



H series Horizontal Machining Centers

-introduction



HPC

H

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H series horizontal machining center is Haitian Precision introduced Japanese advanced technology production of NC products, the machine one time clamping can complete parts processing, especially suitable for the body parts of hole and plane processing, widely used in automotive, aerospace, rail transportation, oil valves, plastic machinery, mining machinery, general machinery and mechanical processing field.

Models	63H	80H	100H	125H
Travels X/Y/Z, mm	1000/850/750	1270/1000/920	2000/1500/1200	2000/1500/1200
Table size, mm	630x630	800x800	1000x1000	1250x1250
Max. speed rpm	5000	4500		4500





Valve parts (steel)



IMM plate (spheroidal graphite casting)

H series Horizontal Machining Centers can reach strong, big torque, super - rigid characteristics, is suitable for face mill, boring, drilling and so on, which has high MRR workpieces;



ITEMS			SPEC	ITEMS			SPEC
Machining range	X travel	mm	1000	Tool magazine	Capacity	T	40
	Y travel	mm	850		Max. tool diameter	mm	Φ120(Φ240)
	Z travel	mm	750		Max. tool length	mm	500
	Distance from spindle center to table	mm	0-850		Max. tool weight	kg	30
	Spindle nose to table center	mm	200-950				
Table	Size	mm	630×630	Positioning	X (with scale)	mm	0.012(0.008)
	Max. loading	kg	1200		Y (with scale)	mm	0.012(0.008)
	indexing	°	1°×360		Z (with scale)	mm	0.012(0.008)
					Curvic coupling table	"	8
			NC table		"	10 (OP)	
Spindle	Max. speed	rpm	5000	Repeatability	X (with scale)	mm	0.006(0.005)
	Motor power	kW	18.5/22		Y (with scale)	mm	0.006(0.005)
	Max. torque	Nm	730		Z (with scale)	mm	0.006(0.005)
	Spindle taper	-	ISO7:24 NO.50		Curvic coupling table	"	4
	Pull stud	-	P50T-2-MAS403		NC table	"	6 (OP)
Feeds	Cutting feed X/Y/Z	m/min	5/5/5	Required power		kVA	65
	Rapid feed X/Y/Z	m/min	20/20/20	Controller		-	FANUC 0i
	Min. indexing	mm	0.001				

SPEC-80H 80H/D



ITEMS			SPEC	ITEMS			SPEC	
Machining range	X travel	mm	1270	Tool magazine	Capacity	T	40	
	Y travel	mm	1000		Max. tool diameter	mm	Φ120(Φ240)	
	Z travel	mm	920		Max. tool length	mm	500	
	Distance from spindle center to table	mm	0-1000		Max. tool weight	kg	30	
	Spindle nose to table center	mm	200-1120					
Table	Size	mm	800x800	Positioning	X (with scale)	mm	0.012(0.008)	
	Max. loading	kg	1500		Y (with scale)	mm	0.012(0.008)	
	indexing	°	1°×360		Z (with scale)	mm	0.012(0.008)	
					Curvic coupling table	"	8	
			NC table		"	10 (OP)		
Spindle	Max. speed	rpm	4500	Repeatability	X (with scale)	mm	0.006(0.005)	
	Motor power	kW	18.5/22		Y (with scale)	mm	0.006(0.005)	
	Max. torque	Nm	837		Z (with scale)	mm	0.006(0.005)	
	Spindle taper	-	ISO7:24 NO.50		Curvic coupling table	"	4	
	Pull stud	-	P50T-2-MAS403		NC table	"	6 (OP)	
Feeds	Cutting feed X/Y/Z	m/min	5/5/5		Required power		kVA	65
	Rapid feed X/Y/Z	m/min	18/18/18	Controller			-	FANUC 0i
	Min. indexing	mm	0.001					



ITEMS			SPEC	ITEMS			SPEC
Machining range	X travel	mm	2000	Tool magazine	Capacity	T	40
	Y travel	mm	1500		Max. tool diameter	mm	Φ120(Φ240)
	Z travel	mm	1200		Max. tool length	mm	500
	Distance from spindle center to table	mm	-50-1450(100H) 50-1550(100H/D)		Max. tool weight	kg	30
	Spindle nose to table center	mm	280-1480				
Table	Size	mm	1000X1000	Positioning	X (with scale)	mm	0.015(0.012)
	Max. loading	kg	3000		Y (with scale)	mm	0.015(0.012)
	indexing	°	1°×360		Z (with scale)	mm	0.015(0.012)
					Curvic coupling table	"	8
			NC table		"	10 (OP)	
Spindle	Max. speed	rpm	4500	Repeatability	X (with scale)	mm	0.010(0.008)
	Motor power	kW	18.5/22		Y (with scale)	mm	0.010(0.008)
	Max. torque	Nm	837		Z (with scale)	mm	0.010(0.008)
	Spindle taper	-	ISO7:24 NO.50		Curvic coupling table	"	4
	Pull stud	-	P50T-2-MAS403		NC table	"	6 (OP)
Feeds	Cutting feed X/Y/Z	m/min	4/4/4		Required power		kVA
	Rapid feed X/Y/Z	m/min	14/14/14	Controller			-
	Min. indexing	mm	0.001				FANUC 0i

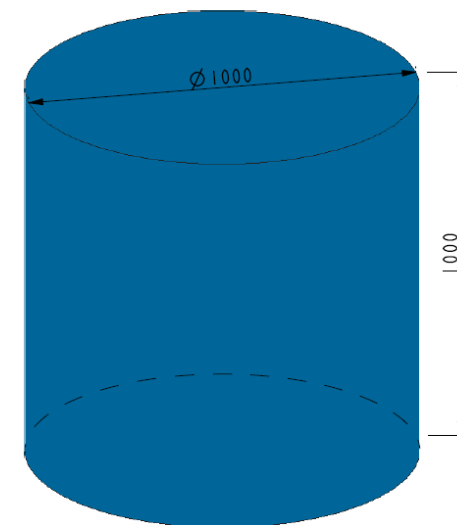
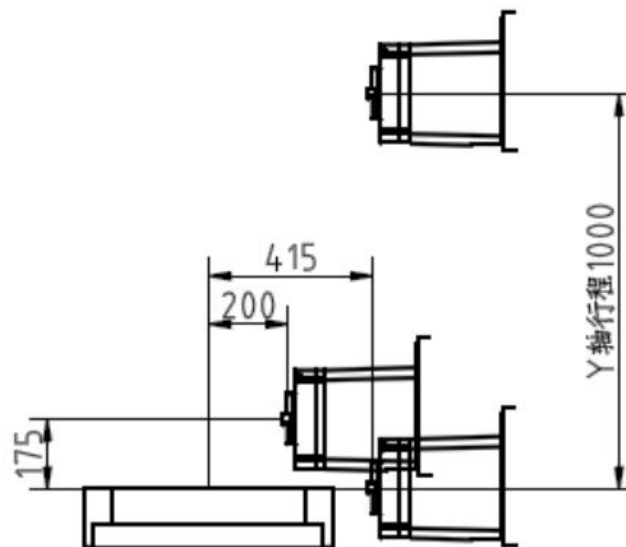
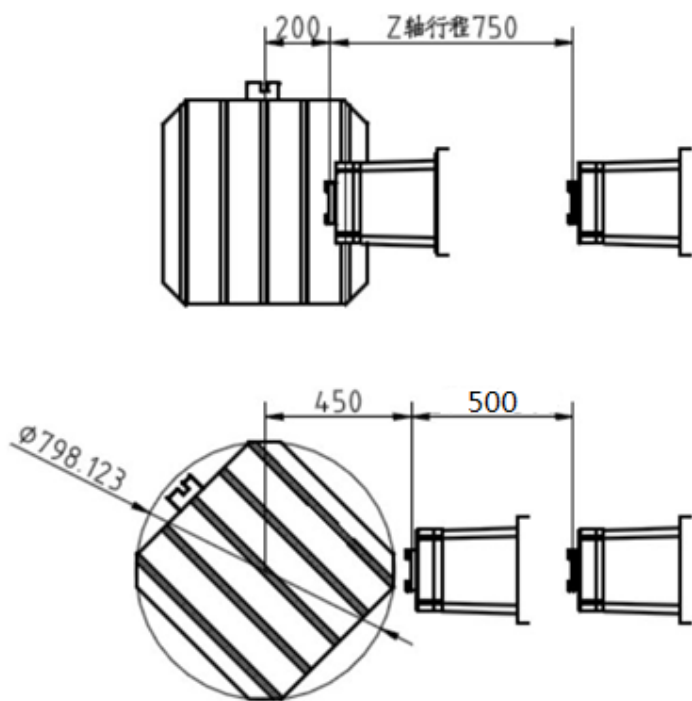
ITEMS			SPEC	ITEMS			SPEC
Machining range	X travel	mm	2000	Tool magazine	Capacity	T	40
	Y travel	mm	1500		Max. tool diameter	mm	Φ120(Φ240)
	Z travel	mm	1200		Max. tool length	mm	500
	Distance from spindle center to table	mm	-50-1450(125H) 50-1550(125H/D)		Max. tool weight	kg	30
	Spindle nose to table center	mm	405-1650		X (with scale)	mm	0.015(0.012)
Table	Size	mm	1250X1250	Positioning	Y (with scale)	mm	0.015(0.012)
	Max. loading	kg	3000		Z (with scale)	mm	0.015(0.012)
	indexing	°	1°×360		Curvic coupling table	"	8
					NC table	"	10 (OP)
Spindle	Max. speed	rpm	4500	Repeatability	X (with scale)	mm	0.010(0.008)
	Motor power	kW	18.5/22		Y (with scale)	mm	0.010(0.008)
	Max. torque	Nm	837		Z (with scale)	mm	0.010(0.008)
	Spindle taper	-	ISO7:24 NO.50		Curvic coupling table	"	4
	Pull stud	-	P50T-2-MAS403		NC table	"	6 (OP)
Feeds	Cutting feed X/Y/Z	m/min	4/4/4	Required power		kVA	65
	Rapid feed X/Y/Z	m/min	14/14/14	Controller		-	FANUC 0i
	Min. indexing	mm	0.001				

Pallet size

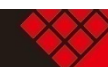


Max. rapid feed X/Y/Z m/min	20/20/20
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Max. workpiece rotary diameter and height



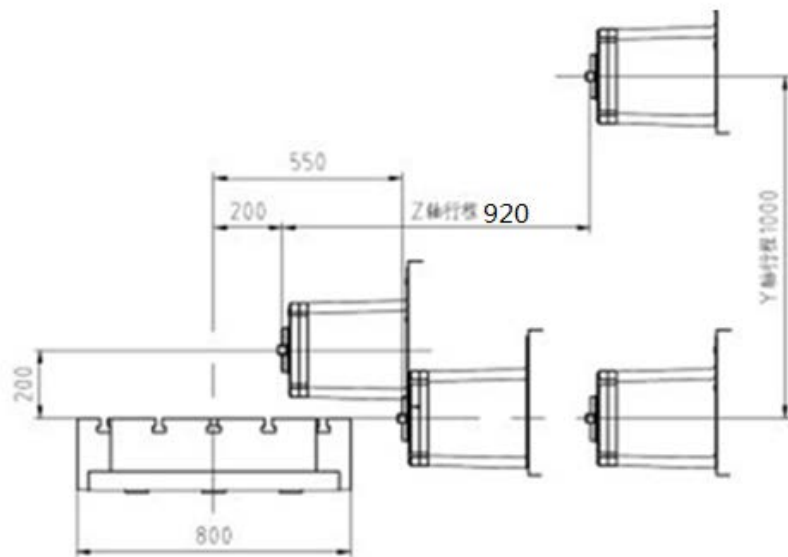
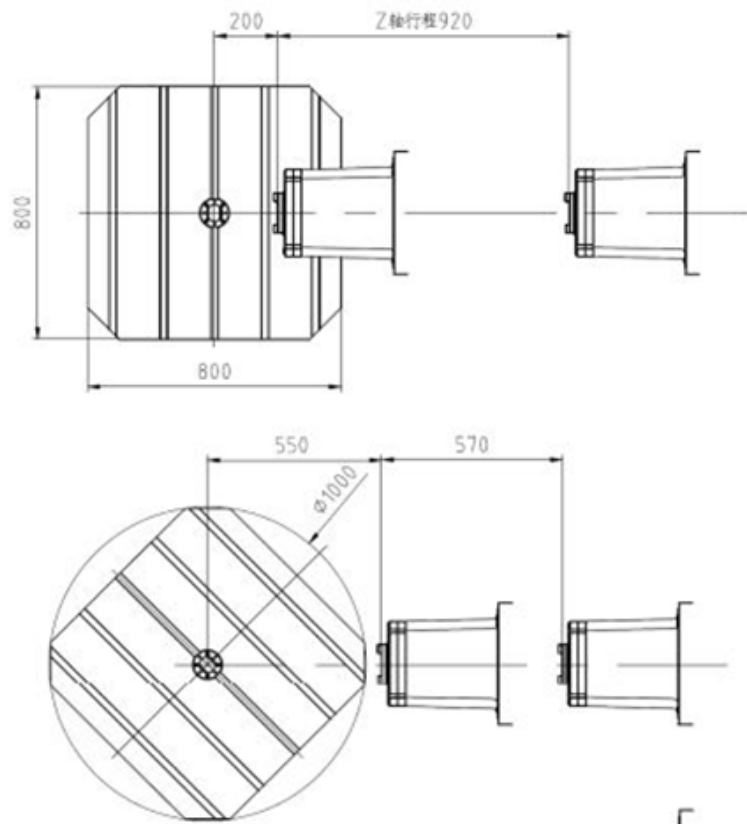
63H 63H/D



