

NEWAY CNC EQUIPMENT(SUZHOU) CO.,LTD

No 69 Xunyangjiang Road, Suzhou New District, P.R.China
Tel: 86-512-6239 2186
Fax: 86-512-6607 1116
E-mail: cncsale@neway.com.cn
www.newaycnc.com

NEWAY CNC (USA),INC.

9757 Stafford Centre Drive Strafford,Texas 77477 USA
Tel: +1 281-969-5800
Fax: +1 281-969-5903
www.newaycnc.us

www.newaycnc.com

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CNC Milling and Boring Machine PB/HB Series



Neway CNC Milling and Boring Machine

Neway's diverse New model milling and boring machine is designed to meet the World Class processing needs of several unique and different industries. The uniqueness of many of their zero-defect manufacturing process has won the trust and praise of many old customers worldwide.

Deep hole boring is an important content in metal cutting processing — PB table type and HB cross slide type CNC milling and boring machine can easily complete a variety of processing such as boring, milling, drilling, tapping and curved surface, especially suitable for Deep hole boring of complex and precision box parts is widely welcomed in the machining of national key industries such as aerospace, shipbuilding, railways, mining and metallurgy, engineering machinery, valves, and new energy.

- Key components R&D by Neway independently, like head stock, automatic shifting, haing two model, high-speed high-precision machining and low-speed high-torque machining; high precision rotary table can achieve high precision indexing of 0.001 degree, and the rotation accuracy increased by more than 30%.
- Excellent rigidity and precision. Large-span bed, double-walled structure column, greatly improved rigidity; using rolling composite rail structure and international brands. The transmission components have greatly improved the bearing capacity of the machine tool. The slewing mechanism uses double gears to eliminate backlash to ensure accurate transmission circular grating, effectively guarantee the accuracy of the machine.
- Various options configuration. The milling and boring machine developed by Neway CNC equipment can be easily configured with various extended acc. and functions, such as: tool magazine, cooling through spindle, heavy loading Precision rotary table, right-angle milling head, universal milling head, spindle support sleeve, CNC rotary table, etc.

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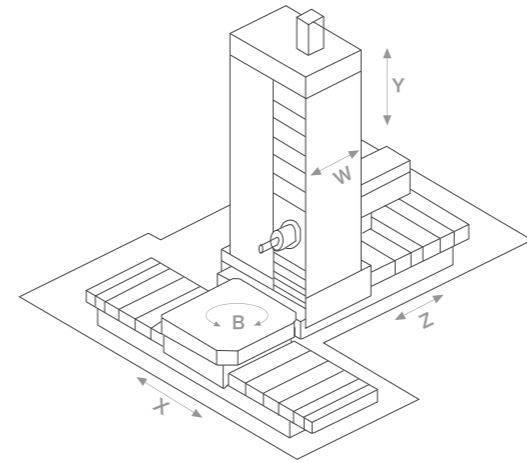
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PB Series- CNC Table Type Horizontal Milling and Boring Machine

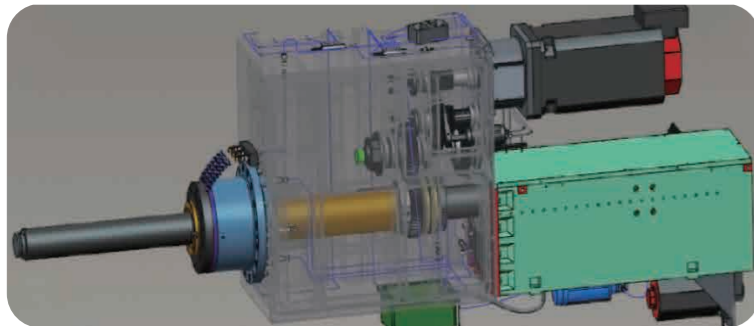
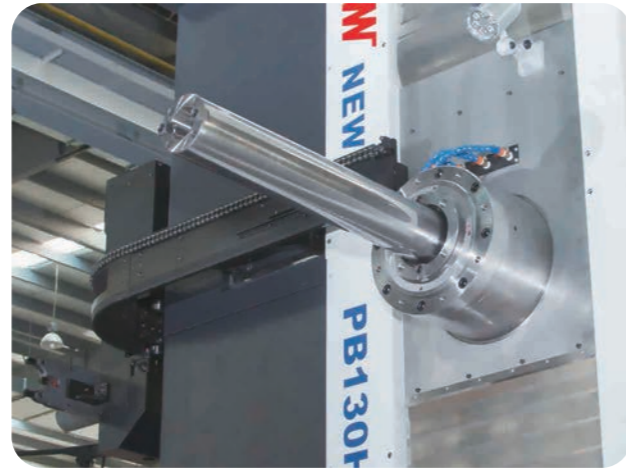
- This series of models adopt a typical horizontal table type structure, with the headstock side mounted, the boring shaft embedded in the milling shaft hole, the worktable placed on the top of the slide and rotatable, and the vertical movement of the column;
- The main shaft is equipped with a gearbox structure design, which is suitable for both high-speed die cutting and general low-speed high-torque machining;
- Complete a variety of processes in one clamping, suitable for big part milling, boring, drilling, reaming, tapping, turning, turning, etc.;
- Widely used in aerospace, shipbuilding, railway, mining and metallurgy, engineering machinery, valves, new energy and other industries.



- The headstock moves up and down —Y axis
- Vertical movement of the column —Z axis
- Axial movement of boring axis —W axis
- Rotary motion of the table —B axis
- Two-layer spindle structure, the boring axis rotates with the milling axis —SP axis

