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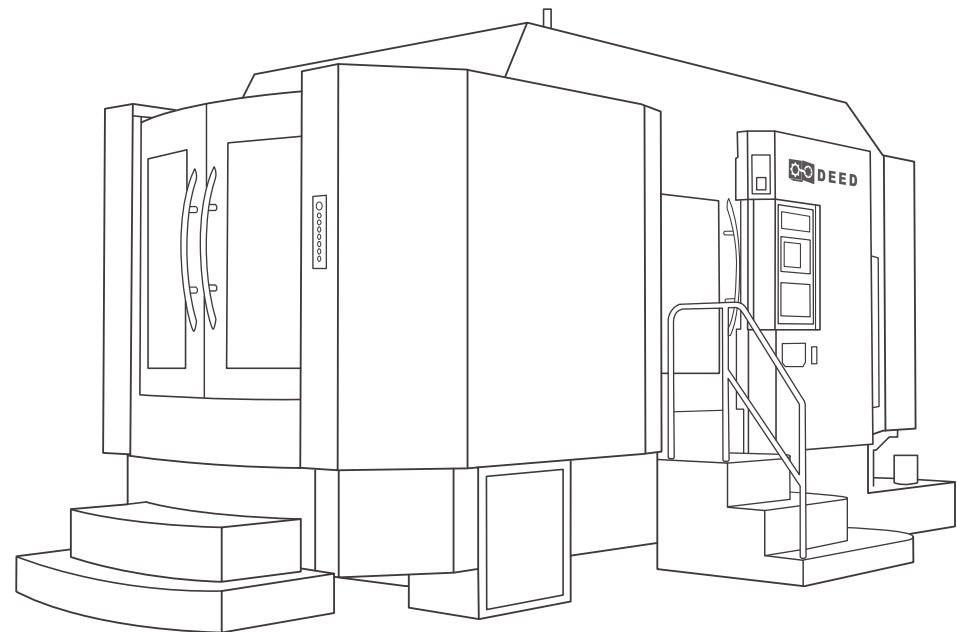
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卧式加工中心

Horizontal 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，现有员工500余人，目前是“中国机床工具工业协会理事单位”和“山东机床通用机械工业协会理事单位”。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、高精度五轴联动加工中心、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德制造的完美结合。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24项重点政府科技项目，获得各类知识产权200余项（含发明专利9项）、科技成果奖14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”、“国家级专精特新‘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 integratd with R&D, production and sales. It is located in Yanzhou District, Jining City, with more than 500 people, is currently the governing unit of "China Machine Tool Industry Association " and the governing unit of "Shandong Machine Tool General Machinery Industry Association". The company takes high-speed vertical machining center, large gantry machining center, high-efficiency drilling and tapping machining center, high-precision turning center, high-precision five-axis linkage machining center, horizontal milling and boring machining center and horizontal machining center as the leading products, and serves a wide range of domestic and foreign key industries such as aviation, aerospace, military, shipbuilding, automobile, construction machinery, rail transit, 5G, precision mold and other key fields. 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 and jointly explore the global high-end market. It has set up a high-end machine tool R & D center and manufacturing base in Germany - "Hipreed Technology GmbH", fully implemented international operations, and achieved perfect combination of German technology and Chinese-German manufacturing. The company has set up five domestic and foreign R & D centers, and six provincial and municipal innovation platforms, with high-grade machine tool research and development, new material development, advanced technology testing and reliability improvement and comprehensive R & D, experiment, testing, manufacturing advantages. Through continuous innovation and breakthrough, it has undertaken 24 key governmental science and technology projects, obtained more than 200 intellectual property rights (including 9 invention patents), and 14 scientific and technological achievement awards, and leading overall development and innovation ability of 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 the "National High-Tech Enterprise", "National Special New 'little giant' Enterprise", the highest award of China's machine tool industry "Spring Swallow Award", "China Machine Tool Industry 'Top 10 Product Quality'", "China Machinery Industry Science and Technology Progress 2nd Award" and more than 80 key honors.