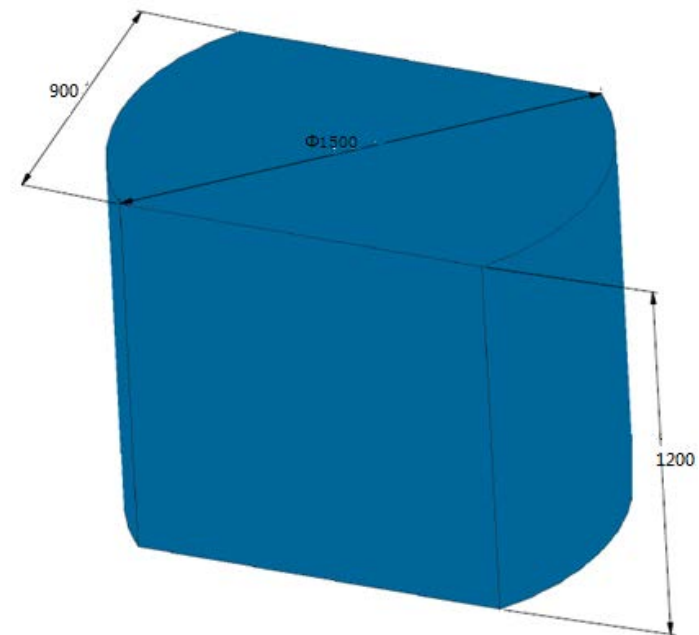
Pallet size

Max. rapid feed X/Y/Z m/min

18/18/18



max. workpiece rotary diameter and height

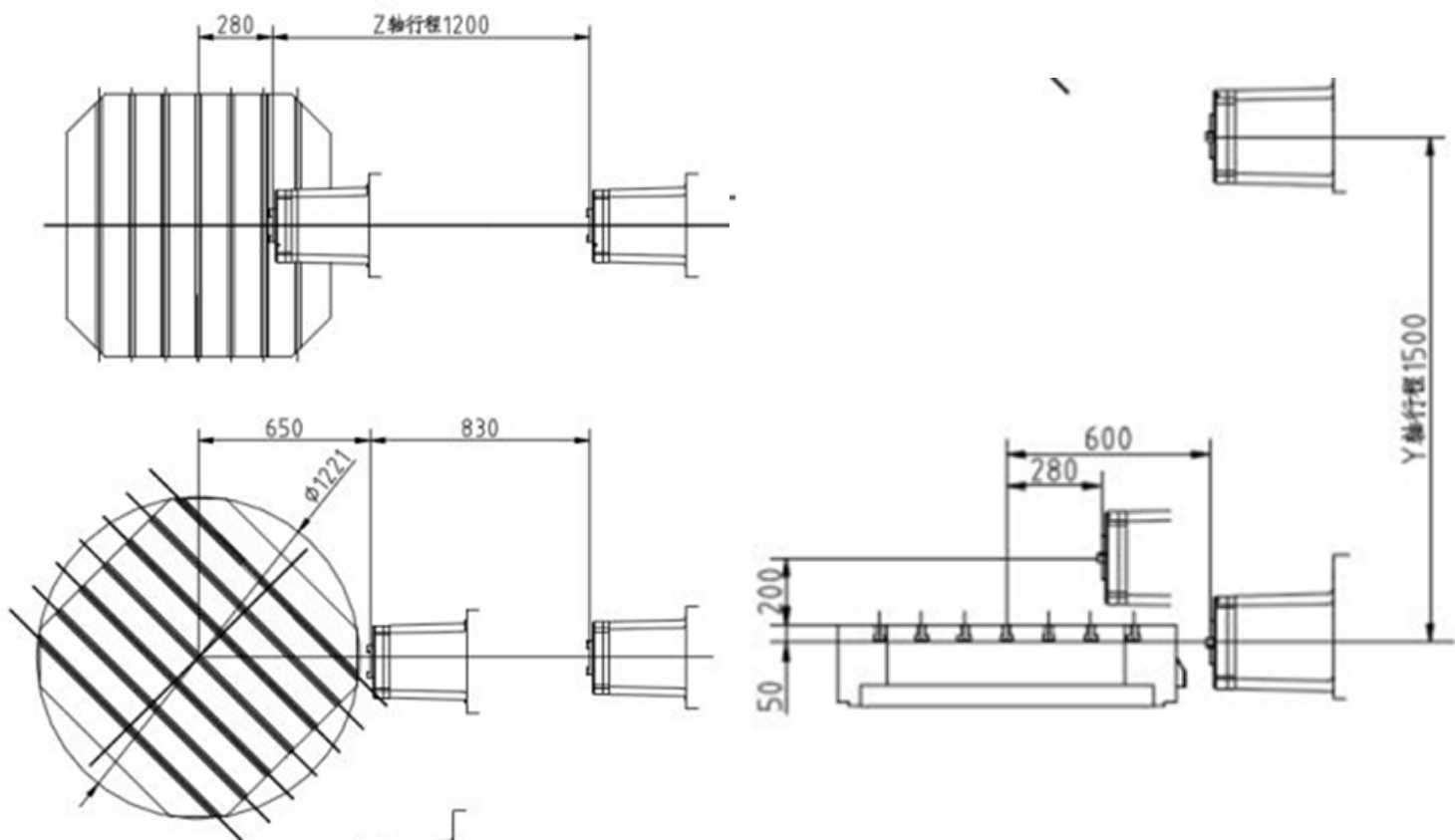


80H 80H/D

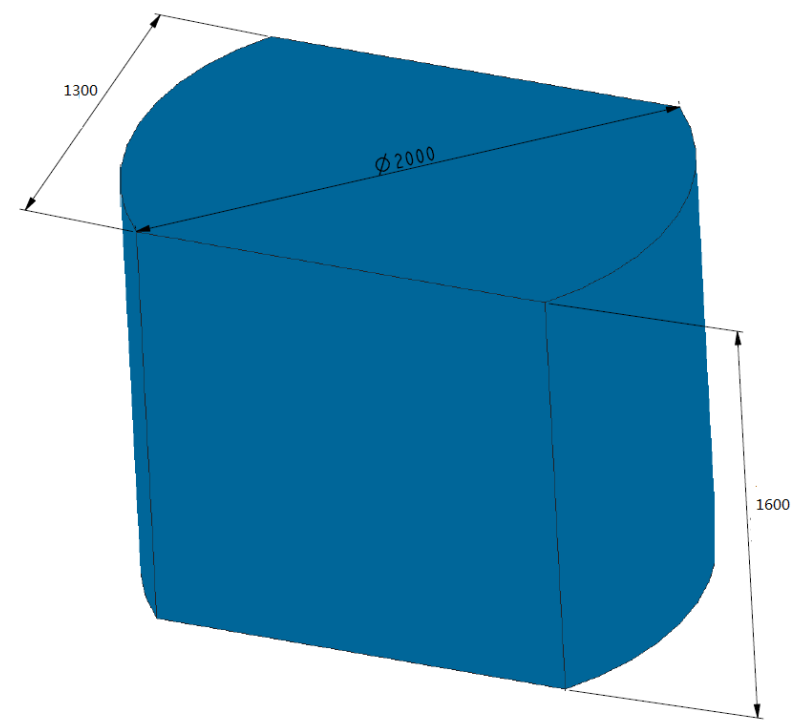


Pallet size

Max. rapid feed X/Y/Z m/min	14/14/14
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Max. workpiece rotary diameter and height

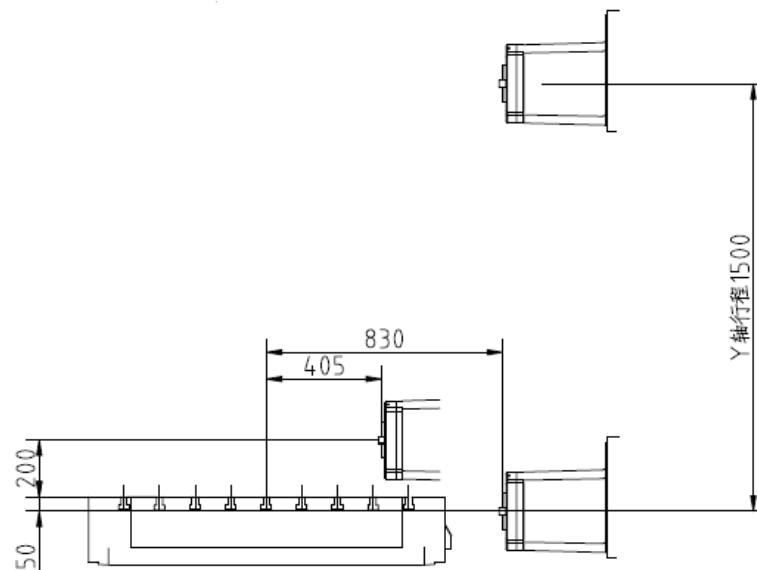
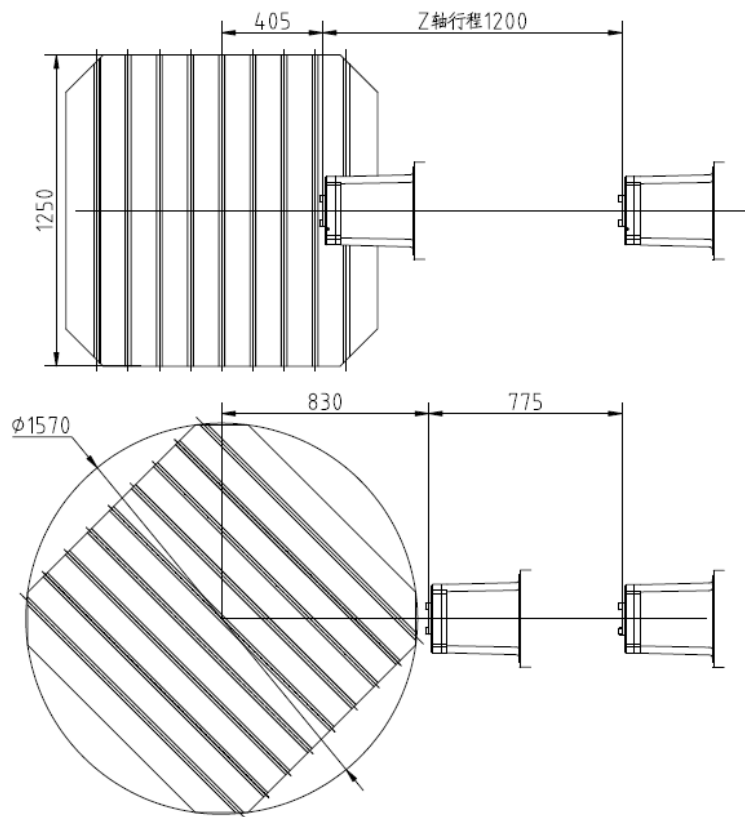


100H 100H/D

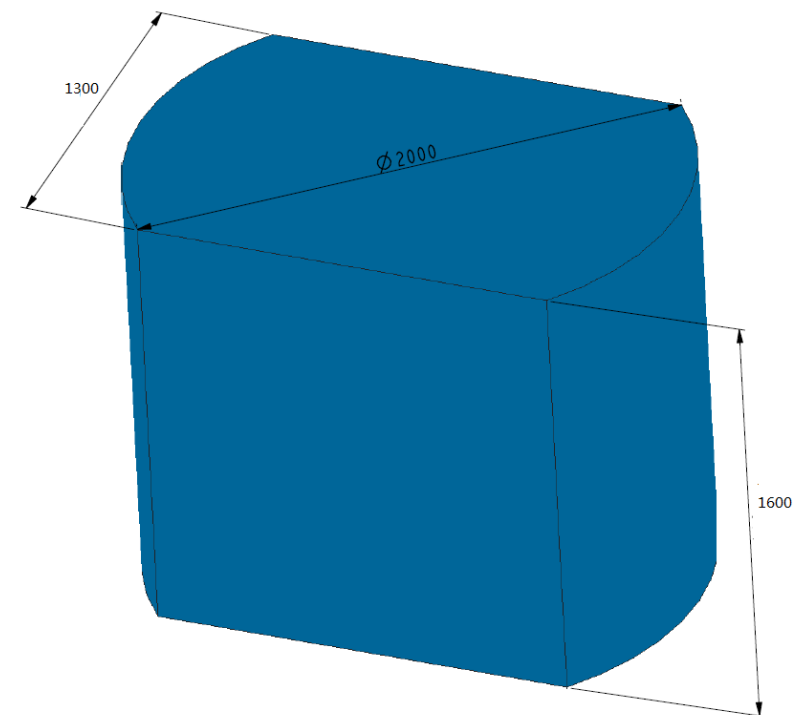


Pallet size

Max. rapid feed X/Y/Z m/min	14/14/14
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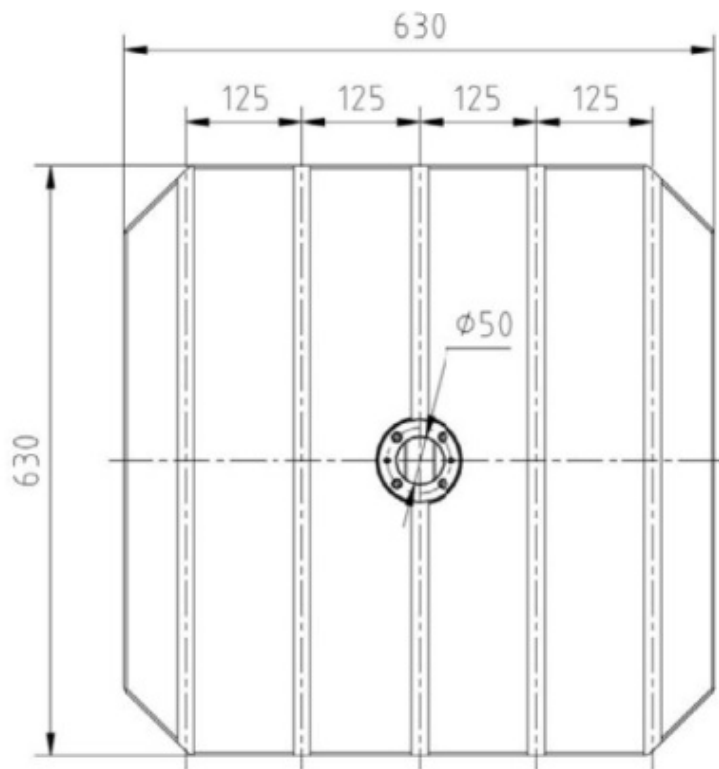
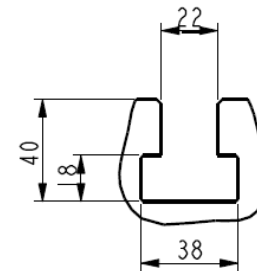
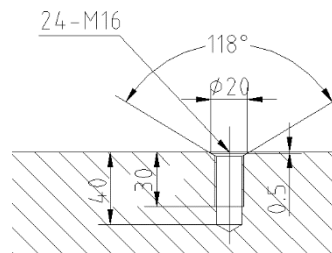
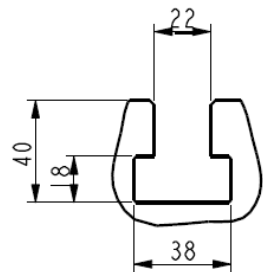
Max. workpiece rotary diameter and height



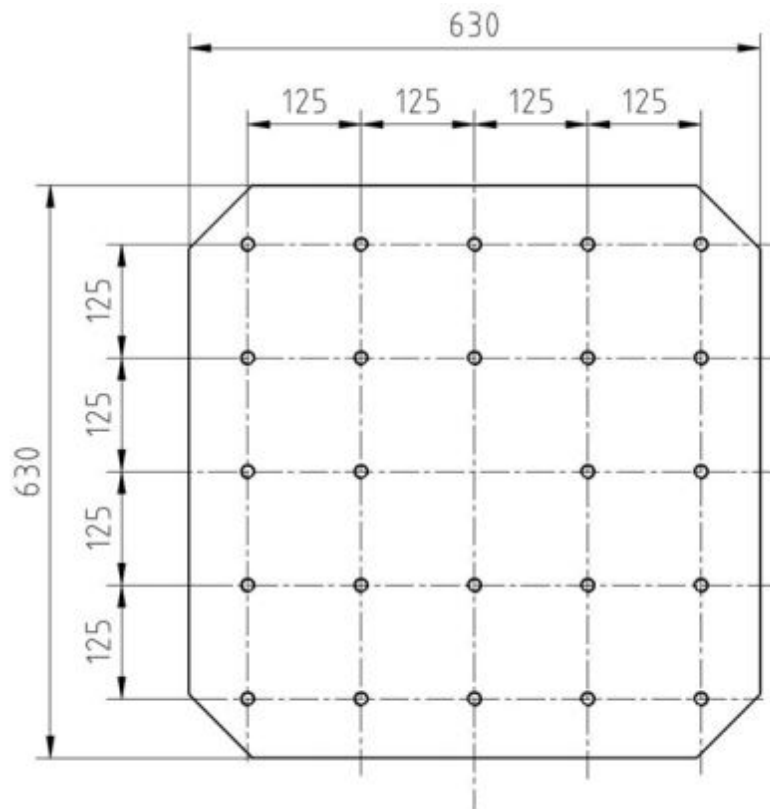
125H 125H/D



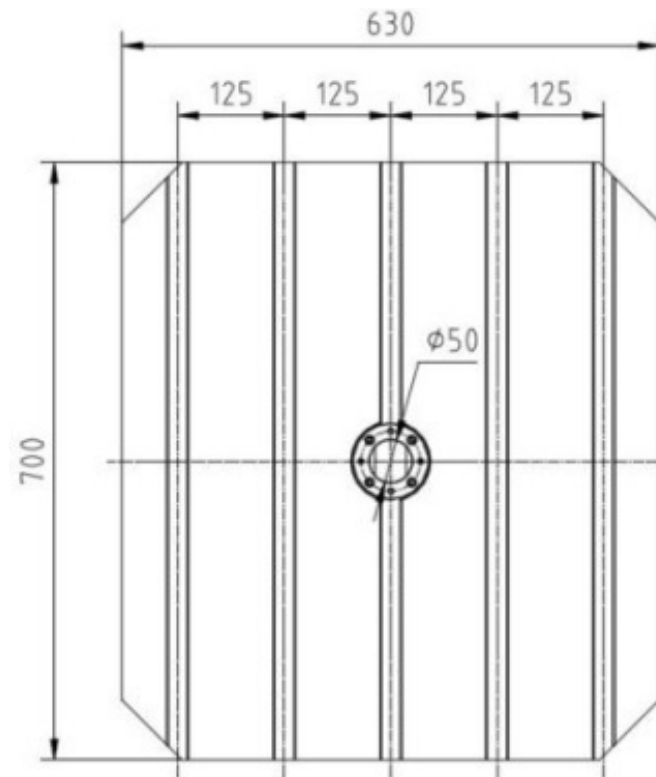
63H 63H/D Pallet



630×630 T slot(STD)



