



THE ULTIMATE MACHINING POWER

龍門世家™

ISO 9001

ISO 14001



HVM Series

CNC BRIDGETYPE CNC BRIDGETYPE
CNC BRIDGETYPE CNC BRIDGETYPE CNC

CNC BRIDGE TYPE
5-face MULTICENTER
HVM SERIES



AWEA MECHANTRONIC CO., LTD

HVM Series

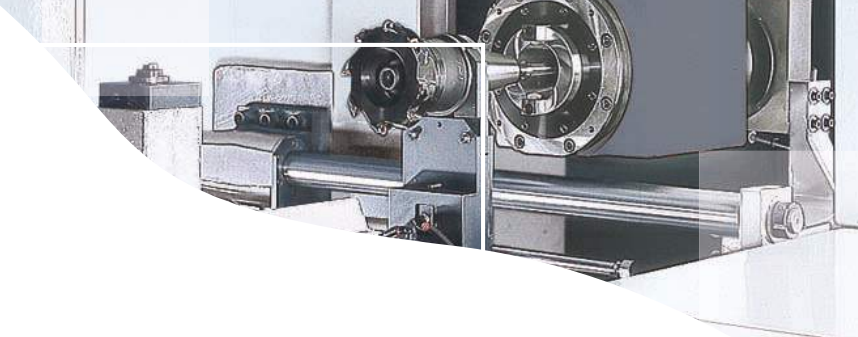
HIGH PERFORMANCE, HIGH ACCURACY, HEAVY CUTTING, LARGE OR BIG CUTTING EQUIPMENT FOR MEDIUM & LARGE WORKPIECES

SMOOTH CUTTING DISPOSAL, MAXIMUM WORKING ENVELOPE, UNPARALLELED ACCURACY, HIGH CUTTING CAPACITY, MAXIMUM TABLE LOAD.

Main machine features

- Fixed bridge, Double column construction for full support of Y axis.
- Four guide-way rails fully support the entire table.
- Z axis employs the latest linear guide-way technology combining extreme rigidity, stability and long life with high accuracy and speed.
- Special spindle temperature control design minimizes thermal expansion.
- Vertical spindle with horizontal head provides high rigidity, and maximizes the working area for both vertical and horizontal machining.
- The Horizontal head's strong rigidity curvic coupling provides 44,000 lbs. of clamping force. Indexing options are 72 positions / 5 degrees increments.
- Unique floating unclamping design eliminates harmful force to the spindle bearings while unclamping.
- Unclamping device for the horizontal spindle, can avoid any extra forces to the horizontal spindle.
- The oil mist lubricated horizontal spindle achieves spindle speeds up to 2,400 rpm.
- The new Robotic Arm Automatic Tool Changing System, provides precision mechanical movement for consistent, reliable operation.
- The Overhead Swivel Pendulum Arm for the CNC control panel and the manual pulse generator (MPG) hand wheel offer convenient operation.
- AWEA's exclusive, proprietary 5 face Coordinate Conversion System simplifies programming.





SUMMARY

- 1,000 mm Z travel
- 430 X 430 mm spindle head cross section
- 35 HP AC spindle motor
- Two step, gear head spindle
- Stepless speed range from 10 ~ 4,000 rpm
- 2,400 rpm oil mist lubricated horizontal spindle
- Twin hydraulic counter balance spindle head
- Torque Limiting Overload Clutch safety feature for all 3 axes
- 5 degree's indexing for horizontal head
- 240 mm in diameter, 400 mm long of ATC
- 60 tools magazine (optional 90 or 120)
- Hanging type operator panel
- AWEA's proprietary 5 face Coordinate Conversion Programming System



Vertical machining



Horizontal machining

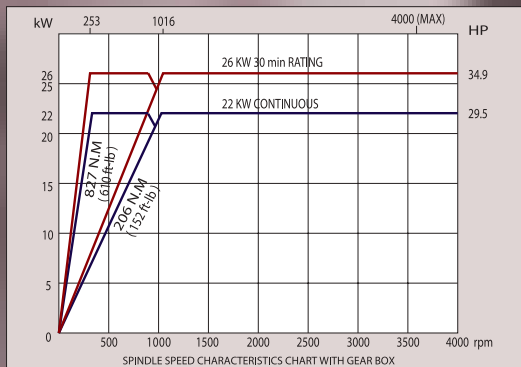
HVM Series

SPINDLE COMPONENT PLACEMENT ENGINEERED FOR OPTIMUM PERFORMANCE

THE TWIN HYDRAULIC CYLINDERS, Z AXIAL BALL SCREW, GEAR HEAD AND SPINDLE MOTOR ARE SYMMETRICALLY PLACED TO ENSURE EQUAL LOADING TO THE WAY AREA AND TO MAINTAIN SENSITIVITY AND ACCURACY TO THE CUTTING AREA.

