



TOP Well

TW-400HV

Combination – Universal
Horizontal / Vertical
Machining Center



www.topwell.com.tw

TW-400HV

Combination – Universal Horizontal / Vertical Machining Center

**NEW CENTURY
NEW THINKING
NEW GENERATION**



Structure

- Analysis by FEA (Finite Element Analysis).
- Meehanite certified iron.

Precision

- Optical scale is equipped for rotary table. (opt.)
- Minimize geometric error for 5 face job.
- Rigid tapping : M1 (Metric) or #0-80 (imperial)

HI Speed

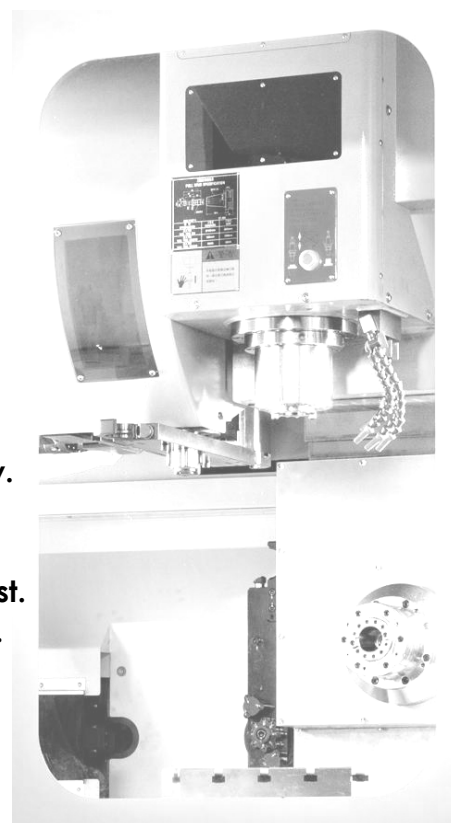
- 10,000rpm up Direct drive Spindle.
- Rapid travel 36M/min for each axes (48M/MIN Opt.)

Practical

- Vertical / Horizontal mode is changed automatically.
- 24 tools for each magazine , high tool capacity.

