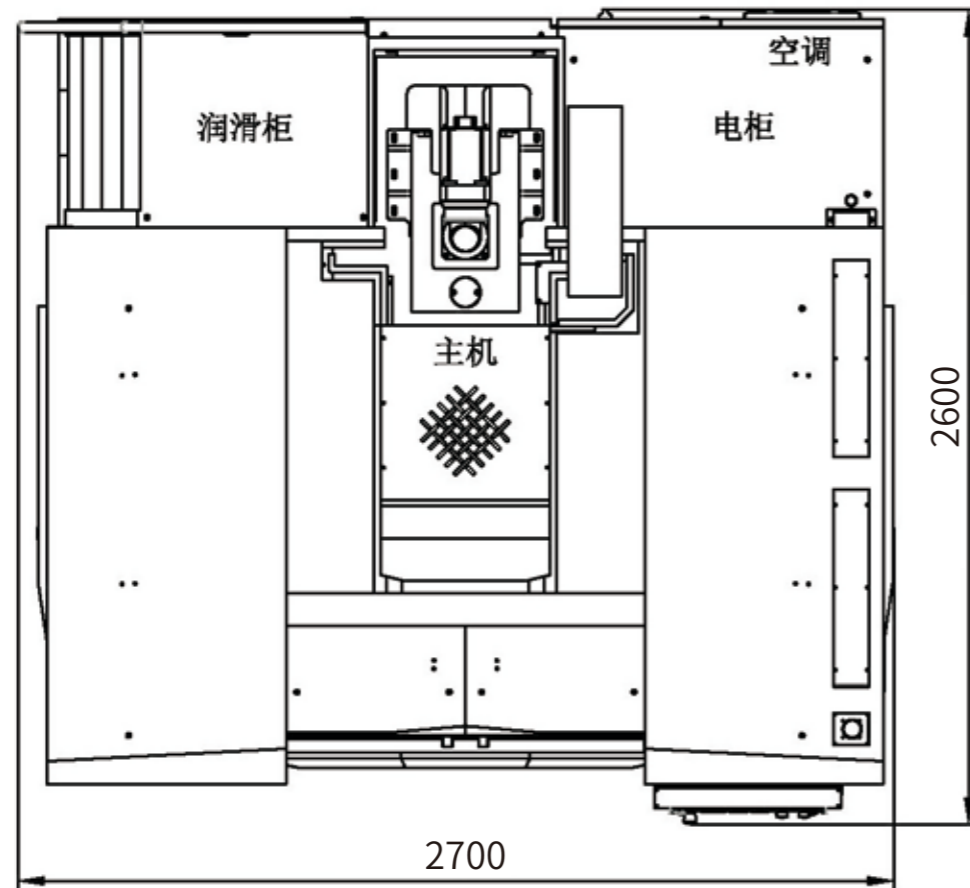
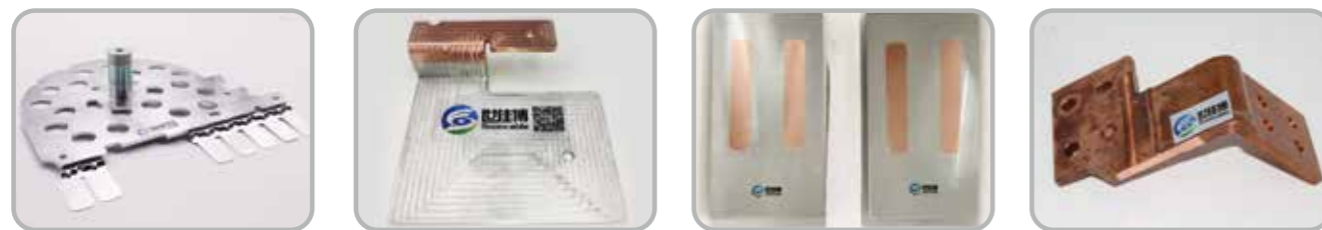


台式重载850型搅拌摩擦焊机床平面布局图
Layout Plan Of 850 Style Friction Stir Welding Machine



台式重载850型搅拌摩擦焊接机床
Heavy Load T-style Of 850 FSW Machine



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with technical development, the explanation, diagram and specifications are subject to change without further notice. actual machine dimensions should be taken as authentic.

