairs	6 digits - 400 sets
Tool offset memory C	Standard
Tool life management	Standard
Number of registerable programs	400
Background editing	Standard
Parts count display	Standard
Multi-language display	English / Japan / German / French / Italian / Chinese / Spanish / Korean

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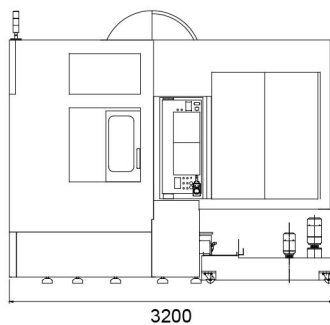
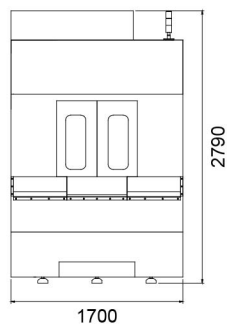
## Machine Dimensions

Unit : mm

### TMH-400

■ Front view

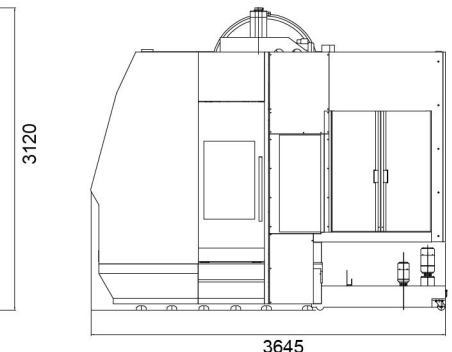
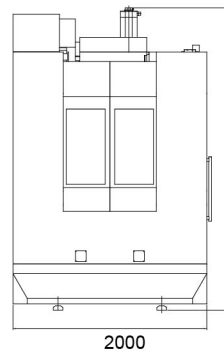
■ Side view



### TMH-500

■ Front view

■ Side view



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