HYUNDAI
MOTOR GROUP

HYUNDAI WIA

High Speed Vertical Machining Center for Mold Machining

Hi-MOLD Series

Hi-MOLD450 | Hi-MOLD560 | Hi-MOLD6500

HYUNDAI WIA | CREATING VALUE IN SEAMLESS MOBILITY

Technical Leader

The Vertical Machining Center Hi-MOLD Series designed by Hyundai WIA with years of expertise and the latest technology, ensures performance requirements of the mold industry.

		Hi-MOLD450	Hi-MOLD560	Hi-MOLD6500
Table Size (L×W)	mm(in)	850×500 (33.5″×19.7″)	1,250×600 (49.2″×23.6″)	1,200×650 (47.2″×25.6″)
Max. Load Capacity	kg(lb)	300 (661)	800 (1,764)	1,000 (2,205)
Sp. Taper	_	HSK-A63 [HSK-E40]		BBT40
Sp. Speed	r/min	24,000 [40,000]		20,000 [24,000]
Sp. Power (Max./Cont.)	kW(HP)	33/25 (44.3/33.5) [26/18 (35/24.1)]		22/18.5 (30/25) [22/18.5 (30/25)]
No. of Tools	EA	24		30
Travel (X/Y/Z)	mm(in)	600/450/450 (23.6″/17.7″/17.7″)	1,000/560/450 (39.4″/22″/17.7″)	1,100/650/550 (43.3″/25.6/21.7″)
Rapid Traverse Rate	m/min	50/50/50		40/40/40

[ ] : Option

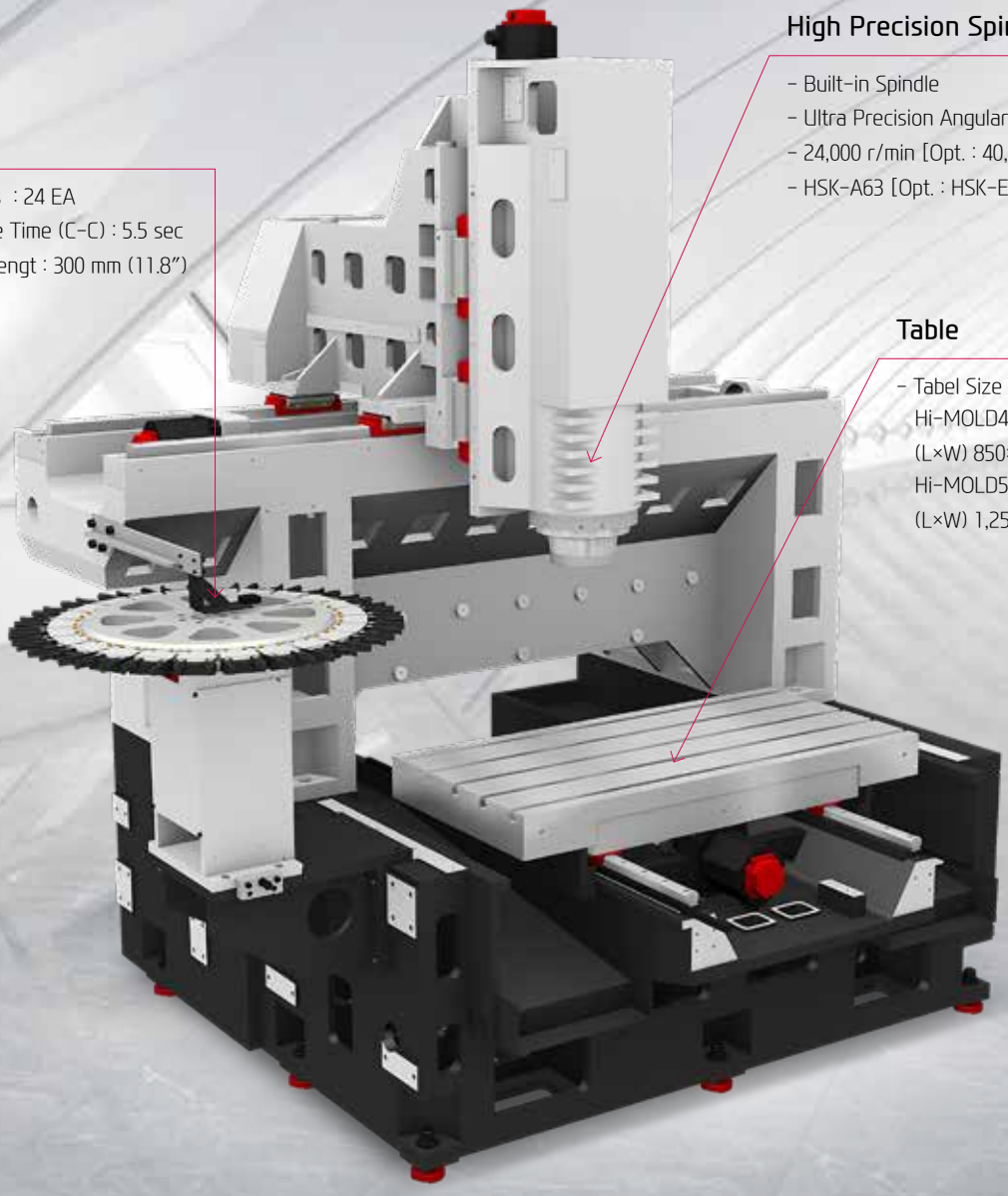
Hi-MOLD Series

Super Quality Mold Machining

- Highly reliable bridge type structure
- Highly accurate main spindles with ultra precision angular contact bearings
- HIgh speed built-in main spindle for the utmost quality of molds
- Hyundai WIA mold package for optimal processing of mold parts

01 Hi-MOLD450/560

Super Quality & productivity Vertical Machining Center for Mold Machining



Magazine

- No. of Tools : 24 EA
- Tool Change Time (C-C) : 5.5 sec
- Max. Tool Lengt : 300 mm (11.8")

High Precision Spindle

- Built-in Spindle
- Ultra Precision Angular Contact Bearings
- 24,000 r/min [Opt. : 40,000 r/min]
- HSK-A63 [Opt. : HSK-E40]

Table

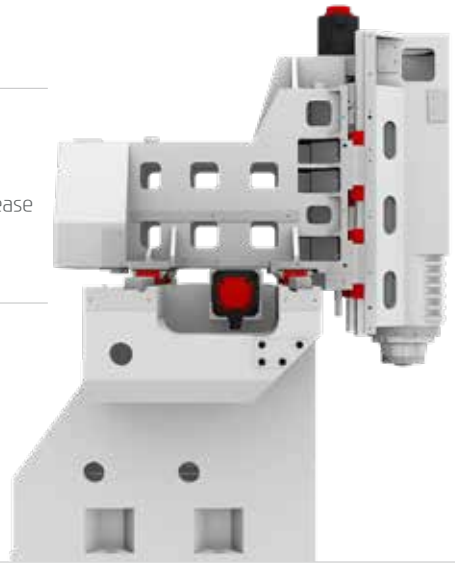
- Tabel Size
  Hi-MOLD450 :
  (L×W) 850×500 mm (33.5"×19.7")
  Hi-MOLD560 :
  (L×W) 1,250×600 mm (49.2"×23.6")

HIGH PRECISION & HIGH SPEED

HIGH-PRECISION STRUCTURE

Wall Type Column Structure

Hi-MOLD450/560 are built upon a wall type frame.
The biggest benefit of the bridge type machining center is the increase of rigidity and the decrease of heat generation.
Hence, it retains accuracy and repeatability at the highest levels.



GUIDE WAY

LM Guideway

Each axis of the Hi-MOLD450/560 features slideways optimized to the model.
In order to allow for flexible axis movement, ball type LM guides on the X and Y axis as well as roller type guide on the Z axis were implemented within the headstock. This makes the axis travel super fast, reducing idle time tremendously.

Ball Screw

All axis are driven by high precision double anchored ballscrews.
This provides outstanding positioning and repeatability with virtually no thermal growth. All ballscrews are connected directly to the servo drive motors, to eliminate backlash.

