

## Machine Specifications :

		HT-400	HT-500	HT-630	HT-800
<b>TRAVEL</b>					
X axis travel	mm	620	620	1050	1400
Y axis travel	mm	560	600	900	1200
Z axis travel	mm	630	565	1000	1350
Distance between spindle nose to table center	mm	100 ~ 730	100 ~ 665	150 ~ 1150	300 ~ 1650
Distance between spindle center to table surface	mm	80 ~ 640	65 ~ 665	100 ~ 1000	100 ~ 1300
<b>SPINDLE</b>					
Max. spindle speed	rpm	Direct driven 10000rpm (Opt. 15000-20000 rpm)		Direct driven 10000rpm (Bulit-in)	
Spindle motor power	kw	15 / 18.5		22 / 26	
Spindle taper		BT40		BT50	
The diameter of bearing	mm	70		100	
<b>TABLE</b>					
Table dimension	mm	400 x 400	500 x 500	630 x 630	800 x 800
Quantity of table		2	2	2	2
Indexing degree		1°(0.001° opt.)	1°(0.001° opt.)	1°(0.001° opt.)	1°(0.001° opt.)
Max. swing and height	mm	Ø630 x 700	Ø700 x 690	Ø1050 x 1000	Ø1450 x 1450
Pallet change time	sec	10	10	12	12
T-slot (width x T x gap)	mm	24-M16 x P2 x 80	24-M16 x P2 x 100	24-M16 x P2 x 125	24-M16 x P2 x 160
Load capacity	kgs	400	500	1500	2000
<b>FEED RATE</b>					
Rapid traverse	m/min	48 / 36 / 48		36 / 36 / 36	
Cutting feed rate	m/min	1 ~ 10		1 ~ 10	
Feed motor X / Y / Z axes	kw	3 x 2 / 7.0 / 4.0		4.0 x 2 / 6.0 / 6.0	
Feed motor B axis	kw	1.6 ( 3.0 opt. )		4	7
<b>ATC</b>					
Tool change type		Arm type		Arm type	
Tool capacity	set	40 (60 / 90 / 120 opt.)		60 (90 / 120 opt.)	
Max. tool weight	kgs	7		25	
Max. tool length	mm	300		450	
Max. tool diameter	mm	80 / 150		125 / 250	
Tool change time (T-T)	sec	5.5		8	
<b>OTHER</b>					
Compressed air supply	kgs/cm <sup>2</sup>	6	6	6	6
Floor space (L x W x H)	mm	4287 x 2805 x 2780	4330 x 2847 x 2780	7750 x 5550 x 3400	8350 x 5900 x 3270
Machine net weight	kgs	14060	14360	22000	24000
Machine gross weight	kgs	14560	14860	23000	25000

•L&W Machine Tools, Inc. reserves the right to alter any mechanical specification without prior notice in the interests of product development.

## L&W MACHINE TOOLS, INC.

Factory: No. 53, Ho Tso St., Feng Yuan, Taiwan  
 Export Office: 9F-8, No.62, Ta Ya Road, Taichung, Taiwan  
 Tel : +886-4-2201-4701 Fax: +886-4-2203-6013 • 2207-0371  
<http://www.lw-machinetools.com> • E-mail: lwmachin@ms31.hinet.net

# L&W MACHINE



# HT SERIES

Model: 400 / 500 / 630 / 800

Horizontal Machining Center with  
Auto Pallet Changer



## Great Mechanical structure Horizontal Machining Center

The HT series meets all of today's market needs for high precision in the high-speed continuous machining, a wide range of automation application and machining of any material, space saving, easy chip removal with advanced technology.