PB130H

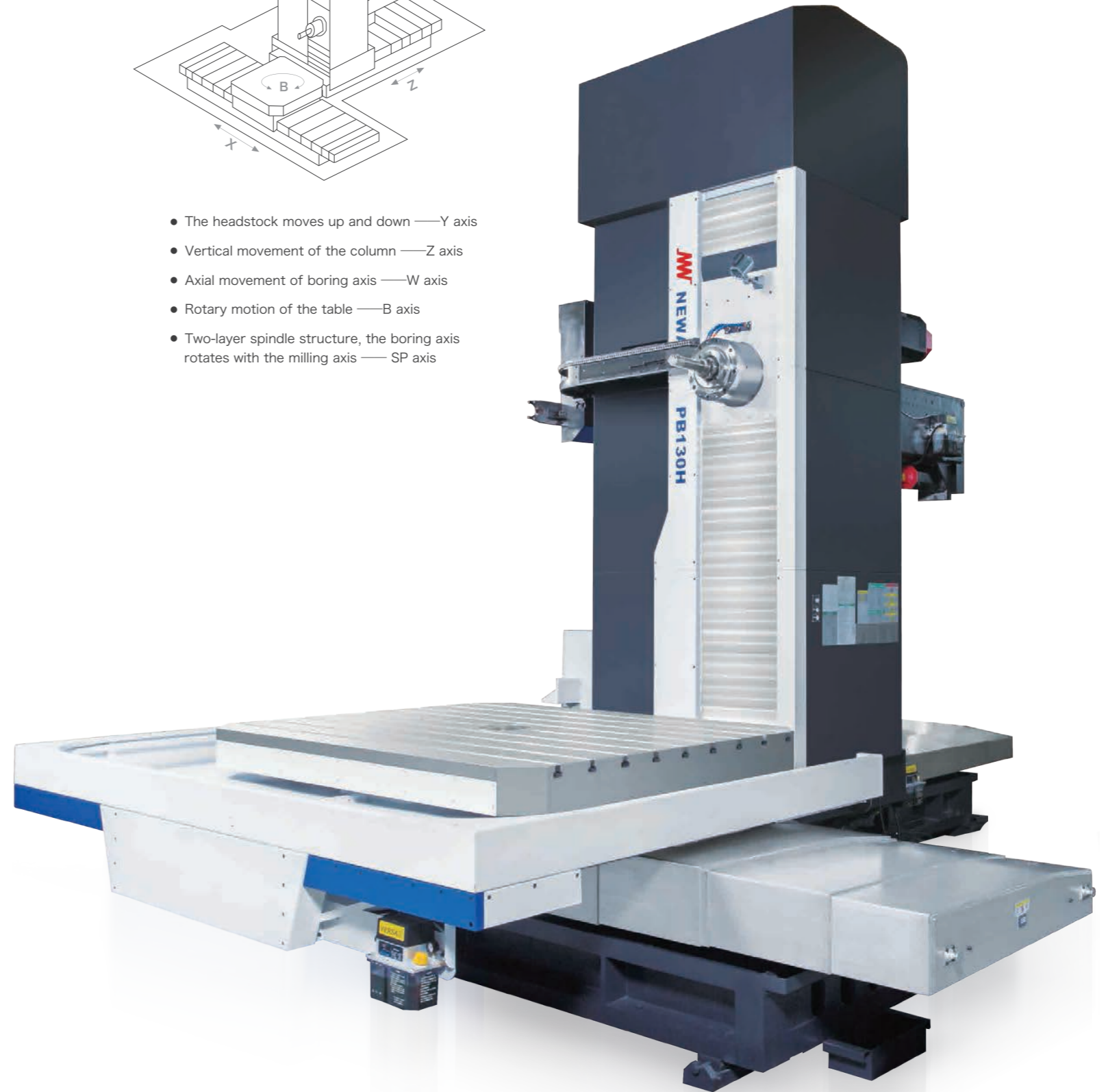
- Telescopic precision spindle is composed of boring shaft, milling shaft, broach device and so on.
- The spindle cooling adopts a high-performance oil-cooled temperature control device, which can automatically and accurately cool all the bearings, gears and other mechanisms inside the spindle to effectively reduce thermal deformation and ensure processing accuracy.

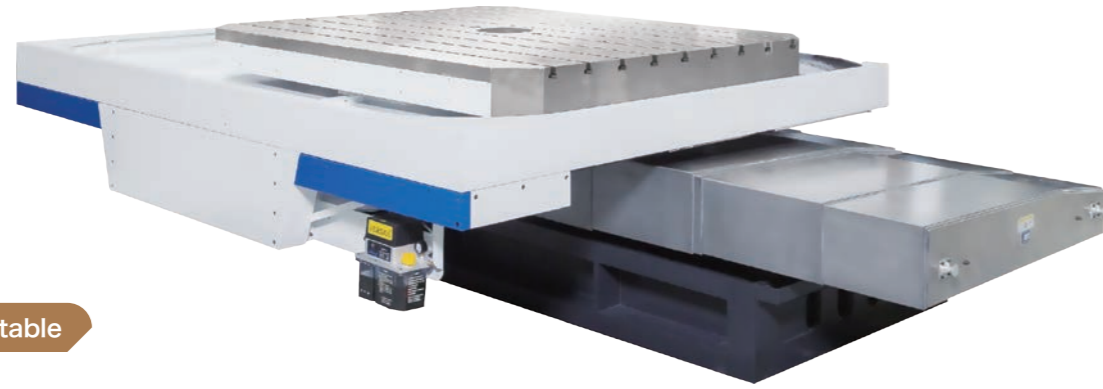


Precision Gear Transmission Headstock

Two-speed transmission, independently developed by Neway

The closed headstock structure design provides a highly rigid foundation for heavy cutting.





Rotary Worktable

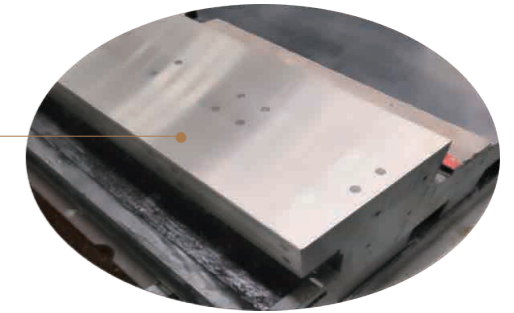
High precision, large load capacity, multiple options sizes

- High-quality cast iron HT300
- Secondary aging ensures stable accuracy
- Optimized design through finite element to ensure high rigidity
- Streamlined design without redundant structure

Worktable	Worktable Options						
	worktable size (mm)	1400×1600	1600×1800	2000×2000	2000×2500	2000×2000	
	Max. loading (T)	8	15			20	
	X axis travel (mm)	2500	3000			3000	4000
Type	PB110H	standard	optional	optional	optional	optional	optional
	PB130H	optional	standard	optional	optional	optional	optional

High Rigid Bed

- Three-axis mobile full-stroke support to ensure long-term accuracy;
- The three-axis guide rails are designed with high rigidity, which greatly improves the rigidity and heavy cutting ability;
- Large contact surface, large span, better rigidity and stability.

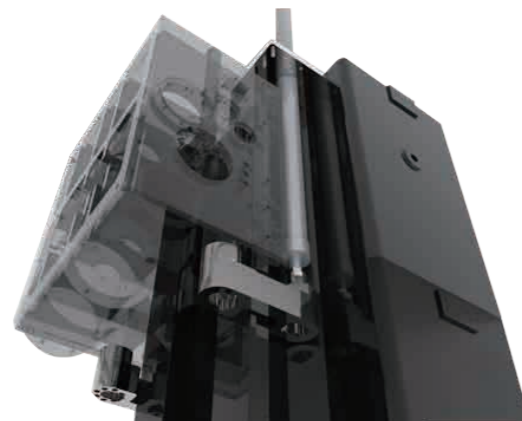


Precision High Rigidity Steel Inlaid Rail



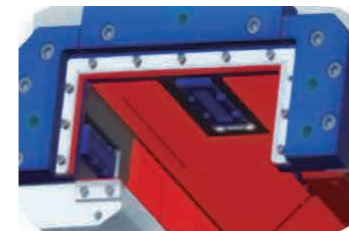
Double-cylinder Nitrogen Oil Mixed Counter Weight Structure

PB110H / HB110H / HB110U adopts double balance cylinder nitrogen oil mixed weight structure. This balance system uses the principle of accumulator to balance the weight of the headstock by gas pushing oil. No external power equipment is needed. Fast response, no noise, can improve the quality of parts processing. Compared with air pressure counterweight, nitrogen liquid counterweight has the advantages of high accuracy, stable system, energy saving, noise reduction and environmental protection. The double balance cylinder structure has double balance points, which effectively improves sagging, and has higher accuracy and stability.

