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MACHINE COLLECTION 綜合型錄

Mac cision is located in the Wuri District, Taichung City, Taiwan and is dedicated to the production of high-precision horizontal centering machines.

Our team members have many years of R&D experience in machining center machines and production technology that includes sophisticated scooping techniques that can produce high-efficiency and high-precision machinery according to customer needs.

Provide customers with the best quality service, quality and technology is our business philosophy. The products are mainly used for general machinery, automobile, aviation and other industries. They can complete machining operations such as milling planes, bushing holes and internal and external end faces, drilling, tapping, etc., and can meet the requirements of higher accuracy of the box type hole Department of processing.

Our machines are characterized by high rigidity, high precision, high reliability, easy operation, and high production efficiency, and are equipped with high-end numerical control systems that can satisfy the processing of various parts and achieve high-speed, flexible, and modular production.

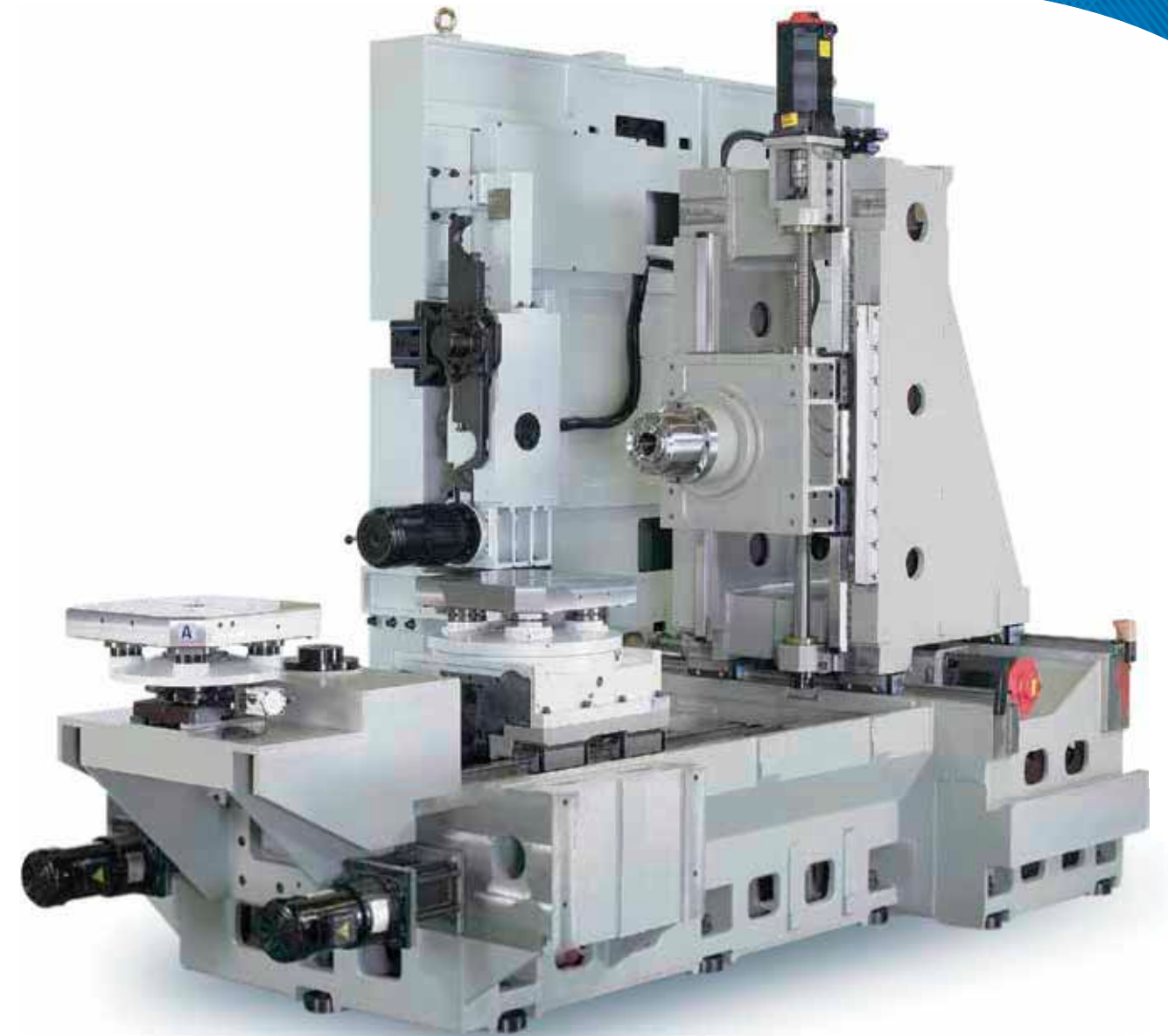


THE HIGH RIGID STRUCTURE MAKES A TOUGH & COMPACT BODY

- FEM analysis determines the high rigid frame design
- T style structure with heavy ribs makes machine easy maintain and calibrate,
- Stepped column bottom design makes machine more stable than competitors
- 3 axis 50mm diameter high precision ball screws with pre-extension design to release transmission heat and increase accuracy
- 3 axis which have very wide roller pack guide ways (ø50mm) with top cover provide the low abrasion & high damping effect to assure accuracy at up to 50 meter high speed feed rate.
- Twin powerful screw chip augers efficiently deliver cutting chips to the chain type conveyor and then the bucket on the front side of the machine.



MH-500/630 series



SUPERIOR MACHINE FEATURES

MH-500:

Working travel : 720mm x 650mm x 720mm , maximum work piece : ø700mm x 750mm .

MH-630:

Working travel : 1050mm x 900mm x 900mm , Maximum work piece : ø1050mm x 1000mm .

MH-800:

Working travel : 1400mm x 1200mm x 1350mm , Maximum work piece : ø1400mm x 1500mm .

Twin pallets : 500mm x 500mm / 630mm x 630mm / 800mm x 800mm

Change time : MH-500/18s , MH-630/18s , MH-800/24s , Positional accuracy : 8" , Repeat accuracy : 4"

Multiple options for Spindle : BT#40 , BT#50 , HSK-A63 , HSK-100

Max acceleration without idle time

MH-500/630 series

TOOL CAPACITY

- Standard equipment : 40 tools
- Optional accessory : 60 / 80 / 120 / 180 tools
- Automatic tool changer driven by a AC 2.5 KW servo motor to have a quick & reliable tool selection without error.



- Faster automatic tool changer.



AUTO EXCHANGE PALLET EQUIPMENT



0.001° indexing pallet with 2 rotary station and a high precision encoder is standard equipment. Pallet indexing time from 0° to 90° is 2 seconds.



AIR-BLOW CLEANING SYSTEM FOR TABLE INDEXING TAPER CONES

Each pallet and table are clamped with taper cones and hole to ensure accuracy and rigidity. During pallet changing process, strong air blow from the taper cones is activated to clean the chips and maintain indexing accuracy.



Fully enclosed cover protect the accessories well , even equipments in the rear side, such as ATC, hydraulic, pneumatic, coolers etc. All have been well protected and easy maintenance to reduce idle time.



- The transparent machine back and the visibility of the ATC magazine include door or window for easy service.



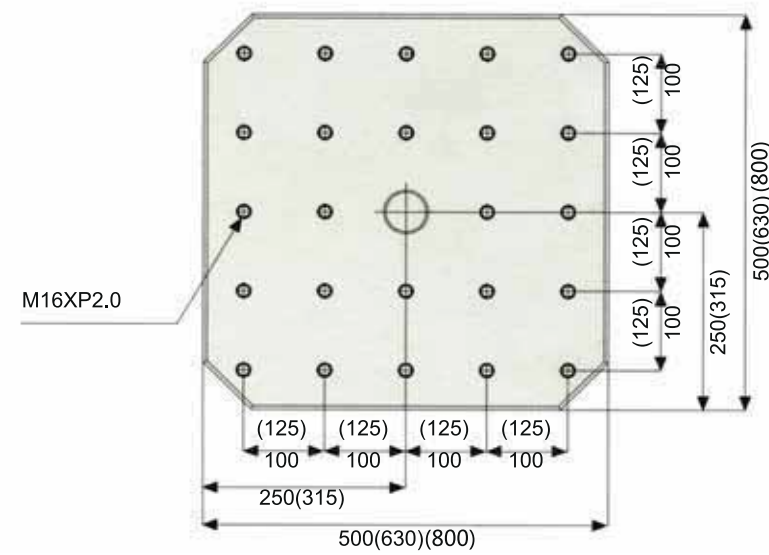
- Pallet closes to the front guard, and twin door can be opened widely for more easily setup.

MAXIMUM DIMENSION

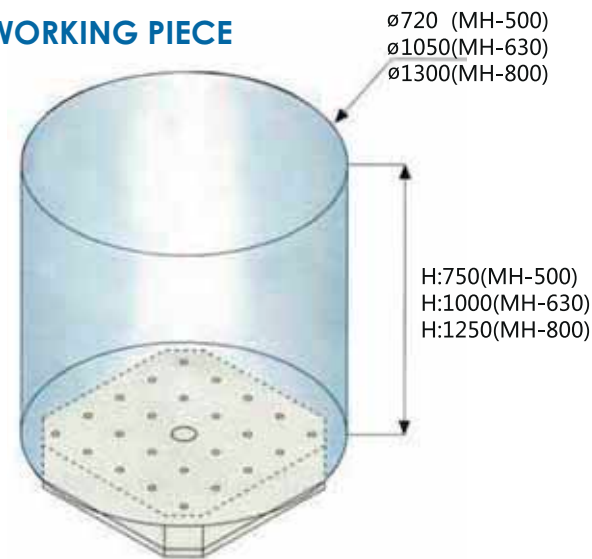
POWERFUL DIRECT COUPLING SPINDLE



PALLET



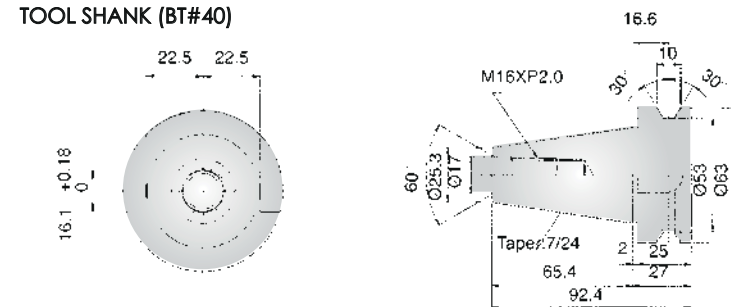
WORKING PIECE



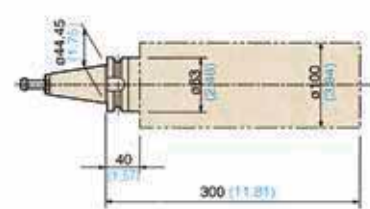
unit: mm

TOOL SHANK & PULL STUD

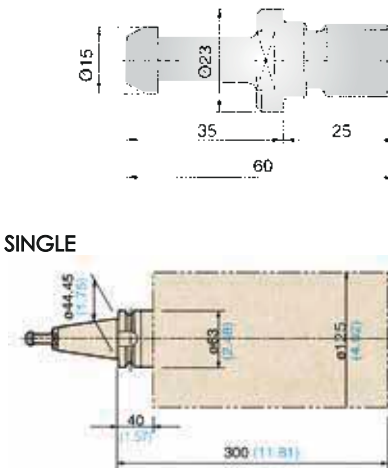
TOOL SHANK (BT#40)