Travel (X/Y/Z)

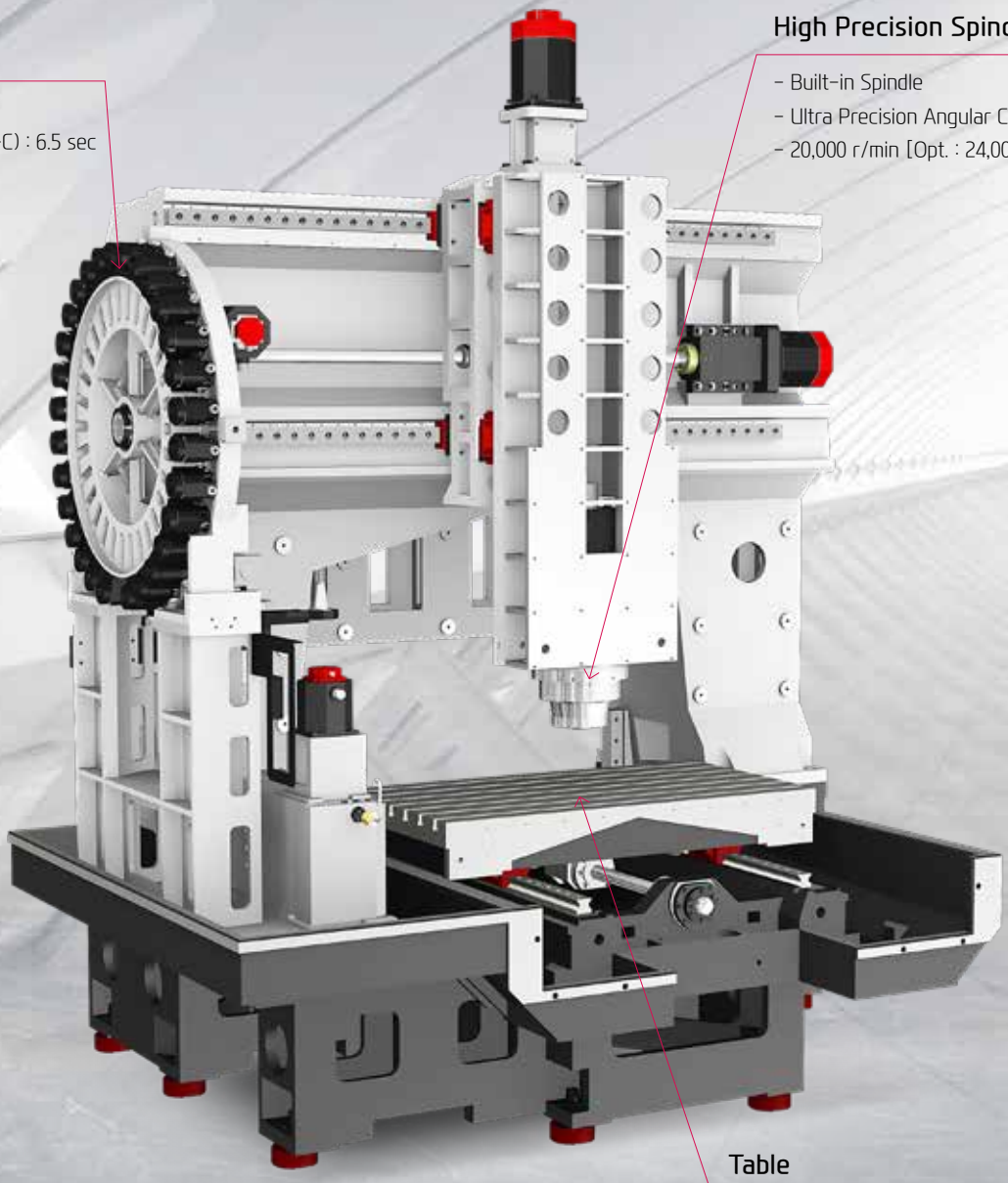
Hi-MOLD450	Hi-MOLD560
600/450/450 mm (23.6"/17.7"/17.7")	1,000/560/450 mm (39.3"/22"/17.7")

Rapid Traverse Rate (X/Y/Z)

50/50/50 m/min (1,969/1,969/1,969 ipm)

02 Hi-MOLD6500

Super Quality & Productivity Vertical Machining Center for Mold Machining



Magazine

- No. of Tools : 30 EA
- Tool Change Time (C-C) : 6.5 sec
- Tool Shank : BBT40

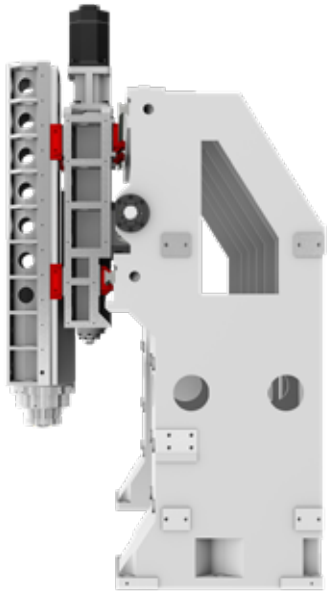
High Precision Spindle

- Built-in Spindle
- Ultra Precision Angular Contact Bearings
- 20,000 r/min [Opt. : 24,000 r/min]

Table

- Tabel Size (L×W) :
  1,200×650 mm (47.2"×25.6")
- Max. Load Capacity : 1,000 kg (2,205 lb)

HIGH PRECISION & HIGH SPEED



HIGH-PRECISION STRUCTURE

Double Column Structure

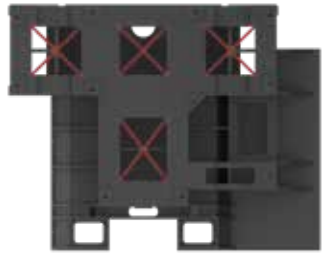
Hi-MOLD6500 is built upon a Double Column Structure frame. The greatest benefit of the double column machining center is the increase of rigidity and the decrease of heat generation. Hence, it retains accuracy and repeatability at the highest levels.

Step Type Column Structure

Since the column's X-axis cross beam has incorporated a 'step type' design, the load that occurs at the front during machining has reduced.

X Type Rib Structure Bed

Hi-MOLD6500 is designed with a highly rigid X type rib structure, showing the best performance in high quality mold machining.
It can also offer powerful cutting and high precision machining due to excellent vibration absorption.



GUIDE WAY

Roller Type LM Guideway

For processing the highest quality mold products, the Hi-MOLD6500 is designed with roller LM guideways for high rigidity and enhanced acc/deceleration.

Grease Lubrication Method

Significant cost savings is achieved by incorporating the grease lubrication system versus the oil lubrication method.

Nut Cooling Ball Screw

HI-MOLD6500 has also adopted ball screw nut cooling system which protects travel axis from thermal displacement.

Travel (X/Y/Z)	**Rapid Traverse Rate** (X/Y/Z)
1,100/650/550 mm (43.3"/25.6"/21.7")	40/40/40 m/min (1,575/1,575/1,575 ipm)

03 SPINDLE & ATC

Excellent Machining Performance with High-precision Spindle & ATC

Spindle Specifications

[ ] : Option

Model	Speed r/min	Motor (Max./Cont.)	Torque (Max./Cont.)	Type
Hi-MOLD450/560	HSK-A63 : **24,000** rpm	**33/25** kW (44.3/33.5 HP)	**96/72.5** N·m (70.8/53.5 lbf·ft)	Built-in
	[HSK-E40 : **40,000** rpm]	[**26/18** kW (35/24 HP)]	[**16.8/12.2** N·m (12.4/9 lbf·ft)]	
Hi-MOLD6500	**20,000** rpm	**22/18.5** kW (30/25 HP)	**98/80** N·m (72.3/59 lbf·ft)	
	[**24,000** rpm]	[**22/18.5** kW (30/25 HP)]	[**53/37** N·m (39.1/27.3 lbf·ft)]	

HIGH-PERFORMANCE, HIGH-PRECISION SPINDLE

SPINDLE

Built-in Spindle

The built-in spindle is designed to minimize vibration and heat, as well as deliver rapid acc/deceleration. Stable precision is maintained even under high speed and heavy duty operations.

Spindle Cooling

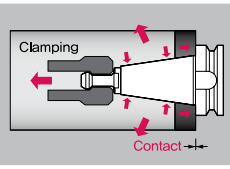
The spindle cooling system minimizes thermal displacement which can happen during lengthy machining operations, and offers continued accuracy based on the thermal stability.

Through Spindle Coolant (20/30/70 bar) OPTION

Through Spindle Coolant is exceedingly useful when drilling deep holes. It helps increase the lifetime of the tool, while decreasing cycle time.

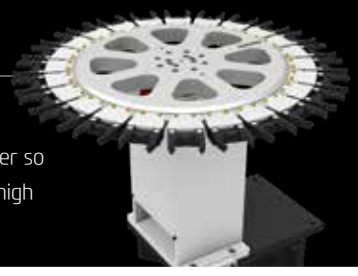
Dual Contact Spindle (Hi-MOLD6500)

The Big Plus spindle system (BBT40) provides dual contact between the spindle face and the flange face of the tool holder.



MAGAZINE

Hi-MOLD450/560 ››



Tool Magazine

The tool magazine and machining area are completely separated by a shutter so that chip, coolant and dust particles can be blocked. This helps to maintain high precision and cleanliness.

