



CATALOG

综合目录

立式加工中心 Vertical Machining Center

龙门加工中心 Gantry Machining Center

五轴加工中心 5-axis Machining Center



中国销售中心
China Sales Center
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
企业邮箱 / E-mail: sale@deedmt.com / itd@deedmt.com
企业网站 / Website: www.deedmt.com
销售热线 / Sales Hotline(China): 0537 - 3775666
外贸热线 / Sales Hotline(International): +86 537 3451030
售后服务 / After-sale Service: 400 - 113 - 6699

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

ROTLER

德国 (Germany)
地址 / Address : Hauptstrasse 39-D-57555 Mudersbach



产品样本内说明文字、图样及技术参数随技术发展而更改，不另行通知。
Statements, figures and technical parameters in the manual instruction are subject to change without notice in advance.





山东蒂德精密机床有限公司位于山东省济宁市，目前是中国机床工具工业协会理事单位和山东省高端装备制造重点企业。公司产品高速立式加工中心、大型龙门加工中心、高精度五轴联动加工中心等，产品广泛服务于国内外航空航天、军工船舶、汽车制造、轨道交通、风电装备、电子模具等行业用户；公司通过持续的技术引进和联合研发制造，公司深入消化、吸收了德国高端机床设计理念、构造技术及关键零部件、整机的制造工艺，产品精度、稳定性达到行业领先水平。

未来的时间里，公司将围绕“中国制造2025”和“山东省新旧动能转换重大工程战略”的发展要求，沿着科技化、高端化、品牌化和国际化的整体目标，全面利用新材料、新技术、新工艺、新理念和新模式，重点研发高端装备制造业所需的高档、精密加工中心产品，不断提升科技创新能力，为机床行业技术进步和社会经济发展贡献更多力量。

Founded in 2007, Shandong Yonghua Machinery Co., Ltd. is committed to R&D and manufacture of high quality CNC machine tool, main products including high-speed vertical machining center, large gantry machining center, heavy portal milling machine and 5-axis machining center.

Shandong Yonghua Machinery Co., Ltd. started comprehensive strategic cooperation with ROTTLER in 2014, and established HIPREED TECHNOLOGY GmbH in Germany in 2016. Since then, YONGHUA got R&D center and high-end machine tool sales and service base in Europe to better service customers all over the world.

To promote international market expanding, focus on higher level products, Shandong Deed precision machine tool Co., Ltd. started, with main business of high-end CNC machine tool and key parts R&D, manufacture, sales and service, aimed to be more professional and international with the brand of DEED.

Holding the concept of “design in Germany, made in China”, involving in deep development of Sino-Germany strategic cooperation, DEED will provide more advanced processing machine and more efficient processing solutions to all customers with top quality products.



欧洲技术中心
Europe R&D Center



雄厚的技术力量 Strong Technical Strength

公司目前拥有一百多名国内外机床行业的研发工程师，设立机械、电气研发部，通过与国际知名关键零部件厂商的战略合作，全部产品通过三维优化设计与有限元分析后方能输往生产系统，为客户提供性能最佳的生产加工设备。

德国研发中心担负数控装备产品的研发和设计，为全球地域特殊化使用要求提供技术保障。利用有限元法和多体动力学仿真技术对机床结构进行力学建模，为每一处结构更改、新产品设计提供了精确的分析数据，在源头上保证产品的质量。

The company currently has more than 100 mechanical and electrical engineers working at home and abroad, they keep looking for qualified suppliers for machine key parts, and make sure each part cannot be put into workshop until they pass 3d optimization design and FEA analysis. In this way, all customers can get the machine with best performance for further production or processing.

The German R&D center is responsible for the R&D and design of CNC new products series, combining the most advanced technology of machine tool industry and providing customized technical support for customers from all over the world.

All data for construction modification and new products design are precise enough taking from the mechanical modeling and finished by FEA and MBD analysis. In this way, the machine quality can be ensured at the sources.



先进的制造基础

Advanced Manufacture Equipment

公司拥有15000m²恒温无尘装配车间，采用瑞士KEL-VARIA磨削中心、德国WALDRICH重型龙门铣床、日本仓敷KURAKI铣镗床、瑞士DIXI高精度坐标镗床、进口高精度导轨磨床、进口精密卧式加工中心、进口高速激光切割机、全电脑自动钣金喷涂线等一流加工母机和成套设备，为生产高精度机床零部件及整机产品提供了可靠的保证。