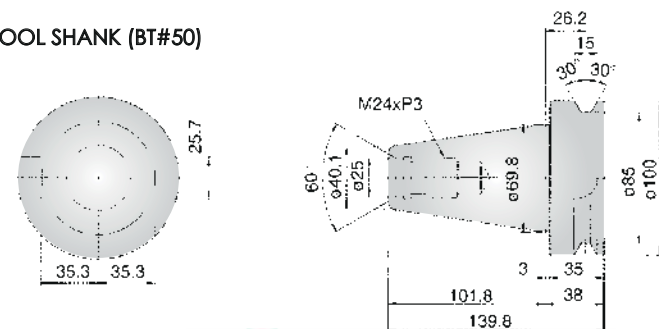
MAXIMUM ADJACENT
TOOL SIZE



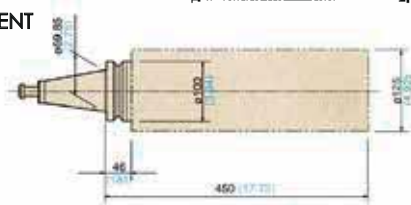
MAXIMUM SINGLE
TOOL SIZE



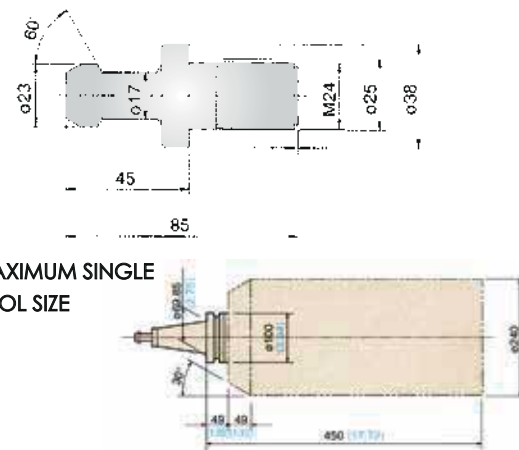
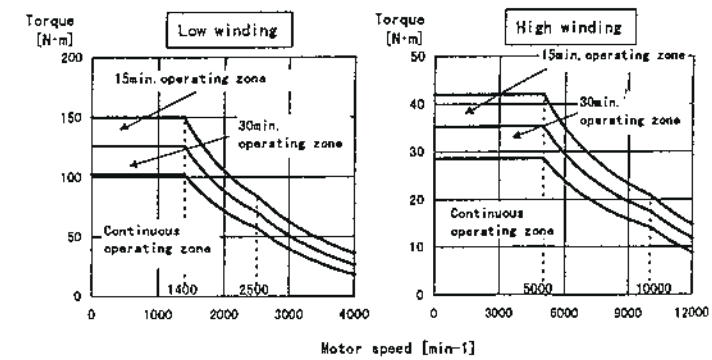
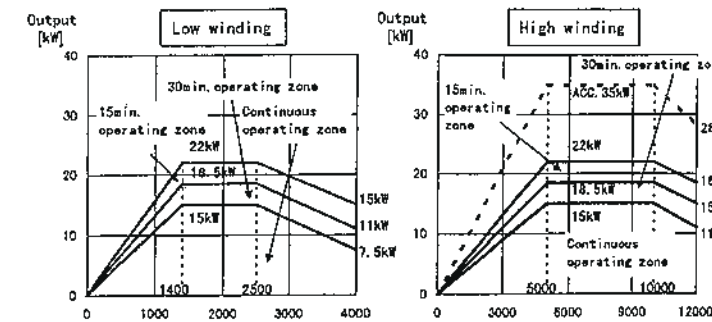
TOOL SHANK (BT#50)



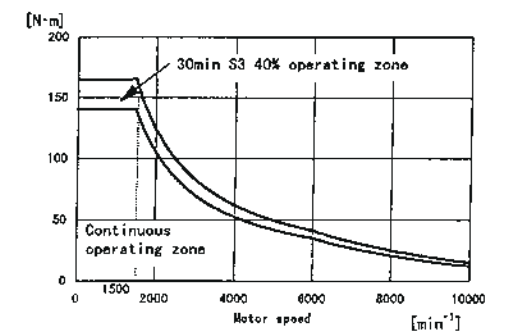
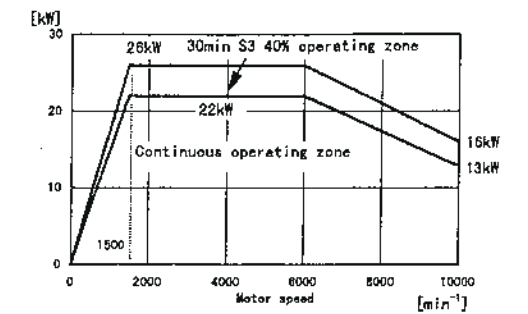
MAXIMUM ADJACENT
TOOL SIZE



MAXIMUM SINGLE
TOOL SIZE

 $\alpha_{\text{T15/12000i(standard)}}$ 

α , T22/10000i(optional)



HIGH SPEED & HIGH PERFORMANCE SPINDLES

Taper		RPM	Motor	KW	Nm	KGS
1.Direct coupling drive : sindle + coupler + motor						
Standard	BT#40	12000	T15/12000i	15/18.5/22	28.6/102.2	121
Optional	BT#40	15000	L15/15000i	18.5/22	35/150	140
Optional	HSK-A63	20000	L8/20000i	11/15/18.5	28.6/70	80
Optional	BT#50	10000	T22/10000i	22/26	140	143
Optional	BT#50	10000	L26/10000i	15/18.5/22	88.3/286.3	170
2.Direct coupling drive : spindle + coupler + gear box + motor						
Optional	BT#50	8000	α,22/8000i	22/26	140/560(770)	143

ITEM		UNIT	MH-500		MH-630	MH-800
CAPACITY	X axis travel	mm	720		1050	1400
	Y axis travel	mm	650		900	1200
	Z axis travel	mm	720		900	1350
DISTANCE	Spindle nose to table center	mm	160 - 880		150 - 1050	150-1550
	Spindle center to table surface	mm	100 - 750		80 - 980	100-1300
	Machining area	mm	ø 700 x 750		ø 1050 x 1000	ø 1400 x 1500
PALLET	Working area	mm	500 x 500		630 x 630	800 x 800
	Max. loading weight	kg	800		1200	2000
	Surface configuration		M16 x P2.0 x 100 x 24	M16 x P2.0 x 125 x 24	M16 x P2.0 x 150(200) x 24	
	Pallet height	mm	1150		1250	1300
	Min. angle of rotation	deg	0.001°(1°)			
	Exchange type		Rotary type			
	SPINDLE	Spindle transmission		Direct coupling / (motor + spindle + gear box)		
Spindle taper			BT-40 / BT-50		BT-50	BT-50
Spindle speed		rpm	12000(15000) / 10000(8000)		10000 (8000)	10000(8000/6000)
Spindle bearing diameter		mm	70 / 90 /100			100
FEED RATE	Rapid feed rate-X/Y/Z	m/min	36 / 36 /36		40 / 40 / 40	50/50/50
	Cutting feed rate-X/Y/Z	mm/min	15000			20000
	Ballscrew dia. x pitch	mm	ø 50X12		ø 50X16	ø 50*12
	Linear way		55mm Roller		65mm Roller	
ATC	Tool capacity		40 (60,80,120,180)			
	Max. Tool diameter	mm	100 / 125	125 / 250	125 / 250	125 / 250
	Max. Tool length	mm	300	450	500	600
	Max. Tool weight	kg	7	20	25 (30)	25 / (30)
MOTOR	Spindle motor (cont / 30min)	kw	15/18.5 (18.5/22) (22/26)		18.5/22 (22/26)	18.2/22(22/26)
	X/Y/Z/B axis feed motor	kw	4.4/4.8/4.4/4.4 (0.001°)		7/6/7/4 (0.001°)	9/9/9/4
	ATC motor	kw	2.5	3		
ACCURACY	Positional accuracy (full stroke)	mm	0.01			
	Repeated Accuracy	mm	0.006			
	Linear scale accuracy (full stroke)	mm/sec	0.008 / 8"			
	Linear scale repeated accuracy	mm/sec	0.004 / 4"			
MACHINE	Machine height	mm	2900		4180	4500
	Machine floor space	mm	5400 x 3500		6500 x 4000	7200 x 4300
	Machine weight	kg	12000	14000	20000	25000

*Specifications are subject to change without notice for design improvement.

(OPTION)

STANDARD ACCESSORIES

1. 0.001° indexing pallet
2. Spindle coolant unit
3. Coolant tank 450L
4. Fully enclosed splash guard

5. Manual pules generator
6. Hand tools and tool box
7. Screw chip auger in z axis
8. Built-in work lamp

9. Programming end light
10. Leveling block
11. Automatic 2 pallet changer
12. Chip conveyer & bucket

OPTIONAL ACCESSORIES

1. Coolant through spindle (25/40/70 bar)
2. 40,60,90,120 tool magazine
3. Shower coolant

4. Tool length measurement
5. Workingpiece measurement
6. Linear scales

7. Spindle thermo compensation device
8. Max. Tool Weight 30kg
9. U axis boring head

BT40 :
U=12mm, ØMax. 200mm, wet: 6kg
BT50 :
U=25mm, ØMax. 320mm, wet: 19.5kg



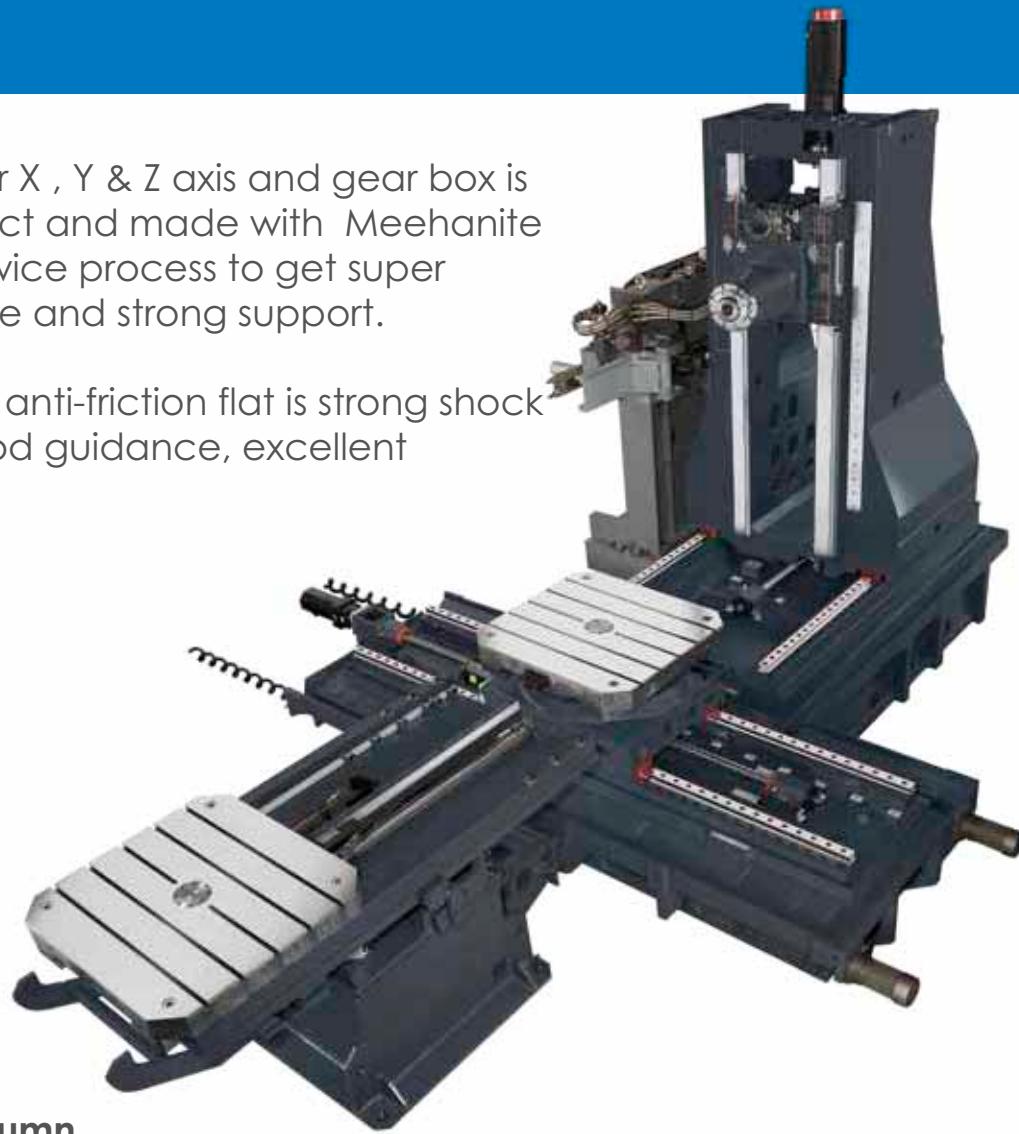
MH - Standard series

MH-500/630 series

SUPER RIGIDY & EXCELLENT PRECISION STRUCTURE

The structure for X , Y & Z axis and gear box is designed perfect and made with Meehanite cast iron and twice process to get super rigidy and stable and strong support.

