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.

Gentiger Machinery Industrial Co., Ltd.

No.66, Lane 100, Shueitou 1st , Rd., Waipu Dist.,
Taichung City 43856, Taiwan
TEL: 886-4-2683-6919 FAX: 886-4-26839900
Http://www.gentiger.com.tw
E-mail:gentiger@ms38.hinet.net

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GT-2516V / 3016V

High Speed Double Column Machining Center

www.gentiger.com.tw

CE ISO 9001

High Speed Double Column Machining Center

High Speed · High Precision · High Efficiency

The Ultimate in Large Mold Machining

Designed with advanced concepts, the GT-2516V High Speed Double Column Machining Center from Gentiger optimizes high speed, high accuracy and heavy cutting. This machine will bring large mold machining into a new era. Its specially designed double column high speed machine structure combined with one-piece constructed double columns makes the GT-2516V fully exhibit its extraordinary stability and rigidity. The Gentiger GT-2516V has X, Y, Z-axis of 2,500(3,000)x1,600x700(800)mm with maximum table load up to 10,000 kg. The cutting feedrates on three axes are 20, 18 and 20m/min. In addition, its three axes are mounted with roller type linear guideways.

Gentiger GT-2516V / 3016V

Machine Features:

- Special double-column high speed machine structure for high speed and heavy cutting.
- One-piece constructed double columns feature extra high rigidity.
- All structural parts are stress relieved and seasoning treated.
- Three axes are mounted with high speed, heavy duty roller type linear ways.
- Extra powerful drives on three axes.
- X, Y, Z-axis feedrates:
  Rapid feedrates: 20, 18, 20 m/min.
  Cutting feedrates: 20, 18, 20 m/min.
- Heidenhain linear scales on X, Y, Z-axis.
- Positioning accuracy: 0.005 mm / Full Stroke. (ISO-230-2)
- Repeatability accuracy: <0.004 mm / Full Stroke. (ISO-230-2)
- Cutter balance should be calibrated to within G2.5

Perfect Structure Design

to Maximize Machine Rigidity

OPTIMAL MACHINE STRUCTRUE

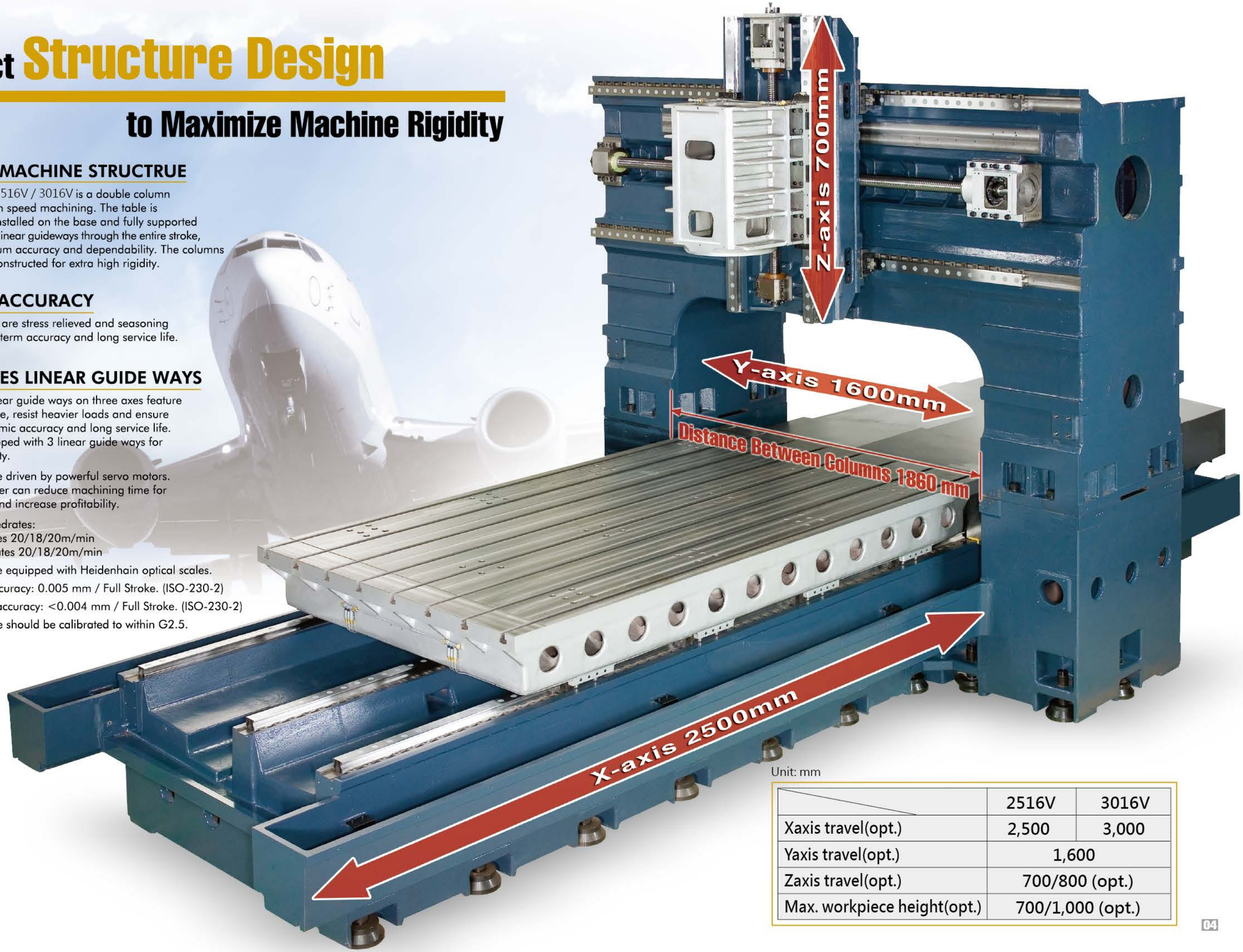
The model GT-2516V / 3016V is a double column structure for high speed machining. The table is independently installed on the base and fully supported by 3 roller-type linear guideways through the entire stroke, assuring maximum accuracy and dependability. The columns are one-piece constructed for extra high rigidity.

