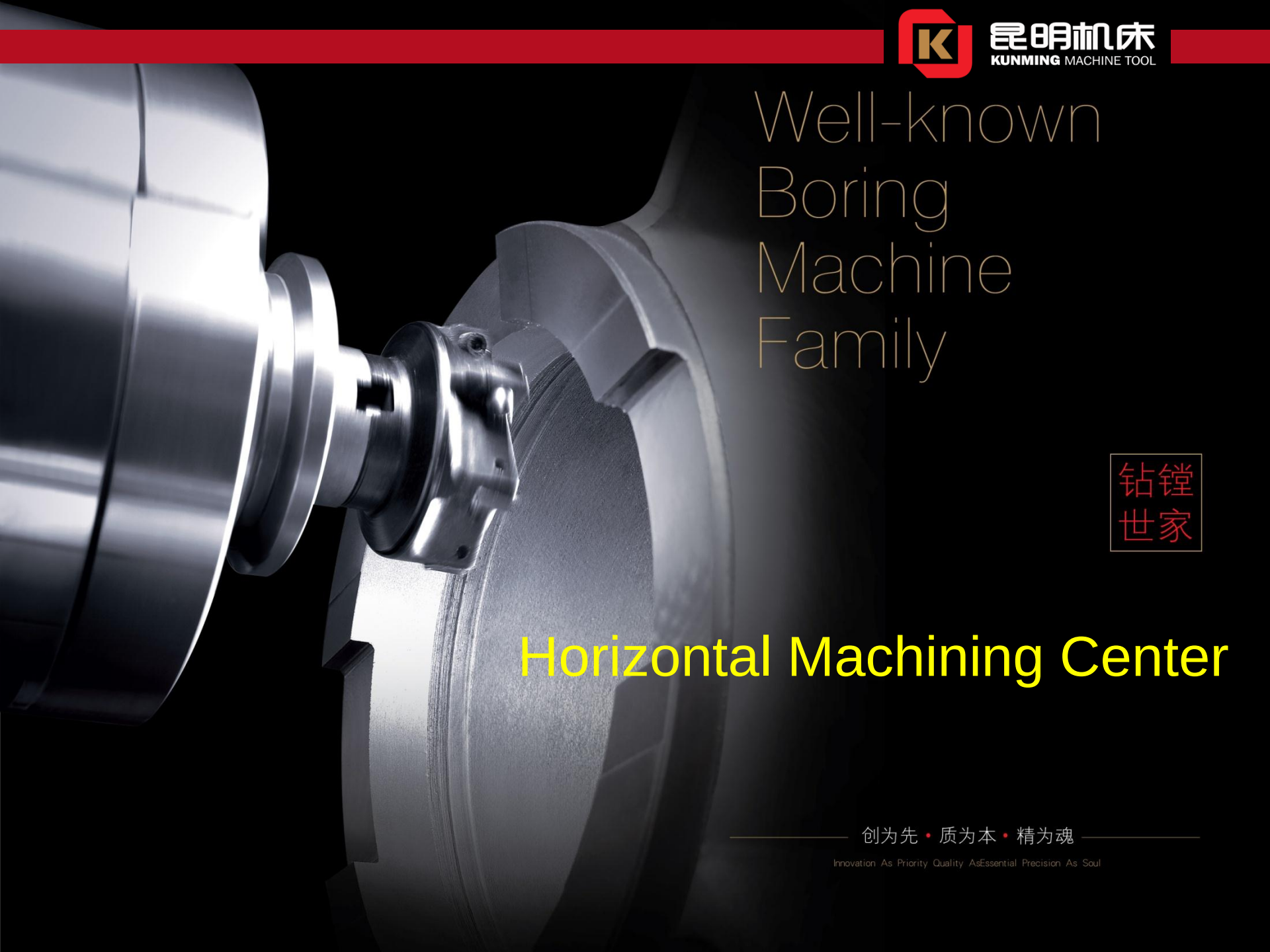
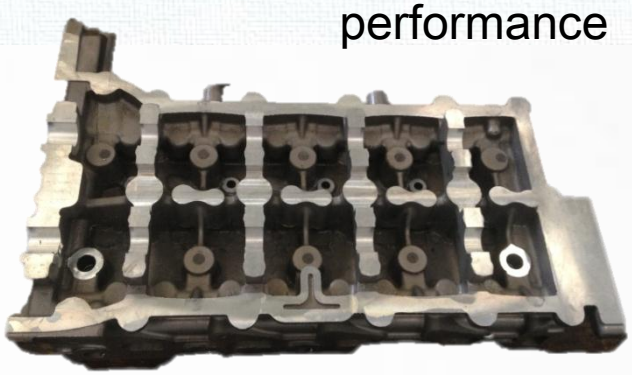

昆明机床
KUNMING MACHINE TOOL
Well-known
Boring
Machine
Family
钻镗
世家
Horizontal Machining Center
创为先 • 质为本 • 精为魂
Innovation As Priority Quality AsEssential Precision As Soul

Especially suitable for machining automobile engine cylinder block & cylinder cover.
High efficiency, high stability and high performance



Series of Horizontal Machining Center

Series of Horizontal Machining Center

KIKI50	Table size ：450X900mm (entire casting bed, liner guideway , Spindle speed 6000rpm)
KHC63/80	Table width：630/800mm (entire casting bed, liner guideway 、 can equip A swing table or AB swing table)
KHC100/125	Table width：1000/1250/1400mm (Front and rear bed are separated casting , liner guideway , high speed spindle /A swing spindle)
KHC160/200	Table width ：1600/1800/2000/2500mm (Front and rear bed are separated casting , liner guideway , high speed spindle /A swing spindle)
TH651xx	Table width ：1000/1250/1400 (roller compound guideway , Spindle speed 3000-5000rpm)
THM4680/100/125	Table width：800/1000/1250mm (Entire casting bed , gantry column , liner guideway , positioning accuracy 0.003mm)

KHC(S)63/2

Horizontal Machining Center

As being one of the Horizontal Machining Center the series KHC(S)63/2 has features as follows:

• High structure rigid ensures the high efficiency and high precision of machining parts;

•60 m/min feed speed & 1G acceleration can reduce the time of machining;

• Varieties of spindle, ATC and table change pallet system configuration for option;

• High precision, high speed of roller linear guideway as strong support.

KHC63/2 Suitable processing materials and work piece:

•High speed and rapid feed motion suitable for machining engine block cover or other aluminum alloy parts.

