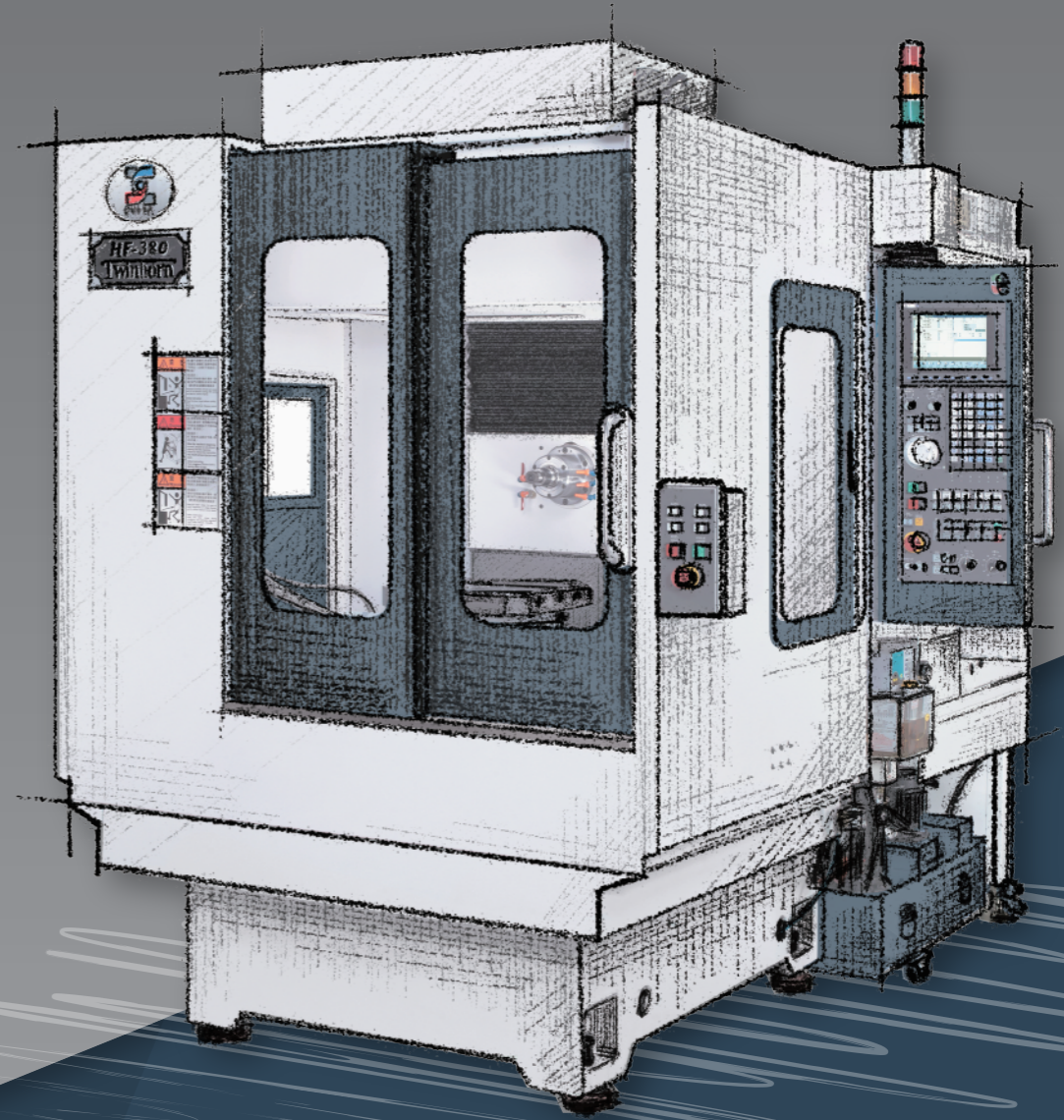


Pursuit technology innovation  
Creat excellent quality



**Twinhorn**

No.44-8, MING-CHUNG RD., SHENG-KANG DIST.,  
TAICHUNG CITY, TAIWAN 42948

Tel: +886-4-2562-8747 (Rep.)

