

H Series

H7 / H10 / H13 / H16

High Speed Double Column Machining Center

Box structure design, 3 axes linear guide ways,
high speed & high precision.

TAKUMI : Professional Team and Outstanding Brand



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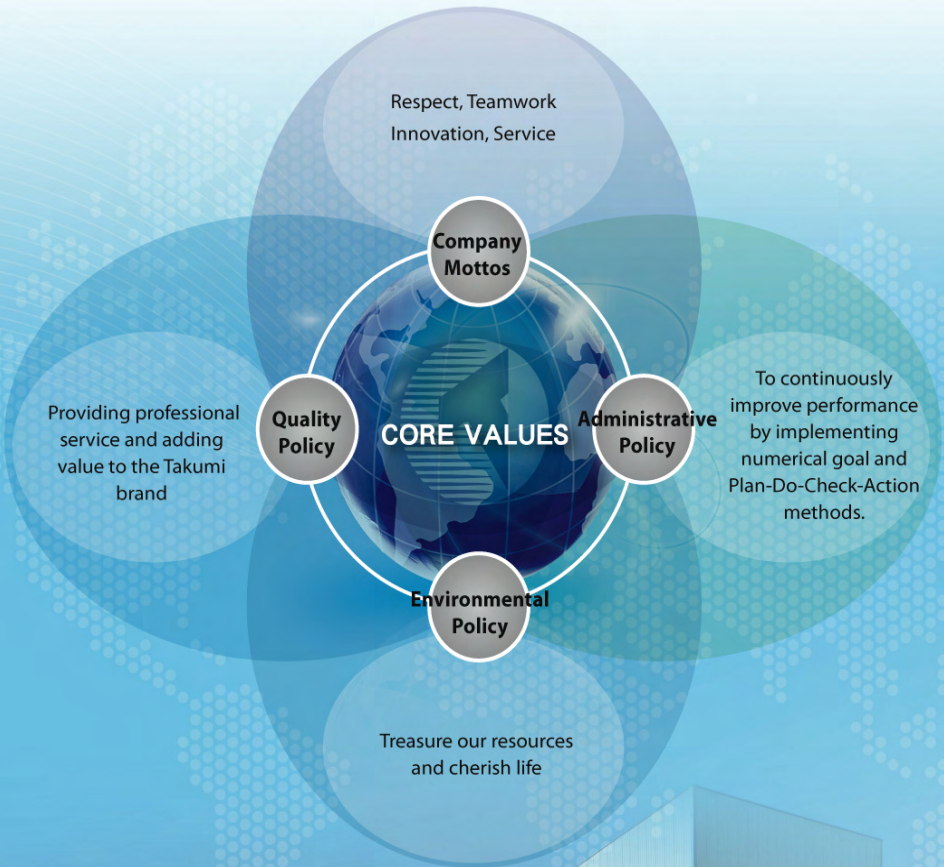
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Takumi : Professional Team and Outstanding Brand

Takumi Machinery has been devoting to the development, production and application technology of high speed machining centers since its establishment in 1988. Takumi machining centers are used in a wide range of industries, including plastic injection molds, electrodes manufacturing and parts production.

In 2008, Takumi officially became a part of the USA based LDI group. Integration has increased the pace of internationalization while combining the technology

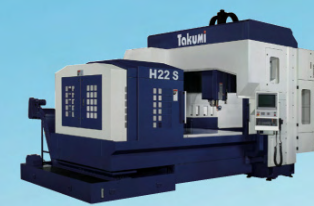
expertise of the USA and Taiwan based operations. Based on the guiding principles of "respect, teamwork, innovation, and service" the Takumi team of professionals continues to develop vertical machining centers, high speed double-column machining centers and five-axis machining centers. Takumi Machinery is dedicated to providing a complete product line and fulfilling diverse customer needs.

