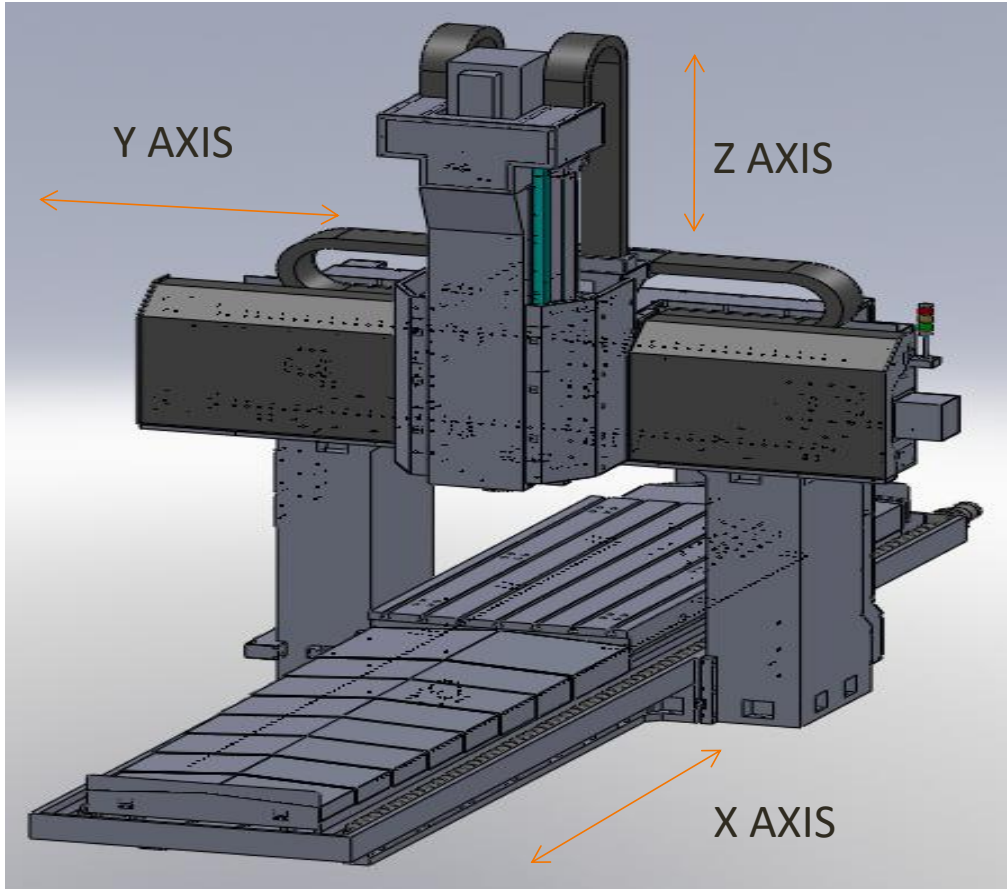


WHALES CNC

GANTRY MACHINING CENTER

GMC-SERIES



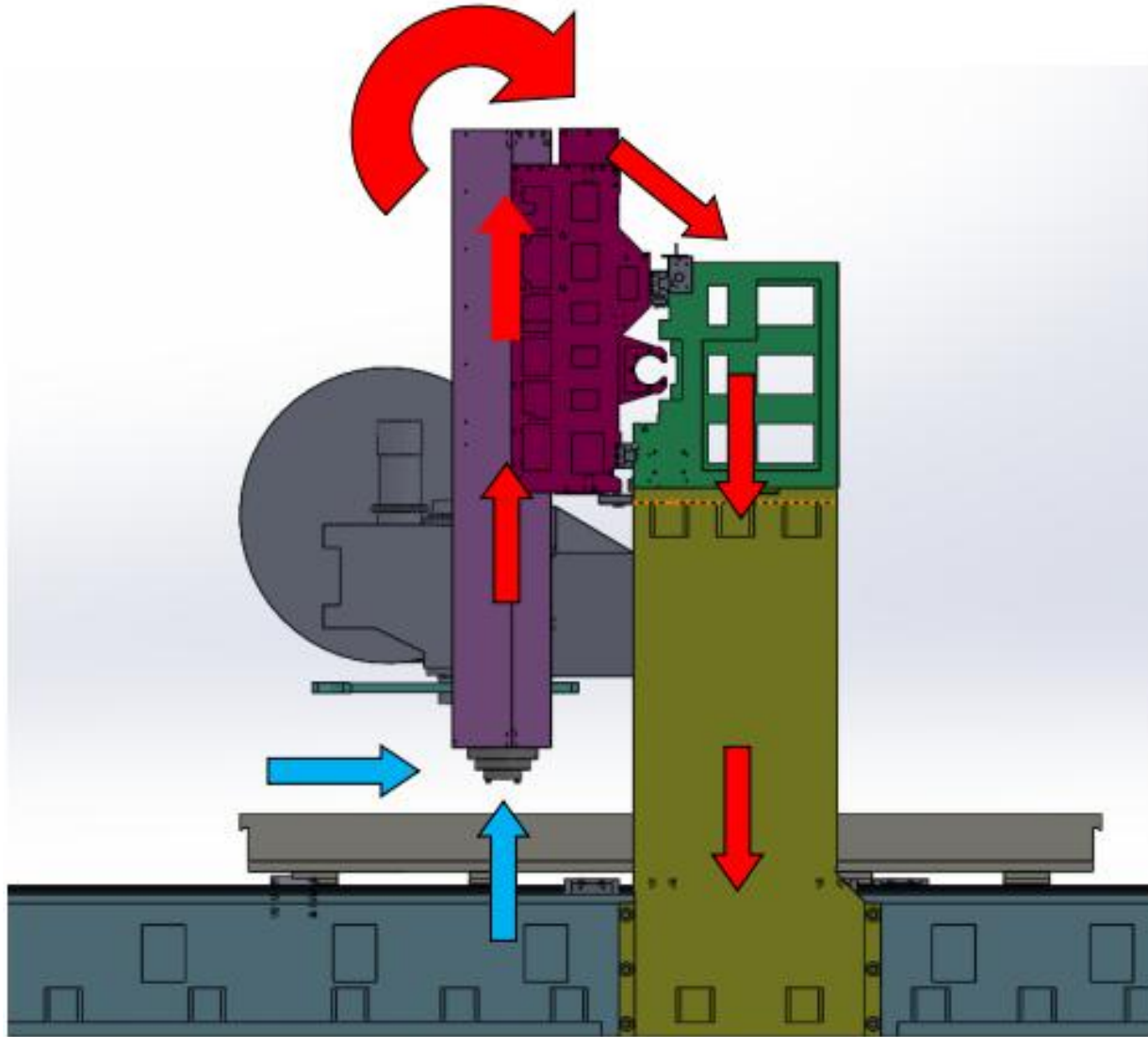


Column and beam fixed type GMC

X axis: work table moving forward and backward
Y axis: saddle and spindle box moving left and right
Z axis: spindle box moving up and down

All GMCs in WhalesCNC are fixed type and designed by PROE, FEA and thermal deformation principle to get best structure.

