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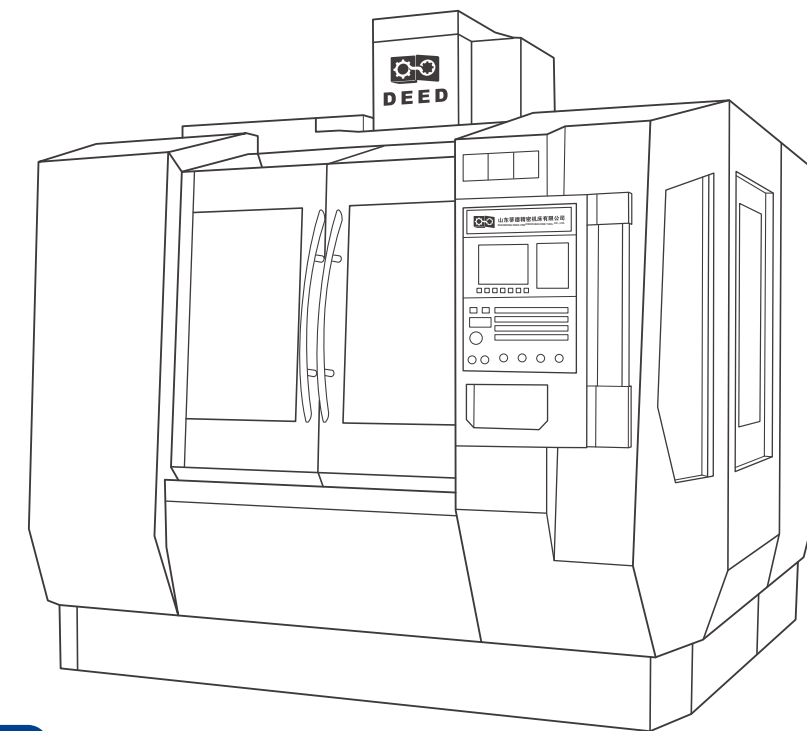


德国 (Germany)  
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# VMC立式加工中心

VMC Vertical 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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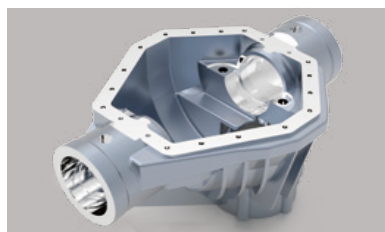
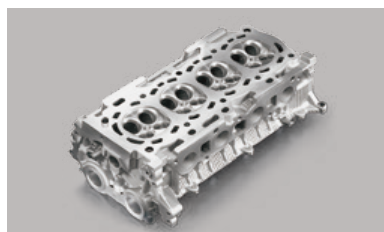
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## VMC立式加工中心 VMC Vertical Machining Center

本设备是由德国设计、中国制造的一款中小型规格的立式加工中心，是我司采用欧洲主流设计结构，并结合我司多年的机床设计及制造经验、大量用户的使用要求特点等，全新开发的新一代高速、高精度产品。工件一次装夹后可以自动连续地完成铣、钻、镗、扩、铰、攻丝等多种工序的加工，适用于中、小型箱体类、板类、盘类、壳类等复杂零件的多品种加工，广泛应用于汽车零部件、阀门、工程机械、IT设备、光学设备、医疗设备、常规模具及航空航天等行业。