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2024版



台式重载 850 型搅拌摩擦焊接机床

秉承“做品牌,用好料”的焊接机床制造初衷,为客户提供高精度、高寿命、高可靠性的搅拌摩擦焊接机床。台式重载850型搅拌摩擦焊接机床基于世佳博“精密搅拌摩擦焊接机床”理念研发的高端重载焊接机型。机床设有5轴,具备五轴四联动运动属性,可实现任意平面二维曲线搅拌摩擦焊接功能。机床配备3T/6T焊接机头,可实现铜合金单面3/6mm的搅拌摩擦焊接,铝合金单面8/12mm的搅拌摩擦焊接,具备X轴快移速度12,000mm/min。同时,配备基于西门子828D经世佳博二次开发的搅拌摩擦焊接专用控制系统,具有超高的控制可靠性和丰富的扩展功能。

主要特点

- 机床为立式结构,焊接机头在立柱上沿Z轴上下移动,工作台在底座上沿X/Y方向移动,B/C轴集成在焊接机头(B轴绕Y轴方向移动, C轴绕Z轴转动);

- 机床整体结构经过有限元分析优化,依照机床行业规范及制造标准并结合搅拌摩擦焊接工艺特点,进行搅拌摩擦焊机机床独特设计及制造。设备主体结构均为高强度优质铸件, Z轴采用进口贴塑复合硬轨,经多次热处理和时效处理,具有超高的刚性、抗扭性、稳定性和良好的抗震性能;

- 机床为5轴数控,可实现“五轴四联动”焊接功能;各运动轴均由西门子原装进口独立交流伺服电机驱动,可实现高运行稳定性;

- 配备3T/6T载荷3,000RPM主轴,匹配精准恒压力系统,可实现一键启动及直线焊缝最快3m/min,电机机壳/驱动壳体1.2m/min;

- 实行“交钥匙”工程服务。在机床交付的同时,提供目标产品全套工艺资料,确保机床交付与产品生产无缝对接;

- 机床拥有功能强大的可选及升级配置,轻松提升焊接机床使用性能并最大化投入产出比;可实现无人化及数字化智能焊接加工;

- 机床外防护采用全新工业设计理念,在满足工业安全要求的前提下,以“变形金刚”为设计原型,结合现代工业人机功能学特征,展现出蓬勃原动力。

关键件配置

名称	品牌	品牌属地
● 铸造精密床身	● 世佳博	● 中国云南
● 828D数控系统	● 西门子	● 德国
● 四轴联动伺服电机	● 西门子	● 德国
● 主轴电机	● 西门子	● 德国
● 减速机	● 精 锐	● 台湾
● P级滚柱导轨	● THK	● 日本
● C3级滚珠丝杠	● THK	● 日本
● 焊接主轴	● 世佳博	● 台湾
● 电气	● 施耐德	● 法国

Heavy Load T-style Of 850 FSW Machine

Beijing Sooncable Technology Development Com., Ltd (Sooncable) make up our mind to manufacture high precision, Heavy Load T-style Of 850 FSW Machines an advanced one designed on theidea of Sooncable making precise FSW Machine. It has 5-axis and can achieve 4 axes simultaneously controlled for constant tangential velocityduring 2-D welding process with stepless speed regulation. The machine is equipped with 3T/6Twelding head, which can achieve the maximum friction stir welding of 3/6mm on one side of copper alloy and 8/12mm on one side of aluminum alloy.Besides, customized development on Siemens 828D based on the FSW process is done by Sooncable for more reliable running and plenty of FSW operation.

Main Features

- The FSW Machine is vertical structure, its welding head moves up and down Z direction on the column, the worktable moves along X/Y direction on the base, and the B/ C axis is integrated in the welding head(the B axismoves around Y axis, the C axis rotates around Z axis).

- The overall structure of the machine is optimized by finite element analysis. Main parts of the machine are iron castings with very high strength caused by several tempering and aging treatments. The whole machine is rigid and stable enough with superior performances on anti-interference, the torsion resistance, anti-shock and damping capacity. The precision of the FSW machine is as high as that of numerical control machine.

- The FSW Machine has 5-axis and can achieve 4 axes coordinated welding control. Each motion axis is driven by an Siemens AC Servo Motor for nice stability of continuous long term running.

- Equipped with 3T/6T(3,000RPM)welding spindle accurate constant pressure control system. realize one key start linear weld 3m/min and the motor casing drive casing 1.2m/min.

- Technical trainings and welding trials based on FSW process is also served as key part of “Turn-key” project along with the machine delivery.

- Great optional configurationrealizing automatically welding, thus increasing annual work efficiency.

- The machine reflects the design concept of Transformers, combining the characteristics ofergonomics in modernindustry, also the development trend of manufacturing industrial, i.e. environment-friendly automatic, flexible, high efficient and function composite.