Model	No. of Tools	Tool Shank	Change Time	Max. Tool Dia. (W.T/W.O)
Hi-MOLD450/560	24 EA	HSK-A63 [HSK E40]	5.5 sec (C-C)	HSK-A63 : Ø100/Ø140 (Ø3.9"/Ø5.5") HSK-E40 : Ø70/Ø140 (Ø2.7"/Ø5.5")
Hi-MOLD6500	30 EA	BBT40	6.5 sec (C-C)	Ø80/Ø150 (Ø3.1"/Ø5.9")

04 MOLD PACKAGE

Powerful Mold Package, HYUNDAI-WIA Mold All in One

Mold Package Specifications

HWM ALL IN ONE		1 Package	2 Package	3 Package	4 Package	SIEMENS
AICC II Package	200 block	•	•			
	600 block			•		
	1,000 block				•	
Advanced surface						•
S/W : HW-MCS, HW-AFC		•	•	•	•	
Auto Power Off		•	•	•	•	•
Sp. Heat Distortion Compensation Device		•	•	•	•	•
Cutting Air Blow		•	•	•	•	•
Auto Tool Measuring Device		•	•	•	•	•
Data Server 1GB			•	•	•	

- Hi-MOLD450/560 – SIEMENS Package
- Hi-MOLD6500 – Standard : 3 Package, Option : 4 Package

HWM ALL-IN-ONE

To enhance mold machining, the "HWM ALL-IN-ONE" is provided as a standard feature for Hi-MOLD Series machines. This ensures accurate and high quality surface finishing and contouring.

❶ High Speed Contouring Control (AICC II)

❷ Development S/W
HW-MCS (Selectable Process Conditions), HW-AFC (Adapive Feed Control)

❸ Main Spindle Cooling Device (8-channel) - Maintain spindle temperature (heat sensor)

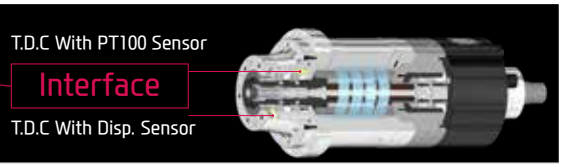
❹ Cutting Air Blow - Cutting air blow is provided for mold machining.

❺ Auto Tool Measuring Device - Detects and sets tool length, and attrition
(Graphic User Interface included)

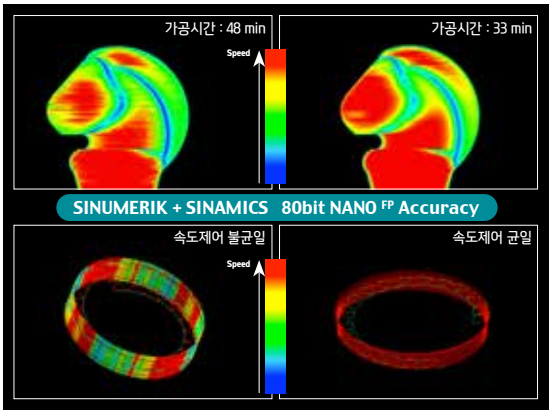
Thermal Displacement Compensation Device

Cooling system & Lubrication system

Thermal displacement of the spindle is minimized by the use of cooling techniques. This provides high accuracy when machining at high speed.



ADVANCED SURFACE



- Advanced Surface software for high speed, high accuracy mold processing
- 80-bit floating-point calculation enable to calculate numbers less than a nanometer
- A brand new filter for speed and acceleration control - Improves upon the problems of intensity of illumination due to irregular CAM data
- Standard jerk-restriction function to ease deceleration impact - Minimized vibration and high-speed deceleration
- Standard feed-forward function for speed control - Improves contouring accuracy by correcting the following error before setting point output

SPECIFICATIONS

Standard & Optional

● : Standard ○ : Option ☆ : Prior Consultation – : Non Applicable

Spindle		Hi-MOLD450	Hi-MOLD560
24,000rpm (33kW [44.3HP])	Bulit-in	●	●
40,000rpm (26kW [35HP])	Bulit-in	○	○
Spindle Cooling Device		●	●
ATC			
ATC Extension	24	●	●
Tool Shank Type	24K : HSK A63	●	●
	40K : HSK E40	●	●
U-Center	D'andrea	–	–
Table & Column			
T-Slot Table		●	●
NC Rotary Table		–	–
High Column	180mm (7")	○	○
Coolant System			
Std. Coolant (Main Spindle Nozzle)		●	●
Bed Flushing Coolant		●	●
Through spindle coolant*	20bar	○	○
	30barr, 20ℓ	○	○
	70bar, 15ℓ	○	○
	70bar, 30ℓ	–	–
Top Cover		●	●
Shower Coolant		○	○
Gun Coolant		○	○
Side Oil Hole Coolant		–	–
Air Gun		○	○
Cutting Air Blow		●	●
Tool Measuring Air Blow (Only for TLM)		●	●
Air Blow for Automation		☆	☆
Thru MQL Device (Without MQL)		☆	☆
Coolant Chiller (Sub Tank)		☆	☆
Power Coolant System (For Automation)		☆	☆
Chip Disposal			
Coolant Tank	350ℓ	●	–
	450ℓ	–	●
Interior Screw Chip Conveyor		–	–
Chip Conveyor (Hinge/Scraper)	Left (Left)	○	○
	Left (Rear)	–	–
Special Chip Conveyor (Drum Filter)		☆	☆
Chip Wagon	Standard (180ℓ)	○	○
	Swing (200ℓ)	○	○
	Large Swing (290ℓ)	○	○
	Large Size(330ℓ)	○	○
	Customized	☆	☆
Safety Device			
X Axis Javara Cover (TOp)		○	○
S/W			
Automatic CAM (HW-ACAM)		–	–
Dialogue Program (HW-DPRO)		○	○
DNC software (HW-eDNC)		○	○
Machine Monitoring System (HW-MMS Cloud)		☆	☆
Machine Monitoring System & Analysis (Customer Installation : HW-MMS Edge)		☆	☆
Smart Guide-i : FANUC		–	–
Smart S/W		☆	☆

Electric Device		Hi-MOLD450	Hi-MOLD560
Call Light	1 Color : ■	●	●
Call Light & Buzzer	3 Color : ■ ■ ■ B	○	○
Work Light		●	●
Electric Cabinet Light		○	○
Remote MPG		●	●
3 Axis MPG		☆	☆
Work Counter	Digital	○	○
Total Counter	Digital	○	○
Tool Counter	Digital	○	○
Multi Tool Counter	6 EA	☆	☆
	9 EA	☆	☆
Electric Circuit Breaker		○	○
AVR (Auto Voltage Regulator)		☆	☆
Transformer	220V : 50kVA	●	●
	400V : 25kVA	●	●
Auto Power Off		●	●
Back up Module for Black out		–	–
Measuring Device			
Air Zero	TACO	○	○
	SMC	○	○
Work Measuring Device		○	○
TLM	Touch	●	●
	Laser	○	○
Tool Broken Detective Device		○	○
Linear Scale	X/Y/Z	○	○
Rotary Scale	A/C	–	–
Coolant Level Sensor (Only for Chip Conveyor, Bladder Type)		☆	☆
Enviornment			
Air Conditioner		○	○
Dehumidifier		○	○
Oil Mist Collector		☆	☆
Oil Skimmer (Only for Chip Conveyor)		○	○
MQL (Minimal Quantity Lubrication)		○	○
Fixture & Automation			
Auto Door	Std.	☆	☆
	High Speed	○	○
Auto Shutter (Only for Automatic System)		–	–
Sub O/P		☆	☆
NC Rotary Tablel/F	Single	○	○
	Channel	☆	☆
Control of Additional Axis	1Axis	☆	☆
	2Axis	☆	☆
External M Code 4ea		○	○
Automation Interface		☆	☆
I/O Extension (In & Out)	16 Contact	☆	☆
	32 Contact	☆	☆
Hyd. Device			
Std. Hyd. Unit	65bar/30ℓ	●	●
Fixture Hyd. Unit	45bar	☆	☆
	70bar	☆	☆
	100bar	☆	☆
	Customized	☆	☆
ETC			
Tool Box		●	●
Customized Color	Need for Munsel No.	☆	☆
CAD&CAM Software		☆	☆

* Through Spindle Coolant* : please check the filter types with sales representative.

Specifications are subject to change without notice for improvement. / Please refer to the S/W catalog (iRiS) for details by S/W product.

