



Zhou Haigang

GreMaT Machine Tool Group VP

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New Products

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Corporate Philosophy and New Product Strategy

Differentiation and Innovation

Gantry Machining Center:

Already launched 4 models+ planned 11 models (Full coverage of X-axis stroke within 8 meters)

Five-axis Machining Center: Following UA650, newly launched UZ320, UP400, UB500, UA800

Composite Machining: High-speed and high-precision; turning-milling composite; turning-milling-grinding composite

Specialized Equipment: Industry-customized solutions

Introduction to New Products

Portal Machining Center —— Model Coding Rules

Portal Machining Center · Model Decoding



Model Prefix: PM = Portal Machining Center Series

Coding Logic:

First Two Digits: X Axis Travel (Unit: 100 mm)

Example: PM4022H → 40 = 4000 mm

Last Two Digits: Portal Width (Unit: 100 mm)

Example: PM4022H → 22 = 2200 mm

Suffix Letter: H = T-Type Ram / R = Square Ram

Specification Table for Portal Machining Centers						
	Unit	PM1510	PM2011	PM2015H	GM2018H	PM3015H
Three-Axis Travel (X/Y/Z)	mm	1500/1000/620	2000/1100/800	2200/1700/800	2200/2000/800	3200/1700/800
Distance Between Two Columns	mm	950	1150	1500	1800	1500
Distance from Spindle Nose to Worktable Surface	mm	150 ~ 770	120 ~ 920	200 ~ 1000	200 ~ 1500	200 ~ 1000
Worktable Dimensions (Length × Width)	mm	1500×800	2000×900	2000×1300	2000×1500	3000×1300
Maximum Load Capacity	kg	1800	2000	6000	7000	8000
Spindle Speed	rpm	8000	8000	6000	6000	6000
Spindle Taper		BT50	BT50	BT50	BT50	BT50
Rapid Traverse Speed (X/Y/Z Axis)	m/min	20/20/15	20/20/15	18/18/18	18/18/18	15/18/18
Cutting Feed Rate (X/Y/Z Axis)	m/min	10/10/10	10/10/10	8/8/8	8/8/8	8/8/8
Number of Tools	pcs	24	24	24	24	24
Machine Tool Weight	kg	15000	18000	22000	23000	25000
Machine Tool External Dimensions (Length × Width × Height)	mm	4400×3600×3400	6900×4900×3900	7000×6000×4200	7000×6300×4200	9500×6000×4200

Specification Table for Portal Machining Centers							
	Unit	PM3018H	PM3022H	PM4022H	PM5022H	PM3025H	PM4025H
Three-Axis Travel (X/Y/Z)	mm	3200/2000/800	3200/2400/1000	4200/2400/1000	5200/2400/1000	3200/2700/1000	4200/2700/1000
Distance Between Two Columns	mm	1800	2200	2200	2200	2500	2500
Distance from Spindle Nose to Worktable Surface	mm	200 ~ 1000	200 ~ 1200	200 ~ 1200	200 ~ 1200	200 ~ 1200	200 ~ 1200
Worktable Dimensions (Length × Width)	mm	3000×1500	3000×1800	4000×1800	5000×1800	3000×2000	4000×2000
Maximum Load Capacity	kg	9500	10500	12000	14500	10500	12000
Spindle Speed	rpm	6000	4500	4500	4500	4500	4500
Spindle Taper		BT50	BT50	BT50	BT50	BT50	BT50
Rapid Traverse Speed (X/Y/Z Axis)	m/min	15/18/18	15/15/15	12/15/15	12/15/15	12/12/12	12/12/12
Cutting Feed Rate (X/Y/Z Axis)	m/min	8/8/8	6/6/6	6/6/6	6/6/6	6/6/6	6/6/6
Number of Tools	pcs	24	24	24	24	24	24
Machine Tool Weight	kg	29000	31000	35000	40000	33000	38000
Machine Tool External Dimensions (Length × Width × Height)	mm	9500×6300×4200	9800×7000×4900	11800×7000×4900	14000×7000×4900	9800×7000×4900	11800×7000×4900

Specification Table for Portal Machining Centers							
	Unit	PM5025H	PM4028R	PM5028R	PM6028R	PM6036R	PM8036R
Three-Axis Travel (X/Y/Z)	mm	5200/2700/1000	4200×3000×1000	5200×3000×1000	6200×3000×1000	6500×3800×1250	8500×3800×1250
Distance Between Two Columns	mm	2500	2800	2800	2800	3600	3600
Distance from Spindle Nose to Worktable Surface	mm	200 ~ 1200	250 ~ 1250	250 ~ 1250	250 ~ 1250	250 ~ 1500	250 ~ 1500
Worktable Dimensions (Length × Width)	mm	5000×2000	4000×2200	5000×2200	6000×2200	6000×3000	8000×3000
Maximum Load Capacity	kg	14500	20000	23000	26000	35000	35000
Spindle Speed	rpm	4500	4500	4500	4500	3000	3000
Spindle Taper		BT50	BT50	BT50	BT50	BT50	BT50
Rapid Traverse Speed (X/Y/Z Axis)	m/min	12/12/12	12/12/12	12/12/12	10/12/12	10/12/12	8/12/12
Cutting Feed Rate (X/Y/Z Axis)	m/min	6/6/6	6/6/6	6/6/6	6/6/6	6/6/6	6/6/6
Number of Tools	pcs	24	24	24	24	24	24
Machine Tool Weight	kg	45000	45000	50000	55000	75000	75000
Machine Tool External Dimensions (Length × Width × Height)	mm	14000×7000×4900	11800×7200×6300	14000×7200×6300	16200×7200×6300	17500×8000×6600	22000×8000×6600

PM3022H

General-Purpose Portal Machining Center

Applicable Industries: Construction Machinery, Automotive, Shipbuilding, Energy, etc.

Optimally suited for roughing and finishing of large and medium-sized castings and welded components,

Also applicable for stamping dies and non-ferrous metal processing.

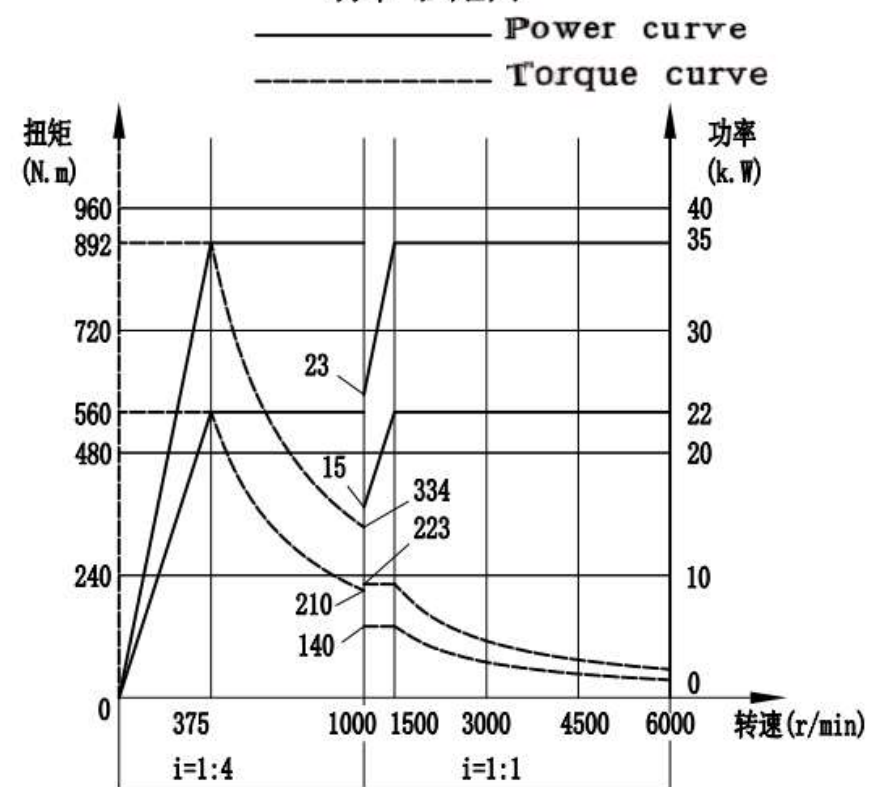
Core Advantages

- Modular design with broad market adaptability
- High rigidity structure with excellent heavy cutting performance
- Thermal management system ensuring high accuracy stability
- Full protection design compliant with CE standards





功率-扭矩图



Item		Unit	PM3022H
Machining Range	X Axis Stroke	mm	3200
	Y Axis Stroke	mm	2400
	Z Axis Stroke	mm	1000
	Distance Between Two Columns	mm	2200
	Distance from Spindle Nose to Worktable Surface	mm	200 ~ 1200
Worktable	Worktable Dimensions (Length × Width)	mm	3000×1800
	Maximum Load Capacity	kg	10000
	T Slot (Number of slots × Slot width × Pitch)	mm	11×22×160
Spindle	Spindle Speed	rpm	4500 (Optional 6000)
	Spindle Taper		BT50
	Spindle Motor Power (Rated/ Short-time)	kW	22/26
	Maximum Spindle Torque (Rated/ Short-time)	N.m	560/892
Speed	Rapid Traverse Speed (X/Y/Z Axis)	m/min	15/15/15
	Cutting Feed Rate (X/Y/Z Axis)	m/min	6/6/6
Others	Spindle Diameter	mm	Φ190
	Linear Guide Specifications (X/Y/Z)	mm	Roller 55/55/ Hard Rail (Rectangular Ram)
	Number of Guideway Sliders (X/Y/Z)		8/4/ Hard Rail
	Ball Screw Specifications (X/Y/Z)	mm	63/63/55
	Machine Tool Weight (Approximate)	t	31
	Floor Space (Length × Width × Height)	mm	11000×6000×4900

Structural Features

- Large Component Cross-Section Dimensions, Overall Structure Solid and Heavy
- Rectangular Spindle Headstock (Ram) + Enclosed Guideway, Rigidity Far Exceeds T-Shaped Ram, Exhibiting Excellent Heavy Cutting Performance

(Ram Size Large, Close to Square Ram Structure)

- Right-Angle Trapezoidal Column with large foundation contact area, ensuring machine stability and excellent seismic resistance during heavy cutting; Bridge-type

Crossbeam with large cross-section+ Internal cavity truss-type reinforcement, preventing deflection deformation

- Multidimensional heat source management: main motor externally mounted on top, positioned away from the spindle; air-cooled top exhaust, equipped with reflective heat insulation panel;

Spindle, gearbox, and connecting plate oil-cooled to ensure stable precision

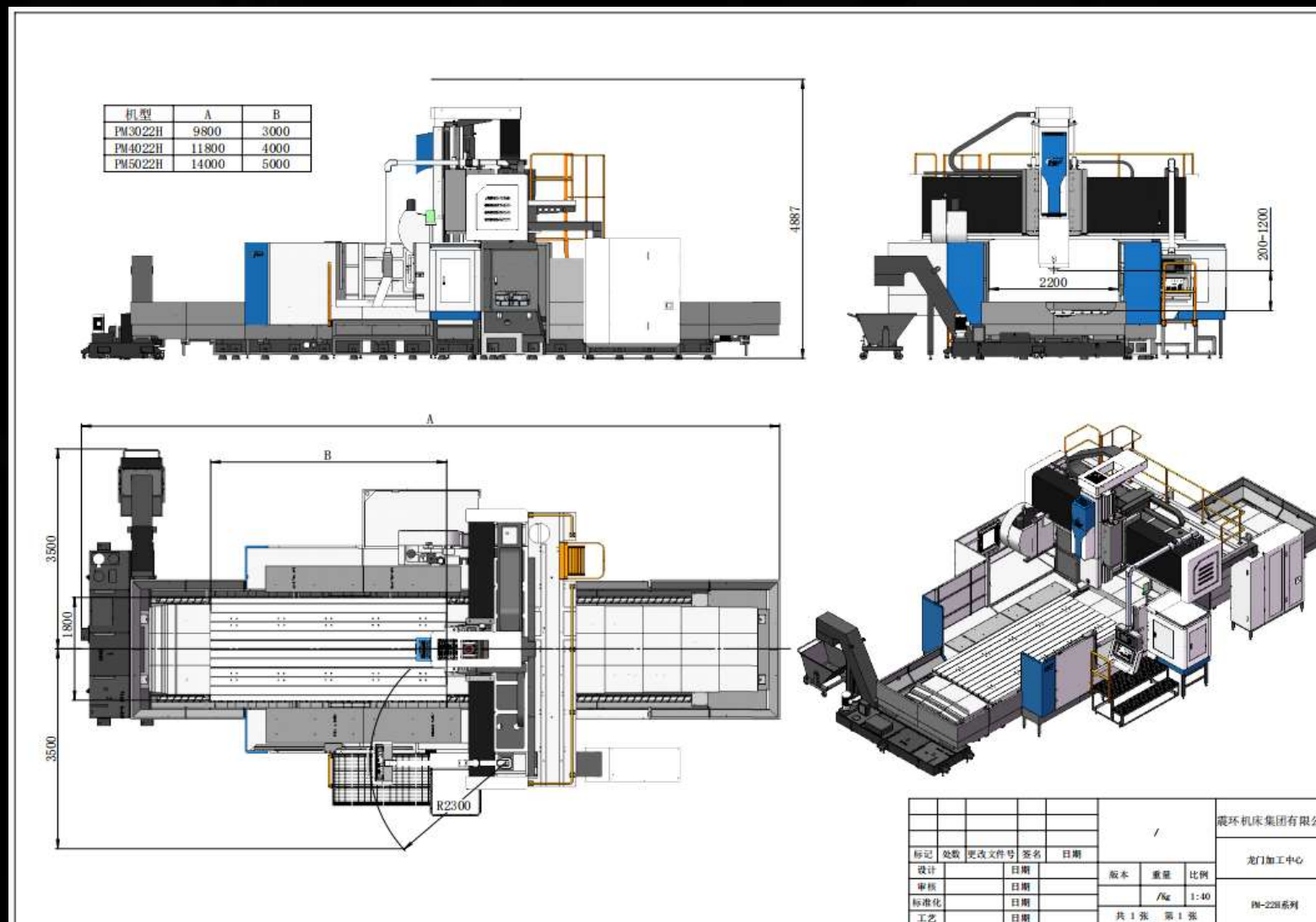
- Main motor mounted on top, suitable for stepped workpieces and five-face machining
- X/Y axes equipped with large-size heavy roller guideways, Z axis with dual balance oil cylinders, optimizing rigidity and motion characteristics
- The oil cooler and hydraulic station are integrated into the crossbeam, featuring short piping, low energy consumption, superior refrigeration and power performance, and saving floor space.
- The bed is fully protected, waterproof and chip-proof, with waste oil recovery (environmentally friendly).

Loading and unloading as well as personnel access are convenient, safe, comfortable, and compliant with CE standards.

- Optional configurations include tool magazine, central coolant outlet, linear scale, and others.

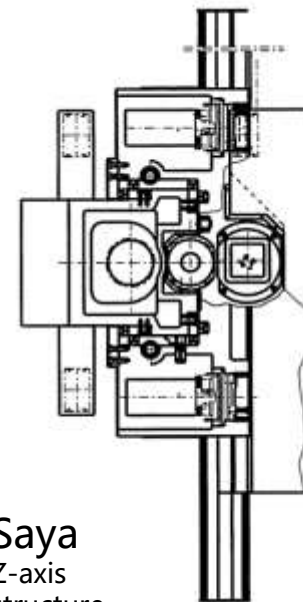


- Component cross-section dimensions are large, and the overall structure is solid and heavy.
- Rectangular ram
- Right-Angle Trapezoidal Column
- Various methods are employed to manage heat sources in order to protect the main motor. Heat generation causes thermal deformation of the spindle headstock, ensuring machine tool precision stability.
- The upper placement of the main motor is more conducive to stepped workpiece machining and five-face machining.



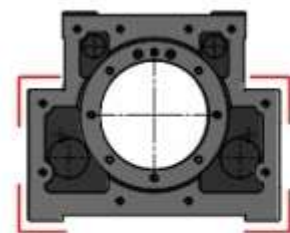
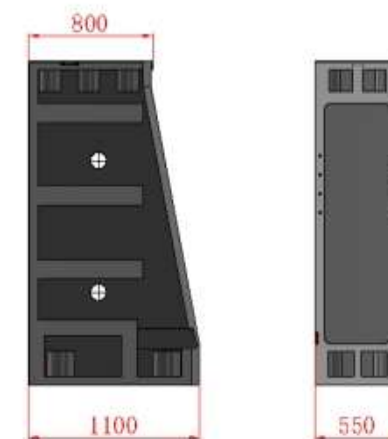


Rectangular spindle headstock (ram) with an encircling guideway arrangement significantly improves rigidity compared to the T-shaped ram, enhancing heavy cutting performance.

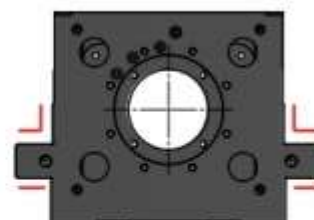


Saya
Z-axis
structure

Right-Angle Trapezoidal Column with a larger foundation contact area improves overall machine stability and seismic resistance for heavy cutting.



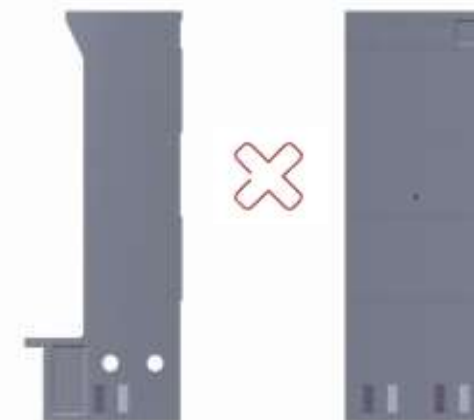
Our Guideway Arrangement on a Rectangular Ram



Linear Guide Layout for a T-Type Ram

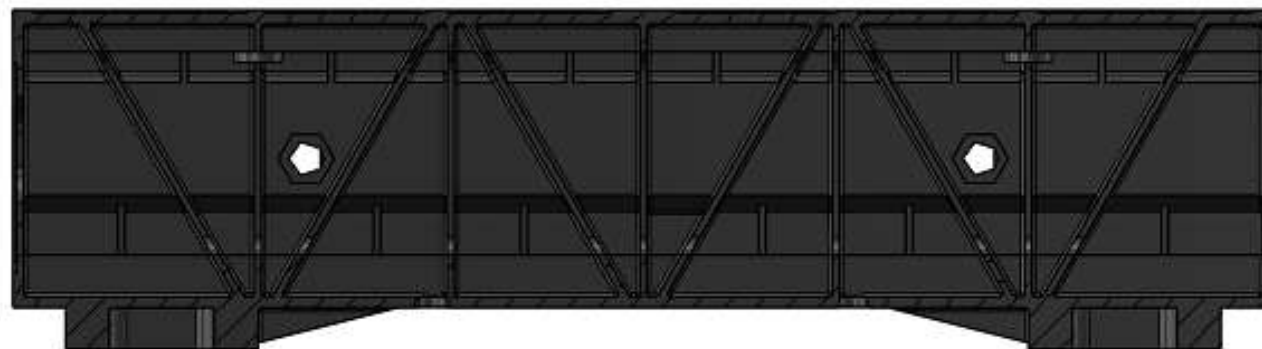
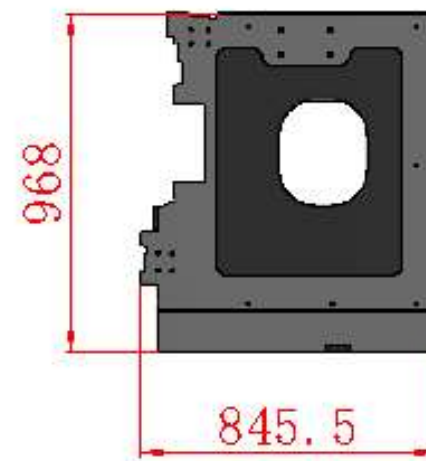


Nicholas
Rectangular
ram



Structural Overview

Bridge-type structure with a large cross-section,
internal cavity box-type ribbing,
Ensure the crossbeam exhibits no deflection
deformation.

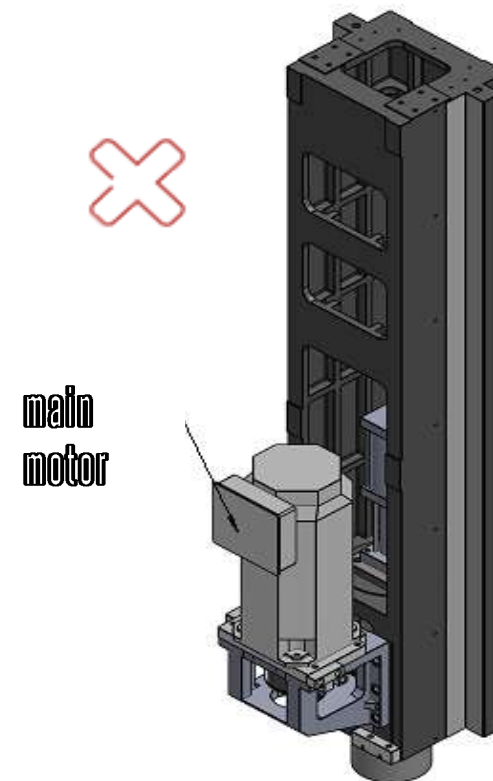
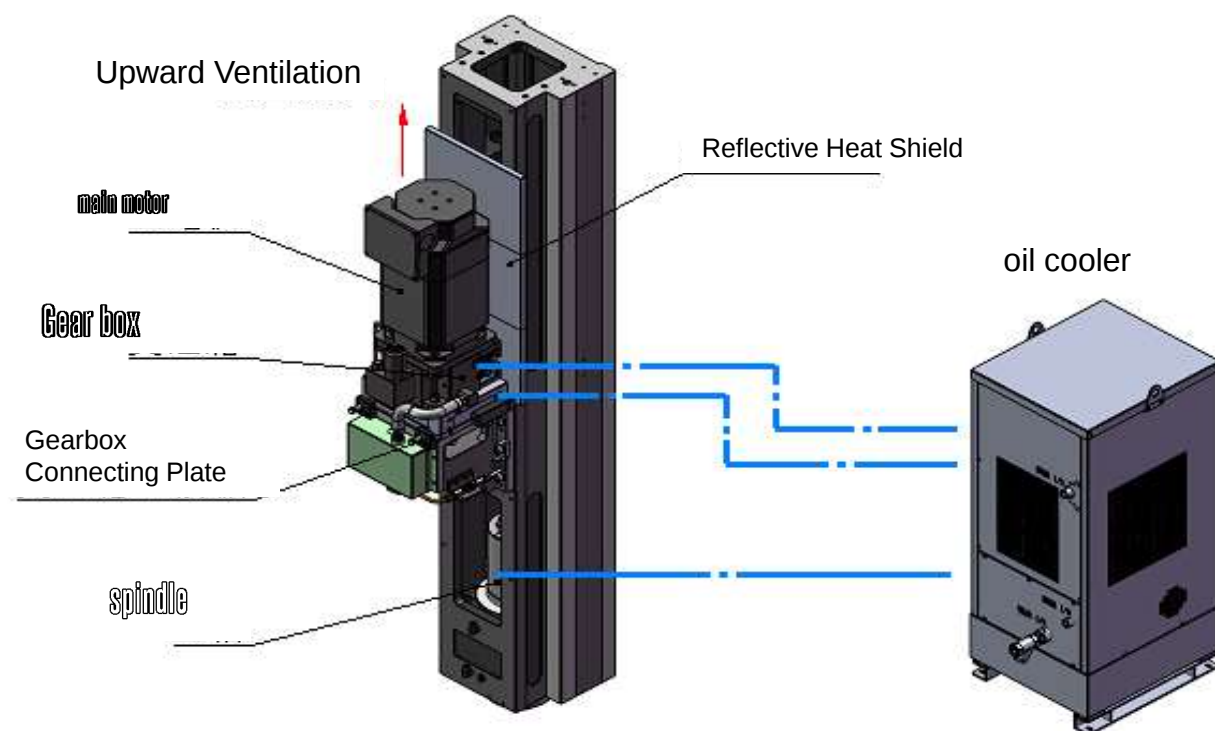


Structural Overview

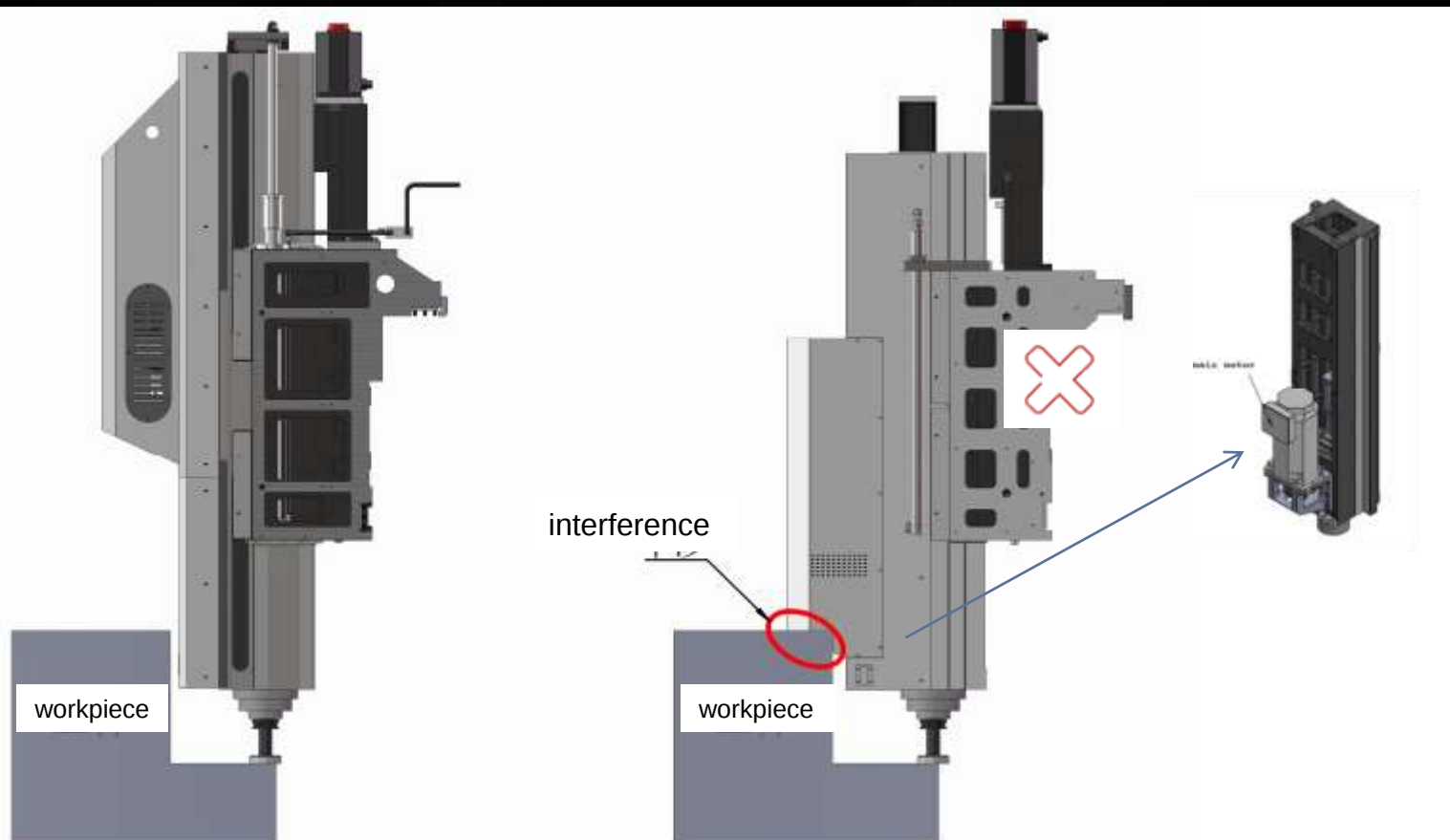
The main motor is externally mounted and positioned on top; The main motor is air-cooled with upward exhaust.

The main motor is separated from the ram by a Reflective Heat Insulation Panel.

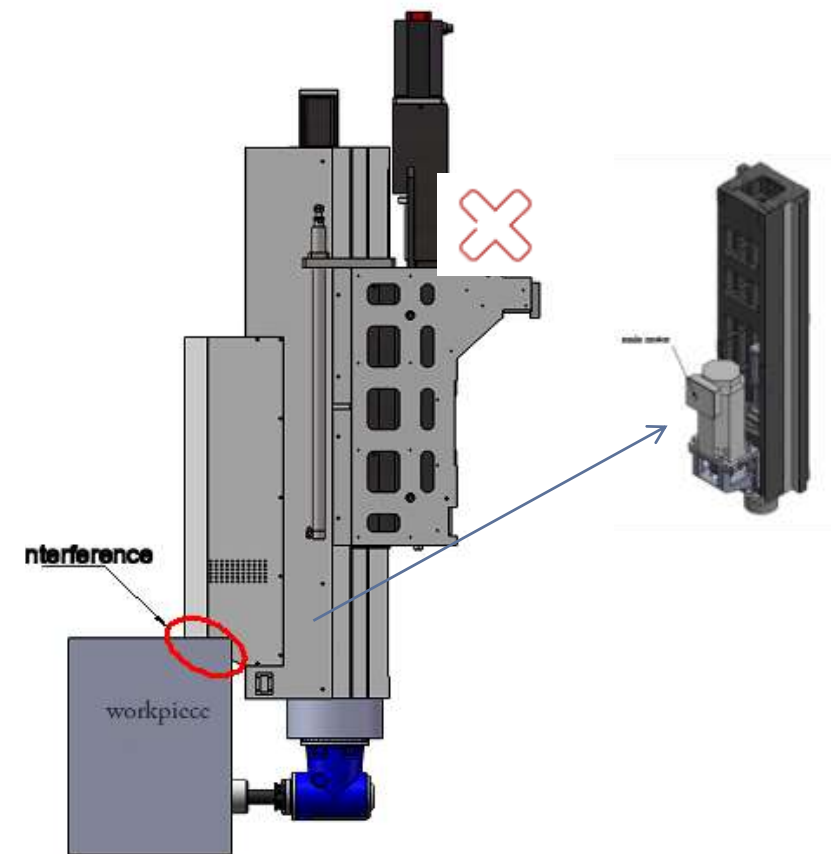
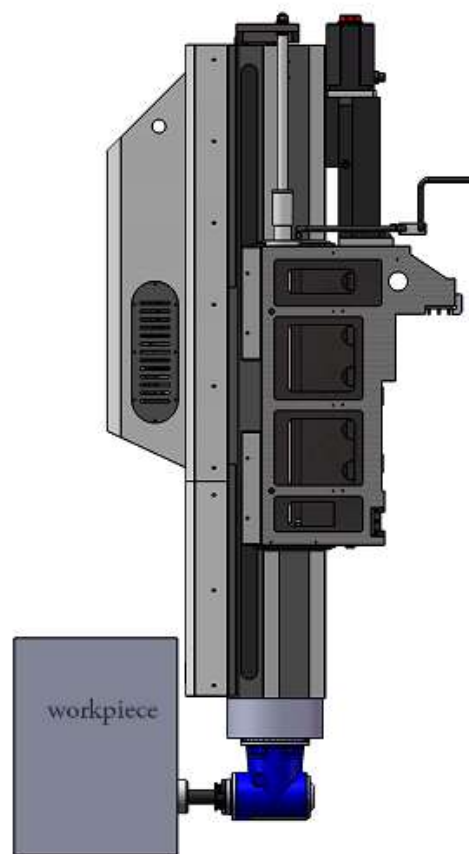
The spindle, gearbox, and gearbox mounting plate utilize oil cooler cooling.



The main motor positioned on top is more advantageous for machining stepped workpieces and five-face machining.

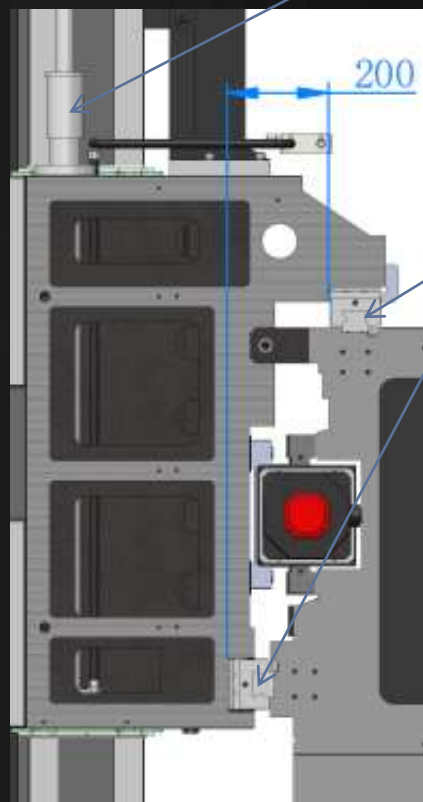


The main motor positioned on top is more advantageous for machining stepped workpieces and five-face machining.





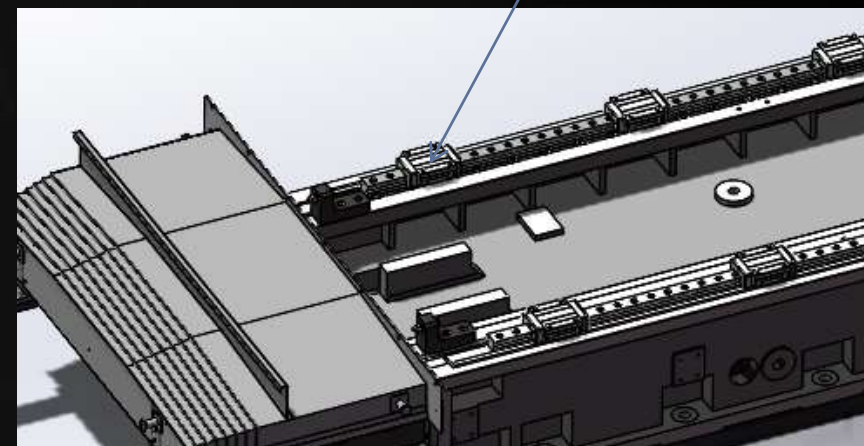
The X and Y axes employ large-size heavy roller guideways,
The Z axis is equipped with dual balance oil cylinders to ensure structural rigidity while maintaining favorable motion characteristics.



Double-cylinder nitrogen
balance

Crossbeam (Y axis) with large specification
heavy-duty guideway

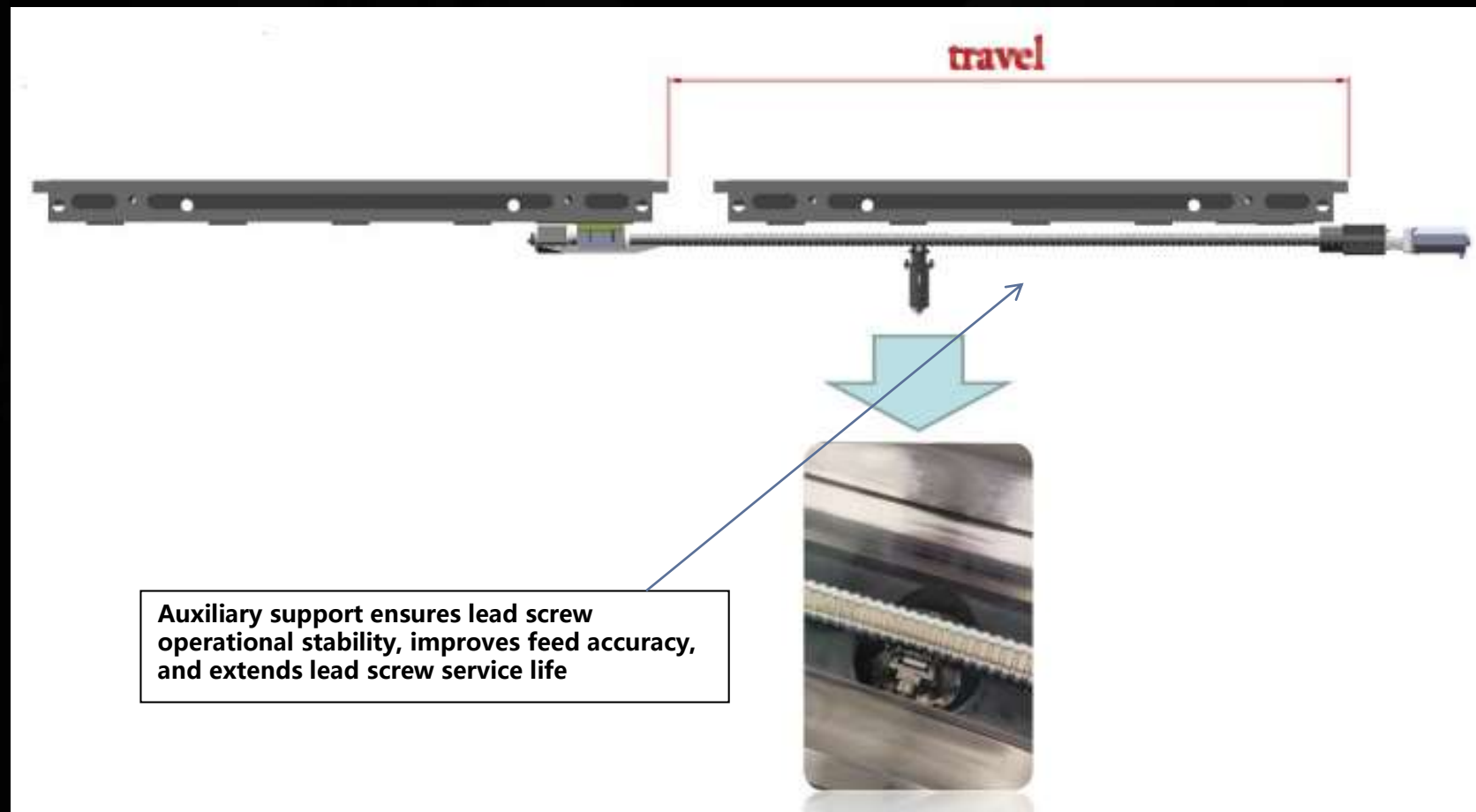
Installation method: horizontal+ wall-mounted
Front and rear stepped arrangement

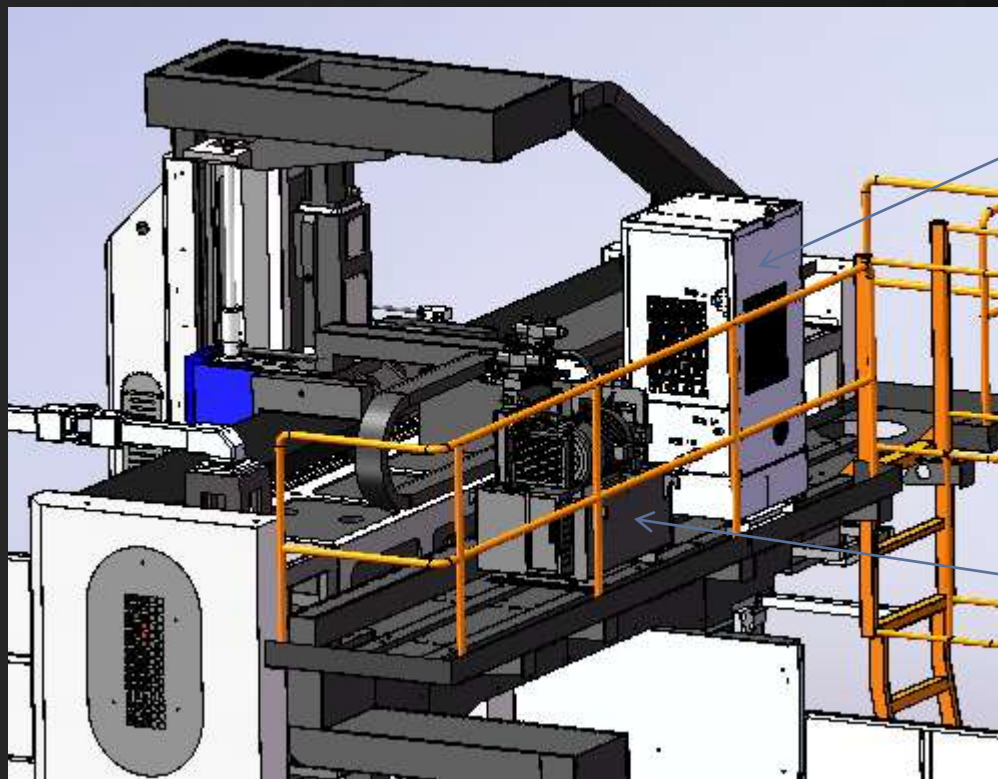


Imported precision and heavy-duty roller
guideways,
Excellent guidance and load-bearing capacity

Structural Overview

Large-diameter, high rigidity ball screws,
Long stroke models (GM4022,/5022)
Equipped with fixed-point auxiliary
support





Oil
cooler

Hydraulic
station

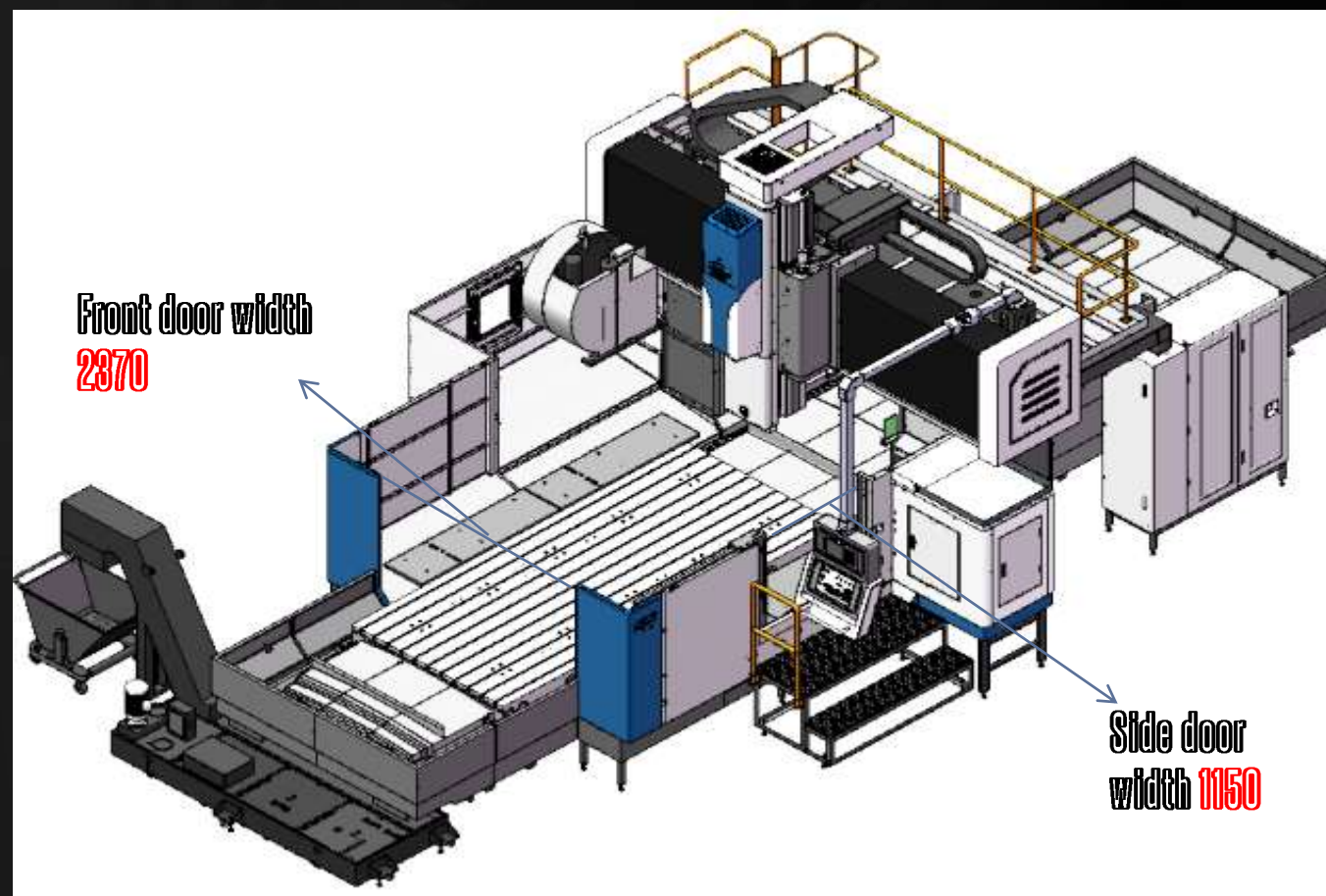
Oil cooler and hydraulic station mounted
On top of the crossbeam with short
piping,
Reducing energy loss and enhancing
cooling efficiency,
Exhibiting favorable dynamic
characteristics.
Reduces machine tool footprint.