Fax: +886-4-2561-4199

E-mail: inquiry@twinhorn.com.tw

www.twinhorn.com

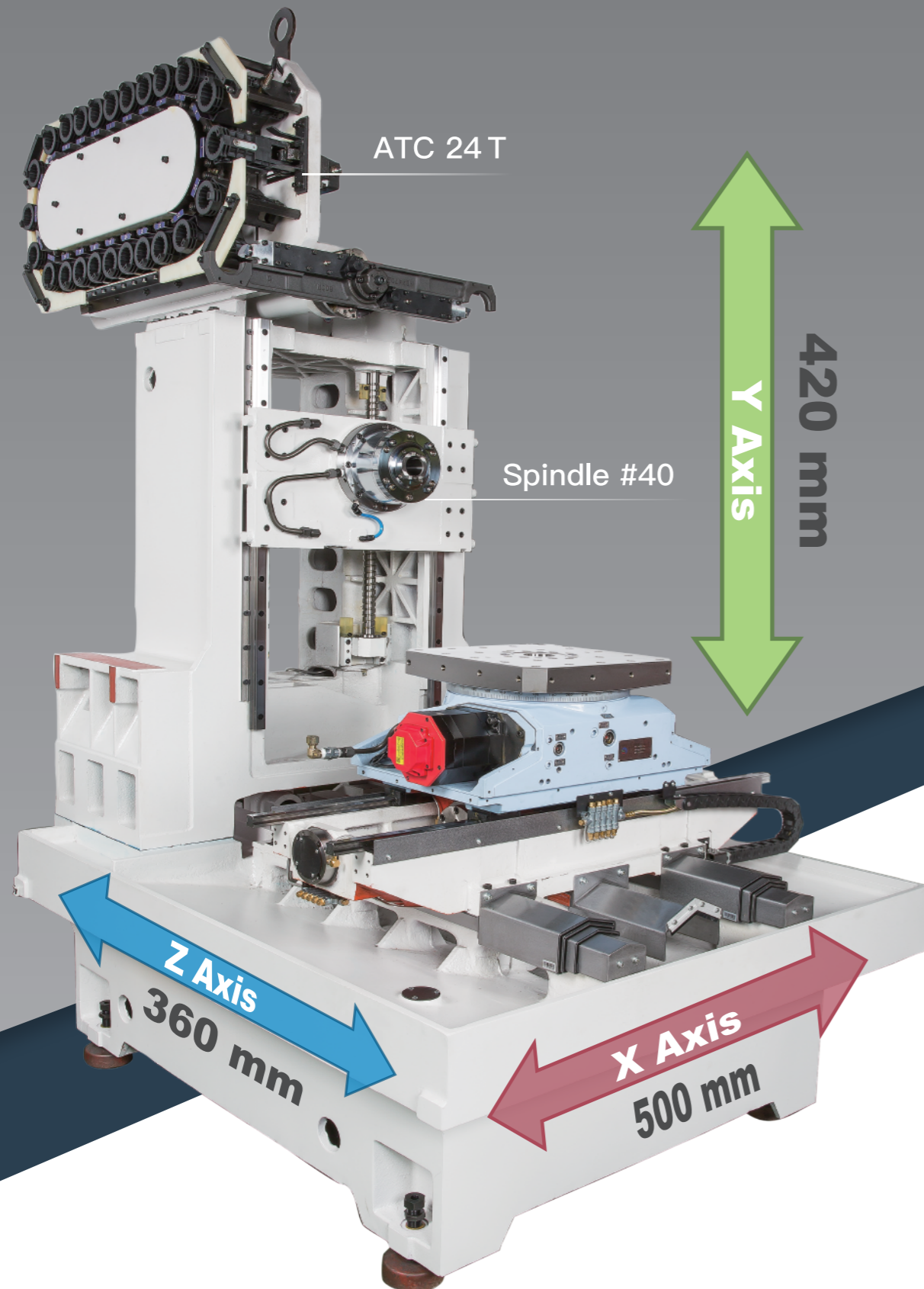


**HF-380 Series**

High Speed Horizontal Machining Center

# HF-380 High Speed Horizontal Machining Center

This mini HMC is quite sufficient for non-iron material, aluminum workpiece or any light cutting. All slideways adopt high precision P-class linear guide that can traverse at 48/48/48 m/min (X/Y/Z) with high accuracy. With quick tool changer and high speed spindle (BT30/BT-40), the production efficiency of high volume or complex components could be increased substantially. 360° rotary table (1° indexing) is driven by servo motor and clamp/unclamp by powerful hydraulic system. Suitable for 3C products, bicycle parts, and aluminum cutting.