Standard & Optional

● : Standard ○ : Option ☆ : Prior Consultation – : Non Applicable

Spindle		Hi-MOLD6500
20,000rpm (22/18.5kW)	Bulit-in	●
24,000rpm (22/18.5kW)	Bulit-in	○
Spindle Cooling Device		●
ATC		
ATC Extension	30	●
	40	–
Tool Shank Type	HSK A63	–
	BT40	●
U-Center	D'andrea	–
Pull Stud	45°	●
	60°	–
	90°	–
Table & Column		
Tap Type Table		–
T-Slot Table		●
NC Rotary Table		☆
High Column		–
Coolant System		
Std. Coolant (Main Spindle Nozzle)		●
Bed Flushing Coolant		●
Through spindle coolant*	20bar	○
	30bar, 20 ℓ	○
	70bar, 15 ℓ	○
	70bar, 30 ℓ	–
Top Cover		●
Shower Coolant		○
Gun Coolant		○
Side Oil Hole Coolant		–
Air Gun		○
Cutting Air Blow		●
Tool Measuring Air Blow (Only for TLM)		●
Air Blow for Automation		☆
Thru MQL Device (Without MQL)		☆
Coolant Chiller (Sub Tank)		☆
Power Coolant System (For Automation)		☆
Chip Disposal		
Coolant Tank	400 ℓ	●
	600 ℓ	–
Interior Screw Chip Conveyor		–
Chip Conveyor (Hinge/Scraper)	Right (Right)	–
	Left (Left)	○
Special Chip Conveyor (Drum Filter)		☆
Chip Wagon	Standard (180 ℓ)	○
	Swing (200 ℓ)	○
	Large Swing (290 ℓ)	○
	Large Size(330 ℓ)	○
	Customized	☆
S/W		
Automatic CAM (HW-ACAM)		–
Dialogue Program (HW-DPRO)		○
DNC software (HW-eDNC)		○
Machine Monitoring System (HW-MMS Cloud)		☆
Machine Monitoring System & Analysis (Customer Installation : HW-MMS Edge)		☆
Smart Guide-i : FANUC		☆
Smart S/W		☆

Electric Device		Hi-MOLD6500
Call Light	1 Color : ■	●
Call Light & Buzzer	3 Color : ■ ■ ■ B	○
Work Light		●
Electric Cabinet Light		○
Remote MPG		●
3 Axis MPG		○
Work Counter	Digital	☆
Total Counter	Digital	☆
Tool Counter	Digital	☆
Multi Tool Counter	6 EA	☆
	9 EA	☆
Electric Circuit Breaker		○
AVR (Auto Voltage Regulator)		○
Transformer	70kVA	○
Auto Power Off		●
Back up Module for Black out		○
Measuring Device		
Air Zero	TACO	○
	SMC	○
Work Measuring Device		○
TLM	Laser	●
Tool Broken Detective Device		○
Linear Scale	X/Y/Z	☆
Rotary Scale	A/C	○
Coolant Level Sensor (Only for Chip Conveyor, Bladder Type)		☆
Enviornment		
Air Conditioner		○
Dehumidifier		○
Oil Mist Collector		☆
Oil Skimmer (Only for Chip Conveyor)		○
MQL (Minimal Quantity Lubrication)		☆
Fixture & Automation		
Auto Door	Std.	○
	High Speed	☆
Auto Shutter (Only for Automatic System)		☆
Sub O/P		☆
NC Rotary Table I/F	Single	☆
	Channel	☆
Control of Additional Axis	1Axis	○
	2Axis	☆
External M Code 4ea		○
Automation Interface		☆
I/O Extension (In & Out)	16 Contact	☆
	32 Contact	☆
Hyd. Device		
Std. Hyd. Unit	70bar/14 ℓ	●
	70bar/60 ℓ	–
Center Type Hyd. Supply Unit	2×3 (6port)	☆
	2×5 (10port)	☆
Fixture Hyd. Unit	50bar	–
	70bar	☆
	100bar	☆
	Customized	☆
ETC		
Tool Box		●
Customized Color	Need for Munsel No.	☆
CAD&CAM Software		☆

* Through Spindle Coolant* : please check the filter types with sales representative.

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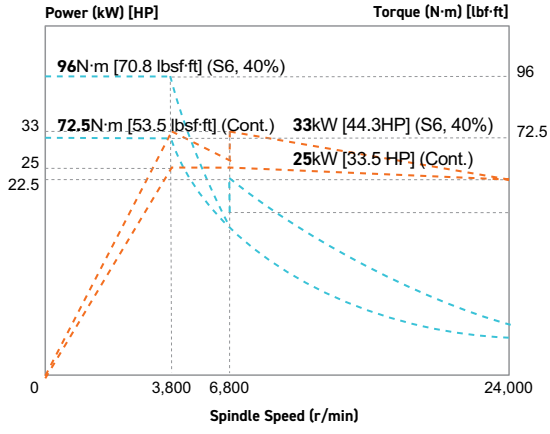
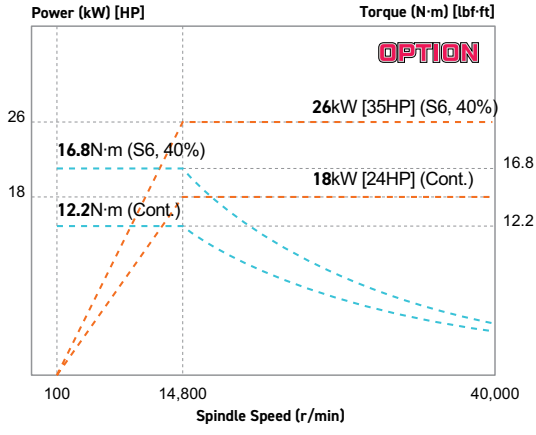
SPECIFICATIONS

Spindle Output/Torque Diagram

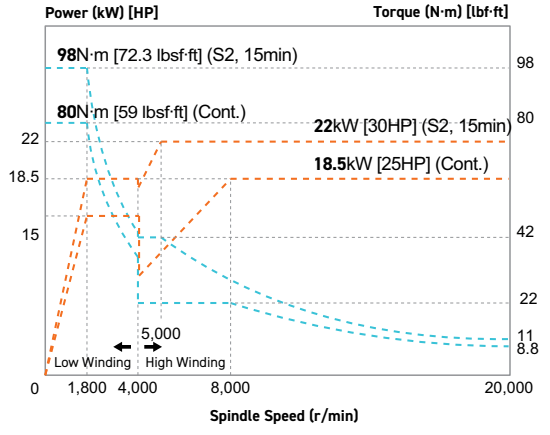
Hi-MOLD450/560 24,000rpm



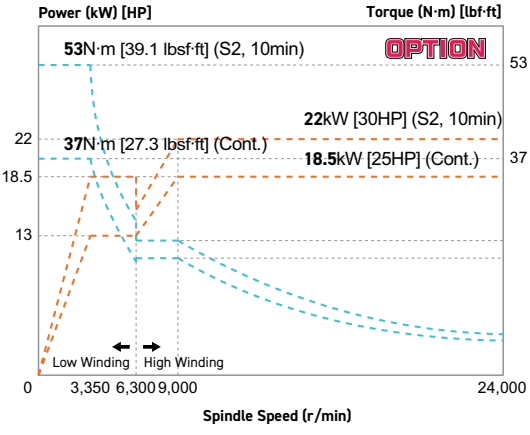
Hi-MOLD450/560 40,000rpm



Hi-MOLD6500 20,000rpm



Hi-MOLD6500 24,000rpm

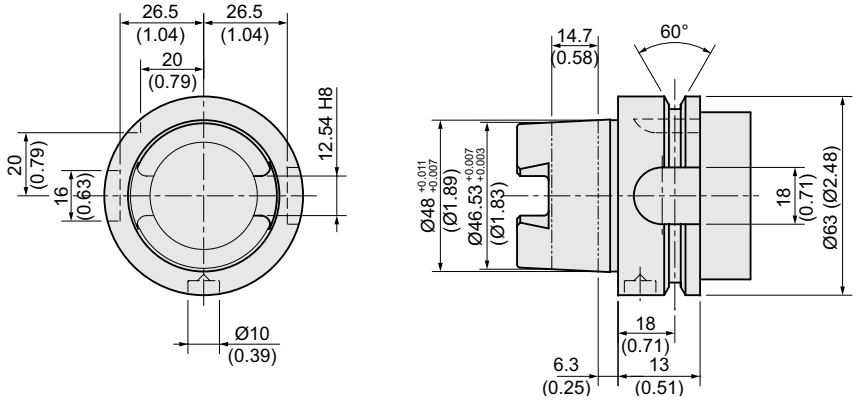


SPECIFICATIONS

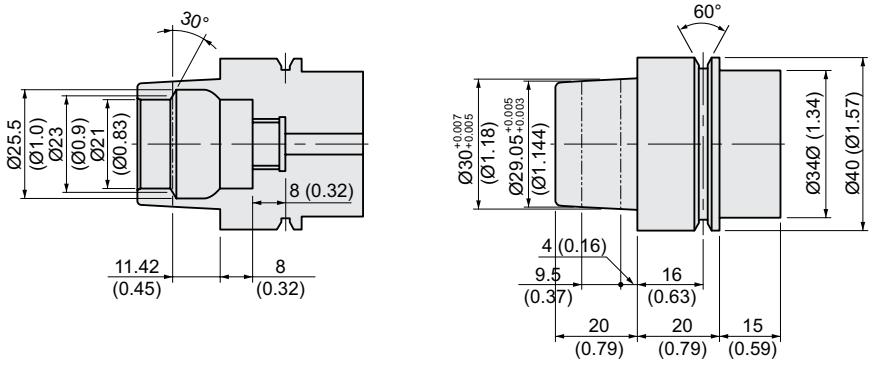
Tool Shank

unit : mm(in)

