

CNC Vertical Turning Center
HANTURN V16/V16M





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Heavy Duty, High Precision, Cost Effective CNC Vertical Turning Center Designed to Deliver Superior Performance

High Productivity

- Maximum 2000mm turning capacity
- Maximum 8 tons load capable table
- Elevating cross rail of 1000mm travel
- Full controlled C-axis and rotary spindle (only for V16M)
- Automatic tool changing system up to 12/18 (V16/V16M) tools

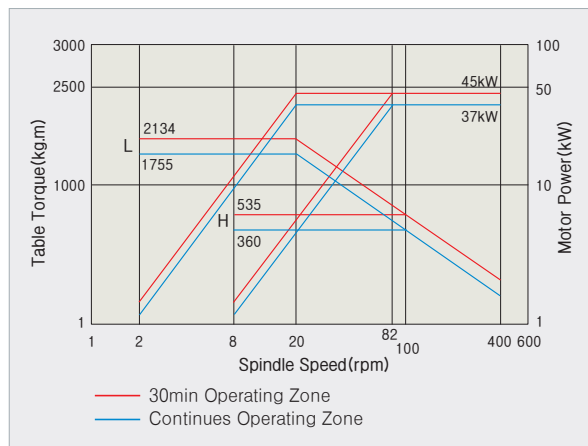
High Reliability

- Heavy duty, wide guide ways of box type
- Massive one-piece cast iron bed, column, saddle, and cross-rail
- Induction-hardened and precise-ground guide ways
- Extra large 220mm square spheroidal-graphite-iron ram

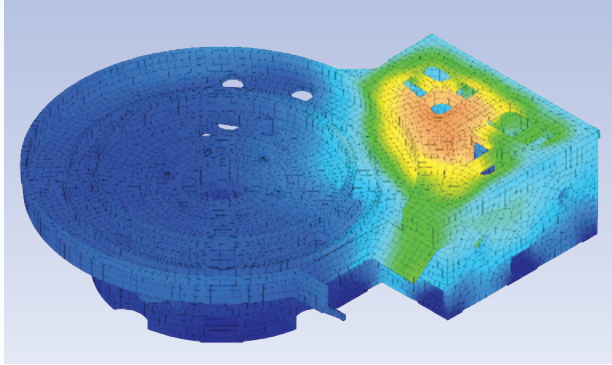
High Accuracy

- Qualified precision bearings & ball screws
- Fluoroplastic-bonded & hand-scraped guide ways
- Full automatic lubrication to all critical areas
- Energy saving ECO system embedded

Table Torque & Power Diagram



■ Bed



The stress analysis was applied to the bed structure design for maintaining the best condition to support the heavy load and cutting force and to minimize the distortion, deflection and dampen vibration.