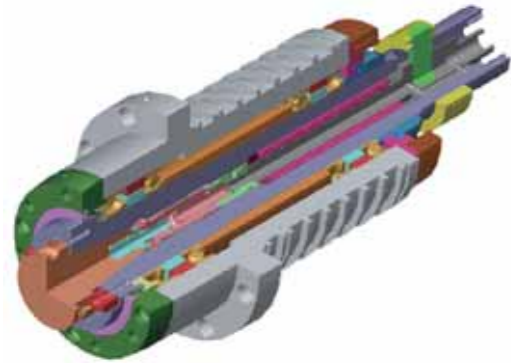


**HT** SERIES  
Model: 400 / 500 / 630 / 800



# High Speed Spindle

High speed and precision with advanced technology

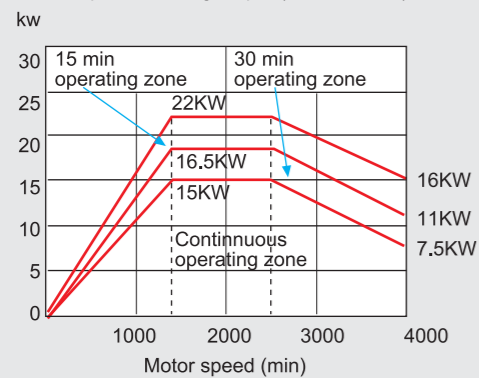


The high speed 10,000 rpm 40/50 taper spindle is a true cartridge type unit supported by four precision class high speed bearings which are permanently greased and lubricated. The spindle is driven by a high torque 15/18.5 kW A.C motor delivering an impressive 301.8N.m. (HT-400 /HT-500)

## Spindle power - torque diagram(BT-40 for HT-400/ HT-500)

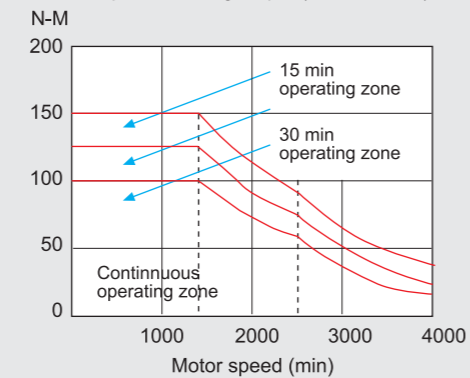
### • Standard 10,000rpm (15/18.5kW)

Low-speed winding output (Y connection)

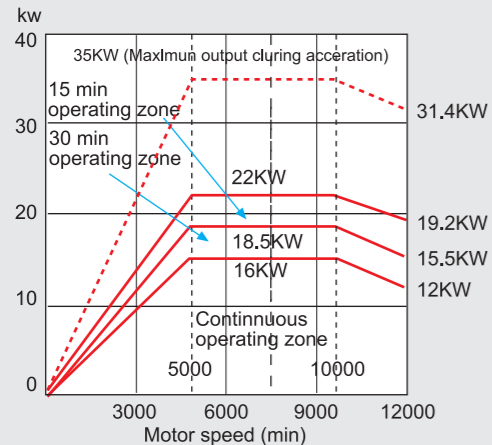


### • Optional 12,000rpm (15/18.5kW)

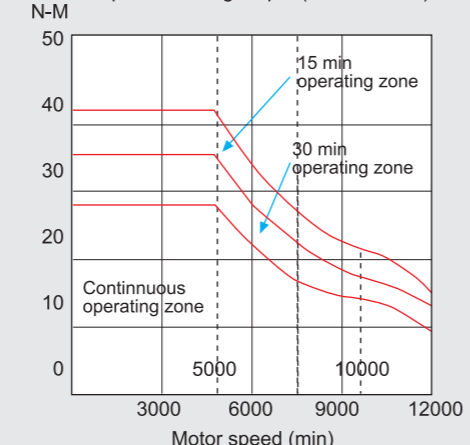
Low-speed winding output (Y connection)



High-speed winding output (Y connection)



Low-speed winding output (Y connection)



