

Sowin 硕方



深圳市硕方精密机械有限公司
Shenzhen Sowin Precision Machine Tool Co., Ltd.

地址: 中国广东省深圳市宝安区松岗街道办潭头西部工业区A10栋厂房A栋
Add: Area A, Tantou Western Industrial Zone, Songgang Street, Bao'an District, Shenzhen, Guangdong Province, China
总机(TEL): +86 755-29874500 / 27175156
网址(Web): www.sowincnc.com 邮箱(E-mail): market@sowincnc.com
海外(Overseas): admin@cncswisstylathe.com

昆山办事处(产品展示中心)
Kunshan Office (Product Exhibition Center)

地址: 江苏省昆山市城北路1288号正泰隆国际工贸城1号馆1042-4043
Add: No 1 museum Zhengtailong International Trade Center, No. 1288, North City Rd., Kunshan City, Jiangsu Province
电话(M): +86 13316998703 传真(FAX): +86 512-36825901

青岛办事处(产品展示中心)
Qingdao Office (Product Exhibition Center)

地址: 山东省青岛市城阳区裕亭路69号
Add: No 69, Yuting Rd., Chengyang District, Qingdao City, Shandong Province
电话(M): +86 15898819301 传真(FAX): +86 532-87065882

Sowin 硕方

全新一代高刚性46机
New Generation High Rigidity

SC-46YD

数控车铣复合机床
Slant Bed CNC Turn Mill Lathe

SC-46D SC-46P

数控排刀机
Slant Bed CNC Gang Tool Lathe



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2022版



公司介绍 Company Profile

深圳市硕方精密机械有限公司创立于 2010 年，总部位于广东省深圳市，是一家致力于数控走心机和数控车铣复合机床研发制造的国家级高新技术企业，深圳市机械行业协会理事企业。公司致力于成为“国际一流的中高端小型精密数控机床制造与服务提供商”，以高精密、高稳定性、高可靠性数控走心机及车铣复合机床为核心产品。通过多年的努力和技术创新，产品始终处于国内领先地位，为国内外航空、汽车、医疗器械、3C、家电、新能源汽车、五金、电动工具等行业提供了大量的高效加工解决方案。

Shenzhen Sowin Precision Machine Tool Co., Ltd was founded in 2010, locating in Shenzhen city, Guangdong Province, which is a national high-tech enterprise specializing in research and development of CNC Swiss type automatic lathe and slant bed CNC turn mill lathe, and a member of Shenzhen Machinery Alliance. SOWIN always focus on becoming a world-class equipment manufacturer and service provider, and the core products of SOWIN are high precision, high stability, high reliability CNC Swiss type automatic lathe and slant bed CNC turn mill lathe. In the past years efforts and technological innovation, SOWIN products always take the leading position in China, providing a large number of efficient processing solutions for aviation, automobile, medical equipment, 3C, household appliances, new energy vehicles, hardware, electric tools and other industries at home and abroad.

公司拥有先进的智能化加工设备，包括日本三菱五面体龙门加工中心，大隈卧式、立式加工中心，哈斯立式加工中心，台湾建德平面磨床等，确保公司产品的高品质和高精度。

现已开发出 C 系列走心机、EN 系列走心机、F 系列走心机和车铣复合机床系列，产品远销美国、俄罗斯、意大利、西班牙、墨西哥、葡萄牙、捷克、乌克兰、马来西亚和泰国等国家，国内销售网络覆盖全国大部分省、市和地区，获得客户广泛应用，赢得客户一致好评。

SOWIN owns advanced intelligent processing equipment as the manufacturing machine tool, includes Japan Mitsubishi Heavy Industries Vertical planomiller, Japan OKUMA-BYJC large horizontal and vertical machining centers, HAAS vertical processing center, Taiwan KENT Surface Grinding Machine, ect which ensure SOWIN's each product with high quality and high precision components and parts.

