



# Horizontal Machining Center HM/HE SERIES



\* The content of the catalogue is subject to change without notice.

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## Neway Horizontal Machining Centers Meet And Exceed Customer Expectations

Neway's diverse HMC are designed to meet the high class machining needs of the unique and different industries. The high quality and high precision guaranteed by our zero-defect manufacturing processes have won the trust and praise from many customers in the world.

### ■ Wide variety product model

HM/HE series horizontal machining center has rich product types and complete specifications. According to the customer's workpiece size, processing content and automation requirements, the applicable model can be selected to meet the processing needs of different industries.

### ■ Computer Optimized Designed Structure Utilizing FEA

All products have undergone finite element structural analysis during the development process, including static rigidity, dynamic rigidity and thermal deformation analysis, etc. Before prototype trial production, all-round analysis and verification of its structure is carried out to continuously improve product performance.

### ■ High Rigidity, World Class Base, Absorbs Vibration and Maintains Rigidity

Neway's one-piece machine bed with T type layout provides a very solid foundation and utilizes thick wall ribbing to stiffen the inside of the frame, and double-column box over box frame column is designed with excellent anti-bending, anti-deflection and improved torsion resistance.

### ■ Neway Offers Excellent Machine Accuracies

Neway utilizes high precision linear guide roller ways, with pre-tensioned sealed roller packs offering repeated positioning precision to less than 6 microns. Neway's B axis is designed with a heavy duty high precision curvic coupling. Neway rotary repeat positioning precision is less than 2 arc seconds.

### ■ Stability Built-In for Heavy Duty Machining

HM/HE series horizontal machining centers are designed for stable processing; solid basic components, reliable functional components, perfect assembly process, and strict inspection tests. The machines can work in 3 shifts a day, 7 days a week.

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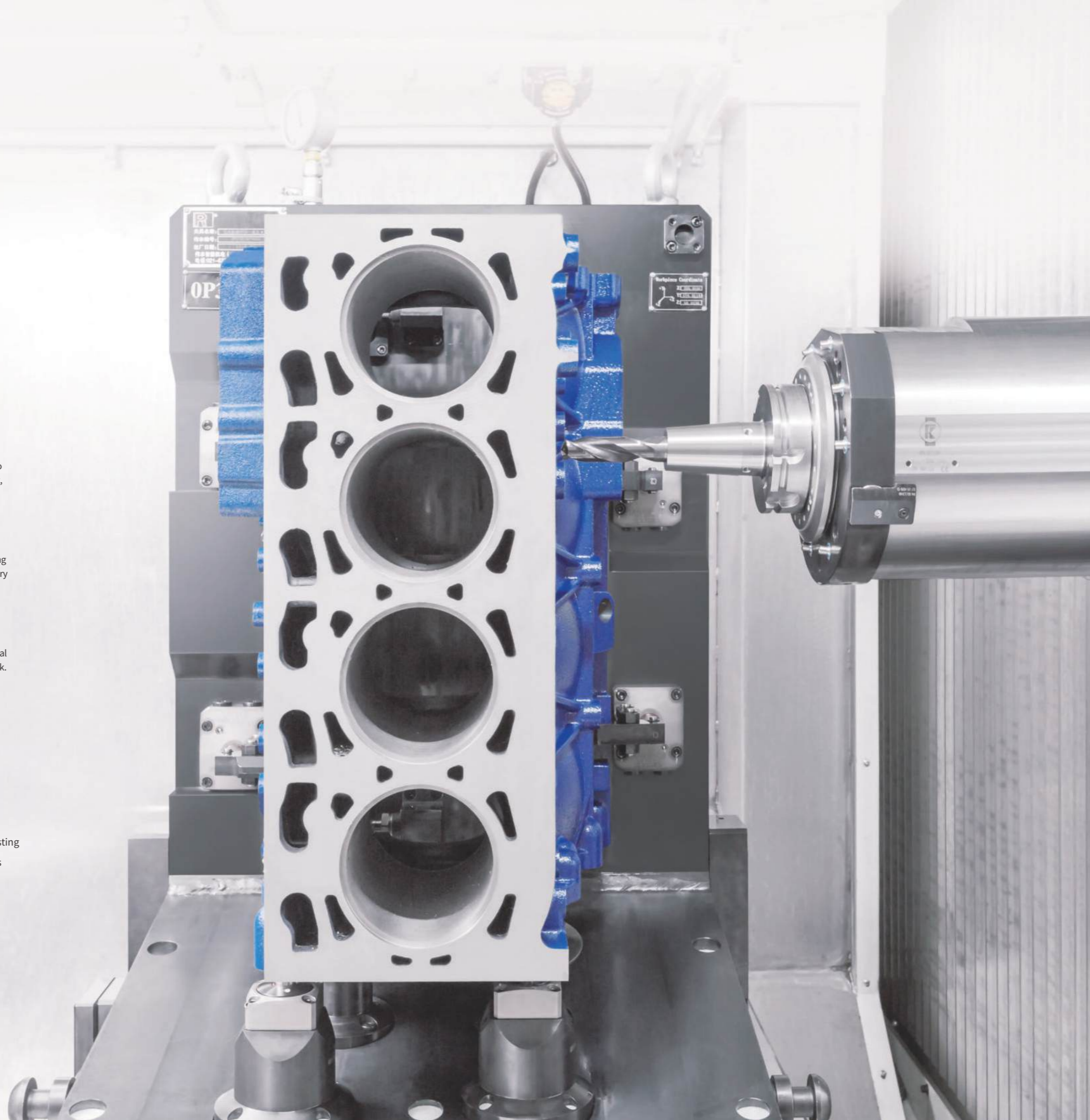
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# 01 World Class Stability

One-piece machine bed castings with high rigidity. FEA structure analysis allows the correct layout of casting. By increasing the rigidity and vibration absorption through the addition of material at critical stress points identified by FEA analysis reporting optimum cutting conditions are insured.

## 1 Highly rigid base parts

One-piece bed structure, thick-walled reinforcing ribs inside the machine base, good rigidity, double-column frame-type column design, good bending and torsion resistance.

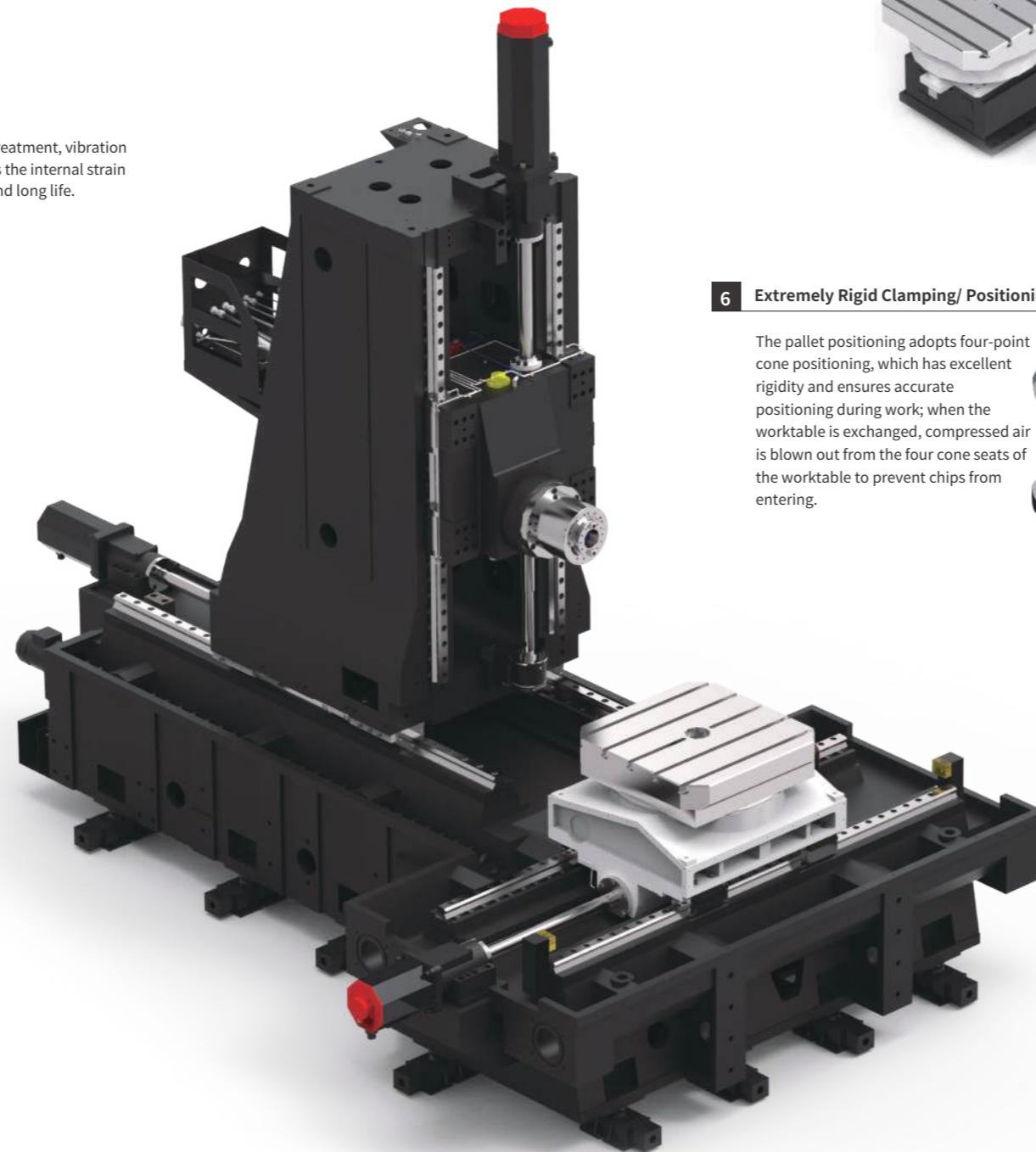
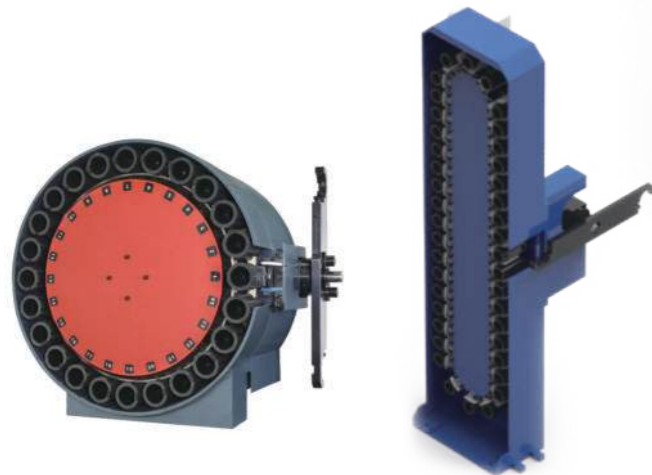
## 2 Multi-Stage Aging Process

Neway applies multiple aging processes, including thermal aging treatment, natural aging treatment, vibration aging treatment and even chemical aging in some cases. Aging properly completely removes the internal strain and stress residual in the casting process. This is meant to ensure the machine's stability and long life.



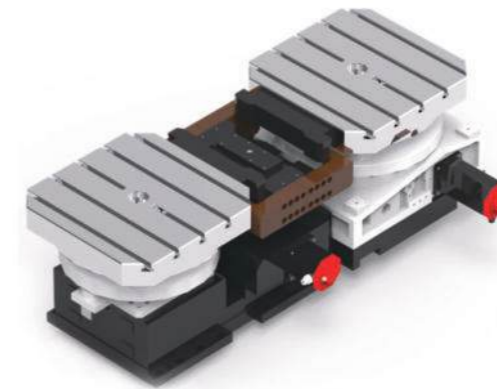
## 3 Automatic Tool Changing System

The cam-driven tool changing device is simple and reliable, different options can be equipped, such as tool identification system, tool damage detection system and spindle power monitoring.



## 4 Automatic Exchange Pallet

Advanced Rotary exchange worktable provides reliable high-speed pallet changing.



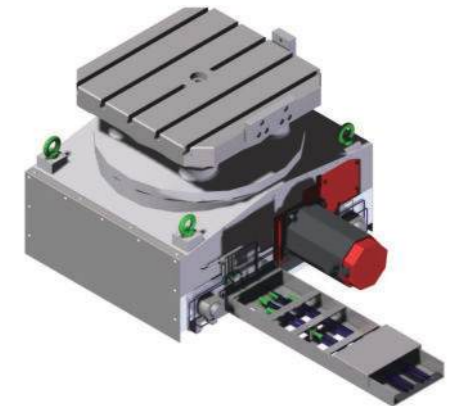
## 6 Extremely Rigid Clamping/ Positioning System

The pallet positioning adopts four-point cone positioning, which has excellent rigidity and ensures accurate positioning during work; when the worktable is exchanged, compressed air is blown out from the four cone seats of the worktable to prevent chips from entering.



## 5 High Precision Rotary Table

The shaft of the rotary table adopts large embedded double radial preload bearings to enhance the cutting resistance in the vertical and horizontal directions and ensure the rotation accuracy of the table surface. The two-section worm is adopted, the worm and the worm wheel are contact through arc surface, which is 5 times bigger contact area than the traditional "complex double lead", and the precision and durability are better.



## 7 Spindle Speed Changing System

Standard with German ZF gear box, utilizes a two-speed stepless gear change. This gear box allows rock crushing low-speed high torque but also high speed cutting, for a seamless finish pass. The noise control, transmission efficiency and reliability are far better than traditional structures used by other factories.



## 02 High-Speed Cutting with Rigidity

High-speed cutting can obtain higher workpiece surface quality, and high-speed feed system can achieve higher workpiece processing efficiency.

### 1 High-Speed Rapid Traverse

Some high-speed HMC models with 60m/min rapid travel speed, 0-60m accelerate time 0.2s, greatly improving acceleration and deceleration, effectively shortening the non-cutting time and improving the overall machining efficiency and “keeping the machine in the cut” .

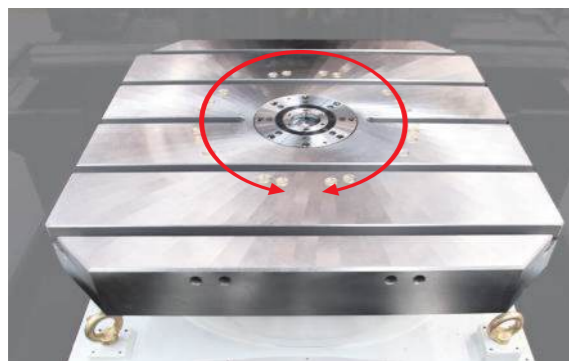
### 2 High-Speed Spindle

HE50D is equipped with 12000rpm built-in spindle as standard, 16000rpm and 20000rpm built-in spindles are optional;  
HE63D/80D is equipped with 10,000rpm built-in spindle as standard, and high torque mechanical spindle is optional.



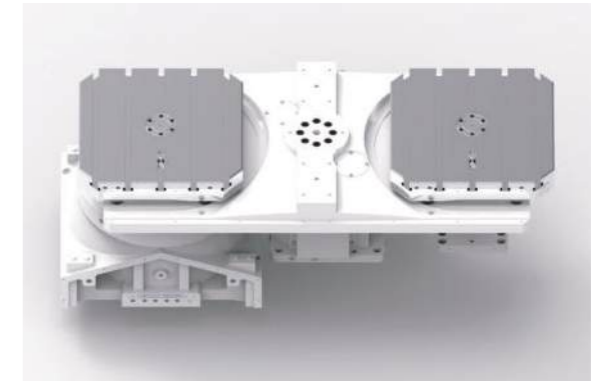
### 3 High-Speed Rotary Table

The 180° indexing time of the rotary table is only 3.5s, which greatly improves the processing efficiency.



### 4 High-Speed APC

Neway offers Advanced Rotary Pallet shuttle type worktables with reliable exchanging at high speed allowing for continued uninterrupted cutting.



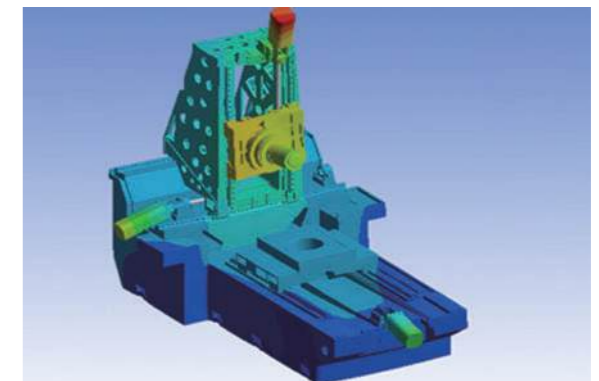
### 5 High-Speed ATC

Neway cam type ATC insures easy reliable operation. By changing the tool at high speed, it shortens the non-cutting time and increases spindle efficiency. The modular tool change system allows the tool magazine capacity can be expanded to 60, 80, 120, according to user requirements. The tool identification system, tool wear detection, and spindle load monitoring can be equipped as options.



### 6 Lightweight Dynamic Moving Parts

Neway utilizes reduced weight dynamic moving parts in their design to improve ACC and DECC providing better machine dynamic response whenever accelerating or decelerating, most suitable for high-speed machining.

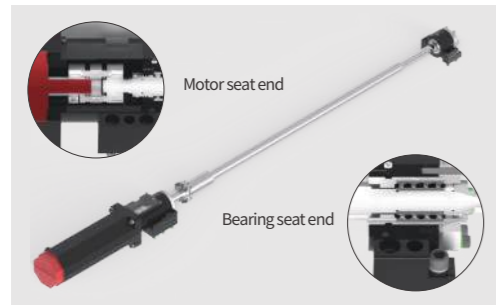


## 03 High Precision

Neway utilizes a Patented drive structure design, selecting field tested and proven high-precision functional components; each process is carefully crafted and tested to ensure the accuracy of the machine.

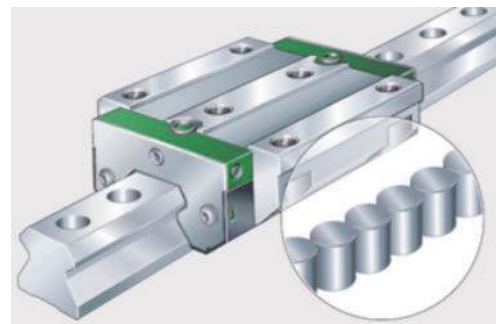
### 1 Patent Drive System

Neway patented The three-axis design adopting imported high-speed silent ball screw, and the support bearings at both ends are imported ball screw special bearings. The installation method adopts Neway's unique invention patent: a fully fixed screw pre-tensioning mechanism, which effectively offsets the thermal elongation of the ball crew during the high-speed movement of the machine tool, and achieves the purpose of providing excellent repeat positioning accuracy with the minimum thermal elongation.



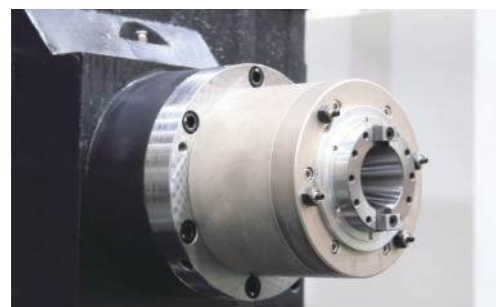
### 3 Precision Linear Guideway

All axes utilize high-precision linear guideways with pre-tensioned and pre-sealing slides and roller packs for excellent precision retention.



### 5 Spindle Systems

The high-precision spindle system with spindle end runout  $\leq 3\mu$  is equipped with a highprecision constant temperature cooling system to effectively suppress the temperature rise of the spindle and ensure machining accuracy.



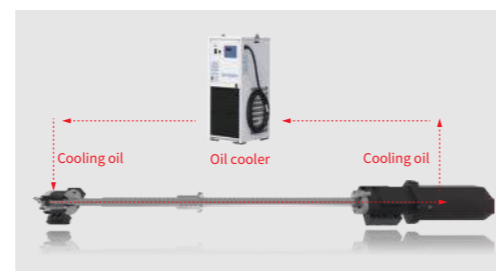
### 2 High Precision APC

Neway horizontal machines feature a standard rotary table equipped for positioning the ratchet ( $1^\circ \times 360$ ). The positioning accuracy of the rotary table is  $\leq 6''$ , and the repeat positioning accuracy is  $\leq 2$ arc seconds. The CNC table offers an option with continuous indexing ( $0.001^\circ$ ) and can be selected if needed. This option allows for four-axis simultaneous machining and contouring.



### 4 Chilled Ball Screws Available

Three-axis hollow cooling lead screw is optional, the lead screw adopts a hollow design, and low-temperature cooling oil is passed through the middle, which can effectively control the temperature rise and reduce the accuracy variety of the machine tool caused by the temperature rise of the ball screw and bearing during high-speed or long-term operation.



### 6 Hand Scraping of all Contact Surfaces Ensures Matched Precision

Important contact surfaces are carefully hand scraped to achieve maximum assembly accuracy, machine rigidity, lubrication as needed and balanced load.



## 04 Research&Development

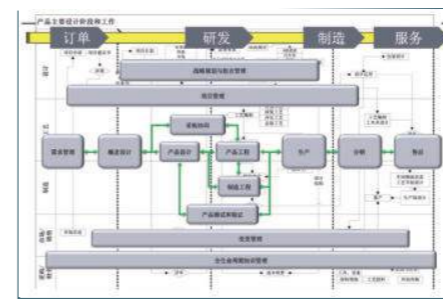
Neway has 7 R&D departments, 150+ R&D personnel, with an annual design capability of 20+ new products per year. Neway's basic field R&D projects 10+, utilize PLM full lifecycle management system to improve R&D efficiency.

### Neway continuous improvement field R&D projects include a focus on:

- Machine tool static rigidity
- Machine Vibration and Dynamic rigidity
- Machine tool spectrum analysis
- FEA of the whole machine and components
- Thermal deformation control of the whole machine and components
- Compensation Method for Spindle Temperature Rise Thermal Deformation
- High-Speed Chilled Ball Screw Cooling System
- Intelligent Development and Application of CNC Machine Tools
- High-pressure chip breaking test and application research of protective seal

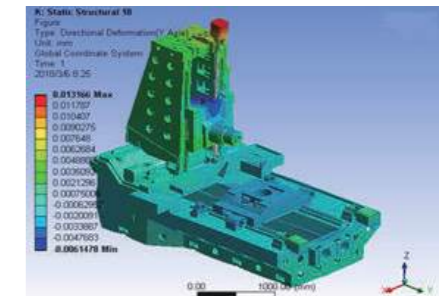
### 1 PLM Full Life Cycle management system

Neway Improved R&D efficiency with PLM's full lifecycle management system.