High Speed Double Column Machining Center

B Series
 X=550 mm
 Y=600 mm
 Z=350 mm
 Graphite Cutting Set is Available



H Series
 X=750~3200 mm
 Y=600~2250 mm
 Z=500~800 mm



DJ Series
 X=300~400 mm
 Y=300 mm
 Z=200~300 mm



Vertical Machining Center

V Series
 X=1000~3200 mm
 Y=510~1066 mm
 Z=560~750 mm
 3-Axis Box Ways



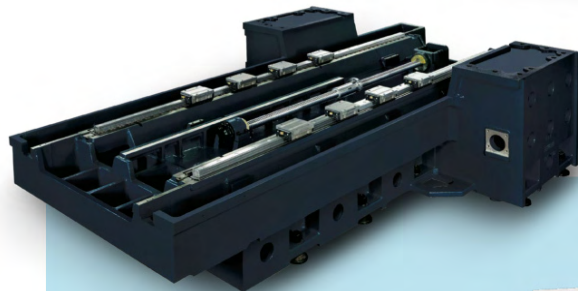
VL Series
 X=1020 mm
 Y=610 mm
 Z=610 mm
 3-Axis Linear Guide Ways



**The achievement of Takumi's innovation and technology:
 The perfect performance of rapid machining and stability.**

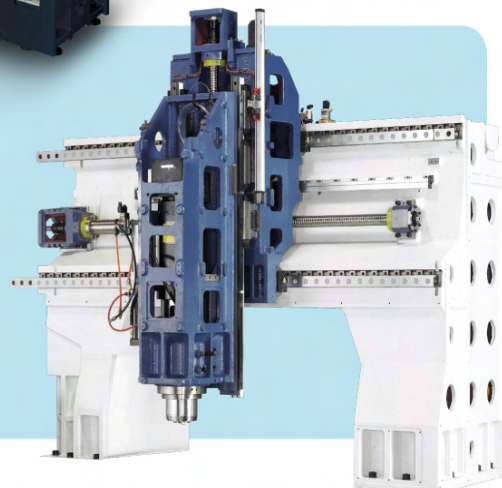
- H series is designed for the machining requirements from the industries of parts production and mold & die. 3 axes are equipped with roller type linear guide ways to meet the demand of high acceleration/deceleration, the maximum cutting feed rate ups to 30 m/min (H13/H16). By adopting 10000rpm~36000rpm high speed spindles, H series is widely used in the industries of 3C, automotive and mold machining.

- The wider width of door opening makes workpiece easier to be loaded and unloaded.



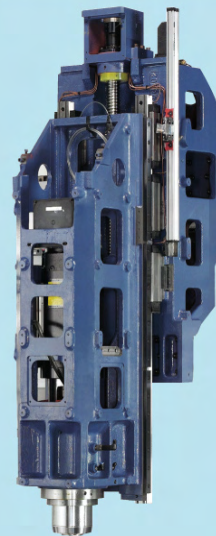
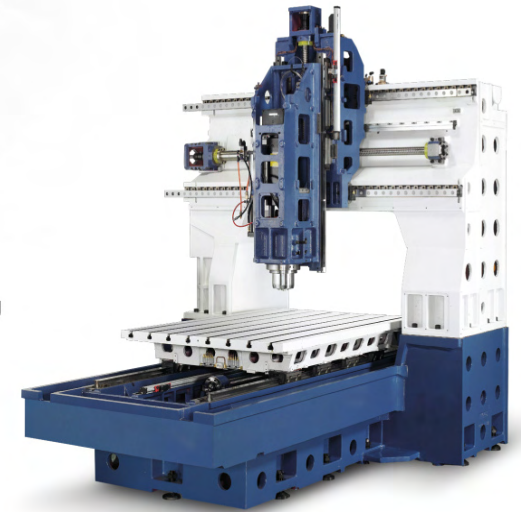
- T-shape bed provides the best rigidity and stability.
- Beam & columns are made of one piece casting.

- The swivel operation box allows users to operate at suitable angle and position.



High Rigidity and High Stability Double Column Structure

- 3 axes travel: X=750~1600mm, Y=600~1300mm, Z=500~700mm
- 3 axes are equipped with roller type linear guide ways to optimize acceleration/deceleration.
- Non-counter balance on spindle head allows high speed and quick response.
- Bed, columns, saddle and other main castings are made of Meehanite grade cast iron and released the stress by heat treatment, ensuring the best structural stability and positioning accuracy.
- The ladder type design of linear guide ways on the beam provides wider supporting surface for saddle, ensuring powerful and stable cutting performance.
- 3 axes ball screws pretension design reduces the thermal deformation, offering the best accuracy.
- 3 axes ball screws and linear guide ways are lubricated by centralized automatic lubrication system (oil type).
- Absolute encoder motors are used in 3 axes feeding system to ensure the positioning accuracy.
- The device of oil & coolant separation on machine bed and oil skimmer on coolant tank prolongs the service life of coolant.
- Fully enclosed splash guard provides safety and clean operating environment.



