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蒂德精机 DEED MT

中国销售中心
China Sales Center

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外贸热线 / Sales Hotline(overseas): +86 537 3451030
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企业邮箱 / E-mail: sale@deedmt.com / itd@deedmt.com
企业网址 / Website: www.deedmt.com (中国/China) / www.cncindeed.com(国际/overseas)
地址：山东省济宁市兖州经济开发区永安路
Address: Yong'an Road,Industrial Park,Yanzhou District,Jining City,Shandong Province.

HIPREED

德国（Germany）
欧洲研发、销售中心
Europe R&D, Sales Center
地址 / Address: Stahlwerkstraße 32-D-57555 Mudersbach

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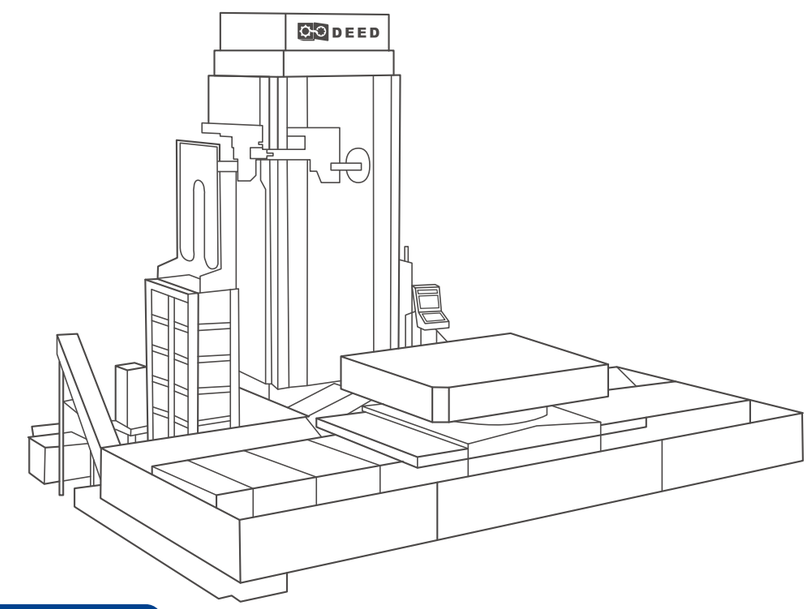
铣镗加工中心
Milling & Boring Machining Center



精 | Precise
大 | Large
特 | Customized

山东蒂德精密机床有限公司
SHANDONG DEED PRECISION MACHINE TOOL CO.,LTD.

蒂德简介

COMPANY PROFILE

山东蒂德精密机床有限公司是一家集高档数控机床研发、生产、销售为一体的高端装备企业，位于济宁市兖州区。公司以高速立式加工中心、大型龙门加工中心、高效钻攻加工中心、高精度车削加工中心、高精密五轴联动加工中心、卧式铣镗加工中心及卧式加工中心为主导产品，广泛服务于国内外航空、航天、军工、船舶、汽车、工程机械、轨道交通、5G、精密模具等重点领域。公司大力实施"走出去，引进来"的发展战略，与德国知名数控机床制造企业ROTTLER达成全面战略合作，联合开发具有世界领先水平的高档精密机床，共同开拓全球高端市场，并在德国设立了高端机床研发中心及制造基地——"Hipreed Technology GmbH（汉普瑞德科技有限公司）"，全面实施国际化运营，实现了德国技术和中国制造的完美结合。公司建有国内外5大研发中心，拥有6大省市级创新平台，具备高档机床研发、新材料研制、先进技术测试和可靠性提升等全面的研发、实验、测试、制造优势。通过持续创新和不断突破，已承担25项重点政府科技项目，获得各类知识产权200余项，科技成果奖15项，整体开发、创新能力行业领先。凭借强大的技术、创新优势，公司分别通过了ISO9001质量管理体系认证、ISO14001环境管理体系认证和ISO45001职业健康安全管理体系认证，荣获"国家高新技术企业"、"国家专精特新'小巨人'企业"、中国机床行业最高奖"春燕奖"、"中国机床工具行业'产品质量十佳'"、"中国机械工业科技进步二等奖"等80多项重点荣誉。

Shandong Deed Precision Machine Tool Co., Ltd. is a high-end equipment enterprise integrating R&D, production and sales of high-end CNC machine tools, located in Yanzhou District, Jining City. The company takes high-speed vertical machining center, large scale gantry machining center, high-efficiency drilling & tapping machining center, high-precision turning center, high-precision five-axis linkage machining center, horizontal milling & boring machining center and horizontal machining center as the leading products, and serves a wide range of key industries such as aviation, aerospace, military, shipbuilding, automobile, construction machinery, rail transit, 5G, precision mold and others, both in the domestic and overseas markets. The company vigorously implements the development strategy of "going out and bringing in", and has reached a comprehensive strategic cooperation with the well-known German CNC machine tool manufacturing enterprise ROTTLER to jointly develop high-grade precision machine tools of the world's leading level and jointly explore the global high-end market. Establishing a high-end machine tool R & D center and manufacturing base in Germany - "Hipreed Technology GmbH", fully implementing international operations and achieving the perfect combination of German technology and Chinese manufacturing. The company has five domestic and foreign R & D centers, with six provincial and municipal innovation platforms, with comprehensive R & D, experiment, testing, manufacturing advantages of high-grade machine tool research and development, new material development, advanced technology testing and reliability improvement. Through continuous innovation and breakthrough, it has undertaken 25 key government science and technology projects, obtained more than 200 intellectual property rights of various types, 15 scientific and technological achievement awards, and is in a leading position of the overall development and innovation ability in the industry. With strong technology and innovation advantages, the company has passed the ISO9001 quality management system certification, ISO14001 environmental management system certification and ISO45001 occupational health and safety management system certification. It has won more than 80 key awards such as the "National High-Tech Enterprise", "National Specialized New Little Giant Enterprise", the highest award of China's machine tool industry the " Spring Swallow Award", " Top 10 Product Quality of China's Machine Tool Industry", and "Chinese Machinery Industry Science & Technology Progress 2nd Award " etc.