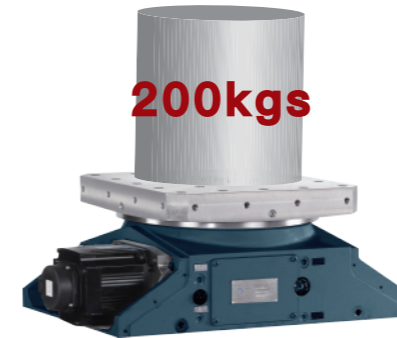
- 3D finite element analysis is utilized in casting process to provide optimized thermal stability and best dampening ability during high speed machining.
- Each axis equipped with C3 grade pretensioned ballscrews.
- High performance, servo motor direct drive with brake on Y axis provides best accuracy and performance during high speed machining.
- High precision linear guide way on 3 axes.

# High Precision, High Rigidity Spindle

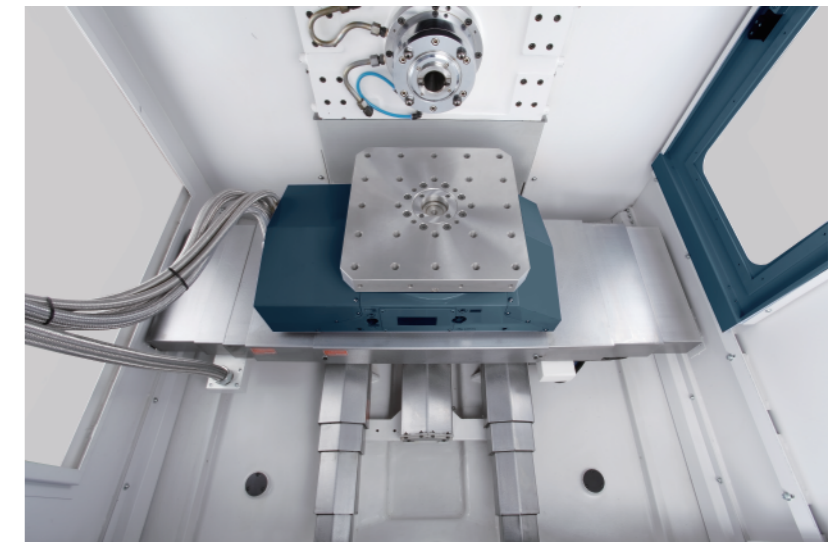
## Powerful Spindle

## Working Table

The advanced design provides high axial thrust capacity and generates minimum heat. For BT-30, we adopt motor direct-driven spindle; BT-40, with built-in spindle. Both are very suitable for high-speed machining application. Without belt transmission, it dramatically reduces noise and vibration thus bring out high accurate cutting performance even working at high speeds. Surrounding spindle front are 4 coolant nozzles with wide range adjustable angle.

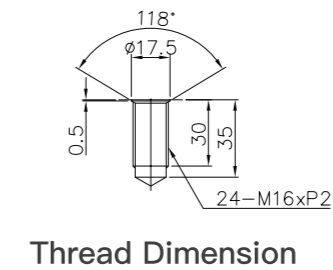
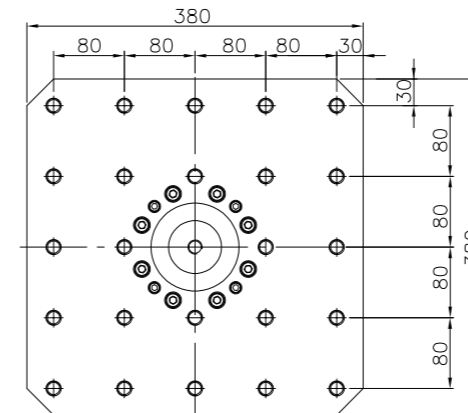


HF-380 adopts powerful hydraulic clamp system for rotary table. Collaborating 360° gear, which guarantees the index accuracy and also reduces the service/maintenance time on gear gap adjustment.



- **BT-30 Direct Driven**
- Spindle speed :**  
12000rpm (Mitsubishi) 1500rpm (Fanuc)
- Spindle motor power :**  
3.7/5.5 kw, (Cont./30mins)
- Spindle bearing diameter :** Ø 50mm

- **BT-40 Built-in Design**
- Spindle speed :** 12000 rpm
- Spindle motor power :**  
18/23kW (S1/S6-60%)
- Spindle bearing diameter :** Ø70mm



