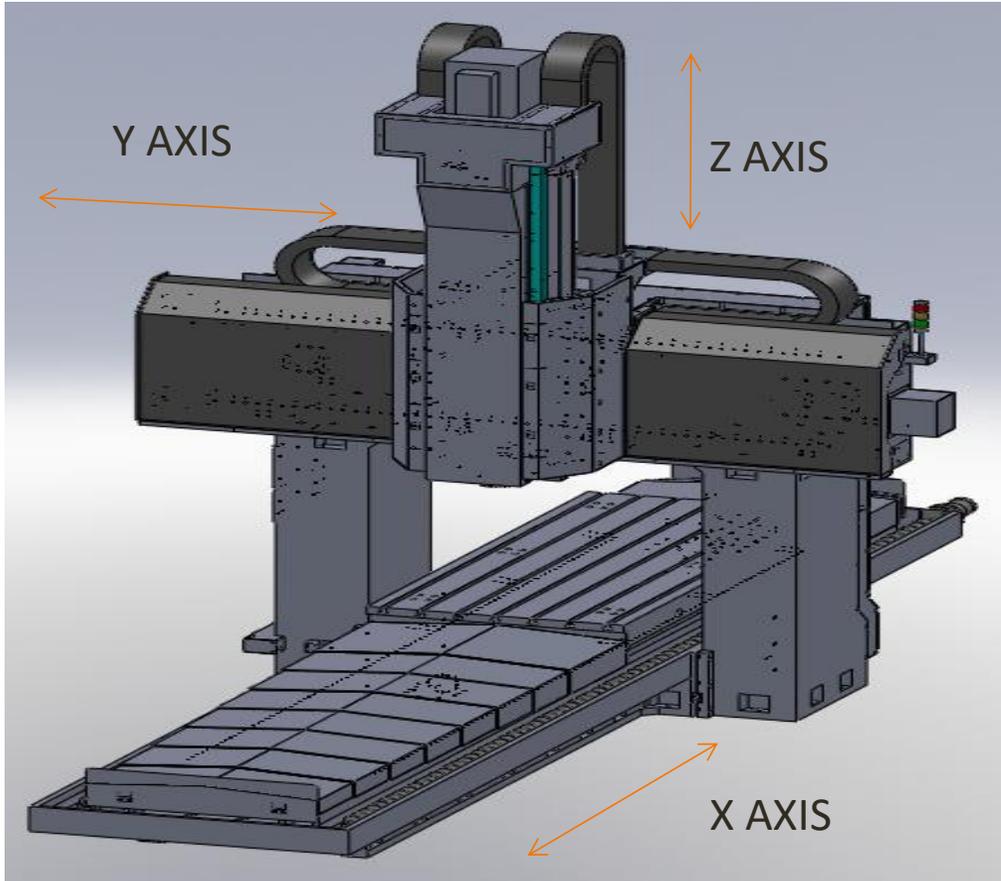


# SINO DCMC INTRODUCTION

[www.sinocnc.com.cn](http://www.sinocnc.com.cn)