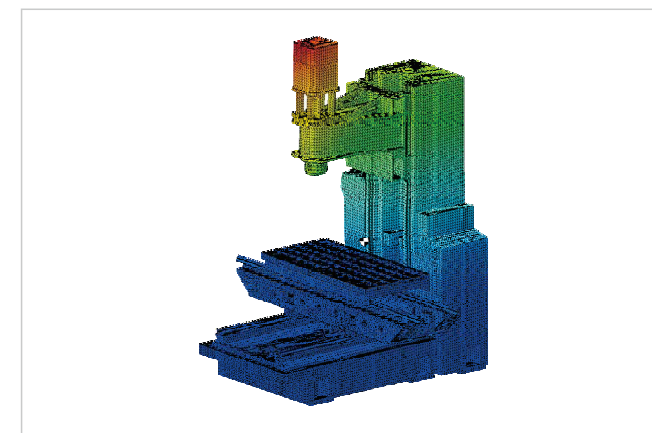
This machine is a small and medium-size vertical machining center designed in Germany and manufactured in China. Adopting mainstream European design structure, based on company many years design and manufacture experience, combined with big number research on customers' application demands, our company developed this new generation high-speed and high-precision products. Once the workpiece is clamped, it can automatically and continuously complete multiple processes such as milling, drilling, boring, expanding, reaming and tapping. It is suitable for complex parts and multi-variety processing ranges such as medium and small box-type parts, plates, disk parts and housing parts. This series can be widely used in automobile parts, valves, engineering machinery, IT equipment, optical equipment, medical equipment, conventional molds, aerospace and other industries.

## 产品优势 PRODUCT ADVANTAGES



标配刀库可以安装24把刀具(可以选择30把刀具)，有效扩大了加工工具的选择范围，同时换刀装置(ATC)可以迅速实现快速的换刀，从而大幅缩短非切削的待机时间。

Standard tool amount for ATC is 24(can choose 30 as option), it can effectively increase the cutting tool selection range, realize fast tool change, thus greatly shorten the non-cutting waiting time.



通过有限元分析采用了金字塔式床身结构设计达到床身最佳结构刚性，使静态刚性大幅度提高，与普通产品相比提升了46%。

To get the best structural rigidity, the machine bed adopts pyramid structure with support of FEA, compared to normal products, the static rigidity is improved by 46%.

- 机床底座、立柱等基础部件全面采用新型矿物铸件材料，相比传统的高耗能铸铁件，具备极佳的吸振性、热稳定性、高刚性和耐腐蚀性，同时室温固化内应力小，且绿色无污染，节能环保；
- 鞍座、工作台、主轴箱等移动部件采用德国先进的钢板焊接新工艺，具有更高的刚性，同时又降低了移动部件的重量减小运动惯性，提升了机床的响应速度和运动精度；
- 各轴均采用大扭矩交流伺服电机通过德产联轴器直联驱动精密滚珠丝杠，零背隙，传动刚性好、响应速度快，适宜于工件高精度强力切削；
- 各导轨、滚珠丝杆等润滑点采用中央集中式自动油脂润滑系统，无渗漏，彻底解决了机床漏油及油液与切削液混合污染问题，减少维护成本；
- 机床占地小巧，内部空间宽大，同时设置多处可开启或拆卸的门，便于操作者操作及机床检修。

- Basic components such of machine bed and column are all made of new mineral casting materials. Compared with traditional high-energy-consuming iron casting, it has the advantages as excellent vibration absorption, thermal stability, high rigidity and corrosion resistance, with small curing stress under room temperature, it is green, non-pollution and environmental friendly;
- Moving parts such of the saddle, worktable, and spindle box adopt German advanced new steel plate welding technology, which can help increase rigidity, reduce the motion inertia by moving parts weight reduction, meanwhile improve the response speed and moving accuracy;
- Each axis uses high-torque AC servo motor to directly drive precision ball screw through German-made coupling, with zero backlash, good transmission rigidity and fast response speed, It is suitable for high-precision and strong cutting;
- Each guide rail, ball screw and other lubrication points adopt centralized automatic grease lubrication system without leakage, which completely solves the problem of oil leakage and mixed pollution of oil and cutting fluid, reducing maintenance costs;
- The machine tool occupies small area and has large internal space. It is also equipped with multiple doors that can be opened or removed for operation, inspection or maintenance.