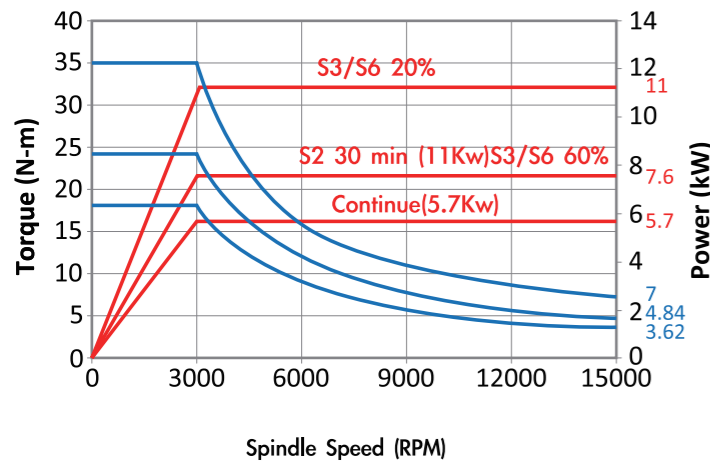
### Table size: 380x380mm

- Servo motor driven with brake
- Powerful hydraulic clamp system
- Min. index: 0.001° (opt. 1°)
- Loading: 200kgs
- Max. speed: 16.6rpm

## Spindle Motor Torque

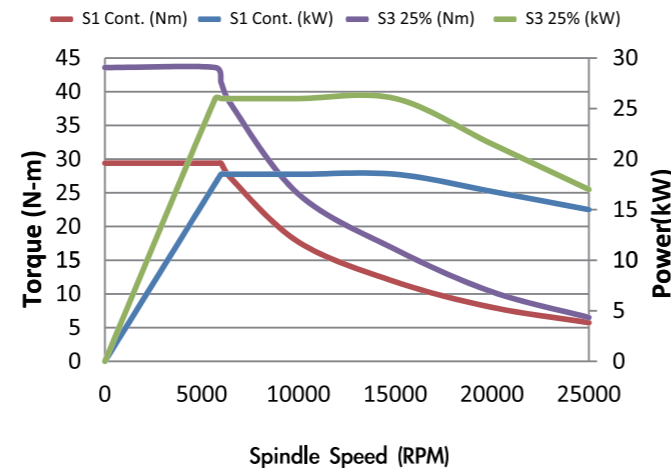
### FANUC

BT-30 Fanuc Spindle Motor



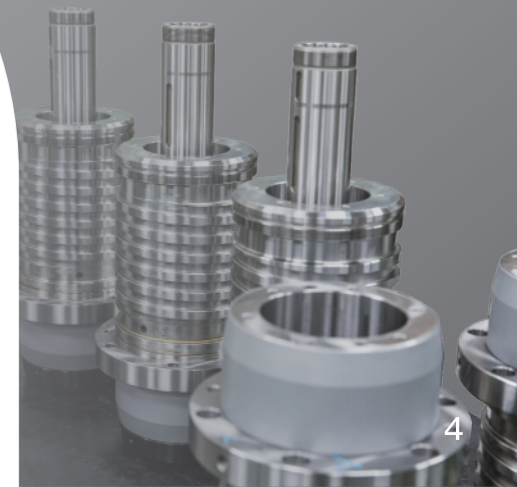
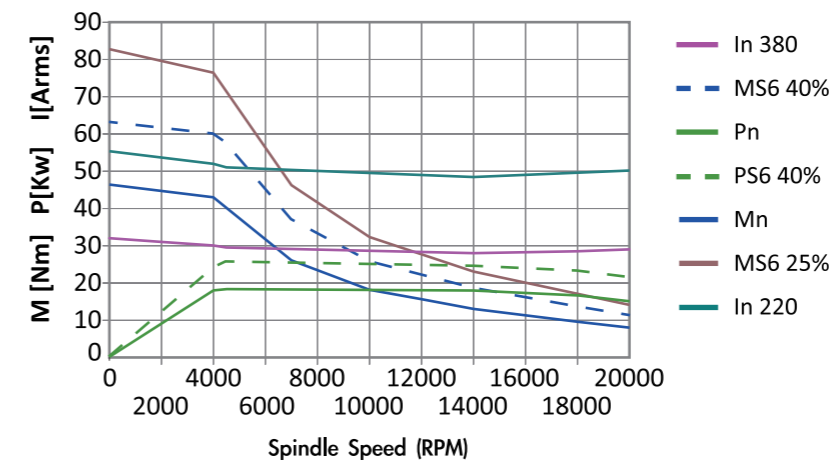
### FANUC 90L