## Tool clamping force



**BT-40**  
8,000 - 10,000 N  
(High / Low speed)

**BT-50**  
18,000 - 20,000 N  
(High / Low speed)



## Oil cooler

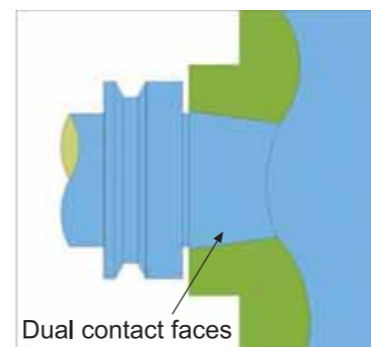
The refrigerated cooling system maintains a uniform spindle temperature required for high accuracy and extended production. Thermo sensors regulate the temperature of the oil which is circulated through oil jackets around the spindle.



# Variable Spindle

## Dual contact system (Big plus: Opt.)

The dual contact system offers simultaneous dual contact between the machine spindle face and tool holder flange face, as well as the machine spindle taper and long tool holder taper shank. This system is based on the most currently available standards for BT, DIN and CAT flange tooling.



- Higher rigidity
- Improved ATC repeatability, surface finish and higher precision machine
- Extended tool life

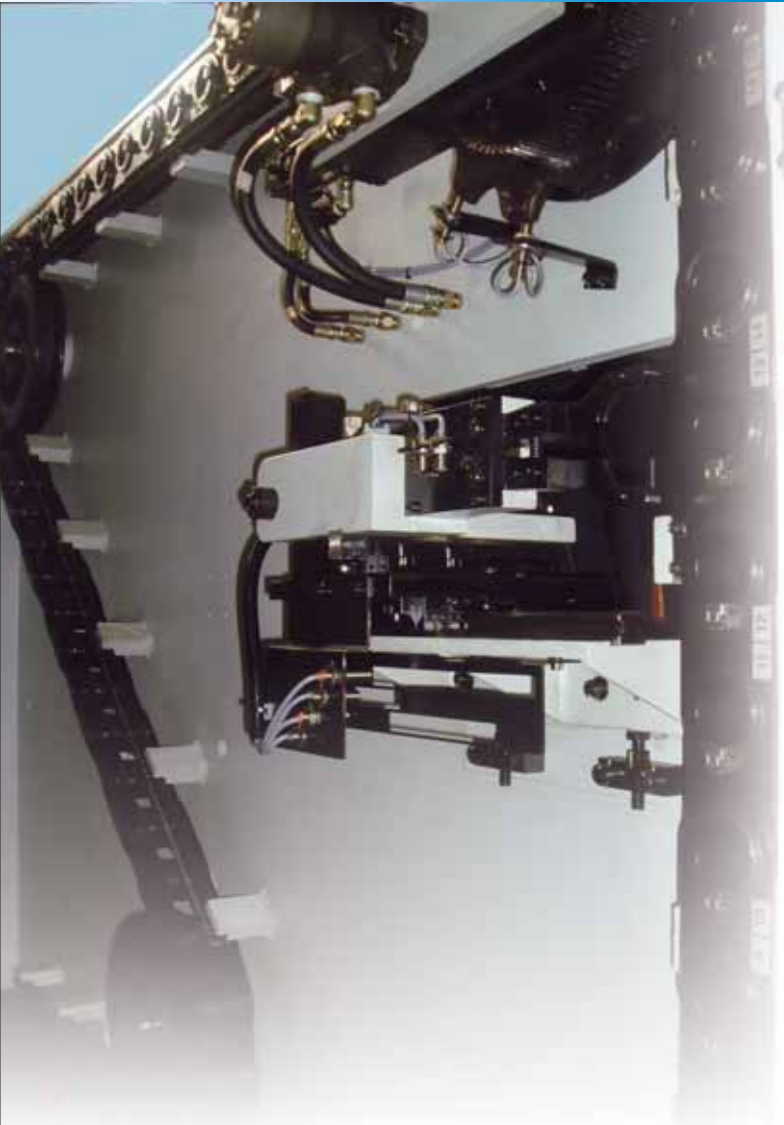
## HSK Spindle(Opt.)