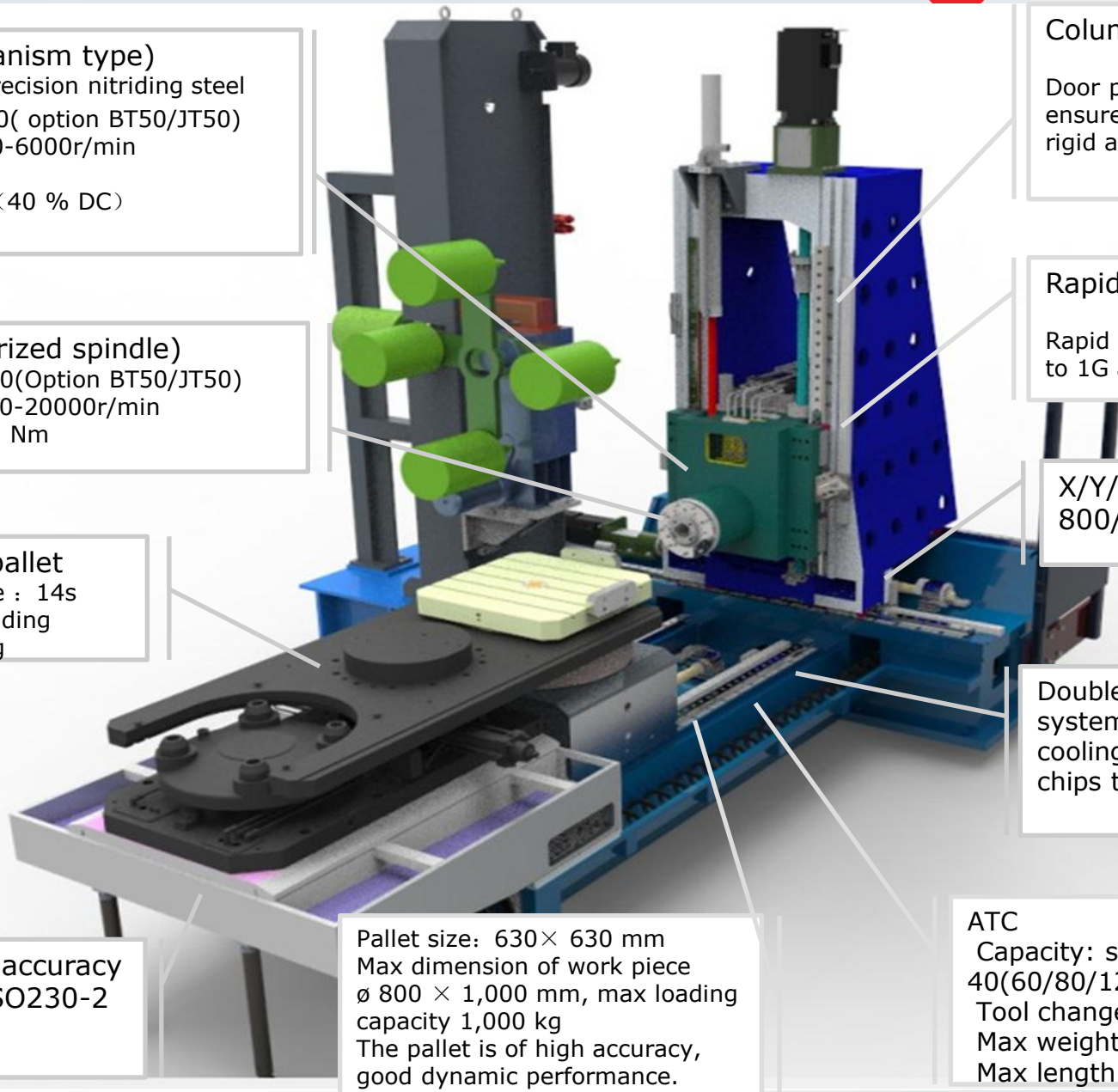
High power and torque suitable for machining engine cylinder block and other steel iron parts.

KHC(S)63/2 can also equipped with 5 axes function module

•A milling head use in large size parts processing

•2D cradle type table is applied to machining medium and small size parts or overloading processing field

先进的主机构造



Spindle (mechanism type)
High rigid, high precision nitriding steel
Shank：HSK-A100(option BT50/JT50)
Spindle speed：20-6000r/min
Torque：750 Nm
Power：22/26kw（40 % DC）

Spindle (motorized spindle)
Shank：HSK-A100(Option BT50/JT50)
Spindle speed：10-20000r/min
Torque：110-540 Nm

Rapid change pallet
Pallet change time ： 14s
Unilateral max loading capacity:：1000kg

All geometric accuracy standard is ISO230-2

Pallet size：630× 630 mm
Max dimension of work piece ø 800 × 1,000 mm, max loading capacity 1,000 kg
The pallet is of high accuracy, good dynamic performance.

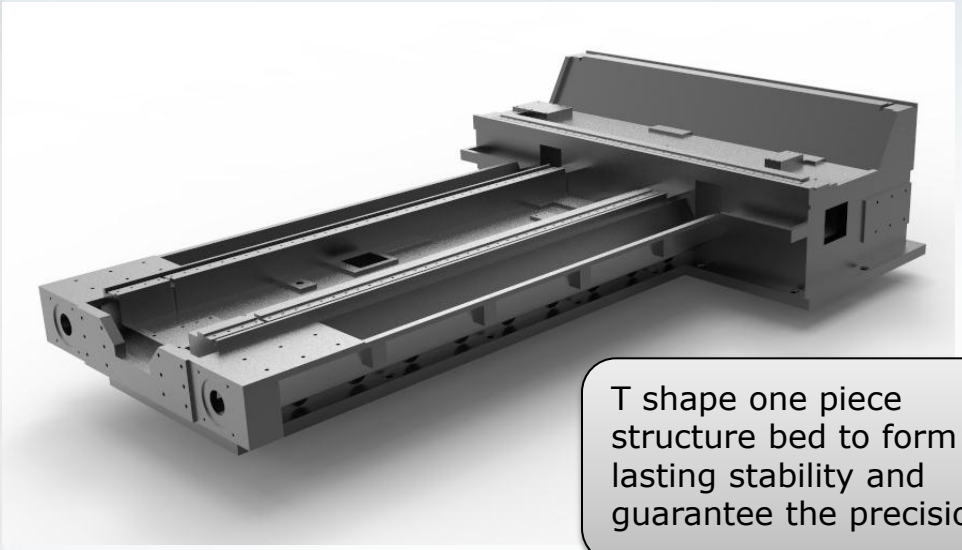
Column
Door pillar type structure to ensure the machine superior rigid and strength

Rapid feed
Rapid feed speed is 60m/min to 1G acceleration.