MAXIMUM VERTICAL / HORIZONTAL HEAD CLAMPING POWER

- The Horizontal Spindle clamping system combines a 400 mm diameter curvic coupling surface, 44,000 lbs. of hydraulic clamping force and an additional mechanical clamping device for maximum rigidity and safety.
- The Spindle consists of a 30 / 35 HP (22 / 26 kW) spindle motor, two-step gear transmission with 827 Nm (610 ft. / lbs.) full horsepower torque at 253rpm meets all the demands of heavy and high precision cutting applications.
- Spindle is support by 4 sets of 100 mm high precision bearings, horizontal head bearing lubricate by forcing oil mist temperature control which can provide more accuracy and stable in high speed operation.



Spindle speed characteristics chart
with gear box



Spindle head structure



Vertical head structure



Horizontal head structure

FULLY AUTOMATIC, PROGRAMMABLE VERTICAL / HORIZONTAL TOOL CHANGING SYSTEM

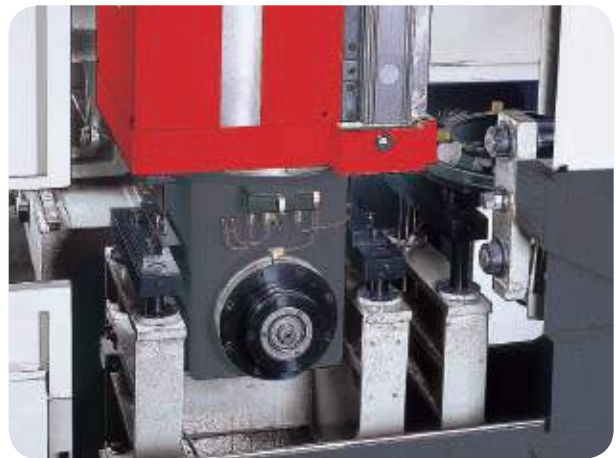


Left view of Tool Magazine

- The Robotic Arm Type vertical / horizontal automatic tool changing system stands separately along the machine backside. A 60 tools magazine is standard (90 or 120 tools as optional available) provide 127 mm / 240 mm in diameter (full / adjance) , 400 mm in length, 25 kg in weight.
- During automatic tool change, all moving parts have sensors and sequence scanning to ensure precise consistent tool changing.
- The exchangeable Horizontal head and storage system also has sensors and sequence scanning to ensure safety and reliability.



ATC in vertical direction



Horizontal head exchange



ATC in horizontal direction



Vertical head exchange

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ERGONOMICALLY DESIGNED CONTROLS FOR CONVENIENCE OPERATION



4 guide-ways on bed

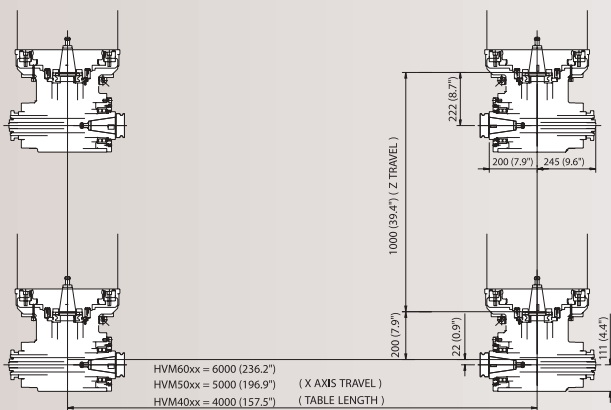


Hanging type control panel

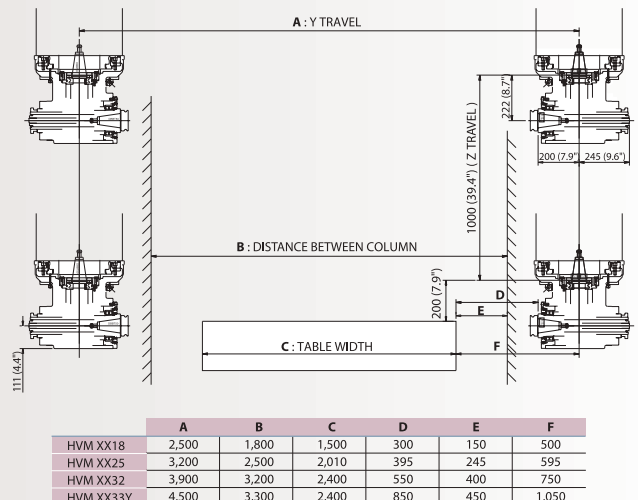
- Four heavy duty linear guide-ways fully support the heaviest table loads. Low friction, low coefficient factors provide high speed, high precision positioning and long-term accuracy.
- Hanging type operator panel with 10.4" LCD color monitor, movable MPG hand wheel and machine status lights meet the European safety regulation.
- AWEA's proprietary own developed CNC programming conversion system for 5 face machining function that can be programmed according to the cutting effective range in vertical and horizontal to optimize work setting.
- The effective travel on all axes are well designed by adding the maximum tool length. The working table size is the actual effective cutting area.