LIFETIME ACCURACY

All casting parts are stress relieved and seasoning treated for long term accuracy and long service life.

THREE AXES LINEAR GUIDE WAYS

- Roller type linear guide ways on three axes feature higher feedrate, resist heavier loads and ensure superior dynamic accuracy and long service life. X-axis is equipped with 3 linear guide ways for superior rigidity.
- Three axes are driven by powerful servo motors. Its strong power can reduce machining time for large molds and increase profitability.
- Three axes feedrates:
  Rapid feedrates 20/18/20m/min
  Cutting feedrates 20/18/20m/min
- Three axes are equipped with Heidenhain optical scales.
- Positioning accuracy: 0.005 mm / Full Stroke. (ISO-230-2)
- Repeatability accuracy: <0.004 mm / Full Stroke. (ISO-230-2)
- Cutter balance should be calibrated to within G2.5.



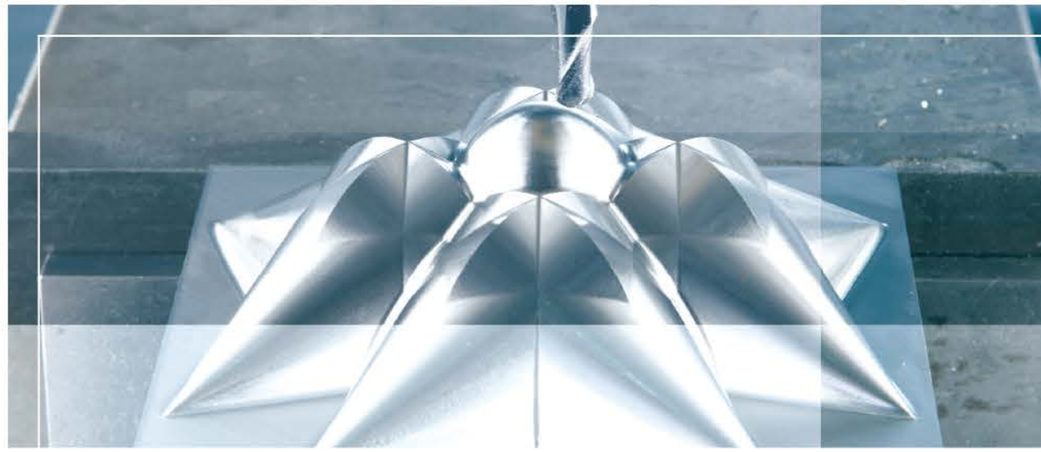
Unit: mm

	2516V	3016V
Xaxis travel(opt.)	2,500	3,000
Yaxis travel(opt.)	1,600	
Zaxis travel(opt.)	700/800 (opt.)	
Max. workpiece height(opt.)	700/1,000 (opt.)	