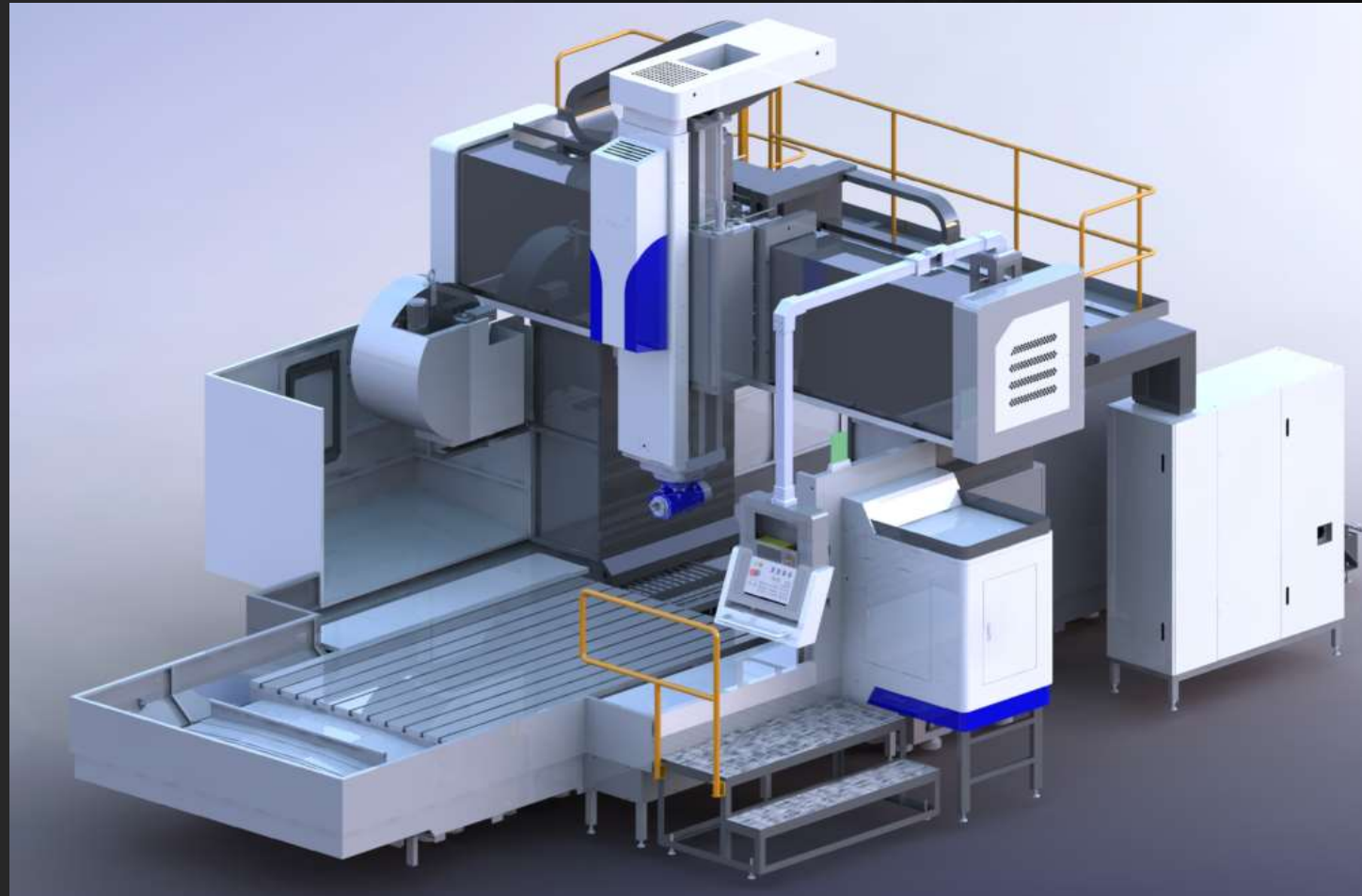
Structural Overview

Complete protection around the bed,
Prevents water and chips from splashing
externally,
Waste oil recovery: (environmentally
friendly)

Facilitates loading, unloading, and
personnel access,

**Safe, comfortable, and
thoughtfully designed,
Complies with CE safety
standards**

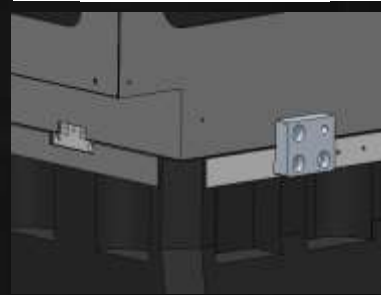
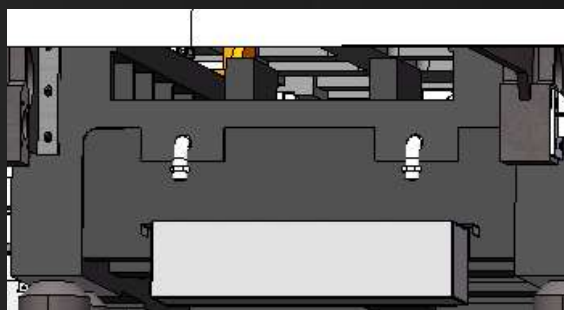
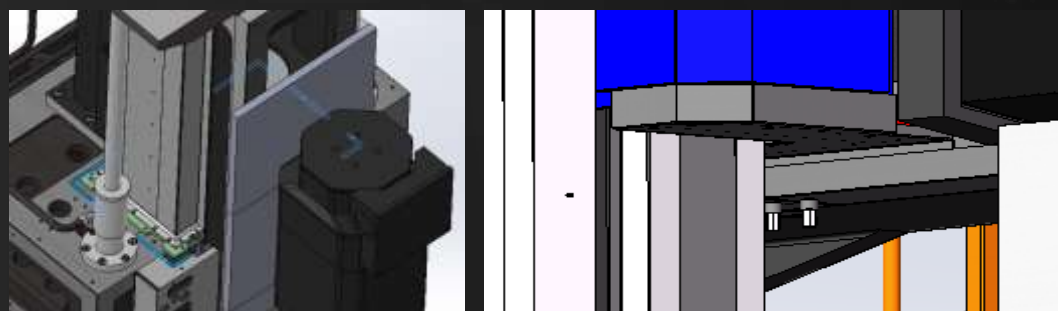
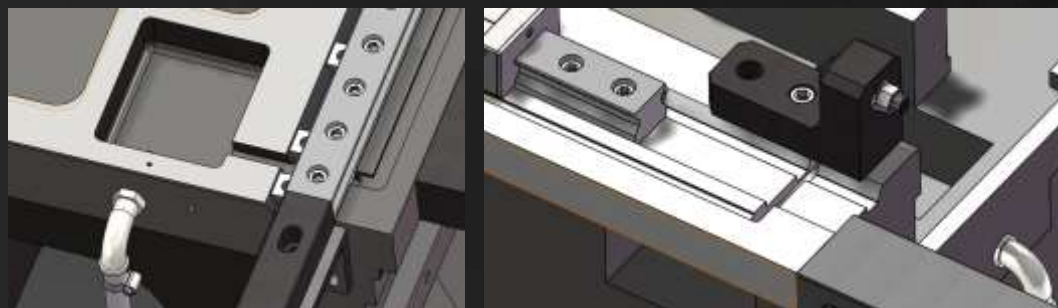




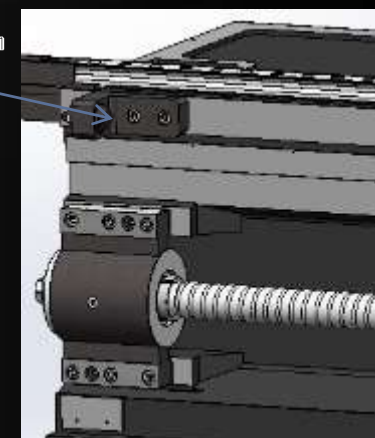
**For
internal
use**



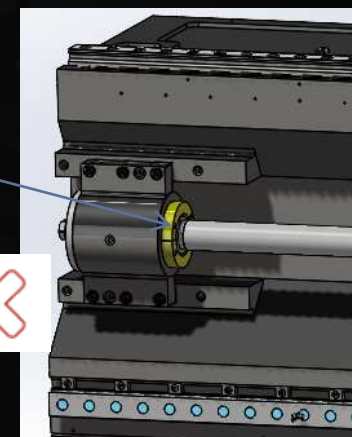
Facilitates loading, unloading, and
personnel access,
Safe, comfortable, and thoughtfully
designed,
Complies with CE safety standards



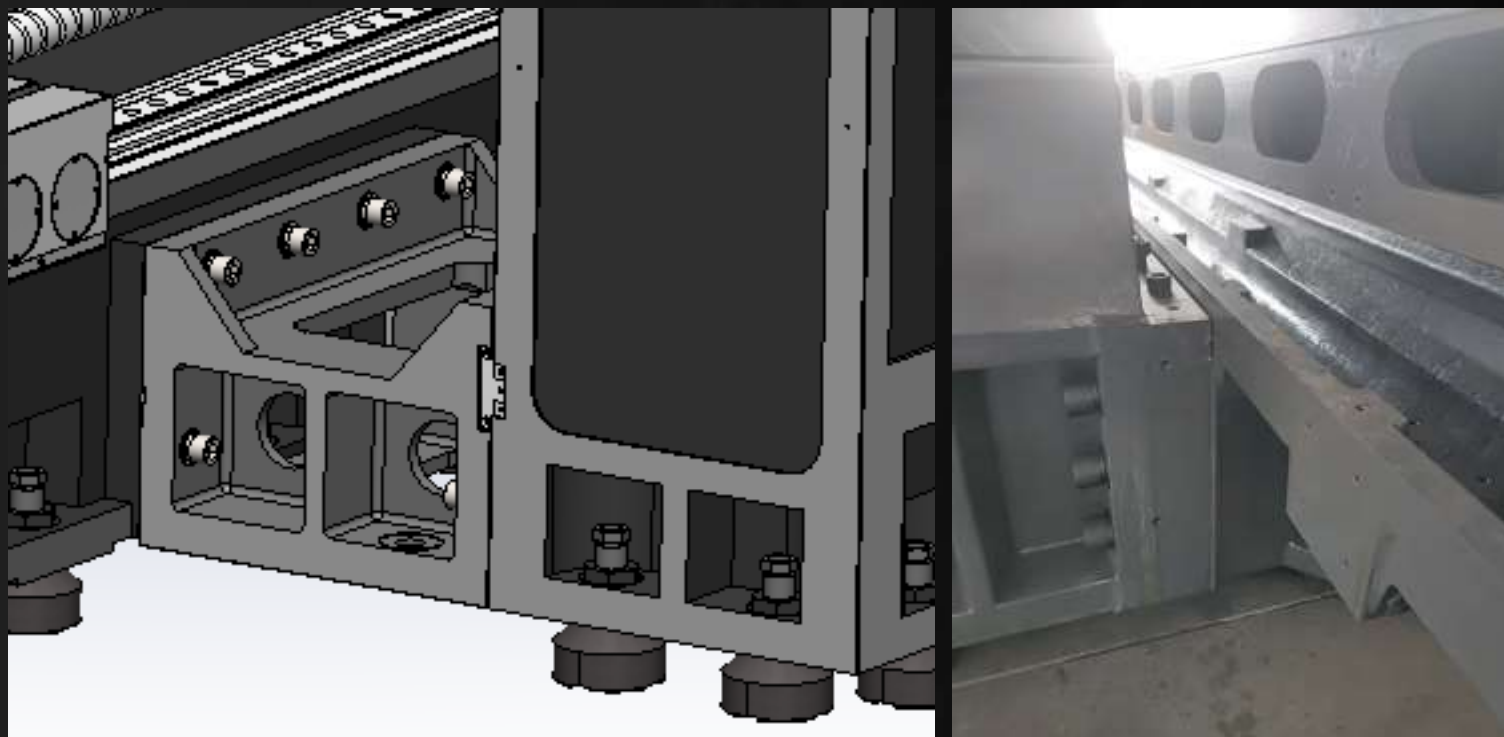
Disc spring safety mechanism
Limit switch



Rubber buffer block
Limit switch



Structural Overview



Optional configurations

Optional accessories include a tool magazine, center-through coolant system, grating scale, various milling heads, rotary tables, probes, tool setters, and other functional components.

All interfaces for optional accessories have been pre-machined and reserved. Users can add them as needed at any time, with no limitations on timing or technical feasibility.





PM2015H

Medium and small Portal machining centers

Preferred choice for small to medium-sized precision machining

Applicable industries

Construction machinery, automotive, shipbuilding, energy, printing, etc.

Optimal for roughing and finishing small to medium-sized castings and welded components, also suitable for stamping dies and non-ferrous metal machining Machining (Machine tool)

Column: Right-angle trapezoidal structure with a large foundation contact area,

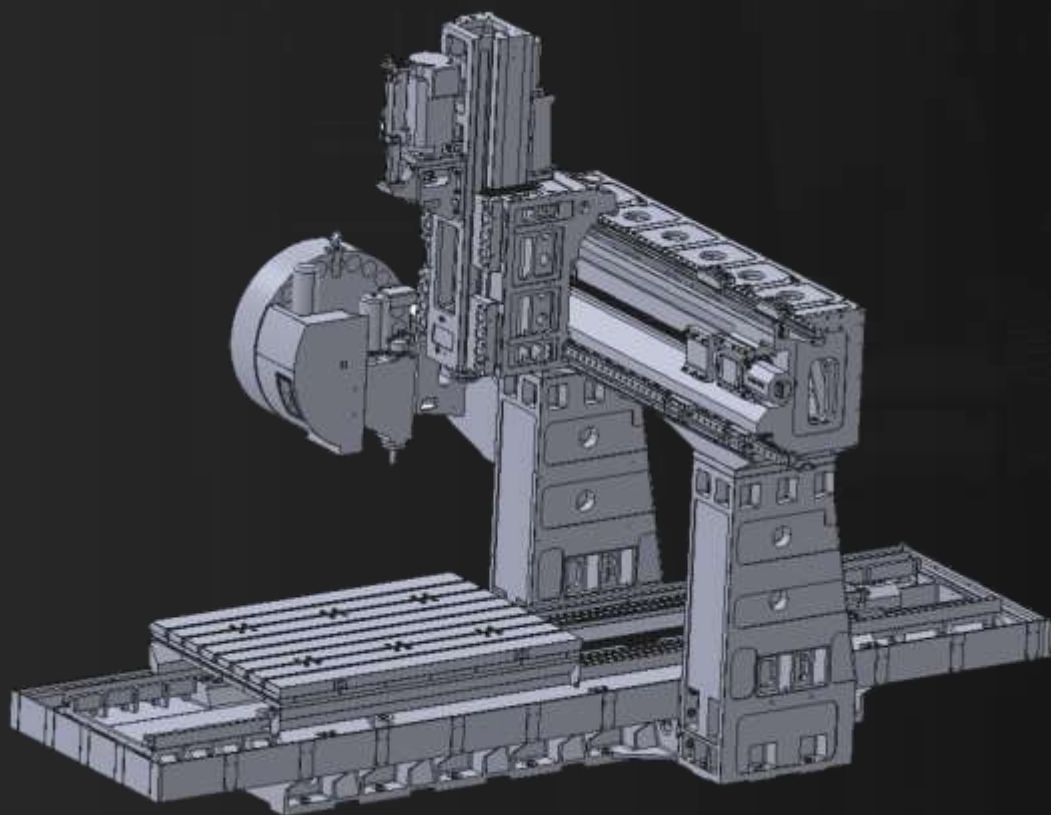
Stable machine construction with excellent seismic resistance during heavy cutting

Crossbeam: Bridge-type structure + Large cross-section + Internal cavity ribbed frame,

No deflection deformation

Main motor: Upper-mounted layout, suitable for stepped workpieces and five-face machining

Linear guide rail: XY axis double rolling+ Z axis hardened rail



Main Technical Parameters

	Item	Unit	PM2015H
Machining Range	X Axis Stroke	mm	2200
	Y Axis Stroke	mm	1700
	Z Axis Stroke	mm	800
	Distance Between Two Columns	mm	1500
	Distance from Spindle Nose to Worktable Surface	mm	200 ~ 1000
Worktable	Worktable Dimensions (Length × Width)	mm	2000×1300
	Maximum Load Capacity	kg	10000
Spindle	Spindle Speed	rpm	6000 (optional 8000)
	Spindle Taper		BT50
Others	Spindle Diameter	mm	Φ190
	Linear Guide Specifications (X/Y/Z)	mm	Roller 55/55/ Hard Rail (Rectangular Ram)
	Machine Tool Weight (Approximate)	t	22

PM6036R

Heavy Cutting Type Portal Machining Center

Core Positioning:

Heavy cutting and large-size workpiece machining,
Adapted to the core advantages of construction machinery
and energy industries

Core Advantages

- High rigidity, high precision, high efficiency, with strong accuracy stability, Low failure and maintenance rates
 - Safe and environmentally friendly, equipped with full enclosure protection and waste oil recovery system.
- Comfortable operation
- Rich optional configurations to meet diversified machining requirements



Transmission, Structure, and Detail Design

Drive system: Main motor → ZF/BF gearbox (1:4) → lower gearbox (1:2) → Spindle (total transmission ratio 1:8)

Optional spindle: High-speed spindle/ Electric Spindle (suitable for high-speed and high-precision machining)

Detailed design:

Full protection + Waste oil recovery (environmentally friendly)

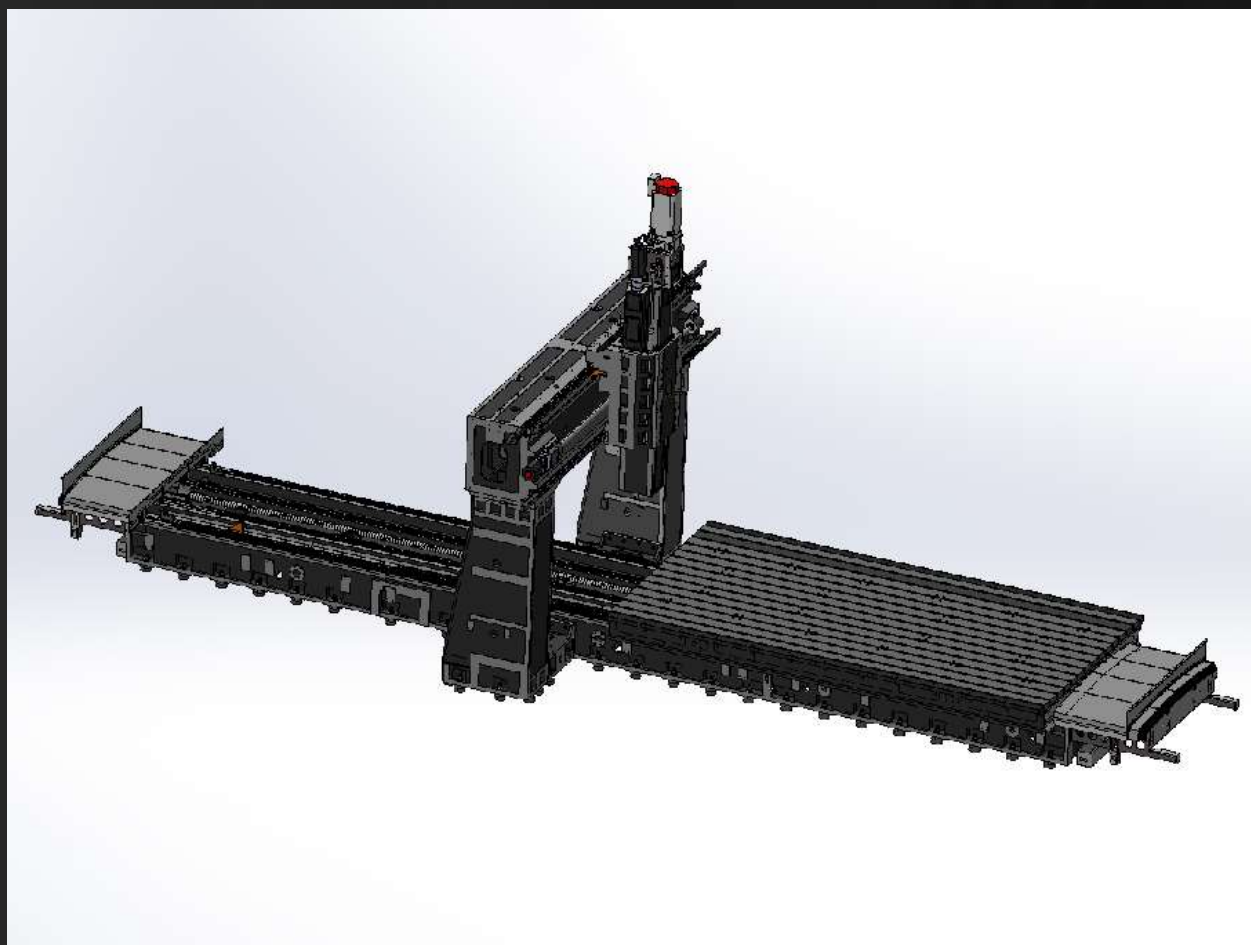
Taper adjustment mechanism (facilitates precision calibration)

High-strength disc spring collision limiter (high reliability)

Optional configurations: Tool magazine, central coolant outlet, linear scale, four-axis, various milling heads (manual/Automatic/ Universal/ Five-axis), tool changer, etc.

Core structure:

- Symmetrical machine tool layout with solid and heavy components; base equipped with three rows of leveling feet, Preventing subsidence and ensuring precision
- X axis equipped with 4 55-type guide rails and 20 sliders, paired with a $\phi 80$ large ball screw for stable support
- Crossbeam upper and lower guide rails are 65-type and 55-type respectively, featuring a multi-slider design for ample rigidity
- 450 × 450 Large-section square ram (guide 1.2 m+ hydraulic balance cylinder), double-tooth Gearbox transmission ratio 1:8 (Rare in the industry)
- Standard Configuration BT50-3000 High-rigidity spindle (NN bearing, suitable for heavy cutting), Customizable high-speed and high-precision configuration



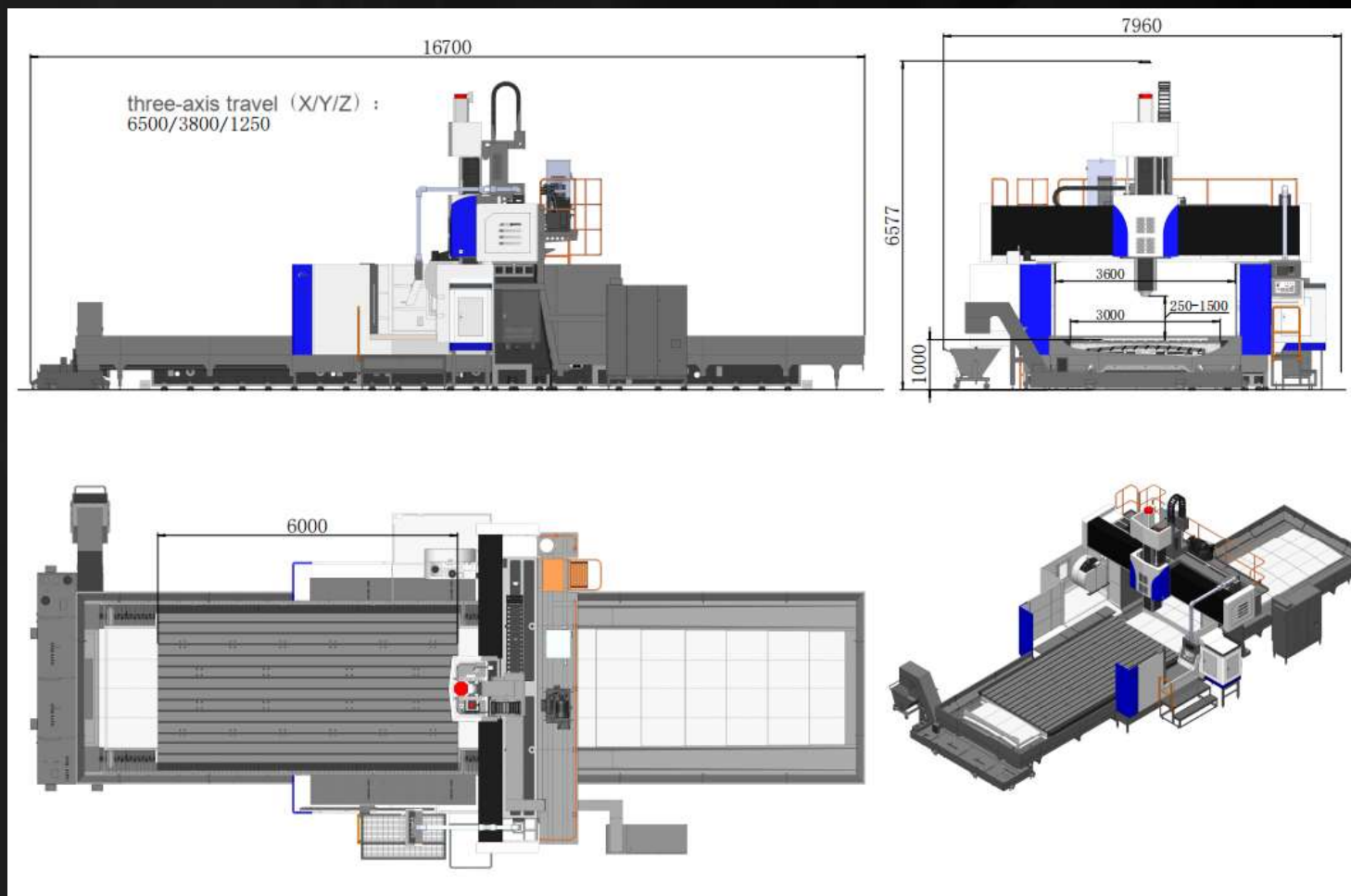
Main Technical Parameters

	Item	Unit	PM6036R
Machining Range	X Axis Stroke	mm	6500
	Y Axis Stroke	mm	3800
	Z Axis Stroke	mm	1250
	Distance Between Two Columns	mm	3600
	Distance from Spindle Nose to Worktable Surface	mm	250 ~ 1500
Worktable	Worktable Dimensions (Length × Width)	mm	6000×3000
	Maximum Load Capacity	kg	35000
	T Slot (Number of slots × Slot width × Pitch)	mm	13 × 28 × 225
Spindle	Spindle Speed	rpm	3000
	Spindle Taper		BT50
	Spindle Motor Power (Rated/ Short-time)	kW	30/37
	Maximum Spindle Torque (Rated/ Short-time)	N.m	1993/2458
Speed	Rapid Traverse Speed (X/Y/Z Axis)	m/min	10/12/12
	Cutting Feed Rate (X/Y/Z Axis)	m/min	6/6/6

The PM-R series offers broad market applicability across industries including construction machinery, machine tools, automotive, shipbuilding, energy, and printing.

High precision, high rigidity, heavy cutting capability, suitable for machining medium to large castings and welded components, efficient, energy-saving, and environmentally friendly.

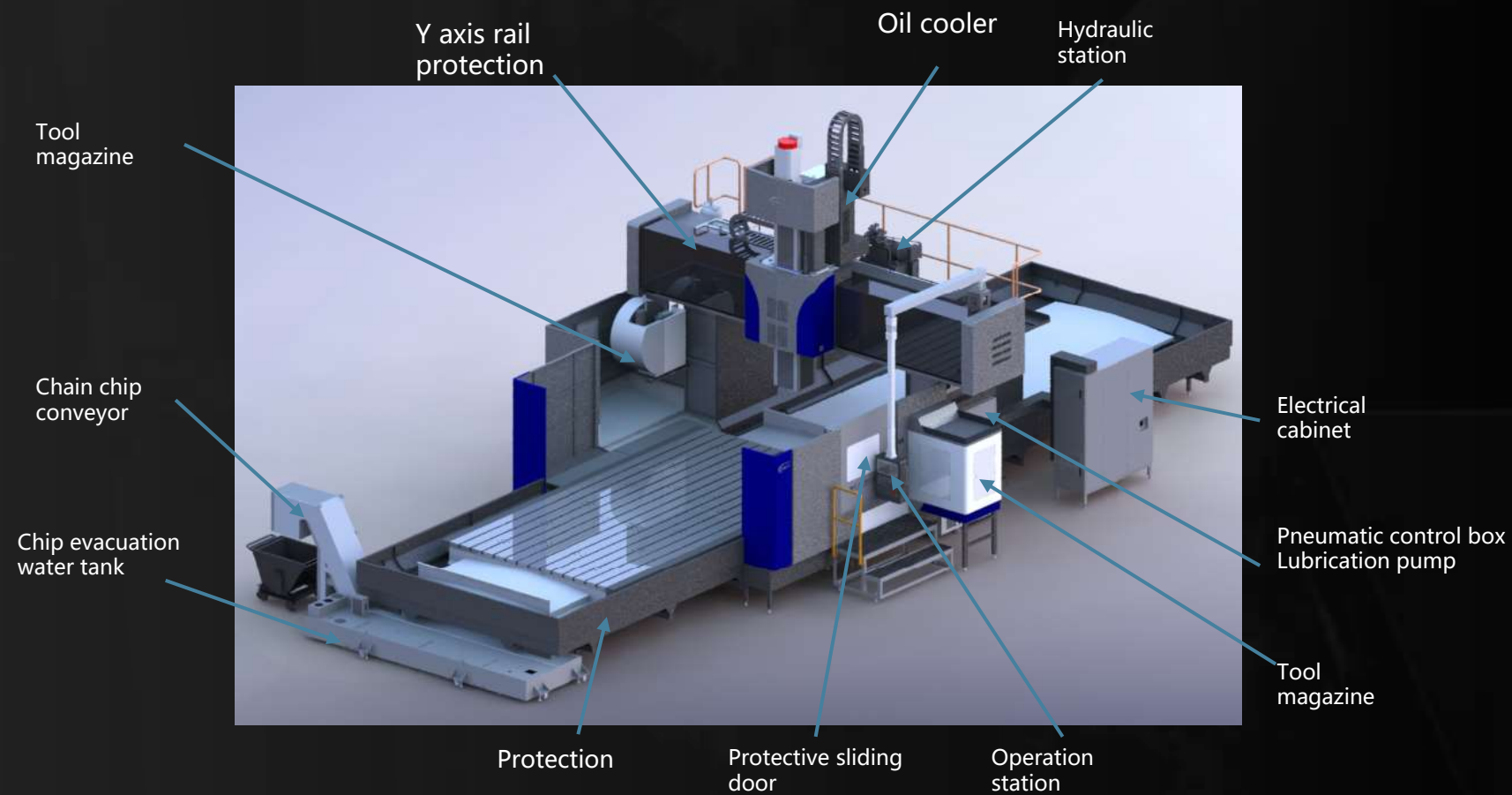
Integrated single-unit, standardized design, full-range modular and flexible configuration, providing strong market adaptability.



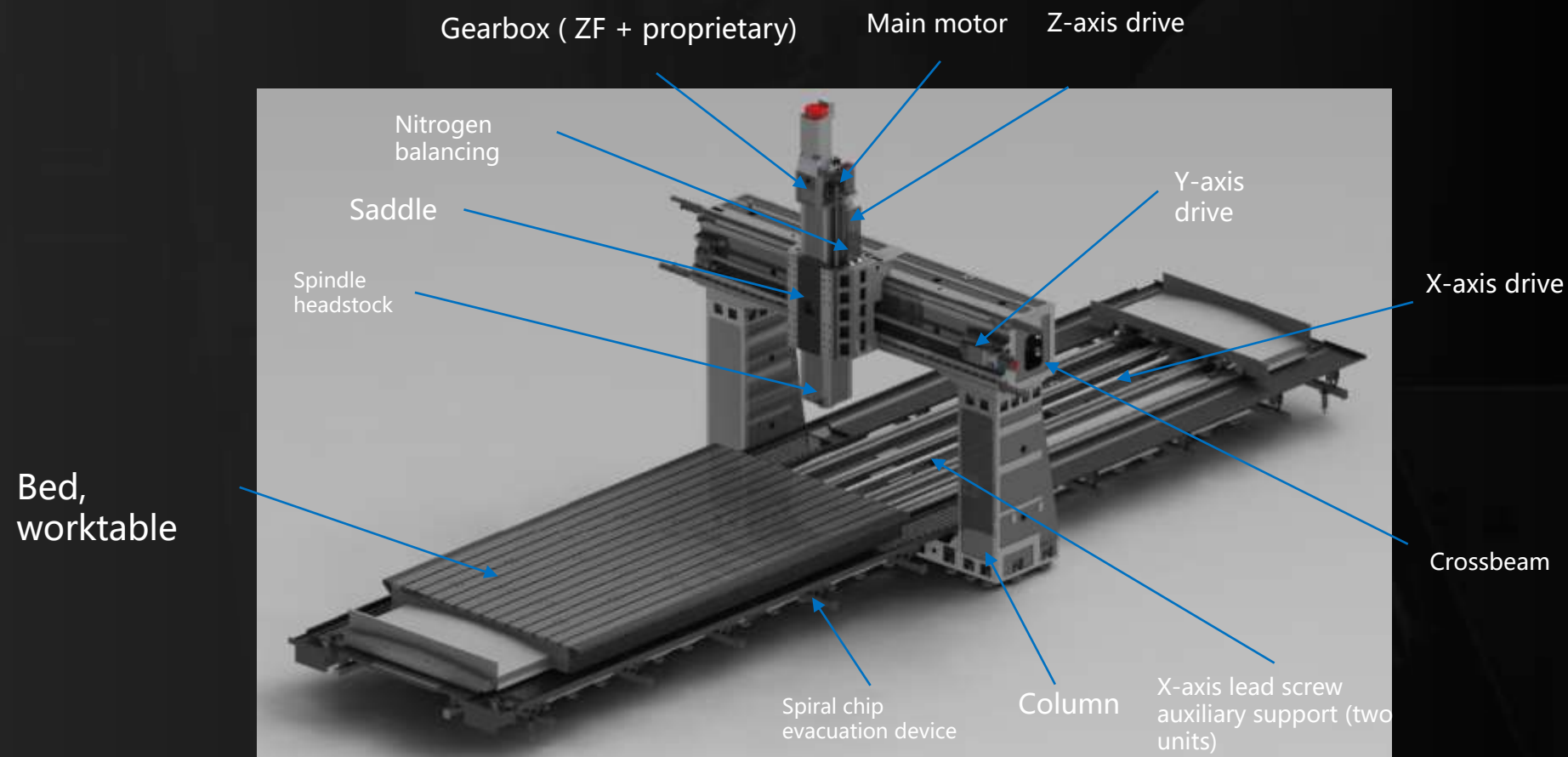
- Large component cross-section dimensions, with a solid and robust overall structure.
- Large-section square ram (450×450)
- Right-Angle Trapezoidal Column
- Main motor mounted atop
- Large-dimension lead screw, rail

X axis stroke	mm	6500	8500
Spindle Diameter	mm	Φ220	
Linear Guide Specifications (X/Y/Z)	mm	4-55/55+65/ Hard rail	
Number of Guideway Sliders (X/Y/Z)		20/5/ Hard rail	28/5/ Hard rail
Ball Screw Specifications (X/Y/Z)	mm	80/63/55	100/63/55
Machine Tool Weight (Approximate)	t	75	95
Floor Space (Length × Width × Height)	mm	17500 × 8000 × 6600	22000 × 8000 × 6600

Structural Overview

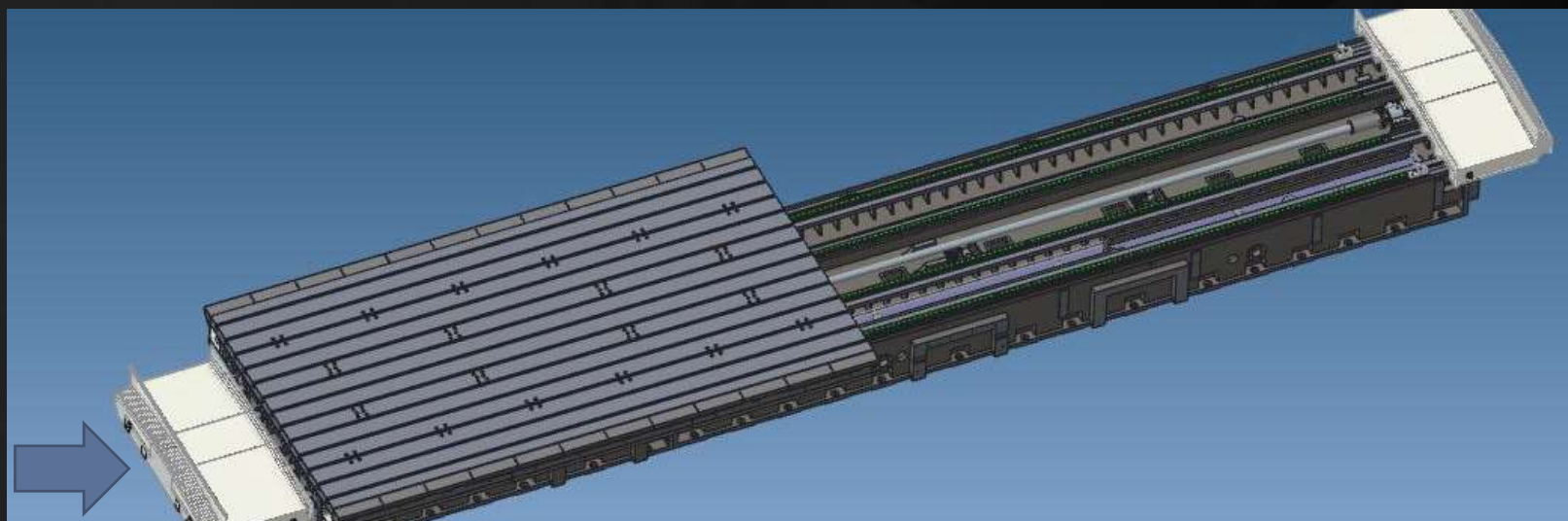


Structural Overview

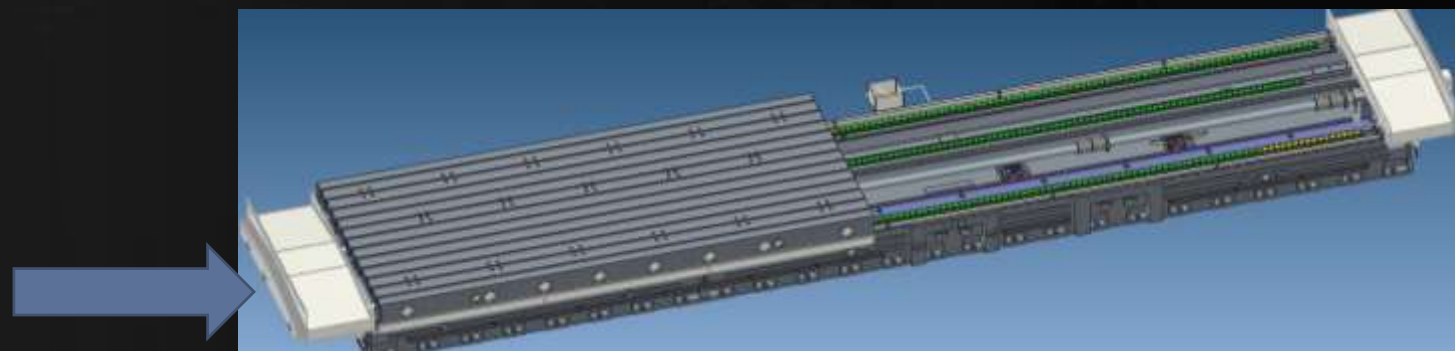


Structural Overview

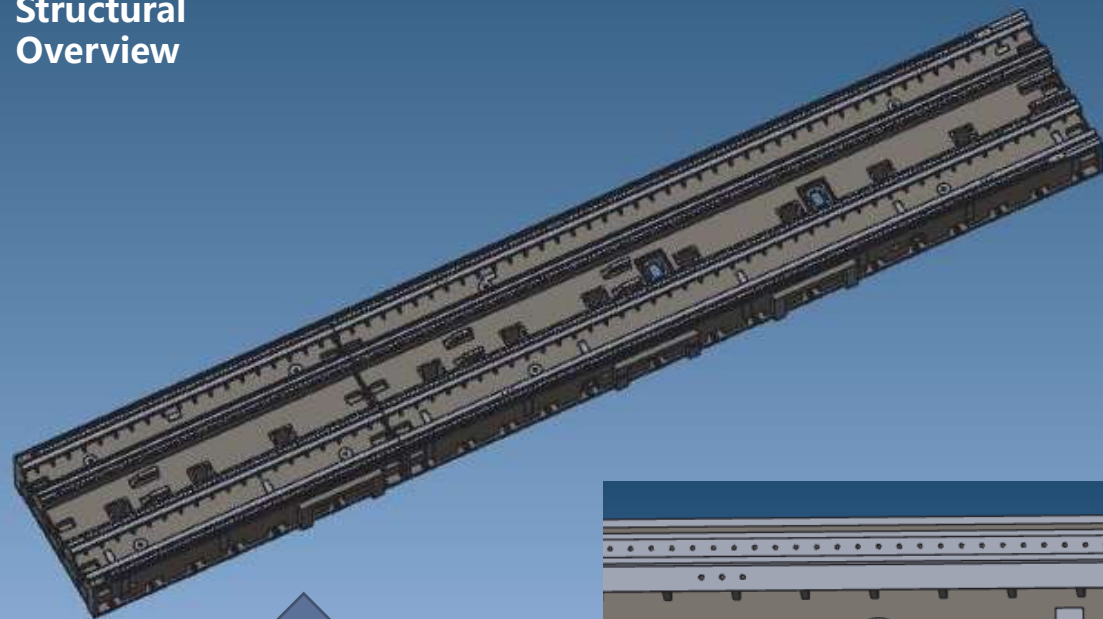
PM6036R
Bed with four
guideways



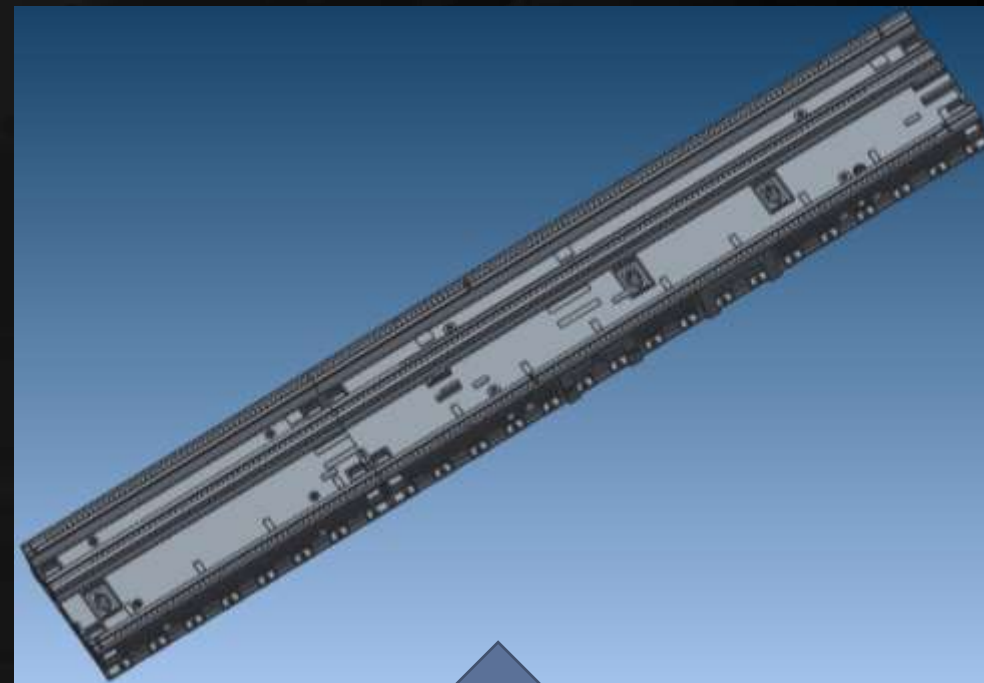
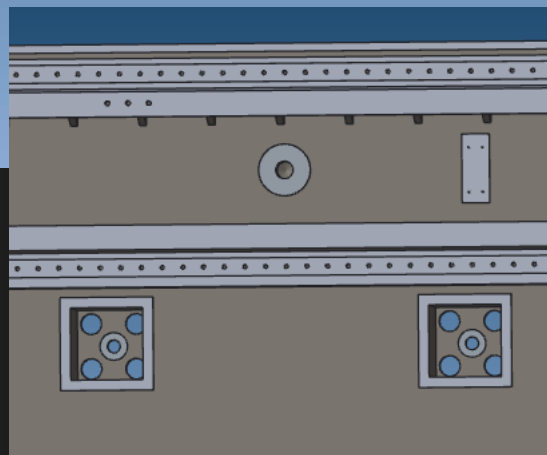
Three guideways: uneven deformation of the worktable under pressure, affecting the linear and planar accuracy of the workpiece.



Structural Overview



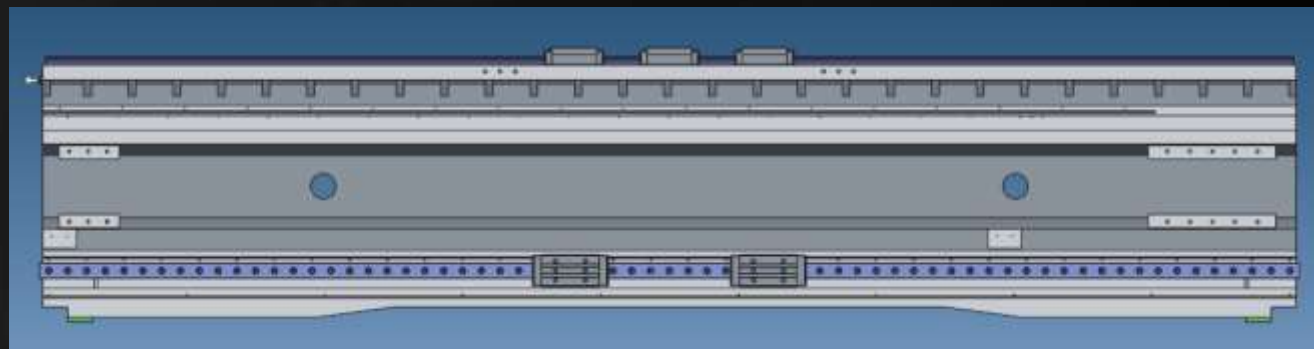
PM6036R
Bed with three rows of leveling feet



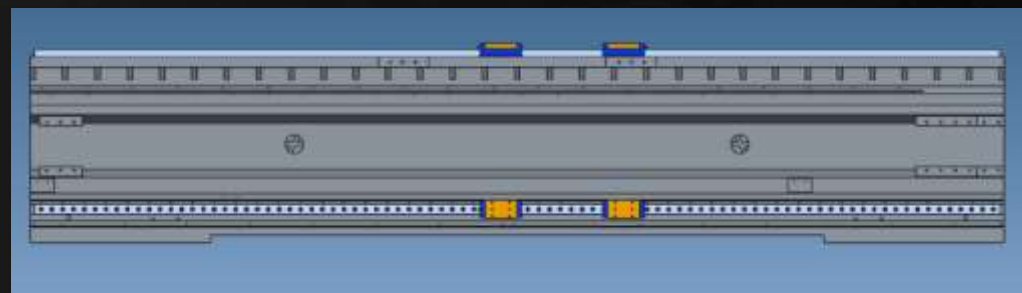
The middle section of the bed sinks under pressure between two rows of leveling feet, affecting the linear and planar accuracy of the workpiece.

Structural Overview

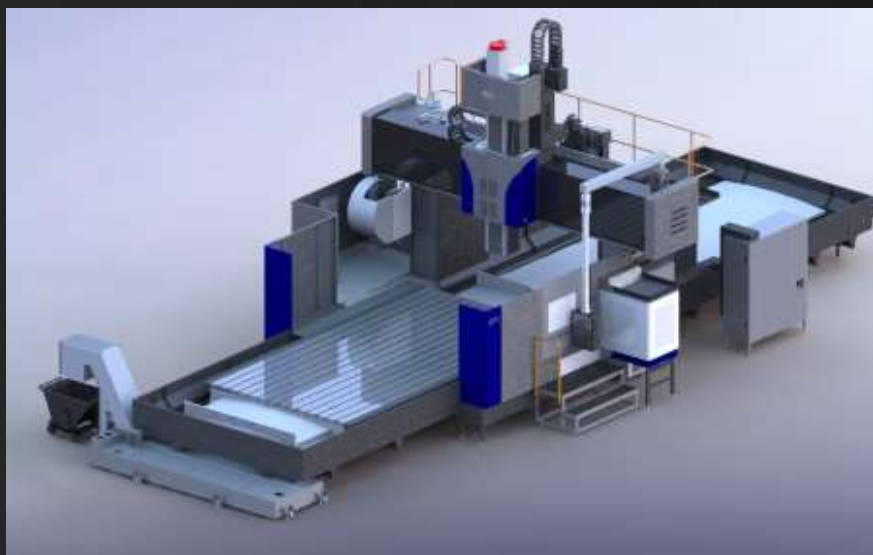
PM6036R crossbeam lower guideway employs 65 roller guideway; upper guideway uses 55-type roller guideway with three sliders.



