

VP-*HS* Series

High Speed Bridge Type Machining Centers



AWEA[®]
THE ULTIMATE MACHINING POWER

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ISO 9001



ISO 14001



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VP-HS Series 1612 / 2012 / 3012 / 4012 / 5012

High Speed Bridge Type Machining Centers

The AWEA VP-HS series high speed bridge type machining centers are designed for high precision parts as required by the mold industry. we implement cutting-edge R&D techniques and stringent assembly procedures in the construction of the VP-HS series, making its mechanical rigidity, machining accuracy, and productivity superior.

- The modular design allows for either direct-driven spindles or built-in motorized spindles to provide flexibility for different working conditions.
- Super rigid roller type linear guide ways on the X \ Y \ Z axes offer heavy-duty cutting, fast movement, and low abrasion capabilities.
- The high quality extension splash door design makes loading and unloading of the workpiece very convenient for operators.



Fully enclosed splash guard with roof

VP-HS Series 1612 / 2012 / 3012 / 4012 / 5012

High Speed Bridge Type Machining Centers

- The Finite Element Analysis (FEA) provides the means to optimize the machine design and create a light-weight yet extremely rigid machine structure.
- The structural designs of bridge and base have been optimized. The contact surfaces are precision hand scraped to ensure optimum assembly precision, utmost structural integrity, and enhanced load distribution.
- The spindle heads' wide span symmetrical design, with the X-axis' ball screw placed at the center line of the axial movement, provides high precision axial feeding features and avoids yawing problems, as well as uneven wear of the guide ways, encountered in other machines due to their eccentric drive system design.



Brand new Z-axis drive system

Due to the powerful servo motor and the strengthened ball screw the Z-axis does not require a counter balance system. The design significantly improves the dynamic response and makes the VP-HS Series ideal for high precision mold making.

VP-HS vs. Previous Models

↑ 15 %

Dia. of the Z-axis ball screw

↑ 20 %

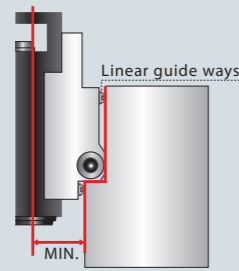
Power of the Z-axis servo motor

VP-2012HS super rigid structure

Optimum Spindle System

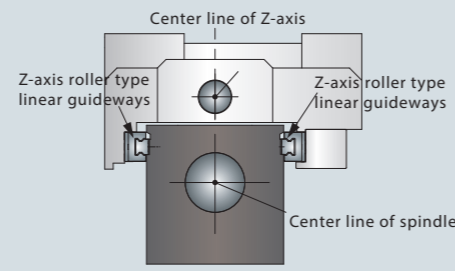
Y-Axis Guide Ways Design

The stepped offset design of the Y-axis guide ways increases the structural integrity and reduces the distance between the spindle center and the cross beam, which further enhances overall rigidity and cutting performance.

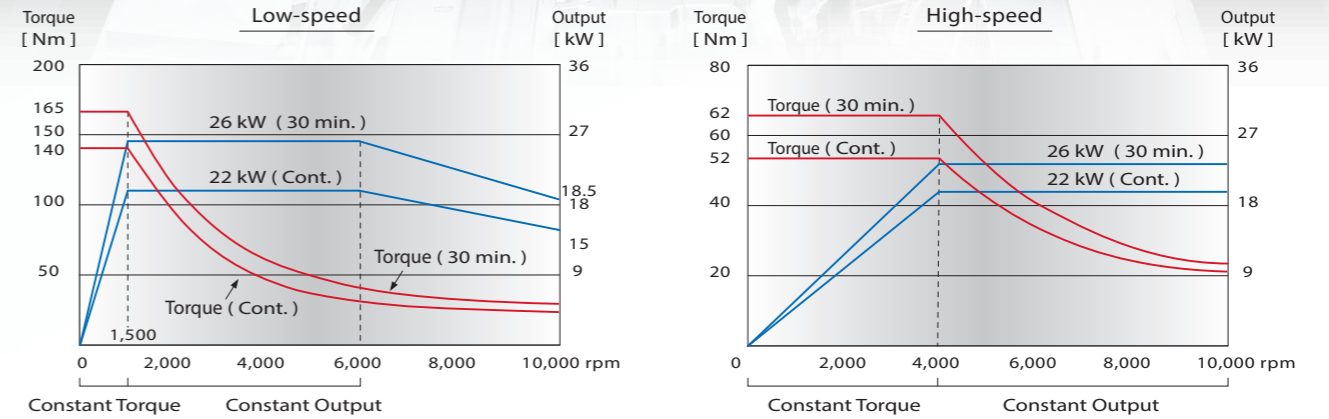


Centro-Symmetric Spindle Head Design

Unique spindle head design, with the main spindle, spindle motor, and ball screw all symmetrically placed to preventing distortion and minimizing deflection, thereby ensuring accuracy and heavy cutting capability.