Machine Structure



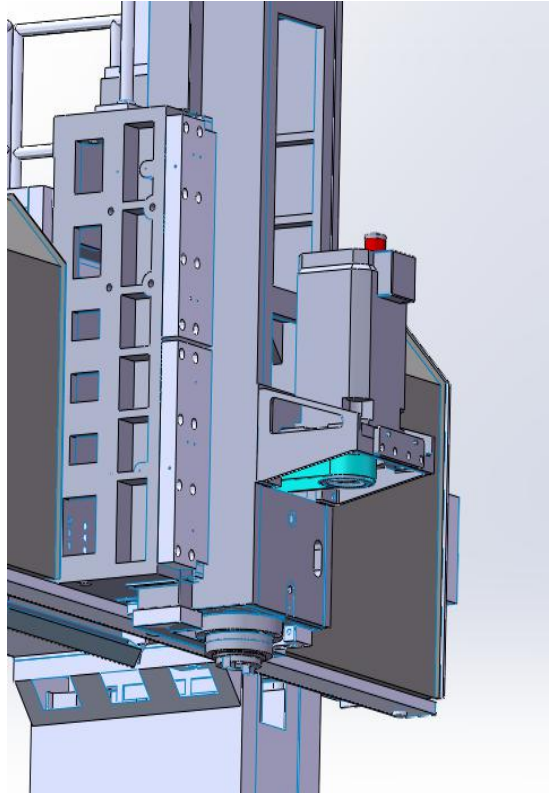
Cutting contrary strength



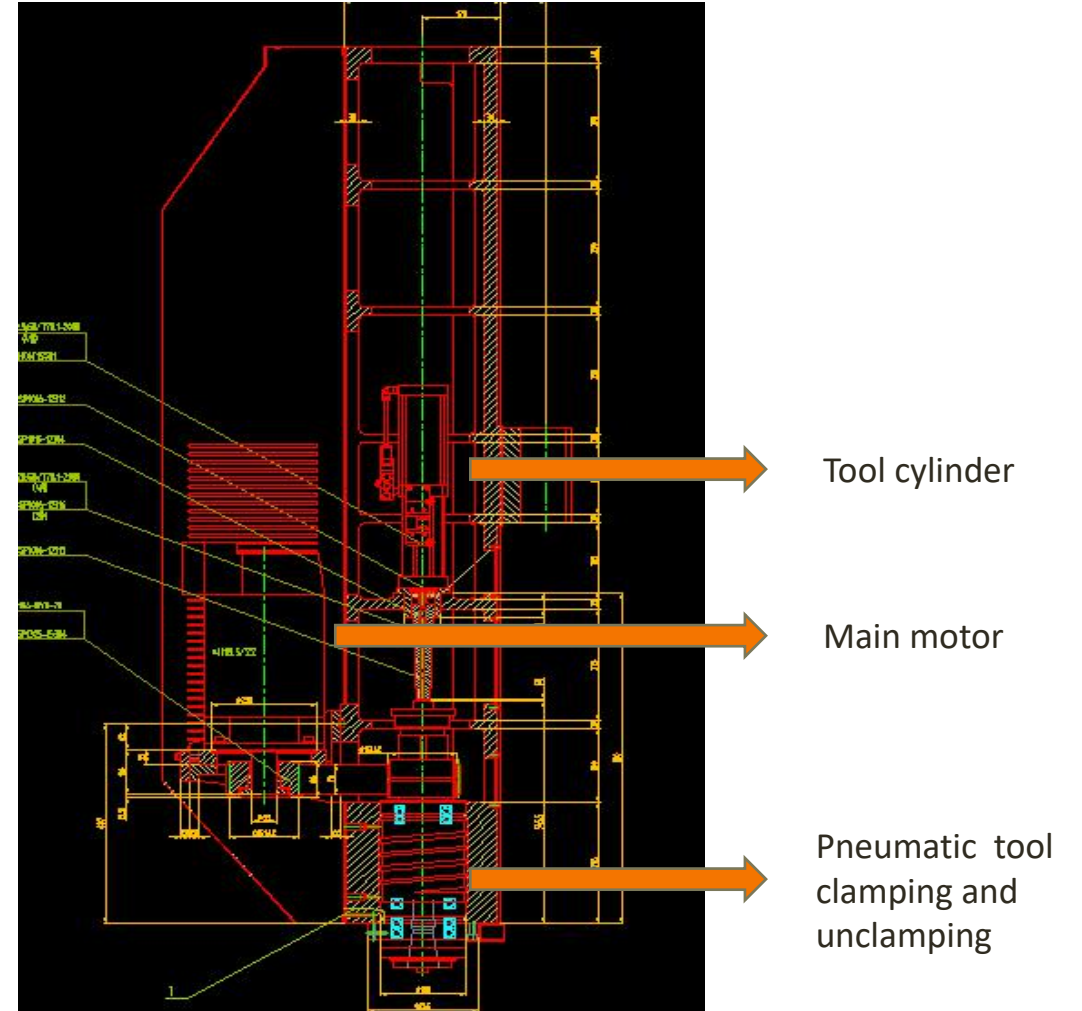
Machine strength direction

When machining, X axis direction force focused on body then convey to foundation
Z axis force from spindle to saddle to beam to column then to foundation

Spindle transmission - belt type

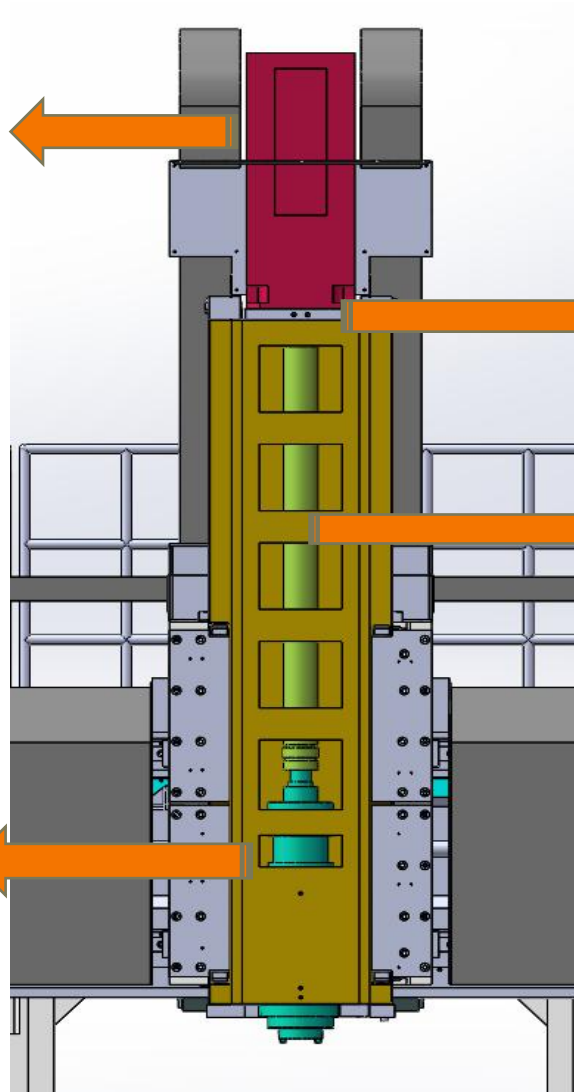


All GMC are standard equipped with belt type spindle which can offer higher rigidity but competitive price



Spindle transmission - direct type

Spindle motor directly connects to spindle through high quality carbon fiber coupling.



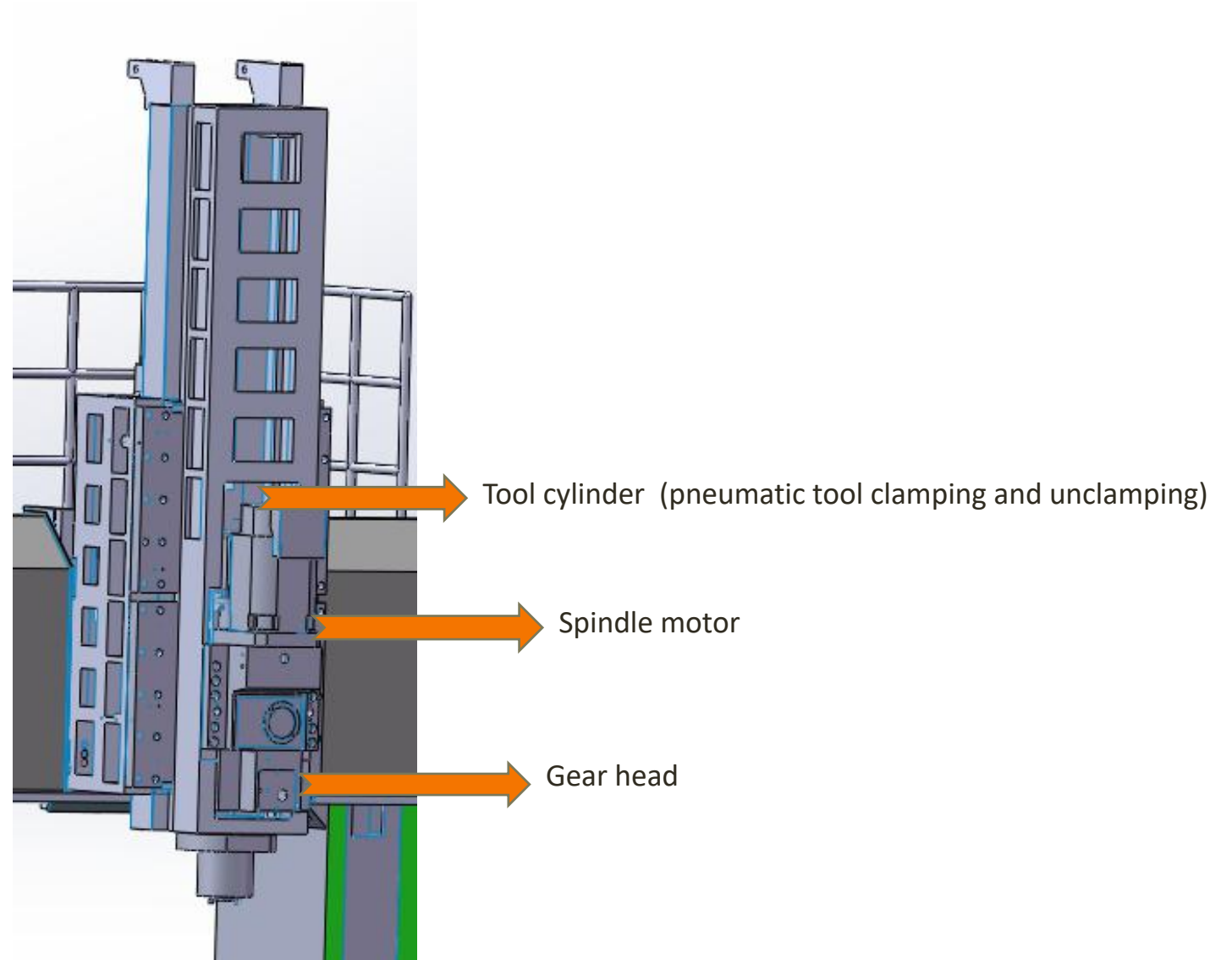
Spindle motor thermal-protective plate with oil cooling

Mayr brand high torque high rigidity carbon fiber coupling (TKs=975Nm) , which helps to fullfil the nice performance of main motor as overturn torque is much reduced.

