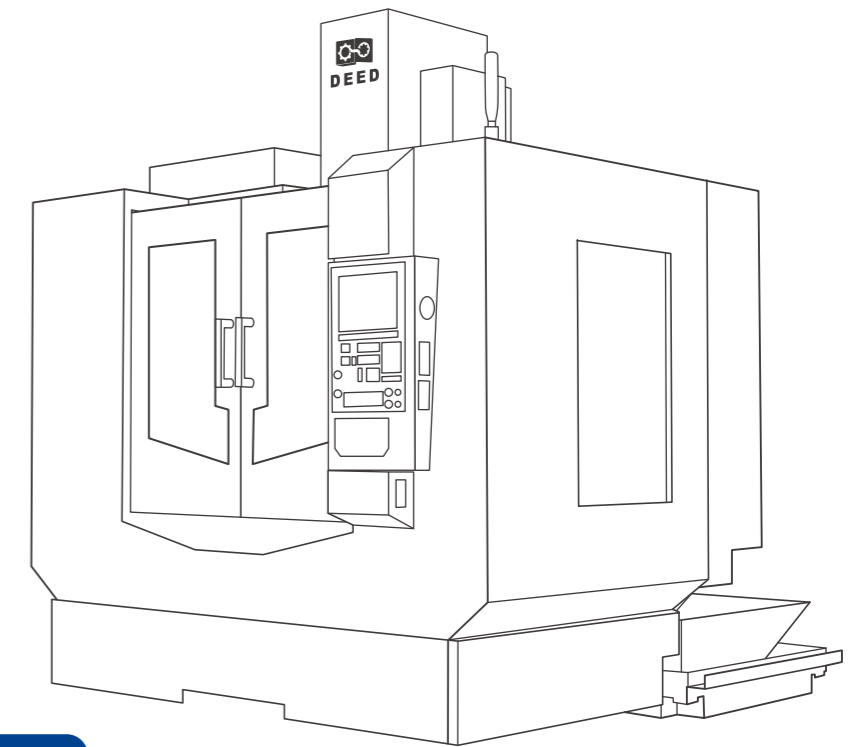




# VL立式加工中心

VL Vertical Machining Center



 精 | Precise  
 大 | Large  
 特 | Customized



中国销售中心  
China Sales Center

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德国 (Germany)  
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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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24/7 NON-STOP SERVICE



## VL系列 立式加工中心

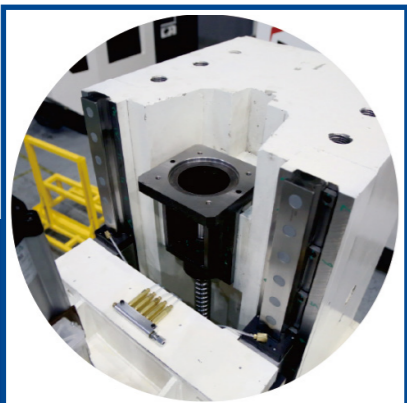
VL-Series vertical machining center

本设备采用十字滑台移动结构，导轨采用直线滚动导轨，主要用于各种中小型复杂零件的加工，能在一次装夹下完成铣、钻、扩、攻丝以及轮廓铣削等多种加工，适合于加工各种精度高、工序多，形状复杂的零件，加装数控转台后，可使机床具备4轴/5轴加工能力。

This series machine adopts cross-slide structure, and equipped with roller linear guideway. It is mainly used for processing various small and medium-sized complex parts. It can complete milling, drilling, enlarging, tapping and contour milling with one clamping. It is suitable for processing various parts with high precision, multiple processing steps and complex shapes. After adding a CNC rotary table, the machine can have 4-axis/5-axis processing capabilities.