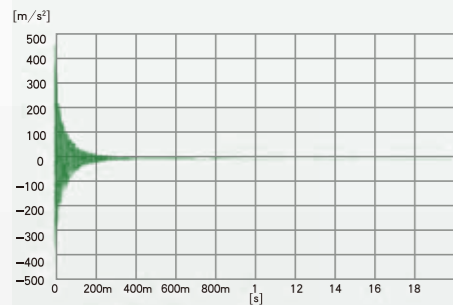
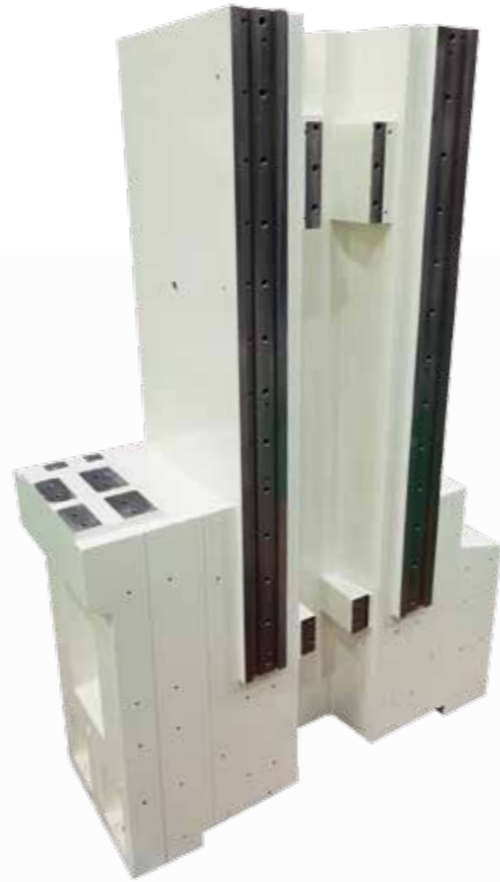
15000m² dust-free constant-temperature assembling plant, KELLENBERGER grinding machining center from Switzerland, WALDRICH Portal milling machine from Germany, KURAKI Milling and Boring machine from Japan, DIXI Jig Boring machine from Switzerland, imported top-brand high precision Grinding machine, Horizontal machining center, laser cutting machine as well as full automatic sheet metal painting line, all we owned now are aimed to provide reliable quality guarantee for machine parts and whole series products.



全新矿物铸件材料 New Casting Material

为确保每一台机床达到最高的精度标准、稳定性以及精度保持性，生产环节从机床底座、立柱基础部件全面采用德国新型矿物铸件技术工艺和铸造材料。

In order to make sure the highest precision, stability and precision preservation of each machine, we take in new casting material UHPC and build our own casting workshop. For the current manufacture of the company, all machine bases and columns are casted by UHPC strictly according to German casting standard.



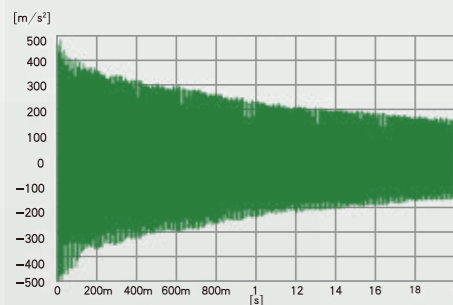
矿物铸件

矿物铸件极强的吸振性

吸振性是铸铁的 10 倍，在大幅动态载荷下，保证了机床精度的稳定性，工件表面加工质量提高 20%。

Better Vibration Absorption

The vibration absorption of UHPC mineral casting is 10 times better than iron casting. Under large dynamic load, the stability of machine precision can be guaranteed, while the surface finish quality of the workpiece can also be improved by 20%.



