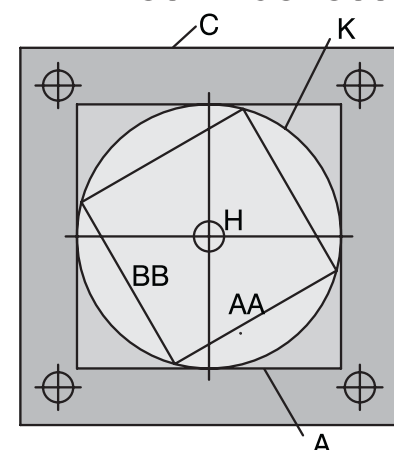


Efficiency... High Speed Spindle

PRECISION SPINDLE CONSTRUCTION WITH A DIRECT DRIVE

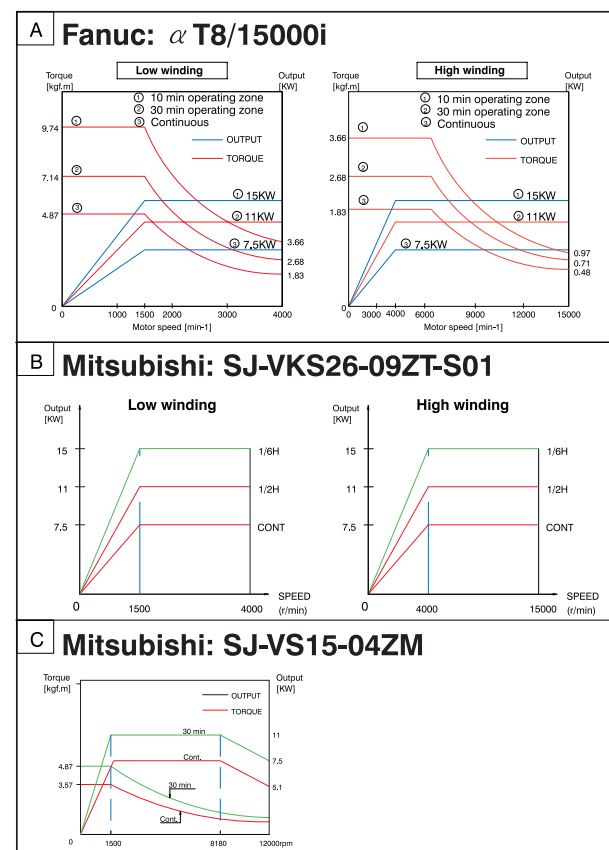
1. The direct drive motor and the spindle are connected by a couple. The heat of the motor will not transmit to the spindle, assuring spindle accuracy.
2. There is no pulley or gear transmission noise, gap or vibration when using the direct drive.
3. Can increase the motor efficiency from the direct drive system. Directly detects the spindle speed, for more accurate rigid tapping.
4. It can provide central hole shafts for coolant through spindle system.
5. The entire machine is precisely and rigidly constructed throughout to ensure the best machining accuracy.

THE HIGHEST ACCURACY POSSIBLE TO MEET YOUR RIGOROUS REQUIREMENTS.



TEST ITEMS		Accuracy Value
Cyclic Cutting	Circularity K	0.02
Side Milling Accuracy	Perpendicularity A	0.01
	Parallelism A & C	0.015
Linear End Milling Accuracy	Perpendicularity AA & BB	0.02
Boring Accuracy	Circularity H	0.01

10,000 RPM Standard 15,000 RPM Optional



Automatic Tool Changer (ATC)



- Tool storage capacity - - - - **40(60/90)** tools
- Tool-to-tool - - - - - **6** sec.
- Chip-to-chip - - - - - **10** sec.
- Tool preparation time (Shortest) **8** sec.
- (Longest) **14** sec.