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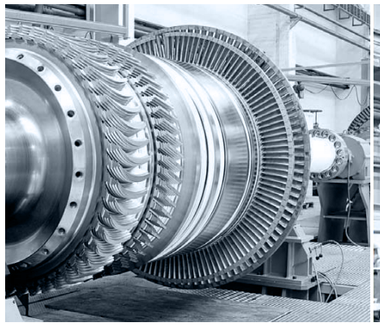
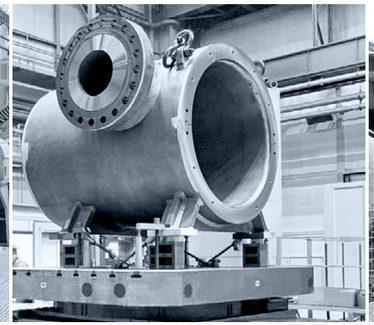
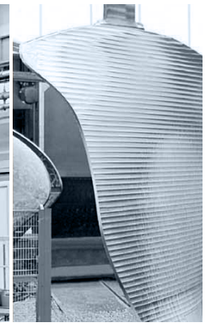

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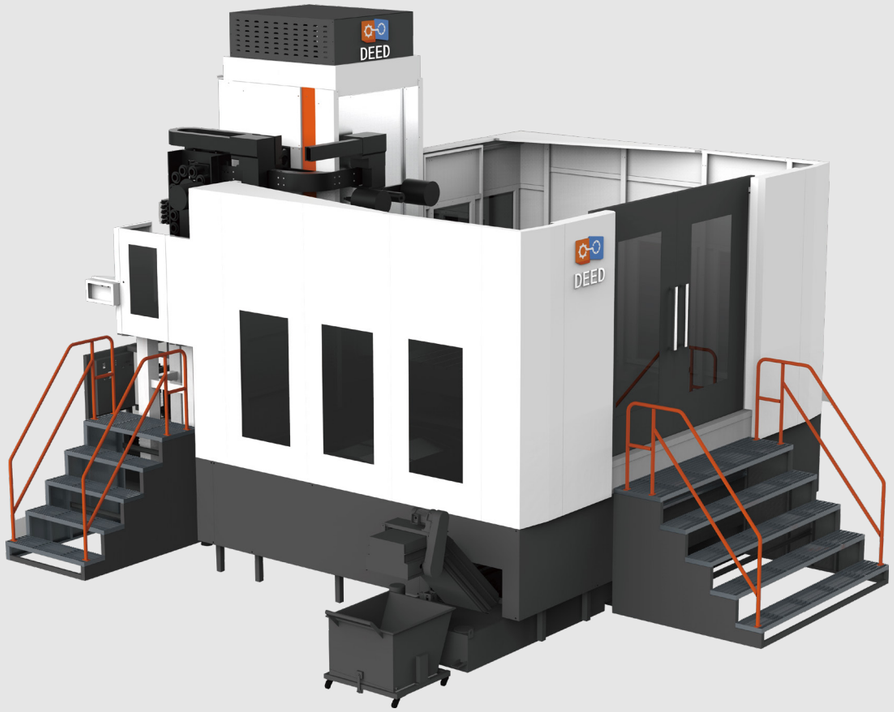


HBC系列 卧式铣镗加工中心
HBC Series Horizontal Milling & Boring Machining Center

本系列机床为卧式铣镗加工中心，立柱与床身固定，十字滑台结构，工作台左右移动（X轴），主轴箱在立柱上上下移动（Y轴），工作台前后移动（Z轴），镗轴前后移动（W轴），工作台回转（B轴）。床身采用新型矿物材料，精度更稳定。
该机床广泛应用于船舶、交通、铁路、能源、风电、重型、冶金、矿山、工程机械、石化机械、内燃机、水泵、高压开关、模具等各类通用机械加工行业，是加工箱体类、壳体类、机座类等零件的关键首选设备。

This series of machine tools is a horizontal milling and boring machining center, the column and the bed are fixed, cross sliding table structure, table moves left and right (X axis), spindle box moves up and down on the column (Y axis), table moves back and forth (Z axis), boring shaft moves back and forth (W axis), table rotates (B axis). The bed is made of new mineral materials with more stable accuracy.
The machine tool is widely used in shipping, transportation, railway, energy, wind power, heavy duty, metallurgy, mining, engineering machinery, petrochemical machinery, internal combustion engine, water pump, high pressure switch, mold and other general mechanical processing industry, is the key preferred equipment for processing box class, shell class, frame class and other parts,etc.

产品优势
PRODUCT ADVANTAGES

基础大件 BASIC LARGE PARTS

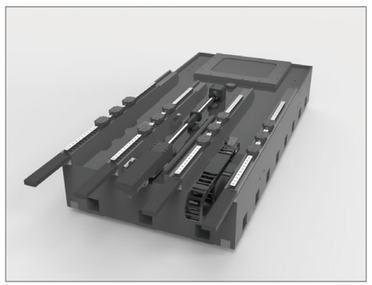
1) 床身采用全新矿物质材料，三维同步设计 ，FEM 有限元分析等一流研发手段，进行合理布局，保证基础大件良好的抗扭曲和抗弯曲能力，具有超强的精度稳定性。

The bed adopts new mineral materials, 3-dimensional synchronous design, FEM finite element analysis and other first-class research and development methods, and carries out reasonable layout to ensure good anti-distortion and anti-bending ability of the basic large components, it has super precision stability.

2) 其余基础大件采用三维同步设计 ，FEM 有限元分析等一流研发手段，进行合理的布筋，保证基础大件良好的抗扭曲和抗弯曲能力，具有超强的精度稳定性，均进行二次回火处理，消除应力，保证加工后的精度稳定性。

The rest of the basic large parts adopt 3D synchronous design, FEM finite element analysis and other first-class R&D means are used for reasonable reinforcement to ensure good anti-distortion and anti-bending ability of the basic large parts, with super precision stability. Secondary tempering treatment is carried out to eliminate stress and ensure the precision stability after processing.

床身部 MACHINE BED



1) X轴采用高刚性直线滚动导轨副，动静摩擦系数小，响应速度快，高速定位高，低速无爬行。

X axis adopts high rigidity linear rolling guide pair, small static and static friction coefficient, fast response speed, the high-speed positioning is high, and the low speed without crawling.

2) Z轴采用高刚性直线滚动导轨副，动静摩擦系数小，响应速度快，高速定位高，低速无爬行。

Z axis adopts high rigidity linear rolling guide pair, small static and static friction coefficient, fast response speed, the high-speed positioning is high, and the low speed without crawling.