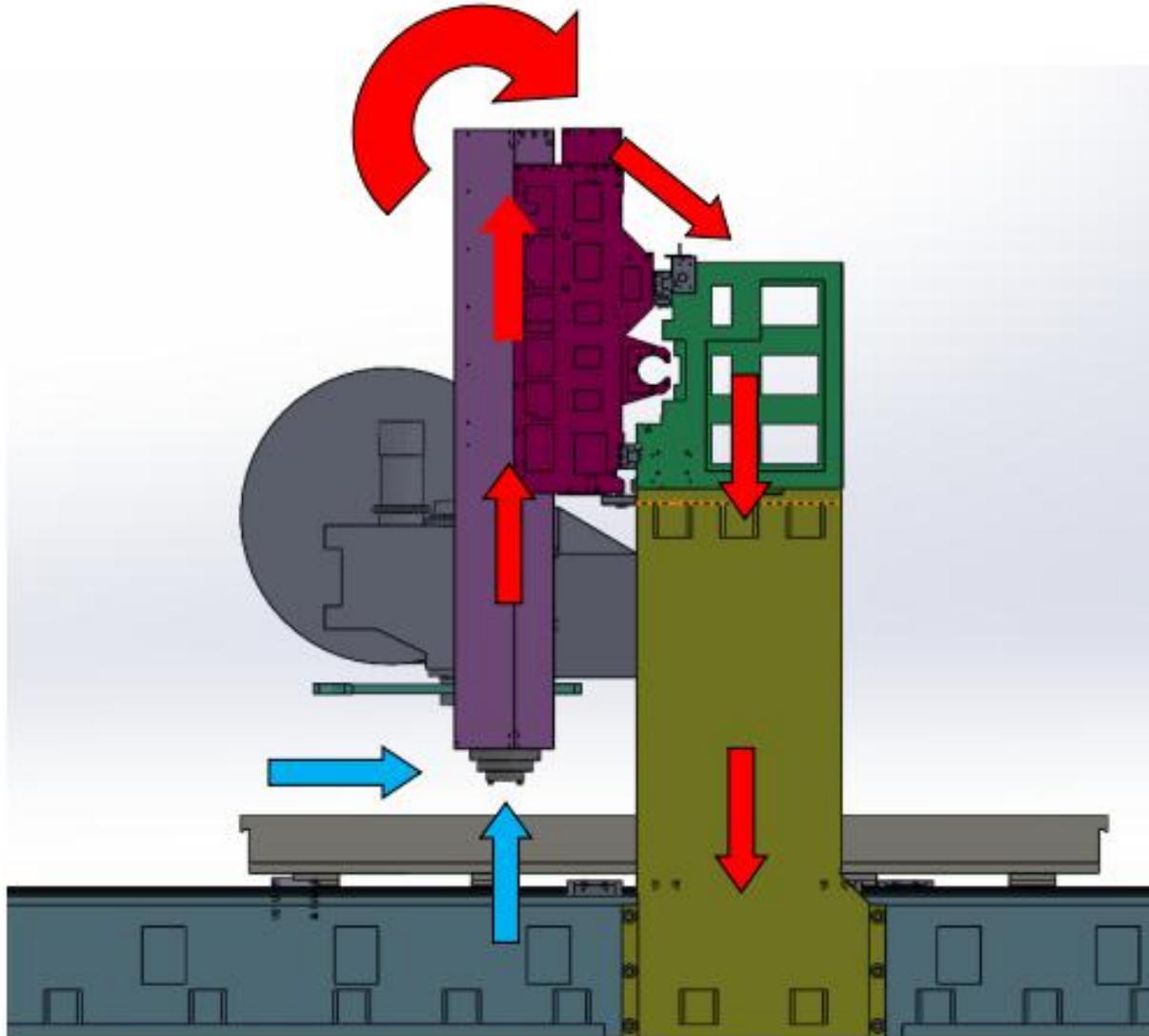




### Column and beam fixed type DCMC

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

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

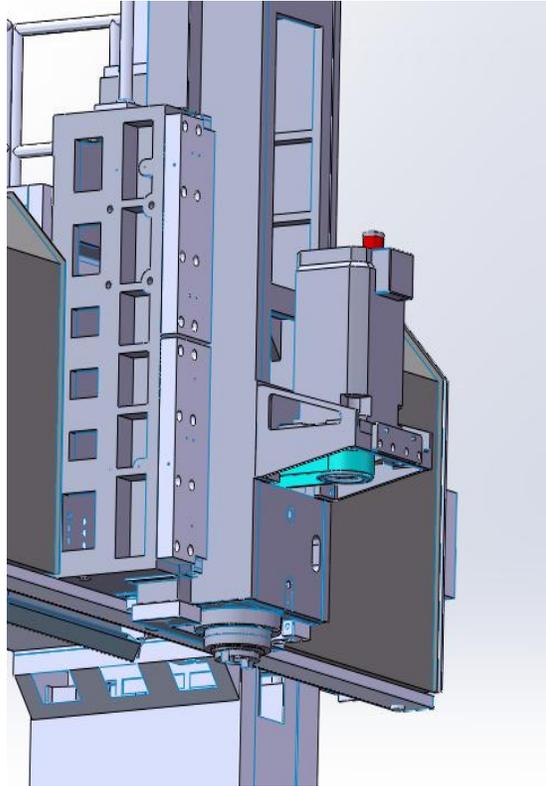


Cutting contrary strength

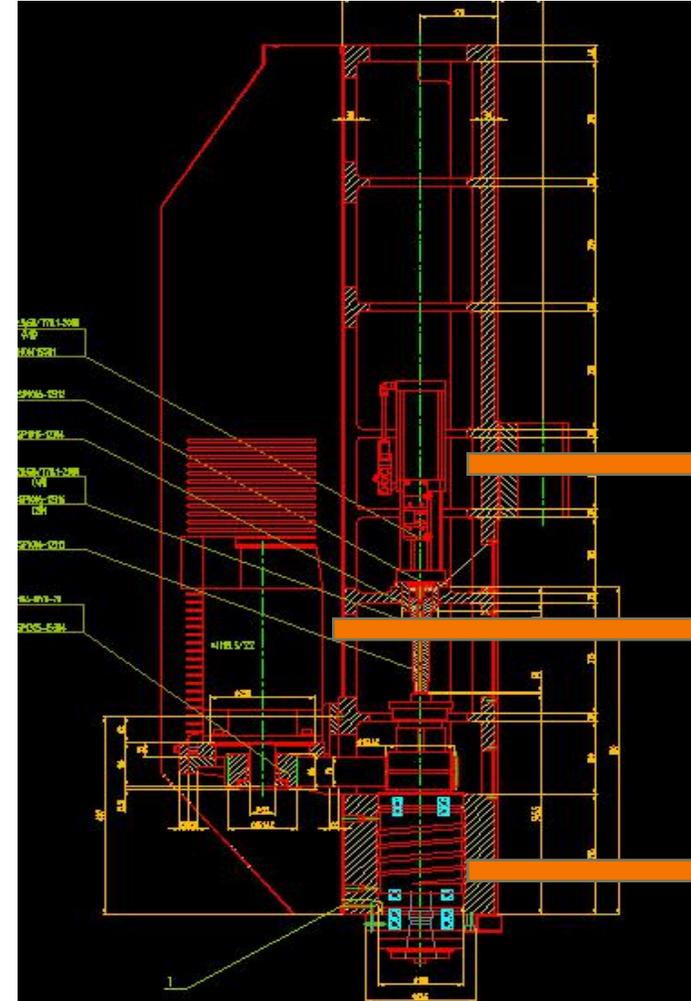


Machine strength direction

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



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



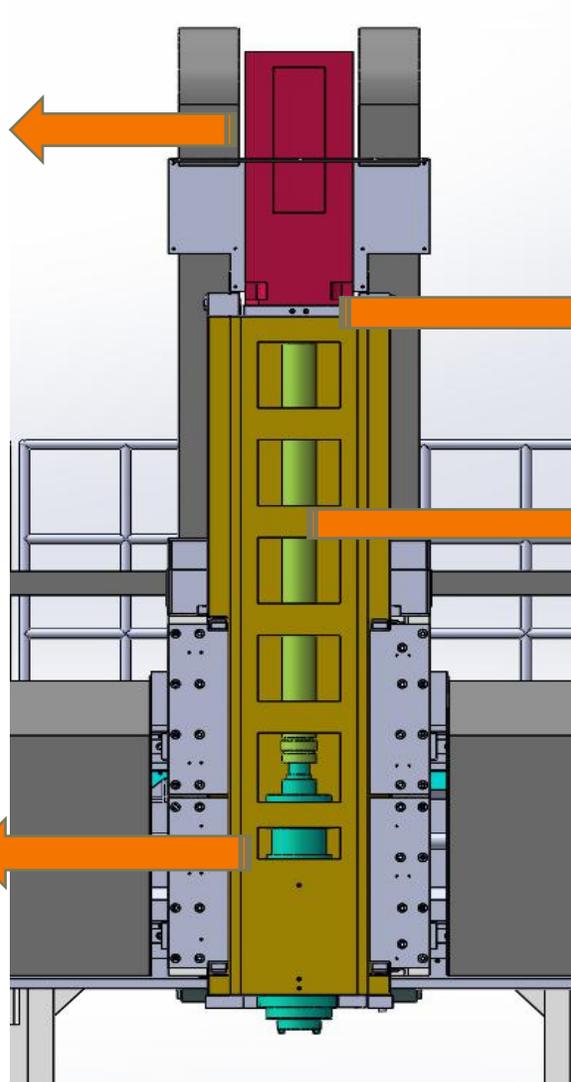
Tool cylinder