AXES TRAVEL RANGE

X,Z axes travel range



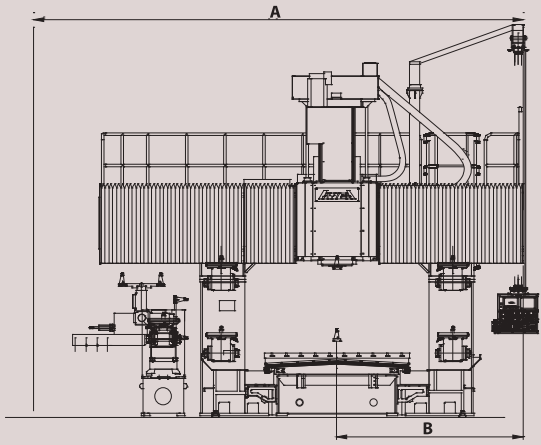
Y,Z axes travel range



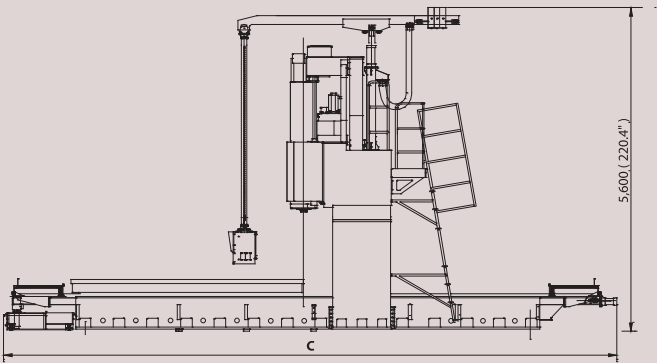
MACHINE DIMENSION, SPACE REQUIREMENT AND INSTALLATION

Unit : mm (inch)

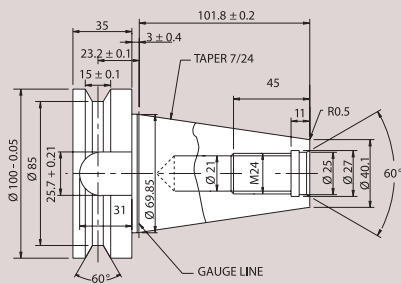
Front view



Side view



BT50 tool shank



DIN 50 tool shank (69871-A)

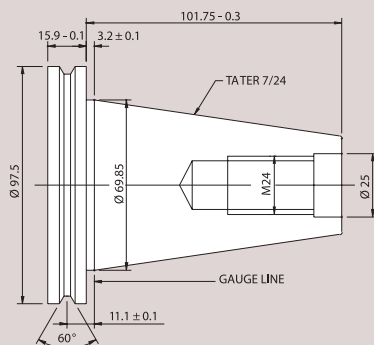
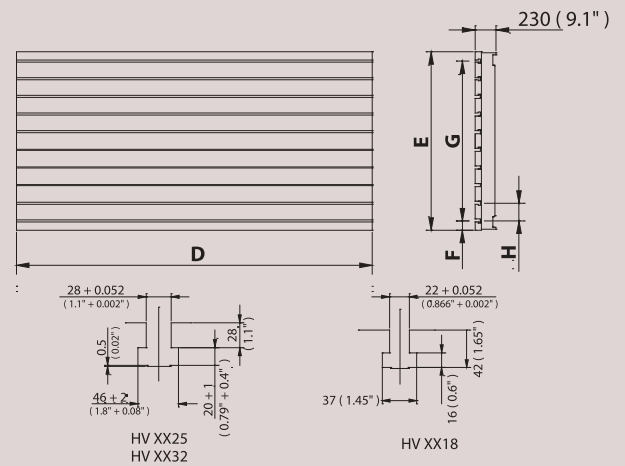
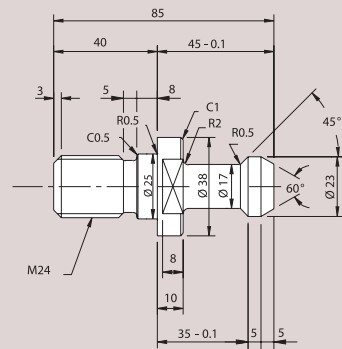