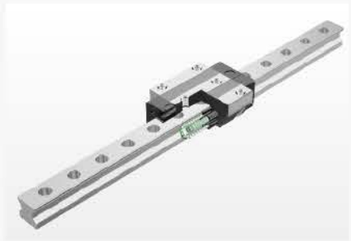
Excellent Design Throughout.

GT-2516V / 3016V

is Your No.1 Choice in Large Mold Machining



Gentiger Machine GT-2516V / 3016V Features



Rigid Roller Type Linear Way

Mounted with the SRG highly rigid roller type linear guide ways combined with the use of roller retainer. These special linear guide ways feature low friction coefficiency, smooth movement and maintenance-free performance for long periods of operation.

Three Linear Ways on X-axis

The X-axis is mounted with three heavy-duty roller type linear guide ways with greater span between ways. This provides solid support for table. Another benefit is the table can accommodate heavier loads without deformation.

Chip Augers

There is one chip auger each equipped at each side of base, delivering chips to a chip conveyor for exhausting chips out of the machine.

Disk Type Magazine (standard equipment)

The loading capacity if magazine is 20 tools.

Coolant Through Ball Screw

Coolant through ball screws on X, Y-axis prevent ball screw deformation, while assuring smooth feed motions and high positioning accuracy.

6 Blocks on Z-axis

Slideways are mounted with two heavy duty roller type linear ways with great span between ways. Each linear way emplys three blocks to upgrade rigidity on Z-axis and features maximum stability during heavy cutting.

Air Conditioner for Electronic Cabinet

With the use of air conditioner, the controller, motor driver and electronic components may maintain a constant temperature at all times. It also eliminates trouble or machine down-time caused by high temperature for a long time operation.

High Quality Electronic Components

The control circuit in the electrical cabinet consists of high quality electronic components that feature excellent stability and long service life.

Automatic Lubricator

This lubricator automatically delivers lubrication oil to Y, Z-axis ball screws (X-axis is grease lubricated) and three axes linear ways.

Heidenhain Optical Scales on 3 Axes

High accuracy (± 3μm)
High repeatability accuracy (≦0.2μm)
Pollution resistant (single field scanning)
Interfering signal-resistant (covered by full conductor)

Caterpillar Chip Conveyor

The chip conveyor efficiently delivers chips out of the machine. It eliminates machine problem caused by chips deposit.

High Precision, High Speed Spindle

A Guarantee for High Speed and High precision Machining

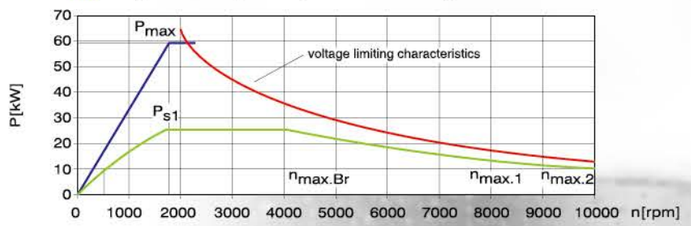
10,000 rpm

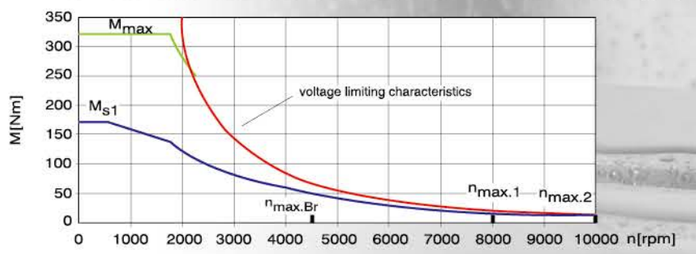
T-10

DIRECT DRIVE BT-50 OIL CIRCULATED COOLING

- Max. Speed: 10,000 rpm
- Spindle Motor: 22 kW
- Spindle Torque Output: 140 Nm
- Inside Dia. of Spindle Bearing: Ø90mm
- Bearing Lubrication: Grease
- High Precision Ceramic Bearings
- Cutter Balance Should be Calibrated to Within G2.5