铸铁铸件

矿物铸件极佳的热稳定

热传导率是铸铁的 1/20，比热容是铸铁的 2.1 倍，极佳的热稳定性和热惯性，有效的控制了机床因温度变化引起的变形，保证了机床加工精度的稳定性。

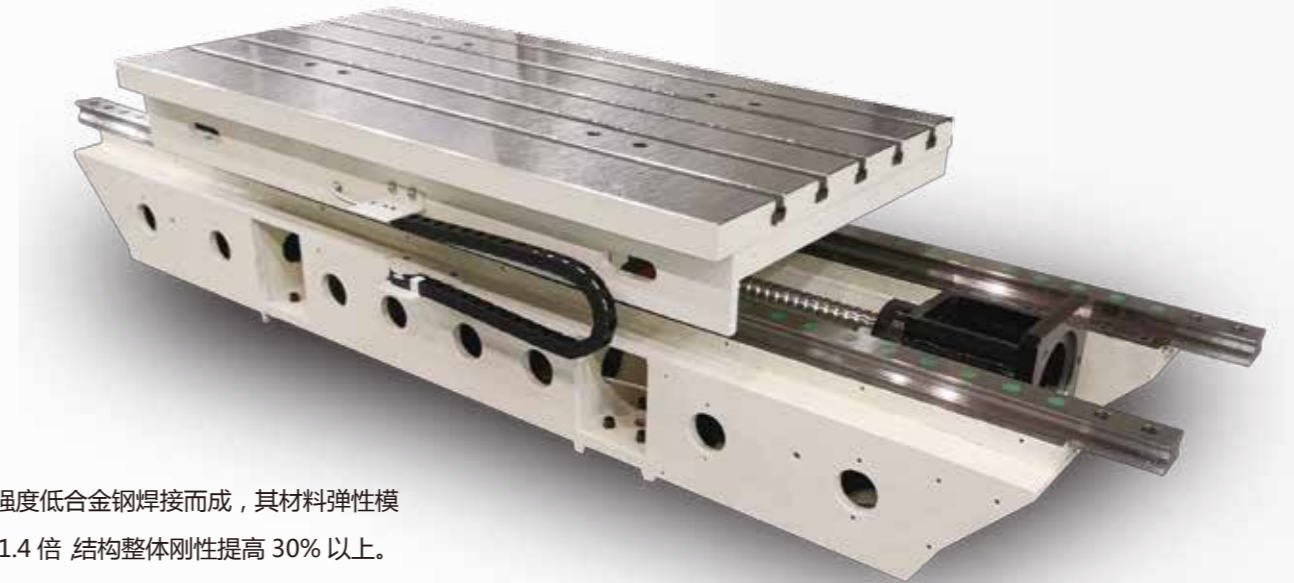
Excellent thermal stability

The thermal conductivity of UHPC mineral casting is 1/20 of that of iron casting, the specific heat capacity is 2.1 times of that of iron casting. Excellent thermal stability and thermal inertia can effectively control any kind of machine deformation caused by temperature change, the stability of machine precision is further guaranteed.

钢板焊接技术 Steel-board Welding Technology

鞍座、工作台、主轴箱引用德国钢板焊接技术工艺，具有更高的刚性。

For higher rigidity, saddles, worktables and spindle boxes of all machines we manufacture are steel board welded.



高刚性

移动部件由高强度低合金钢焊接而成，其材料弹性模量约为铸铁的 1.4 倍，结构整体刚性提高 30% 以上。

High Rigidity

The moving parts are welded by high-strength low-alloy steel, the material elasticity modulus is around 1.4 times of that of iron casting, so the overall rigidity can be improved by 30% or more.

轻量化

轻量化的结构，重量较铸铁件降低了 20%-30%，有效降低移动部件的惯量，动态响应提升 10-20%。

Lighter Weight

Compared to iron casting, the lighter-weight structure can reduce unit weight by 20%-30%, effectively reduce the inertia of moving parts and increase the dynamic response by 10-20%.



▲ 德国矿物铸件技术
UHPC mineral casting technology from Germany



▲ 德国钢板焊接技术
Steel board welding technology from Germany

严密的检测流程

Strict Test Process

严格的质量管理内控标准，保证整个机床设计制造过程的严密检测。45个检验检测项目，632个品质管控要点，48小时高速全行程载荷加工测试，采用德国ZEISS三坐标测量仪、英国RENISHAW激光干涉仪等顶级精密检测设备，保证机床所有细节的精准控制。

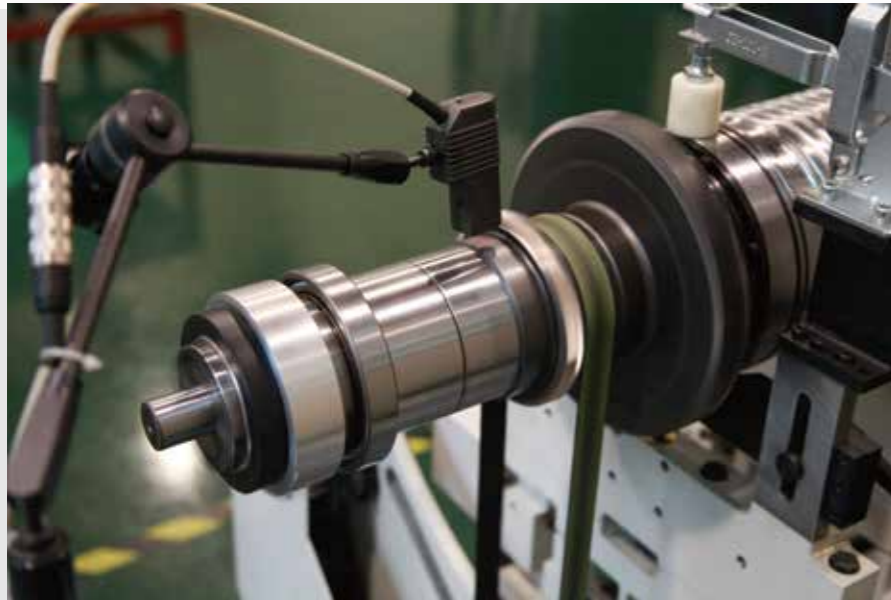
To strictly test and control the whole design and manufacture process of each machine, the company constructs intensive internal control standards. With 45 inspection and monitoring projects, 632 quality control points, 48-hour high-speed full-stroke load processing test, tested by ZEISS three-coordinate measuring instrument from Germany, RENISHAW laser interferometer from UK and other top-level precision testing equipment, all details of the machines are precisely under-control.