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双工位卧式加工中心

DOUBLE-PALLET HORIZONTAL MACHINING CENTER

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售后服务 AFTER-SALES SERVICE

24/7 全天候不间断服务

24/7 NON-STOP SERVICE

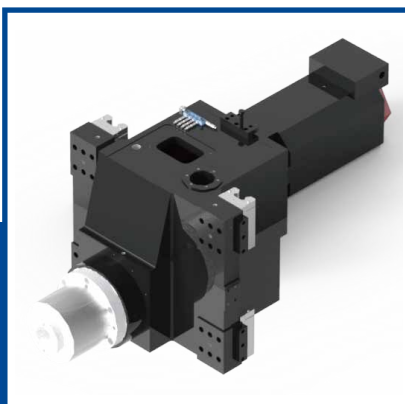


单工位 卧式加工中心 Single-Pallet Horizontal Machining Center

本系列卧式加工中心，采用倒T型整体床身结构，门型双重壁立柱结构设计，结构刚性强，行程大，精度高，适用于各种重切削、高精度机械加工领域，具备铣削、镗削、钻削（钻、扩、铰）、攻螺纹等多种加工功能，保证高效率和高精度的单件或中小批量产品的加工需求。

This series of horizontal machining centers adopts inverted T-shape whole bed structure and portal double-wall column structure, configured with strong structural rigidity, large travel, and high precision, it can be widely used for various heavy cutting and high-precision mechanical processing industries. It can do milling, boring, drilling (drilling, expanding, reaming), tapping etc. and can meet single piece or small & medium batch products machining demands with high-efficiency and high-precision.





标配 Standard

电机 Motor:Bip30/8000

扭矩 Torque:143/236N.m

转速 Speed:6000 转 6000rpm



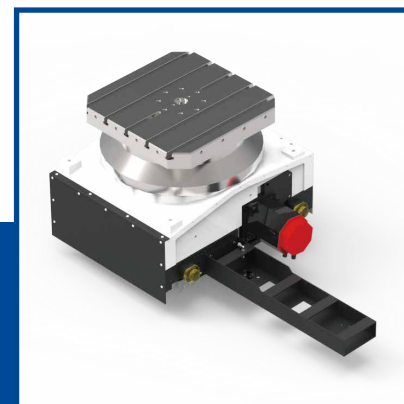
床身采用纳米聚合物矿物复合材料一体铸造，具备优异的吸振性和热稳定性，可有效提高工件表面加工质量和刀具使用寿命

The machine bed is one-piece casted with nanoscale mineral material, it has excellent vibration absorption and thermal stability, which can effectively improve the surface processing quality and the cutting tools service life.



立柱采用封闭式框架结构提高抗弯抗扭性能

The columns adopt closed frame structure to improve bending and torsion resistance performance.



工作台台面可选择T型槽或者螺纹孔，标配1°x360分度工作台，可选配0.001°数控工作台

The worktable surface can choose T-shaped slots or threaded holes. The standard table is 1°x360 indexing, can choose 0.001° indexing as option.