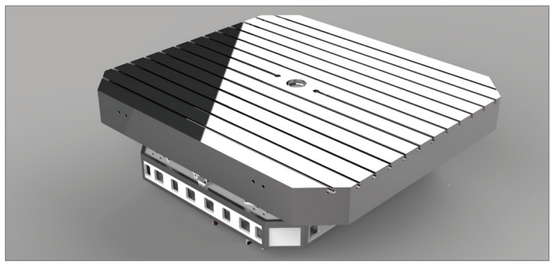
3) X、Z轴采用交流伺服电机和精密伺服行星减速器通过精密弹性联轴器与滚珠丝杠副联结获得进给运动。

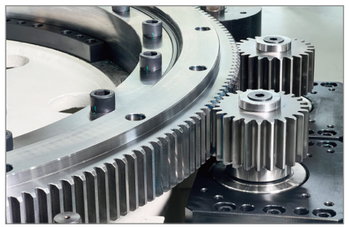
X,Z axes adopt AC servo motor and precise servo planetary reducer,connecting with ball screws through precision elastic coupling to obtain feed movement.

转台部 ROTARY TABLE

工作台采用进口十字交叉滚子轴承（外圈为齿圈），通过双电机双齿轮消隙传动，并标配全闭环控制，实现其精确分度定位，具有高精度、任意分度的定位功能。装置采用碟簧夹紧，液压松开，配备压力检测及松开位置检测，双重检测保证了转台平稳无故障的运行。

The table adopts imported cross roller bearing (outer ring is gear ring), which is driven by double motors and double gears, and is equipped with standard full closed-loop control as to realize precise indexing positioning, with high precision and arbitrary indexing positioning function. The rotary table adopts disc spring clamping, hydraulic release, equipped with pressure detection and release position detection, double detection ensures smooth and trouble-free operation of the rotary table.





转台传动结构特点（双电机电气消隙）
Rotary table transmission structure features (double motor electric anti-backlash)

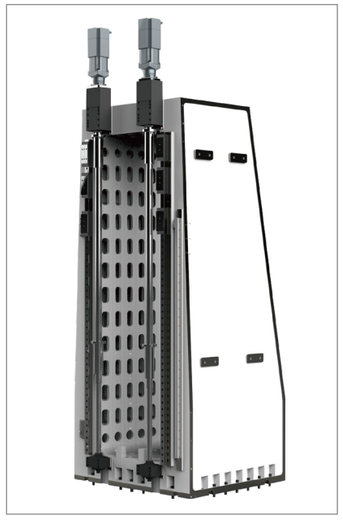
未来数控机床的发展趋势主要是大型和重型，因而机床的行程越来越长，对精度的要求也就越来越高。要消除齿轮齿条传动中产生的背隙，有两种方式，一是机械消隙，二是双电机电气消隙。机械消隙是单个电机输入两个齿轮输出的形式，而双电机消隙属于双电机输入两个齿轮输出的形式。

双电机消隙就是两个电机通过两个齿轮与主齿轮啮合，并按双电机消隙控制曲线进行驱动，永远不会出现两个电机输出转矩同时为零的情况，即任何时候两个电机至少有一个会对主齿轮施加不为零的转矩，在此转矩的作用下，主齿轮的运动间隙就不可能存在。

The development trend of CNC machine tools in the future is mainly large and heavy, so the stroke of the machine tool is getting longer and longer, and the requirements for accuracy are getting higher and higher. There are two ways to eliminate the backlash generated in the pinion and rack drive, one is mechanical anti-backlash, the other is dual motor electrical anti-backlash. Mechanical anti-backlash is the form of single motor input double gear output, and double motor anti-backlash belongs to the form of double motor input double gear output.

Double motor anti-backlash is two-motor match with main gear through two-gear, and drive as per double motor anti-backlash control curve,there will never be the case which the torque of two motor is zero at the same time, that is, at least one of the two motors will apply non-zero torque to the main gear at any time, under the action of this torque, the movement backlash of the main gear is impossible to exist.

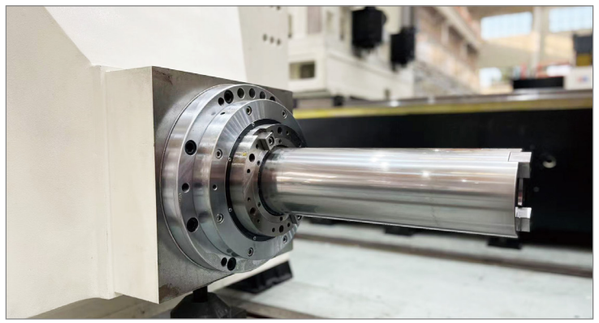
立柱部 COLUMN



Y轴采用前后四条高刚性的直线滚动导轨副，采用带制动功能的交流伺服电机带动精密伺服行星减速器，通过精密联轴器与滚珠丝杠副联结获得进给运动。Y轴采用正挂箱双丝杠对称结构，具有最大热稳定性，配合数控系统实现了伺服轴的主从控制，该结构完全代替了传统的配重结构，降低了系统故障率，提高了机床动态响应性及机床定位精度。

Y-axis adopts 4 high rigid linear guideways in front and back, and adopts AC servo motor with braking function to drive precision servo planetary reducer, and obtains feed movement through precision coupler and ball screw connection. Y-axis adopts symmetrical structure of double ball screws with upright box, which has maximum thermal stability, and realizes the master-slave control of servo shaft with CNC controller system. This structure completely replaced traditional counterweight structure, can help reduce controller failure rate, and improve the dynamic response and positioning accuracy of machines.

主轴箱部 SPINDLE BOX



主轴电机与主轴之间，采用二段齿轮变速箱（恒温油箱冷却），主轴电机与二段齿轮变速箱直联，将动力传递至主轴，充分发挥主轴电机的最大效率，确保在低速档大扭矩输出，特别适合重切削。主轴轴承采用进口主轴专用轴承，配备恒温油箱冷却，使主轴具有良好的精度及使用寿命。镗轴可在主轴孔内沿导向键作轴向移动并与空心主轴一起作旋转运动。镗轴内装有刀具夹紧机构，碟形弹簧通过拉杆将夹爪拉紧，从而拉紧装在镗轴上的刀具，松刀时压力油推动装在尾筒内的油缸中的活塞使其向前运动，推动拉杆带动夹头一起向前运动，使夹头张开、放松刀具。

Between the spindle motor and spindle, a two-stage gear transmission (thermostatic oil tank cooling) is adopted, and the spindle motor is directly connected with the two-stage gear transmission box to transfer power to the spindle, it can help maximize the efficiency of the spindle motor to ensure high torque output at low speed, especially suitable for heavy cutting. The spindle bearing adopts imported spindle special bearings, together with constant temperature oil cooling system,the spindle can get good accuracy and longer service life. The boring shaft can move axially along the guide key in the spindle hole and rotate together with the hollow spindle. The boring shaft is equipped with a tool clamping mechanism, the disc spring pulls the claw tight through a pull rod, thus tightening the tool mounted on the shaft. When the tool is loosened, the oil pressue pushes the piston installed in the oil cylinder in the tail barrel to make it move forward,pushing the pull rod to drive the collet forward, so that the collet can clamp and release the tools.