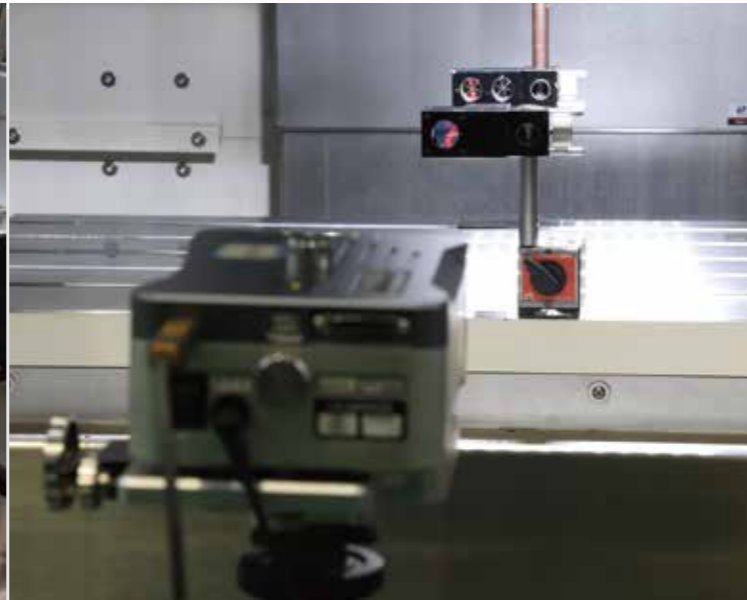
▲ 球杆仪循圆检测
Ball-bar Test



▶ 三坐标测量仪检测
Three-coordinate Measure



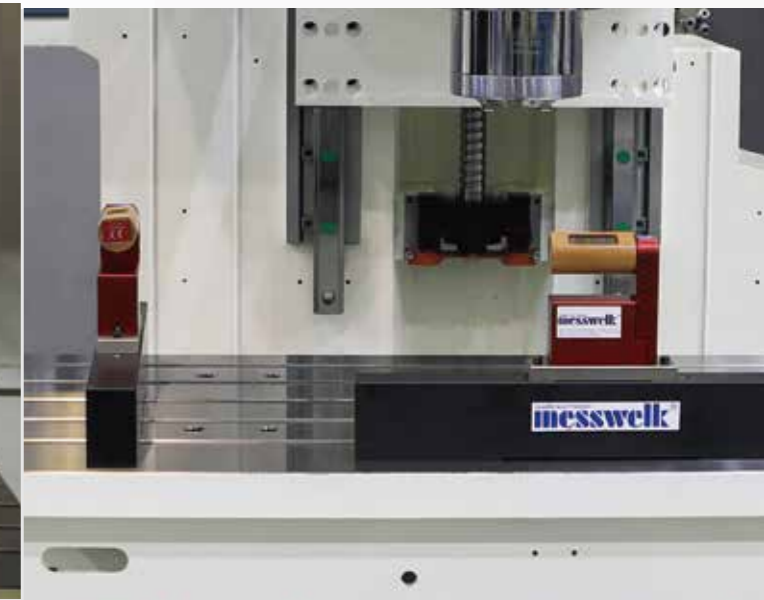
▲ 卧式动平衡
Horizontal Dynamic Balance



▲ 激光干涉仪检测
Laser Interferometer



▲ 动平衡仪
Dynamic Balance



▲ 电子水平检测
Electronic leveling

可靠的服务体系

Reliable Service System

富有经验的服务工程师，随时准备为您服务，为您提供全方位的售前售后技术服务支持，为您提供经济、高效的设备配置方案、加工工艺、夹具、刀具等系统解决方案，培训中心承担为客户提供加工中心操作、编程和日常维护保养培训的重任。为客服提供理论和实际相结合的机床培训服务。

Experienced service engineers are always ready to serve all customers, with full range of pre-sales and after-sales technical service support, the most economical and efficient configuration scheme, the most proper technical solutions with matched program, fixtures and tools. At customer demands, the training office can provide integrated training services to make sure the customers can get perfect mastery of machine operation, programming and routine maintenance.