Main motor

Pneumatic tool clamping and unclamping

## 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 fulfill 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

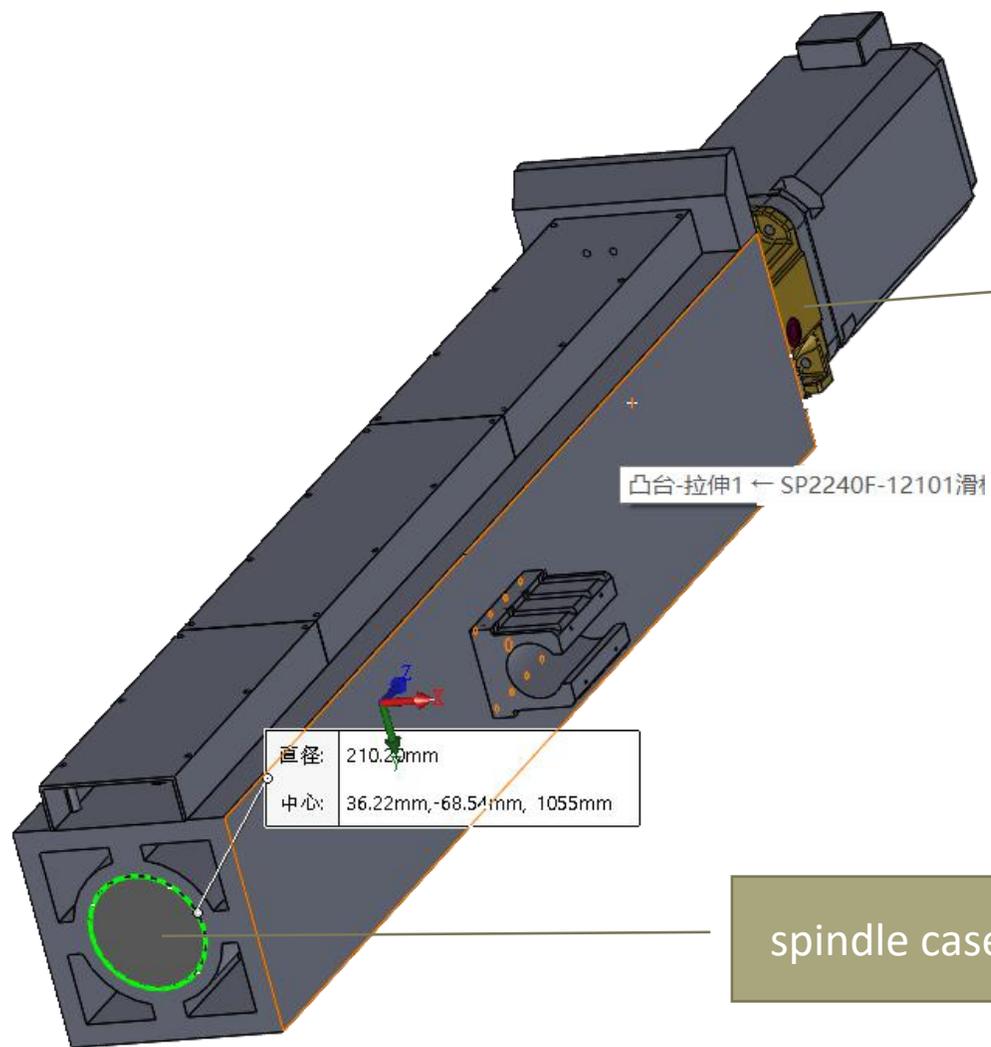
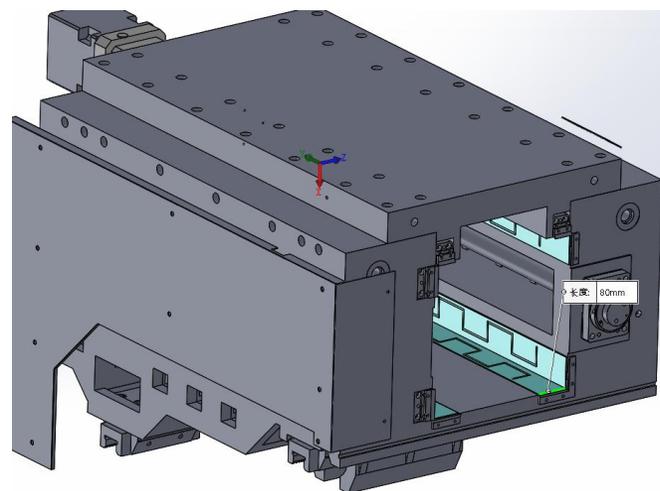
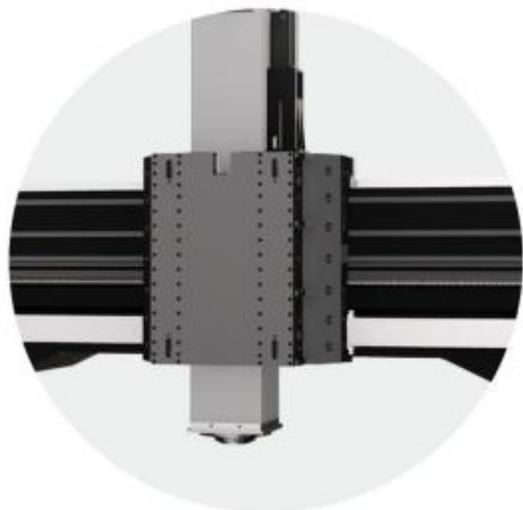


Tool cylinder (pneumatic tool clamping and unclamping)

Spindle motor

Gear head

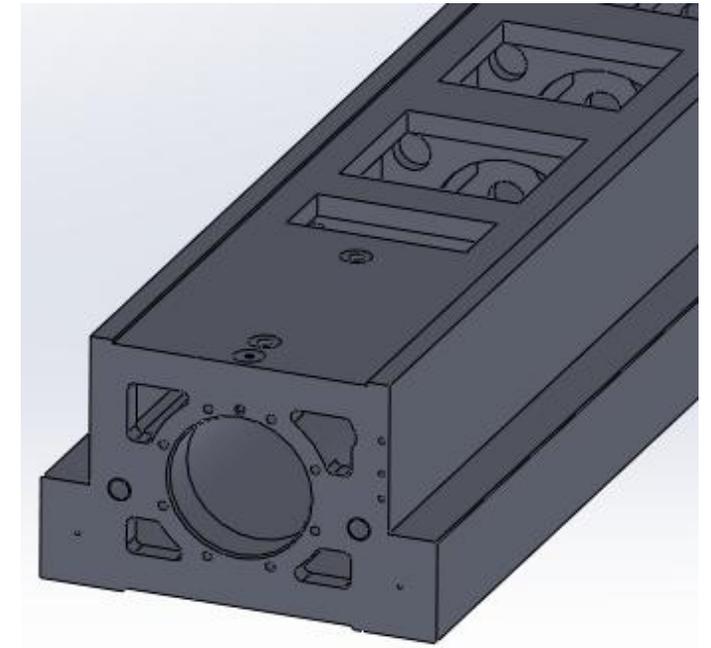
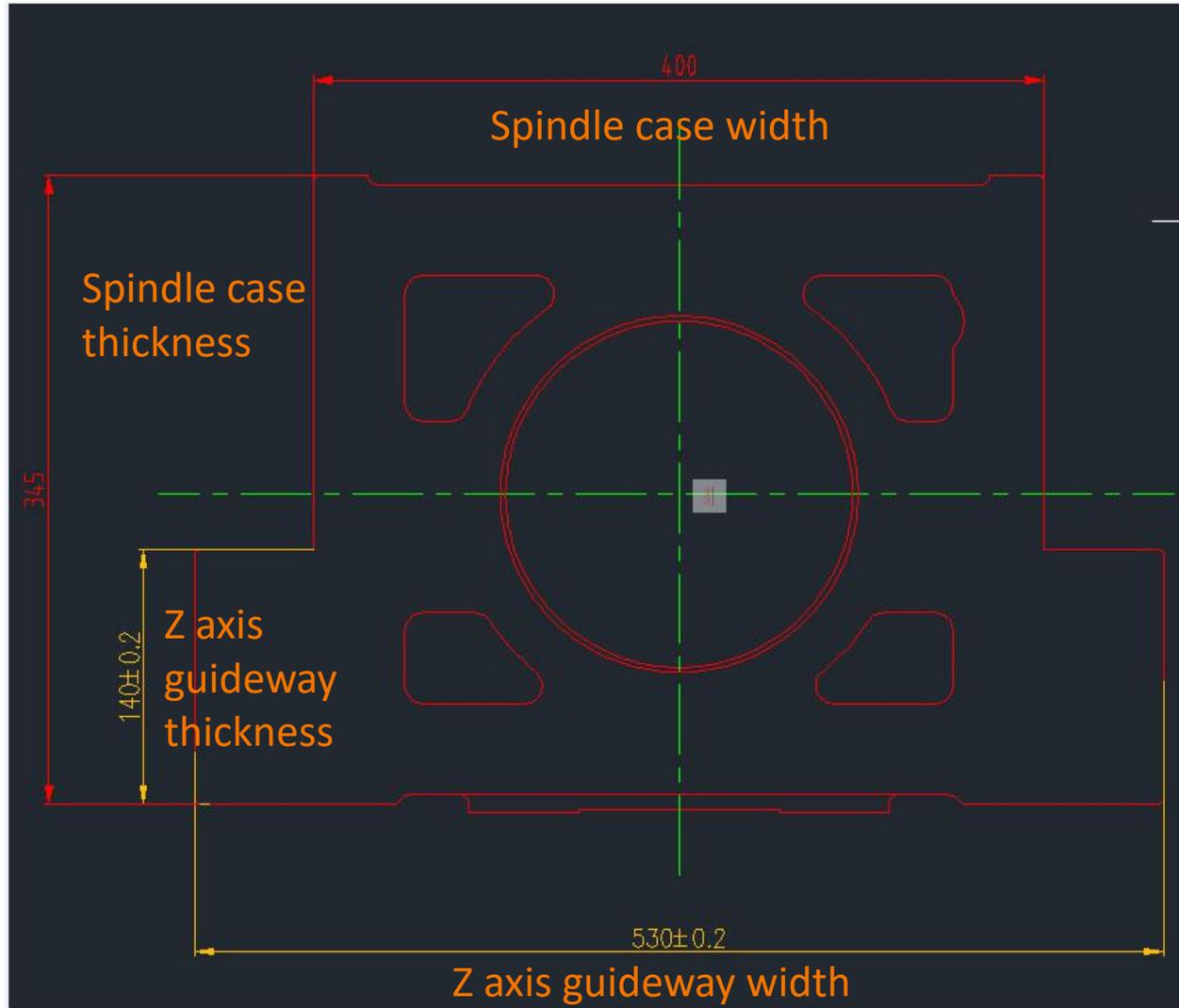
## Spindle transmission - square ram