技术参数
TECHNICAL PARAMETER

配置 Configuration	型号 Model	单位 Unit	HBC110	HBC130
主轴 Spindle	直径 Dia.	mm	ϕ110	ϕ130
	转速 Speed	rpm	3000	2500
	锥孔 Taper hole	/	BT50/7:24	
	功率（FANUC S1/S6） Power（FANUC S1/S6）	kW	22/26	22/26
	功率（SIEMENS S1/最大） Power（SIEMENS S1/Max）		22/59.7	22/59.7
	扭矩（FANUC S1/S6） Torque（FANUC S1/S6）	N.m	1155/1839	1155/1839
	扭矩（SIEMENS S1/最大） Torque（SIEMENS S1/Max）		1155/3135	1155/3135
转台 Rotary table	尺寸（宽×长） Size（Width x Length）	mm	1250×1250	1250×1400
			1250×1400(可选/Option)	1400×1600(可选/Option)
	载重 Load	Kg	5000	5000
			6000	6000
	工作台回转 Table swing	°	自动连续360 Automatic continuous 360	
行程 Travel	X轴 X axis	mm	1600	2000
	Y轴 Y axis	mm	1200	1500
	Z轴 Z axis	mm	1200	1200
	W轴 W axis	mm	550	700
快速移动速度 Fast traverse	X/Y/Z/W	m/min	12/12/12/6	12/12/12/6
	B	rpm	5	5
进给速度 Feed rate	X/Y/Z	m/min	8	8
	B	rpm	2	2
定位精度 Positioning accuracy	X/Y/Z/W	mm	0.02	0.02
	B（全闭环） B（Full-closed）	″	6	6
重复定位精度 Positioning accuracy repeatability	X/Y/Z/W	mm	0.015	0.015
	B（全闭环） B（Full-closed）	″	4	4
整机重量 Weight		kg	33000	35000

*各轴行程及转台参数可根据客户需求订制
*Each shaft travel and rotary table parameters can be customized according to customers' needs.

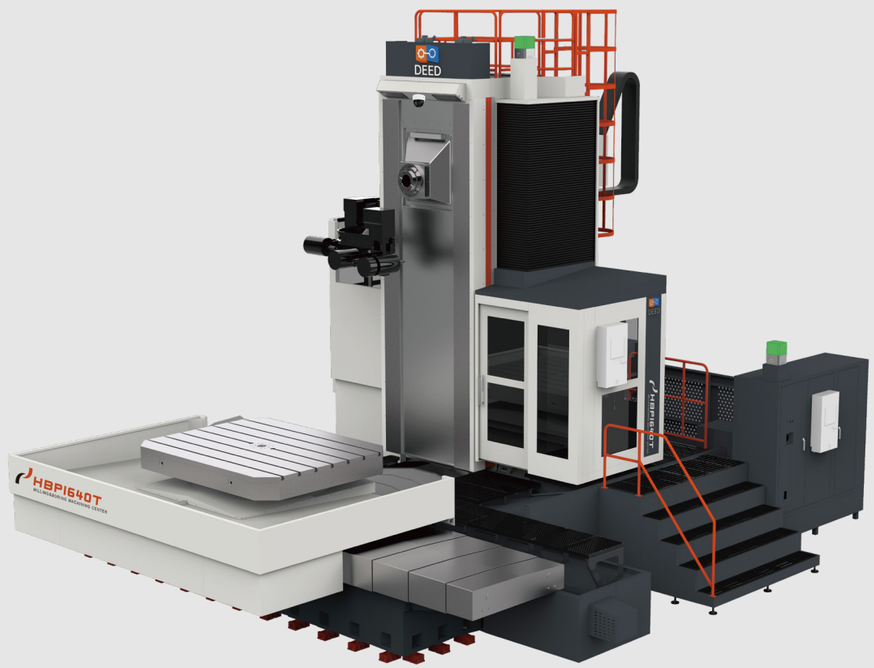
标准配置
STANDARD CONFIGURATION

序号 No.	名称 Name	序号 No.	名称 Name
1	数控系统 CNC system	11	前端照明 Front lighting
2	滚柱线轨 Roller linear guide	12	简易护罩 Simple shield
3	滚珠丝杠 Ball screw	13	工件水冷 Workpiece water cooling
4	主轴锥孔吹气 Spindle taper air blow	14	工件气冷 Workpiece air cooling
5	主轴循环冷却 Spindle circulating cooling	15	全闭环转台 Full-closed rotary table
6	主轴编码器 Spindle encoder	16	电柜空调 Electric cabinet air conditioner
7	导轨防护罩 Guideway protective cover	17	丝杠预拉 Screw prestretching
8	三色灯 Tri-color light	18	垫铁和调整螺栓 Pad iron&adjusting bolt
9	自动润滑系统 Automatic lubrication system	19	手持脉冲发生器 Handheld pulse generator
10	电柜箱照明 Electric cabinet lighting	20	随机操作及维修手册 Attached operation & maintenance manual

选购配置
OPTIONS

序号 No.	名称 Name	序号 No.	名称 Name
1	主轴支撑套 Spindle support sleeve	10	主轴中心出水 Spindle CTS
2	CE要求 CE requirement	11	水枪 Water gun
3	对刀仪 Tool setting gauge	12	刀库 Tool magazine
4	断刀检测 Tool break detection	13	手动直角铣头 Manual right angle milling head
5	工件测量 Workpiece measurement	14	手动加长直角铣头 Manual extended right angle milling head
6	X、Y、Z三轴光栅尺 X、Y、Z three axes grating ruler	15	手动万能铣头 Manual universal milling head
7	B轴圆光栅 B axis circular grating	16	手动加长万能铣头 Manual extended universal milling head
8	工作台防护钣金 Table protective sheet metal	17	数控平旋盘 CNC flat chuck
9	全防护钣金 Fully protected sheet metal	18	地基下沉 Foundation subsidence