- 6 guide blocks on H13/H16 Z axis linear guide ways ensure the consistent precision of consecutive operation.
- The quantities of guide blocks on 3 axes are as below:

Axis	Model	H7	H10	H13	H16
X axis		4	4	4	8
Y axis		4	4	4	4
Z axis		4	4	6	6

- The design of tilting groove surface and flushing coolant system on H7/H10 provides perfect performance of chip-removal. (H13/H16 are equipped with chip augers and coolant flushing system.)

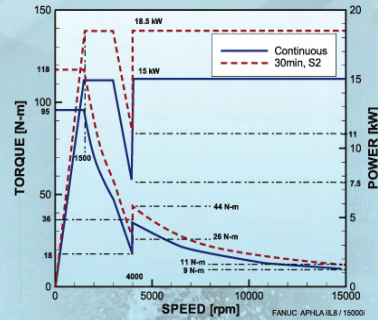
High Accuracy and High Performance Spindle

- H series provides direct-drive type spindle and built-in type spindle to meet different machining requirements. The spindle speed range is 10,000rpm~36,000rpm.
- Spindles are made by professional spindle manufacturers, featuring high accuracy and high performance.
- The built-in thermal compensation system (optional: IBAG spindle only) decreases the effect of thermal deformation, assuring the accuracy during operation.
- Spindle cooling system reduces thermal deformation and prolongs working life of spindle.

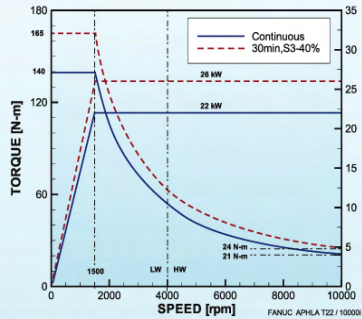


Spindle Power & Torque Chart

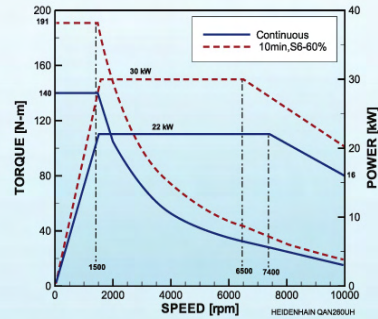
- Direct-drive type spindle, 15/18.5 kW, 15000rpm (standard, for FANUC NC only)



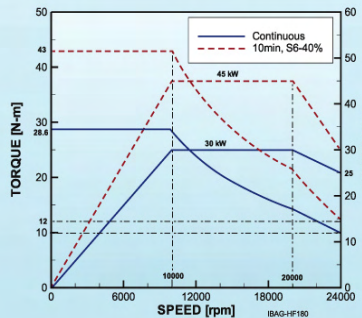
- Direct-drive type spindle, 22/26 kW, 10000rpm (optional, for FANUC NC only)



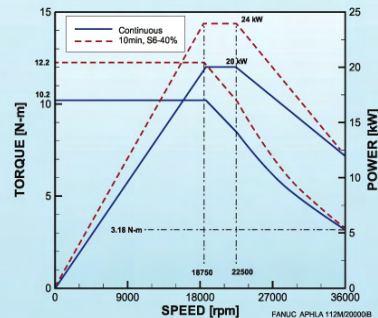
- Direct-drive type spindle, 22/30 kW, 10000rpm (optional, for HEIDENHAIN NC only)



- Built-in type spindle (IBAG), 30/45 kW, 24000rpm (optional)



- Built-in type spindle (IBAG), 20/24 kW, 36000rpm (optional)