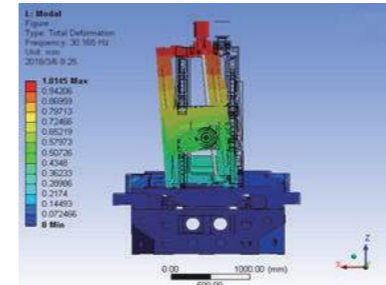
### 2 Finite Element Analysis

All basic parts are subjected to finite element analysis, optimized structural layout, cast with high quality cast iron material, high stability, and good vibration absorption.



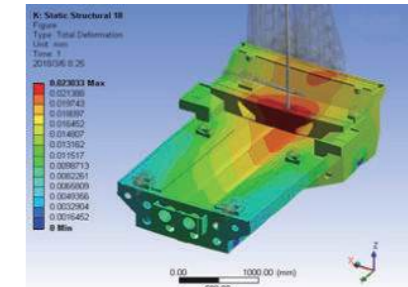
### 3 Dynamic Machine Modal Analysis

Improve the natural frequency and vibration resistance of the machine through dynamic performance analysis.



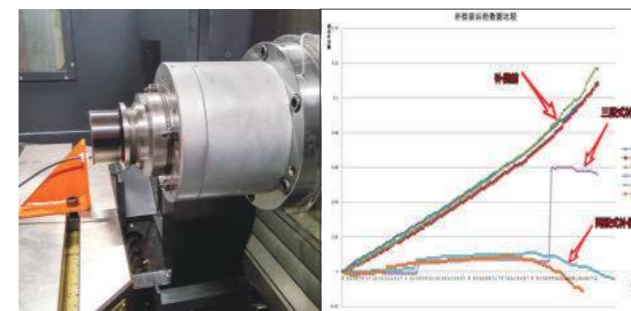
### 4 Structural Thermal Analysis of All Componentry

Through the thermal analysis of important components, specific measures are taken to reduce the thermal deformation of the whole machine.



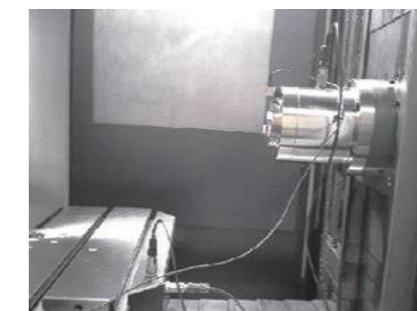
### 5 Temperature Rise Research

Through the temperature rise research, the machining accuracy of the machine tool and the service life of the machine tool can be effectively improved, and the precision error caused by the temperature growth can be significantly reduced.



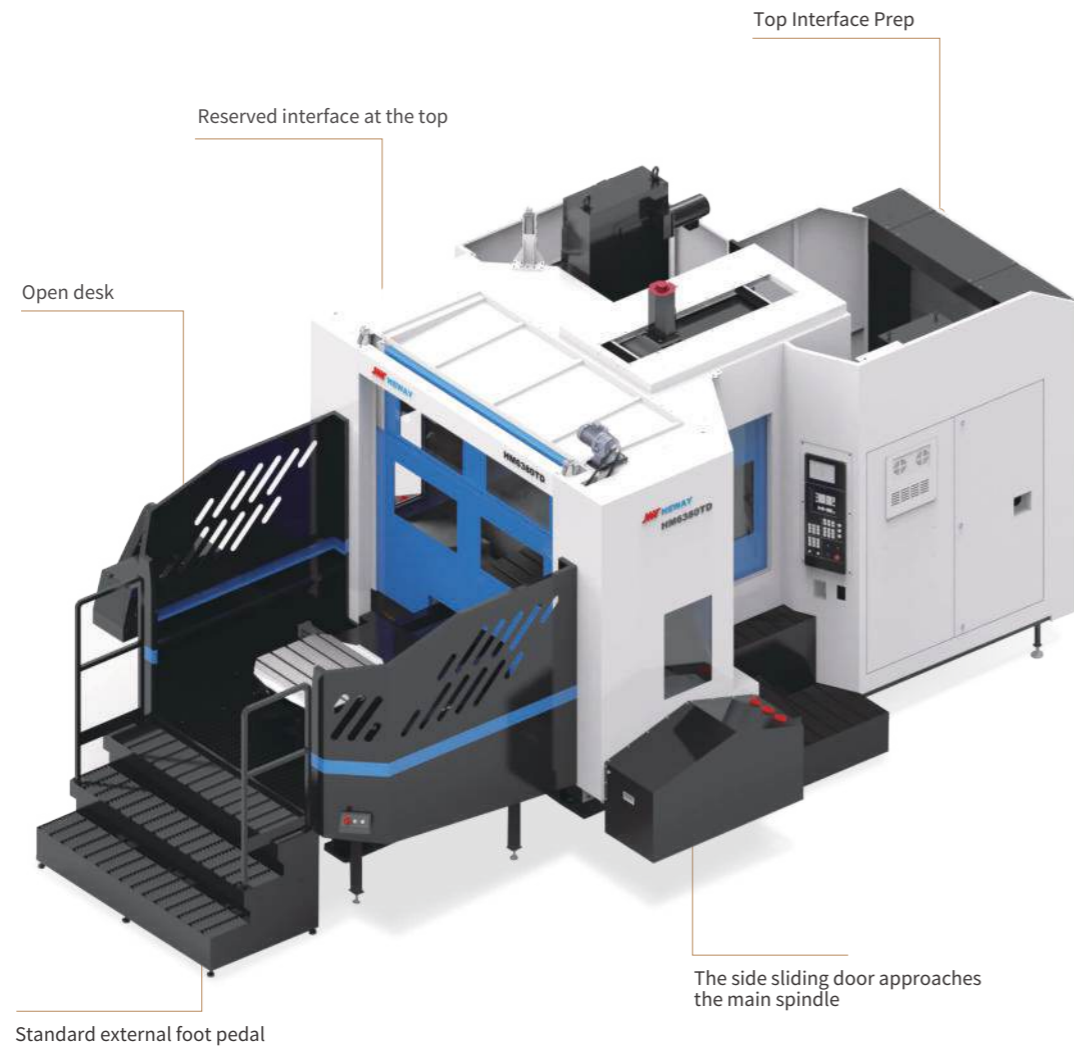
### 6 Vibration Research

Vibration analysis and Harmonic analysis of the main drive system can provide effective structural improvements and process improvement references, reducing the impact of vibration on machine life while improving machining accuracies.



## 05 Operator/User-Friendly Design

Neway machines are based on user-friendly ergonomics. Each one carefully designed and continuously optimized, to be user-friendly and easy to operate, easy to adjust and maintain.



- Easy slide front door facilitates easy manual tool change and tool measurement.
- Standard External Pedal is easy to operate, safe and reliable.
- Top Interface Reserved a workpiece measurement system, oil mist collection flush interface, are all to afford convenient function additions which improve the setup.
- Rear maintenance is easy with a large size maintenance access door at the back of the machine for easy maintenance.
- The centralized arrangement of pneumatic lubrication: centralized way lubrication is effective and easy to check and fill for long life and easy maintenance.
- Open cooling system layout for easy maintenance.
- Separate tool magazine protection: separate tool magazine protection, safe and reliable, easy to maintain.
- Open exchange mechanism: workpiece clamping, safe and convenient.

## 06 Industry Application



### Cylinder Block

Industry	Engine	Processing time	7min
Material	HT250	Processing site	Face milling, Hole boring, Hole drilling, Tapping
Feature	High-speed/High-precision/High-rigidity	Processing machine	HE63S



### Engine

Industry	Cylinder top	Processing time	7min
Material	HT250	Processing site	Face milling, Hole boring, Hole drilling, Tapping
Feature	High-speed/High-precision/High-rigidity	Processing machine	HE63S



### Flywheel Housing

Industry	Engine	Processing time	16min
Material	HT200	Processing site	Face milling, Hole boring, Hole drilling, Tapping, Reaming
Feature	High-precision	Processing machine	HM50TSA/HM63TS



### Hydraulic Cylinder

Industry	Medical Instruments	Processing time	12min
Material	Aluminum	Processing site	Face milling, Hole boring, Hole drilling, Tapping, Reaming
Feature	High-speed/High-precision	Processing machine	HE50D



### Rabet

Industry	Steam turbine	Processing time	15min
Material	Forged steel	Processing site	Face milling, Hole boring, Hole drilling, Tapping, Reaming
Feature	High-rigidity	Processing machine	HM80TS



### Valve Body

Industry	Valve	Processing time	15min
Material	Forged steel	Processing site	Face milling, Hole boring, Hole drilling, Tapping, Reaming
Feature	High-rigidity	Processing machine	HM63TS

Attention: The above data are all from actual use cases. When the cutting conditions and environmental conditions are different, the above-listed data may not be achieved. Care must be taken to match feeds and speeds to optimize results.

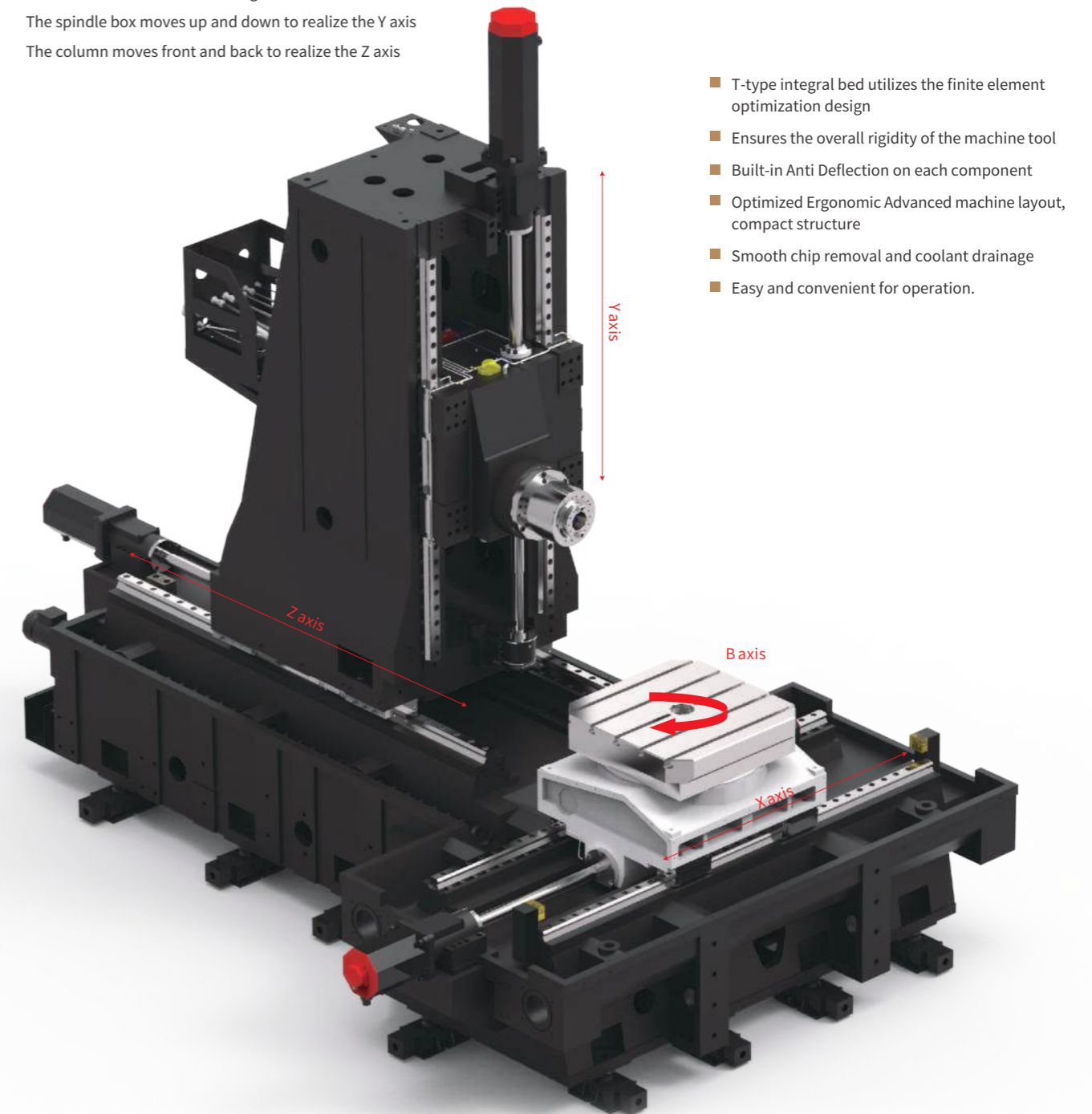
## HM series- Heavy Cutting Horizontal Machining Center

- Neway's T Series main structure and base casting of this series is a T-shaped, full-moving column structure similar to much more expensive highend Japanese models. It features a large span design with high rigidity, and high strength built right into the casting.
- FEA optimized casting with an M-shaped annular reinforce rib layout greatly increases the overall strength, rigidity, torsion and bending resistance of the machine tool. This casting is very suitable for heavy cutting.
- With automatic pallet changer and auto tool changes during machining, they can perform four-face machining in one setup to complete various processes such as milling, drilling, reaming, boring, reaming, tapping, etc.
- Integrated machine layout insures components are optimized to handle stress, insure for smooth chip removal and drainage and easy to maintain. The operator has easy access to the workpiece and the spindle when touching off or for in-process inspection.
- Modern machine tools and control concepts, compact structure design, ensure high efficiency and high precision processing requirements for single piece or small and medium batch products;
- They are suitable for complex processing of automotive engines, gearbox housings, construction machinery parts, steam turbines and other industrial parts.



## HM50T/HM63T/HM6380T/HM100T/HM125T Classic T Series Models

The work table moves left and right to realize the X axis  
The spindle box moves up and down to realize the Y axis  
The column moves front and back to realize the Z axis





**Column**

**Double-Column Box Frame Column Design**

- The column adopts double-column frame structure design, which greatly enhances the torsion and bending resistance of the column.
- Built-in longitudinal and transverse ring ribs, afford uniform thermal deformation, heat dissipation and increases overall machine tool rigidity and long machine life
- All structural components of the machine tool are tested and analyzed for static and dynamic characteristics and then optimized using finite element analysis (FEA) to ensure the best performance of the machine under dynamic and static conditions.

**Machine Bed**

**T-Type Large Span Machine Bed**

- T-type structure has a large-span machine bed design, and the base has large load bearing capacity and good rigidity for Large Heavy Parts Processing.
- The case adopts M-shaped reinforce mesh structure, and the overall casting is processed and formed at one time, with stable performance, strong rigidity and anti-vibration ability;
- Utilizes Static and Dynamic characteristics defined by the use of Finite Element Analysis, uniform and reliable force, strong rigidity, and good vibration resistance.
- X-axis guide rails of some models are with 6-slide block, which has larger load carrying capacities;
- Newway' s machine bed is designed with a four spiral chip conveyor to remove chips in a timely, rapid and effective manner.
- The inclined design of the large surface of the bed ensures smoother flow of cutting fluid.

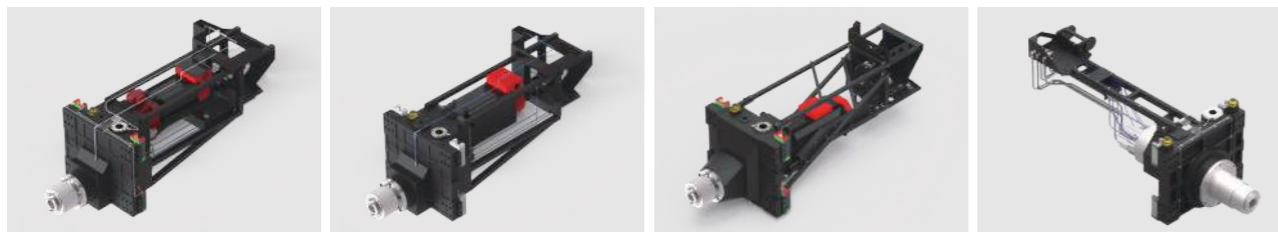


**Spindle Transmission System**

High-speed and High-Rigidity Spindle Chiller system insures minimized temperature rise and thermal deformation.

- Easy to maintain, modular spindle unit;
- Standard high torque spindle to meet all kinds of roughing or finishing;
- Optional high-speed spindles, facing head, coolant through spindle.

Spindle with ZF gear box: 4500rpm/22kW/770Nm  
 Spindle with ZF gear box: 4500rpm/18.5kW/647Nm  
 Belt drive Spindle: 6000rpm/18.5kW/307Nm  
 Belt drive spindle: 10000rpm/15kW/95.4 Nm

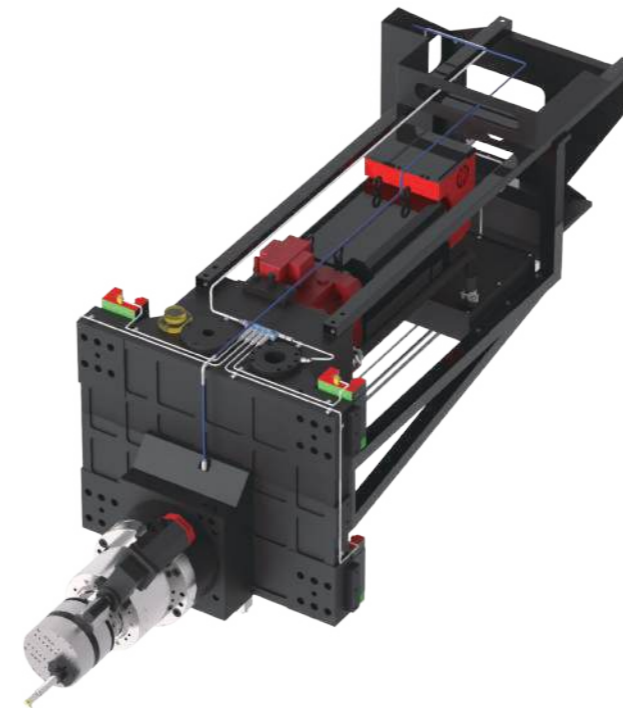


Spindle with ZF gear box

Belt drive  
Transmission ratio 1:1

Direct drive spindle

Electric spindle



**CNC Facing Head**

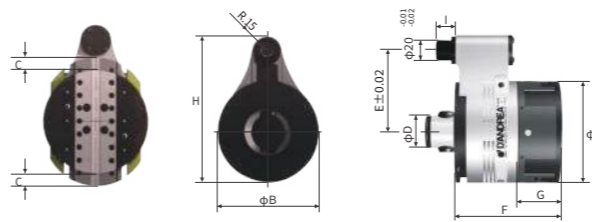
TA-CENTER can hold Standard or Non-Standard Tools for single and composite machining. Such as Internal and External Turning, Taper and Step Hole Boring, Concave and Convex Corner Machining, Groove Machining, Cylindrical and Tapered Pipe Threading, Rotary plane, Complex surface, etc. This advanced facing head not only reduces the number of clamping required but it shortens cycle times while optimizing machining accuracy.



The coolant is sprayed from two adjustable nozzles on the side of the slide plate through the taper handle and the rotating body of the flat disk. This significant advantage extends tool life, increases cutting speeds and maintains surface quality.



The facing head is equipped with two counter weights (1), which are automatically balanced by the opposite movement of the slide plate (2), so that high-speed machining can be realized without obvious vibration.



Item	Unit	TA-C 80	TA-C 100	TA-C 125	TA-C 160	TA-C 200
φA	mm	80	100	125	160	200
φB	mm	80.5	100.5		160.5	
C radial trip	mm	±10	±12	±17	±25	±32.5
φD	mm	(MHD'40)25 <sup>-0.004</sup> <sub>-0.006</sub>	(MHD'50)32 <sup>-0.005</sup> <sub>-0.008</sub>		(MHD'80)42 <sup>-0.005</sup> <sub>-0.008</sub>	
E	mm	65/80	80/110		110	
F	mm	80	100	104	136	
G	mm	32.5	40.5	44.5	56	
H	mm	120/135	145/175		205	
I	mm	17	19		19	
φL	mm	8-62	10-72	10-81	20-109	20-124
M	mm	60	75		125	
φN	mm	62-102	72-122	63-131	103-203	88-218
O	mm	80	100		160	
φP	mm	112-160	122-200	131-250	203-320	218-400
Q	mm	20.5	25.5		38.5	
Max. feeding speed	mm/min	1÷500		1÷500		1÷500
Speed	rpm	2200	2000	1800	1600	1400
Weight (without taper shank)	kg	2.9	4.8	6.5	16.8	21.4
Radial force	daN	100	150		250	
Torque	N.m	200	400		800	
Boring precision		H7		H7		H7
Max cutting force(C40 steel)	mm <sup>2</sup>	0,5	0,75	0,85		1
Roughness	Ra	0,8-1,2		0,8-1,2		0,8-1,2

**ATC**

The tool magazines are provided by world class supplier. They are with reliable quality and stable performance. The tool magazine capacity can be extended to 40, 60, 90, 120..... according to customer's requirements.

