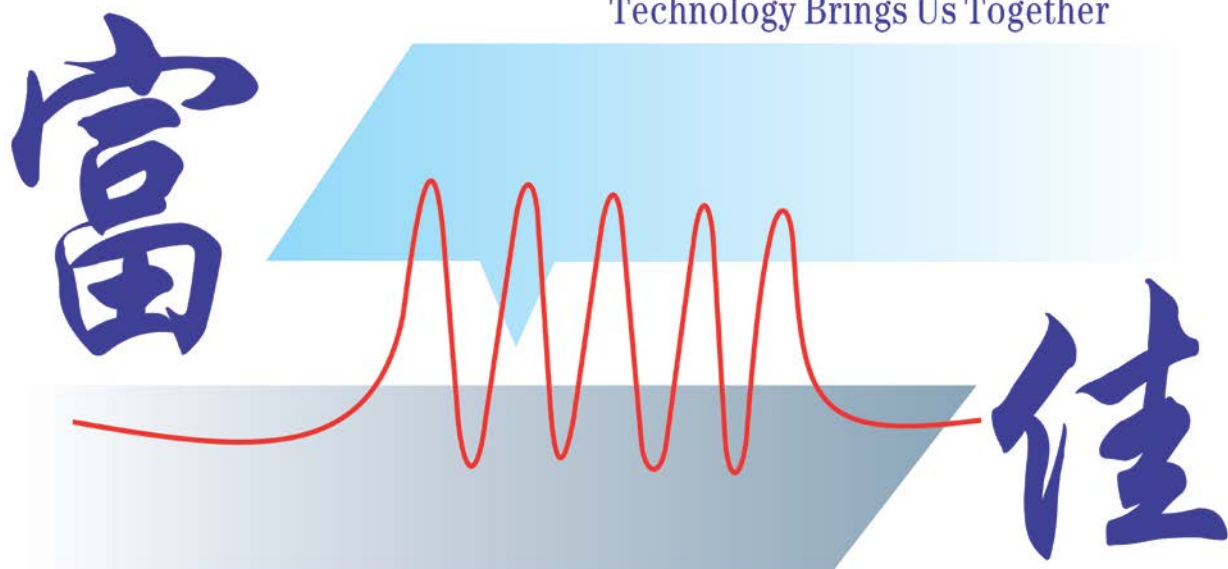




科技让我们 凝聚在一起

Technology Brings Us Together



富佳（香港）科技有限公司

Fujia(Hong Kong)Technology Co.,Ltd.

东莞市富佳机械设备有限公司

Dongguan Fujia Machine Equipment Co.,Ltd

Fujia is an intelligent equipment manufacturer. As a company, we provide integrated designs, production, sales and service and have gained many patents and national Hi-tech enterprise certificates. With advanced technology, excellent quality and professional after-sales service, we are highly recognized by the global top 500 companies and have their continuous cooperation.

Since we established our company in 2003, we are deeply committed to the research of core technology and production in ultrasonic, pulse, Hi-frequency, test and intelligent equipment machinery field. We offer complete solutions to industries related to electronics, automotive, new power appliance, medical, daily-use chemical products, etc.

With our principle focus in efficiency, standard, responsibility and result, we stand strongly at the front of the field in intelligent manufacturing. While in active practice of Industry 4.0 and Made In China 2025, we are proud to be one of your future partners with our competitive products and professional services.

富佳——集研发，生产，销售及服务为一体的智能设备提供商，公司为国家高新技术企业，拥有多项专利，依托领先技术，优良的品质及专业的售后，获得众多世界500强企业的高度认可与持续合作。

2003年成立以来，致力于超声波、脉冲、高频、测试、智能装备等核心技术的研发应用和制造，面向3C、汽车、新能源、家电、医疗、日化等行业提供智能工厂整体解决方案。

凭借“高效、标准、责任、结果”的理念，立足智能制造领域，积极践行工业4.0，助力“中国制造2025”，为客户提供极具竞争力的产品和服务，成为您服务上的战略合作伙伴。