The HSK shank system with two restrained faces simultaneously couples the taper portion of the shank and the flange end face. The hollow 1/10 taper changes flexibly while the flange end face fit tightly to the spindle nose.



- Improved high speed and heavy duty cutting performance
- Improved machining accuracy

## Tool Magazine

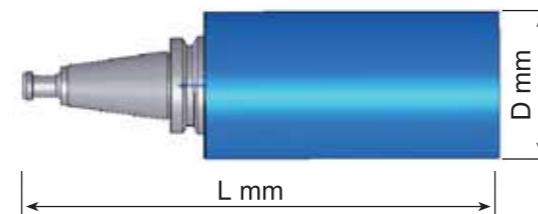


Tool storage capacity:

**40 tools** {Opt: 60/ 90/120}

The ATC is composed of tool magazine and change arm. The tools are selected by a fixed address method that follows the shorter path. All tools are returned to the pots from which they were originally taken so that collision problems involving large-sized tools need to be considered only once when they are first mounted.

### Maximum Tool Size



### HT-400/500 (BT40)

Max. tool diameter:

**Ø80mm** (Continuous)

**Ø150mm** (Adjacent ports are empty)

Max. tool length: **300mm**

Max. tool weight: **7kg**

### HT-630/800 (BT-50)

Max. tool diameter:

**Ø125mm** (Continuous)

**Ø250mm** (Adjacent ports are empty)

Max. tool length: **450mm**

Max. tool weight: **25kg**

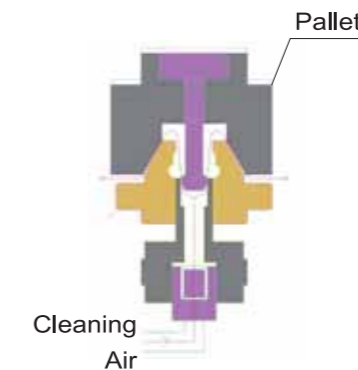
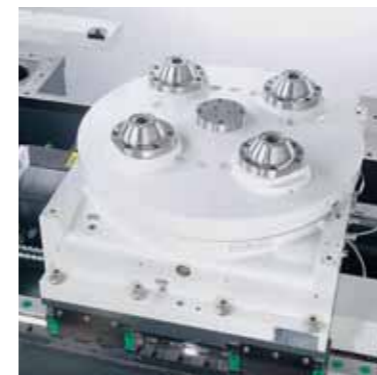
## Automatic Pallet Changer



HT series are equipped with rotary shuttle type APC (Automatic Pallet Changer) as a standard feature, it provides high reliability and wide working area for easy setup. This system can withstand high thrusts and cutting forces with no dislocation or movement.

An air blast cleans each cone and mating taper during pallet change.

### Pallet change time



**10 sec.** (HT-400 / 500)

**12 sec.** (HT-630 / 800)

The possibility that chips might degrade the meshing accuracy of the pallet positioning mechanism increases at higher machining speeds. On the HT series strong jets of air are discharged from the tapered cones when a pallet is changed to clean any chips from the cones and assure accurate pallet positioning.

### Table



Indexing angle: **1°** (Opt 0.001°, 5°)

**Table indexing time.** (Z axis rotates 180°)

HT-400 : **15 sec.**

HT-500 : **17 sec.**

HT-630 : **20 sec.**

HT-800 : **25 sec.**

## Rigid Structure Bed and Column

### Twin drive system

The X-axis twin drive system has been employed to enable smooth drive. The **box-in-box** design gives a rigid structure for saddle and column.