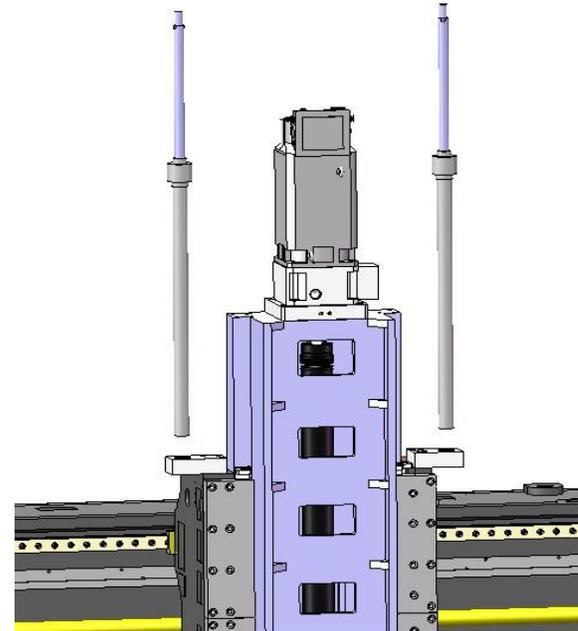
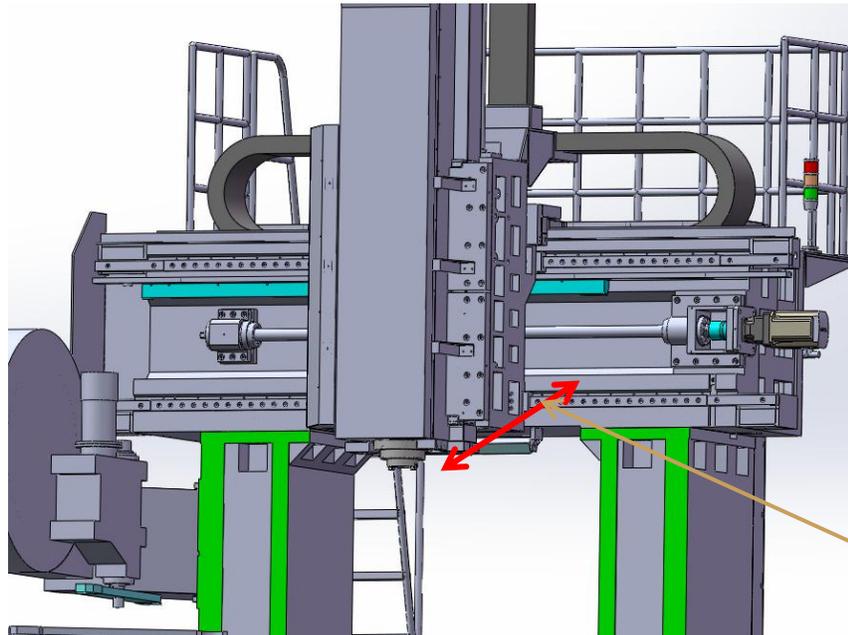
ZF gearbox

spindle case diameter 210mm





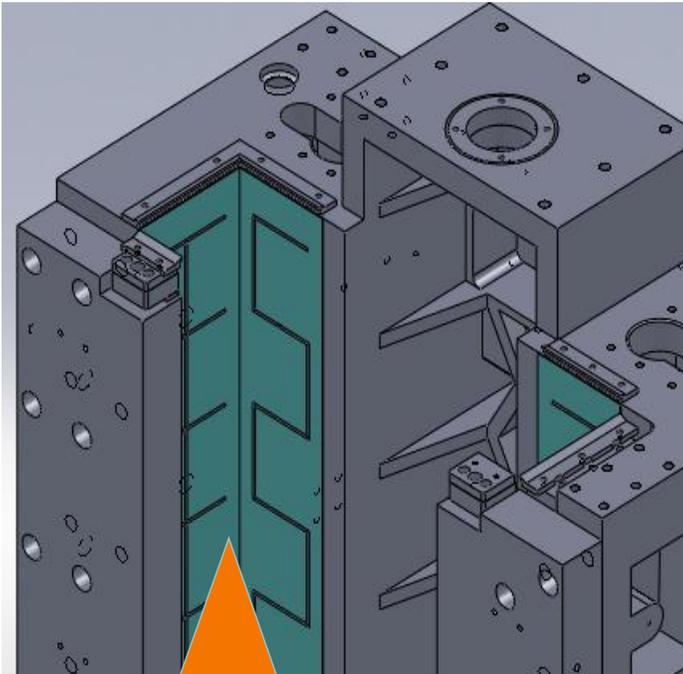
With large cross section design, it improves spindle case rigidity by 20% compared with other competitors