Guideway with anti-friction flat is strong shock absorbing , good guidance, excellent precision.



Wide span column

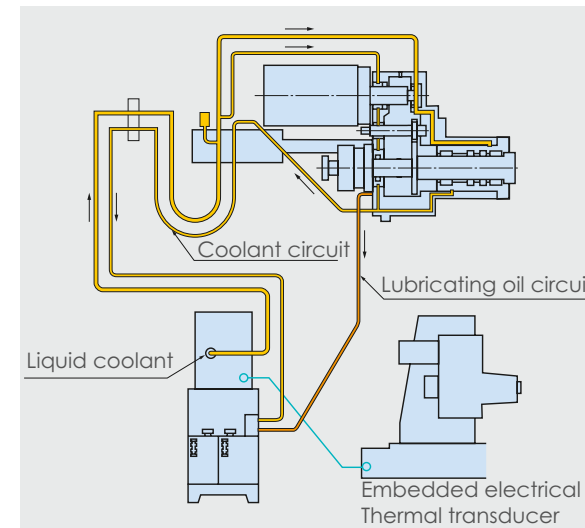


Super rigidy structure, the pallet with 6 high preicision taper cones.



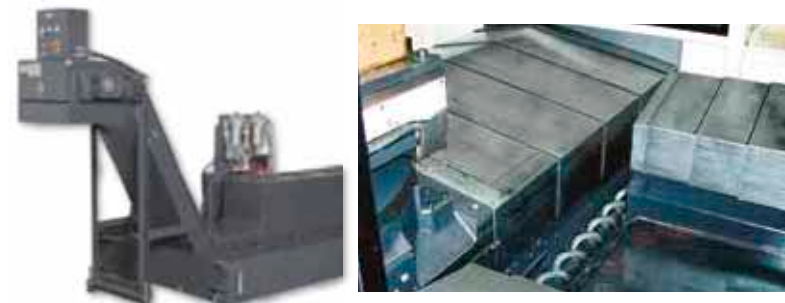
Constant temperature & cooling system

We use Habor cooler to control the oil temperature and increase the using life of the hydraulic units and work stability of the hydraulic system. And ensure the rotation accuracy of the spindle and keep spindle temperature to be the same step with machine. It also reduce unidirectional heat deformation in the spindle system and make your process more stable and accurate.



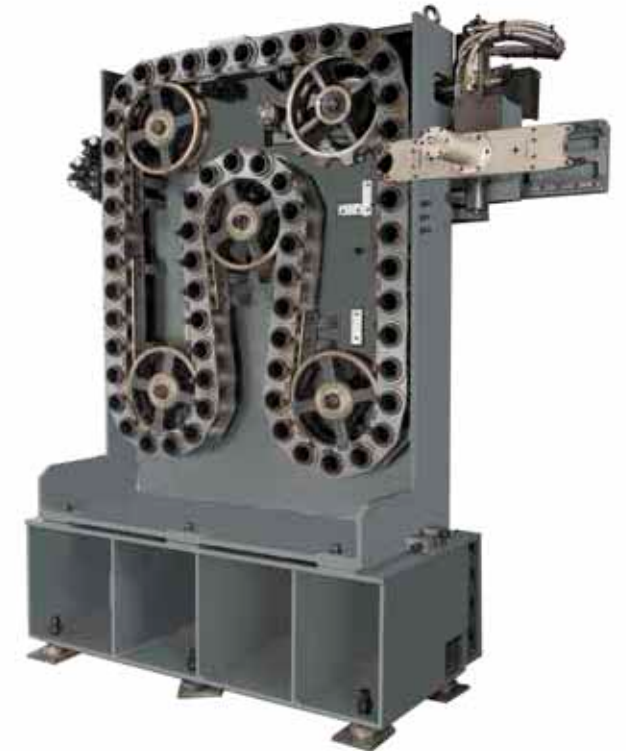
Chip filter equipment

The coolant tank , chip filter and the chip conveyor with chain type are designed as intergrated unit.It separete the chip and coolant before the chips drop into the chip removal system. The chip tank and coolant recycle tank are setup inside and outside. Twin removal screwchip augers is inside, and the chip conveyor with chain type is outside.



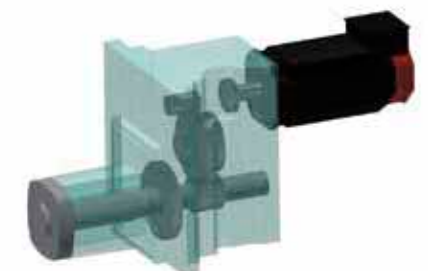
Auto Tool exchange device

It is grouped with chian style tool magazine and the manipulator for changing tool. Fixed set-up approach for tools selection. Standard tool magazine : 60 tools (BBT 50).



Three steps gearbox

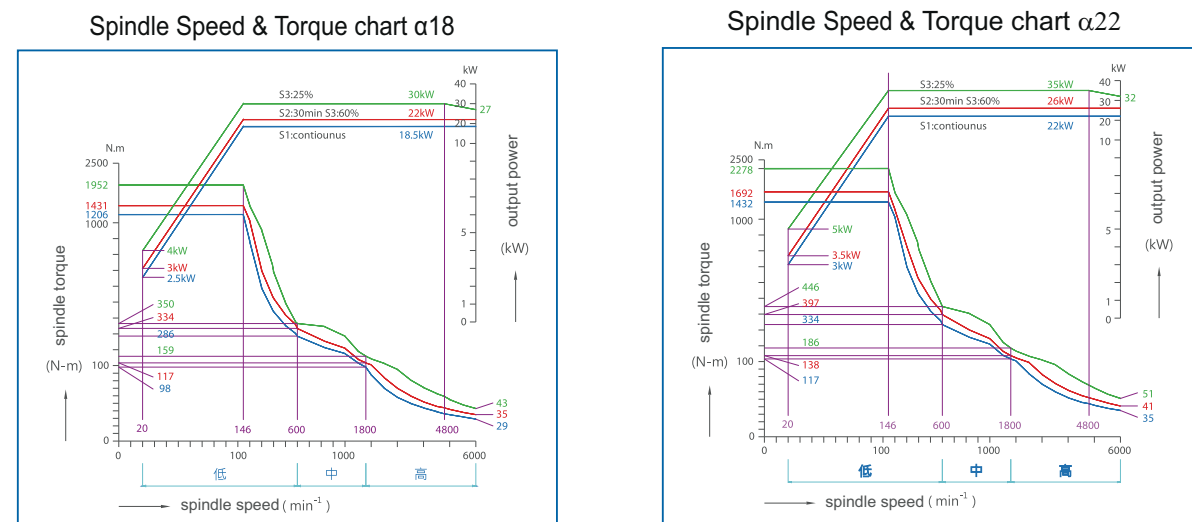
To adopt high precision 0-level gear set, and it is wide speed range, spindle with high speed is coordinated with wide diameter (the inside diamemter of bearing Ø110mm) and easily output the maximum torque of 1952 Nm without noise.



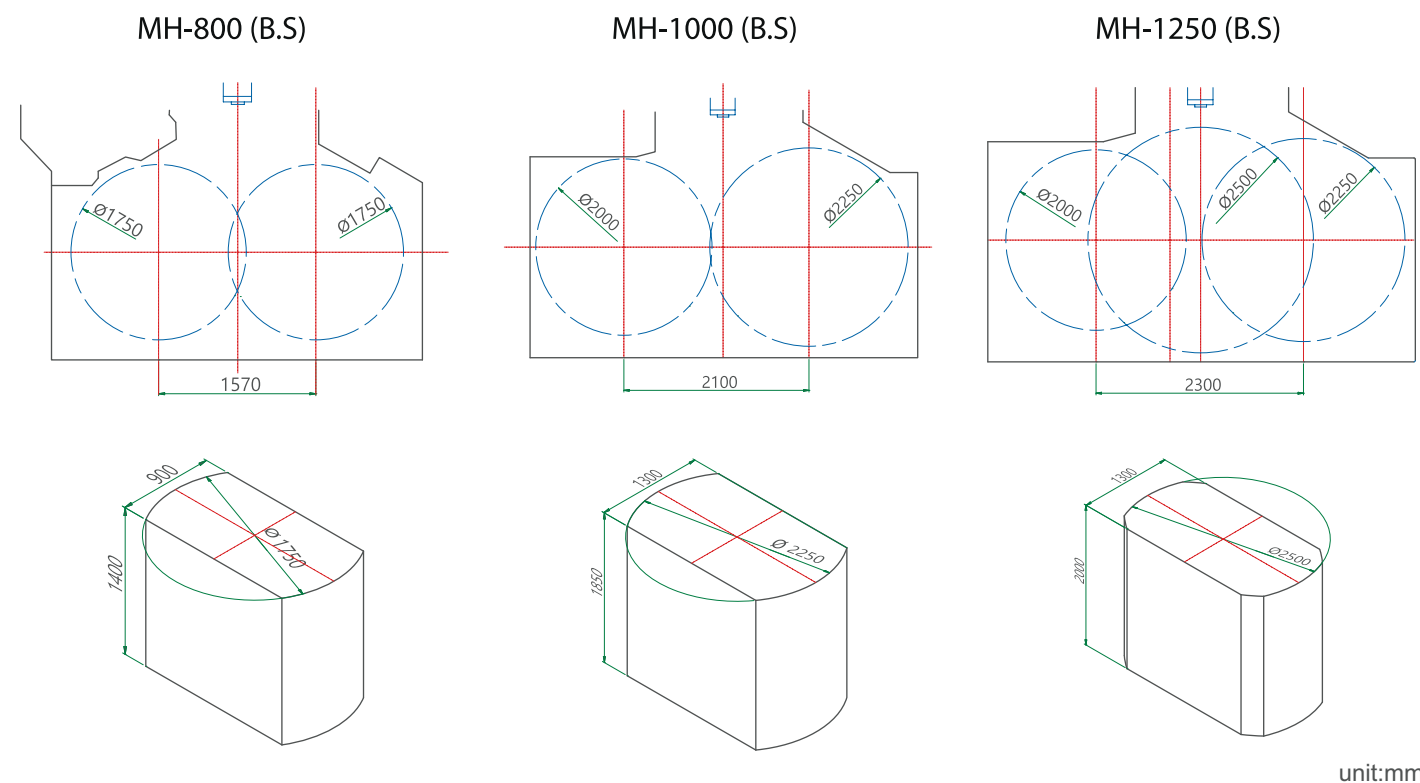
Excellent machine performance

The cutting power of the spindle box with single set-up structure is stronger than the others.

Wonderful performance of the spindle and high rigidity structure provide great power and torque.