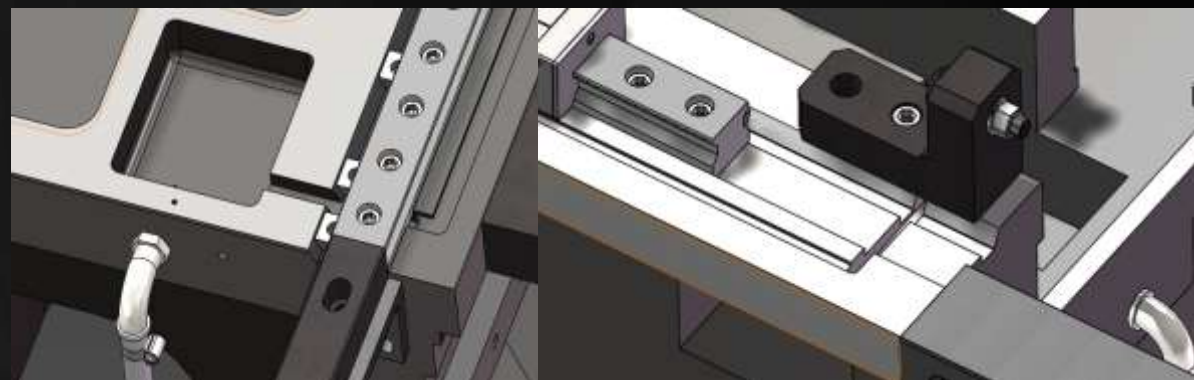
Small guide rail specifications and a low number of sliders result in insufficient rigidity and reduced heavy cutting capability.



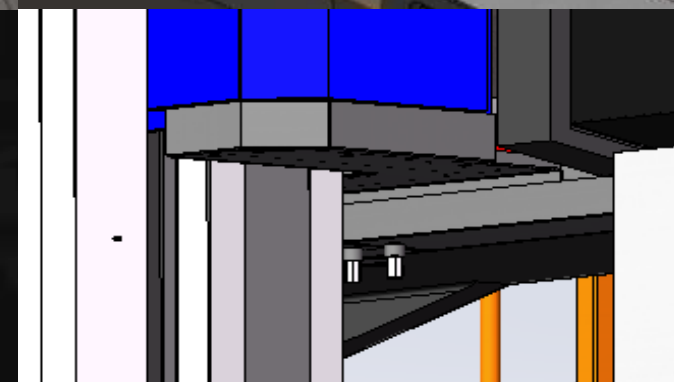
Other details



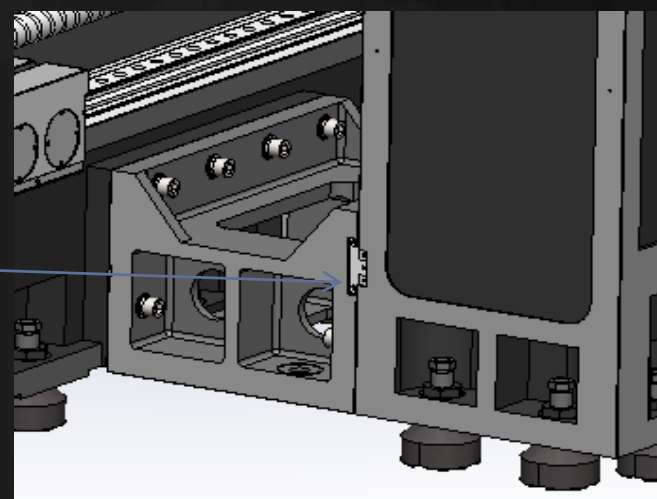
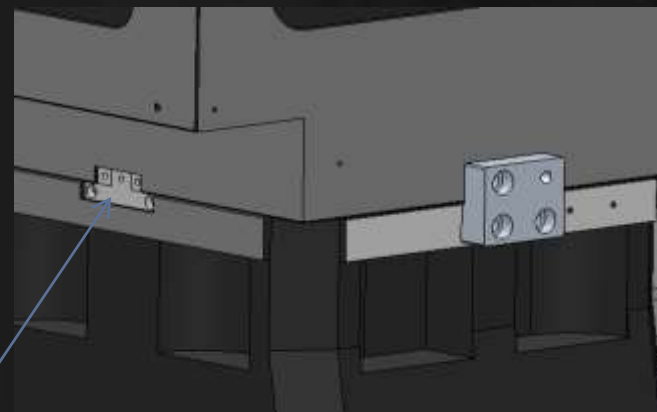
PM6036R Equipped with comprehensive protection, Facilitating maintenance of site cleanliness and enhancing production efficiency.



PM6036R Equipped with waste oil recovery system
The structure or device ensures reliable recovery of waste oil at all lubrication points, contributing to the cleanliness of both the machine tool and the environment.

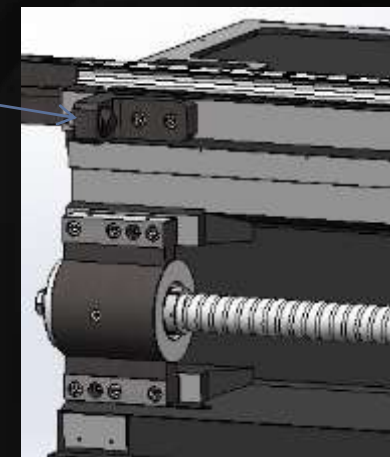


Other details

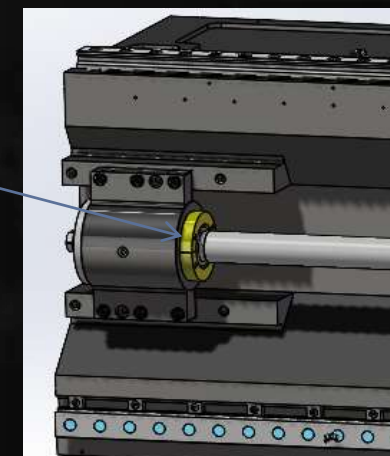


These installation and adjustment structures
Are similar to those of
Okuma, Japan.

Disc spring
safety
mechanism
Limit switch



Rubber buffer
block
Limit switch



Other configuration

Optional accessories include a tool magazine, center-through coolant system, grating scale, various milling heads, rotary tables, probes, tool setters, and other functional components.

All interfaces for optional accessories have been pre-machined and reserved. Users can add them as needed at any time, with no limitations on timing or technical feasibility.



Five-axis machining center

— Model coding rules and family

Model coding: Number= Disk diameter (mm) → UZ320= ø
320 mm

Product Family: UZ320 (Cross Slide)

UP400 (Portal Type)

UB500 (Bullhead Type)

UA800 (Bridge-Type)

Core Value: Multiple processes completed in single clamping, eliminating reference deviation, Suitable for machining complex parts





UZ320

Vertical Five-Axis Machining Center

Small Precision Five-Axis Benchmark

Applicable industries

Core Application Areas

3C Electronics, precision molds, and other industries with stringent dimensional accuracy requirements can efficiently complete multiple processes such as drilling, tapping, and milling; particularly suitable for machining medium- and small-sized complex parts featuring inclined surfaces, curved surfaces, and special contours.

Expansion of Application Fields

In high-end manufacturing sectors such as aerospace and medical equipment, leveraging multi-axis linkage capabilities and high-precision machining advantages, the machining requirements for parts with complex structures and stringent quality standards can be met.

UZ320 Core Features of Machine Tool

Multi-axis linkage · Single clamping

The cradle structure enables multi-axis linkage, completing drilling, tapping, and milling operations in a single clamping, eliminating reference deviation, and precisely machining inclined surfaces, curved surfaces, and special-shaped parts. It is suitable for advanced fields including 3C, precision molds, aerospace, and medical equipment.

Cost reduction and efficiency improvement · Multi-functional machining center

A single machine replaces multiple traditional devices, reducing equipment procurement costs and workshop footprint. Reduced workholding and manual intervention, lowering scrap rate and labor costs.

High rigidity structure · Stable and reliable

Equipped with roller guideways, featuring high rigidity and strong vibration resistance, capable of bearing large cutting forces; symmetrical base and column design. Design maximizes machining stability; tilting disc-type tool magazine on the head ensures faster tool change speed.

High-speed and high-precision · Efficient machining

20,000 RPM high-speed spindle, leading machining efficiency for small and medium-sized products. Linear Shaft / Rotary Axis equipped with standard linear scales, full closed-loop control, significantly improving precision.

Flexible Tool Magazine · Optional configuration as required

Standard Configuration 21T disc-type tool magazine; optional 26T disc-type tool magazine or BT40-20 flanged disc-type tool magazine, meeting diverse machining demands.

Temperature-Controlled Chip Evacuation · Strict deformation control

Standard oil cooler for spindle and rotary table cooling; high-flow chip flushing system enables rapid chip evacuation, reducing bed thermal conduction and thermal deformation.

Function Expansion · Broad compatibility

Optional features include spindle central coolant outlet, probe, tool setter, and mist collector, covering a wider range of complex machining scenarios.

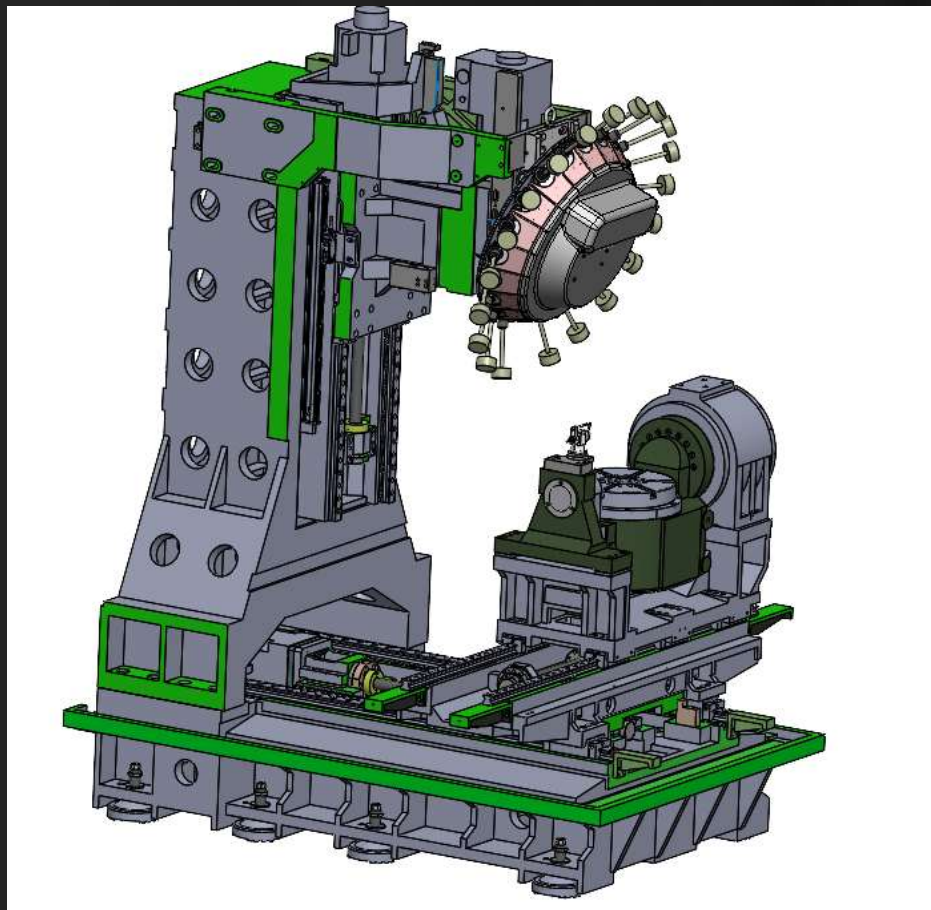
Compact design · User-friendly experience

Attractive appearance, compact structure with a small footprint, and enhanced user-friendly operation.



Main Technical Parameters

	Name	Unit	Parameter
Machining Range	Three-axis travel (X/Y/Z)	mm	500/500/400
	Rotary range (A/C)	deg	$\pm 115^{\circ}$ /360°
	Distance from Spindle Nose to Worktable Surface	mm	100-500
Five-axis rotary table	Cradle size	mm	$\Phi 320$
	Maximum Load Capacity	kg	100
Spindle	Maximum spindle speed	rpm	20000
	Spindle Taper	/	BT30
	Spindle motor power	kW	5.5
Speed	Rapid rotary speed (B/C)	rpm	130/100
	Cutting feed rate	mm/min	0-10000
Tool magazine	Number of Tools	pcs	21
	Maximum tool diameter/ Length	mm	$\Phi 60/100$
Machine tool accuracy	Positioning accuracy (X/Y/Z)	mm	0.006
	Positioning Accuracy (B/C)	sec	± 5
	Repeat Positioning Accuracy (X/Y/Z)	mm	0.004
	Repeat Accuracy (B/C)	sec	± 2.5



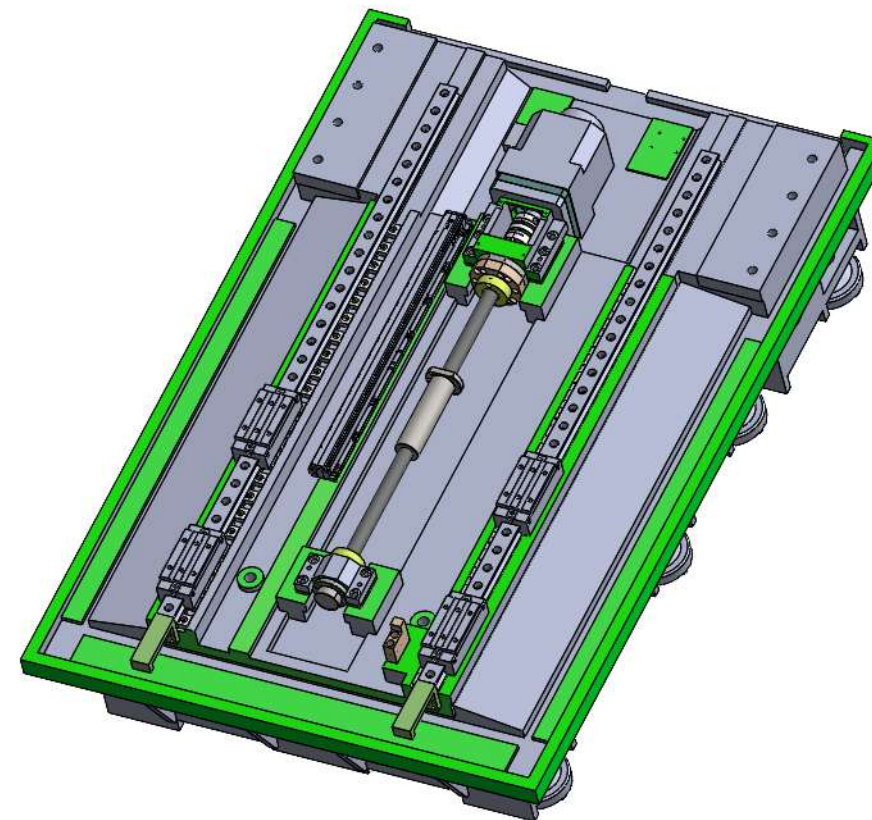
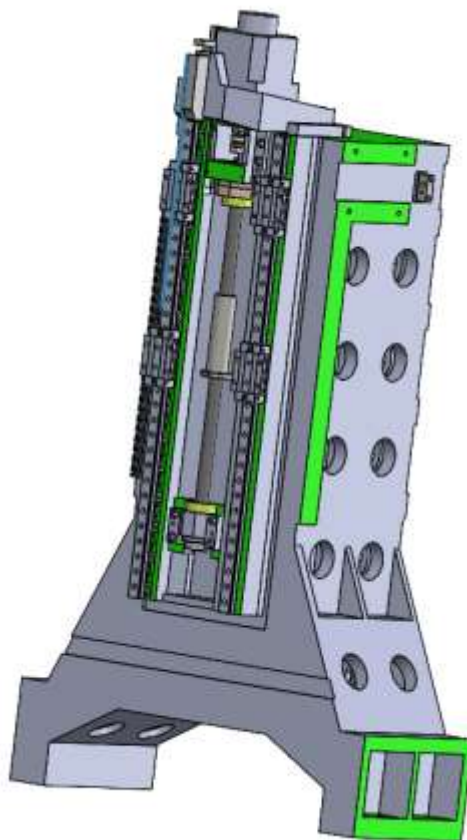
Rational Structural Design

Z Axis- Spindle Headstock Mounted on Column
Spindle Headstock Movement Fully Supported by Column

Rotary Table Height from Ground ≈ 1115 mm, Facilitating Workpiece Workholding with Ergonomic Operation.

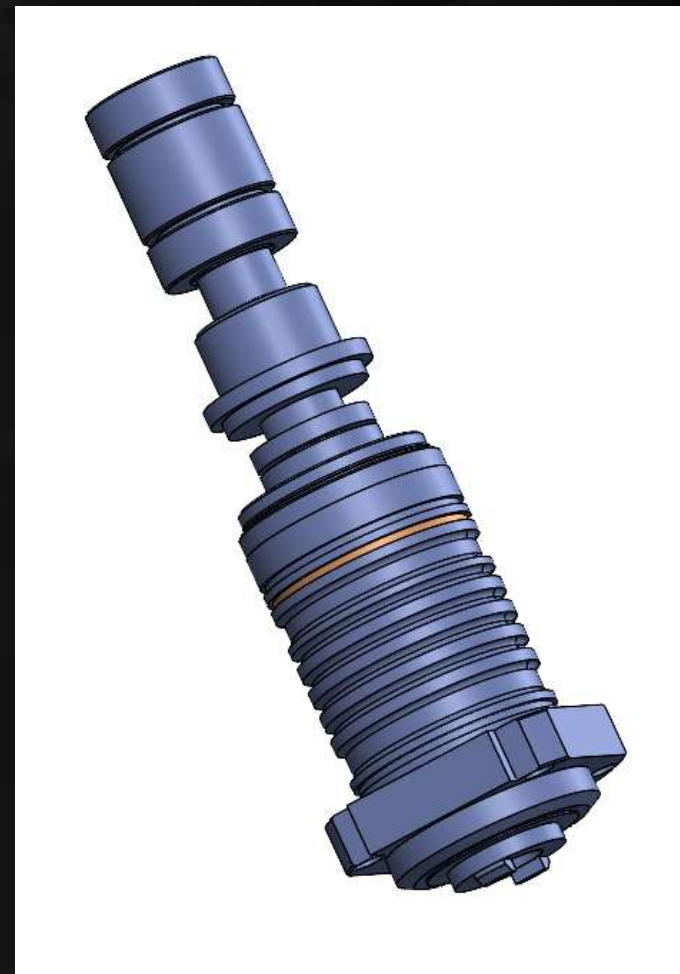
The Three-Axis Guideway of the Machine Tool Utilizes Roller Guideways, Offering High Rigidity and Strong Seismic Resistance, Capable of Withstanding Greater Cutting Forces.

Symmetrical Mechanical Structure
Design Ensures Machining Stability;
Strict Mechanical Structure Design
Guarantees the Dynamic Accuracy of the
Machine Tool, Promoting Efficient Mold
Production While Ensuring Quality.



The machine tool employs a mechanical direct-drive spindle.

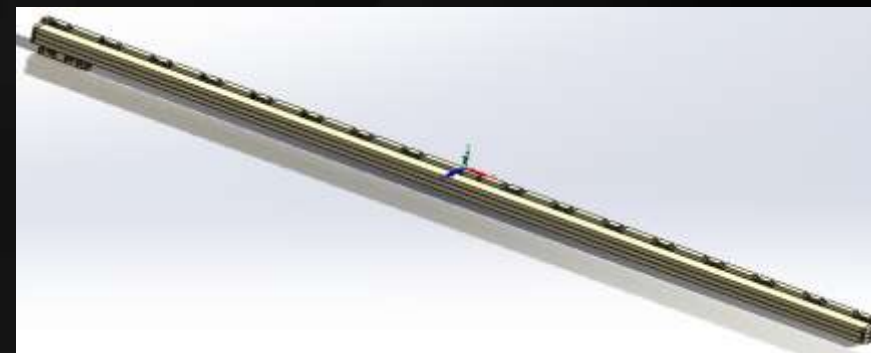
1. The Mechanical Direct-Drive Spindle is driven through a coupling, featuring a relatively simple structure with lower manufacturing and maintenance costs, making it suitable for cost-sensitive applications.
2. Designed for heavy cutting and large stock removal, it can withstand high torque to ensure stable power transmission during machining, making it suitable for large, heavy machine tools or applications with high torque demands.
3. The externally mounted motor facilitates heat dissipation and can effectively control temperature rise via circulating oil or water cooling systems, preventing accuracy loss or component damage due to overheating.



System Control

Equipped with a high-performance new generation system, ensuring the stability of machine tool control, and guaranteeing the CNC machining functions and auxiliary functions required by users.

Three linear shafts are standardly equipped with Yuheng linear scales to realize full closed-loop control, significantly enhancing the performance of the machine tool.



Optimization of Machining Quality:

Full closed-loop control can effectively compensate for various errors in the machine tool drive chain, such as lead screw pitch error, enabling the machine tool to more accurately follow the command trajectory during machining, reducing machining errors, and improving the dimensional accuracy and surface quality of machined parts.

Spindle oil cooler

Reduce spindle thermal deformation.
Enhance machining accuracy.



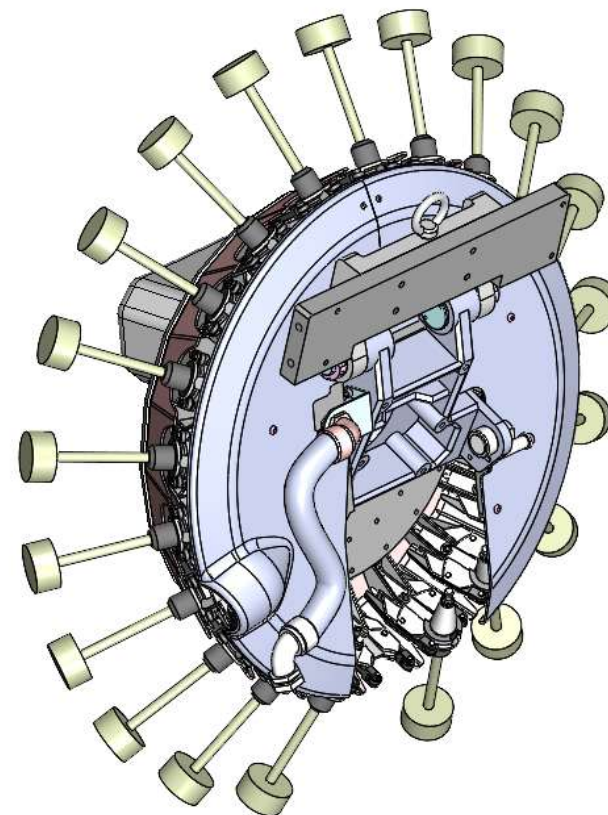
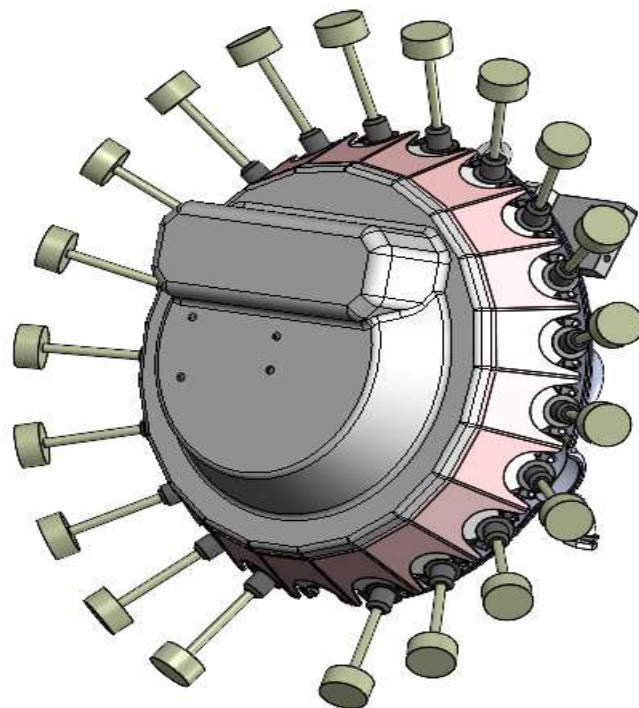
Standard Configuration 21T Carousel-type tool magazine

Fast and reliable tool changer mechanism.

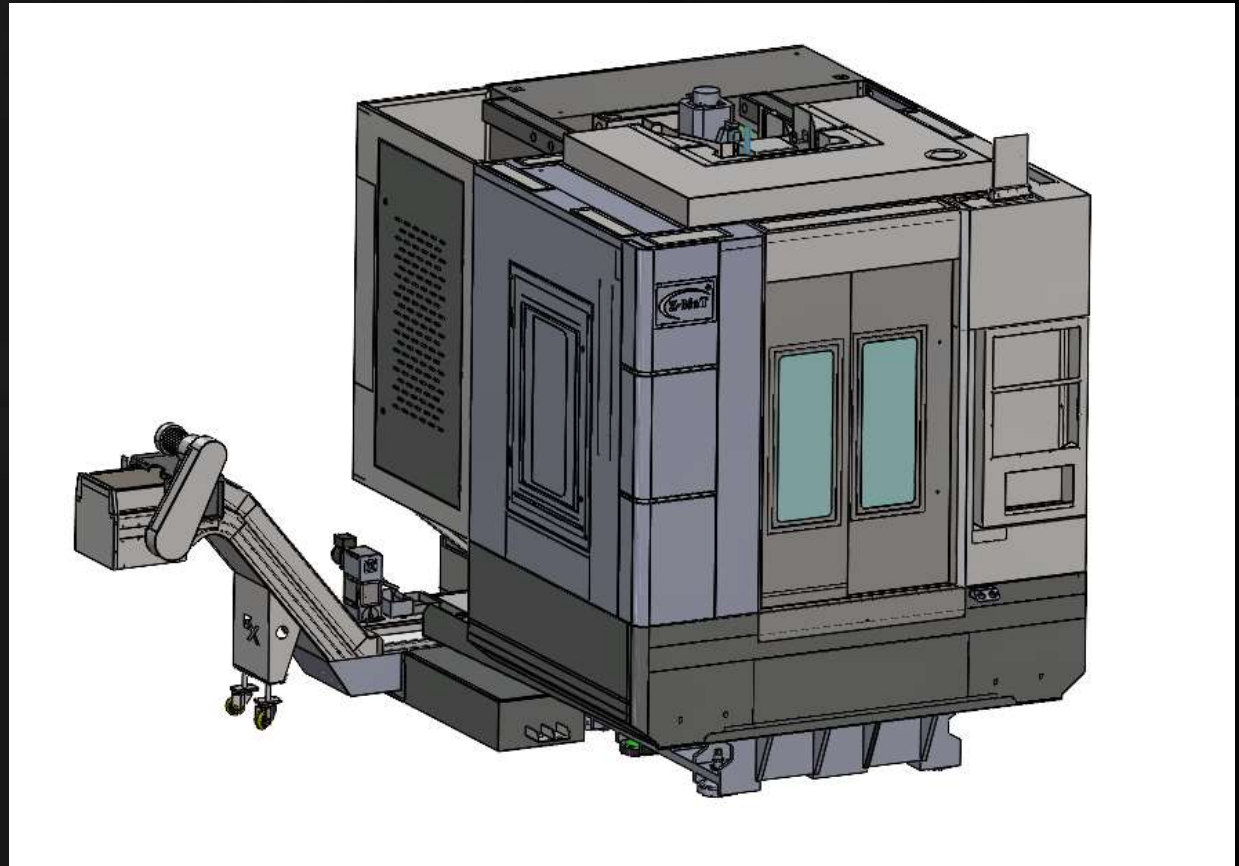
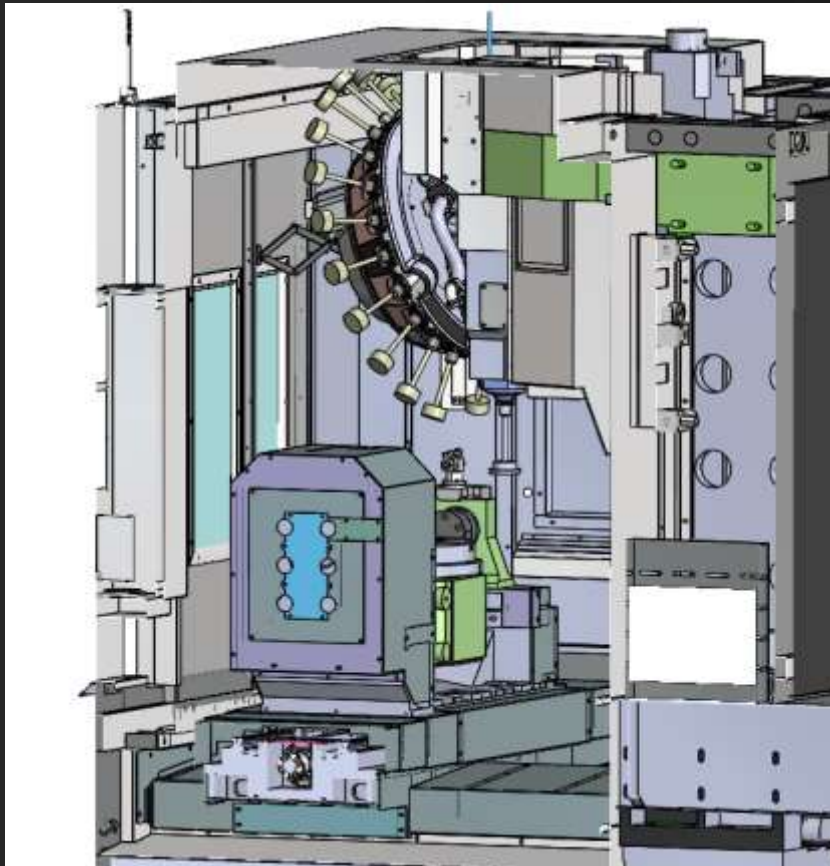
Fast tool change speed with excellent structural stability.

High reliability for prolonged continuous tool changes.

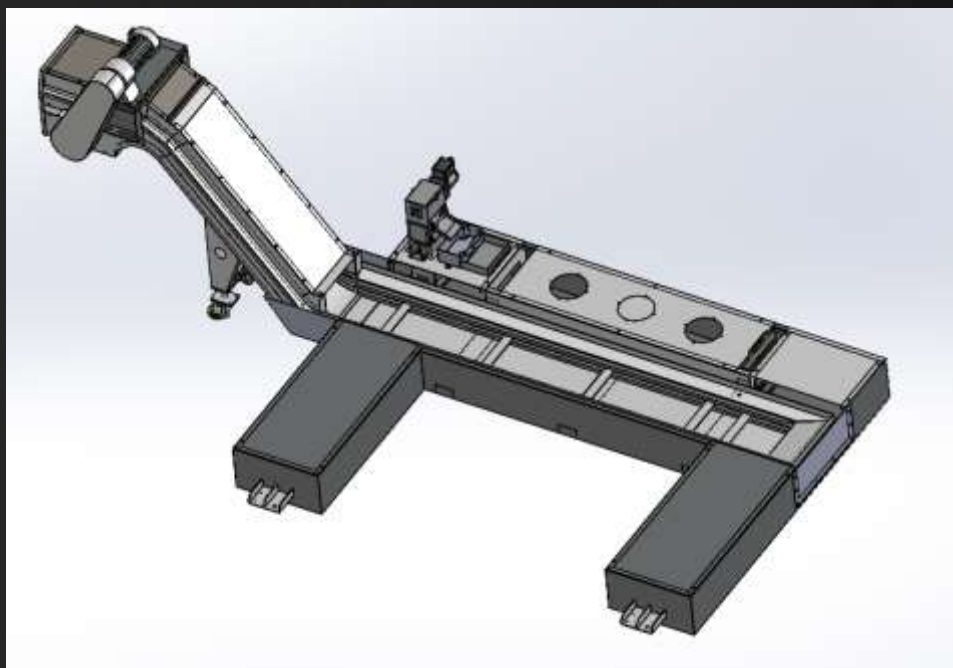
Reduce tool change time and improve machining efficiency.



The sliding door utilizes a scissor-type sliding mechanism-- Machine Tool This design saves floor space.

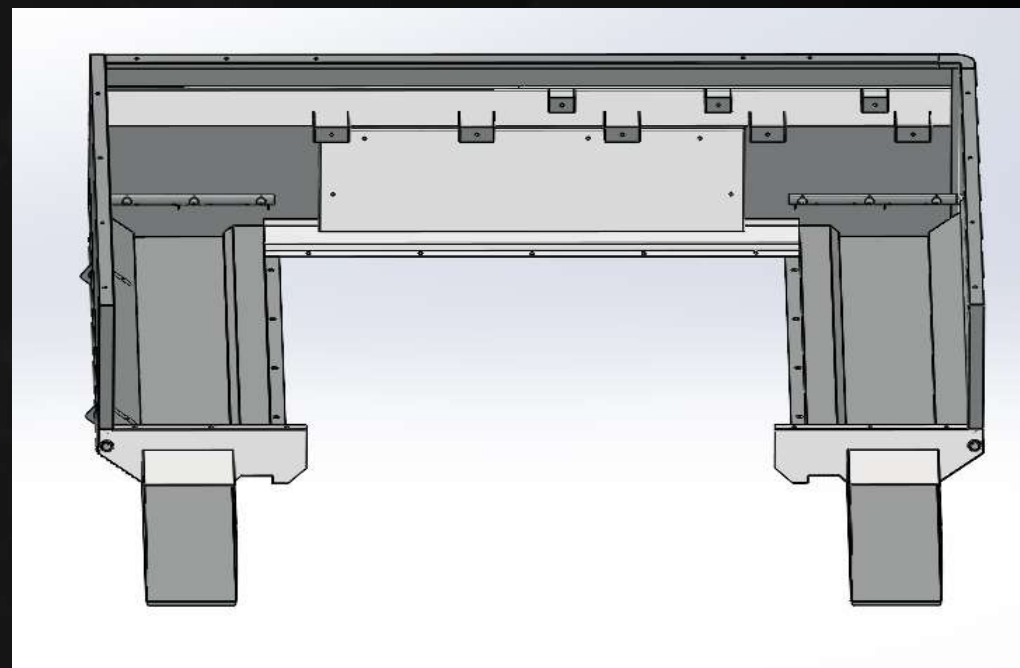


Convenient iron chip collection and reliable chip evacuation.



Chassis welded for chip evacuation;
Coolant forms a circulation system;

Powerful chip evacuation capability;
Automatic chip recovery



High-flow chip flushing.

Equipped with a high-flow chip flushing system, the machine tool ensures smooth and rapid chip evacuation. Reduce heat conduction to the bed, minimizing bed thermal deformation to the greatest extent.

Optional

Coolant Through Spindle function;
Coolant outlet pressure
options of 2MPa, 3MPa,
5MPa and 7MPa.

Heidenhain linear scale



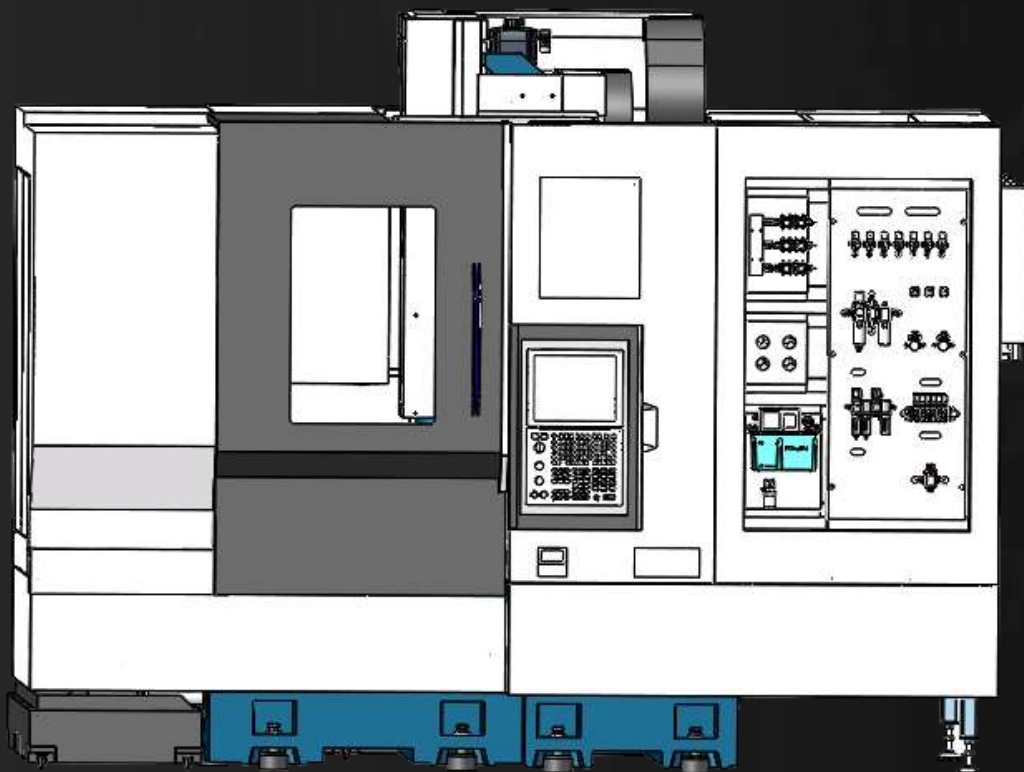
Probe, tool setter

Improved machining accuracy and
level of automation

Extended column

Suitable for machining
taller workpieces





UP400

Vertical Five-Axis Machining Center

Processing of Medium and Small Complex Components

1. Large span with low center of gravity+ overall beam and column, uniform precision, long-term stability without forward tilt
2. P2 Grade Rotary Table+ Hydraulic Balance, DD Direct Drive with No Stalling
3. Double Helix+ Chain Plate Combination, 24h Continuous Machining without Interruption
4. Worktable/ Dual Spindle Optional, Spacious Layout with Minimal Interference
5. Six-Slider Linear Guide+ Full Grating, High-Speed Spindle with Maximum Efficiency
6. Compact Structure, Enhanced Accuracy Control

UP400 Vertical Five-Axis Machining Center

Portal-Type Structure

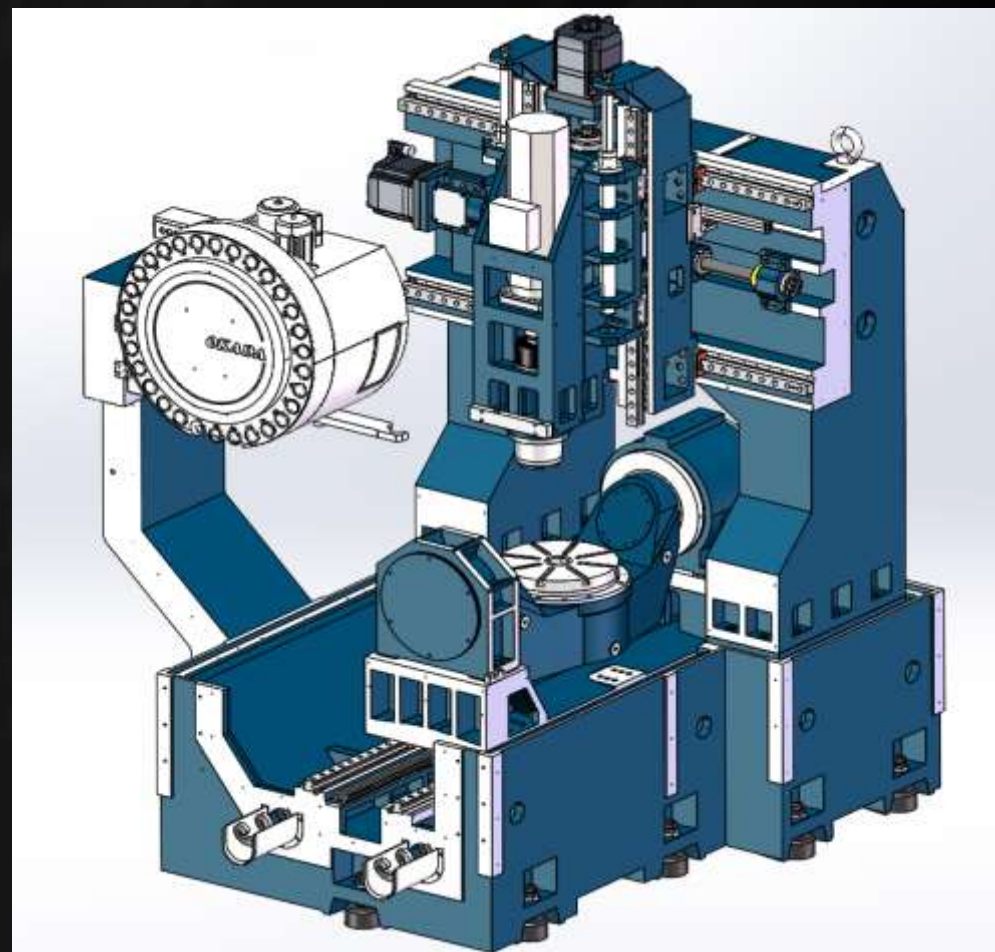
X Axis: Rotary Table Moves Longitudinally on the Machine Tool Base;

Y axis: The ram moves laterally on the crossbeam.

Z axis: The spindle head moves vertically up and down on the ram.

A axis: The tilt axis rotates around the X axis by $\pm 115^\circ$.

C axis: The rotary axis freely rotates 360° around the Z axis.



The machine tool base adopts a large span and low center of gravity design, ensuring the AC five-axis rotary table operates more stably and with enhanced convenience.

The interior of the base features a steep contour and is equipped with dual helical chip evacuators and 1 external chain plate chip evacuator, preventing chip accumulation during extended continuous operation.

The machine tool features an integrated dual-column and crossbeam structure, with a Y axis guide rail pitch of 710mm on the crossbeam, ensuring uniform machining accuracy of the spindle at any position within the Z axis stroke.

The column front-to-back width is 705mm, providing ample rigidity to ensure long-term machine tool operation without concerns of Z axis forward tilt.

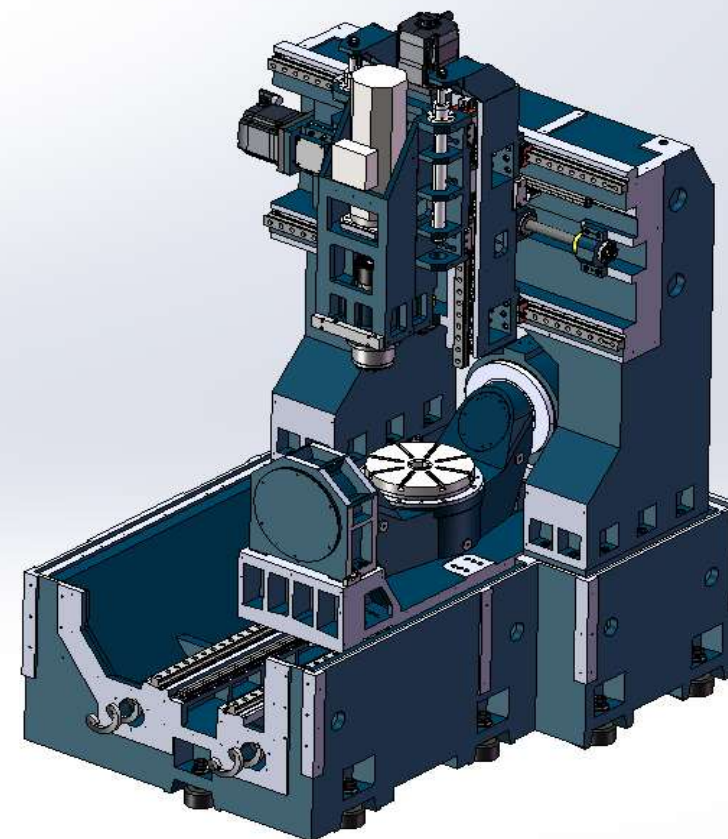
The Z-axis features six double-direction sliders with an enlarged pitch design, and the spindle headstock is equipped with hydraulic balancing devices on both sides to ensure smoother and more precise vertical spindle movement.

The spindle headstock supports both Ø150 mechanical spindle and electric spindle configurations.

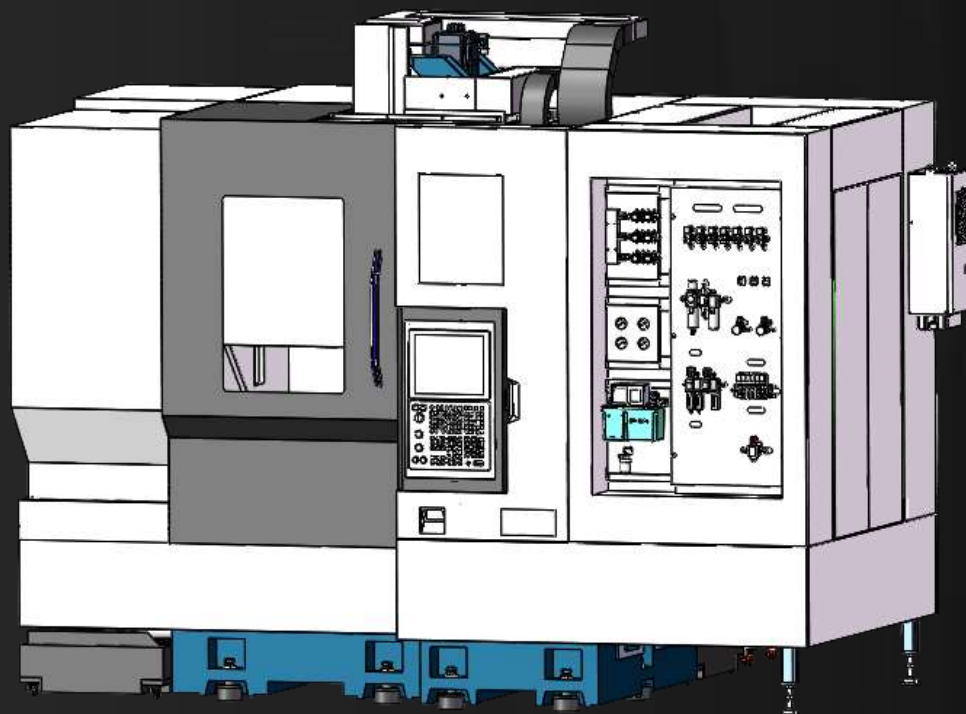
Cradle-type AC five-axis rotary table, standard configuration includes a Ø400 worktable, with an optional Ø630 worktable available upon request, providing a maximum machining range of Ø600×480.

The rotary table A-axis main end and tail end support seats are fitted with larger-sized P2-grade precision roller bearings, ensuring enhanced accuracy and load capacity of the rotary table.

The machine tool features a spacious interior, combined with a streamlined spindle front end and a simple yet robust rotary table, which reduces interference during the machining of complex structural parts and enables smoother tool paths.