VMC50B 立式加工中心

Vertical machining center

标准配置 | STANDARD CONFIGURATION

|                                             |                                                       |                                                          |
|---------------------------------------------|-------------------------------------------------------|----------------------------------------------------------|
| 数控系统<br>CNC controller                      | 气枪<br>Air gun                                         | 前活动门开检测<br>Front door opening detection                  |
| 三轴45滚柱线轨<br>3-axis 45mm roller linear guide | 水枪<br>Water gun                                       | 工作灯<br>working lamp                                      |
| 三轴滚珠丝杠<br>3-axis ball screw                 | 机床整体式护罩<br>Whole machine cover                        | 垫铁和调整螺栓<br>Sizing block and adjust bolts                 |
| 主轴锥孔吹气<br>Spindle taper air blowing         | 链板排屑器及排屑车<br>Chain type chip conveyor and chip cart   | 工具箱及专用工具<br>Tool box and special tools                   |
| 主轴气幕防尘<br>Spindle air curtain dust-proof    | 工件水冷<br>Work-piece water cooling                      | 手持脉冲发生器<br>Handheld pulse generator                      |
| 主轴环喷<br>Spindle ring spray                  | 工件气冷<br>Work-piece air cooling                        | 随机操作及维修手册<br>Operate manual guide and maintenance manual |
| 导轨防护罩<br>guideway protection                | BT40-24T刀库（直连）<br>BT40-24T tool magazine(Direct type) | 警示灯<br>Alarm light                                       |
| 双侧螺旋排屑器<br>Double side auger chip conveyor  | BT50-24T刀库（皮带）<br>BT50-24T tool magazine(Belt type)   | 主轴温控系统<br>Spindle temperature control system             |
| 自动润滑系统<br>Automatic lubrication system      | 电柜空调<br>Electric cabinet air conditioner              |                                                          |

| 技术规格 Technical specification        |                                                          |       | VMC50B                              |          |               |
|-------------------------------------|----------------------------------------------------------|-------|-------------------------------------|----------|---------------|
| 行程<br>Travel                        | X 轴<br>X-axis                                            | mm    | 850                                 |          |               |
|                                     | Y 轴<br>Y-axis                                            | mm    | 500                                 |          |               |
|                                     | Z 轴<br>Z-axis                                            | mm    | 600                                 |          |               |
|                                     | 主轴鼻端至工作台面(直连式)<br>spindle nose to table surface (Direct) | mm    | 150-750                             |          |               |
|                                     | 主轴鼻端至工作台面(皮带式)<br>spindle nose to table surface (Belt)   | mm    | 120-720                             |          |               |
| 工作台<br>Working table                | 尺寸<br>Size                                               | mm    | 950x500                             |          |               |
|                                     | 载重<br>load capacity                                      | kg    | 600                                 |          |               |
| 主轴<br>Spindle                       | 主轴形式<br>Drive type                                       | -     | 直连式 Direct type                     |          | 皮带式 Belt type |
|                                     | 主轴锥度<br>Spindle taper                                    | -     | BT40                                | BBT40    | BT50          |
|                                     | 主轴转速<br>Spindle speed                                    | rpm   | 12000rpm                            | 15000rpm | 4500rpm       |
|                                     | 功率(额定 / 最大)<br>Power(rated/max.)                         | kW    | 11/18.5                             | 9/15     | 15/18.5       |
|                                     | 扭矩(额定 / 最大)<br>Torque(rated/max.)                        | Nm    | 70/117                              | 55/115   | 126/208       |
| 进给<br>Feed                          | 快移速度<br>Rapid traverse                                   | m/min | 40/40/40                            | 40/40/40 | 40/40/32      |
|                                     | 三轴螺杆直径<br>3-axis screw diameter                          | mm    | 40                                  |          |               |
|                                     | 三轴线轨宽度<br>3-axis linear guideway width                   | mm    | 45                                  |          |               |
| ISO 精度<br>ISO Accuracy<br>(20±0.5℃) | 定位精度<br>Positioning                                      | mm    | 0.006                               |          |               |
|                                     | 重复定位精度<br>Repeatability                                  | mm    | 0.004                               |          |               |
| 刀库<br>Tool magazine                 | 刀库型式<br>Type                                             | -     | 圆盘 Disk                             |          |               |
|                                     | 刀库容量<br>Tool magazine capacity                           | -     | 24                                  |          |               |
|                                     | 换刀时间(刀对刀)<br>too change time (tool to tool)              | s     | 1.6                                 |          | 3.5           |
| 重量<br>Weight                        |                                                          | kg    | 7500                                |          |               |
| 控制系统 Control system                 |                                                          |       | FANUC/SIEMENS/MITSUBISHI/HEIDENHAIN |          |               |

