



Professional High-Speed Machine

Establishment in 1995, GENTIGER has become is the name equal to "High Speed Cutting Expert". Our company spirit, "Perfection, Efficiency, Specialization" is embedded in all GENTIGER machines, as we deliver comprehensive machines and services to our customers worldwide.



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GT-45V GT-45-5AX

High Speed Double Column Machining Center

133951000211E

www.gentiger.com.tw

CE ISO 9001

GT-45V GT-45-5AX

High Speed Double
Column Machining
Center

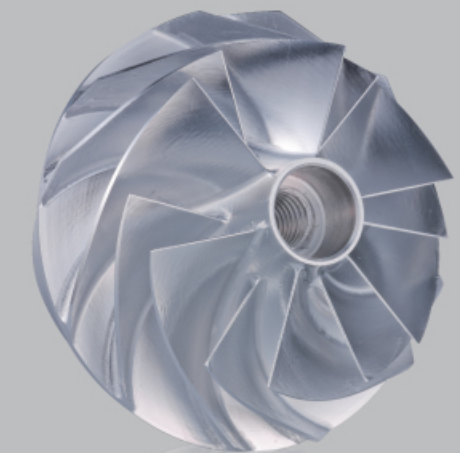


B-Axis: 22.2 min⁻¹ / Repeatability: ± 4 Sec.
C-Axis: 41.7 min⁻¹ / Repeatability: ± 3 Sec.



Robust Structure
Supports Immense
Power from High
Speed Spindle

For high speed cutting, it is not just a matter of spindle speed or motor power, it is a matter of the entire machine's integral performance. It requires super rigid machine body, a high level 5-axis CNC controller, well-balanced cutting tools, proper lubrication / cooling support, and a correct cutting path arranged by CAD / CAM system. All those key factors can be found in the Gentiger GT-45V high speed double column machining center, exhibiting the combination of all key technical points in one machine with best value and performance.



- ▷ Newly designed machine structure dramatically upgrades structural rigidity, speed, stability and accuracy.
- ▷ All structural parts are manufactured from high quality cast iron, stress relieved and seasoning treated to ensure lifetime accuracy and long service life.
- ▷ X, Y, Z-axis ball screws are supported by preloaded angular contact ball bearings to achieve high positioning accuracy at high speed.
- ▷ X, Y, Z-axis are mounted with ball type linear guide ways, featuring heavy load resistance, high rigidity and high dynamic accuracy.
- ▷ Cutting feed rate on 3 axes: 20 m/min
- ▷ Rapid feed rate on 3 axes: 20 m/min
- ▷ Positioning accuracy: 0.003 / 300 mm (when linear scale is equipped)
- ▷ Repeatability accuracy: ± 0.002 mm (when linear scale is equipped)

Transmission Control

Precision Ball Screw

An independent cooler is employed for circulated cooling through ball screw. This fully avoids ball screw deformation while ensuring extra smooth feed motion and higher positioning accuracy.