BT-40 Fanuc Built-in Spindle



### Sangalli

BT-40 Sangalli Built-in Spindle



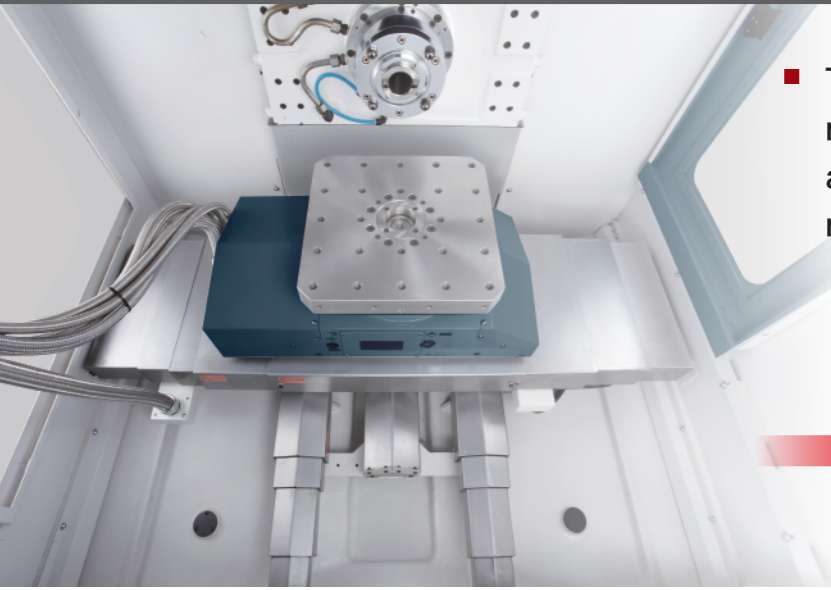
# ATC

The ATC adopts double gripper exchange arm to minimize the tool to tool time. This could highly increase the production efficiency of high volume or complex components.

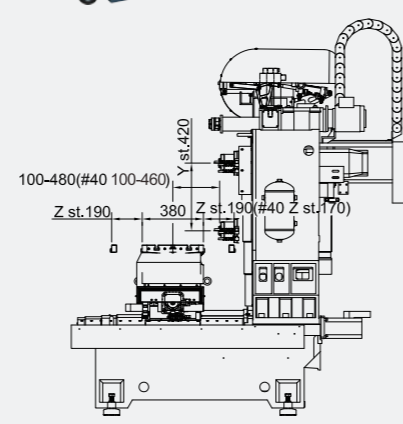
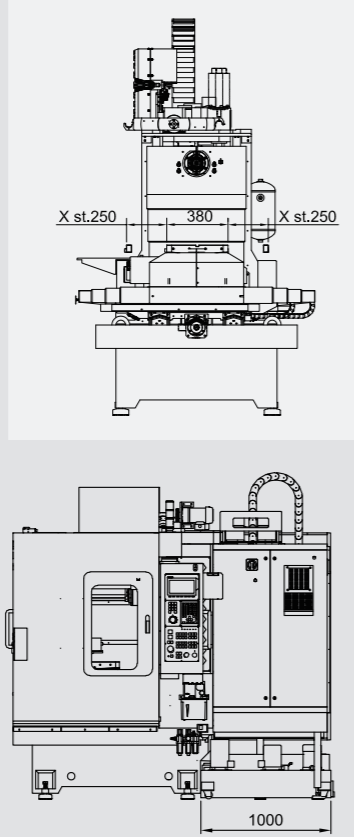
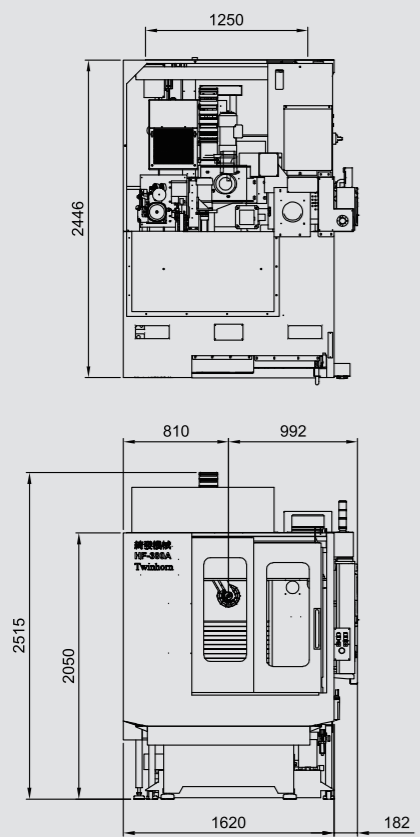
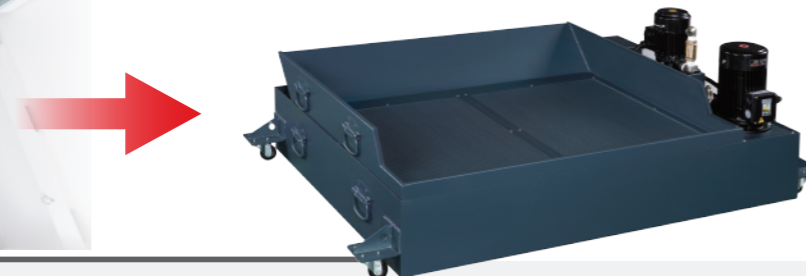
- HF-380 (BT-30) 20 Tools  
T-T 1.5 sec
- HF-380A (BT-40) 24 Tools  
T-T 2 sec