X/Y/Z axis travel 800/700/900mm

Double spiral chip removal system with large flow cooling fluid will remove chips to chip conveyor

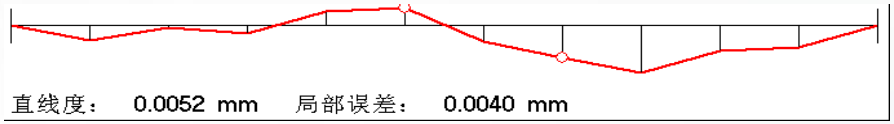
ATC
Capacity: standard 40(60/80/120 for option)
Tool change time:5s
Max weight of tool: 20kgs
Max length of tool: 400mm



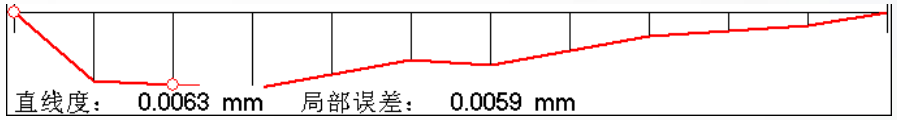
T shape one piece structure bed to form lasting stability and guarantee the precision

Liner roller guideway meet the high speed, precision and rigid requirements

Basic supporting parts guarantee the high precision machining.



Straightness: 0.0052mm, error: 0.0040mm



Straightness: 0.0063mm, error: 0.0059mm

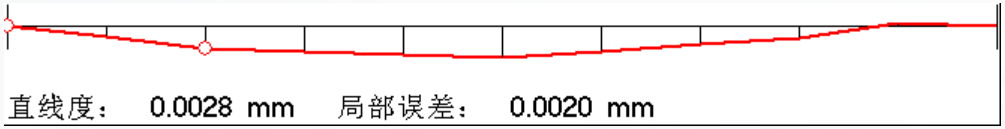
Motor and ball screw directly coupling realized the acceleration speed to 1G, implement of feed shaft high dynamic characteristics.

Door type column structure ensure the high rigid and strength。

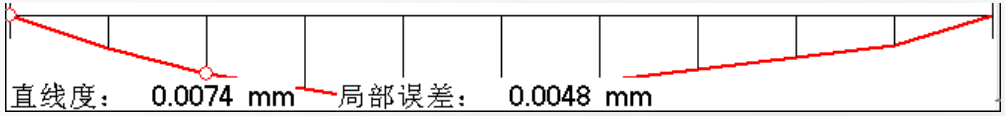
Ladder structure of high and low orbit shorten the power flow, improve process stability.

The lightweight design, get better acceleration performance.

High precision installation base of guideway guarantee Y axis high positioning accuracy.

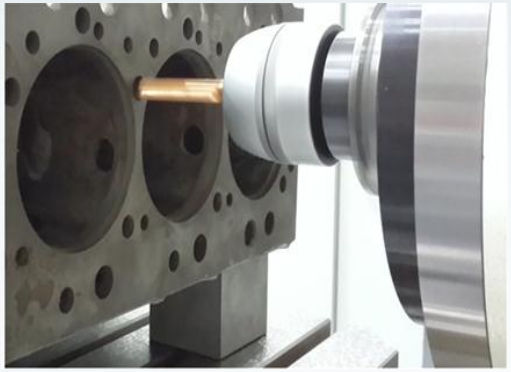


Straightness: 0.0052mm, error: 0.0040mm

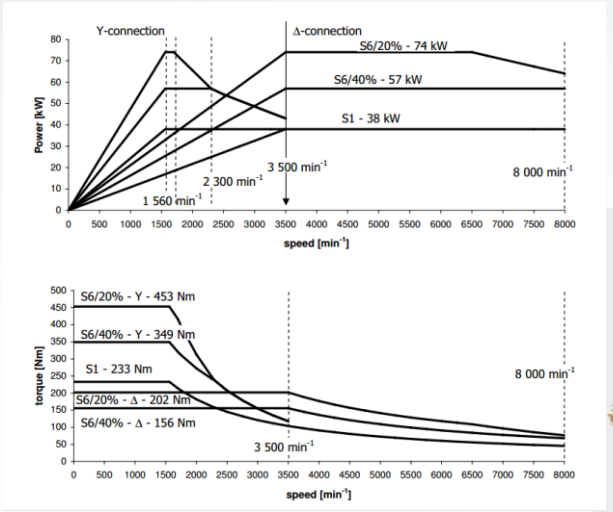


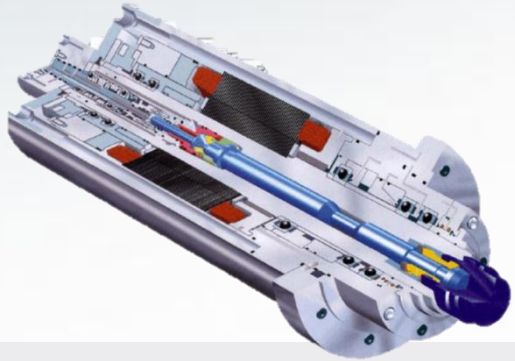
Straightness: 0.0074mm, error: 0.0048mm

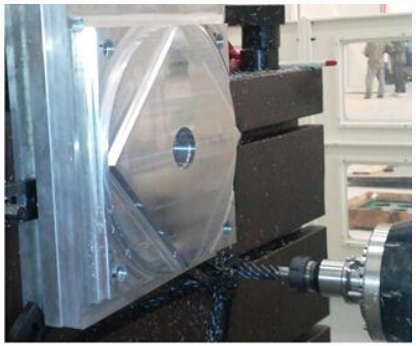
High speed spindle



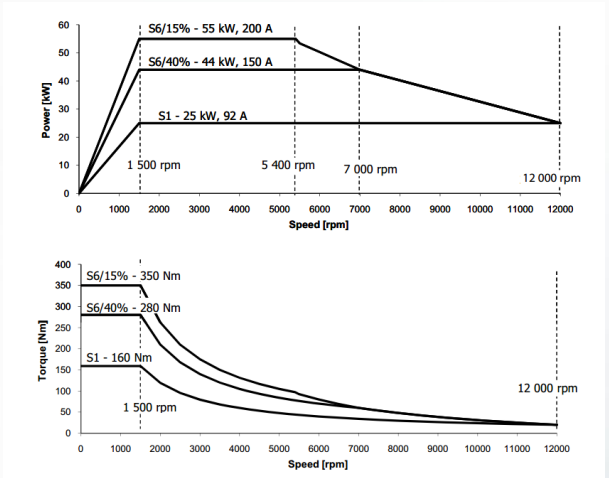
Electrical spindle(25/44kw, HSK-A100,12000min^{-1})
Material being cutting: HT250
Spindle speed:8000min^{-1}
Feed speed: 2000mm/min