Rigid Linear Guide Way

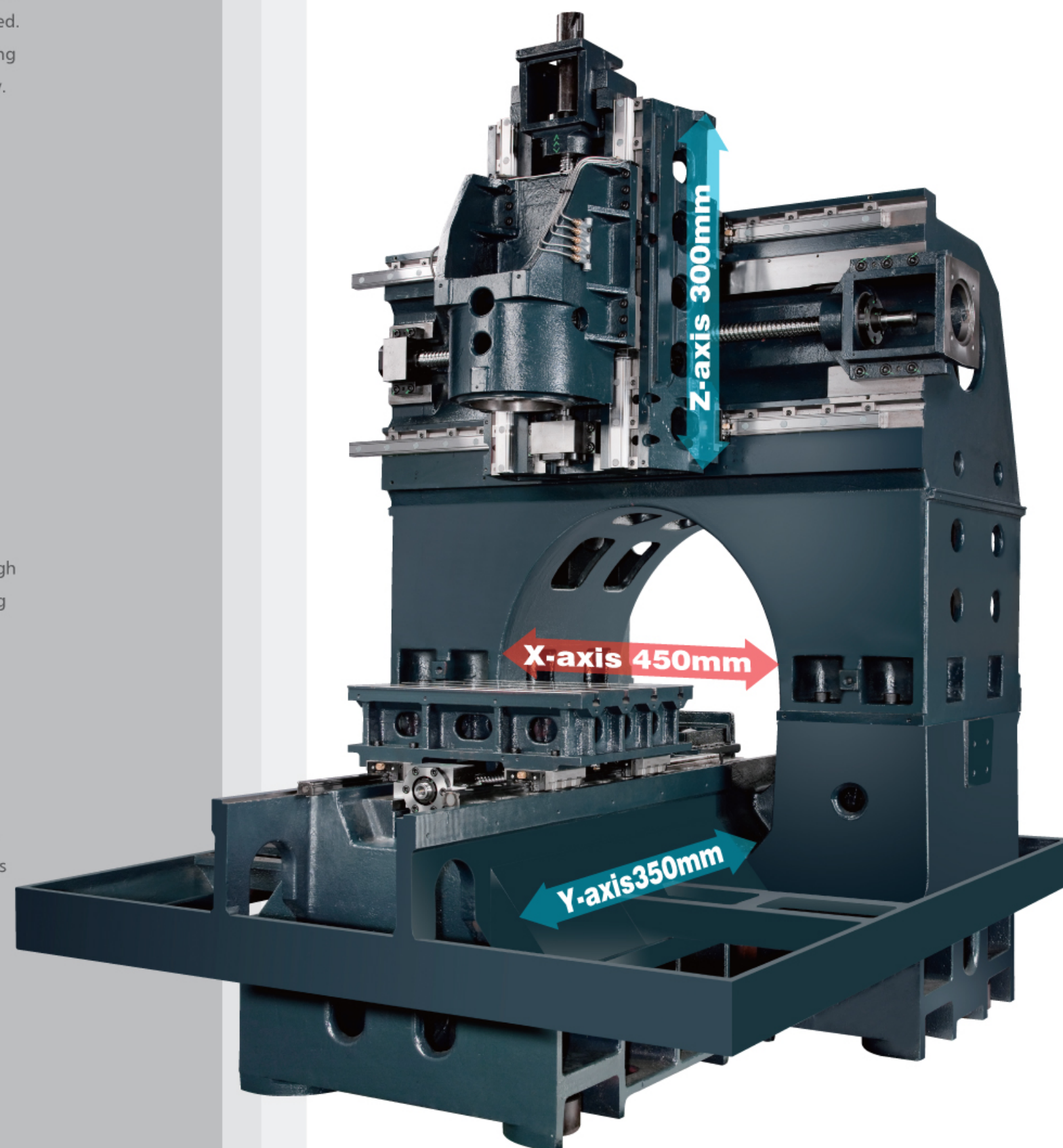
The use of extra heavy duty, high speed type linear guide ways provides outstanding features; such as low thermal growth, low noise, extra low surface pressure and excellent lubrication effect. The linear way effectively suppresses thermal growth and features long life and remains maintenance free for a long time.

Heidenhain Linear Scale(Optional)

- ▷ High accuracy
- ▷ Pollution resistance (single field scanning)
- ▷ Interfering signal-resistance (covered by full conductor)

GT-45V

High precision construction



Max. speed	36,000 rpm
Bearing lubrication	By oil air
Spindle motor type	Built-in type
Spindle motor	20.0 / 26.0 Kw
Spindle torque output	10.4 / 13.5 Nm
Tool shank type	HSK-E50
Inside dia. Of spindle bearing	Ø50
Features	Position sensor (optional)
Cutter needs to be dynamically balanced to	Within G2.5

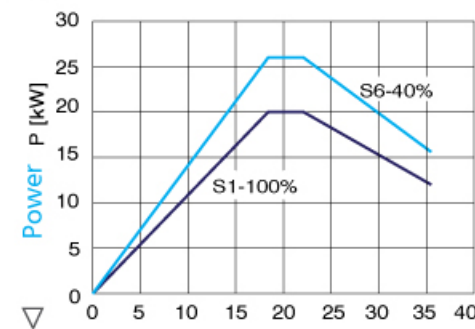
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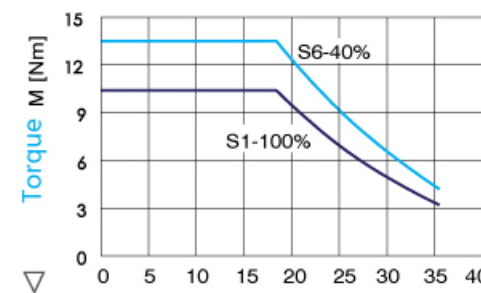
50,000 rpm Built-in Type Spindle