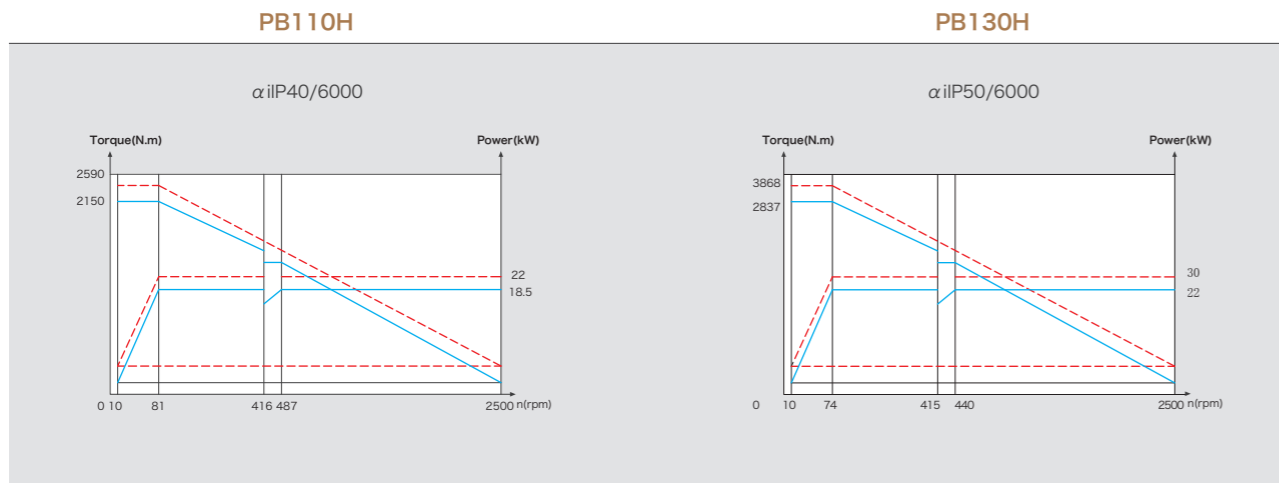


Box and Linear Composite Guide Way

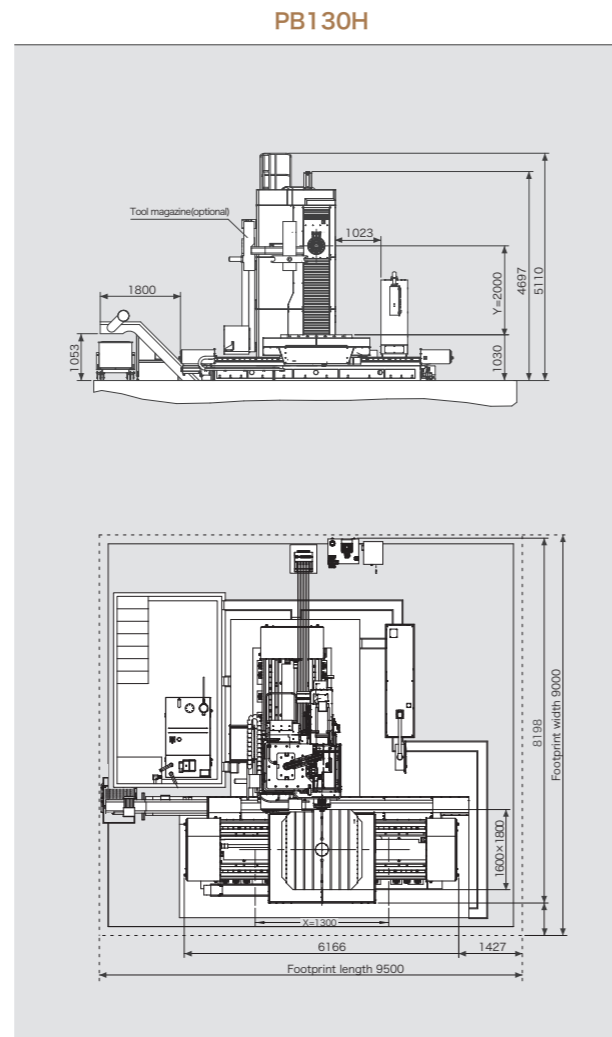
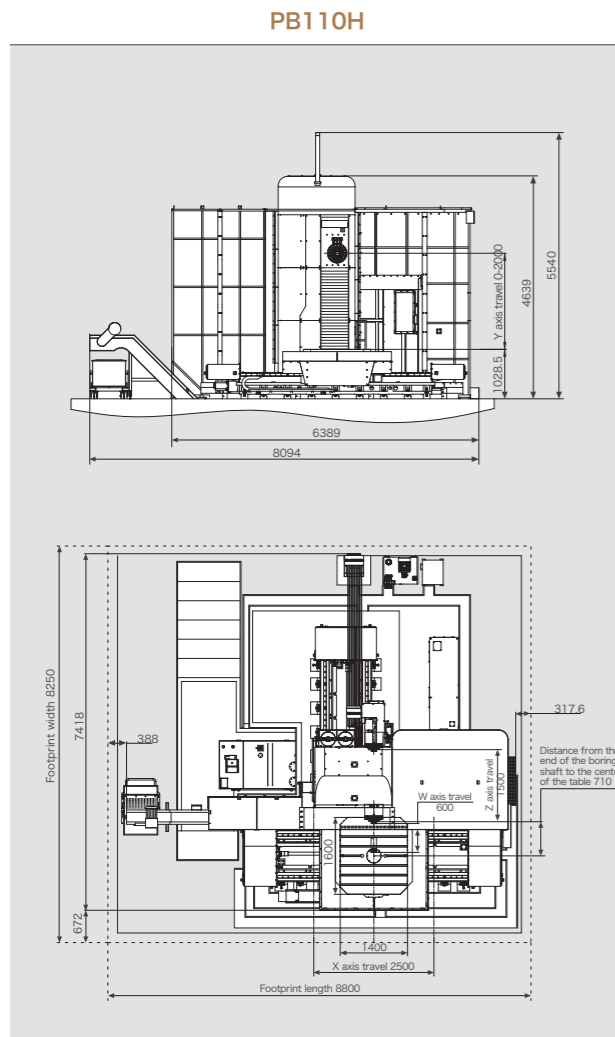
- The slide blocks are in contact with the box and linear way surface at the same time, haing the both advantage of high rigidity and smooth, effectively avoiding the defects of hard rail crawling and shaking.