可选配置

OPTIONS

|                                                                              |                       |                                                |                       |
|------------------------------------------------------------------------------|-----------------------|------------------------------------------------|-----------------------|
| NANO平滑插补(MF)<br>NANO smooth interpolation (MF)                               | <input type="radio"/> | 加工实时模拟<br>Processing real-time simulation      | <input type="radio"/> |
| 高速高质量加工软件包（MF）<br>High-speed and high-quality machining software package(MF) | <input type="radio"/> | 中心出水18/20/30/50bar<br>CTS 18/20/30/50bar       | <input type="radio"/> |
| 数据服务器<br>Data server                                                         | <input type="radio"/> | 五轴转台<br>5-axis rotary table                    | <input type="radio"/> |
| 快速以太网<br>Fast Ethernet                                                       | <input type="radio"/> | 四轴转台和尾座<br>4th-axis rotary table and tailstock | <input type="radio"/> |
| PMC/L梯形图功能<br>PMC/L ladder diagram function                                  | <input type="radio"/> | 光栅尺<br>Linear scale                            | <input type="radio"/> |
| AI轮廓控制 I（MF）<br>AI contour control I (MF)                                    | <input type="radio"/> | 对刀仪<br>Tool setter                             | <input type="radio"/> |
| CNC应用程序开发套件<br>CNC Application Development Kit                               | <input type="radio"/> | 伺服刀库<br>Servo tool magazine                    | <input type="radio"/> |
| 动态图形显示（MF）<br>Dynamic graphics display (MF)                                  | <input type="radio"/> | 工件测量<br>Work-piece measurement                 | <input type="radio"/> |
| FANUC程序传送工具<br>FANUC program transfer tool                                   | <input type="radio"/> | 油雾收集<br>Oil mist collection                    | <input type="radio"/> |
| 3D成品模拟<br>3D finished product simulation                                     | <input type="radio"/> | 底盘冲屑<br>Flushing device                        | <input type="radio"/> |
|                                                                              |                       | 气动门<br>Pneumatic door                          | <input type="radio"/> |



VMC60B 立式加工中心

Vertical machining center

标准配置 | STANDARD CONFIGURATION

|                                             |                                                     |                                                          |
|---------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|
| 数控系统<br>CNC controller                      | 气枪<br>Air gun                                       | 工作灯<br>working lamp                                      |
| 三轴45滚柱线轨<br>3-axis 45mm roller linear guide | 水枪<br>Water gun                                     | 垫铁和调整螺栓<br>Sizing block and adjust bolts                 |
| 三轴滚珠丝杠<br>3-axis ball screw                 | 机床整体式护罩<br>Whole machine cover                      | 工具箱及专用工具<br>Tool box and special tools                   |
| 主轴锥孔吹气<br>Spindle taper air blowing         | 链板排屑器及排屑车<br>Chain type chip conveyor and chip cart | 手持脉冲发生器<br>Handheld pulse generator                      |
| 主轴气幕防尘<br>Spindle air curtain dust-proof    | 工件水冷<br>Work-piece water cooling                    | 随机操作及维修手册<br>Operate manual guide and maintenance manual |
| 主轴环喷<br>Spindle ring spray                  | 工件气冷<br>Work-piece air cooling                      | 警示灯<br>Alarm light                                       |
| 导轨防护罩<br>guideway protection                | BT40-24T刀库<br>BT40-24T tool magazine                | 主轴温控系统<br>Spindle temperature control system             |
| 双侧螺旋排屑器<br>Double side auger chip conveyor  | 电柜空调<br>Electric cabinet air conditioner            |                                                          |
| 自动润滑系统<br>Automatic lubrication system      | 前活动门门开检测<br>Font door opening detection             |                                                          |