蒂德精机
DEED MT



HBP系列 刨台式铣镗加工中心

HBP Series Planer Type Milling & Boring Machining Center

本系列机床为刨台式铣镗加工中心，工作台在前床身上左右移动（X轴），主轴箱在立柱上上下移动（Y轴），立柱在后床身上前后移动（Z轴），镗轴前后移动（W轴），工作台回转（B轴）。前后床身采用新型矿物材料，精度更稳定。
该机床广泛应用于船舶、交通、铁路、能源、风电、重型、冶金、矿山、工程机械、石化机械、内燃机、水泵、高压开关、模具等各类通用机械加工行业，是加工箱体类、壳体类、机座类等零件的关键首选设备。

This series of machine is planer type milling & boring machining center. The table moves left and right on the front bed (X axis), spindle box moves up and down on the column (Y axis), column moves front and back on the back bed (Z axis), the boring shaft moves back and forth (W axis), and the table rotates (B axis). The front and rear beds are made of new mineral materials with higher precision stability.
The machine can be widely used in shipbuilding, transportation, railway, energy, wind power, heavy duty, metallurgy, mining, engineering machinery, petrochemical machinery, internal combustion engine, water pump, high pressure switch, molds and other general mechanical processing industries. It can be the first choice to process box-type, housing type, base parts and other types of parts.

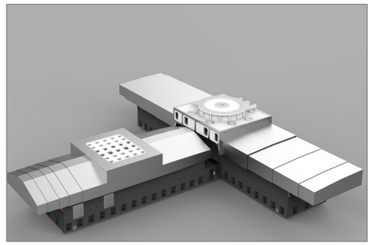
产品优势
PRODUCT ADVANTAGES

基础大件 BASIC LARGE PARTS

1) 床身采用全新矿物质材料，三维同步设计，FEM 有限元分析等一流研发手段，进行合理布局，保证基础大件良好的抗扭曲和抗弯曲能力，具有超强的精度稳定性。
The bed adopts new mineral materials, 3-dimensional synchronous design, FEM finite element analysis and other first-class research and development methods, and carries out reasonable layout to ensure good anti-distortion and anti-bending ability of the basic large components, it has super precision stability.

2) 其余基础大件采用三维同步设计，FEM 有限元分析等一流研发手段，进行合理的布筋，保证基础大件良好的抗扭曲和抗弯曲能力，具有超强的精度稳定性，均进行二次回火处理，消除应力，保证加工后的精度稳定性。
The rest of the basic large parts adopt 3D synchronous design, FEM finite element analysis and other first-class R&D means are used for reasonable reinforcement to ensure good anti-distortion and anti-bending ability of the basic large parts, with super precision stability. Secondary tempering treatment is carried out to eliminate stress and ensure the precision stability after processing.

床身部 MACHINE BED



1) X轴采用高刚性直线滚动导轨副，动静摩擦系数小，响应速度快，高速定位高，低速无爬行。
X axis adopts high rigidity linear rolling guide pair, small static and static friction coefficient, fast response speed, the high-speed positioning is high, and the low speed without crawling.

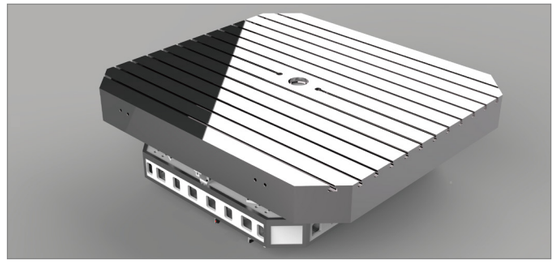
2) Z轴采用高刚性直线滚动导轨副，动静摩擦系数小，响应速度快，高速定位高，低速无爬行。
Z axis adopts high rigidity linear rolling guide pair, small static and static friction coefficient, fast response speed, the high-speed positioning is high, and the low speed without crawling.

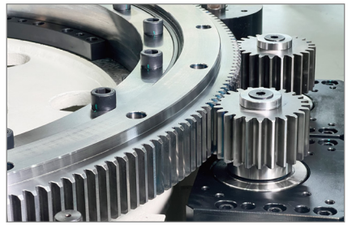
3) X、Z轴采用交流伺服电机和精密伺服行星减速器通过精密弹性联轴器与滚珠丝杠副联结获得进给运动。
X,Z axes adopt AC servo motor and precise servo planetary reducer,connecting with ball screws through precision elastic coupling to obtain feed movement.

转台部 ROTARY TABLE

工作台采用进口十字交叉滚子轴承（外圈为齿圈），通过双电机双齿轮消隙传动，并标配全闭环控制，实现其精确分度定位，具有高精度、任意分度的定位功能。转台采用碟簧夹紧，液压松开，配备压力检测及松开位置检测，双重检测保证了转台平稳无故障的运行。

The table adopts imported cross roller bearing (outer ring is gear ring), which is driven by double motors and double gears, and is equipped with standard full closed-loop control as to realize precise indexing positioning, with high precision and arbitrary indexing positioning function. The rotary table adopts disc spring clamping, hydraulic release, equipped with pressure detection and release position detection, double detection ensures smooth and trouble-free operation of the rotary table.





转台传动结构特点（双电机电气消隙）
Rotary table transmission structure features (double motor electric anti-backlash)

未来数控机床的发展趋势主要是大型和重型，因而机床的行程越来越长，对精度的要求也就越来越高。要消除齿轮齿条传动中产生的背隙，有两种方式，一是机械消隙，二是双电机电气消隙。机械消隙是单个电机输入两个齿轮输出的形式，而双电机消隙属于双电机输入两个齿轮输出的形式。
双电机消隙就是两个电机通过两个齿轮与主齿轮啮合，并按双电机消隙控制曲线进行驱动，永远不会出现两个电机输出转矩同时为零的情况，即任何时候两个电机至少有一个会对主齿轮施加不为零的转矩，在此转矩的作用下，主齿轮的运动间隙就不可能存在。

The development trend of CNC machine tools in the future is mainly large and heavy, so the stroke of the machine tool is getting longer and longer, and the requirements for accuracy are getting higher and higher. There are two ways to eliminate the backlash generated in the pinion and rack drive, one is mechanical anti-backlash, the other is dual motor electrical anti-backlash. Mechanical anti-backlash is the form of single motor input double gear output, and double motor anti-backlash belongs to the form of double motor input double gear output.
Double motor anti-backlash is two-motor match with main gear through two-gear, and drive as per double motor anti-backlash control curve,there will never be the case which the torque of two motor is zero at the same time, that is, at least one of the two motors will apply non-zero torque to the main gear at any time, under the action of this torque, the movement backlash of the main gear is impossible to exist.

