

LAUREL

MVH/HMC series

Horizontal machining center

- Hartrol plus controller
- 5-year warranty on guideways
- Spindle run-out: 5 micro
- Built-in type spindle torque: 600N-m
- Built-in type spindle shaft with cooling system



Photo show is MVH-8

Website



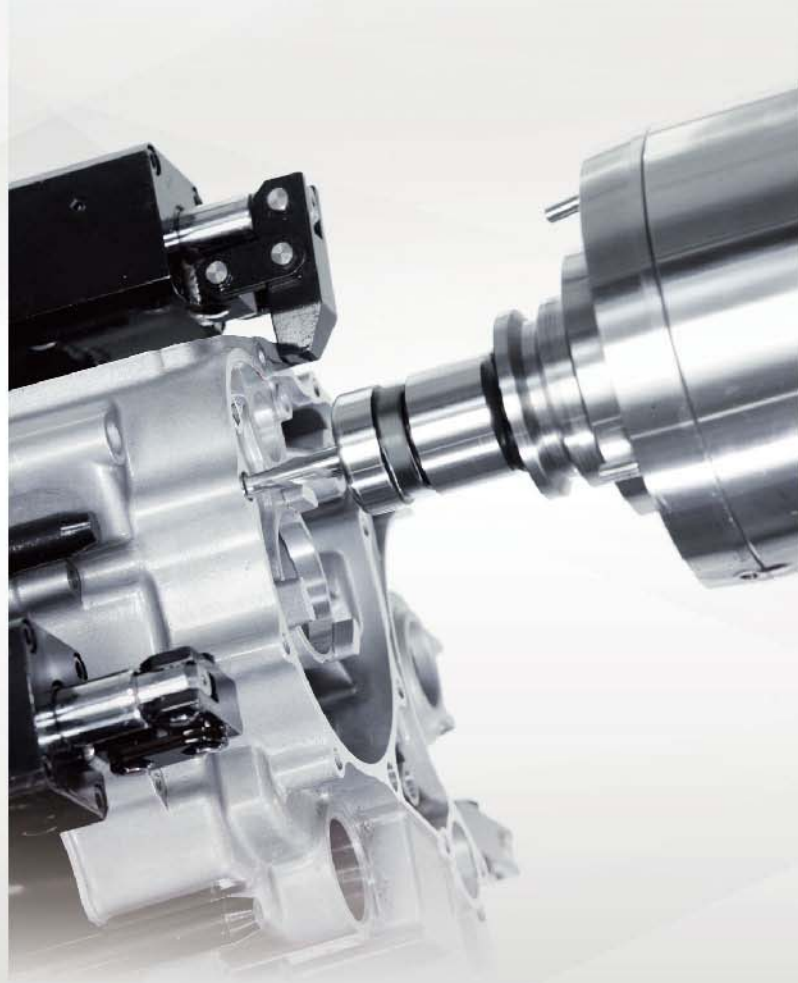
FaceBook



Hartford has sold more than 46,000 machines to all over the world, accumulated more than 37,000 customers, who absolutely affirm Hartford's manufacturing experience and ingenious machine manufacture technology. We insist on providing customers with the best quality machining centers. We will devote more carefully, in order to continuously enhance the technical level of manufacture and applications.

Optimized Cutting Efficiency

Underneath the compact appearance, the robust structure of LAUREL is engineered with the unique Hartford technology to decrease the cycle time and enhance your cutting efficiency.



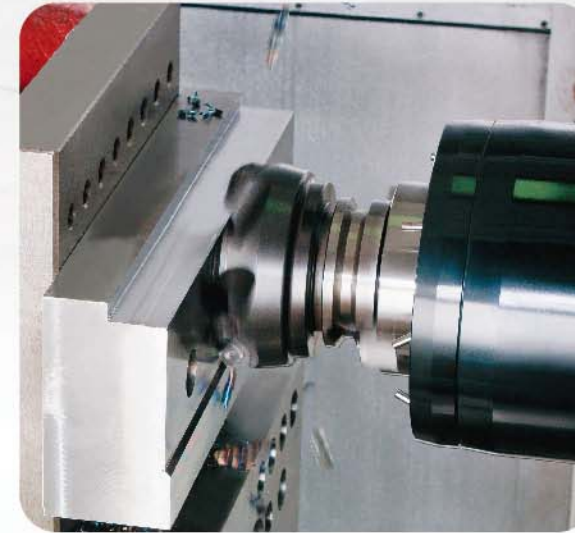
1. Parts for motorcycle

2. Hydraulic valve



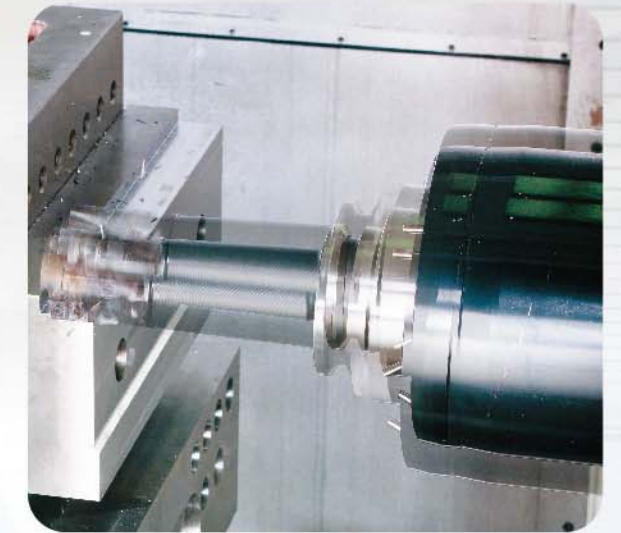
Optimized Cutting Efficiency

Model : MVH-6
 Spindle : Gear type 6,000 rpm 18.5kW
 Material : S45C



Face mill

Tool: ϕ 125x7
 Feedrate: 1200 mm/min
 Depth: 4mm
 Width: 100mm
 Cutting volume: 480 cc/min



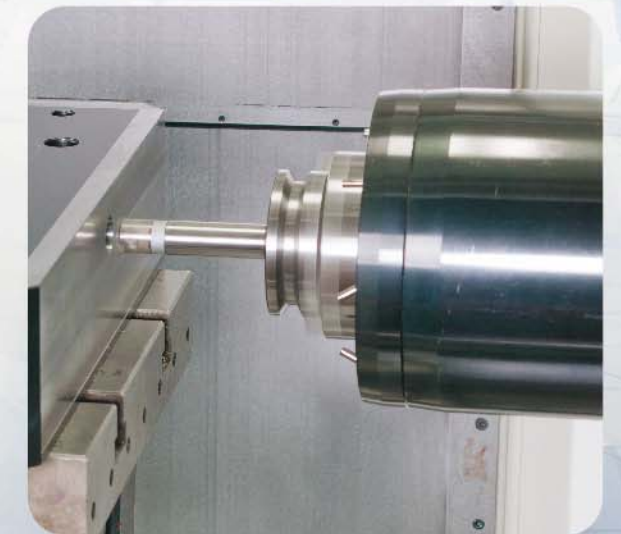
End mill

Tool: ϕ 63x3
 Feedrate: 2000 mm/min
 Depth: 30 mm
 Width: 5 mm
 Cutting volume: 300 cc/min



Tapping

Tool: M30x3.5
 Feedrate: 420 mm/min
 Depth: 40 mm
 Speed: 120rpm



Drilling

Tool: ϕ 76x2
 Feedrate: 60 mm/min
 Depth: 40 mm
 Speed: 300rpm
 Spindle load: 100%