UP400 Vertical Five-Axis Machining Center



Standard Configuration	Optional Configuration
Fully Enclosed Sheet Metal Cover	Air Purifier TM-28
X/Y/Z Three-Axis Yuheng Direct-Reading Scale	Heidenhain Direct-Reading Scale
A/C Axis National Measuring Circular Scale	Heidenhain Circular Scale
HSK A63-150 Electric Spindle 0-20000 rpm	BBT40-150 Mechanical Spindle 0-12000 rpm
30T Disc-Type Tool Magazine	24T Disc-Type Tool Magazine
DD Direct Drive AC Five-Axis Rotary Table	Spindle central coolant outlet
Bagchi Automatic Lubrication System	Wireless Probe OMP60
Double-Helix and Single Chain-Plate Chip Evacuator	Workpiece Spraying System
Hydraulic System	External High-Pressure Flushing Water Gun
Pneumatic System	Collision Protection Machine Retraction
Z-Axis Balance Cylinder	Five-Axis Tool Presetter TS27R
Work Light	Laser Tool Setter
Variable Frequency Water Cooler	
Siemens Five-Axis System ONE	Central China HNC848Di CNC System, 17 inch Display



UB500

Vertical Five-Axis Machining Center

Machining of Large Heavy Parts

- Rapid Dynamic Response (Spindle Movement Instead of Worktable)
- High Load Capacity (Suitable for Large Heavy Molds and Energy Structural Parts)
- Smooth Chip Evacuation (Spacious Worktable Area)

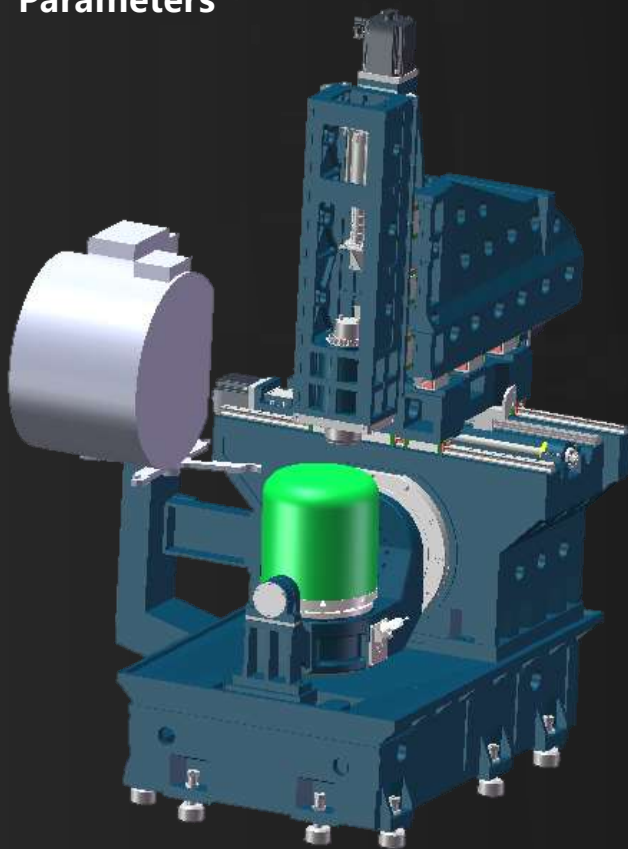
UB500 Vertical Five-Axis Machining Center Ram-Type Structure

The equipment is a high-end CNC machine tool based on the core concept of 'independent movement of the spindle in three-dimensional space, with the five-axis rotary table fixed on the bed.'

The motion structure is as follows: the first-layer slide moves left and right along the bed as the X axis; the second-layer slide moves forward and backward along the first-layer slide as the Y axis; the spindle headstock moves vertically up and down as the Z axis; the tilt axis of the five-axis rotary table rotates around the Y axis as the B axis; the rotary axis of the five-axis rotary table rotates around the Z axis as the C axis.

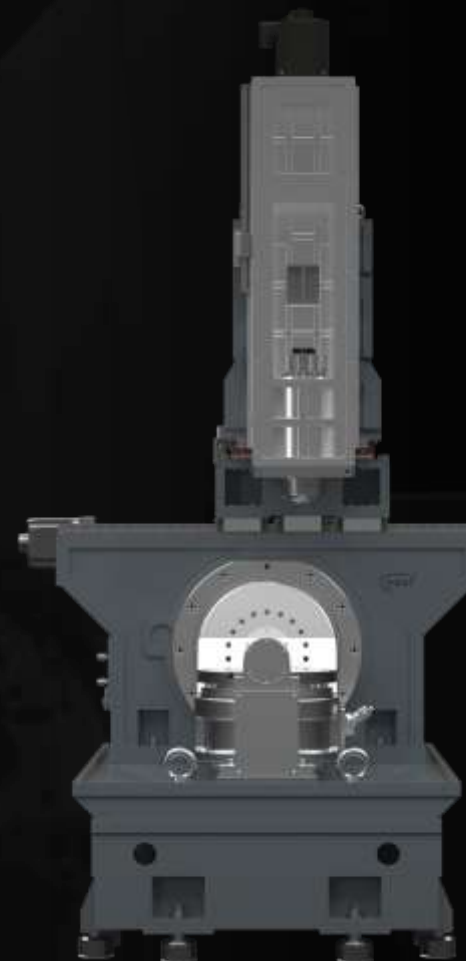


Technical Parameters



Item	Unit	U500
Stroke X/Y/Z	mm	700/500/500
B Axis rotational range	°	±115
C axis rotation range	°	360
Distance from spindle nose to worktable surface	mm	120-620
Worktable dimensions	mm	Φ500
X/Y/Z axis rapid traverse speed	mm/min	48
B/C axes rapid rotational speed	r/min	100/100
X/Y/Z/B/C axis motor power	kW	5.2/4.3/4.3/8.82/4.7
B axis motor torque (S1/S6)	Nm	1200/1900
C axis motor torque (S1/S6)	Nm	560/780
Spindle motor power	kW	35/52.5
Spindle motor torque (S1/S6)	Nm	60.8/90.2
Spindle Speed	r/min	18000
Tool holder specification	/	HSK A63
Tool magazine structure	/	Disc-Type Tool Magazine
Tool magazine capacity	pcs	30
Maximum tool weight	KG	8
Maximum tool length	mm	300
Maximum diameter (full tool/ empty adjacent slot)	mm	φ75/φ120
Machine tool overall dimensions (length × width × height)	mm	2570x4041x3546
Machine Weight (Approximate)	KG	11500

Standard Configuration	Optional Configuration
Fully Enclosed Sheet Metal Cover	Air Purifier TM-28
X/Y/Z Three-Axis Yuheng Direct-Reading Scale	Heidenhain Direct-Reading Scale
A/C Axis National Measuring Circular Scale	Heidenhain Circular Scale
HSK A63-190 Electric Spindle 0-18000 rpm	HSK A63-150 Electric Spindle 0-20000 rpm
30T Disc-Type Tool Magazine	24T Disc-Type Tool Magazine
DD Direct Drive BC Five-axis Rotary Table	40T Chain-type Tool Magazine
BIJUR Automatic Lubrication System	Spindle central coolant outlet
Chain Plate Chip Evacuation	External High-Pressure Flushing Water Gun
Hydraulic System	Wireless Probe OMP60
Pneumatic System	Workpiece Spraying System
Oil-Water Separator	Collision Protection Machine Retraction
Work Light	Five-Axis Tool Presetter TS27R
Variable Frequency Water Cooler	
Siemens Five-Axis System ONE	Huazhong HNC848Di CNC System, 17 inch Display



Core Features of Machine Tool UB500

Unique Structure

The spindle moves independently along three axes; the five-axis rotary table is fixed; the worktable only rotates, supporting large heavy-duty workpieces with stable operation.

Smooth chip evacuation

Spacious worktable surroundings, direct chip evacuation path, high efficiency

Wide Applicability

Suitable for large heavy molds, aerospace/ new energy automotive structural components, and complex machining of impeller and blade disk parts.

High-end configuration

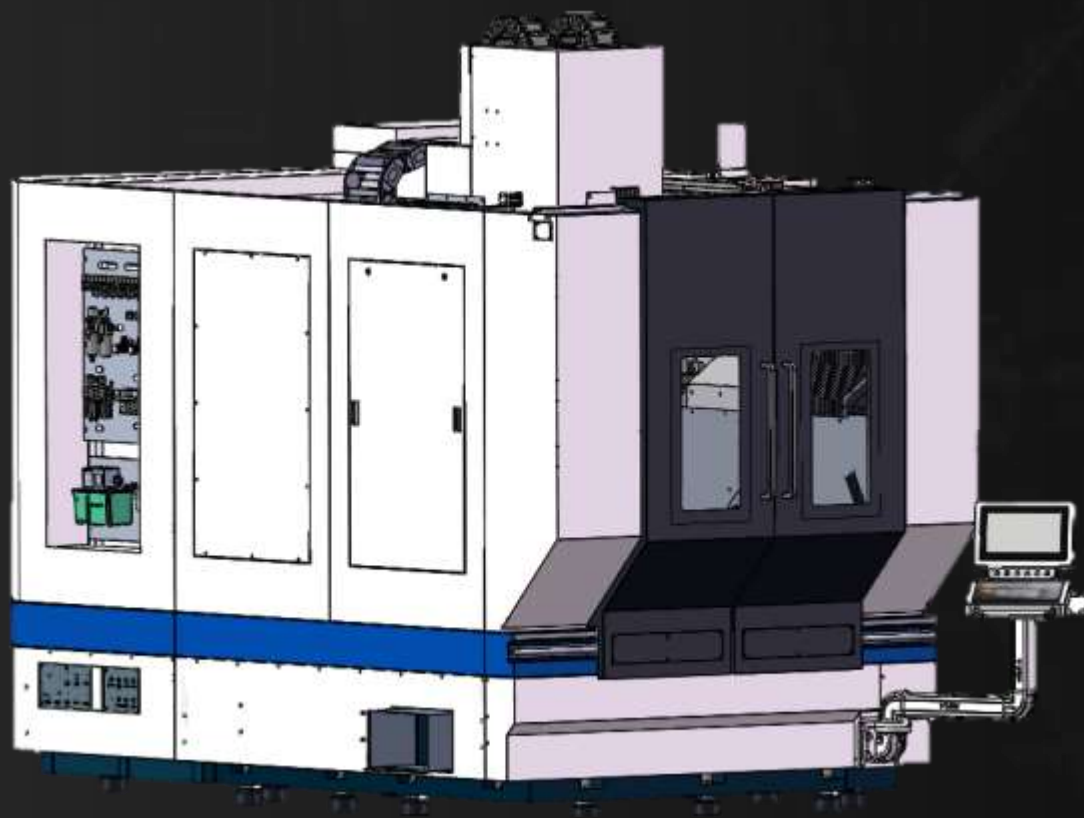
Three axes 45 roller gauge+6 slider, standard linear scale measurement, electric spindle 18000 rpm, 30 tool magazine, DD direct drive rotary table, fully enclosed cover

Excellent Dynamics

Lightweight moving spindle head with high acceleration and feed rates, providing fast response and high precision in surface machining.

Specification compatibility

Worktable $\varnothing 500$ mm, X/Y/Z stroke 700/500/500 mm, meeting the requirements for machining large workpieces



UA800

Vertical Five-Axis Machining Center

Heavy-Duty Precision Machining

Applicable fields:

Aerospace parts, impeller and blade disk, heavy precision components

Core configuration:

45 roller gauge+ full linear scale+ DD direct drive rotary table+ fully enclosed cover

Core Features of Machine Tool UA800

Bridge-type Portal Enhancing Foundation Strength

Utilizing the U630 proven structure, an ultra-high rigidity bed combined with a stable layout ensures enhanced machining accuracy.

Powerful Drive and Efficient Output

18000rpm High-Speed Electric Spindle, A Axis Dual 2110Nm and C Axis 1700Nm High Torque for More Aggressive Cutting

Extra-Large Stroke with Wide Coverage

Rotary Table Cradle X Axis Stroke of 1100mm, machining range up to $\varnothing$ 1000, enabling seamless processing of complex large workpieces.

Flexible Configuration and Customization on Demand

Standard Configuration: 32T HSK A63 Tool Holder; 40T, 60T, and 90T are Optional, Supporting Diverse Machining Requirements

High-Precision Configuration with Dual Safeguards

Three axes 45 roller gauge and six sliders, combined with Yuheng linear grating and Guoce circular grating, delivering uncompromised precision.

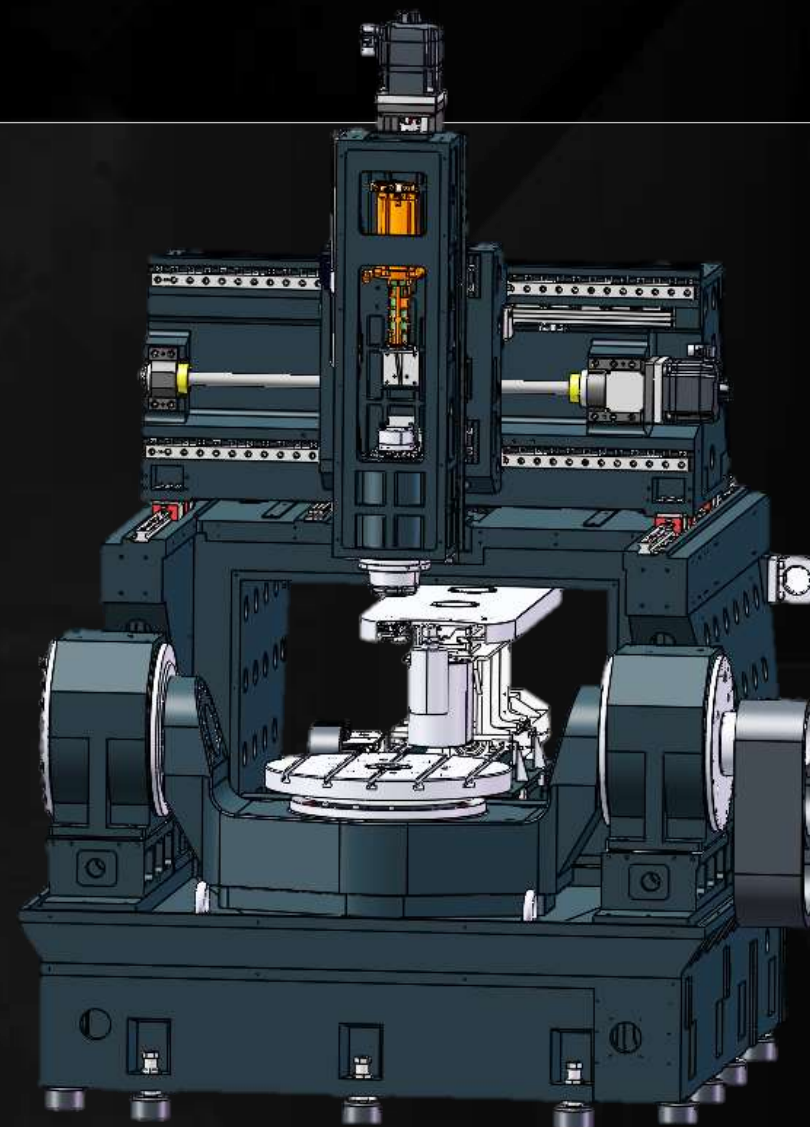
Fully Enclosed Protection for Enhanced Safety

Integrated Fully Enclosed Cover Design, Ensuring Operational Safety and Equipment Protection, Simplifying Maintenance

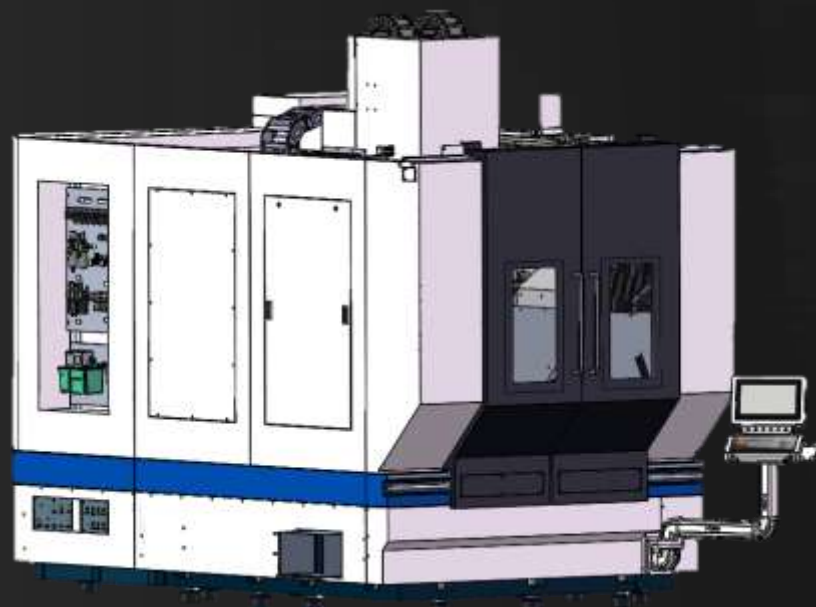
UA800

Vertical Five-Axis Machining Center

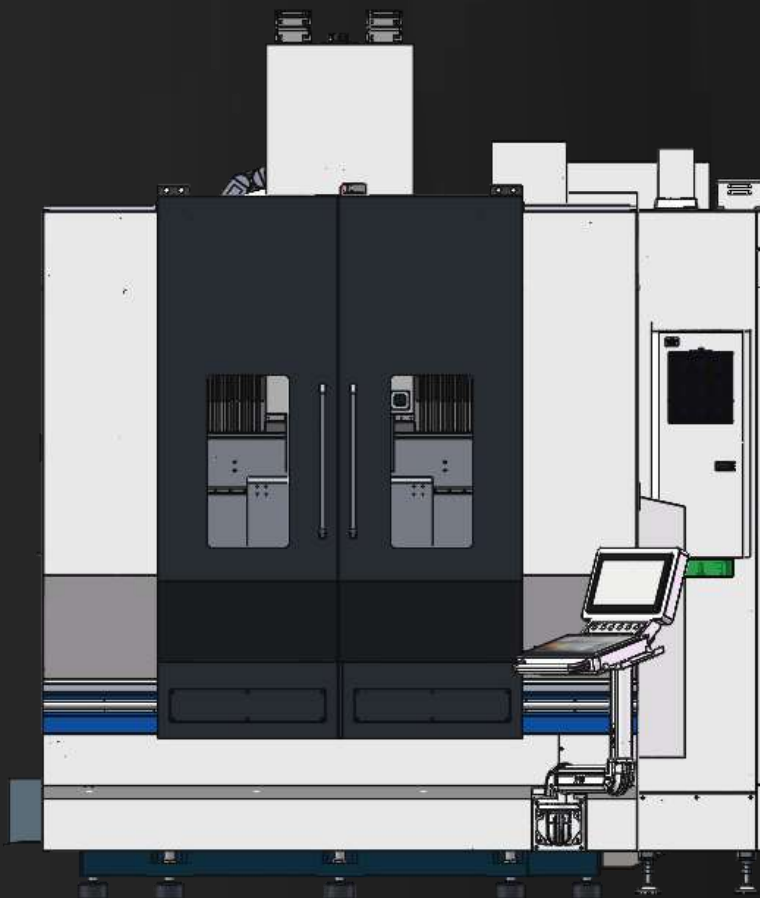
Based on a Mature Structure, with High-Precision Configuration as the Core, Powered by Strong Performance, Featuring a Wide Machining Range. Featuring flexible customization and fully enclosed protection design. Better aligned with industrial production requirements, it is the preferred equipment for high-precision machining.



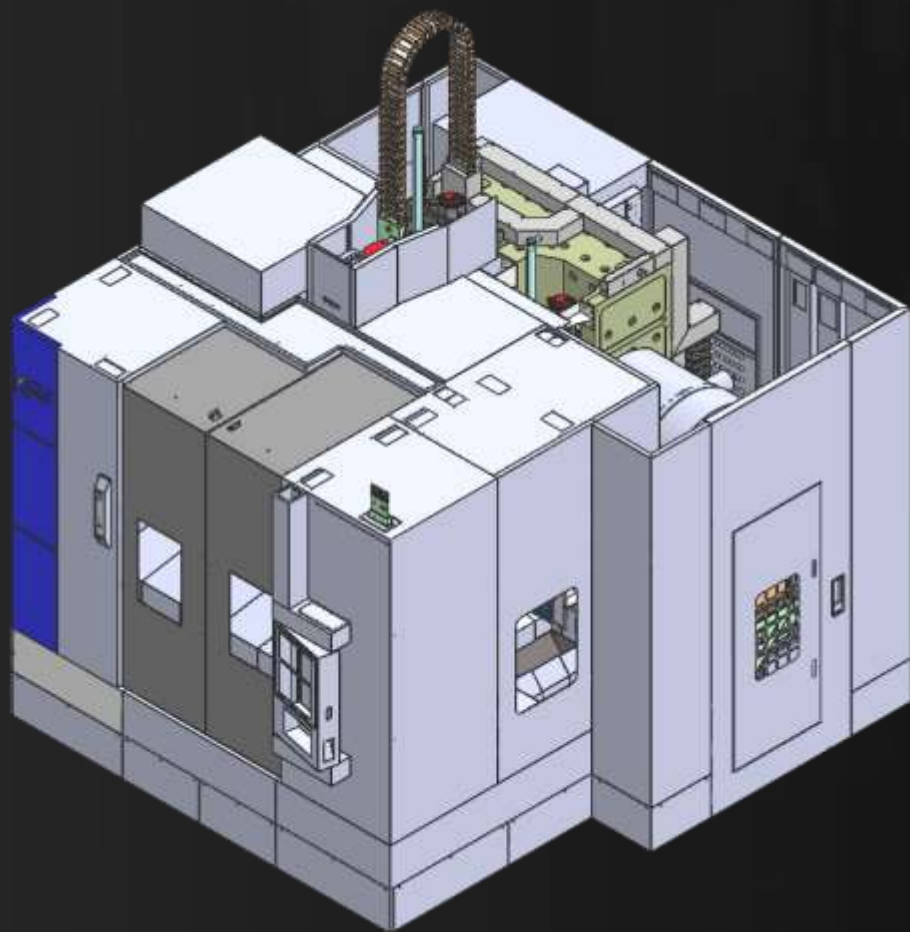
Technical Parameters



Item	Unit	UA800
Stroke X/Y/Z	mm	1000/970/600
A axis rotation range	°	±115
C axis rotation range	°	360
Distance from spindle nose to worktable surface	mm	120-720
Worktable dimensions	mm	Φ 8 00
X/Y/Z axis rapid traverse speed	mm/min	48
B/C axes rapid rotational speed	r/min	80/80
X/Y/Z/A*2/C axis motor power	kW	4.3/5.2/4.3/11*2/8.9
A axis motor torque (S1/S6)*2	Nm	2110/3500*2
C axis motor torque (S1/S6)*2	Nm	1700/2500
Spindle motor power	kW	35/52.5
Spindle motor torque (S1/S6)	Nm	60.8/90.2
Spindle Speed	r/min	18000
Tool holder specification	/	HSK A63
Tool magazine structure	/	Disc-Type Tool Magazine
Tool magazine capacity	pcs	32
Maximum tool weight	KG	8
Maximum tool length	mm	300
Maximum diameter (full tool/ empty adjacent slot)	mm	φ75/φ120
Machine tool overall dimensions (length × width × height)	mm	2936x4190x3800
Machine Weight (Approximate)	KG	18000



Standard Configuration	Optional Configuration
Fully Enclosed Sheet Metal Cover	Air Purifier TM-28
X/Y/Z three-axis Heidenhain linear scale	External High-Pressure Flushing Water Gun
A/C Axis National Measuring Circular Scale	Heidenhain Circular Scale
HSK A63-190 Electric Spindle 0-18000 rpm	Collision Protection Machine Retraction
32T straight tool magazine	40T tool magazine
DD Direct Drive BC Five-axis Rotary Table	60T tool magazine
BIJUR Automatic Lubrication System	90T tool magazine
Chain Plate Chip Evacuation	Spindle central coolant outlet
Hydraulic System	
Pneumatic System	Wireless Probe OMP60
Oil-Water Separator	
Work Light	
Five-Axis Tool Presetter TS27R	Laser Tool Setter
Variable Frequency Water Cooler	
Siemens Five-Axis System ONE	Huazhong HNC848Di CNC System, 17 inch Display



VMH630X

Five-face machining center

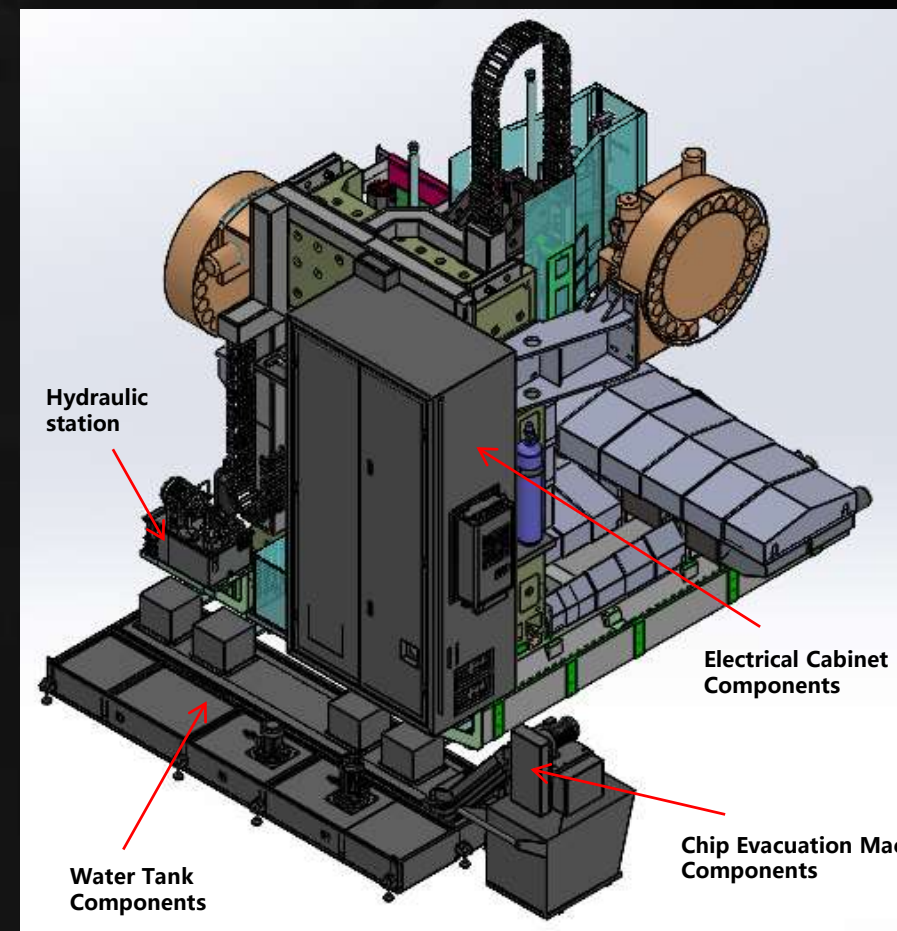
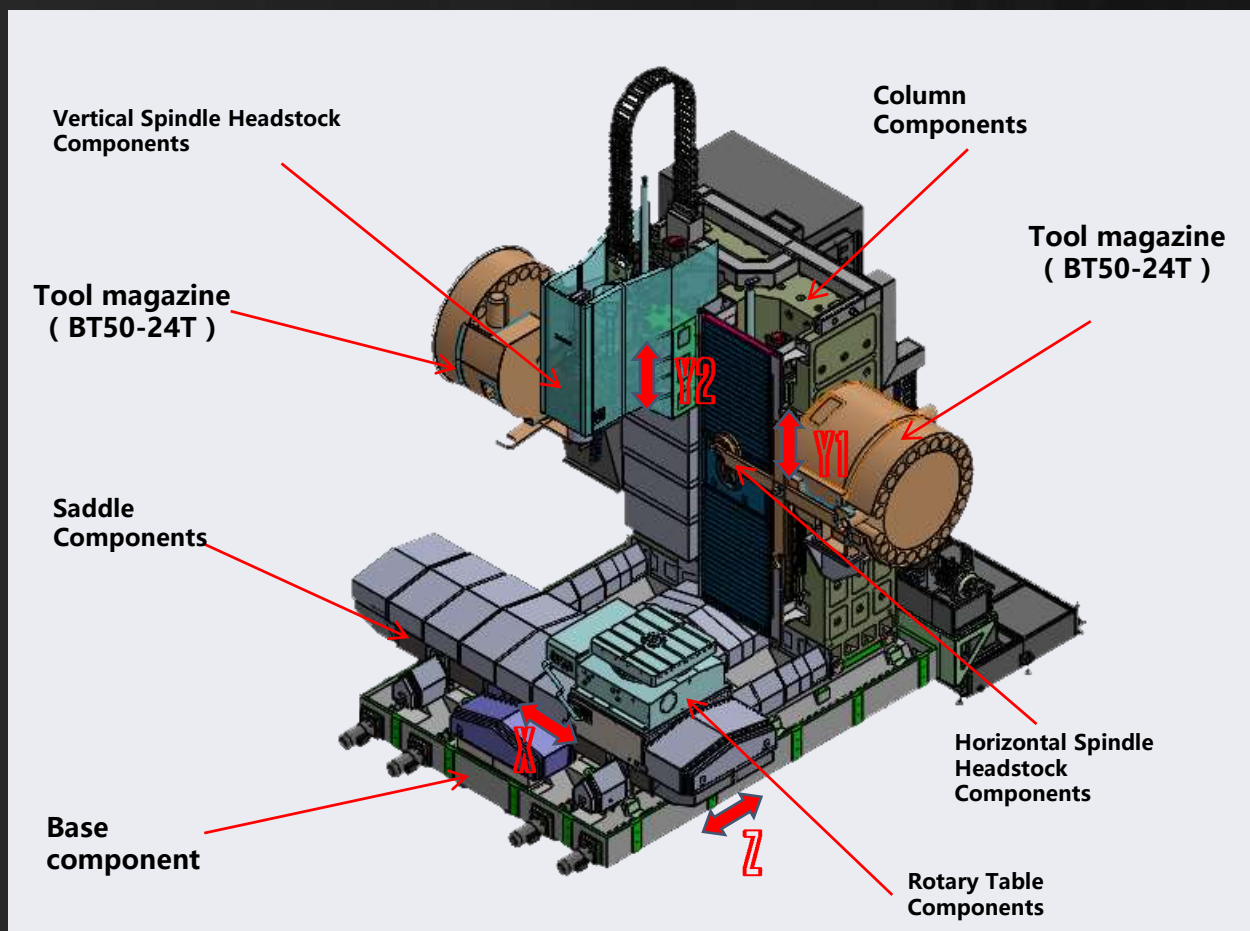
Fixed Column Type Cross Slide

Core feature: Single clamping to continuously complete machining on five faces of a workpiece

Applicable scenarios: small- and medium-batch production of multiple product variants

Machined Parts: High-Precision Rotary Components, Housing, and Casing-Type Parts (Rough and Finish Machining)

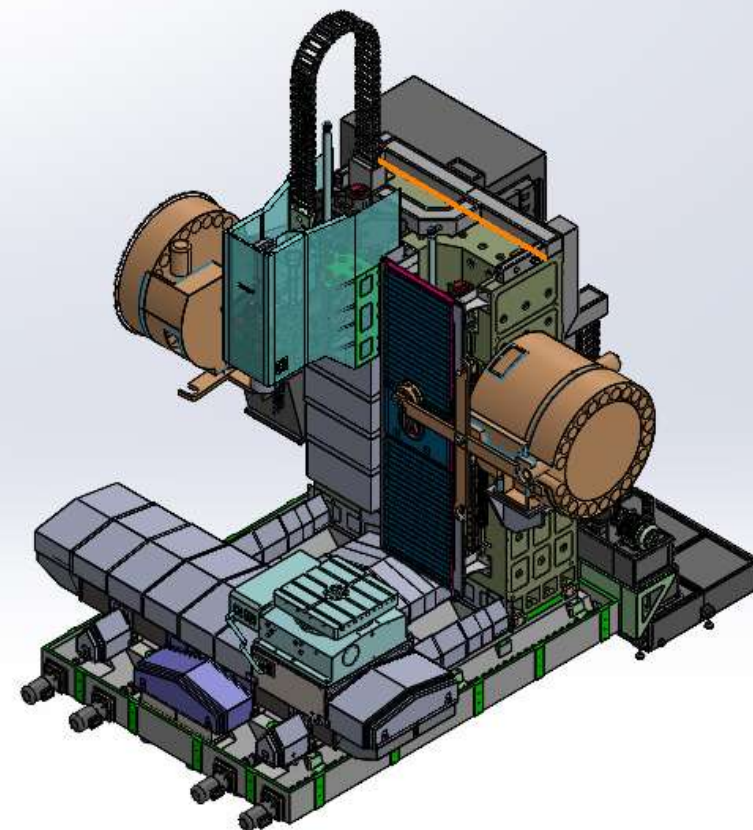
Compatible Materials: Aluminum Alloy, High-Strength Ductile Cast Iron, Mold Steel, and Other Alloy Structural Steels



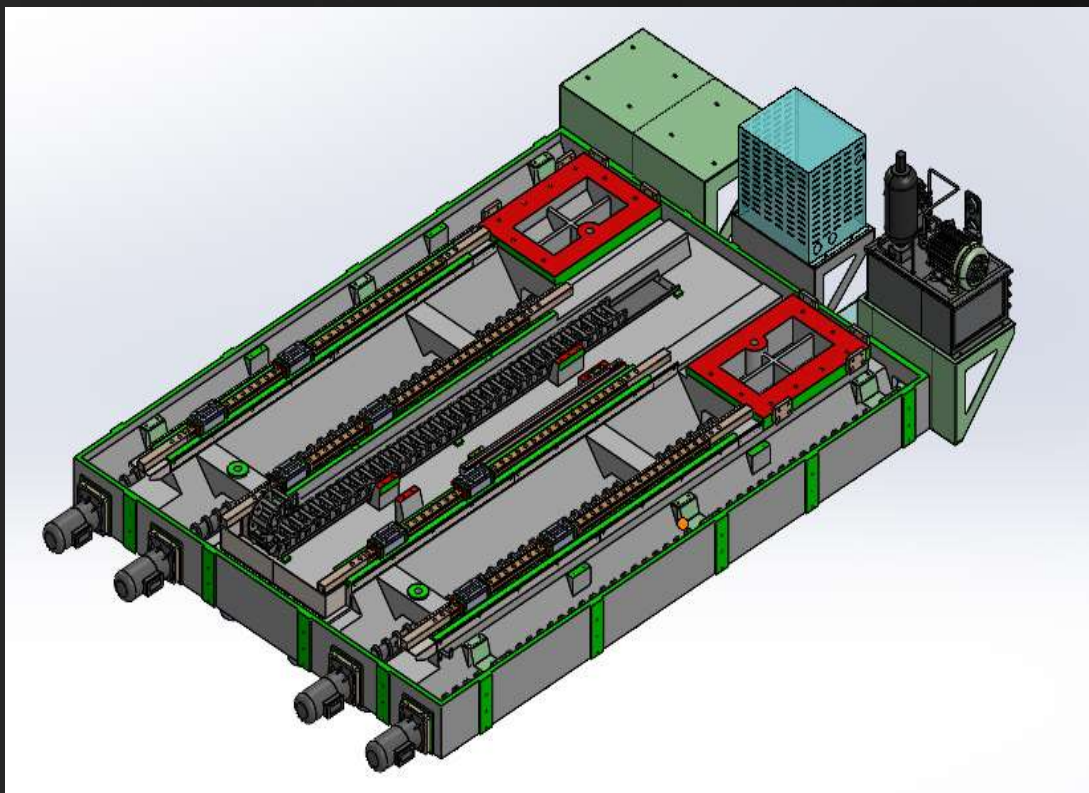
The VMH630X Five-Face Machining Center Machine Tool adopts a cross slide structural design, featuring an automatic tool changer, indexing rotary worktable, disk-type tool magazine unit, a CNC four-axis control system, and is a mechatronic integrated machine tool.

Multiple machining processes, including milling, drilling, boring, reaming, honing, and tapping, can be continuously completed on five faces of the workpiece within a single clamping, reducing clamping time and accelerating the machining cycle. This is suitable for the production of medium-to-large batch workpieces with diverse varieties. It is used for rough and finish machining of high-precision rotary components, housings, and casing-type parts. Capable of processing materials such as aluminum alloy, high-strength ductile cast iron, mold steel, and other alloy structural steels.

The machine tool features a reasonable structural design with sufficient static, dynamic, and thermal stiffness. Equipped with a comprehensive control system, reliable servo drive performance, fast response speed, and actuating elements with reasonable structure and high precision; the machine tool incorporates centralized lubrication and cooling systems. Furthermore, it is easy to use, operate, and maintain, featuring an aesthetically pleasing design and durable protection.

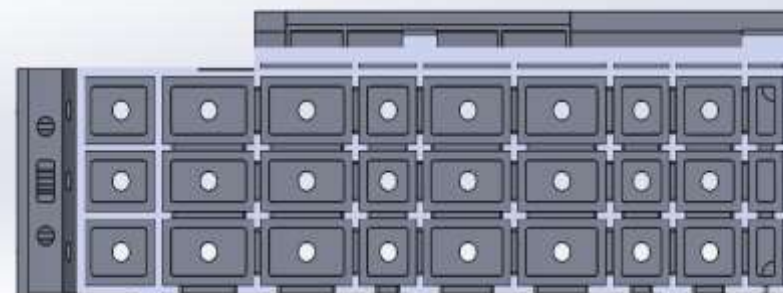
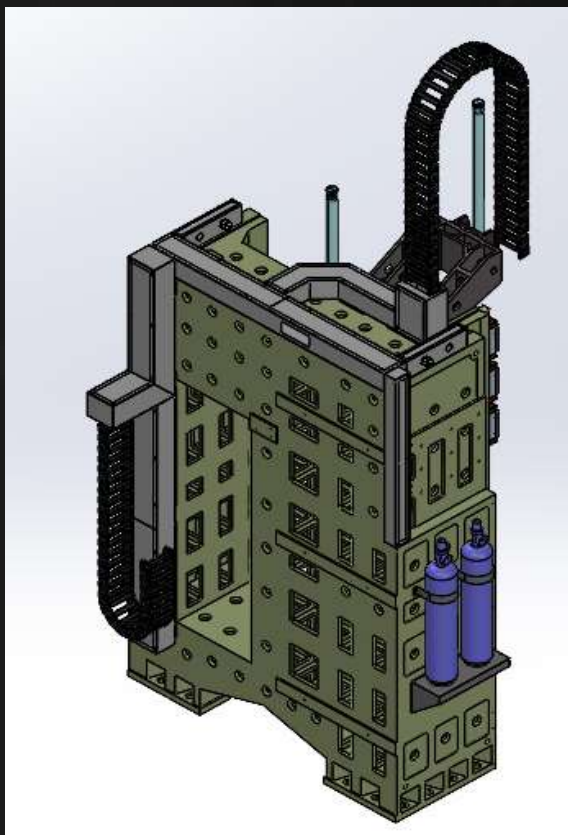
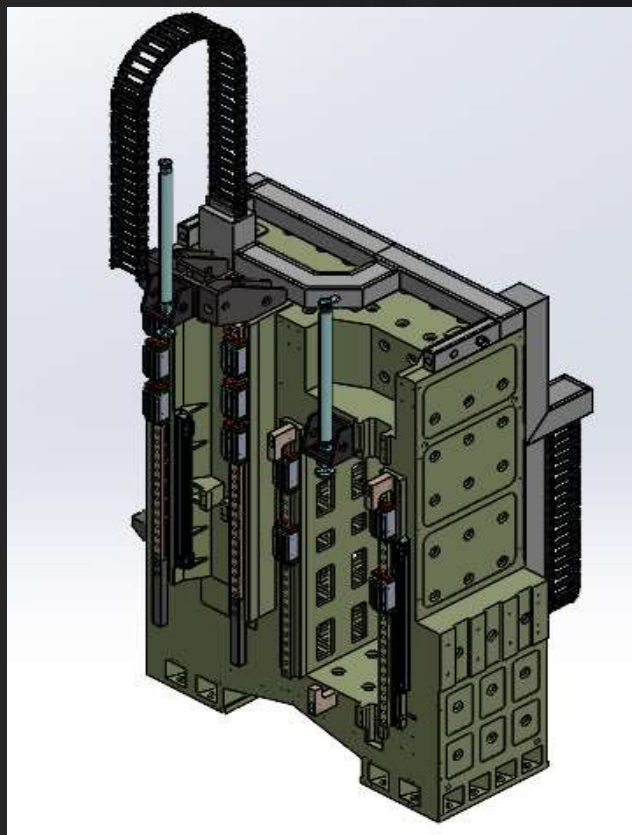


VMH630X (Base components)



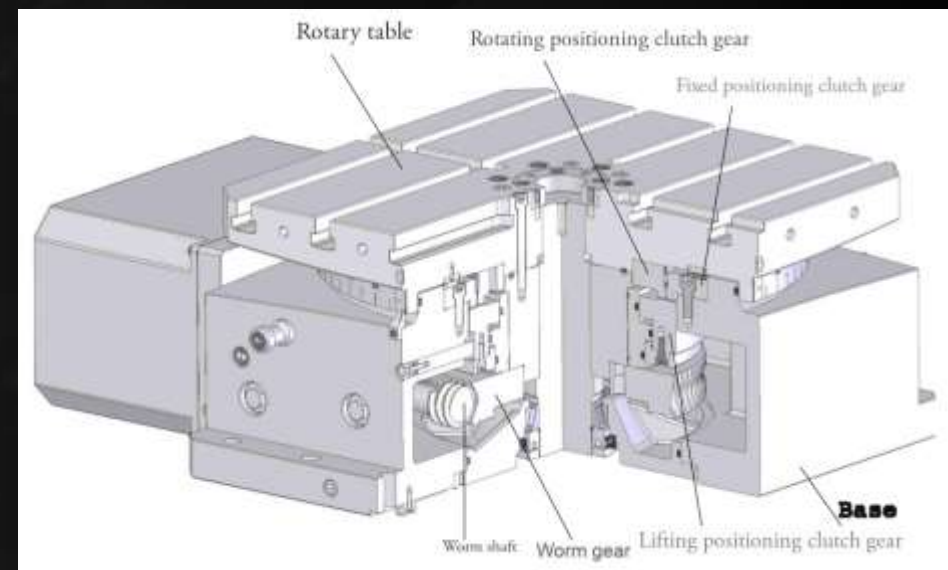
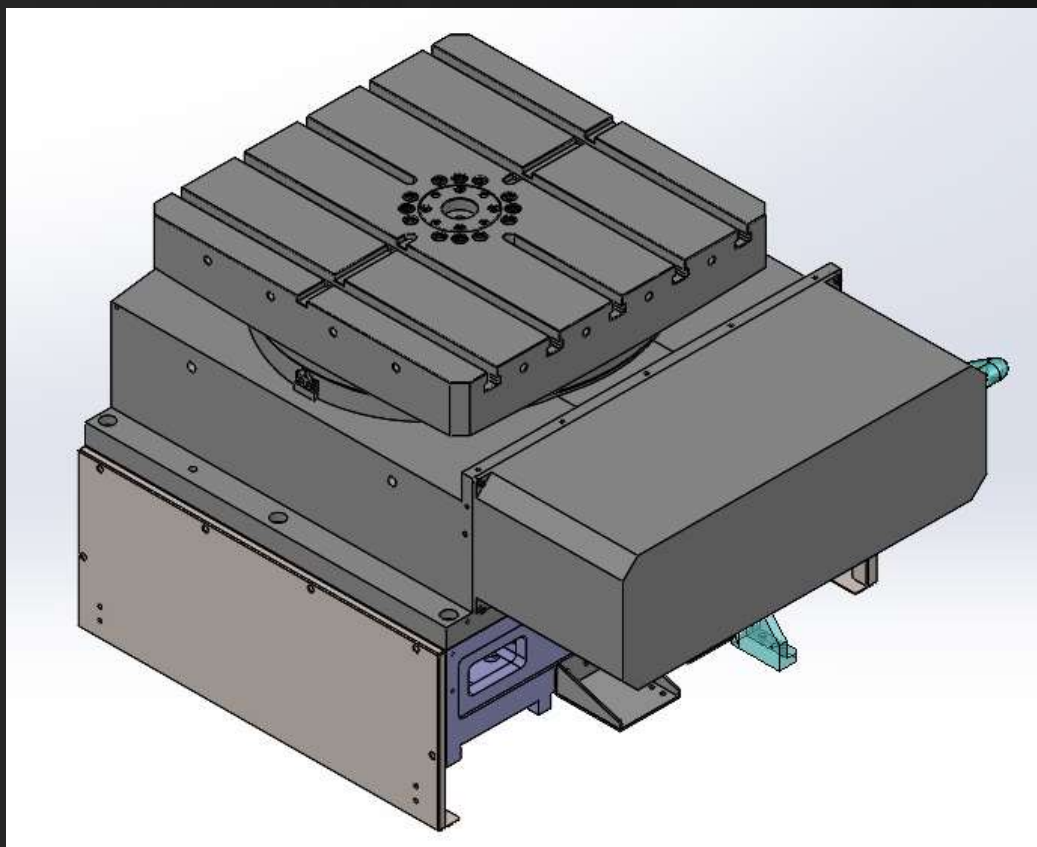
The base is designed to provide sufficient rigidity and strength, with a well-arranged internal stiffening rib layout. Shim installation positions are reserved directly beneath the corresponding stiffening ribs to enhance the machine tool's vibration damping, noise reduction, and machining accuracy. The rail span is large to ensure a rational overall internal wiring and oil circuit layout within the machine tool.

VMH630X (Column component)



The column span is large, offering high rigidity to maintain the precision of both vertical and horizontal spindle headstock movements. The internal stiffening rib layout is well-structured, delivering high torsional and bending rigidity and ensuring excellent thermal stability.

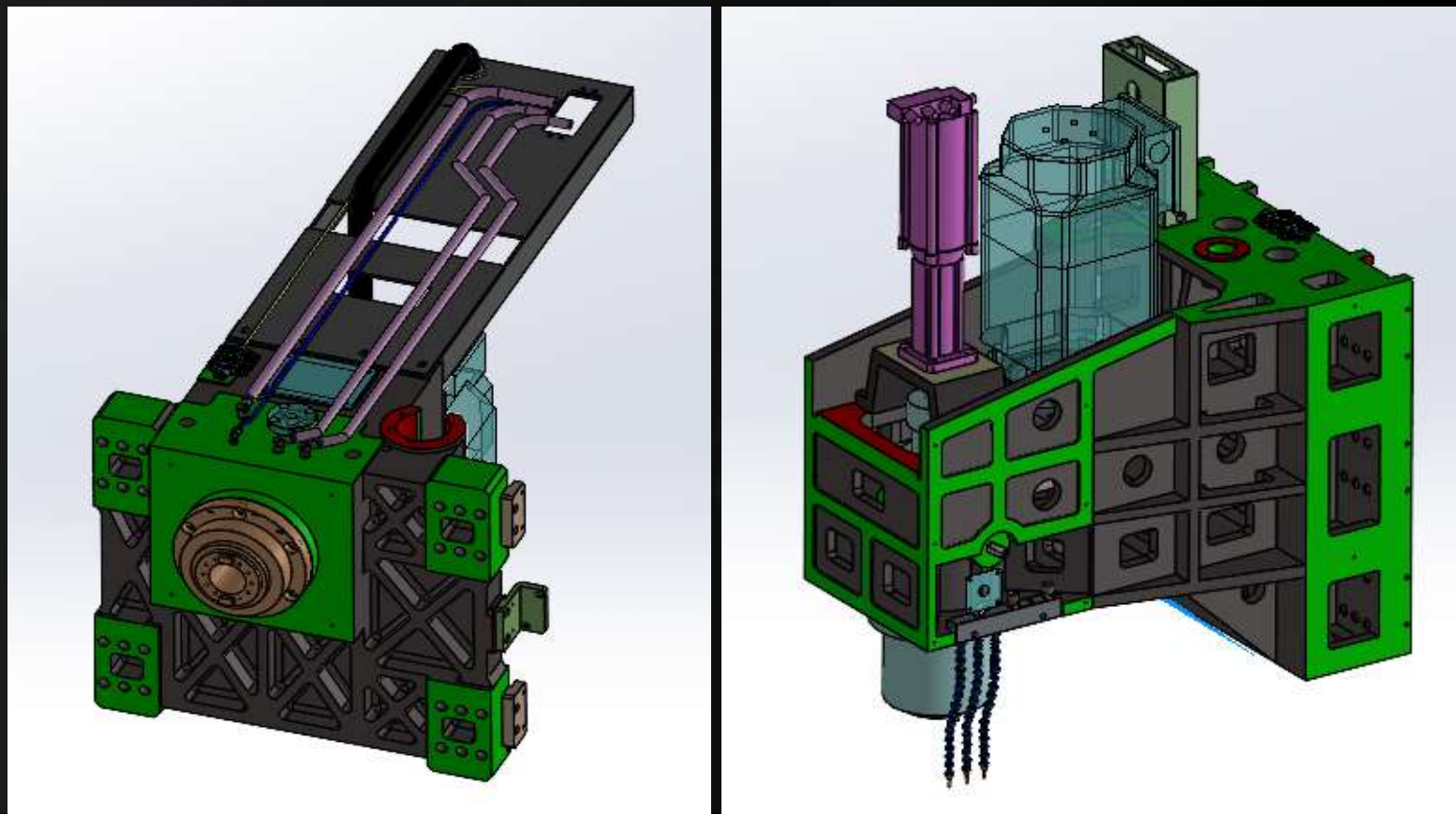
VMH630X (Rotary Table component)



This rotary table employs a three-piece gear structure; during angle indexing, the table surface does not move vertically. Utilizes a variable pitch worm wheel and worm set, providing precise transmission and easy backlash adjustment; it maintains high precision even after extended use. Possesses superior rigidity and clamping force, significantly enhancing performance during heavy cutting.