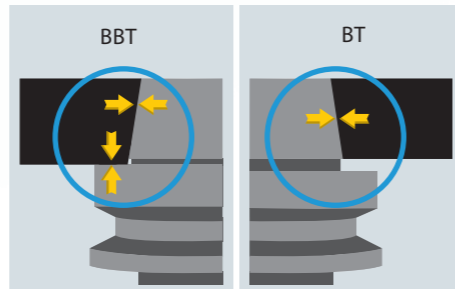


BBT50 10,000 rpm Direct-driven Spindle



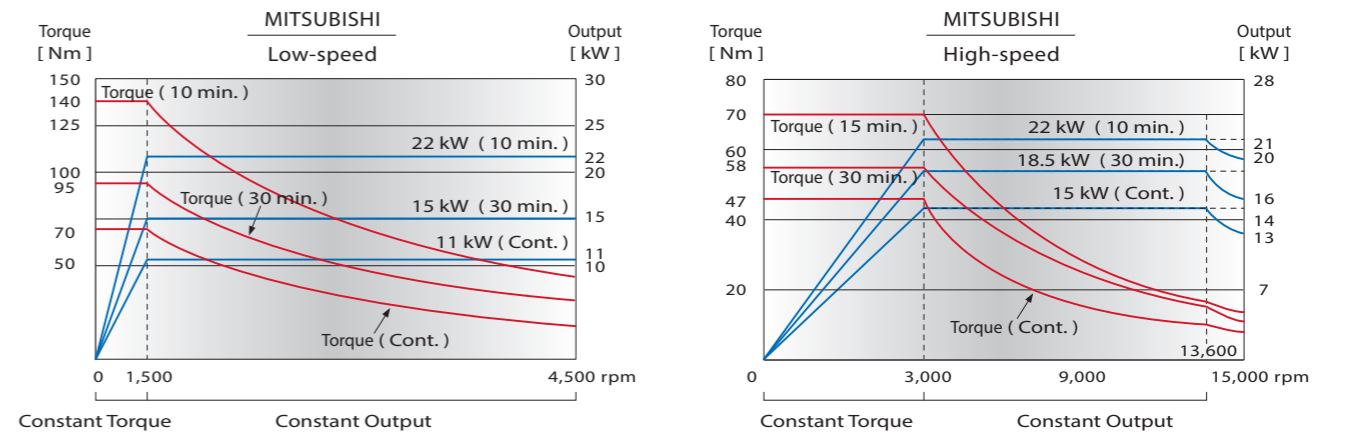
BBT Type Spindle Taper

The VP-HS series are equipped with a BBT Dual Contact Spindle to meet the needs of long time high speed cutting accuracy. The BBT Dual Contact Spindle ensures both taper and face of the tool holder and spindle are securely coupled to maintain high speed cutting rigidity.