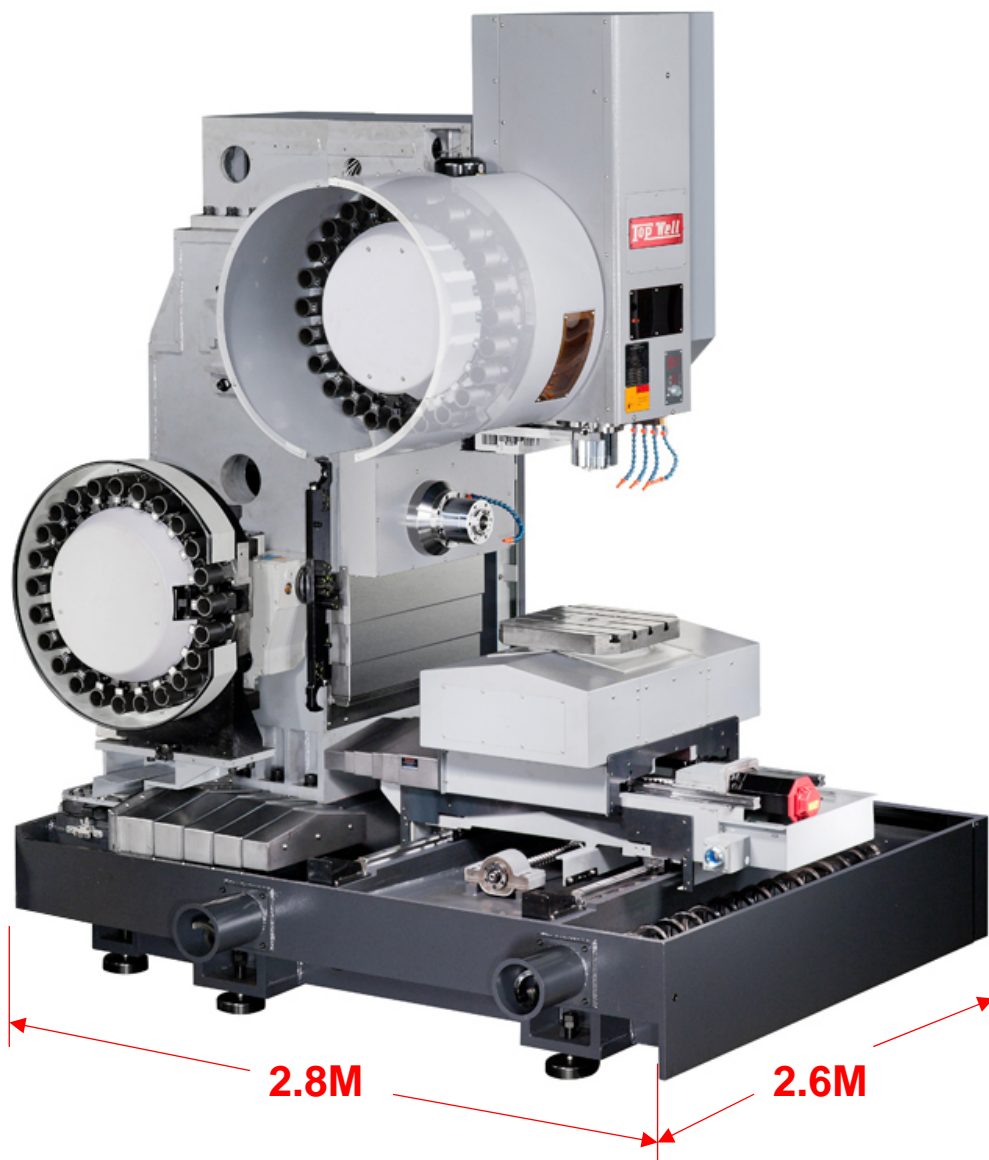
Economy

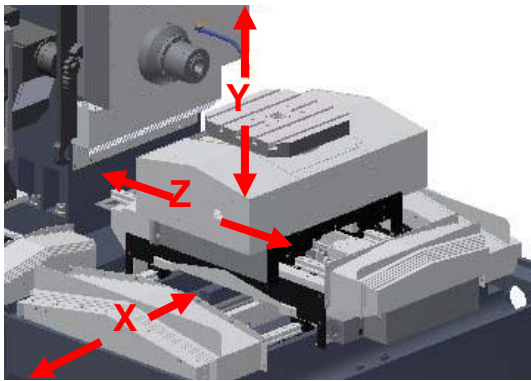
- Reduce work piece upload time , and jig design cost.
- Double chip auger , and fast-return tank , 240L only.
- Floor space is 206cmx289cm only.



Complex Vertical / Horizontal unique design

- Five-face job finished in a program.
- Work piece set up once time.
- Reduce work piece load time, and jig design cost.
- Compact floor space to save factory building cost.

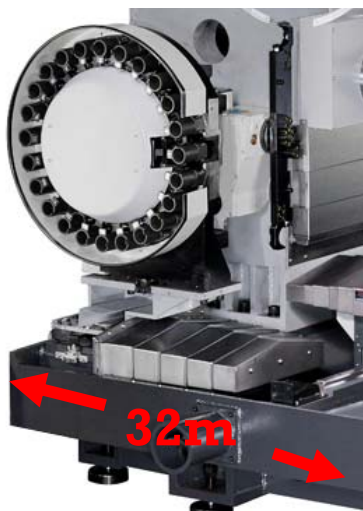




X-axis full support design

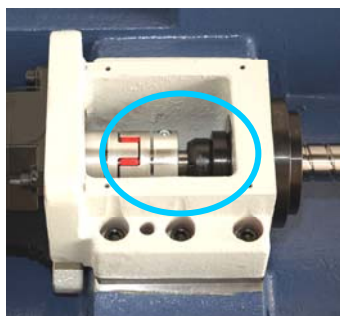
- Reduce motor load, when table Move to back and forth.
- Easy for rigid tapping of Horizontal mode.
- Reduce X-axis twist, when table move right, and left.