Servo-driven Tool Changer

Hartford Series Horizontal Machining Centers come standard with a 40-pocket tool changer. It is driven by a high-power servomotor rather than the traditional Geneva drive. This bi-directional tool changer can select any tool in the carousel within 1.8 seconds (optional). It has an average tool change time of 4.5 seconds. Coolant nozzles are positioned about the spindle centerline to direct coolant in a downward flow. This, combined with the vertical height of the carousel, inhibits chips and coolant from entering the tool changer.

Machine Specifications

MODEL	UNIT	MVH-4	MVH-5
TABLE			
Working surface	mm	400 x 400	500 x 500
Max. workpiece swing diameter	mm	Ø550x750	Ø800x900
Max. table load	kg	400	600
TRAVEL			
Longitudinal Travel (X-axis)	mm	520	720
Gross travel (Y-axis)	mm	460	700
Vertical travel (Z-axis)	mm	460	650
Distance from spindle end to table center	mm	80-540	100-800
Distance from spindle center to table surface	mm	125-585	150-800
SPINDLE			
Spindle nose taper		BT-40	
Spindle speed (DDS)	RPM	10,000 (std.) / 15,000 (opt.)	
FEED			
Cutting feedrate	mm/min	1-12,000	
Rapid traverse (X, Y, Z axes)	mm/min	30,000 (std.) / 40,000 (opt.)	
ATC			
Tool storage capacity	pcs	40	
Max. tool weight	kgs	6	6
Max. tool size (diameter x length)	mm	Ø 90 x 250	Ø 90 x 250
Tool selection		Random	
Tool shank		BT-40	
Pull stud bolt		P40T-1	
MOTOR			
Spindle drive motor (Fanuc)		α T8/11 Kw	
(Mitsubishi)		SJ-VS15-04zm/11Kw	
X, Y, Z axis drive motor (Fanuc)		X, Y, Z: α 22	
(Mitsubishi)		HA:200	

■ Design and specifications are subject to change without prior notice.

Hartford

The machining center company

SHE HONG INDUSTRIAL CO., LTD.
HEADQUARTER
 No. 6, 6th Rd., Taichung Industrial Park, Taichung, Taiwan.
 Tel: +886-4-2359-2747 Fax: +886-4-2358-1793
 E-mail: public@hartford.com.tw
 www.machiningcenter.com.tw

EU TECHNICAL CENTER
 Prague, Czech Republic

DISTRIBUTION CENTER
 Le Havre, France Istanbul, Turkey Bangkok, Thailand
 Caxias Do Sul, Brazil Bs.As, Argentina

SALES & SERVICE CENTER
 Korea - Seoul, Busan, Daegu
 China - Tianjin, Shanghai, Foshan, Huangyan, Shenyang
 Taiwan - Taipei, Taoyuan, Hsinshu, Taichung, Tainan, Kaohsiung

Standard Features:

- Full splash guard
- Cutting cooling system
- Auto lubricating device
- Spindle oil cooler
- Spindle air curtain
- Base coolant separation configuration
- Working light
- Air blast through spindle
- Working light (2 colors)
- #40 tool magazine
- Screw type chip conveyor
- Link type chip conveyor with chip bucket
- Electrical panel with heat exchange device
- Cutting fluid tank
- Auto power-off function
- Remote manual pulse generator
- 3-axes ABS encoder
- Rigid tapping
- Leveling bolts, foundation screws and blocks
- Operation manual, maintenance book and electrical diagram
- Water gun

Optional Features:

- Optical scale feedback system
- Coolant through tool and tool holder
- Through spindle coolant (20 bar)
- Pallet indexing (0.001°)
- Auto workpiece measurement
- Coolant shower device on roof
- Rapid traverse 40x40x40 m/min
- DNC software
- #40 15,000 RPM directly coupled spindle
- 60 pcs tool capacity (MVH-5)
- 90 pcs tool capacity (MVH-5)

CAT. NO. Laurel150209E04

L@UREL

HORIZONTAL MACHINING CENTER!

