Hankook VTC-200E CNC Vertical Boring & Turning Mills

Heavy Duty, High Precision, Vertical Boring and Turning Mills designed to deliver Superior Performance.

High Productivity

■Maximum 1250 to 3000mm Turning Capacity

■Maximum 4 to 15 Tons Load Capable Table

■Elevating Cross Rail of 700 and 1000mm Travel

■Full Controlled C-Axis and Rotary Spindle.

■Automatic Tool Changing System up to 12 / 24 (VTC 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 220, 240 and 280mm Square Spheroidal Graphite Iron Ram.

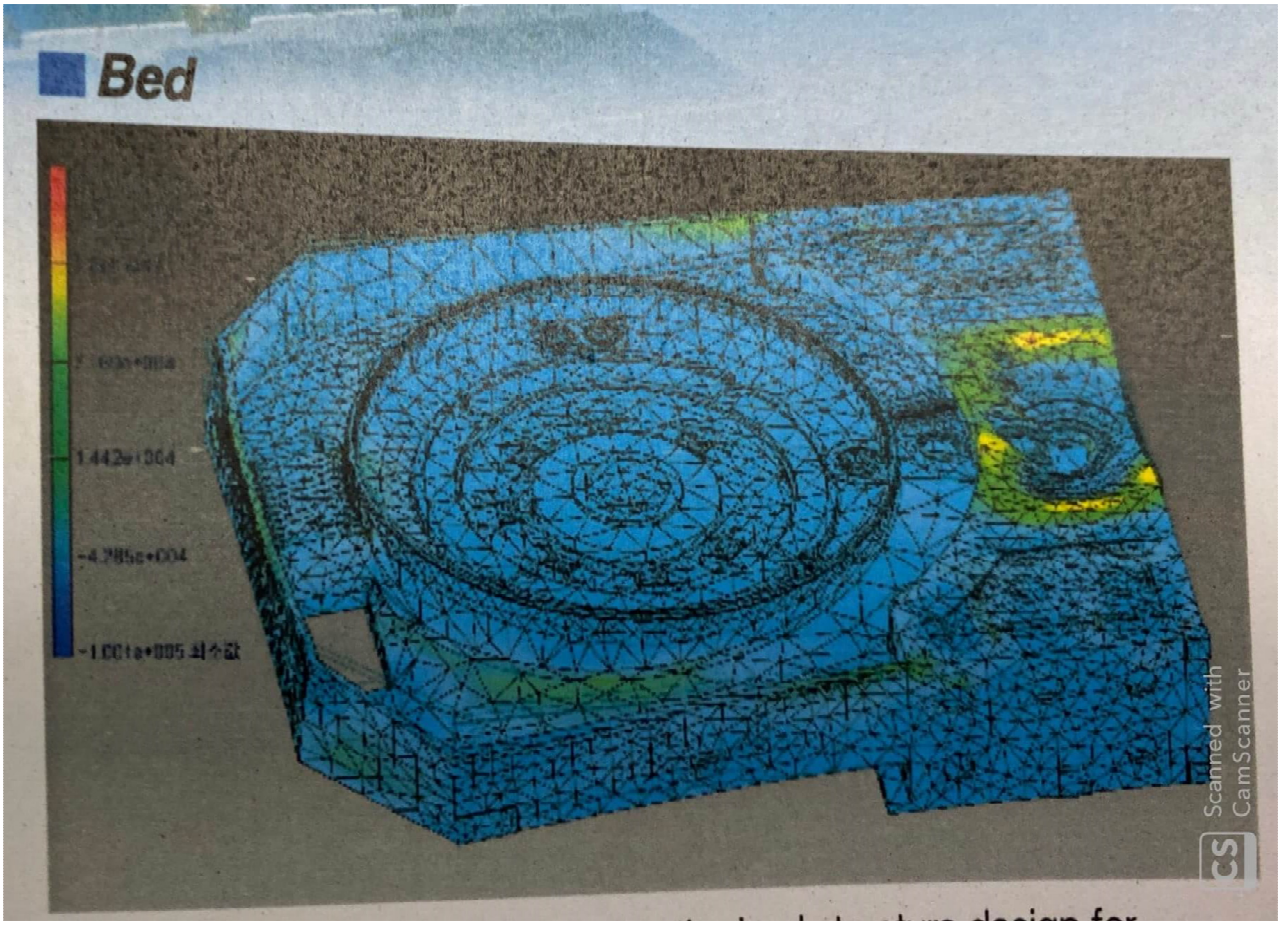
■The Saddle enclosing the ram is one-piece casting to keep the high rigidity.