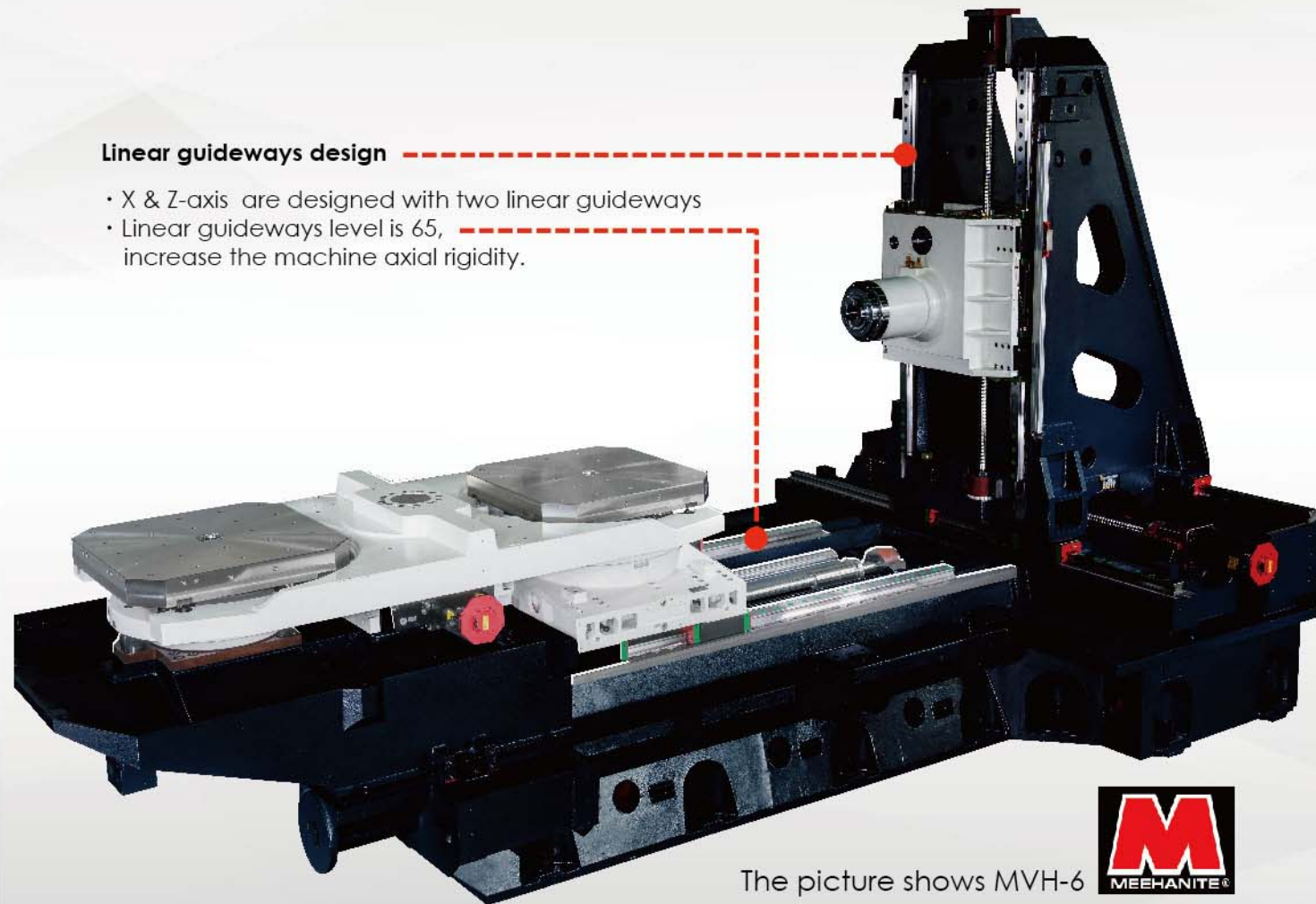
All the test results featured in this catalogue were produced under strict testing condition in a special zed testing environment. Under different testing conditions and in less than ideal testing environments, that the test results may vary from those shown in this catalogue.

Monolithic Machine Base of LAUREL

Hartford horizontal machining center with unique V-ribs delivers solid structure.

Linear guideways design

- X & Z-axis are designed with two linear guideways
- Linear guideways level is 65, increase the machine axial rigidity.

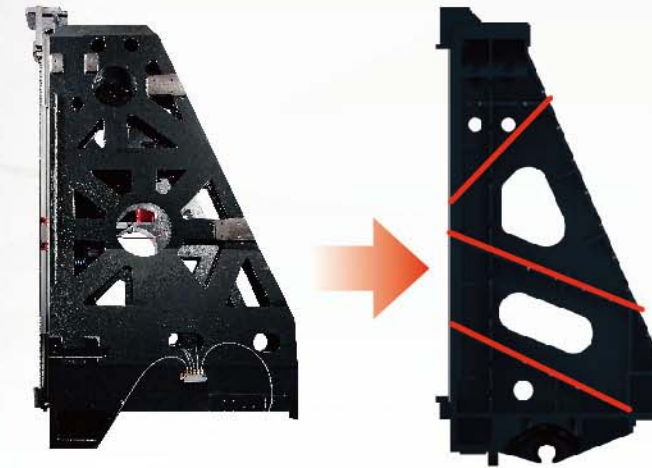


The picture shows MVH-6



Full range of box guideway five-year warranty

Warranty coverage will not apply under the following conditions,
 1.Improper operation (collision)
 2.Lack of regular cleaning of accumulated debris causing damaged to the linear rails & carriages.

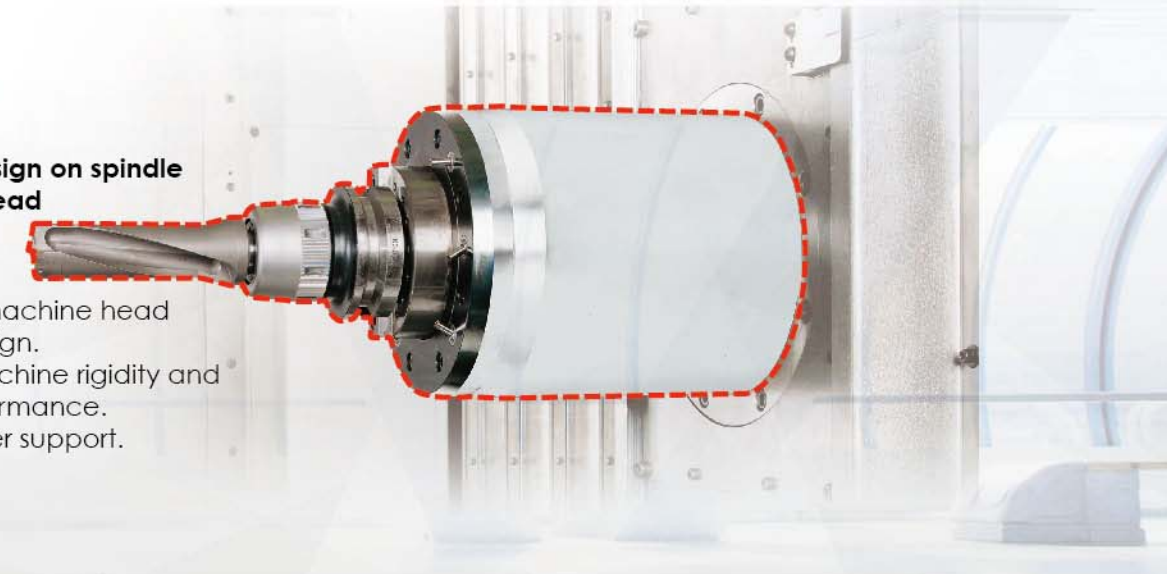


High rigidity column design

- One-piece design on column, increases structure rigidity.
- Two-step design on column, enhances rigidity..
- Chamfer design on inner body increases torsion resistance capability.