Item	CAM	
	HM50TSA/HM63TEA	HM63TS/TD HM6380TD
Tools number	24/30 (standard)	40(standard)
	40/60/90(option)	40/60/90(option)
Max. tool diameter	φ120/φ112mm	φ125mm(continuous)
	φ250mm (Adjacent without tool)	φ250mm (Adjacent without tool)
Max.tool length	400/500mm	400mm
Max.tool weight	20/25kg	25kg
Tool change time T-T	3.8s	4.75s

Item	Cam	Hydraulic
	HM80TS/TD/TEA HM100TS/TD HM8080TD	HM100TL HM125TS/TD/TBS/TBD
Tools number	40(standard)	40(standard)
	60/90(option)	90/120(option)
Max. tool diameter	φ125mm(continuous)	φ125mm(continuous)
	φ250mm (Adjacent without tool)	φ250mm (Adjacent without tool)
Max.tool length	400mm	600mm
Max.tool weight	25kg	35kg
Tool change time T-T	4.75s	10s



HSK



ISO

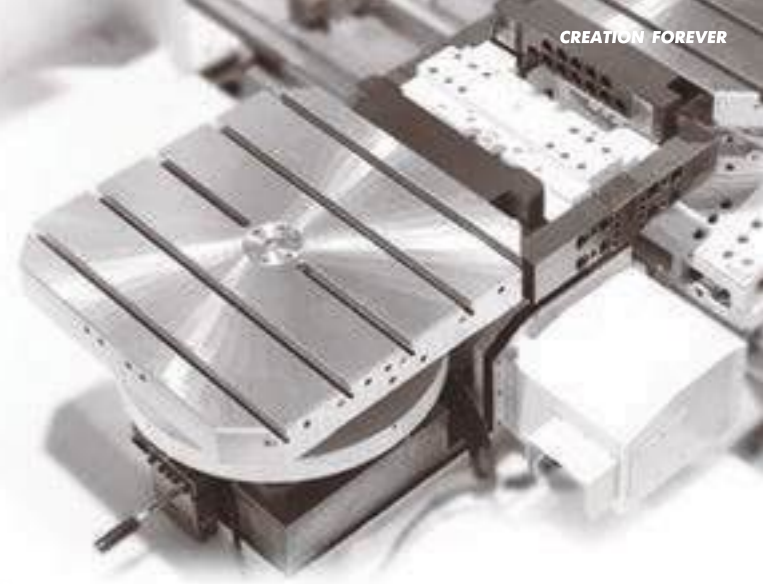


BT

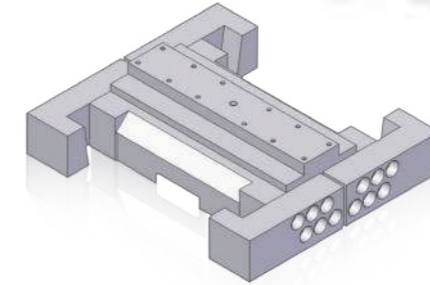
**Pallet Exchanging System**

**Hook type exchange pallet**

The exchange pallet system adopts the structure of hook plate lifting, and then rotating exchange, which works stably and reliably, and the exchange speed is high. At the same time, according to the needs of customers, the oil circuit interface of the fixture can be provided to facilitate the installation of hydraulic fixtures. This structure is suitable for HM63TD/HM80TD/HM100TD models.



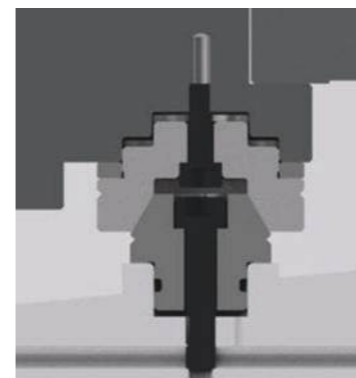
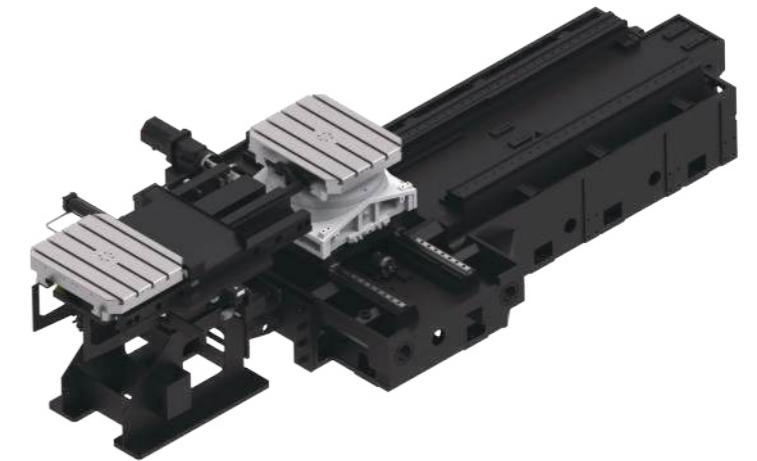
The pallet positioning adopts four-point cone positioning, which is excellent in rigidity, ensuring accurate positioning during work. When the table is exchanged, the four cones on the table blow out compressed air to prevent chips from entering.



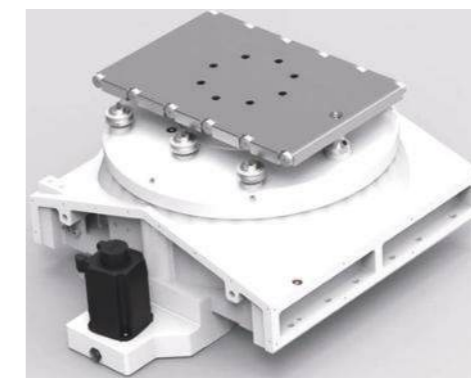
Neway's exchange arm offers fast exchange speed with a stable and reliable exchange process.

**Tray type rotary exchange table**

The exchange mechanism is a structure in which the B-axis table is pulled flat above the APC exchange table by hooks, and then rotated and exchanged. This structure has high stability and good precision retention. This structure is suitable for HM6380TD/HM8080TD.



The bottom of the table adopts 6 cone positioning, simple structure, reliable positioning.



The locking of the table is achieved by the hydraulic cylinder of the B axis turntable driving the pressure plate at the top, with large locking force and good stability.

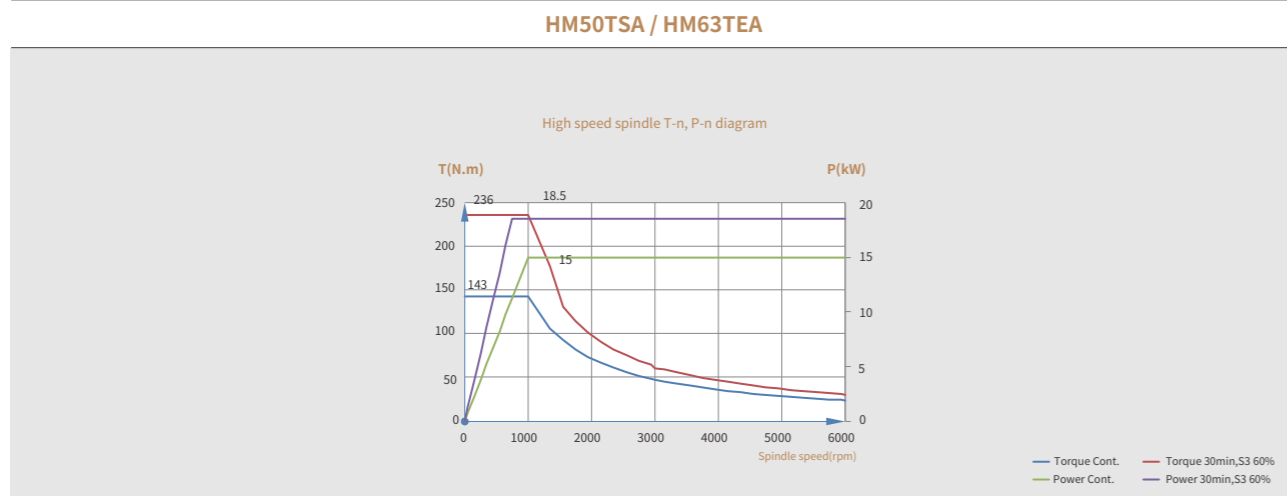
Machining Capacity Table

HM63TD/HM6380TD (material 45#)									
<b>Face milling tool</b>									
Item	Tool diameter D(mm)	Tool teeth	Cutting depth Dp(mm)	Cutting width Ae(mm)	Linear velocity (m/min)	Feed per tooth Fz(mm/z)	Spindle speed S(RPM)	Cutting feed F(mm/min)	Metal removal rate cm <sup>3</sup> /min
Milling surface	100	8	5	80	160	0.2	500	800	325
	160	12	4	120	140	0.2	280	670	310
<b>U drill</b>									
Item	Tool diameter D(mm)	Tool teeth	Cutting depth Dp(mm)	Cutting width Ae(mm)	Linear velocity (m/min)	Feed per tooth Fz(mm/z)	Spindle speed S(RPM)	Cutting feed F(mm/min)	
Drilling	60	1	100	/	150	0.1	800	80	
<b>Tapping</b>									
Item	Tool diameter D(mm)	Cutter teeth	Cutting depth Dp(mm)	Cutting width Ae(mm)	Linear velocity (m/min)	Feed per tooth Fz(mm/z)	Spindle speed S(RPM)	Cutting feed F(mm/min)	
tapping	M48	1	50	/	10	5	70	350	

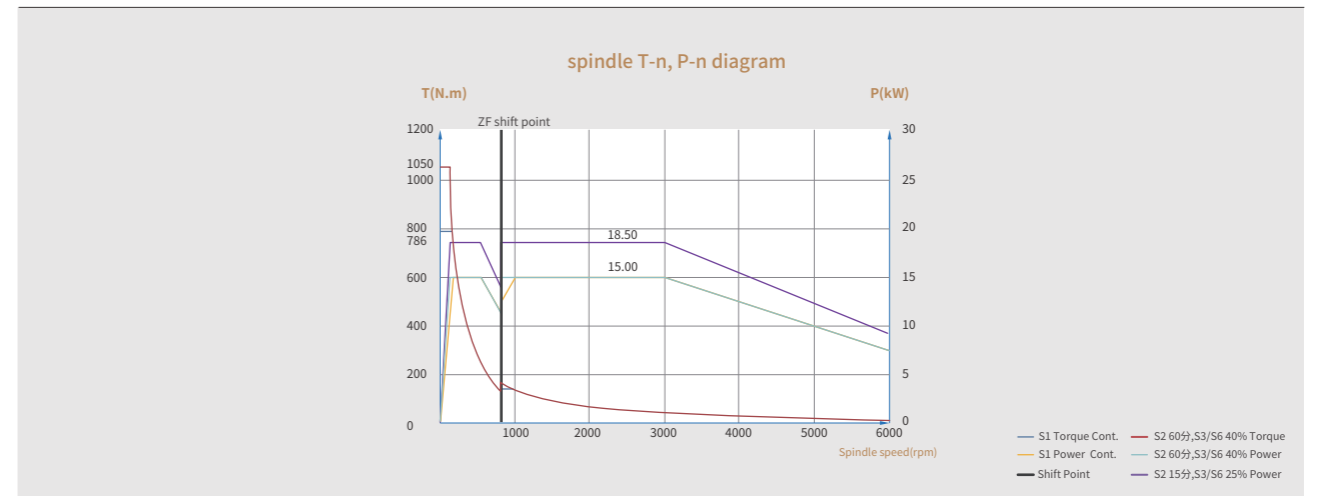
Attention: The above data are all from actual use cases. When the cutting conditions and environmental conditions are different, the above-listed data may not be achieved. Care must be taken to match feeds and speeds to optimize results.

Spindle Power Torque Diagram

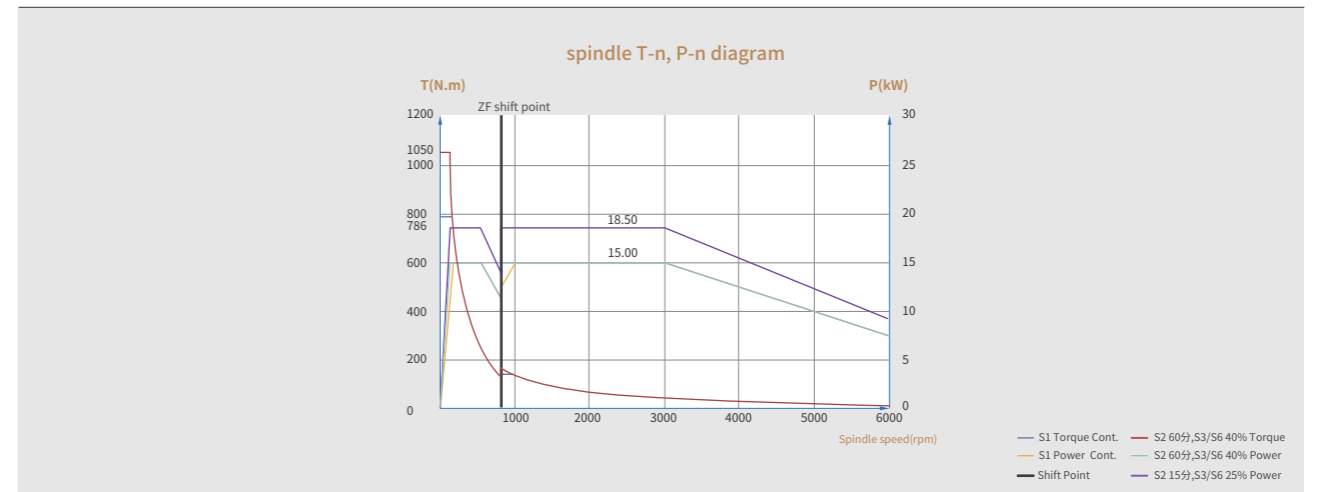
(Unit: mm)



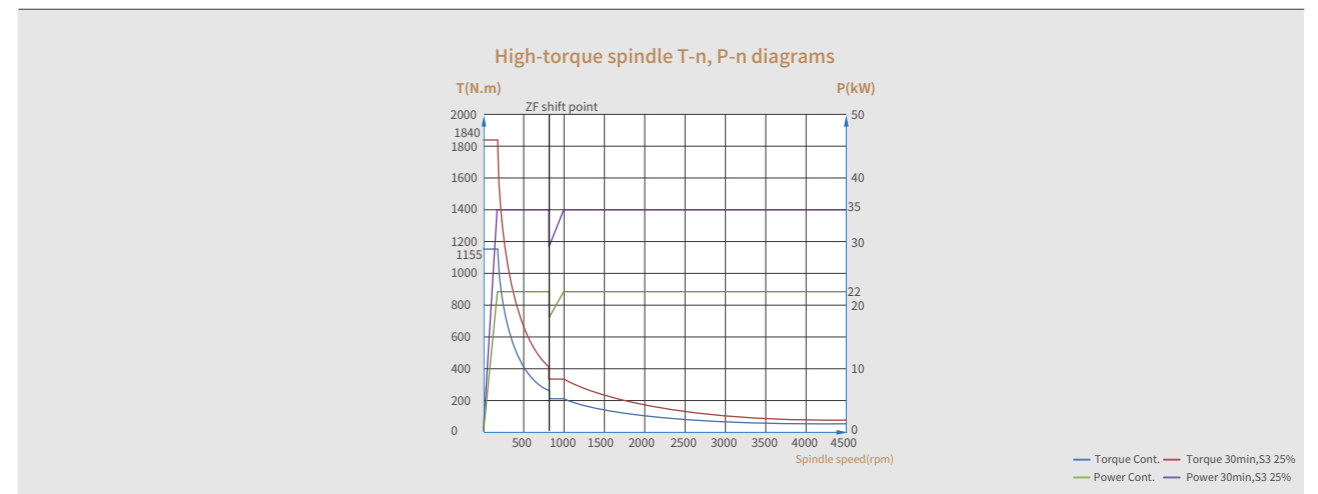
**HM63TS / HM63TD / HM6380TD**



**HM80TS / HM80TD / HM80TEA/HM100TS / HM100TD / HM8080TD**



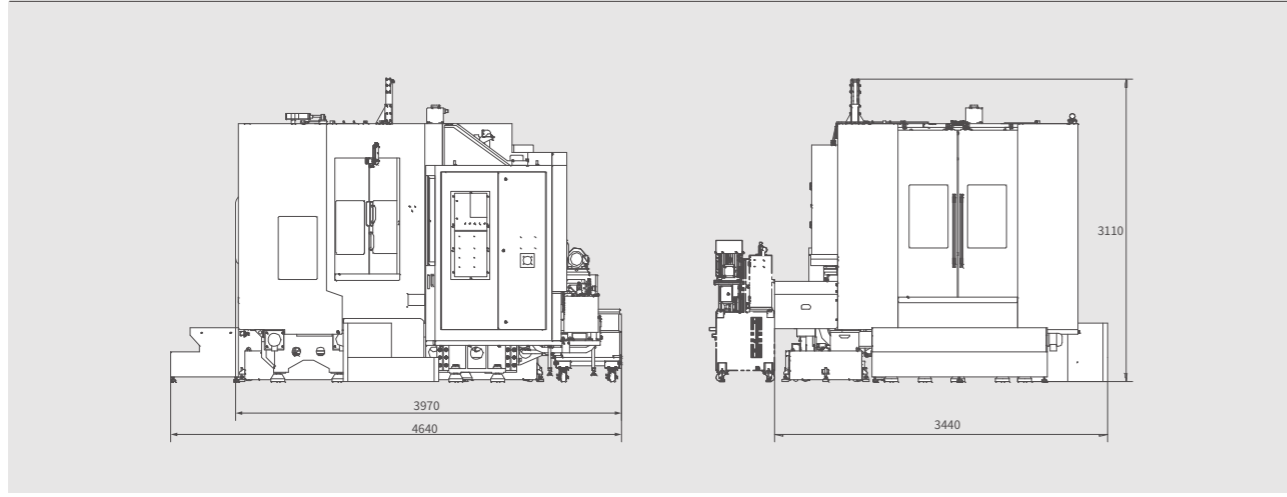
**HM125TS / HM125TD / HM125TBS / HM125TBD / HM100TL**



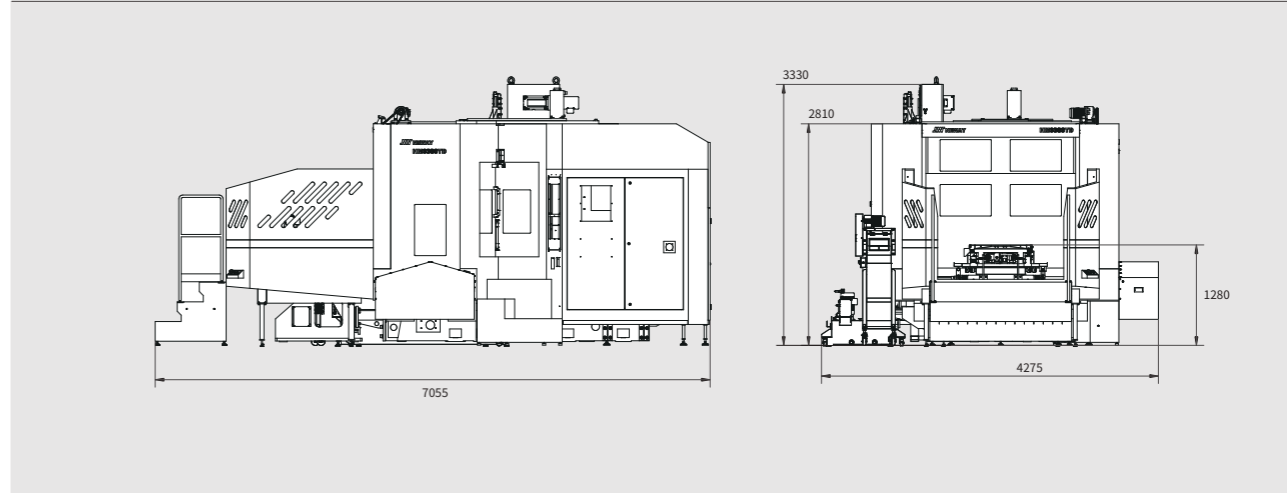
External Dimensions

(Unit: mm)