ATC

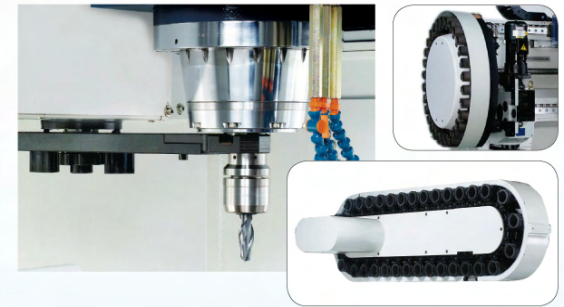
- Armless type ATC (standard)

- H7/H10 : 16T, BBT40
- H13/H16 : 20T, BBT40



- Arm type ATC (optional)

- H7 : 24T, BBT40
- H10 : 30T, BBT40
- H13/H16 : 30/48/60T, BBT40
- H13/H16 : 32/60T, BBT50



Optional Accessories



- Oil mist collector



- Linear scales (3 axes)



- Workpiece measurement system



- Tool length measurement system

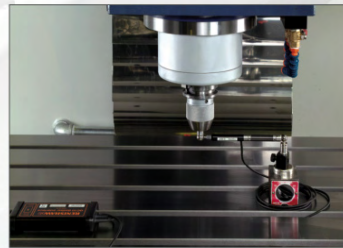


- Ball screw cooling system

ISO9001:2008 Quality Management



• Hand scraping
All of the main assembling surfaces are hand scraped to optimize machine accuracy.



• Ball bar test



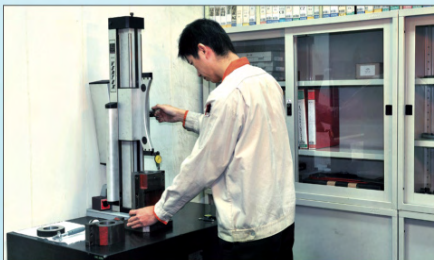
• Laser inspection



• Spindle test



• Temperature control room

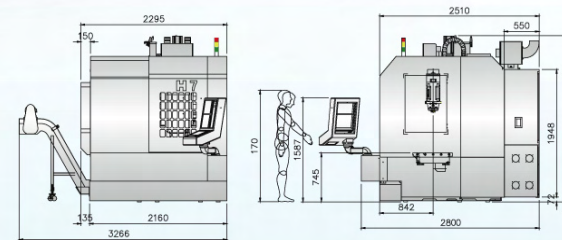
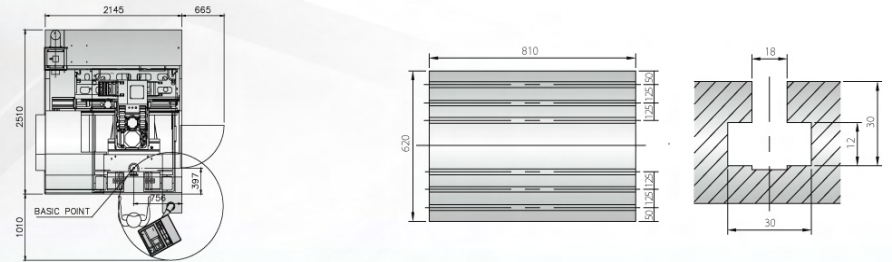


• Parts inspection before installation

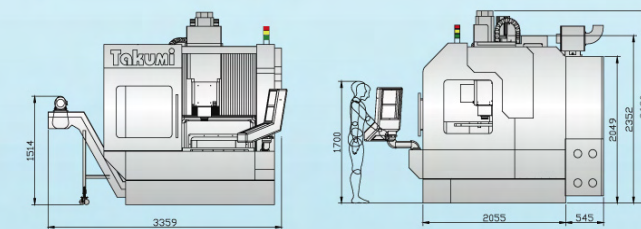
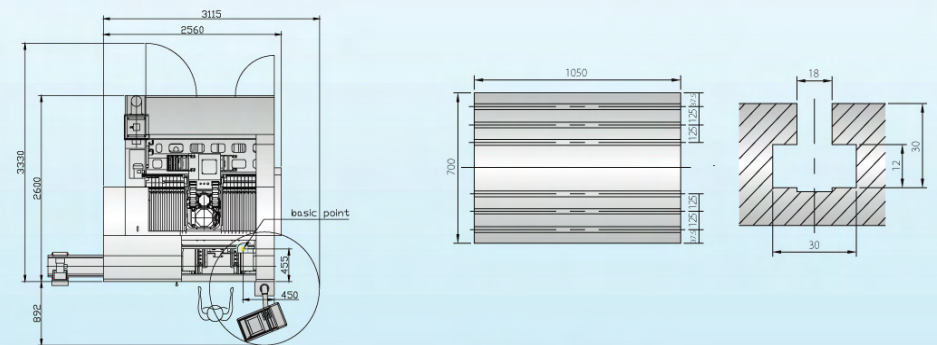