High Accuracy

■Qualified Precision Bearings & Ball Screws.

■Fluoroplastic Bonded & Hand Scraped Guide Ways

■Full Automatic Lubrication to all critical areas



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.

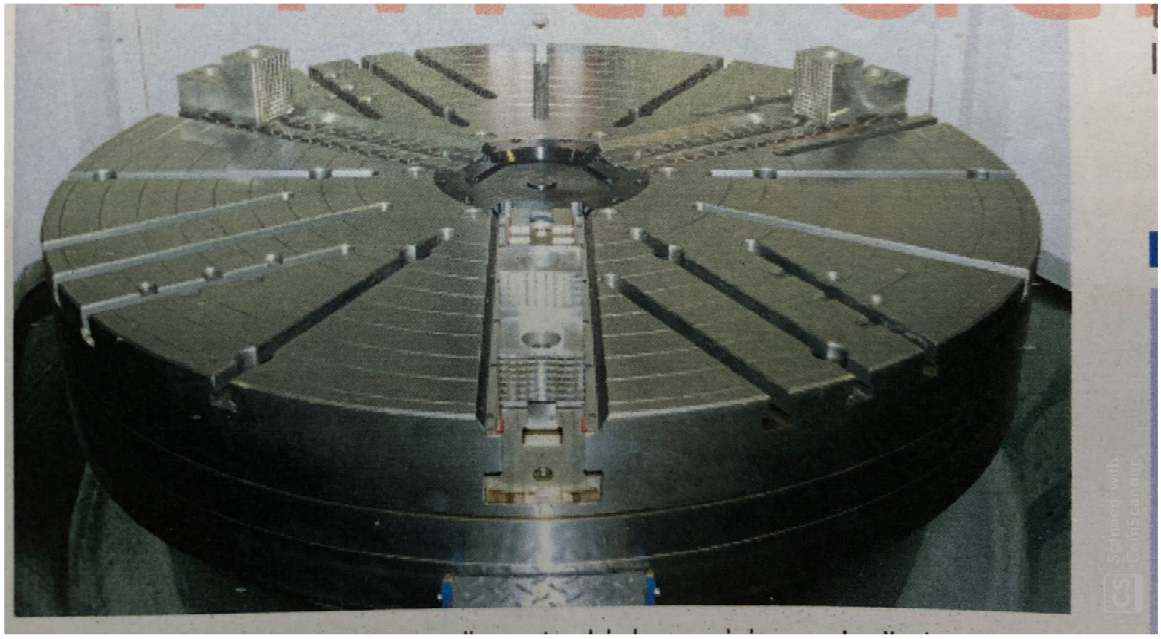
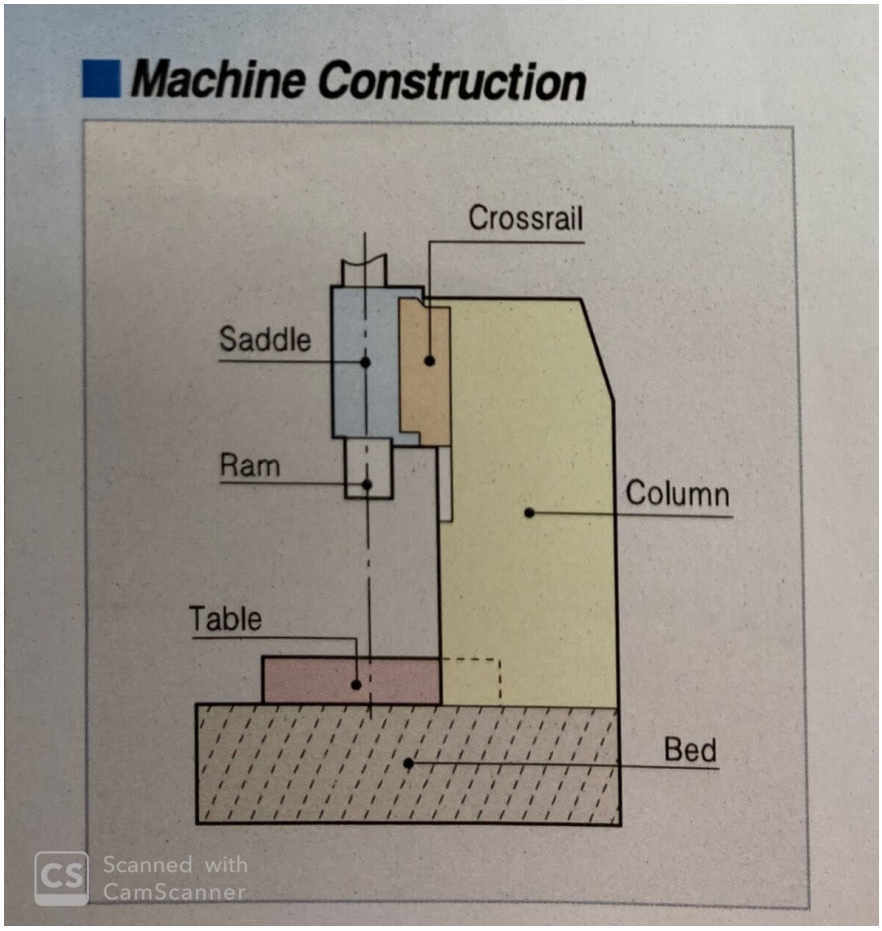