Spindle Speed/Power Diagram





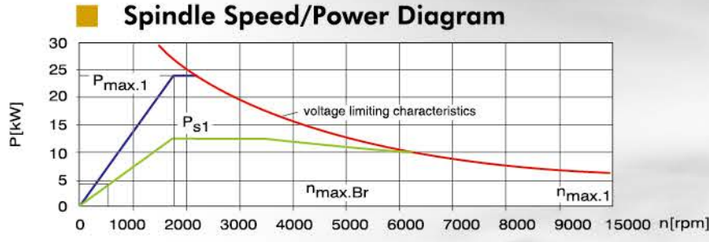
15,000 rpm

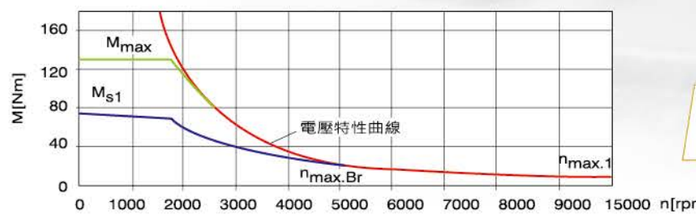
T-15

DIRECT DRIVE BT-40 OIL CIRCULATED COOLING

- Max. Speed: 15,000 rpm
- Spindle Motor: 11 kW
- Spindle Torque Output: 74/130 Nm
- Inside Dia. of Spindle Bearing: Ø70 mm
- Bearing Lubrication: Grease/Oil-Air(Opt.)
- High Precision Ceramic Bearings
- Cutter Balance Should be Calibrated to Within G2.5

Spindle Speed/Power Diagram





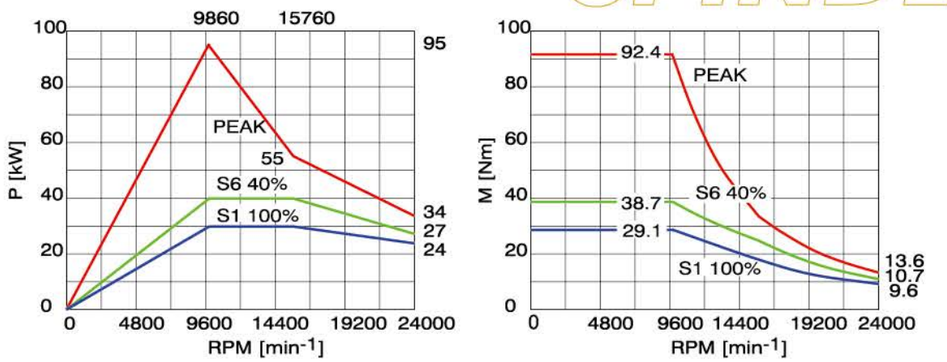
24,000 rpm

S24A

BUILT-IN HSK-A63 SPINDLE WATER-COOLING OIL MIST LUBRICATION ON BEARINGS

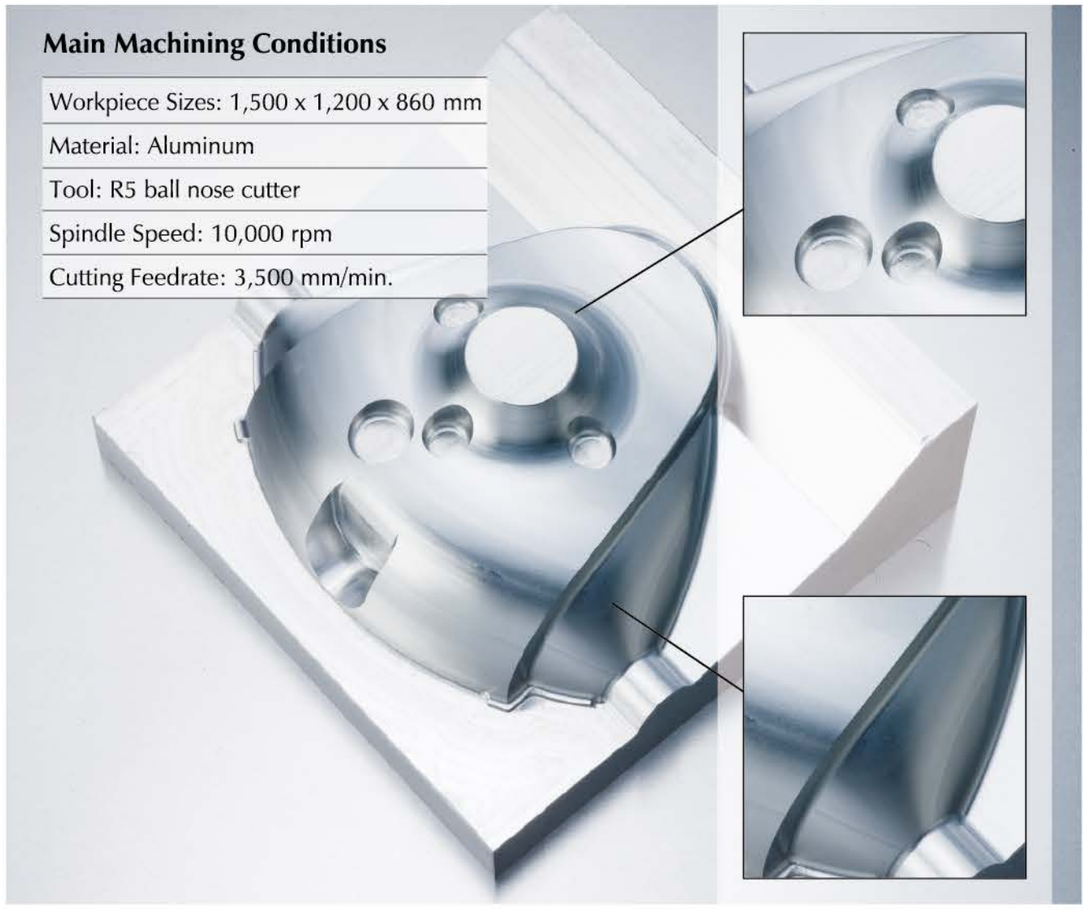
- Max. Speed: 24,000 rpm
- Spindle Motor: 30 / 39 kW
- Spindle Torque Output: 29.1/38.7 Nm
- Inside Dia. of Spindle Bearing: Ø65 mm
- Bearing Lubrication: Oil-Air
- High Precision Ceramic Bearings
- Cutter Balance Should be Calibrated to Within G2.5