Now, SOWIN has developed C series, EN series and F series CNC Swiss type automatic lathe, and slant bed CNC turn mill lathe. SOWIN products are exported to U.S.A, Russia, Italy, Spain, Mexico, Portugal, Czech Republic, Ukraine, Malaysia, Thailand and other overseas countries. The domestic sales network covers most provinces, cities and regions in China. Products have been widely used by customers and won unanimous praise from customers.

46系列车铣复合机床/排刀机

46 Series Slant Bed CNC Turn-mill Lathe/Gang Tool Lathe

双电机内冷4+4动力头结构
Dual-motor & inner-oil-cooling live head structure

轴向动力:4×ER25
轴向固定:4×ER25
径向4×ER25

Axial live:4×ER25
Axial fixed:4×ER25
Radial live:4×ER25

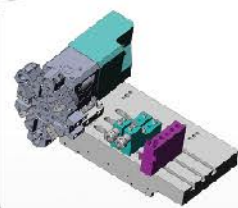
46型主轴 可通最大棒材规格
46 mm spindle max through bar material

| Max Dia | | |
|---------|-----|-----|
| | | |
| Φ45 | H39 | S32 |

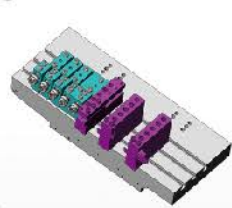
◇ 动力头可做非标选配, 详情请咨询。

◇ Live head can be customized, details please consult.

1 SC-46D



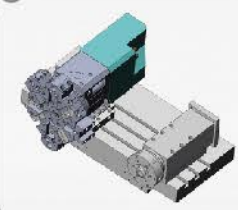
2 SC-46P



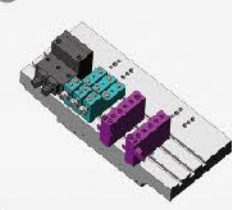
拓展机型 刀具结构

Expanded lathes' tool structure

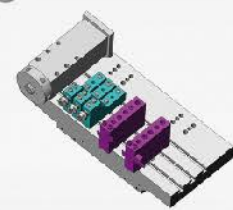
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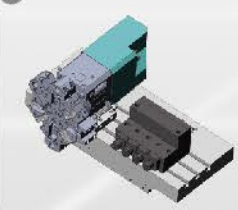
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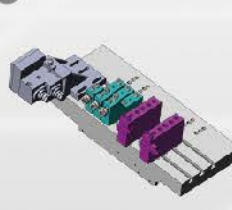
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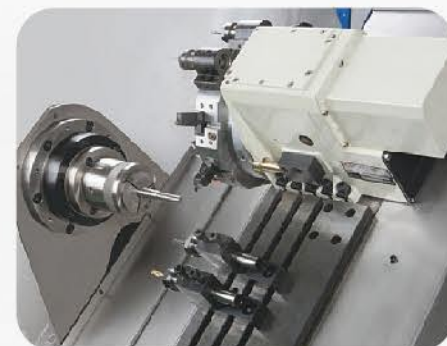
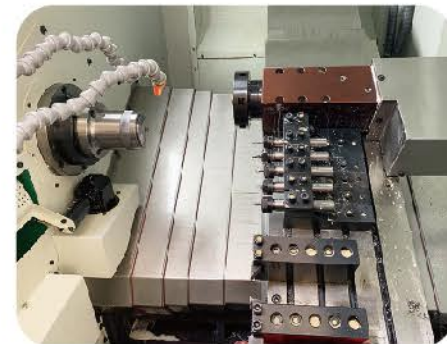
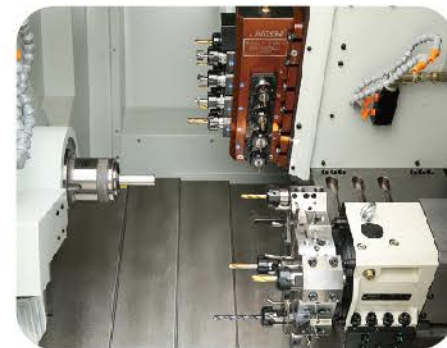
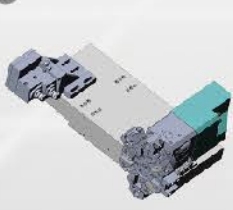
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7