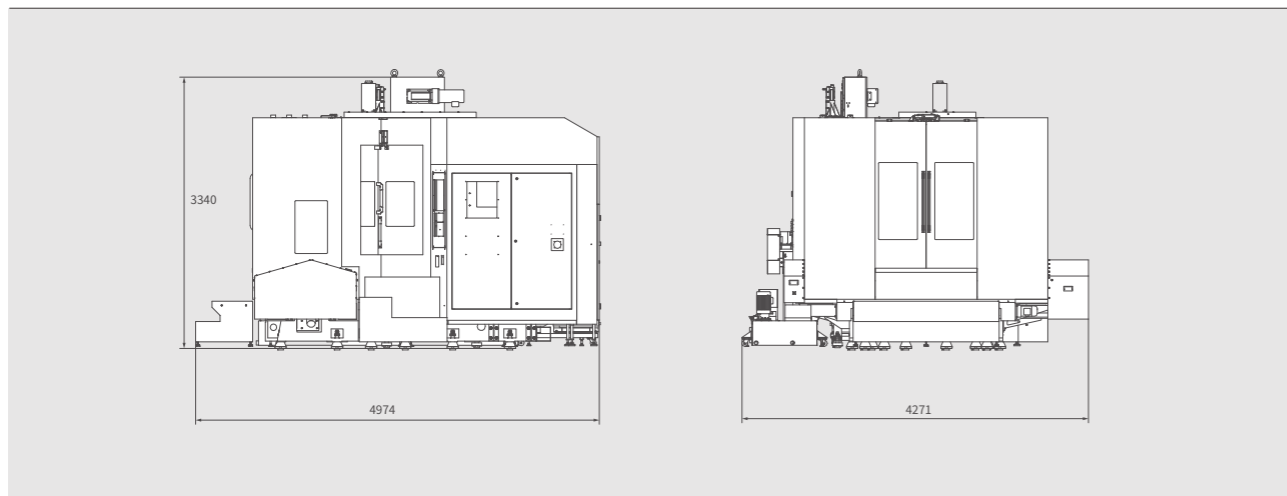
HM50TSA / HM63TEA



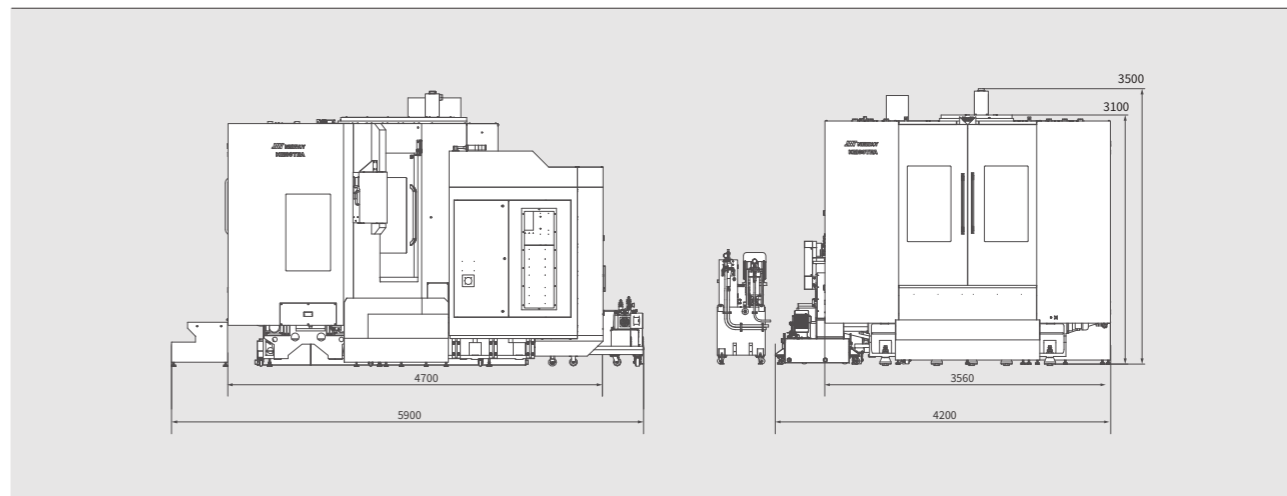
HM6380TD



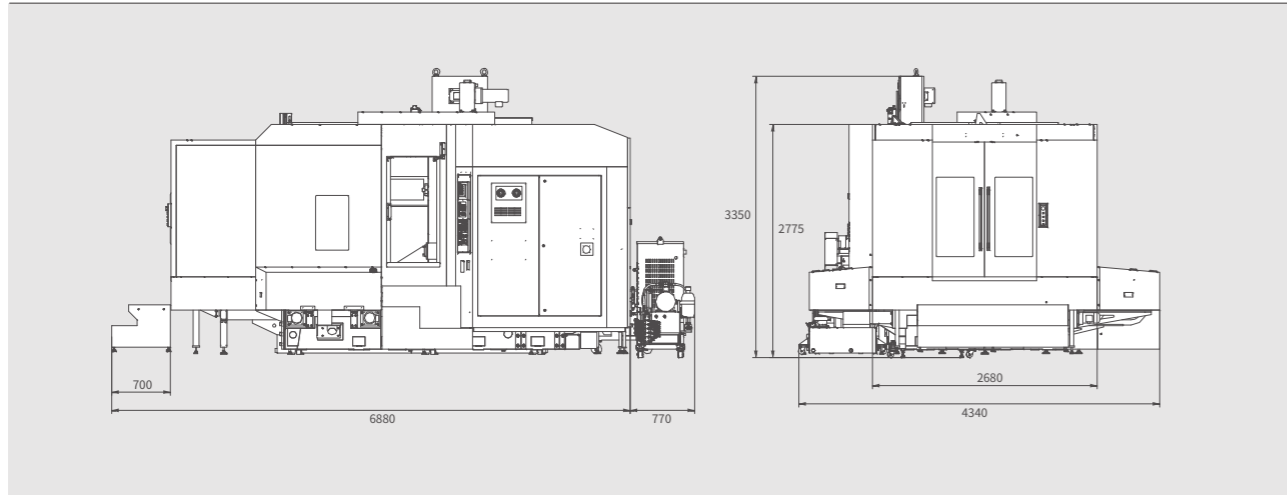
HM63TS



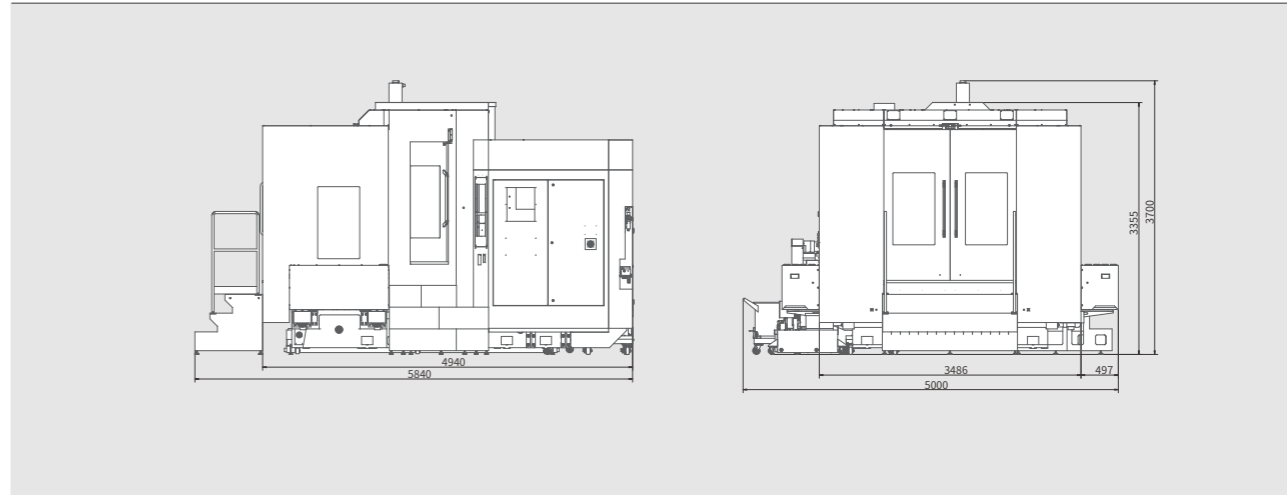
HM80TEA



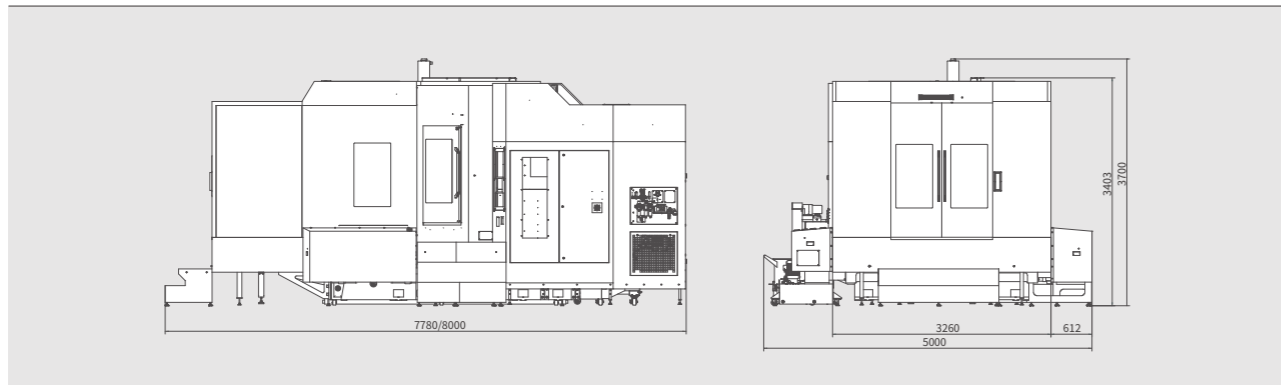
HM63TD



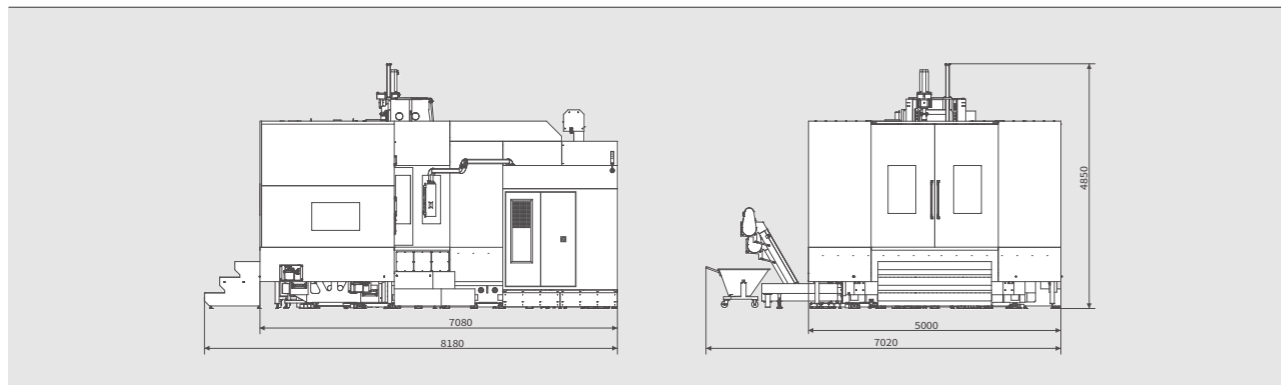
HM80TS / HM100TS



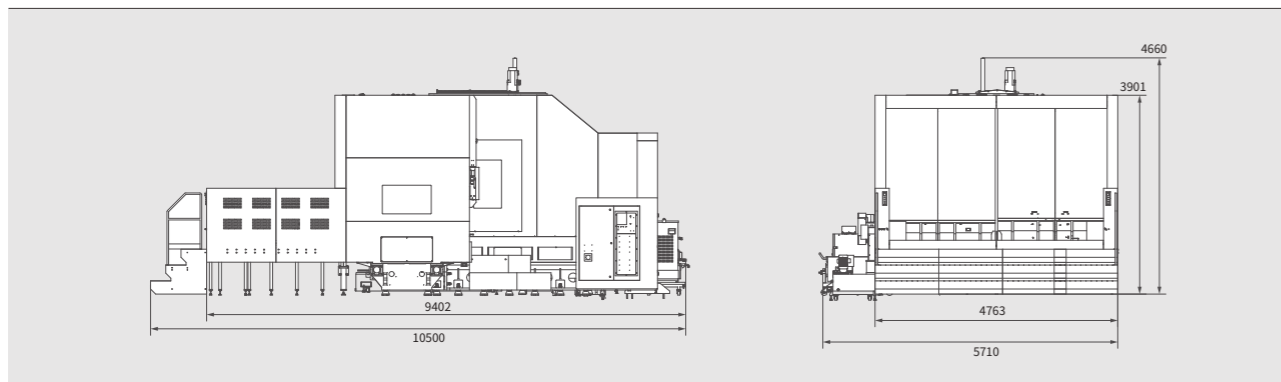
## HM80TD / HM100TD



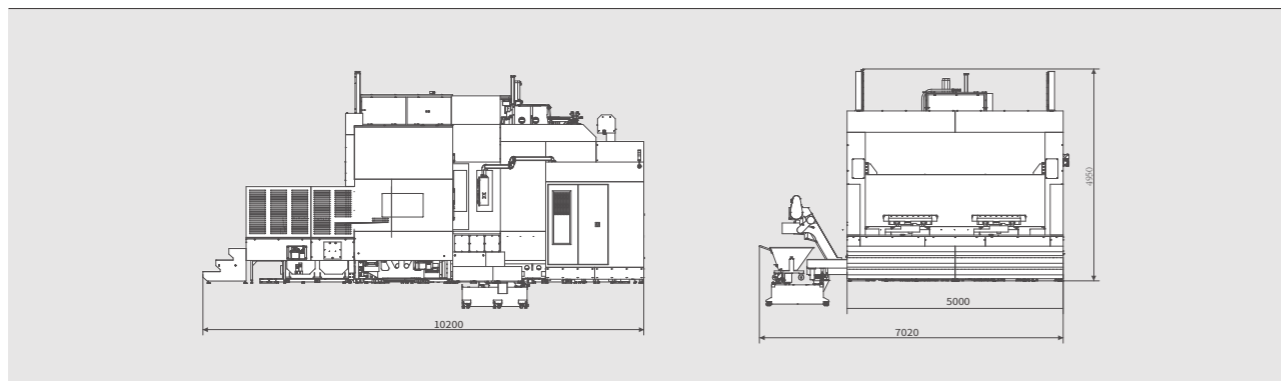
## HM125TBS



## HM125TSA



## HM125TBD



Item	Unit	HM50TSA	HM63TEA	HM63TS	taper HM63TD	HM6380TD
Worktable size	mm	500×500	630×630	630×630	2-630×630	2-630×800
Max. worktable load	kg	700	1000	1200	1200	1200
Worktable indexing	-	1°×360[0.001°×360000]				
Worktable number	-	1	1	1	2	2
Worktable exchanging time	s	/	/	/	20	55
Worktable exchanging drive	-	/	/	/	hydraulic	hydraulic
Worktable max. speed	r/min	10	10	10	10	10
Max. part diameter / height	mm	1000×800	1200×1000	1200×1000	1000×1000	1000×1000
Axis travel X/Y/Z	mm	850×750×750	1000×800×800	1000×850×900	1000×850×900	1000×850×900
Spindle nose to worktable	mm	50~800	50~850	200~1100	200~1100	200~1100
Spindle center to worktable surface	mm	0~750	0~800	80~930	80~930	0~850
Axis rapid travel X/Y/Z	m/min	30/20/30 [30/24/30]*	30/20/30 [30/24/30]*	20 [30]	20 [30]	20 [30]*
Spindle motor power	kW	15/18.5 [11/15]*	15/18.5 [11/15]*	15/18.5 [18.5/30]*	15/18.5 [18.5/30]*	15/18.5 [18.5/30]*
Max. spindle speed	rpm	6000	6000	4500	4500	4500
Spindle torque	N.m	143/236 [140/191]*	143/236 [140/191]*	786/1298 [649/1050]	786/1298 [649/1050]	786/1298 [649/1050]*
Spindle taper	-	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50
Number of tools	Pc	24 (disc type)	30 (disc type)	40 (chain type)	40 (chain type)	40 (chain type)
Tool shank	-	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50
Max. tool dia./length/weight	mm/mm/kg	Φ120/400/20	Φ112/500/25	Φ125/500/25	Φ125/500/25	Φ125/500/25
Max. tool size (empty neighbor)	mm	Φ250	Φ250	Φ250	Φ250	Φ250
Tool change time T-T	s	3.8	3.8	4.75	4.75	4.75
Drilling (normalized mild steel)	mm	Φ35	Φ35	Φ55	Φ55	Φ55
Tapping (normalized mild steel)	mm	M24	M24	M45	M45	M45
Milling (normalized mild steel)	cm <sup>3</sup> /min	250	250	600	600	600
Positioning accuracy (X/Y/Z)	mm	0.01	0.01	0.01	0.01	0.010
Repositioning accuracy X/Y/Z	mm	0.006	0.006	0.006	0.006	0.006
Positioning accuracy (B)	"	6	6	6	6	6
Repositioning accuracy (B)	"	2	2	2	2	2
CNC system	-	NEWAY FANUC [SIEMENS]				
Machine dimension(L×W×H)	mm	3970×3150×3110	3970×3150×3110	4980×4275×3350	6880×4340×3350	7055×4275×3330
Total power	KVA	40	40	40	40	40
Coolant tank capacity	L	450	450	650	650	480
Auto chip conveyor	-	Z axis double spiral chip conveyor + X axis double spiral chip conveyor + sideway chain type chip conveyor				
Machine Weight	kg	10000	11000	16000	18000	19000

**HM50TSA/HM63TEA standard configuration:**

Indexing rotary table, automatic chip removal device, ring spray cutting cooling, full machine protection, cutting air cooling, air gun.

**HM50TSA/HM63TEA optional configuration:**

Main variable speed box, spindle and ZF box thermostatic cooling system, three-axis scale, CNC rotary table, spindle center water cooling, top spray, water gun, broken tool detection, large-capacity tool magazine, center of the table oil, oil-water separator, oil mist collector. Translated with DeepL.com (free version),

\*fanuc 0i-MF Plus 1 system required for this motor option

Item	Unit	HM80TEA	HM80TS	HM80TD	HM8080TD	HM100TS	HM100TD	HM100LS	HM100LD	HM125TS	HM125TDA	HM125TBS	HM125TBD
Worktable size	mm	800×800	800×800	2-800×800	2-800×800	1000×1000	2-1000×1000	1000×1000	2-1000×1000	1250×1250	2-1250×1250	1250×1250	2-1250×1250
Max. worktable load	kg	1600	1600	1600	1600	2000	2000	3000	3000	4000	4000	4000	4000
Worktable indexing	-	1°×360[0.001°×360000]				1°×360[0.001°×360000]				1°×360[0.001°×360000]			
Worktable number	-	1	1	2	2	1	2	1	2	1	2	1	2
Worktable exchanging time	s	/	/	25	60	/	25	/	120	/	120	/	120
Worktable exchanging drive	-	/	/	servo motor	hydraulic	/	servo motor	/	hydraulic	/	hydraulic	/	hydraulic
Worktable max. speed	r/min	10	10	10	10	10	10	9.0	9.0	9.0	9.0	9.0	9.0
Max. part diameter / height	mm	1800×1000	1800×1300	1200×1200	1750×1300	1800×1300	1300×1300	2000×2000	2000×1800	2000×2000	2000×1800	2000×2000	2000×1800
Axis travel X/Y/Z	mm	1400×1000×1000	1400×1050×1050	1400×1050×1050	1400×1050×1050	1600×1100×1100	1600×1100×1100	2100×1300×1300	2100×1300×1300	2200×1500×1500	2200×1500×1500×500	2200×1500×1500×500	2200×1500×1500×500
Spindle nose to worktable	mm	200~1200	250-1300	250-1300	250-1300	250-1350	250-1350	300~1600	300~1600	300~1800	300~1800	300~1800	300~1800
Spindle center to worktable surface	mm	50~1050	120-1170	0-1050	0-1050	120-1220	0-1100	300~1600	0~1300	150~1650	0~1500	220~1720	0~1500
Axis rapid travel X/Y/Z	m/min	20[30]	16 [24]	16 [24]	16 [24]	16 [24]	16 [24]	20	20	20	20/20/20/5	20/20/20/5	20/20/20/5
Spindle motor power	kW	15/18.5 [22/35]*	15/18.5 [22/35]*	15/18.5 [22/35]*	15/18.5 [22/35]*	15/18.5 [22/35]*	15/18.5 [22/35]*	22/35	22/35	22/35	22/35	22/35	22/35
Max. spindle speed	rpm	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	2500	2500
Spindle torque	N.m	786/1298 [770/1226]	786/1298 [770/1226]	786/1298 [770/1226]	786/1298 [770/1226]	786/1298 [770/1226]	786/1298 [770/1226]	1155/1840	1155/1840	1155/1840	1155/1840	1155/1840	1155/1840
Spindle taper	-	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50
Number of tools(disc type)	Pc	40 (chain type)	40 (chain type)	40 (chain type)	40 (chain type)	40 (chain type)	40 (chain type)	40 (chain type)	40 (chain type)	40 (hydraulic)	40 (chain type)	40 (chain type)	40 (chain type)
Tool shank	-	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50	MAS403 BT50
Max. tool dia./length/weight	mm/mm/kg	Φ125/600/25	Φ125/600/25	Φ125/400/25	Φ125/600/25	Φ125/600/25	Φ125/400/25	Φ125/600/35	Φ125/600/35	Φ125/500/35	Φ125/600/35	Φ125/600/35	Φ125/600/35
Max. tool size (empty neighbor)	mm	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250
Tool change time T-T	s	4.75	4.75	4.75	4.75	4.75	4.75	10	10	10	10	10	10
Drilling (normalized mild steel)	mm	Φ55	Φ55	Φ55	Φ55	Φ60	Φ60	Φ70	Φ70	Φ70	Φ70	Φ70	Φ70
Tapping (normalized mild steel)	mm	M45	M45	M45	M45	M48	M48	M50	M50	M50	M50	M50	M50
Milling (normalized mild steel)	cm <sup>3</sup> /min	600	600	600	600	900	900	1000	1000	1000	1000	1000	1000
Positioning accuracy (X/Y/Z)	mm	0.01	0.010	0.010	0.01	0.010	0.010	0.015	0.015	0.015	0.015	0.015	0.015
Repositioning accuracy X/Y/Z	mm	0.006	0.006	0.006	0.006	0.006	0.006	0.010	0.010	0.010	0.010	0.010	0.010
Positioning accuracy (B)	"	6	6	6	6	6	6	6	6	10	6	6	6
Repositioning accuracy (B)	"	2	2	2	2	2	2	2	2	5	2	2	2
CNC system	-	NEWAY FANUC [SIEMENS]						NEWAY FANUC [SIEMENS]					
Machine dimension(L×W×H)	mm	5900×4200×3500	5640×5000×3700	7780×5000×3700	8050×4730×3700	5640×5000×3700	8000×5000×3700	10500×5700×4660	10500×5700×4660	8000×5700×4660	10500×5700×4660	8000×5700×4660	10500×5700×4660
Total power	KVA	40	40	45	40	40	45	65	65	65	65	65	65
Coolant tank capacity	L	640	750	750	750	750	750	1000	1000	1000	1000	1000	1000
Auto chip conveyor	-	Z axis double spiral chip conveyor + X axis double spiral chip conveyor + chain type chip conveyor						Z axis double spiral chip conveyor + X axis double chain type chip conveyor (Remark: HM125TBS/TBD boring shaft diameter Φ110)					
Machine Weight	kg	16000	20000	22000	22000	20500	23000	30000	32000	31000	32000	32000	33000

**Standard configuration:**

gear box, Spindle and box constant temperature cooling system, Indexing rotary table, automatic chip conveyor, external coolant, fully enclosed machine guard, air gun.

**Options:**

Electrical spindle, linear scale on 3 axes, CNC rotary table, coolant through spindle, air cooling, top spray shower coolant system, water gun, broken tool detection, larger capacity tool magazine, hydraulic pressure supply through worktable, oil-water separator, oil mist collector and more,\*fanuc 0i-MF Plus 1 system required for this motor option

[ ]Options

## HE series- High-Speed Type Horizontal Machining Center

- Integrated ladder guide bed structure, the distance between the spindle and the rear support rail is closer, increasing the cutting rigidity of the column;
- Double-layer frame column, symmetrical thermal, offset thermal deformation effectively and ensure stable precision;
- All three axes adopt high rigidity and high precision roller linear guideway;
- Suitable for complex processing of box parts in different industries, such as automobile engines, agricultural machinery, gearbox housings, and home appliance molds.



## Excellent Main Drive

High-performance spindle takes into account both low-speed high-torque and high-speed high-precision

### HE50D/HE63D/HE80Ds Main drive

- HE50D is equipped with BBT40 mechanical spindle as standard (electric spindle as option, the maximum speed can reach 12000rpm);
- HE63/80D is equipped with BBT50 mechanical spindle as standard (electric spindle as option, the maximum speed can reach 10000rpm);
- The oil cooling for the spindle and oil cooling for the gearbox as standard to reduce the thermal extension of the spindle and ensure the positioning accuracy of the tool tip;
- Spindle air curtain function is standard, which can effectively prevent chips, dust and cutting fluid from entering the spindle.

