

立式加工中心 Vertical Machining Center

我公司立式加工中心采用两线一硬的床身结构，具有优异的模具加工性能和强劲的重切削能力。底座一体铸造坚强和稳定，强劲有力并配合低摩擦系数的进口耐磨片经久耐用，立柱采用人字形一体铸造，刚性大幅增加，支撑头部重切削，确保刚性及精度。

Our company's vertical machining center adopts a two-linear guide rail and one hardened rail structure, which has excellent mold processing performance and strong heavy-duty cutting ability. The base is integrally cast to be strong and stable, powerful and imported wear-resistant plate with low friction coefficient, which is durable. The column is cast in a herringbone shape, which greatly increases rigidity and supports the head for heavy cutting to ensure rigidity and precision.

适用行业 APPLICATIONS

通用机械、模具、工程机械、石油泵阀、汽车等。
General machinery, molds, engineering machinery, oil pump valves, automobiles, etc.



头部 HEAD

恒温稀油喷淋润滑精密齿轮和轴承，确保超长安全使用；日制滨田牌铬钼合金钢齿轮，精密研磨，确保高速高温耐久使用。

Constant temperature oil spray lubrication of precision gears and bearings to ensure long-term safe use; Japanese-made Hamada brand chrome-molybdenum alloy steel gears, precision grinding, to ensure high-speed high temperature and durable use.

底座 BASE

超大尺寸双层箱式底座，精细铲花各结合部，以多点硬接触、确保整机稳定持久；采用比同行加大规格螺杆和线轨，确保机械的高刚性及整机精度；一体内置式油水分离和排屑结构，确保整机环保省钱。

立柱 COLUMN

全封闭“人”字型铸件结构，内部采用最高稳定之蜂窝肋骨结构，高品质标准铸机，两次电炉时效和两次振动时效。

Fully enclosed "人" type casting structure with the most stable honeycomb rib structure, high quality standard casting machine, two electric furnace aging and two vibration aging.

Super-sized double-layer box-type base, fine shoveling of each joint, multi-point hard contact to ensure the stability and durability of the whole machine. The use of larger-sized screws and line rails than the peers ensures high mechanical rigidity and machine precision. Integrated built-in structure of oil-water separation and chip removal ensures that the whole machine is environmentally friendly and economical.

技术参数 Technical specification		FRT-L850	FRT-L1060	FRT-L1270	FRT-L1580
行程 Travel					
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	800/500/500	1000/600/600	1200/700/800	1500/800/700
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	105-655	180-780	150-750	170-870
导轨方式 Guide rail		两线一硬 Two linear guide rail, one hardened rail			
工作台 Work Table					
工作台尺寸 Table size	mm	500X1000	600X1100	700X1300	800X1800
工作台最大承载量 The maximum load capacity of the worktable	kg	600	800	1000	1500
主轴 Spindle					
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)	mm	BT40/150	BT40/150	BT50/155	BT50/155
主轴电机 The spindle motor power	kw	5.5-7.5	7.5-11	11-15	11-15
主轴转速 Spindle speed	rpm	8000	8000	8000	8000
精度 Accuracy					
定位精度 Precision of position	mm	0.01/1000	0.01/1000	0.01/1000	0.01/1000
重复定位精度 Accuracy of repeated position	mm	±0.01	±0.01	±0.01	±0.01
尺寸 Size					
机床重量 (约) Net weight (approx.)	kg	5300	6700	8200	12000

* 可根据使用工况按定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- 1、数控系统标准功能
- 2、主轴恒温系统
- 3、自动断电装置
- 4、液压单元系统
- 5、切削液单元
- 6、自动润滑系统
- 7、三色警示灯
- 8、工作照明灯
- 9、手轮控制盒
- 10、RS-232界面
- 11、热交换器配置
- 12、除屑机及屑桶
- 13、基础螺栓及水平调整垫块
- 14、控制器操作手册及电路图
- 15、机械安全操作手册
- 16、精度检验表
- 17、防溅防护及手动门
- 18、机械调整工具一组

选配 OPTIONAL

- 数控系统simens/三菱/Fanuc/KND
各轴光栅尺装置
圆盘刀库/链式刀库
主轴中心出水2-7MPa
12000-15000机械主轴
四轴功能
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function

卧式加工中心 Horizontal Machining Center

卧式加工中心具有高精度，高刚性，立柱整体，双层壁结构，粗精加工适宜，床身采用两线一硬重型滚柱线轨，超大尺寸，T型动柱结构，确保机械性能的高刚性及整机精度。整体采用比同行加大规格螺杆和线轨，能做到大承载，重切削，高刚性。

The horizontal machining center has high precision, high rigidity, integral column, double-wall structure, suitable for rough and fine machining, the bed adopts two linear guide rail and one hardened rail, heavy-duty roller line rail, super-sized, T-shaped moving column structure, to ensure the mechanical performance, high rigidity and overall precision. The overall use of screw rods and line rails with larger specifications than those of the same industry can achieve large load, heavy cutting, and high rigidity.

产品特点

FEATURES

- ▶ 动柱式结构:
X/Z轴线轨, Y轴升级为硬轨,
Y轴立柱刚性增强;
- ▶ 齿轮箱升级, 切削效率大大提升;
- ▶ 升级为新款防护罩。
- ▶ Moving column structure:
X/Z axis rail, Y axis is upgraded to hard rail,
and Y-axis column is rigidly enhanced;
- ▶ Gearbox upgrade,
cutting efficiency is greatly improved;
- ▶ Upgrade to new shield.



头部

HEAD

全封闭正挂箱式含铜铸件结构, 贴进口胶带, 超大尺寸钳式导轨, 确保重切削之抗震; 日制及台式铬钼合金钢齿轮, 精密研磨, 确保高速高温耐久使用。

Fully enclosed hanging box type copper-containing casting structure, with imported tape and oversized clamp rails to ensure heavy-duty shock resistance; Japanese-made and Taiwan-made chrome-molybdenum alloy steel gears, precision grinding, ensuring high-speed and high-temperature durability.

底座

BASE

超大尺寸“T”型双层箱式底座, 精细铲花各结合部, 以多点硬接触, 确保整机稳定持久; 采用比同行加大规格螺杆和线轨, 确保机械的高刚性及整机精度; 一体内置式油水分离和排屑结构, 确保整机环保、省钱。

立柱

COLUMN

封闭“回”式双层铸件结构, 高品质米汉纳标准铸铁, 两次电炉时效和两次振动时效, 确保抗震长久不变形, 大尺寸(140×70mm)内支撑硬轨(HRC55), 台湾设备超精研磨, 精细铲花, 确保寿命延长50%。

Closed "back" double-layer casting structure, high-quality Mehana standard cast iron, two electric furnace aging and two vibration aging, to ensure long-term deformation without deformation, large size (140 × 70mm) support hard track (HRC55), Taiwan's equipment is super-fine grinding and fine shovel to ensure that the life of the purlins is extended by 50%.

Super-sized double-layer box-type base, fine shoveling of each joint, multi-point hard contact to ensure the stability and durability of the whole machine. The use of larger-sized screws and line rails than the peers ensures high mechanical rigidity and machine precision. Integrated built-in structure of oil-water separation and chip removal ensures that the whole machine is environmentally friendly and economical.