32 M positioning for magazine Tool change time : 1.8sec. (T to T)



Each axes equipped with German Made Hi-Torque coupling

The German made coupling connecting The ball screw and motor shaft can ensure the Accuracy at high speed movement.



HI-Precision Rotary Table

- 1/1000⁰ minimum indexing unit.
- 4 axes contouring.
- Auto hydraulic clamping system.
- Accuracy is 2 sec, equipped with Heidenhain ERN-180 optical scale (Opt.)



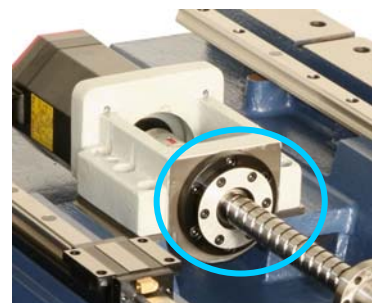
High Precision Linear guide ways

The high precision Japanese roller linear Guide ways (opt.) provides higher rigidity of the machine, and improve the machine stability, and machining ability.



C 3 Class double Nuts Ball Screw

With high precision C3 class double Nut ball screw, and applying suitable pre-tension, the ball screw backlash can be reduced and the accuracy can be ensured.



Easy Operation

- **User friendly 180° console:**
It can be operate at front door or side door.
- **Extra-wide front door & side door:**
Table height form ground is 1080 mm easy for job loading.
- **Horizontal Spindle can be reached easily:**
Easy for tool set up.



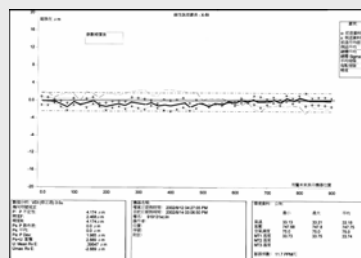
- Double chip auger can clean chip faster.
- Compact coolant tank: 240L required.



Side door 700mm

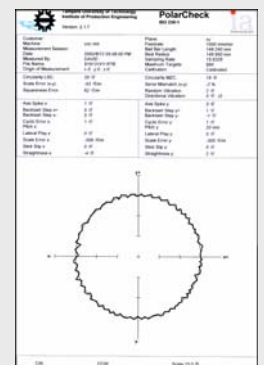
High standard inspection is Quality insurance

- The machine's dynamic accuracy and repeatability's tested by the **RENISHAW Laser system**.



Laser Linear inspection
(ISO 10791-4)

- The circularity is tested by the **RENISHAW Ball-Bar system** in order to ensure the profile.



Ball-Bar testing Report (ISO 230-4)

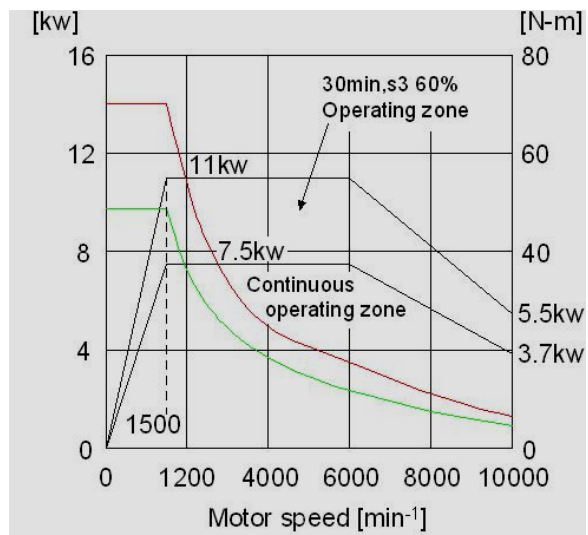


10,000 rpm Isolated Direct Drive Spindle

- Rigid tapping: M1 (Metric) / #0-80 (Imperial).
- The noise of spindle is less than 67dB.
- Ceramic bearing extends spindle life at high speed.
- Floating tool unclamp system can avoid the bearing hit by the cylinder.
- Spindle air sealing can prevent the coolant.
- Oil chiller can reduce the spindle and motor heat transmission.