### Travel axes (X/Y/Z)

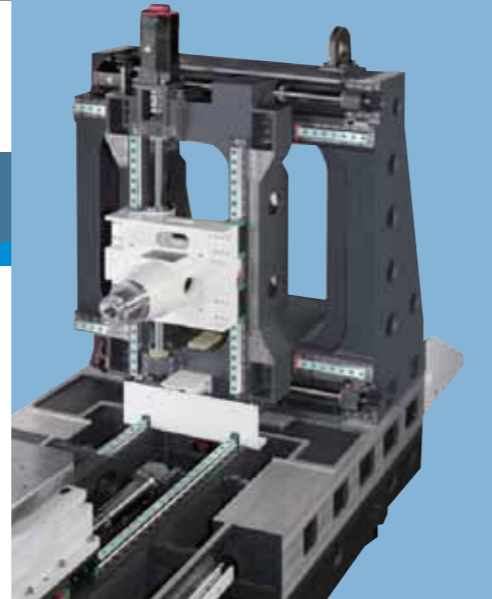
The machine is designed to build rigidity into a stable body. The construction of the machine was thoroughly examined from the stage of basic design to ensure consistent high-speed and high-accuracy operation. The deformation of the bed when subject to a load at the center was simulated to secure high level rigidity against bending. The HT series has a design with a basic structure using FEM advanced technology.

HT-400 **620/560/630** mm

HT-500 **620/600/565** mm

HT-630 **1050/900/1000** mm

HT-800 **1400/1200/1350** mm

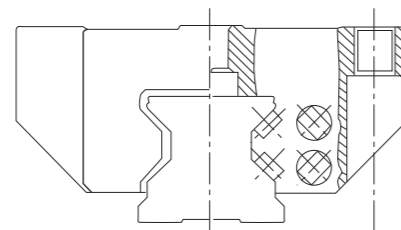


## Ball Screws & Axis Drives

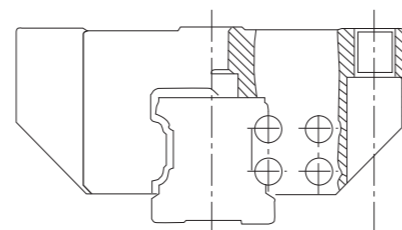
The axis is driven by a high precision, double-nut ballscrew that's centered between the guideways. The ballscrews are supported at each end with angular thrust bearings. This double pretension design provides outstanding positioning repeatability with minimize thermal growth. A 50 mm diameter ball screw connects directly to a powerful Fanuc AC servo drive motor. With no gears or belts, there's no backlash and servo lag. Easily reset, flexible couplings protect the ball screw from the damage of sudden impact with the table or workpiece.

### Linear roller guideway system

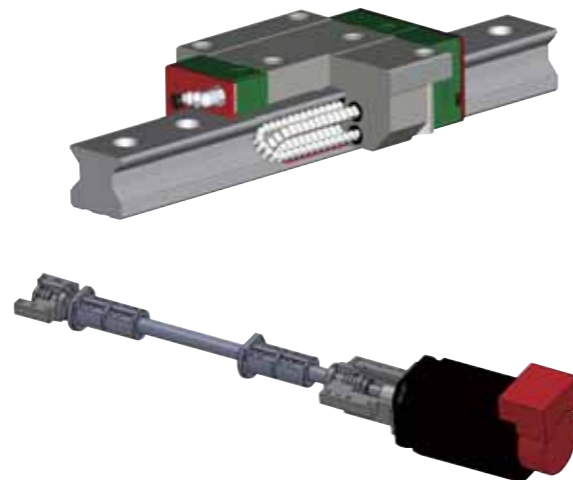
Guideways with preloaded roller bearings provide superior rigidity under cutting conditions. This design improves parallelism and cylindricity. Roller bearings have a larger surface contact area than ball bearings, which makes a wear rigid guideways system for rigid machining.