技术参数 Technical specification		FRT-1810	FRT-1812	FRT-1814	FRT-1816
行程 Travel					
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	1800/1000	1800/1200	1800/1400	1800/1600
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	0-1000	0-1100	0-1100	0-1200
导轨方式 Guide rail		两线一硬 Two linear guide rail, one hardened rail			
工作台 Work Table					
工作台尺寸 Table size	mm	1000X1000	1200X1200	1400X1400	1600X1600
工作台最大承载量 The maximum load capacity of the worktable	T	5	6	7	8
主轴 Spindle					
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)	mm	BT50/190	BT50/190	BT50/190	BT50/190
主轴电机 The spindle motor power	kw	22	26	26	30
主轴转速 Spindle speed	rpm	6000	6000	6000	6000
精度 Accuracy					
定位精度 Precision of position	mm	0.01/1000	0.01/1000	0.01/1000	0.01/1000
重复定位精度 Accuracy of repeated position	mm	±0.01	±0.01	±0.01	±0.01
尺寸 Size					
机床重量 (约) Net weight (approx.)	T	20	24	26	28

* 可根据使用工况按需定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- 1、数控系统标准功能
- 2、主轴恒温系统
- 3、自动断电装置
- 4、液压单元系统
- 5、切削液单元
- 6、自动润滑系统
- 7、三色警示灯
- 8、工作照明灯
- 9、手轮控制盒
- 10、RS-232界面
- 11、热交换器配置
- 12、除屑机及屑桶
- 13、基础螺栓及水平调整垫块
- 14、控制器操作手册及电路图
- 15、机械安全操作手册
- 16、精度检验表
- 17、防溅防护及手动门
- 18、机械调整工具一组

选配 OPTIONAL

数控系统simens/三菱/Fanuc/KND
各轴光栅尺装置
圆盘刀库/链式刀库
主轴中心出水2-7MPa
12000-15000机械主轴
四轴功能

CNC system simens/Mitsubishi
/Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function

数控 龙门铣 Integral Gantry Machining Center

河南帆尔特定梁柱数控龙门镗铣床，继承了传统龙门机床基础框架刚性强，结构对称，稳定性强等优点的基础上，采用创新设计理念，产品全部采用PRO/E三维设计，机床主要结构均采用有限元分析，通过优化布筋结构，合理分布质量，使整机载重大、刚性强、动态特性佳、满足大功率、高精度切削的要求，适合超大、超重型零件的加工。

Henan Front fixed beam and column CNC gantry boring and milling machine inherits the advantages of traditional gantry machine tools such as strong rigidity, symmetrical structure, and strong stability, and adopts innovative design concepts. All products adopt PRO/E three-dimensional design. The main structure of the machine tool is uniform. Using finite element analysis, by optimizing the reinforcement structure and distributing the mass reasonably, the whole machine has heavy load, strong rigidity, good dynamic characteristics, which meets the requirements of high power and high precision cutting, and it is suitable for the processing of super large and super heavy parts.

FRTSP-6035B具备铣削、镗削、钻削（钻、扩、铰）、攻螺纹、铰削等多种加工功能，适于船舶、新能源、航空航天、汽车、工程机械、包装、轨道交通、五金橡胶等各种机械加工领域的大型零件加工，更是加工精度要求较高、结构复杂的各种超大、超重型零件加工的首选设备。

FRTSP-6035B has various processing functions such as milling, boring, drilling (drilling, expanding, and reaming), threading, spot milling, etc. It is suitable for processing large parts in various mechanical processing fields such as shipbuilding, new energy, aerospace, automotive, engineering machinery, packaging, rail transit, hardware and rubber, and is also the preferred equipment for processing various ultra large and ultra heavy parts with high precision requirements and complex structures.

主要结构 MAIN STRUCTURE

FRTSP-6035B系列机床为工作台移动式结构，主要由工作台、床身、滑座、立柱、横梁、滑枕、液压系统、润滑系统、气动系统、冷却过滤系统、排屑装置、固定式操作面板以及电控系统等部件组成。

The FRTSP-6035B series machine tools are mobile worktable structures, mainly composed of worktable, bed, sliding seat, column, crossbeam, ram, hydraulic system, lubrication system, pneumatic system, cooling filtration system, chip removal device, fixed operation panel, and electronic control system.

各坐标轴定义： Definition of each coordinate axis:

- ▶ X轴：工作台在床身上沿导轨作前后纵向运动；
 - ▶ Y轴：滑枕、滑座部件在横梁上沿导轨作左右横向运动；
 - ▶ Z轴：滑枕在滑座上沿导轨作上下垂直运动；
- ▶ X-axis: The workbench moves longitudinally along the guide rail on the bed in front and back directions;
 - ▶ Y-axis: The ram and seat components move horizontally along the guide rail on the crossbeam to the left and right;
 - ▶ Z-axis: The ram moves vertically up and down along the guide rail on the slide seat;

头部 HEAD

采用最佳矩形比例含铜铸件结构，配合日本滨田齿轮和直径100mm球轴承，高精静音加工；长套筒型主轴（300mm），直接深入型腔内部精修。

It adopts the best rectangular ratio copper-containing casting structure, cooperates with Japan Hamada gear and diameter 100mm ball bearing, and has high-precision and silent processing; the long sleeve type spindle (300mm) directly goes into the interior of the cavity for intensive repair.

产品特点 FEATURES

- ▶ 选配全闭环，三坐标检测误差0.01mm内
- ▶ 齿轮头升级高精6000转，能粗能精
- ▶ 提升制造精度，直角误差0.01mm

- ▶ Optional full-closed, three-coordinate detection error within 0.01mm
- ▶ Gear head upgrade high-precision 6000 rpm, capable of rough and fine machining
- ▶ Improve manufacturing accuracy, right angle error 0.01mm

底座 BASE

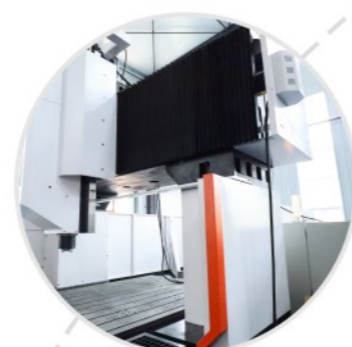
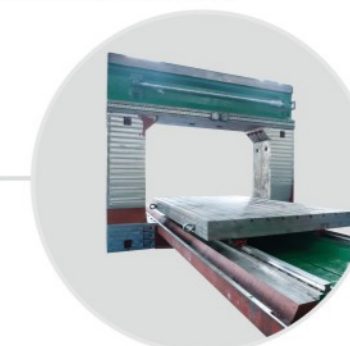
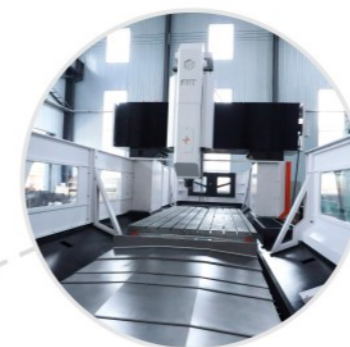
采用有限元分析设计的整体船行结构，双层壁与肋骨结合成一体，确保提供稳若磐石之最大重载抗震的基础。采用比同行加大规格螺杆和线轨，确保机械的高刚性及整机精度；一体内置油水分离和排屑结构，确保整机环保、省钱。

The finite element analysis design of the overall ship structure, the double wall and ribs integrated into one, to ensure the most stable heavy-duty seismic foundation. Adopting more specifications of the screw and line rail than the peer to ensure the high rigidity of the machine and the accuracy of the whole machine; the integrated built-in oil-water separation and chip evacuation structure ensures the machine is environmentally friendly and saves money.

门梁 DOOR BEAM

采用“门”型一体铸造设计，分布井字网格肋骨，高品质米汉纳标准铸铁，两次电炉时效和两次振动时效，确保抗震长久不变形；比同行加大阶梯滑轨跨距（850×300mm），确保加工稳定性。

The "door" type integrated casting design, distribution of well-word grid ribs, high-quality Mehanna standard cast iron, two electric furnace aging and two vibration aging, to ensure long-term non-deformation of seismic resistance; increase the step rail span than the peers (850 × 300mm) to ensure processing stability.