Max. torque **226** N.m  
(HE50D)

Motor power **18.5/37** kW  
(HE50D)

Max. spindle speed up to **12000** rpm  
(HE50D)

Max. torque **623** N.m

Motor power **26/45** kW

Max. spindle speed up to **10000** rpm



# High Rigidity Structure

Ladder bed guideway layout, roller linear guideway on three axis to achieve high rigidity cutting

## New axis feeding drive structure

- HE50D/HE63D/HE80D three-axis ball screw is equipped with hollow oil cooling as standard;
- The overall pre-stretch structure of the three-axis screw, from qualitative stretching to quantitative stretching, which can accurately compensate the thermal extension of the ball screw, and further improve the positioning and repeatability accuracy of the machine tool.

## Roller linear guide way

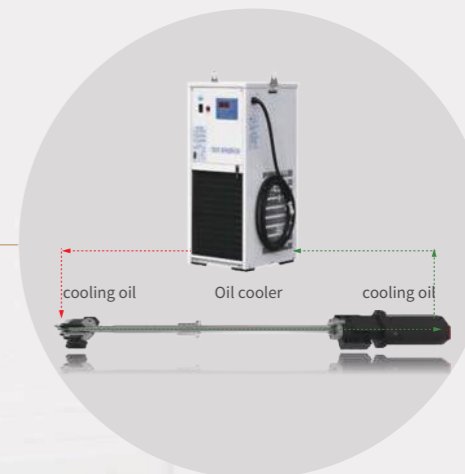
Strong bearing capacity, high precision, eliminate low-speed crawling of the machine, suitable for heavy cutting and high-speed cutting.

**60/60/60**  
m/min  
Rapid teavel speed  
(HE63D)

**1250/1000/1050**  
mm  
Travel X/Y/Z  
(HE63D)

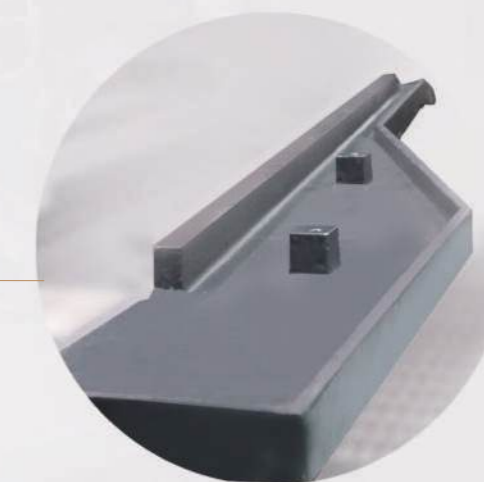
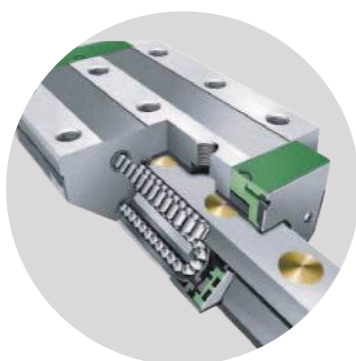
**90~1090**  
mm  
Spindle center to worktable  
(HE63D)

Item	Unit	HE50D	HE50DA	HE63D	HE80D
Spindle center to worktable surface	mm	30~760	50~800	90~1090	30~1330
Spindle nose to worktable center	mm	70~870	25~825	150~1200	200~1600



## Ball screw hollow cooling

The HE/50/63/80D is equipped with hollow cooling system for the ball screw as standard, and the low-temperature cooling medium is passed through the center hole of ball screw, which can effectively control the temperature rise.



## Excellent chip removal system

- Adopt double-helix centralized chip removal method, fast chip removal;
- Quickly install the chip conveyor; the chip conveyer can be inserted directly from the rear of the machine, greatly reducing the time for secondary installation.

## Double layer water tray installation surface

Double-layer protection, sealing + backflow, to prevent oil and water leakage of the machine.



# Fast And Reliable Tool Change System

The tool magazine is driven by a servo motor, the tool positioning is accurate, the tool change speed is high, the non-cutting time is shortened, and the processing efficiency is improved. The modular design, various ATC can be equipped as option.

Item	Unit	HE50D	HE50DA	HE63D	HE80D
Tool shank	-	BBT40	BT50	BBT50	BTB50
Number of tools	Pc	40	24	40	40
Tool selection method	-	Random	Random	Random	Random
Tool change time T-T	S	1.5s	3s	2.4s (<15kg)	2.4s (<15kg)

## MAX. TOOL SIZE

Item	Unit	HE50D	HE50DA	HE63D	HE80D
Adjacent tool position without tool( full tool)	mm	φ85	φ125	φ125	φ125
Max. tool dia. Adjacent tool position without tool	mm	φ170	φ250	φ250	φ250
Max. tool length	mm	500	500	530	600
Max. tool weight	kg	8	25	25	25



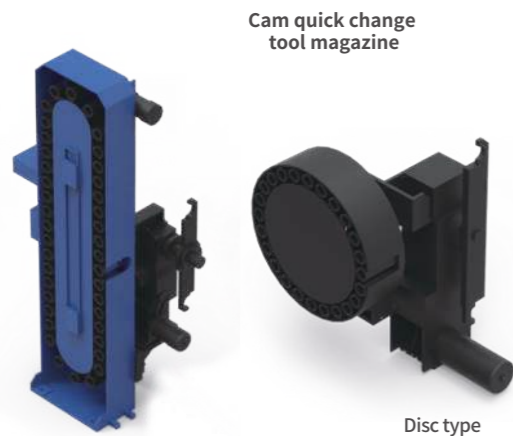
**Dual servo drive**  
(HE63/80D)

**φ250×530**  
Tool size  
(HE63/80D)

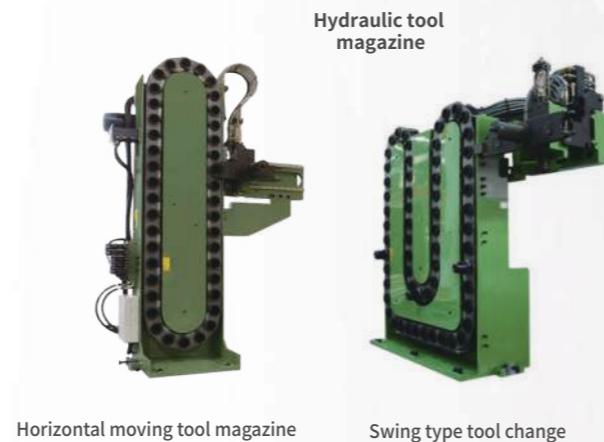
**2.4s**  
Tool change time  
(HE63/80D)

## A full range of tool magazines

Configure the corresponding tool magazine according to the different production needs of customers.



Mechanical cam tool change mechanism, servo drive, fast tool change



Hydraulic tool magazine, the tool changing mechanism is driven by oil pressure.



# High Precision Worktable

High-precision gear plate and precise cone seat ensure the excellent positioning accuracy of the worktable.

## Worktable

- High-precision end face tooth disc, ensuring 2" repeatability accuracy \*1
- Precise worm gear and worm to achieve 6" repeatability accuracy \*2
- Large embedded double radial preloaded bearings are used to ensure the rotation accuracy of the worktable.

HE50D	Unit	standard configuration	Selective configuration
Indexing angle	°	1	0.001
Positioning accuracy	"	6	10
Repeatability accuracy	"	2	6

HE63/80D	Unit	standard configuration	Selective configuration
Indexing angle	°	1	0.001
Positioning accuracy	"	6	10
Repeatability accuracy	"	2	5



Servo exchange

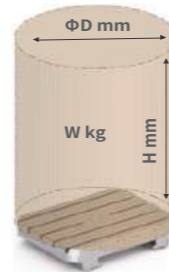
## Hydraulic fixture interface (optional)

Supplied from the top, with 6 interfaces on each side, up to 13 interfaces on each side are possible.



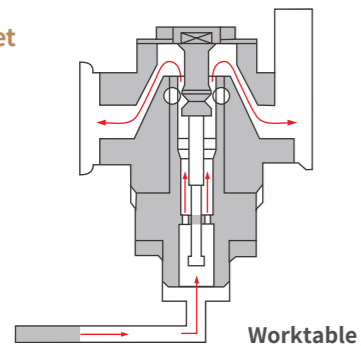
## Pallet positioning structure

- Pallet positioning adopts four-point cone positioning, which has excellent rigidity and ensures accurate positioning during machining;
- When the pallet exchange, compressed air is blown out from the four cone seats of the worktable to avoid chips from entering.

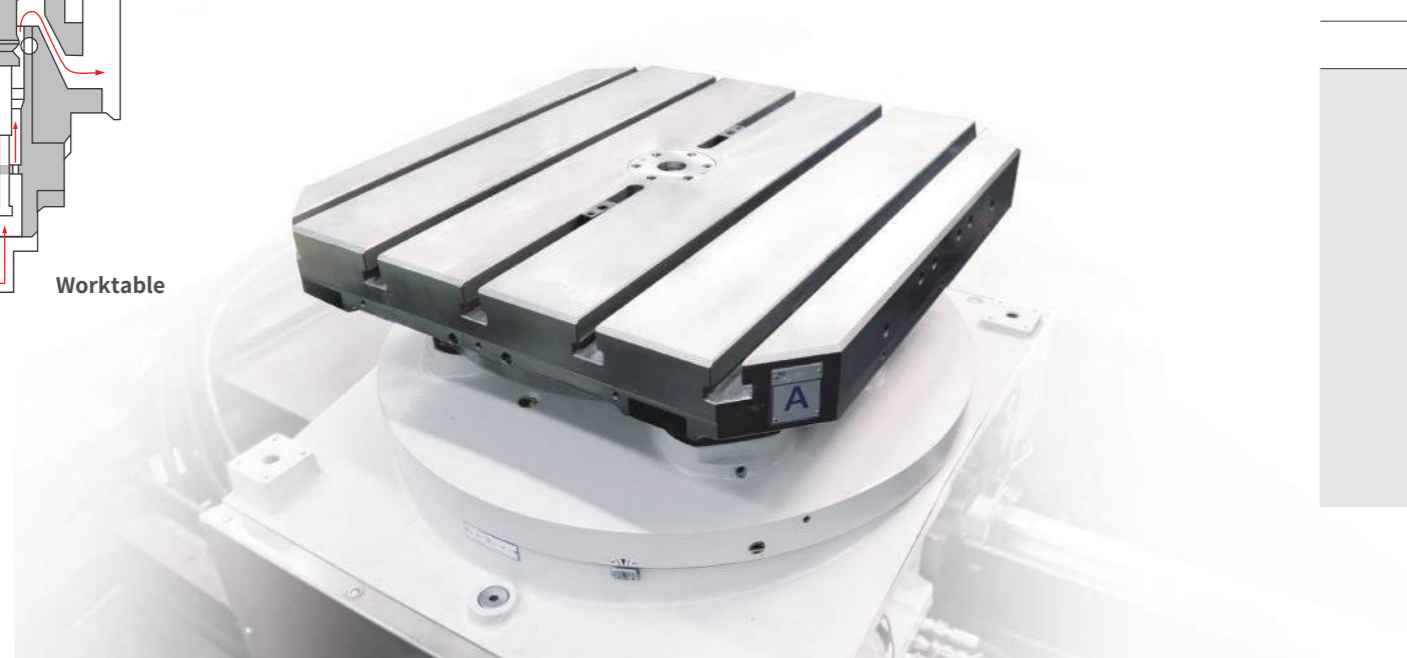


Model	Max. tool size(mm)	Max. tool weight(kg)
HE50D	Φ800×1000	500
HE50DA	Φ800×1000	500
HE63D	Φ1050×1300	1200
HE80D	Φ1450×1450	2000

Pallet

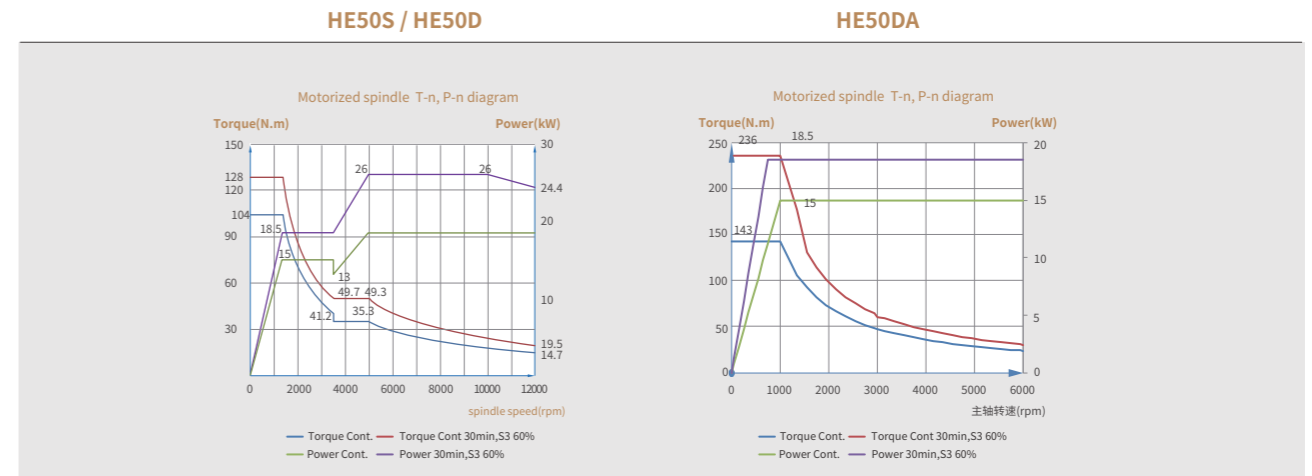


Worktable

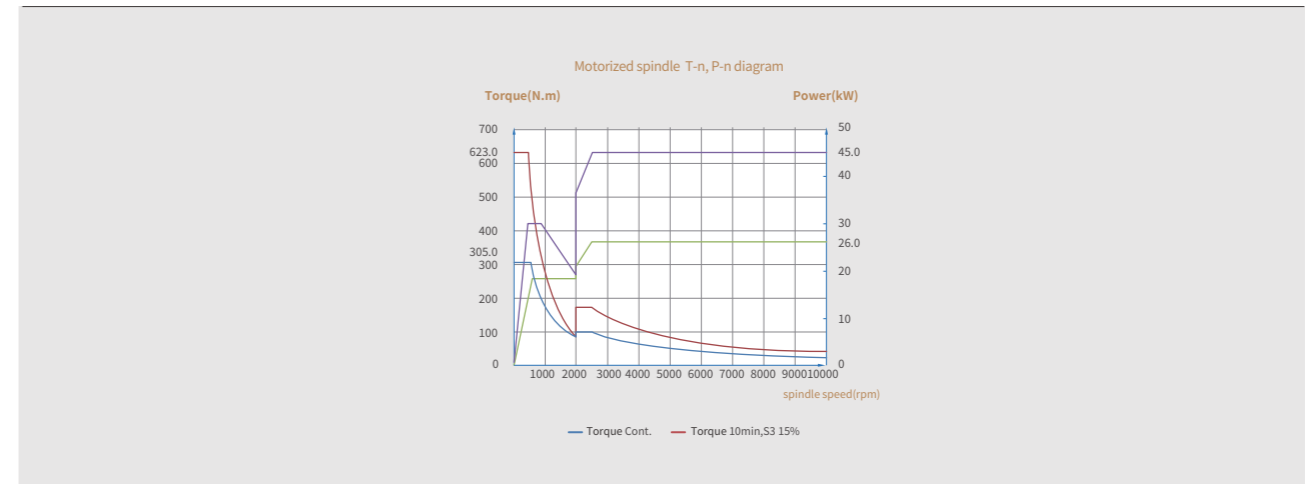


## Spindle Power Torque Diagram

(Unit: mm)