Roller guideway



Ball guideway



## Ergonomic and User Friendly Design

### Distance From Spindle Center To Table Surface

- (HT-400) **80-640**mm
- (HT-500) **65-665**mm
- (HT-630) **100-1000**mm
- (HT-800) **100-1300**mm



### Collection of waste lubrication oil

Less waste lubrication oil extends the life time of the coolant water and cut down the grime and offensive smell of the machine inside.

### No coolant leakage

Rigorously designed, manufactured and tested machine covers do not permit coolant leakage in any condition. The factory always keeps our environment clean.

### Portable MPG

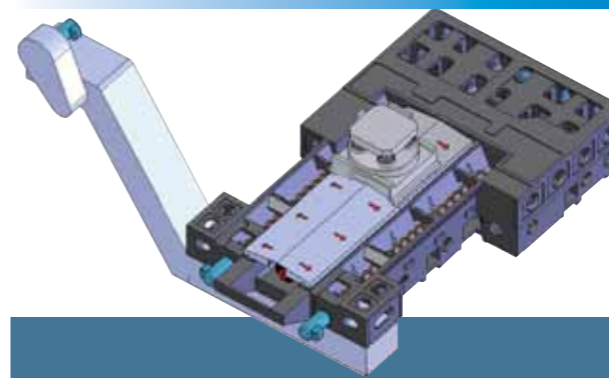






### Operator's panel



## Chip Disposal

Separate chip conveyor and coolant tank provide easy cleaning and maintenance. A telescopic cover, inclined at a 225° angle, directs chips into the coil type chip conveyor to keep the area around the table clean. From the sliding cover, chips are flushed onto the chip conveyor by the coil screw conveyors to make quick and easy work of chip removal. The chip conveyor mounting is available for rear and side type.

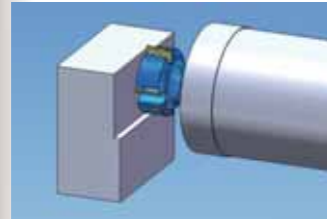


	Steel	Cast	Aluminum and nonferrous metal	Compound
Specifications				
Hinge type	●	×	×	×
Scraper type	×	●	▲	●
Drum filter type	●	●	●	●

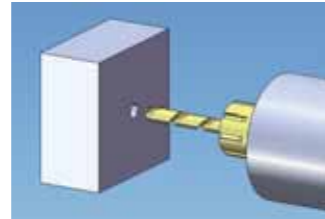
- ● : Available    × : Unavailable    ▲ : Asking for information
- Some type of chips may not be completely removed from the chip conveyor.
- Contact L&W for more information.