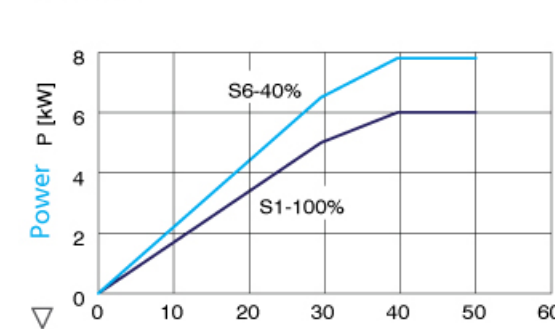
36,000 rpm Built-in Type Spindle

S36E n x 1000 [min⁻¹ / RPM]

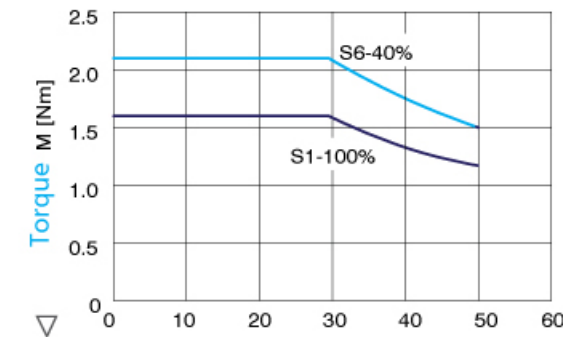
Values		18.4	22.1	35.5
P [kW]	S1-100%	20	20	12
	S6-40%	26	26	15.6



Values		18.4	22.1	35.5
M [Nm]	S1-100%	10.4	8.6	3.2
	S6-40%	13.5	11.2	4.2



Values		29.5	39.6	50
P [kW]	S1-100%	5	6	6
	S6-40%	6.5	7.8	7.8



Values		29.5	39.6	50
M [Nm]	S1-100%	1.6	1.4	1.1
	S6-40%	2.1	1.9	1.5

HSK-E50

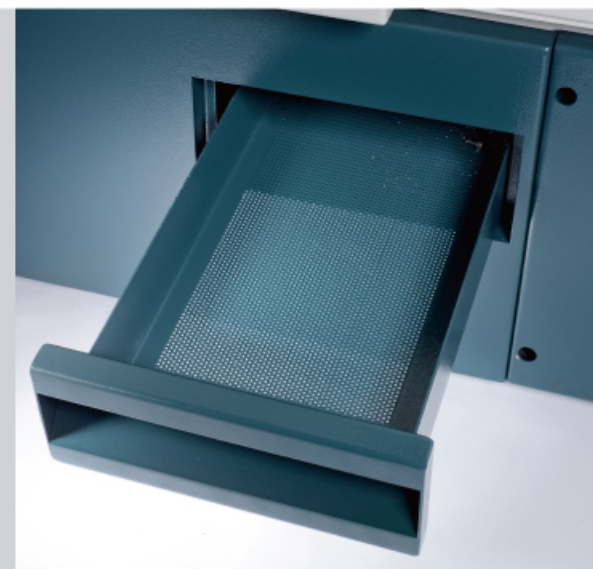
HSK-E32-

Outstanding Design Concept With Robust Structure, Offering Extremely Stable Platform For High Speed Cutting



Tool Magazine

The disk type magazine is driven by a Genova intermittent mechanism for tool change. It employs a spring clamping mechanism to clamp tools securely when the tool disk is rotating. Standard loading capacity of the magazine is 12 tools (20 tools magazine is optional)



Chip Exhaust

Chips with coolant flow to the chip outlet port, located at the front side of the machine. then chips are collected in a chip box on the coolant tank.

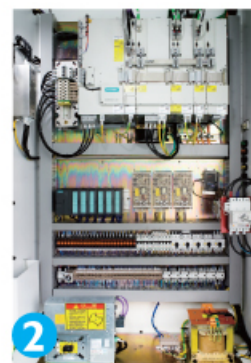
1. Air Conditioner

With the use of air conditioner, the controller, motor driver and electronic components may maintain a constant temperature, this eliminates trouble or machine down-time caused by high temperature for lengthy operations.