Spindle Power Torque Diagram



External Dimensions



Item		Unit	PB110H	PB130H
Working capacity	Worktable Size	mm	1400×1600	1600×1800
	Max. Worktable loading	kg	8000	15000
	T slot width	mm	28	28
	Min. table indexing	-	0.001°	0.001°
	Max. worktable speed	r/min	2	2
	Worktable travel X	mm	2500	3000
	Spindle box travel Y	mm	2000	2000
	Column travel Z	mm	1500	1600
	Spindle axial travel W	mm	600	800
	Worktable travel B	°	360	360
Travel	Rapid speed X/Y/Z/W	m/min	10/10/10/4	10/10/10/4
Spindle	Motor power	kW (30min)	18.5/22	22/30
	Spindle speed	rpm	10-2500	10-2500
	Spindle taper	-	BT50	BT50
	Pull stud size	-	P50T-1	P50T-1
	Boring shaft dia.	mm	Φ110	Φ130
	Max. boring shaft tensile	N	15000	25000
	Milling shaft end dia.	mm	Φ221.44	Φ221.44
	Max. milling shaft torque	N.m(30min)	2150/2590	2837/3868
Tool	Tools (option)	-	[40 (chain type)]	[40 (chain type)]
	Tool size	-	MAS403 BT50	MAS403 BT50
	Max tool dia/length/weight	mm/mm/kg	Φ125/400/25	Φ125/400/25
	Max tool diameter (empty neighbor cell)	mm	Φ250	Φ250
Machine accuracy	Positioning accuracy X/Y/Z	mm	0.02	0.02
	Repositioning accuracy X/Y/Z	mm	0.015	0.015
	Positioning accuracy(W)	mm	0.025	0.025
	Repositioning accuracy(W)	mm	0.02	0.02
	Positioning accuracy(B)	-	15"	15"
	Repositioning accuracy(B)	-	7"	7"
Other	CNC system	-	NEWAY FANUC [SIEMENS]	
	Auto chip conveyor	-	Single screw+Chain plate	Chain plate
	Machine power capacity	KVA	80	85
	Dimension(L×W×H)	mm	8094×7418×5540	8100×8198×5110
	Machine weight	kg	32000	40000

Standard configuration:

X/Y/Z axis encoder, B axis circular encoder, spindle oil cooling, chip cooling external cooling device, accessory trolley, water receiving tray, operation platform, operation protection

Optional configuration:

Tool magazine, tool internal cooling device (ie, cooling through spindle), boring shaft support sleeve, right-angle milling head, universal milling head, Facing head, tool measurement, etc.

PB Series- CNC Horizontal Milling and Boring Machine

- This series of models adopt a typical cross slide layout, with fixed columns and side-mounted headstock. The worktable can be rotated by the cross slide and the main shaft can be extended.
- Equipped with high-speed headstock with precision gears, which can be used for both high-speed light cutting and low-speed heavy cutting. One machine is multi-purpose;
- Complete a variety of processes in one clamping, suitable for large part milling, boring, drilling, reaming, tapping, turning, turning, etc.;
- It is widely used in aerospace, shipbuilding, railway, mining and metallurgy, engineering machinery, valves, new energy and other industries. It is the preferred equipment for processing parts such as boxes, housings, and bases.

HB110H

- It adopts precision gear transmission spindle box structure, equipped with precision high rigidity telescopic spindle, imported high precision spindle bearings;
- Equipped with precise constant temperature oil cooling system to effectively control the thermal extension of the spindle.
- High torque 3000Nm, high speed 3000rpm.

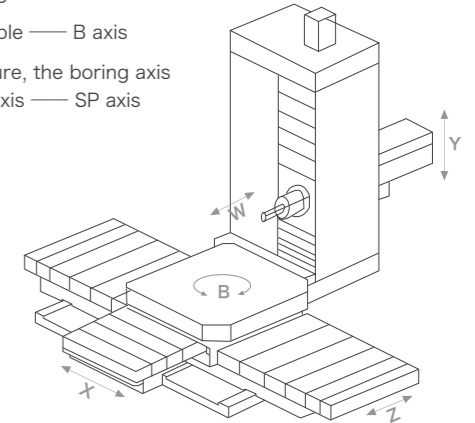


Neway design and made spindle



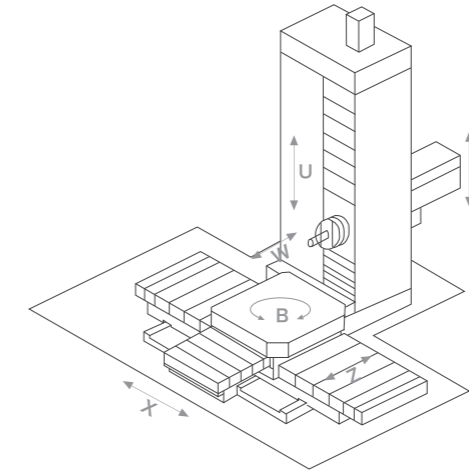
Cross type milling and boring machine (full protection optional)

- The horizontal movement of the table — X axis
- The headstock moves up and down — Y axis
- Longitudinal movement of table — Z axis
- Axial movement of boring axis — W axis
- Rotary motion of worktable — B axis
- Two-layer spindle structure, the boring axis rotates with the milling axis — SP axis



HB110U

- This model adopts a typical cross slide layout, with fixed columns and side-mounted headstock. The table can be rotated by the cross slide and the main shaft can be extended;
- The main shaft consists of one facing spindle, one milling spindle, and one boring spindle;
- Complete a variety of processes in one clamping, suitable for large parts milling, boring, drilling, reaming, tapping, turning, etc.;
- It is widely used in aerospace, shipbuilding, railway, mining and metallurgy, engineering machinery, valves, new energy and other industries. It is the preferred equipment for processing parts such as boxes, housings, and bases.



- The horizontal movement of the table — X axis
- The headstock moves up and down — Y axis
- Longitudinal movement of the saddle — Z axis
- Axial movement of boring axis — W axis
- Rotary motion of worktable — B axis
- Facing head slider movement-U axis
- Three-layer spindle structure, the boring axis rotates with the milling axis; the facing head disc can rotate independently, and can also rotate at the same time as the milling axis — SP axis



NC Horizontal Facing Head

- The spindle composed of three layers of spindle, one facing head spindle, one milling shaft and one boring shaft. The boring spindle is equipped with a loose broach device;
- The facing head and its spindle are installed in the spindle box; the milling spindle support sleeve is installed in the facing head spindle and can rotate independently; the boring spindle is embedded in the milling spindle, which can be axially telescopically moved and kept synchronized with the milling spindle;