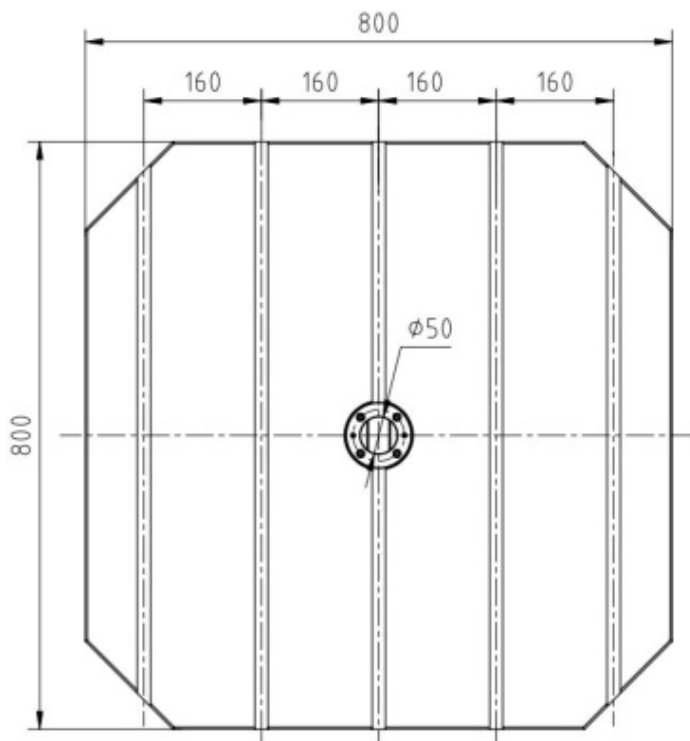
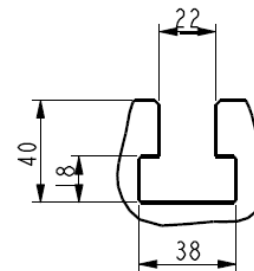
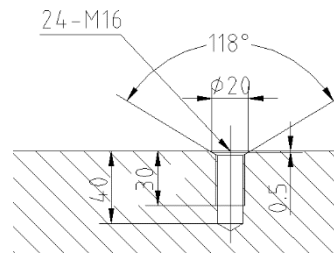
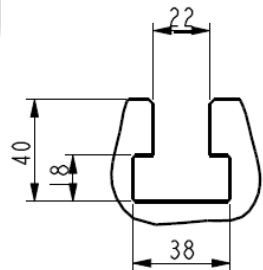
630×630 screw hole(OP)



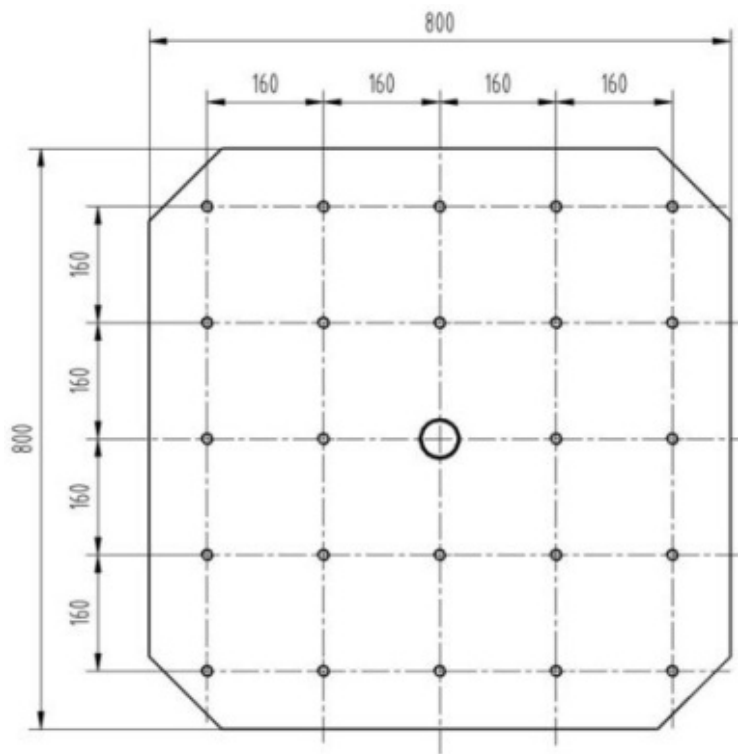
630×700 T slot(OP)



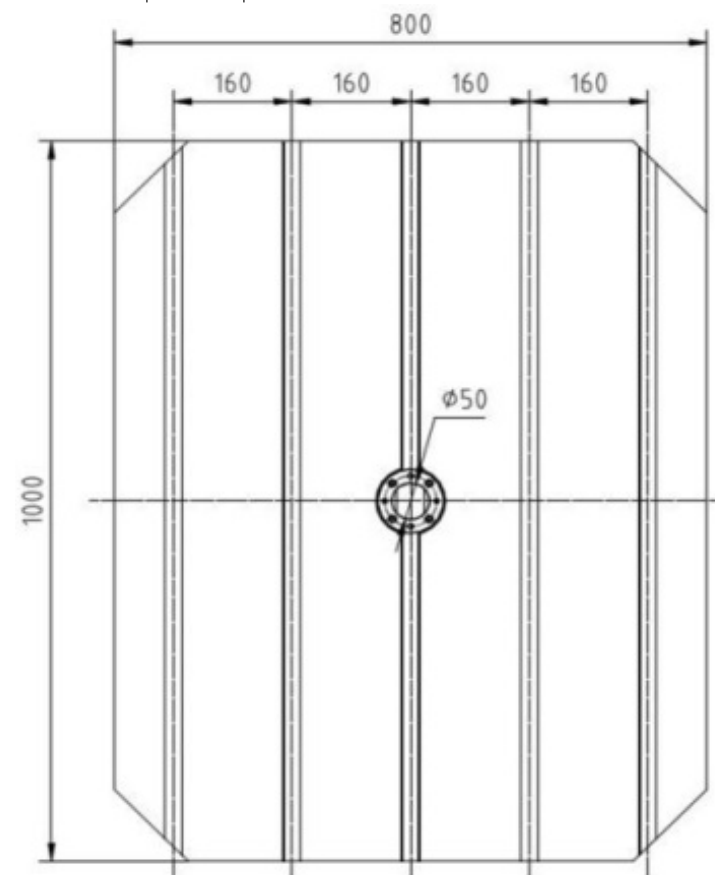
80H 80H/D Pallet



800×800T Slot (STD)



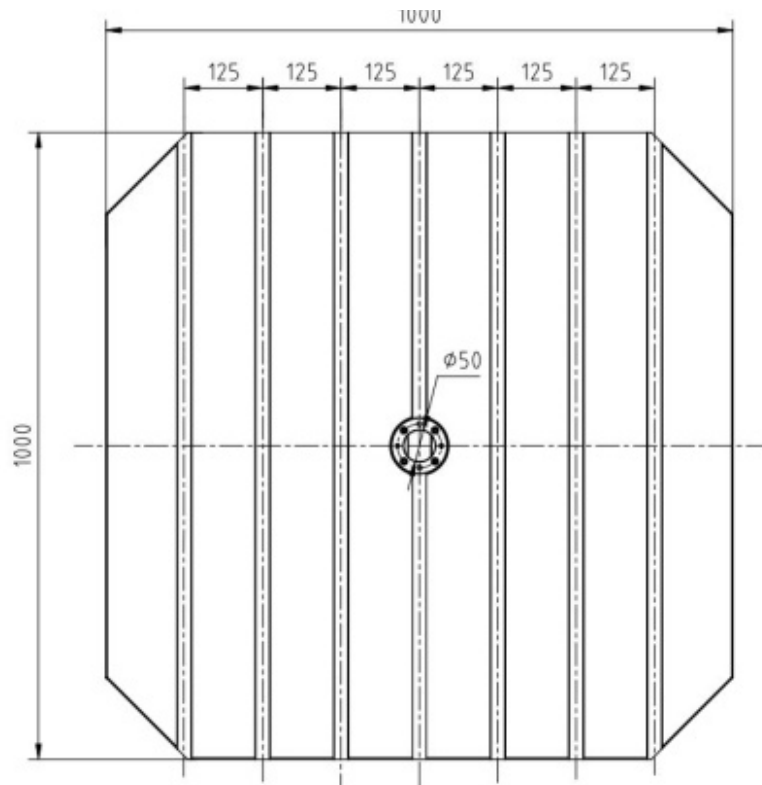
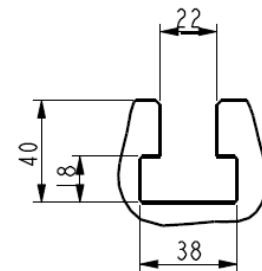
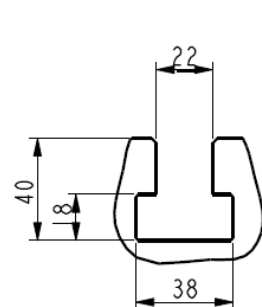
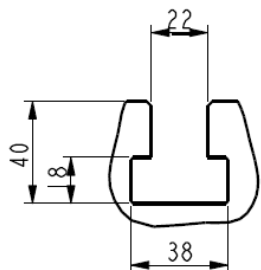
800×800screw hole(OP)



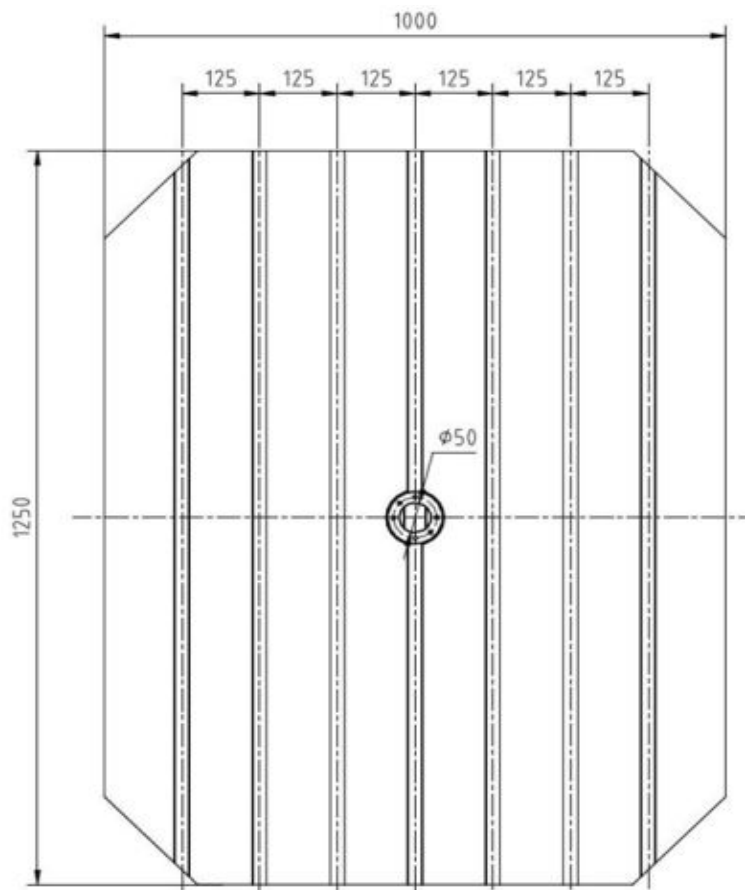
800×1000T Slot(OP)



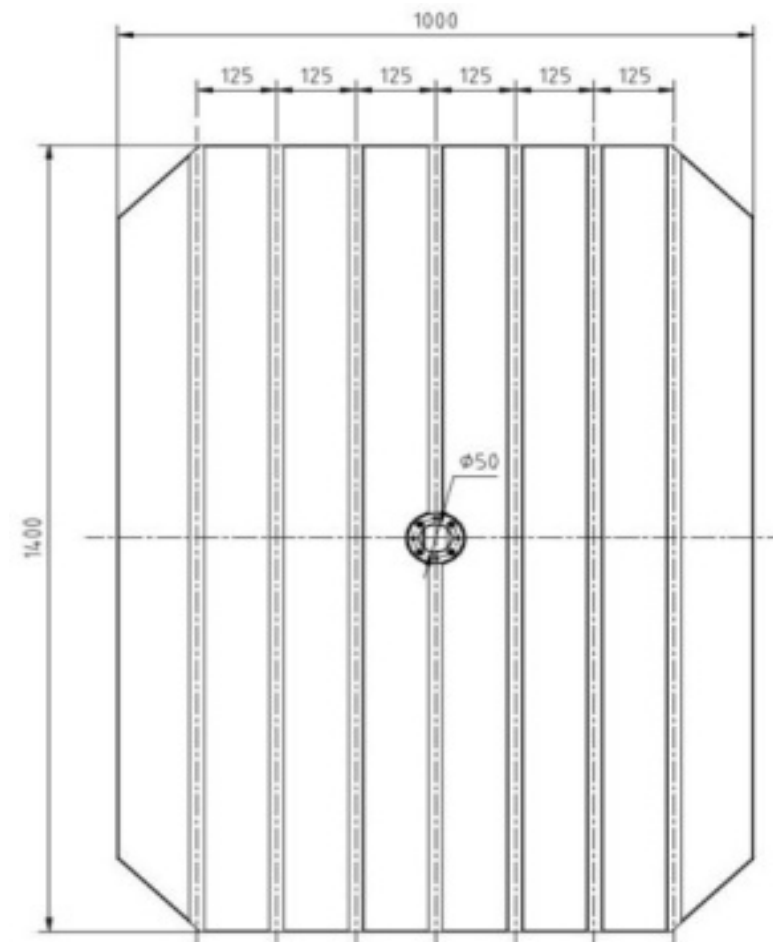
100H 100H/D Pallet



1000×1000T Slot (STD)



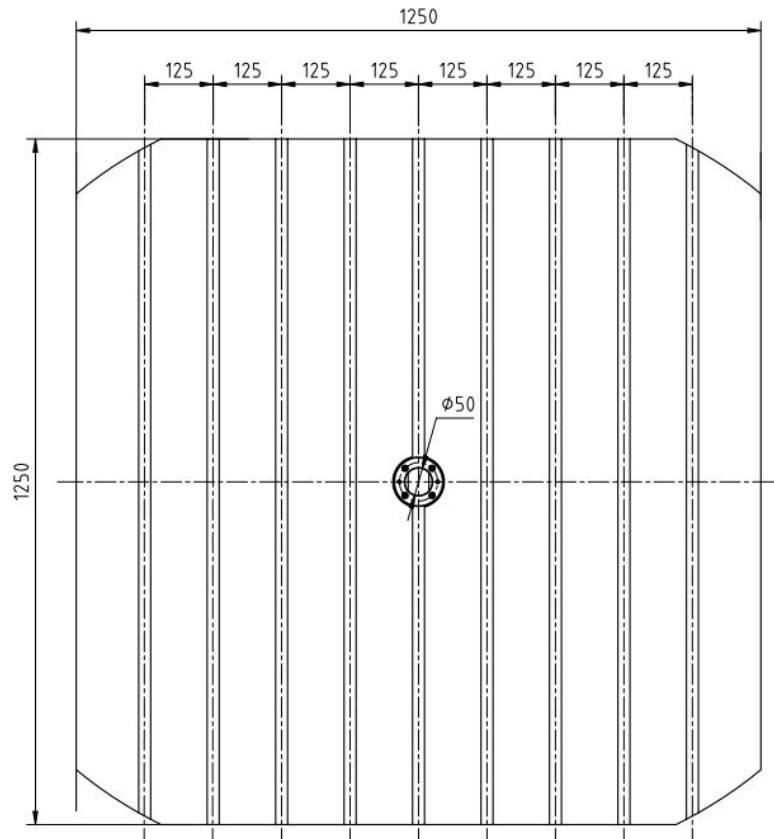
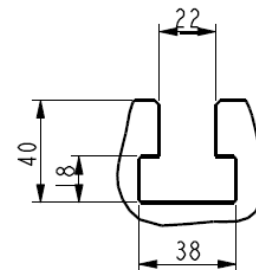
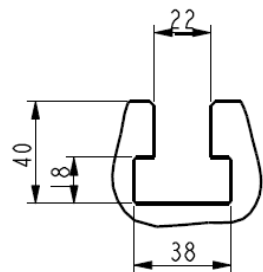
1000×1250T Slot(OP)