▲ 24/7 全天候不间断服务
24/7 Non-stop Service



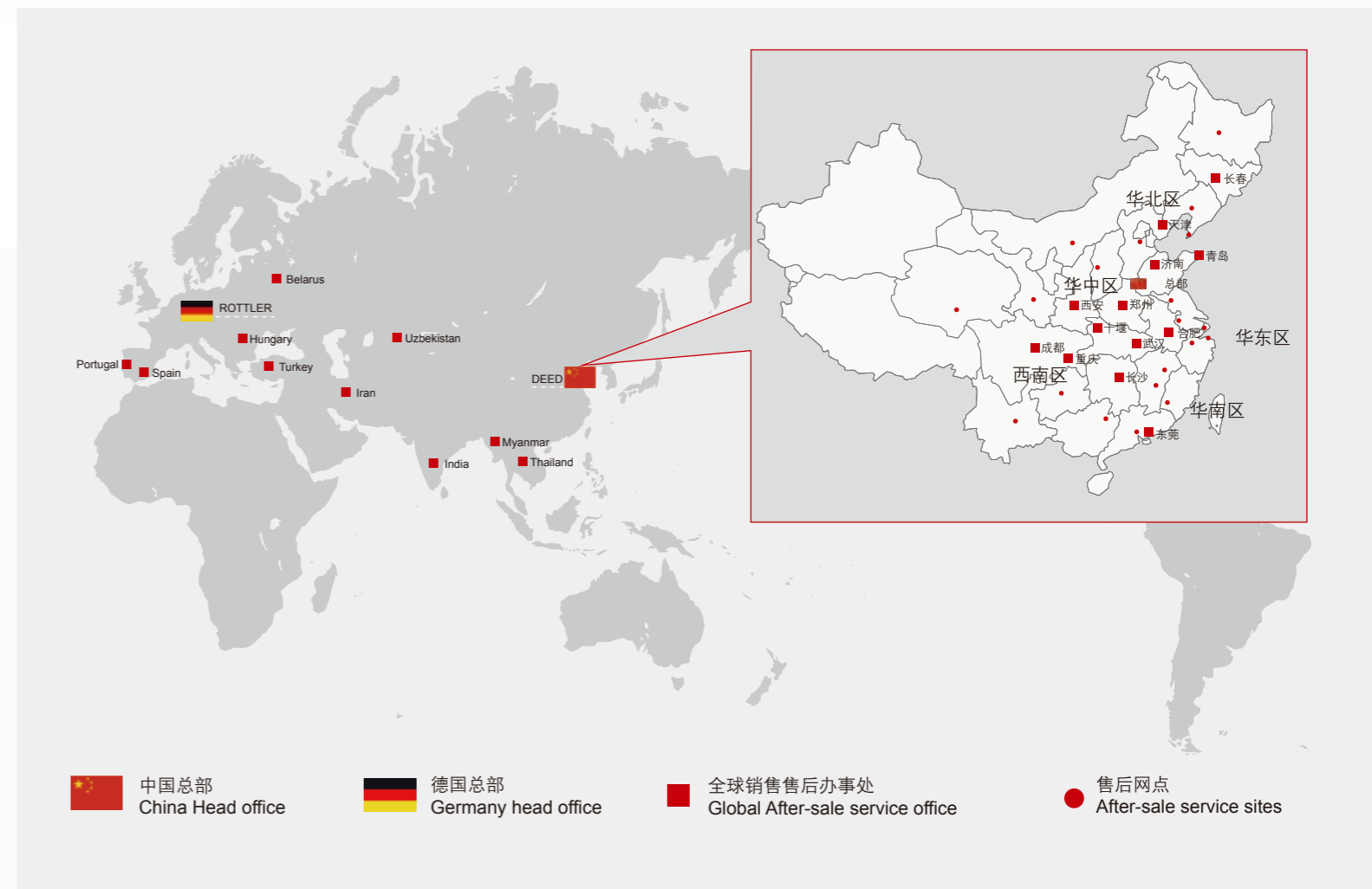
▲ 提供完善的客户培训及操作指南
On-site customer training



▲ 定期回访客户对机床维护保养
Fastest after-sale service , regular return visit



▲ 备件中心, 即时供应, 迅速发货
Sapareparts Warehouse , Quick supply , Fast Delivery



■ 中国总部 China Head office
 ■ 德国总部 Germany head office
 ■ 全球销售售后办事处 Global After-sale service office
 ● 售后网点 After-sale service sites

服务体系 Service System



服务承诺 Service Guarantee

- 24/7服务热线: 400-113-6699
- 客户故障2小时响应回复
- 办事处服务范围内24小时内到场服务
- 整机提供终身维修服务
- 24/7 Service Hotline: 400-113-6699
- Troubleshooting Response within 2 hours
- Service engineer be onsite within 24 hours(within each service range)
- Lifetime maintenance service

服务理念:

以优质、高效、快捷的服务为客户创造最大的实用价值。

Service Concept:

High-quality, High-efficiency, high-satisfaction

VMC立式加工中心 Vertical Machining Center



V1160L立式加工中心 Vertical Machining Center

技术规格 Technical Specifications		VMC50A	VMC50B	VMC60A	VMC60B	VMC70A	VMC70B	VMC50C	VMC60C	VMC70C	
行程 Travel	X轴 X-axis	mm	650	850	900	1100	1200	1400	750	850	1000
	Y轴 Y-axis	mm	500	500	600	600	700	700	500	620	700
	Z轴 Z-axis	mm	600	600	600	600	700	700	600	600	700
	主轴鼻端至台面(直连/内藏) Distance from table surface to spindle gauge plane (D.D)	mm	150-750	150-750	150-750	150-750	150-850	150-850	150-750	150-750	150-850
	主轴鼻端至台面(皮带式) Distance from table surface to spindle gauge plane (Belt)	mm	120-720	120-720	120-720	120-720	90-790	90-790	-	-	-
工作台 Worktable	尺寸 Size	mm	750 x 500	950 x 500	1000 x 600	1200 x 600	1300 x 700	1500 x 700	850 x 500	950 x 620	1100 x 700
	最大载重 Maximum load	kg	500	600	800	1000	1200	1200	500	600	800
配重 Counterweight	Counterweight		无 no								
主轴 Spindle	主轴型式 Spindle type		直连式 Direct-Drive Type				皮带式 Belt Type		内藏式 Built-in Type		直连式 Direct-Drive Type
	主轴锥度 Spindle taper		BT40/BBT40				BT50		HSK-A63		BBT40/BT40
	主轴转速 Spindle speed	rpm	10000	12000	15000	4500	5300	20000	15000		
	主电机功率(额定/最大) Spindle motor power(continuous/Max.)	kW	11/15	11/18.5	9/15	15/18.5	20/24	9/15			
	主轴扭矩(额定/最大) Spindle torque(continuous/Max.)	N.m	52.5/95.5	70/117.8	55/115	168/260	146/220	30.7/36.8	55/115		
进给 Feed	快移速度 Rapid traverse	m/min	40/40/32(40)	40/40/40	40/40/40	32(40)/32(40)/24(32)	40/40/40	40/40/32			
	切削速度 Cutting speed	m/min			12/(20)		20	20			
	加速度 Acceleration	m/s ²		4(6)		3(5)	6	5			
	三轴螺杆直径 3 axes screw diameter	mm		40X16		50X16	40 x 16	50 x 16			
	三轴滚柱线轨宽度 3 axes roller linear guideway width	mm		45		45	45	45			
精度 GB Precision (20±0.5°C)	定位精度 positioning	mm		0.006		0.008	0.006	0.008			
	重复定位精度 Repeatability	mm		0.004		0.005	0.004	0.005			
刀库 Tool Magazine	刀库形式 Tool magazine type					圆盘 Disk					
	刀库容量 Tool magazine capacity	把				24/30					
	换刀时间(刀对刀) Tool change time(T-T)	s		1.6		3.5		1.6			
重量 Weight	kg	7000		8500		12500	7000	8500	12500		
控制系统 Control System		FANUC/SIEMENS/MITSUBISHI/HEIDENHAIN									

技术规格 Technical Specifications		V1160L	
行程 Travel	X轴 X-axis	mm	1100
	Y轴 Y-axis	mm	610
	Z轴 Z-axis	mm	610
工作台 Worktable	主轴鼻端至台面(BT40) Distance from table surface to spindle gauge plane (BT40)	mm	150-760
	尺寸 Size	mm	1200 x 600
配重 Counterweight	最大载重 Maximum load	kg	1000
	Counterweight		无 no
主轴 Spindle	主轴型式 Spindle type		直连/皮带 Direct-Drive Type / Belt Type
	主轴锥度 Spindle taper		BT40
	主轴转速 spindle speed	rpm	10000/8000
	主电机功率(额定/最大) Spindle motor power(continuous/Max.)	kW	11/15
	主轴扭矩(额定/最大) Spindle torque(continuous/Max.)	N.m	52.5/95.5
进给 Feed	快移速度 Rapid traverse	m/min	36/36/24
	切削速度 Cutting speed	m/min	12
	三轴螺杆直径 3 axes screw diameter	mm	40 x 12
精度 GB Precision (20±0.5°C)	三轴滚珠线轨宽度 T3 axes roller linear guideway width	mm	45
	定位精度 positioning	mm	0.008(全长)
刀库 Tool Magazine	重复定位精度 Repeatability	mm	0.005(全长)
	刀库形式 Tool magazine type		圆盘 Disk
	刀库容量 Tool magazine capacity	把	24
重量 Weight	换刀时间(刀对刀) Tool change time(T-T)	s	1.6
	Weight	kg	7000
控制系统 Control System		FANUC/SIEMENS/MITSUBISHI	

• 红色部分为配置 FANUC-α 电机时规格参数 (Specifications with Fanuc-α motor are marked in red).