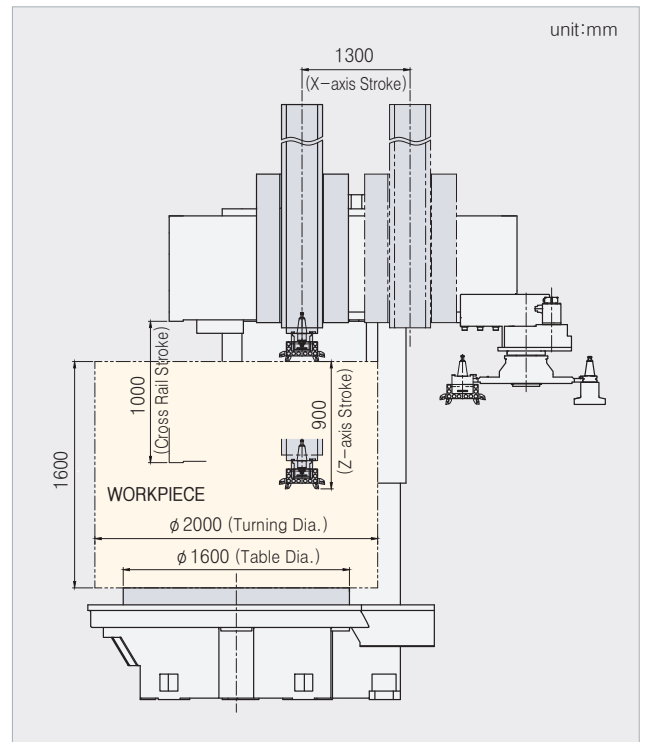
■ Table



- Heavy duty table and large diameter high precision spindle bearings guarantee heavy loads and precise machining.
- Heavy duty 4-jaw independent chuck is standard(max. clamping force 4 metric tons). Hydraulic power chuck is available.
- The main spindle and drive gears are made of special alloy steel. They are induction hardened, fully stress relieved, and then precision ground for maximum performance.
- The power is transmitted to the table through the automatically shifted two speed gear box which generates enough speed and torque to satisfy wide spectrum of most demanding machining requirement.
- High-accurate table index by C-axis control : 0.001° on model V16M.
- Forced lubrication system provided.



■ Machining Range



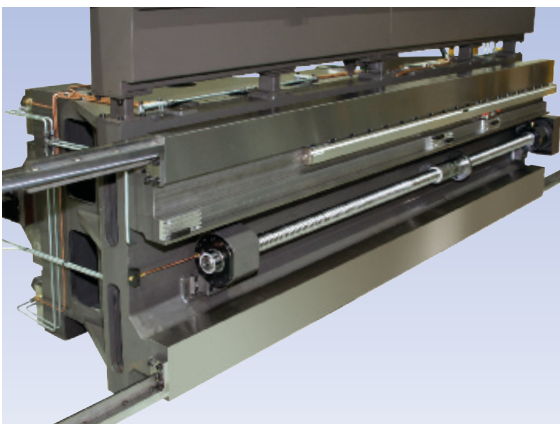


■ **Saddle & Ram**

- Huge 220mm square spheroidal graphite iron ram, hardened and ground, is encased in the heavily ribbed saddle.
- Low friction fluoroelastomer resin bonded to the ram sliding surfaces of the saddle minimizes friction.
- Model V16M has milling spindle with high-speed that involves drilling, milling, and tapping.
- Pull stud tool mounting and dismounting way of machining center type (P50T-I / DIN. 69872.50).
- Automatic metered lubrication system ensures lasting accuracy.

■ **Guide Ways**

The wide box type guide ways are induction-hardened and precision-ground. Mating surfaces of the sliding components are coated with fluoroelastomer resin and are hand scraped for perfect fit. Fully automatic metered lubrication system provided.

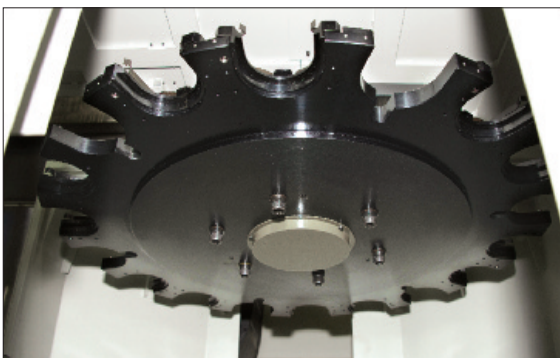


■ **Elevating Cross Rail**

Vertical positioning of this massive cross rail is performed by large diameter ball screw. Positioning accuracy is assured by automatically actuated precision pins and 38tons of hydraulic clamping force.

■ **Axis Drives**

Each axis is driven by a high precision ballscrew and is powered by a high torque, maintenance free Fanuc digital AC servo motor. Ballscrews are supported on both ends by high precision bearings. The optional X axis linear scale feed back system combined with double anchor pretensioned design assures outstanding machining accuracy and repeatability. Rapid traverse rate of both X & Z axes is 15m/min (590 ipm).



■ **Automatic Tool Changer**

The standard 12 tool capacity (18 tools for model V16M) automatic tool changer system and a wide variety of available tooling enable uninterrupted fully automatic machining possible. This rigidly constructed carousel type tool changer features high speed random indexing and is capable of safely handling tools of up to 50kg (110 pounds).