Max workpiece dimensions for machining



unit:mm

Standard Equipment

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> ■ Standard maintenance tools ■ Fuses (Spare parts) ■ Bolt horn for adjustment ■ Spindle large volume cooling 600w ■ Chip conveyor inside (twin screwchip type) ■ Coolant tank (ground type 380L) MH-800(B,S) ■ Coolant tank (ground type 500L) MH-1000(B,S) ■ Fully enclosed guard | <ul style="list-style-type: none"> ■ Light ■ Work completion and emergency lamp ■ Automatic power off device ■ Spindle speed / magnification display ■ Spindle load display ■ Spindle cooling unit ■ Big plus spindle | <ul style="list-style-type: none"> ■ AC100V plug ■ Interlock ■ Rigid tapping,spiral milling ■ MST display ■ LCD coordinates display handwheel ■ Leakage circuit breakers ■ 2APC program detection |
|---|--|--|

Optional features

Travel	Add distance to be1570mm for X axis (MH-800 series)		Coolant	Spindle center through coolant
Tabels	0.001°(NC Table) / 4th Axis for continuing cutting			Spindle Flange through coolant
	0.001°(High precisionTable) / 4th Axis for continuing cutting			Overhead shower coolant system
	Max. Load 2500kg (MH-800 series)			Shower coolant and airblow system
Spindle	Max. Load 5000kg (for NC Table ,MH-1000,1250 series)			Wash gun
	Tool Shank CT50,DIN50,ISO50,JT50,HSK-A100		Oversizeed coolant tank	
	Pull Studs MAS P50T-1,CT		Chip removal	External hinge lift chip conveyor
ATC	90 tools for chain type magazine	178 tools for matrix type magazine		Scraper type
	120 tools for chain type magazine	256 tools for matrix type magazine		Magnet scraper type
APC	Auto rotary type 6APC			Roller filter type
	8APC pallet exchange system			Double-layer (hinge + magnet scraper)
	10APC pallet exchange system			Chips trolley
	12APC pallet exchange system			Cleaning guns
Scale	Scale feedback system in X,Y,Z axis		Oil mist collector	
	Scale feedback system in B axis		Other	Spindle thermal offset compensation device (spindle part)
Inspection	Tool damage inspection device			Direct spindle speed 10,000rpm (22/35kw)
	Auto tool life inspection device			Cabinet lighting
	RENISHAW auto tool inspection device			

Multiple pallet APC

(6 / 8 / 10 / 12 pallets)



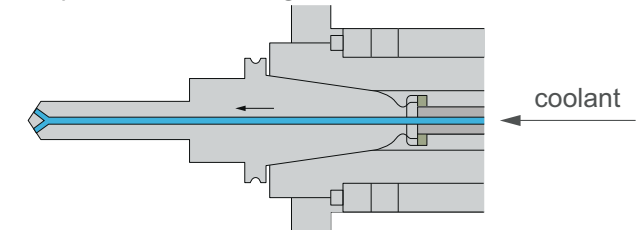
High capacity for magazine

(90/120/178/256 tools)



High pressure coolant through spindle

Spindle center through coolant

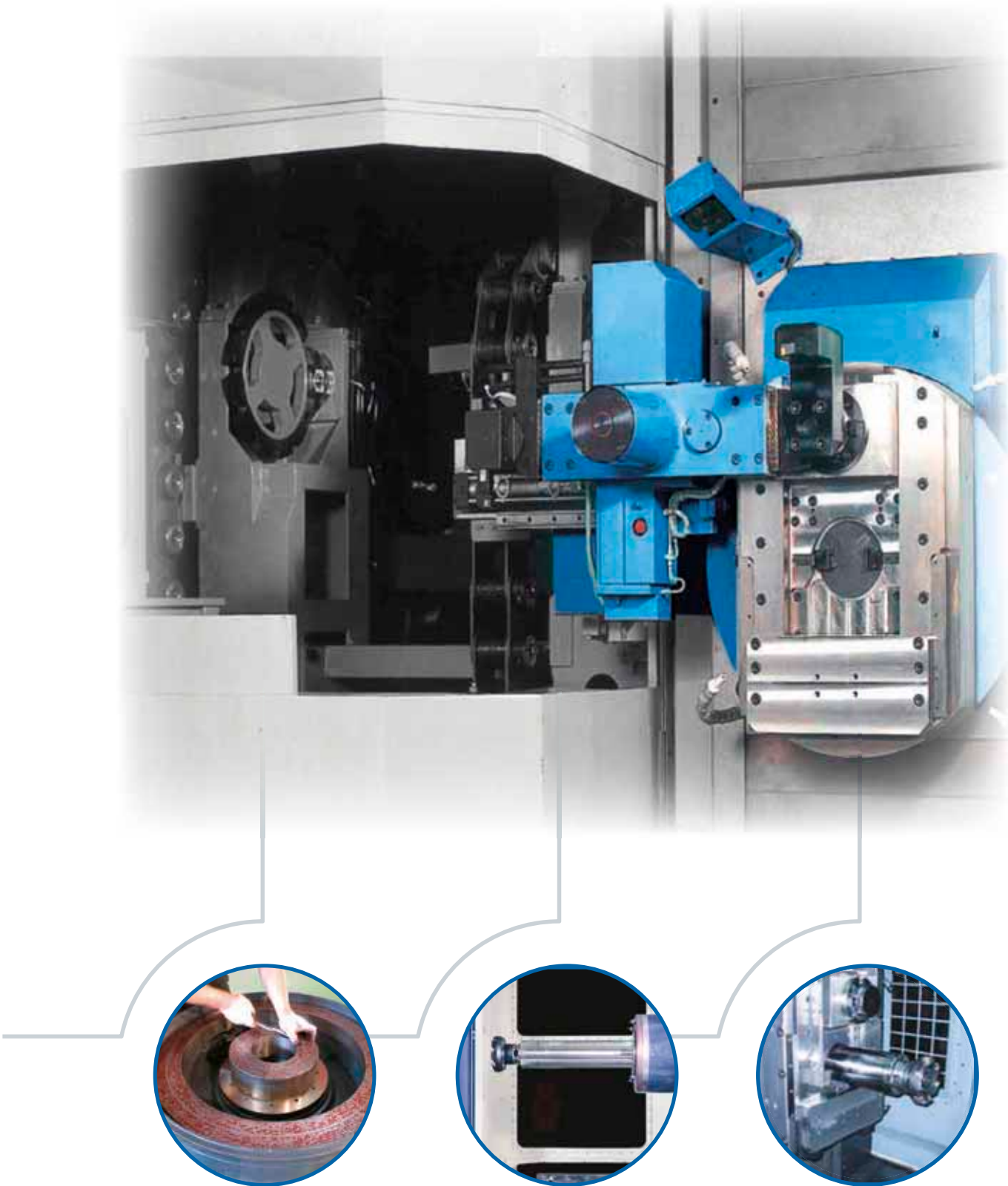


Pressure choice

1.96MPa / 2.94MPa
4.90MPa / 6.86MPa

Item		Unit	MH 800		MH 1000		MH 1250		MH 1416	MH 1618	MH 1820
			B	S	B	S	B	S	B / S	B / S	B / S
Travel	X axis travel (Horizontal table)	mm	1270[1570]	1270 [1570]	2100	2100	2300	2300	2300	2500	3200
	Y axis travel (Vertical Spindle)	mm	1300	1300	1650	1650	1800	1800	1800	2000[2300]	2500
	Z axis travel	mm	1200	1200	1350	1350	1450	1450	1350[1450]	1350[1500]	1500
	Spindle center line to pallet surface (Y axis)	mm	0~1300	0~1300	0~1650	0~1650	30~1830	30~1830	50~1850	50~2050 [50~2350]	0~2500
	Spindle nose to table center line (Z axis)	mm	150~1350	150~1350	200~1550	200~1550	280~1730	280~1730	470~1820 [550~2000]	470~1820 [550~2000]	650~2400 [700~2400]
Table	Diemension	mm	800X800 [1000X1000]	800X800 [1000X1000]	1000X1000 [1250X1250]	1000X1000 [1250X1250]	1250X1250 [1250X1400]	1250X1250 [1250X1400]	1400X1600	1600X1800	1800X2200
	Increments		1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	0.001°	0.001°	0.001°
	Max table loading	kg	2000 [2500]	2000 [2500]	3500 [5000]	3500 [5000]	3500 [5000]	3500 [5000]	8500	8500	10000
Spindle	Motor	kW	18.5/30[22/35]	18.5/30[22/35]	22/35	22/35	22/35	22/35	22/35	22/35	22/35
	Speeds	rpm	6000	6000	6000	6000	6000	6000	6000	6000	6000
	Max. torque	N·m	1952	1952	2278	2278	2278	2278	2278	2278	2278
	Taper		7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50
Feedrate	Rapaid (X/Y/Z axis)	m/min	30 / 30 / 30	40 / 40 / 40	30[20]/30/30	40[30]/40/40	20 / 20 / 20	30 / 30 / 30	20 / 20 / 20	20 / 20 / 20	20 / 20 / 20
	Cutting (X/Y/Z axis)	m/min	15 / 15 / 15	15 / 15 / 15	15 / 15 / 15	15 / 15 / 15	15 / 15 / 15	15 / 15 / 15	15 / 15 / 15	10 / 10 / 10	10 / 10 / 10
	Table index / 1°	rpm	12	12	5	5	5	5	--	--	--
	Table index / 0.001°	rpm	11.1	11.1	4[2]	4[2]	4[2]	4[2]	2.8	2.7	2.2
ATC	Capacity		60	60	60	60	60	60	60	60	60
	Tool shank		BBT50	BBT50	BBT50	BBT50	BBT50	BBT50	BBT50	BBT50	BBT50
	Max. tool length	mm	610	610	610	610	610	610	610	610	610
	Max. tool diameter (with adjacent tool)	mm	125	125	125	125	125	125	125	125	125
	Max. tool diameter (without adjacent tool)	mm	250	250	250	250	250	250	250	250	250
	Max. tool weight	kg	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]
	Tool change time	s	12	12	12	12	12	12	12	12	12
APC	Type		Rotary shuttle						Horizontal shuttle		
	Change time	s	53	53	75 [120]	75 [120]	120	120	90	120	120
	Quantity		2	2	2	2	2	2	2	2	2
Accuracy (ISO230-2)	Positioning(X ,Y, Z)	mm	0.008	0.008	0.008	0.008	0.008	0.008	0.01	0.01	0.01
	Repeatability	mm	0.006	0.006	0.006	0.006	0.006	0.006	0.008	0.008	0.008
	Table rotate positioning		± 4 "	± 4 "	± 4 "	± 4 "	± 4 "	± 4 "	10"	10"	10"
	Table Repeat rotate positioning		± 2 "	± 2 "	± 2 "	± 2 "	± 2 "	± 2 "	6"	6"	6"
General	Machine weight (approx.)	kg	27500	27500	30500	30500	35500	35500	40000	43000	50000
	Machine space WxL	mm	7200x5300	7200x5300	8810x6470	8810x6470	9800x6500	9800x6500	9800x6750	10500x6950	11500x6950
	Machine height	mm	4180	4280	4770	4870	5100	5200	5200	5400[5700]	5700
	Power	kVA	70	70	80	80	80	80	90	90	90

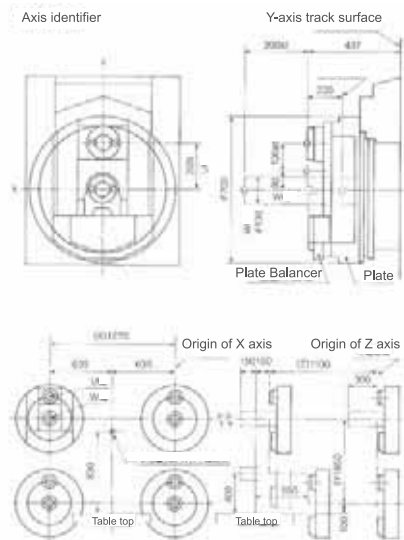
* [] option
*All specification are subjected to change without prior notice.