Spindle Speed/Power Diagram



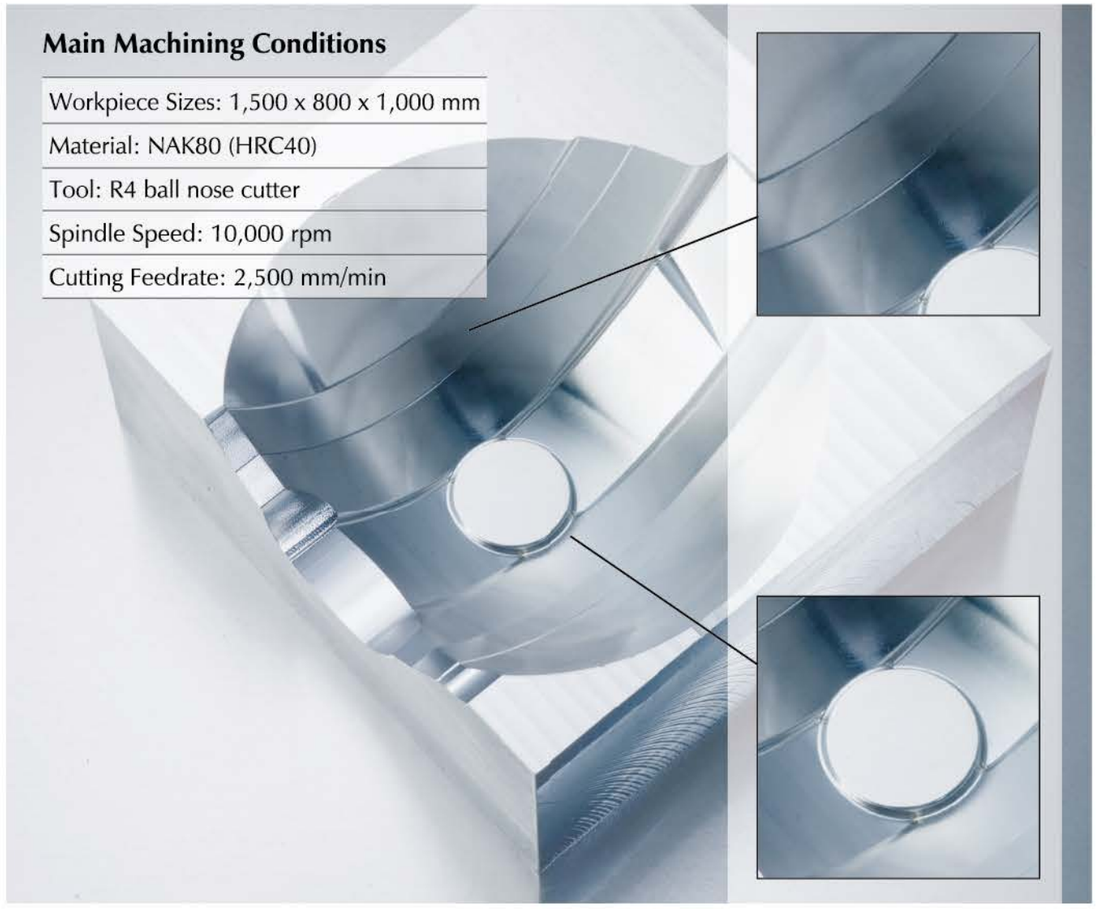
HIGH SPEED SPINDLE

Outstanding Mold Machining Capability



Main Machining Conditions

Workpiece Sizes: 1,500 x 1,200 x 860 mm
Material: Aluminum
Tool: R5 ball nose cutter
Spindle Speed: 10,000 rpm
Cutting Feedrate: 3,500 mm/min.