GMC龙门加工中心 Gantry Machining Center

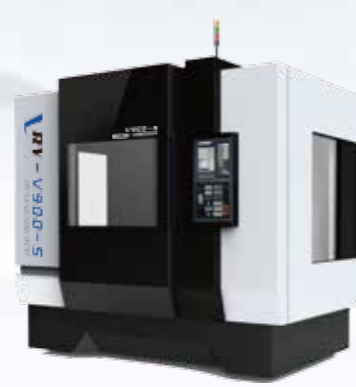


技术规格 Technical Specifications		GMC16L		GMC20L		GMC24L		
行程 Travel	门宽 distance between columns	mm	1600		2000		2400	
	X轴 X-axis	mm	2000/2500/3000/3500/4000		2000/2500/3000/3500/4000		3000/3500/4000/4500	
	Y轴(加工行程) Y-axis(processing space)	mm	1600		2000		2400	
	Z轴 Z-axis	mm	850		850		850	
工作台 Worktable	主轴鼻端至工作台距离 Distance from table surface to spindle gauge plane	mm	200-1050	255-1105	200-1050	255-1105	200-1050	255-1105
	工作台宽度 Worktable Width	mm	1250		1600		1800	
	T型槽 T-slot	mm	22		22		22	
	承重 Load Capacity	t	5/6/8/9/10		7/9/11/13/14		13/14/16/18	
主轴 Spindle	驱动形式 Driving Form		直连式+减速箱 Direct Drive + Gear Reducer	电主轴 Motorized Spindle	直连式+减速箱 Direct Drive + Gear Reducer	电主轴 Motorized Spindle	直连式+减速箱 Direct Drive + Gear Reducer	电主轴 Motorized Spindle
	主轴锥孔规格 Spindle Taper		BT50	HSK63	BT50	HSK63	BT50	HSK63
	主轴转速 Spindle speed	rpm	8000	12000	8000	12000	8000	12000
	功率 Power	kW	22/26	25/44	22/26	25/44	22/26	25/44
	扭矩 Torque	N.m	560/661	87/150	560/661	87/150	560/661	87/150
	主轴箱截面 spindle box section	mm	400 × 400		400 × 400		400 × 400	
进给速度 Feed	X/Y/Z轴快移速度 Rapid traverse X/Y/Z	m/min	16/20/20		16/20/20		16/16/16	
	切削速度 Cutting speed	m/min	12		12		12	
精度 GB Precision (20 ± 0.5°C)	定位精度 X positioning X	mm	0.014/0.016/0.018/0.02/0.021		0.014/0.016/0.018/0.02/0.021		0.018/0.02/0.021/0.023	
	定位精度 Y positioning Y	mm	0.014		0.014		0.016	
	定位精度 Z positioning Z	mm	0.011		0.011		0.011	
	重复定位精度 X Repeatability X	mm	0.009/0.011/0.011/0.013/0.014		0.009/0.011/0.011/0.013/0.014		0.011/0.013/0.014/0.015	
其它 other	重复定位精度 Y Repeatability Y	mm	0.009		0.009		0.01	
	重复定位精度 Z Repeatability Z	mm	0.006		0.006		0.006	
	电源容量 Power capacity	kVA	60		60		60	
	气源压力 Air Source	kgf/cm ²	6.5		6.5		6.5	
其它 other	机床高度(约) Height (rough)	mm	5100		5100		5100	
	占地面积(约) Floor area (rough)	mm	7520/7850/9000/10250/11250 × 4955		7520/7850/9000/10250/11250 × 5400		9000/10250/11250/12250 × 5800	
	机床净重(约) Net weight (rough)	t	24/26/27.5/29.5/35		25/27/28/31/36		32/35/38.5/42	
控制系统 Control System		FANUC/SIEMENS						

GL龙门加工中心 Gantry Machining Center



技术规格 Technical Specifications			G24L	G28L	G32L	G37L
行程 Travel	门宽 Distance between columns	mm	2400	2800	3200	3700
	X 轴 X-axis	mm	3000/3500/4000/4500	4000/4500	5500/6500	6500/8500/10500
	Y 轴(加工行程) Y-axis(processing space)	mm	3000	3400	3800	4200
	Z 轴 Z-axis	mm	850 (1050)	1050 (1250)	1050 (1250)	1050 (1250)
	主轴鼻端至工作台距离 Distance from table surface to spindle gauge plane	mm	200-1050 (200-1250)	200-1250 (200-1450)	200-1250 (200-1450)	200-1250 (200-1450)
工作台 Worktable	工作台宽度 Worktable Width	mm	1800	2200	2600	3000
	T 型槽 T-slot	mm	22	22	22	28
	承重 Load Capacity	t	15/16/18/20	20/22	28/32	32/36/40
主轴 Spindle	驱动形式 Driving Form		直连式+减速箱 Direct Drive + Gear Reducer	直连式+减速箱 Direct Drive + Gear Reducer	直连式+减速箱 Direct Drive + Gear Reducer	直连式+减速箱 Direct Drive + Gear Reducer
	主轴锥孔规格 Spindle Taper		BT50	BT50	BT50	BT50
	主轴转速 Spindle speed	rpm	8000	6000	6000	6000
	功率 Power	kW	22/26	22/26	22/26	22/26
	扭矩 Torque	N.m	560/661	770/910	770/910	770/910
	主轴箱截面 spindle box section	mm	400 × 400	450 × 450	450 × 450	450 × 450
	进给速度 Feed	XY/Z 轴快移速度 Rapid traverse X/Y/Z	m/min	16/16/16	12/12/12	12/12/12
切削速度 Cutting speed		m/min	8	8	8	6
精度 GB Precision (20 ± 0.5°C)	定位精度 X positioning X	mm	0.024/0.027/0.028/0.031	0.028/0.031	0.035/0.039	0.039/0.047/0.055
	定位精度 Y positioning Y	mm	0.024	0.026	0.028	0.029
	定位精度 Z positioning Z	mm	0.02	0.02	0.02	0.02
	重复定位精度 X Repeatability X	mm	0.016/0.017/0.018/0.02	0.018/0.02	0.022/0.024	0.024/0.029/0.034
	重复定位精度 Y Repeatability Y	mm	0.016	0.017	0.018	0.019
其它 other	重复定位精度 Z Repeatability Z	mm	0.008	0.008	0.008	0.008
	电源容量 Power capacity	kVA	50	50	50	50
	气源压力 Air Source	kgf/cm ²	6.5	6.5	6.5	6.5
	机床高度(约) Height (rough)	mm	5000	5900	5900	6100
	占地面积(约) Floor area (rough)	mm	9800/10800/11800/12800 × 5800	11800/12800×6600	14800/16800×7000	16800/20800/24800×7500
机床净重(约) Net weight (rough)	t	30/33/36.5/40	45/47	63/67	86/102/118	
控制系统 Control System		FANUC/SIEMENS				