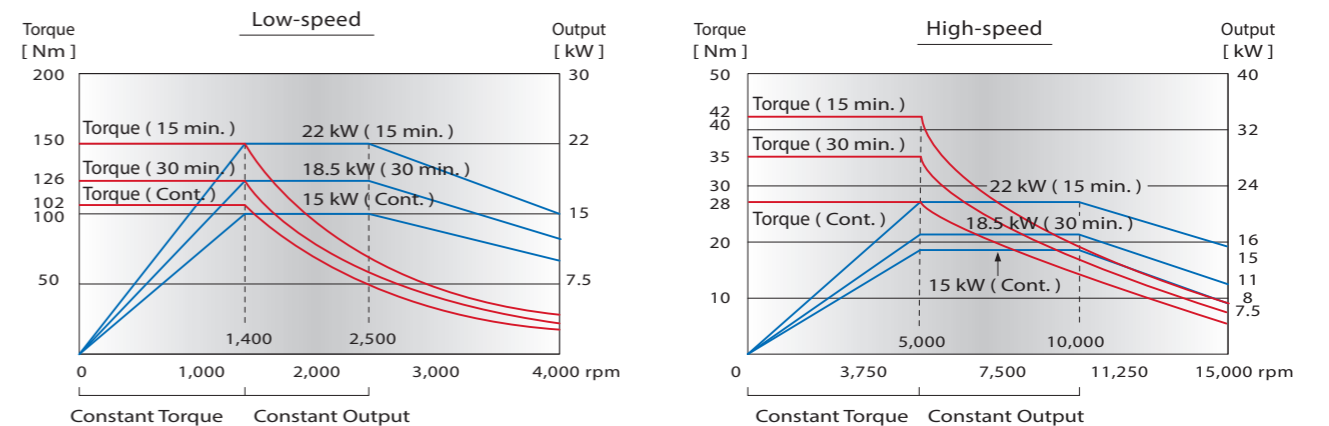


- Increases machining accuracy and reliability
- Improves the roundness when boring and drilling
- Ensures tool change accuracy
- Extends tool life

BBT40 15,000 rpm Direct-driven Spindle



BBT40 15,000 rpm Direct-driven Spindle

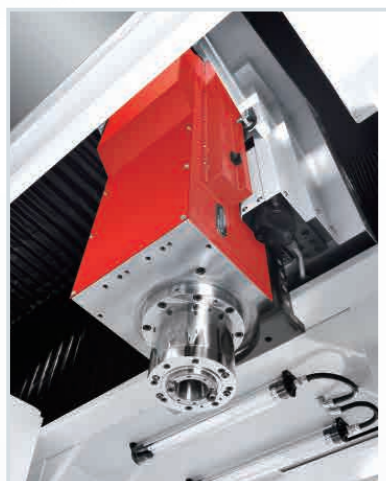


Spindle Specifications

Taper	Direct-driven spindle	Built-in spindle
BBT50	10,000 / 12,000 rpm	12,000 rpm
BBT40	15,000 rpm	20,000 rpm

Long Nose Spindle

- The optional long nose spindle combined with a shorter tool will increase rigidity and accuracy significantly. Recommended for groove milling and boring.



NC Intelligence Option

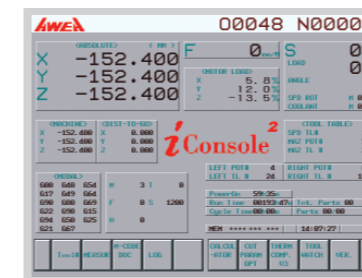
i Console

AWEA's self-developed *i* Console intelligent software enhancement system provides you with a user-friendly interface, real-time machine status information and diagnosis functions. It not only effectively reduces complex working process but also increases intelligent machining abilities.

(For 10.4" LCD only)

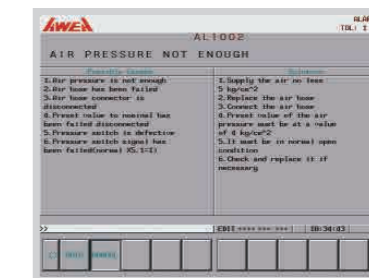


Multiple Functions Status Display



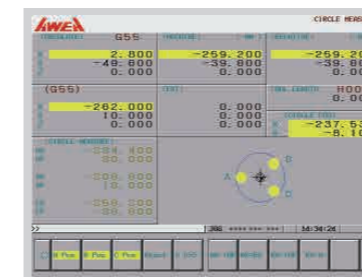
- Real time operation information
- Tool list
- Work piece measurement
- M code illustration
- PLC function
- Calculator
- CNC optimize parameter (Opt.)
- Spindle thermal compensation (Opt.)

Trouble Shooting



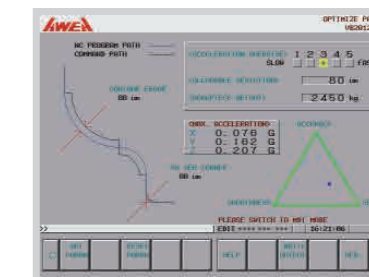
When an alarm is triggered, the program will display the cause for the alarm and a troubleshooting procedure. Users can easily solve minor problems and thereby reduce down time.

Circular Work Piece Measurement



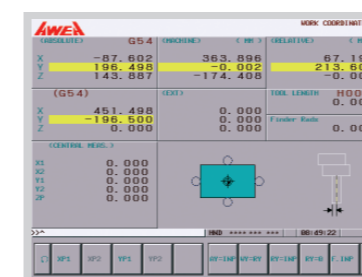
The circular work piece program can calculate the center coordinate of a work piece by measuring point A, B and C coordinates.