| 技术规格 Technical specification        |                                                                    |       | VMC60B                              |          |               |
|-------------------------------------|--------------------------------------------------------------------|-------|-------------------------------------|----------|---------------|
| 行程<br>Travel                        | X 轴<br>X-axis                                                      | mm    | 1100                                |          |               |
|                                     | Y 轴<br>Y-axis                                                      | mm    | 600                                 |          |               |
|                                     | Z 轴<br>Z-axis                                                      | mm    | 600                                 |          |               |
|                                     | 主轴鼻端至工作台面(直连式)<br>spindle nose to table surface (Drive connection) | mm    | 150-750                             |          |               |
|                                     | 主轴鼻端至工作台面(皮带式)<br>spindle nose to table surface (Belt)             | mm    | 120-720                             |          |               |
| 工作台<br>Working table                | 尺寸<br>Size                                                         | mm    | 1200x600                            |          |               |
|                                     | 载重<br>load capacity                                                | kg    | 1000                                |          |               |
| 主轴<br>Spindle                       | 主轴形式<br>Drive type                                                 | -     | 直联式 Direct drive                    |          | 皮带式 Belt type |
|                                     | 主轴锥度<br>Spindle taper                                              | -     | BT40                                | BBT40    | BT50          |
|                                     | 主轴转速<br>Spindle speed                                              | rpm   | 12000rpm                            | 15000rpm | 4500rpm       |
|                                     | 功率(额定 / 最大)<br>Power(rated/continuous)                             | kW    | 11/18.5                             | 9/15     | 15/18.5       |
|                                     | 扭矩(额定 / 最大)<br>Torque(rated/continuous)                            | Nm    | 70/117                              | 55/115   | 126/208       |
| 进给<br>Feed                          | 快移速度<br>Rapid traverse                                             | m/min | 40/40/40                            | 40/40/40 | 40/40/32      |
|                                     | 三轴螺杆直径<br>3-axis screw diameter                                    | mm    | 40                                  |          |               |
|                                     | 三轴线轨宽度<br>3-axis linear guideway width                             | mm    | 45                                  |          |               |
| ISO 精度<br>ISO Accuracy<br>(20±0.5℃) | 定位精度<br>Positioning                                                | mm    | 0.006                               |          |               |
|                                     | 重复定位精度<br>Repeatability                                            | mm    | 0.004                               |          |               |
| 刀库<br>Tool magazine                 | 刀库型式<br>Type                                                       | -     | 圆盘 Disk                             |          |               |
|                                     | 刀库容量<br>Tool magazine capacity                                     | -     | 24                                  |          |               |
|                                     | 换刀时间(刀对刀)<br>too change time (tool to tool)                        | s     | 1.6                                 |          | 3.5           |
| 重量<br>Weight                        |                                                                    | kg    | 7500                                |          |               |
| 控制系统 Control system                 |                                                                    |       | FANUC/SIEMENS/MITSUBISHI/HEIDENHAIN |          |               |