• Testing workpieces

H7 Dimensions Table & T-slot

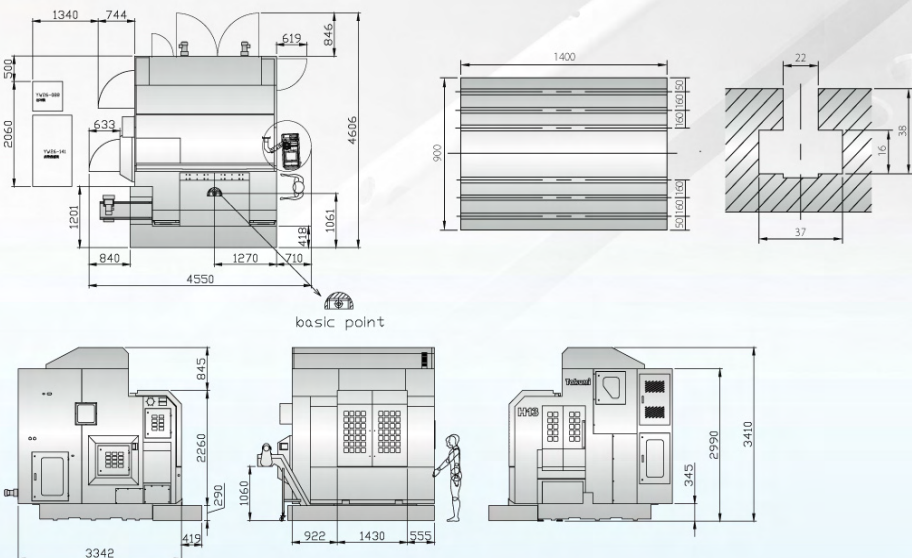


H10 Dimensions Table & T-slot

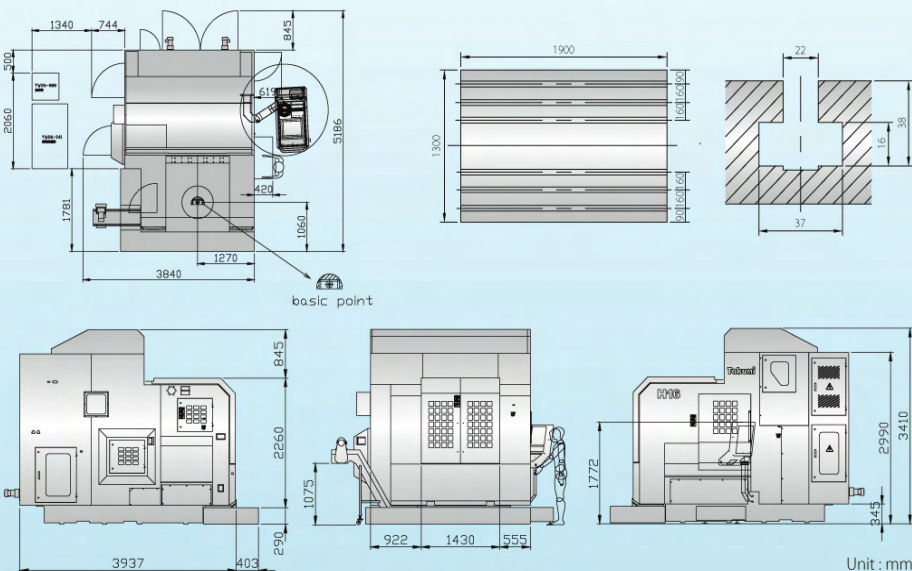


Unit : mm

H13 Dimensions **Table & T-slot**



H16 Dimensions **Table & T-slot**



Specifications

Travel	Unit	H7	H10	H13	H16
X axis	mm	750	1020	900	1600
Y axis	mm	600	700	1300	1300
Z axis	mm	500		700	
Distance from spindle nose to table	mm	150~650	180~680	200~900	
Distance between columns	mm	850	1080	1500	1500