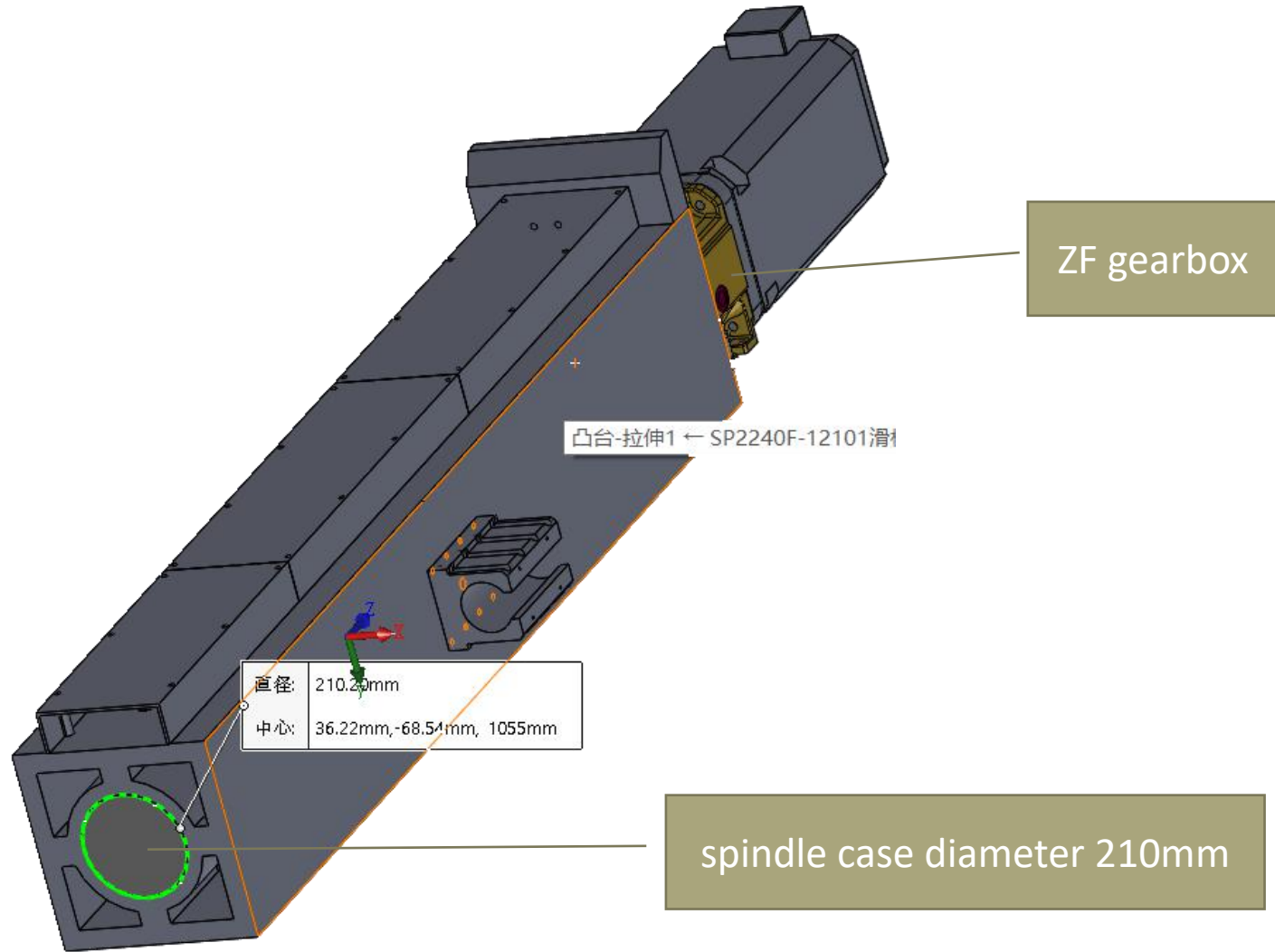
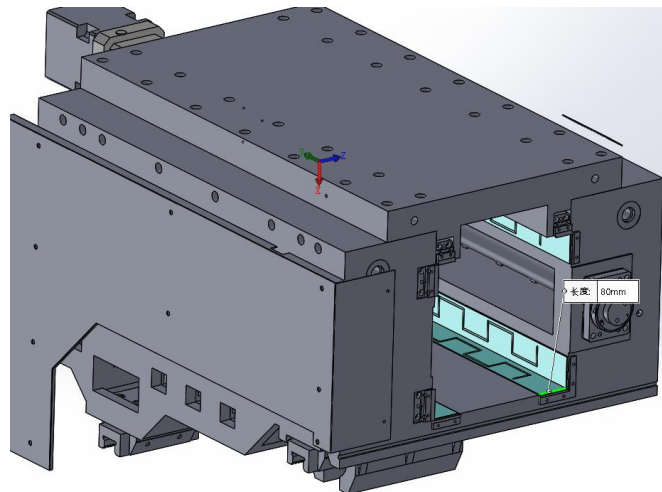
Hydraulic tool clamping and unclamping for spindle unit