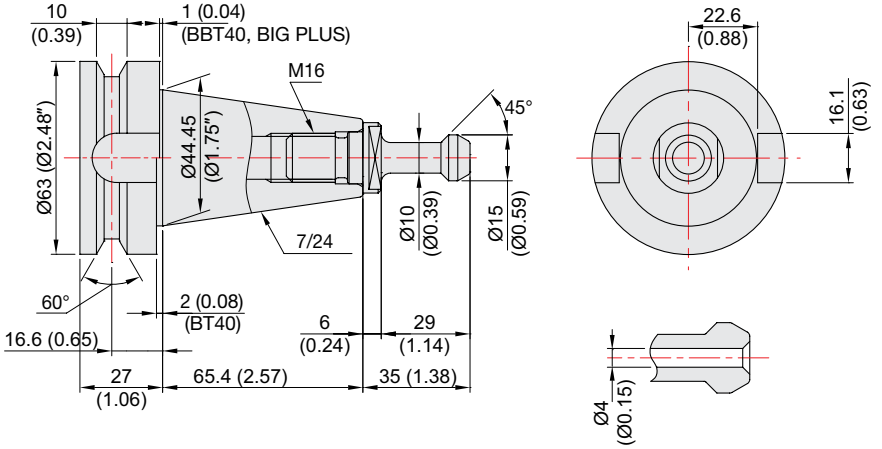
HSK-A63
Hi-MOLD450
Hi-MOLD560



OPTION
HSK-E40
Hi-MOLD450
Hi-MOLD560



BBT40
Hi-MOLD6500

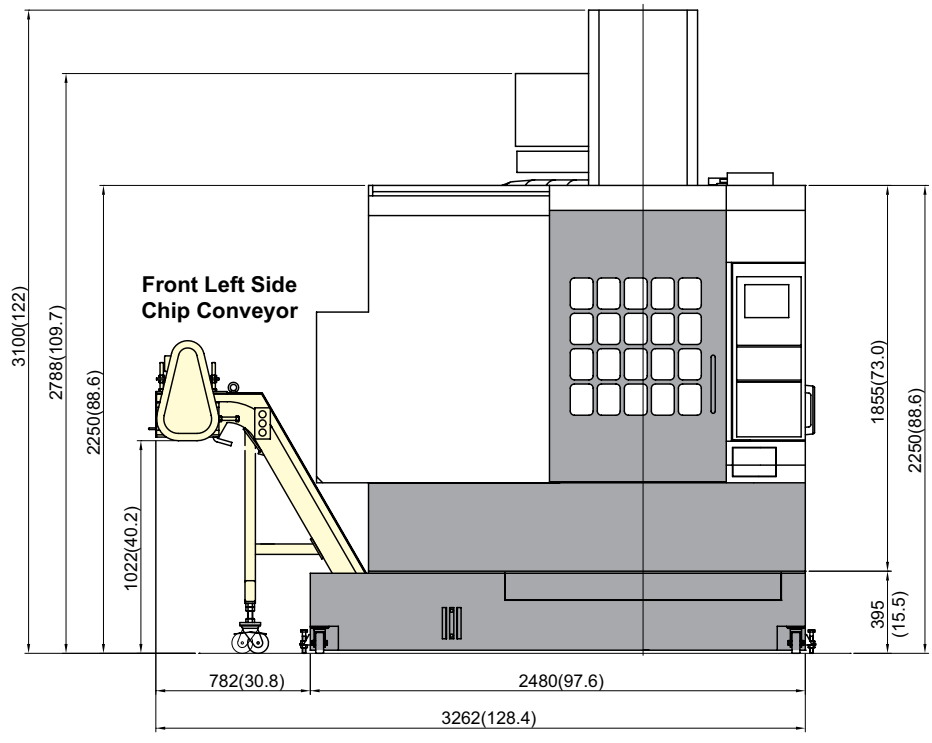


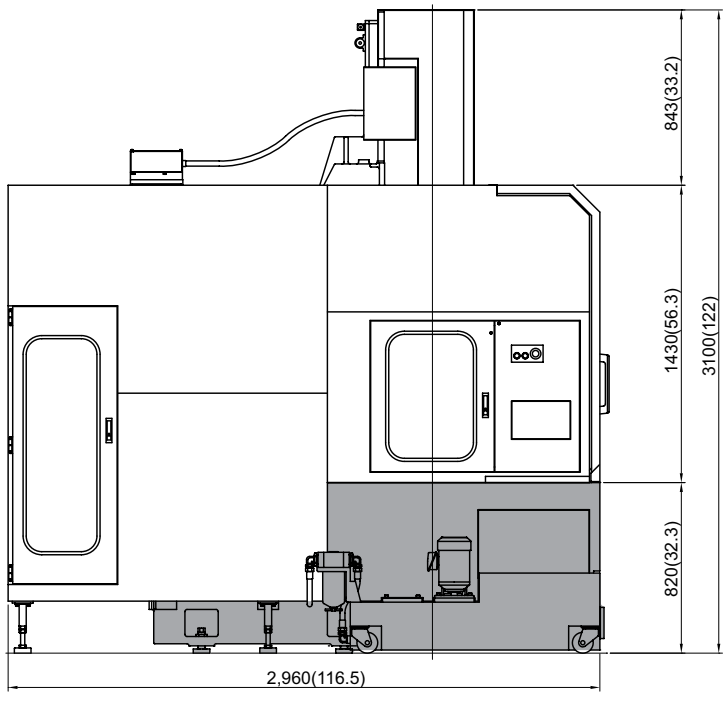
SPECIFICATIONS

External Dimensions

unit : mm(in)

Hi-MOLD450

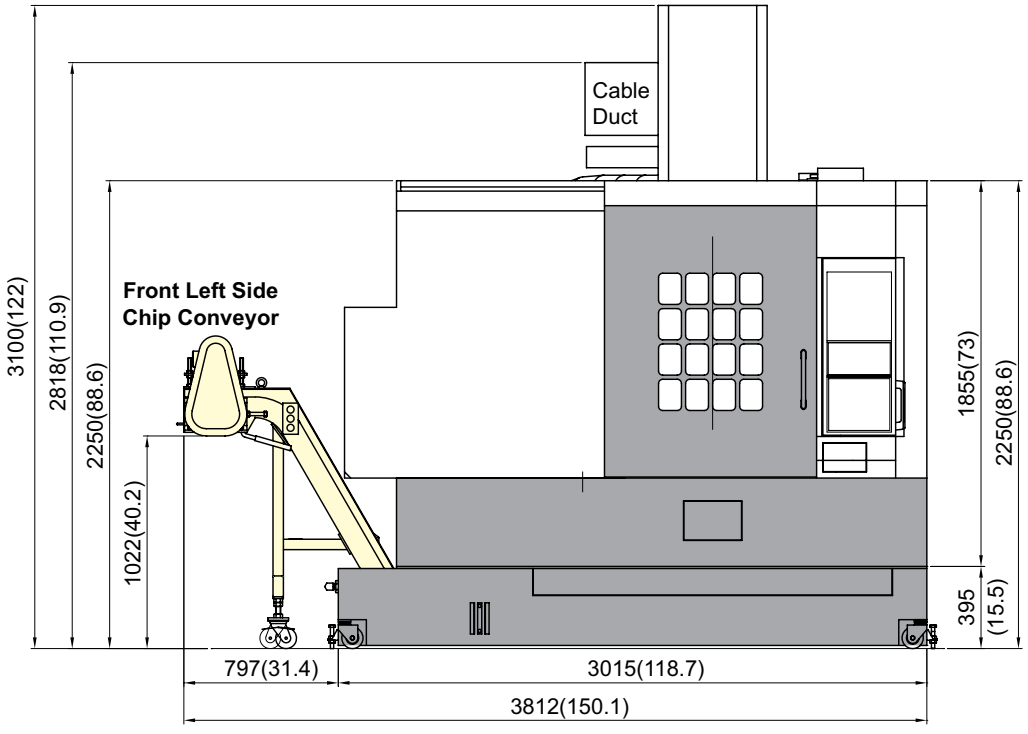


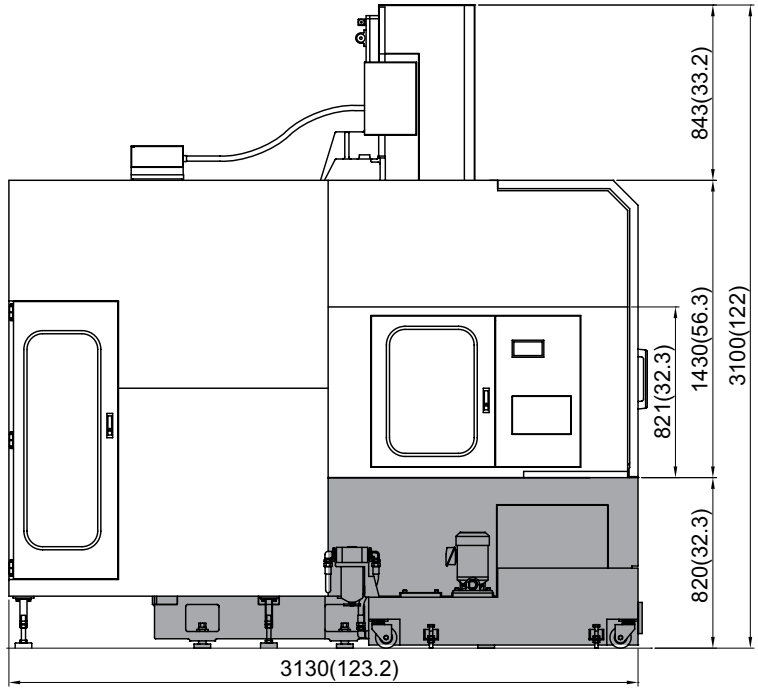


External Dimensions

unit : mm(in)