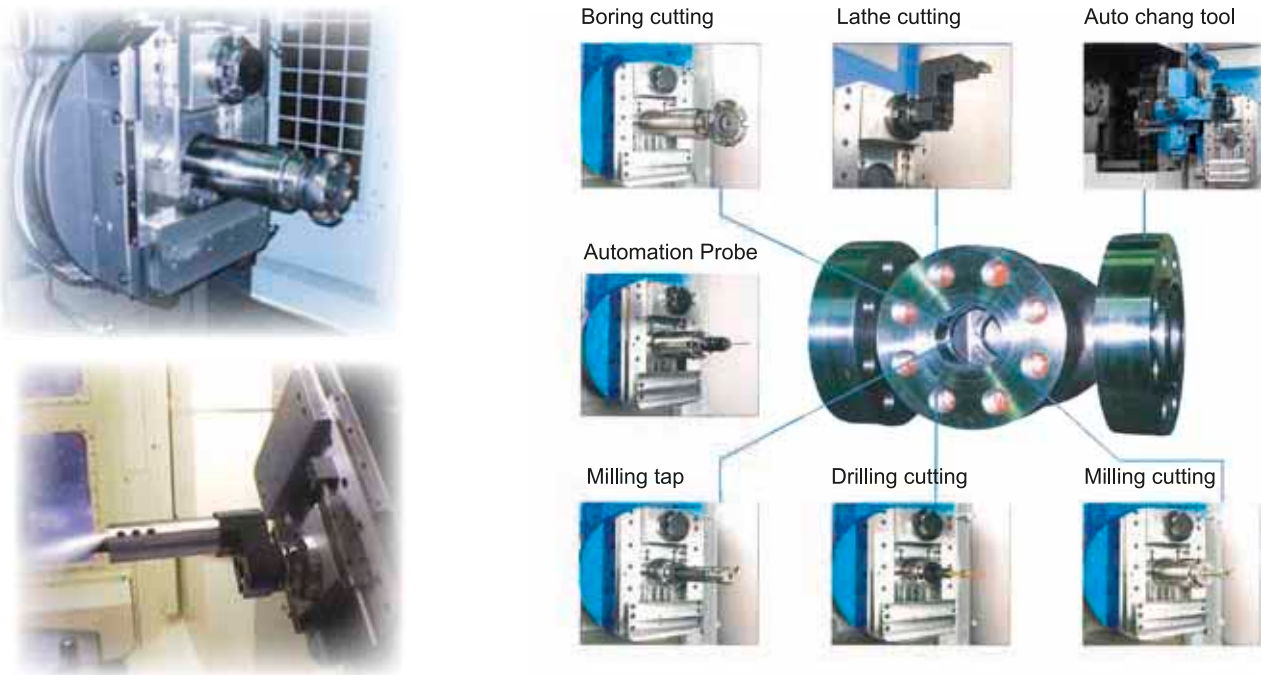
MH-Bar / FC series

Reduce labor costs and greatly increase work efficiency

- BAR and FC series are designed on the basis of MH-800/1000/1250, which can be used for turning, boring, drilling and tapping etc.
- Automatic tool changing system can automatically replace spindle and face plate cutters
- Diversified processing saves the time of replacing the machine and improves your work efficiency and quality.
- Super Rigid Turning Face Disk
 1. Supported by the disk spindle and driven by the spindle motor, the U-axis and the W-axis can be separately selected. When the W-axis is used, the U-axis can not be driven at the same time.
 2. With the wide range movement of the U-axis, a wide range of spinning can be realized.



Actual application for multi working



Item		Unit	MH 800		MH 1000		MH 1250		MH 1416	MH 1618	MH 1820
			B	S	B	S	B	S	B / S	B / S	B / S
Travel	X axis travel (Horizontal table)	mm	1270 [1570]	1270 [1570]	2100	2100	2300	2300	2300	2500	3200
	Y axis travel (Vertical Spindle)	mm	1150	1150	1500	1500	1650	1650	1500 [1650]	1650[2100]	2100[2500]
	Z axis travel	mm	1200	1200	1350	1350	1450 [1500]	1450 [1500]	1350 [1450]	1350 [1500]	1500
	W axis travel (Extend spindle)	mm	500	500	500 [700]	500 [700]	500 [700]	500 [700]	500 [700]	500 [700]	500 [700]
	Spindle center line to pallet surface (Y axis)	mm	100~1250	100~1250	50~1550	50~1550	80~1730	80~1730	40~1540 [100~1750]	100~1750 [100~2200]	100~2200 [100~2600]
	Spindle nose to table center line (Z axis)	mm	150~1350	150~1350	200~1550	200~1550	280~1730	280~1730	470~1820 [550~2000]	470~1820 [500~2000]	650~2400 [700~2400]
Table	Diemension	mm	800X800 [1000X1000]	800X800 [1000X1000]	1000X1000 [1250X1250]	1000X1000 [1250X1250]	1250X1250 [1250X1400]	1250X1250 [1250X1400]	1400x1600	1600x1800	1800X2200
	Increments		1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	0.001°	0.001°	0.001°
	Max. table loading	kg	2000[2500]	2000[2500]	3500 [5000]	3500 [5000]	3500 [5000]	3500 [5000]	8500	8500	10000
Spindle	Motor	kW	AC22/35 [AC37/45]	AC22/35 [AC37/45]	AC22/35 [AC37/45]	AC22/35 [AC37/45]	AC22/35 [AC37/45]	AC22/35 [AC37/45]	AC22/35 [AC37/45]	AC22/35 [AC37/45]	AC30/37 [AC37/45]
	Speeds	rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000
	Max torque	N.m	1836	1836	1836	1836	1836	1836	1836	1836	2055
	Taper		7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50	7/24 No.50
	Spindle bar dia.	mm	130[110]	130[110]	130[110]	130[110]	130[110]	130[110]	130[110]	130[110]	130[150]
Feedrate	Rapaid (X/Y/Z axis)	m/min	30 / 20 / 20	40 / 20 / 30	30[20]/20/20	40[30]/20/30	20 / 20 / 20	30 / 20 / 30	20 / 20 / 20	20 / 20 / 20	20 / 20 / 20
	Rapaid (W axis)	m/min	5	5	5	5	5	5	5	5	5
	Cutting (X/Y/Z axis)	m/min	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	10 / 10 / 10	10 / 10 / 10
	Cutting (W axis)	m/min	5	5	5	5	5	5	5	5	5
	Table index / 1°	rpm	12	12	5	5	5	5	—	—	—
	Table index / 0.001°	rpm	11.1	11.1	4[2]	4[2]	4[2]	4[2]	2.8	2.0	2.2
ATC	Capacity		60	60	60	60	60	60	60	60	60
	Tool shank		BT50	BT50	BT50	BT50	BT50	BT50	BT50	BT50	BBT50
	Max. tool length	mm	610	610	610	610	610	610	610	610	610
	Max. tool diameter (with adjacent tool)	mm	125	125	125	125	125	125	125	125	125
	Max. tool diameter (without adjacent tool)	mm	250	250	250	250	250	250	250	250	250
	Max. tool weight	kg	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]
	Change time	s	10	10	12	12	12	12	12	12	15
APC	Type		Rotary shuttle		Rotary shuttle		Rotary shuttle		Horizontal shuttle		
	Tool change time	s	53	53	75 [120]	75 [120]	120	120	120	120	120
	Quantity		2	2	2	2	2	2	2	2	2
Accuracy (ISO230-2)	Positioning(X ,Y, Z)	mm	0.01	0.01	0.01	0.01	0.012	0.012	0.012	0.012	0.012
	Repeatability	mm	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.01	0.01
	Rotate positioning		± 4 "	± 4 "	± 4 "	± 4 "	± 4 "	± 4 "	10 "	10 "	10 "
	Repeat rotate positioning		± 2 "	± 2 "	± 2 "	± 2 "	± 2 "	± 2 "	6 "	6 "	6 "
General	Machine weight (approx.)	kg	26500	26500	31500	31500	36500	36500	41000	44000	50500
	Machine space WL	mm	7200x5300	7200x5300	8100x6470	8100x6470	9800x6000	9800x6000	9800x6750	10500x6950	11500x6950
	Machine height	mm	4180	4280	4770	4870	5100	5200	5200	5400[5700]	5700
	Power	kVA	70	70	85	85	85	85	105	105	110

* [] option
*All specification are subjected to change without prior notice.

Item		Unit	MH 800		MH 1000		MH 1250		MH 1416	MH 1618	MH 1820
			B	S	B	S	B	S	B / S	B / S	B / S
Travel	X axis travel (Horizontal table)	mm	1270 [1570]	1270 [1570]	2100	2100	2300	2300	2300	2500	3200
	Y axis travel (Vertical Spindle)	mm	900	900	1300	1300	1450	1450	1450	1650	1850
	Z axis travel	mm	1200	1200	1350	1350	1450	1450	1500	1500	1500
	W axis travel (Extend spindle)	mm	300	300	300	300	300	300	300	300	300
	Movement of spindle rotation center to slider (U axis)	mm	130	130	130	130	130	130	130	130	130
	Spindle center line to pallet surface (Y axis)	mm	150~1050	150~1050	150~1450	150~1450	150~1600	150~1600	200~1650	200~1850	200~2050
	Spindle nose to table center line (Z axis)	mm	165~1365	165~1365	210~1560	210~1560	290~1740	290~1740	510~2010	510~2010	510~2010
Table	Diemension	mm	800X800 [1000X1000]	800X800 [1000X1000]	1000X1000 [1250X1250]	1000X1000 [1250X1250]	1250X1250 [1250X1400]	1250X1250 [1250X1400]	1400X1600	1600X1800	1800X2200
	Increments		1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	1° [0.001°]	0.001°	0.001°	0.001°
	Max. table loading	kg	2000 [2500]	2000 [2500]	3500 [5000]	3500 [5000]	3500 [5000]	3500 [5000]	8500	8500	100000
Spindle	Motor	kW	AC22/26	AC22/26	AC22/26	AC22/26	AC22/26	AC22/26	AC22/26	AC22/26	AC22/26
	Speeds	rpm	2500	2500	2500	2500	2500	2500	2500	2500	2500
	Max torque	N.m	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5	659.5
	Taper		No.50	No.50	No.50	No.50	No.50	No.50	No.50	No.50	No.50
	Facing head speeds	rpm	600	600	600	600	600	600	600	600	600
	Spindle bar dia.	mm	130	130	130	130	130	130	130	130	130
	Facing head dia.	mm	700	700	700	700	700	700	700	700	700
Feedrate	Rapaid (X/Y/Z axis)	m/min	30 / 15 / 20	40 / 15 / 30	30 / 15 / 20	40[30]/15/30	20 / 15 / 20	30 / 15 / 30	20 / 15 / 20	20 / 15 / 20	20 / 15 / 20
	Rapaid (W axis)	m/min	5	5	5	5	5	5	5	5	5
	Rapaid (U axis)	m/min	5	5	5	5	5	5	5	5	5
	Cutting (X/Y/Z axis)	m/min	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	15 / 10 / 10	10 / 10 / 10	10 / 10 / 10
	Cutting (W axis)	m/min	4	4	4	4	4	4	4	4	4
	Cutting (U axis)	m/min	4	4	4	4	4	4	4	4	4
	Table index / 1°	rpm	12	12	5	5	5	5	--	--	--
	Table index / 0.001°	rpm	11.1	11.1	4[2]	4[2]	4[2]	4[2]	2.8	2.0	2.0
ATC	Capacity		60	60	60	60	60	60	60	60	60
	Tool shank		BT50	BT50	BT50	BT50	BT50	BT50	BT50	BT50	BT50
	Max. tool length	mm	610	610	610	610	610	610	610	610	610
	Max. tool diameter (with adjacent tool)	mm	125	125	125	125	125	125	125	125	125
	Max. tool diameter (without adjacent tool)	mm	250	250	250	250	250	250	250	250	250
	Max. tool weight	kg	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]	30 [35]
	Tool change time	s	10	10	12	12	12	12	12	12	12
APC	Type		Rotary shuttle		Rotary shuttle		Rotary shuttle		Horizontal shuttle		
	Change time	s	53	53	75 [120]	75 [120]	120	120	90	120	120
	Quantity		2	2	2	2	2	2	2	2	2
Accuracy (ISO230-2)	Positioning(X ,Y, Z)	mm	0.01	0.01	0.01	0.01	0.012	0.012	0.012	0.012	0.012
	Repeatability	mm	0.008	0.008	0.008	0.008	0.01	0.01	0.01	0.01	0.01
	Rotate positioning		± 4 "	± 4 "	± 4 "	± 4 "	± 4 "	± 4 "	10 "	10 "	10 "
	Repeat rotate positioning		± 2 "	± 2 "	± 2 "	± 2 "	± 2 "	± 2 "	6 "	6 "	6 "
General	Machine weight (approx.)	kg	27000	27000	32000	32000	37000	37000	41500	44500	51000
	Machine space WL	mm	7200x5300	7200x5300	8810x6470	8810x6470	9800x6000	9800x6000	9800x6750	10500x6950	11500x6950
	Machine height	mm	4180	4280	4770	4870	5100	5200	5200	5400[5700]	5400
	Power	kVA	80	80	90	90	90	90	110	110	110