CNC Optimized Parameter



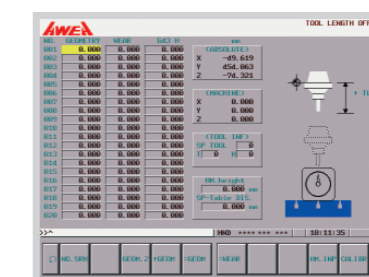
From rough cutting to fine machining, users can select different working modes, determine the allowable tolerance and the weight of the work piece, based on your desired working condition.

Rectangular Work Piece Measurement



The rectangular work piece program can calculate the center coordinate and the slant angle of a work piece by measuring point A, B, C, D and E coordinates; the calculated center coordinate can be inputted into the work piece coordinate program (G54 ~ G59).

Manual Tool Length Measurement



After manually measuring the tool length, the controller will automatically calculate the tool tip position and input the data into the tool length offset table.

Highly Reliable ATC System



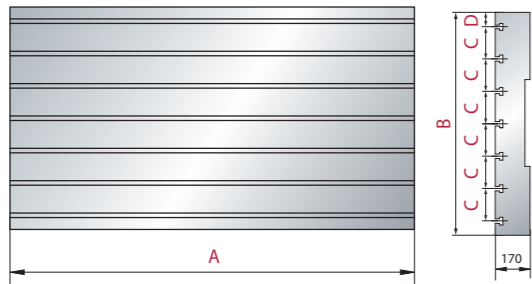
All machines are equipped with an arm type ATC and a 40T magazine to accommodate various processing needs.

- 24T / 32T magazines are available on request.
- The optimized tool change function shortens the tool change time and increases efficiency.

(The ATC system is fully enclosed to protect the operator and to prevent dust, chips, and coolant spray from contaminating the tools or the ATC.)

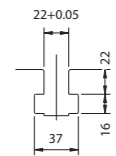
Dimensions

Table Dimensions

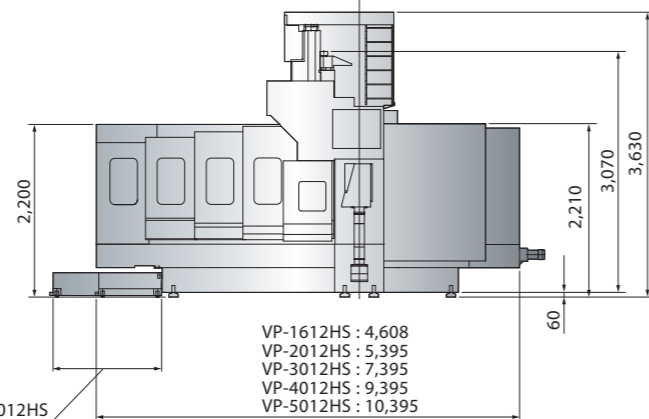
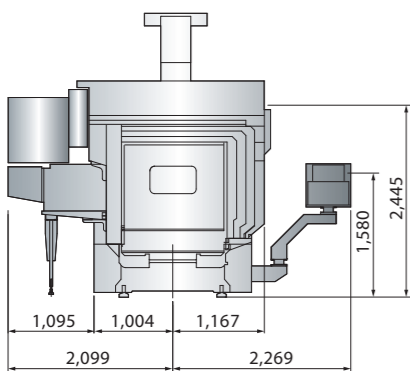
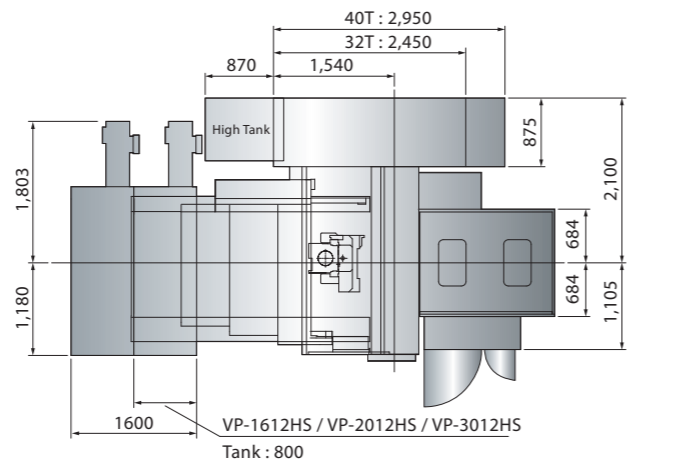