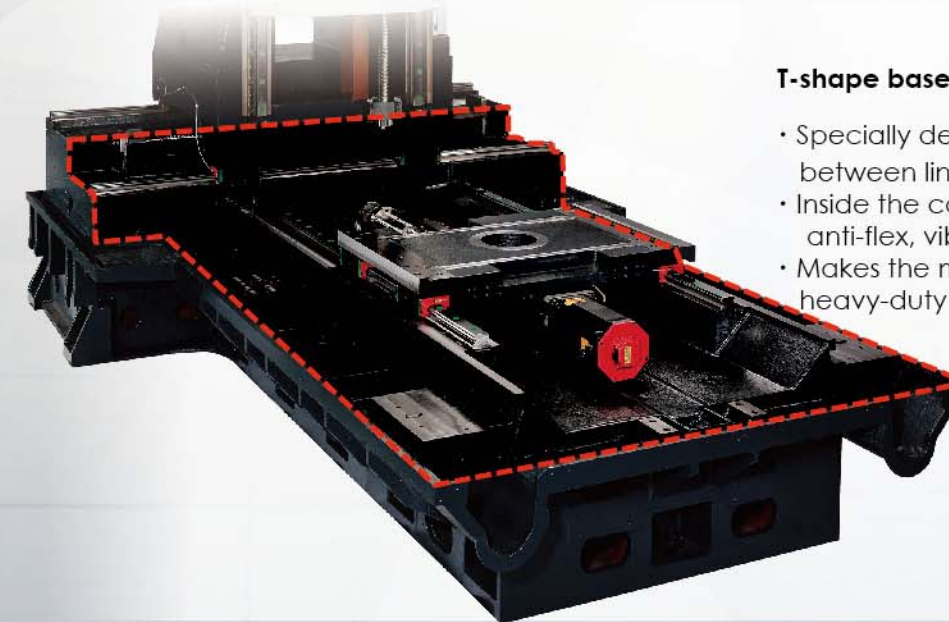
One-piece design on spindle housing and head

- The all new machine head structure design.
- Increases machine rigidity and cutting performance.
- Delivers higher support.



T-shape base features high stability

- Specially design on guideways, distance between linear guideways is **580mm**
- Inside the casting are the heavy-duty, anti-flex, vibration-absorbing ribs .
- Makes the machines perfect for heavy-duty machining.



Features Of Hartford Horizontal Machining Center



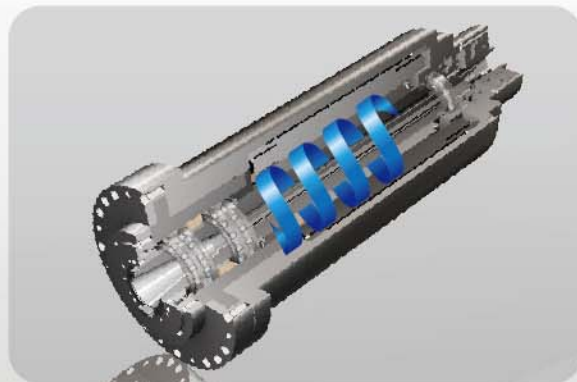
Auto pallet changer

- Auto pallet changer system is anchored on the base.
- The APC of Laurel is integrated on the machine base, free from an possibility of accuracy deviation.
- Min. indexing angle: **0.001°** (1° opt.)



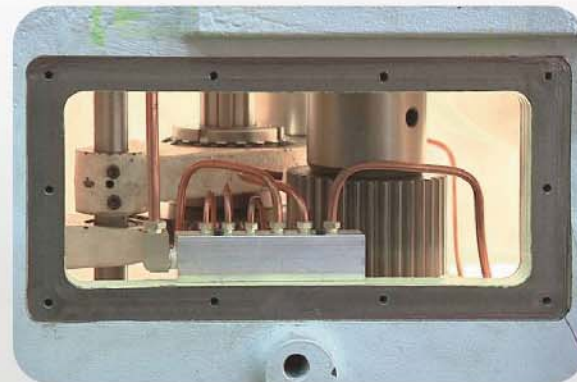
Air blast in B-axis positioning cones

- Pallets are positioned on 4 taper cones in combination with air blast on cone surface and hydraulic drawbar.
- Provides high rigidity and accuracy of the pallet.
- Prevents the ingress of cutting chip or fluid.



Built-in type spindle 10,000rpm

- The built-in type spindle is capable of resisting longtime continuous running at high speeds.
- It features water & dustproof protection for the spindle bearing.
- Spindle thermal problem is controlled by cooler system.
- Spindle runs on special bearings, providing excellent resistance for axial and radial loads.



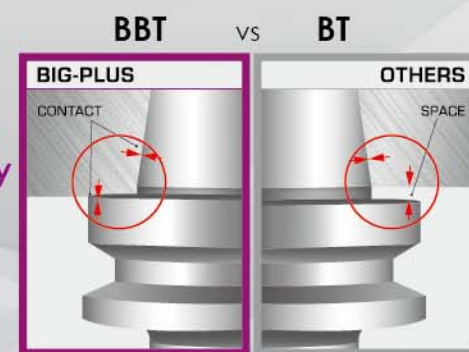
ISO 50 Gear type spindle

- Two-step transmission
- High torque output in low speed
- Spur gear with big modulus delivers high rigidity and low abrasion.
- Suitable for heavy-load cutting