2. Electrical Cabinet

The electrical cabinet consists of various electric components, such as controller, driver, PLC and magnetic switches. The control circuit features excellent stability and long service life.



3. Lubrication System / Air System

- ▷ The lubrication system uses an electric oil pump, which delivers lubrication oil to 3 axes feed system.
- ▷ All pneumatic parts are in a centralized arrangement.



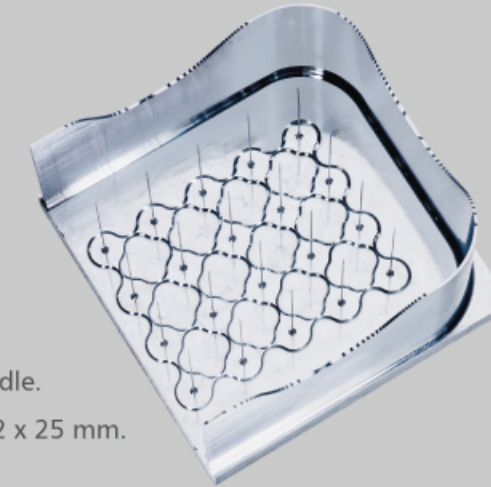
Cutting Capability

The machine is ideal for machining applications in various industries, such as molds, medical instruments, semi-conductors, optics and automotive parts.



- ▷ Workpiece: Turbine blade.
- ▷ Workpiece sizes: $\varnothing 70 \times 27$ mm.

- ▷ Workpiece: Deep needle.
- ▷ Workpiece sizes: $\varnothing 0.2 \times 25$ mm.

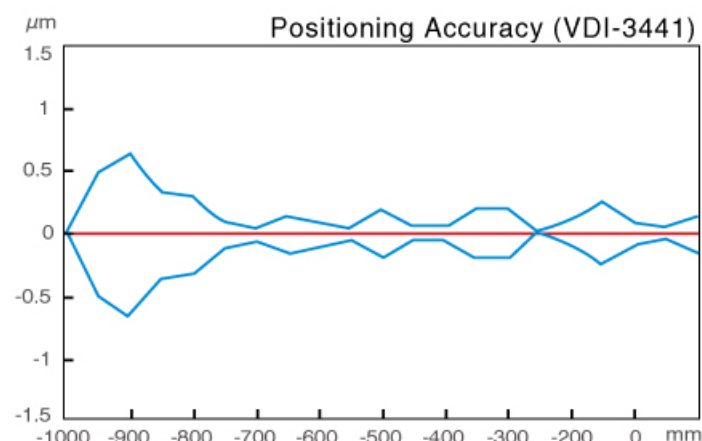
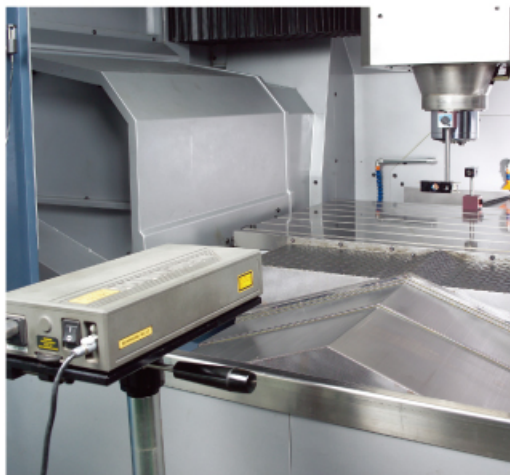


- ▷ Workpiece: Teeth mold.
- ▷ Workpiece sizes: $\varnothing 70 \times 70$ mm.

Superior Quality Control

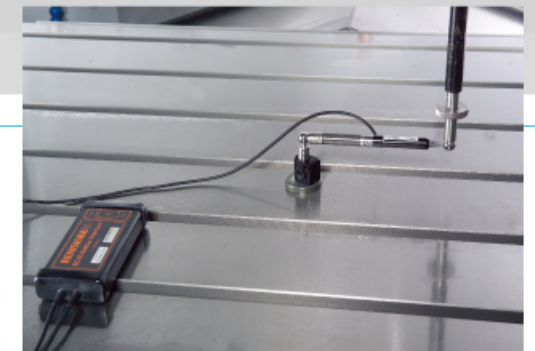
Accuracy Inspection by Laser

The high-tech Renishaw laser unit is applied for inspecting linear positioning accuracy, pitch error and backlash, etc.