Model	A	B	C	D
VP-1612HS	1,600			
VP-2012HS	2,000			
VP-3012HS	3,000	1,100	160	70
VP-4012HS	4,000			
VP-5012HS	5,000			

T-slot Dimensions

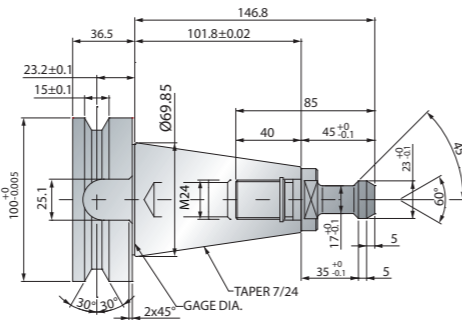


Machine Dimensions

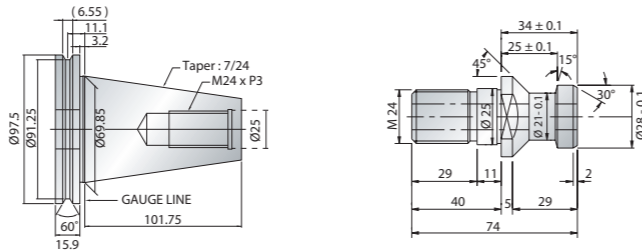


VP-4012HS / VP-5012HS
Tank : 1,383

BBT50



DIN69871-A (#50) (opt.)



Unit : mm

VP-1612HS VP-2012HS VP-3012HS VP-4012HS VP-5012HS

SPECIFICATIONS

X-axis travel	mm	1,600	2,000	3,000	4,000	5,000
Y-axis travel	mm	1,200				
Z-axis travel	mm	760				
Distance from spindle nose to table top	mm	200 ~ 960				
Distance between columns	mm	1,300				

TABLE

Table size (X)	mm	1,600	2,000	3,000	4,000	5,000
Table size (Y)	mm	1,100				
Table load capacity	kg	3,000	3,500	4,500	6,000	8,000

SPINDLE

Spindle taper	BBT50 (BBT40 opt.)					
Spindle output (Cont. / 30 min.)	kW	22 / 26				
Spindle speed	rpm	Direct-driven spindle 10,000				

FEED RATE

X-axis rapid feed rate	m/min	24	20	10	8
Y-axis rapid feed rate	m/min	24			
Z-axis rapid feed rate	m/min	20			
Cutting feed rate	m/min	12	10	8	

TOOL MAGAZINE

Tool magazine capacity	T	40 (24 / 32 opt.)			
Max. tool length (from gauge line)	mm	350			
Max. tool weight	kg	15			
Max. tool diameter / adj. pocket empty	mm	Ø125 / Ø229			

ACCURACY

Positioning accuracy (JIS B 6338)	mm	± 0.010 / Full travel			
Positioning accuracy (VDI 3441)	mm	P ≤ 0.02 / Full travel	P ≤ 0.03 / Full travel	P ≤ 0.04 / Full travel	
Positioning accuracy (JIS B 6338)	mm	± 0.003			
Positioning accuracy (VDI 3441)	mm	Ps ≤ 0.015	Ps ≤ 0.02	Ps ≤ 0.03	

GENERAL

Power requirement	AC 220 ± 10 % 3 phase, 60 / 50 Hz / 40 kVA					
Pneumatic pressure requirement (min.)	kg/cm ²	5 ~ 7				
Coolant tank capacity	liter	4.5				
Control system	FANUC Oi-MF / MITSUBISHI M70 / SIEMENS 828D					
Hydraulic unit tank capacity (pump)	liter (HP)	400 (1)				
Machine weight	kg	14,000	16,000	20,000	24,000	28,000

Specifications are subject to change without notice.

Standard Accessories

- Spindle cooling system
- Centralized automatic lubricating system
- Splash guard with roof
- Coolant system with pump and tank
- Dual chip augers
- Caterpillar type chip conveyor and bucket
- Air gun
- Automatic power off system
- Foundation bolt kit
- Adjusting tools & tool box
- Status signal light

Optional Accessories

- Direct-driven spindle :
 - BBT40 12,000 rpm / 15,000 rpm
 - Built-in motorized spindle :
 - BBT50 12,000 rpm / BBT40 20,000 rpm
- Spindle taper : DIN50 / CAT50 / ISO50
- Long nose spindle
- Column raiser 200 / 400 mm
- Tool magazine 24T / 32T
- X / Y / Z axes optical linear scale (HEIDENHAIN)
- Spindle thermal compensation (must order linear scales)
- Coolant through the tool adapter
- Coolant through the spindle (Form A)
- Automatic tool length measurement
- Automatic work piece measurement
- CNC rotary table
- Oil skimmer
- Oil mist cooling system