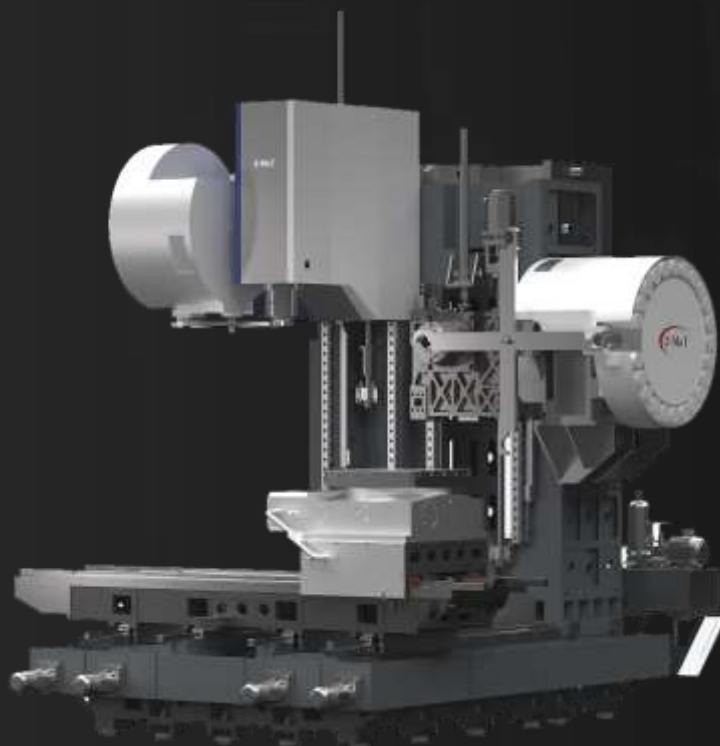
VMH630X (Spindle headstock component)

The spindle headstock is designed for heavy cutting applications, featuring an integral casting with internal cross ribs to enhance stability, reduce vibration during machining, and ensure high-precision machining. The rational layout of the lubrication system simultaneously reduces heat generation and wear, extends maintenance intervals, decreases downtime, and enhances machining efficiency.



VMH630X Five-face machining center

Single clamping with optimized precision and efficiency in five-face machining



Main Technical Parameters

Item	Unit	VMH630X
Worktable dimensions (Length × Width)	mm	630 × 630
T-slot (Number of slots- Slot width × Pitch)	mm	5-18 × 125
Worktable indexing	°	1 × 360
Maximum worktable load	Kg	2000
Spindle taper hole taper		BT50
Spindle motor power	kW	18.5
Maximum spindle speed	r/min	6000
Tool magazine		BT50-24T/BT50-24T
X-axis stroke	mm	1700
Y1-axis stroke	mm	700
Y2-axis stroke	mm	750
Z-axis stroke	mm	800
Distance from Y1 spindle centerline to worktable surface	mm	50 ~ 750
Distance from Y1 spindle end face to worktable center	mm	250 ~ 1050
Distance from Y2 spindle end face to worktable surface	mm	130 ~ 880
Three-axis rail		X/Z: RGW55HC (4 Slider) Y1: RGH55HA (4 Slider) Y2: RGH55HA (6 Slider) Z: RGH45HA (4 Rail+8 Slider)
Three-axis rapid traverse speed	m/min	24
Lead screw		X:φ50 × 10 Y1: φ50 × 10 Y2: φ50 × 10 Z:φ50 × 10

VMH630X Five-face machining center

Standard Configuration

1. System: FANUC-0I-MF (3 Package)
2. Spindle unit: BT50-190/BT50-190 (Standard spindle)
3. Tool magazine: BT50-24T/BT50-24T Disc-Type Tool Magazine
4. Rotary table: 630 × 630 (1 °) (Indexing turntable)
5. Balancing system: Y1 Y2 Bidirectionally balanced oil cylinders
6. Chip evacuation system: Four screw chip conveyors+ One chain plate chip conveyor

Optional configurations:

Linear scale (Heidenhain)
BT50-190 Medium spray spindle unit
630 × 630 (0.001 °) (CNC rotary table)

HM1250

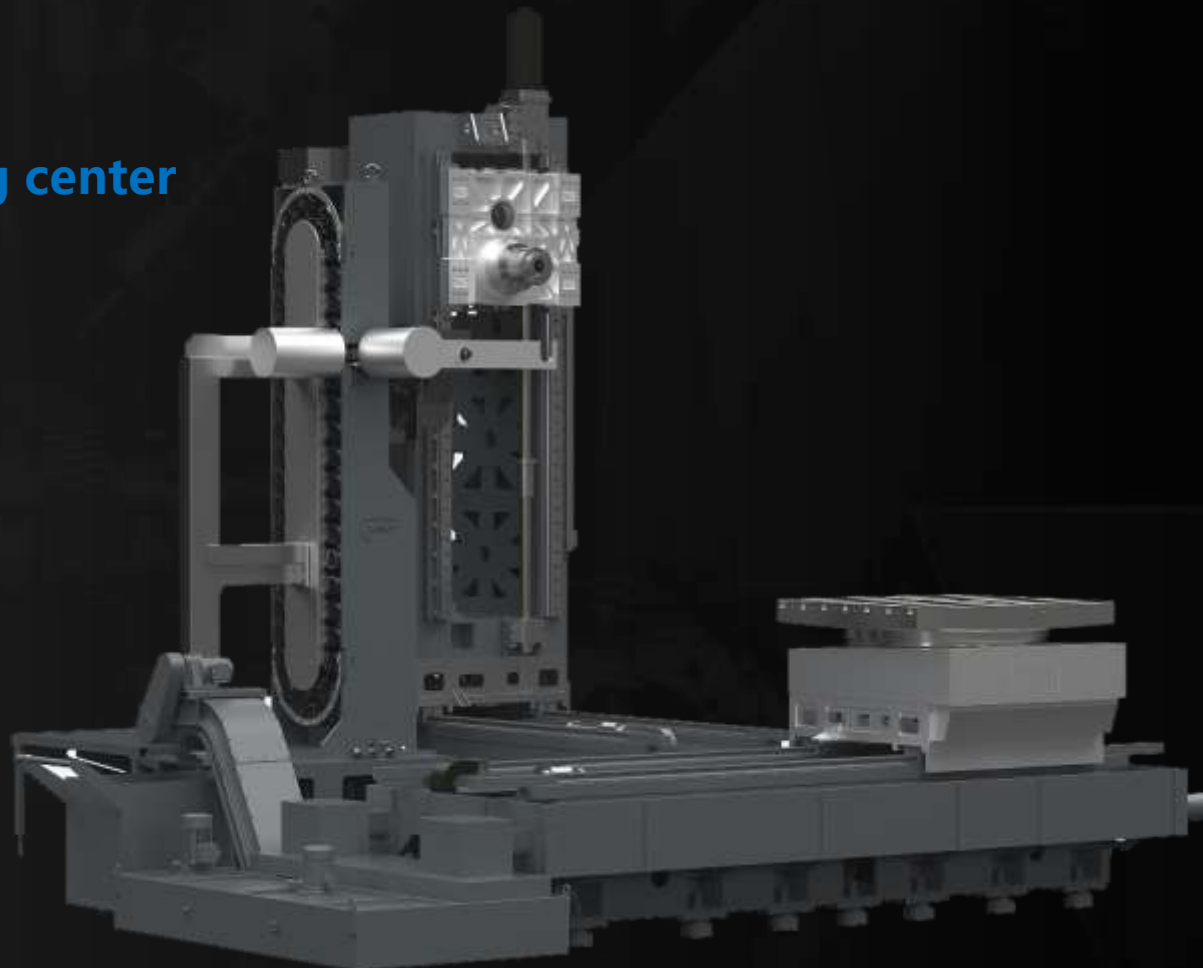
Inverted T-type Horizontal machining center

Large housing, heavy parts multi-process machining

Large stroke and high load capacity

High rigidity and advanced configuration

Designed for large, heavy workpiece batch precision machining



Structure and configuration

Inverted T-type structure, equipped with Automatic Tool Changer, Indexing rotary worktable, large-capacity tool magazine, and configured with a CNC four-axis control system; classified as a Mechatronic Integrated Machine Tool

Machining capacity

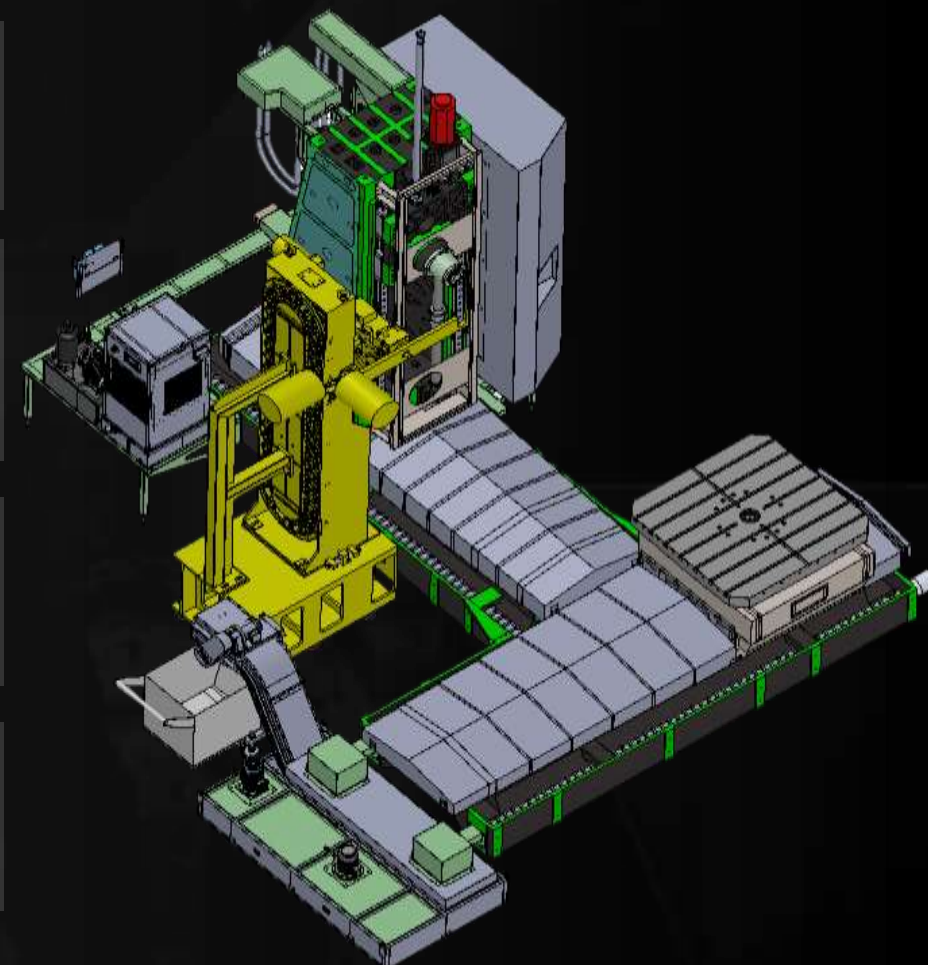
Multiple processes such as milling, drilling, boring, reaming, honing, and tapping can be completed in a single clamping operation; Compatible with aluminum alloy, high-strength ductile cast iron, mold steel, and other materials, specializing in the rough and finish machining of high-precision rotary components, housings, and casings.

Performance advantages

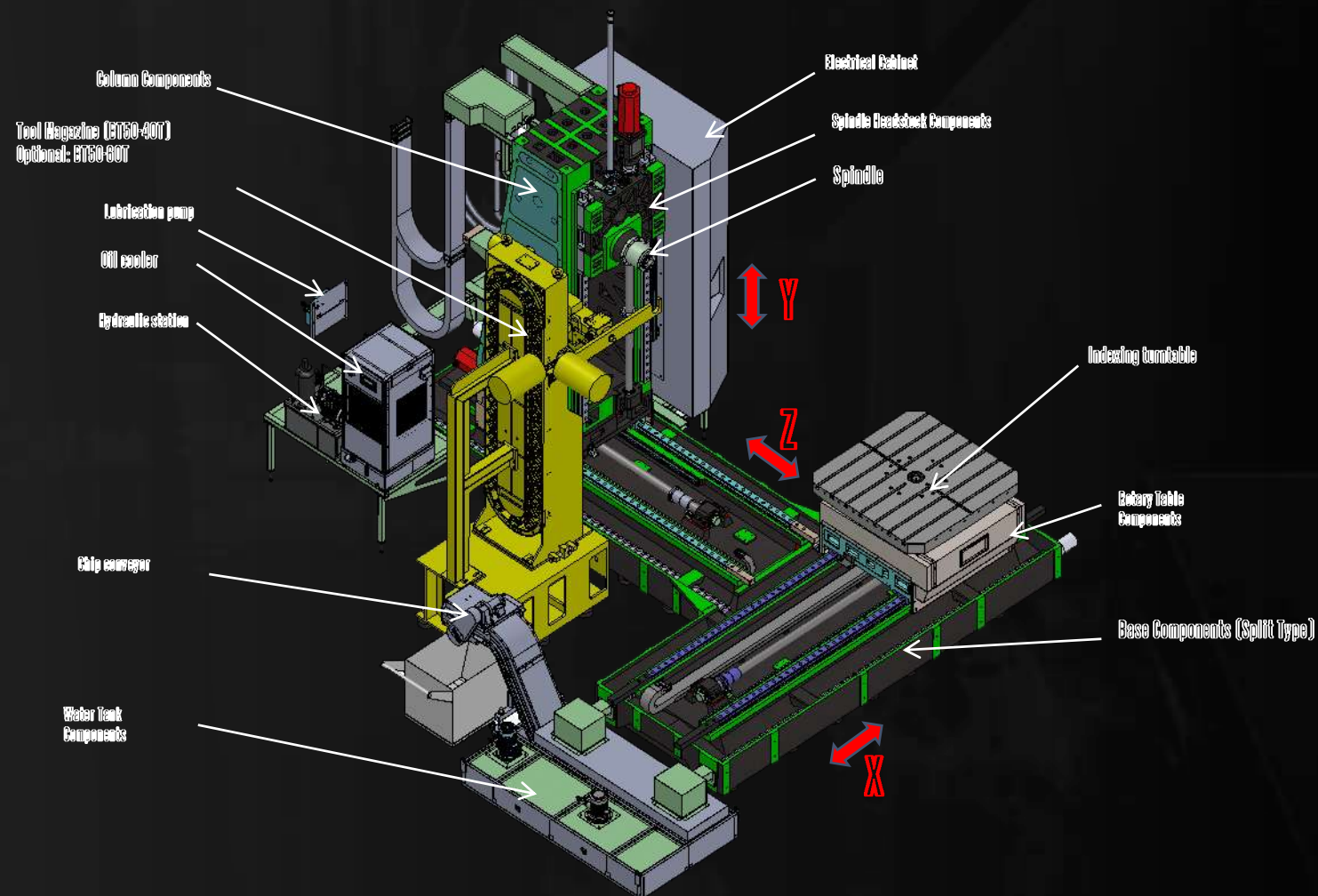
Static, dynamic, and thermal stiffness are adequate; the control system offers comprehensive functionality; the servo drive provides rapid response and stable performance; the actuating elements exhibit high precision; equipped with centralized lubrication and cooling systems.

User experience

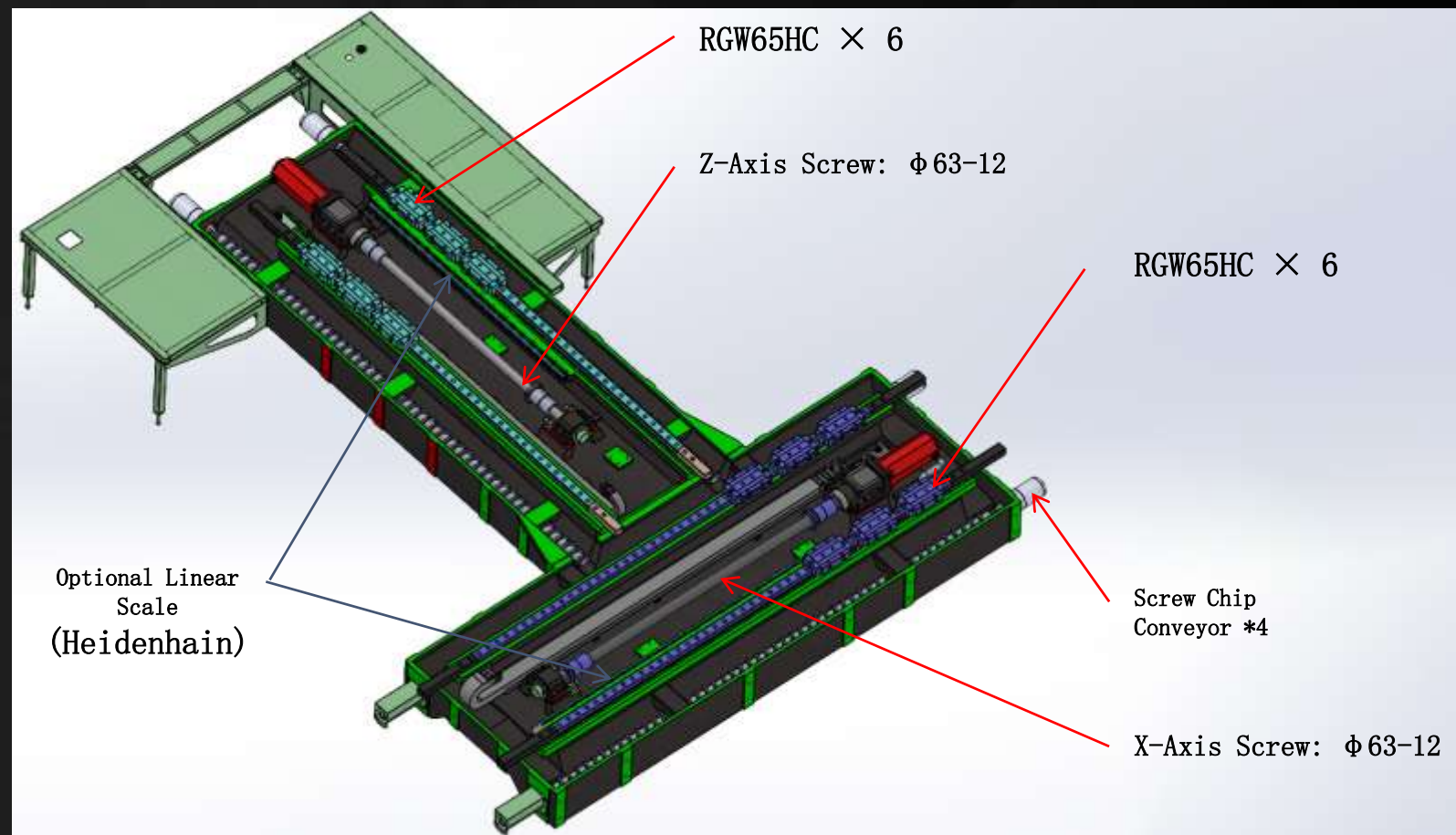
Operation and maintenance are convenient; the design is aesthetically pleasing; protection is durable; suitable for multi-variety medium-to-large batch production.



HM1250 Structural Diagram (Inverted 'T' Structure)

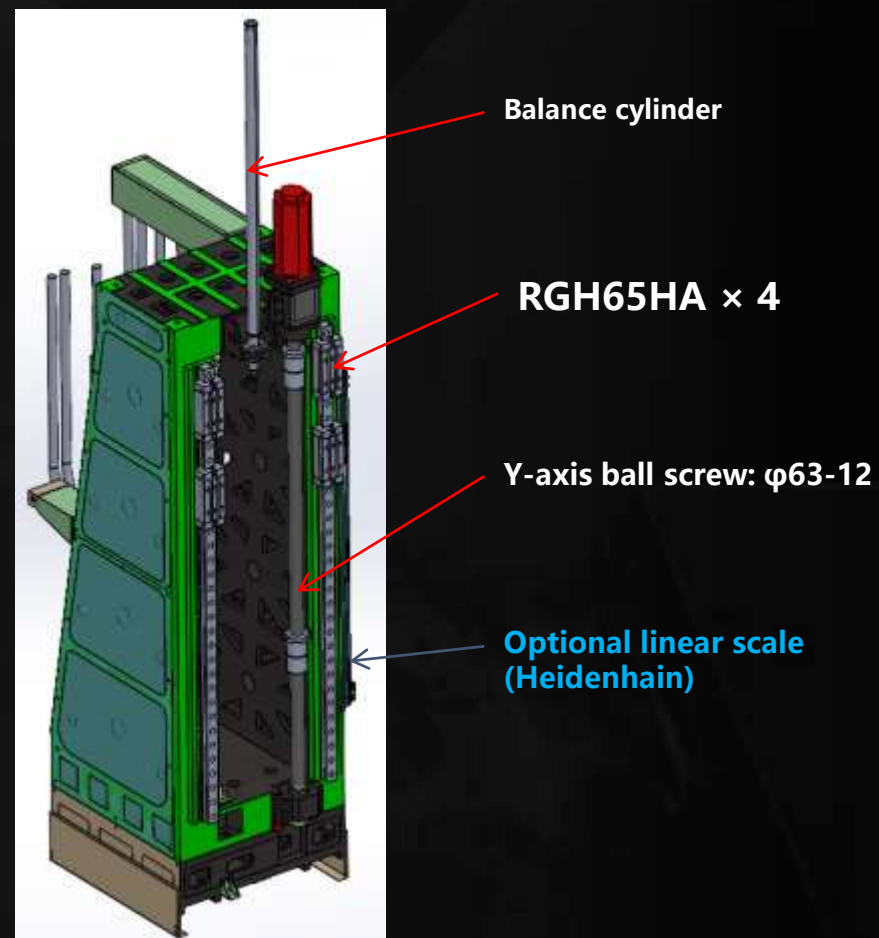


HM1250 (Base Components)

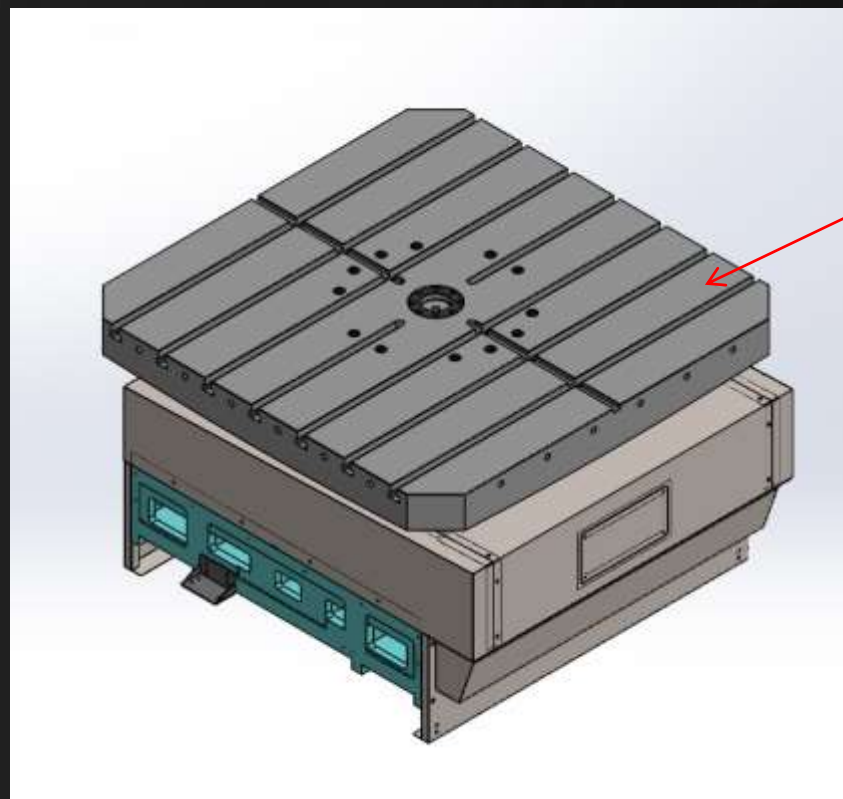


HM1250 (Column Components)

The column utilizes a frame structure formed by double walls, with reinforced longitudinal and transverse annular ribs within the vertical walls on both sides. This ensures high torsional and bending rigidity and a symmetrical structure, providing excellent thermal stability.



HM1250 (Rotary table component)



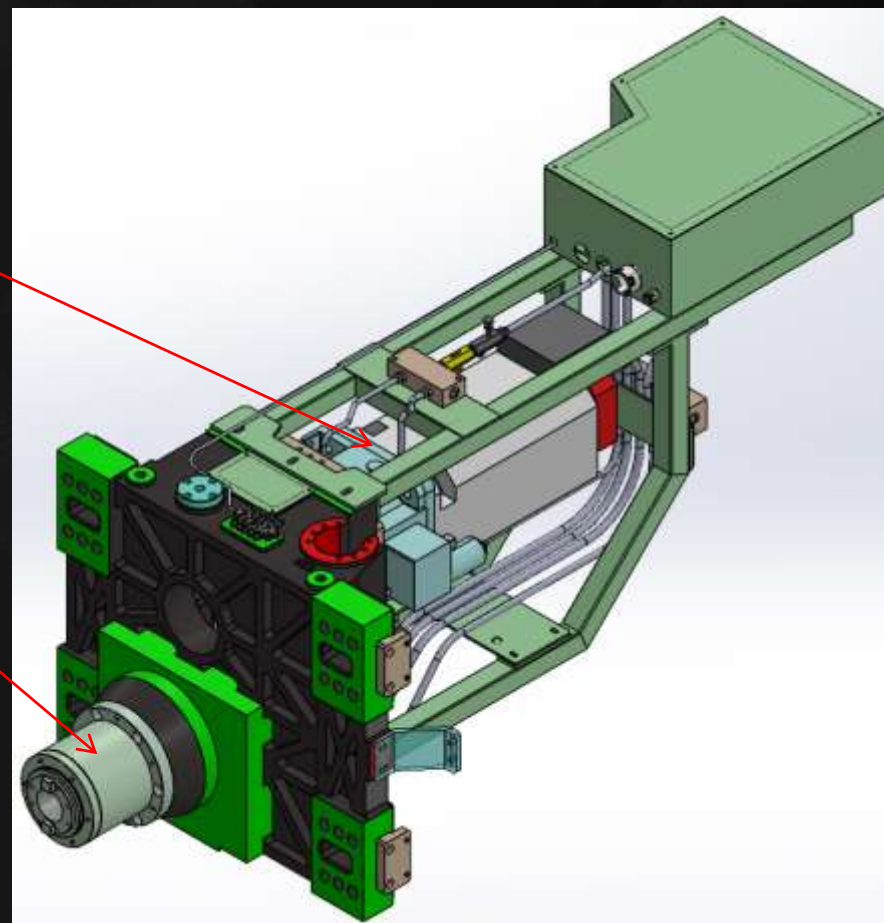
Indexing turntable (1°)

Optional CNC rotary table (0.001°)

HM1250 (Spindle headstock component)

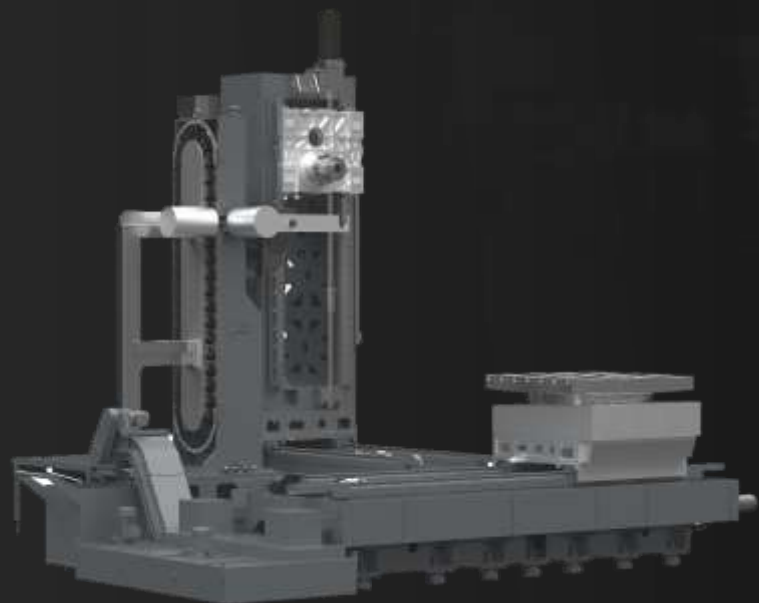
Optional BF gearbox (1:4) / ZF gearbox (1:4)

BT50-190 (Standard spindle)
Optional BT50-190 through-coolant spindle



HM1250

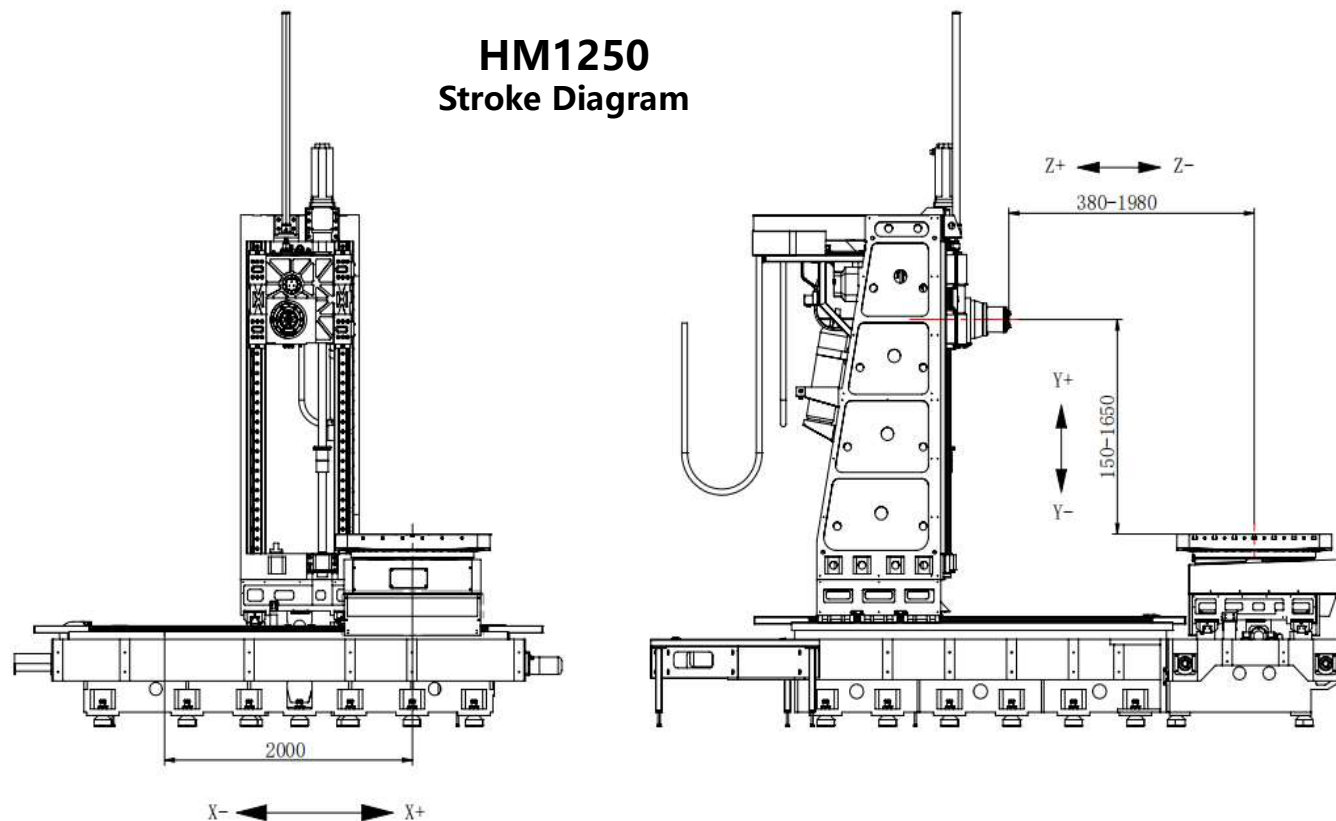
Inverted T-type Horizontal machining center



Main Technical Parameters

Item	Unit	HM1250
Worktable dimensions (Length × Width)	mm	1250 × 1250
T-slot (Number of slots- Slot width × Pitch)	mm	7-22 × 160
Worktable indexing	°	1 × 360
Maximum worktable load	Kg	8000
Maximum workpiece swing diameter	mm	φ2500
Maximum workpiece size (Length × Width × Height)	mm	1250 × 1250 × 1400
Spindle taper hole taper		BT50
Spindle motor power	kW	18.5/22
Maximum spindle speed	r/min	6000
Tool magazine		BT50-40T
X-axis stroke	mm	2000
Y-axis stroke	mm	1500
Z-axis stroke	mm	1600
Distance from spindle centerline to worktable surface	mm	250 ~ 1050
Distance from spindle nose to worktable center	mm	380 ~ 1980
Three-axis rail		X/Z: RGW65HC (6 Sliders) Y: RGH65HA (4 Sliders)
Three-axis rapid traverse speed	m/min	24
Lead screw		φ63 × 12

HM1250 Stroke Diagram

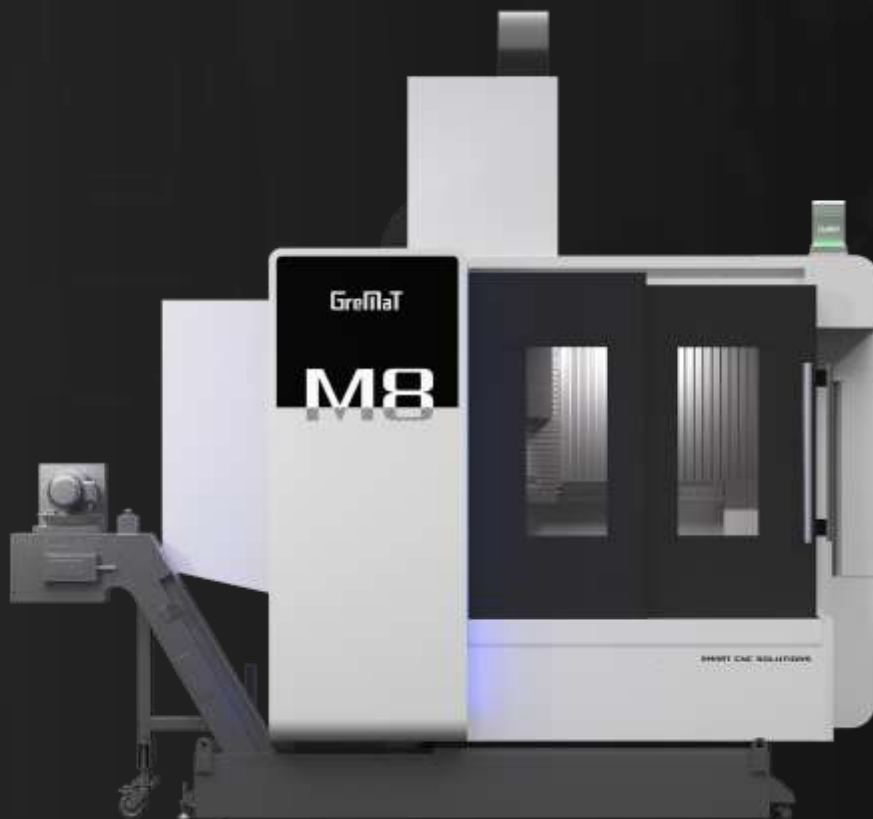


Standard Configuration

1. System: FANUC-0I-MF (3 Package)
2. Spindle Unit: BT50-190 (Standard Spindle)
3. Tool Magazine: BT50-40T Chain-type Tool Magazine
4. Rotary Table: 1250 × 1250 (1°) (Indexing Turntable)
5. Balancing System: Y-direction Balancing Cylinder
6. Chip evacuation system: Four screw chip conveyors+ One chain plate chip conveyor

Optional configurations:

- Linear scale (Heidenhain)
- BF Box (1:4) / ZF Box (1:4)
- BT50-190 Medium spray spindle unit
- BT50-60T Chain-type Tool Magazine
- 1250 × 1250 (0.001°) (CNC Rotary Table)



M Series

High-speed and High-precision Portal Type Mold Machining Center

Benchmarking the Makino F series, focusing on complex molds and precision components

Excellent structural design with high rigidity and stability
High-end transmission and spindle configuration with outstanding accuracy and durability
Professional CNC and inspection configuration; full closed-loop control ensures performance
Comprehensive supporting components combining automation and environmental protection
Strong machining adaptability, precisely matching high-end models

Excellent structural design

Portal frame+ symmetrical design, without X/Y stacking; wide column support with roller guideway, offering high rigidity and stability; ergonomically elevated worktable and convenient workholding.

High-precision transmission and spindle

8mm fine-pitch lead screw (high precision, wear-resistant), A63-18000rpm electric spindle (thermal elongation compensation),
Hollow coolant lead screw (temperature-controlled for stable precision).

Professional CNC configuration

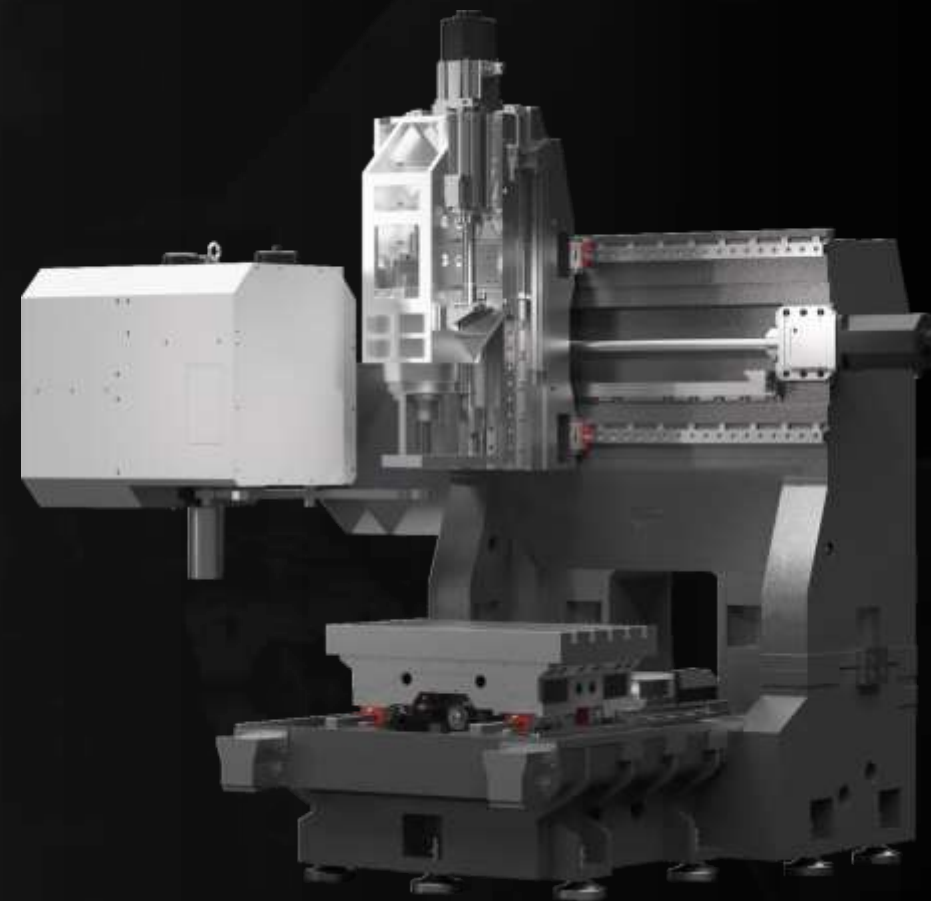
High-performance system+ Heidenhain 3μm linear scale full closed-loop control, ensuring control stability and machining performance.

Comprehensive supporting features

24 fully enclosed tool magazine, spindle oil cooler, grease lubrication (environmentally friendly and durable); automated chip evacuation+ large-capacity filtered water tank, efficient and convenient.

Widely adaptable

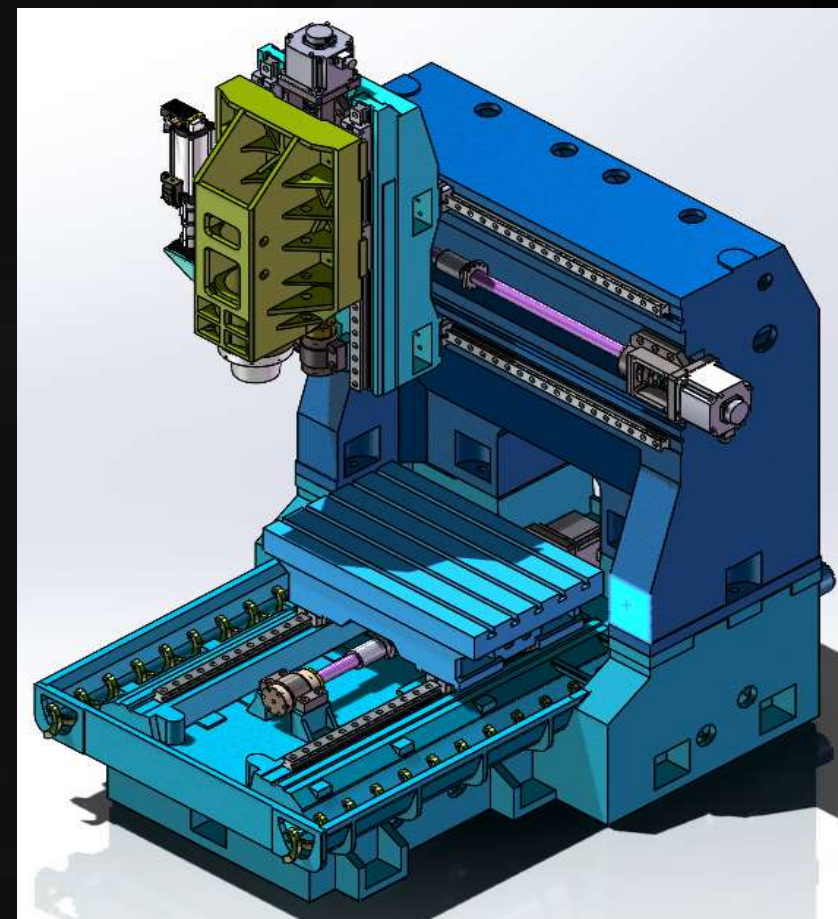
Benchmarking against Makino F3/F5/F8, covering multiple models, suitable for complex molds and machining of high-precision, high-surface-finish precision parts.



Machine Tool Model			M3	M5	M8
Processing Range	Saddle Stroke (X Axis)	mm	800	1000	1480
	Worktable Stroke (Y Axis)	mm	550	600	800
	Spindle Headstock Stroke (Z Axis)	mm	500	500	660
	Distance Between Two Columns	mm	1140	1300	1800
	Distance from Spindle Nose to Worktable Surface	mm	150-650	150-650	200-860
Worktable	Worktable Dimensions (Length ´ Width)	mm	900×550	1100×600	1550×800
	Maximum Load Capacity	Kg	800	1000	2500
	T-Slot Dimensions		5-18 × 100	5-18 × 110	5-22x150
Spindle	Main Motor Power	Kw	35	35	35
	Rated Output Torque	Nm	60.8	60.8	60.8
	Spindle Taper		HSK A63	HSK A63	HSK A63
	Spindle Speed	rpm	18000	18000	18000
Speed	Rapid Traverse Speed (X/Y/Z)	m/min	24	24	24
	Cutting Feed Rate Range	m/min	10	10	10
Tool magazine	Number of Tools	pcs	24		
	Maximum tool diameter/ Length/ Weight		φ78mm/300mm/8Kg		
	Maximum tool diameter (no adjacent tool)	mm	φ120		
Others	Air source/ Air pressure		280L/min		6-8bar
	Total power capacity of the machine tool	KVA	40	40	50
	Water tank volume	L	350	350	400
	Machine tool overall dimensions	mm	2800x3600x3011	2800x3700x3045	3400 × 3470 × 3400
	Machine Tool Weight	Kg	6500	7700	13000

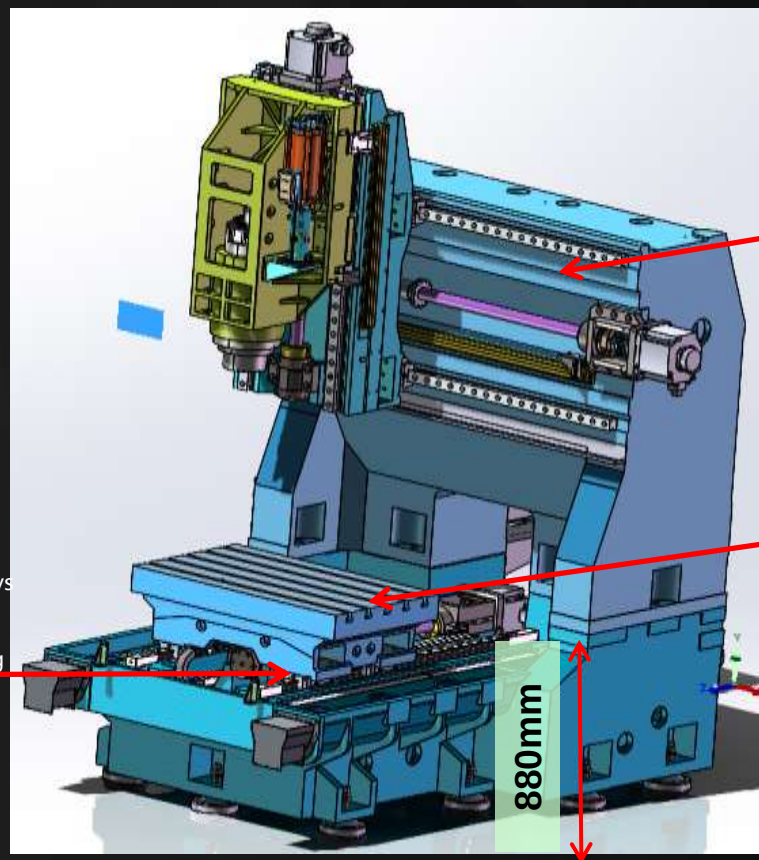
The M series mold machining center is a medium-sized machining center. After a single clamping, the workpiece can be automatically and continuously processed with multiple operations, including milling, drilling, boring, reaming, counterboring, and tapping. This machine tool is suitable for multi-variety, small- to medium-batch machining of complex parts such as medium-sized housings, plates, discs, and casings.