FANUC 11kW-10000 rpm spindle motor



Hi-Precision Hi-Speed Controller and AI Operation method

• FANUC-0i-MD /32i-MB (opt.) Controller

The new controller has faster processing capacity, and the hardware has high stability, and reliability.

• AI style Vertical / Horizontal mode change function

Our experienced IT technician develops the program, the user can use standard program for other machine, and combined it together for 5 face program. The machine can finish the job at one time, and mode can be seen on the panel.

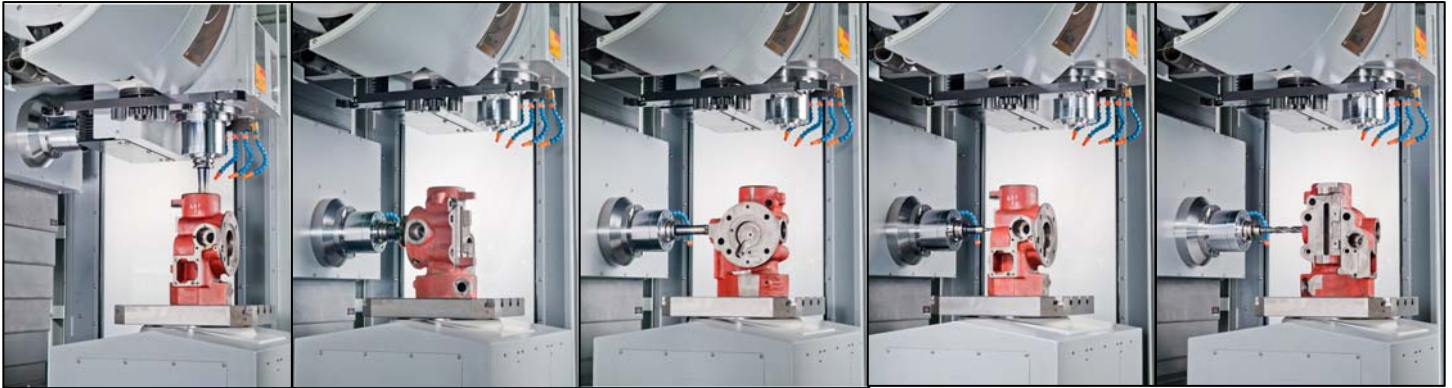
• Easy, and user Friendly operation panel provide convenient for user

• The cabinet is complied with CE regulation, and continuous test over 96 hours.



5 Sides Manufacturing at Once




Vertical Spindle → Horizontal- 0° → Horizontal- 90° → Horizontal- 180° → Horizontal- 270°



Parts Sample :



Cutting Data

Cutting Data					
	Face Milling 80mm x 4		Drilling Outer dia.22mm	Tapping (Max.) M24x3.0mm	Tapping (Min.) M1 & #0-80
Material	S45C	AL6061	S45C	S45C	AL6061
SP. Speed (rpm)	1000	4500	300	200	3000
Feedrate. (mm/min)	1200	6000	60	600	952.5
Cutting Width (mm)	60	60	----	----	----
Cutting depth (mm)	2.0	2.0	----	----	----
Peak of cut (cc/min)	144	200	----	----	----