* [] option
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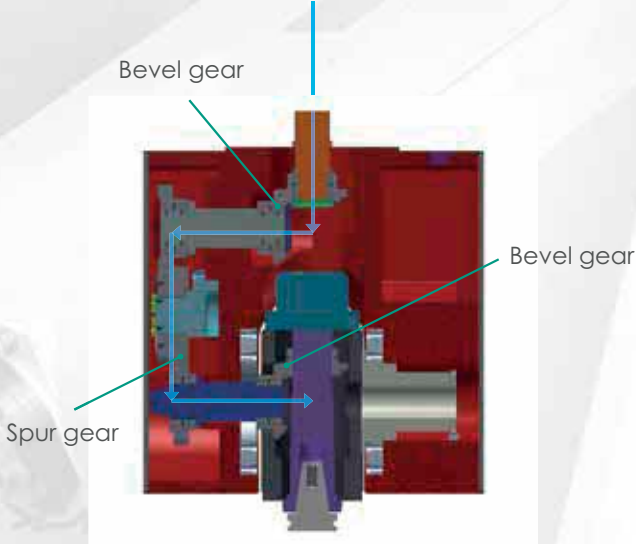
MH-5XA series

Ultra-rigid, high-precision structure

Swing head for A axis

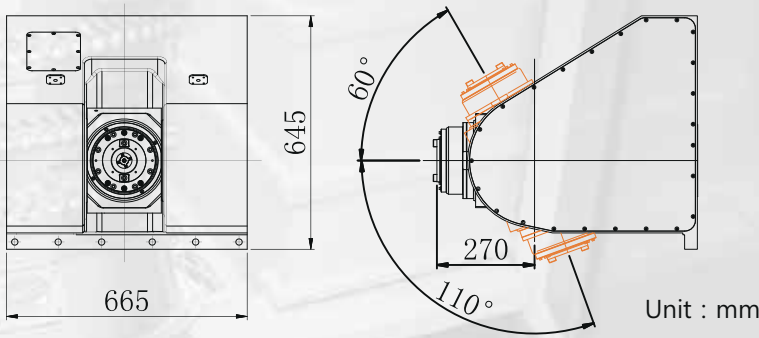
Spindle taper	BT-50 (Opt. HSK-A100 , DIN-50)
Spindle speed	6000rpm (Gear) / 10,000rpm(Built-in)
Spindle power	22/41.8kW 50/70kW (SIEMENS)
Spindle torque	1,470Nm (Gear) / (Opt. 560Nm Built-in)
A axis rotate speed	8 rpm
A axis rotate Torque Cont./Max.	2160 / 5760 Nm
A axis rotate angle	+60 ~ -110°

Mechanical A-axis spindle power transmission



Swing head diameter

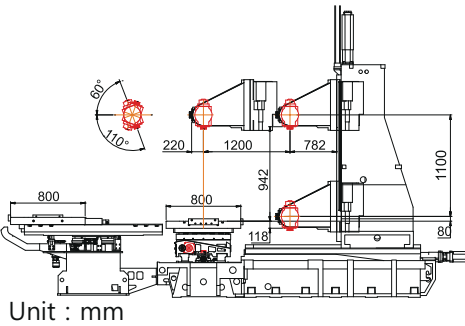
Max. width: 665mm
Swing radius: 270mm



Swing head travel

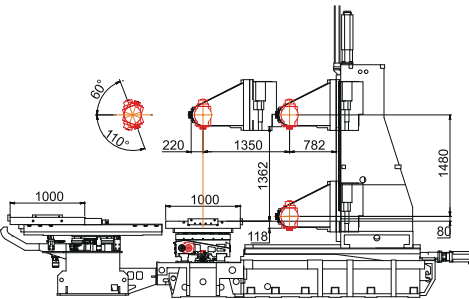
MH-800 B/S-5XA

X axis travel: 1300mm [1600mm]
Y axis travel: 1100mm [1480mm]
Z axis travel: 1350mm [1400/1530mm]
Worktable dia. : 800x800mm [Ø1200mm]



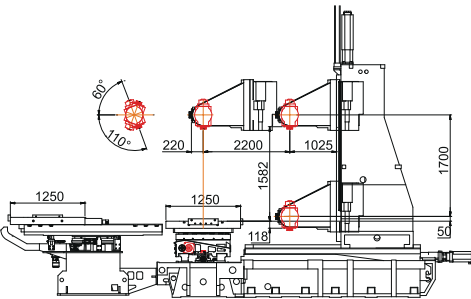
MH-1200 B/S-5XA

X axis travel: 2100mm
Y axis travel: 1480mm [1700mm]
Z axis travel: 1350mm [2030mm]
Worktable dia. : 1250x1250mm [Ø1400mm]



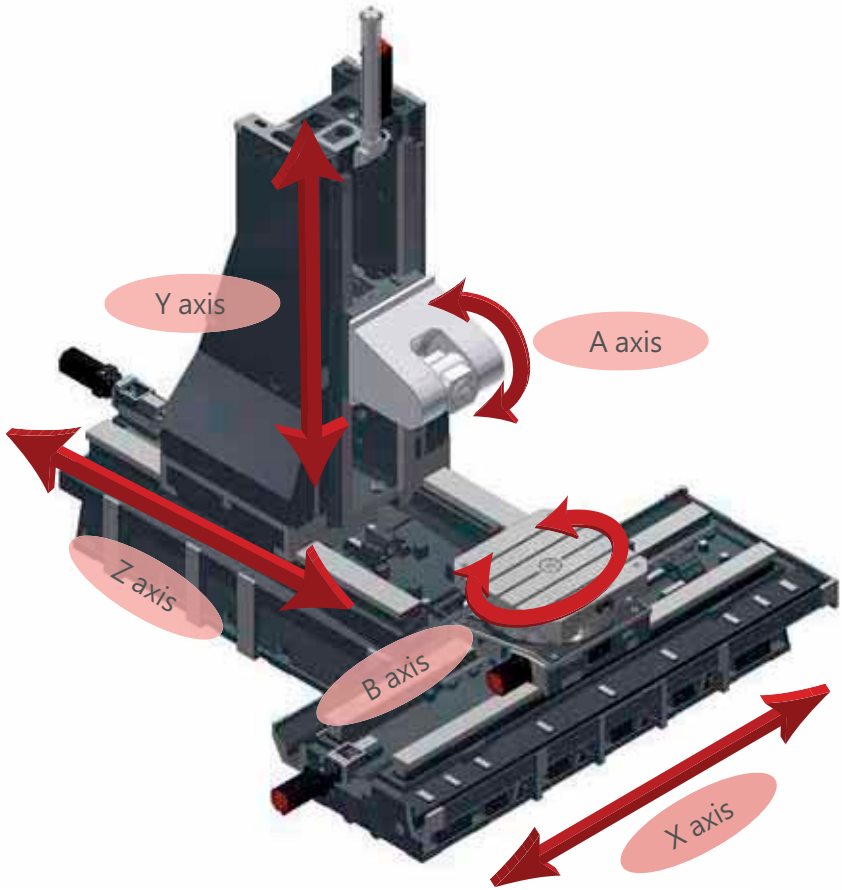
MH-14000 B/S-5XA

X axis travel: 2300mm
Y axis travel: 1700mm [1900mm]
Z axis travel: 2030mm [2230mm]
Worktable dia. : 1400x1400mm [Ø1600mm / Ø1800mm]



MH-5XA structure is based on inverted T type.

The machine structure castings are made by "MEEHANITE" casting , a fully annealing process and aging have been implemented to ensure best stability for long term usage.

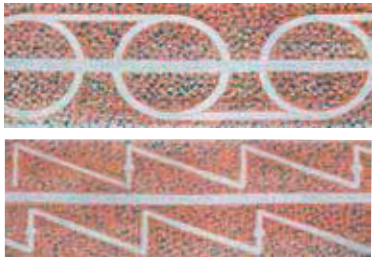


Swing Spindle (oil-air lubrication)

The maximum output torque of spindle is 1,470 Nm. Furthermore, equipping with a gear transmission system to process precise machining in hard cutting materials and a spindle cooling system to avoid the thermal accumulation during machining .

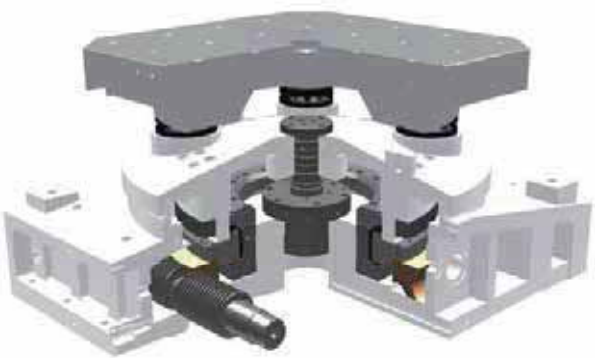
High rigid box-way and scraping

High contact face of box-way has Turcite-B with professional scraping to make sure all axes can move smoothly with proper lubrication and avoid machine being affected by thermal deformation. It benefits on having stable and excellent heavy duty machining performances.