Adopting advanced international machine tool design concepts, it employs advanced and reliable functional components. The three axes are equipped with high precision C3 grade hollow coolant lead screws and high precision Heidenhain linear scales. The machine tool adopts a gantry frame structure, with major key components such as the bed, column, saddle, spindle headstock, and worktable all manufactured from resin sand-cast HT300 high-strength premium cast iron, thereby providing the machine tool with high rigidity, high precision, and excellent dynamic performance. It is especially suitable for mold machining. Widely used in industries including molds, automotive components, 3C industry, robotics, automation equipment, and medical equipment.



Rational Structural Design

The three-axis guideway of the machine tool employs roller guideways, providing high rigidity and strong seismic resistance, and can withstand greater cutting forces.



The X and Z axes are mounted on the column.

XZ movement is fully supported by a wide column.

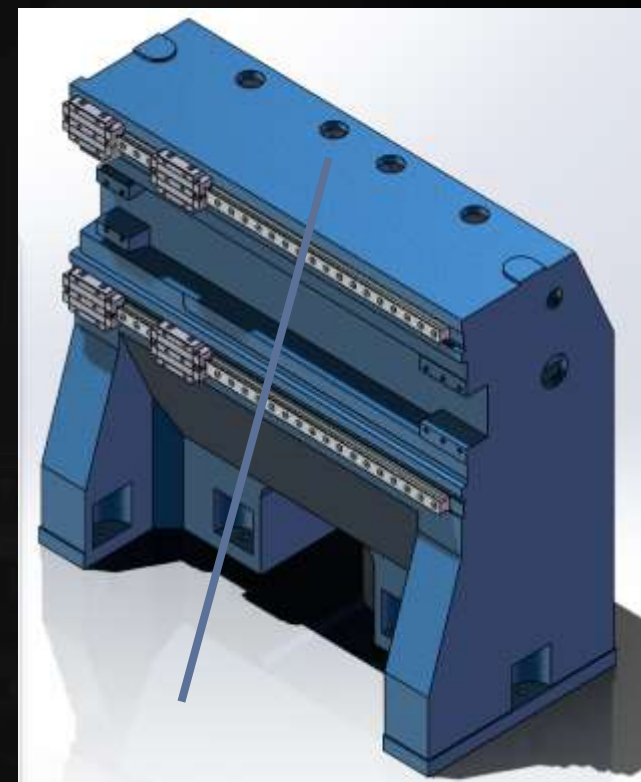
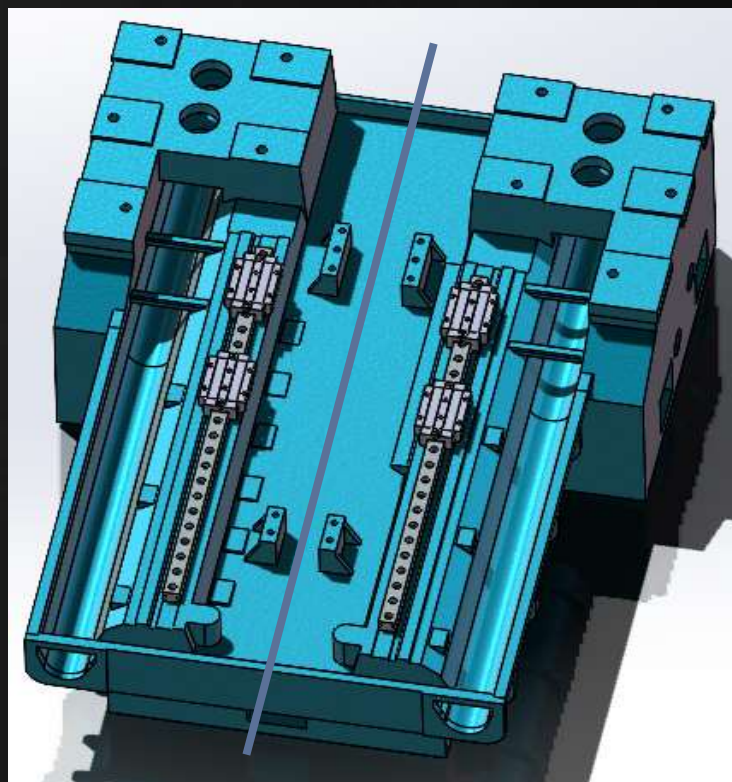
It does not utilize the XY axis stacked design typical of conventional vertical machining centers, resulting in improved dynamic stability.

The worktable height from the ground is approximately 850-880 mm, facilitating workpiece workholding and ergonomic operation.

Rational Structural Design

The symmetrical mechanical structure design ensures machining stability.

A rigorous mechanical structure design sufficiently guarantees the dynamic accuracy of the machine tool, thus promoting efficient mold production while ensuring quality.

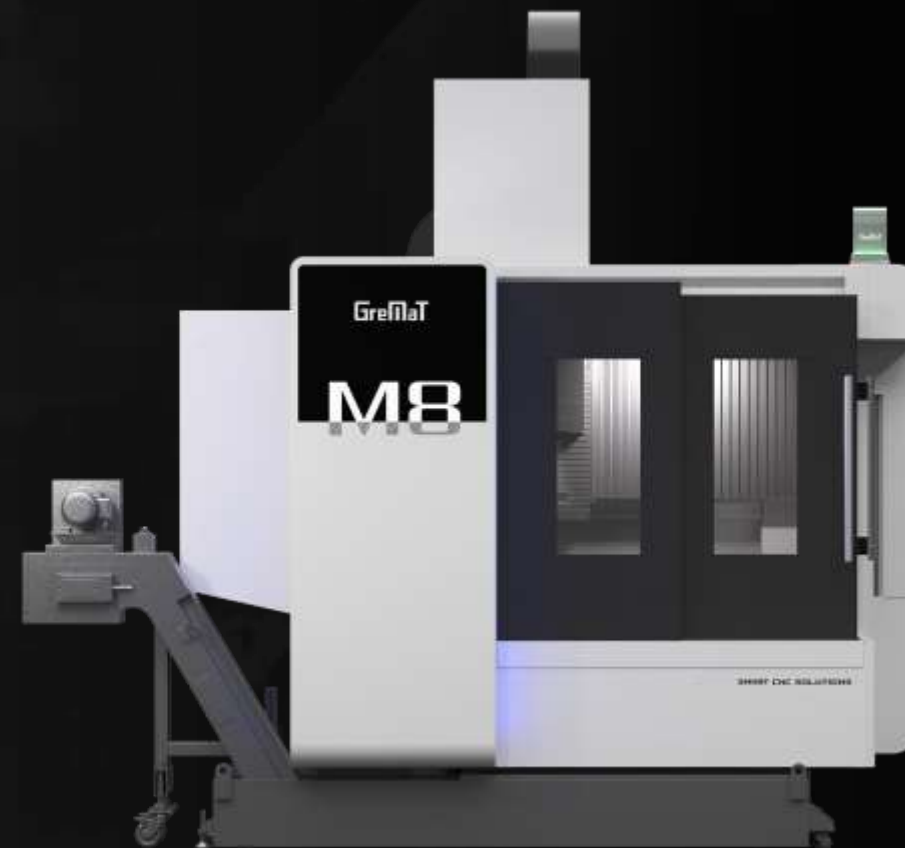


The three axes utilize an 8mm fine-pitch lead screw.

Due to its small lead, the feed per revolution is relatively low; therefore, in applications requiring fine machining and slow feed rates, it can provide enhanced motion accuracy and positioning accuracy.

During prolonged use, owing to its small lead, wear progresses slowly, thus maintaining accuracy. The performance is relatively good. Especially in certain high-precision machining applications, fine-pitch lead screws can maintain high motion accuracy and positioning accuracy over extended periods, thereby reducing machining errors caused by lead screw wear. Fine-pitch lead screws exhibit relatively good rigidity during transmission, effectively reducing errors occurring in the transmission process.

The rigidity of the fine-pitch screw during transmission is relatively high, effectively reducing vibration and errors in the transmission process. Elastic deformation and vibration within the machine tool enhance its stability and machining accuracy. Some parts requiring higher machining accuracy and surface quality are better suited for small-pitch lead screws. Applicable.



The machine tool utilizes an HSK A63-18000 rpm Electric Spindle
The electric spindle includes a displacement compensation function, effectively reducing spindle thermal elongation error, thereby improving part machining accuracy and surface machining quality **during high-speed machining.**

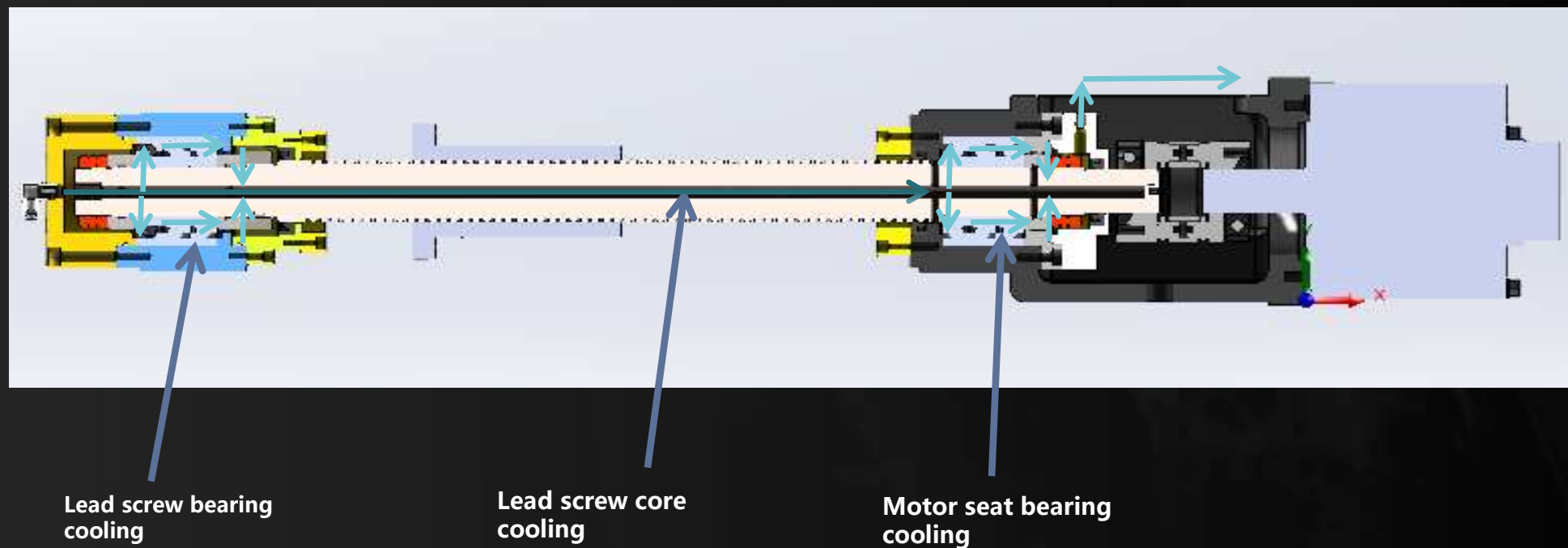
Tool holder specifications

HSK A63



All three-axis lead screws are hollow coolant lead screws

The lead screws of all axes feature core cooling, with temperature control applied to the bearing bracket area and motor mounting area, maintaining the temperature stability of all components and improving machining accuracy.



System Control

Equipped with a high-performance Mitsubishi M80A CNC system, ensuring the stability of machine tool control and meeting the user's requirements for CNC machining functions and auxiliary functions.

The three axes utilize Heidenhain 3 μ m linear scales to achieve full closed-loop control, significantly enhancing machine tool performance.

Enhancement of System Performance:

The full closed-loop control system consisting of linear scales can perform real-time comparison between the actual position of the machine tool and the commanded position.

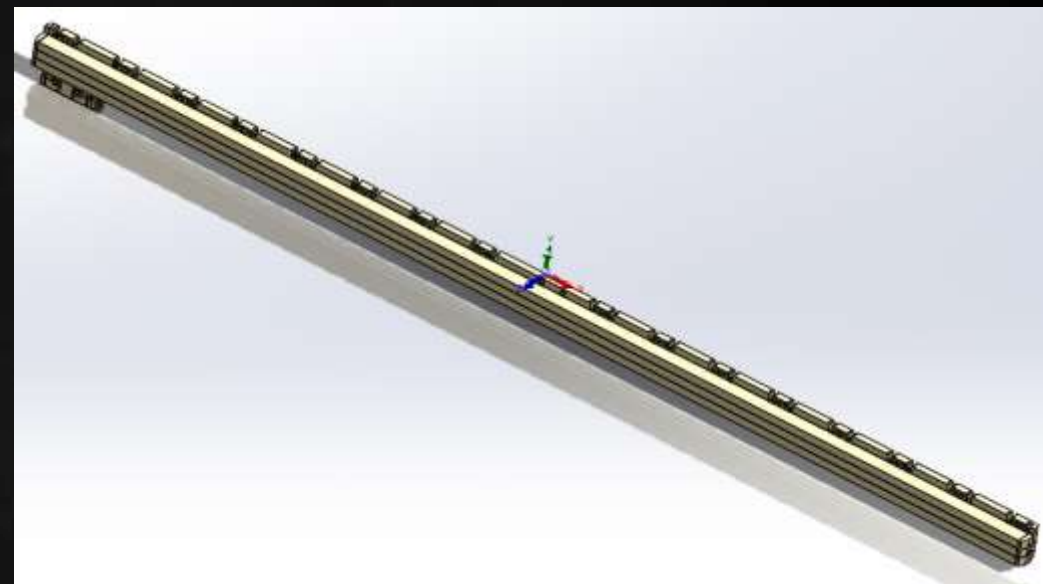
The CNC system precisely adjusts based on the difference, significantly improving the

Optimization of Machining Quality:

positioning accuracy and machining accuracy of the machine tool.

Full closed-loop control effectively compensates for various errors within the machine tool drive chain, such as lead screw pitch error,

allowing the machine tool to more accurately follow the commanded trajectory during machining, reducing machining errors, and enhancing



Standard Configuration



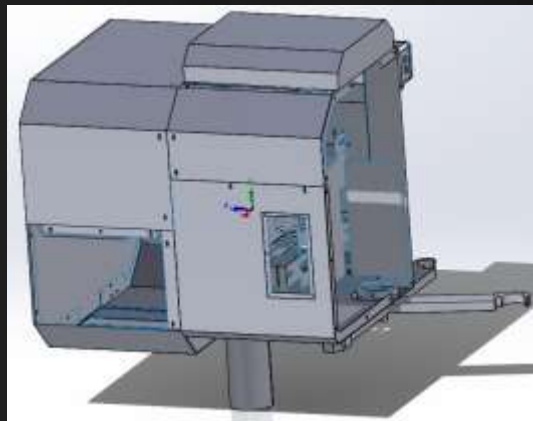
24T disc-type tool magazine

Fast and reliable ATC tool changer mechanism

Fast tool change speed with excellent structural stability.

High reliability for prolonged continuous tool changes.

Reduce tool change time and improve machining efficiency.



Spindle oil cooler

Standard configuration spindle oil cooler,

Reduce spindle thermal deformation.

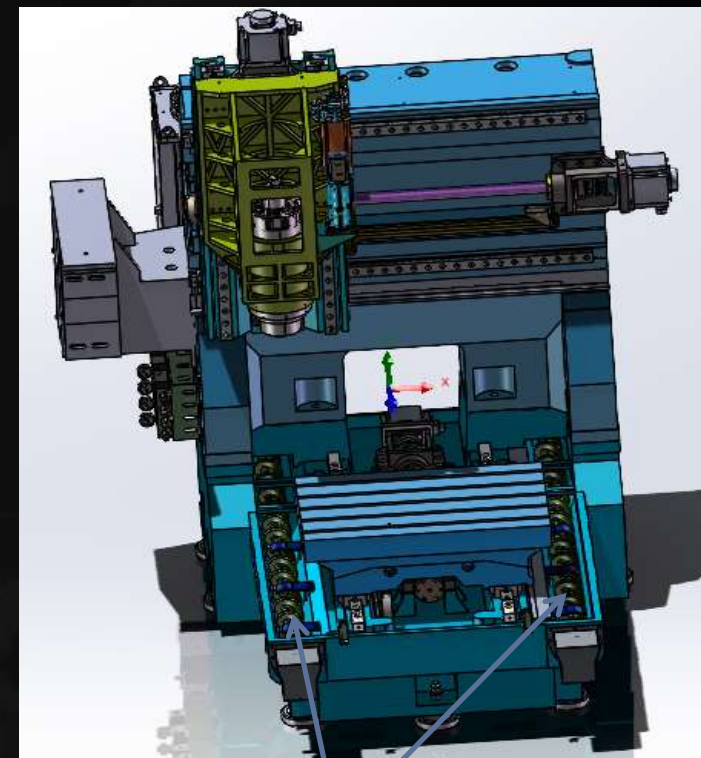
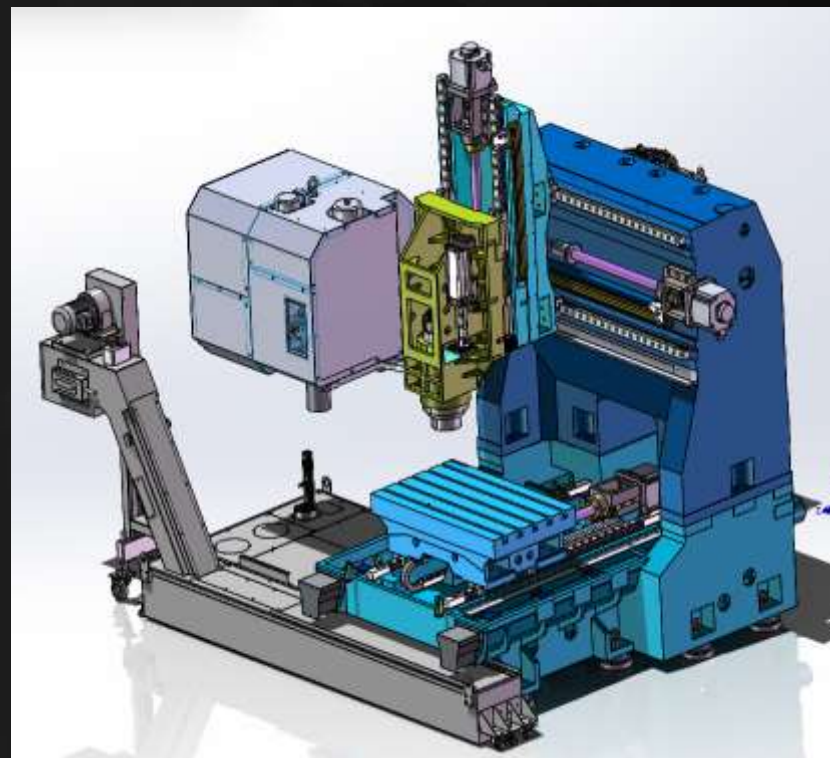
Enhance machining accuracy.



Convenient iron chip collection, Reliable chip evacuation

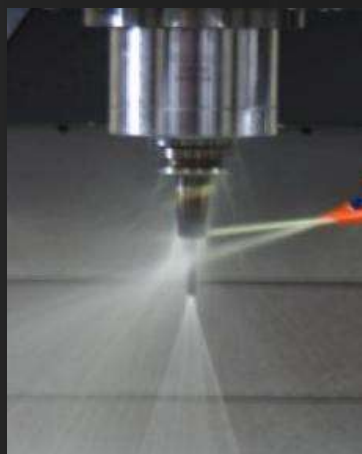
Machine tool chip removal utilizes built-in dual screw conveyors and is equipped with a front chain row. It features automation, user-friendly operation, high efficiency, and reduces manual cleaning time.

The water tank employs a multi-layer filtration large-capacity structure to provide sufficient cutting fluid for workpiece machining.



Two spiral chip conveyors

Machine tool optional configuration



Optional coolant through spindle function;

Coolant outlet pressure options of 2MPa and 3MPa, 5MPa and 7MPa.



Optional 4th axis/ cradle-type 5th axis

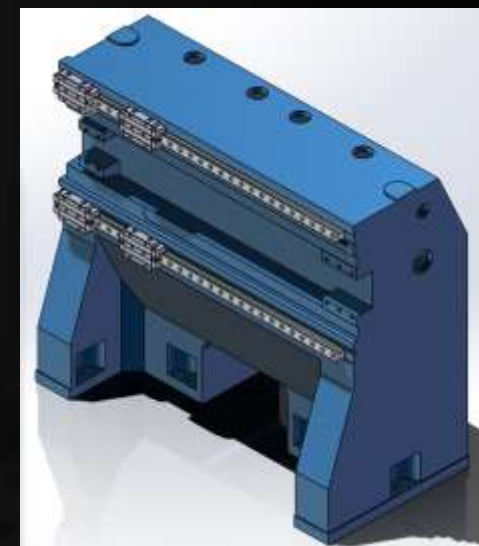
Enhanced multi-axis machining capability, suitable for machining complex parts

Machine tool optional configuration



Optional probe and tool setter available

Improved machining accuracy and
level of automation



Optional elevated column available

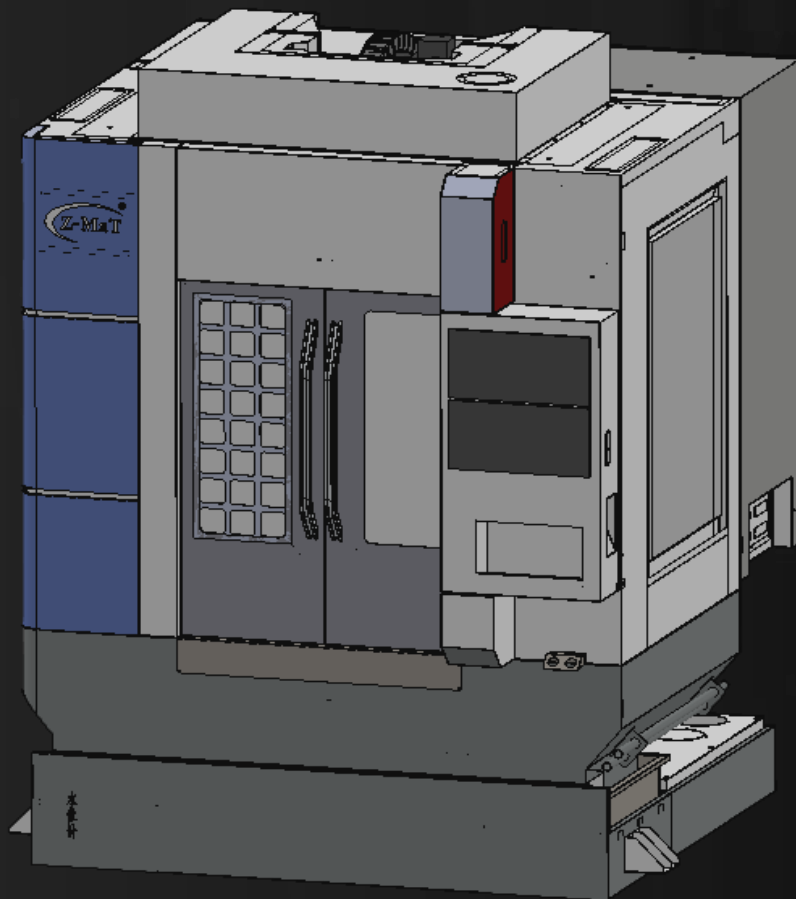
Suitable for machining taller workpieces

Machine tool machined parts

Suitable for machining various complex molds, such as injection molds and stamping dies; its high rigidity and high precision ensure the machining accuracy of complex mold cavities and cores.

Capable of rapidly and accurately machining various mold components, thereby improving mold manufacturing efficiency and quality.





VMC420S

Compact machining center

Small machining center designed for small precision parts

Core features:

- Small footprint, significantly reducing workshop utilization costs
- Excellent accuracy stability and good seismic resistance
- Fast tool change speed and high machining efficiency
- Optional fourth axis installation, supporting multi-face machining of small parts

Core Values:

Outstanding cost performance with highly competitive pricing

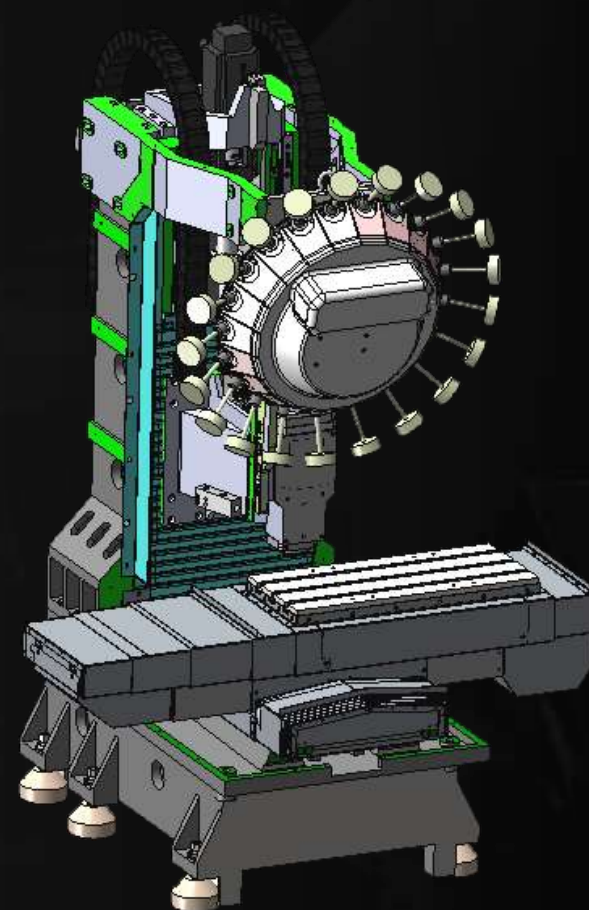
Combining the accuracy of machining centers with the high efficiency of drilling and tapping centers

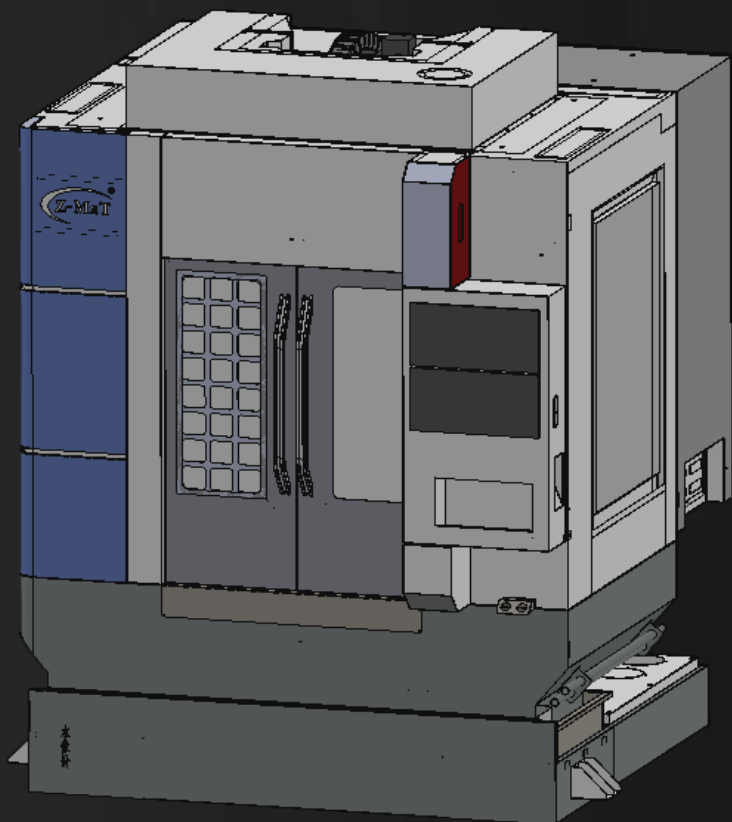
Primary application areas: Small precision parts machining

Specific applicable products: 1. 3C product components

2. Electronic product components

3. Instrument and meter product components





Main Technical Parameters

	Item	Unit	VMC420S
Machining Range	X Axis Stroke	mm	420
	Y Axis Stroke	mm	240
	Z Axis Stroke	mm	450
	Distance from spindle nose to worktable	mm	50-500
Worktable	Worktable dimensions	mm	720 × 305
	Worktable load capacity	kg	250
Spindle	Spindle Speed	rpm	20000
	Spindle Taper		BT30

TBX63S

**B-Axis swiveling five-axis
simultaneous turning and milling
machining center**

Core Advantages

Turn-mill integration, completing AB surface machining in a single clamping

HSK-T63 interface (high rigidity, high precision)

Roller guideway+ column support (high vibration resistance)



Structure and positioning

Horizontal moving column orthogonal 3-axis structure, expanding complex surface milling and cutting, reducing clamping errors.

Core parameters

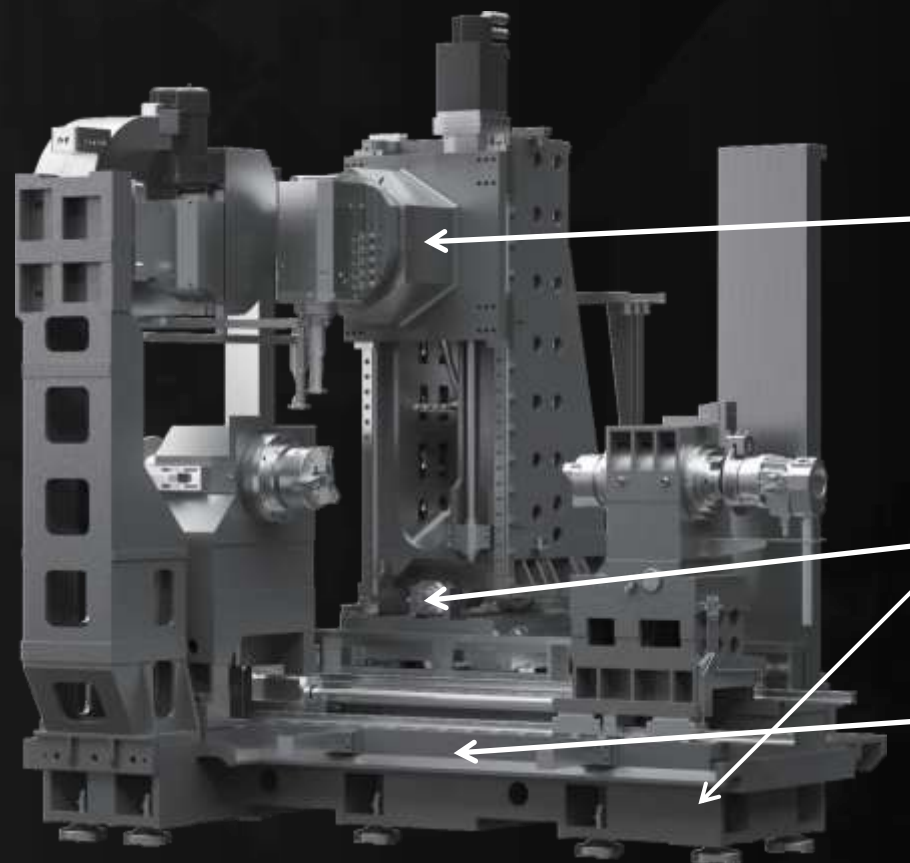
Maximum machining diameter 450 mm, length 750 mm; Dual spindle configuration, HSK-T63 electric spindle+ 24-position tool magazine; B Axis $\pm 120^\circ$ Indexing (1100 N·m), milling spindle maximum speed 12000 rpm.

Advantages

Roller guideway with high rigidity; electric spindle with strong milling capability and superior tool holder rigidity; multi-process composite machining.

Applications

Complex rotational parts (shaft components / special-shaped parts / high-precision parts), covering turning, milling, drilling, and tapping processes.



X Axis and swiveling head mounted on the column
Swiveling head movement fully supported by the column

The machine tool's four feed axis guideways employ roller guideways, providing high rigidity and strong seismic resistance, capable of withstanding greater cutting forces.

Designed with enhanced dynamic stability.

Machine Tool Model			TBX63S
Machining Range	X Axis	mm	790
	Y Axis	mm	±75
	Z Axis	mm	750
	W1 Axis	mm	1000
	B Axis	°	±120
Swiveling	Turn-Milling Head		HSK-T63(A63)
			Power 30KW, Rated Torque 95Nm
Spindle	S1 Spindle		A2-6 Electric Spindle
	S2 Spindle		A2-5 Electric Spindle
Speed	Rapid Traverse Speed (X/Y/Z)	m/min	24
	Cutting Feed Rate Range	m/min	10
Tool magazine	Number of Tools	pcs	24
	Maximum tool diameter/ Length/ Weight		φ78mm/250mm/8Kg
	Maximum tool diameter (no adjacent tool)	mm	φ120
Others	Maximum Swing Diameter	mm	φ450
	Chip Evacuation Device		Front Chip Evacuation
	Maximum Machining Diameter	mm	φ400
	Machining Length	mm	750

Horizontal Composite Machining Center TBX63S series, capable of machining long and large-diameter workpieces from turning to milling.

All machining operations can be completed in a single clamping.

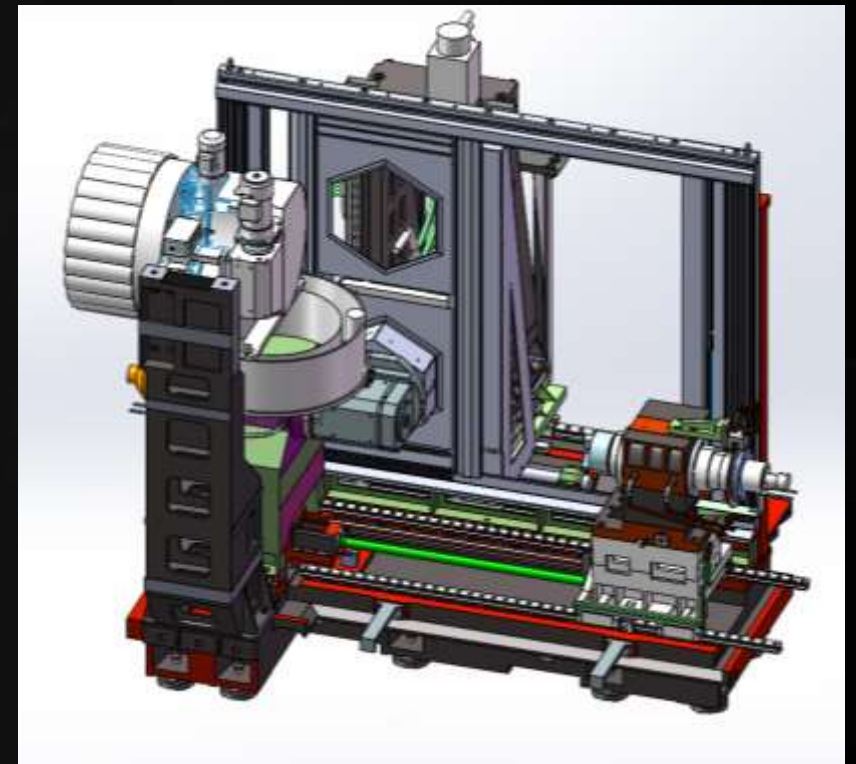
Employs a moving column orthogonal 3-axis structure; the high rigidity structure enables heavy cutting. Based on the turning center, machining capabilities are expanded to include milling of complex curved and inclined surfaces, reducing workpiece setups and positioning errors in turn-milling composite machining. The B-axis swiveling offers a large range, high rigidity, and precise indexing. The HSK-T63 milling electric spindle provides high torque and, combined with the C-axis, enables five-axis linkage. During turning, the B-axis and milling spindle are hydraulically locked via an end-face gear, enhancing turning tool accuracy. The disc-type tool magazine supports automatic tool changes for both milling and turning tools. The main and sub spindle configuration allows a single machine tool to perform multiple processes, including turning, milling, and grinding, on the AB surfaces.

The compound rotational motion of the milling cutter and the workpiece enables the completion of the following machining types:

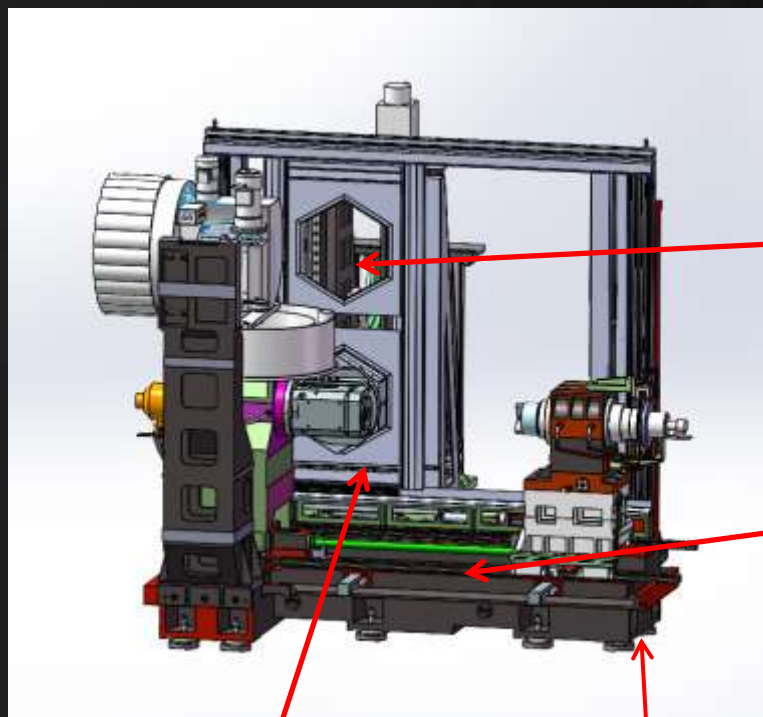
Plane milling and contour machining.

Deep hole drilling and thread tapping.

Complex surface synchronous turning and milling forming. This feature allows most machining processes to be completed in a single setup, thereby significantly shortening the manufacturing process chain.



Rational Structural Design



X Axis and swiveling head mounted on the column
Swiveling head movement fully supported
by the column

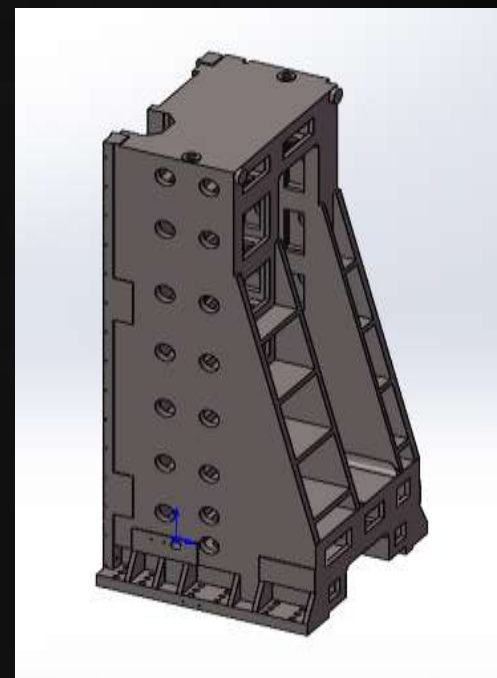
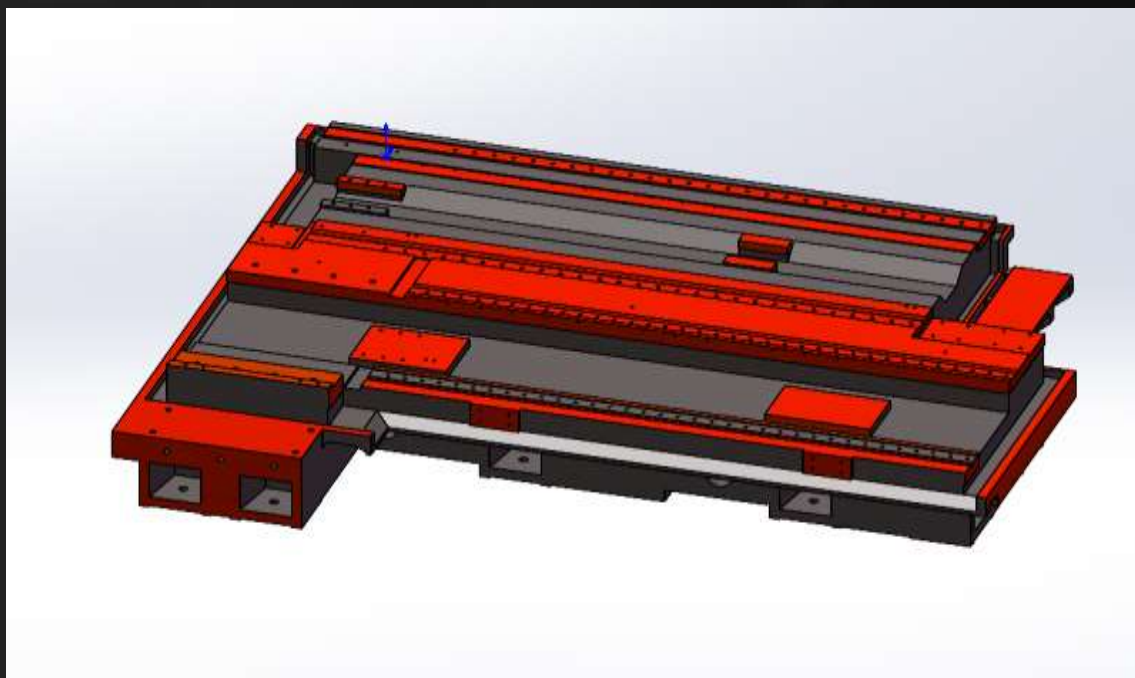
Designed with enhanced dynamic
stability.

The machine tool's four feed axis guideways utilize roller guideways, offering high rigidity and strong seismic resistance, and can withstand greater cutting forces.

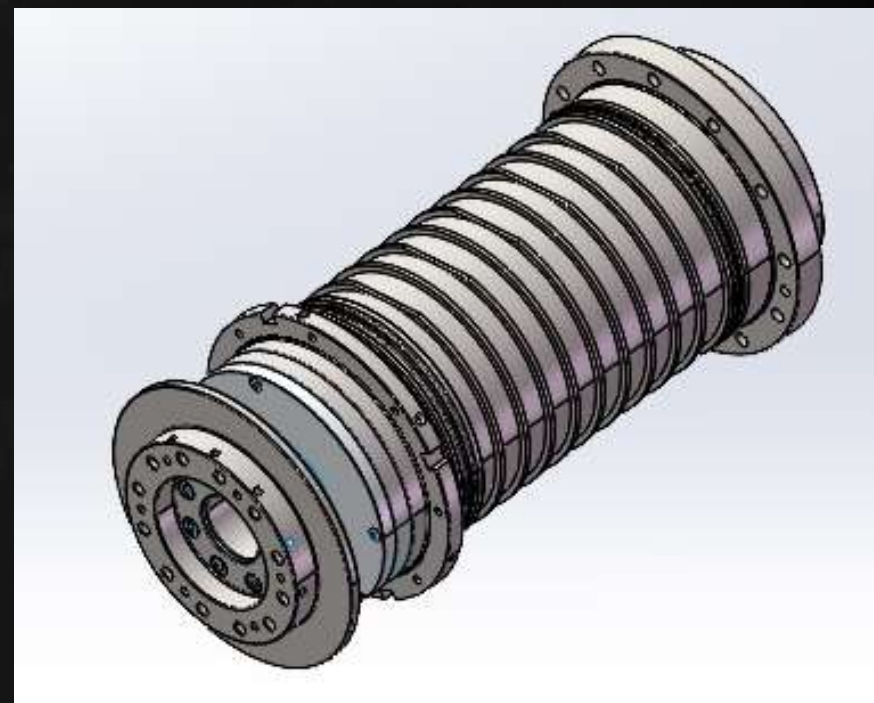
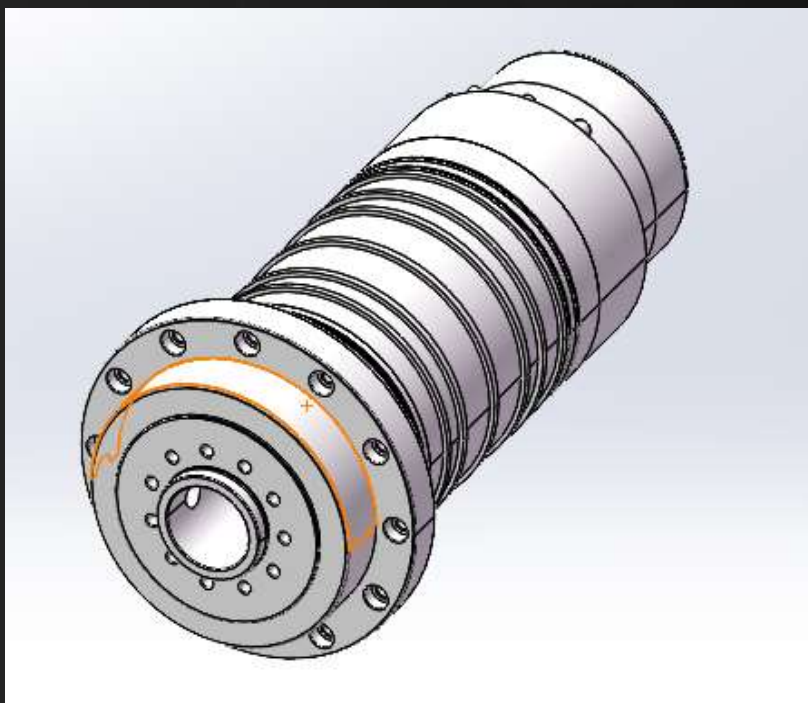
Optimized casting design.

An optimized mechanical structure design ensures machining stability.

Strict Mechanical Structure Design Guarantees the Dynamic Accuracy of the Machine Tool, Promoting Efficient Mold Production While Ensuring Quality.



The main spindle of the machine tool utilizes the Haozhi A2-6 spindle; the secondary spindle utilizes the Haozhi A2-5 spindle. The electric spindle includes a displacement compensation function, effectively reducing spindle thermal elongation error, During high-speed machining, enhance part machining accuracy and surface machining quality.



System Control

Equipped with a high-performance CNC system, ensuring stable machine tool control,

and guaranteeing the CNC machining functions and auxiliary functions required by users.

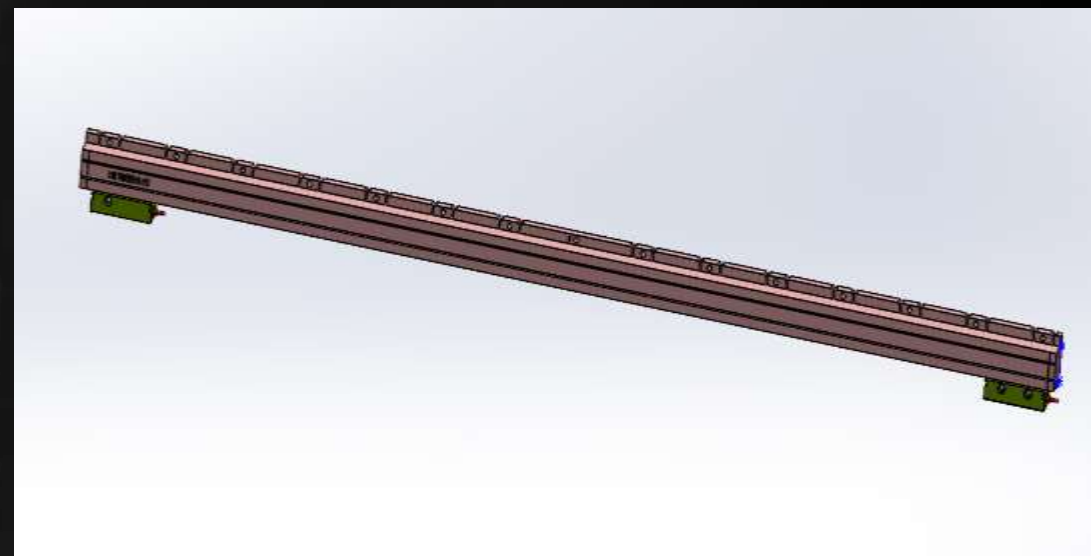
the three axes utilize Heidenhain linear scales to achieve full closed-loop control, significantly enhancing the machine tool's performance. (The X axis is standard configuration; other axes are optional.)