Table and T slot dimension

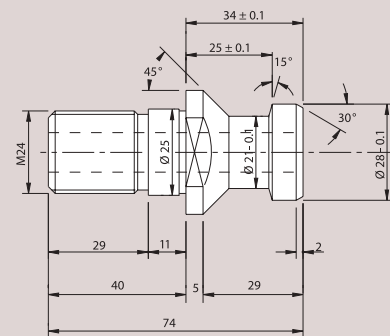


	HVM 3018	HVM 4018	HVM 4025	HVM 5025	HVM 6025	HVM 4032	HVM 5032	HVM 6032
A	6,100 (240.1")	6,100 (240.1")	6,775 (266.7")	6,775 (266.7")	6,775 (266.7")	7,475 (294.2")	7,475 (294.2")	7,475 (294.2")
B	2,220 (87.4")	2,220 (87.4")	2,570 (101.1")	2,570 (101.1")	2,570 (101.1")	2,920 (114.9")	2,920 (114.9")	2,920 (114.9")
C	9,030 (355.5")	11,000 (433")	10,480 (412.5")	12,775 (502.9")	14,875 (585.6")	10,480 (412.5")	12,775 (502.9")	14,875 (585.6")
D	3,260 (128.3")	4,020 (158.2")	4,020 (158.2")	5,020 (197.6")	6,020 (237")	4,020 (158.2")	5,020 (197.6")	6,020 (237")
E	1,500 (59")	1,500 (59")	2,010 (79.1")	2,010 (79.1")	2,010 (79.1")	2,400 (94.4")	2,400 (94.4")	2,400 (94.4")
F	155 (6.1")	155 (6.1")	105 (4.1")	105 (4.1")	105 (4.1")	100 (3.9")	100 (3.9")	100 (3.9")
G	1,190 (46.8")	1,190 (46.8")	1,800 (70.8")	1,800 (70.8")	1,800 (70.8")	2,200 (86.6")	2,200 (86.6")	2,200 (86.6")
H	170 (6.6")	170 (6.6")	200 (7.8")	200 (7.8")	200 (7.8")	200 (7.8")	200 (7.8")	200 (7.8")

BT50 pull stud



DIN 50 pull stud (69872)