具备硬切削能力的高精密卧式加工中心

High-precision horizontal machining center with hard cutting capabilities

高刚性重切粗加工

Rough machining ---High-rigidity, Heavy-cutting

高精密细腻精加工

Prcise machining—high-precision, fine-finishing

全自动凸轮快换变频刀库

Fully automatic cam quick change frequency conversion tool magazine

铠甲式护罩，德国进口材质

Armor-type shield, raw materials imported from Germany

台湾高性能分度式旋转式工作台

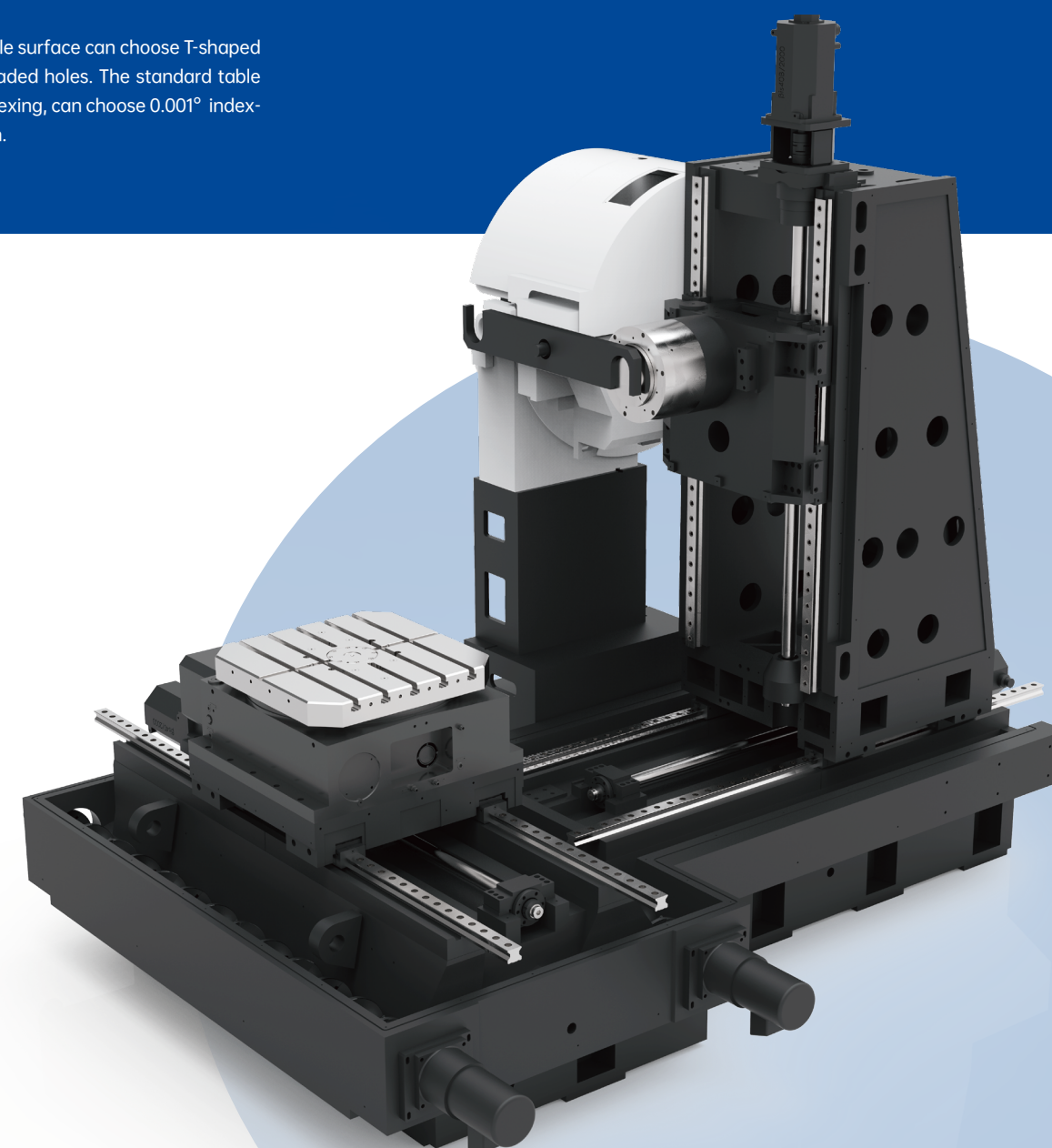
Taiwan high-performance indexing rotary table

高刚性、高可靠性、适合重切削加工的矿物铸件实心结构机床床身

Solid mineral casting structure machine bed with high rigidity, high reliability, suitable for heavy cutting