技术参数 Technical specification		FRT-2217	FRT-3018
行程 Travel			
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	2200/1700/1000	3000/1800/1000
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	0-1200	0-1200
导轨方式 Guide rail		两线一硬 Two linear guide rail,one hardened rail	
工作台 Work Table			
工作台尺寸 Table size	mm	2200X1300	3000X1500
工作台最大承载量 The maximum load capacity of the worktable	T	5	7
主轴 Spindle			
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)	mm	BT50/155	BT50/155
主轴电机 The spindle motor power	kw	18	22
主轴转速 Spindle speed	rpm	6000	6000
精度 Accuracy			
定位精度 Precision of position	mm	0.01/1000	0.01/1000
重复定位精度 Accuracy of repeated position	mm	±0.01	±0.01
尺寸 Size			
机床重量 (约) Net weight (approx.)	T	23	30

* 可根据使用工况按定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- | | |
|----------------|--|
| 1、数控系统标准功能 | 1、CNC control system standard function |
| 2、主轴恒温系统 | 2、spindle constant temperature system |
| 3、自动断电装置 | 3、automatic power off device |
| 4、液压单元系统 | 4、hydraulic unit system |
| 5、切削液单元 | 5、cutting fluid unit |
| 6、自动润滑系统 | 6、automatic lubrication system |
| 7、三色警示灯 | 7、three-color warning light |
| 8、工作照明灯 | 8、work lighting |
| 9、手轮控制盒 | 9、hand wheel control box |
| 10、RS-232界面 | 10、RS-232 interface |
| 11、热交换器配置 | 11、heat exchanger configuration |
| 12、除屑机及蓄屑桶 | 12、chip remover and chip bucket |
| 13、基础螺栓及水平调整垫块 | 13、Foundation bolts and level adjustment pads |
| 14、控制器操作手册及电路图 | 14、controller operation manual and circuit diagram |
| 15、机械安全操作手册 | 15、Mechanical Safety Operation Manual |
| 16、精度检验表 | 16、precision test table |
| 17、防溅防护及手动门 | 17、splash protection and manual door |
| 18、机械调整工具一组 | 18、a set of mechanical adjustment tools |

选配 OPTIONAL

- 数控系统simens/三菱/Fanuc/KND
各轴光栅尺装置
圆盘刀库/链式刀库
主轴中心出水2-7MPa
12000-15000机械主轴
四轴功能
直角铣头
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function
Right-angle milling Head

技术参数 Technical specification		FRT-4022	FRT-6035
行程 Travel			
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	4000/2200/1000	6000/3500/1200
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	0-1400	0-1600
导轨方式 Guide rail		两线一硬 Two linear guide rail,one hardened rail	
工作台 Work Table			
工作台尺寸 Table size	mm	4000X1800	6000X2500
工作台最大承载量 The maximum load capacity of the worktable	T	12	20
主轴 Spindle			
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)	mm	BT50/190	BT50/190
主轴电机 The spindle motor power	kw	26	30
主轴转速 Spindle speed	rpm	6000	6000
精度 Accuracy			
定位精度 Precision of position	mm	0.01/1000	0.01/1000
重复定位精度 Accuracy of repeated position	mm	±0.01	±0.01
尺寸 Size			
机床重量 (约) Net weight (approx.)	T	40	75

* 可根据使用工况按定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- | | |
|----------------|--|
| 1、数控系统标准功能 | 1、CNC control system standard function |
| 2、主轴恒温系统 | 2、spindle constant temperature system |
| 3、自动断电装置 | 3、automatic power off device |
| 4、液压单元系统 | 4、hydraulic unit system |
| 5、切削液单元 | 5、cutting fluid unit |
| 6、自动润滑系统 | 6、automatic lubrication system |
| 7、三色警示灯 | 7、three-color warning light |
| 8、工作照明灯 | 8、work lighting |
| 9、手轮控制盒 | 9、hand wheel control box |
| 10、RS-232界面 | 10、RS-232 interface |
| 11、热交换器配置 | 11、heat exchanger configuration |
| 12、除屑机及蓄屑桶 | 12、chip remover and chip bucket |
| 13、基础螺栓及水平调整垫块 | 13、Foundation bolts and level adjustment pads |
| 14、控制器操作手册及电路图 | 14、controller operation manual and circuit diagram |
| 15、机械安全操作手册 | 15、Mechanical Safety Operation Manual |
| 16、精度检验表 | 16、precision test table |
| 17、防溅防护及手动门 | 17、splash protection and manual door |
| 18、机械调整工具一组 | 18、a set of mechanical adjustment tools |

选配 OPTIONAL

- 数控系统simens/三菱/Fanuc/KND
各轴光栅尺装置
圆盘刀库/链式刀库
主轴中心出水2-7MPa
12000-15000机械主轴
四轴功能
直角铣头
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function
Right-angle milling Head

动梁数控 龙门铣 Moving beam CNC gantry milling

河南帆尔特龙门框架整体移动式龙门铣镗床。继承了传统龙门机床基础框架刚性强，结构对称，稳定性强等优点的基础上，采用创新设计理念，产品全部采用PRO/E三维设计，机床主要结构均采用有限元分析，通过优化布筋结构，合理分布质量，使整机载重大、刚性强、动态特性佳、满足大功率、高精度切削的要求，适合超大、超重型零件的加工。

Henan Front Gantry Frame Integral Mobile Gantry Milling and Boring Machine. On the basis of inheriting the advantages of strong rigidity, symmetrical structure, and strong stability of the traditional gantry machine tool foundation frame, innovative design concepts are adopted. All products adopt PRO/E three-dimensional design, and the main structure of the machine tool adopts finite element analysis. By optimizing the reinforcement structure and distributing the quality reasonably, the whole machine has a heavy load, strong rigidity, good dynamic characteristics, meets the requirements of high-power and high-precision cutting, and is suitable for processing super large and ultra heavy parts.

FRTSP-130520B具备铣削、镗削、钻削（钻、扩、铰）、攻螺纹、铰削等多种加工功能，适于船舶、新能源、航空航天、汽车、工程机械、包装、轨道交通、五金橡胶等各种机械加工领域的大型零件加工，更是加工精度要求较高、结构复杂的各种超大、超重型零件加工的首选设备。

FRTSP-130520B has various processing functions such as milling, boring, drilling (drilling, expanding, and reaming), threading, spot milling, etc. It is suitable for processing large parts in various mechanical processing fields such as shipbuilding, new energy, aerospace, automotive, engineering machinery, packaging, rail transit, hardware and rubber, and is also the preferred equipment for processing various ultra large and ultra heavy parts with high precision requirements and complex structures.

主要结构 MAIN STRUCTURE

FRTSP-130520B系列机床为龙门框架移动式结构，主要由工作台、床身、滑座、立柱、横梁、滑枕、液压系统、润滑系统、气动系统、冷却过滤系统、排屑装置、固定式操作面板以及电控系统等部件组成。

The FRTSP-130520B series machine tool is a gantry frame mobile structure, mainly composed of workbenches, bed bodies, sliding seats, columns, crossbeams, sleepers, hydraulic systems, lubrication systems, pneumatic systems, cooling filtration systems, chip removal devices, fixed operating panels, and electronic control systems.

各坐标轴定义： Definition of each coordinate axis:

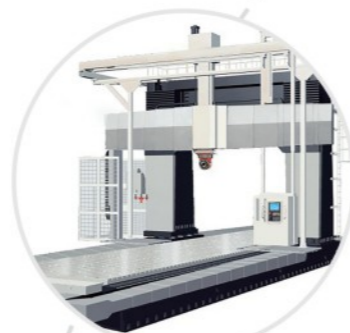
- ▶ X轴：龙门框架在床身上沿导轨作前后纵向运动；
- ▶ Y轴：滑枕、滑座部件在横梁上沿导轨作左右横向运动；
- ▶ Z轴：滑枕在滑座上沿导轨作上下垂直运动；

- ▶ X-axis: The gantry frame moves forward and backward along the guide rail on the bed body in a longitudinal manner;
- ▶ Y-axis: The ram and seat components move horizontally along the guide rail on the crossbeam to the left and right;
- ▶ Z-axis: The ram moves vertically up and down along the guide rail on the slide seat;

头部 HEAD

采用最佳矩形比例含铜铸件结构，配合日本滨田齿轮和直径100mm球轴承，高精静音加工；长套筒型主轴（300mm），直接深入型腔内部精修。

It adopts the best rectangular ratio copper-containing casting structure, cooperates with Japan Hamada gear and diameter 100mm ball bearing, and has high-precision and silent processing; the long sleeve type spindle (300mm) directly goes into the interior of the cavity for intensive repair.



底座 BASE

采用有限元分析设计的整体船形结构，双层壁与肋骨结合成一体，确保提供稳若磐石之最大重载抗震的基础。采用比同行加大规格螺杆和线轨，确保机械的高刚性及整机精度；一体内置式油水分离和排屑结构，确保整机环保、省钱。

The finite element analysis design of the overall ship structure, the double wall and ribs integrated into one, to ensure the most stable heavy-duty seismic foundation. Adopting more specifications of the screw and line rail than the peer to ensure the high rigidity of the machine and the accuracy of the whole machine; the integrated built-in oil-water separation and chip evacuation structure ensures the machine is environmentally friendly and saves money.