## 产品简介

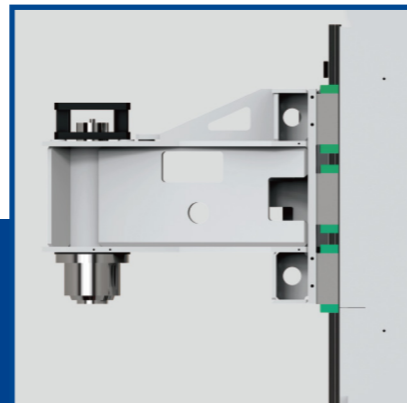
PRODUCT INTRODUCTION



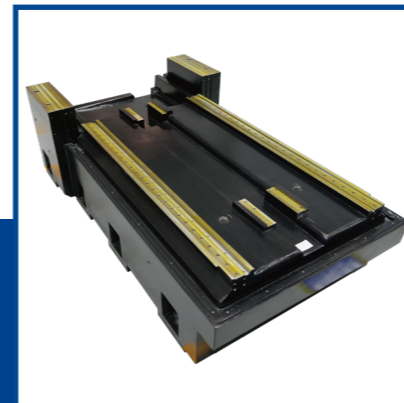
Z轴无配重设计有效减少Z轴换向产生的振动  
Z-axis counterweight design can effectively reduce vibration caused by Z-axis movement.



刀库垂直安装减少立柱侧向变形同时提高换刀稳定性  
Vertical installation of the tool magazine can reduce lateral deformation of the column and improve tool change stability the stability of tool changing.



主轴箱悬伸比1:1  
刚性更强  
Spindle box overhang ratio 1:1  
higher rigidity



实心结构  
具有良好的吸振性  
Solid Structure  
Better vibration absorption

## 三轴导轨大跨距机床设计

LARGE SPAN 3-axis guide way

## 载重更大

BIGGER load capacity

## 刚性更好

HIGHER rigidity

## 运行更平稳

STEADIER running

内防护采用回型结构，底部斜坡式设计防止屑、液进入护罩内部，提升功能部件使用寿命  
The inner protection adopts loop structure, together with bottom slope design, can help prevent chips and liquids from entering inside of the guard, thereby increasing the lifetime of the machine parts.

采用防积屑、防脱轨滚轮结构保障前门频繁使用无故障

The anti-chip accumulation and anti-derailing roller structure is designed to make sure the front door trouble-free with frequent use.

内防护无假轨设计运行更平稳

No false rail design of inner protection can help guarantee smooth running.

轴承座二次防护有效提升轴承使用

Double protection of the bearing seat can effectively increase the bearing working life.

床身水槽设计使切削液自动回流，防止外溢

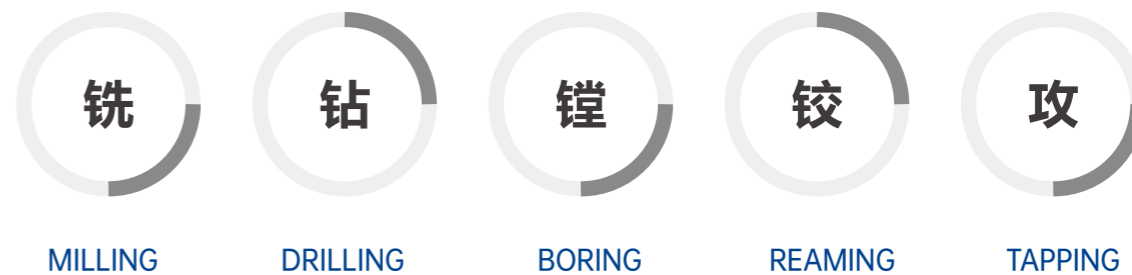
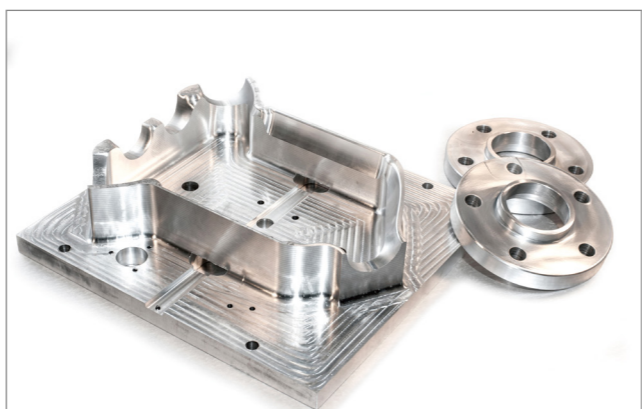
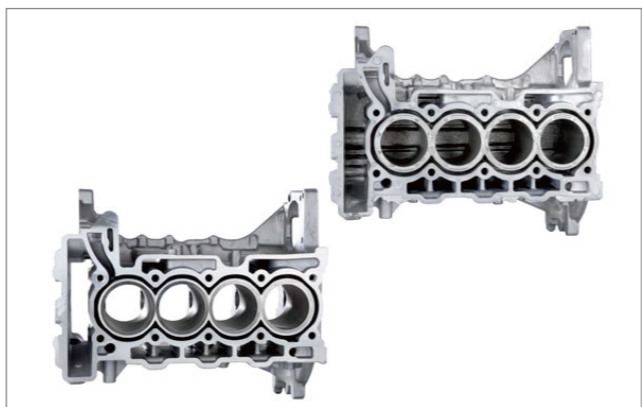
The water channel design on machine bed allows the cutting fluid to automatically flow back to avoid overflow.