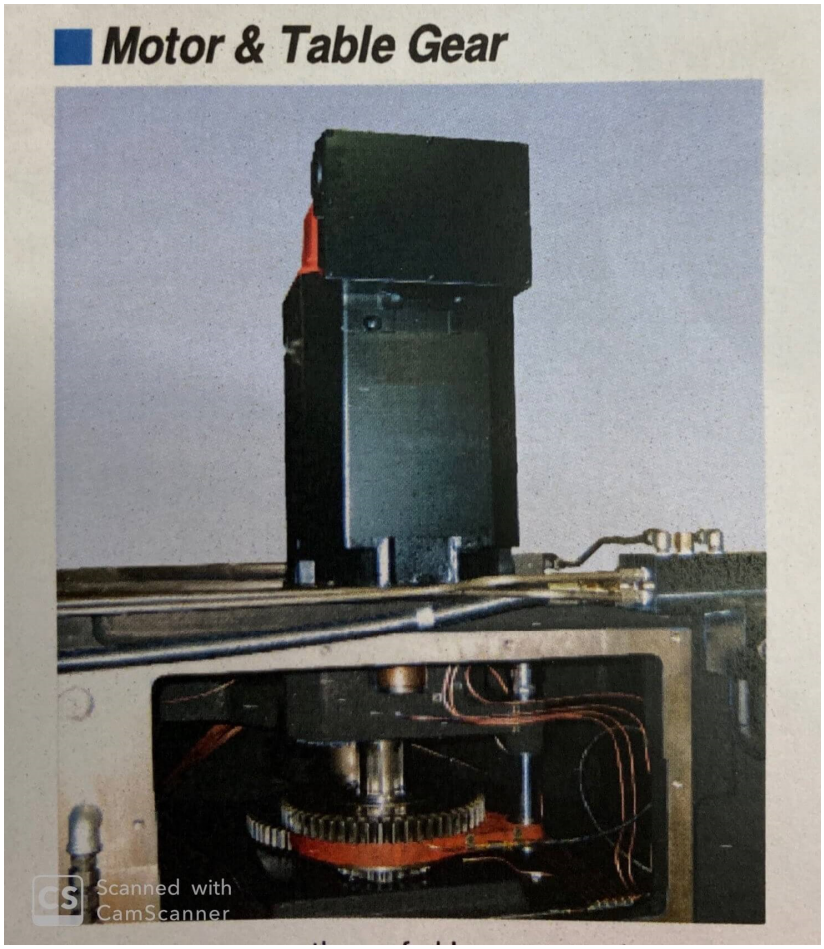
Table & Spindle Bearings

- 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 and Automatic Pallet Changer System are 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.
- Helical Gears are used for smooth and efficient power transmission characteristics.