门梁 DOOR BEAM

采用“门”型一体铸造设计，分布井字网格肋骨，高品质米汉纳标准铸铁，两次电炉时效和两次振动时效，确保抗震长久不变形；比同行加大阶梯滑轨跨距（850×300mm），确保加工稳定性。

The "door" type integrated casting design, distribution of well-word grid ribs, high-quality Mehanna standard cast iron, two electric furnace aging and two vibration aging, to ensure long-term non-deformation of seismic resistance; increase the step rail span than the peers (850 × 300mm) to ensure processing stability.



产品特点 FEATURES

- ▶ 选配全闭环，三坐标检测误差0.01mm内
- ▶ 齿轮头升级高精6000转，能粗能精
- ▶ 提升制造精度，直角误差0.01mm
- ▶ Optional full-closed, three-coordinate detection error within 0.01mm
- ▶ Gear head upgrade high-precision 6000 rpm, capable of rough and fine machining
- ▶ Improve manufacturing accuracy, right angle error 0.01mm



技术参数 Technical specification		FRT-10400	FRT-120420
行程 Travel			
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	10000/4000/1500	12000/4200/1800
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	0-1600	0-2000
导轨方式 Guide rail		两线一硬 Two linear guide rail, one hardened rail	
工作台 Work Table			
工作台尺寸 Table size	mm	10000X3500	12000X3800
工作台最大承载量 The maximum load capacity of the worktable	T	m ² /20	m ² /20
主轴 Spindle			
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)		BT50	BT50
主轴尺寸 The spindle dimension	mm	195	210
主轴功率 The spindle motor power	kw	45	55
主轴转速 Spindle speed	rpm	5000	4000
精度 Accuracy			
定位精度 Precision of position	mm	0.02/1000	0.02/1000
重复定位精度 Accuracy of repeated position	mm	0.015/1000	0.015/1000
尺寸 Size			
机床重量 (约) Net weight (approx.)	T	145	165

* 可根据使用工况按定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- | | |
|----------------|--|
| 1、数控系统标准功能 | 1、CNC control system standard function |
| 2、主轴恒温系统 | 2、spindle constant temperature system |
| 3、自动断电装置 | 3、automatic power off device |
| 4、液压单元系统 | 4、hydraulic unit system |
| 5、切削液单元 | 5、cutting fluid unit |
| 6、自动润滑系统 | 6、automatic lubrication system |
| 7、三色警示灯 | 7、three-color warning light |
| 8、工作照明灯 | 8、work lighting |
| 9、手轮控制盒 | 9、hand wheel control box |
| 10、RS-232界面 | 10、RS-232 interface |
| 11、热交换器配置 | 11、heat exchanger configuration |
| 12、除屑机及蓄屑桶 | 12、chip remover and chip bucket |
| 13、基础螺栓及水平调整垫块 | 13、Foundation bolts and level adjustment pads |
| 14、控制器操作手册及电路图 | 14、controller operation manual and circuit diagram |
| 15、机械安全操作手册 | 15、Mechanical Safety Operation Manual |
| 16、精度检验表 | 16、precision test table |
| 17、防溅防护及手动门 | 17、splash protection and manual door |
| 18、机械调整工具一组 | 18、a set of mechanical adjustment tools |

选配 OPTIONAL

- 数控系统simens/三菱/Fanuc/KND
各轴光栅尺装置
圆盘刀库/链式刀库
主轴中心出水2-7MPa
12000-15000机械主轴
四轴功能
直角铣头
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function
Right-angle milling Head

技术参数 Technical specification		FRT-150520	FRT-20620
行程 Travel			
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	15000/5200/2000	20000/6200/2500
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	0-2200	0-2800
导轨方式 Guide rail		两线一硬 Two linear guide rail, one hardened rail	
工作台 Work Table			
工作台尺寸 Table size	mm	15000X4200	20000X5500
工作台最大承载量 The maximum load capacity of the worktable	T	m ² /20	m ² /20
主轴 Spindle			
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)		BT50	BT50
主轴尺寸 The spindle dimension	mm	230	260
主轴功率 The spindle motor power	kw	65	70
主轴转速 Spindle speed	rpm	3500	3000
精度 Accuracy			
定位精度 Precision of position	mm	0.02/1000	0.02/1000
重复定位精度 Accuracy of repeated position	mm	0.015/1000	0.015/1000
尺寸 Size			
机床重量 (约) Net weight (approx.)	T	180	210

* 可根据使用工况按定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- | | |
|----------------|--|
| 1、数控系统标准功能 | 1、CNC control system standard function |
| 2、主轴恒温系统 | 2、spindle constant temperature system |
| 3、自动断电装置 | 3、automatic power off device |
| 4、液压单元系统 | 4、hydraulic unit system |
| 5、切削液单元 | 5、cutting fluid unit |
| 6、自动润滑系统 | 6、automatic lubrication system |
| 7、三色警示灯 | 7、three-color warning light |
| 8、工作照明灯 | 8、work lighting |
| 9、手轮控制盒 | 9、hand wheel control box |
| 10、RS-232界面 | 10、RS-232 interface |
| 11、热交换器配置 | 11、heat exchanger configuration |
| 12、除屑机及蓄屑桶 | 12、chip remover and chip bucket |
| 13、基础螺栓及水平调整垫块 | 13、Foundation bolts and level adjustment pads |
| 14、控制器操作手册及电路图 | 14、controller operation manual and circuit diagram |
| 15、机械安全操作手册 | 15、Mechanical Safety Operation Manual |
| 16、精度检验表 | 16、precision test table |
| 17、防溅防护及手动门 | 17、splash protection and manual door |
| 18、机械调整工具一组 | 18、a set of mechanical adjustment tools |

选配 OPTIONAL

- 数控系统simens/三菱/Fanuc/KND
各轴光栅尺装置
圆盘刀库/链式刀库
主轴中心出水2-7MPa
12000-15000机械主轴
四轴功能
直角铣头
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function
Right-angle milling Head

数控落地镗床

CNC Floor Boring Machine

河南帆尔特数控落地镗铣床利用当今国际先进铣镗床设计及制造技术，自行研发高性能镗头中置落地镗铣床。继承了传统机床基础框架刚性强，结构对称，稳定性强等优点的基础上，采用创新设计理念，产品全部采用PRO/E三维设计，机床主要结构均采用有限元分析，通过优化布筋结构，合理分布质量，使整机载重大、刚性强、动态特性佳、满足大功率、高精度切削的要求，适合超大、超重型零件的加工。

Henan Front CNC floor type boring and milling machine utilizes advanced international milling and boring machine design and manufacturing technology to independently develop a high-performance floor type boring and milling machine with a central boring head. On the basis of inheriting the advantages of traditional machine tool foundation frames such as strong rigidity, symmetrical structure, and strong stability, innovative design concepts are adopted. All products adopt PRO/E three-dimensional design, and the main structure of the machine tool adopts finite element analysis. By optimizing the reinforcement structure and distributing the mass reasonably, the machine has a heavy load, strong rigidity, good dynamic characteristics, meets the requirements of high-power and high-precision cutting, and is suitable for the processing of ultra large and ultra heavy parts.