◎ Spindle transmission - gear type

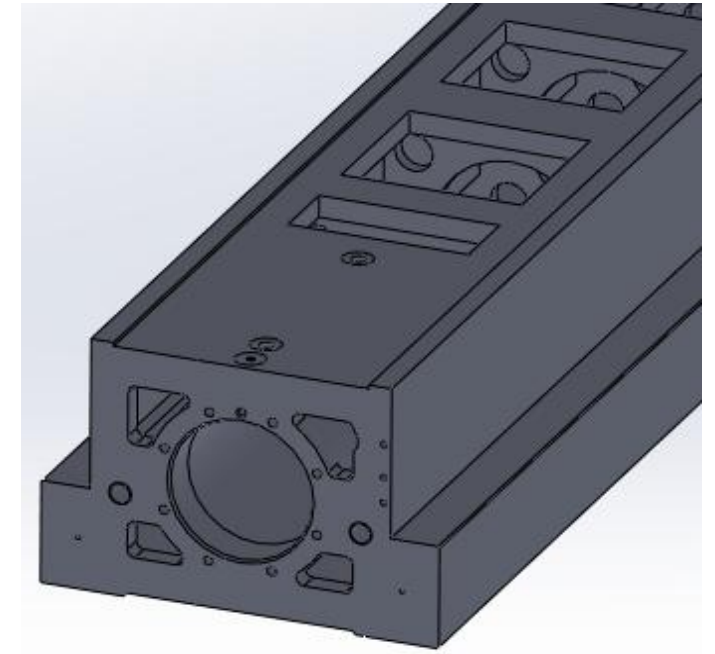
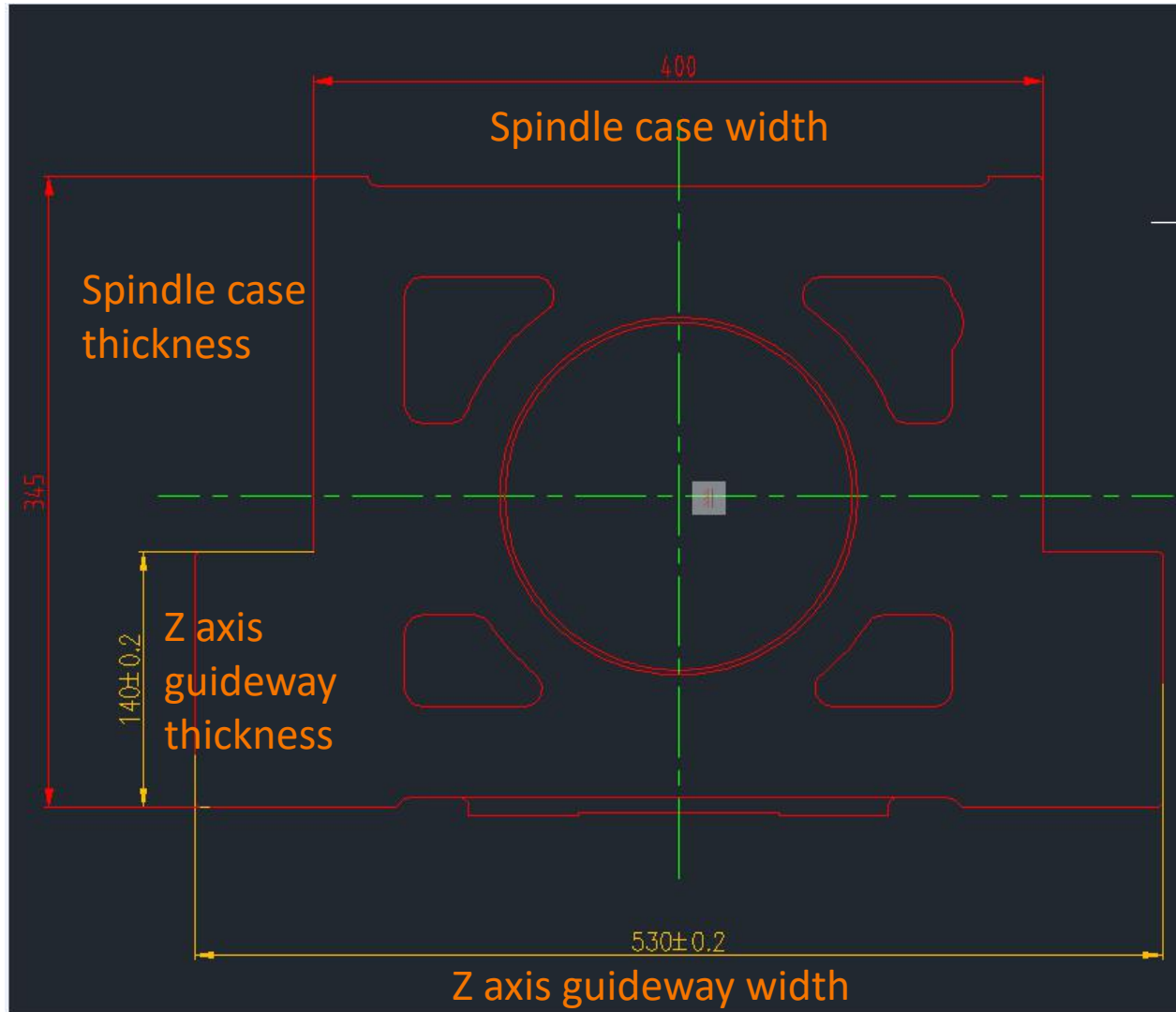
Compared with belt type, gear head is with much higher rigidity, better for heavy cutting



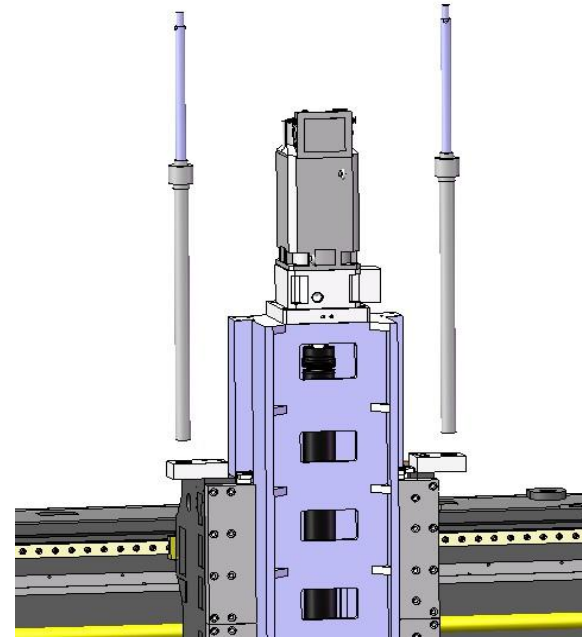
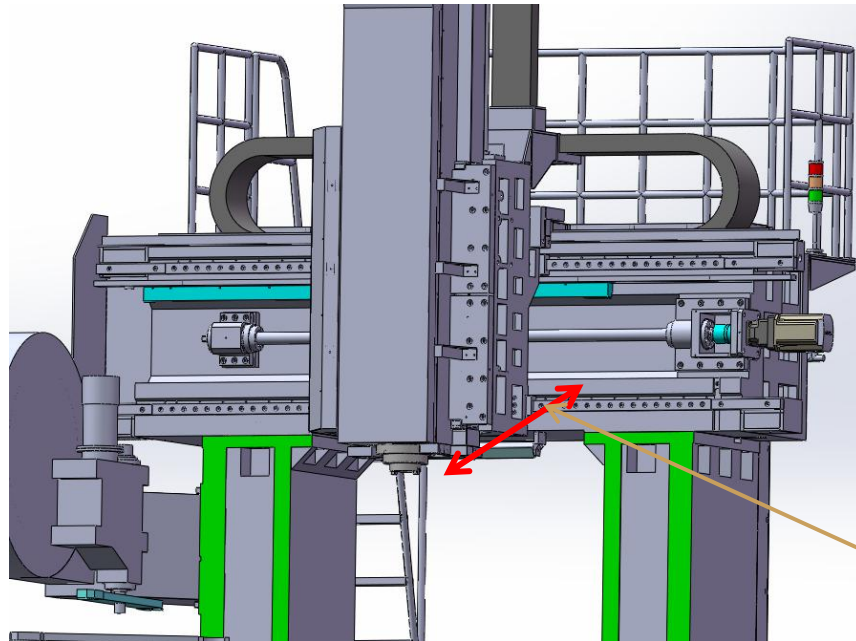
Spindle transmission - square ram



Machine structure - spindle case



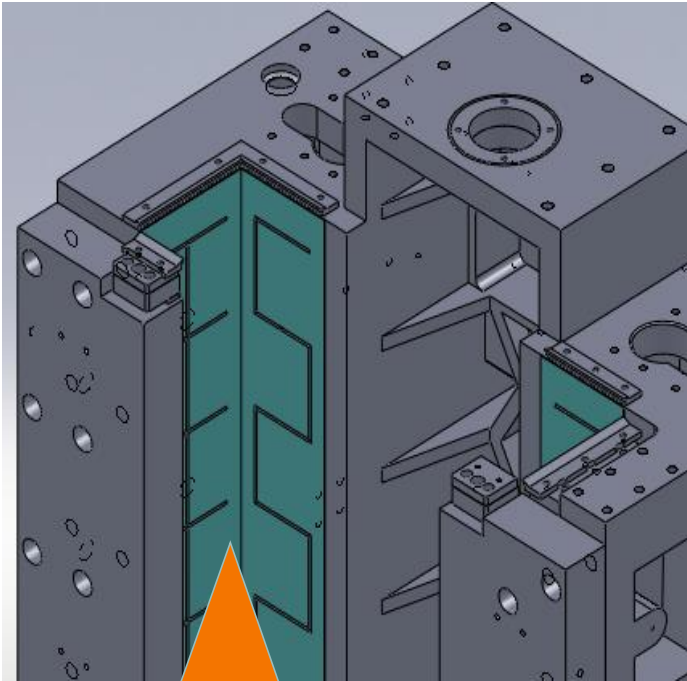
With large cross section design, it improves spindle case rigidity by 20% compared with other competitors