技术参数
TECHNICAL PARAMETER

配置 Configuration	型号 Model	单位 Unit	HBP110 - Ⅰ	HBP110 - Ⅱ	HBP130 - Ⅰ
主轴 Spindle	直径 Dia.	mm	ϕ110	ϕ110	ϕ130
	转速 Speed	rpm	3000	3000	2500
	锥孔 Taper hole	/	BT50/7:24		
	功率（FANUC S1/S6） Power（FANUC S1/S6）	kW	22/26	30/37	30/37
	功率（SIEMENS S1/最大） Power（SIEMENS S1/Max）		22/59.7	31/89.1	31/89.1
	扭矩（FANUC S1/S6） Torque（FANUC S1/S6）	N.m	1155/1839	2054/3085	2054/3085
	扭矩（SIEMENS S1/最大） Torque（SIEMENS S1/Max）		1155/3135	2491/6105	2491/6105
转台 Rotary table	尺寸（宽×长） Size（Width x Length）	mm	1250×1400	1250×1400	1600×1800
			1400×1600 (可选Option)		1800×2000 (可选Option)
	承重 Load	kg	6000	8000	12000
			10000	10000	15000
	工作台回转 Table swing	°	自动连续360 Automatic continuous 360		
行程 Travel	X轴 X axis	mm	2000	2000	3000
	Y轴 Y axis	mm	1500	1500	2000
	Z轴 Z axis	mm	1200	1200	1600
	W轴 W axis	mm	550	550	700
	V轴 V axis	mm	/	/	/
快速移动速度 Fast traverse	X/Y/Z/W	m/min	12/12/12/6	12/12/12/6	12/12/12/6
	V	m/min	/	/	/
	B	rpm	5		2
进给速度 Feed rate	X/Y/Z	m/min	8	8	8
	B	rpm	2		1
定位精度 Positioning accuracy	X/Y/Z/W	mm	0.02	0.015	0.02
	V轴 V axis	mm	/	/	/
	B（全闭环） B（Full-closed）	″	6	6	6
重复定位精度 Positioning accuracy repeatability	X/Y/Z/W	mm	0.015	0.012	0.015
	V	mm	/	/	/
	B（全闭环） B（Full-closed）	″	4	4	4
整机重量 Weight		kg	35000	38000	45000

*各轴行程及转台参数可根据客户需求订制
*Each shaft travel and rotary table parameters can be customized according to customers' needs.

技术参数
TECHNICAL PARAMETER

配置 Configuration	型号 Model	单位 Unit	HB(S)P130 - Ⅱ	HBP160 - Ⅰ	HB(S)P160- Ⅱ
主轴 Spindle	直径 Dia.	mm	ϕ130	ϕ160	ϕ160
	转速 Speed	rpm	2500	2000	2000
	锥孔 Taper hole	/	BT50/7:24		
	功率（FANUC S1/S6） Power（FANUC S1/S6）	kW	37/45	37/45	60/75
	功率（SIEMENS S1/最大） Power（SIEMENS S1/Max）		31/89.1	37.7/116.2	58/148
	扭矩（FANUC S1/S6） Torque（FANUC S1/S6）	N.m	2532/4793	2532/4793	3112/4672
	扭矩（SIEMENS S1/最大） Torque（SIEMENS S1/Max）		2491/6105	2491/6105	3615/9225
转台 Rotary table	尺寸（宽×长） Size（Width x Length）	mm	1800×2200	1800×2200	2000×2500
			2000×2500 (可选Option)		2500×3000 (可选Option)
	承重 Load	kg	20000	20000	30000
			30000	30000	40000
	工作台回转 Table swing	°	自动连续360 Automatic continuous 360		
行程 Travel	X轴 X axis	mm	3000	3000	4500
	Y轴 Y axis	mm	2000	2000	2500
	Z轴 Z axis	mm	1600	1600	2000
	W轴 W axis	mm	700	1000	1000
	V轴 V axis	mm	800	/	1000
快速移动速度 Fast traverse	X/Y/Z/W	m/min	12/12/12/6	12/12/12/6	12/12/12/6
	V	m/min	6	/	6
	B	rpm	2		
进给速度 Feed rate	X/Y/Z	m/min	8	8	8
	B	rpm	1		
定位精度 Positioning accuracy	X/Y/Z/W	mm	0.015	0.02	0.02
	V轴 V axis	mm	0.015	/	0.02
	B（全闭环） B（Full-closed）	″	6	6	6
重复定位精度 Positioning accuracy repeatability	X/Y/Z/W	mm	0.012	0.015	0.015
	V	mm	0.012	/	0.015
	B（全闭环） B（Full-closed）	″	4	4	4
整机重量 Weight		kg	60000（75000）	62000	90000（110000）

*各轴行程及转台参数可根据客户需求订制
*Each shaft travel and rotary table parameters can be customized according to customers' needs.