FRT-160B具备铣削、镗削、钻削（钻、扩、铰）、攻螺纹、镗削等多种加工功能，可实现8轴五联动，性能优良、加工范围广、生产效率高，还可选配多种功能附件，扩大加工范围、一次装夹完成钻孔、扩孔、镗孔、切沟槽以及平面等铣削加工，进一步提高加工效率；用轮廓控制方法铣削斜面、框形平面、大孔端面、二维、三维曲面及内外螺纹。回转工作台连续分度功能，可持续多角度加工工件。机床刚性好、精度高、操作方便、安全可靠，是重型机械、工程机械、机车车辆、注塑机、矿山设备、大型电机、水轮机、汽轮机、船舶、钢铁、军工、核电、环保等机械加工领域优选加工设备适于船舶、新能源、航空航天、汽车、工程机械、包装、轨道交通、五金橡胶等各种机械加工领域的大型零件加工，更是加工精度要求较高、结构复杂的各种超大、超重型零件加工的首选设备。

FRT-160B has various processing functions such as milling, boring, drilling (drilling, expanding, and reaming), threading, spot milling, etc. It can achieve 8-axis five linkage, with excellent performance, wide processing range, and high production efficiency. It can also be equipped with various functional accessories to expand the processing range, complete drilling, expanding, boring, grooving, and plane milling processing in one clamping process, further improving processing efficiency; Use contour control methods to mill inclined surfaces, box shaped planes, large hole end faces, two-dimensional, three-dimensional surfaces, and internal and external threads. The rotary workbench has continuous indexing function, which can continuously process workpieces from multiple angles. Machine tools have good rigidity, high accuracy, easy operation, safety and reliability. They are the preferred processing equipment in the fields of heavy machinery, engineering machinery, locomotives, injection molding machines, mining equipment, large motors, water turbines, steam turbines, ships, steel, military, nuclear power, environmental protection, and other mechanical processing fields. They are suitable for ships, new energy, aerospace, automobiles, engineering machinery, packaging, rail transit, etc. The processing of large parts in various mechanical processing fields such as hardware and rubber is the preferred equipment for processing ultra large and ultra heavy parts with high precision requirements and complex structures.

主要结构 MAIN STRUCTURE

FRT-160B系列机床为立柱移动式结构，主要由工作台、床身、滑座、立柱、滑枕、液压系统、润滑系统、气动系统、冷却过滤系统、排屑装置、固定式操作面板以及电控系统等部件组成。

The FRT-160B series machine tool is a column moving structure, mainly composed of worktable, bed, slide seat, column, ram, hydraulic system, lubrication system, pneumatic system, cooling and filtering system, chip removal device, fixed operation panel, and electronic control system.

各坐标轴定义：

Definition of each coordinate axis:

- | | |
|-------------------------|--|
| ▶ X轴：立柱在床身上沿导轨作左右向运动； | ▶ X-axis: The column moves left and right along the guide rail on the bed; |
| ▶ Y轴：滑座部件在立柱上沿导轨作上下向运动； | ▶ Y-axis: The sliding seat component moves up and down along the guide rail on the column; |
| ▶ Z轴：滑枕在滑座上沿导轨作前后向运动； | ▶ Z-axis: The ram moves forward and backward along the guide rail on the slide seat; |
| ▶ W轴：镗杆在滑枕里作前后向运动 | ▶ W-axis: boring bar moves forward and backward in the ram; |
| ▶ A轴：回转工作台回转运动（选配） | ▶ A-axis: rotary working table rotary movement (optional) ; |
| ▶ V轴：回转工作台前后运动（选配） | ▶ V-axis: rotary working table moves forward and backward ; |

回转工作台+V轴 ROTARY TABLE + V AXIS

回转轴系采用精密YRT轴承，工作台回转运动精度及抗弯刚度、抗剪切性能好。重载滚柱直线导轨具有接触刚度、能承受较大的动态载荷和静态载荷、动静摩擦系数小、动态性能好、定位精度高、维护简便等优点。

The rotary shaft system adopts precision YRT bearings, the rotary motion precision of the worktable is high, the bending rigidity is high, and the shearing resistance is good. Heavy-duty roller linear guides have the advantages of high contact rigidity, can withstand large dynamic loads and static loads, small dynamic and static friction coefficients, good dynamic performance, high positioning accuracy, and easy maintenance.

头部 HEAD

镗轴采用德国原装进口材料SACM-645，氮气处理后硬度高达（HS100° ± 10°）。

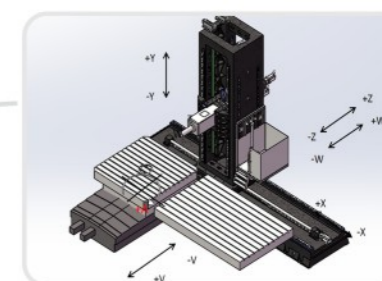
The boring bar is made of imported German material SACM-645, and the hardness after treatment is as high as (Hs100° ± 10°) .



立柱 COLUMN

立柱为封闭箱型结构，加强筋布置合理，多点支承，刚性强、稳定性好；立柱主导轨采用双层壁式结构，立柱内壁采用米字形交叉筋，抗弯、抗扭强度高；整机刚性好，满足重负荷切削加工要求。

The column is a closed box-shaped structure with reasonable arrangement of reinforcing ribs, multi-point support, strong rigidity and good stability; Main rail of the column adopts a double-wall structure, and the inner wall of the column adopts a Union Jack shape cross rib, which has high bending and torsional strength; The whole machine has good rigidity and meets the requirements of heavy-duty cutting.



技术参数 Technical specification		FRT-T110	FRT-T130
行程 Travel			
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	4000/1100	6000/1300
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	0-1100	0-1300
导轨方式 Guide rail	两线一硬 Two linear guide rail,one hardened rail		
工作台 Work Table			
工作台尺寸 Table size	mm	4000X2000	6000X2000
工作台最大承载量 The maximum load capacity of the worktable	T	m ² /15T	m ² /15T
主轴Spindle			
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)	mm	BT50	BT50
主轴电机 The spindle motor power	kw	22	26
主轴转速 Spindle speed	rpm	2000	2000
精度 Accuracy			
定位精度 Precision of position	mm	0.01/1000	0.01/1000
重复定位精度 Accuracy of repeated position	mm	±0.01	±0.01
尺寸Size			
机床重量 (约) Net weight (approx.)	T	40	55

* 可根据使用工况按需定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- | | |
|----------------|--|
| 1、数控系统标准功能 | 1、CNC control system standard function |
| 2、主轴恒温系统 | 2、spindle constant temperature system |
| 3、自动断电装置 | 3、automatic power off device |
| 4、液压单元系统 | 4、hydraulic unit system |
| 5、切削液单元 | 5、cutting fluid unit |
| 6、自动润滑系统 | 6、automatic lubrication system |
| 7、三色警示灯 | 7、three-color warning light |
| 8、工作照明灯 | 8、work lighting |
| 9、手轮控制盒 | 9、hand wheel control box |
| 10、RS-232界面 | 10、RS-232 interface |
| 11、热交换器配置 | 11、heat exchanger configuration |
| 12、除屑机及蓄屑桶 | 12、chip remover and chip bucket |
| 13、基础螺栓及水平调整垫块 | 13、Foundation bolts and level adjustment pads |
| 14、控制器操作手册及电路图 | 14、controller operation manual and circuit diagram |
| 15、机械安全操作手册 | 15、Mechanical Safety Operation Manual |
| 16、精度检验表 | 16、precision test table |
| 17、防溅防护及手动门 | 17、splash protection and manual door |
| 18、机械调整工具一组 | 18、a set of mechanical adjustment tools |

选配 OPTIONAL

- 数控系统simens/三菱/Fanuc/KND
各轴光栅尺装置
圆盘刀库/链式刀库
主轴中心出水2-7MPa
12000-15000机械主轴
四轴功能
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function

技术参数 Technical specification		FRT-T160	FRT-T200
行程 Travel			
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	8000/1600	10000/2000
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	0-1600	0-2000
导轨方式 Guide rail	两线一硬 Two linear guide rail,one hardened rail		
工作台 Work Table			
工作台尺寸 Table size	mm	8000X2000	10000X2000
工作台最大承载量 The maximum load capacity of the worktable	T	m ² /15T	m ² /15T
主轴Spindle			
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)	mm	BT50	BT50
主轴电机 The spindle motor power	kw	26	30
主轴转速 Spindle speed	rpm	2000	2000
精度 Accuracy			
定位精度 Precision of position	mm	0.01/1000	0.01/1000
重复定位精度 Accuracy of repeated position	mm	±0.01	±0.01
尺寸Size			
机床重量 (约) Net weight (approx.)	T	65	75

* 可根据使用工况按需定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- | | |
|----------------|--|
| 1、数控系统标准功能 | 1、CNC control system standard function |
| 2、主轴恒温系统 | 2、spindle constant temperature system |
| 3、自动断电装置 | 3、automatic power off device |
| 4、液压单元系统 | 4、hydraulic unit system |
| 5、切削液单元 | 5、cutting fluid unit |
| 6、自动润滑系统 | 6、automatic lubrication system |
| 7、三色警示灯 | 7、three-color warning light |
| 8、工作照明灯 | 8、work lighting |
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| 17、防溅防护及手动门 | 17、splash protection and manual door |
| 18、机械调整工具一组 | 18、a set of mechanical adjustment tools |