BBT Option

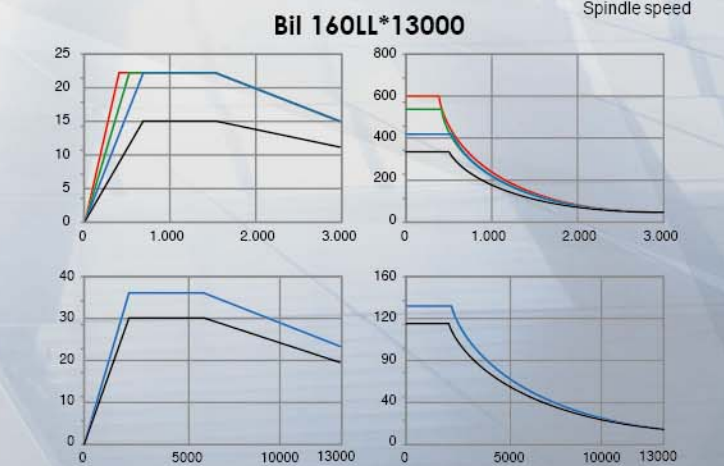
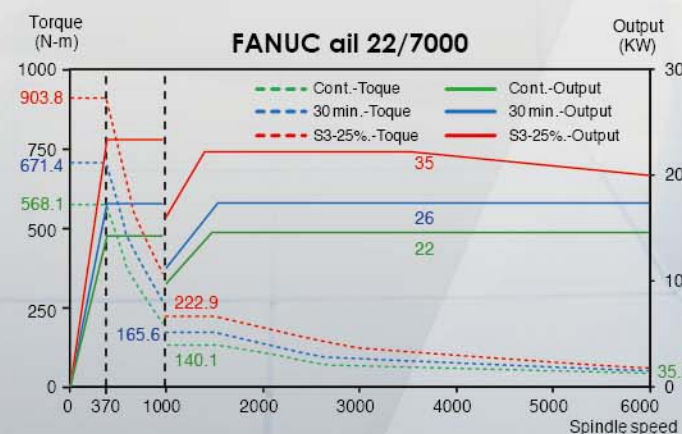
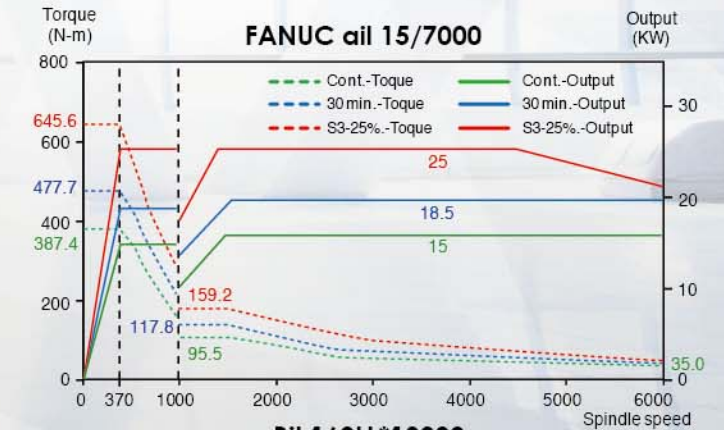
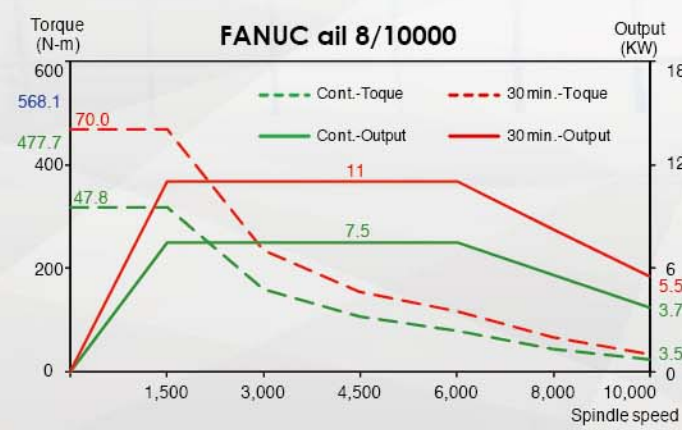
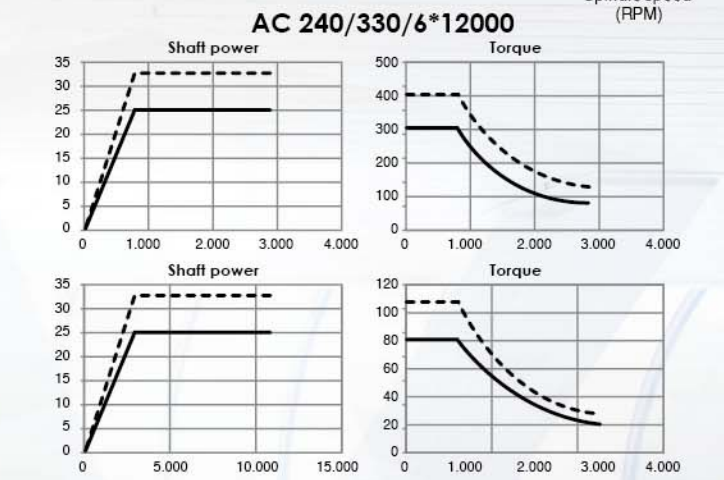
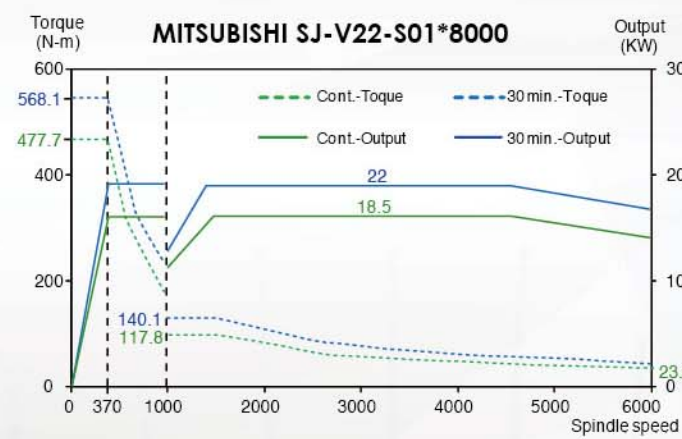
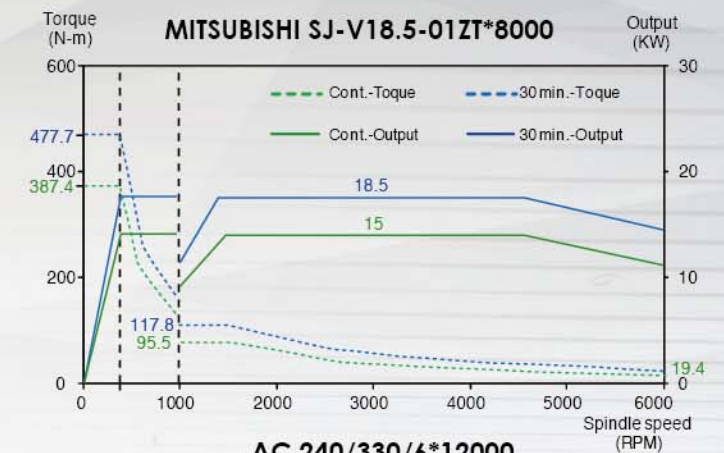
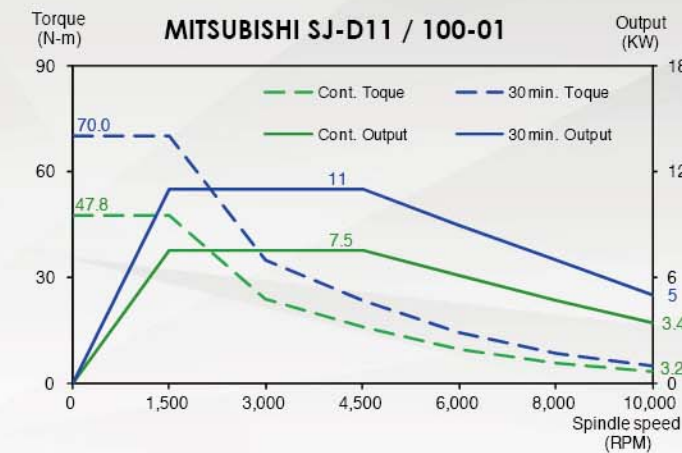
- Dual contact between the taper and the flange.
- Improves the rigidity, accuracy, speed and performance.
- Radial deflection, vibration and deviation are significantly reduced.

30% rigidity up



BBT (OPTIONAL)

Spindle Diagrams



Intelligent Controller- **Hartrol Plus**

What is Hartrol plus?

- 19" multi-touch screen
- IPC is equipped with the Windows operating system
- The world's fastest CNC
- Automatic feed system control function

By the use of open architecture, we begin to enter a new era of intelligent processing. In addition to basic functions, we have joined hardware and software exclusively developed by Hartford. Software can be added to and updated at any time with each new features.



An Intelligent Controller

With three major solutions, Hartrol plus takes your machining to the next level. Highly optimized and intelligent controls bring even more capabilities and productivity to your metal cutting processes.

With ease of use, advanced automation, and smart data collection, Hartrol plus is essential tool for enhancing performance on your production floor.