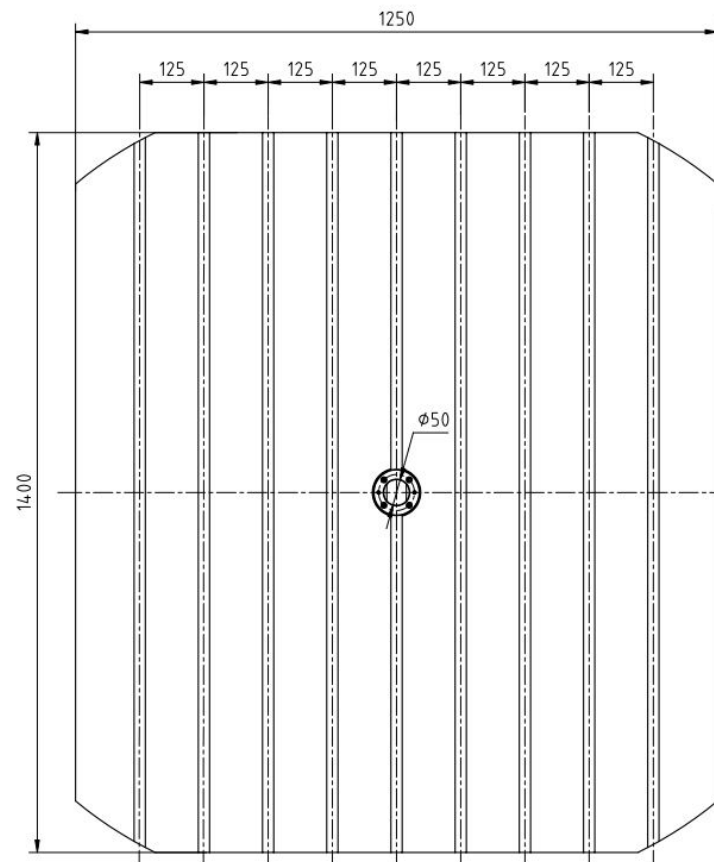
1000×1400T Slot (100H/D) (OP)



125H 125H/D Pallet



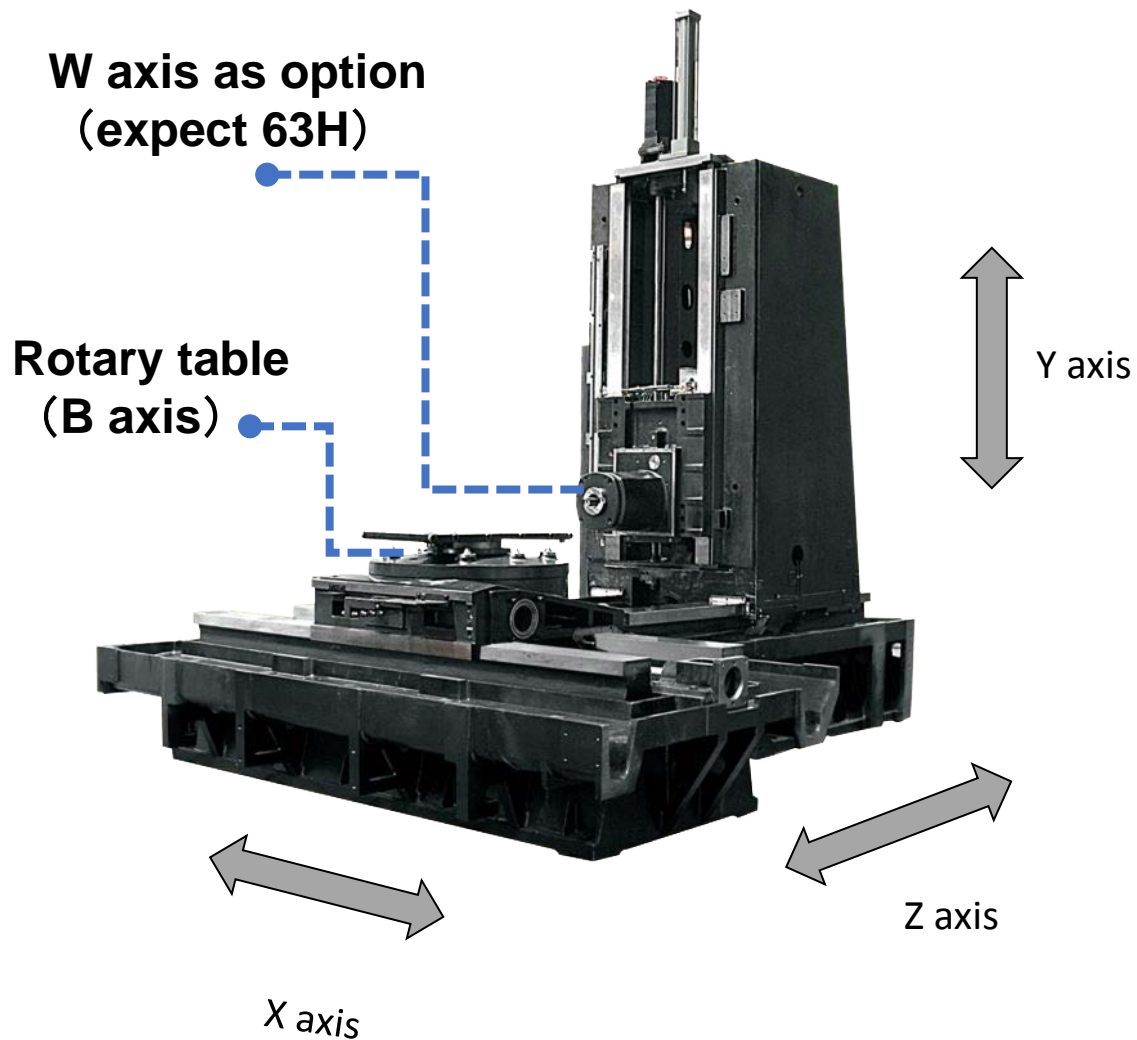
1250×1250T Slot (STD)



1250×1400T Slot (OP)



Structure feature-Frame



H series has the characteristics of strong, large torque and super rigidity. Through continuous improvement, the cost performance and reliability are improved.



The overall design adopts T-shaped bed, gantry column, and hung frontal with symmetrical headstock structure.

All major parts such as the bed, column, table, slider, and headstock are made of high-grade cast iron, with high accuracy and stability, outstanding stability, damping through extensive ribbing of machine frame. improve deformation resistance.

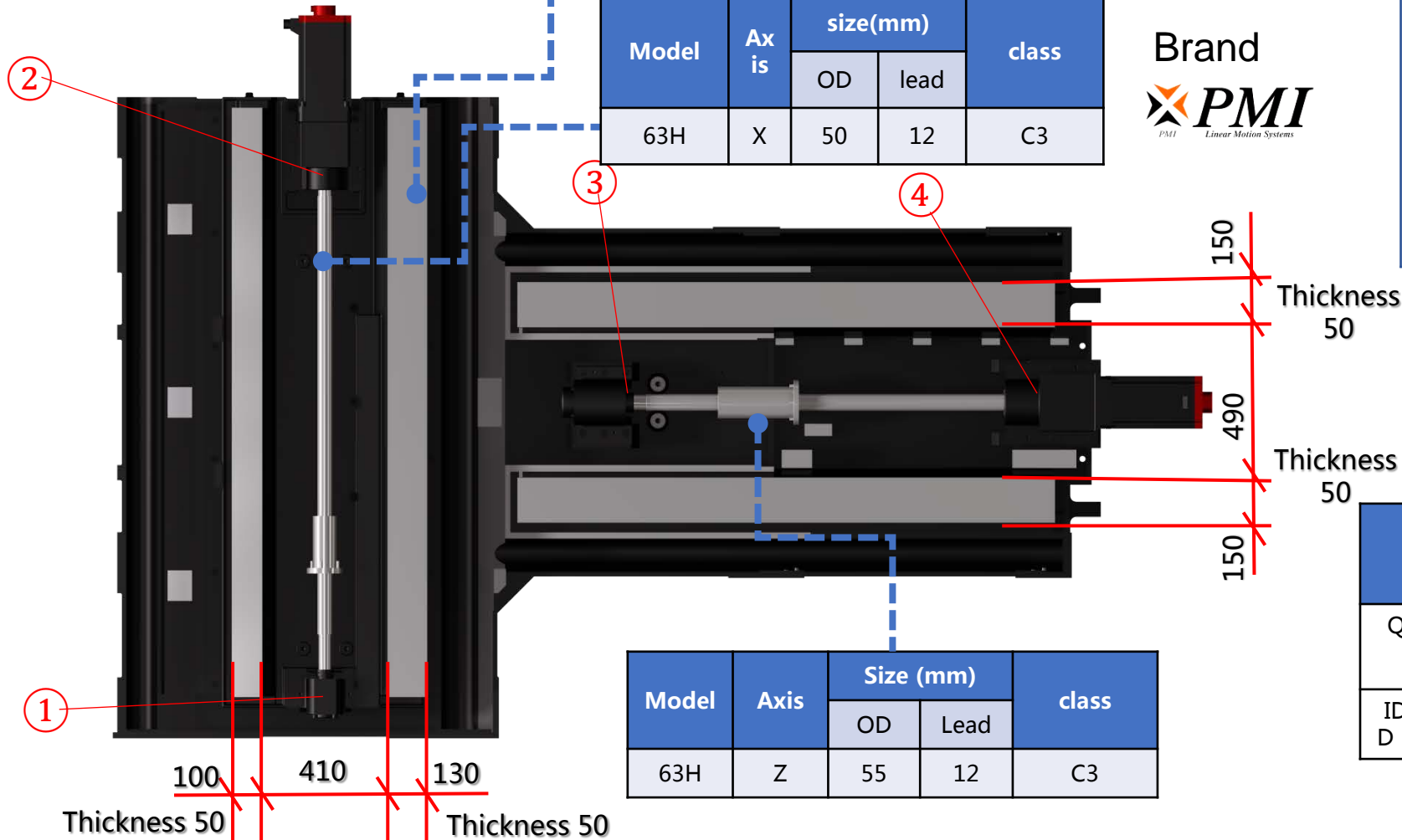


Structure feature-Bed (one-piece)



X axis stand
on bed

63H&63H/D



Brand
PMI
Linear Motion Systems

Wide induction hardened box ways and sticked Turcite B-HF, With powerful thin oil lubrication, So that the machine has high rigidity and long-term stable accuracy.(harden depth 3mm with HRC52)

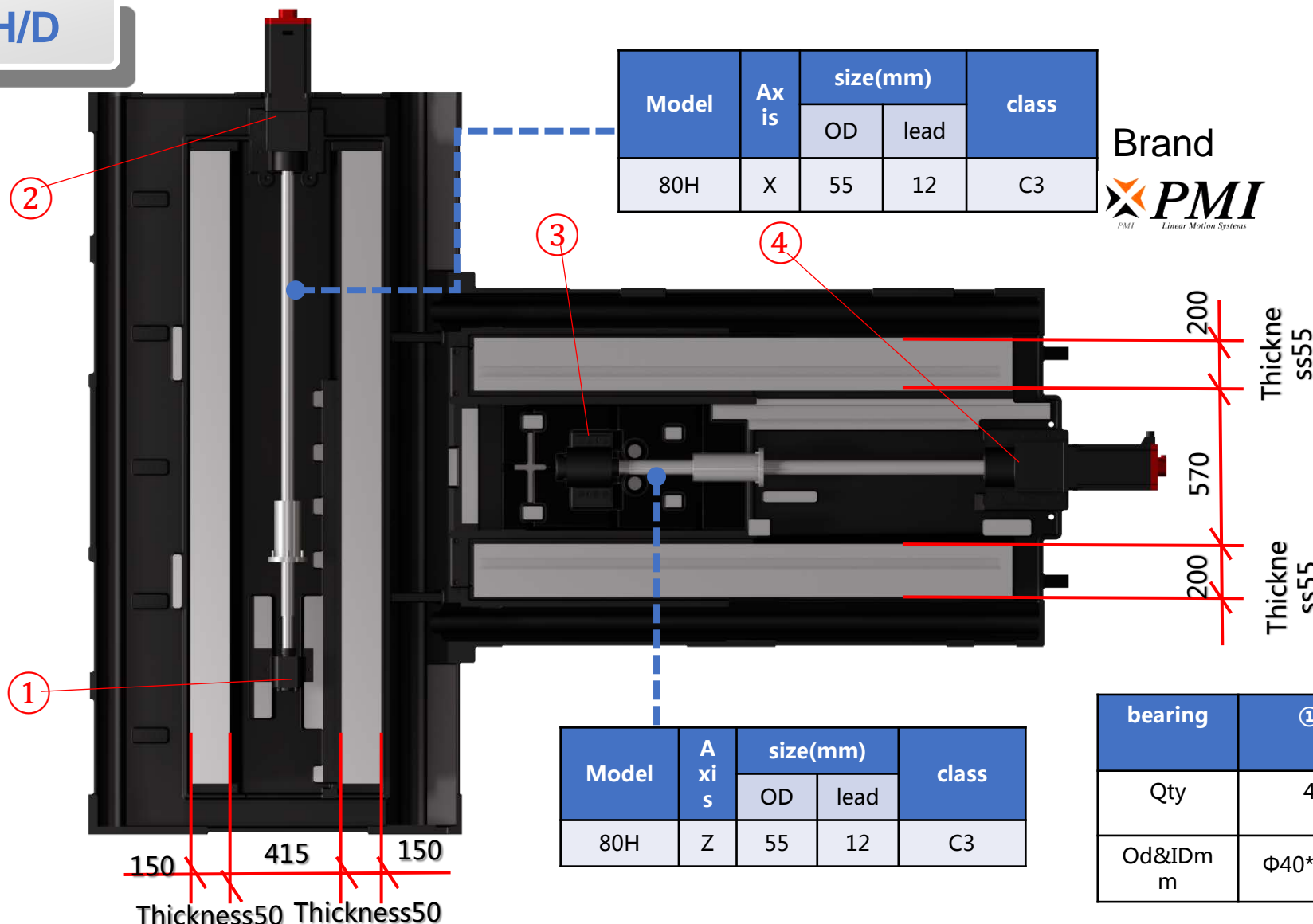
Bearing: NSK

	X axis rear ①	X axis front ②	Z axis rear ③	Z axis front ④
QTY	4	4	4	4
ID/O D mm	Φ40*Φ72	Φ40*Φ72	Φ45*Φ100	Φ45*Φ100



Structure feature-Bed (two-piece)

80H 80H/D



Model	Axis	size(mm)		class
		OD	lead	
80H	X	55	12	C3

Brand
PMI
Linear Motion Systems

Model	Axis	size(mm)		class
		OD	lead	
80H	Z	55	12	C3

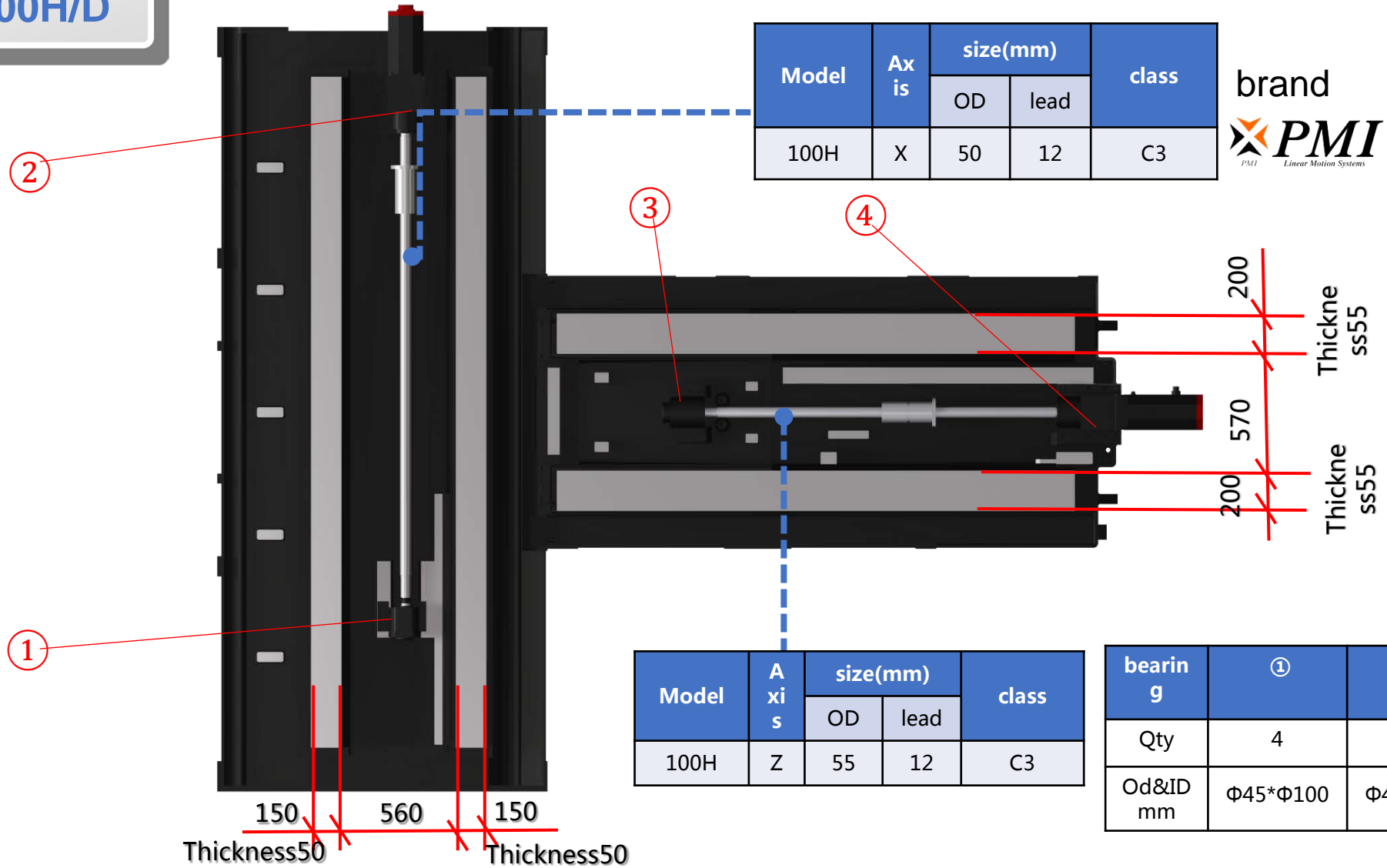
200
Thickne
ss55
570
200
Thickne
ss55

Bearing: NS
K

bearing	①	②	③	④
Qty	4	4	4	4
Od&IDmm	φ40*φ72	φ40*φ72	φ45*φ100	φ45*φ100

Structure feature-Bed (two-piece)

