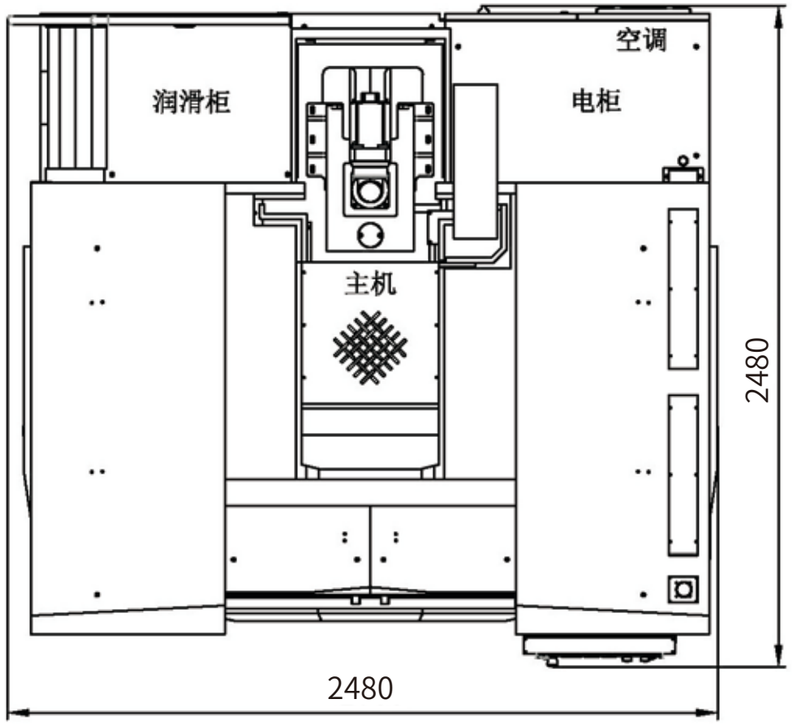
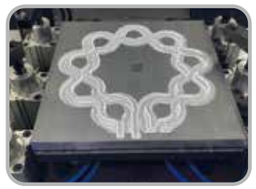
世佳博 Sooncable
—搅拌摩擦焊专家—

超高速台式850型搅拌摩擦焊设备平面布局图
Layout Plan Of 850 Style Friction Stir Welding Machine





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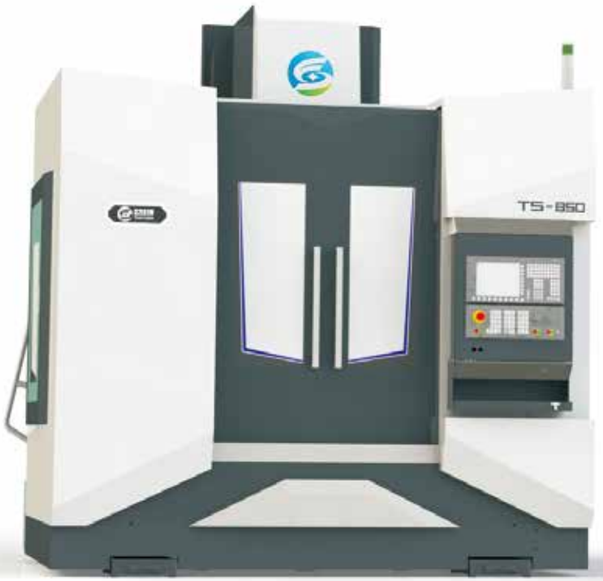
with technical development,the explanation,diagram and specifications are subject to change without further notice. actual machine dimensions should be taken as authentic.

超高速台式850型搅拌摩擦焊接机床
High-speed T-style Of 850 FSW Machine



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2024版本

北京中关村高新企业 · IATF16949认证企业 · 双百民认证企业 · 北京专精特新优质企业 · ISO体系认证 · 国家高新技术企业 · 欧盟CE认证企业

超高速台式 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。超高速台式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2T焊接机头，可实现铝合金单面最大6/8mm的搅拌摩擦焊接，具备X轴快移速度15，000mm/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，进行搅拌摩擦焊机床独特设计及制造。设备主体结构均为高强度优质铸造件，经多次热处理和时效处理，具有超高的刚性、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2T载荷4,000/6,000 RPM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

High-speed T-Style of 850 FSW Machine

Beijing Sooncable Technology Development Com., Ltd (Sooncable) make up our mind to manufacture high precision, high reliable and igh-speed T Style of 850 FSW Machineis 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 2 Ton welding main axle and possesses the capacity of maximum welding thickness of Al alloy for one side within 6/8 mm. 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, 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 2T(4,000/6,000RPM)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 of ergonomics 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 Main Specifications

项 目	Description	Unit	SCB-TS850-2D-2T/3T
工作台尺寸	Work-piece size	mm	800×500
各轴最大行程	Each axial travel	mm	600×500×450
Z向焊接空间	Max. welding space	mm	450
主轴顶锻力	Max. Z-axis down forth	T	2/3
最大焊接厚度	Max. welding thickness	mm（Al-alloy）	6/8
焊接主轴最高转速	Max. spindle speed	r/min	4,000/6,000
X/Y/Z轴快移速度	X axial Y axial Z axial	mm/min	15,000 / 15,000 /6,000
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	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	12
机床电力总负荷	Total power	kw	30
机床尺寸	Machine size	mm	2,480×2,480×3,000
机床重量	Total weight	kg	7,280

标准配置及功能

功能	功能描述
电控系统空调系统	电控系统恒温恒湿
搅拌头寿命监控系统	拌头寿命实时监测
焊接过程参数记录系统	焊接过程参数记录及调取
安全门锁装置	操作门与设备联动
断针检测系统	焊前判定搅拌针是否断裂

可选配置及功能

功能	功能描述
自动门	自动开启及关闭操作门
点触式对刀	实现一键对刀功能
DNC管理系统	焊接数据DNC并网及智能控制
急速气冷系统	5分钟内气雾温度可达3°
二维码扫描系统	生成数据库文件并存储
恒压力控制系统	焊接过程恒压力控制
焊接机头自适应平衡系统	焊接匙孔消除

Optional Attachments

Function	Description
Air Condition for ECC	Temperature controlling of ECC
Life Monitoring System	Monitoring lifetime of FSW tool
Parameters Recording System	Recording & copying manually
Safety door lock device	Door and equipment linkage
Broken needle detection	Fracture judgment of tool needle

Optional Attachments

Function	Description
Automatic-door	Door opens and closes automatically
Point contact tool setting	Press the key to complete tool setting
DNC function System	Monitoring, controlling on line
Rapid air cooling Device	Mist TEMP can reach 3 ° in 5mins
QR code scanning system	Generate and store database files
Constant Force Control system	Constant down force output
Spindle Responsive System	Eliminate FSW keyhole