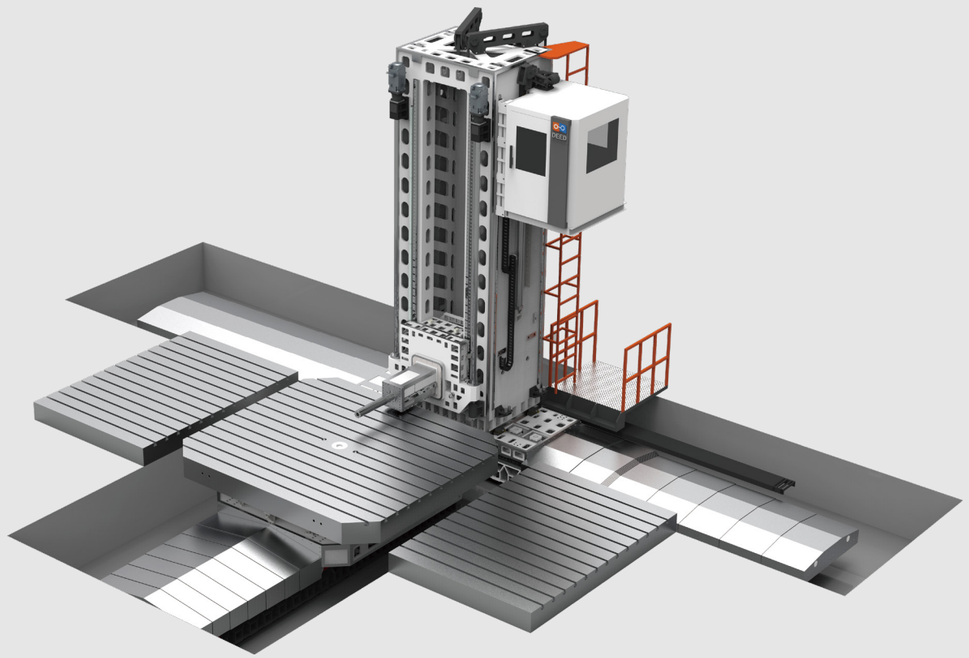
标准配置
STANDARD CONFIGURATION

序号 No.	名称 Name	序号 No.	名称 Name
1	数控系统 CNC system	11	前端照明 Front lighting
2	滚柱线轨 Roller linear guide	12	简易护罩 Simple shield
3	滚珠丝杠 Ball screw	13	工件水冷 Workpiece water cooling
4	主轴锥孔吹气 Spindle taper air blow	14	工件气冷 Workpiece air cooling
5	主轴循环冷却 Spindle circulating cooling	15	全闭环转台 Full-closed rotary table
6	主轴编码器 Spindle encoder	16	电柜空调 Electric cabinet air conditioner
7	导轨防护罩 Guideway protective cover	17	丝杠预拉 Screw prestretching
8	三色灯 Tri-color light	18	垫铁和调整螺栓 Pad iron&adjusting bolt
9	自动润滑系统 Automatic lubrication system	19	手持脉冲发生器 Handheld pulse generator
10	电柜箱照明 Electric cabinet lighting	20	随机操作及维修手册 Attached operation & maintenance manual

选购配置
OPTIONS

序号 No.	名称 Name	序号 No.	名称 Name
1	主轴支撑套 Spindle support sleeve	10	主轴中心出水 Spindle CTS
2	CE要求 CE requirement	11	水枪 Water gun
3	对刀仪 Tool setting gauge	12	刀库 Tool magazine
4	断刀检测 Tool break detection	13	手动直角铣头 Manual right angle milling head
5	工件测量 Workpiece measurement	14	手动加长直角铣头 Manual extended right angle milling head
6	X、Y、Z三轴光栅尺 X、Y、Z three axes grating ruler	15	手动万能铣头 Manual universal milling head
7	B轴圆光栅 B axis circular grating	16	手动加长万能铣头 Manual extended universal milling head
8	工作台防护钣金 Table protective sheet metal	17	数控平旋盘 CNC flat chuck
9	全防护钣金 Fully protected sheet metal	18	地基下沉 Foundation subsidence

蒂德精机
DEED MT

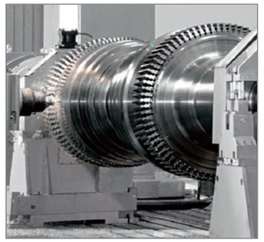
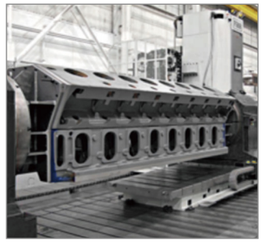
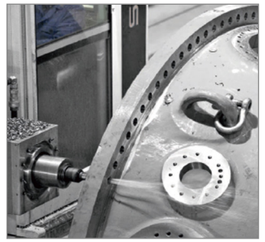


HBF系列 落地式铣镗加工中心
HBF Series Floor Type Milling & Boring Machining Center

本系列机床为动立柱、正挂主轴箱、滑枕移动式布局，并配有数控转台（或落地式平台）。机床X轴采用两台伺服电机、精密减速机及高精度齿轮、齿条进行同步驱动，其它各轴均采用伺服电机、精密减速机及高精度滚珠丝杠副进行驱动。

This series of machine is column-moving, spindle box upright hanging ,ram movable layout, it is equipped with CNC rotary table (or floor type platform). X-axis is driven synchronously by two servo motors, precise reducer and high-precision gears and racks, while the other axes are driven by servo motors, precise reducer and high-precision ball screws.

产品优势
PRODUCT ADVANTAGE

1) 主轴箱采用二级齿轮变速，在低速档，输出扭矩大，适合重切削；在高速档，输出转速高，适合高速切削。

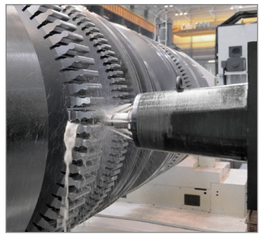
2) 方滑枕采用优质球墨铸铁精铸而成，Z轴导轨采用最新滚滑复合技术，并配备自动伸出补偿，保证了Z轴刚性及动态响应。

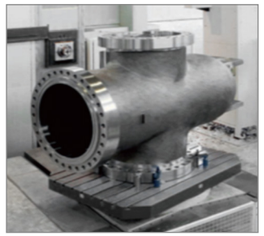
3) 立柱采用封闭框型结构，Y轴采用双丝杠四导轨对称结构，该结构具有同规格最强的刚性及热稳定性，使整机高精度得到了保证。

1) Spindle box adopts two-stage gear change, in low speed, output torque is big, suitable for heavy cutting; in high speed, output speed is fast, suitable for high-speed cutting.

2) The square ram is precisely casted with high-quality ductile iron,and the Z-axis guideway adopts the latest rolling and sliding composite technology, together with automatic extension compensation function, Z-axis rigidity and dynamic response are guaranteed.

3) The column adopts closed frame structure, while Y-axis adopts double-screw 4-guideway symmetrical structure, which can get the strongest rigidity and thermal stability among similar specifications, so that the high precision of the whole machine can be guaranteed.