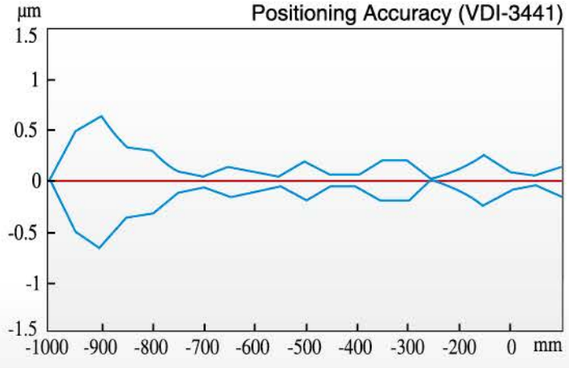
Main Machining Conditions

Workpiece Sizes: 1,500 x 800 x 1,000 mm
Material: NAK80 (HRC40)
Tool: R4 ball nose cutter
Spindle Speed: 10,000 rpm
Cutting Feedrate: 2,500 mm/min

Superior Quality Control

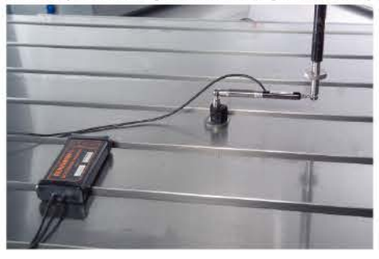
Accuracy Inspection by Laser

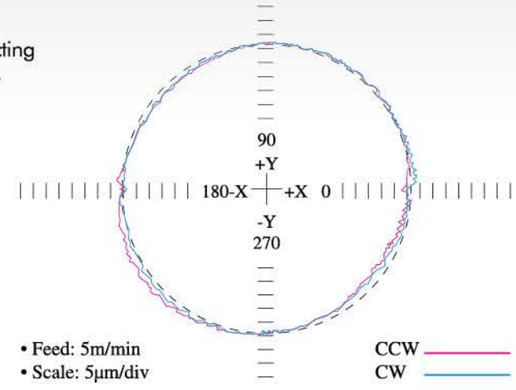
The high-tech Renishaw laser unit is applied for inspecting linear positioning accuracy, pitch error and backlash, etc.



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.