100H 100H/D



Model	Axis	size(mm)		class
		OD	lead	
100H	X	50	12	C3

brand
PMI
Linear Motion Systems

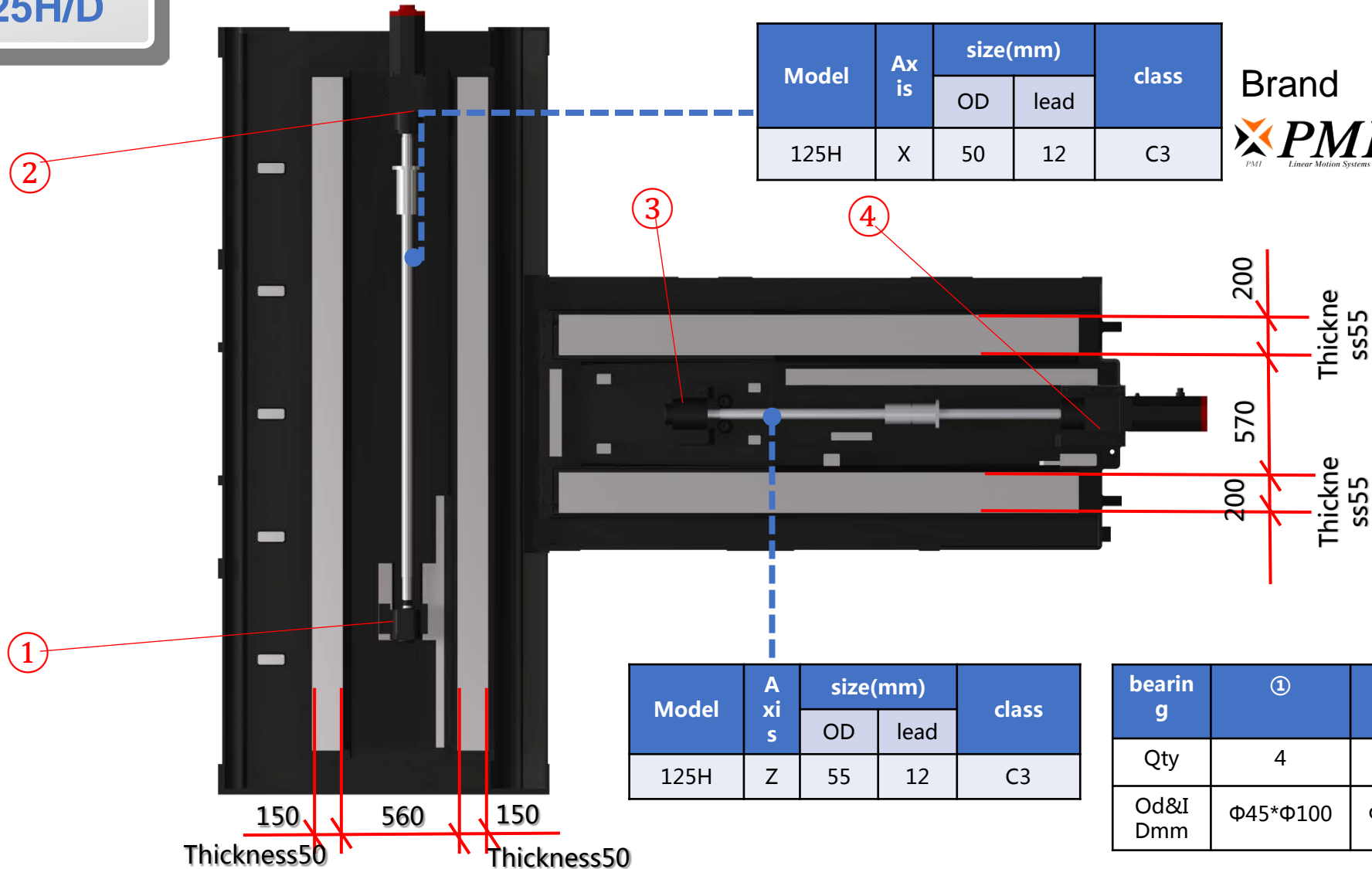
Model	Axis	size(mm)		class
		OD	lead	
100H	Z	55	12	C3

bearing	①	②	③	④
Qty	4	4	4	4
Od&ID mm	Φ45*Φ100	Φ45*Φ100	Φ45*Φ100	Φ45*Φ100

Bearing : NSK

Structure feature-Bed (two-piece)

125H 125H/D



Model	Axis	size(mm)		class
		OD	lead	
125H	X	50	12	C3

Brand
PMI
Linear Motion Systems

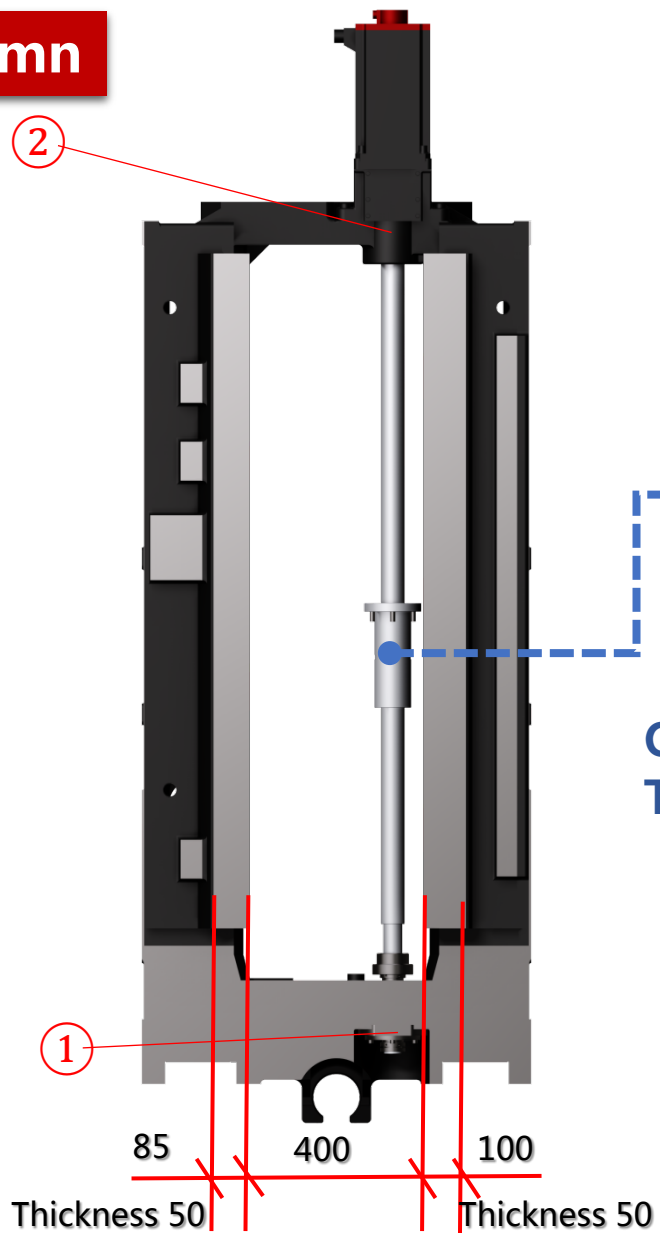
Model	Axis	size(mm)		class
		OD	lead	
125H	Z	55	12	C3

bearing	①	②	③	④
Qty	4	4	4	4
Od&I Dmm	Φ45*Φ100	Φ45*Φ100	Φ45*Φ100	Φ45*Φ100

Bearing : NSK

Structure feature-Column

63H&63H/D



Model	axis	Size (mm)		class
		OD	lead	
63H	Y	55	12	C3

brand

Gantry frame column,
Thermosymmetric structure

	Y axis rear ①	Y axis front ②
QTY	4	3
ID/OD mm	Φ40*Φ90	Φ45*Φ100

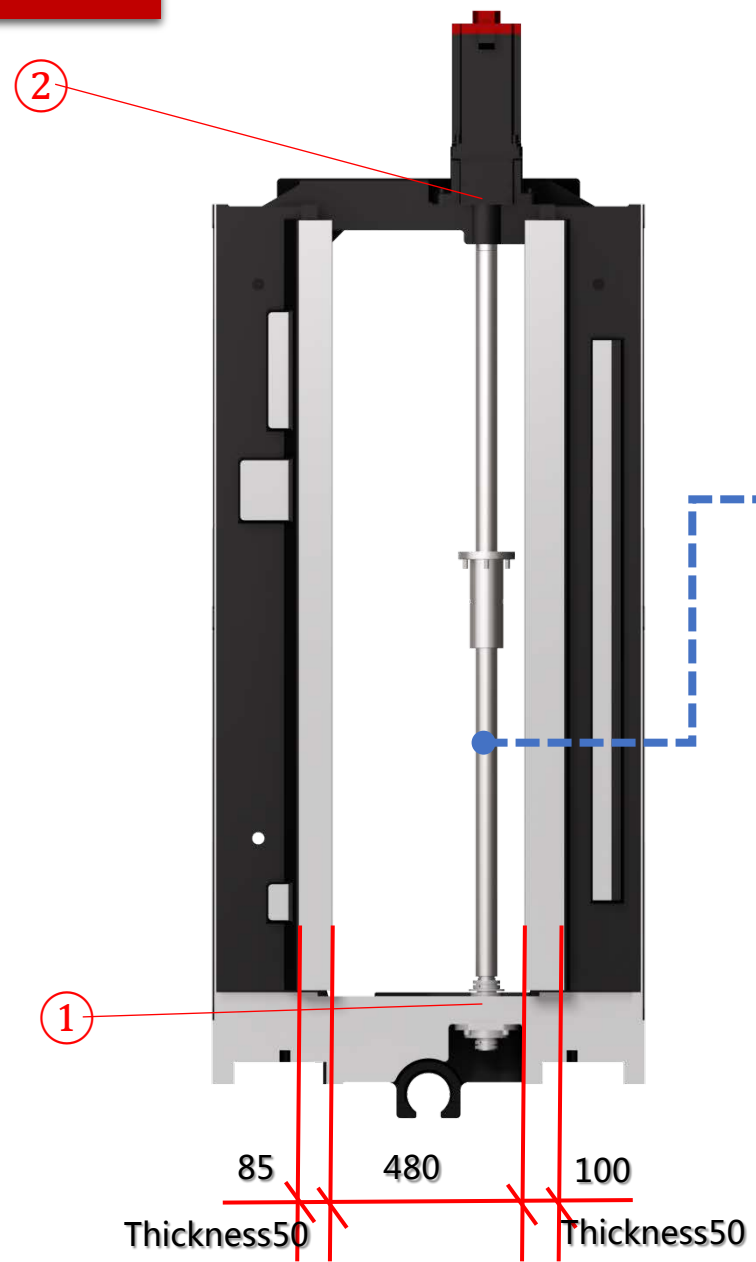
Bearing:
NSK



Structure feature-Column



80H 80H/D



Model	axis	Size (mm)		class
		OD	lead	
80H	Y	55	12	C3

brand
 PMI
 PMI Linear Motion Systems

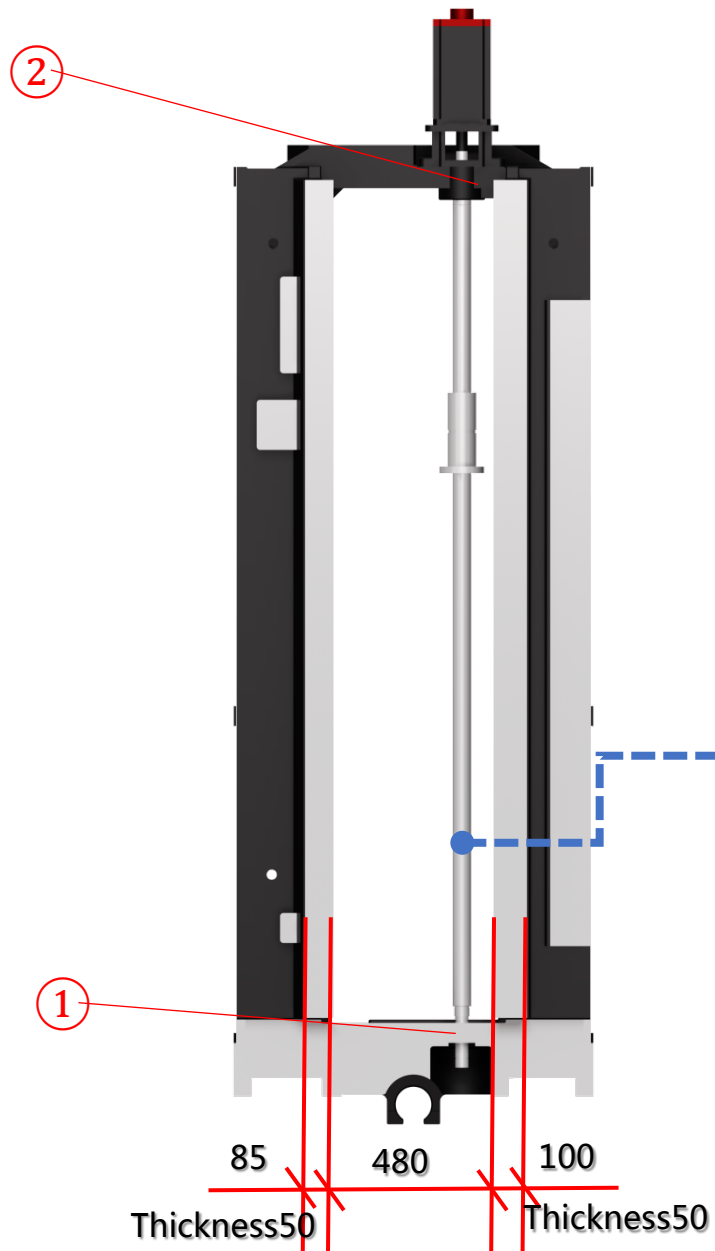
	①	②
QTY	4	3
ID/OD mm	Φ40*Φ72	Φ45*Φ100

Bearing:
NSK



Structure feature-Column

100H 100H/D



	①	②
QTY	4	3
ID/OD mm	Φ40*Φ72	Φ45*Φ100

Bearing:
NSK

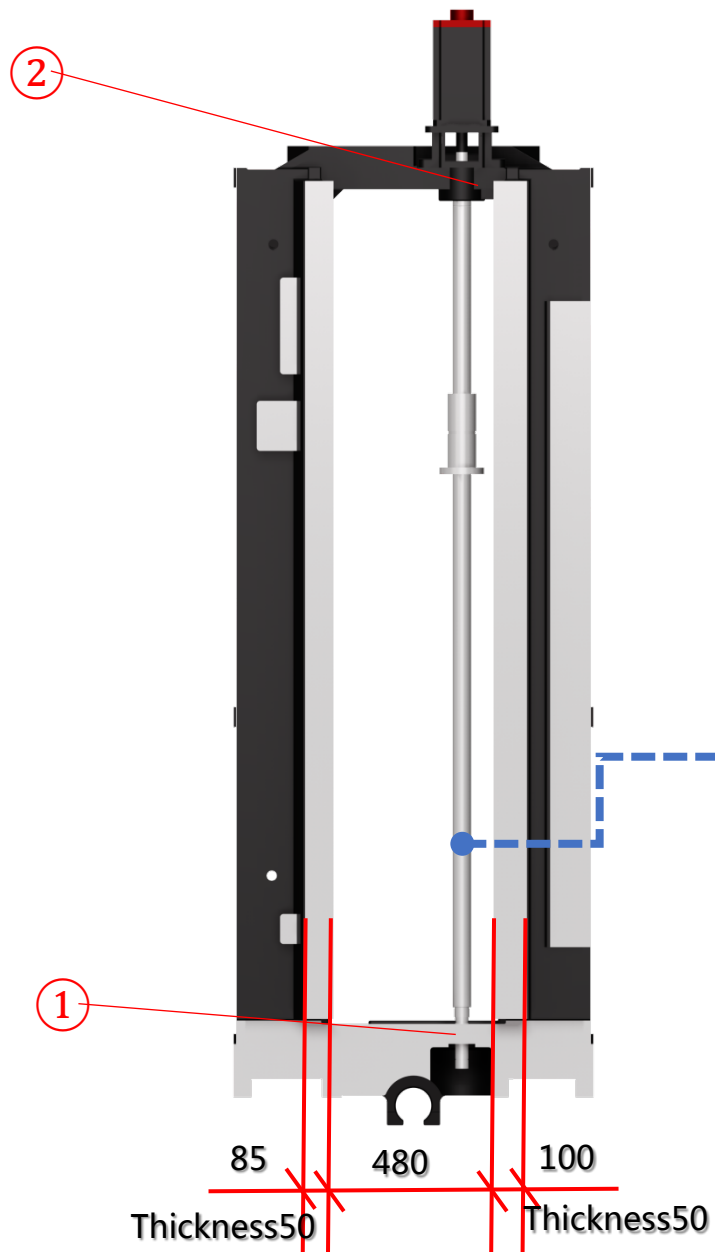
Model	axis	Size (mm)		class
		OD	lead	
100H	Y	55	12	C3