4) 转台采用伺服电机驱动十字交叉滚子轴承（轴承外圈为齿圈），双电机消隙控制，实现转台高承载力，并配备角度光栅尺，达到转台任意分度8″高定位精度的要求。

5) 机床采用自动升降操作站台，操作方便灵活，安全性好。

6) 基础大件除床身采用新型矿物铸件材料一体铸造外，其余均采用优质灰铸铁，二者结合使整机具备优异的吸振性和热稳定性，具有更加完美的切削表现。

4) The rotary table adopts servo motor to drive the cross roller bearing (the outer ring of the bearing is the tooth ring), dual motor anti-backlash control to achieve bigger load capacity of the rotary table, it is equipped with angle grating ruler, to achieve the rotary table arbitrary division 8″ high positioning accuracy requirements.

5) The machine adopts automatic lifting operation platform, convenient and flexible operation, good safety.

6) Besides the application of new mineral casting materials in one piece casting, the rest basic parts are made of high-quality grey cast iron, the combination of the 2 kinds of castings makes the whole machine with excellent vibration absorption and thermal stability, can help achieve perfect cutting performance.

技术参数
TECHNICAL PARAMETERS

配置 Configuration	型号 Model	单位 Unit	HBF130	HBF160	HBF200
主轴 Spindle	直径 Dia.	mm	ϕ130	ϕ160	ϕ200
	转速 Speed	rpm	2500	2000	1800
	锥孔 Tapter hole	/	BT50/7:24		BT60/7:24
	功率（FANUC S1/S6） Power（FANUC S1/S6）	kW	37/45	60/75	75/90
	功率（SIEMENS S1/最大） Power（SIEMENS S1/Max.）		37.7/116.2	58/148	81/212
	扭矩（FANUC S1/S6） Torque（FANUC S1/S6）	N.m	2532/4793	3112/4672	5115/6142
	扭矩（SIEMENS S1/最大） Torque（SIEMENS S1/Max.）		2491/6105	3615/9225	5047/14520
转台尺寸（宽×长） Rotary table size (width × length)		mm	2000×2500	2500×3000	3000×3500
			2500×3000(可选Option)	3000×3500(可选Option)	3500×4500(可选Option)
			3000×3500(可选Option)	3000×4000(可选Option)	5000×5000(可选Option)
转台承重 Load of rotary table		Kg	30000	40000	60000
			40000	60000	80000
			60000	80000	100000
工作台回转 Table swing		°	自动连续360 Automatic continuous 360		
行程 Travel	X轴 X axis	mm	6000+（n×1000）	8000+（n×1000）	10000+（n×1000）
	Y轴 Y axis	mm	3000+（n×1000）	4000+（n×1000）	5000+（n×1000）
	Z轴 Z axis	mm	800	1000	1200
	W轴 W axis	mm	700	1000	1200
	V轴 V axis	mm	2000	2500	3000
快速移动速度 Fast traverse	X/Y/Z/V/W	m/min	12/12/12/6/6	12/12/12/6/6	12/12/12/6/6
	B	rpm	2	1.5	1.5
进给速度 Feed rate	X/Y/Z	m/min	8	8	8
	B	rpm	1.5	1	1
定位精度 Positioning accuracy	(X/Y/Z/W)	mm	0.01/1000	0.01/1000	0.01/1000
	V轴 V axis		0.01/1000	0.01/1000	0.01/1000
	B（全闭环） B（Full-closed loop）	″	6	6	6
重复定位精度 Positioning accuracy repeatability	X/Y/Z	mm	0.008/1000	0.008/1000	0.008/1000
	V（全闭环） V（Full-closed loop）		0.008/1000	0.008/1000	0.008/1000
	B（全闭环） B（Full-closed loop）	″	4	4	4
整机重量 Weight		kg	120000	180000	220000

*各轴行程及转台参数可根据客户需求订制

*Each axis travel and rotary table parameter can be customized according to customer demands.

标准配置
STANDARD CONFIGURATION

序号 No.	名称 Name	序号 No.	名称 Name
1	数控系统 CNC system	11	前端照明 Front lighting
2	滚柱线轨 Roller linear guide	12	简易护罩 Simple shield
3	滚珠丝杠 Ball screw	13	工件水冷 Workpiece water cooling
4	主轴锥孔吹气 Spindle taper air blow	14	工件气冷 Workpiece air cooling
5	主轴循环冷却 Spindle circulating cooling	15	全闭环转台 Full-closed rotary table
6	主轴编码器 Spindle encoder	16	电柜空调 Electric cabinet air conditioner
7	导轨防护罩 Guideway protective cover	17	丝杠预拉 Screw prestretching
8	三色灯 Tri-color light	18	垫铁和调整螺栓 Pad iron&adjusting bolt
9	自动润滑系统 Automatic lubrication system	19	手持脉冲发生器 Handheld pulse generator
10	电柜箱照明 Electric cabinet lighting	20	随机操作及维修手册 Attached operation & maintenance manual

选购配置
OPTIONS

序号 No.	名称 Name	序号 No.	名称 Name
1	主轴支撑套 Spindle support sleeve	10	主轴中心出水 Spindle CTS
2	CE要求 CE requirement	11	水枪 Water gun
3	对刀仪 Tool setting gauge	12	刀库 Tool magazine
4	断刀检测 Tool break detection	13	手动直角铣头 Manual right angle milling head
5	工件测量 Workpiece measurement	14	手动加长直角铣头 Manual extended right angle milling head
6	X、Y、Z三轴光栅尺 X、Y、Z three axes grating ruler	15	手动万能铣头 Manual universal milling head
7	B轴圆光栅 B axis circular grating	16	手动加长万能铣头 Manual extended universal milling head
8	工作台防护钣金 Table protective sheet metal	17	数控平旋盘 CNC flat chuck
9	全防护钣金 Fully protected sheet metal	18	地基下沉 Foundation subsidence

24/7 全天候不间断服务
24/7 NON-STOP SERVICE

- 售后服务工程师平均具有 10 年机床维修经验，客户故障 2 小时响应回复；
  After-sales engineers averagely have over 10 years machine tool industry service experience, can respond to customer failure within 2 hours ;
- 全国设有 30 个销售及售后服务网点，售后网点覆盖范围 24 小时内到场服务；
  30 sales& servive centers inside of China, can give on-site service within 24 hours in near covering range;
- 提供完善的客户培训计划及操作指南；
  Comprehensive training system and operation guidance ;
- 标准化的售后交机及售后服务流程；
  Standardized machine delivery and after-sales service process;
- 购买机床，终身服务。
  1-time purchase, life-time service.