Hartford Technology Always a Step Ahead.

www.machiningcenter.com.tw

Put Hartford's Reliability to Work for You.

The New Hartford L@UREL Gives You the Ability to Stay Competitive.



Full Support on the Three Axes Features High Rigidity.

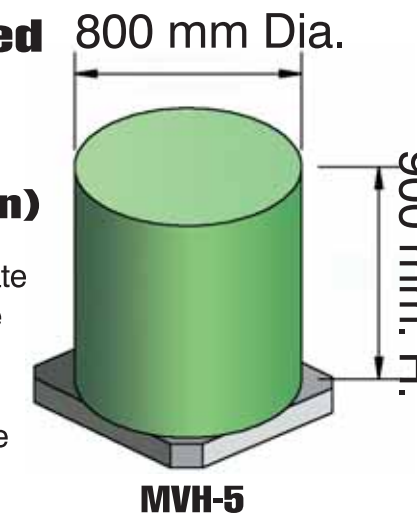
- Unique development of B-axis built-in servo transmission.
- Direct drive spindle - 15,000 RPM (DDS). (Optional).
- 40-tool capacity (60-tool optional).
- High pressure coolant through spindle system (70 Bar) (Optional).
- 40 M/min rapid traverse. (Optional).
- T-shaped base features high stability.
- Two-step X-axis configuration features high loading capacity.
- Full support on the three axes ensures excellent rigidity.
- 18 second automatic pallet change (APC).
- Fully enclosed splash guard prevents cutting fluid from spilling out.
- Coolant shower device on the roof prevents buildup of chips inside the splash guard.
- Position feedback on the 3 axes controlled by the Absolute Encoder.
- With Hartrol enhanced software which increases machining efficiency.

Maximum Workpiece Size Accommodated by Pallet Changer (Dia. x H)

800 x 900 mm (without limitation)

Relative to Y-axis travel of 800 mm, the pallet changer can accommodate a maximum workpiece height of 900 mm. This secures ample space for the hydraulic pressure and compressed air supply units.

Larger workpieces can be handled by a pallet changer in spite of the limitations. Please refer to the specifications for further details.