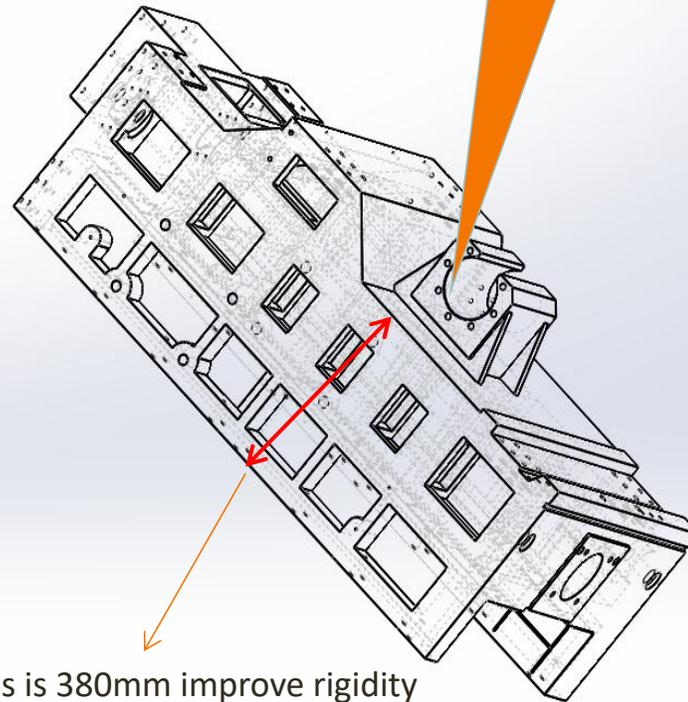
Double balance cylinder can efficiently decrease bending moment during Z axis movement.(source powered by hydraulic station)

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

## Machine structure - saddle

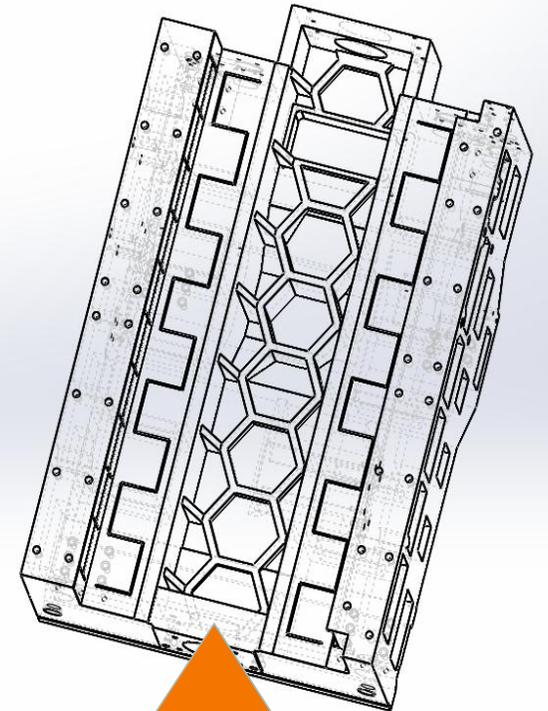


To improve saddle rigidity and anti-shock, Z axis is made of box guideway with plastic which is manually scraped well.



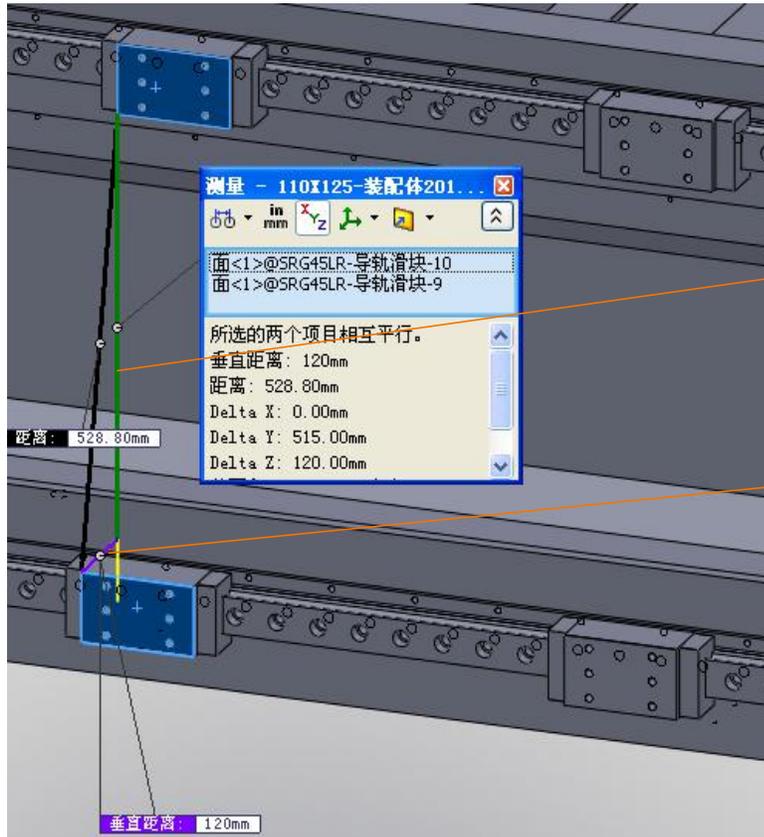
Thickness is 380mm improve rigidity

One piece of screw nut seat improve machine accuracy



Inner side use regular hexagon design for higher rigidity

# Machine structure - beam

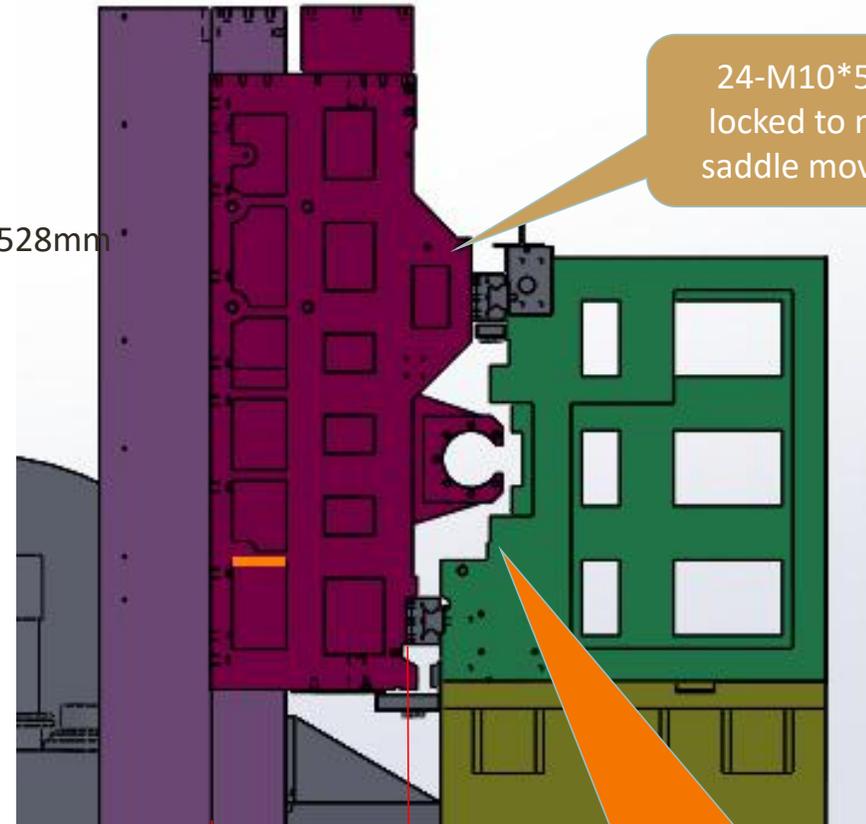


Upper guideway (SRG45)

guideways distance 528mm

ladder distance 120mm

Down guideway (SRG45)