Ball Bar Circulating Accuracy Inspection

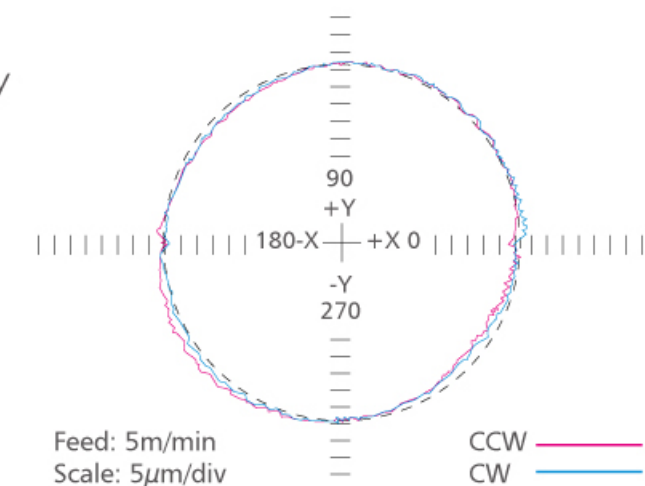
A high precision Renishaw ball bar tester is used for inspecting servo accuracy and geometric errors between two axes, thereby ensuring outstanding circularity accuracy.



Positioning and Repeatability Accuracy

GT-45V
GT-45-5AX

Control	SIEMENS / FANUC / HEIDENHAIN
Positioning Accuracy	0.003 / 300mm
Repeatability	± 0.002 mm



Various Advanced CNC Controls to Choose from

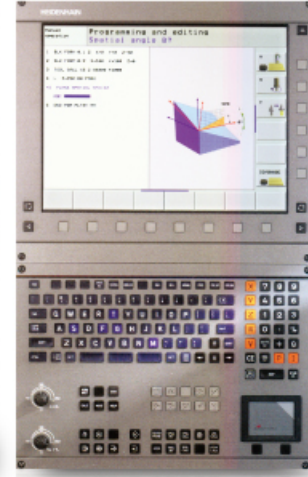
The Gentiger machining center provides a choice of various advanced CNC controls. Each control permits high speed milling and NURBS curved surface machining functions; easy to learn and operate.



SIEMENS 840D / 828D
CONTROL
(Standard Equipment)



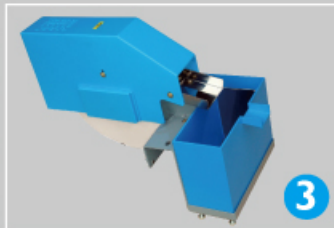
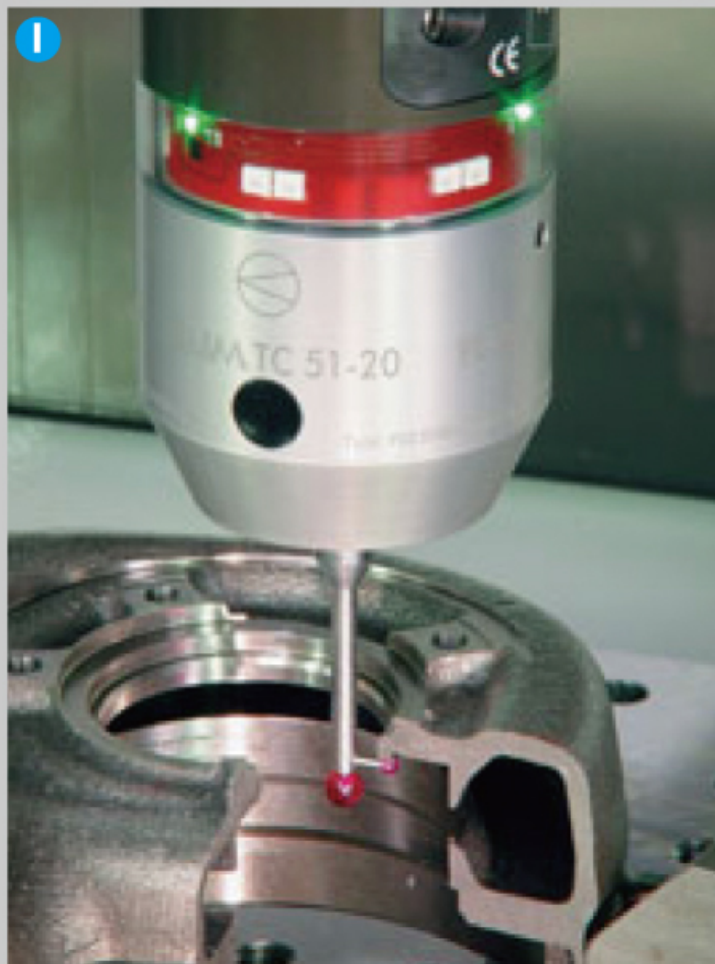
FANUC 18iMB / 31iMB
HPCC CONTROL
(Optional Equipment)