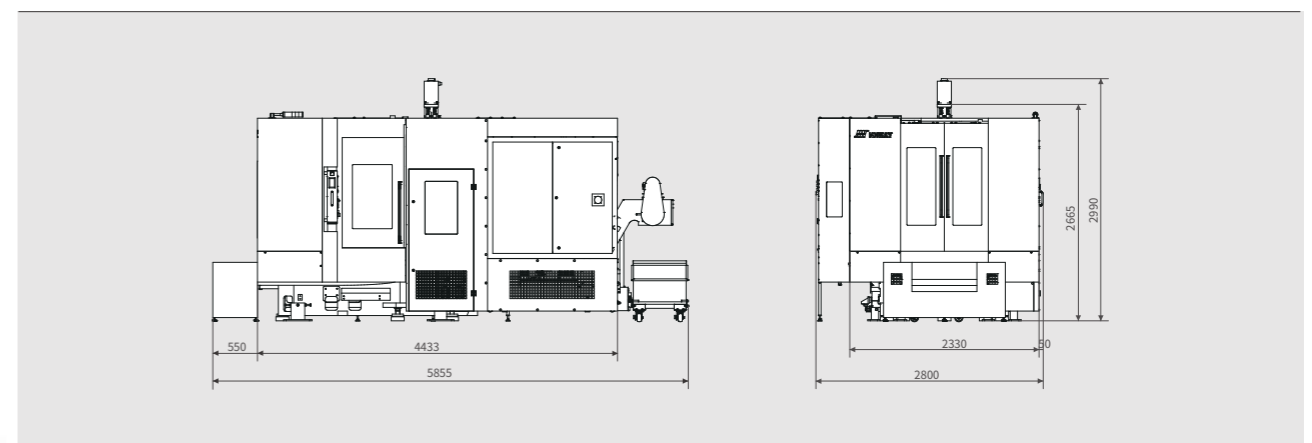


## HE63D/HE63S/HE80S/HE80EF/HE80EV/HE80D

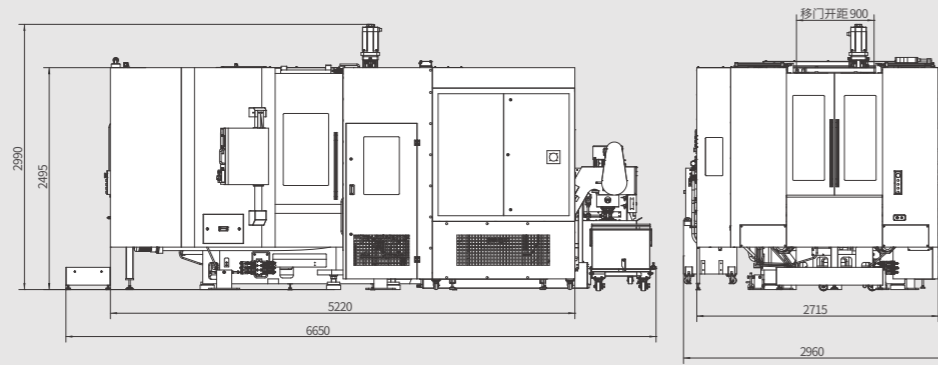


## External Dimensions

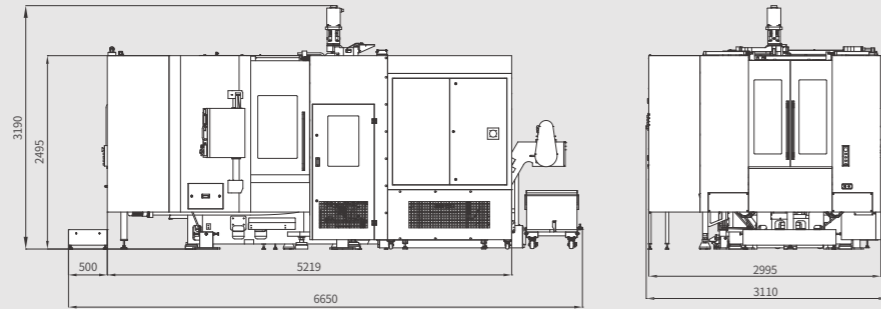
### HE50S



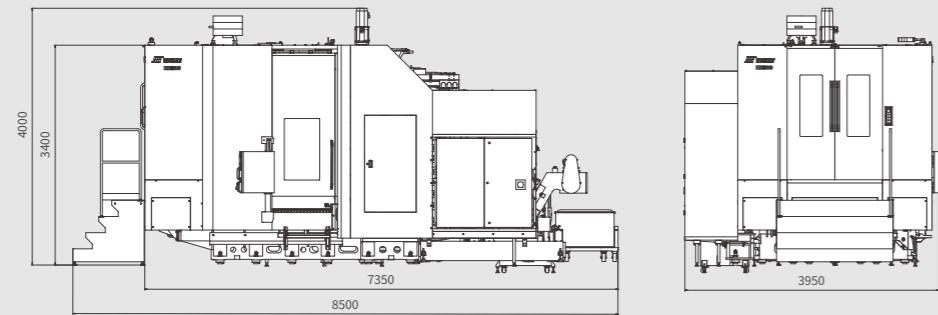
HE50D



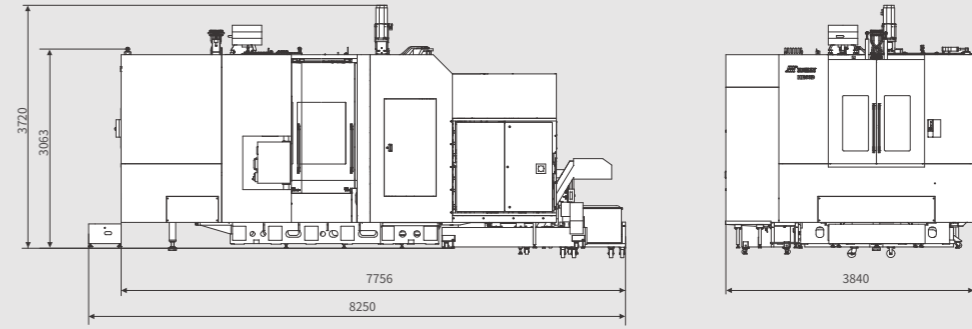
HE50DA



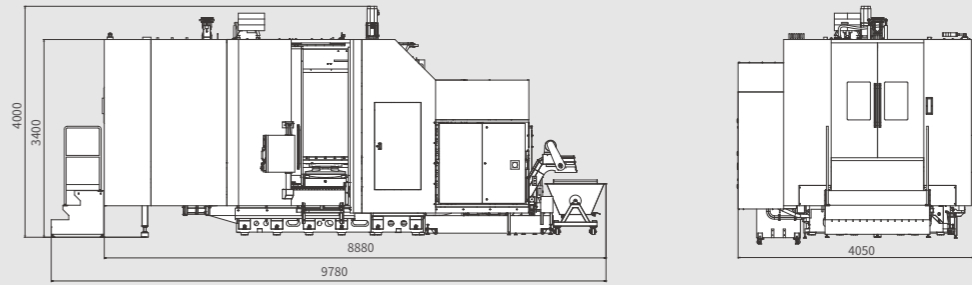
HE63S



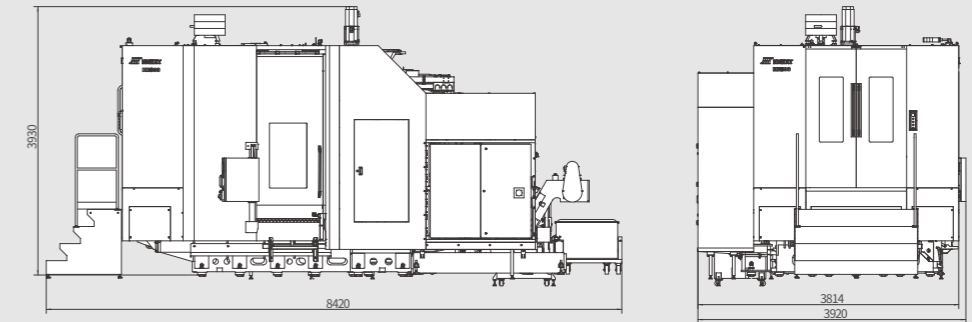
HE63D



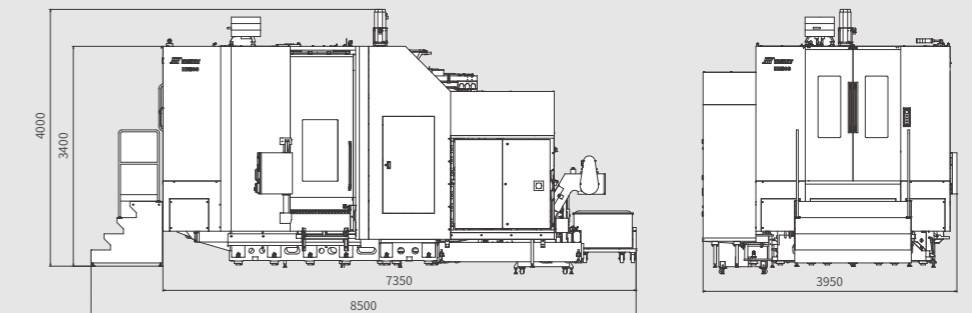
HE80D



HE80EF



HE80EV/S



Item	单位	HE50S	HE50D	HE50DA	HE63S	HE63D
Worktable size	mm	500×500	2-500×500	2-500×500	630×630	2-630×630
Max. worktable load	kg	500	500	500	1200	1200
Worktable indexing	-	1°×360[0.001°×360000]				
Worktable number	-	/	2	2	1	2
Worktable exchanging time	s	/	12	12	/	16
Worktable exchanging drive	-	/	servo	servo	/	servo
Worktable max. speed	r/min	10	10	10	10	10
Max. part diameter / height	mm	Φ800×1000	Φ800×1000	Φ800×1000	Φ1250×1300	Φ1050×1300
Axis travel X/Y/Z	mm	730/730/800	730/730/800	750/750/800	1250/1100/1100	1250/1000/1050
Spindle nose to worktable center	mm	70~870	70~870	25~825	200~1300	150~1200
Spindle center to worktable surface	mm	170~900	30~760	50~800	160~1260	90~1090
Axis rapid travel X/Y/Z	m/min	60	60	40	60	60
Spindle motor power	kW	18.5/37	18.5/37	15/18.5	26/45	26/45
Max. spindle speed	rpm	12000	12000	6000	10000	10000
Spindle torque	N.m	104/226	104/226	143/236	305/623	305/623
Spindle taper	-	7:24 taper NO.40	7:24 taper NO.40	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50
Number of tools	把	40(disc type)	40(disc type)	24(disc type)	40	40
Tool shank	-	MAS403 BBT40	MAS403 BBT40	MAS403 BT50	MAS403 BBT50	MAS403 BBT50
Max. tool dia./length/weight	mm/mm/kg	Φ85/500/8	Φ85/500/8	Φ125/500/25	Φ125/530/25	Φ125/530/25
Max. tool size (empty neighbor)	mm	Φ170	Φ170	Φ250	Φ250	Φ250
Tool change time T-T	s	1.5	1.5	3	2.8s ( <25kg) /2.4s ( <15kg)	
Drilling (normalized mild steel)	mm	Φ35	Φ35	Φ35	Φ55	Φ55
Tapping (normalized mild steel)	mm	M24	M24	M24	M45	M45
Milling (normalized mild steel)	cm <sup>3</sup> /min	250	250	250	600	600
Positioning accuracy (X/Y/Z)	mm	0.01	0.01	0.01	0.01	0.01
Repositioning accuracy X/Y/Z	mm	0.006	0.006	0.006	0.006	0.006
Positioning accuracy (B)	"	6	6	6	6	6
Repositioning accuracy (B)	"	2	2	2	2	2
CNC system	*	NEWAY FANUC [SIEMENS]				
Machine dimension(L×W×H)	mm	6640×2990×2990	6650×2960×2990	6650×3110×3190	8100×4000×4000	8800×3950×3840
Total power	KVA	60	60	40	60	60
Coolant tank capacity	L	600	600	600	1000	1000
Auto chip conveyor	-	Z-axis double spiral chip conveyor + chain plate chip conveyor in backside				
Machine Weight	kg	11000	12000	12000	20000	20500

**HE50 series standard configuration:**

Electric spindle, spindle constant temperature cooling system, CNC rotary table, automatic chip conveyor, coolant ring spray, full protection cover, air gun.

**HE50 series optional configuration:**

Three-axis linear scale, indexing rotary table, CTS, cutting air cooling, coolant top spray, water gun, broken tool detection, large-capacity tool magazine, oil outlet at the center of the worktable, oil mist collector.

Item	单位	HE80S	HE80D	HE80EV	HE80EF
Worktable size	mm	800×800	2-800×800	800×800	800×800
Max. worktable load	kg	1600	2000	2500	2500(B)/600(C)
Worktable indexing	-	1°×360[0.001°×360000]		0.001°×360000	
Worktable number	-	1	2	1	1
Worktable exchanging time	s	/	16	/	/
Worktable exchanging drive	-	/	servo	/	/
Worktable max. speed	r/min	10	10	20	10(B)/16(C)
Max. part diameter / height	mm	Φ1600×1800	Φ1450×1450	Φ1600×1800	Φ1600(C)
Axis travel X/Y/Z	mm	1400/1300/1400	1400/1300/1400	1400/1300/1400	1400/1300/1400
Spindle nose to worktable center	mm	200~1600	200~1600	200~1600	200~1600
Spindle center to worktable surface	mm	135~1435	30~1330	135~1435	135~1435
Axis rapid travel X/Y/Z	m/min	60	60	60	60
Spindle motor power	kW	26/45	26/45	26/45	26/45
Max. spindle speed	rpm	10000	10000	10000	10000
Spindle torque	N.m	305/623	305/623	305/623	305/623
Spindle taper	-	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50	7:24 taper NO.50
Number of tools	把	40	40	40	40
Tool shank	-	MAS403 BBT50	MAS403 BBT50	MAS403 BBT50	MAS403 BBT50
Max. tool dia./length/weight	mm/mm/kg	Φ125/600/25	Φ125/600/25	Φ125/600/25	Φ125/600/25
Max. tool size (empty neighbor)	mm	Φ250	Φ250	Φ250	Φ250
Tool change time T-T	s	2.8s ( <25kg) /2.4s ( <15kg)			
Drilling (normalized mild steel)	mm	Φ55	Φ55	Φ55	Φ55
Tapping (normalized mild steel)	mm	M45	M45	M45	M45
Milling (normalized mild steel)	cm <sup>3</sup> /min	600	600	600	600
Positioning accuracy (X/Y/Z)	mm	0.01	0.01	0.01	0.01
Repositioning accuracy X/Y/Z	mm	0.006	0.006	0.006	0.006
Positioning accuracy (B)	"	6	6	10	10
Repositioning accuracy (B)	"	2	2	5	5
CNC system	*	NEWAY FANUC [SIEMENS]			
Machine dimension(L×W×H)	mm	8100×4000×4000	9780×4050×4000	8100×4000×4000	8400×4000×4000
Total power	KVA	70	70	80	80
Coolant tank capacity	L	1000	1000	1000	1000
Auto chip conveyor	-	Z-axis double spiral chip conveyor + chain plate chip conveyor in backside			
Machine Weight	kg	21000	23000	21000	21500

**HE63/80 series standard configuration:**

Spindle constant temperature cooling system, main transmission box, indexing rotary table, automatic chip conveyor, coolant ring spray, full protection cover, air gun.

**HE63/80 series optional configuration:**

Electrical spindle, three-axis linear scale, CNC rotary table, CTS, cutting air cooling, coolant top spray, water gun, broken tool detection, large-capacity tool magazine, oil outlet at the center of the worktable, oil mist collector.

# HM series- 5-axis Swing Head Horizontal Machining Center

- This model adopt T type structure, movable column, large span design, high rigidity and strength.
- M-shaped reinforce ribs layout, effectively increasing the overall strength and rigidity of the machine, and strong resistance to torque and bending.
- Automatic tool exchange during processing, one-time clamping, multi-face processing, and completion of drilling, milling, reaming, boring, reaming, tapping and other processes;
- Equipped with A axis swing head, which can realize interpolation machining with 0.001 degree rotary table simultaneously, realize 5-axis simultaneous function.
- Reasonable and advanced layout, good stress state of each part, smooth chip removal and drainage, convenient operation, easy access to the workpiece and spindle for the operator, and good user-friendliness.



## Spindle Power Torque Diagram

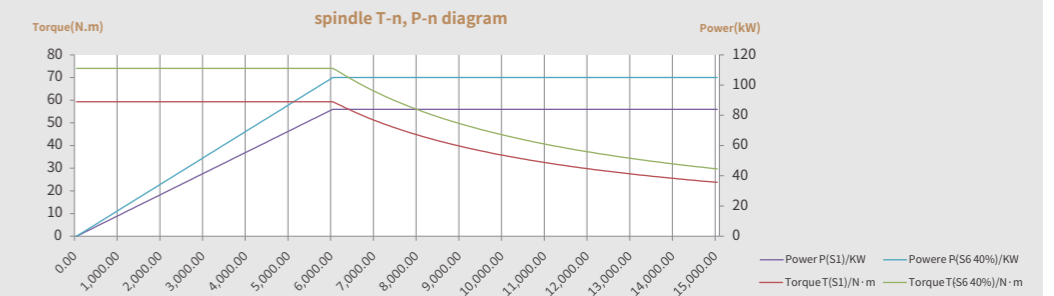
## External Dimensions

(Unit: mm)

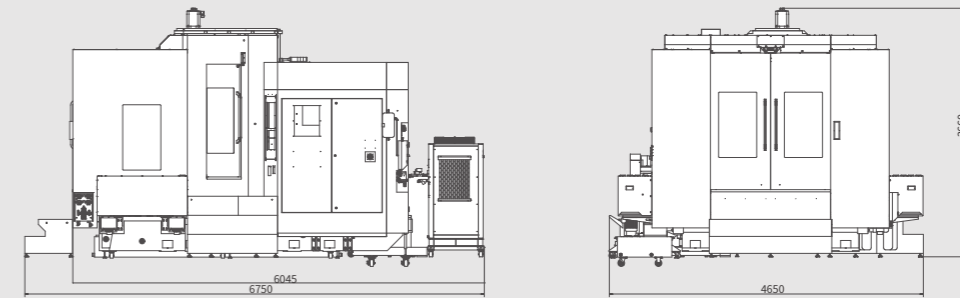
### HM100TLU, HM125TU



A-axis swing head  
 Speed: 15000rpm  
 Clamping torque: 2160nm  
 Positioning accuracy:  $\pm 5 \mu$   
 Swing angle:  $\pm 105^\circ$



### HM80TF



### HM100TLU / HM125TU



Item		Unit	HM80TF	HM100TLU	HM125TU
Worktable	Worktable size	mm	Φ800	1000×1000	1250×1250
	Max. worktable load	kg	700	2000	4000
	Worktable indexing	-	0.001°×360000	0.001°×360000	0.001°×360000
	Worktable exchanging time	s	/	/	/
	Worktable exchanging drive	-	/	/	/
	Worktable max. speed	rpm	/	5.5	5.5
Machining range	Max. part diameter / height	mm	Φ800/750	Φ2000/2000	Φ2000/2000
Travel	Axis travel X/Y/Z	mm	1200/1100/1100	2100/1300/1300	2200/1500/1500
	A-axis rotation range	°	-30~+110	±105	±105
	B-axis rotation range	°	±360	±360	±360
Spindle	Spindle terminal to worktable(horizontal)	mm	150~1250	-280~1020	-280~1220
	Spindle center to worktable surface(horizontal)	mm	-350~+750	120~1420	120~1620
	Spindle terminal to worktable surface (vertical)	mm	210~1310	-160~1140	-160~1340
	Spindle center to worktable center (vertical)	mm	-410~+690	0~1300	0~1500
	Axis rapid travel X/Y/Z	mm	20	20	20
	Spindle motor power	kW	22/30	56/70	56/70
	Max. spindle speed	rpm	12000	15000	15000
	Spindle torque	N.m	161/216	89/111	89/111
	Spindle taper	-	HSK-A100	HSK-A63	HSK-A63
Tool magazine	Number of tools	Pc	40 (chain type)	60 (chain type)	60 (chain type)
	Tool shank	-	HSK-A100	HSK-A63	HSK-A63
	Max. tool dia./length/weight	mm/mm/kg	Φ125mm/400mm/25kg	Φ75mm/400mm/8kg	Φ75mm/400mm/8kg
	Max. tool size (empty neighbor)	mm	Φ250	Φ150	Φ150
	Tool change time T-T	s	4.75	10	10
	Drilling (normalized mild steel)	mm	Φ30	Φ30	Φ30
	Tapping (normalized mild steel)	mm	M20	M20	M20
	Milling (normalized mild steel)	cm <sup>3</sup> /min	200	200	200
Machine accuracy	Positioning accuracy (X/Y/Z)	mm	0.015	0.015	0.015
	Repositioning accuracy X/Y/Z)	mm	0.01	0.01	0.01
	Positioning accuracy (B)	"	10	10	10
	Repositioning accuracy (B)	"	5	5	5
Other	CNC system	-	NEWAY SIEMENS	NEWAY SIEMENS	NEWAY SIEMENS
	Machine dimension(L×W×H)	mm	6750×4650×3660	8180×7050×4850	8180×7050×4850
	Total power	kVA	75	105	160
	Coolant tank capacity	L	750	750	750
	Auto chip conveyor	-	Z axis double spiral chip conveyor + X axis double chain type chip conveyor		
	Machine Weight	kg	21000	34000	35000

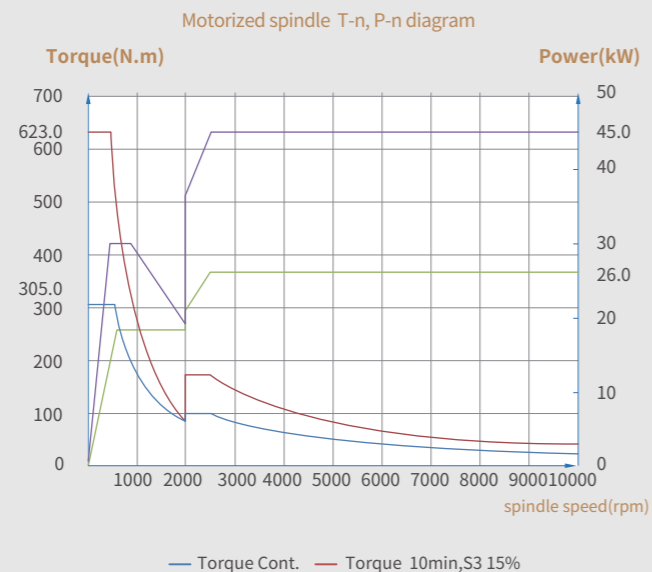
## HE Series 5-axis Horizontal Machining Center

- Structure of one-piece stepped guideway and bed design, increase the column cutting rigidity;
- Large slope of the bed, coupled with the double helix cross centralized chip removal structure can quickly and effectively eliminate chips;
- Table double DD motor drive, good rigidity, high load, fast speed. The BC axis machining can be switched at will to reduce the cycle time.
- Double door design on the side, when the door is opened, the worktable will be all exposed, which can load material and save time and effort;



## Spindle Power Torque Diagram

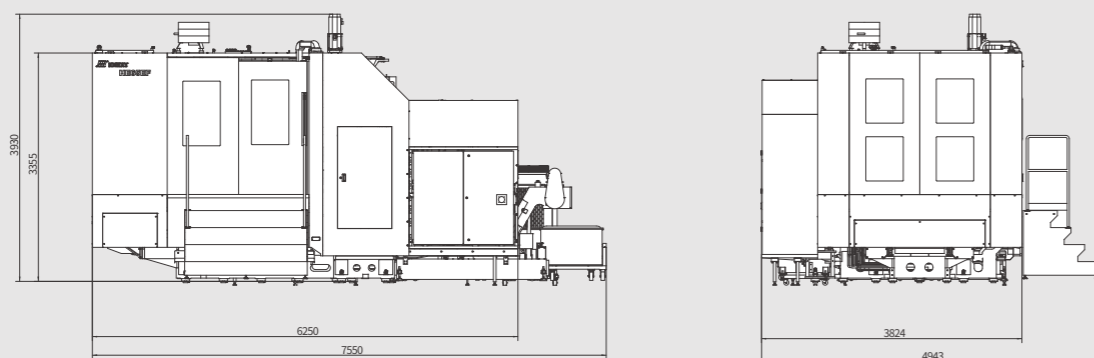
## HE65EF



## External Dimensions

(单位: mm)

## HE65EF



Items	Units	HE65EF
Table size	mm	650×650
Maximum bench load	kg	1000
Table indexing	-	0.001°
Number of tables	-	1
Table exchange time	s	/
Table switching drive mode	-	/
Maximum speed of worktable	r/min	30
Maximum workpiece diameter/height	mm	Φ1500×925(B-axis horizontal)
Three axis travel X/Y/Z	mm	1350/1200/700
Distance from spindle end face to center of worktable	mm	0~700
Distance from spindle center to worktable	mm	-400~800
Three axis fast move speed X/Y/Z	m/min	60
Main motor power	kW	26/45
Maximum spindle speed	rpm	10000
Spindle torque	N.m	305/623
Spindle cone hole	-	7:24 Taper NO.50
Knife storage capacity	Position	40
Shank type	-	MAS403 BT50
Maximum tool diameter/length/weight	mm/mm/kg	Φ125/530/25
Maximum tool diameter (no tool adjacent)	mm	Φ250
Tool change time (tool to tool)	s	3
Drilling (normalizing medium carbon steel)	mm	Φ55
Tapping (normalizing medium carbon steel)	mm	M45
Milling (normalizing medium carbon steel)	cm <sup>3</sup> /min	600
Positioning accuracy (X/Y/Z)	mm	0.01
Repositioning accuracy (X/Y/Z)	mm	0.006
Positioning accuracy (B)	"	8
Repositioning accuracy (B)	"	4
Numerical control system	*	NEWAY FANUC [SIEMENS]
Machine outline dimensions	mm	7600×5000×4000
Total power capacity of the machine	KVA	90
Tank chip fluid	L	1000
Automatic chip conveyor	-	Z-axis double helix + chain-plate rear chip
Machine weight	kg	21000

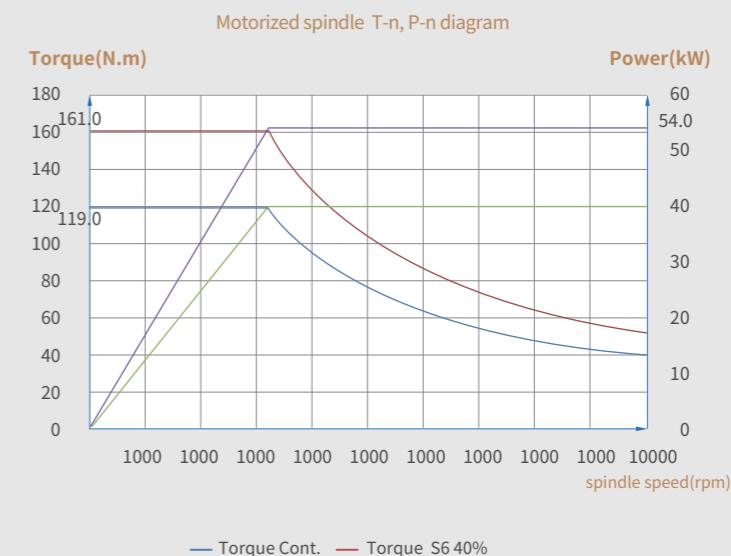
## HP series- High Speed Cradle Type 5-axis Horizontal Machining Center

- The main body of the machine adopts one-piece welded steel bed structure, and the moving object is highly lightweight design;
- X/Y/Z axis adopt linear motor drive, up to 120m/min moving speed;
- The spindle adopts imported high-performance electric spindle, the speed can reach 10000rpm;
- Five-axis cradle rotary table is driven by DD motor ,with linear scale ,can reach high precision and five-axis linkage;
- HSK-A100 overhead servo tool magazine, the tool change adopts the picking type tool change mode, and fix the tool position.