# Chip Remove System



- The large-tilted design on the base collaborating with powerful chip flush down device, all the chips can be efficiently removed to rear coolant tank right away.



- ▲ WORKING AREA
- ◀ MACHINE DIMENSION

# Specification

Model	HF-380(#30)	HF-380A(#40)
<b>Travel</b>		
X axis travel	500 mm	
Y axis travel	420 mm	
Z axis travel	380 mm	360 mm
<b>Spindle</b>		
Spindle nose to B axis center	100~480 mm	100~460 mm
Spindle nose to B axis table surface	90~510 mm	
Spindle taper	7/24 No.30	7/24 No.40
Spindle type & speed	Direct driven 12000rpm	Built-in 12000rpm
Spindle bearing diameter	50mm	70mm
Spindle motor	M: 3.7/5.5kW (12000rpm) F: 3.7/5.5kW (15000rpm)	F: 18/23kW(S1/S6 60%)
<b>Table</b>		
Rotary table (LxW)	380x380 mm	
Fasten hole (No./size/distance)	24/M16/80 mm	
Min. index	0.001°(Opt.1°)	
Basic bore diameter	Ø60 H7	
Rotary table max. speed	16.6 rpm	
Max. load	200 kg	
Index accuracy	20 sec (Opt. 4 sec)	
Repeatability	±2 sec (Opt. ±1sec)	
<b>Feedrate</b>		
Rapid traverse (X/Y/Z)	48/48/48/ m/min	
Cutting feedrate	10 m/min	
Ballscrew diameter	32 mm	
<b>Accuracy</b>		
Positioning accuracy	VDI 3441 P0.014mm(JIS B6338±0.004/300 mm)	
Repeatability accuracy	VDI3441 PS0.01mm(JIS B6338±0.003 mm)	
<b>ATC</b>		
Tool shank	BT30	BT40
Tool capacity	20	24
Tool changer time	T-T 1.5 sec	T-T 2 sec
Pull stud	MAS 403 P30T-1 (45°)	MAS 403 P40T-1 (45°)
Max. tool diameter(w/ adjacent tool)	55 mm	76 mm
Max. tool diameter(w/o adjacent tool)	100 mm	120 mm
Max. tool length	200 mm	250 mm
Max. tool weight	3 kg	7 kg
<b>Other</b>		
Power required	15 kVA	25 kVA
Pressure capacity	6kg/cm <sup>2</sup> , 200L/min	
Machine dimension (WxDxH)	1800x2500x2500 mm	
Machine weight	3500 kg	

## Standard Accessories

- Arm type ATC 20T (BT-30)
- Arm type ATC 24T (BT-40)
- Coolant system
- Automatic lubrication system
- working lamp
- Spindle air blow
- External air blow
- Automatic power off (M30)
- Heat exchanger cabinet
- Toolbox
- Fully enclosed splash cover
- Rigid tapping
- Spindle oil cooler
- Safety door switch
- Automatic side chip flashing device
- Water gun
- Air gun

## Optional Accessories

- Direct type spindle 20000rpm (BT-30)
- Direct type spindle 12000rpm (BT-40)
- Built-in type spindle 15000rpm (BT-40)
- Rotary table (accuracy 1°)
- Coolant through spindle (CTS)
- Chain type chip conveyor
- 3-axis with roller type linear guide
- Oil skimmer
- Automatic tool length measurement
- Automatic workpiece measurement
- CE specifications
- Transformer

## Controller

- MITSUBISHI M80
- FANUC 0i-MF
- SIEMENS 828D

■ The company reserves the right to change the mechanical specifications, accessories and appearance without prior notice.