- High Accurate Table Index by C-Axis Control: 0.001° on Model VTC
- Force Lubrication System provided.

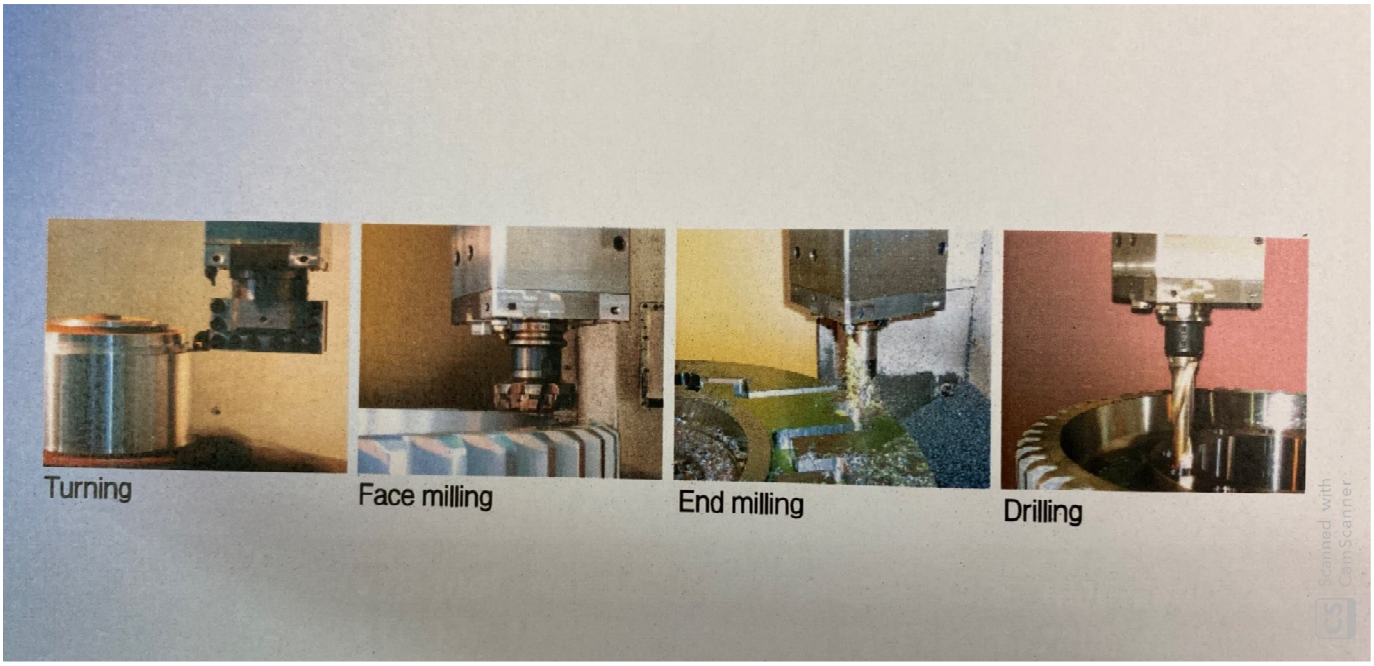


The Column, Cross Rail, Bed, Saddle and Table are constructed of High Quality Meehanite Cast Iron.