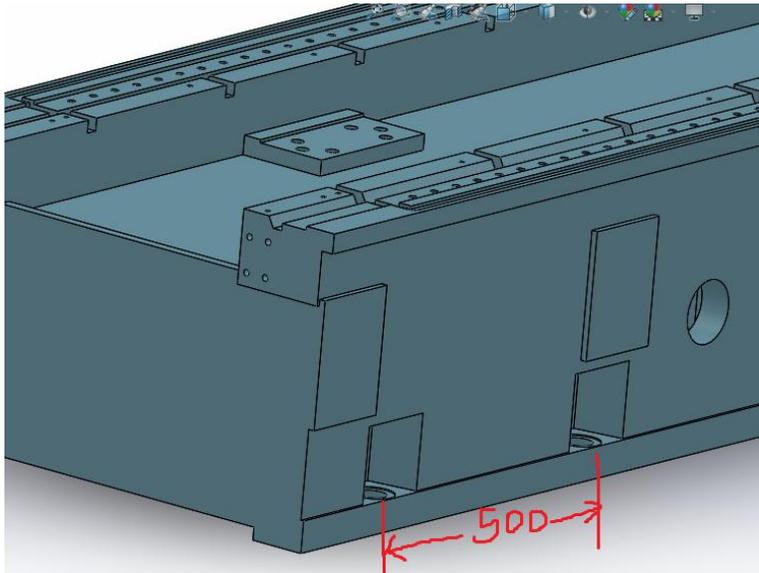
24-M10\*55 screws locked to make sure saddle moving stably

Ladder designed beam assured spindle case gravity backward.

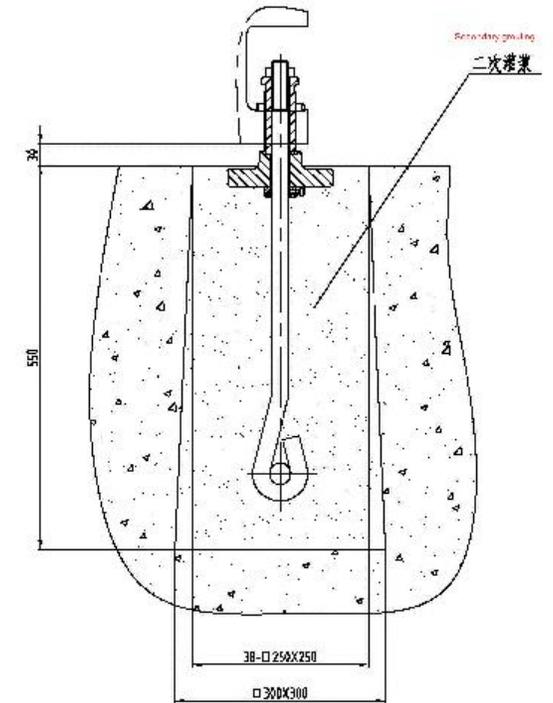
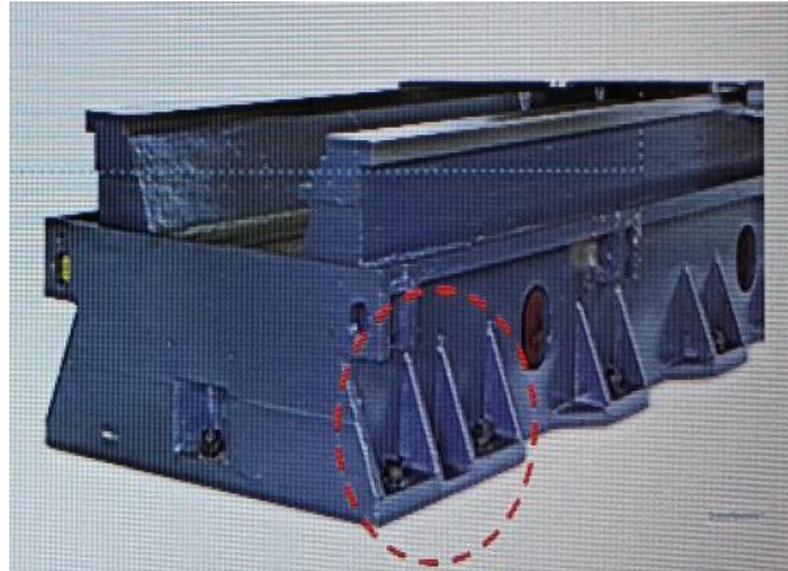
Reasonable distance between guideway to spindle center by FEA