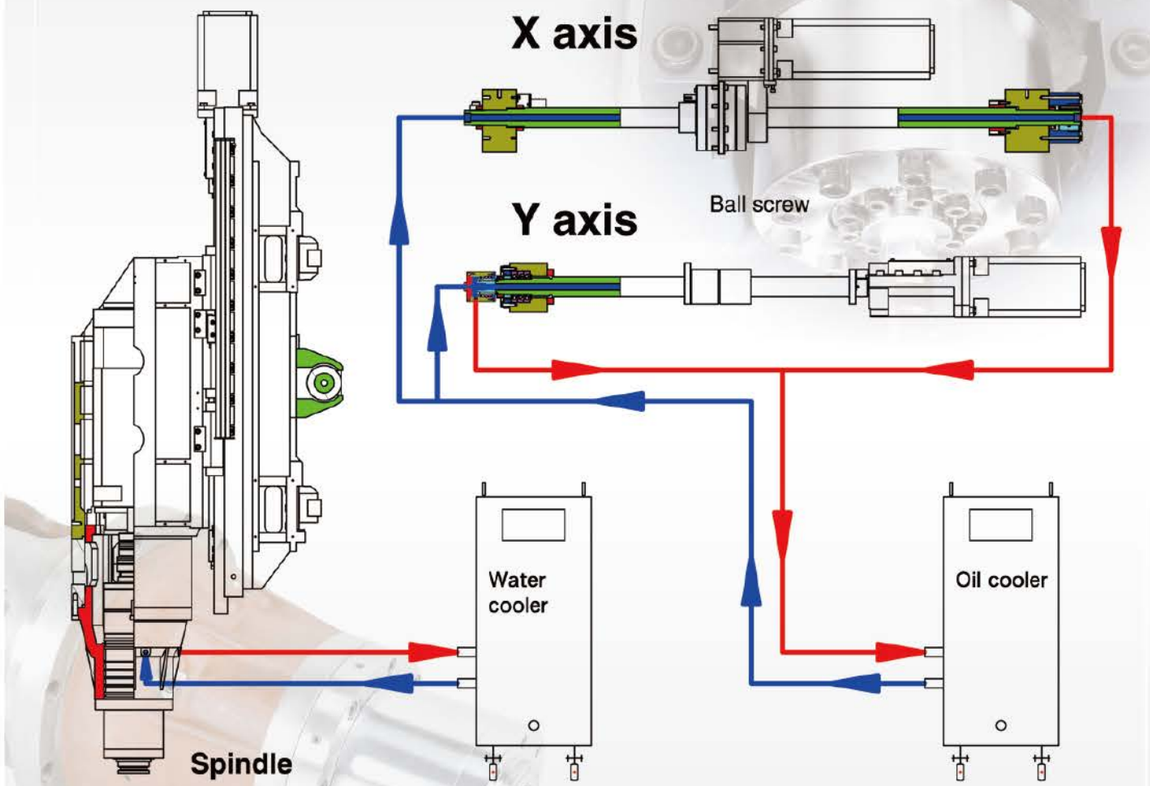




Positioning and Repeatability Accuracy

Model	Control	Positioning Accuracy	Repeatability
GT-2516V	SIEMENS FANUC HEIDENHAIN	0.005 mm / Full Stroke (ISO-230-2)	<0.004 mm / Full Stroke (ISO-230-2)
GT-3016V			

High Precision Performer



Spindle
The spindle employs an independent cooler for circulated water cooling, minimizing thermal growth while spindle is running. It also greatly extends service life of the spindle.

X, Y-axis Ball Screw
The ball screws employ an independent cooler for circulated oil cooling. It prevents ball screw deformation, while providing smooth feed motions and high positioning accuracy.

Various Advanced CNC Controls to Choose from

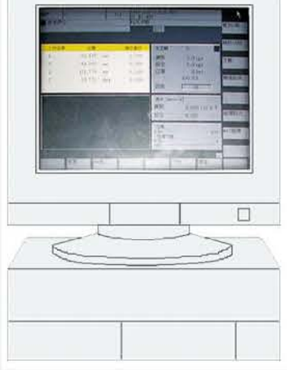

SIEMENS 828D/840D CONTROL (Standard Equipment)


FANUC 0iMD / 31iMB AICC CONTROL (Optional Equipment)


HAIDENHAIN iTNC530 CONTROL (Optional Equipment)

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

Ethernet



Ethernet Support Function

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

Optional Equipment

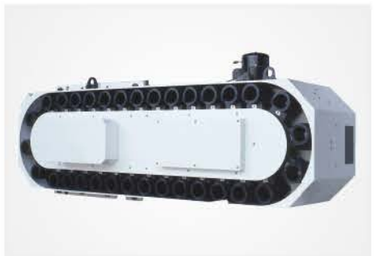

CTS Coolant Through Spindle Device


Automatic Tool Length Measurement System (Laser Type)

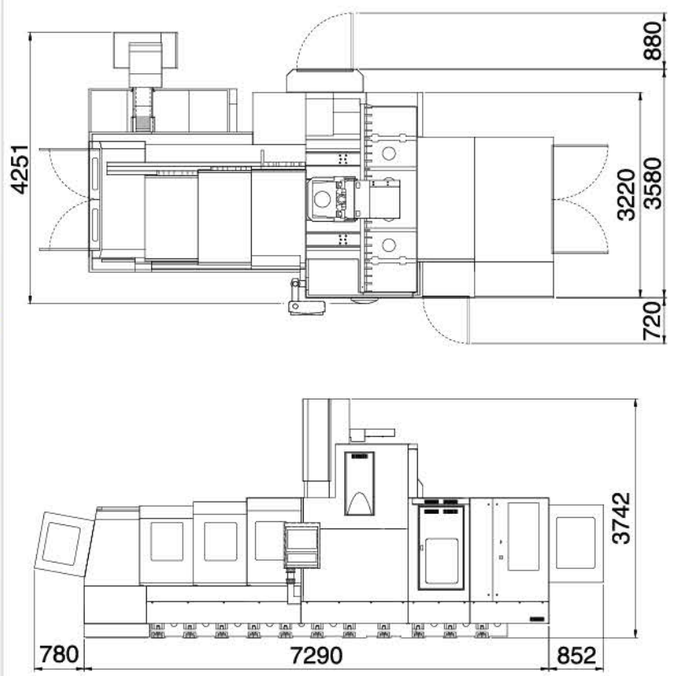

Automatic Tool Length Measurement System (Mechanical Type)