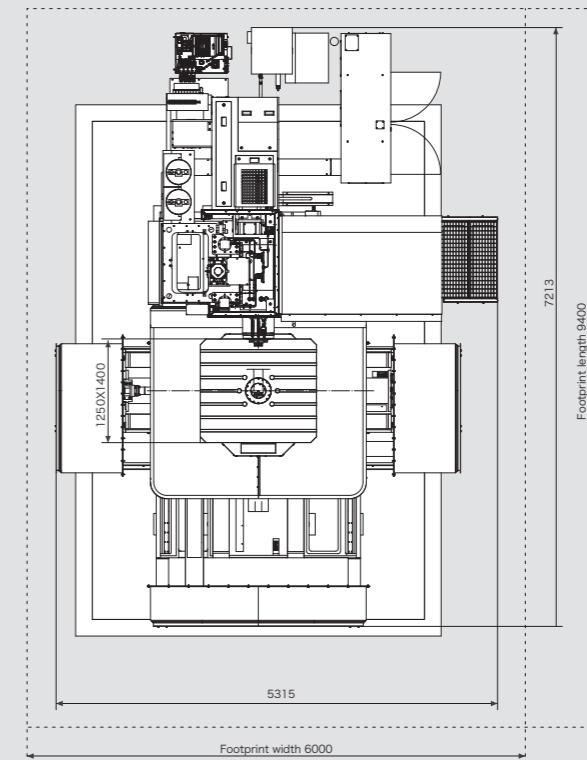
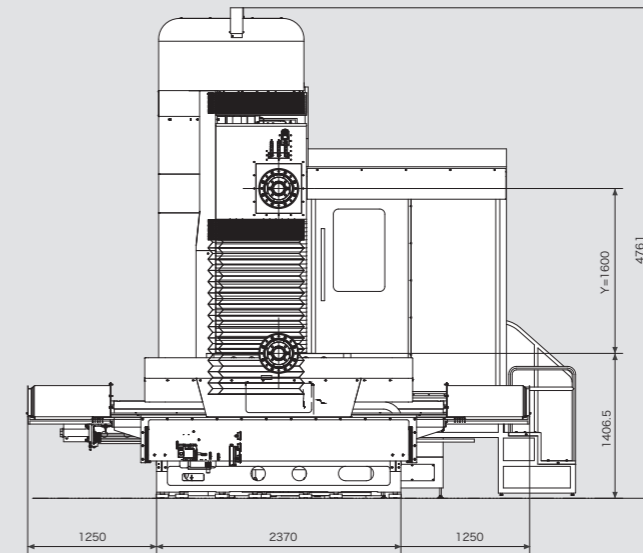
Bed Structure

- HB series models adopt high rigidity overall heightened bed design, lightweight sliding saddle structure, ensuring low speed heavy cutting and high speed light cutting, high efficiency, high precision and high reliability;
- The bed adopts multi-point support, and the structure design is user-friendly, highly pleasant, and easy to assemble, maintain and maintain.



External Dimensions

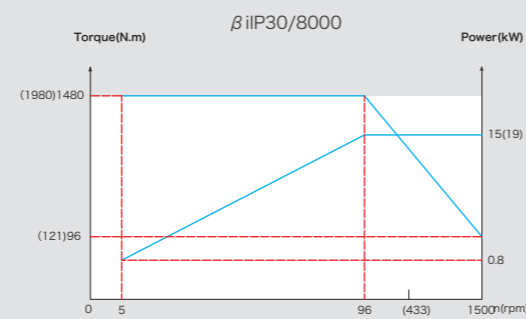
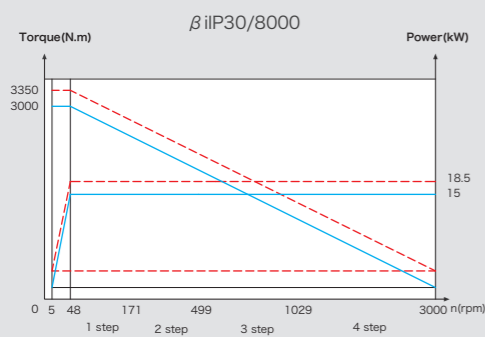
HB110H



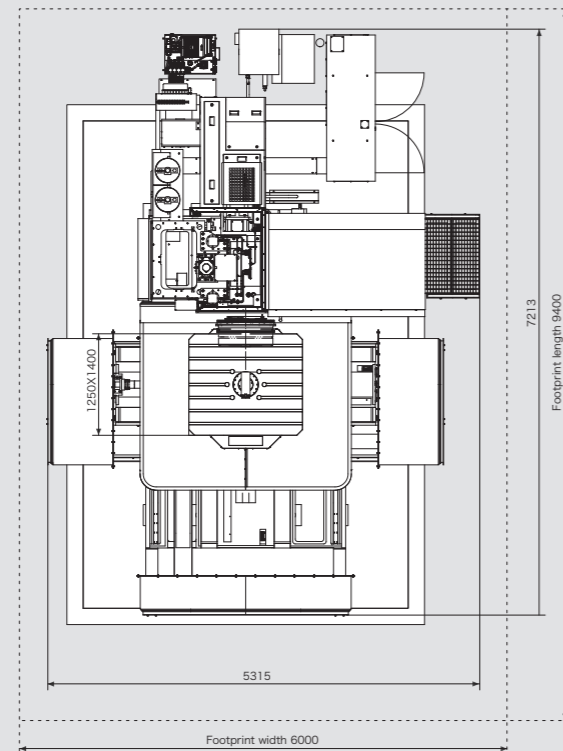
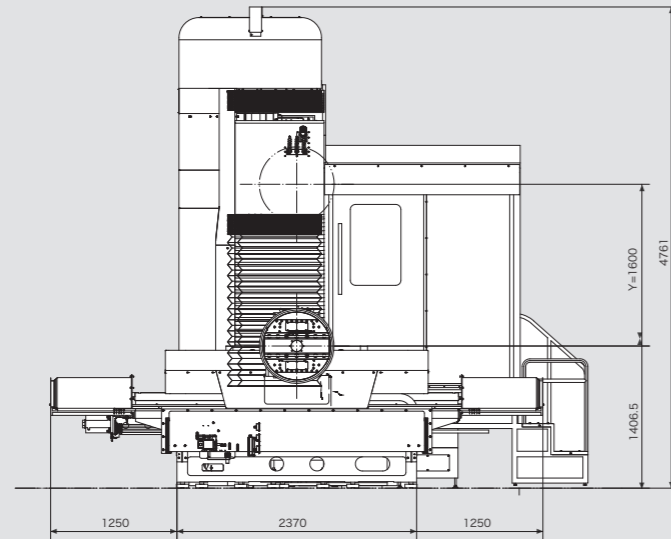
Spindle Power Torque Diagram

HB110H

HB110U



HB110U



Item	Unit	HB110H	HB110U
Worktable Size	mm	1250 × 1400	1250 × 1400
Max. Worktable loading	kg	5000	5000
T slot width	mm	28	28
Min. table indexing	°	0.001	0.001
Max. worktable speed B	rpm	2	2
Max. worktable travel X	mm	1800	1800
Spindle box travel Y	mm	1600	1600
Column travel Z	mm	1400	1400
Spindle axial travel W	mm	600	600
Facing head slider moves radially U	mm	/	200 (±100)
Workable travel B	°	360(any angle)	360(any angle)
Spindle center line to worktable	mm	0~1600	0~1600
Spindle terminal to center line of worktable	mm	-25~1975	-130~1870
Travel			
Rapid speed X/Y/Z/W/U	m/min	5/5/5/3	5/5/5/3/2.5
Max. cutting feed speed X/Y/Z/W/U	m/min	3/3/3/2	3/3/3/2/1
Spindle			
Boring shaft dia.	mm	φ110	φ110
Milling shaft end dia.	mm	φ221.44	/
Spindle taper	-	BT50	BT50
Pull stud size	-	MAS403 P50T-1	MAS403 P50T-1
Motor power	kW	15/18.5	15/18.5
Spindle speed	rpm	5~3000	5~1500
Max. milling shaft torque	N.m	3000/3651(30min)	1480/1980(30min)
Max. boring shaft tensile	N	20000	20000
Facing head			
Facing head dia.	mm	/	φ670
Facing head speed	rpm	/	7-165
Max. Facing head torque	N.m	/	2522/3380(30min)
Magazine			
Tools (option)	mm	[40(chain type)]	[40(chain type)]
Tool size	mm	MAS403 BT50	MAS403 BT50
Max tool dia/length/weight	mm	φ125/400/25	φ125/400/25
Max tool diameter (empty neighbor cell)	"	φ250	φ250
Min. setting unit	"	0.001	0.001
Machine accuracy			
Positioning accuracy X/Y/Z/W/U	-	0.02/0.02/0.02/0.02	0.02/0.02/0.02/0.02/0.035
Repositioning accuracy X/Y/Z/W/U	-	0.015/0.015/0.015/0.015	0.015/0.015/0.015/0.015/0.02
Positioning accuracy B	-	15	15
Repositioning accuracy B	-	7	7
CNC system	-	NEWAY FANUC [SIEMENS]	NEWAY FANUC [SIEMENS]
Other			
CNC coordinate axis number	mm/mm/kg	5 axis four linkage	6 axis four linkage
Auto chip conveyor (option)	mm	[Chain-plate chip remover (two)+ external cold water tank	
Machine power capacity	kVA	60	60
Air source/pressure	-	500L/min 6~8bar	500L/min 6~8bar
Dimension(L×W×H)	mm	7213×5315×4761	7213×5315×4761
Machine weight	kg	21000	21300