Stable... Highly Rigid Construction

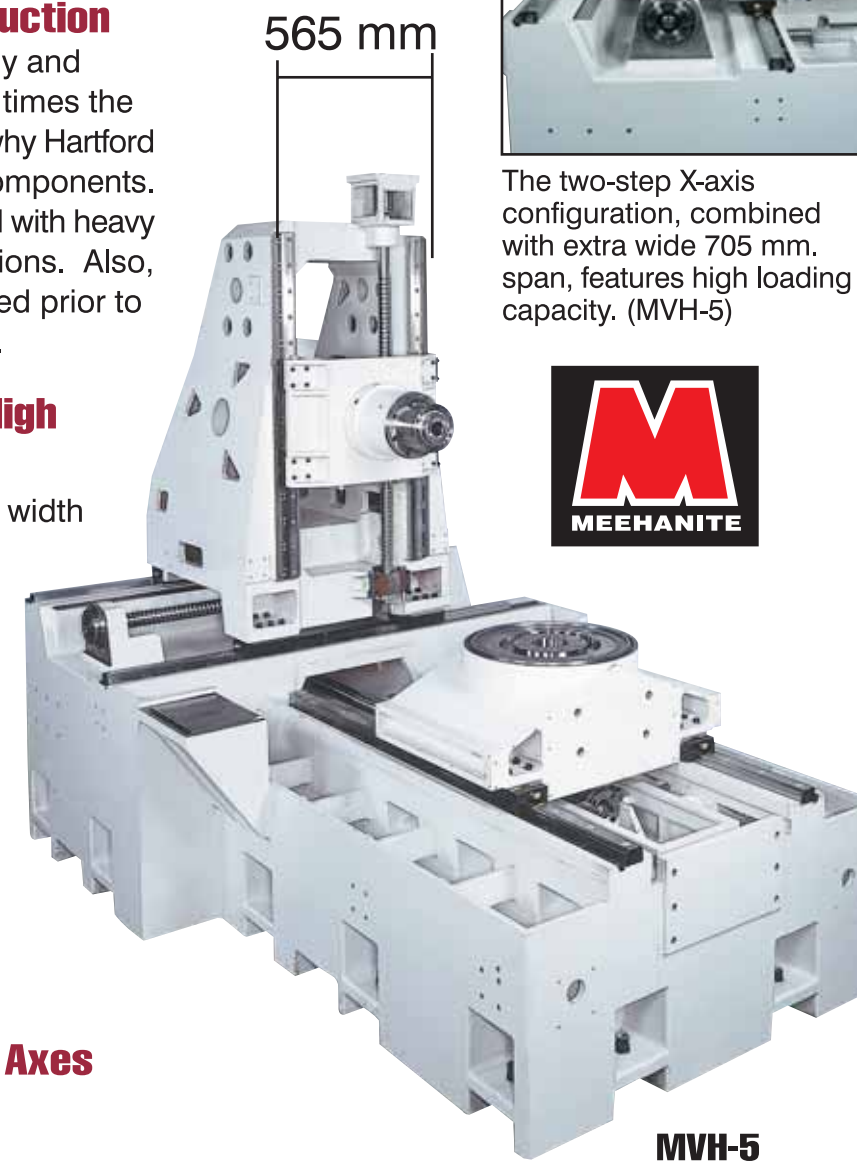
Massive Cast Iron Construction

Cast iron is more expensive to buy and machine but it provides up to ten times the damping capacity of steel. That's why Hartford only uses cast iron for all major components. Our cast iron is internally reinforced with heavy ribs to resist flex and damp vibrations. Also, every piece is thoroughly inspected prior to machining to ensure it is flawless.

T-shaped Base Features High Stability

The T-shaped base measures the width of the column and the depth of the saddle. Specially-designed 580 mm. distance between linear guideways makes the machine perfect for heavy-duty machining. Inside the castings are the heavy-duty, anti-flex, vibration-absorbing ribs that Hartford adds. Measure up the competition and you will find that they just don't measure up to Hartford!

Full Support on the Three Axes Features High Rigidity.



The two-step X-axis configuration, combined with extra wide 705 mm. span, features high loading capacity. (MVH-5)



Spindle...

- Spindle speed range ----- **50-10000** min⁻¹
- Spindle taper hole ----- **7/24 No 40 taper**
- Spindle drive motor ----- (30 min/xont.) **15/11** kw
(High-power spindle: optional specification) **22/15** kw
- Spindle bearing inner/outer diameter ----- **70/110** mm.
- Spindle starting time ----- (10000 min⁻¹) **3.3** sec.



COOLANT JETS AROUND SPINDLE (OPTIONAL) THROUGH-SPINDLE COOLANT (OPTIONAL)

The optional through-spindle coolant operates via an auxiliary pump that supplies coolant at up to 300 psi to the cutting edge. This improves tool life and allows higher speeds, deep hole drilling and blind pocket milling. The result is high productivity and reduced cycle time. Hartford engineers have designed a special seal which disengages when the system is not in use. This exclusive design feature extends the life of the system.

Precision...



COOLANT SHOWER DEVICE ON ROOF (OPTIONAL)

● The splash guard ceiling is equipped with nozzles which discharge coolant to prevent buildup of chips scattering inside the splash guard.

Table...

- Min. indexing angle ----- **1°**
- Indexing time -- **2.2** sec./90°
4.0 sec./180°



18 SECOND APC High-productivity Pallet Changer

● Pallets are rigidly clamped using a constantly engaged, oil-bathed drawbar and are hardened alloy steel pullstud mounted directly to the pallet.
● The mechanical lock of the Hartford horizontal pallet completely prevents any movement.

● Pallet positioning accuracy of 1 is standard, and 1/1000 is optional.