Machine Specifications

Items		Unit	HANTURN-V16	HANTURN-V16M
Capacity	Max. turning diameter	mm	2000	2000
	Max. turning height	mm	1600	1600
	Max. torque	kg.m(N-m)	2134(20915)	2134(20915)
	Max. cutting force	kgf	2500	2500
	Max. workpiece weight	kg	8000	8000
Table	Table diameter	mm	1600	1600
	Table speed	rpm	2~400	2~400
	Table speed range	step	Auto. 2-step	Auto. 2-step
C-axis	Min. index angle	deg.	—	0.001°
	Cutting feedrate	deg/min	—	0~1080
	Max. speed	rpm	—	3
Ram Head	Tool size	mm	□32	□32
	Spindle taper	—	ISO 7/24 No.50	ISO 7/24 No.50
	Mill spindle speed	rpm	—	30~3000
	Max. mill spindle torque	kg.m(N-m)	—	24(235)
	Ram cross section	mm	220×220	220×220
Travel & Feedrate	X-axis travel(Saddle horizontal)	mm	1300	1300
	Z-axis travel(Ram Vertical)	mm	900	900
	Vertical travel of cross rail	mm	1000	1000
	X/Z-axis cutting feedrate	mm/min	Max.15000	Max.15000
	X/Z-axis rapid traverse	mm/min	15000	15000
	Cross rail rapid traverse	mm/min	500	500
ATC	Type of tool holder	—	MAS BT50	MAS BT50
	Tool magazine capacity	set	Turning 12-tool	Turning 6, Milling 12
	Max. tool weight	kg	50	50
	Type of pull stud	—	P50T-I	DIN 69872.50
Motor	Table motor	kW(Hp) (Cont./30min)	AC 37/45(50/60)	AC 37/45(50/60)
	Mill spindle motor		—	AC 15/18.5(20/25)
	X/Z-axis servo motor	kW(Hp)	AC 7(9.3)	AC 7(9.3)
Power Source	Input power supply	—	AC 200/220V ±10%, 50/60Hz ±1%	
	Power capacity	kVA	75	80
Machine Size	Floor space	mm	5200×3750	
	Weight	kg	21000	21000
CNC Controller		—	FANUC Oi series	

Standard Accessories

- CNC controller, FANUC Oi series
- Table and servo drives and motors
- 4-jaw independent chuck
- Automatic tool changer system
- Lubrication oil cooler
- C-axis scale (Only for V16M)
- Hydraulic power unit
- Automatic lubrication system for guides
- Coolant system and Washer coolant
- Through tool coolant
- Through spindle coolant (Only for V16M)
- Splash guard

- X-axis slideway protect steel cover
- Work light
- Patrol lamp (Red, Yellow, Green)
- NC power off
- Chip pan
- Levelling blocks
- Foundation bolts and nuts
- Tool box with maintenance tools

Optional Accessories

- Hyd. 3-jaw & manual 4-jaw combination chuck (Ø1600mm)
- Chip conveyor & bucket
- Scale feedback (X/Z-Axis)
- Tool setter
- Work probe
- High pressure coolant system
- Air-conditioner for electrical cabinet
- High cooler for operation panel
- Transformer
- A.V.R
- Tool holders

■ Standard CNC Controller Features

FANUC 0i series Control Features

- Simultaneously controllable axes : 2
- Minimum programmable increment : 0.001mm(0.00001")
- Tape storage length : 1280m(512 KB)
- Registerable programs : 400EA
- Backlash compensation
- Pitch error compensation
- Constant surface speed control
- Self diagnostic functions