Specification/Model	Unit	HVM 3018	HVM 4018	HVM 4025	HVM 5025	HVM 6025	HVM 4032	HVM 5032	HVM 6032	HVM6033Y	HVM7033Y
Table travel left and right (X-axis)	mm (in)	3,060 (120)	4,000 (158)	4,000 (158)	5,000 (197)	6,000 (236)	4,000 (158)	5,000 (197)	6,000 (236)	6,000 (236)	7,000 (275)
Spindle head travel in and out (Y-axis)	mm (in)	2,500 (98)	2,500 (98)	3,200 (126)	3,200 (126)	3,200 (126)	3,900 (153)	3,900 (153)	3,900 (153)	4,500 (177)	4,500 (177)
Spindle head travel up and down (Z-axis)	mm (in)	1,000 (39)									
Dist. between table and vertical spindle	mm (in)	200 ~ 1,200 (7.9 ~ 47.2) / option : 400 ~ 1,400 (15.7 ~ 55.1)									
Dist. between table and center line of horizontal spindle	mm (in)	-22 ~ 978 (-0.8 ~ 38.5) / option : 178 ~ 1,178 (7 ~ 46.4)									
Distance between columns	mm (in)	1,800 (71)	1,800 (71)	2,500 (98)	2,500 (98)	2,500 (98)	3,200 (126)	3,200 (126)	3,200 (126)	3,300 (130)	3,300 (130)
Table size in X direction	mm (in)	3,260 (128)	4,020 (158)	4,020 (158)	5,020 (197)	6,020 (237)	4,020 (158)	5,020 (197)	6,020 (237)	6,020 (237)	6,020 (237)
in Y direction	mm (in)	1,500 (59)	1,500 (59)	2,010 (79)	2,010 (79)	2,010 (79)	2,400 (94)	2,400 (94)	2,400 (94)	2,400 (94)	2,400 (94)
Table load capacity	kg (lb)	10,000 (22,000)	12,000 (26,400)	12,000 (26,400)	15,000 (33,000)	17,000 (37,400)	15,000 (33,000)	18,000 (39,600)	20,000 (44,000)	20,000 (44,000)	20,000 (44,000)
Spindle drive		Gear transmission (two step. Auto exchange)									
Spindle motor	KW (HP)	22 / 26 (30 / 35)									
Spindle speed (in vertical direction)	rpm	10 ~ 4,000 (stepless)									
(in horizontal direction)	rpm	20 ~ 2,400 (stepless)									
Distance from table to ground	mm (in)	890 (35)									
Spindle nose configuration		BT50 (7 / 24)									
Rapid traverse rate X-axis	m(in)/min	20 (787)	15 (590)	15 (590)	10 (393)	7.5 (295)	15 (590)	10 (393)	7.5 (295)	7.5 (295)	7.5 (295)
Y-axis	m(in)/min	15 (590)	15 (590)	15 (590)	15 (590)	15 (590)	12 (472)	12 (472)	12 (472)	10 (393)	10 (393)
Z-axis	m(in)/min	10 (393)									
Cutting feed rate (max)	m(in)/min	1~10 (393)	1~10 (393)	1~10 (393)	1~8 (315)	1~5 (197)	1~10 (393)	1~8 (315)	1~5 (197)	1~5 (197)	1~5 (197)
Tool magazine capacity		60 (90 / 120 option)									
Max. tool diameter/adjacent pockets empty	mm (in)	127 (5) / 240 (9.4)									
Max. tool length (from gauge line)	mm (in)	400 (15.7)									
Max. tool weight	kg (lb)	25 (55)									
Indexing degree	degree	90°									
Pull stud		MAS 403P50T-1 (45°)									
CNC Controller		FANUC 18iMB									
Vertical/Horizontal exchange time	sec	100									
Positioning accuracy (JIS standard)	mm (in)	± 0.015 (± 0.0006) / full travel									
Positioning accuracy (JIS Linear scale – option)	mm (in)	± 0.010 (± 0.0004) / full travel									
Repeatability (JIS standard)	mm (in)	± 0.003 (± 0.0001)									
Repeatability (JIS Linear scale – option)	mm (in)	± 0.003 (± 0.0001)									
Total required power	KVA	80									
Pneumatic pressure requirement	kg/cm ²	5 ~ 8 (5)									
Hydraulic unit tank capacity	Liter (gal)	180 (45)									
Lubrication oil tank capacity	Liter (gal)	6 (1.5)									
Coolant tank capacity	Liter (gal)	650 (172)	650 (172)	800 (211)	800 (211)	800 (211)	1,100 (291)	1,100 (291)	1,100 (291)	1,100 (291)	1,100 (291)
Floor space requirement (length)	mm (in)	9,030 (355)	11,000 (433)	10,480 (412)	12,775 (503)	14,875 (585)	10,480 (412)	12,775 (503)	14,875 (585)	14,875 (585)	15,585 (613)
(width)	mm (in)	6,100 (240)	6,100 (240)	6,775 (267)	6,775 (267)	6,775 (267)	7,475 (294)	7,475 (294)	7,475 (294)	8,150 (321)	8,150 (321)
(height)	mm (in)	5,600 (220)									
Machine weight	kg (lb)	39,000 (85,800)	49,000 (107,800)	53,000 (116,600)	55,000 (121,000)	57,000 (125,400)	54,000 (118,800)	56,000 (123,200)	58,000 (127,600)	59,000 (129,800)	61,000 (134,200)

★ Product specifications and accessories are subject to change without notice.

Standard Accessories

- Spindle temperature control system
- Two step gear head
- Twin hydraulic counter weight cylinders
- Chain type 60 tool magazine (tools not included)
- Automatic tool change system in Vertical and Horizontal
- 5 degrees indexing head
- Automatic head exchange system
- Protection cover for vertical head
- Adjustable torque limiting overload clutch
- Linear scale feedback system for X, Y axes
- External pulse coder on Z axis
- Centralized automatic lubricating system
- Recycling lubricating oil collector
- Hydraulic system
- Pneumatic system (exclude air pressure resource and pipe)
- Four splash guard
- Coolant system with pump & tank
- Spray hose for chip washdown
- Twin screw type chip conveyor
- Caterpillar type chip conveyor and bucket
- Foundation bolt kit
- Tool box
- Electronic cabinet & Heat exchanger
- Overhead swivel pendulum type control panel
- Remote handwheel
- Foot switch for tool clamping
- work light
- Operation cycle finish and alarm light
- RS-232 interface
- Automatic power off function
- Operation & maintenance manual
- Rigid tapping

Optional Accessories

- Special spindle head on requested
- 90/120 tools magazine
- CNC rotary tables
- OMP60 scanning systems for mold and die
- Automatic workpiece measuring system
- Full splash guard

Distributor :



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