Table	Dimension	mm	810 X 620	1050 X 700	900 X 1400	1900 X 1300
Max. load	kg	500	800	3500	8000	
T-slot (width X pitch X number)	mm	18 X 125 X 5	18 X 125 X 6	22 X 160 X 5	22 X 160 X 8	

Spindle	Spindle type	Direct-drive			
Spindle speed	rpm	15000			
Spindle motor power (cont./30 min rated)	kW	15/18.5			
Spindle taper	—	BBT40			

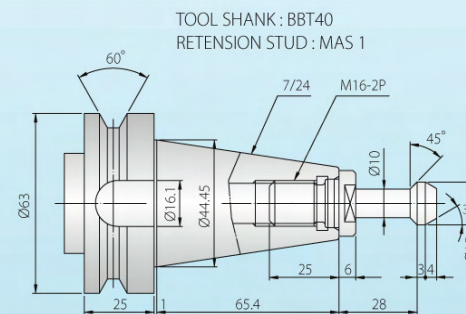
Feed	Rapid traverse (X/Y/Z)	m/min	32/32/32		30/30/30	
Cutting feed rate	mm/min	1~20000	1~20000	1~20000	1~20000	
Motor power (X/Y/Z)	kW	4.6/4.6/4.6	4.6/4.6/4.6	5.5/5.5/5.5	14/5.5/5.5	

ATC & Magazine	ATC type	Armless			
Magazine capacity	pcs	16		20	
Max. tool diameter (next pockets empty)	mm	105/120		105/150	
Max. tool length	mm	300			
Max. tool weight	kg	7			
Tool shank	—	BBT40			
Pull stud	—	MAS 1			

Space & System Requirement	Pneumatic pressure	kgf/cm ²	6			
Electrical power consumption	kVA	50	50	50	75	
Machine net weight	kg	7000	9100	18000	22000	
Max. floor space (W X L X H)	mm	2200 X 2800 X 2650	2700 X 3000 X 2960	3500 X 3700 X 3700	3500 X 4300 X 3700	

*Specifications are subject to change without notice.

BBT40 Tool Shank & Pull Stud



Standard Accessories

- FANUC 18i MB controller
 - 15000 rpm, BBT40, direct-drive type spindle
 - 16T, BBT40, armless type ATC (H7/H10)
 - 20T, BBT40, armless type ATC (H13/H16)
 - Spindle air blast
 - Cutting air blast
 - Spindle cooler
 - Cutting coolant system
 - Centralized automatic lubrication system (oil)
 - 3 axes absolute encoder motors
 - Fully enclosed splash guard
 - Working lamp
 - Indication lamp
 - Washing gun & air gun
 - Oil skimmer
 - Coolant tank & coolant flushing system
 - Steel belt type chip conveyor (H13/H16)
 - Manual pulse generator
 - Ethernet & RS-232C interface
 - Air conditioner for electrical cabinet
 - Tool kits
 - Anchor bolts, leveling blocks and bolts
 - Operation manuals, PLC, electrical circuit diagrams
 - One-year machine warranty
- (Spindle warranty depends upon spindle manufacturer)
- Controller warranty
- (FANUC : 24 months from shipping date)

Optional Accessories

- HEIDENHAIN iTNC 530 controller
- 10000rpm, BBT50, direct-drive type spindle (H13/H16)
- 24000rpm, HSK A63, built-in type spindle (IBAG)
- 36000rpm, HSK E50, built-in type spindle (IBAG)
- 24T, BBT40, arm type ATC (H7)
- 30T, BBT40, arm type ATC (H10/H13/H16)
- 48T/60T, BBT40, arm type ATC (H13/H16)
- 48T/60T, BBT50, arm type ATC (H13/H16)
- Coolant through spindle (20BAR)
- Spindle thermal compensation system (For IBAG spindle only)
- Ball screw cooling system
- Oil mist device
- Oil mist collector
- Linear scales (3 axes)
- Workpiece measurement system
- Tool length measurement system
- Rotary table (The 4th/5th axis)
- Steel belt type chip conveyor (H7/H10)
- Scraper type chip conveyor
- Transformer
- CE (CE area only)