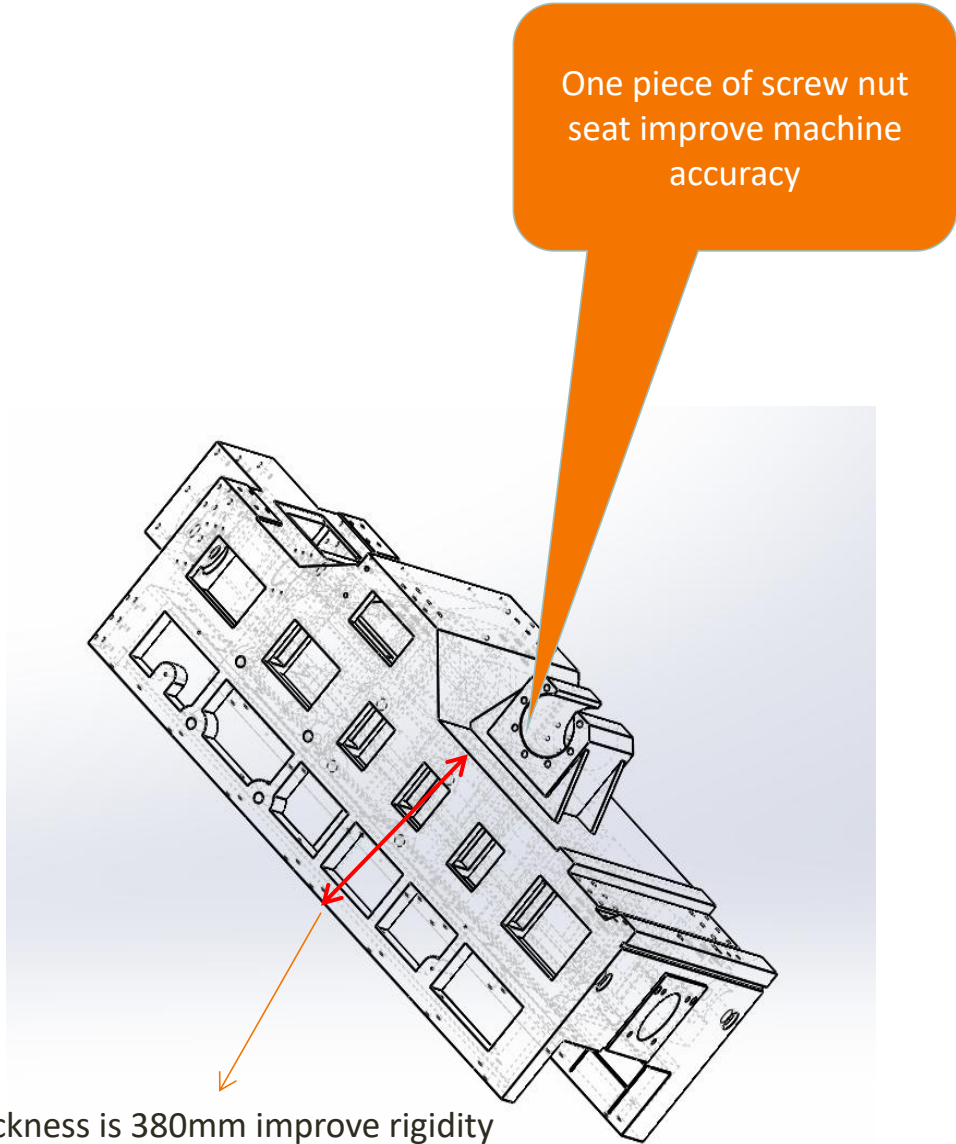
Double balance cylinder can efficiently decrease bending moment during Z axis movement.(source powered by hydraulic station)

460mm (distance from spindle center to Y axis guideway)

Machine structure - saddle

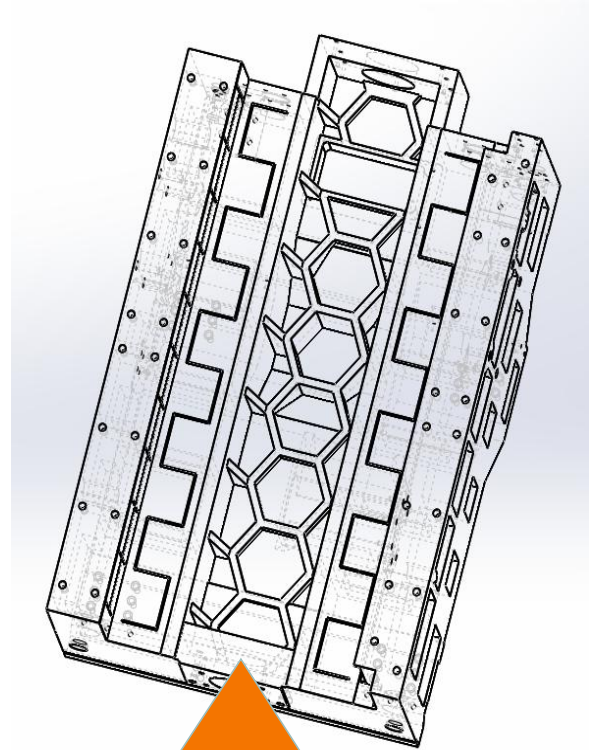


To improve saddle rigidity and anti-shock, Z axis is made of box guideway with plastic which is manually scraped well.



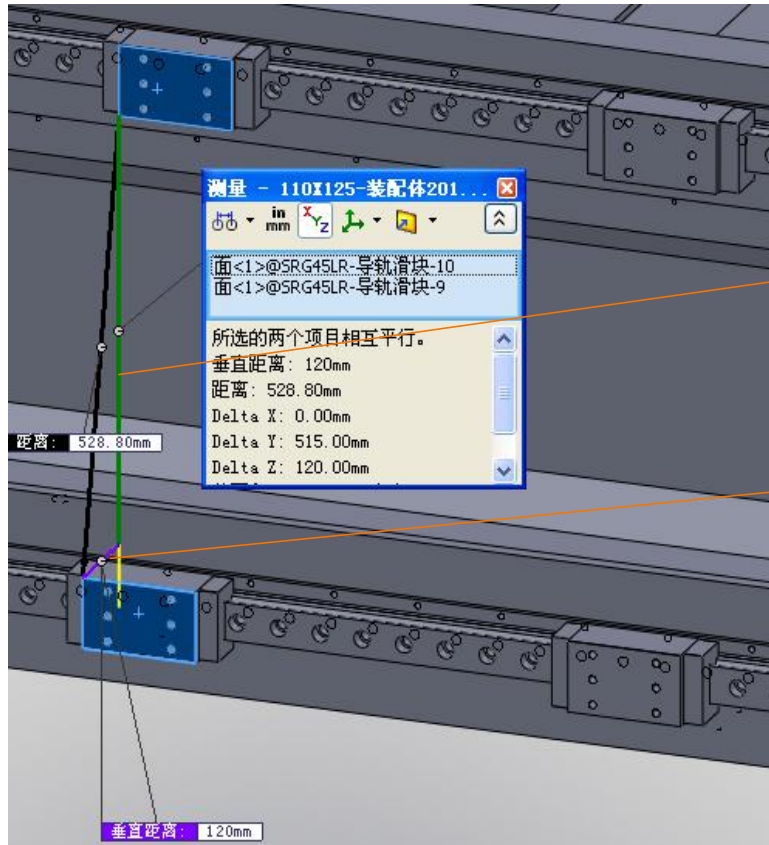
One piece of screw nut seat improve machine accuracy

Thickness is 380mm improve rigidity



Inner side use regular hexagon design for higher rigidity

Machine structure - beam

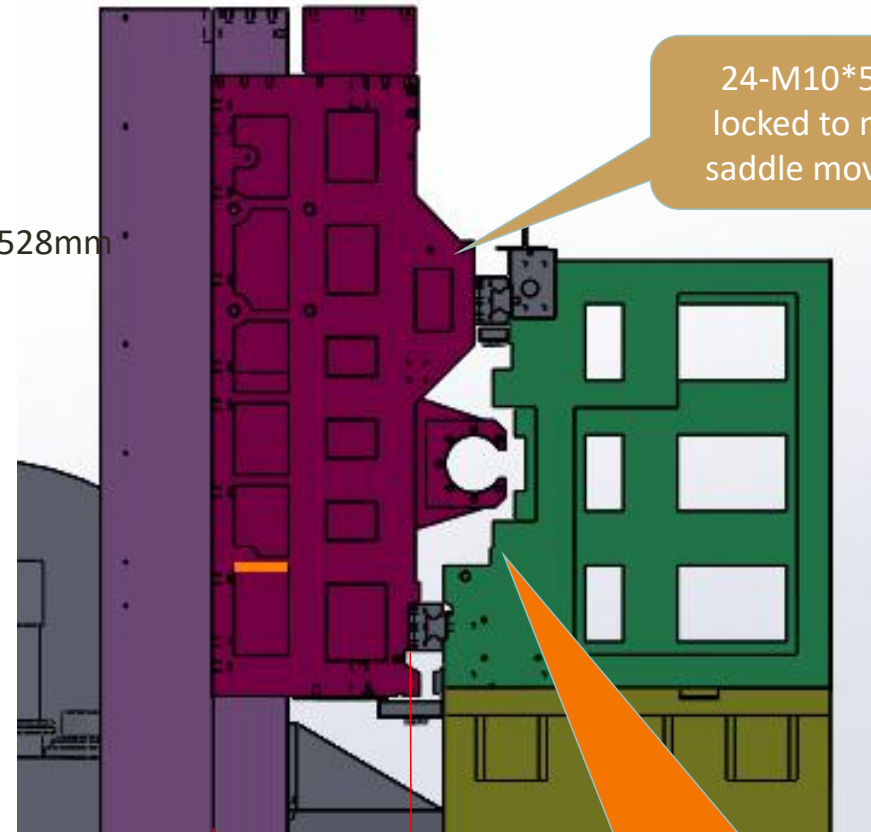


Upper
guideway
(SRG45)