选配 OPTIONAL

- 数控系统simens/三菱/Fanuc/KND
各轴光栅尺装置
圆盘刀库/链式刀库
主轴中心出水2-7MPa
12000-15000机械主轴
四轴功能
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function

数控卧式镗铣床

CNC Horizontal boring machine

河南帆尔特数控卧式镗铣床，继承了传统机床基础框架刚性强，结构对称，稳定性强等优点的基础上，采用创新设计理念，产品全部采用PRO/E三维设计，机床主要结构均采用有限元分析，通过优化布筋结构，合理分布质量，使整机载重大、刚性强、动态特性佳、满足大功率、高精度切削的要求，适合超大、超重型零件的加工。

Henan Front CNC Horizontal boring machine, on the basis of inheriting the advantages of strong rigidity of the basic frame of the traditional machine tool, symmetrical structure, strong stability, etc., adopts innovative design concepts, all products adopt PRO/E three-dimensional design, and the main structure of the machine tool adopts Finite element analysis optimizes the reinforcement structure and distributes the mass reasonably, so that the whole machine has heavy load, strong rigidity, and good dynamic characteristics, which meets the requirements of high-power and high-precision cutting, and is suitable for processing super-large and super-heavy parts.

河南帆尔特数控卧式镗铣床具备铣削、镗削、钻削（钻、扩、铰）、攻螺纹、铰削等多种加工功能，适于船舶、新能源、航空航天、汽车、工程机械、包装、轨道交通、五金橡胶等各种机械加工领域的大型零件加工，更是加工精度要求较高、结构复杂的各种超大、超重型零件加工的首选设备。

Henan Front CNC Horizontal boring machine has various processing functions such as milling, boring, drilling (drilling, expanding, reaming), tapping, spot milling, etc. It is suitable for processing large parts in various mechanical processing fields such as ships, new energy, aerospace, automobiles, engineering machinery, packaging, rail transit, hardware and rubber, and is also the preferred equipment for processing various ultra large and ultra heavy parts with high precision requirements and complex structures.

主要结构

MAIN STRUCTURE

河南帆尔特数控卧式镗铣床机床总体设计布局为纵、横床身呈T字型分离结构，立柱纵向移动，工作台横向移动，主要由工作台、床身、滑座、立柱、滑枕、液压系统、润滑系统、气动系统、冷却过滤系统、排屑装置、固定式操作面板以及电控系统等部件组成。

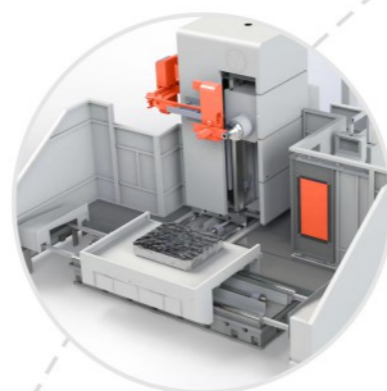
The overall design layout of the Henan Front CNC Horizontal boring machine is a T-shaped separation structure with longitudinal and transverse bed bodies. The columns move longitudinally, while the workbench moves horizontally. It mainly consists of components such as the workbench, bed body, sliding seat, column, ram, hydraulic system, lubrication system, pneumatic system, cooling filtration system, chip removal device, fixed operating panel, and electric control system.

主轴

SPINDLE

由镗轴和铣轴组成，进口主轴轴承。主传动系统采用交流伺服电机与两极机械变速箱结合，实现无极调速。

Composed of boring and milling axis, imported spindle bearings. The main transmission system adopts an AC servo motor combined with a bipolar mechanical gearbox to achieve stepless speed regulation.



数控回转工作台+V轴

CNC ROTARY TABLE WORKING TABLE/ V AXIS

1. 主要结构特点

直线运动导轨采用重载滚柱直线导轨；回转轴采用精密YRT轴承作为环形导轨，摩擦小、动态响应性好、回转部件运动平稳性好。A轴可以采用圆光栅全闭环控制，实现连续任意分度。工作台回转，进给形式采用电机+双减速结构驱动双小齿轮带动工作台大齿圈的传动结构，消除传动间隙，回转精度高。

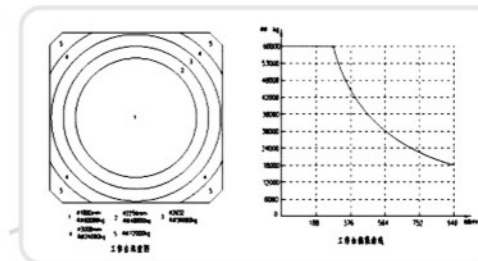
2. 重载滚柱直线导轨具有接触刚度、能承受较大的动态载荷和静态载荷、动静摩擦系数小、动态性能好、定位精度高、维护简便等优点。

3. 回转轴系采用精密YRT轴承，工作台回转运动精度及抗弯刚度、抗剪切性能好。

4. 数控回转工作台V轴导轨设有钢制伸缩式防护罩，工作台配有接水盘。

5. 数控回转工作台A轴具有液压夹紧机构，夹持可靠。

数控回转工作台主要技术参数(可选多种规格)



1. Main structural features

The linear motion guide rail adopts heavy-duty roller linear guide rail; the rotary shaft adopts precision YRT bearing as the ring guide rail, which has small friction, good dynamic response, and good motion stability of the rotary parts. The A-axis can be fully closed-loop controlled by a circular grating, achieving continuous and arbitrary indexing. The workbench rotates, and the feeding form adopts a transmission structure of electric motor+double reduction structure to drive double small gears to drive the large gear ring of the workbench, eliminating transmission clearance and achieving high rotation accuracy.

2. The heavy-duty roller linear guide rail has advantages such as high contact stiffness, ability to withstand large dynamic and static loads, small dynamic and static friction coefficient, good dynamic performance, high positioning accuracy, and easy maintenance.

3. The rotary shaft system adopts precision YRT bearings, and the workbench has high rotational motion accuracy, bending stiffness, and good shear resistance.

4. The V-axis guide rail of the CNC rotary workbench is equipped with a steel telescopic protective cover, and the workbench is equipped with a water tray.

5. The A-axis of the CNC rotary workbench has a hydraulic clamping mechanism, ensuring reliable clamping. Main technical parameters of CNC rotary workbench (multiple specifications available)



床身

MACHINE BED

床身、立柱、工作台、滑座和后尾筒基础大件均采用高强度树脂砂灰铸铁件；滑枕座和滑枕采用高牌号球墨铸铁件，均经过两次热时效处理。

The bed, column, working table sliding seat, and rear tailpipe foundation are all made of high-strength resin sand gray cast iron parts; The slide seat and ram are made of high-grade ductile iron parts, both of which have undergone two heat aging treatments.



技术参数 Technical specification		FRT-1600	FRT-1800
行程 Travel			
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	1800/1200/1200	12000/4200/1800
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	1200	1300
导轨方式 Guide rail		两线一硬 Two linear guide rail,one hardened rail	
工作台 Work Table			
工作台尺寸 Table size	mm	1600X1600	1800X1800
工作台最大承载量 The maximum load capacity of the worktable	T	10	12
主轴 Spindle			
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)		BT50	BT50
主轴尺寸 The spindle dimension	mm	110	130
主轴功率 The spindle motor power	kw	35	35
主轴转速 Spindle speed	rpm	2000	2000
精度 Accuracy			
定位精度 Precision of position	mm	0.015/1000	0.015/1000
重复定位精度 Accuracy of repeated position	mm	0.01/1000	0.01/1000
尺寸 Size			
机床重量 (约) Net weight (approx.)	T	95	105

* 可根据使用工况按需定制机床行程及部件更换

* Machine tool travel and component replacement can be customized according to usage conditions as needed

标配 STANDARD CONFIGURATION

- | | |
|----------------|--|
| 1、数控系统标准功能 | 1、CNC control system standard function |
| 2、主轴恒温系统 | 2、spindle constant temperature system |
| 3、自动断电装置 | 3、automatic power off device |
| 4、液压单元系统 | 4、hydraulic unit system |
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选配 OPTIONAL