These main components are densely ribbed, thick walled and fully stress relieved for long lasting accuracy.



A Direct Connection of Drive Gear Train to the motor minimize the loss of torque.



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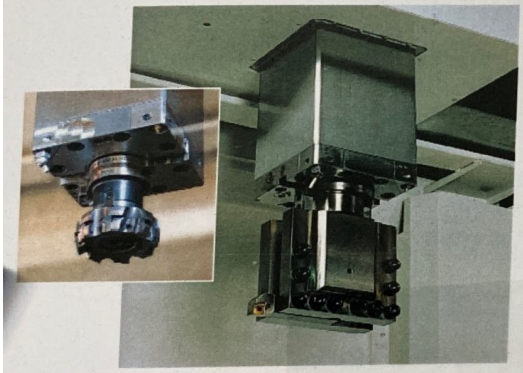
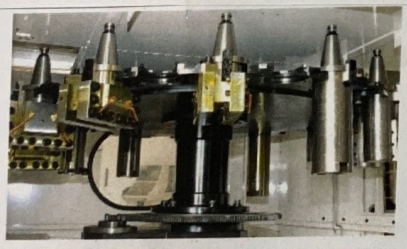


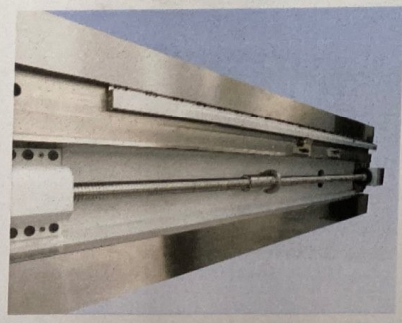
■ Saddle & Ram

- The saddle enclosing the ram is one-piece casting to keep the high rigidity.
- Huge 220, 240 and 280mm square spheroidal graphite iron ram, hardened and ground, is encased in the heavily ribbed saddle and is hydraulically counter balanced.
- Low friction fluroplasitc resin bonded to the ram sliding surfaces of the saddle minimizes friction.
- ModelVTC 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.
- Tool fall-safety device assures safe operation.



■ Automatic Tool Changer

The standard 12 tool capacity(24 tools for model VTC) 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 70kg(150 pounds).



■ Guide Ways

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

■ Axis Drives

Each axis is driven by a high precision ballscrew and is powered by a high touque, 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 7500mm/min(295 ipm).

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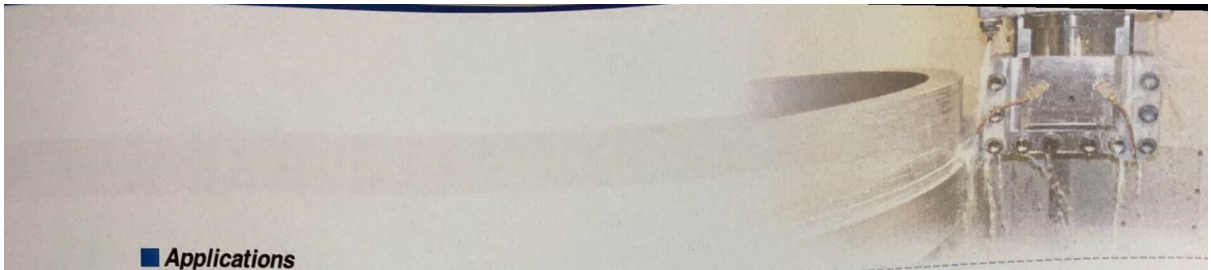
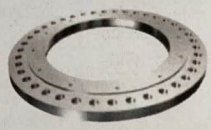