→ guideways distance 528mm

→ ladder distance 120mm

Down
guideway
(SRG45)

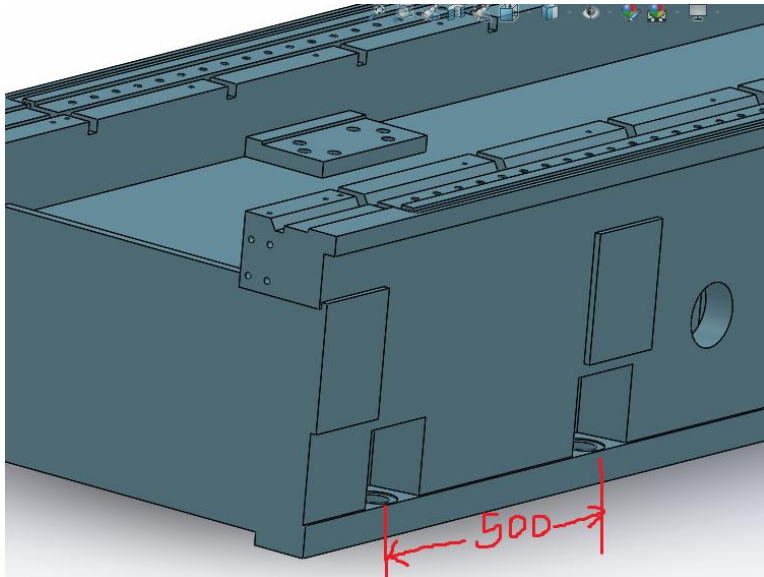


Reasonable distance
between guideway to
spindle center by FEA

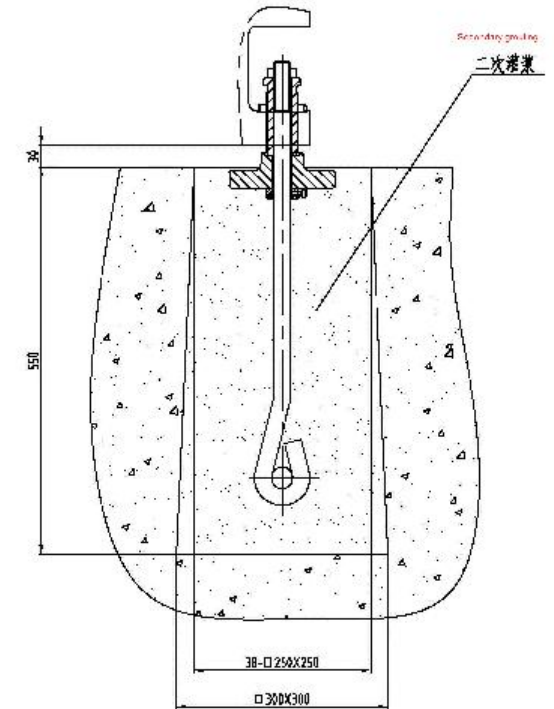
Ladder designed beam assured
spindle case gravity backward.

Machine structure - base

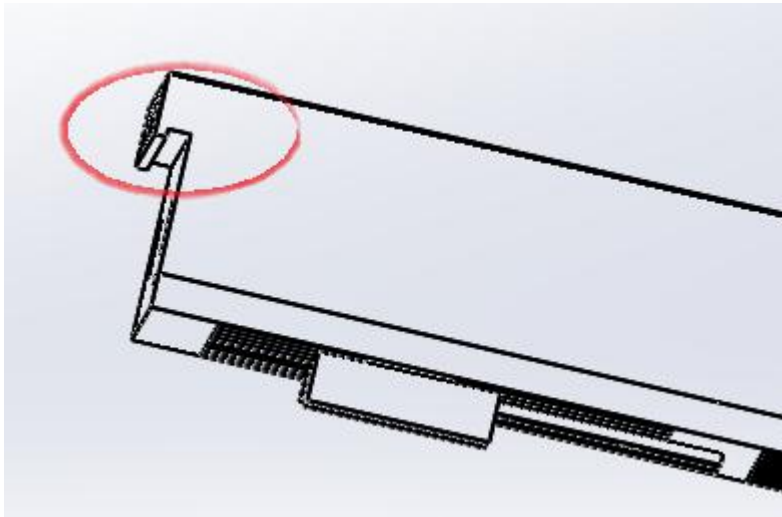
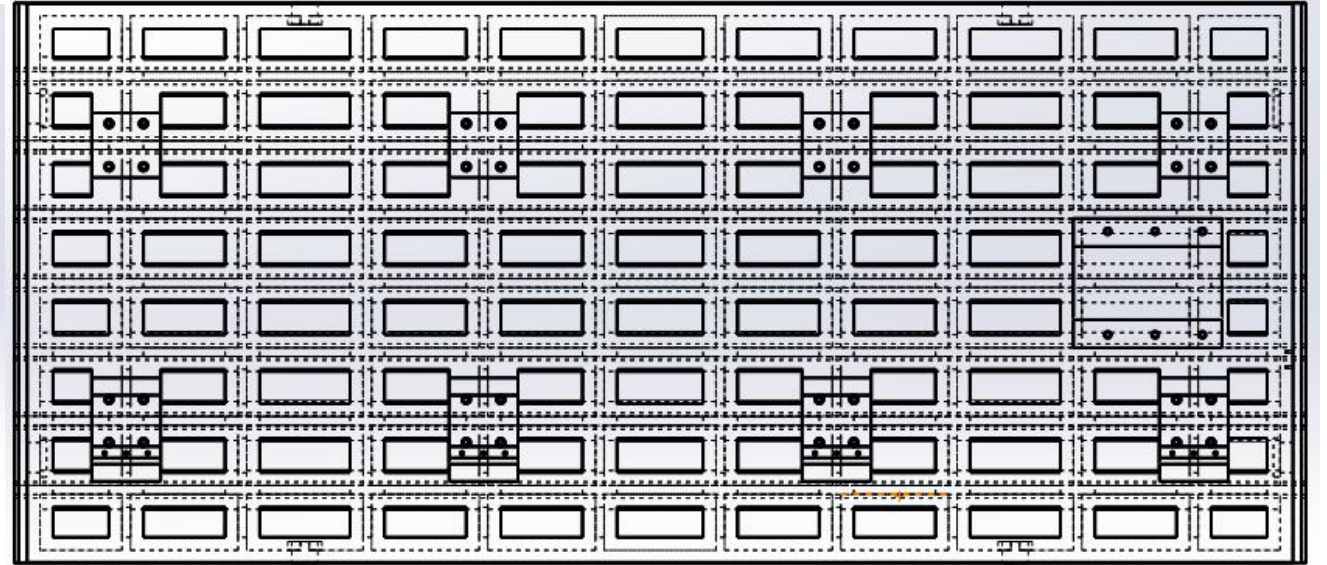
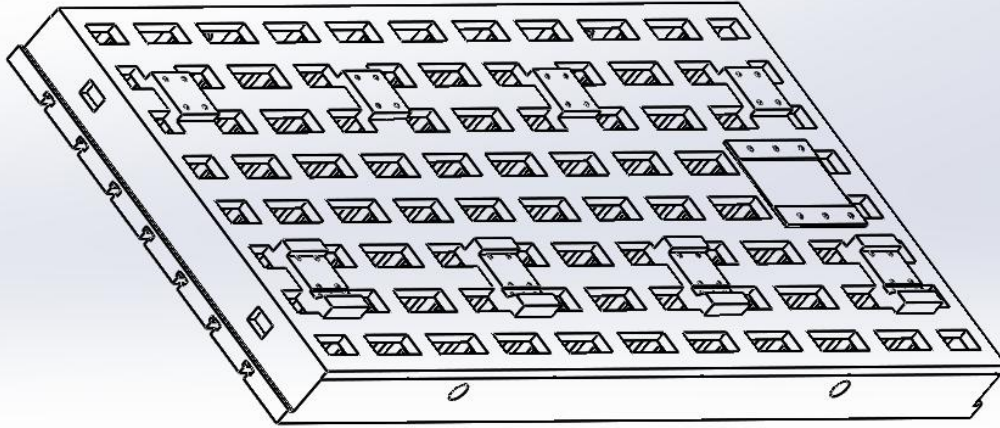
WhalesCNC