集中排屑，高效、高稳定性

Centralized chip removal, high efficiency and high stability



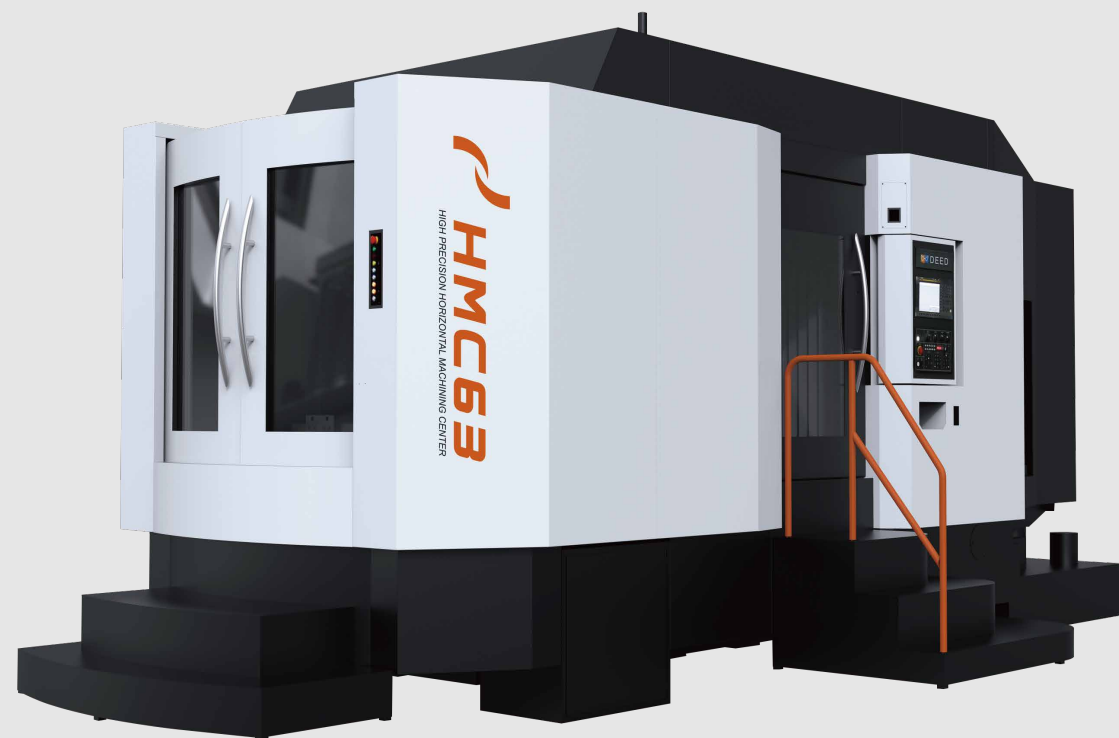
技术参数

TECHNICAL PARAMETER

配置 Configuration		型号 Model	单位 Unit	HMC50S	HMC63S	HMC80S	HMC100S
加工范围 Processing range	X轴行程 X axis travel	mm		850	1050	1500	1600
	Y轴行程 Y axis travel	mm		600	800	1000	1200
	Z轴行程 Z axis travel	mm		700	950	1150	1200
	主轴中心至工作台面 Spindle center to table surface	mm		120-720	120-920	120-1120	120-1320
	主轴端面至工作台中心 Spindle nose to table center	mm		175-875	200-1150	250-1400	300-1500
	最大工件旋径 Max. Workpiece rotation	mm		800	1050	2200	2300
	最大工件高度 Max. Workpiece height	mm		800	1000	1200	1400
工作台 Work table	工作台尺寸 Size	mm		500x500	630x630	800x800	1000×1000
	工作台最大载重 Max. loading	kg		600	1200	2500/2000	3000/2000
	工作台最小分度 Min. indexing	°		1/0.001			
主轴 Spindle	锥柄规格 Spindle taper			BT50			
	标配主轴转速 Spindle speed	rpm		6000			
	主电机功率(连续/30分钟) Main motor power (Continuous/30 minutes)	kW		15/18.5			
	主轴输出扭矩(连续/30分钟) Spindle torque (Continuous/30 minutes)	N.m		143/236			

配置 Configuration		型号 Model	单位 Unit	HMC50S	HMC63S	HMC80S	HMC100S
进给 feed	切削速度X/Y/Z X/Y/Z axis cutting speed	mm/min		0~10000			
	快移速度X/Y/Z X/Y/Z axis rapid traverse	m/min		24	24	20	16
精度 Precision	定位精度X/Y/Z X/Y/Z axis positioning	mm		0.01	0.01	0.012	0.02/0.015/.015
	重复定位精度X/Y/Z X/Y/Z axis repeatability	mm		0.005	0.006	0.008	0.015/0.01/0.01
	B轴定位精度 B axis positioning	"		10			
	B轴重复定位精度 B axis repeatability	"		3			
刀库 Tool magazine	刀库型式 Type			圆盘 Disc			
	换刀时间(刀对刀) Tool change time(Tool to tool)	Sec.		7			
	刀库容量 tools	把 T		24			
	最大刀具尺寸 (满刀直径/空邻刀直径/长度) Max. Tool size (full/unfull/length)	mm		Φ112/Φ200/300			
	最大刀具重量 Max. Tool weight	kg		15			