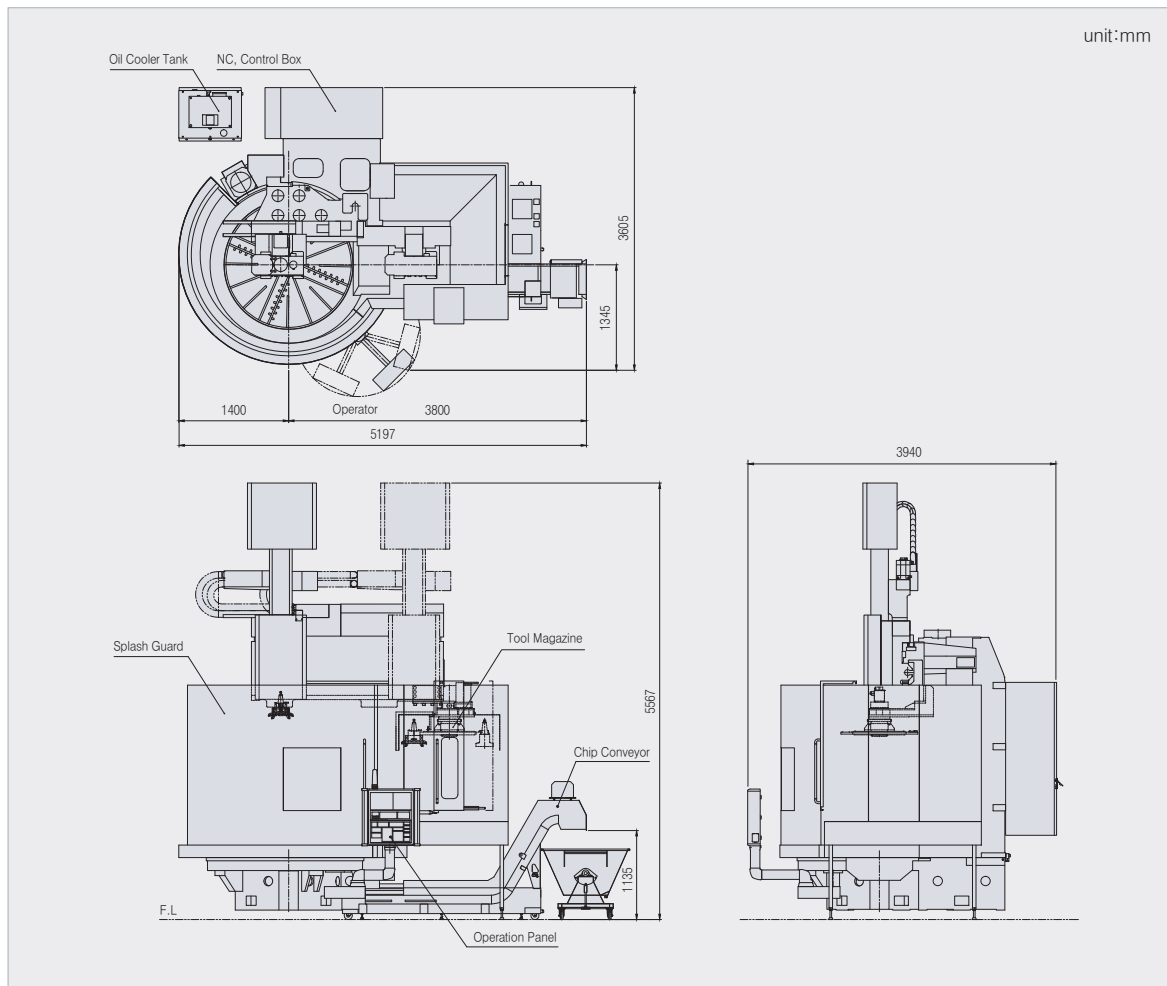
Programming Features

- Circular interpolation by radius designation
- Tool nose radius compensation(G40–G42)
- Combined use of absolute/incremental command
- Inch/Metric programming
- Chamfering, corner R
- Multiple repetitive cycles(G70–G76)
- Canned cycles(G90,G92,G94)
- Decimal point programming
- Reference point return(G27–G30)
- Sub-program 10 holds nested

Operation Features

- 10.4" color LCD
- Geometry and wear offsets
- 64 pairs of tool offsets
- Run hour display
- Thread cutting retract
- Direct input of offset value measured
- Input/output interface (RS232C)
- Keyboard type manual data input (MDI full key)
- Program protect key
- Incremental offset
- Rapid traverse override
- Feed rate override
- Spindle speed override
- Tape code: EIA, ISO Automatic recognition

■ External Dimensions



• Specifications and features are subject to change without prior notice.



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