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各轴光栅尺装置
圆盘刀库/链式刀库
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12000-15000机械主轴
四轴功能
直角铣头
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function
Right-angle milling Head

技术参数 Technical specification		FRT-2000	FRT-2500
行程 Travel			
XYZ轴行程 (工作台左右运动) Worktable travel(X/Y/Z)	mm	2200/1500/1500	2800/1600/1600
主轴端面到台面距离 Distance of spindle nose and working table surface	mm	1500	1600
导轨方式 Guide rail		两线一硬 Two linear guide rail,one hardened rail	
工作台 Work Table			
工作台尺寸 Table size	mm	2000X2000	2500X2500
工作台最大承载量 The maximum load capacity of the worktable	T	15	18
主轴 Spindle			
主轴锥孔 (型号、套筒直径) The spindle taper (model, sleeve diameter)		BT50	BT50
主轴尺寸 The spindle dimension	mm	130	160
主轴功率 The spindle motor power	kw	40	45
主轴转速 Spindle speed	rpm	2000	2000
精度 Accuracy			
定位精度 Precision of position	mm	0.015/1000	0.015/1000
重复定位精度 Accuracy of repeated position	mm	0.01/1000	0.01/1000
尺寸 Size			
机床重量 (约) Net weight (approx.)	T	110	135

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直角铣头
- CNC system simens/Mitsubishi /Fanuc/KND
Each axis grating device
Disc magazine / chain magazine
Spindle center water output 2-7MPa
12000-15000 mechanical spindle
Four-axis function
Right-angle milling Head



Machines tools Maintenance and upgraded Projects
设备维修升级项目



130镗床改数控
130 boring machine change to CNC type



6150车床改造
6150 lathe upgrade



安阳6180三米改数控
Anyang 6180 three meters upgraded CNC Type



718数控改造
718 CNC transformation



160八米落地镗改造
160 8m floor boring machine upgrade CNC Type



6米龙门改造
6m gantry boring and milling machine upgraded CNC Type

SERVICE AND MAINTENANCE
服务维修



Overseas Maintenance and Renovation Projects
国外维修改造项目



德国双通道轮毂车改造
German two-channel wheeled car transformation



俄罗斯T130镗床改数控
Russian T130 boring machine changed to CNC type



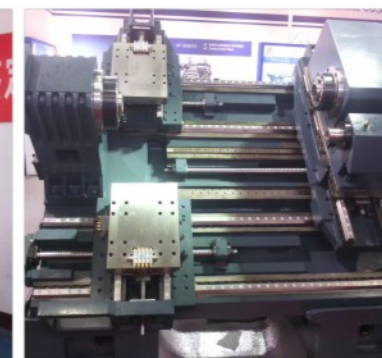
斯柯达200十米落地镗改数控
Skoda 200 ten-meter floor boring machine changed to CNC type



2218龙门改造
2218 Gantry boring and milling machine upgrade



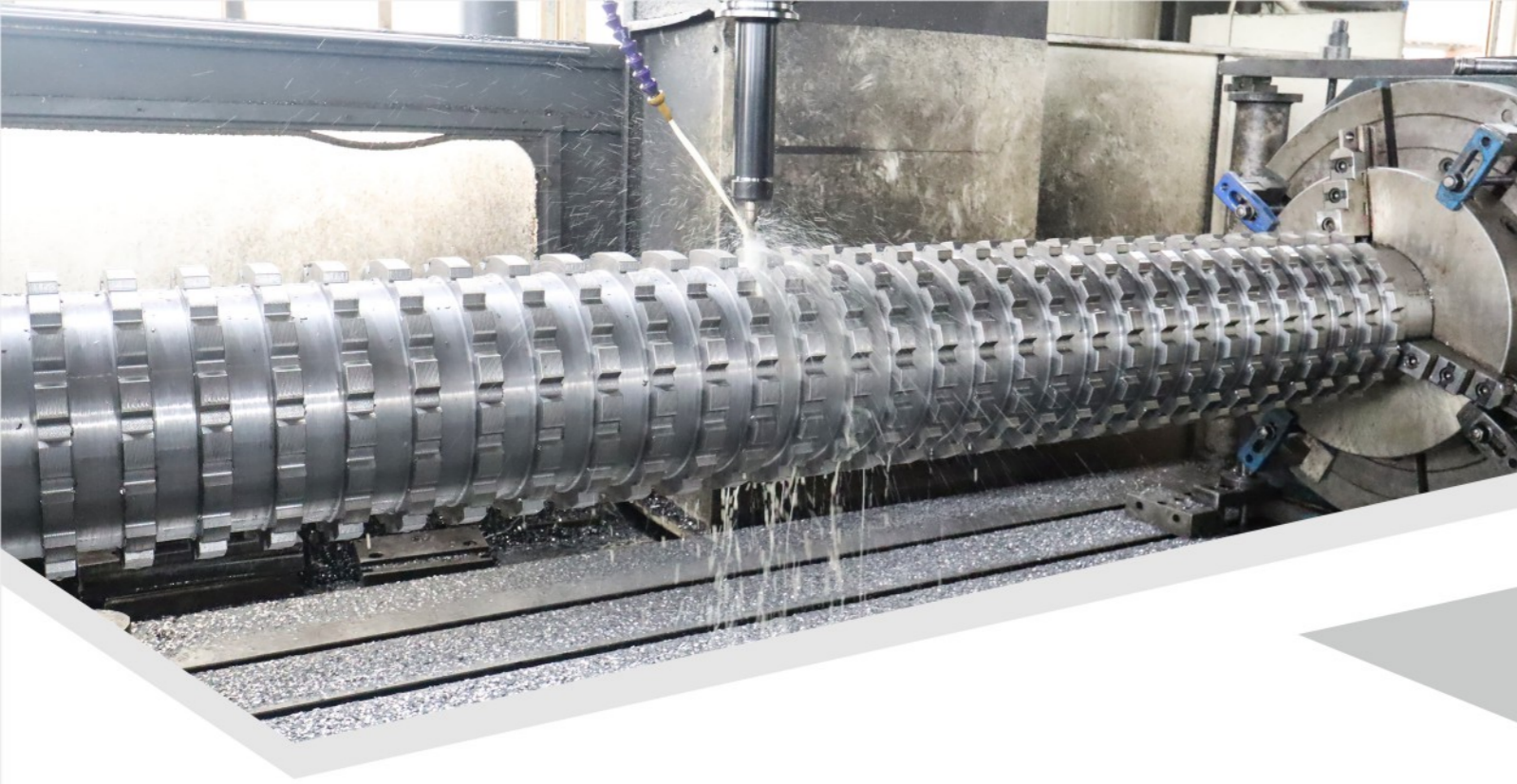
中建二局用压管机改造
China construction Crimping Machine renovation



双通道斜床身改造
Double channel inclined bed transformation



齐齐哈尔第一机床厂五米立车改造
Qiqihar five meter vertical lathe upgraded



APPLICATION AREA 应用领域



工程机械 CONSTRUCTION MACHINERY

工程机械制造业需要大量的中小型数控机床，帆尔特数控装备的机床具有品种齐全、整体造型美观、刚性强、稳定可靠、速度快等优点。

The engineering machinery manufacturing industry requires a large number of small and medium-sized CNC machine tools. The machine tools equipped by Front CNC equipment have the advantages of full variety, beautiful overall appearance, strong rigidity, stability and reliability, and fast speed.



汽车行业 AUTOMOBILE INDUSTRY

汽车零配件生产需要大量的数控机床以满足市场的需求，拥有稳定、可靠、高效的加工设备和成熟的工艺，已是汽车制造业的成功关键。

The production of automotive parts requires a large number of CNC machine tools to meet market demand. Having stable, reliable, and efficient processing equipment and mature processes has become the key to the success of the automotive manufacturing industry.



模具行业 MOLD INDUSTRY

现代模具结构越来越复杂，产品更新换代速度不断的在加快，因此只有大量的添置数控装备才能满足制造要求。

The modern mold structure is becoming increasingly complex, and the speed of product updates is constantly accelerating. Therefore, only by adding a large number of CNC equipment can manufacturing requirements be met.