8



标准配置和选配配置

Standard /Optional Configuration



- ◇ 整体铸件斜床身, 倾斜度: 30°, 抗弯, 抗扭, 刚性高;
- ◇ 主轴使用高精度进口 P4 级角接触球轴承, 前三后二的重负荷设计组合, 有效确保刚性和精度;
- ◇ 上银 / 银泰 滚柱导轨, 滚珠丝杆刚性更高;
- ◇ 支持 X/Y/Z/C 轴 4 轴联动加工, 支持车、铣、钻、镗、铰、攻、雕、冲等加工工艺, 可一次完成复杂零件加工;
- ◇ 双电机驱动动力头, 采用 4+4 结构, 极大的满足了客户生产加工的需要;
- ◇ 刀塔选用高精度伺服刀塔, 换刀速度快, 精度更高。

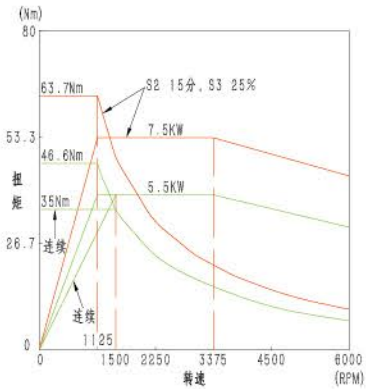
- ◇ Lathe body uses integral cast iron, slanting degree 30°, anti-bending, anti-torsion, high rigidity.
- ◇ Spindle uses imported angular contact ball bearings, and the heavy load design combination is front three and back two, which can effectively ensure the rigidity and accuracy.
- ◇ Higher rigidity of C3 grade HIWIN/PMI roller guide rail, ball screw.
- ◇ Support X/Y/Z/C 4 axis linkage processing, support turning, milling, drilling, boring, reaming, tapping, carving, punching ect., can complete complex part machining at one time, which can improve product accuracy and reduce process.
- ◇ The live head use double-motor driven mode, 4+4 power head structure, which greatly meet the needs of customer production and processing.
- ◇ Use Taiwan/Germany brand turret, servo drive turret, quick tool change, higher accuracy.