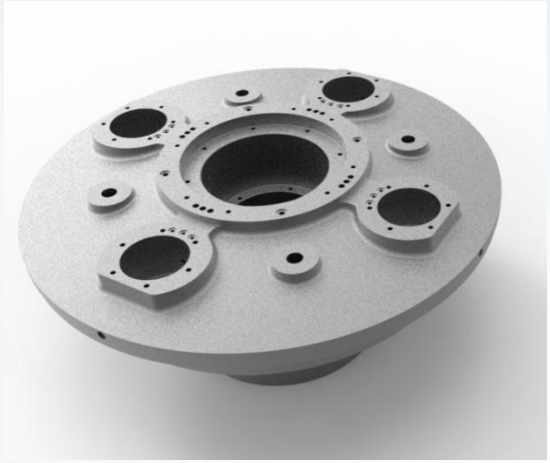


Electrical spindle(25/44kw, HSK-A100,12000min-1)
Material being cutting: Al
Using tool: Dia. 20mm, Z=4
Spindle speed: 12000min-1
Feed speed:12000mm
Axial deep/ Redial deep: 25/15mm
Cutting removable :4500cm 3min



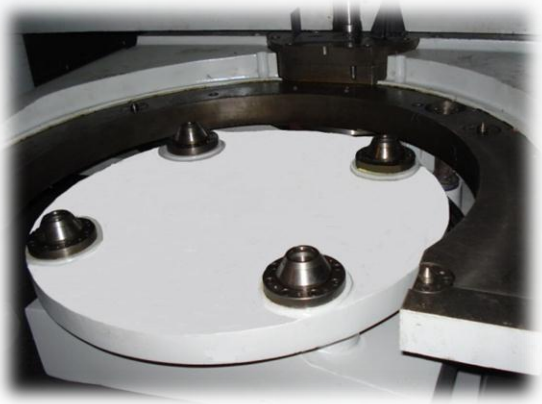
- High speed spindle particularly suitable for machining aluminum alloy, cast iron etc.
- Ideal choice of the automobile engine cylinder block and cylinder cover.
- Various high-speed spindle configuration, satisfy various customers' needs.
- Easy maintenance and installation

One piece rotary table with high rigid and stability.

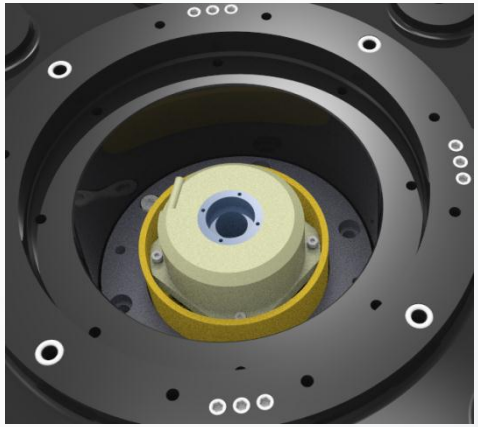


Axial radial as rotary bearing support of guideway guarantee the high precision and smooth movement, can keep the precision for a long time.

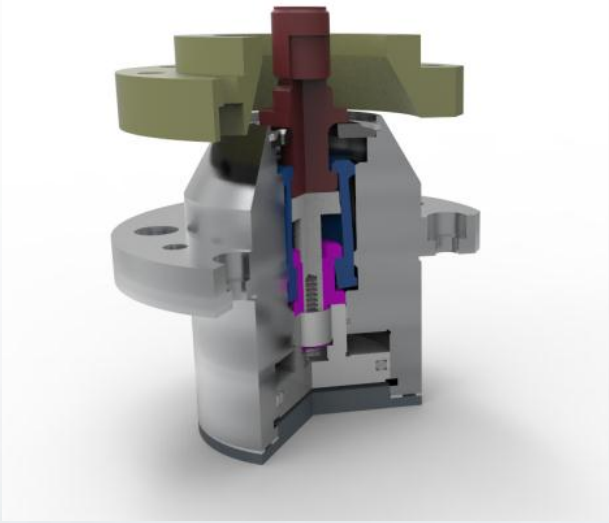
B axis feed mechanism adopts double lead worm gear transmission, transmission is of high precision, and can eliminate the backlash



Equip with four cone positioning of the ATC exchange mechanism, switching time is only 14 seconds, significantly improve processing efficiency.



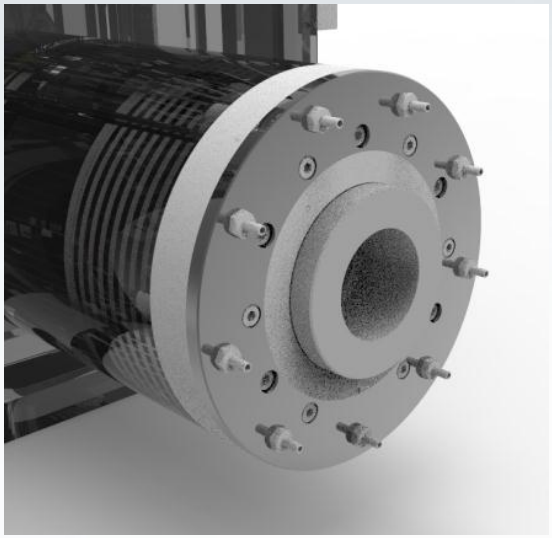
Angular encoder is overhead type installation, easy maintaining.



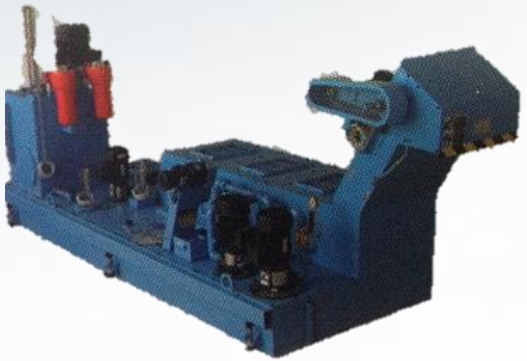
High strength four cone positioning

Accessories

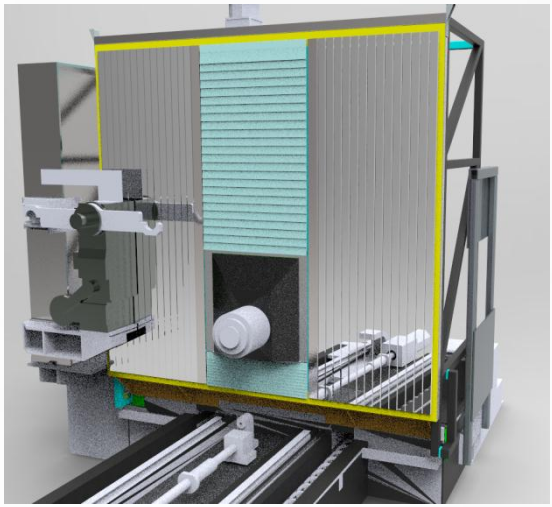
Standard configuration 40 sets of ATC (option 60/80/120)



Spindle nose equipped with adjust nozzle to provide the cooling liquid improve the machining precision.