可选配置

OPTIONS

|                                                                               |                       |                                                |                       |
|-------------------------------------------------------------------------------|-----------------------|------------------------------------------------|-----------------------|
| NANO平滑插补(MF)<br>NANO smooth interpolation (MF)                                | <input type="radio"/> | 加工实时模拟<br>Processing real-time simulation      | <input type="radio"/> |
| 高速高质量加工软件包 (MF)<br>High-speed and high-quality machining software package(MF) | <input type="radio"/> | 中心出水18/20/30/50bar<br>CTS 18/20/30/50bar       | <input type="radio"/> |
| 数据服务器<br>data server                                                          | <input type="radio"/> | 五轴转台<br>5-axis rotary table                    | <input type="radio"/> |
| 快速以太网<br>Fast Ethernet                                                        | <input type="radio"/> | 四轴转台和尾座<br>4th-axis rotary table and tailstock | <input type="radio"/> |
| PMC/L梯形图功能<br>PMC/L ladder diagram function                                   | <input type="radio"/> | 光栅尺<br>grating ruler                           | <input type="radio"/> |
| AI轮廓控制 I (MF)<br>AI contour control I (MF)                                    | <input type="radio"/> | 对刀仪<br>Tool setter                             | <input type="radio"/> |
| CNC应用程序开发套件<br>CNC Application Development Kit                                | <input type="radio"/> | 伺服刀库<br>Servo tool magazine                    | <input type="radio"/> |
| 动态图形显示 (MF)<br>Dynamic graphics display (MF)                                  | <input type="radio"/> | 工件测量<br>Work-piece measurement                 | <input type="radio"/> |
| FANUC程序传送工具<br>FANUC program transfer tool                                    | <input type="radio"/> | 油雾收集<br>Oil mist collection                    | <input type="radio"/> |
| 3D成品模拟<br>3D finished product simulation                                      | <input type="radio"/> | 底盘冲屑<br>Flushing device                        | <input type="radio"/> |
|                                                                               |                       | 气动门<br>pneumatic door                          | <input type="radio"/> |



VMC70B 立式加工中心  
Vertical machining center

标准配置 | STANDARD CONFIGURATION

|                                             |                                                     |                                                          |
|---------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|
| 数控系统<br>CNC controller                      | 气枪<br>Air gun                                       | 工作灯<br>working lamp                                      |
| 三轴45滚柱线轨<br>3-axis 45mm roller linear guide | 水枪<br>Water gun                                     | 垫铁和调整螺栓<br>Sizing block and adjust bolts                 |
| 三轴滚珠丝杠<br>3-axis ball screw                 | 机床整体式护罩<br>Whole machine cover                      | 工具箱及专用工具<br>Tool box and special tools                   |
| 主轴锥孔吹气<br>Spindle taper air blowing         | 链板排屑器及排屑车<br>Chain type chip conveyor and chip cart | 手持脉冲发生器<br>Handheld pulse generator                      |
| 主轴气幕防尘<br>Spindle air curtain dust-proof    | 工件水冷<br>Work-piece water cooling                    | 随机操作及维修手册<br>Operate manual guide and maintenance manual |
| 主轴环喷<br>Spindle ring spray                  | 工件气冷<br>Work-piece air cooling                      | 警示灯<br>Alarm light                                       |
| 导轨防护罩<br>guideway protection                | BT40-24T刀库<br>BT40-24T tool magazine                | 主轴温控系统<br>Spindle temperature control system             |
| 双侧螺旋排屑器<br>Double side auger chip conveyor  | 电柜空调<br>Electric cabinet air conditioner            |                                                          |
| 自动润滑系统<br>Automatic lubrication system      | 前活动门门开检测<br>Font door opening detection             |                                                          |