The difference between Hartrol plus and others

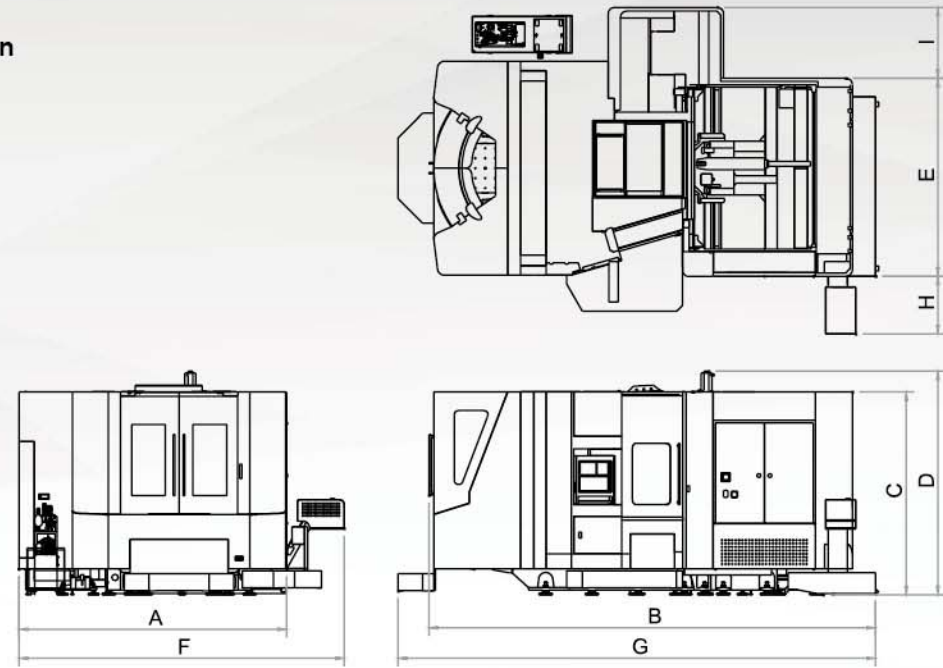
Function	Hartrol plus 1 	Others
Screen Size	19" Multi-touch Panel	10.4"(OPT:15")
Hard Drive	32GB SSD	NO
Smoothing Interpolation	SSS-4G	Option
Look Ahead Block	1350	400(1000 Max.)



For more information of Hartrol plus, please check with sales person.

Dimension Drawing

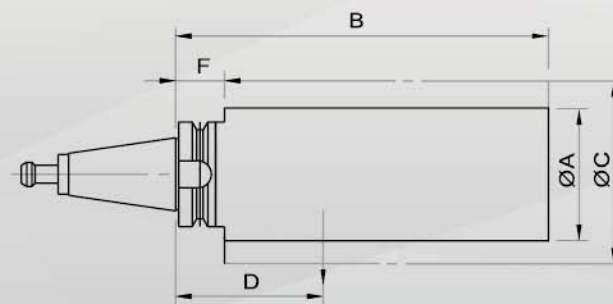
Machine dimension



Unit: mm

Model	A	B	C	D	E	F	G	H	I
MVH-5 (#40)	3587	4574	2380	2861	2940	-	-	-	-
MVH-5 (#50)	3461	5257	3000	3094	3461	3817	-	-	-
MVH-6	3518	5883	3032	3393	3518	4727	6358	-	-
MVH-8	4346	7227	3282	3619	3196	5284	7807	950	1150
HMC-500 (#40)	-	-	2440	2861	-	3587	4574	-	-
HMC-6	3461	5257	3000	3094	3461	3817	-	-	-
HMC-600	3518	4707	3000	3094	3461	4115	-	-	-
HMC-8	3518	5883	3032	3393	3518	4727	6358	-	-
HMC-10	4346	7227	3282	3619	3196	5284	7807	950	1150
HMC-800	4103	5466	3016	3393	3518	5012	5987	-	-
HMC-1000	4346	5827	3282	3619	3200	5284	7322	950	1150

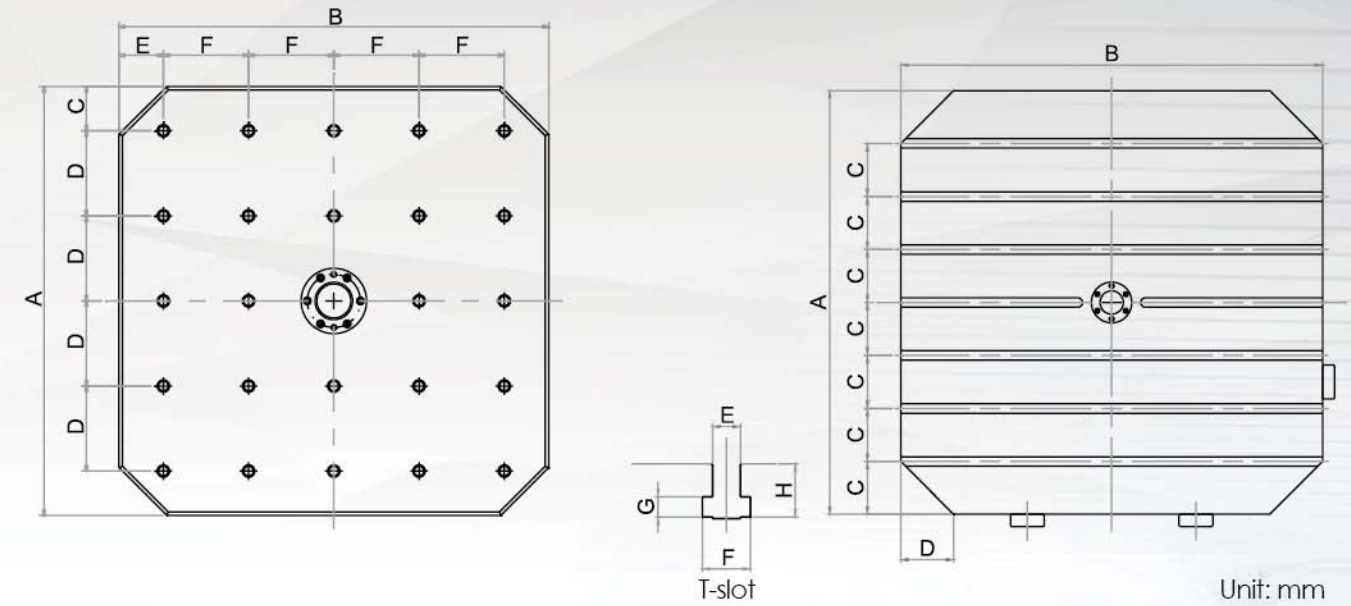
Tool dimension



Unit: mm

Model	A	B	C	D	E	F	Max. tool mass moment
MVH-5 (#40)	75	350	150	150	7kg	30	10.3N-m
MVH-5 (#50)	125	400	250	130	20kg	50	25.5N-m
MVH-6	125	500	250	130	20kg	50	25.5N-m
MVH-8	125	600	250	100	25kg	45	24.5N-m
HMC-500 (#40)	75	350	150	150	7kg	30	10.3N-m
HMC-6	125	400	250	130	20kg	50	25.5N-m
HMC-600	125	400	250	130	20kg	50	25.5N-m
HMC-8	125	500	250	130	20kg	50	25.5N-m
HMC-10	125	600	250	100	25kg	45	24.5N-m
HMC-800	125	500	250	130	20kg	50	25.5N-m
HMC-1000	125	600	250	100	25kg	45	24.5N-m