Standard configuration:

B-axis circular grating, operating table, operating room, water tray, full protective cover for bed, full protective cover for column

Optional configuration:

Tool magazine, chip conveyor, tool external cooling (large water tank), tool internal cooling (center water), X / Y / Z / W axis linear scale, workbench protection room, complete machine protection, tool detection, etc.

HB110H: Boring shaft support sleeve, right-angle milling head, extension milling head, universal milling head, Facing head, etc.

Applications

Humanized Design



- 01 Semi-protection in the operation room:**
It is safe and comfortable to prevent the iron chips from splashing and easy to clean.
- 02 Safety climbing ladder:**
easy for machine maintenance.
- 03 Ladder for loading and unloading workpieces:**
convenient for loading and unloading, safe and reliable.
- 04 Rotatable operation panel:**
can be rotated to the best position for smoother operation.

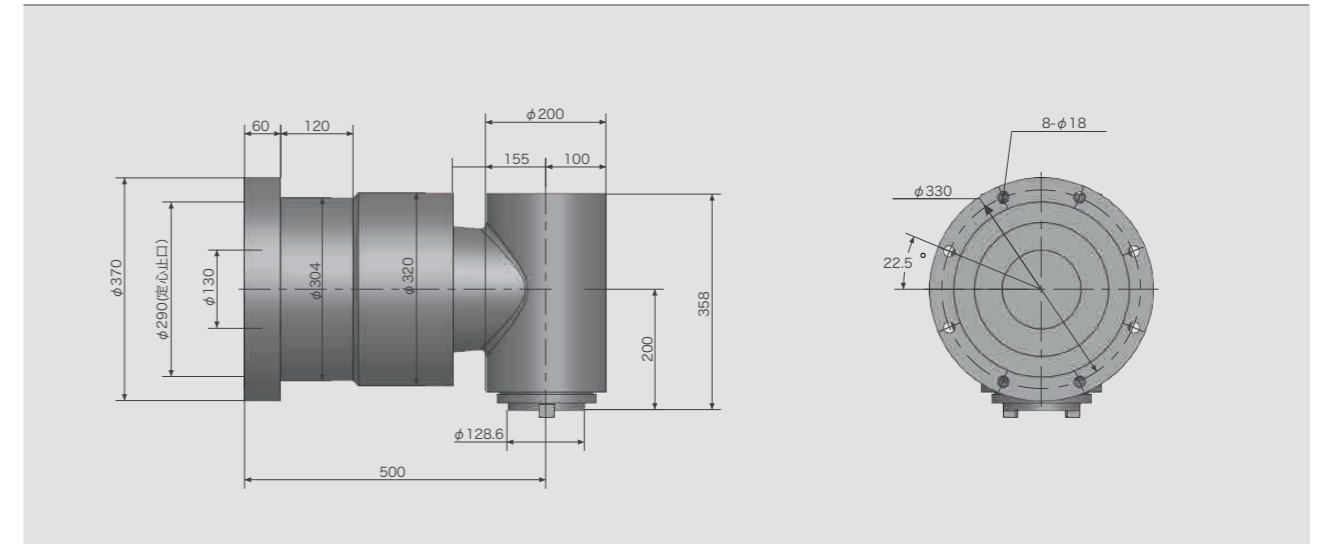
Inspection

Milling Head(optional)