矿物铸件精密铸造密封槽沟，安装密封胶条，钣金零漏水

Mineral casting precisely casted sealing grooves, matching with sealing stripes, ensure 0-leakage.



**加工案例**  
PROCESSING CASES



<b>标准配置</b> STANDARD CONFIGURATION	数控系统 CNC controller 三轴滚柱线轨 3-axis roller linear guideway 三轴滚珠丝杠 3-axis ball screw 主轴锥孔吹气 spindle taper air blowing 主轴气幕防尘 Spindle air curtain dust-proof 主轴环喷 Spindle ring spray	导轨防护罩 Guideway protection 三色灯 3-color alarm lights 自动润滑系统 Automatic lubrication system 气枪 Air gun 水枪 Water gun 电柜箱照明 Electric cabinet lighting	前端与右侧照明 Front and right side lighting 机床整体式护罩 Whole machine cover 工件水冷 Workpiece water cooling 工件气冷 Workpiece air cooling BT40-24T刀库 BT40-24T tool magazine 热交换器 heat exchanger	丝杠预拉 Ball screw pre-stretch 垫铁和调整螺栓 Sizing block and adjust bolts 手持脉冲发生器 Handheld pulse generator 双泵底盘冲屑 double-pump flushing device 2G CF卡 2G CF card
	<b>选项配置</b> OPTIONS	链式排屑器及排屑车 chain type chip conveyor and chip cart 双侧链式后排屑 Double side chain type chip conveyor 主轴温控系统 Spindle temperature control system 中心出水系统 CTS	电柜箱门开检测 Electrical cabinet door opening detection 立柱整体式加高200 column height increase 200mm 四轴及尾座 4th-axis and tailstock 电柜空调 Electric cabinet air conditioner	开门检测 Door-open detection 气动门 Pneumatic door 门联锁 Door interlock 对刀仪 Tool setter

# 技术参数

## TECHNICAL PARAMETER

配置 Configuration		型号 Model	V850L		V870L	V1160L		V1160L (特配) special configuration
主轴驱动方式/主轴锥度/转速 Drive type/ Spindle taper/ speed			皮带式/ Belt type BT40/8000	直联式/ Direct type BT40/12000	直联式/ Direct type BT40/15000	皮带式/ Belt type BT40/8000	直联式/ Direct type BT40/12000	皮带式/ Belt type BT50/4500
主轴 Spindle	主电机(额定/最大功率) Spindle Motor (rated/max.) power kW		11/18.5	11/18.5	9/15	11/18.5	11/18.5	15/18.5
	主轴扭矩(额定/最大) Spindle torque (rated/max.) N·m		69/157	52.5/118	55/115	69/157	52.5/118	126/208
<b>技术参数 technical parameter</b>								
加工范围 Travel	X/Y/Z行程 X/Y/Z-axis travel mm		850/510/510	850/510/510	800/710/500	1100/610/610	1100/610/610	1000/600/600
工作台 Worktable	工作台尺寸(长×宽) Size(L*W) mm		950×500	950×500	1000×600	1200×600	1200×600	1200×600
	T型槽(尺寸×数量×间距) T-Slot(size*Qty*space) mm		18×4×100	18×4×100	18×4×100	18×5×100	18×5×100	18×5×100
	工作台最大载重 Max load kg		500	500	500	1000	1000	1000
进给 Feed	快移速度 Rapid traverse m/min		36/36/24	36/36/24	36/36/24	32/32/24	32/32/24	32/32/24
精度 Accuracy	三轴定位精度 X/Y/Z axis positioning mm		0.008(全长full)	0.008(全长full)	0.008(全长full)	0.008(全长full)	0.008(全长full)	0.008(全长full)
	三轴重复定位精度 X/Y/Z repeatability mm		0.005(全长full)	0.005(全长full)	0.005(全长full)	0.005(全长full)	0.005(全长full)	0.005(全长full)
刀库 ATC	刀库型式/容量 Tool magazine type/capacity 把		圆盘式/24T Disk type	圆盘式/24T Disk type	圆盘式/24T Disk type	圆盘式/24T Disk type	圆盘式/24T Disk type	圆盘式/24T Disk type
	最大刀具尺寸 满刀直径/空邻刀直径/长度 Maximum tool size (full/unfull/length) mm		φ78/φ150/300	φ78/φ150/300	φ78/φ150/300	φ78/φ150/300	φ78/φ150/300	φ105/φ200/350
	最大刀具重量 Maximum tool weight kg		8	8	8	8	8	15
其他 Others	所需气压 Air pressure Mpa		0.65	0.65	0.65	0.65	0.65	0.65
	电源容量 Power capacity KVA		25	25	25	25	25	30
	机床重量 Machine weight kg		6000	6000	6000	7000	7000	8500
	机床外形(长×宽) Machine floor size mm		2850×2600	2850×2600	2600×2750	3025×2900	3025×2900	2900×3200
	机床高度 Machine height mm		3050	3050	3050	3200	3200	3200