Automatic parts Measurement Device

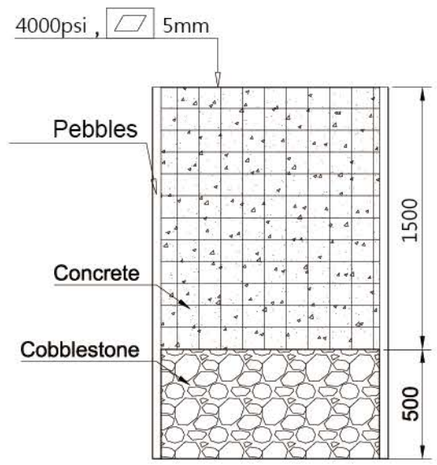

Oil Coolant Separator


40T Magazine

DIMENSIONAL DRAWINGS OF MACHINE



Foundation Requirements:



1.) Concrete Thickness: over 1500mm.

2.) Cobblestone Thickness: over 500mm.

3.) Surface Flatness Accuracy should be under 5 mm in the foundation area.

4.) The Foundation must be able to support 4000psi at least.

Gentiger GT-2516V / 3016V

Model	T10	T15	S24A
Travel (X / Y / Z)	2,500x1,600x700/800mm(Opt.)	3,000x1,600x700/800mm(Opt.)	
Cutting Feedrate (X / Y / Z)	20 x 18 x 20 m/min		
Rapid Feedrate (X / Y / Z)	20 x 18 x 20 m/min		
Table Area	2,800x1,600mm	3,300x1,600mm	
T-Slot	22 x 210 x 8 mm		
Height of Table from Ground	980 mm		
Max. Height of Working Piece	700 / 1,000 mm (Opt.)		
Distance from Spindle Nose to Table Surface	300 ~ 1,000 mm / 250 ~ 1,050 mm (Opt.)		
Max. Load of Table (Average Load)	10,000 kg		
Max. Spindle Speed	10,000 rpm	15,000 rpm	24,000 rpm
Type of Spindle Motor	Direct Drive	Direct Drive	Built-in
Bearing Lubrication	Grease	Grease	Oil-Air
Spindle Cooling	Oil-Cooling	Oil-Cooling	Water-Cooling
Spindle Taper	BT / BBT-50	BT / BBT-40	HSK-A63
Spindle Motor	22 kw	11/14.5 kw	30 / 39 kw
Spindle Torque	140 Nm	74/130 Nm	29.1 / 38.7 Nm
Spindle Bearing Ins.Diameter	Ø90 mm	Ø70 mm	Ø65 mm
ATC Capacity	20 tools / 40 tools (Opt.)		
ATC Tool System	BT / BBT-50	BT / BBT-40	HSK-A63
Max. Tool Diameter	Ø133 mm	Ø100 mm	Ø100 mm
Max. Tool Length	300 mm	250 mm	250 mm
Max. Tool Weight	15 kg	7 kg	7 kg
Total Power Consumption (Max.)	50 KVA		
Coolant Tank Capacity	1,170 Liter		
Controller	SIEMENS		
Servo Motor for 3 Axes	X: 21.99 kw / Y, Z: 10 kw		
Machine Dimension	7,290x4,251x3,724(4162)mm	8,460x4,251x3,724(4162)mm	
Packing Dimension	7,800 x 3,800 x 4,000 mm		
Machine Net Weight	30,000 kg		
Machine Gross Weight	33,000 kg		

* SIEMENS control is standard. HEIDENHAIN, FANUC and MITSUBISHI control are optional.
* Various door height or Y axis 3 linear guideways of SRG65 is available for option.
* Above specifications are subject to change without prior notice.

STANDARD ACCESSORIES

- Coolant tank
- Work lamp lamp
- Tool box
- Coolant motor
- Coolant system
- Spindle air blow system
- Chip air blow device
- Air conditioner for electrical cabinet
- MPG
- M30 work end indication lamp
- Spindle cooling system
- Caterpillar chip conveyor and cart
- Central control lubricator
- Operation and maintenance manual
- Leveling bolts and pads
- Helix chip conveyors along side working table
- Network function
- X, Y, Z axis optical scale

OPTIONAL ACCESSORIES

- Oil and lubricant separator
- Oil-mist cooling system
- Auto tool measurement system
- Auto workpiece measurement system
- Coolant through spindle device
- 40-tool magazine