技术参数表
Technical Parameter

| 型号 Model | SC-46YD | SC-46D | SC-46P |
|---|--|--|------------------------|
| 系统 System | 三菱E80系统 Mitsubishi E80 control system | | |
| 额定功率 Rated power | kW | 15 | 10 |
| 床身最大回转直径 Spindle max swing dia. | mm | Φ240 | Φ450 |
| 最大加工长度 Max turning length | mm | 150 | 200 |
| 最大加工直径(盘类) Max turning dia (Disk) | mm | Φ150 | Φ200 |
| Φ400 | | | |
| 主轴中心到工作台面距离 Spindle center to slat table distance | mm | 75 | 75 |
| 75 | | | |
| 主轴通孔直径 Spindle through hole | mm | 56 | 56 |
| 56 | | | |
| 过最大棒料直径 Max through bar dia. | mm | 45 | 45 |
| 45 | | | |
| 主轴端部形式 Spindle end face type | ／ | A2-5 | A2-5 |
| A2-5 | | | |
| 主轴电机功率 Spindle motor power | kW | 5.5 (连续 continuous) | 5.5 (连续 continuous) |
| 5.5 | | | |
| 主轴最高转速 Spindle max rotate speed | rpm | 6000 | 6000 |
| 6000 | | | |
| 伺服刀塔 Servo turret | mm | 8 tool holder | 8 tool holder |
| 8 tool holder | | | |
| 单孔镗刀座规格(数量) Single-hole drill tool holder | mm | 1*Φ25(1pcs) | 1*Φ25(2pcs) |
| 1*Φ25(2pcs) | | | |
| 1*Φ25(3pcs) | | | |
| 双孔镗刀座规格(数量) Double-hole drill tool holder | mm | ／ | ／ |
| 2*Φ25(1pcs) | | | |
| 2*Φ25(2pcs) | | | |
| 单刀车刀座规格(数量) Single-turning tool holder | mm | ／ | ／ |
| 1*□20(1pcs) | | | |
| 1*□20(2pcs) | | | |
| 双刀车刀座规格(数量) Double-turning tool holder | mm | ／ | ／ |
| 2*□20(1pcs) | | | |
| 2*□20(2pcs) | | | |
| X轴电机功率 X axis servo motor power | kW | 2.2 | 2.2 |
| 2.2 | | | |
| Z轴电机功率 Z axis servo motor power | kW | 2.2 | 2.2 |
| 2.2 | | | |
| Y轴电机功率 Y axis servo motor power | kW | 1.5 | ／ |
| ／ | | | |
| X轴行程(直径) X axis travel (Diameter) | mm | 1100 | 1100 |
| 1100 | | | |
| Z轴行程 Z axis travel | mm | 350 | 350 |
| 350 | | | |
| Y轴行程 Y axis travel | mm | 240 | ／ |
| ／ | | | |
| X轴快速进给速度 X axis rapid feed speed | m/min | 24 | 24 |
| 24 | | | |
| Z轴快速进给速度 Z axis rapid feed speed | m/min | 24 | 24 |
| 24 | | | |
| Y轴快速进给速度 Y axis rapid feed speed | m/min | 24 | ／ |
| ／ | | | |
| X/Y/Z轴定位精度 X/Y/Z axis positioning accuracy | mm | 0.005 | 0.005 |
| 0.005 | | | |
| X/Y/Z轴重复定位精度 X/Y/Z axis repeat positioning accuracy | mm | 0.003 | 0.003 |
| 0.003 | | | |
| 主轴旋转跳动精度 Spindle rotate runout tolerance | mm | 0.003 | 0.003 |
| 0.003 | | | |
| 动力头刀具(端+侧) Live head tool (Axial live: AL; Radial live: RL) | ／ | 4×ER25端固AL+ 4×ER25端旋AL+ 4×ER25侧旋RL | ／ |
| ／ | | | |
| 端铣动力头电机功率 Axial live head servo motor power | kW | 2.2 | ／ |
| ／ | | | |
| 侧铣动力头电机功率 Radial live head servo motor power | kW | 2.2 | ／ |
| ／ | | | |
| 端铣动力头最高转速 Axial live head servo motor power | rpm | 4000 | ／ |
| ／ | | | |
| 侧铣动力头最高转速 Radial live head servo motor power | rpm | 4000 | ／ |
| ／ | | | |
| 动力头最大钻孔直径 Live head max drill dia. | mm | Φ10 | ／ |
| ／ | | | |
| 动力头最大攻牙直径 Live head max tap dia. | mm | M10 (中碳钢Steel) M12 (铜铝Brass) | ／ |
| ／ | | | |
| 刀具安装数量 Max tool install capacity | | 21 | 10 |
| 10 | | | |
| 重量 Weight | kg | 3500 | 3000 |
| 3000 | | | |
| 机床尺寸(长×宽×高) Dimensions(L×W×H) | mm | 2370*1850*2120 | 2370*1850*2120 |
| 2370*1850*2120 | | | |
| 选配系统 Option system | 新代 SYNTEC 22TB | | 发那科 FANUC 0i-TF plus |
| X轴电机功率 X axis servo motor power | kW | 3.1 | 1.8 |
| 1.8 | | | |
| Z轴电机功率 Z axis servo motor power | kW | 2.4 | 1.8 |
| 1.8 | | | |
| Y轴电机功率 Y axis servo motor power | kW | 1.7 | 1.2 |
| 1.2 | | | |
| 端铣动力刀头电机功率 Axial live head servo motor power | kW | 2.3 | 1.8 |
| 1.8 | | | |
| 端铣动力刀头电机最高转速 Axial live head max rev speed | rpm | 5000 | 3000 |
| 3000 | | | |
| 侧铣动力刀头电机功率 Radial live head servo motor power | kW | 2.3 | 1.8 |
| 1.8 | | | |
| 侧铣动力刀头电机最高转速 Radial live head max rev speed | rpm | 5000 | 3000 |
| 3000 | | | |