Hi-MOLD560



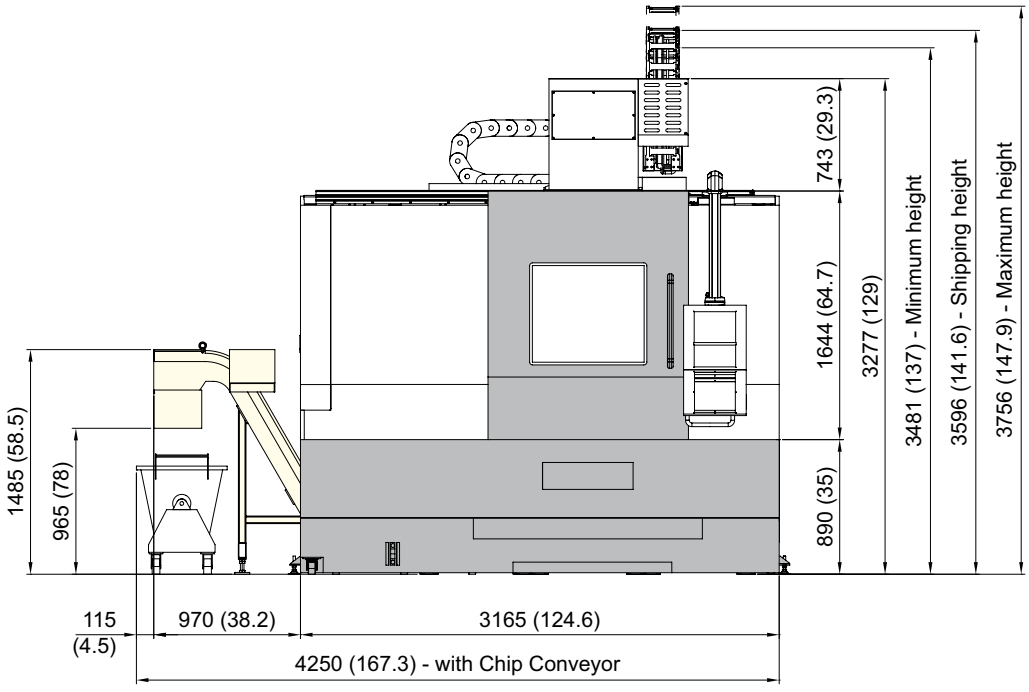


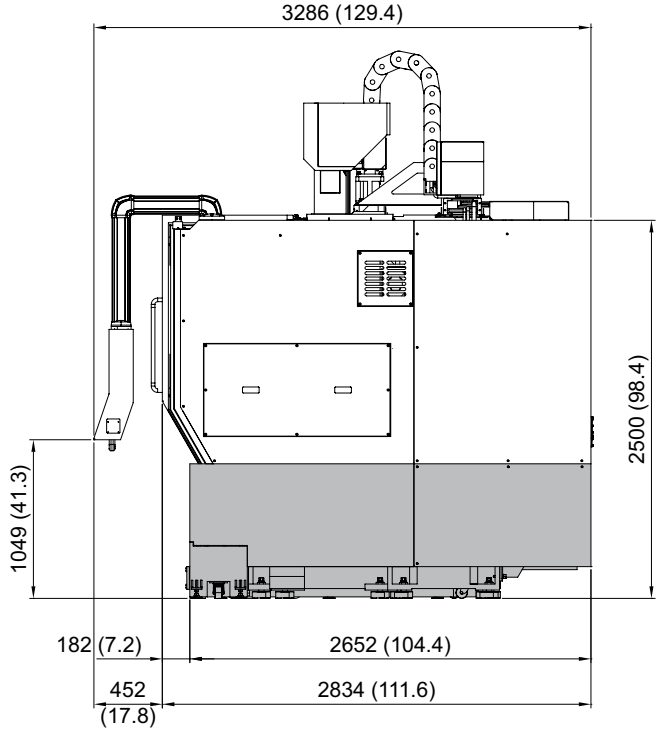
SPECIFICATIONS

External Dimensions

unit : mm(in)

Hi-MOLD6500



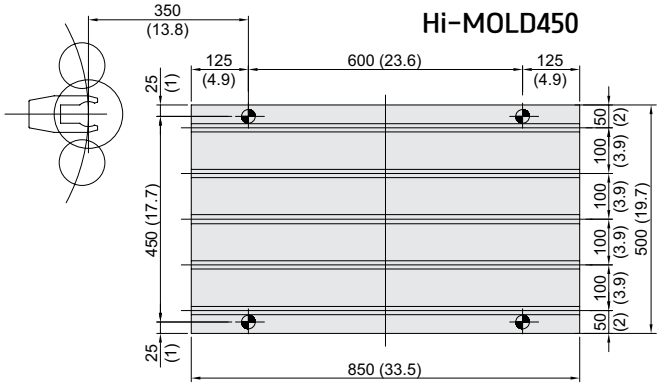


SPECIFICATIONS

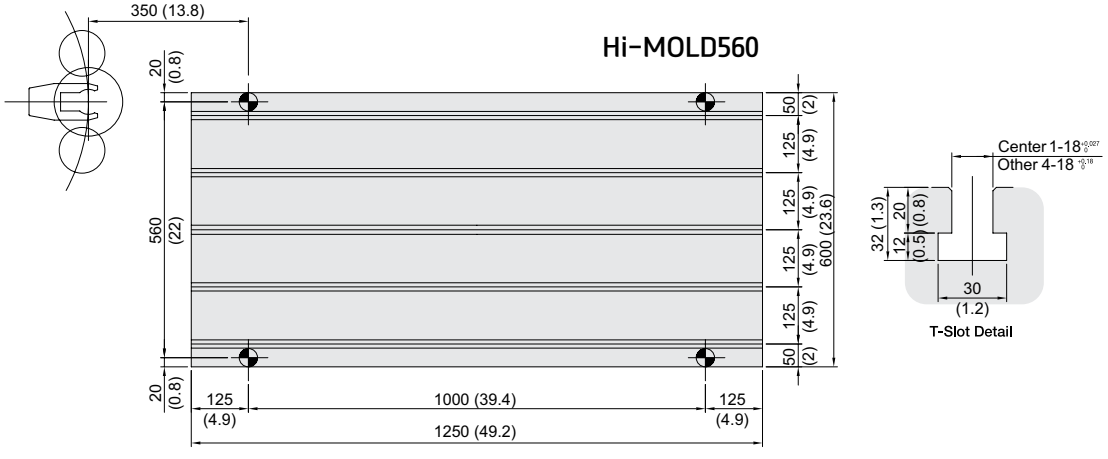
Table Dimensions

unit : mm(in)