OTHERS

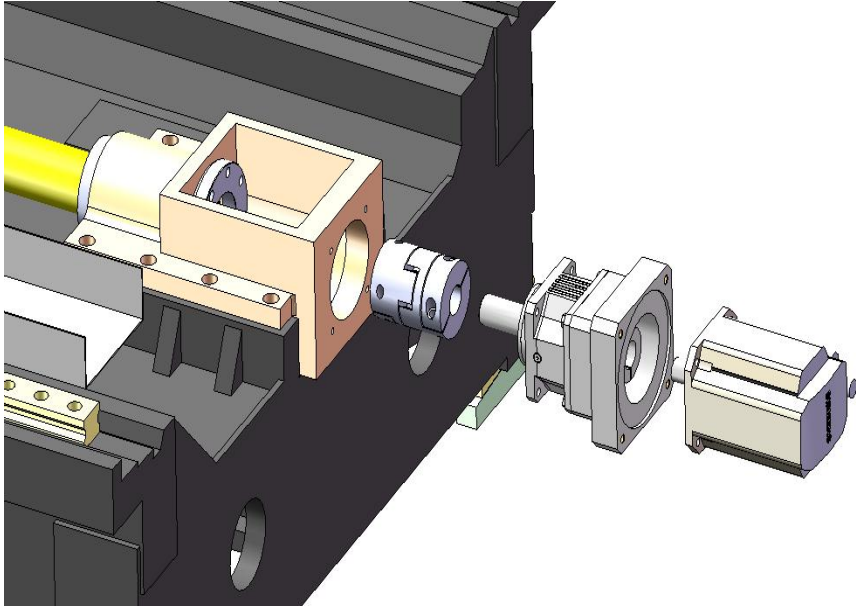


- Foundation hole keep in vertical line with linear guideway which assure a better loading support.
- If machine is installed by two holes, one fixing hole and one adjusting hole, the machine base is easily deformed due to unequal force.
- Trapezoid foundation hole ensure machine stability.
- 500mm distance between two holes keep reasonable equal force.

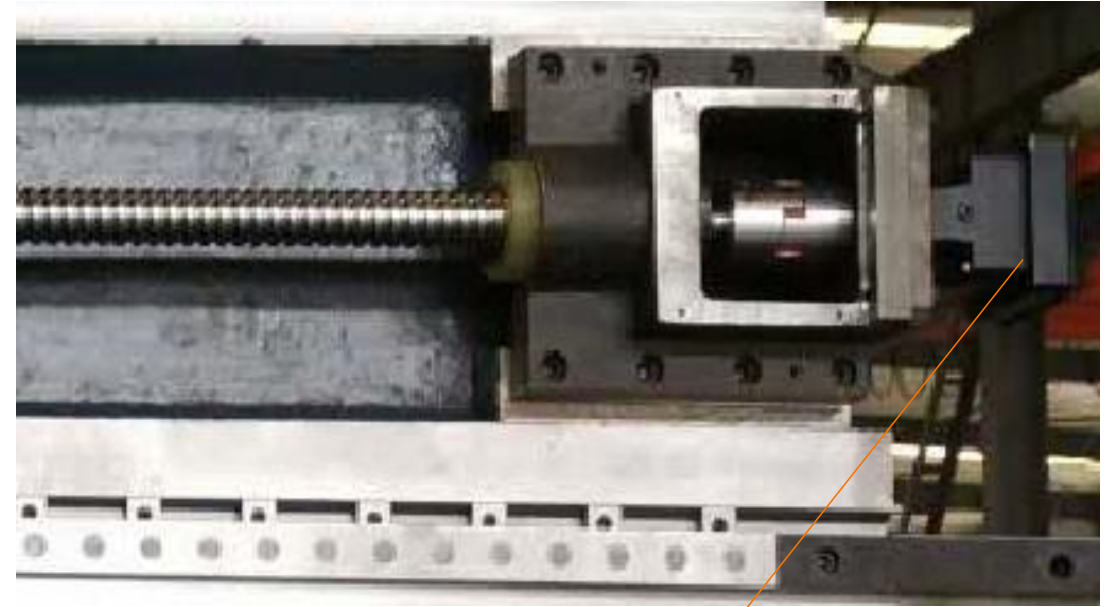


- Worktable cavity is square and hollowed-out designed to reduce weight but keep rigidity. Groove is designed in case of cutting fluid flowing into the worktable underneath and inner side of machine to reduce slider accuracy.

Machine structure-axis movement



3 axes motor connect ball screw directly by coupling and reducer

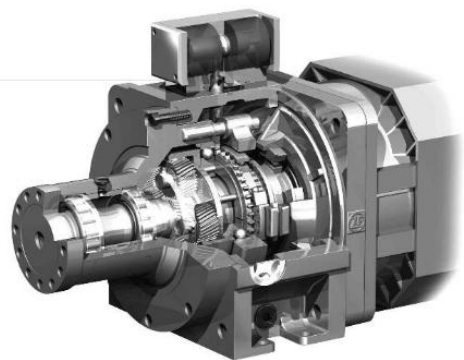


10 years free- maintenance Germany STOBBER reducer (increase torque by 1:4)

MODEL	WORKTABLE SIZE	AXESTRAVEL	MOTOR POWER	T-Slot	DISTANCE OF SPINDLE TO TABLE	SPINDLE SPEED
GMC1613	1600 x 1000	1600 x 1300 x 800	15 / 18.5 Kw	7-22x140	150 - 950	Belt:6000 r/min
GMC1614	1700 x 1200	1600 x 1500 x 800		7-22x170		
GMC2015	2500 x 1300	2000 x1400 x 800		7-22x170		
GMC2518	2500 x 1600	2500 x 1800 x 1000		7-22x180		
GMC3016	3000 x 1300	3000 X 1650 X 800	22 Kw	7-22x170	250 - 1050	Belt:4500 r/min
GMC3018	3000 x 1600	3000 X 1800 X 1000		7-22x180	150 - 1150	
GMC4025	4000 x 2300	4000 x 2750 x 1000		11-28x200	280 - 1280	
GMC5022	5000 x 2000	5000 x 2200 x 1000	30 Kw	11-28x200	200 - 1200	
GMC6032	6000 x 2300	6000 X 3200 X 1000				
GMC8032	8000 x 2300	8000 x 3200 x 1000				

Dual screw type chip conveyor	Air gun
Front side chain type chip conveyor	Cutting fluid cooling system
Semi enclosed splash guard	Tool box
Oil cooler	Auto power off
Tosoku MPG	Leveling blocks and bolts
RS232 and IEEE data transfer box	Oil skimmer
Automatic lubrication system	Transformer
Pneumatic coupling	3 colour LED warning light
Schneider electric parts	Heat exchanger
Independent lubrication oil collector for 3 axes	Z-axis retract function at power failure
Thermal compensation system of Spindle	Footswitch for tool clamping

Optional Accessories



ZF/BF/GTP gear box



WEMAS gear head



Mitsubishi / SIEMENS/HEIDENHAIN



Extension head
(only manual)