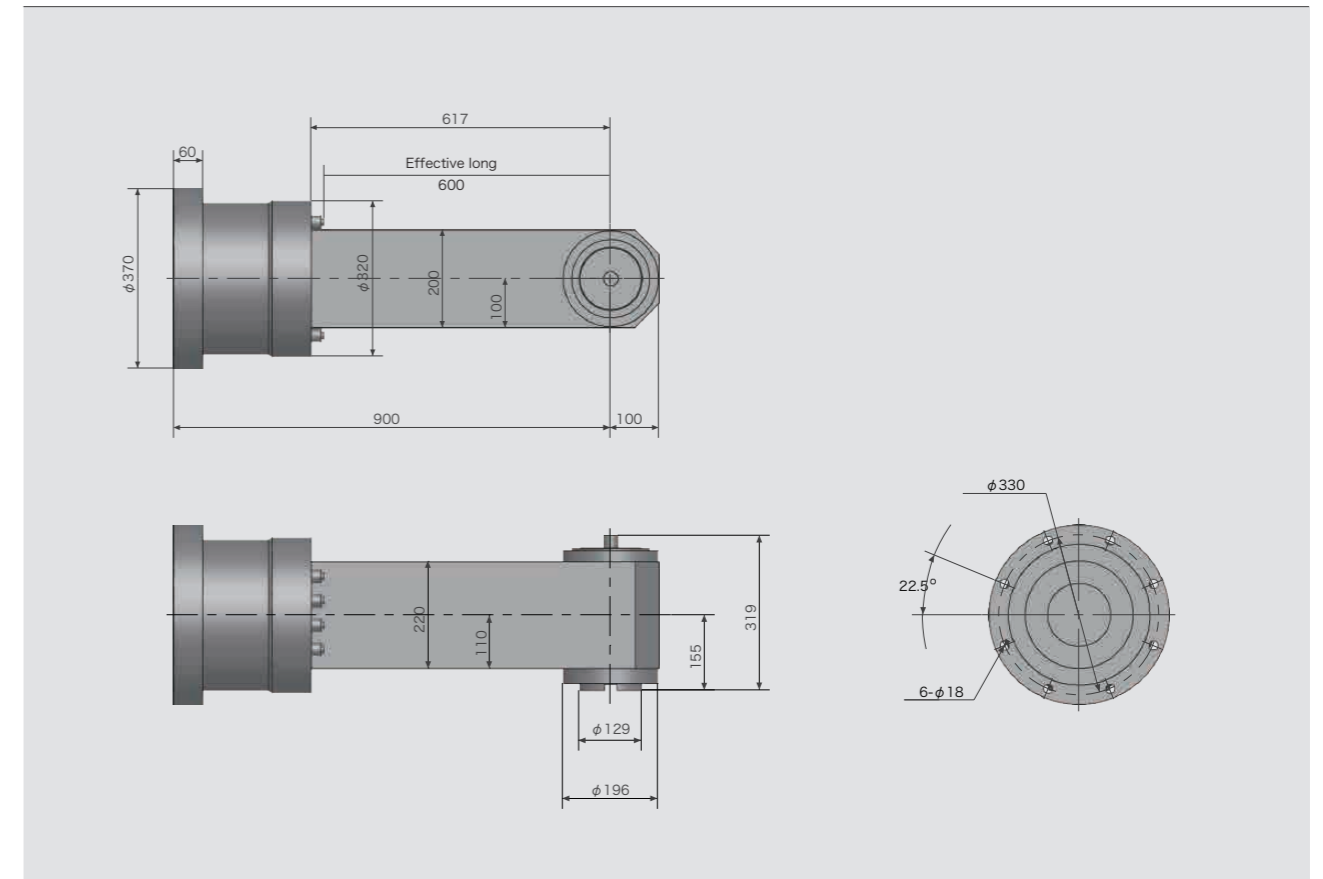


- 01 Geometric accuracy detection
- 02 Laser interferometer accuracy test
- 03 Parallelism detection
- 04 Three-coordinate detection
- 05 Precision cutting test
- 06 Scraping
- 07 Heavy cutting machining test
- 08 hole precision machining test

Right-angle milling head FXT1-P18

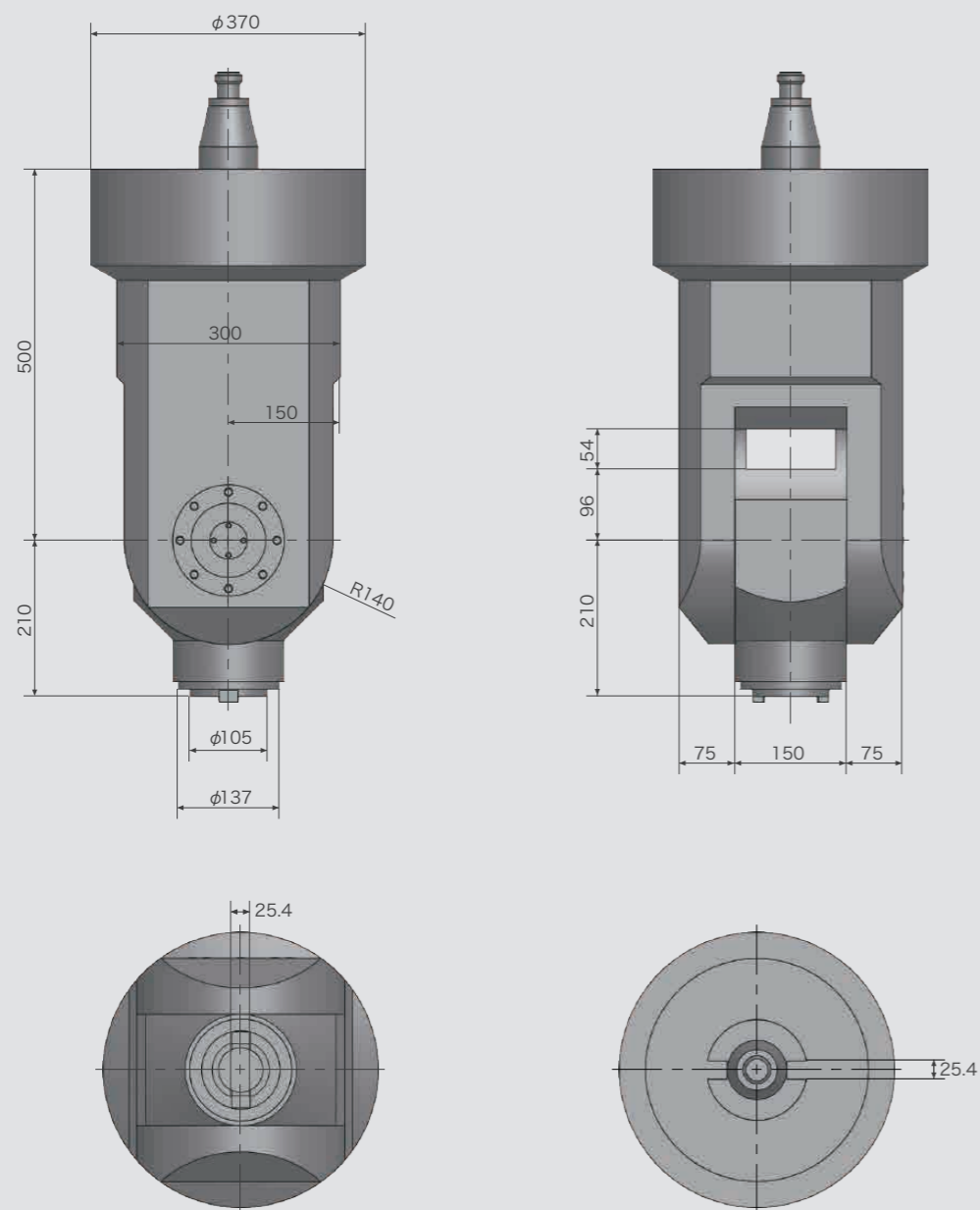


Extention vertical milling head FXT7-P37



Milling Head(optional)

Universal milling head FXT5-P28

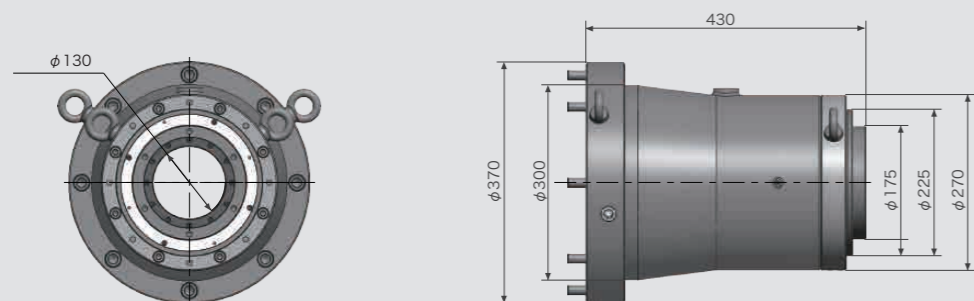


Milling head selection configuration table

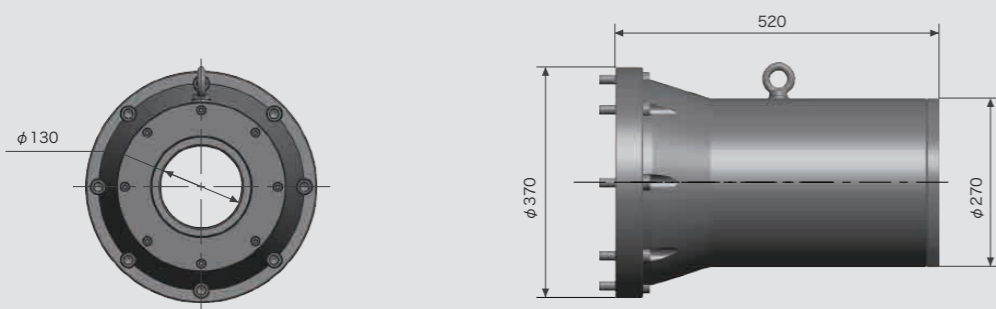
Milling head model	FXT1-P18	FXT7-P37	FXT5-P28
Transmission ratio	1:1	1:1	1:1
Speed (rpm)	2000	1000	1000
Torque (Nm)	1000	1000	1000
Power (kW)	18	22	28
Tool interface	BT 50	BT 50	BT 50
A-axis rotation	/	/	± 120° /Manual swing (turbine worm)
C-axis rotation	Manual swing (turbine worm)		5° x72 automatic indexing
Tool draw	Manual	Manual	Manual
Milling head assembly	Manual	Manual	Manual
PB110H	Option	Option	Option
PB130H	Option	Option	Option
HB110H	Option	Option	Option
...