配置 Configuration		型号 Model	V1370L			V1580L	V1690L
主轴驱动方式/主轴锥度/转速 Drive type/ Spindle taper/ speed			皮带式/ belt type BT40/8000	直联式/ Direct drive BT40/12000	皮带式/ belt type BT50/4500	皮带式/ belt type BT50/5000	皮带式/ belt type BT50/5000
主轴 Spindle	主电机(额定/最大功率) Spindle Motor (rated/max.) power kW		11/18.5	11/18.5	15/18.5	11/15	11/15
	主轴扭矩(额定/最大) Spindle torque (rated/max.) N·m		69/157	52.5/118	126/208	168/305	168/305
<b>技术参数 technical parameter</b>							
加工范围 Travel	X/Y/Z行程 X/Y/Z-axis travel mm		1300/710/710	1300/710/710	1300/700/700	1500/810/810	1600/910/810
工作台 Worktable	工作台尺寸(长×宽) Size(L*W) mm		1400×700	1400×700	1400×700	1700×800	1800×900
	T型槽(尺寸×数量×间距) T-Slot(size*Qty*space) mm		18×5×125	18×5×125	18×5×125	22×6×125	22×6×130
	工作台最大载重 Max load kg		1300	1300	1300	1500	1600
进给 Feed	快移速度 Rapid traverse m/min		30/30/24	30/30/24	30/30/24	20/20/20	20/20/20
精度 Accuracy	三轴定位精度 X/Y/Z axis positioning mm		0.01(全长full)	0.01(全长full)	0.01(全长full)	0.012(全长full)	0.012(全长full)
	三轴重复定位精度 X/Y/Z repeatability mm		0.006(全长full)	0.006(全长full)	0.006(全长full)	0.008(全长full)	0.008(全长full)
刀库 ATC	刀库型式/容量 Tool magazine type/capacity 把		圆盘式/24T Disk type	圆盘式/24T Disk type	圆盘式/24T Disk type	圆盘式/24T Disk type	圆盘式/24T Disk type
	最大刀具尺寸 满刀直径/空邻刀直径/长度 Maximum tool size (full/unfull/length) mm		φ78/φ150/300	φ78/φ150/300	φ150/φ200/350	φ105/φ200/350	φ105/φ200/350
	最大刀具重量 Maximum tool weight kg		8	8	15	15	15
其他 Others	所需气压 Air pressure Mpa		0.65	0.65	0.65	0.65	0.65
	电源容量 Power capacity KVA		25	25	30	30	30
	机床重量 Machine weight kg		10000	10000	12000	13500	14200
	机床外形(长×宽) Machine floor size mm		3530×3400	3530×3400	3600×3350	4000×3700	4000×3800
	机床高度 Machine height mm		3350	3350	3505	3600	3600