brand
 PMI
Linear Motion Systems



Structure feature-Column

125H 125H/D



	①	②
QTY	4	3
ID/OD mm	Φ40*Φ72	Φ45*Φ100

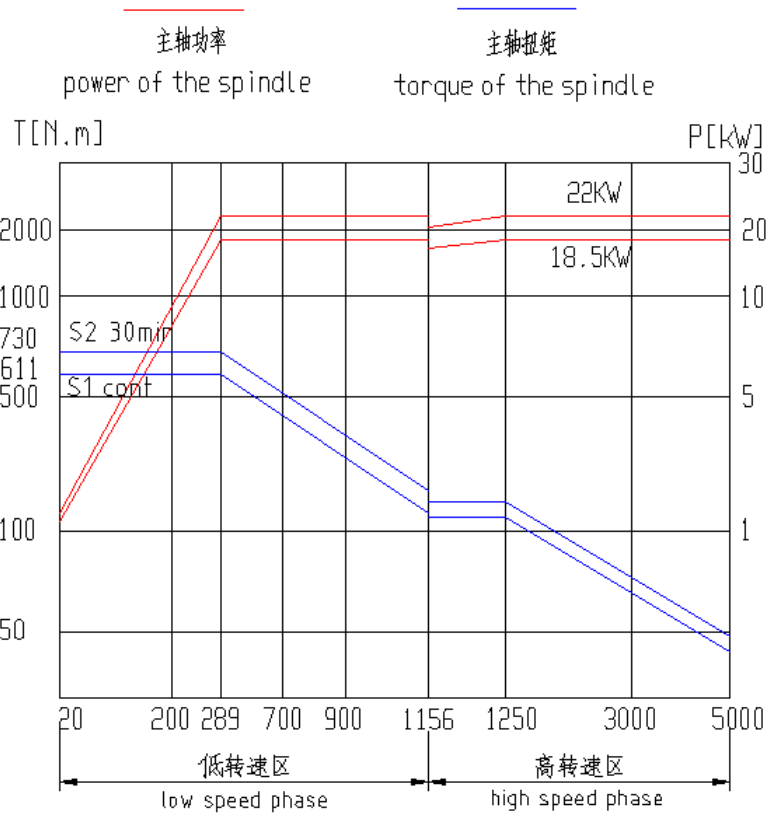
Bearing:
NSK

Model	axis	Size (mm)		class
		OD	lead	
125H	Y	55	12	C3

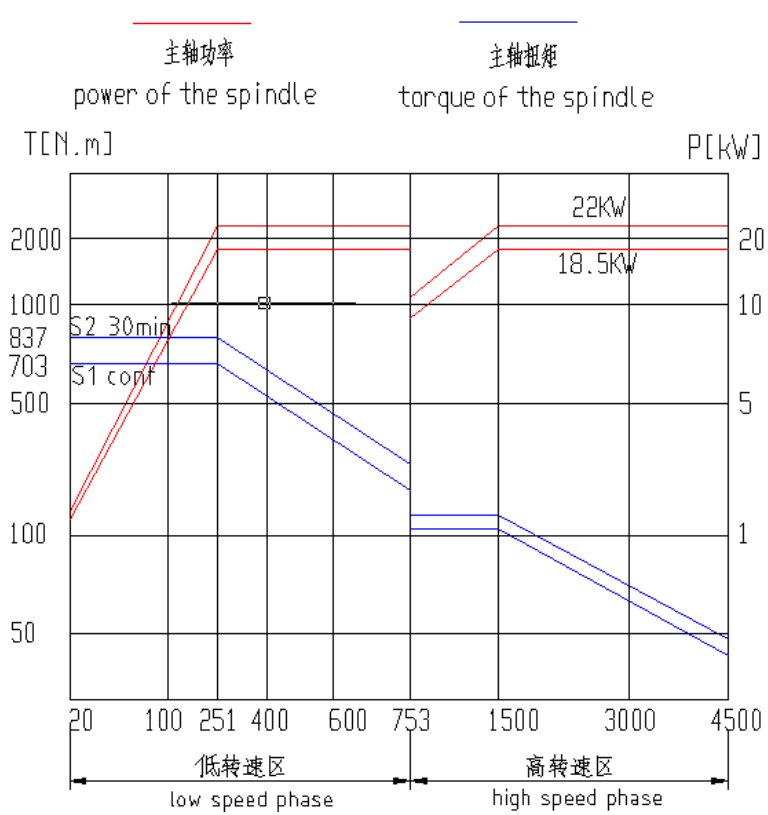
brand
 PMI Linear Motion Systems



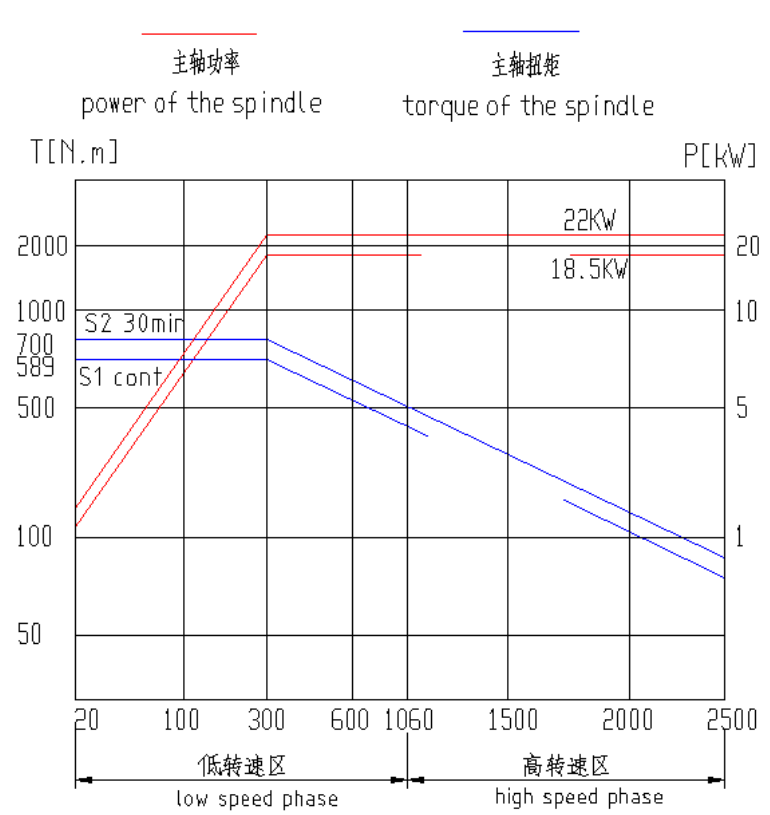
Power-torque



63H

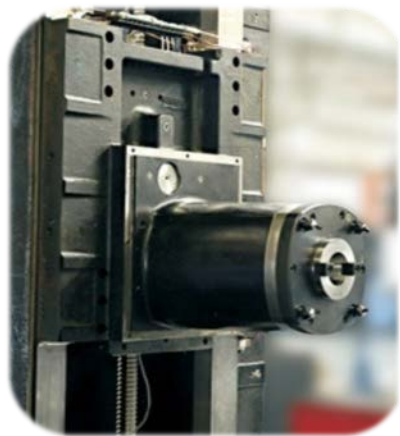


80H/100H/125H

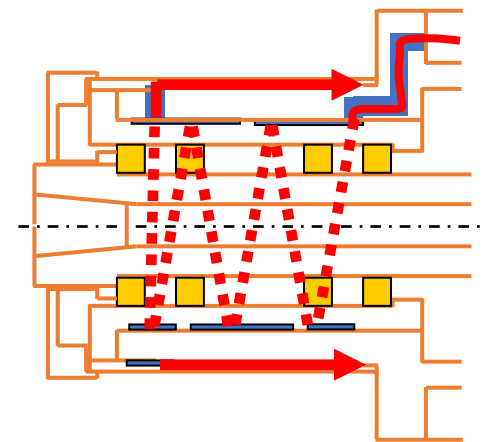


80H/100H/125H with W axis

The integrated casting headstock is equipped with a circulating cooling device, which can quickly remove heat from gears and bearings with minimal thermal deformation. The headstock adopts oil air lubrication (except for 63H which is lubricated with grease) and short roller bearings.

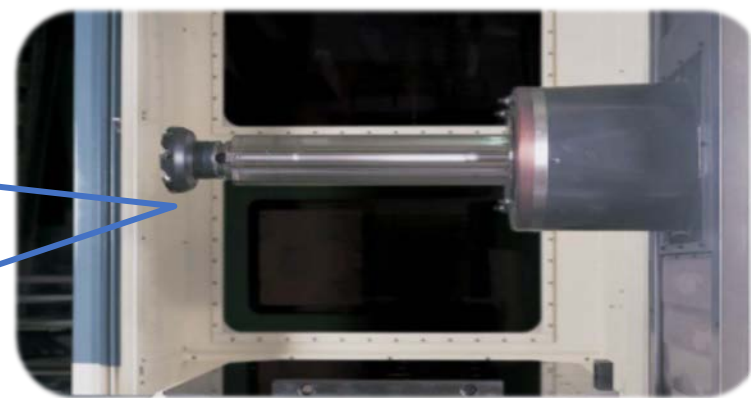


headstock



Circulating cooling

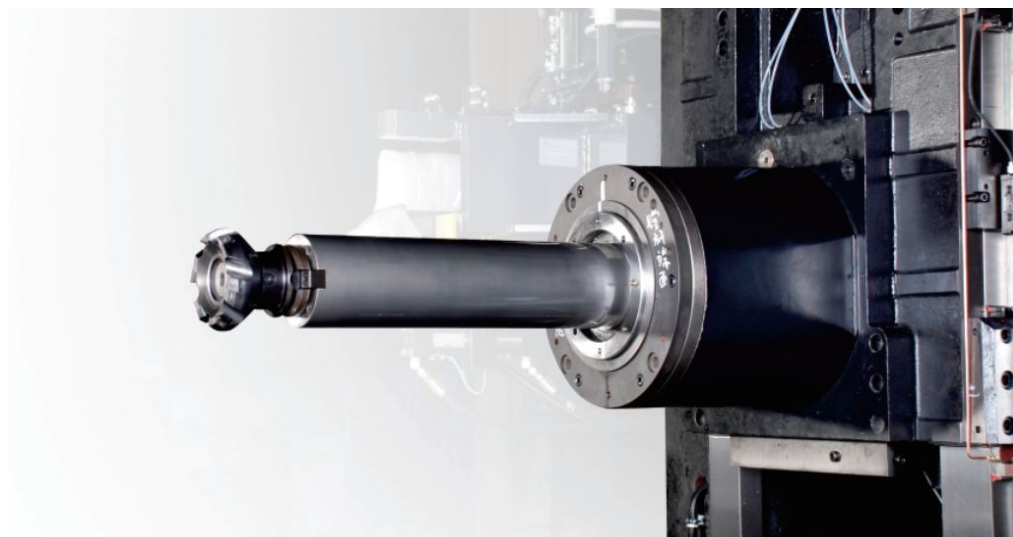
Bigger bearing size, W axis in option, Y axis adopts balancing cylinder to reduce loading on Y ball screw.



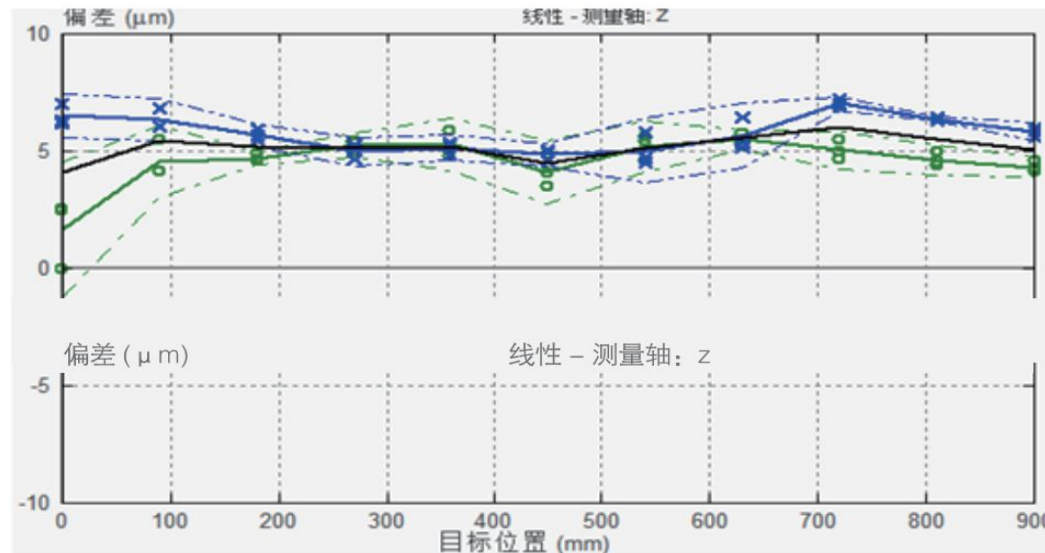
Structure feature-spindle option



W axis in option



Spindle thermal elongation compensation function

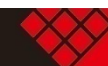


Telescopic boring bar function is a powerful complement to the traditional horizontal machining center.

According to sensor feedback, instant compensate Z axis coordinate, reduce mechanical deformation.

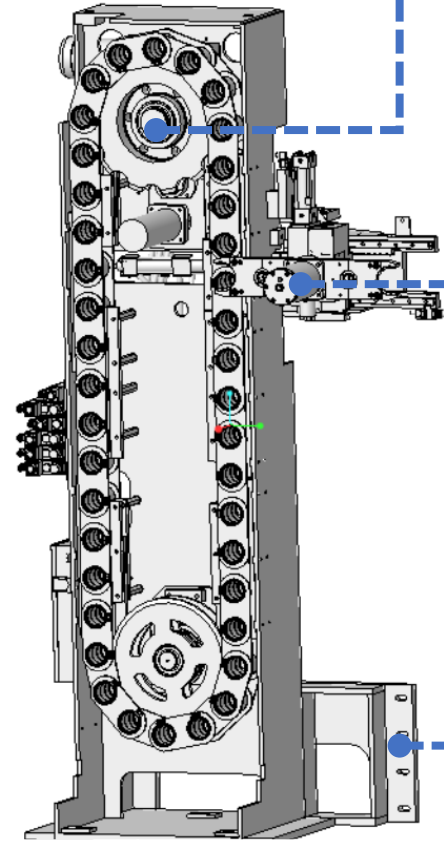
Model	80H 80H/D	100H 100H/D	125H 125H/D
W axis dia.	φ130	φ130	φ130
travel	535	535	535

Model	80H	80H/D	100H	100H/D	125H	125H/D
W axis center to table mm	60-860	100-900	70-1370	170-1470	70-1370	170-1470
W axis nose to table center mm	200-1120	200-1120	280-1480	280-1480	405-1605	405-1605



Structure feature-ATC

Self made 40T
ATC



Cam and Motor drive(STD)

Arm with hydraulic drive

Fixed position tool change, Tool search and automatic tool preparation can be performed during processing, shortening tool change time.