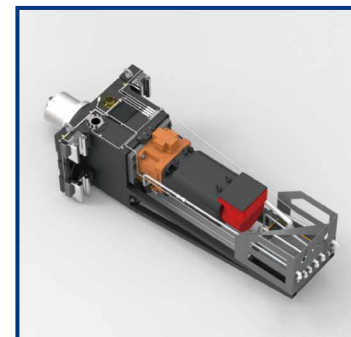
※ 参数以技术协议为准
※ The parameters are subject to the technical agreement



双工位 卧式加工中心 Double-Pallet Horizontal Machining Center

本系列高速卧式加工中心，机床主体为正T型高刚性一体式床身、门型双重壁立柱结构设计，采用有限元(FEM)分析，正挂箱布局，可实现高刚性重切削加工；配备自动换刀装置(ATC)，和托盘自动交换(APC)提高了设备可靠性，且便于维护，可配备托盘自动化生产线实现自动化生产线的高效生产。

This series of machine is high-speed horizontal machining centers, its main body is combined by positive T-shaped one-piece casted high-rigidity base and portal structure double-wall column. With help of FEM, the spindle box is hanged upright, it can help realize high-rigidity heavy cutting; equipped with automatic tool changer (ATC) and automatic pallet changer (APC), machine reliability can be improved and machine maintenance can be easier. It can also be equipped with automatic pallets to organize automatic production line and achieve high-efficiency production.



标配主轴气幕保护功能，防止铁屑进入主轴轴承内部。

标配主轴油冷却功能。通过油冷机对主轴进行循环冷却，减小主轴的热伸长，从而提高加工精度和主轴单元寿命。

标配两档减速箱，最大输出扭矩 770Nm。

Standard configured spindle air curtain protection function can help prevent iron chips from entering the inner side of spindle bearings.
Standard configured spindle oil cooler, can help cyclically cool the spindle via oil cooler, thus reduce spindle thermal elongation, improve processing precision and spindle unit service life.

Standard configured two-gear reduction gearbox, maximum output torque 770Nm.

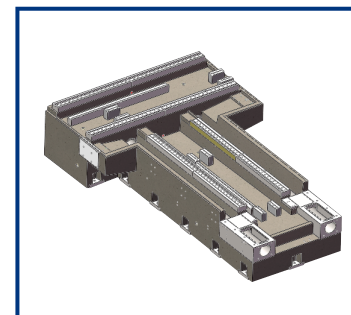


交换台采用旋转式交换工作台，工作平稳、速度快，可靠。提供液压夹具接口，配有独立的液压系统来保证装夹系统的压力。

工作台台面可选择T型槽或者螺纹孔。工作台线路全部走拖链，大大延长管线使用寿命，且维护方便。标配1°x360 分度工作台，可选配0.001°数控工作台。

Rotary changable work tables can work smoothly, speedily and reliably. Equipped with hydraulic clamp interface, the independent hydraulic system will help ensure clamping system pressure.

The worktable surface can choose T-shaped slots or threaded holes. All cables and wires for tables go through drag chains to extend their service life and make it easier for maintenance. The standard table is 1°x360 indexing, can choose 0.001° indexing as option.



床身采用纳米聚合物矿物复合材料一体铸造，具备优异的吸振性和热稳定性，可有效提高工件表面加工质量和刀具使用寿命。

The machine bed is one-piece casted with nanoscale mineral material, it has excellent vibration absorption and thermal stability, which can effectively improve the surface processing quality and the cutting tools service life.



立柱采用封闭式框架结构，提高抗弯抗扭性能。

The columns adopt closed frame structure to improve bending and torsion resistance performance.