| 技术规格 Technical specification        |                                                                   |       | VMC70B                              |          |               |
|-------------------------------------|-------------------------------------------------------------------|-------|-------------------------------------|----------|---------------|
| 行程<br>Travel                        | X 轴<br>X-axis                                                     | mm    | 1400                                |          |               |
|                                     | Y 轴<br>Y-axis                                                     | mm    | 700                                 |          |               |
|                                     | Z 轴<br>Z-axis                                                     | mm    | 700                                 |          |               |
|                                     | 主轴鼻端至工作面(直连式)<br>spindle nose to table surface (Drive connection) | mm    | 150-850                             |          |               |
|                                     | 主轴鼻端至工作面(皮带式)<br>spindle nose to table surface (Belt)             | mm    | 90-790                              |          |               |
| 工作台<br>Working table                | 尺寸<br>Size                                                        | mm    | 1500x700                            |          |               |
|                                     | 载重<br>load capacity                                               | kg    | 1200                                |          |               |
| 主轴<br>Spindle                       | 主轴形式<br>Drive type                                                | -     | 直联式 Direct drive                    |          | 皮带式 Belt type |
|                                     | 主轴锥度<br>Spindle taper                                             | -     | BT40                                | BBT40    | BT50          |
|                                     | 主轴转速<br>Spindle speed                                             | rpm   | 12000rpm                            | 15000rpm | 4500rpm       |
|                                     | 功率(额定 / 最大)<br>Power(rated/continuous)                            | kW    | 11/18.5                             | 9/15     | 15/18.5       |
|                                     | 扭矩(额定 / 最大)<br>Torque(rated/continuous)                           | Nm    | 70/117                              | 55/115   | 126/208       |
| 进给<br>Feed                          | 快移速度<br>Rapid traverse                                            | m/min | 40/40/32                            | 40/40/32 | 32/32/24      |
|                                     | 三轴螺杆直径<br>3-axis screw diameter                                   | mm    | 50                                  |          |               |
|                                     | 三轴线轨宽度<br>3-axis linear guideway width                            | mm    | 45                                  |          |               |
| ISO 精度<br>ISO Accuracy<br>(20±0.5℃) | 定位精度<br>Positioning                                               | mm    | 0.008                               |          |               |
|                                     | 重复定位精度<br>Repeatability                                           | mm    | 0.005                               |          |               |
| 刀库<br>Tool magazine                 | 刀库型式<br>Type                                                      | -     | 圆盘                                  |          |               |
|                                     | 刀库容量<br>Tool magazine capacity                                    | -     | 24                                  |          |               |
|                                     | 换刀时间(刀对刀)<br>too change time (tool to tool)                       | s     | 1.6                                 |          | 3.5           |
| 重量<br>Weight                        |                                                                   | kg    | 12500                               |          |               |
| 控制系统 Control system                 |                                                                   |       | FANUC/SIEMENS/MITSUBISHI/HEIDENHAIN |          |               |

可选配置  
OPTIONS

|                                                                               |                       |                                                |                       |
|-------------------------------------------------------------------------------|-----------------------|------------------------------------------------|-----------------------|
| NANO平滑插补(MF)<br>NANO smooth interpolation (MF)                                | <input type="radio"/> | 加工实时模拟<br>Processing real-time simulation      | <input type="radio"/> |
| 高速高质量加工软件包 (MF)<br>High-speed and high-quality machining software package(MF) | <input type="radio"/> | 中心出水18/20/30/50bar<br>CTS 18/20/30/50bar       | <input type="radio"/> |
| 数据服务器<br>data server                                                          | <input type="radio"/> | 五轴转台<br>5-axis rotary table                    | <input type="radio"/> |
| 快速以太网<br>Fast Ethernet                                                        | <input type="radio"/> | 四轴转台和尾座<br>4th-axis rotary table and tailstock | <input type="radio"/> |
| PMC/L 梯形图功能<br>PMC/L ladder diagram function                                  | <input type="radio"/> | 光栅尺<br>grating ruler                           | <input type="radio"/> |
| AI轮廓控制 I (MF)<br>AI contour control I (MF)                                    | <input type="radio"/> | 对刀仪<br>Tool setter                             | <input type="radio"/> |
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|                                                                               |                       | 气动门<br>pneumatic door                          | <input type="radio"/> |



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