# Cutting Performance

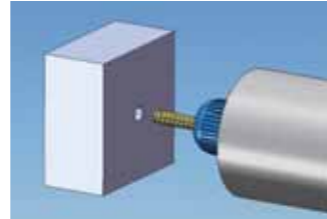
Face Mill



Drill Gray casting



Top Gray casting

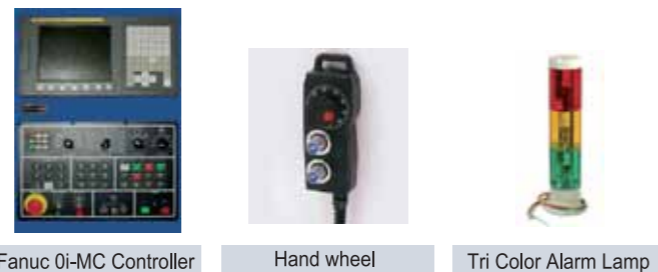


HT-400 / 500	Machining rate		Machining rate		Tool	
	Material: Aluminum		Material: GC25		Material: GC25	
	2,625 cm <sup>3</sup> / min		71.5 cm <sup>3</sup> / min		M 30 x P 3.5	
	Spindle speed	Feed rate	Spindle speed	Feed rate	Spindle speed	Feed rate
	10,000 rpm	15,000 mm/min	125 rpm	63 mm/min	150 rpm	525 mm/min
HT-630 / 800	Material: S45C					
	480 cm <sup>3</sup> / min		115 cm <sup>3</sup> / min		M 42 x P 4.5	
	Spindle speed	Feed rate	Spindle speed	Feed rate	Spindle speed	Feed rate
	800 rpm	1,200 mm/min	150 rpm	60 mm/min	100 rpm	450 mm/min
	Material: FC30					
	756 cm <sup>3</sup> / min		175 cm <sup>3</sup> / min		M 42 x P 4.5	
	Spindle speed	Feed rate	Spindle speed	Feed rate	Spindle speed	Feed rate
	800 rpm	1,200 mm/min	150 rpm	90 mm/min	100 rpm	450 mm/min

# Standard Accessories

1. Heat exchanger
2. Working light
3. Air blast through spindle
4. Warning light
5. Auto lubrication system
6. Hydraulic nozzle & pneumatic gun
7. Spindle oil cooler
8. Rigid tapping
9. Chip conveyor
10. Tool kit
11. Leveling bolts and pads

# Standard Equipment



Fanuc 0i-MC Controller    Hand wheel    Tri Color Alarm Lamp



Heat Exchange Cabinet    Spindle Oil Cooler    Standard Chain Type 40T



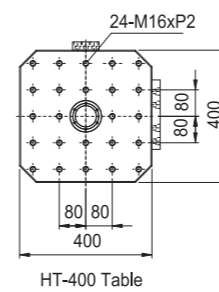
MAS BT-40 (HT-400/500)    Direct Driven 10000 rpm

# Optional Accessories

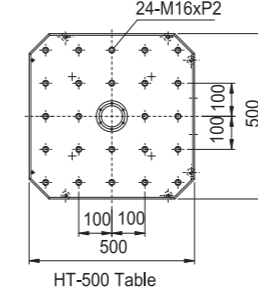
1. Spindle speed 12000/15000/20000rpm (for HT-400/500)
2. Arm type ATC 60/90/120T
3. Niagara coolant shower
4. Tool length measurement system
5. Transformer
6. CTS (Coolant through spindle)
7. CE norms
8. Linear scales

# Machine Dimensions

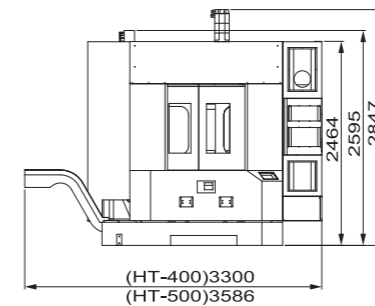
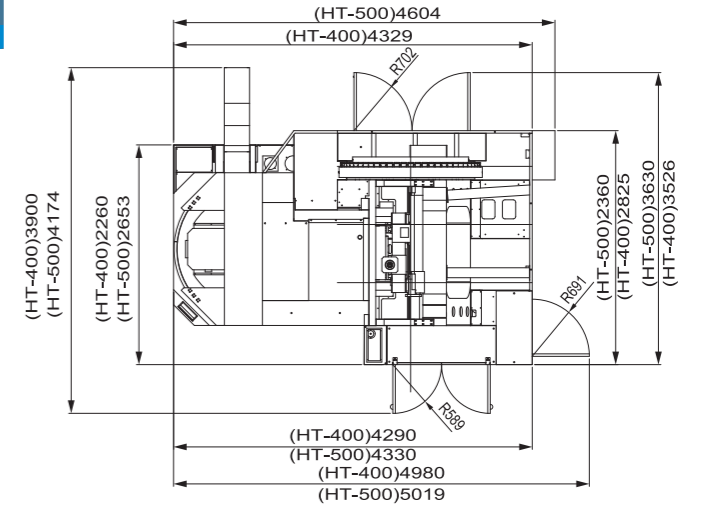
HT-400 / HT-500