Hi-MOLD450



Hi-MOLD560



Hi-MOLD6500

SPECIFICATIONS

Specifications

[ ] : Option

ITEM				Hi-MOLD450	Hi-MOLD560
TABLE	Table Size (L×W)		mm(in)	850×500 (33.5″×19.7″)	1,250×600 (49.2″×23.6″)
	Maximum Load Capacity		kg(lb)	300 (661)	800 (1,764)
SPINDLE	Spindle Taper		-	HSK-A63 : 24,000 [HSK-E40 : 40,000]	
	Spindle Speed		r/min	24,000 [40,000]	
	Spindle Power (Max./Cont.)		kW(HP)	33/25 (44.3/33.5) [26/18 (35/24)]	
	Spindle Torque (Max./Cont.)		N·m(lbf·ft)	96/72.5 (70.8/53.5) [16.8/12.2(12.4/9)]	
	Spindle Driving Method		-	BUILT-IN	
FEED	Travel	X/Y/Z Axis	mm(in)	600(+350 ATC)/450/450 (23.6″/17.7″/17.7″)	1,000(+350 ATC)/560/450 (39.4″/22″/17.7″)
	Distance from Table Top to SP. Nose		mm(in)	160 ~ 610 (6.3″~24″)	
	Distance from Column to SP. center		mm(in)	370 (14.6″)	
	Rapid Traverse Rate	X/Y/Z Axis	m/min(ipm)	50/50/50 (1,969/1,969/1,969)	
	Slide Type		-	X/Y-Axis : LM GUIDE, Z-Axis : ROLLER GUIDE	
ATC	Number of Tools		ea	24	
	Tool Shank		-	HSK-A63 : 24,000 [HSK-E40 : 40,000]	
	Max. Tool Dia. (W.T / W.O)	24,000rpm	mm(in)	HSK-A63 : Ø100/Ø140 (Ø3.9″/Ø5.5″)	
		40,000rpm	mm(in)	HSK-E40 : Ø70/Ø140 (Ø2.7″/Ø5.5″)	
	Max. Tool Length		mm(in)	300 (11.8″)	
	Max. Tool Weight	24,000rpm	kg(lb)	HSK-A63 : 8 (17.6)	
		40,000rpm	kg(lb)	HSK-E40 : 1.5 (3.3)	
	Tool Selection Method		-	Fixed Address	
TANK CAPACITY	Coolant Tank		ℓ (gal)	350 (92.5)	450 (118.9)
	Lubricating Tank		ℓ (gal)	3 (0.8)	
	Hydraulic Tank		ℓ (gal)	30 (8)	
POWER SUPPLY	Air Consumption (0.5MPa)		ℓ /min(gal)	500 (132)	
	Electric Power Supply		KVA	45	
	Thickness of Power Cable		mm^2	Over 35	
	Voltage		V/Hz	220/60 (200/50*)	
MACHINE	Floor Space (L×W)		mm(in)	2,480×2,960 (97.6″×116.5″)	3015×3,130 (118.7″×123.2″)
	Height		mm(in)	3,100 (122″)	
	Weight		kg(lb)	8,500 (18,739)	10,000 (22,046)
NC	Controller		-	SIEMENS 840D sl	

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Specifications are subject to change without notice for improvement.

SPECIFICATIONS

Specifications

[ ] : Option

ITEM				Hi-MOLD6500
TABLE	Table Size (L×W)		mm(in)	1,200×650 (47.2″×25.6″)
	Maximum Load Capacity		kg(lb)	1,000 (2,205)
SPINDLE	Spindle Taper		-	BBT40
	Spindle Speed		r/min	20,000 [24,000]
	Spindle Power (Max./Cont.)		kW(HP)	22/18.5 (30/25) [22/18.5 (30/25)]
	Spindle Torque (Max./Cont.)		N·m(lbf·ft)	98/80 (72.3/59) [53/37 (39.1/27.3)]
	Spindle Driving Method		-	BUILT-IN
FEED	Travel	X/Y/Z Axis	mm(in)	1,100/650/550 (43.3″/25.6″/21.7″)
	Distance from Table Top to SP. Nose		mm(in)	150 ~ 700 (5.9″ ~ 27.6″)
	Distance from Column to SP. center		mm(in)	260 (10.2″)
	Rapid Traverse Rate	X/Y/Z Axis	m/min(ipm)	40/40/40 (1,575/1,575/1,575)
	Slide Type		-	ROLLER GUIDE
ATC	Number of Tools		EA	30
	Tool Shank		-	BBT40
	Max. Tool Dia. (W.T / W.O)		mm(in)	Ø80/Ø150 (Ø3.1″/Ø5.9″)
	Max. Tool Length		mm(in)	300 (11.8″)
	Max. Tool Weight		kg(lb)	8 (17.6)
	Tool Selection Method		-	RANDOM
	Tool Change Time	T-T	sec	2
		C-C	sec	6.5
TANK CAPACITY	Coolant Tank		ℓ (gal)	400 (105.7)
	Lubricating Tank		ℓ (gal)	3 (0.8)
	Hydraulic Tank		ℓ (gal)	15 (4)
POWER SUPPLY	Air Consumption (0.5MPa)		ℓ /min(gal)	500
	Electric Power Supply		KVA	40
	Thickness of Power Cable		mm^2	Over 50
	Voltage		V/Hz	220/60 (200/50*)
MACHINE	Floor Space (L×W)		mm(in)	3,165×2,652 (124.6″×104.4″)
	Height		mm(in)	3,619 (142.5″)
	Weight		kg(lb)	11,000 (24,251)
CNC	Controller		-	FANUC 31i-B

*) Using 50Hz voltage instead of 60Hz may lower the output of motors. (excluding servo motors and inverter motors)

Specifications are subject to change without notice for improvement.

CONTROLLER

SIEMENS 840D sl : Hi-MOLD460/560

[ ] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axis	4 axis (X1, Y1, Z1, MAG)
	6 axis (X1, Y1, Z1, A1, C1, MAG)
Simultaneously controlled axis	Max. 5 axis
Least setting Unit	X, Y, Z axis : 0.001 mm (0.0001 inch),
	B axis : 1 deg
Least input increment	X, Y, Z axis : 0.001 mm (0.0001 inch),
	B axis : 1 deg
Inch / Metric changeover	G70 (inch) / G71 (metric)
Interlock	All axis / Each axis
Machine lock	All axis
Pitch error compensation	
Feedforward control (Torque control)	
LCD / MDI	10 inch color LCD
Keyboard	ABCD Type
Stored stroke check	Over travel
Operation	
Automatic operation (Memory)	
MDI operation	
Program restart	
Program check function	Dry run / Program check / Machine lock
Single block	
Block search	Block search
Reposition	
Working area limit	Working area limitations
Interpolation functions	
Positioning	G00
Linear interpolation	G01
Circular interpolation	Circular Interpolation CW (G02)
	Circular Interpolation CCW (G03)
Exact position stop	Single block exact stop (G09)
	Exact stop G60 (G601, G602, G603)
Dwell	Dwell (G04)
Reference position return	Return to reference point
	Return to 2nd reference point
Helical interpolation	
Spline interpolation	Non-uniform rational B splines
Compressor (Improving machining quality)	Compcad / Compcurv (Cycle 832)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse
	Jog
	Manual handle
	Reference position return
Cutting Feed command	Direct input F code
Feedrate override	0 ~ 120%
Rapid traverse override	1%, 25%, 50%, 100%
Feed per minute	G94
Feed per revolution	G95
Look-ahead block	3,000 block (With Mdynamics)
Program input	
ISO correspondence	G291(ISO)/G290 (SIEMENS)
	(ISO G Code system-A)
Optional block skip	8개 (0~7)
Program stop / end	G90 / G91
Absolute / Incremental program	M00, M01 / M02, M30
Maximum command unit	± 999,999.999 mm, ± 99,999.9999 inch
Plane selection	X-Y : G17, X-Z : G18, Y-Z : G19
Workpiece coordinate system	G54 ~ G57, G505~G549
	G500 (Basic frame - setable zero offset)
	G53 (Work offset non modal)
	G153 (basic frame non modal)
Sub program call	16 folds nested
G code preventing buffering	STOPRE
Drilling/Milling cycle	with programing support
User cycle	

Auxiliary function / Spindle speed function	
Auxiliary function	M Code 4 digit
Spindle speed function	S Code 5 digit
Spindle override	0% ~ 120%
Spindle orientation	SPOS
Rigid tapping	
Autometic mode Interchange	Spindle / Axis mode
Constant surface speed control	G96, G97
Spindle speed limitation	LIMS
Tool function / Tool compensation	
Tool function	Tool number & Tool name
Tool life management	
Tools in tool list	1,500 ea
Cutting Edges in tool list	3,000 ea
Tool radius compensation	ISO (G40, G41, G42)
Geometry / Wear compensation	
Measurement of tool length	
Tool management function	
Editing function	
Part program storage size	10MB
External Strorage devices	USB
Background editing	
Extended part program editing	Copy, move and change of NC program
Memory card program edit	
Data input / output & Interface	
I/O interface	USB memory interface
	Embedded Ethernet memory interface
Screenshot	
Setting, display and diagnosis	
Self-diagnosis function	
History display & Operation	Alarm & Operator message & Operation
Run hour / Parts count display	
Actual cutting feedrate display	
Display of spindle speed / T code	
Graphic display	
Operating monitor screen	Spindle / Servo load etc.
Multi language display	Support 7 languages Chinese, English, French, German, Italian, Korean, Spanish
LCD Screen Saver	Screen saver & Motion sensing
Function	
ShopMill	Machining step programming for milling
3D simulation	
Real time simulation	

Option	
Built-in PC	Industrial PC (IPC427E)
Multi language display	☆ 20 Support languages : Inquiry need

Figures in inch are converted from metric values. I Specifications are subject to change without notice for improvement.