Standard working table

Drive by servo motor
The precision of turbine worm can reach 0.001°
Position by Hydraulic brake
Including high precision rotary encoder



Optional multi working table

Working style	Build-in motor	Build-in motor	Build-in motor
Dimension (mm)	Ø800	Ø1250	Ø1500
Max. speed (rpm)	800	500	300
Max. loading (kg)	1000	2000	3000
Position/Repeat precision (mm)	±5"/ ±3"	±5"/ ±3"	±5"/ ±3"

Specifications (5XA)

ITEM		UNIT	MH-800-5XA		MH-1200-5XA		MH-1400-5XA		MH-1600-5XA		
			B	S	B	S	B	S	B	S	
Travel	X axis travel (Horizontal table)	mm	1300(1570)		2100		2300		2800		
	Y axis travel (Vertical spindle)	mm	1100[1480]		1480 [1700]		1700 [1900]		1900		
	Z axis travel	mm	1350 [1400,1530]		1530 [2030]		2030 [2230]		2430		
	A axis travel	deg	+60°~~ 110°		+60°~~ 110°		+60°~~ 110°		+60°~~ 110°		
	B axis travel	deg	±360°/0 .001°		±360°/0 .001°		±360°/0 .001°		±360°/0 .001°		
	Rotating diameter in the machine	mm	1200 [1500]		1500 [1800]		1800 [2250]		2400		
	Spindle center line to pallet surface (A=0)	mm	140~1240 [150~1630]		150~1630 [150~1850]		110~1810 [110~2010]		60~1960		
	Spindle nose to table center line (A=0)	mm	-300~1050 [-300~1230]		-300~1230 [-300~1730]		-300~1730 [-300~1930]		-300~2130		
	Spindle nose to table center line (A=90)	mm	-30~1320 [-30~1500]		-30~1500 [-30~ 2000]		-30~2000 [-30~2200]		-30~2400		
Table	Dimension	mm	800x800 [Ø1200]		1250x1250 [Ø1400]		1400x1400 [Ø1600]		1600x1600 [Ø1800]		
	T-slot		18*5 H7		22*7 H7		22*7 H7		22*7 H7		
	Increments	deg	0.001		0.001		0.001		0.001		
	Max. table loading-Horizontal	kg	2000 [3000]		5000 [7000]		7000 [10000]		8000 [1000]		
	Exchange style		Horizontal shuttle		Horizontal shuttle		Horizontal shuttle		Horizontal shuttle		
Spindle	Spindle taper		BT-50 (HSK-A100, DIN-50)								
	Spindle Speed	rpm	6000 (gear) / 10000 (build-in)								
	Motor	kW	22/41.8 , 50/70								
	Max. Torque	N-m	1470 (gear) / 560 (build-in)								
A axis	Rotate Torque (Cont./Max.)	N-m	2160/5760								
	Rotate angle	deg	+60~~110								
	Rotate speed	rpm	8								
	Clamping power	N-m	4000								
Feedrate	Cutting - X/Y/Z	m/min	15/15 /15		15/15/15		15/15/15		15/15/15		
	Cutting - B/A	mim ⁻¹	11.1(8.3) / 8		8.3/8		4/8		2.7/8		
	Rapaid - X/Y/Z	m/min	24/24/24		24/24/24		24/24/24		24/24/24		
	Rapaid - B/A	mim ⁻¹	11.1(8.3) / 5		8.3/5		4/5		2.7/5		
Accuracy	Positioning - X/Y/Z	mm	0.008		0.008		0.008		0.008		
	Repeatability - X/Y/Z	mm	0.006		0.006		0.006		0.006		
	Positioning - A/B	sec	8/8		8/8		8/8		8/8		
	Repeatability - A/B	sec	4/4		4/4		4/4		4/4		

* [] option
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Accessory list for 5XA series

ITEM	ACCESSORY	MH-800S-5XA	MH-1200S-5XA	MH-1400S-5XA	MH-1600S-5XA
CONTROLLER	SIEMENS 840D	•	•	•	•
	HEIDENHAIN TNC640	★	★	★	★
SPINDLE	MOTOR 22/26.4/41.8kw	•	•	•	•
	2 section gear , 4000 rpm	★	★	★	★
	2 section gear , 6000 rpm	•	•	•	•
	Build-in , 10,000/20,000 rpm	★	★	★	★
	Coolant through spindle 20 bar	•	•	•	•
	Coolant through spindle 40/70 bar	★	★	★	★
TRAVEL	X axis 1,570mm	★	x	x	x
	Y axis 1,480mm	★	•	x	x
	Y axis 1,700mm	x	★	•	x
	Y axis 1,900mm	x	x	★	•
	Z axis 1,530mm	★	•	x	x
	Z axis 2,030mm	x	★	•	x
	Z axis 2,230mm	x	x	★	x
ATC	60 Tools	•	•	•	•
	90 / 120 / 180 / 256 Tools	★	★	★	★
TABLE	Single 800x800mm	•	x	x	x
	Single 1,250x1,250mm	x	•	x	x
	Single 1,400x1,400mm	x	x	•	•
	Single Ø 1,200mm	★	x	x	x
	Single Ø 1,400mm	x	★	x	x
	Single Ø 1,600mm	x	x	★	★
	APC 800x800mm	★	x	x	x
	APC 1,250x1,250mm	x	★	x	x
	APC 1,400x1,400mm	x	x	★	x
	APC 1,600x1,600mm	x	x	x	★
	Additional table	★	★	★	★
COVER	Fully enclosed guard (incl. roof)	•	•	•	•
DEVICE	Absolute position feedback for X/Y/Z axis	•	•	•	•
	Rigid tapping	•	•	•	•
	Hydraulic Cylinder	•	•	•	•
	Nitrogen balance system	•	•	•	•
	Auto lubrication system	•	•	•	•
	Spindle coolant device	•	•	•	•
	Split handwheel	•	•	•	•
	Independent handwheel for 3 axis	★	★	★	★
	Working lamp	•	•	•	•
	Tri-color alarm lamp	•	•	•	•
	Air conditioner for electrical cabinet	•	•	•	•
	Air gun for cleaning and water gun	•	•	•	•
	Cutting fluid	•	•	•	•
	Hollow screw with the oil cooling system	•	•	•	•
	Twin screw chip auger	•	•	•	•
	Chain type conveyor for chip	•	•	•	•
	Coolant through tool holder interface	★	★	★	★
	Transformer	★	★	★	★
MEASUREMENT SYSTEM	HEIDENHAIN linear scale	•	•	•	•
	HEIDENHAIN encoder for B axis	•	•	•	•
	Automatic tool measuring system	★	★	★	★
	Automatic work piece measuring system	★	★	★	★
OTHERS	Leveling bolts & blocks	•	•	•	•
	Tool box	•	•	•	•

Standard:• Optional:★ N/A: x

MH-630/800/1100/1300-5XB series

MH-5XB series

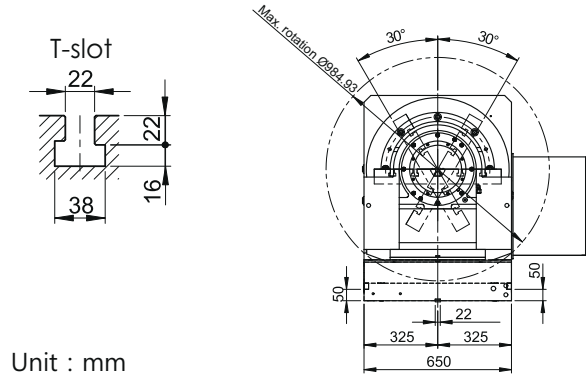


Swing working table

Table diameter (mm)	Ø630	Ø800
T-slot	22	20
Increments	0.001°	0.001°
Max. vertical loading (kg)	300	600
Max. horizontal loading (kg)	500	1000
B axis Max. rotation speed	16.7	16.7
A axis Max. rotation speed	8.3	5.5
Drive style	Turbine worm	
Swing angle	+/- 120°	

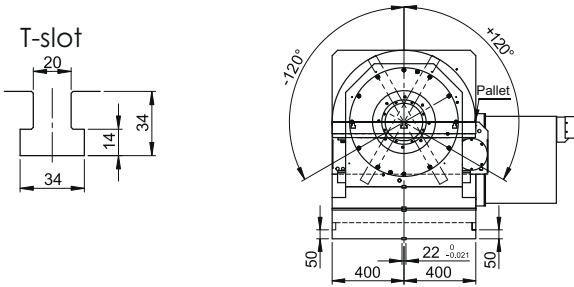
Worktable Size

MH-630S-5XB



Unit : mm

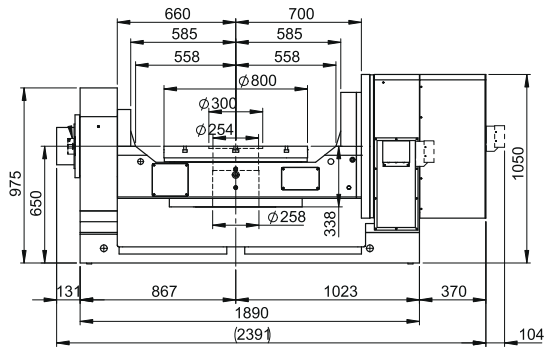
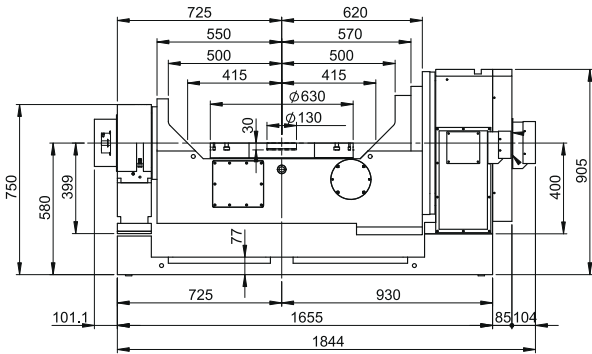
MH-800B/S-5XB



Unit : mm

Powerful torque motor

Spindle Taper	BT-50 (HSK-A-100,DIN-50)
Spindle Speed	6,000 rpm(gear) / 8,000 rpm(direct coupling)
Spindle Power	18.5/22/35 kw
Max. Torque	1,639 Nm(gear) / 720 Nm(direct coupling)



MH-5XB series

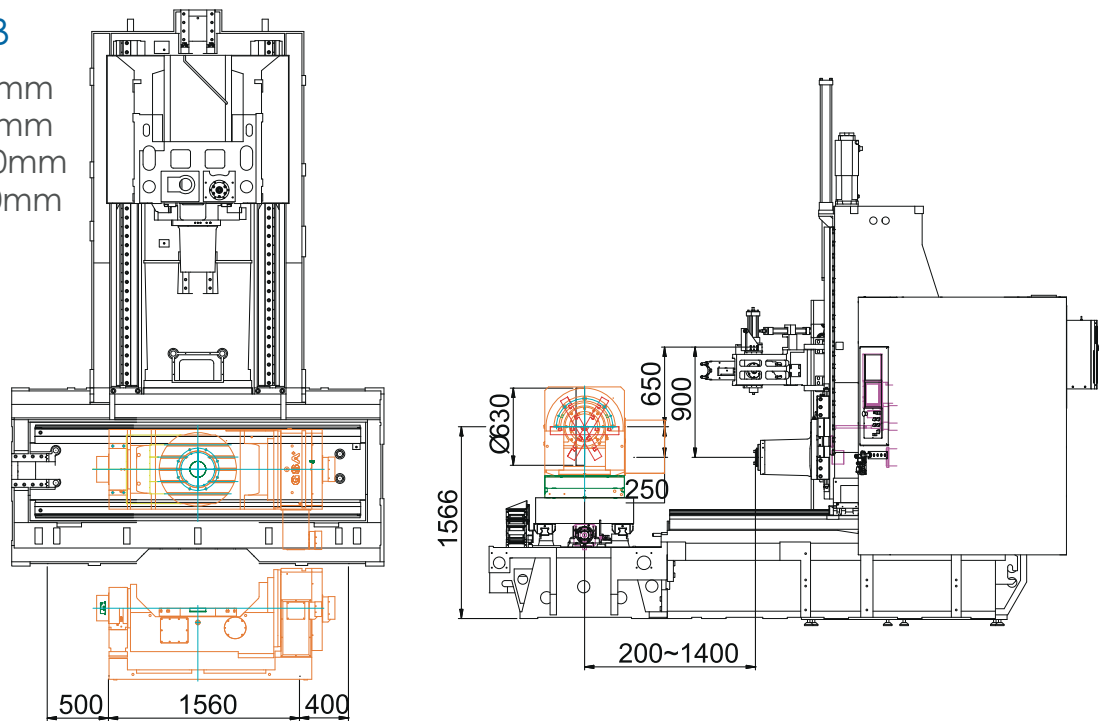
Ultra-rigid, high-precision structure

The basic structure design is inverted T. The machine structure castings are all made by "MEEHANITE" casting, a fully annealing process and aging have been implemented to ensure best stability for long term usage.