### Spindle Power Torque Diagram

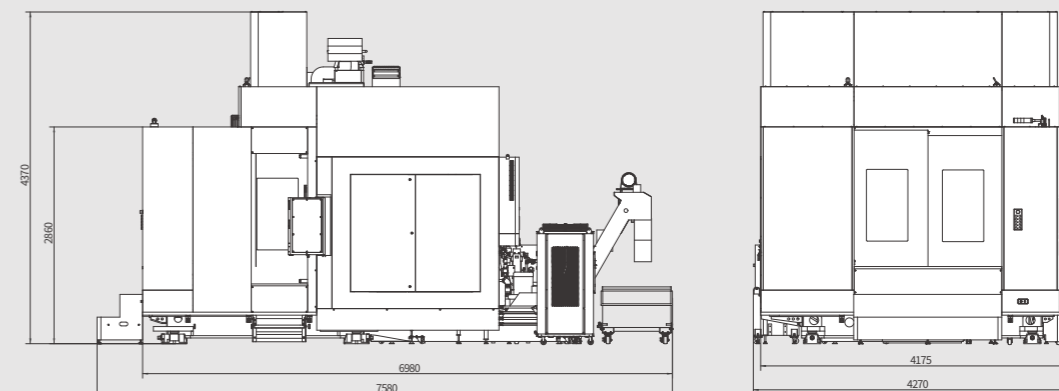
HP80F



### External Dimensions

(单位: mm)

HP80F



Items	Units	HP80F
Table size	mm	Φ800(optional)
Maximum bench load	kg	1000
Table indexing	-	0.001°×360000
Table exchange time	S	/
Table switching drive mode	-	/
Maximum speed of worktable	r/min	25(A)/40(B)
Maximum workpiece diameter/height	mm	Φ1850×1840
Three axis travel X/Y/Z	mm	1500/1325/660
A-axis rotation range	°	-120~+120
B axis rotation range	°	360°
Distance from spindle end face to center of worktable (horizontal)	mm	/
Distance from spindle center to worktable (horizontal)	mm	/
Spindle end face to worktable (vertical)	mm	/
Center of spindle to center of worktable (vertical)	mm	/
Three axis fast move speed X/Y/Z	m/min	120
Main motor power	kW	40/54
Maximum spindle speed	rpm	10000
Spindle torque	N.m	119/161
Spindle cone hole	-	HSK-A100
Knife storage capacity	Position	40
Shank type	-	HSK-A100
Maximum tool diameter/length/weight	mm/mm/kg	Φ110/500/30
Maximum tool diameter (no tool adjacent)	mm	Φ125
Tool change time (tool to tool)	s	5(cut to cut)
Positioning accuracy (X/Y/Z)	mm	0.006
Repositioning accuracy (X/Y/Z)	mm	0.004
Positioning accuracy (B)	"	10
Repositioning accuracy (B)	"	5
Numerical control system	-	SIEMENS
Machine outline dimensions	mm	7580×4270×4370
Total power capacity of the machine	kVA	115
Tank chip fluid	L	1000
Automatic chip conveyorr	-	Scraping rear chip
Machine weight	kg	28000

## HE series- Automatic Line Horizontal Machining Center

- This series features a High-Speed and High Power Direct Drive spindle design, spindle speed 8000rpm, motor power 50/65kW, torque 426/506N.m, 0~8000rpm acceleration 1.2s, effectively improving workpiece quality and processing efficiency;
- Rapid traverse speeds up to 60m/min, 0~60m/min acceleration of 0.2s, overall efficiency increased by 30%;
- The full servo tool magazine is lightning fast with a 1.6s tool change and very reliable.
- 180 indexing time of only 3.5s, improves processing efficiency. A variety of worktable modules can be selected (B-axis, A-axis, five-axis cradle), providing hydraulic fixture interface, equipped with an independent hydraulic system to ensure the pressure of the clamping system, and quickly responding to high-end customer needs;
- Large range machining, three-axis stroke X/Y/Z up to 1000/850/1000mm;
- Achieve off-machine inspection, machining, and testing at the same time, greatly reducing processing preparation time;
- Automatic identification of workpieces to avoid misuse of machine tools;
- The machine footprint decreased by 20%, saving space, and greatly facilitating the formation of production lines;
- Intelligent control affords automatic replacement of multiple lines;
- Suitable for high-precision box-type parts processing, engine block, machine tool spindle box, medical equipment, aerospace, and other industries.



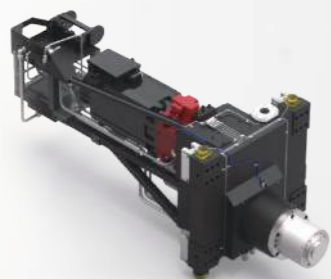
## Spindle

High-power electric spindle as standard, which has a small temperature rise and small thermal deformation, improve processing quality and processing efficiency.

Spindle speed: 20 ~ 8000 rpm  
Spindle taper: HSK A100  
Spindle motor power: 50/65kW  
Spindle torque: 405/526 N.m



Spindle speed: 6000 rpm  
Spindle taper: HSK A100  
Spindle motor power: 22/26kW  
Spindle torque: 770/910 N.m



Spindle speed: 10000 rpm  
Spindle taper: HSK A100  
Spindle motor power: 50/70kW  
Spindle torque: 400/560 N.m



## Column

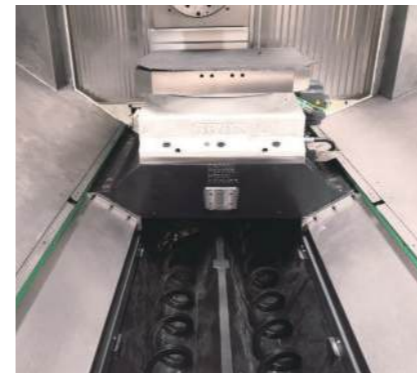
### Double Column, Closed Structure, Frame Design

- Thermal symmetrical frame type and double column structure to minimize thermal deformation and ensure stable high-precision machining;
- The column adopts closed and frame structure, horizontal and vertical circular reinforce rib design to realize excellent bending and torsion resistance;
- There are thick-walled longitudinal and transverse ring reinforce ribs in the cavity, and the width of the column wall is up to 200mm providing great rigidity;
- Large-span inner cavity structure, which can be equipped with the high-torque electric spindle.

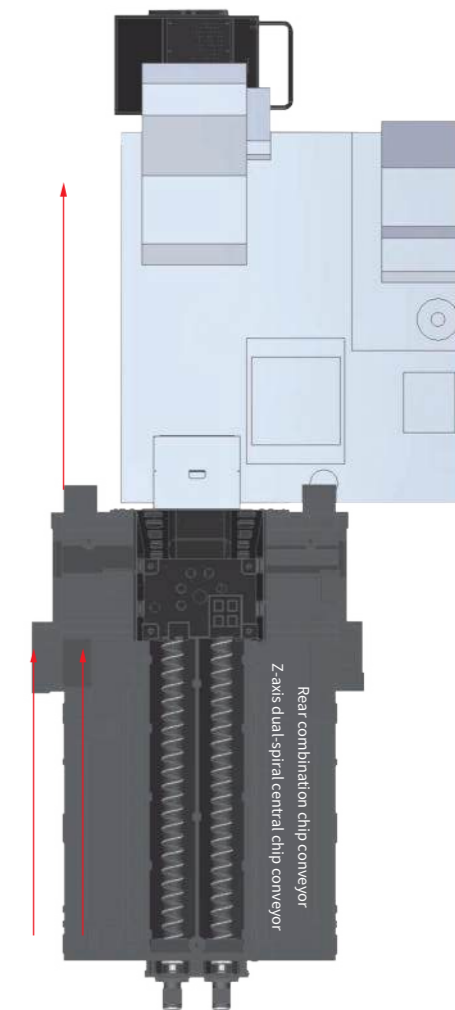
## Chip Removal

### Central Chip Removal Structure

Adopting the central chip removal method, the chip and coolant fluid directly fall into the central chip removal device, which reduces the thermal deformation of the machine tool and is beneficial to improve the accuracy.



Chips on both sides of the worktable are pushed directly into the rear sewage lifting system by a set of spiral chip conveyor. Achieve fast and efficient back chip remove. The front and rear spiral chip conveyor is arranged in an inclined manner, which can discharge chips more smoothly.



## Worktable

### A-axis / B-axis / Five-axis cradle table can be equipped

- A variety of worktable options are available (A-axis, B-axis, five-axis trunnion) to quickly respond to high-end customer needs;
- Neway provides a hydraulic clamping interface with an independent hydraulic system to ensure reliable continuous pressure of the clamping system;
- Neway' s rotary table can be equipped with multi-channel oil and gas outlets to meet the needs of automatic fixtures.

Offering:



A-axis worktable



B-axis worktable

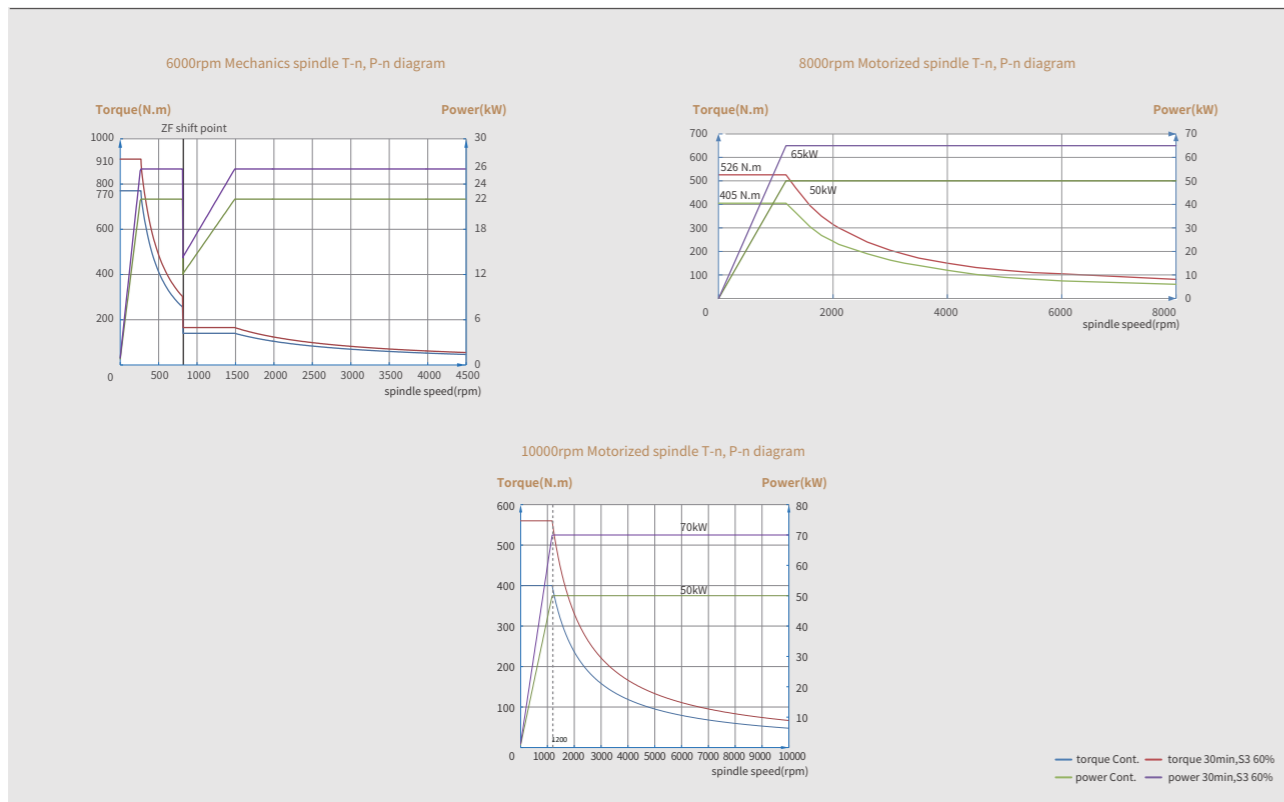


Full Five-axis cradle worktable

### Spindle Power Torque Diagram

(Unit: mm)

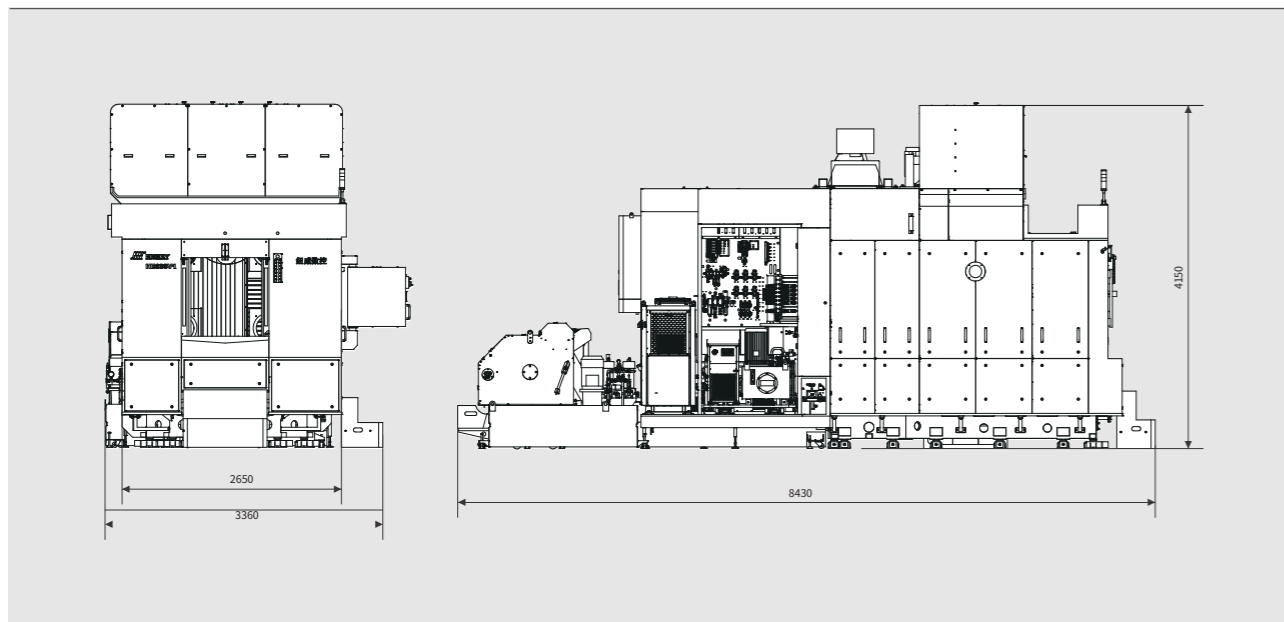
#### HE63S / HE100A / HE50F



### External Dimensions

(Unit: mm)

#### HE63S / HE100A / HE50F



Item	Unit	HE63SZ	HE63SV	HE100AZ	HE100AV	HE50FZ	HE50FV
Worktable size	mm	630×630	630×630	1000×500	1000×500	500×500	500×500
Max. worktable load	kg	1200	1200	800	800	400	400
Worktable indexing	-	0.001°×360000					
Worktable number	-	1	1	1	1	1	1
Worktable exchanging time	s	/	/	/	/	/	/
Worktable exchanging drive	-	/	/	/	/	/	/
Worktable max. speed	r/min	30	30	12	12	30(B)/12(A)	30(B)/12(A)
Max. part diameter / height	mm	Φ900/1000	Φ900/1000	Φ900/600	Φ900/600	Φ800/600	Φ800/600
Axis travel X/Y/Z	mm	1000/890/1000	1000/890/1000	1000/890/970	1000/890/970	1000/890/970	1000/890/970
A-axis rotation range	°	/	/	±360	±360	±120	±120
B-axis rotation range	°	±360	±360	/	/	±360	±360
Spindle nose to worktable	mm	120~1120	120~1120	150~1120	150~1120	150~1120	150~1120
Spindle center to worktable surface	mm	100~990	100~990	-37~853	-37~853	-37~853	-37~853
Axis rapid travel X/Y/Z	m/min	60	60	60	60	60	60
Spindle motor power	kW	22/26	50/65[50/70]	22/26	50/65 [50/70]	22/26	50/65 [50/70]
Max. spindle speed	rpm	6000	8000[10000]	6000	8000 [10000]	6000	8000 [10000]
Spindle torque	N.m	770/910	405/526[400/560]	770/910	405/526 [400/560]	770/910	405/526 [400/560]
Spindle taper	-	HSK-A100	HSK-A100	HSK-A100	HSK-A100	HSK-A100	HSK-A100
Number of tools(disc type)	Pc	40(chain type)	40(chain type)	40(chain type)	40(chain type)	40(chain type)	40(chain type)
Tool shank	-	HSK-A100	HSK-A100	HSK-A100	HSK-A100	HSK-A100	HSK-A100
Max. tool dia./length/weight	mm/mm/kg	Φ125/450/25	Φ125/450/25	Φ125/450/25	Φ125/450/25	Φ125/450/25	Φ125/450/25
Max. tool size (empty neighbor)	mm	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250
Tool change time T-T	s	6(tool weight<10kg)/ 8(tool weight≥10kg)					
Drilling (normalized mild steel)	mm	Φ55	Φ55	Φ55	Φ55	Φ55	Φ55
Tapping (normalized mild steel)	mm	M45	M45	M45	M45	M45	M45
Milling (normalized mild steel)	cm³/min	600	600	600	600	600	600
Positioning accuracy (X/Y/Z)	mm	0.01	0.01	0.01	0.01	0.01	0.01
Repositioning accuracy X/Y/Z)	mm	0.006	0.006	0.006	0.006	0.006	0.006
Positioning accuracy (B)	"	8	8	8	8	8	8
Repositioning accuracy (B)	"	5	5	5	5	5	5
CNC system	-	NEWAY FANUC [SIEMENS]					
Machine dimension(L×W×H)	mm	8430×3360×4150					
Total power	KVA	110	110	110	110	110	110
Coolant tank capacity	L	1000	1000	1000	1000	1000	1000
Auto chip conveyor	-	Central double spiral chip conveyer					
Machine Weight	kg	21000	21000	22000	22000	23000	23000

[ ]Options

## HE series- Multi-pallet & FMS Pallet Line & Processing Automatic Line

- **Increase Spindle Utilization and Overall Equipment Efficiency (OEE)**

The remaining pallets can be opened to other processing tasks, so that the spindle can run continuously. Compared with the traditional machining center, the spindle utilization rate of NEWAY multi-pallet system is increased by more than 35%, and the spindle utilization rate of the multi-pallet horizontal machining center exceeds 90% (calculated according to 24h per day and 6 days per week).

- **Lights-Out Operation + Unmanned Operation**

Neway's multi-pallet option allows the operator to load the workpiece on the remaining pallets before the shift is over, and then process the parts when people are unattended. Realize lights-off operation, and the machine tool can realize unattended operation at night or throughout the weekend.

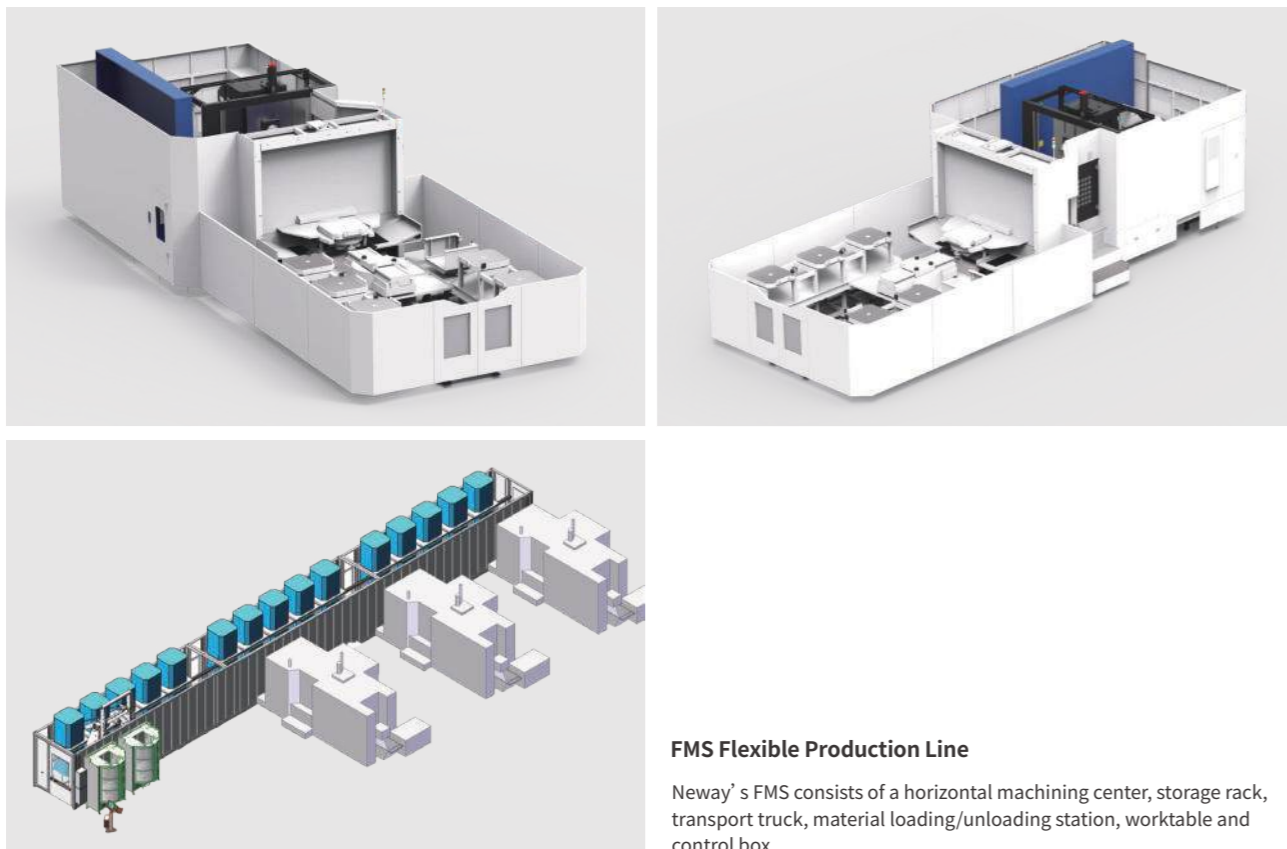
- **Tool Breakage Detection + Automatic Selection Pallet**

Multiple pallets and macro programs (cyclic logic) allow the operator to process multiple parts by change several macro variables. The broken tool detection function can realize processing change to the next pallet when the tool breaks during the operation; Program and tool numbers are stored in macro variables so technicians can perform inspections accurately and quickly.

- **Reduce Operator Skill Requirements**

The machining technician only needs to complete the commissioning of the first piece. The operator can operate some of the buttons on the machine tool as required. The clamping of the pallet clamp can be designed to allow relatively unskilled operators to load the workpiece.

### H Series HMC with Highly Productive 7 Pallet Systems



#### FMS Flexible Production Line

Neway's FMS consists of a horizontal machining center, storage rack, transport truck, material loading/unloading station, worktable and control box.



### Automobile Engine Cylinder Block & Top Production Line

The project consists of 45 horizontal machining centers, with the automatic loading and unloading gantry robot. The machine tool works 300 days a year, three-shift production, 21.3 hours a day, an annual output of 200,000 pieces, and the production line beat  $\leq 96$  seconds/piece (including the loading and unloading material time 25 seconds, all auxiliary time such as probe replacement time and detection time), parts processing content  $CmK \geq 1.67$ .