船舶行业 SHIPBUILDING INDUSTRY

船舶制造业的加厂的零部件通常较大。帆尔特数控装备的大型数控设备有更高的主轴扭矩，更大的机床刚性，可提供可靠、高效的切削性能。

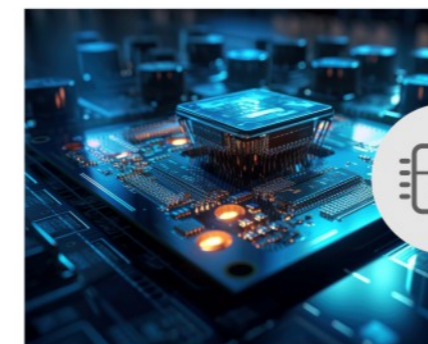
The components in the shipbuilding industry are usually larger. The large CNC equipment equipped by Front CNC has higher spindle torque and greater machine rigidity, providing reliable and efficient cutting performance.



民用航空 CIVIL AVIATION

民用航空行业的零部件种类繁多，结构复杂，材料多样，性能各异，因此需要精密、稳定，多功能的数控设备。

The civil aviation industry has a wide variety of components, complex structures, diverse materials, and diverse performance, therefore requiring precise, stable, and multifunctional CNC equipment.



电子行业 ELECTRONICS INDUSTRY

电子行业所需求的数控设备基本用来小型零件的加工。帆尔特数控装备的小型立加、车床整体造型紧凑美观，具有极高的稳定性和高速的特征。

The CNC equipment required by the electronics industry is mainly used for the processing of small parts. The small vertical lathe and lathe of CNC equipment have a compact and beautiful overall shape, with extremely high stability and high-speed characteristics.



阀门行业 VALVE INDUSTRY

阀门是石油化工，电站、管线、造船、核工业等国民经济各部门不可缺少的流体控制设备。主要用于工艺管道质的切断、节流，调压和改变流向等。

Valve is an indispensable fluid control equipment in various sectors of the national economy such as petrochemical industry, power station, pipeline, shipbuilding, nuclear industry, etc. Mainly used for cutting off, throttling, regulating pressure, and changing flow direction of process pipelines.



SERVICE 定制服务

尊敬的用户 Dear user

河南帆尔特智能装备有限公司是一家专业制造龙门式加工中心、卧式加工中心、数控镗铣床的企业，目前我公司已为国内外上千家企业提供了该设备。可根据客户的工艺要求，为客户提供符合生产要求的设备，我们将尽心尽力的为您做好售后服务。为了让您得到更快速、更满意的服务，为了创造企业名牌，提高企业知名度，树立企业形象，我司本着“铸造精品机床，振兴民族工业，铸造精品机床，追求至诚服务”的企业经营方针，及“优质高效，精益求精，至诚服务，誉满全球”的质量方针和以诚信服务营造客户放心选择的服务宗旨。现针对我公司所售产品郑重承诺如下：

Henan Front Intelligent Equipment Co., Ltd. is a professional manufacturer of gantry machining centers, horizontal machining centers, and CNC boring and milling machines. Currently, our company has provided this equipment to thousands of domestic and foreign enterprises. We can provide customers with equipment that meets production requirements according to customer process requirements, and we will do our best to provide you with after-sales service. In order to provide you with faster and more satisfactory services, to create a corporate brand, enhance corporate awareness, and establish a corporate image, our company adheres to the business policy of "casting high-quality machine tools, revitalizing national industries, casting high-quality machine tools, and pursuing sincere service", as well as the quality policy of "high-quality and efficient, striving for excellence, sincere service, and global reputation", and the service tenet of creating customers' reliable choices with sincere service. We hereby solemnly promise the following regarding the products sold by our company:

设立服务电话热线 SET UP SERVICE HOTLINE



开通服务热线 **400-9221168**

随时解答客户在实际操作中遇到的问题，做好客户的可靠保证。

Open the **400-9221168** service hotline to answer customers' questions in practical operations at any time and ensure their reliability.

坚持服务的原则 ADHERE TO THE PRINCIPLE OF SERVICE



- ▶ 主动上门服务及时解决问题。
- ▶ 对用户的有益建议要积极响应。
- ▶ 及时处理客户的来电来函，处处为客户着想。
- ▶ 定期做好用户质量信息反馈，实行质量反馈单、质量跟踪卡制度。
- ▶ 依法处理质量纠纷。
- ▶ Proactively provide on-site service and promptly address issues.
- ▶ Be proactive in responding to beneficial suggestions for users.
- ▶ Timely handle customer calls and correspondence, and always consider customer concerns.
- ▶ Regularly provide user quality information feedback and implement a quality feedback form and quality tracking card system.
- ▶ Handle quality disputes in accordance with the law.

回访制度 RETURN VISIT SYSTEM



- ▶ 电话回访。安装调试完毕后，七个工作日内回访一次，了解服务质量，听取客户意见。
- ▶ 实地回访。我司派遣专员不定期全国各地实地回访客户，了解机床实际使用情况及售后服务质量。
- ▶ Telephone follow-up. After installation and debugging, conduct a follow-up visit within seven working days to understand the service quality and listen to customer feedback.
- ▶ On site follow-up. Our company dispatches specialists to periodically conduct on-site visits to customers in various regions of the country to understand the actual use of machine tools and the quality of after-sales service.

售后服务具体内容 CONTENT OF AFTER SALES SERVICE

机床保修 MACHINE TOOL WARRANTY

保修期内 During the warranty period

免费服务。如人为因素或自然灾害造成损坏，则酌情收取零件成本费用。

Free service. If damage is caused by human factors or natural disasters, the cost of parts will be charged as appropriate.

保修期外 Beyond warranty period

终身服务。保修期外我公司将提供无偿的技术援助，并为客户提供有偿的维修服务，包括故障维修、原厂配件更换。零件更换收取成本费用，而相关人工费用由双方酌情协商。

Lifetime service. Our company will provide free technical assistance beyond the warranty period and provide paid repair services to customers, including fault repair and replacement of original parts. The cost of replacing parts is charged, and the relevant labor costs are negotiated by both parties at their discretion.

售后服务内容 AFTER SALES SERVICE CONTENT

01

售后服务响应时间：省内24小时内服务人员到位，省外48小时内服务人员到位，特殊情况由双方协商确认。

After sales service response time: Service personnel will be in place within 24 hours within the province, and service personnel will be in place within 48 hours outside the province. In special circumstances, both parties will negotiate and confirm.

02

售后人员携带《现场服务报告》，由客户相关负责人员签字确认并评价服务内容，服务态度等。

The after-sales personnel shall carry the "on-site service report", which shall be signed and confirmed by the relevant responsible personnel of the customer, and the service content, service attitude, etc. shall be evaluated.

03

验收合格后，客户未依合同付款条件履行约定，河南帆尔特智能装备有限公司有权拒绝作售后服务。

After passing the acceptance, if the customer fails to fulfill the payment terms stipulated in the contract, Henan Front Intelligent Equipment Co., Ltd. has the right to refuse to provide after-sales service.

售后服务机构 AFTER SALES SERVICE ORGANIZATION

01 售后服务总部 After sales service headquarters

地点：河南省洛阳市洛新开发区京津北路9号
Address No. 9 Jingjin North Road, Luoxin Development Zone, Luoyang City, Henan Province

400-9221168

作用：负责客户报修。在电话解答后，第一时间通知客户所在地的服务中心进行上门服务。

Role: Responsible for customer repair requests. After answering the phone, notify the customer's local service center as soon as possible to provide on-site service.

02 全国各地服务中心 Service centers across the country

作用：直接面向所在地客户进行上门服务。

Function: Directly provide on-site service to local customers.

03 售后服务投诉中心 After sales service complaint center

400-9221168

作用：监督售后服务人员及售后服务部门在实际工作中的服务质量。

Role: Supervise the service quality of after-sales service personnel and departments in actual work.

在此非常感谢贵司选购我司产品，为了保证我司所提供的产品具有高效的性能和长期可靠的运行，我们将提供完善的售后服务。

Thank you very much for choosing our products. In order to ensure the efficient performance and long-term reliable operation of our products, we will provide comprehensive after-sales service.