主轴箱

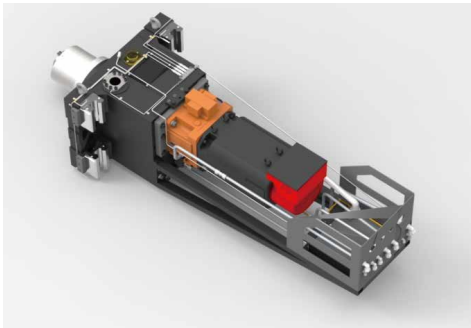
SPINDLE BOX

高速主轴单位

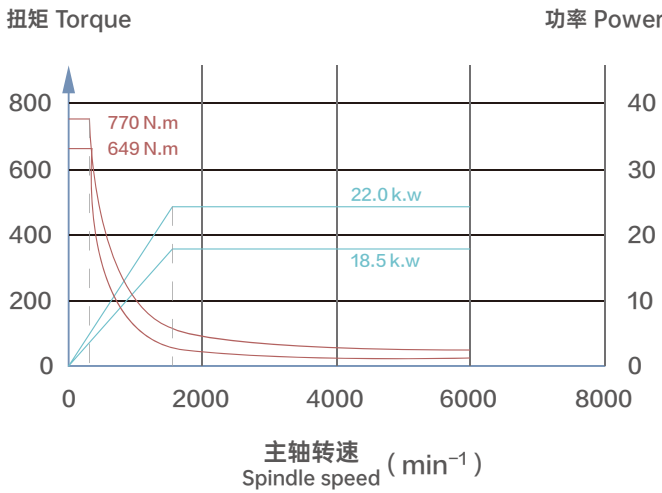
HIGH-SPEED SPINDLE UNIT

标配 STANDARD
两档减速箱 TWO-SPEED GEARBOX

主轴电机功率 18.5/22Kw
SPINDLE MOTOR POWER
主轴转速 6000rpm
SPINDLE SPEED
扭矩 649/770Nm
SPINDLE TORQUE



主轴功率扭矩图 (1:1/1:5.5)
SPINDLE MOTOR TORQUE DIAGRAM



配置自动恒温循环油冷却系统，使得主轴温升小、热变形小、保证加工精度

主轴前端配置“主轴气幕”，保证轴承的清洁度，不易造成主轴轴承的损伤，提高使用寿命

Automatic constant temperature circulating oil cooling system can help reduce spindle temperature rising speed, reduce thermal deformation and ensure processing precision.

The spindle front is equipped with "spindle air curtain" to ensure bearings cleanliness,protect spindle bearings and extend bearings service life.

自动托盘交换装置

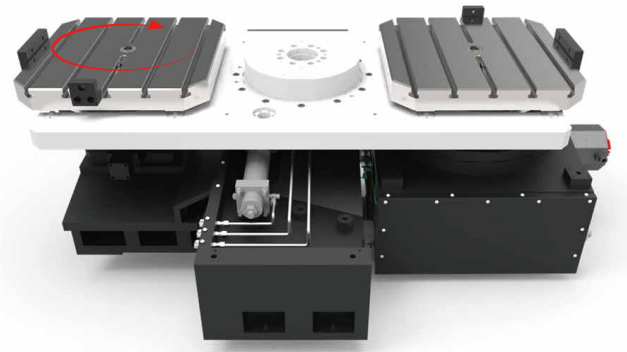
AUTOMATIC PALLET CHANGE

高速APC

HIGH SPEED APC

标配升降旋转式的自动托盘交换装置，最大限度缩短托盘交换时间，等待中的托盘以90°的单位旋转后固定，便于加工件的拆卸和排屑处理。

Standard configured lifting and rotaty automatic pallet changing device can help minimize the pallet changing time. The waiting pallet will fix after rotating in 90° units, it can help for the taking-off of the workpiece and chips removal.



APC 交换时间 14秒
APC EXCHANGE TIME 14S

托盘

PALLET

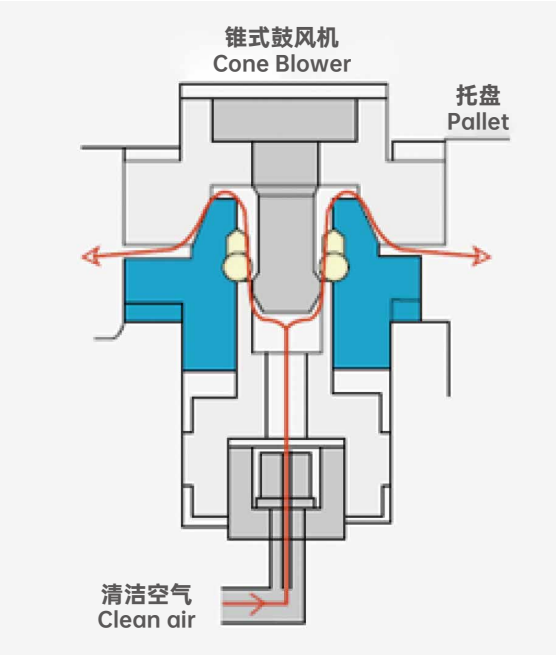


高精度托盘

HIGH-PRECISION PALLET

在定位基座上的定位锥用于托盘夹紧，锥内部有夹紧装置，可在重切削时提供强劲的夹紧力。

The positioning cone on the positioning base is used for pallet clamping. There is a clamping device inside of the cone to provide strong clamping force during heavy cutting.