HEIDENHAIN iTNC 530
CONTROL
(Optional Equipment)

Ethernet Support Function

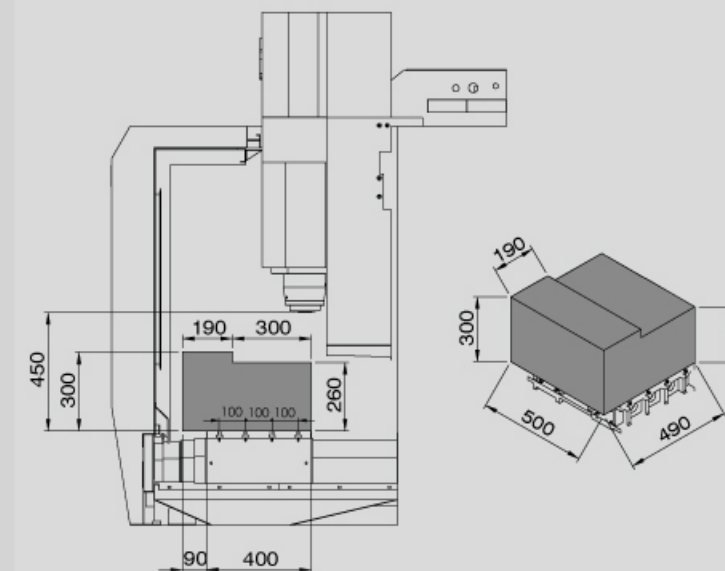
The machining programs can be managed by a PC with instant editing; then programs are transferred through Ethernet to the machine. This function will save operation time.



1. Automatic workpiece measurement system
2. CTS coolant through spindle device
3. Oil fluid separator
4. Automatic tool length measurement device (mechanical type)
5. Automatic tool length measurement system (laser type)