## Machine structure - base

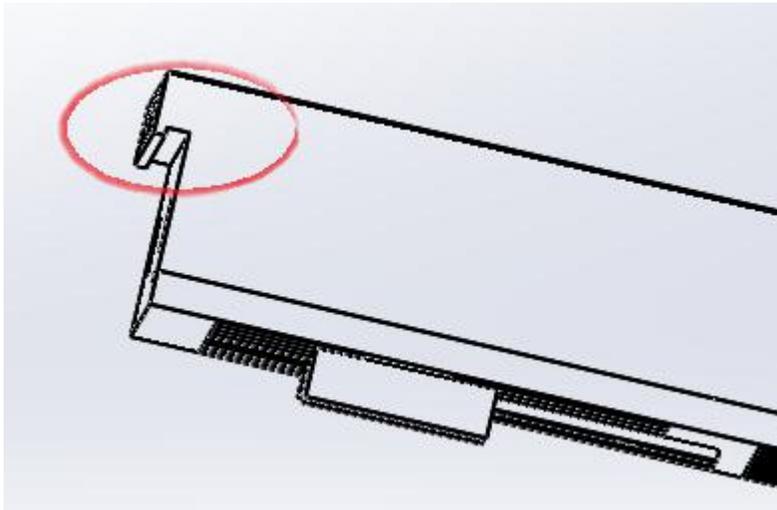
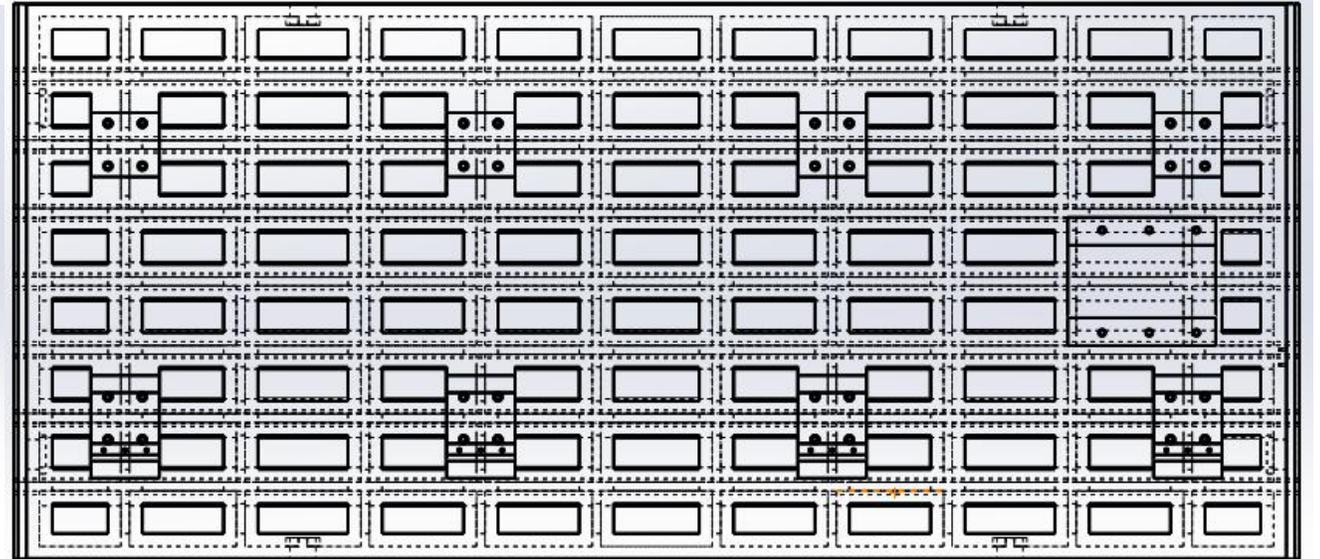
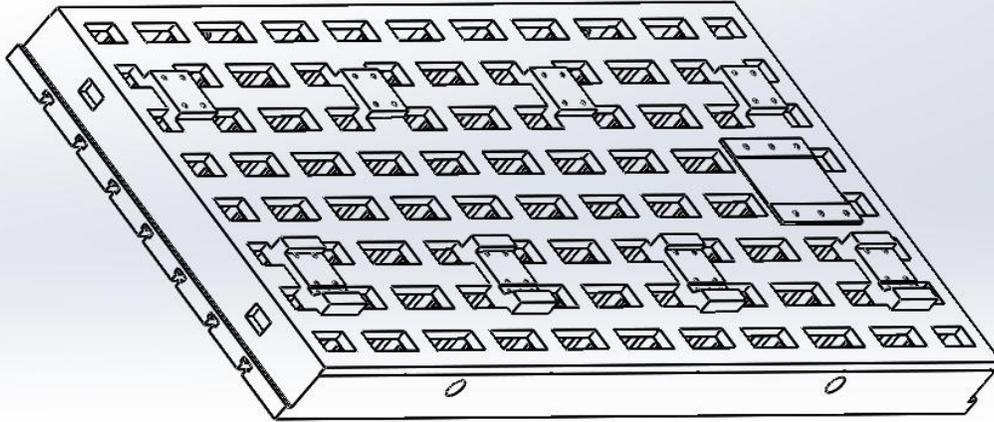
**SINO**



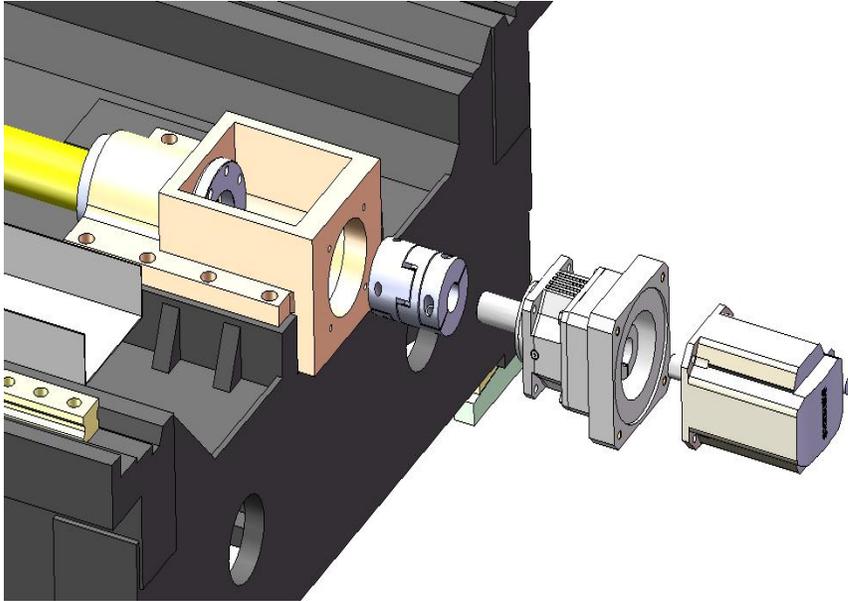
**OTHERS**



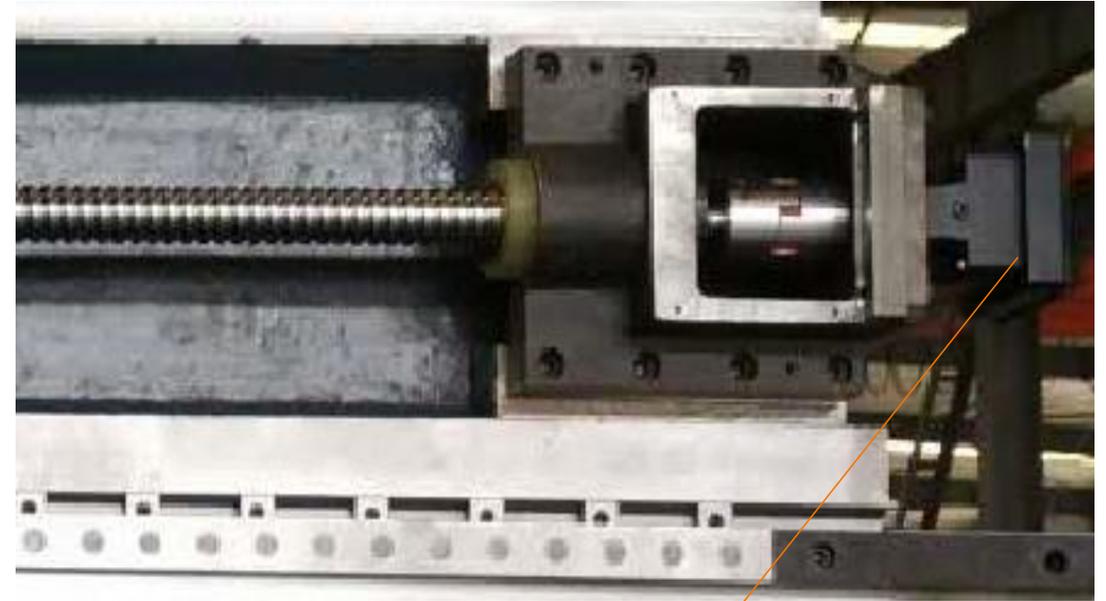
- Foundation hole keep in vertical line with linear guideway which assure a better loading support.
- If machine is installed by two holes, one fixing hole and one adjusting hole, the machine base is easily deformed due to unequal force.
- Trapezoid foundation hole ensure machine stability.
- 500mm distance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