Enhancement of System Performance:

The full closed-loop control system composed of linear scales enables real-time comparison between the machine tool's actual position and the commanded position. The CNC system performs precise adjustments based on the deviation, thereby greatly improving the machine tool's positioning accuracy and machining accuracy.

Optimization of Machining Quality:

Full closed-loop control can effectively compensate for various errors in the machine tool drive chain, such as lead screw pitch error, enabling the machine tool to more accurately follow the command trajectory during machining, reducing machining errors, and improving the dimensional accuracy and surface quality of machined parts.



Standard Configuration

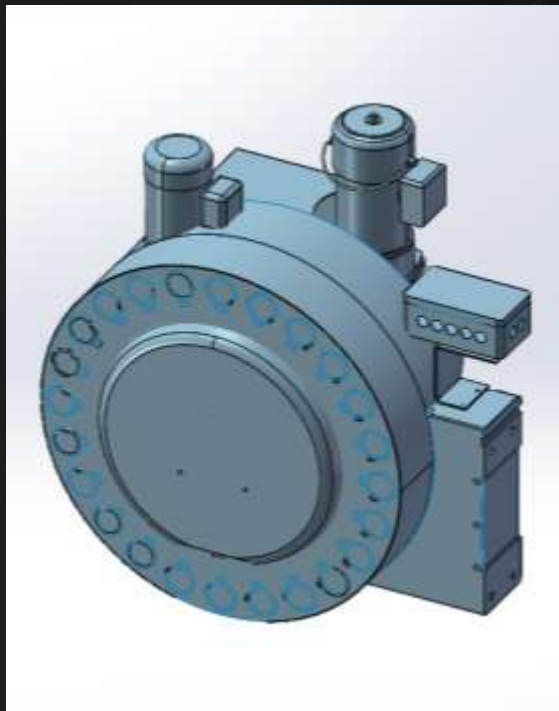
24T disc-type tool magazine

Fast and reliable ATC tool changer mechanism

Fast tool change speed with excellent structural stability.

High reliability for prolonged continuous tool changes.

Reduce tool change time and improve machining efficiency.

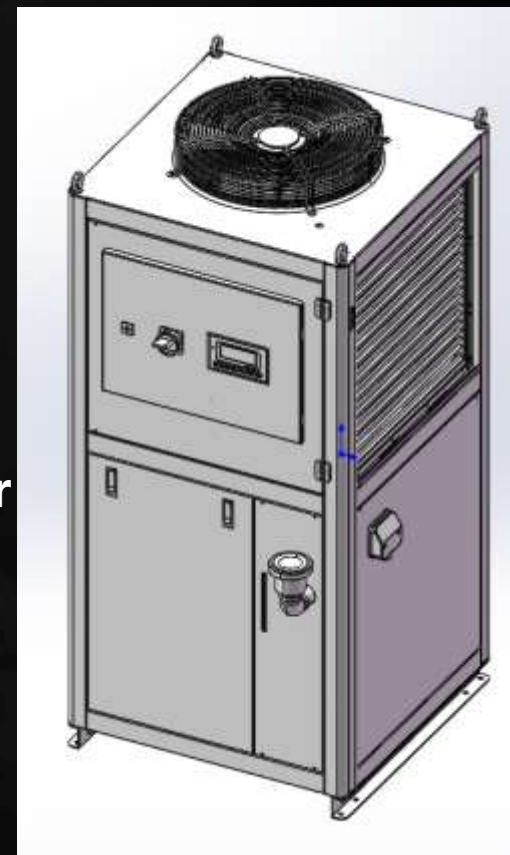


Spindle oil cooler

Standard configuration spindle oil cooler,

Reduce spindle thermal deformation.

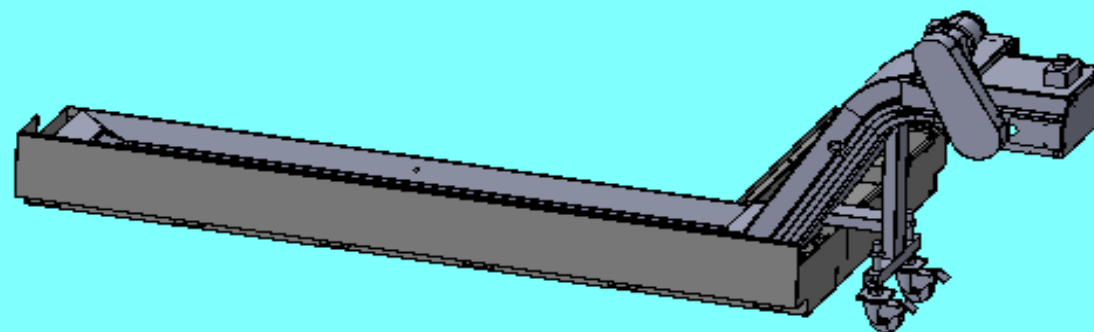
Enhance machining accuracy.



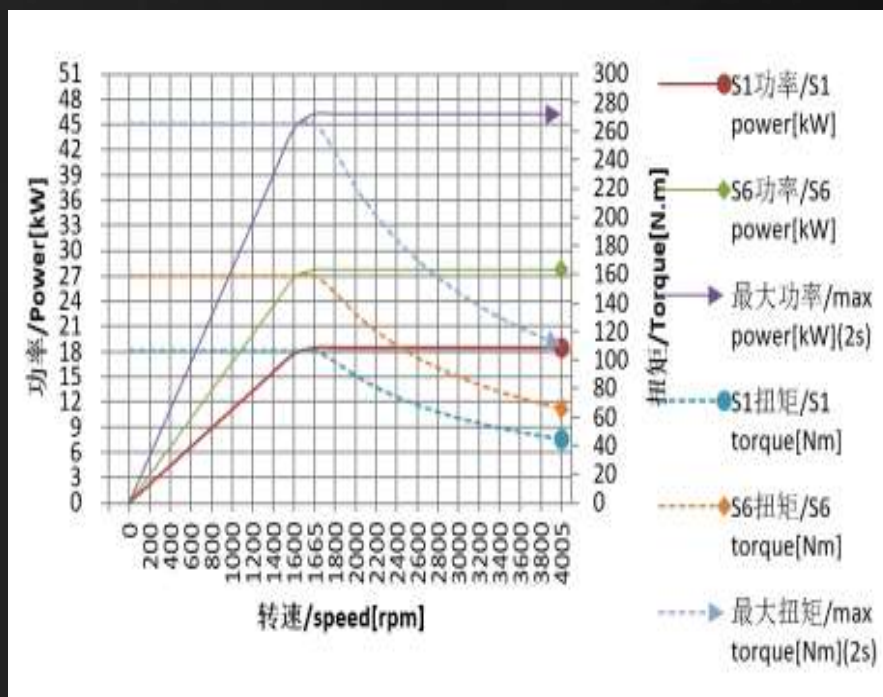
Convenient iron chip collection and reliable chip evacuation.

Machine Tool chip evacuation adopts a front chain row, Automation, user-friendliness, and high efficiency, reducing manual cleaning time. The water tank employs a multi-layer filtration, large-capacity design, providing ample cutting fluid for workpiece machining.

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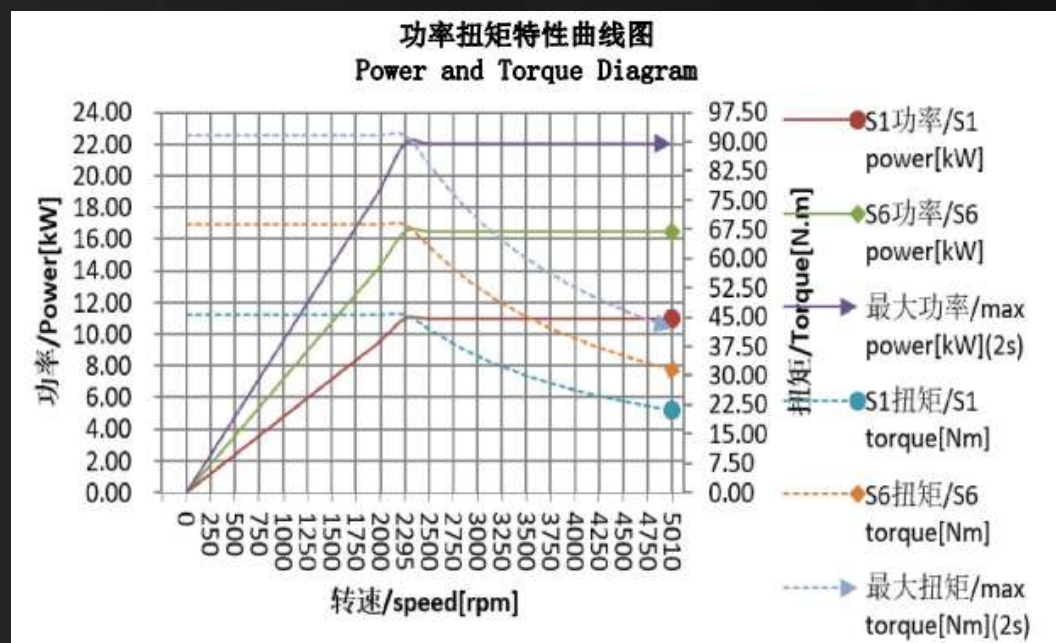
Machine Tool power and torque



Serial No.	Item	Value
1	Motor Type	Three-Phase AC Permanent Magnet Synchronous Motor
2	Direct Axis Inductance (mH)	3.9±0.1
3	Quadrature Axis Inductance (mH)	6.4±0.1
4	Back EMF Coefficient (Vp·m/krpm)	131
5	Thermistor	KTY84-130/NTC-503
6	Maximum Power (Kw)	46.25
7	Maximum Torque (Nm)	265.25
8	Maximum Current (A)	105
9	Maximum Frequency (Hz)	267
10	Maximum Speed (rpm)	4005
11	Continuous Rated Output Torque (S1-100%/Nm)	106
12	Number of Poles (2P)	8
13	Rated Input Voltage (V)	380
14	Rated Frequency (Hz)	111
15	Rated Speed (rpm)	1665
16	Continuous Rated Input Current (S1-100%/A)	42
17	Continuous Rated Output Power (S1-100%/Kw)	18.5
18	Cooling Flow Rate (25℃) (L/min)	≥10 (0.3MPa)

S1 Spindle output power and torque chart

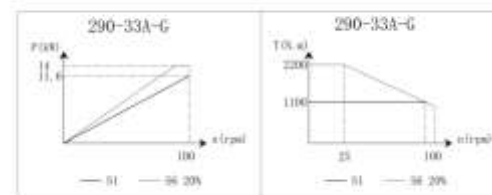
Machine Tool power and torque



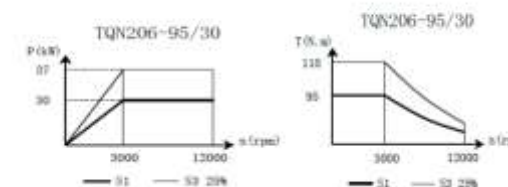
Serial No.	Item	Value
1	Motor Type	Three-Phase AC Permanent Magnet Synchronous Motor
2	Direct Axis Inductance (mH)	3.1±0.1
3	Quadrature Axis Inductance (mH)	5.7±0.1
4	Back EMF Coefficient (Vp·m/Krpm)	99.6
5	Thermistor	KTV84-130 / NTC-503
6	Maximum Power (kW)	22
7	Maximum Torque (Nm)	91.6
8	Maximum Current (A)	54
9	Maximum Frequency (Hz)	334
10	Maximum Speed (rpm)	5010
11	Continuous Rated Output Torque (S1-100%/Nm)	45.8
12	Number of Poles (2P)	8
13	Rated Input Voltage (V)	380
14	Rated Frequency (Hz)	153
15	Rated Speed (rpm)	2295
16	Continuous Rated Input Current (S1-100%/A)	27
17	Continuous Rated Output Power (S1-100%/kW)	11
18	Cooling Flow Rate (L/min)	3.0 (25°C)
19	DC Resistance of Three-Phase Winding (Ω)	0.44 (20°C)
20	Terminal Inductance (mH)	11.4
21	Moment of Inertia (kg·m²)	5.1421×10 ⁻³

S2 Spindle output power and torque chart

● B axis motor power and torque chart



● Motorized Spindle Power-Torque Curve



B-axis Motor Specifications					
Motor Model: 290-33A-G			Motor Type: Permanent Magnet Synchronous (Surface-mounted)		
Rated Power (kW)	11.6	Rated Current (A)	26.9	Rated Frequency (Hz)	47
Rated Voltage (V)	380	Rated Torque (Nm)	1100	Number of Poles (P)	56
Rated Speed (rpm)	100	No-load Back EMF (V/kgpm)	2470	Torque Constant, Kt (Nm/A)	40.8
D-axis Inductance (mH)	19	Q-axis Inductance (mH)	19	Phase Resistance (Ω)	3.37
Maximum Speed (rpm)	100	Peak Torque (Nm)	2200	Peak Current (A)	56
Temperature Sensor	PT-1000 / PTC-140 / MK-140 (two sets of each)	Cooling Method	Forced Water Cooling		
The cable assembly includes 4 power lines, 8 temperature sensor lines (1x per sensor group), 1 ground wire, 1 signal wire, and 1 encoder cable.					

Motorized Spindle Motor Specifications					
Motor Model: TQN206-95/30-SH			Motor Type: Permanent Magnet Synchronous		
Rated Power (kW)	30	Rated Current (A)	55	Rated Frequency (Hz)	200
Rated Voltage (V)	345	Rated Torque (Nm)	95	Number of Poles (P)	56
Rated Speed (rpm)	3000	Back EMF Constant (V/kgpm)	99.7	Torque Constant (Nm/A)	1.65
D-axis Inductance (mH)	2.2	Q-axis Inductance (mH)	4.8	Phase Resistance (Ω @ 80°C)	0.154
Peak Torque (Nm)	170	Peak Current (A)	125	Maximum Speed (rpm)	12000
Moment of Inertia (kg m²)	0.062	Temperature Sensor	KTY84-130 / PTC130 (two sets of each)	Cooling Method	Forced Water Cooling
3 power lines / 1 combined temperature sensor line (4-in-1) / 1 signal line / 1 encoder cable					

B/C Swiveling output power and torque chart

Introduction to the B/C-Axis Head

Design concept:

High-precision machining:

Adopting advanced CNC technology to achieve precise control of the spindle and swiveling motion, ensuring machining accuracy reaches the micron level to satisfy high-precision machining requirements.

Multi-axis linkage:

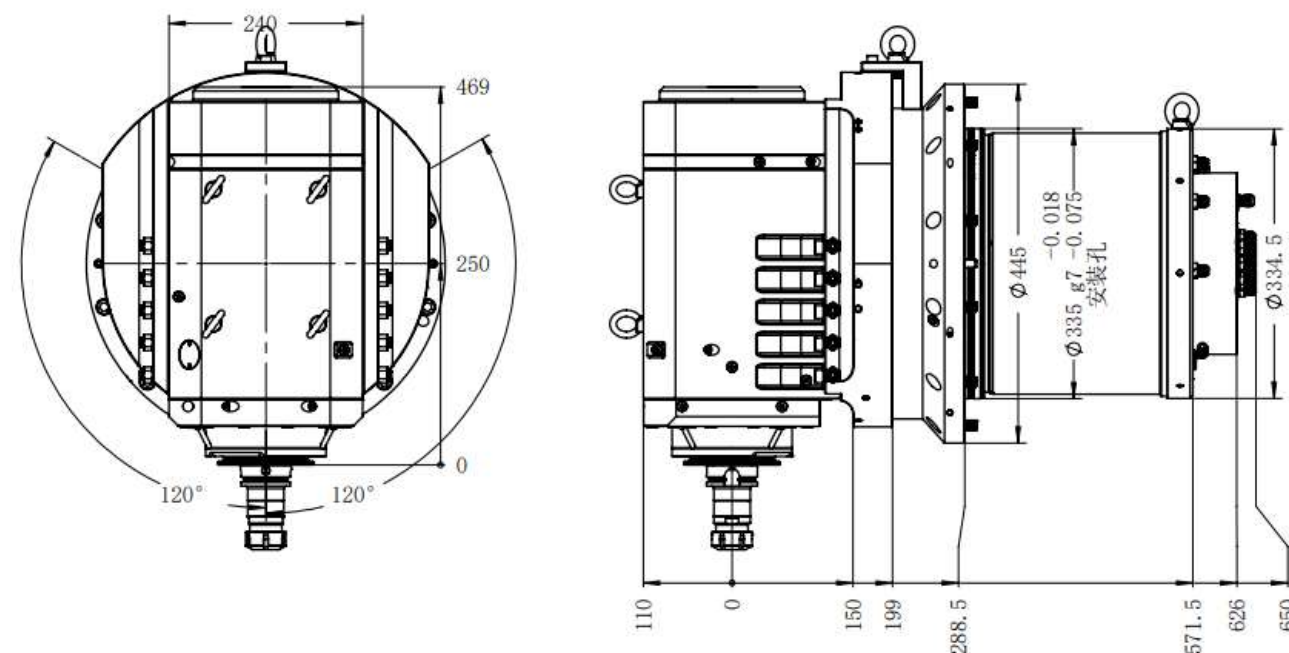
Supports simultaneous operation of multiple axes to achieve efficient machining of complex surfaces, thereby improving production efficiency and machining flexibility. Utilizes high-performance DD motors and drive systems, enabling rapid start, stop, and speed variation of the spindle, which enhances machining efficiency. Compatible with a variety of CNC systems and machining equipment, allowing users to select and upgrade according to actual requirements.

Innovations:

Dynamic balance:

Through rigorous dynamic analysis and optimized design, the spindle maintains dynamic balance during high-speed rotation and oscillation, thereby reducing vibration and noise and extending service life.

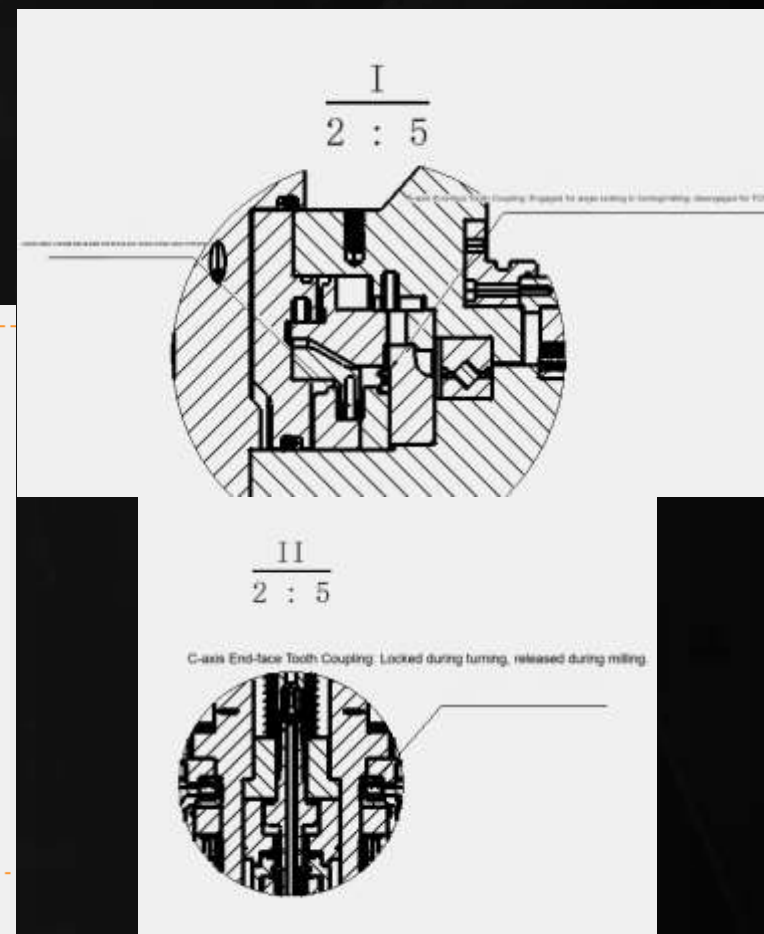
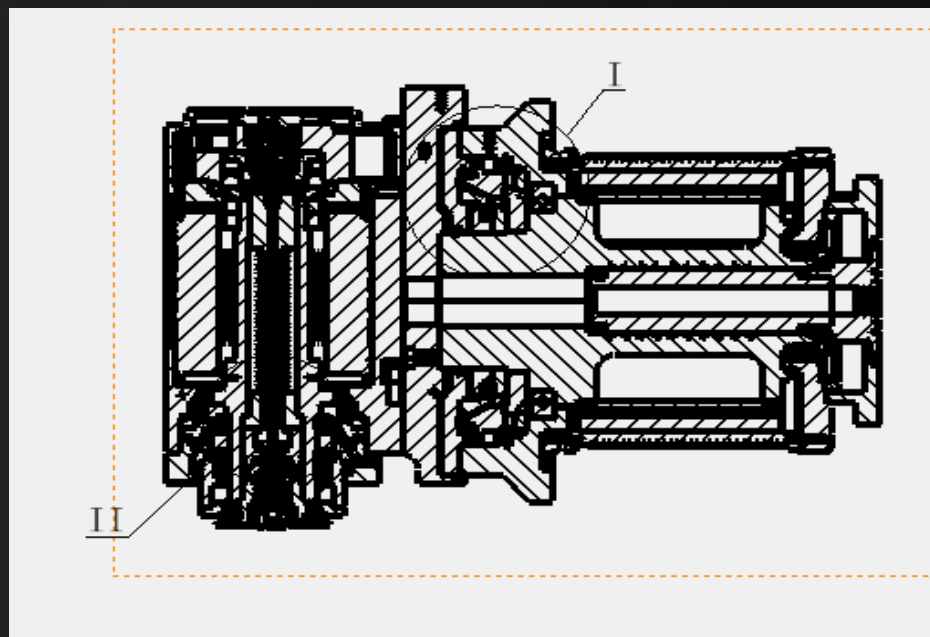
Dimensions diagram



Introduction to the B/C Head Feature & Structure

B-axis Three-gear-disc Braking Cartridge Design

Independent Triple-tooth-disc Design for the Turning/Milling Spindle



Machine tool optional configuration

Optional Tool setter

Improved machining accuracy and level of automation



Machine tool machined parts

The turn-mill compound machine tool core is designed for integrated processing of complex rotational parts, capable of simultaneously performing turning, milling, drilling, and tapping operations without requiring frequent machine tool changes.

Typical workpieces include:

Shaft Components/ Disc Sleeve Parts:

Such as motor shafts with keyways and eccentric holes, and hydraulic valve cores.

Special-shaped Rotational Parts:

Such as valve cores with flat surfaces or arcuate grooves, and complex profile joints. High-precision components: such as Medical Equipment parts and precision shaft components in the aerospace sector.



VTB800-M

Turning, Milling, and Grinding Combined Machine Tool

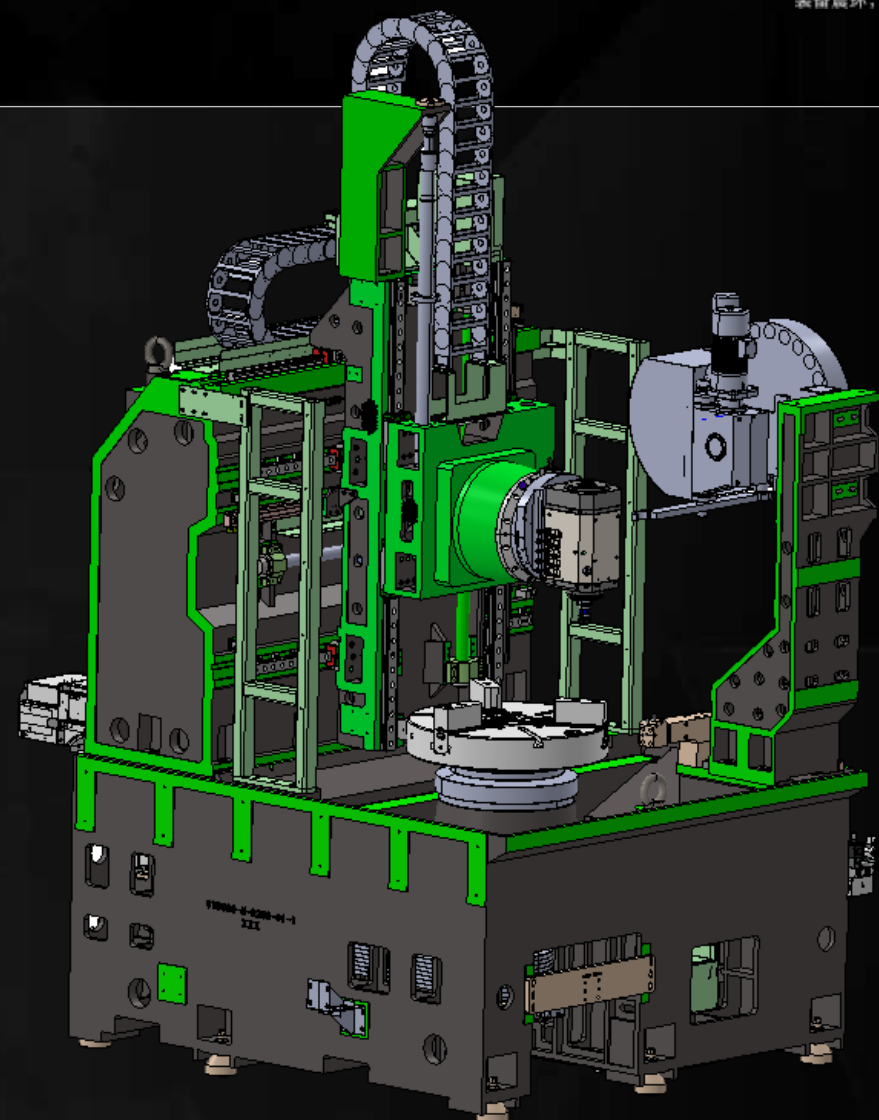
Multi-process Integrated Compound Machine Tool

Core Advantages

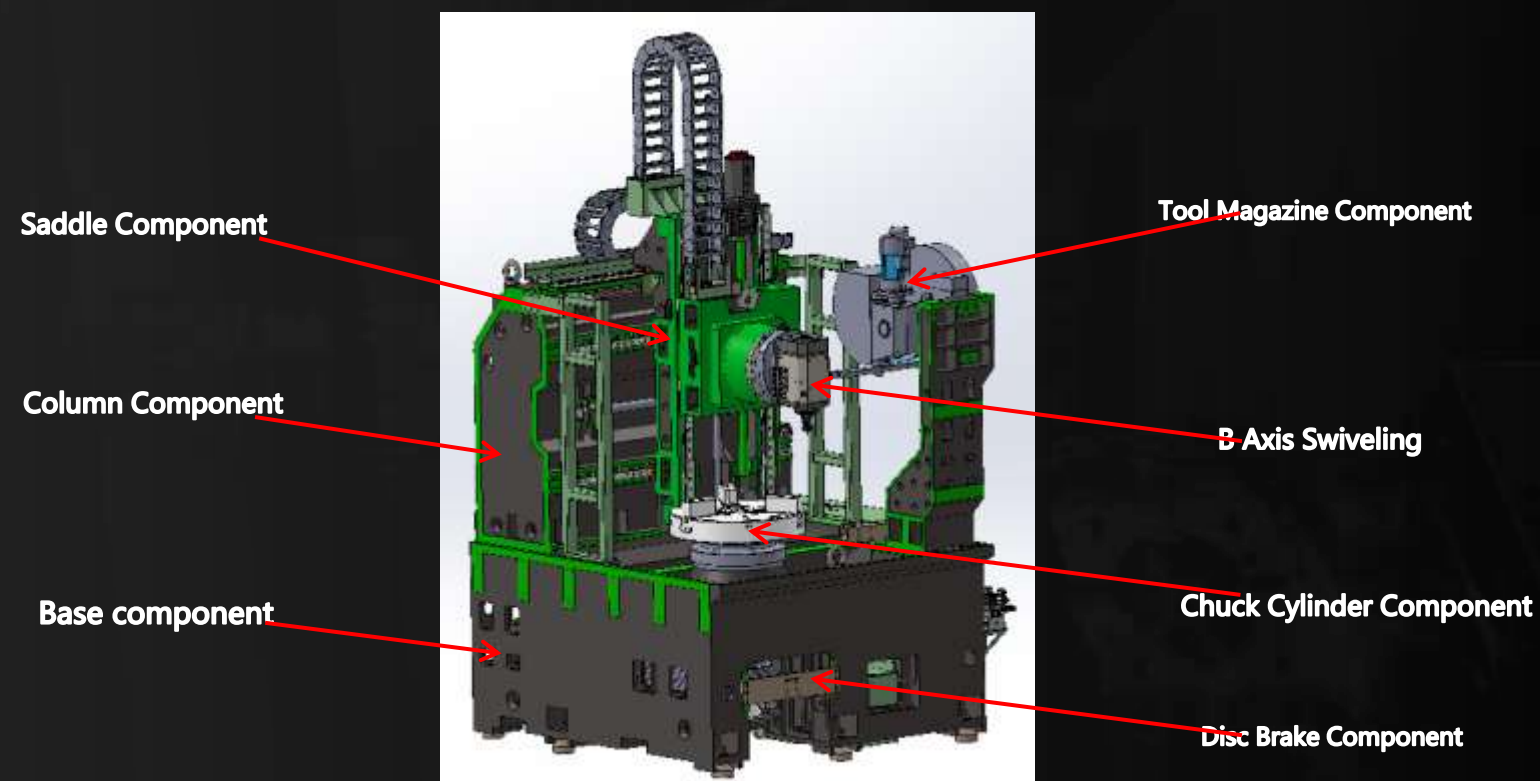
Turning/ Milling/ Grinding in a Single Clamping, Efficiency Improvement 50%+

Adapted for complex parts: Hydraulic Valve Body, Marine Propeller Shaft,
Aeroengine Casing

Traditional 4 Clampings → Current 1 Clamping



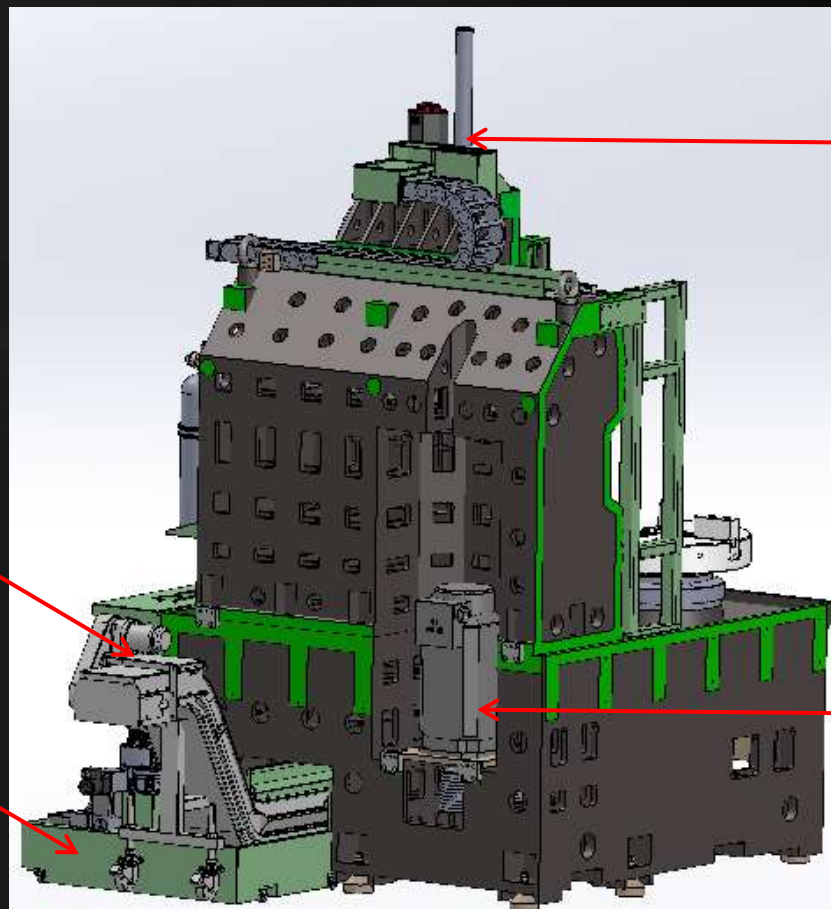
VTB800-M Machine Tool Structural Diagram



VTB800-M Machine Tool Structural Diagram

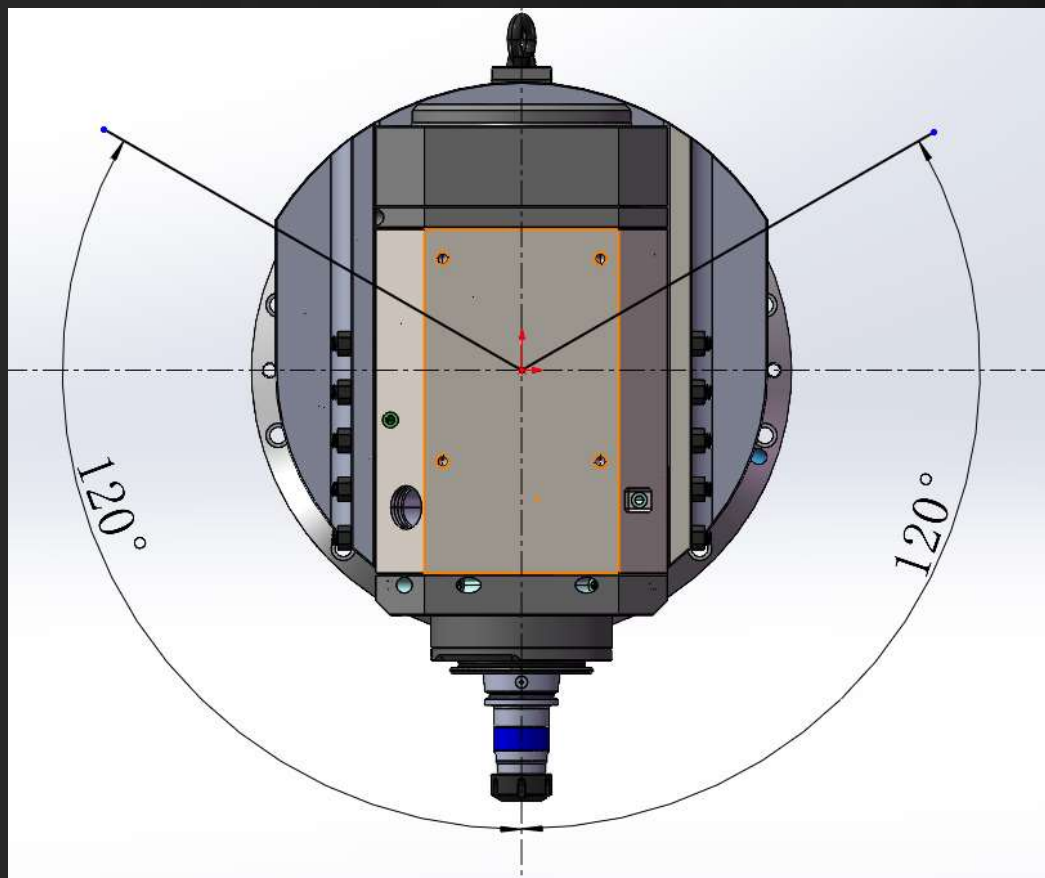
Chip conveyor

Coolant Tank Component



Balance Cylinder Component

Main Motor Component



Multi-Process Integration

Turning, milling, and grinding processes are completed in a single clamping, reducing datum conversion errors; accuracy reaches the IT6 level, with efficiency improved by over 50%.

Complex Surface Machining

Equipped with a B axis $\pm 120^\circ$ five-axis linkage function; clamping operations for complex rotary parts are reduced from 4 to 1, with form and position tolerances controlled within ± 2 arc seconds.

High Precision Adaptation

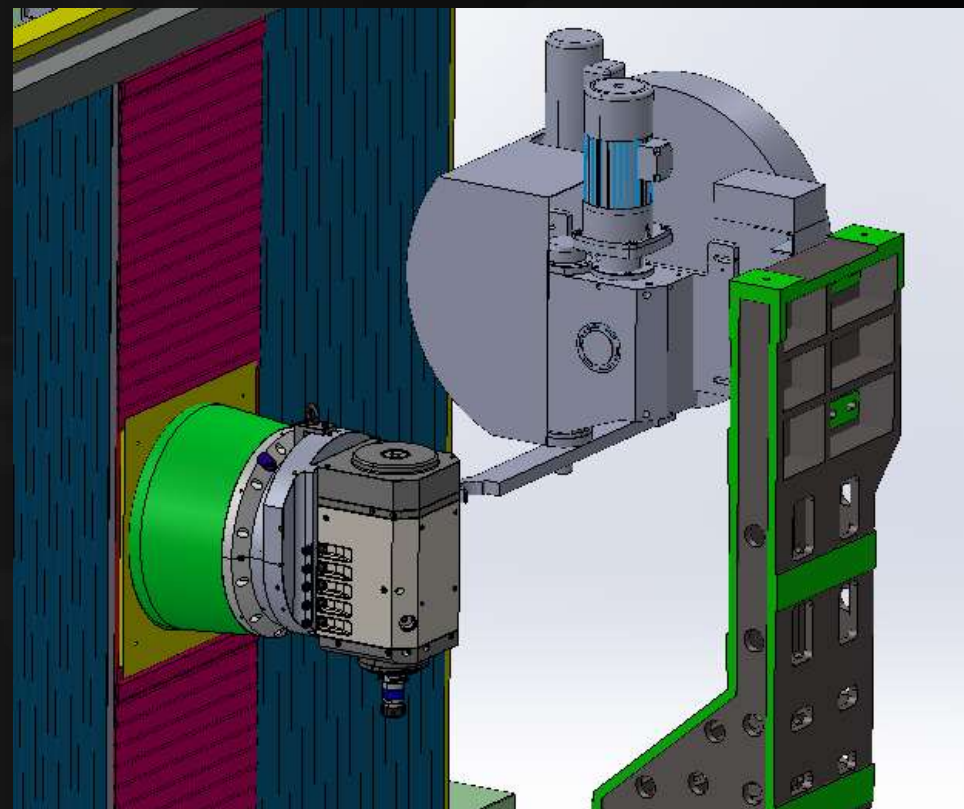
Suitable for hydraulic valve bodies, marine propeller shafts, aeroengine casings, and other irregular / complex structural parts; machining accuracy reaches the micron level, with surface roughness of Ra0.8.

VTB800-M Tool Spindle

Tool Spindle:

High precision HSKT63 turn-mill-grinding electric spindle,
Maximum speed 12000 rpm, rated torque 92 Nm, maximum
torque 170 Nm.

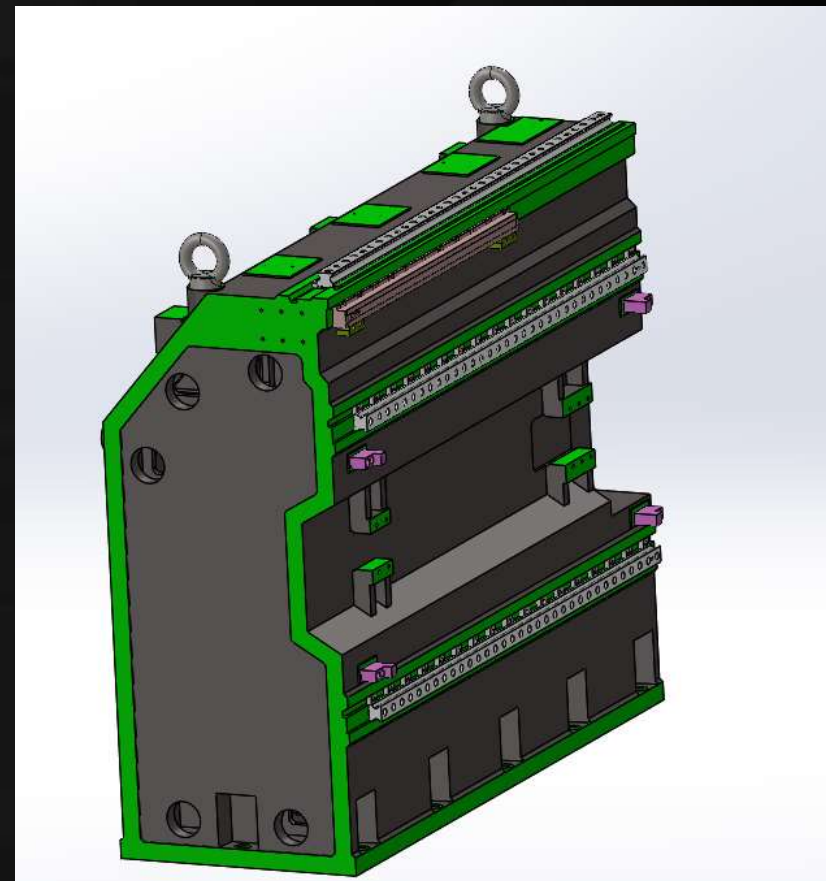
Equipped with a disc-type 24T vertical tool magazine.



VTB800-M Machine Tool Features

The column adopts a back-wall support design. Compared to the traditional structure, the back-wall design contact surface **is over 30% larger than that of the traditional contact surface**, significantly enhancing downward pulling force, providing more secure contact, and resolving the rigidity deficiencies of traditional structures.

The X-axis utilizes a 45 mm high rigidity roller guideway, with three guide rails arranged at different angles to provide strong anti-overturning torque. This significantly improves performance during heavy cutting and precision feeding, better suppressing vibration and ensuring smoother cutting. Compared to conventional rail models, the service life is extended threefold under continuous cutting conditions, making it suitable for heavy-duty turning and milling composite machining.



GV1165

Compact portal machining center

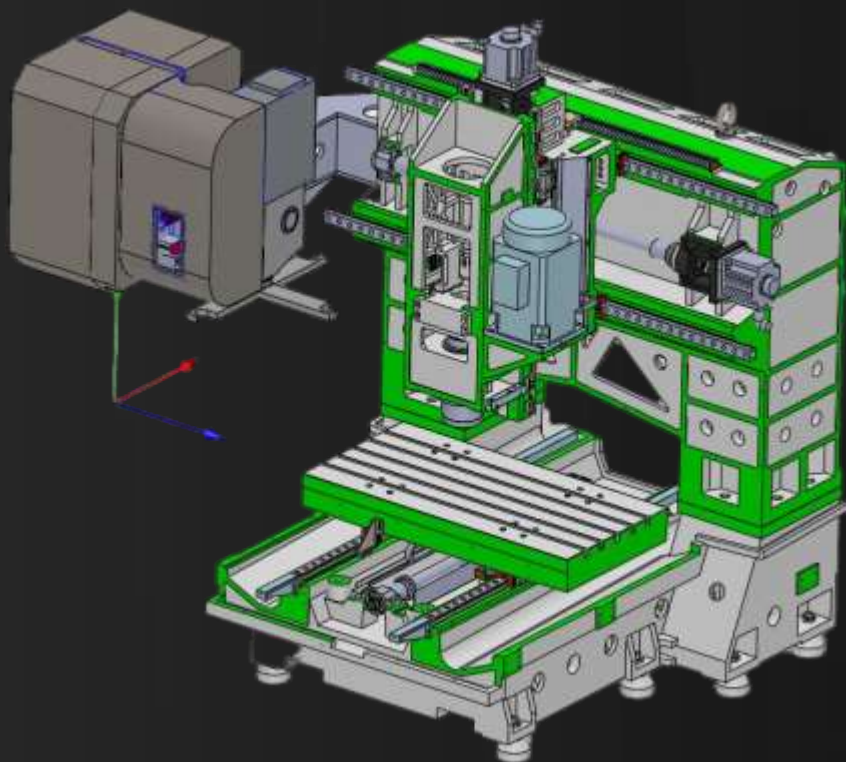
Structural advantages

- Cross milled-bracing spindle headstock (vibration resistant)
- 45 roller linear guideway + six-slider layout (high rigidity)
- X-axis dual-end support (high precision, waterproof and chip-resistant)
- Low-profile worktable (facilitates loading and unloading)

Applicable scenarios:

- Batch machining of small- and medium-sized parts





Structure and rigidity

Gantry design with high overall rigidity, excellent resistance to cutting forces, minimal machining deformation, and high stability, suitable for heavy-duty and high-precision machining requirements.

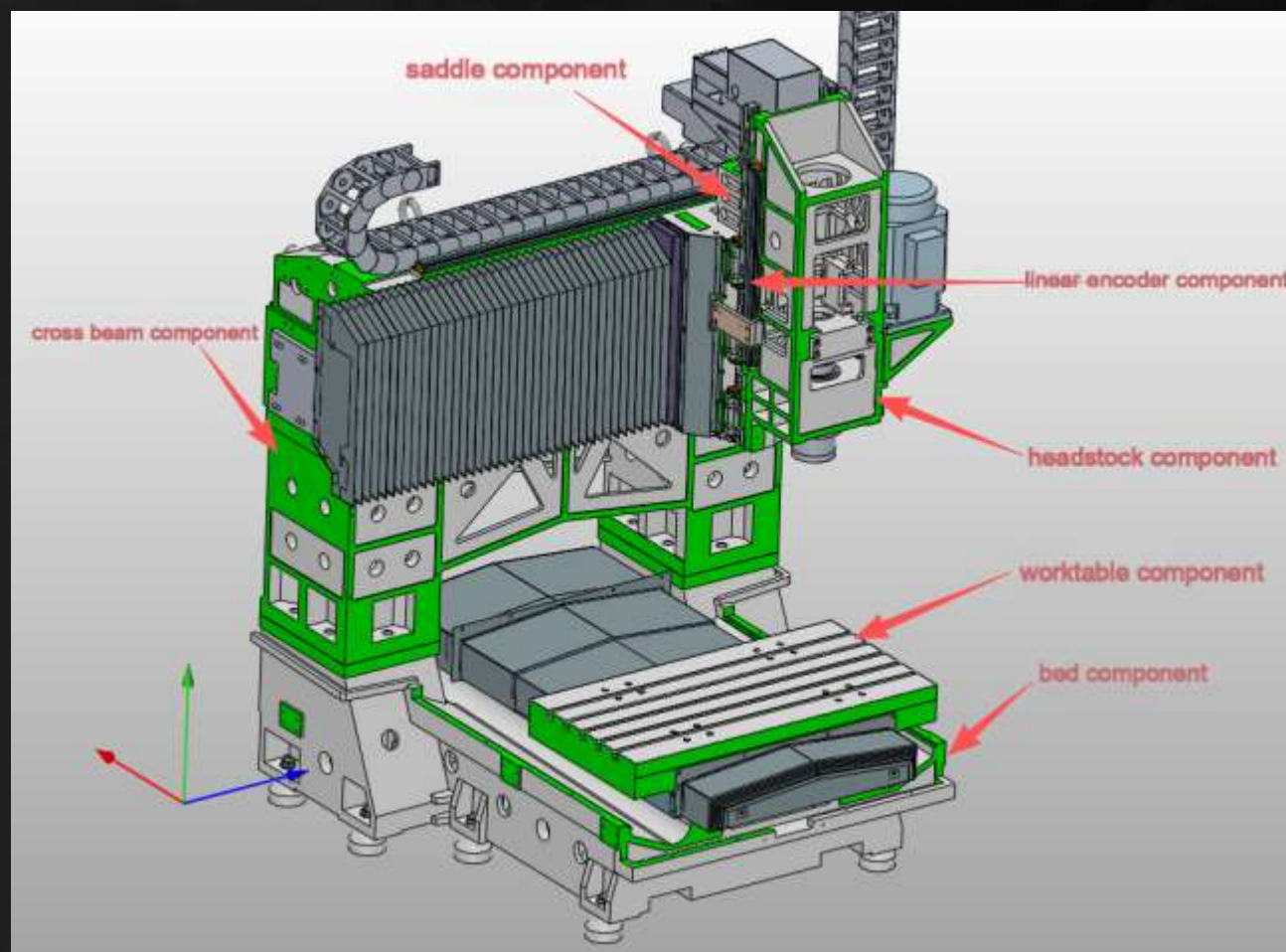
Machining capacity

Equipped with a four-axis rotary table+ disc tailstock, enabling five-sided milling, drilling, boring, reaming, counterboring, and tapping multi-process machining in a single clamping, thereby reducing clamping time and improving machining cycle efficiency.