Working Envelope

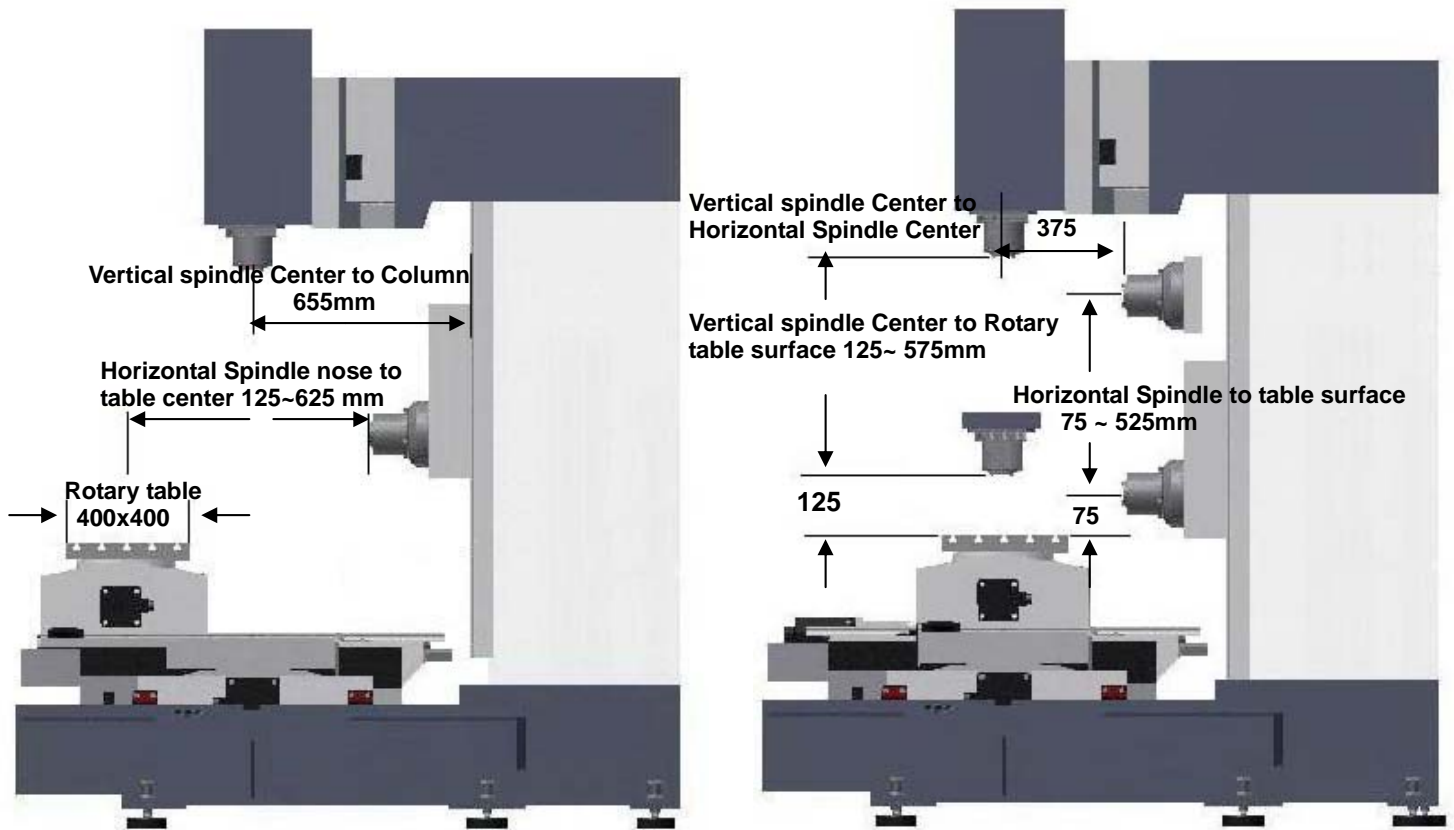
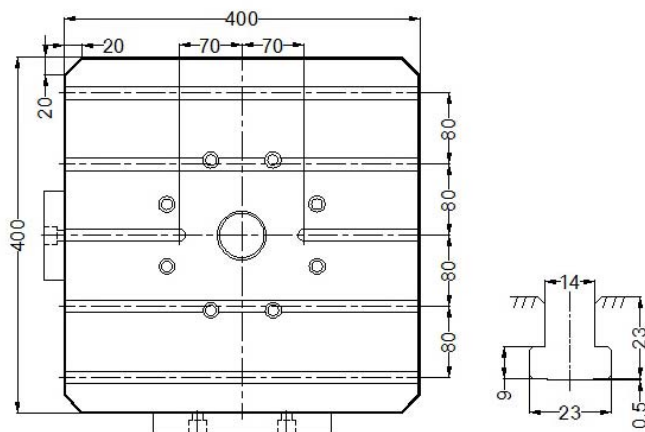
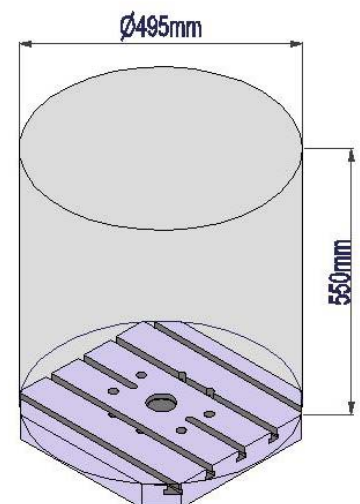