High speed machining will produce a lot of scrap chips, in order to ensure reliable chip removal, protection cover adopt the large angle guide structure design to ensure the chip with coolant flow quickly spiral chip conveyor.。



Whole monolithic wall cover X,Y direction linkage one piece protection

The integral cooling spray system .

Control System

SINAMIC System integration , NC,PLC, HMI and drives controllers

➢SINAMICS drive system
•Electronic nameplate, debugging more easier.
•BICO technology, simple connection
•Suitable for the bad weather
•Distributed connection, modular structure, more flexible configuration

➢Restrain machine resonance and speed acceleration limitation

Speed limit for drive controller is suitable for the dynamic characteristics of machine tool, to help get maximum speed ASAP.

➢Hardware and software of intelligent balance
Satisfy the current production of high speed, high precision machining, realize perfect processing quality

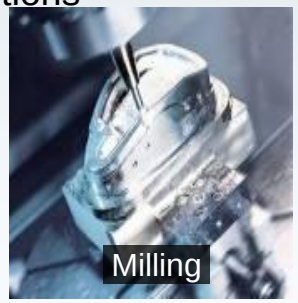
➢Simple, open, unified

Standardized operation, programming, supporting customers a variety applications

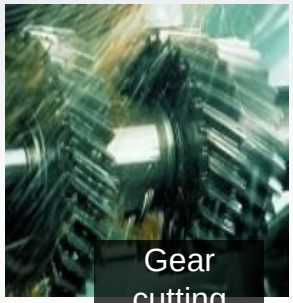
➢Complete communication environment: quit Ethernet connection
System realized the high speed data transmission between the controller and the host, the system is equipped with Ethernet TCP/IP interface.

Optimization control system perfectly meet all kinds of technology solutions

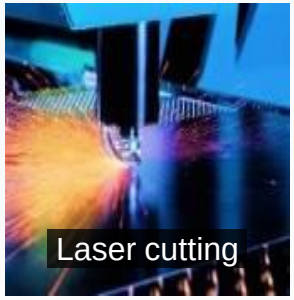

Turning


Milling


Grinding


Gear cutting


Punching


Laser cutting


Complex Machining


Transport and assemble

➢Flexible programming: introduce the concept of frame

Using the interim characteristics of frame to entire orthogonal coordinate system, the system provides the coordinate system of the character move, rotate, zoom, reverse function, in the default frame and procedure, instruction frame is transitional, realize flexible programming, parts inclined plane, also easy to process.

Select the work piece coordinate system (G54), coordinate system translation to three axis direction through TRAS, and the coordinate rotation through APOT centered on the Y axis. Thereby, the coordinate system is set correctly to processing surface. All operations can also rely on five axis transformation function implementation.

➢Simple to achieve the optimal results: quadrantal error value

Though quadrant error compensation and control switch of the shape error compensation, the optimization precision is improved by compaction

➢Efficient five axis control

Further improve the efficiency of turbine blade and other complex shape parts processing.

➢Senior positioning APC

Keep the machine features at the same time improve the Kv wash, improve the productivity.

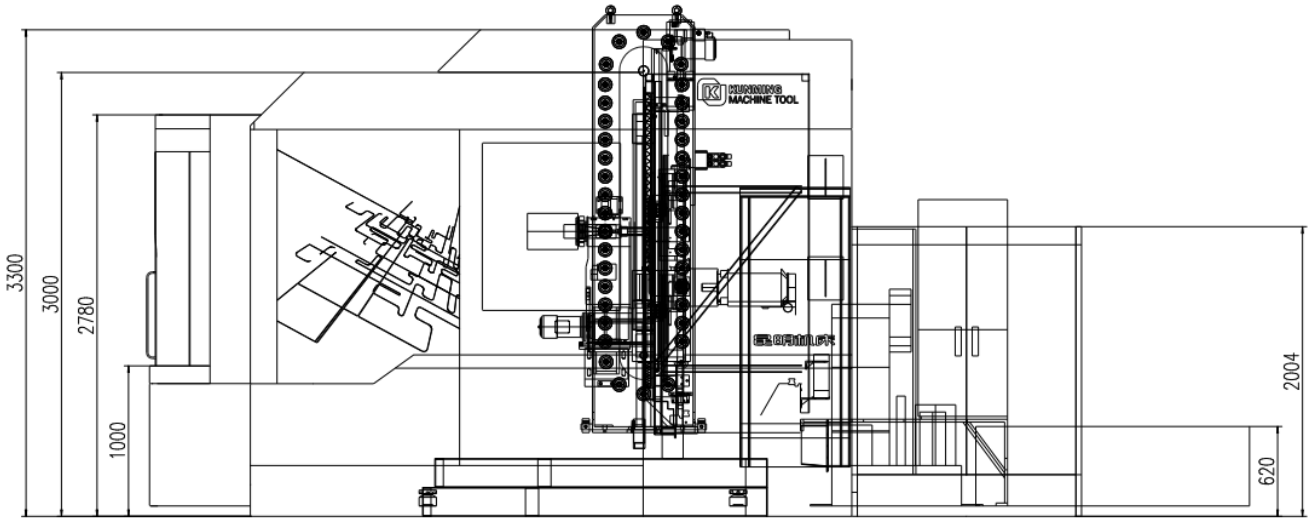
Professional users solutions

Professional customer engineering center to provide comprehensive product technology solutions, improve equipment efficiency, improve and upgrade the user product quality and precision.