Applications

Wind Power Components

Gear Rim

Rotor Break Disk



Yaw Ring

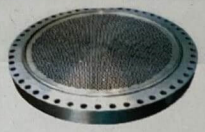
Valve & Pump Components

Valves

Valves

Pumps

Flange



Tube sheet

Self reinforced nozzle

Vehicle Components

Aircraft engine impeller

Rail wheel

Ring gear

Ship Components

Gear wheel supply unit

Intermediate wheel supply unit

Intermediate wheel

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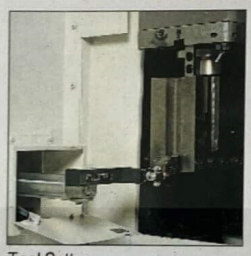
■ Accessories

Automatic Tool Changer

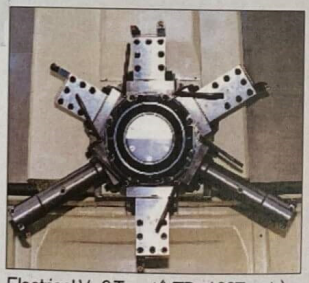


Tool Setter

Couvic Coupling type Tool Holder

Automatic Index Chuck
(for machining large valve)

Automatic Index Chuck
(for machining small valve)



Electrical V-6 Turret(VTB-100T only)

Capto Tool Holder (C6/C8)

Grinding Attchment

C-axis Brake

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Accessories

■Work Probe

■Automatic Pallet Changer (2 Pallets)

■Hydraulic Chuck

Specifications of VTC-200E CNC Vertical Boring & Turning Mills

Items		Unit	VTC-200E
Capacity	Max. Turning Diameter	mm	2500
	Max. Turning Height	mm	2000
	Max .Torque	N-m (Kg.m)	40,300 (4120)
	Max Cutting Force	Kgf	3000
	Max Workpiece Weight	Kgs	15,000
Table	Table Diameter	Mm	2000
	Table Speed	rpm	1 ~200
	Table Speed Range	Step	Auto 2 Step
C-Axis (VTC)	Min Index Angle	Deg	0.001°
	Cutting Feedrate	Deg/min	0 ~720
	Max Speed	Rpm	2
Ram Head	Tool Size	mm	32
	Spindle Taper	-	ISO 7 / 24 No 50
	Mill Spindle Speed	rpm	30 ~3000
	Max Mill Spindle Torque	N-m	280
	Ram Cross Section	mm	240 x 240
Travel & Feedrate	X-Axis Travel (Saddle Horizontal)	mm	1500
	Z-Axis Travel (Ram Vertical)	mm	1500
	Vertical Travel of Cross Rail	mm	1000
	X / Z Axis Cutting Feedrate	mm/min	Max 3000
	X / Z Axis Rapid Traverse	mm/min	7500
	Cross Rail Rapid Traverse	mm/min	300
ATC	Type of Tool Holder	-	Mas BT50
	Tool Magazine Capacity	Set	24 Tool (Turning 12, Milling 12)
	Max Tool Weight	Kg	70
	Type of Pull Stud	-	P50T-I: VTB DIN.69872.50.A: VTC
Motor	Table Motor	Kw (Hp) (Cont./30min)	AC 45 / 55 (60 / 73)
	Mill Spindle Motor		AC 22 / 26 (30 / 35)
	C-Axis Motor	Kw (Hp)	AC 9(12)
	X / Z Axis Servo Motor	Kw (Hp)	AC 7 (9.3)
Power Source	Input Power Supply		AC 200 / 220V +/- 10%, 50 / 60HZ +/- 1%
	Power Capacity	KVA	130
Machine Size	Weight	Kg	61,700
CNC Controller		-	Fanuc 0i Series