CONTROLLER

FANUC 31i-B : Hi-MOLD6500

[ ] : Option ☆ Needed technical consultation

Controlled axis / Display / Accuracy Compensation	
Control axis	3 axis (X, Y, Z)
	[4 axis (X, Y, Z, A)] [5 axis (X, Y, Z, A, C)]
Simultaneously controlled axis	3 axis [Max. 4 axis]
Least setting Unit	X, Y, Z axis : 0.001 mm (0.0001 inch)
	B axis : 1 deg [0.001] deg
Least input increment	X, Y, Z axis : 0.001 mm (0.0001 inch)
	B axis : 1 deg [0.001] deg
Inch / Metric conversion	G20 / G21
High response vector control	
Interlock	All axis / Each axis
Machine lock	All axis
Backlash compensation	± 0 ~ 9999 pulses (Rapid traverse / Cutting feed)
Position switch	
LCD / MDI	10.4 inch color LCD
Feedback	Absolute motor feedback
Stored stroke check 1	Over travel
Stored pitch error compensation	
Operation	
Automatic operation (Memory)	
MDI operation	
DNC operation	Needed DNC software / CF card
Program restart	
Wrong operation prevention	
Program check function	Dry run, Program check
	Z axis Machine lock, Stroek check before move
Single block	
Search function	Program Number / Sequence Number
Interpolation functions	
Nano interpolation	
Positioning	G00
Linear interpolation	G01
Cylinderical interpolation	G02, G03
Exact stop mode	Single : G09, Continuous : G61
Dwell	G04, 0 ~ 9999.9999 sec
Skip	G31
Reference position return	1st reference, G28
	2nd reference, G27
	Ref. position check, G30
Thread synchronous cutting	G33
Helical interpolation	Circular + Linear interpolation 2 axis(max.)
Feed function / Acc. & Dec. control	
Manual feed	Rapid traverse
	Jog : 0~5,000mm/min (197 ipm)
	Manual handle : x1, x10, x100 pulses
	Reference position return
Cutting Feed command	Direct input F code
Feedrate override	0 ~ 200% (10% Unit)
Rapid traverse override	F0% (F1%), F25%, F50%, F100%
Override cancel	
Feed per minute	G94
Feed per revolution	G95
Look-ahead block	40 Block
	200 Block (Mold)
Program input	
Tape Code	EIA / ISO
Optional block skip	1 ea
Absolute / Incremental program	G90 / G91
Program stop / end	M00, M01 / M02, M30
Maximum command unit	± 999,999.999 mm (± 99,999.9999 inch)
Plane selection	X-Y, G17 / Z-X, G18 / Y-Z, G19
Workpiece coordinate system	G52, G53, 6 pairs (G54 ~ G59)
Manual absolute	Fixed ON
Programmable data input	G10
Sub program call	10 folds nested
Custom macro	#100 ~ #149, #500 ~ #549
G code system	A
Programmable mirror image	G51.1, G50.1
G code preventing buffering	G4.1
Including Chamfering / Corner R	
Canned cycle	G73, G74, G76, G80 ~ G89
Coordinate rotation	G68, G69

Auxiliary function / Spindle speed function	
Auxiliary function	M 4 digit
Level-up M Code	Multi / Bypass M code
Spindle speed command	S 5 digit , Binary output
Spindle override	0% ~ 150% (10% Unit)
Spindle orientation	M19
FSSB high speed rigid tapping	
Tool function / Tool compensation	
Tool function	Max. T 8 digit
Tool life management	256 pairs ☆
Tool offset pairs	64 pairs
Tool nose radius compensation	G40, G41, G42
Tool nose length compensation	G43, G44, G49
Tool offset memory C	Tool length, diameter, abrasion(length, diameter)
Tool length measurement	Z axis Input C
Editing function	
Part program storage size	640m (256KB)
No. of registerable programs	500 ea
Program protect	
Background editing	
Extended part program editing	Copy, move and change of NC program
Memory card program edit	
Data input / output & Interface	
I/O interface	CF card, USB memory
	Embedded Ethernet interface
Screen hard copy	
External message	
External key input	
External workpiece number search	
Automatic data backup	
Setting, display and diagnosis	
Self-diagnosis function	
History display	Alarm & Operator message & Operation
Run hour / Parts count display	
Maintenance information	
Actual cutting feedrate display	
Display of spindle speed / T code	
Graphic display	
Operating monitor screen	Spindle / Servo load etc.
Power consumption monitoring	Spindle & Servo
Spindle / Servo setting screen	
Multi language display	Support 20 languages
Display language switching	Selection of 5 optional Languages
LCD Screen Saver	Screen saver
Processing select	Speed/ridigity setting

Option	
Additional optional block skip	9 ea ☆
Fast ethernet	Needed option board
Data server	Needed option board
Protection of data at 8 levels	
Sub Spindle control	
Polar coordinate command	G15, G16
Polar coordinate interpolation	G12.1, G13.1
Cylinderical interpolation	G07.1
One-way positioning	G60
Stored stroke check 2, 3	
Inverse-time feed	G93
Scaling	G50, G51
Manual guide i	Conversational auto program
Handle interrupt	
Manual handle feed	2/3 units
Additional custom macro variables	#100~#199, #500~#999
	#100~#199, #500~#999, #98000~#98499
Retraction for rigid tapping	
Tool offset number	Max. 2000 pair ☆
Program storage capacity	512KB ~ 8MB ☆
Program registration number	Max. 4000 ea ☆
Additional work coordinate	48 pair (G54.1 P1 ~ P48)
AICC II	200 block
	400 / 600 / 1000 block ☆

Figures in inch are converted from metric values.
The FANUC controller specifications are subject to change based on the policy of company CNC supplying.

MOVEMENT FOR BETTER TOMORROW

ECO FRIENDLY

Protect the environment for all humanity and generation to come

01 Achieve carbon neutrality

- Develop Net-zero Roadmap
- Heighten carbon emissions management
- Achieve carbon neutrality goals

02 Boost resource circulation

- Detail plans to reduce environmental impact
- Gradually reduce pollutant emissions
- Build eco-friendly supply chain

03 Establish environmental management framework

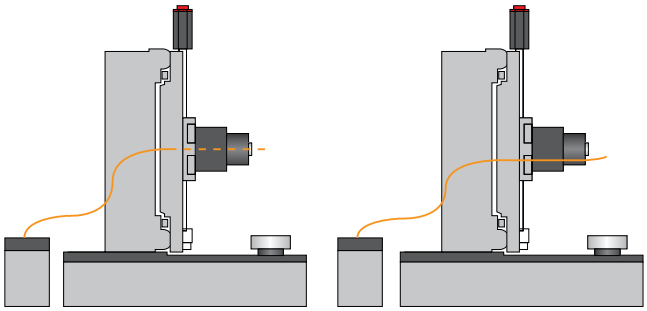
- Set up environmental management process
- Assess business impact of climate change risks

HYUNDAI WIA ECO SYSTEM

MQL (Minimal Quantity Lubrication)

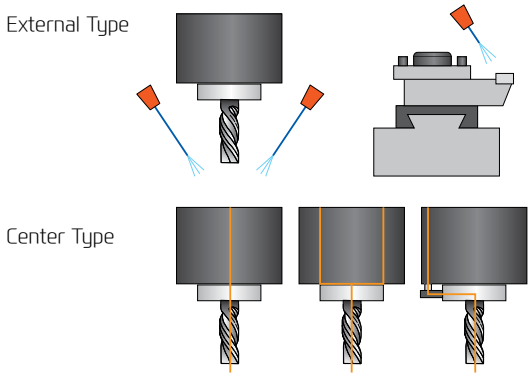
The goal of this system is to spray only the amount of lubricant required to prevent heat and chip build up at the cutting tool or work piece face.

Example of Machining Center Application



Center Type　　External Type

Example of Etc.

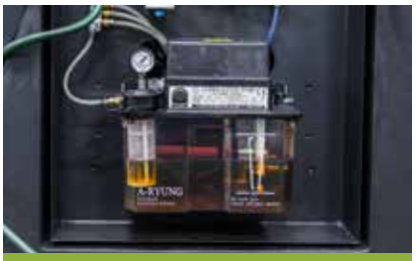


Oil Skimmer

An oil skimmer can increase coolant and tool life by removing tramp oil contaminants.

Mist Collector

Mist Collector reduces the amount of smoke and oil mist in the air. This helps build a safe and comfortable working environment and improve durability.



Lubrication System

By applying lubricant only when the machines axis are moving lubrication consumption is reduced by compared to standard systems.

HYUNDAI WIA ENERGY SAVING

HW-ESS (HYUNDAI WIA Energy Saving System)

HYUNDAI WIA Machine tool provides the optimum power saving function that can easily save energy with an intuitive user interface.

1. **Machine-ready power saving function** : Put all servo motors and other motors into sleep mode when no control or operation is done for a set time
2. **Work light auto-off function** : The work light is turned off automatically when no control or operation is done for a set time
3. **Chip conveyor auto power saving** : Operation/non operation time (timer) can be set to save energy
4. **Auto Power-off** : Auto power off after ending the an operation after a period of time
5. **Eco function** : Machine ready sleep mode can be activated/de-activated from the controller panel
6. **Power consumption monitor** : Real time power consumption can be monitored through the OP screen

Hi-MOLD6500
Movie 1

Hi-MOLD6500
Movie 2

Hi-MOLD6500
3D Movie

HYUNDAI WIA

YouTube HYUNDAI WIA MT
www.youtube.com/HYUNDAIWIAMT

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