- We customized product as per end user’s requirement from product value considerations to the target cost of collaborative to solve the
- Equipment selection improper trouble
- High input low output caused confusion
- Lack of a strong technical support, workshop process planning problem

- According to the special needs of customers, and the characteristics of the user product parts, we provides you with the best solution and technical support services for
- Lack of high-quality technical workers, manufacture is difficult
- Lack of advanced manufacturing technology, production capacity cannot ascend
- Lack of strong technology support and quality cannot improved

Machine layout（occupied area）



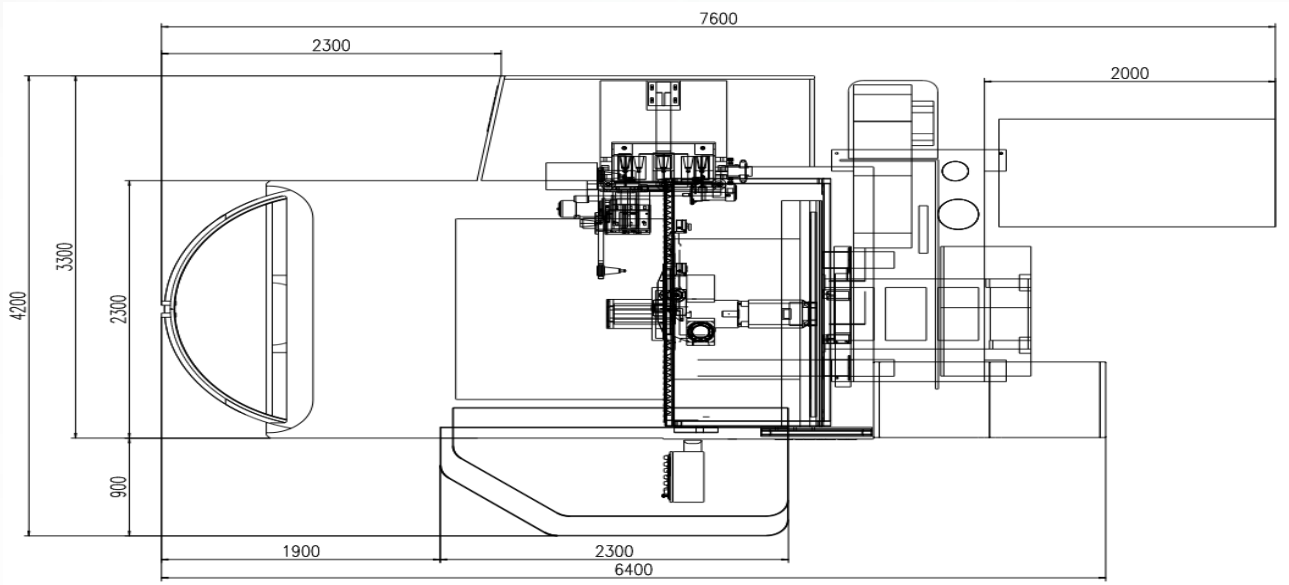
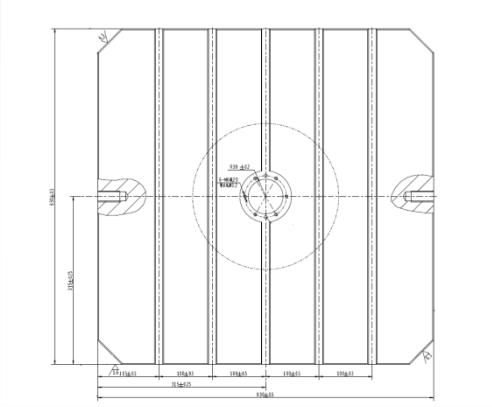
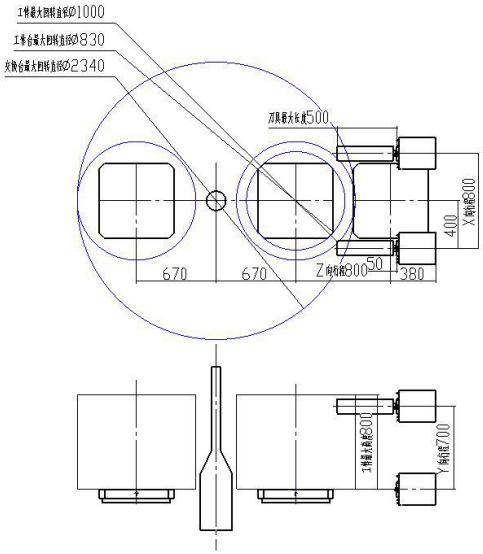


Table layout



Machining area drawing



Main specifications

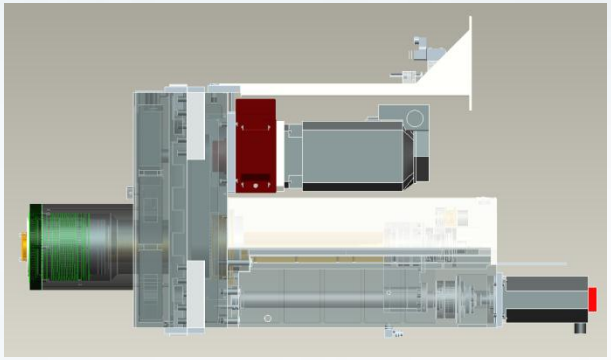
Machine Model		KHC63/2	KHS63/2
Travel	X,Y,Z	800x700x900mm	800x700x900mm
	B (Rotary table)	360°	
	Distance from table surface to spindle center	0-700mm	0-700mm
	Distance from table center to spindle nose	50-950mm	50-950mm
Table	Table size	630x630mm	
	Max. size of work piece (Dia. x height)	Φ 1000x800mm	
	Max. load of table (Evenly distributed)	1000kgs	
	Table structure	14mm T slot (24 x M16 bolt is optional)	
	Table changing time	14s	
Spindle	Rotation speed	6000rpm	12000rpm
	Spindle taper	DIN69893-A	
	Spindle drive power	22/30kw	25/44kw
	Max. torque	749Nm	280Nm
	Shank specification	HSK-A100	
Feed speed	Max. feed speed	1-60m/min	
	Machining feed speed	1-50m/min	

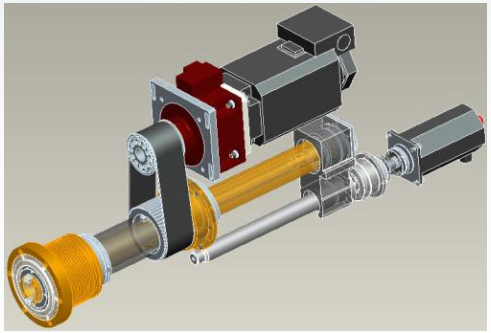
Main specifications

Machine Model		KHC63/2	KHS63/2
Accuracy	X,Y,Z Positioning	0.01mm	
	B Positioning	6″	
	X,Y,Z Repeatability	0.006mm	
	B Repeatability	4″	
ATC	Capacity	40(60/80/120 tools)	
	Max. dia. of tool	Φ 125 (Ortho empty)mm	
	Max. length of tool	500mm	
	Max. weight of tool	25kgs	
	Tool changing time	5s	
Machine dimensions	Machine dimension (LxW)		
	Height	5600x4200mm	
	Total power	3300mm	