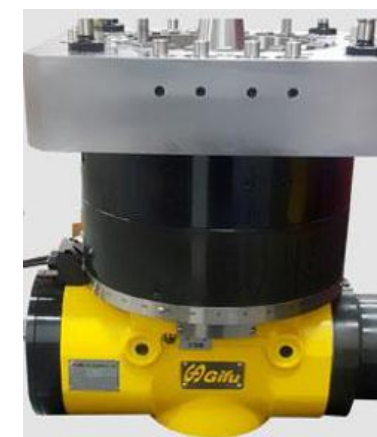
Manual right angle milling head



Manual universal milling head



Semi-automatic right angle milling head

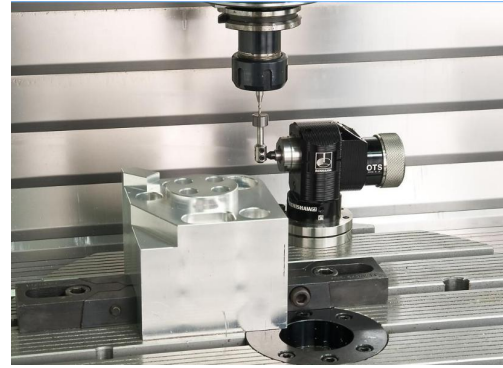


Automatic right angle milling head

Optional Accessories



Chain type tool magazine-32T/40T/60T



RENISHAW tool measurement

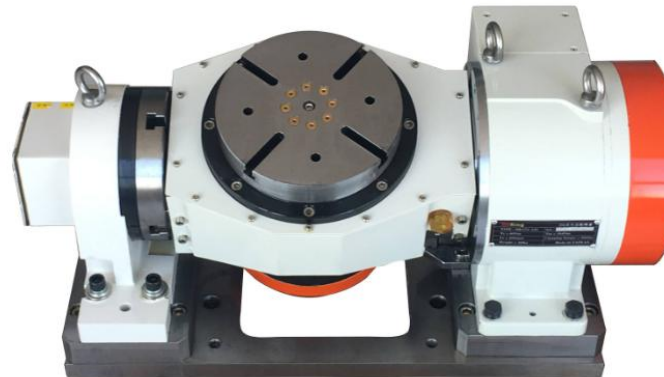


HEIDENHAIN linear scale



CTS for belt type and gear head type

for direct type, cost is high and delivery time is long



4th /5th axis

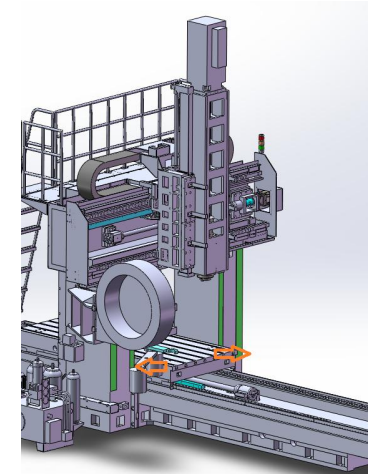
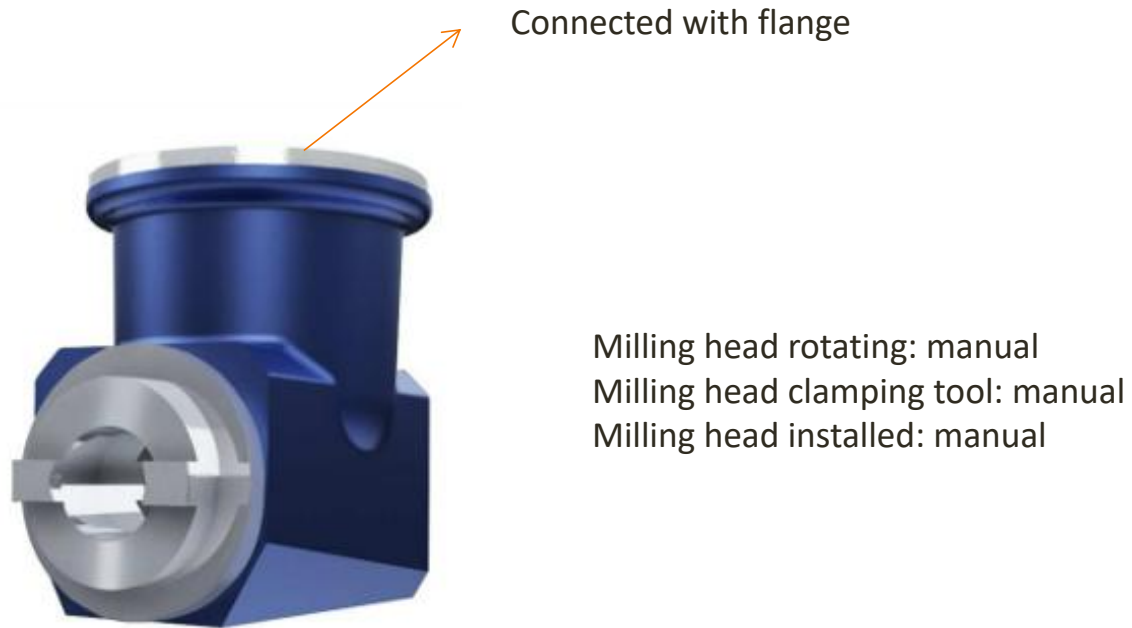


Table size width increase
distance between columns/
column height increase

Manual right angle milling head



speed	2000rpm
Max. power	30Kw
Max. torque	1000Nm
Tool specification	BT50
Clamping tool force	M24 screw clamping tool
Cutting coolant way	N/A

◎ Semi-automatic right angle milling head

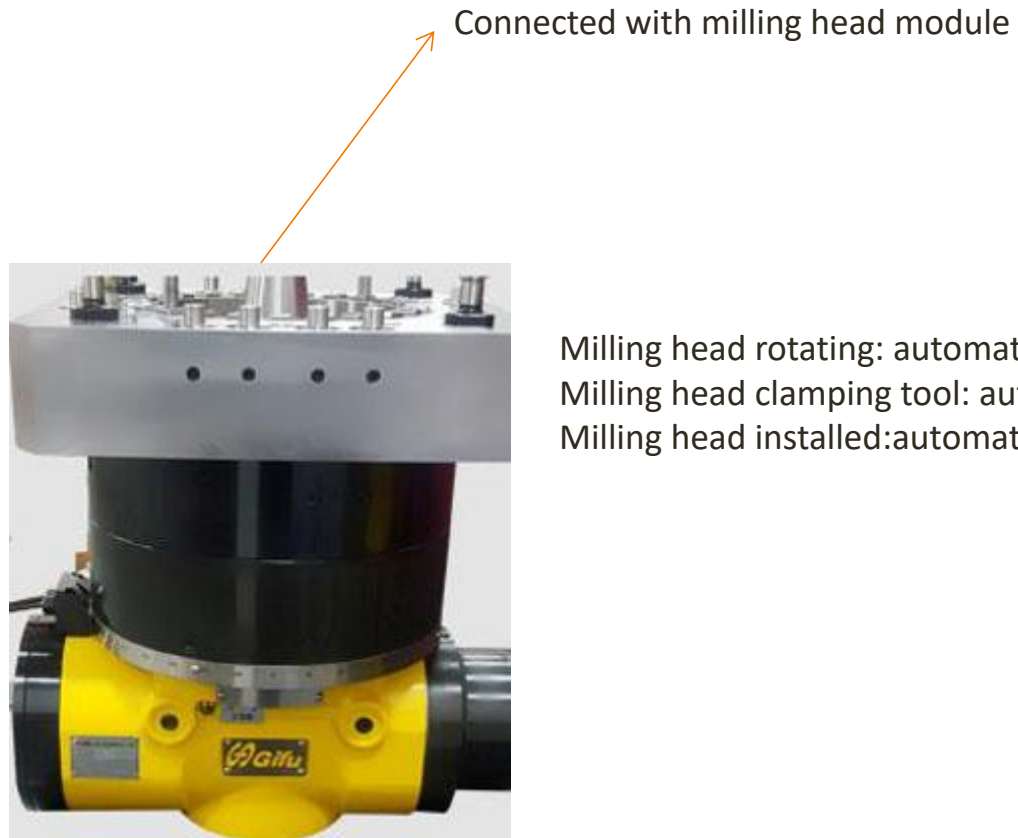
Connected with flange/ milling head moduel



Milling head rotating: manual
Milling head clamping tool: automatic
Milling head installed: manual/automatic

speed	2500rpm
Max. power	30Kw
Max. torque	500Nm
Tool specification	BT50
Clamping tool force	1200
Cutting coolant way	Cutting fluid

Automatic right angle milling head



speed	3500rpm
Max. power	30Kw
Max. torque	100Nm
Tool specification	BT 50
Clamping tool force	1500kgf
Cutting coolant way	Cutting fluid



Manual universal milling head

Connected with flange



Milling head rotating: manual
Milling head clamping tool: manual
Milling head installed: manual



speed	2000rpm
Max. power	30Kw
Max. torque	1000Nm
Tool specification	BT 50
Clamping tool force	M24 screw clamping tool
Cutting coolant way	N/A

Processing sample



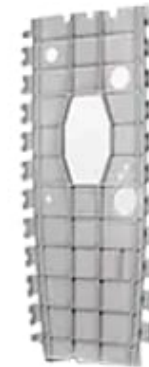
Spiral Bevel Gear

Construction Machinery



Large Castings

Construction Machinery



Structural Parts

Aerospace Industry



Adapter Plate

Aerospace Industry



Welcome to WhalesCNC, a specialized manufacturer of CNC machine tools with a strong emphasis on research and development, quality, and cooperation. With a dedicated team of 13 engineers and over 30 senior technicians, With two decades of focus on the milling machine field, we have honed our expertise to offer you the best in vertical machining centers, gantry machining centers, horizontal machining centers, and turret milling machines.

We have won the trust of industry leaders in various fields such as construction machinery, home appliances, automobiles, new energy, automation, optoelectronics, construction and dozens of machining companies. Our customers include Xuzhou Heavy Industry, Gree, BYD, Xiaopeng and other well-known brands.





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