空气清洁系统

AIR CLEANING SYSTEM

在托盘交换期间，从机床工作台锥孔中心吹出强大气流，有助于清除切屑并清洁托盘定位面，从而确保高托盘定位精度，保证了最佳的刚性。

During pallet changing, powerful airflow will blow out from the table center hole to help clean and remove the cutting chips and clean the pallet positioning surface, thereby it can help ensure high pallet positioning accuracy and optimal processing rigidity.

加工范围

PROCESSING RANGE

	HMC50	HMC63	HMC80
工作台尺寸(mm) Worktable size(mm)	500x500	630x630	800x800
最大承重能力(Kg) Max. Loading(Kg)	<div>最大工件旋径 800mm Workpiece max. Rotation diameter 800mm</div> <div>最大工件高度 800mm Max. Workpiece height 800mm</div> <div>600Kg</div>	<div>最大工件旋径 1050mm Workpiece max. Rotation diameter 1050mm</div> <div>最大工件高度 1000mm Max. Workpiece height 1000mm</div> <div>1200Kg</div>	<div>最大工件旋径 1500mm Workpiece max. Rotation diameter 1500mm</div> <div>最大工件高度 1200mm Max. Workpiece height 1200mm</div> <div>2500Kg</div>

※ 参数以技术协议为准

※ The parameters are subject to the technical agreement

配置 Configuration		型号 Model	单位 Unit	HMC50	HMC63	HMC80
工作范围 Working range	X轴行程 X axis travel	mm	850	1050	1300	
	Y轴行程 Y axis travel	mm	600	850	1100	
	Z轴行程 Z axis travel	mm	700	900	1100	
	主轴中心至工作台面 Spindle center to table surface	mm	50-650	50-900	120-1220	
	主轴端面至工作台中心 Spindle nose to table center	mm	175-875	175-1075	250-1350	
	最大工件旋径 Max.workpiece rotation	mm	800	1050	1500	
	最大工件高度 Max. Workpiece height	mm	800	1000	1200	
工作台 Work table	工作台数量 Table quantity		2			
	工作台尺寸 Table size	mm	500x500	630x630	800x800	
	工作台最大载重 Table max. loading	kg	600	1200	2500/2000	
	工作台最小分度 Table min. indexing	°	1/0.001			
	交换时间 Table exchange time	Sec	14	16	18	
主轴 Spindle	锥柄规格 Spindle taper		BBT50			
	标配主轴转速 Speed	rpm	6000			
	主电机功率（连续/30分钟） Spindle motor power(Continuous/30 minutes)	kW	18.5/22			
	主轴输出扭矩（连续/30分钟） Spindle torque(Continuous/30 minutes)	N.m	649/770			

配置 Configuration		型号 Model	单位 Unit	HMC50	HMC63	HMC80
进给 Feed	切削速度X/Y/Z X/Y/Z axis cutting speed	mm/min	0~10000	0~10000	0~10000	
	快移速度X/Y/Z X/Y/Z axis rapid traverse	m/min	40	40	32	
精度 Precision	定位精度X/Y/Z X/Y/Z axis positioning	mm	0.01	0.01	0.012	
	重复定位精度X/Y/Z X/Y/Z axis repeatability	mm	0.005	0.006	0.008	
	B轴定位精度 B axis positioning	″	10			
	B轴重复定位精度 B axis repeatability	″	3			
刀库 Tool magazine	刀库型式 Type		链式 Chain type			
	换刀时间（刀对刀） Tool change time(Tool to tool)	Sec	7			
	刀库容量 tools	把 T	40			
	最大刀具尺寸 (满刀直径/空邻刀直径/长度) Max. Tool size (full/unfull/length)	mm	Φ125/Φ250/400			
	最大刀具重量 Max. Tool weight	kg	25			

※ 参数以技术协议为准

※ The parameters are subject to the technical agreement

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