5.5Kw主轴功率扭矩曲线图

主轴最大扭矩63.7Nm



标准配置 Standard configuration

三菱系统(选配新代/发那科)
Mitsubishi system(OP SYNTEC/FANUC)

三菱X/Y/Z轴驱动和电机
Mitsubishi X/Y/Z servo and motor

伺服刀塔
Servo turret

上银/银泰 滚柱导轨, 滚珠丝杆
HIWIN/PMI roller guide rail, ball screw

液压站
Hydraulic pump station

主轴液压抱闸装置
Spindle braking device

回转油缸
Angling cylinder

润滑系统
Lubricating system

3色警示灯
3-colour tower light

LED 工作照明灯
LED working light

油箱
Cutting oil tank

变压器
Transformer

工具箱
Tool cabinet

选配装置 Optional configuration

排屑机
Chip conveyor

油雾收集器
Oil mist collector

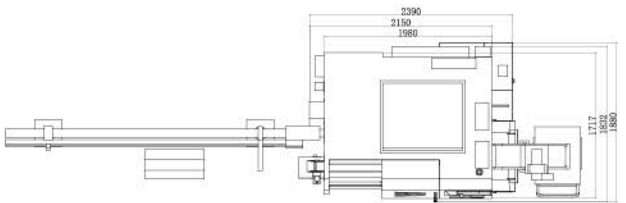
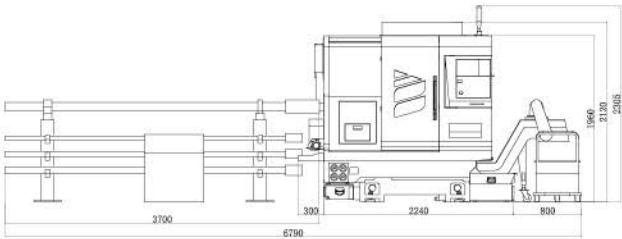
液压卡盘
Hydraulic chuck

油浴送料机/油膜送料机
Oil-bath bar feeder/Auto bar feeder

桁架式机械手/关节机器人
Truss manipulator/Articulated Robot

接料器+工件传送带
Parts catcher + Workpiece belt conveyor

安装尺寸图
Installation Diagram



辅助设备
Auxiliary Equipment

全自动短棒送料机
Short Automatic Bar Feeder



(LNS SL 65-S / IEMCA Advantage 66)

| | | | |
|------------------------|---------|--------------|---------------|
| 棒材直径 Diameter Range | Φ5~65mm | 长度 Length | max 1.2/1.5mm |
|------------------------|---------|--------------|---------------|

全自动油膜送料机
Automatic Bar Feeder



| | | | |
|------------------------|---------|--------------|------------|
| 棒材直径 Diameter Range | Φ3~25mm | 长度 Length | max 3000mm |
|------------------------|---------|--------------|------------|

排屑机
Chip Conveyor (Chain type)



油浴送料机
Oil Bath Feeder



| | | | |
|------------------------|---------|--------------|------------|
| 棒材直径 Diameter Range | Φ5~45mm | 长度 Length | max 2500mm |
|------------------------|---------|--------------|------------|

油雾收集器
Oil Mist Collector



接料器+工件传送带
Parts Catcher + Workpiece Belt Conveyor