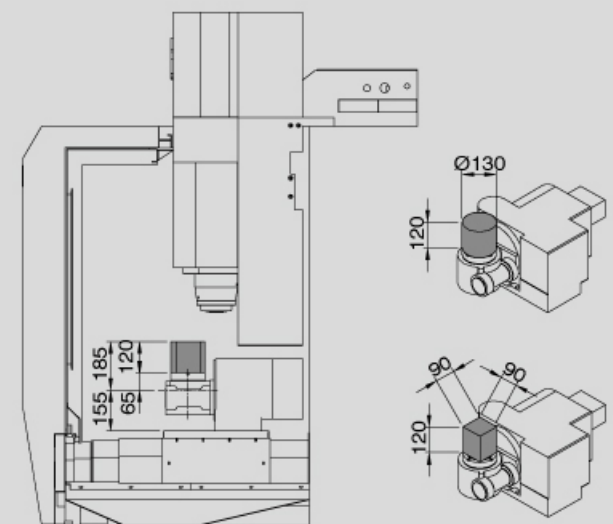
Unit : mm

GT-45V



Average load= 200kg

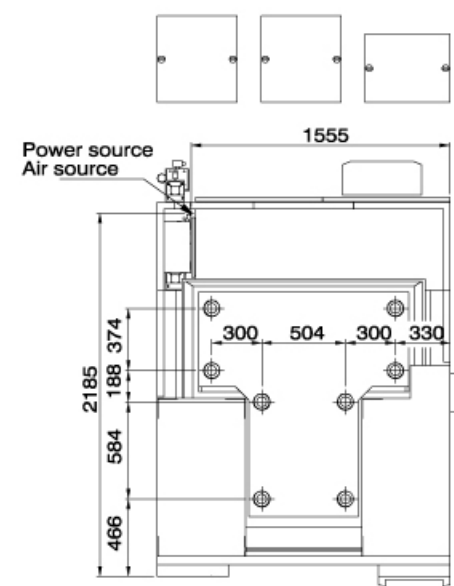
GT-45-5AX



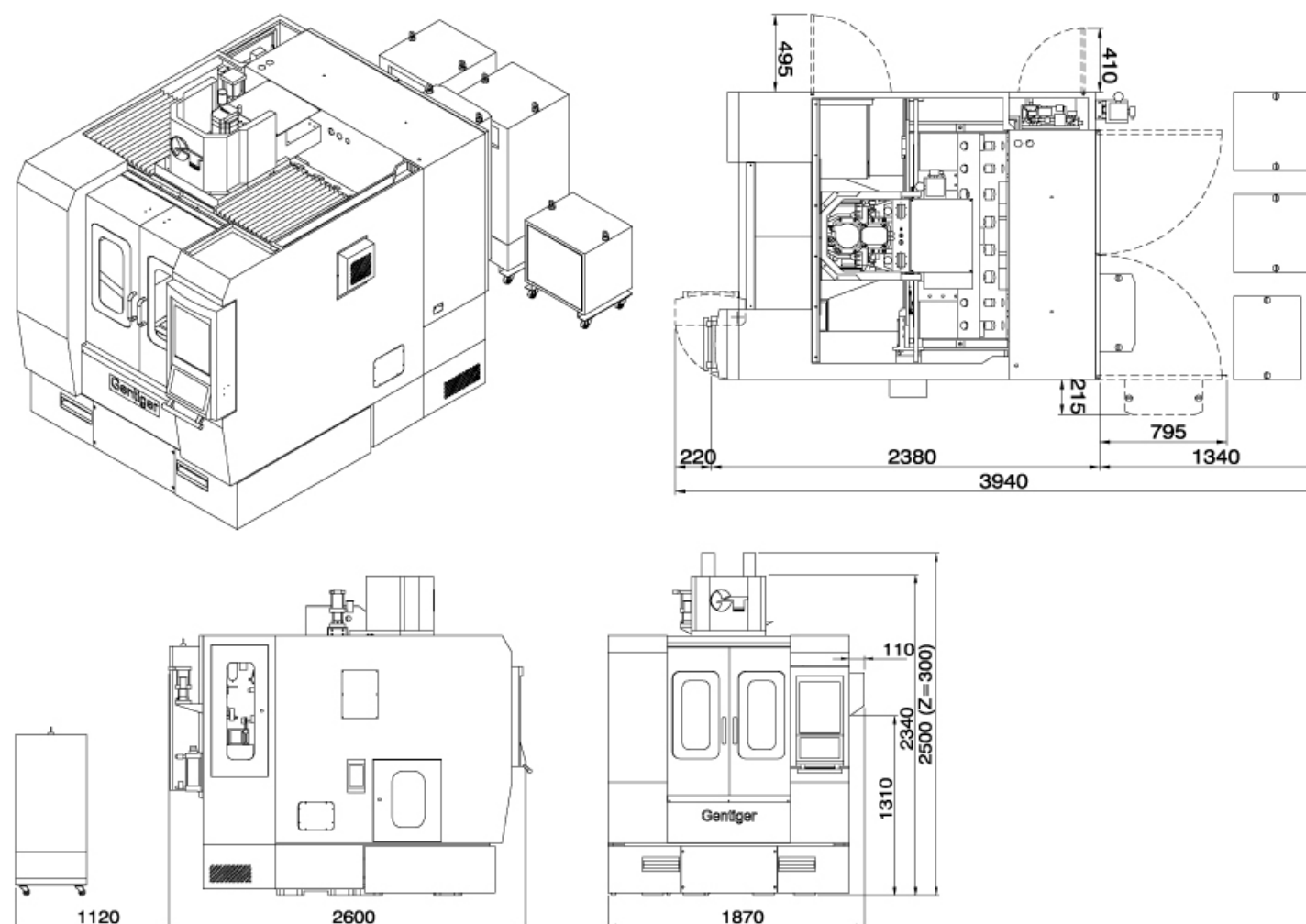
Average load at $0^\circ = 50\text{kg}$
Average load at $90^\circ = 35\text{kg}$