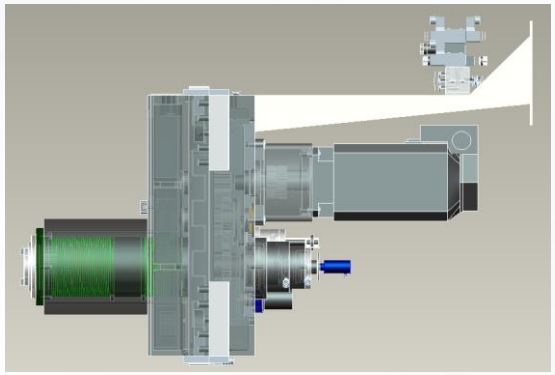
TH65 Series Horizontal Machining Center

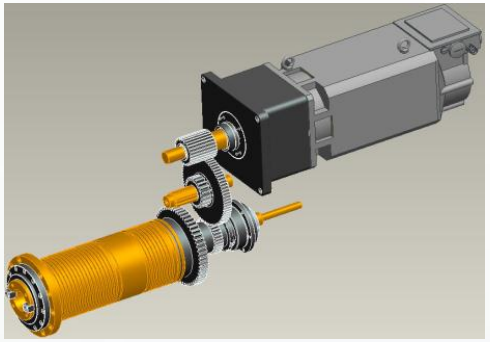
Three Kinds of Spindle structure of TH 65 series