RY 立式加工中心
Vertical Machining Center



RY 桥式五轴加工中心
Bridge type 5-axis portal milling machining center

技术规格 Technical Specifications		V650/3	V850/3	V900/3	V1100/3	V1300/3	V1500/3	V650/5	V900/5	V1300/5	
行程 Travel	X轴 X-axis	mm	650	850	900	1100	1300	1500	650	900	1300
	Y轴 Y-axis	mm	450	450	550	550	750	750	450	550	750
	Z轴 Z-axis	mm	520	520	600	600	700	700	520	600	700
	主轴鼻端至工作台距离 Distance from table surface to spindle gauge plane	mm	150-670	150-670	150-750	150-750	150-850	150-850	150-670	150-750	150-850
工作台 Worktable	尺寸 Size	mm	450×650	450×850	550×900	550×1100	750×1300	750×1500	-	-	-
	最大载重 Maximum load	kg	800	900	1100	1300	1600	1900	-	-	-
转台 Rotary Table	C轴台面尺寸 C-axis table size	mm							500	600	800
	最大载重 Maximum load	kg							800	1000	1400
	C轴转速 C-axis speed	r/min							80		
	C轴转动范围 C-axis Rotary Range	°							360		
	A轴转速 A-axis speed	r/min							25		
A轴回转范围 A-axis Rotary Range	°								-15~+120		
主轴 Spindle	主轴型式 Spindle type		电主轴 Motorized Spindle								
	主轴转速 spindle speed	r/min								15000	18000
	主电机功率 Spindle motor power	kW								26.4	38
	主轴扭矩 Spindle torque	Nm								84	103.7
进给 Feed	快移速度 Rapid traverse	m/min								40	
	进给力 Feed Rate	kN								6.5	
精度 ISO Precision (20±0.5°C)	定位精度 positioning	mm								0.005	
	重复定位精度 Repeatability	mm								0.003	
刀库 Tool Magazine	刀库形式 Tool magazine type									链式	
	刀库容量 Tool magazine capacity	把								30/60	

工作台 Worktable	铣头参数 Milling head
工作台尺寸(宽*长) Table size (W*L)	3500mm × 9000mm
两立柱间距离 Width between columns	5000mm
T型槽宽 T-slot width	36mm
T型槽间距 T-slot interval	250 mm
工作台最大承载 Load Capacity	5000kg/m ²
横梁移动(X轴) Beam moving (X-axis)	B轴转角 B-axis rotate angle
纵向行程 longitudinal Travel	8500 mm
进给速度 Feed rate	10~20000mm/min
快速移动速度 Rapid Traverse	28000mm/min
纵向滑板移动参数(Y轴) Cross movement of saddle (Y-axis)	锥孔形式 Taper type
纵向行程 Cross Travel	4000mm
进给速度 Feed rate	10~20000mm/min
快速移动速度 Rapid Traverse	28000mm/min
主轴箱参数(Z轴) Spindle box (Z-axis)	功率 Power
垂直行程 Vertical travel	1500mm
进给速度 Feed rate	10~15000mm/min
快速移动速度 Rapid Traverse	20000mm/min
主轴箱截面尺寸 Spindle box section	600mm × 600mm
C轴转速 C-axis Rotary Speed	12r/min
C轴转角 C-axis Rotary Angle	± 185°
	电主轴电机功率 Motorized spindle motor power
	56kW
	电主轴最高转速 Motorized spindle Max.speed
	12000r/min
	电主轴最大输出扭矩 Motorized spindle Max.Torque
	89Nm
	B轴转速 B-axis rotate speed
	6r/min
	B轴转角 B-axis rotate angle
	-110° /+5°
	锥孔形式 Taper type
	HSK-A63
	立铣头 Vertical milling head
	功率 Power
	60KW
	最高转速 Max.rotate speed
	6000r/min
	最大扭矩 Max.torque
	1830Nm
	锥孔形式 Taper type
	HSK-A100
	直角铣头 Right-angle milling head
	功率 Power
	60KW
	最高转速 Max.rotation
	4000r/min
	最大扭矩 Max.torque
	1830Nm
	锥孔形式 Taper type
	HSK-A100
	刀库 Tool Magazine
	刀库容量 Tool capacity
	60T 把
	刀柄形式 Taper type
	HSK-A100 20T 把 / HSK-A63 40T 把