Minimum Footprint Maximum Working Area

- Foundation, power source and air source drawing



- Dimensional Drawing of Machine Unit : mm



GT-45V

Model	S36E	S50K
Three axes travel (X / Y / Z)	450 x 350 x 300 mm	
cutting feed rate	20 m/min	
Rapid feed rate	20 m/min	
Table area	500 x 400 mm	
T-slot	14 / 100 x 4 mm	
Height of table from ground	740 mm	
Max. sizes of workpiece	500 x 490 x 300 (260) mm	
Distance from table surface to spindle nose	150~450 mm	
Max. Load of table	200 kg	
Max. Spindle speed	36000 RPM	50000 RPM
Spindle type	Built-in	
Bearing lubrication	Oil-Air	
Spindle cooling	Water-cooling	
Spindle table	HSK-E50	HSK-E32
Spindle motor	20 / 26 kw	6.0 / 7.8 kw
Spindle torque output	10.4 / 13.5 Nm	1.6 / 2.1 Nm
Inside dia. of spindle bearing	Ø 50 mm	Ø 30 mm
Magazine loading capacity	12 tools (20 tools)	
Tool type	HSK-E50	HSK-E32
Max. tool diameter	Ø 78 mm	
Max. tool length	200 mm	
Max. tool weight	5 kg	
Tool magazine motor	60 W	
Control	Heidenhain / Fanuc / Siemens	
3-axis servo motor	3.5 kw / 2.7 kw / 5 kw (Heidenhain/ Fanuc/ Seimens)	
Air source pressure	7 kg / cm ²	
Air conditioner	586 W	
Spindle cooler	900 W	
Automatic lubricator -(slideways)	150 W	
Coolant motor	600 W	
Chip flush motor	900 W	
Total power consumption	28 kw	
Cool tank capacity	100 Liter	
Machine dimensions	1870 x 2600 x 2340 (2500) mm	
Packing dimensions	2030 x 2940 x 2540 mm	
Net weight	5500 kg	
Gross weight	6010 kg	

GT-45-5AX

	Tilting Axis(B)	Rotating Axis(C)
Table size	Ø130 mm	
Height of table from ground	960 mm	
Max. sizes of machining	Ø130 x 120 mm / □90 x 120 mm	
T-Slot	10 x 4 (Ø130Equal division on circle)	
Distance from spindle nose to table (Z-Axis) (B=0 degree)	70 ~ 370 mm	
Distance from spindle nose to table (Z-Axis) (B=90 degree)	135 ~ 435 mm	
Distance from spindle nose to table (X-Axis) (B=0 degree)	-225 ~ +225 mm	
Distance from spindle nose to table rotating center (X-Axis) (B=90 degree)	-160 ~ +290 mm	
Min. index unit.	0.001°	
Rotating angle of tilting axis	+95° ~ -95°	360° (continuous)
Permissible work load	0° - 50 kg / 90° - 35 kg	
Repeatability	±4 sec	±3 sec

► Above specifications are subject to change without prior notice.

STANDARD ACCESSORIES

- ▷ Coolant tank (including. dust collection tank x 2)
- ▷ Work lamp
- ▷ Tool box
- ▷ Spindle air blow system
- ▷ Chip air blow device
- ▷ Air conditioner for electrical cabinet
- ▷ MPG
- ▷ Pilot lamp
- ▷ Fully enclosed splash guard
- ▷ Central lubrication system
- ▷ Operation and maintenance manual
- ▷ Leveling bolts and pads
- ▷ Ethernet transfer function
- ▷ Spindle temperature compensation system
- ▷ Spindle cooler
- ▷ Coolant through ball screws on 3-axis
- ▷ Cooler for 3-axis ball screws

OPTIONAL ACCESSORIES

- ▷ 3-axis optical scale
- ▷ B,C-axis optical scale
- ▷ Oil mist cooling system
- ▷ Oil skimmer
- ▷ Auto tool measurement system
- ▷ Auto workpiece measurement system
- ▷ Coolant through spindle device