Pallet dimension

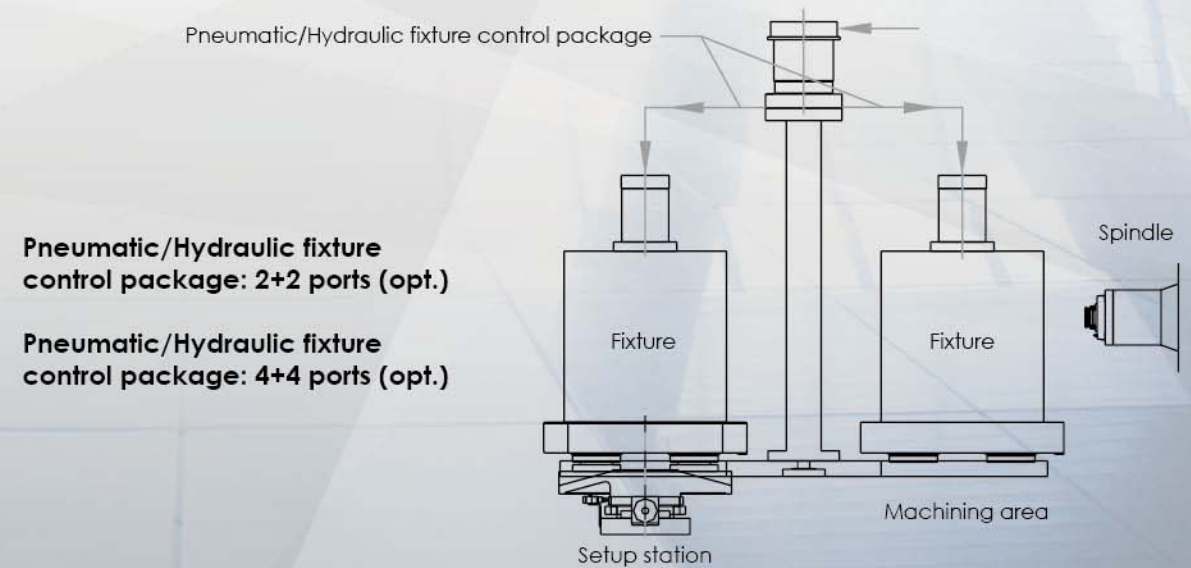


Unit: mm

Model	A	B	C	D	E	F	H
MVH-5 (#40)	500	500	50	100	50	100	M16x2Px25L
MVH-5 (#50)	500	500	50	100	50	100	M16x2Px25L
MVH-6	630	630	65	125	65	125	M16x2Px25L
MVH-8	800	800	80	160	80	160	M16x2Px28L
HMC-500 (#40)	500	500	50	100	50	100	M16x2Px25L
HMC-6	630	630	65	125	65	125	M16x2Px25L
HMC-600	630	630	65	125	65	125	M16x2Px25L
HMC-8	800	800	80	160	80	160	M16x2Px28L
HMC-800	800	800	80	160	80	160	M16x2Px28L

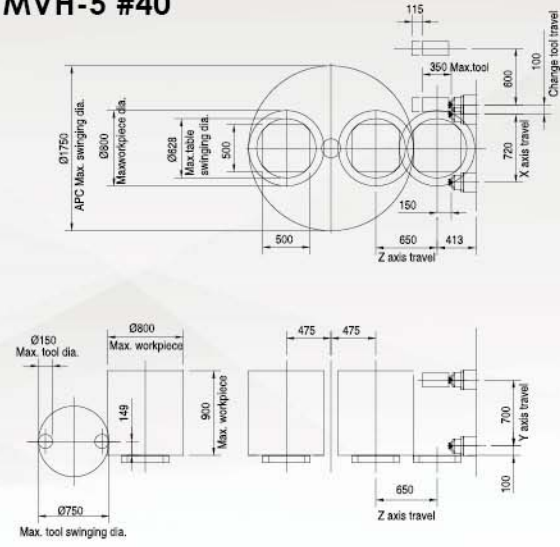
Unit: mm

Model	A	B	C	D	E	F	G	H
HMC-10	1000	1000	125	125	22	38	16	42
HMC-1000	1000	1000	125	125	22	38	16	42