Spindle Support Sleeve(optional)

HB110H5250



PB130H5250



Spindle support sleeve selection configuration		
Right-angle milling head model	HB110H5250	PB130H5250
Boring shaft hole diameter (c mm)	110	130
Support sleeve stroke length (mm)	400	490
Speed (rpm)	3000	2500
Spindle support sleeve installation	Manual	Manual
PB110H	Option	Option
PB130H	Option	Option
HB110H	Option	Option

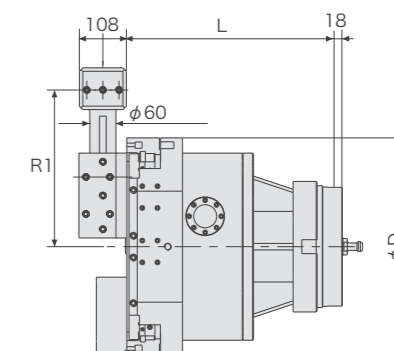
Facing Head(optional)

CNC Facing Head

Neway's facing head selection configuration			
Model	NWM-FH50-01	NWM-FH63-01	Note
Diameter ΦD (mm)	500	630	
Length L	531	531	Recommended
Turning tool radius R1	360	425	
Transmission ratio of spindle stroke and block movement	1:2	1:2	
Max. speed (rpm)	200	150	
Block travel U axis (mm)	130	200	
Feeding rate (mm/min)	1-400	1-400	
Max. working dia (mm)	800	1000	
Tool holder Qty	2	2	
Weight (kg)	272	305	
PB110H	Option		
PB130H	Option	Option	
HB110H	Option		



Neway design and made facing head



Originally imported NC rotary table, which can be used to clamp standard tools or special tools, which can complete single and composite processing.



Can be equipped with coolant system to extend tool life, increase cutting speed and ensure surface processing quality.

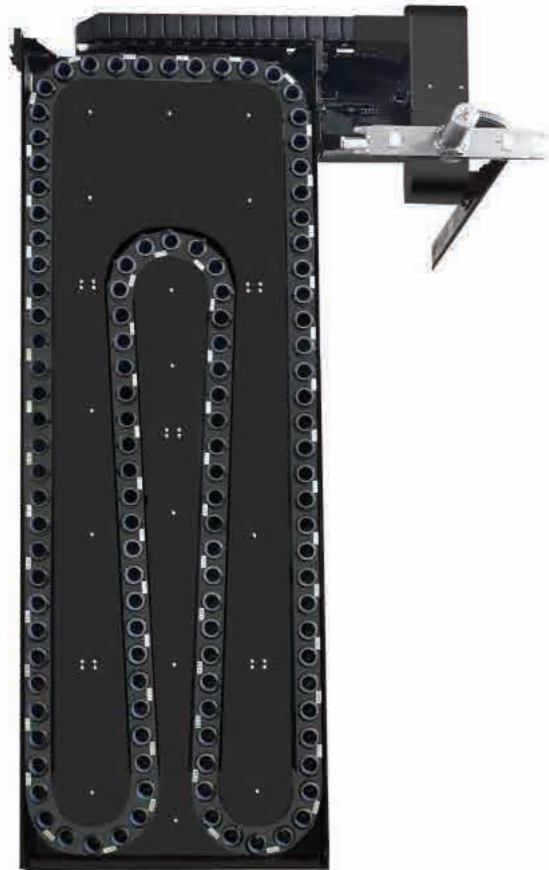


options with balance weight, self-balancing, can realize high-speed processing without obvious vibration.



Tool Magazine(optional)

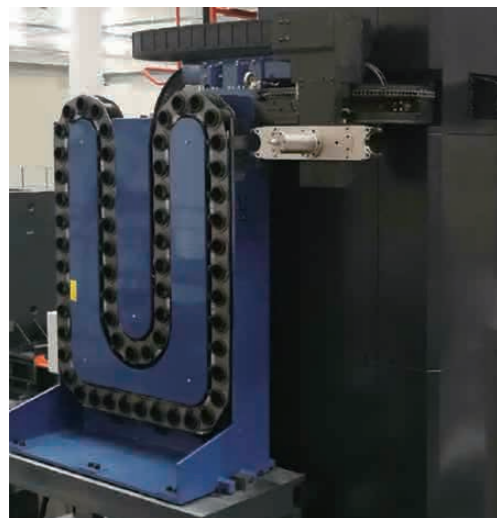
Other Options



Column-type chain magazine

The tool magazine adopts a set of imported professional manufacturers' products with reliable quality and stable performance. The tool magazine can be selected according to user needs.

ATC Tool	Number of tools	24	40	60	80	120
	Tool holder type	MAS403 BT50				
	Pull stud type	MAS403 P50T-1				
	Max. tool diameter/length/weight	Φ125/400/25				
	Max. tool diameter(no adjacent tool)	Φ250				
Model	PB110H	Option	Option	Option	/	/
	PB130H	/	Option	Option	Option	Option



Floor-type chain magazine

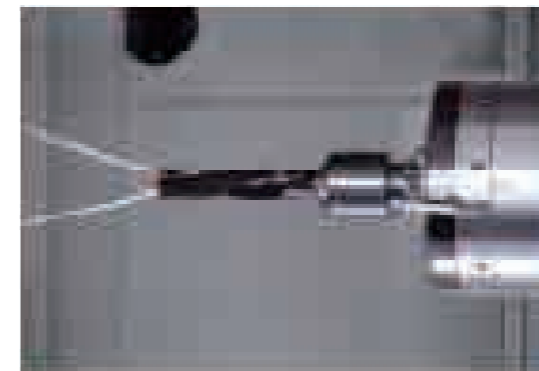
ATC Tool	Number of tools	24	40	60	80	120
	Tool holder type	MAS403 BT50				
	Pull stud type	MAS403 P50T-1				
	Max. tool diameter/length/weight	Φ125/400/25				
	Max. tool diameter(no adjacent tool)	Φ250				
Model	HB110H	Option	Option	/	/	/
	HB110U	Option	Option	/	/	/



01



02



03



04



05

- 01 Deep hole boring bar
- 02 Tool breakage detection device
- 03 Cooling through spindle
- 04 Linear scale
- 05 Chip conveyor