Travel description

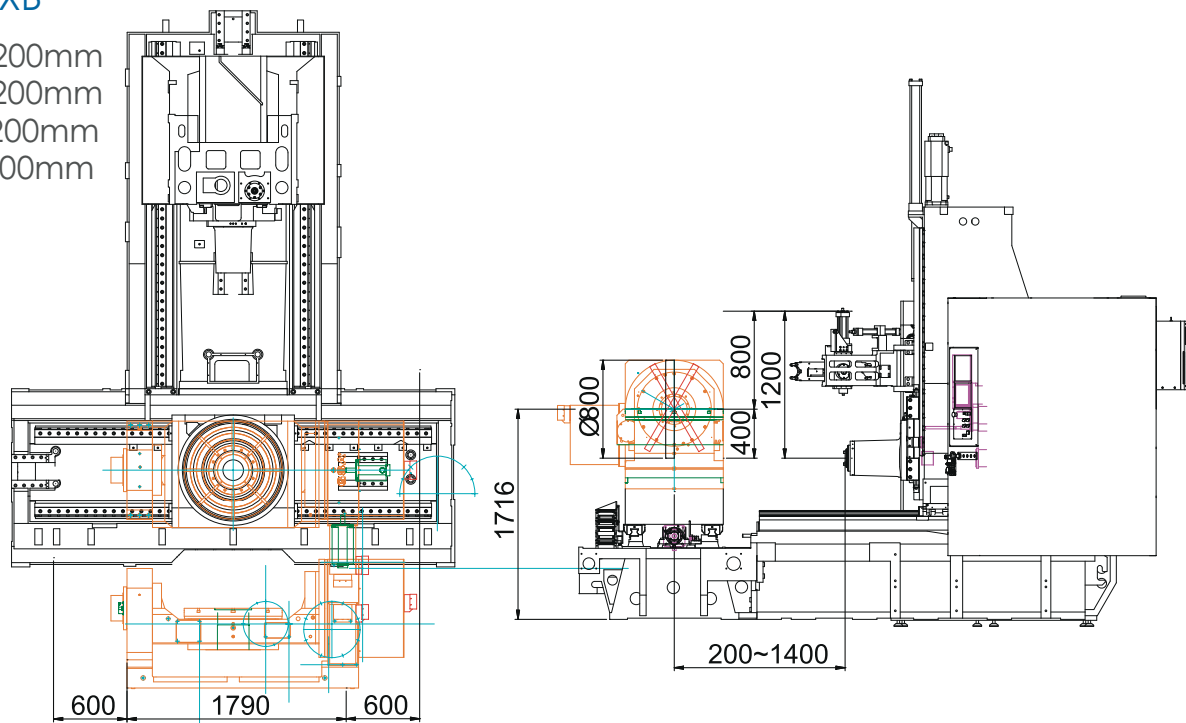
MH-630B/S-5XB

X axis travel: 900mm
Y axis travel: 900mm
Z axis travel: 1200mm
Table dia. : Ø630mm



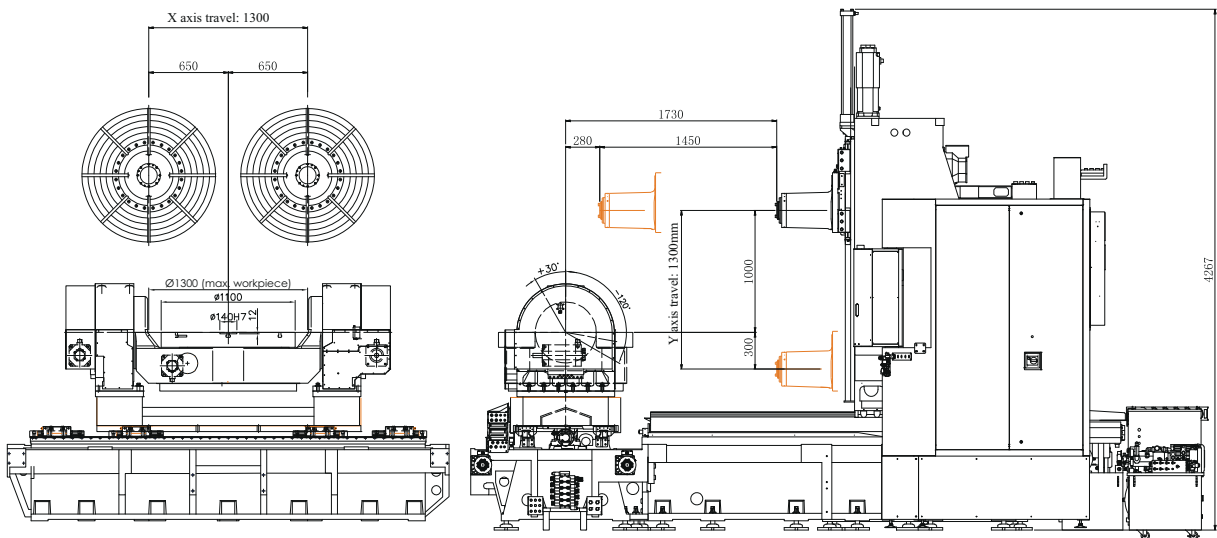
MH-800B/S-5XB

X axis travel: 1200mm
Y axis travel: 1200mm
Z axis travel: 1200mm
Table dia. : Ø800mm



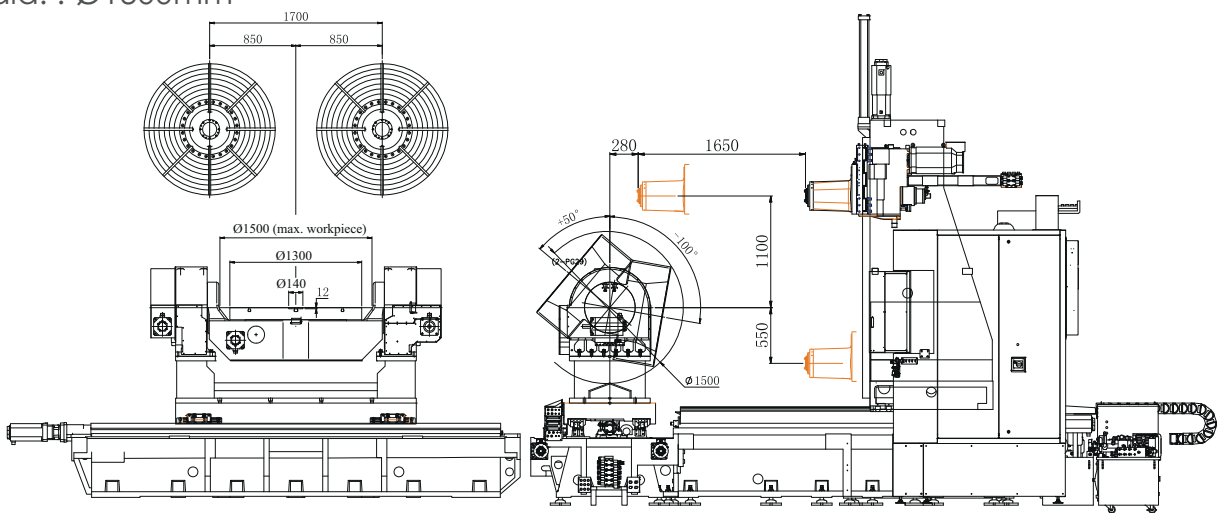
MH-1100B/S-5XB

X axis travel: 1300mm
Y axis travel: 1300mm
Z axis travel: 1450mm
Table dia. : Ø1100mm



MH-1300B/S-5XB

X axis travel: 1700mm
Y axis travel: 1650mm
Z axis travel: 1650mm
Table dia. : Ø1300mm



Specifications (5XB)

Accessories

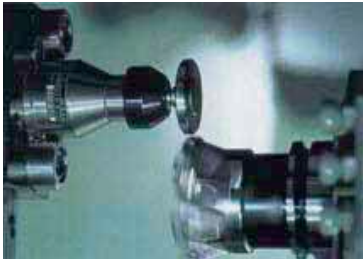
ITEM		UNIT	MH-630B/S-5XB		MH-800B/S-5XB		MH-1100-5XB	MH-1300-5XB
			B	S	B	S	S	S
Travel	X axis(Horizontal table)	mm	900		1200		1300	1700
	Y axis (Vertical spindle)	mm	900		1200		1300	1650
	Z axis	mm	1200		1200		1450	1650
	A axis	deg	±120°		±120°		-30°~+120°	-30°~+120°
	B axis	deg	±360°/0 .001°		±360°/0 .001°		±360°/0 .001°	±360°/0 .001°
	Spindle center line to pallet surface	mm	-250~650		-400~+800		-300~+1000	-550~+1100
	Spindle nose to table center line (Zaxis)	mm	150~1350		150~1350		280~1730	280~1930
Table	Type		Swing + Rotate					
	Table diameter	mm	Ø630		Ø800		Ø1100	Ø1300
	T-slot		22		22		22	22
	Increments	deg	0.001		0.001		0.001	0.001
	Max. Vertical loading	kg	300		600		3000	5000
	Max. Horizontal loading	kg	500		1000		3000	5000
	B axis Max. rotation speed	rpm	16.7		16.7		11.1	8.3
	A axis Max. rotation speed	rpm	8.3		5.5		5.5	2.7
	Drive style		Turbine worm					
	Swing angle		±120°				-30° ~ +120°	-30° ~ +120°
Spindle	Spindle Taper		BT-50 (HSK-A100,DIN-50)					
	Spindle Speed	rpm	6000 rpm (gear) / 8000 rpm (direct coupling)					
	Spindle Power	kw	18.5/22/35					
	Max. Torque	N·m	1639 Nm (gear) / 720 Nm (direct coupling)					
Feed rate	Rapid - X/Y/Z	m/min	24/24/24		24/24/24		20/20/20	20/20/20
	Rapid - B,A	min ⁻¹	16.7/8.3		16.7/5.5		11.1/5.5	8.3/2.7
	Cutting - X/Y/Z	m/min	15/15/15		15/15/15		10/10/10	10/10/10
	Cutting - B,A	min ⁻¹	16.7/8.3		16.7/5.5		11.1/5.5	8.3/2.7
Accuracy	Positioning X/Y/Z	mm	0.008		0.008		0.008	0.008
	Repeatability X/Y/Z	mm	0.005		0.005		0.005	0.005
	Positioning A,B	sec	10/8		10/8		10/8	10/8
	Repeat A,B	sec	6/4		6/4		6/4	6/4

* [] option
*All specification are subjected to change without prior notice.

Standard Accessory & Function (MH-5XA/5XB)

1. Full type splash guard with roof
4. Air blast through spindle
7. Foundation pads & bolts kits
10. Tool kits
2. Programmable cooling system
5. Work lamp
8. RS232 ㊦RJ45 ㊦USB interface
11. Screw type chip conveyor on table sides and Caterpillar type chip conveyor
3. Automatic central lubrication
6. Spindle cooling system
9. Technical manuals
12. X, Y, Z axis linear encoder ㊦A,B axis angle encoder

Optional Accessory & Function (MH-5XA/5XB)



Broken tool detection system.



Automatic tool length measurement protector.



Automatic workpiece measurement.



Coolant through spindle



HEIDENHAIN iTNC-640 HSCI

1. MC 6222 1.8GHz is more powerful than previous CPU systems.
2. 32G SSDR memory system has more shockproof function.
3. New HEROS 5 operator interface has the ability to insert PDF view.
4. TE630 and MB620, 15"XGA monitors.



SIEMENS 840Di

1. NUC 730 and PLC317-2DP+40GB CPU
2. WIN/XP/Pro system
PCU50.3 1.5GHz, 512MB
3. SHOPMILL+ 3D simulation,
HMI interface
4. MCP483, OP015A 15"TFT monitors