3 axes motor connect ball screw directly by coupling and reducer



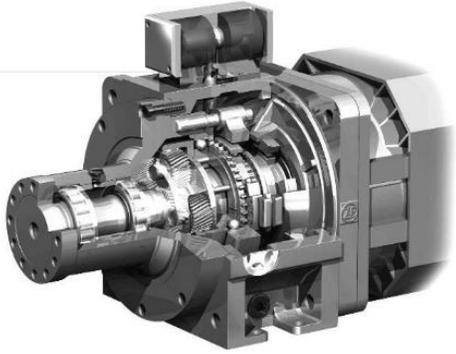
10 years free- maintenance Germany STOBBER reducer (increase torque by 1:4 )

SERIES	MODEL	WORKTABLE SIZE	AXES TRAVEL	MOTOR POWER	SPINDLE TORQUE	COLUMNS DISTANCE	TRANSMISSION			
10	SP1016	1000 x 1600	1650 x 1100 x 600	X/Y/Z: 3 SP:15/18.5	71.5	1250	BELT			
	SP1020	1000 x 2000	2050 x 1100 x 600							
13	SP1325	2500 x 1300	2600 x 1400 x 800	X/Z: 3 Y:1.8 SP: 15/18.5 (WIDE AREA MOTOR)	143/143/572	1400	BELT TYPE STANDARD DIRECT/GEAR HEAD OPTIONAL			
	SP1330	3000 x 1300	3100 x 1300 x 900							
15	SP1530	3000 X 1500	3100 X 1650 X 800			1650				
	SP1540	4000 X 1500	4100 X 1650 X 800							
18	SP1830	3000 X 1800	3200 x 1850 x 1000			X/Y/Z: 3 SP:15/18.5 (WIDE AREA MOTOR)		143/572/572	2000	BELT TYPE STANDARD DIRECT/GEAR HEAD /SQUARE RAM OPTIONAL
	SP1840	4000 X 1800	4200x 1850 x 1000							
22	SP2230	3000 X 2000	3200 X 2250 X 1000	2400						
	SP2240	4000 x 2000	4200 x 2250 x 1000							

## Standard accessories

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

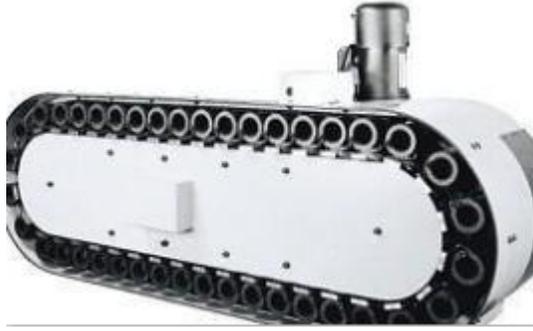


Semi-automatic right angle milling head

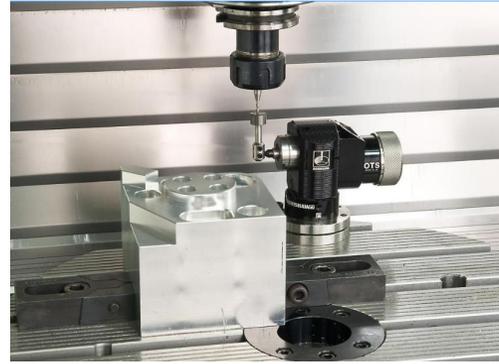


Automatic right angle milling head

## Optional accessories



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



RENISHAW tool measurement

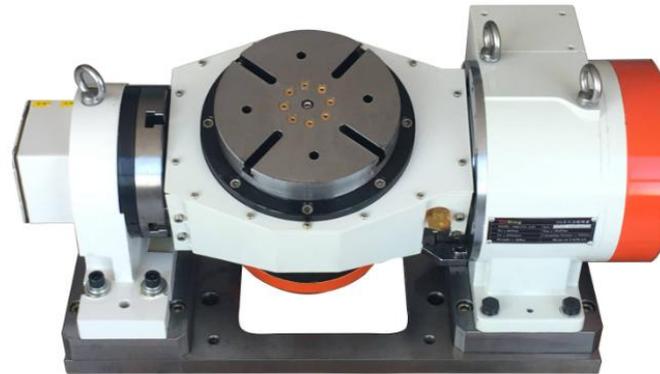


HEIDENHAIN linear scale



CTS for belt type and gear head type

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



4th /5th axis

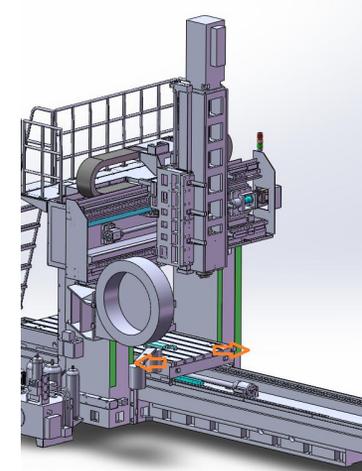


Table size width increase  
distance between columns/  
column height increase



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	BT50
Clamping tool force	M24 screw clamping tool
Cutting coolant way	N/A

## Semi-automatic right angle milling head

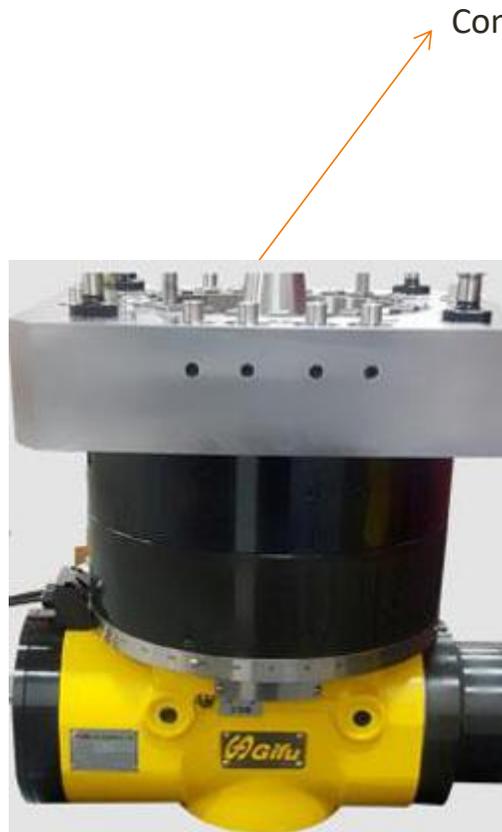
Connected with flange/ milling head moduel



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



Connected with milling head module

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

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

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



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YES , SINO !



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