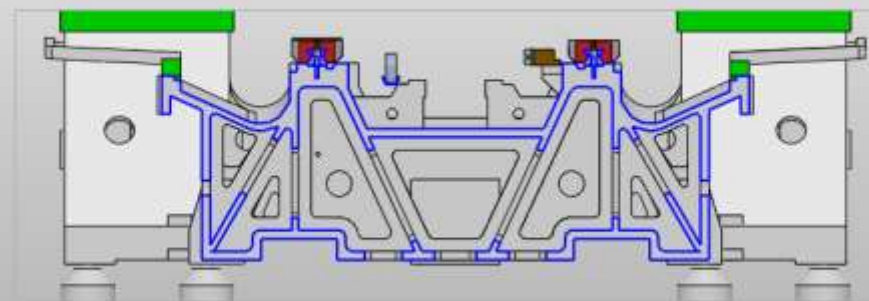
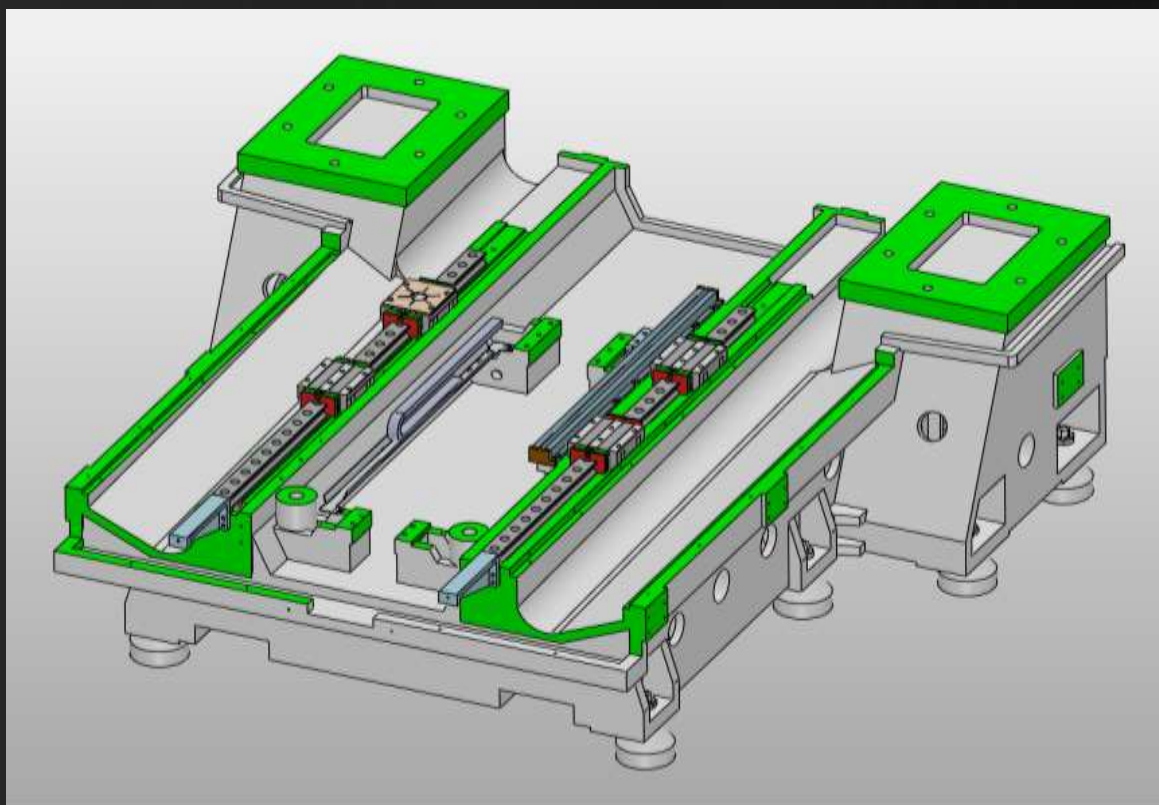
Performance and Ease of Use

Possesses sufficient static/ dynamic/ thermal stiffness; The control system is comprehensive, featuring a servo drive with rapid response and stable operation, and high-precision actuating elements; Equipped with centralized lubrication and cooling system, facilitating convenient operation and maintenance, with an aesthetically pleasing appearance and durable protection.

GV1165 Structural Diagram



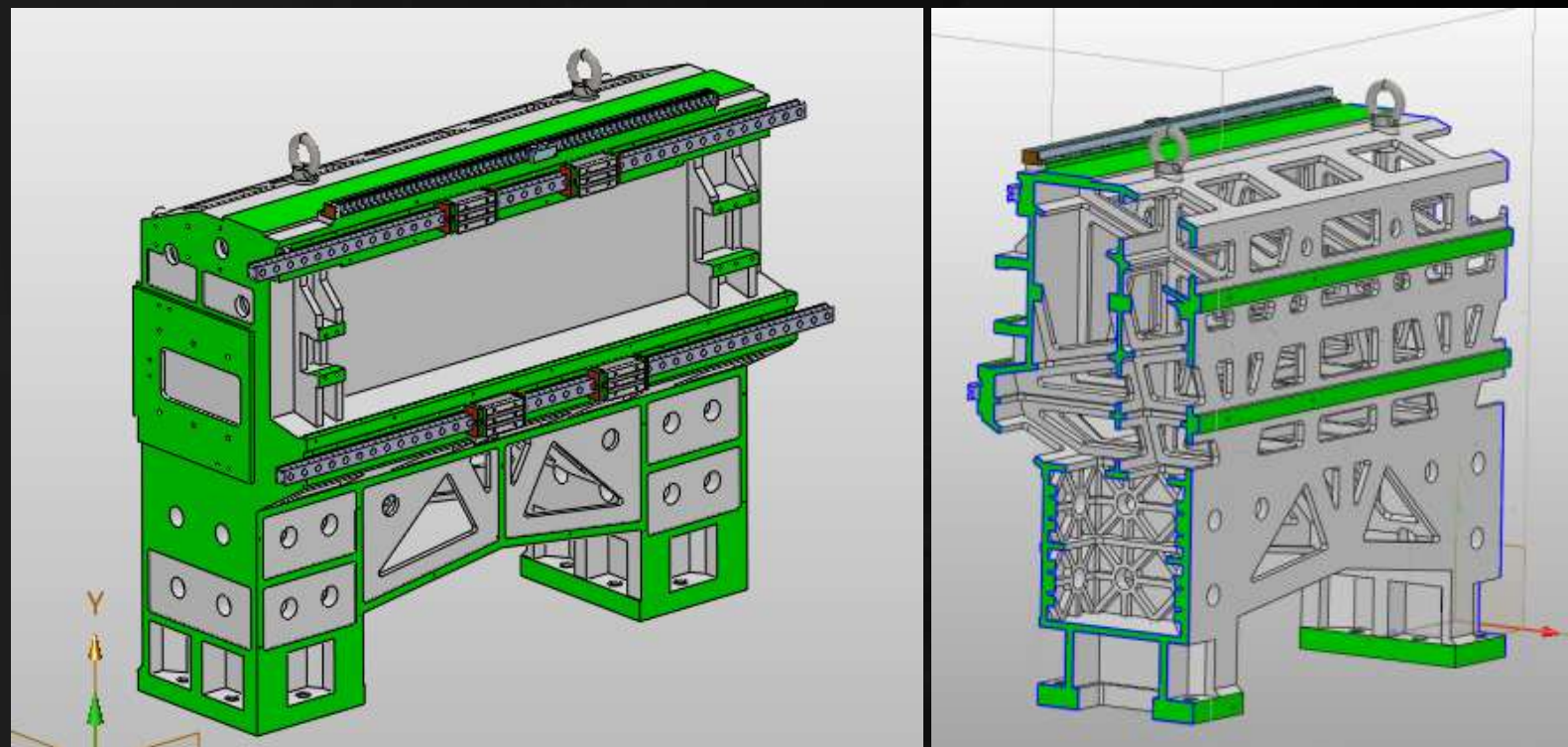
GV1165 (Base Components)



The base is designed to provide sufficient rigidity and strength, with a well-arranged internal stiffening rib layout. Shim installation positions are reserved directly beneath the corresponding stiffening ribs to enhance the machine tool's vibration damping, noise reduction, and machining accuracy. The rail span is large to ensure a rational overall internal wiring and oil circuit layout within the machine tool.

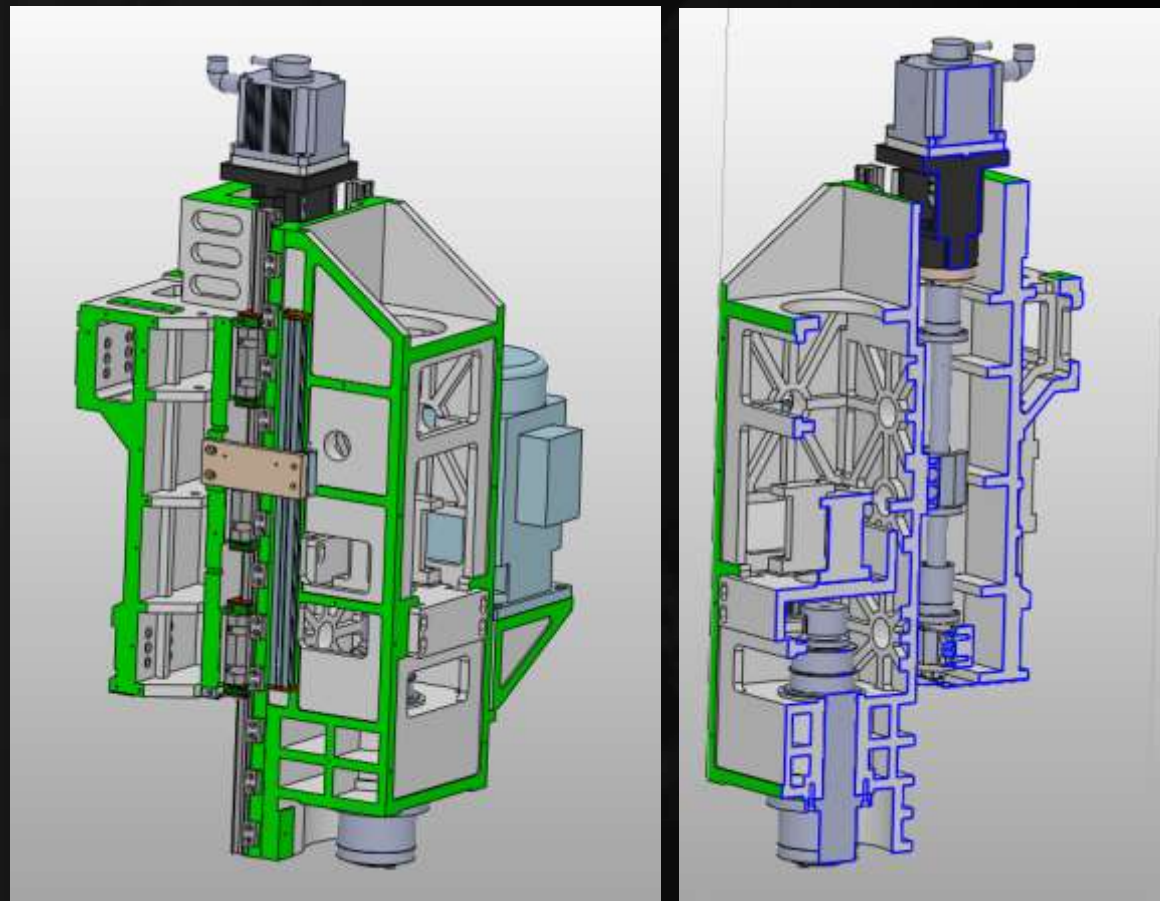
GV1165 (Crossbeam Component)

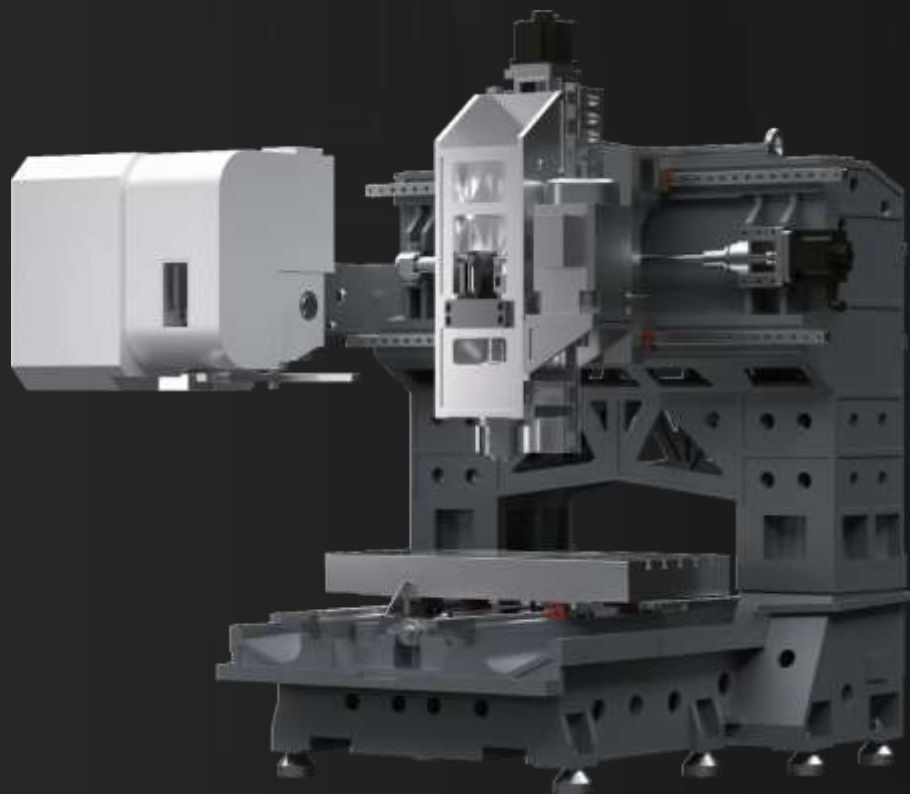
The crossbeam-column span is large, providing high rigidity. The internal stiffening rib arrangement is optimized to deliver high torsional and bending rigidity, ensuring excellent thermal stability.



GV1165 (Spindle Headstock Slider Component)

The spindle headstock is designed for heavy cutting conditions, featuring an integral casting with internal crosswise stiffening ribs to enhance stability, reduce vibration during machining, and ensure high-precision machining. Z The transverse six-slider layout with a large rail span reduces the overturning moment from the mainside motor installation, resulting in higher machining accuracy and improved accuracy retention.





Main Technical Parameters

Item	Unit	GV1165
Worktable dimensions	mm	1300 × 650
Maximum Load Capacity of Worktable	kg	1200
T-Slot Dimensions		Slot Width 18, Slot Pitch 100 mm, Number of Slots 5
X/Y/Z-Axis Stroke	mm	1100/650/500
Distance from Spindle Nose to Worktable	mm	150-650
Guideway		Three-Axis 45 Specified Roller Guideway
X/Y/Z-Axis Rapid Traverse Rate	m/min	36/48/48
Spindle		BT40-150-8000 (Belt Drive)
Tool magazine		BT40-24 Disc-Type Tool Magazine
Ball Screw		Taiwan Hiwin, Yintai

VMR1200

Large Flange Indexing Circular Drilling and Tapping Center

Core Advantages

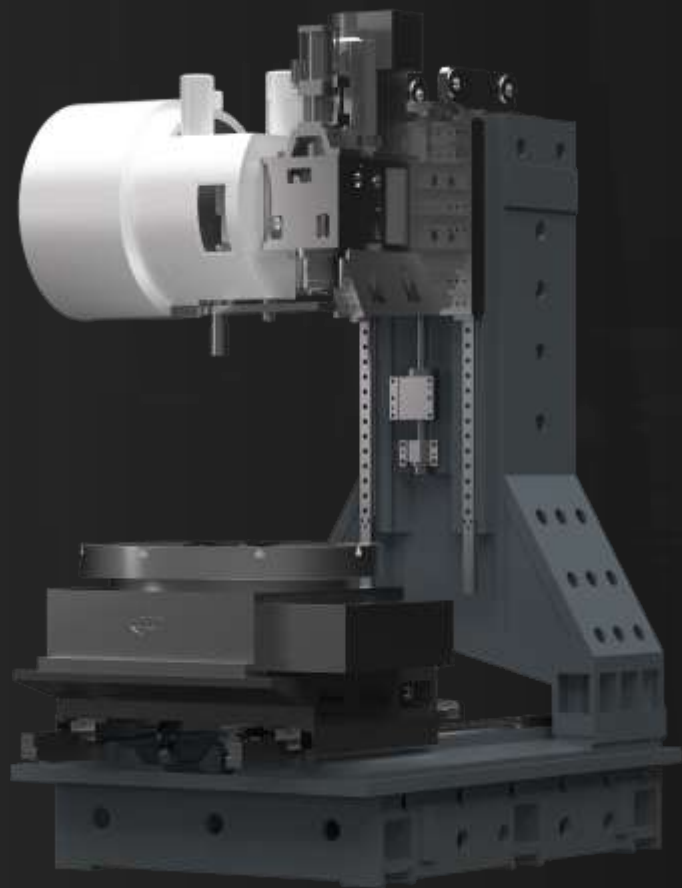
Large Span Herringbone Structure -- High Rigidity

Cycloidal Pitch Worm Gear Rotary Table -- High Precision Retention

55/45 Roller Linear Guide -- Stable Load Bearing

Suitable for drilling, tapping, and slot milling of large disc-type components



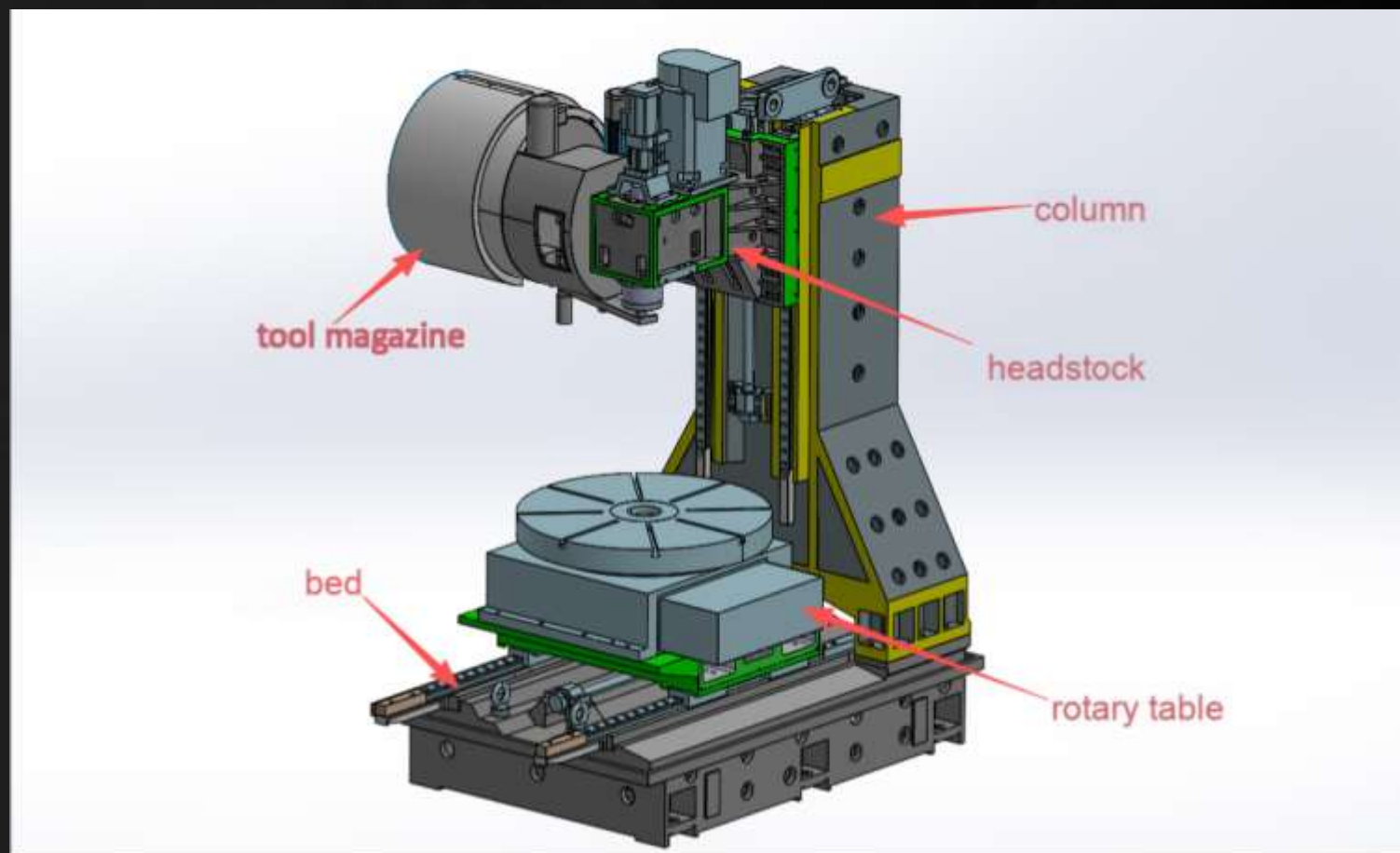


VMR1200 Utilizes a large-span herringbone design structure with high rigidity, suitable for drilling, tapping, and slot milling operations on large disc-type components.

The rotary table employs a multi-pitch worm gear and worm wheel assembly, ensuring precise transmission, easy backlash adjustment, and sustained high accuracy over extended use. Possesses superior rigidity and clamping force, significantly enhancing performance during heavy cutting.

The machine tool features a reasonable structural design with sufficient static, dynamic, and thermal stiffness. Equipped with a comprehensive control system, reliable servo drive performance, fast response speed, and actuating elements with reasonable structure and high precision; the machine tool incorporates centralized lubrication and cooling systems. Furthermore, it is easy to use, operate, and maintain, featuring an aesthetically pleasing design and durable protection.

VMR1200 Structural Diagram



Rotary Table Key Parameters

Large-Diameter Rotary Table Load Capacity

Rotary table diameter reaches 1000 mm,
Maximum load capacity of 5000 kg,
Applied to heavy-duty wind power flange machining.

High-torque motor drive performance

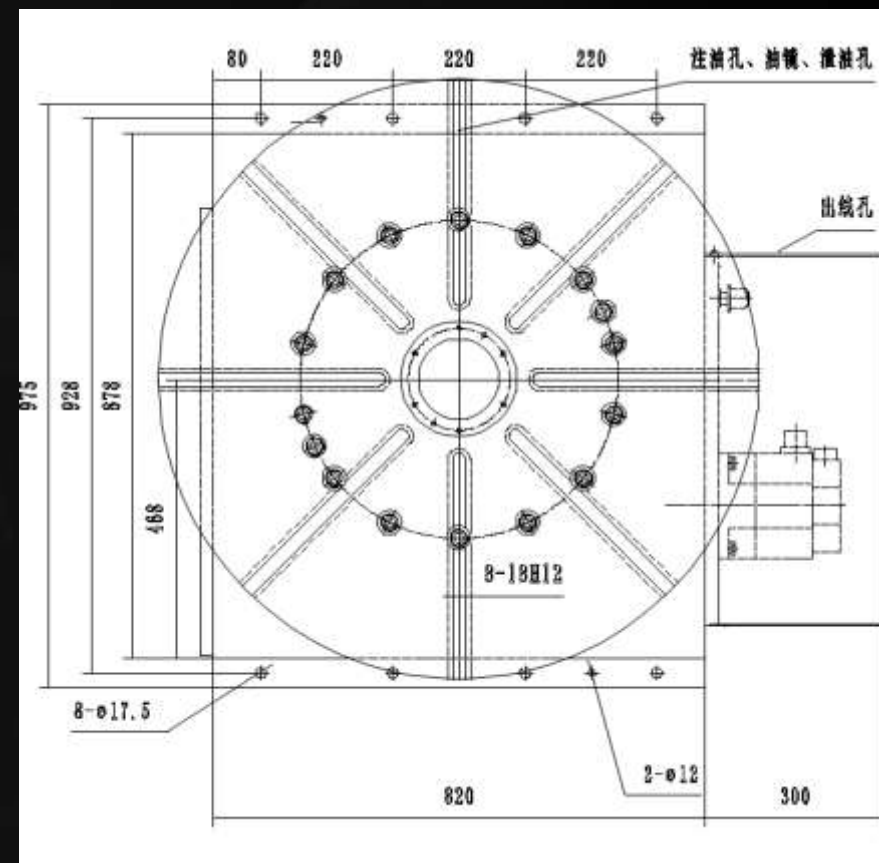
Rotary table motor torque ≥ 12 Nm, power ≥ 2.1 kW,
ensures precise indexing under heavy load. Actual
measurements during continuous rotation
show angular deviation less than 0.001° during
cutting.

Rotary table speed safety control

Maximum table speed 11.1 rpm,

Rotary table speed safety control

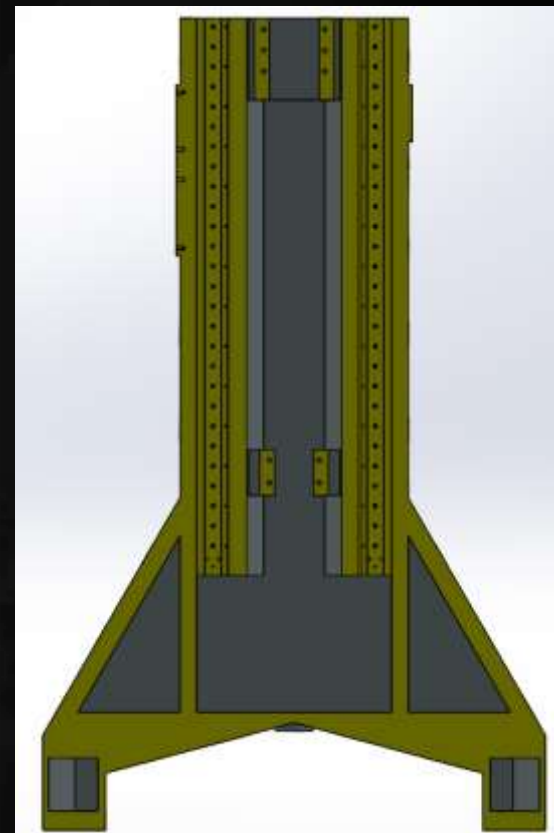
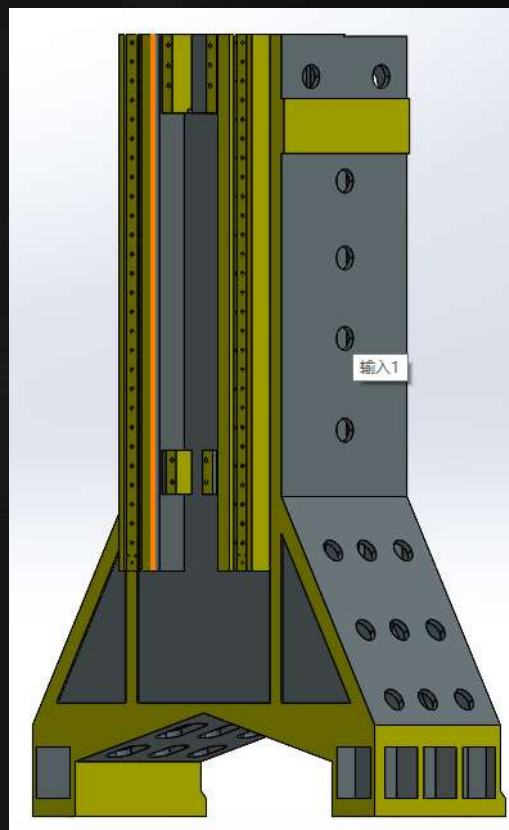
Minimum indexing unit set at 0.001° ,



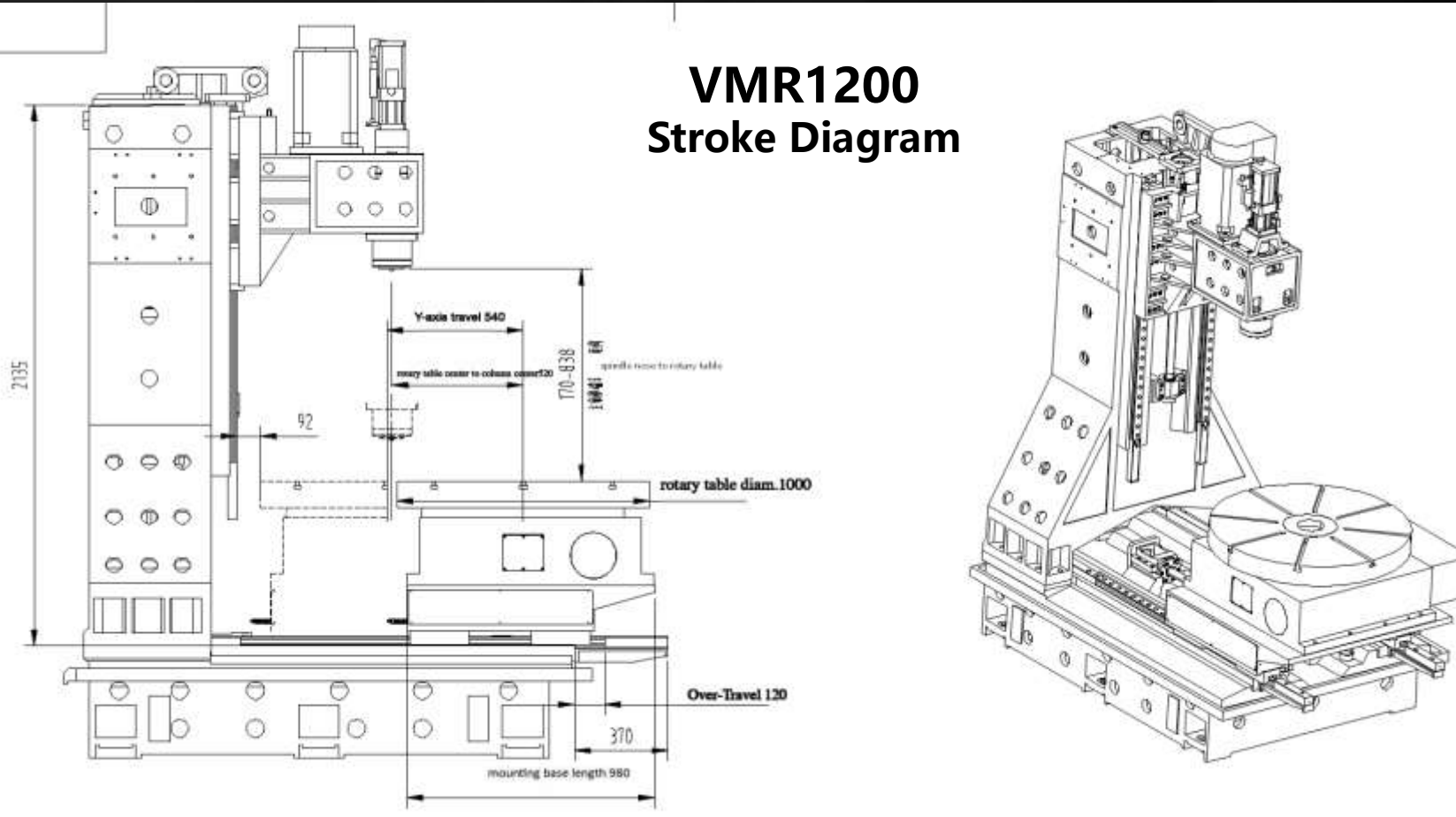
VMR1200 (Column component)

Column structure height enhancement

Column height increased by 220 mm, expanding machining depth by over 30%, enabling the processing of taller and deeper workpieces, such as drilling and slot milling on large pump valve casing components.



VMR1200 Stroke Diagram



Main Technical Parameters

Item	Unit	VMR1200
Rotary Table Dimensions	mm	∅ 1000
Maximum Load of Rotary Table	kg	5000
Y/Z Axis Stroke	mm	540/600
Distance from Spindle Nose to Rotary Table Surface	mm	170-770
Guideway		Z Axis 45 Standard Roller Guideway
Y/Z Axis Rapid Traverse Speed	m/min	48
Spindle		BT40-150
Spindle Speed		8000 rpmBelt Drive
Tool magazine		BT40-24 Disc-Type Tool Magazine
Ball Screw		Taiwan Hiwin, PMI



ZKV400-B

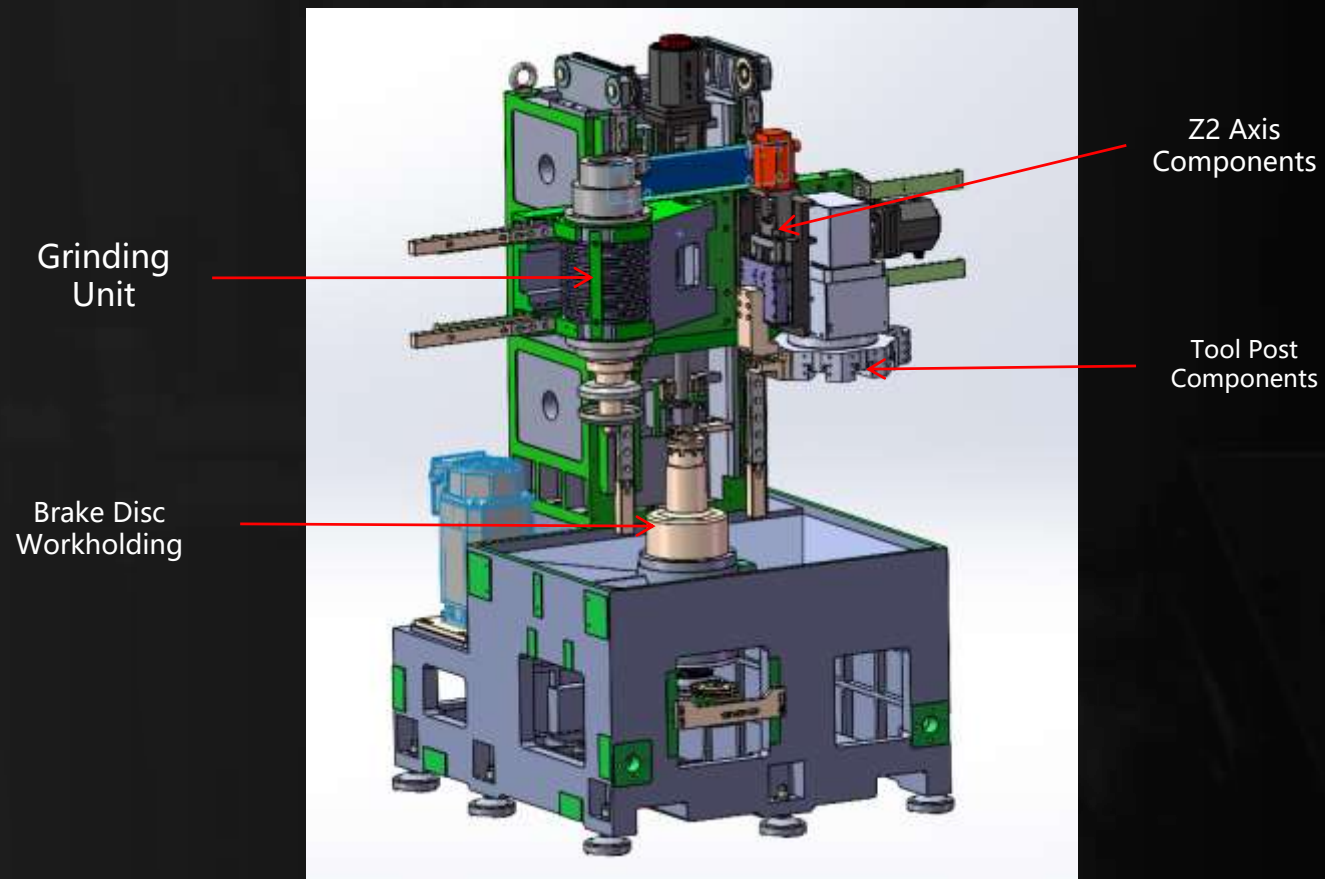
Brake Disc Turning and Grinding Composite Machine Tool

Core Advantages

- Single Clamping for Turning → Grinding (Precision Improved by 30%)
- Double-Tool Synchronous Cutting (High Efficiency, Deformation Prevention)
- Purpose-Built Design for Mass Production of Brake Discs



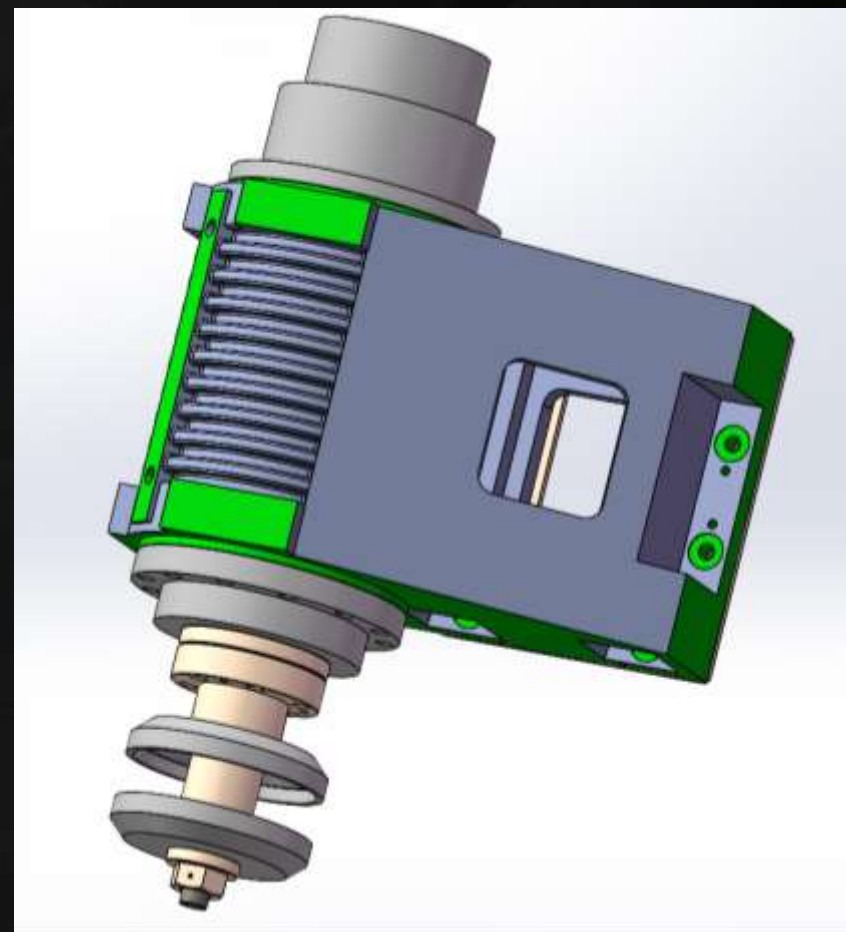
ZKV400-B Machine Tool Structure Diagram



ZKV400-B Grinding Unit

By integrating the grinding wheel with the Electric Spindle, end-face grinding is performed on the left side of the turret. The entire process from rough turning to finishing grinding can be accomplished in a single clamping, effectively eliminating the cumulative errors associated with transferring workpieces from a traditional vertical lathe to a separate grinding machine. Precision is improved by more than 30% compared to conventional methods.

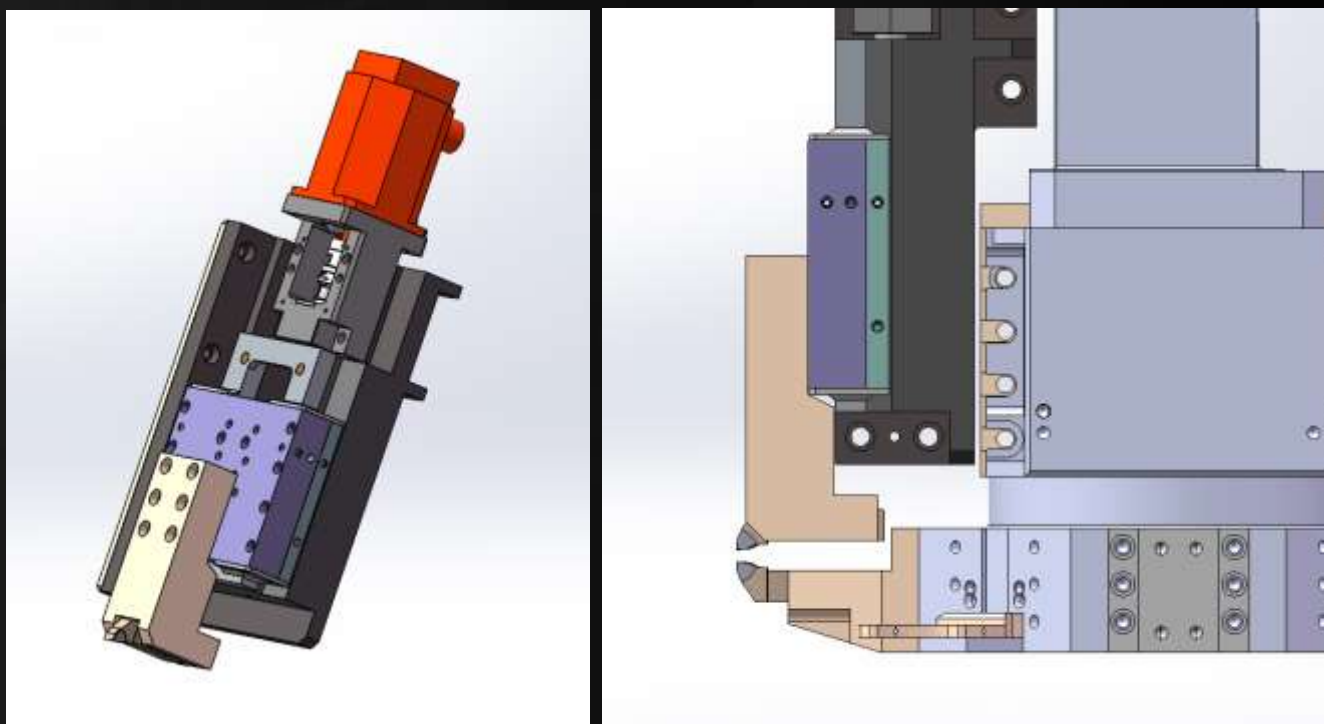
The grinding unit employs a 22 kW A2-6 Electric Spindle with a maximum speed of 4000 rpm, a vertical grinding head distance of 50 mm, and a grinding wheel diameter of $\varnothing 250$ (optional $\varnothing 220$ grinding wheel). It is suitable for double-sided synchronous precision grinding, significantly enhancing efficiency.



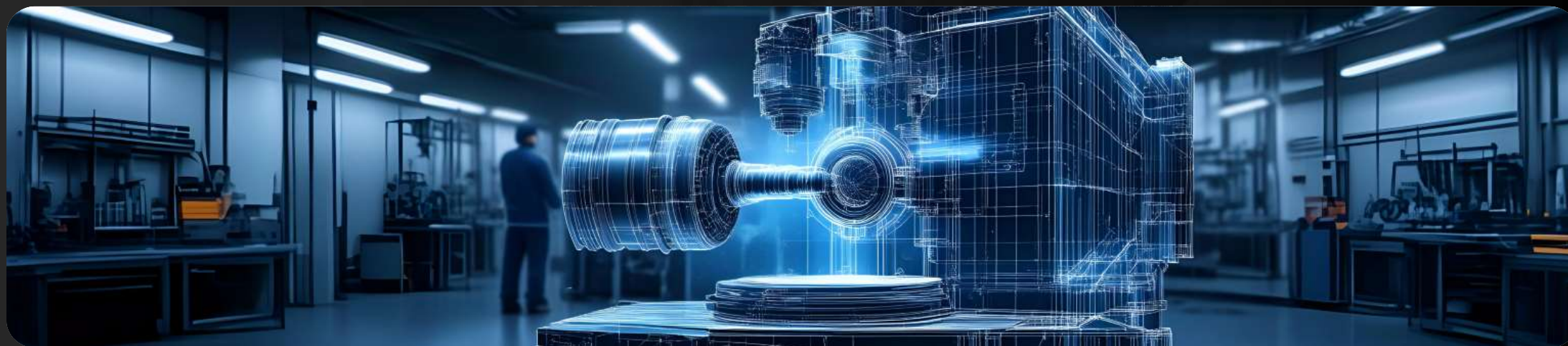
ZKV400-B Z2 AXIS component

The Z2 axis guide rail is a hardened rail
Stroke is 50mm
Equipped with a 25*25mm turning tool

The Z2 axis end-face turning tool and the dedicated end-face turning tool are symmetrically arranged, enabling synchronous dual-tool end-face turning of brake discs. This significantly improves machining performance compared to traditional vertical lathes with single-tool, single-axis cutting, which suffer from low efficiency and uneven force-induced deformation.



Machining capability characteristics



Design of maximum swing and machining diameters

The ZKV400-B supports a maximum swing diameter of $\Phi 500$ mm and a maximum machining diameter of $\Phi 380$ mm, compatible with mainstream medium and small-sized brake disc dimensions, fulfilling the machining requirements of complex structures such as customized ventilated discs for new energy vehicles.

High rigidity structure guarantees load stability

The entire machine adopts a thermally symmetrical box-type ribbed cast iron structure, reducing thermal deformation by 60%, optimizing dynamic and static rigidity, ensuring stability during continuous cutting under high load, and enhancing part machining consistency.

Composite processes completed within single clamping

By utilizing turret and Z2 axis linkage technology, composite process synchronous machining is achieved, significantly reducing workholding time; the single-piece machining cycle is decreased by 20%, making it especially suitable for large-batch automotive brake disc takt production.

THANKS