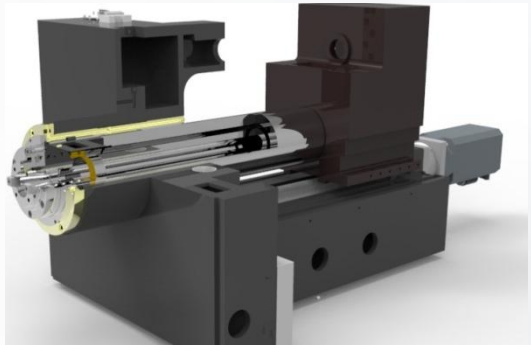


Boring spindle moving



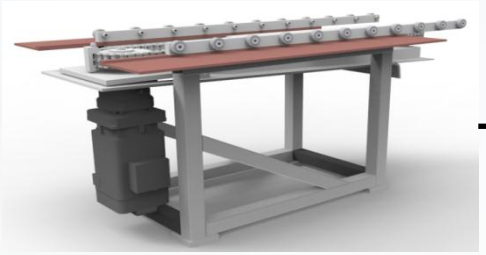


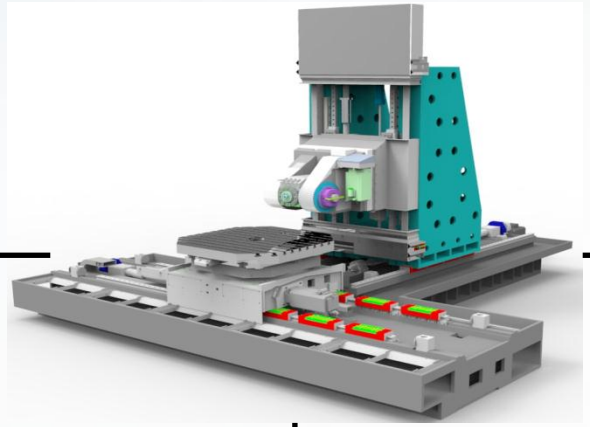
Fixed boring spindle

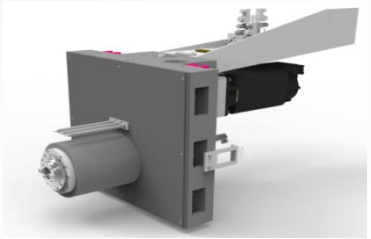


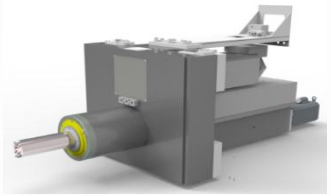
Round ram type

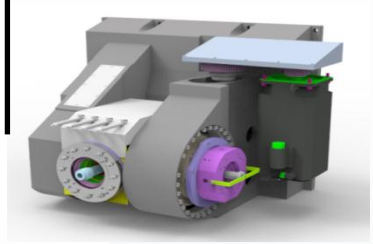
KHC 100-200 Series

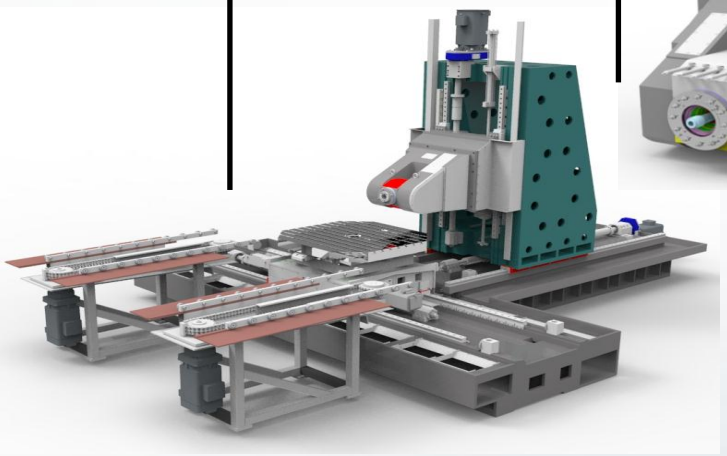






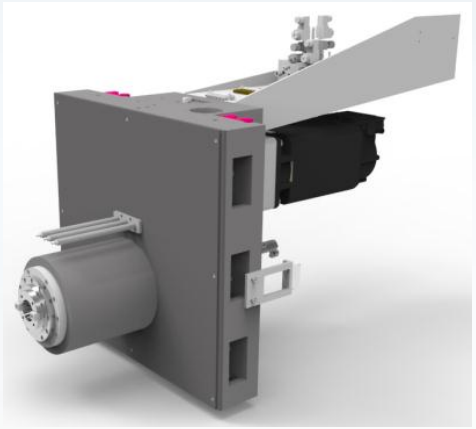


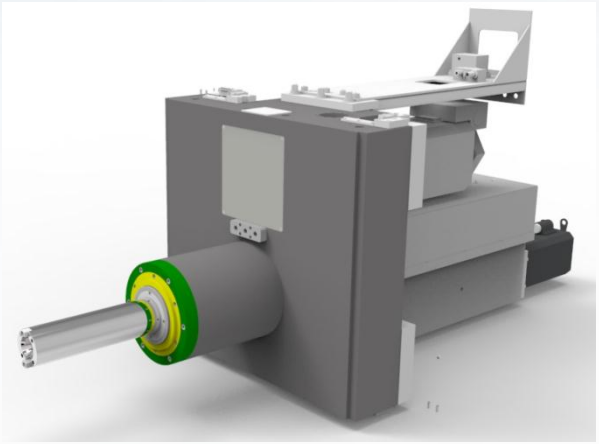


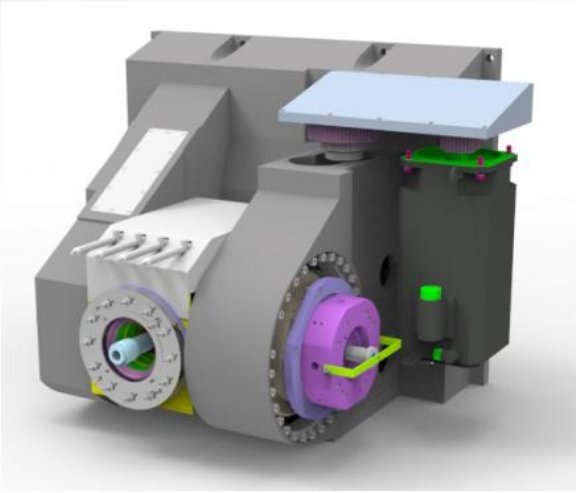


- Various configuration
- Customization product
- Five axes simultaneously control. High efficiency for machining aluminum, steel or titanium.

Three kinds of Spindle structure



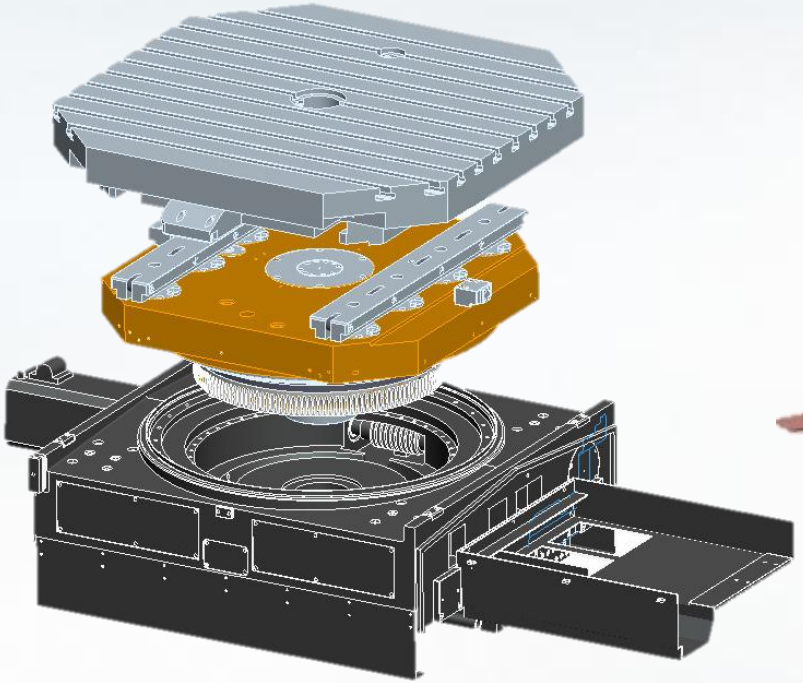


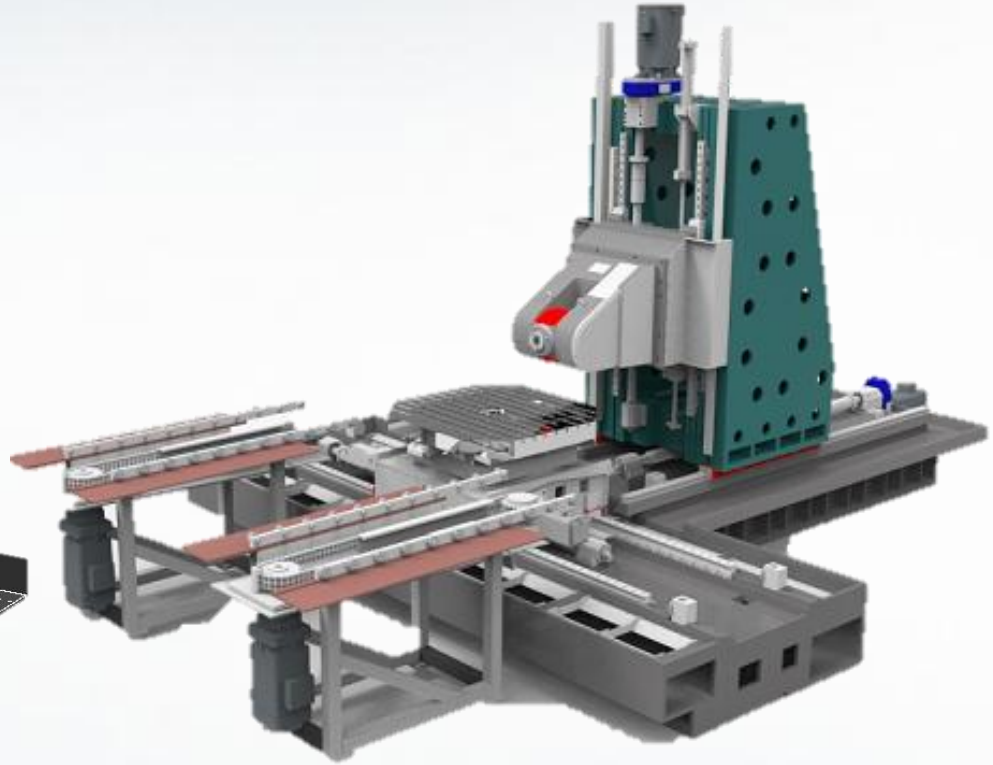


Fixed spindle
Good rigid and high spindle speed, good milling ability

Moving spindle type
W axis max travel 500mm, Good boring hole ability

AC、A swing spindle head
Five axes milling head meet various machining requirement， A swing range+60° /-120°





Change pallet can improve the working efficiency and reduce the working hour.

KHC 100 MACHINES IN THE U.S.A.

THANK YOU