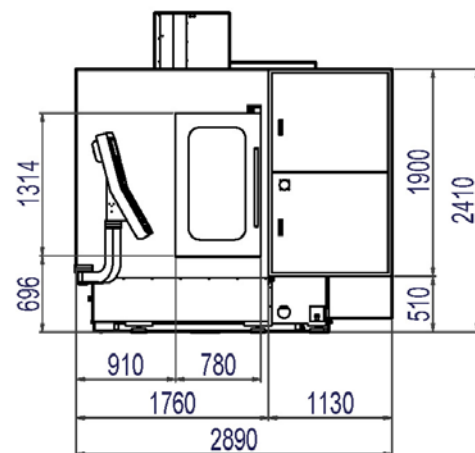
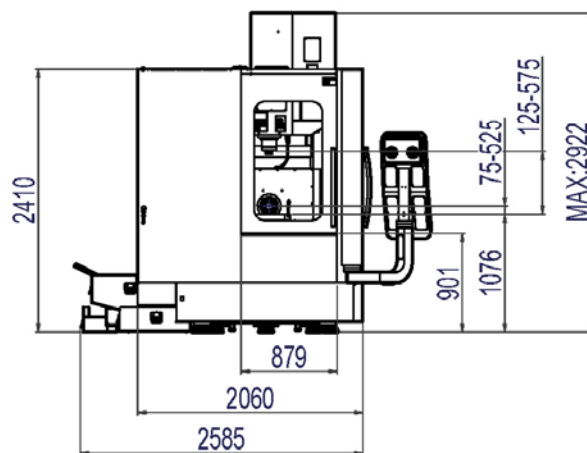
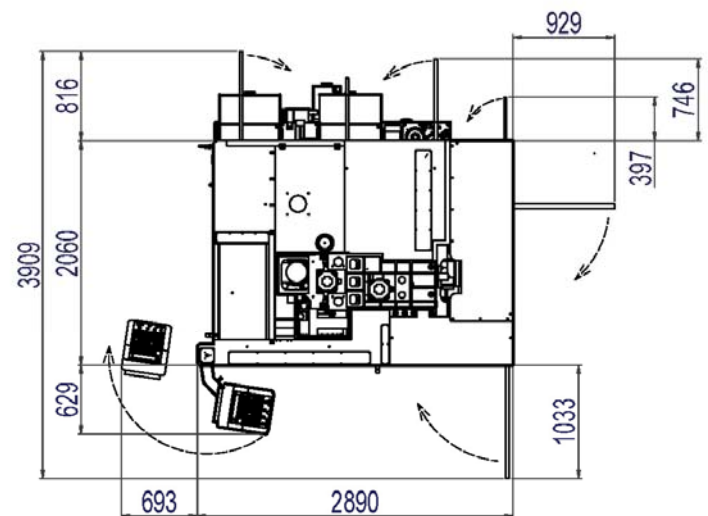
Table Dimensions :



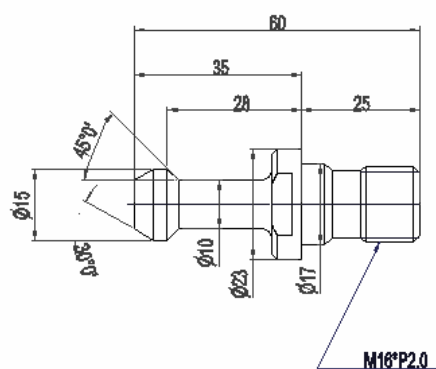
Max. Cutting Area :