Key Attachments

Description	Outsourcing component
● Lathe bed	● Customized, China
● Siemens	● Schneider, France
● Servo motor	● Siemens, Germany
● Main axis motor	● Siemens, Germany
● Reducers	● Apex, Taiwan
● P-level roller guide	● THK
● C3-level ball screws	● THK
● Main axle	● Customized, Taiwan
● Electric control	● Schneider, France

主要技术参数

项 目	Description	Unit	SCB-HL850-2D-3T/6T	
工作台尺寸	Work-piece size	mm	800×500	
各轴最大行程	Each axial travel	mm	600×500×350	
Z向焊接空间	Max. welding space	mm	350	
主轴顶锻力	Max. Z-axis down forth	T	3	6
铜合金最大焊接厚度	Max. welding thickness	mm	Cu-3	Cu-6
铝合金最大焊接厚度	Max. welding thickness	mm	Al-8	Al-12
焊接主轴最高转速	Max. spindle speed	r/min	4,000/2,500	
X/Y/Z轴快移速度	X axial Y axial Z axial	mm/min	12,000/12,000/4,000	7,000 / 7,000 /3,000
X/Y/Z轴定位精度	X axial Y axial Z axial	mm/300mm	0.008 / 0.008 / 0.008	
X/Y/Z重复定位精度	X axial Y axial Z axial	mm	0.01 / 0.01 / 0.01	
T型槽工作尺寸(尺寸×数量×间隔)	T-groove specification	mm	18×5×90	
搅拌头夹持柄直径	Holder diameter of Tool	mm	20	
刀柄规格	Handle specificationsT	—	BT50	
数控系统	Control System	—	828D	
主轴倾角	Spindle inclination	°	±5	
C轴行程	C axis travel	°	N×360	
机床主电机功率	Main motor power	kw	22	22
机床电力总负荷	Total power	kw	42	45
机床尺寸	Machine size	mm	2,700×2,600×3,000	
机床重量	Total weight	kg	8,360	

标准配置及功能

功能

- 电控系统空调系统
- 搅拌头寿命监控系统
- 焊接过程参数记录系统
- 安全门锁装置
- 断针检测系统

可选配置及功能

功能

- 自动门
- 点触式对刀
- DNC管理系统
- 急速气冷系统
- 二维码扫描系统
- 恒压力控制系统
- 焊接机头自适应平衡系统
- 电控系统恒温恒湿
- 拌头寿命实时监测
- 焊接过程参数记录及调取
- 操作门与设备联动
- 焊前判定搅拌针是否断裂

Main Specifications

项 目	Description	Unit	SCB-HL850-2D-3T/6T	
工作台尺寸	Work-piece size	mm	800×500	
各轴最大行程	Each axial travel	mm	600×500×350	
Z向焊接空间	Max. welding space	mm	350	
主轴顶锻力	Max. Z-axis down forth	T	3	6
铜合金最大焊接厚度	Max. welding thickness	mm	Cu-3	Cu-6
铝合金最大焊接厚度	Max. welding thickness	mm	Al-8	Al-12
焊接主轴最高转速	Max. spindle speed	r/min	4,000/2,500	
X/Y/Z轴快移速度	X axial Y axial Z axial	mm/min	12,000/12,000/4,000	7,000 / 7,000 /3,000
X/Y/Z轴定位精度	X axial Y axial Z axial	mm/300mm	0.008 / 0.008 / 0.008	
X/Y/Z重复定位精度	X axial Y axial Z axial	mm	0.01 / 0.01 / 0.01	
T型槽工作尺寸(尺寸×数量×间隔)	T-groove specification	mm	18×5×90	
搅拌头夹持柄直径	Holder diameter of Tool	mm	20	
刀柄规格	Handle specificationsT	—	BT50	
数控系统	Control System	—	828D	
主轴倾角	Spindle inclination	°	±5	
C轴行程	C axis travel	°	N×360	
机床主电机功率	Main motor power	kw	22	22
机床电力总负荷	Total power	kw	42	45
机床尺寸	Machine size	mm	2,700×2,600×3,000	
机床重量	Total weight	kg	8,360	

Optional Attachments

Function

- Air Condition for ECC
- Life Monitoring System
- Parameters Recording System
- Safety door lock device
- Broken needle detection

Optional Attachments

Function

- Automatic-door
- Point contact tool setting
- DNC function System
- Rapid air cooling Device
- QR code scanning system
- Constant Force Control system
- Spindle Responsive System
- Temperature controlling of ECC
- Monitoring lifetime of FSW tool
- Recording & copying manually
- Door and equipment linkage
- Fracture judgment of tool needle

Description

- Temperature controlling of ECC
- Monitoring lifetime of FSW tool
- Recording & copying manually
- Door and equipment linkage
- Fracture judgment of tool needle
- Door opens and closes automatically
- Press the key to complete tool setting
- Monitoring, controlling on line
- Mist TEMP can reach 3 ° in 5mins
- Generate and store database files
- Constant down force output
- Eliminate FSW keyhole