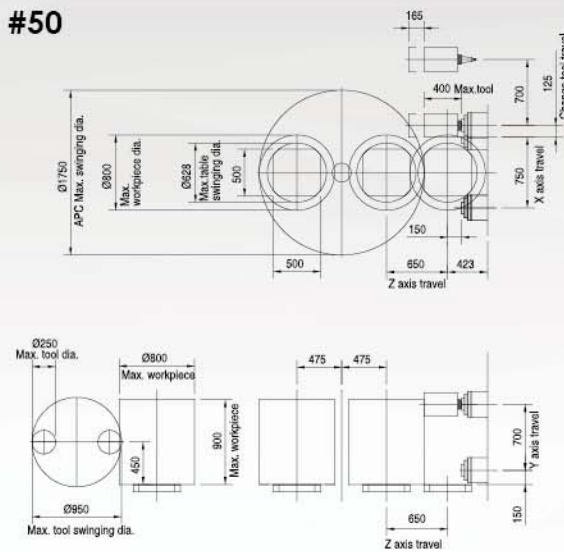


Interference Drawing

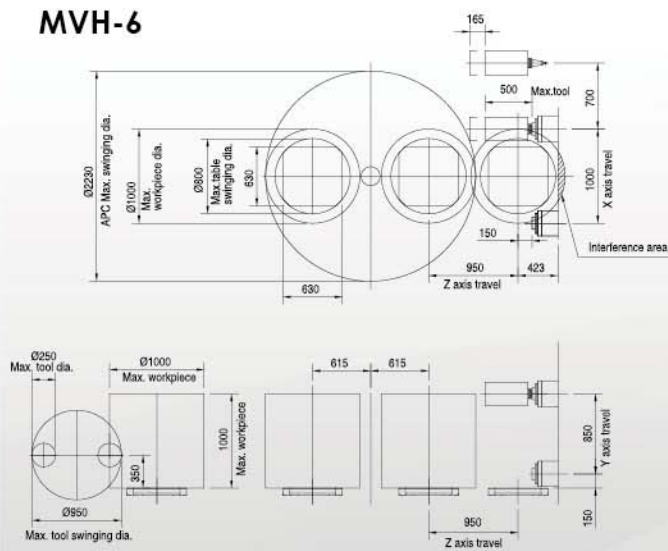
MVH-5 #40



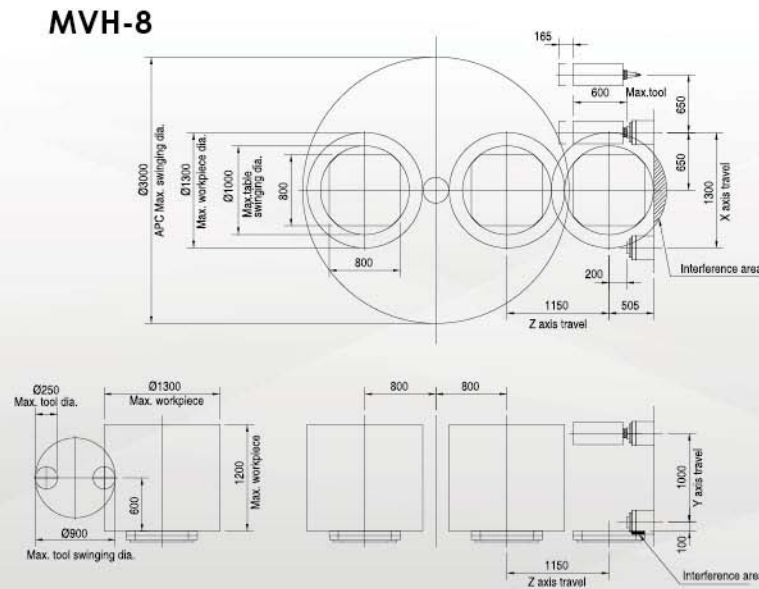
MVH-5 #50



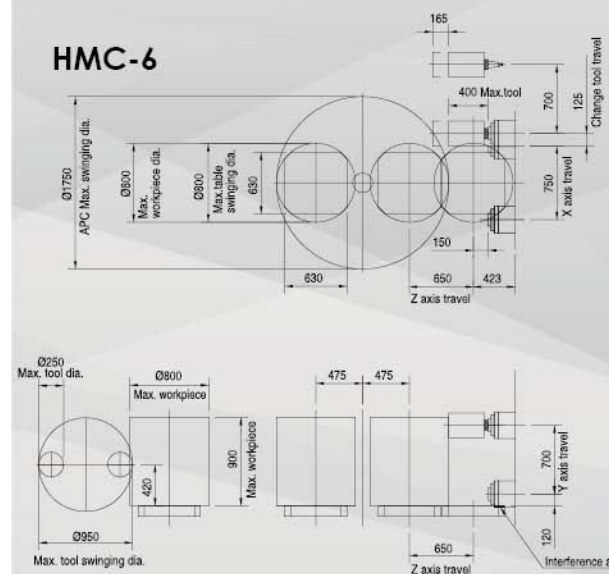
MVH-6



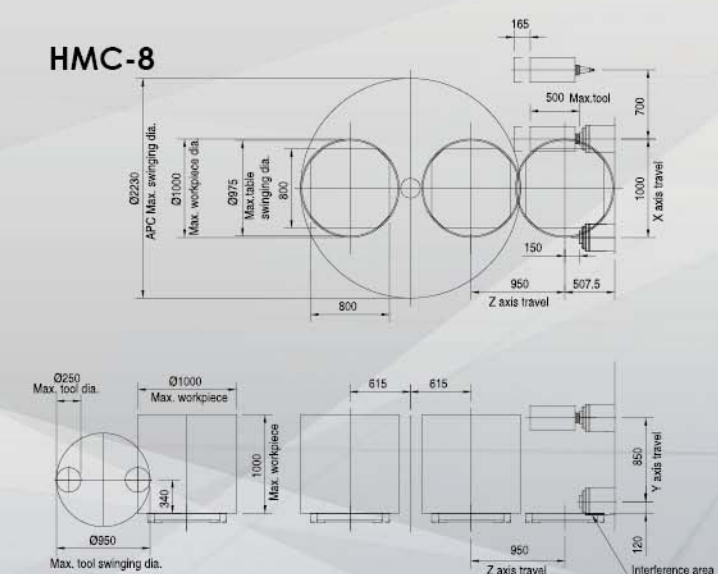
MVH-8



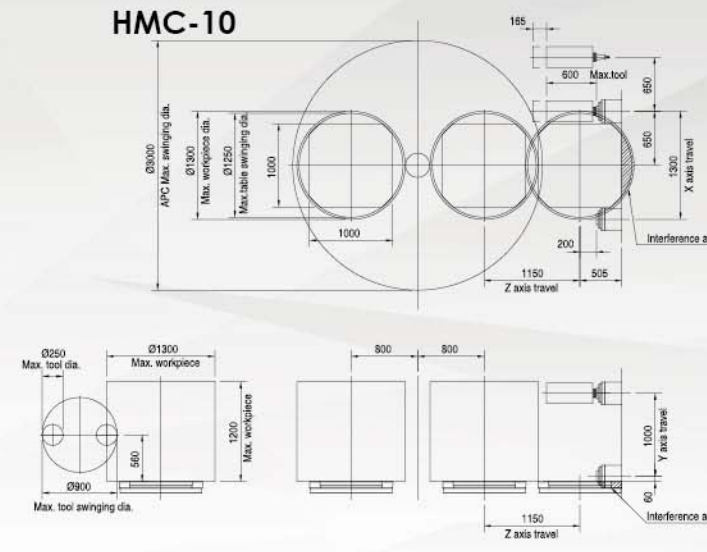
HMC-6



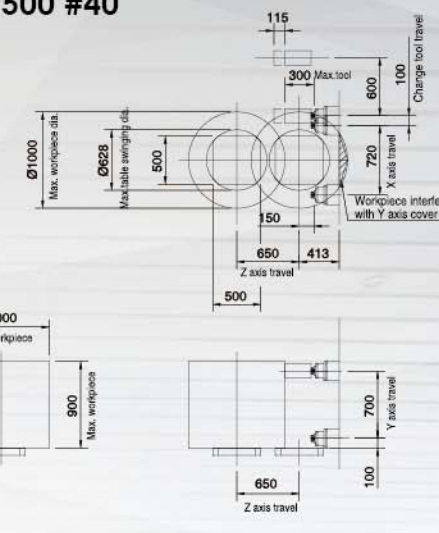
HMC-8



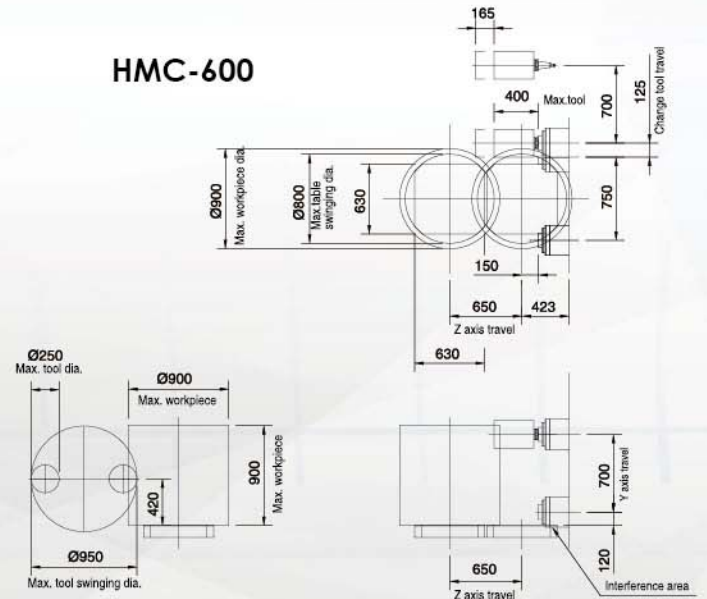
HMC-10



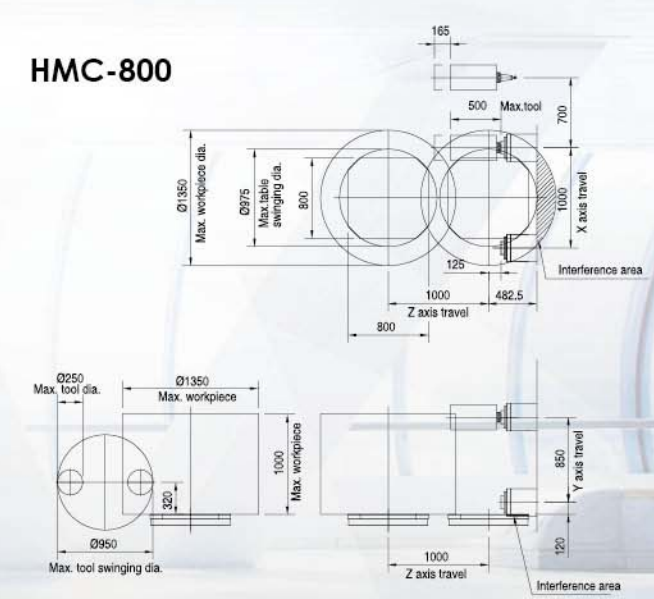
HMC-500 #40



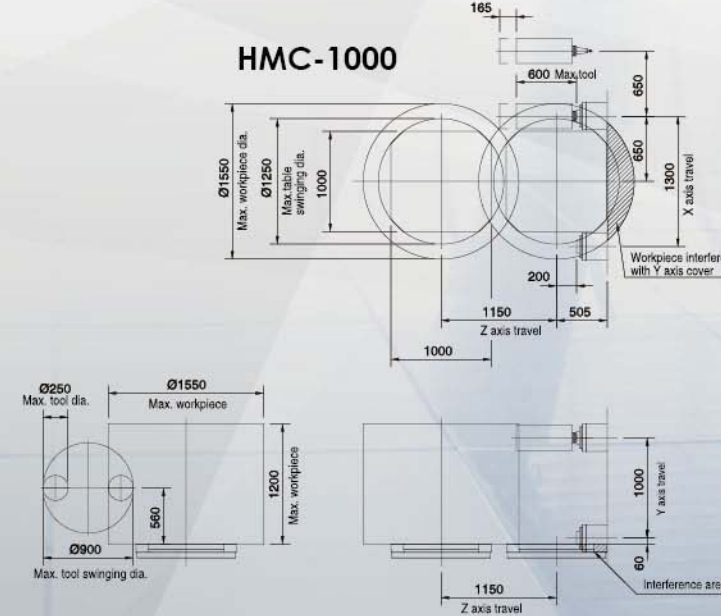
HMC-600



HMC-800



HMC-1000



Specifications

Model	Unit	MVH-5(#40)	MVH-5(#50)	MVH-6	MVH-8	HMC-6	HMC-8	HMC-10	HMC-500(#40)	HMC-600	HMC-800	HMC-1000
Table												
Working surface	mm	500x500	500x500	630x630	800x800	630x630	800x800	1000x1000	500x500	630x630	800x800	1000x1000
Max. workpiece swing diameter	mm	φ 800x900	φ 800x900	φ 1000x1000	φ 1300x1200	φ 800x900	φ 1000x1000	φ 1300x1200	φ 1000x900	φ 900x900	φ 1350x1000	φ 1550x1200
Max. table load	Kg	600	600	1300	2000	600	1500	2000	600	600	1500	2000
Indexing type	deg.	0.001(1)	0.001(1)	0.001(1)	0.001(1)	0.001(1)	0.001(1)	0.001(1)	0.001(1)	0.001(1)	0.001(1)	0.001(1)
Max. speed of pallet top	rpm	22	22	11	11	22	11	11	22	22	11	11
Travel												
Longitudinal travel (X-axis)	mm	720	750	1000	1300	750	1000	1300	720	750	1000	1300
Cross travel (Y-axis)	mm	700	700	850	1000	700	850	1000	700	700	850	1000
Vertical travel (Z-axis)	mm	650	650	950	1150	650	950	1150	650	650	1000	1150
Distance from spindle center to table surface	mm	100-800	150-850	150-1000	100-1100	120-820	110-960	60-1060	100-800	120-820	120-970	60-1060
Distance from spindle end to table center	mm	150-800	150-800	150-1100	200-1350	150-800	150-1100	200-1350	150-800	150-800	125-1125	200-1350
Spindle												
Spindle nose taper	rpm	ISO 40	ISO 50	ISO 50	ISO 50	ISO 50	ISO 50	ISO 50	ISO 40	ISO 50	ISO 50	ISO 50
Spindle speed (Gear type)	rpm	-	6000	6000	6000	6000	6000	6000	-	6000	6000	6000
Spindle speed (DDS)	rpm	10000(15000 opt.)	-	-	-	-	-	-	10000(15000 opt.)	-	-	-
Spindle speed (Built-in)	rpm	-	(10000 opt.)	(10000 opt.)	(10000 opt.)	(10000 opt.)	(10000 opt.)	(10000 opt.)	-	(10000 opt.)	(10000 opt.)	(10000 opt.)
Feed												
Cutting feed rate (X · Y · Z axis)	m/min	12/12/12	12/12/12	12/12/12	12/12/12	12/12/12	12/12/12	12/12/12	12/12/12	12/12/12	12/12/12	12/12/12
Rapid traverse (X · Y · Z axis)	m/min	40/40/40	40/30/40	30/30/30	30/30/30	40/30/40	30/30/30	30/30/30	40/40/40	40/30/40	30/30/30	30/30/30
ATC												
Tool storage capacity	Pcs	40(60 opt.)	40(60/90/120 opt.)	40(60/90/120 opt.)	40(60/90/120 opt.)	40(60/90/120 opt.)	40(60/90/120 opt.)	40(60/90/120 opt.)	40(60 opt.)	40(60/90/120 opt.)	40(60/90/120 opt.)	40(60/90/120 opt.)
Max. tool weight	Kg	7	20	20	25	20	20	25	7	20	20	25
Max. tool size (diameter×length)	mm	φ 75x350L (φ 150x350 Lneighbor empty)	φ 125x400L (φ 250x400 Lneighbor empty)	φ 125x500L (φ 250x500L neighbor empty)	φ 125x600L (φ 250x600L neighbor empty)	φ 125x400L (φ 250x400L neighbor empty)	φ 125x500L (φ 250x500L neighbor empty)	φ 125x600L (φ 250x600L neighbor empty)	φ 75x300L (φ 150x350L neighbor empty)	φ 125x400L (φ 250x400L neighbor empty)	φ 125x500L (φ 250x500L neighbor empty)	φ 125x600L (φ 250x600L neighbor empty)
Tool selection		Random	Random	Random	Random	Random	Random	Random	Random	Random	Random	Random