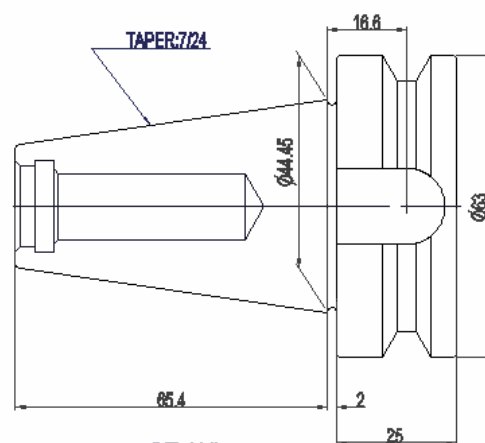
Machine Dimensions



Tool Shank & Pull Studs :



MAS-P40T-1



BT-40#

TW-400HV Specifications :

Model	TW – 400HV
X Axis travel	500 mm
Y Axis travel - Vertical	500 mm
Z Axis travel - Vertical	450 mm
Y Axis travel - Horizontal	450 mm
Z Axis travel - Horizontal	500 mm
Vertical Spindle center to column	655mm
Vertical Spindle nose to table top	125 -575 mm
Horizontal Spindle nose to table center	125 -625 mm
Horizontal Spindle center to table top	75 -575 mm
Table height from the floor	1080 mm
Table load capacity	350kgs
Spindle nose (BT / CAT / DIN)	BT40 / CAT40 /
Spindle RPM (Vertical)	75~10,000rpm (opt.12,000)
Spindle RPM (Horizontal)	75~10,000rpm (opt.12,000)
Main motor (cont./ 30min)	7.5 / 11Kw (Direct Drive)
A.T.C. Magazine for arm type (H/V)	24 / 24
A.T.C. tool diameter	76 / 127 mm
A.T.C. tool length	250 mm
A.T.C. tool weight	7 Kg
Rapid traverse	32,000 mm
Cutting feed	1 ~ 15,000 mm
Positioning	± 0.003 mm
Repeatability	± 0.002 mm
Rotary table – Table top dimension	400 x 400 mm
Rotary table – T-slots(wide× no.× pitch)	14 ^{H7} x 5x 80 mm
Rotary table – Speed reduction ratio	1: 120
Rotary table – Min. indexing (degree)	0.001°
Rotary table – Max. rotation speed	16.6
Rotary table – Positioning accuracy	15"
Rotary table – Repeatability	± 4"
Rotary table – Max. load	350 kg
Coolant system	580 W
Lubrication system	25 W
Air pressure	6Kg / cm ² over
Machine weight	8,500kgs
Floor space (L x W x H)	2890x2689x2922 mm
CNC controller	Fanuc Oi-MD / 32i-MB

• Specification and design characteristics Are Subject to change without Prior notice.

Standard equipment :

- 0.001° Rotary table (400x400mm)
- Spindle chilling system
- M30 Auto-power OFF
- Auto Lubrication system
- Full enclosure Guard
- 12,000 RPM spindle Direct (H/V)
- H/V-Arm type ATC (24 tools)
- Auger type Chip conveyor
- Electrical / Machine manual
- Coolant chip flushing
- Air Gun
- Water Gun
- M-code Air blast
- Heat exchanger
- Coolant system
- Rigid tapping
- Work lamp
- Alarm tower
- Tools & tool box
- External MPG

Optional Accessories :

- Transformer/stabilizer
- Safety switch on both door
- Disk Type Oil Skimmer
- CE Electrical
- Chain type Chip conveyor
- Auto tool length
- Coolant Through Spindle
- 12,000 RPM spindle Direct Drive
- Air con. for electrical Cabinet
- Rotary table Optical scale



TOPWELL Machinery Co., Ltd

No 46, Sec 2, Yuetao Rd., Zhong Li City,
Tao Yuan County, 32053, Taiwan
TEL : 886-3-4986182

FAX : 886-3-4986003

E-mail : twmc@18.hinet.net

<http://www.topwell.com.tw>

2013.1.1000



Linear Way Vertical machining



HSHP Vertical machining Center



Box Way Vertical machining Center



Vertical Traveling Machining Center

We Also Provide You.....