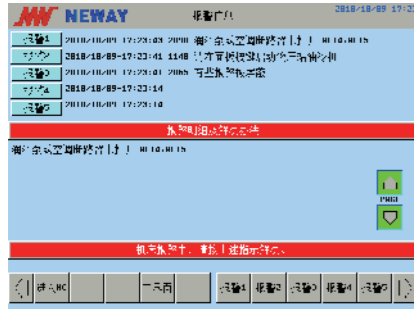


# CNC Cntroller

Neway's combination of powerful system functions and in-depth secondary development greatly enhances the ease of use of machine tools. Neway's second development of the CNC controller greatly improves efficiency in terms of machine tool use, commissioning, safety alarm elimination, and maintenance.

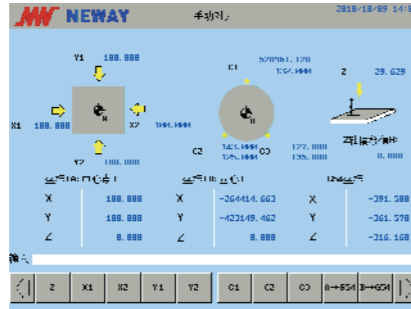
### 1 Alarm Text Help

Alarm information and processing method are generated by the system's PMC. Processing concise English alarm information, it is more convenient to find the root cause of the alarm and provides corresponding solutions.



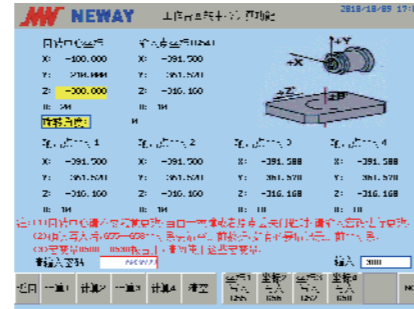
### 2 Tool Manual Setting

Neway uses the system's preset function to image human-machine dialogue making manual tool setting more intuitive and simple.



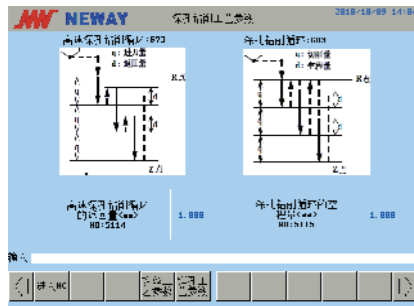
### 3 Worktable Rotary Center Setting

Neway's system's secondary development worktable rotary center calculation function makes the overturn boring more convenient.



### 4 Deep Hole Drilling Process Parameters

Neway utilizes system preset functions to allow easy human-machine dialogue and has preset processing parameters and routines to simplify programming



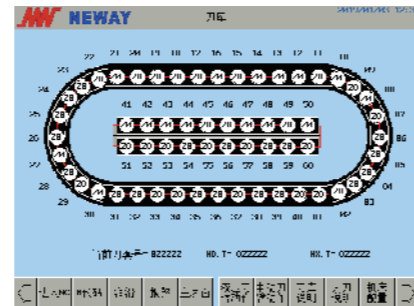
### 5 Lubrication System

Neway's centralized, programmable lubrication offers warnings and quickly and easily sets the lubrication pump oiling time while continuously checking the working status of the lubrication pump to insure long machine life.

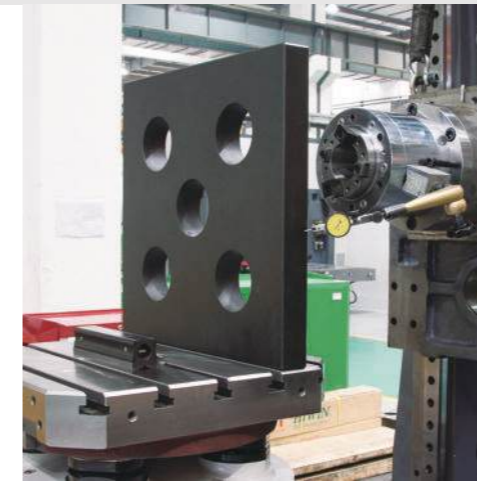


### 6 Tool Magazine Management

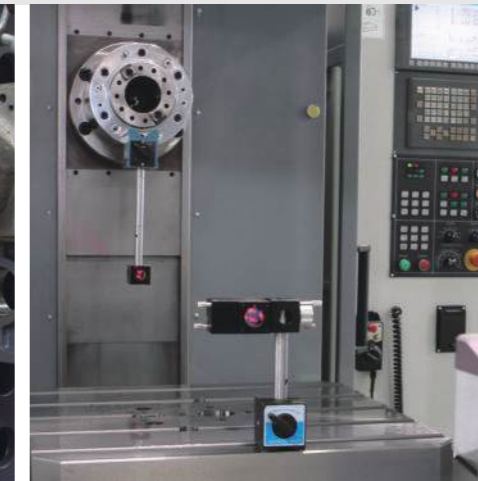
Neway's tool magazine management HMI human-machine interface insures easy tooling and tool magazine management.



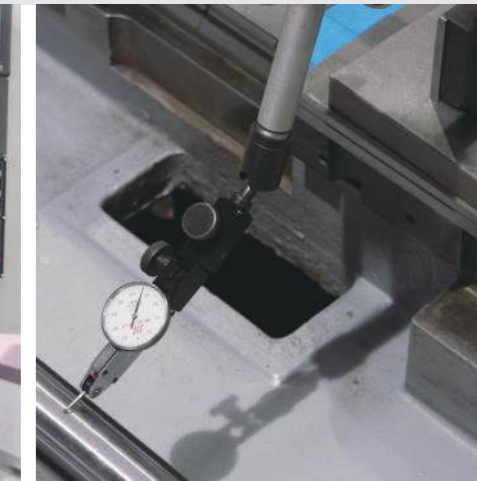
# Manufacturing And Testing



• Perpendicularity detection



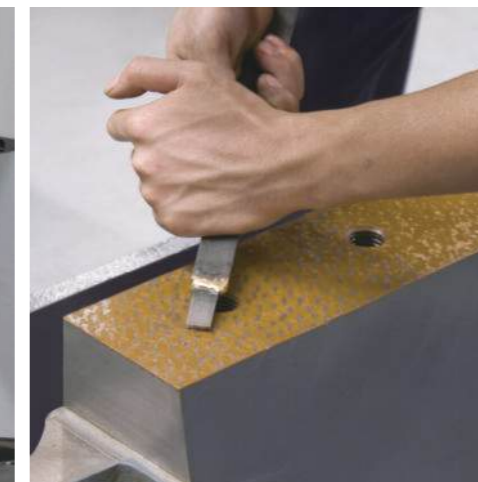
• Laser interferometer precision detection



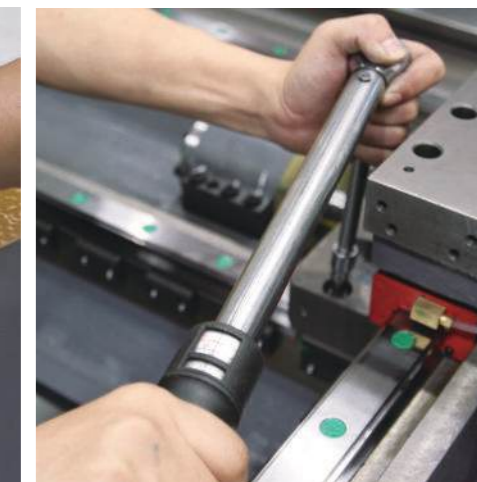
• Parallelism detection



• Three-coordinate detection



• Hand scraping

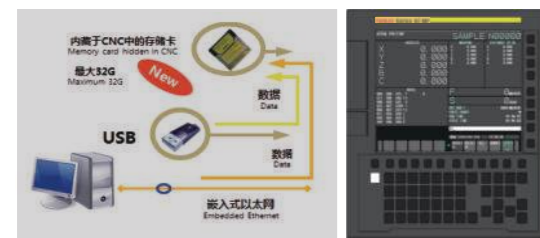


• Torque wrench crafts

Some functions need to be implemented in conjunction with system functions:

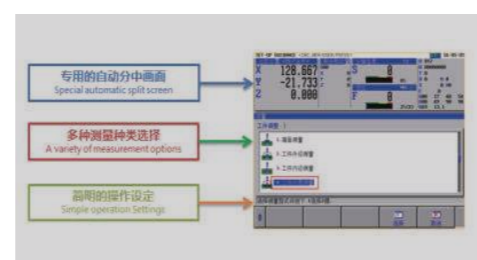
### 1 High-speed USB and convenient PCMA memory card solution

- The CNC program can be transferred from USB to CF card.
- It can transfer program to CF card via embedded Ethernet.



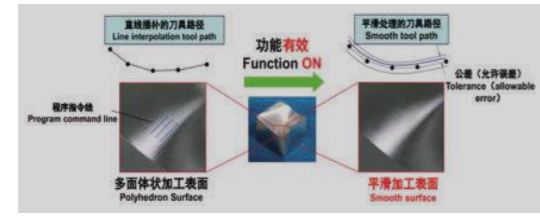
### 2 Preparation support before machining

- Saves the manual calculation steps, simplifying the operation.



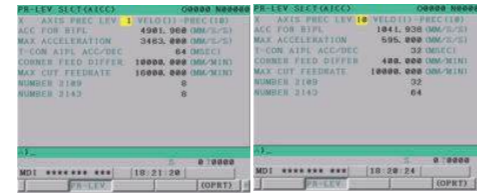
### 3 Smooth tolerance + control

Smooth tool-paths consisting of tiny line segments to improve machined surface quality




### 4 Processing conditions select

- According to the processing requirements, choose different "precision grades" to meet the processing efficiency and accuracy requirements.

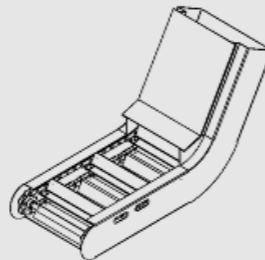


# Chip Conveyor Options

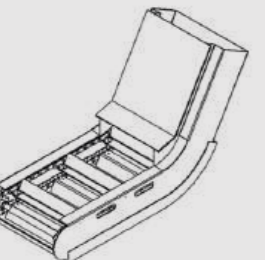
Neway currently offers several types of chip conveyors. Most commonly used are a chain type chip conveyor, scraper type chip conveyor, magnetic chip conveyor, or a spiral chip conveyor.



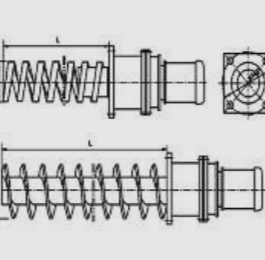
**Chain Type Chip Conveyor**  
It is mainly used for the collection and transportation of various rolls, lumps, strips and block chips, But is not suitable for powdery chips.




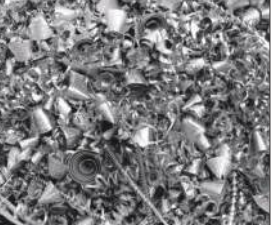
**Scraper Type Chip Conveyor**  
Mainly used for the transport of powdered chips, not for rolling chips.



**Magnetic Chip Conveyor**  
It is mainly chosen when the transport of powder, granules and shorter iron filings (or other magnetically permeable chips) is needed. It can also separate the magnetically conductive debris from oil or cutting fluid. The magnetic chip conveyor is a quantitative chip that does not create an overload.

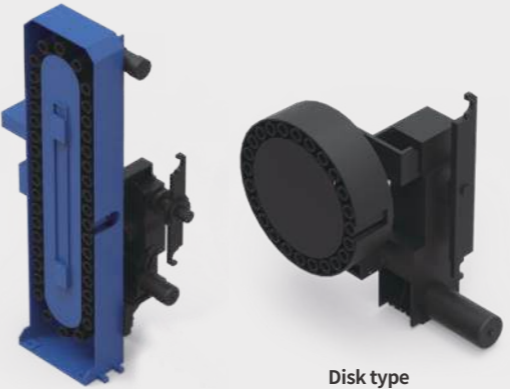


**Spiral Chip Conveyor**  
It is mainly used for the transportation of powder, block, and short chips, especially in places with small space. Not suitable for rolling chips.

Workpiece material	rolled steel	cast iron	aluminum & nonferrous metals	hybrid (general)
Chip shape				
Chip conveyor type	chain type	Chain type, scraper type, magnetic, spiral type	Chain type, scraper type, spiral type	Chain type, scraper type, spiral type

# Tool Magazine Selections

**Cam Quick Change Tool Magazine Type**



Neway's mechanical cam type tool change mechanism offers servo drive and allows a fast, reliable tool change for lower cycle times when several tools are required.

Tool change time: 3.45s  
 Maximum tool weight: 25 kg (55 lbs)  
 Maximum tool length: 400 mm (15.7")  
 Maximum tool outer diameter:  $\phi 125$  mm(4.9") (full tools)  
 $\phi 250$  mm(9.8") (adjacent without tool)  
 Capacity of tools: 24, 32, 40, 60, 80, 120...


**Hydraulic Tool Magazine Type (Heavier tools)**



Neway utilizes a Heavy Duty translational tool change, yaw type tool change hydraulic tool magazine, the tool change mechanism is driven by oil pressure. The advantage is that it easily supports heavier tools. The tool change time is slightly longer, but it maintains the tool grip and is field and factory proven reliable.

Tool change time: 5.5s (vertical) 7.5s (horizontal)  
 Maximum tool weight: 35 kg (77 lbs)  
 Maximum tool length: 400 mm (15.7")  
 Maximum tool outer diameter:  $\phi 125$  mm(4.9") (full tools)  
 $\phi 250$  mm(9.8") (adjacent without tool)  
 Capacity of tools: 40, 60, 80, 120...

**Synchronous Open Door Tool Magazine**



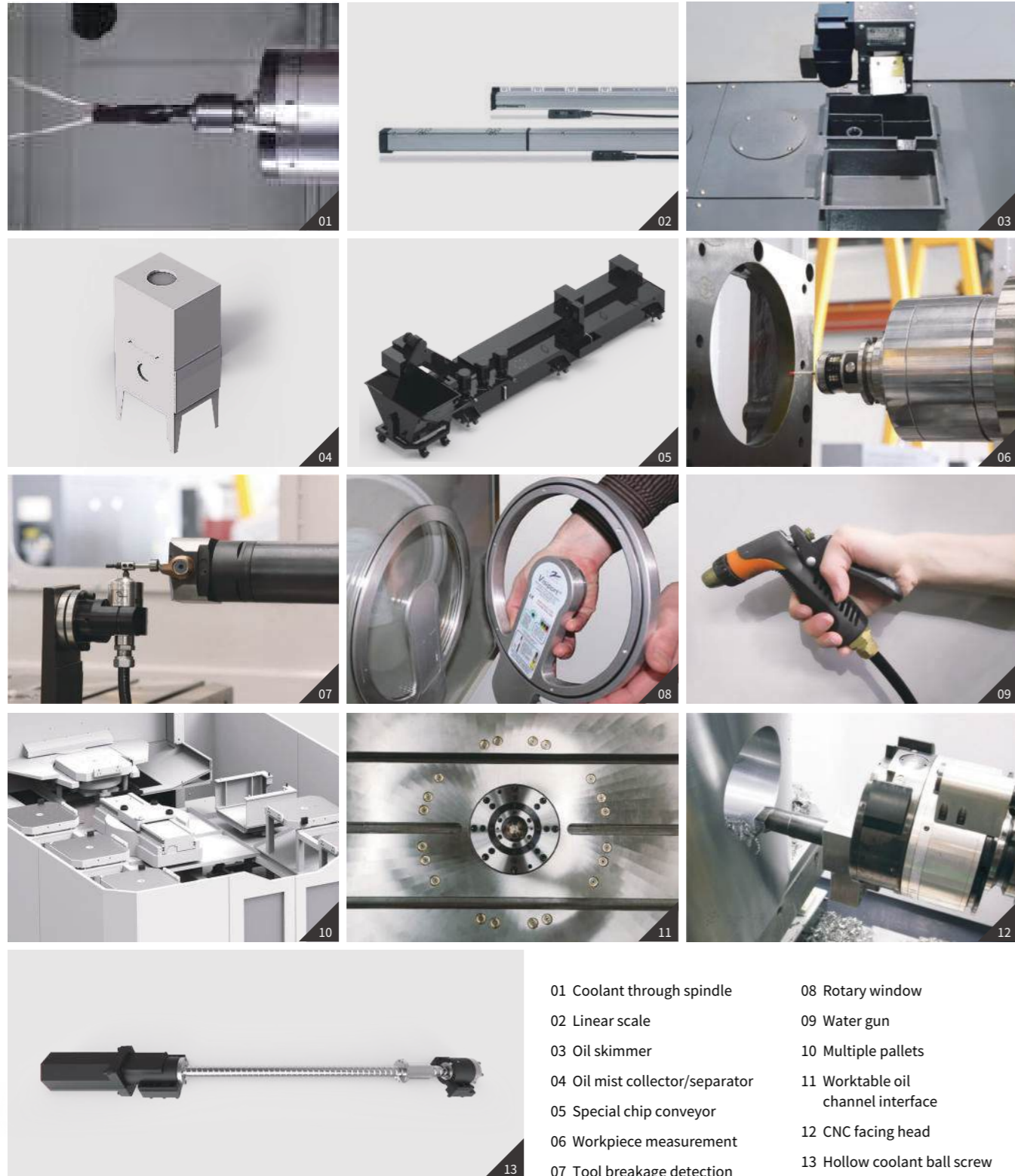
Neway's tool change action and door opening action are performed simultaneously. There is no waiting time for opening the door, and the tool change speed is extremely fast especially considering the weight of the tool.

Tool change time: 2.3s  
 Maximum tool weight: 20 kg (44lbs)  
 Maximum tool length: 500 mm (19.7")  
 The maximum outer diameter of the tool:  $\phi 115$  mm(4.5") (full tools)  
 $\phi 230$  mm (9") (adjacent without tool)  
 The number of tools: 40, 60, 80, 120...

**Support multiple types of tool holders**

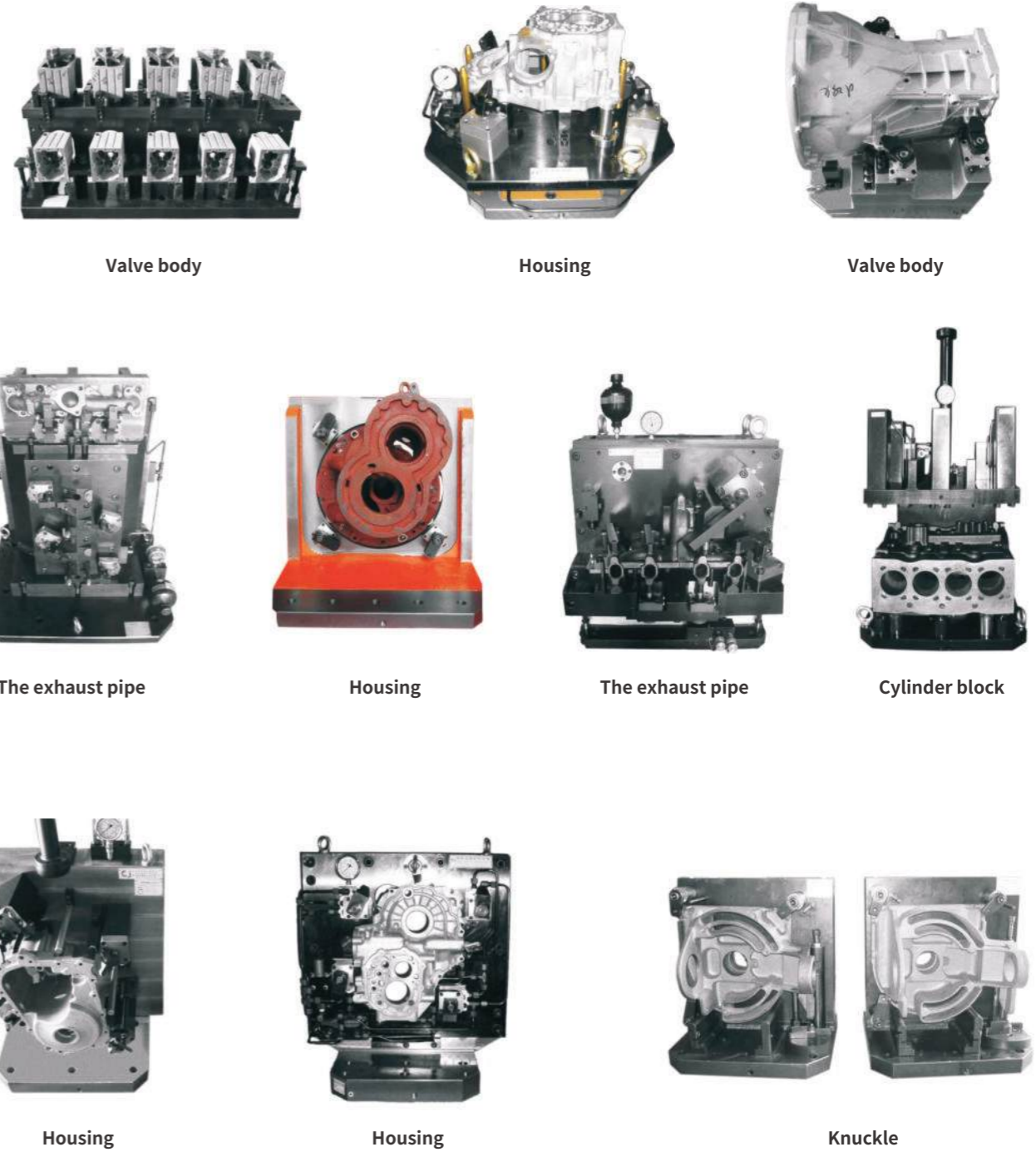
HSK  
 ISO  
 BT

# Options



- 01 Coolant through spindle
- 02 Linear scale
- 03 Oil skimmer
- 04 Oil mist collector/separator
- 05 Special chip conveyor
- 06 Workpiece measurement
- 07 Tool breakage detection
- 08 Rotary window
- 09 Water gun
- 10 Multiple pallets
- 11 Worktable oil channel interface
- 12 CNC facing head
- 13 Hollow coolant ball screw

# Work Fixture



Valve body

Housing

Valve body

The exhaust pipe

Housing

The exhaust pipe

Cylinder block

Housing

Housing

Knuckle