Tool shank		BT40(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)	BT40(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)	BT50(BBT/CAT/DIN)
Pull stud bolt		P40T-1/CAT-40/DIN69872	P50T-1/CAT-50/DIN69872	P50T-1/CAT-50/DIN69872	P50T-1/CAT-50/DIN69872	P50T-1/CAT-50/DIN69872	P50T-1/CAT-50/DIN69872	P50T-1/CAT-50/DIN69872	P40T-1/CAT-40/DIN69872	P50T-1/CAT-50/DIN69872	P50T-1/CAT-50/DIN69872	P50T-1/CAT-50/DIN69872
Spindle motor												
Motor (Cont./30 min)	kw	7.5/11	15/18.5(18.5/22, 22/26 opt.)	15/18.5(18.5/22, 22/26 opt.)	15/18.5(18.5/22, 22/26 opt.)	15/18.5(18.5/22, 22/26 opt.)	15/18.5(18.5/22, 22/26 opt.)	15/18.5(18.5/22, 22/26 opt.)	7.5/11	15/18.5(18.5/22, 22/26 opt.)	15/18.5(18.5/22, 22/26 opt.)	15/18.5(18.5/22, 22/26 opt.)
Positioning accuracy												
3-axes laser positioning accuracy (JIS B6336)												
Positioning accuracy/Full travel	mm	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008	±0.008
Repetitive positioning accuracy	mm	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002
3-axes laser positioning accuracy (JIS B6336)												
Positioning accuracy	mm	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Repetitive positioning accuracy	mm	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
Other												
Required Air Pressure	kg/cm2	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Electric power consumption	KVA	60	60	60	58.3	60	60	58.3	60	60	60	6.5
Floor space (Full Guarding)	mm	7234x5314	7791x5572	8430x5635	9630x7190	7791x5572	8430x5635	9630x7190	5997x5314	7241x5572	8046x6877	58.3
Machine Weight	kg	14000	16500	20500	23000	17000	21000	23500	13000	16000	18000	9630x7190
Coolant Capacity (Standard)	L	300	500	650	1100	500	650	1100	300	500	580	18500

Standard & Optional Electrical Functions

Standard-Mechanical

- Full-enclosed guard
- Spray around spindle
- Lubrication system
- Spindle oil cooler
- Spindle air curtain
- Oil flaud separation system on base
- Fluorescent lamp x2
- Air blast through spindle
- Tri-Lamp Device
- Screw type chip conveyor
- Link type chip conveyor & portable chip bucket(1 EA)
- Convection heat exchanger in control box

- Coolant tank
- Automatic Power OFF
- MPG
- Absolute pulse coder on 3-axis
- Foundation bolt, Concrete
- Hartford manual x1

Optional-Mechanical

- X, Y, Z-axis linear scale system(Heidenhain)
- Coolant through system(20/25/40/70 BAR)
- Auto. Workpiece measurement
- Auto. length measurement
- Coolant shower device of roof

Optional-Mechanical

- Auto. Pallet changer (Driven by servo system)
- Single working table (HMC-500#40/HCM-600/HMC-800/HMC-1000)
- Pneumatic/Hydraulic fixture control package (2+2 ports)
- Pneumatic/ Hydraulic fixture control package (4+4 ports)
- Mist coolant system
- Oil mist collector system
- Air gun
- Wash down hose
- Rotary window
- Oil skimmer
- Hoist Seat

Electrical

Standard-Electrical

- M code display
- PLC bit setting screen
- Tool comment
- Hole pattern
- Face milling cycle
- Side milling cycle
- Pocketing cycle
- Round cutting
- Workpiece calibration (Manually)
- Spindle load monitor
- High speed, high accuracy parameter screen
- Tool magazine display

Optional-Electrical

- DNC software
- Lifting function against gravity
- Intelligent MPG