ATC stand fixed onto bed, reliable structure.



Hardened tool holder in ATC

Model	63H	80H	100H	125H
Change time(T-T)	7.5s			
options	60T、90T、120T			
Change time(C-C)	13	16	16	18



Structure feature-Table

Pallet is positioned by 8 taper pins.



positioning (")	Repeatability (")	Speed (r/min)		Evenly loading (t)	
8	4	63H	10rpm	63H	1.5
		80H	6rpm	80H	1.5
		100H	3rpm	100H	3
		125H	3rpm	125H	3

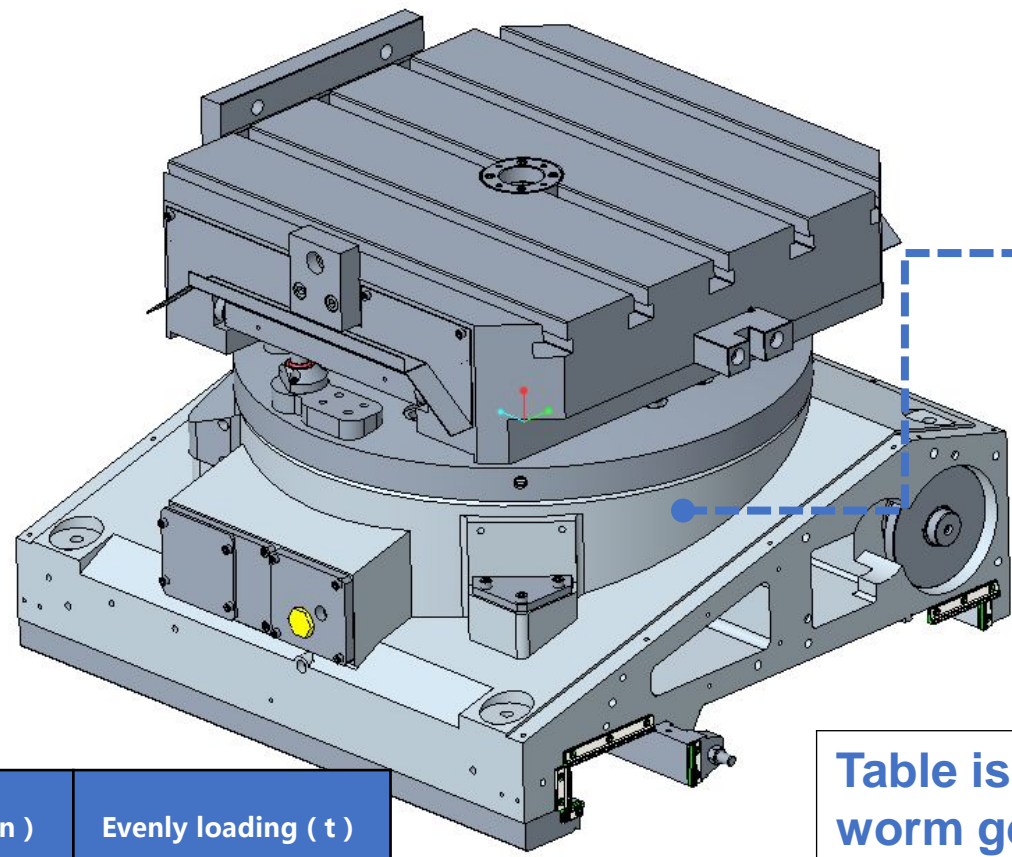
0.5Mpa compressed air inject from taper pins when pallets changing for cleaning contact surface.

AC servo control, makes dual direction indexing faster; big diameter curvic coupling ensures excellent table positioning, hydraulic clamping force: 7t (63H) , 9t (80H) ,12t (100H) , 12t (125H)



Options—NC Table

- Indexing 0.001°
- High rigidity and high load capacity
- High rotation accuracy

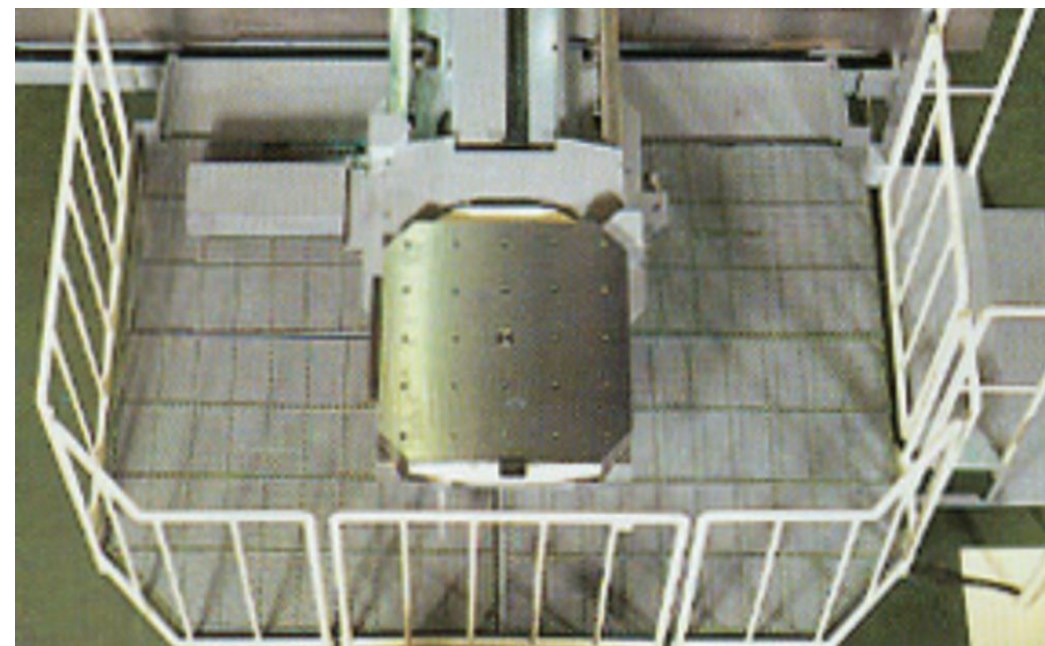
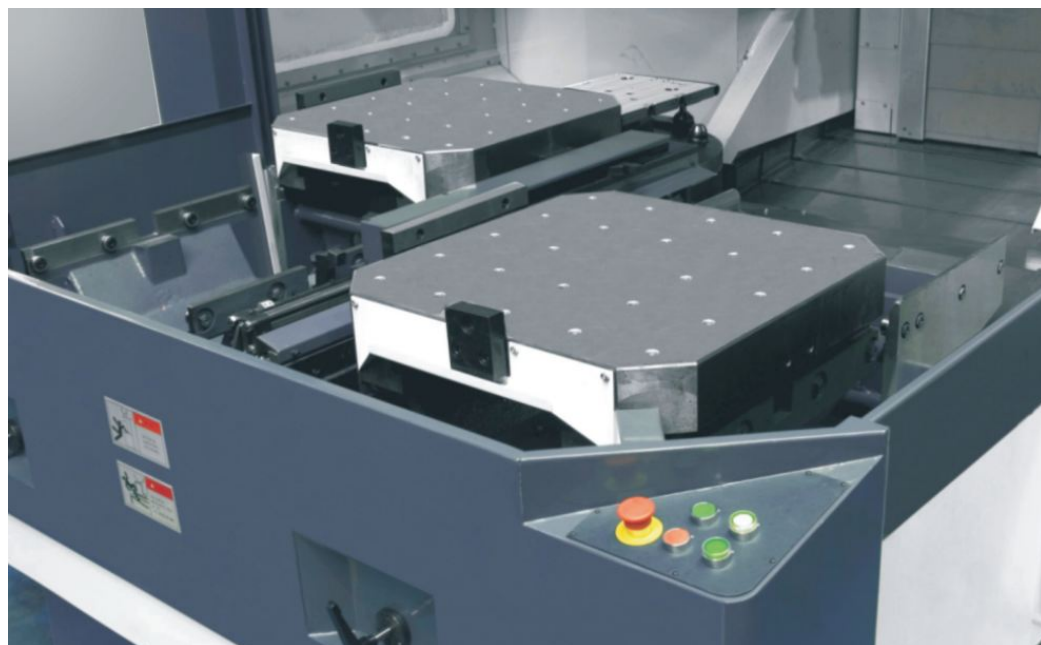


YRTM bearing with angle measurement device

Table is driven by servo motor through worm gear, hydraulic clamp and dual layer friction plate positioning with good repeatability, hydraulic clamping force: 17t (63H) , 17t (80H) , 26.7t (100H) , 26.7t (125H) ;

positioning (")	Repeatability (")	Speed (r/min)		Evenly loading (t)	
10	6	63H	10rpm	63H	1.2
		80H	6rpm	80H	1.5
		100H	3rpm	100H	3 (op5)
		125H	3rpm	125H	3 (op5)





63H: parallel type APC

Model	63H	80H	100H	125H
change time(S)	38	55	58	60

80H、100H、125H adopt rotary type pallet changing, easy loading and unloading.



Structure feature-Dual nuts ball screw



Three axes adopt dual nuts ball screw



B nut

A nut



Structure feature-high precision

HISION



Ball screw stand surface
adopt hand scrapped by
highly experienced
technicians



Turcite B-HF surface
hand scrapped.





**Excellent chip
removal ability**



**Reliable guideways
lubrication**

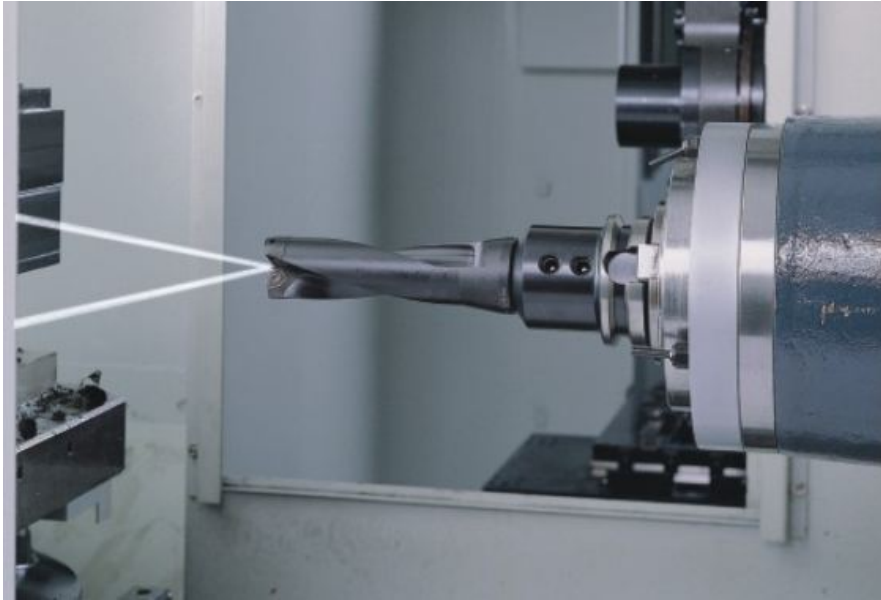




**The coolant is sprayed from machine top for workpiece strongly cooling.
And take away chips from corner.**



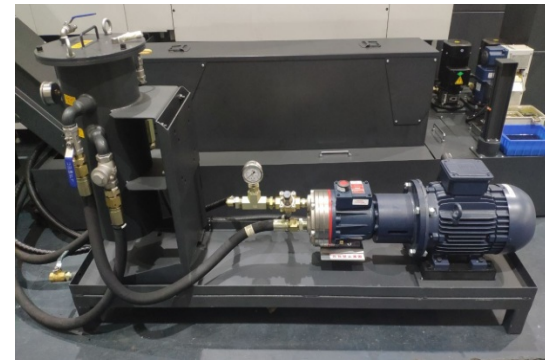
Option—CTS



The coolant passes through spindle center and is sprayed from the tip of the tool, which can directly cool the workpiece and the cutting edge, and take away the cutting heat to ensure the processing quality, suitable for parts for deep hole processing.



2mpa

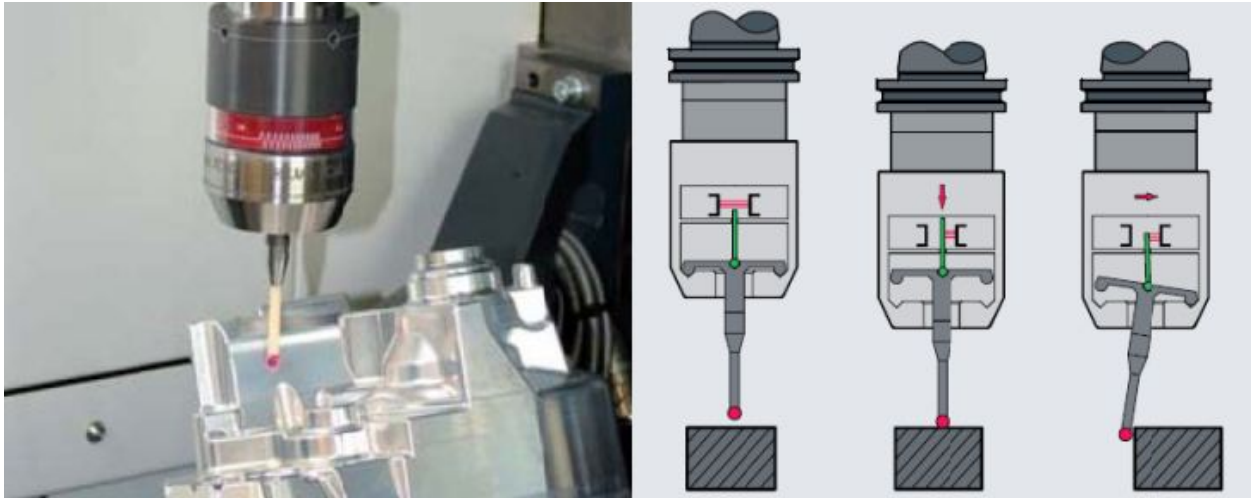


3-6mpa

HISON

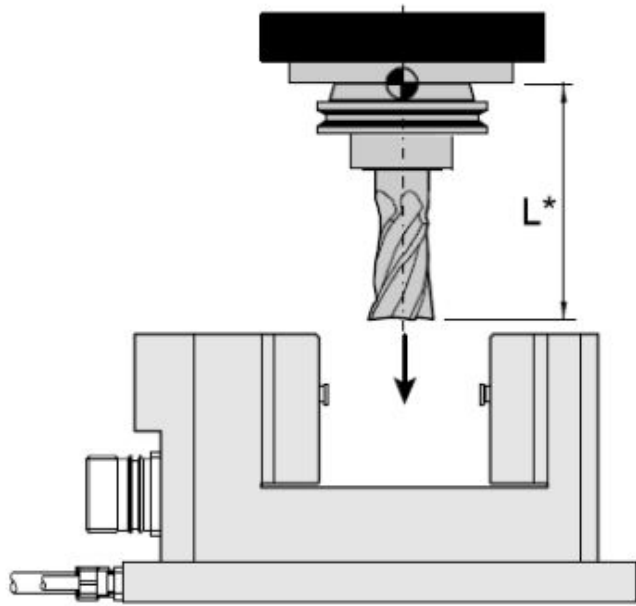
Option—Workpiece probe

Brand:



BRC wireless radio transmission contact type device.





Laser type

Laser tool setter for detecting the geometry of the tool.



Contact type

Common used for tool length and diameter.