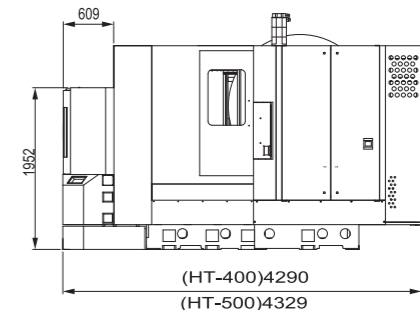
HT-400 Table



HT-500 Table

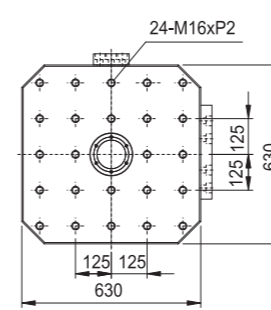


(HT-400)3300  
(HT-500)3586

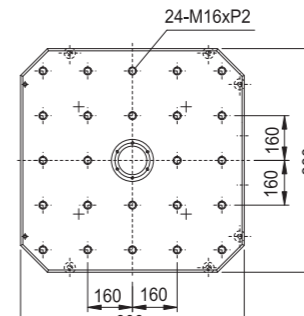


(HT-400)4290  
(HT-500)4329

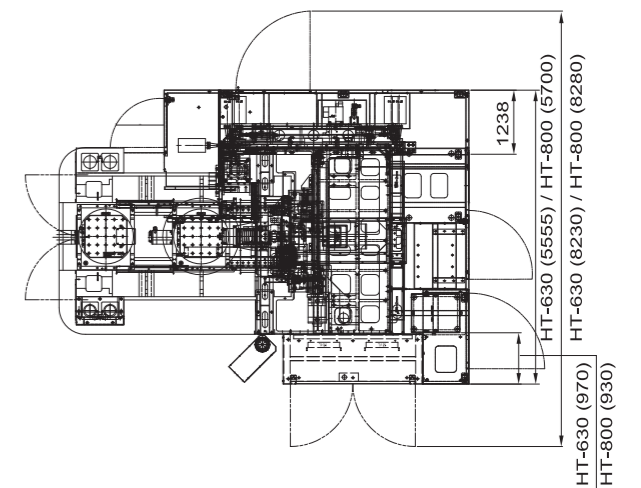
HT-630 / HT-800



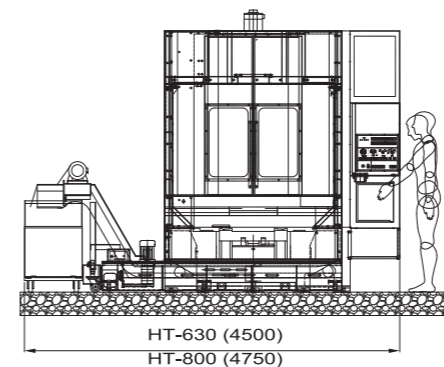
HT-630 Table



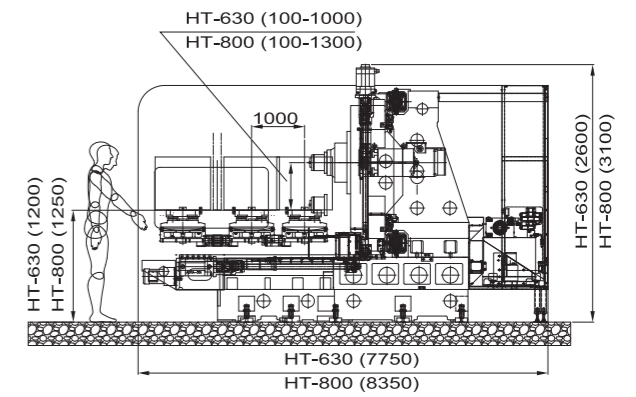
HT-800 Table



(HT-630)970  
(HT-800)930



(HT-630)4500  
(HT-800)4750



(HT-630)7750  
(HT-800)8350