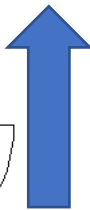
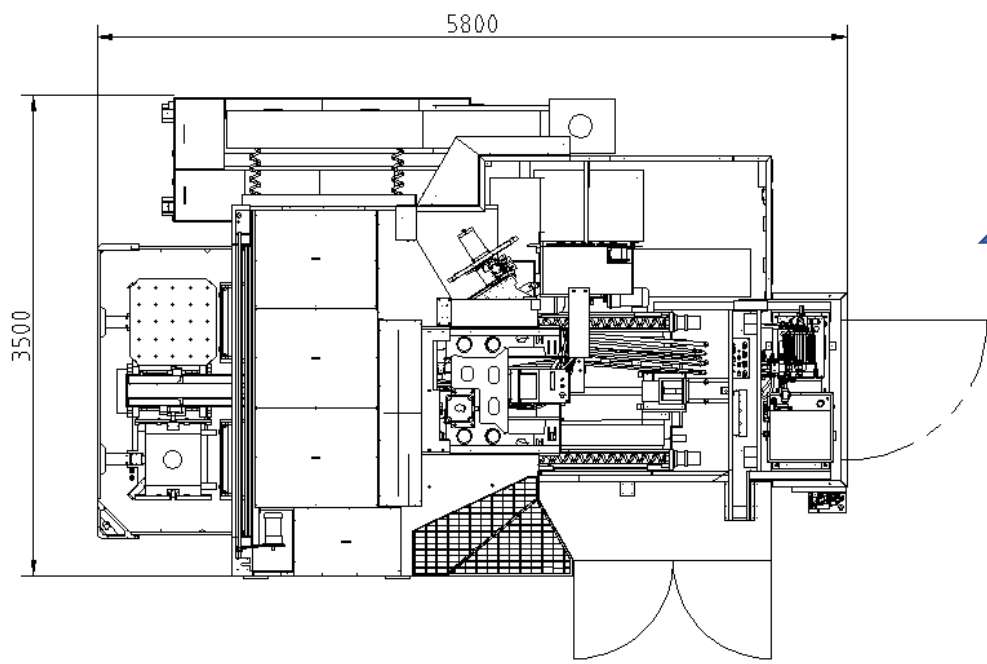
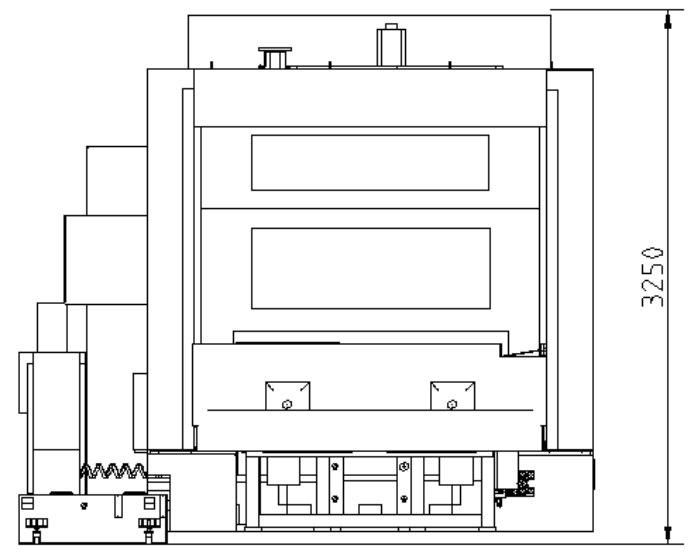
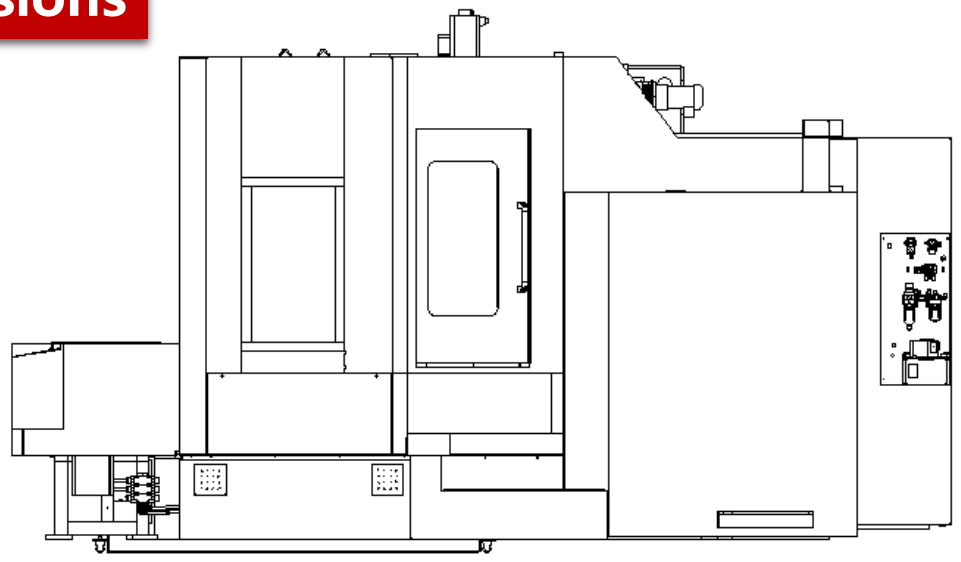
■ Standard :

- Controller : FANUC 0i。
- 40T ATC (BT50) 。
- Full enclosure splash guard
- External chain type chip conveyor
- Spindle oil chiller
- Spindle air blow
- Auto power off
- Self-diagnostic function
- 3-color signal lamp

■ Options :

- Controller: FANUC 31i、 FANUC 0i(22/26kw) 。
- Controller: SIEMENS828D、 SIEMENS840Ds1。
- Air conditioner
- Stabilizer (100KVA)
- BT50 spindle(45°)、
JT50 spindle、
BT50 spindle 6000rpm (excludes 63H 、 63H/D)。
- W axis(excludes 63H、 63H/D)
- BT50 Pull stud/piece(45 ° 、 60 °)、 JT50 pull stud/piece
- X\Y\Z three axes optical scale(Heidenhain/Fagor)
- Screw table(63H, 80H)
- Bigger table with T slot
- NC table (0.001° indexing)
- X/Y axes stainless steel guideways cover
- ATC (60T、 90T、 120T)。
- Workpiece probe: BLUM/ Renishaw
- Tool setter: BLUM/ Renishaw
- CTS (2mpa、 3-4mpa、 5-6mpa)
- Shower coolant
- Workpiece air& water gun
- Oil skimmer
- Oil mist collector

63H Dimensions

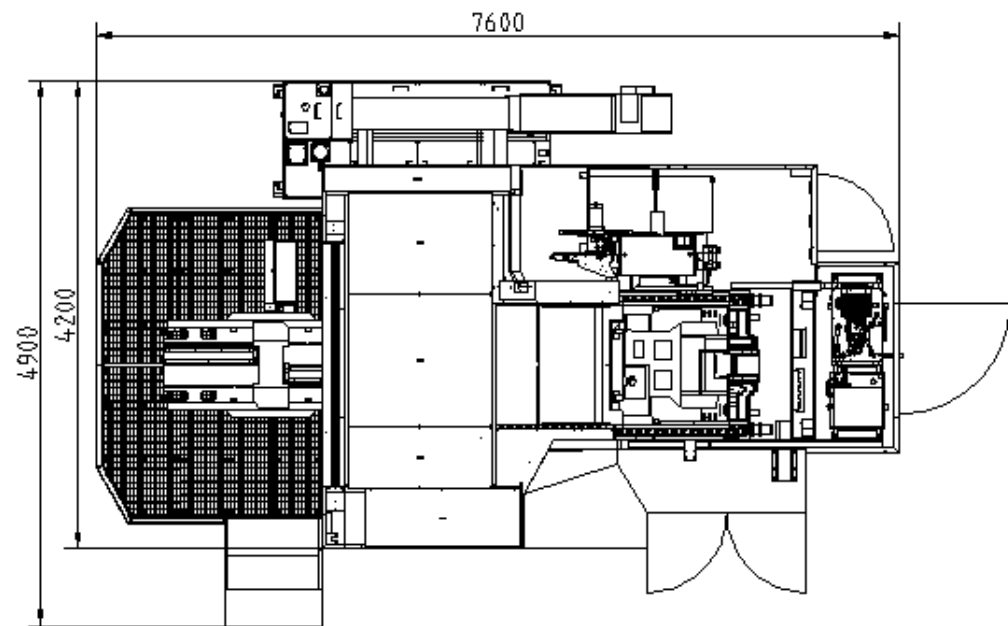
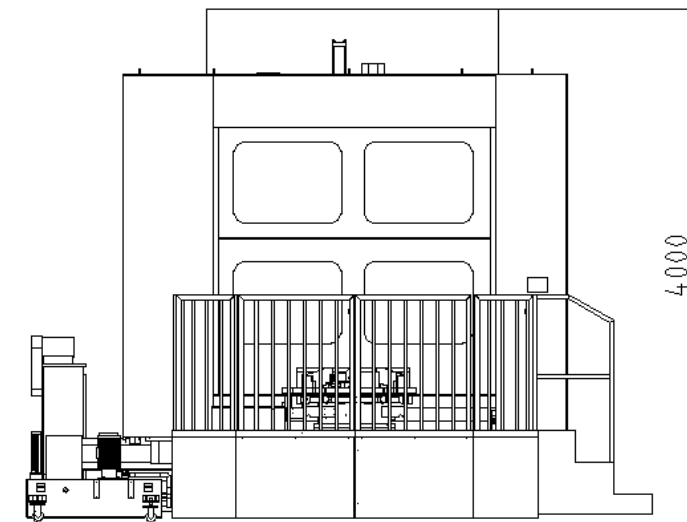
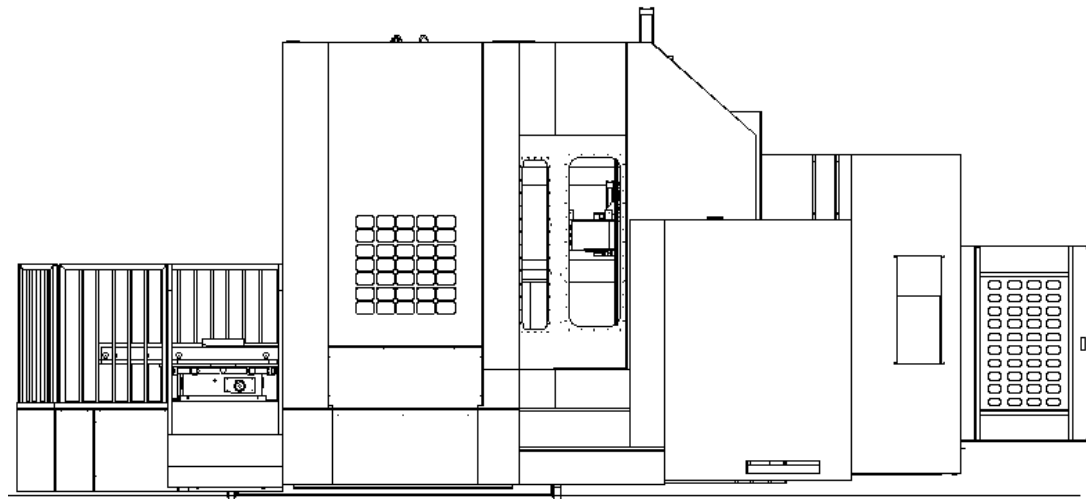


Coolant tank moving out direction

Coolant tank volume: 680L
Output: 66L/min



80H Dimensions

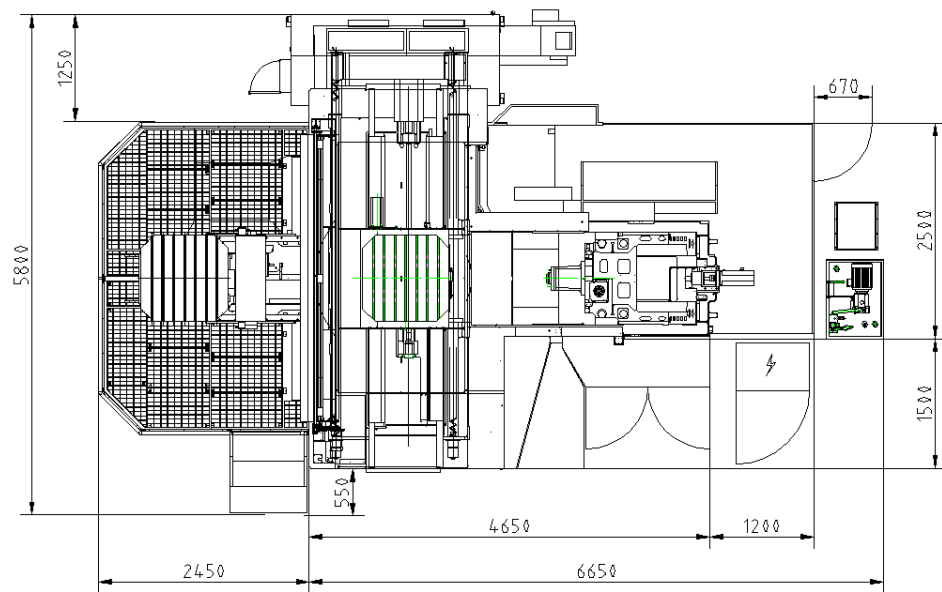
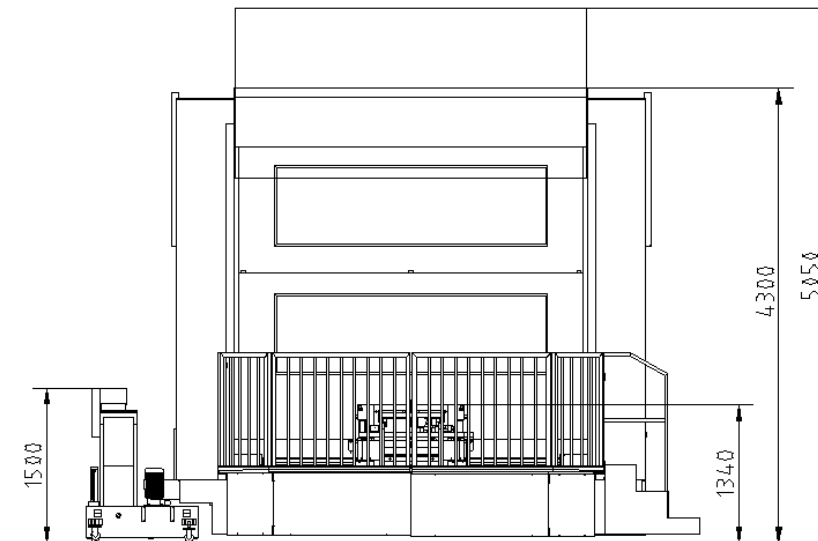
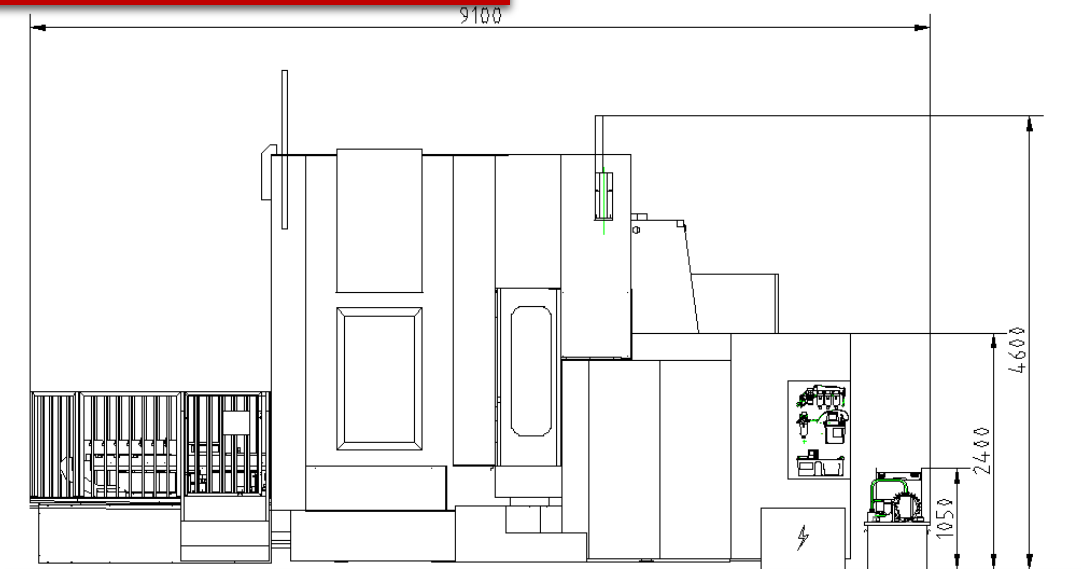


Coolant tank moving out direction

Coolant tank volume: 680L
Output: 66L/min



100H Dimensions



Coolant tank moving out direction

Coolant tank volume: 680L
Output: 66L/min





HISKON

Thanks !

www.haitianprecision.com.cn