塑料焊接

金属焊接

脉冲焊接



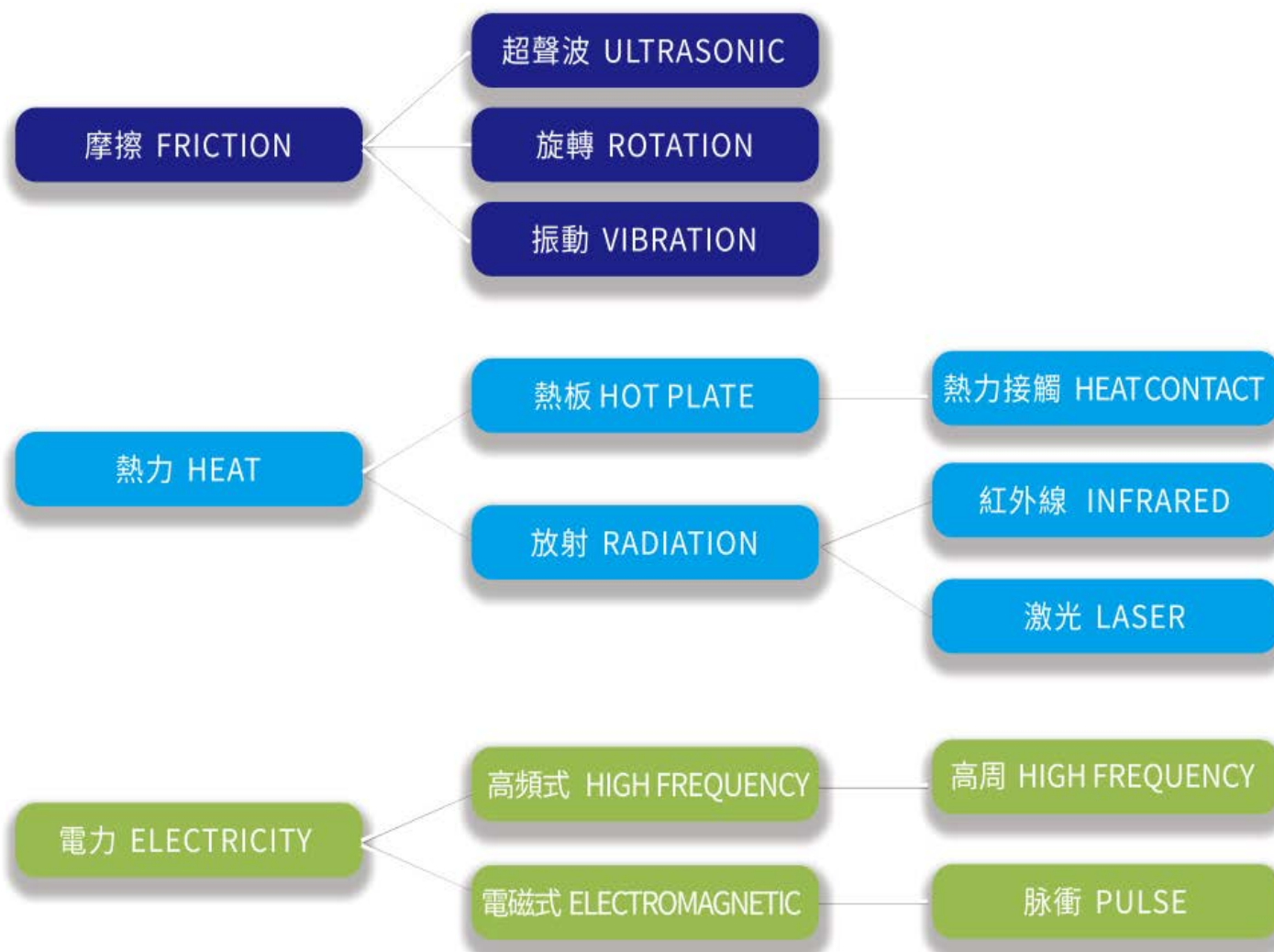
网膜焊接



红外线焊接



激光焊接



超声波塑料焊接机

Ultrasonic Plastic Welding Machine

Ultrasonic welding is a high technology for welding thermoplastic products. All kinds of thermoplastic parts can be processed by it, without the needs of any solvent, adhesive or any other auxiliary. Its advantage is to raise productivity, reduce cost, improve quality, and safe production.

Theory of ultrasonic plastic welding, When the 20kHz (or 15kHz) high pressure, high-amplitude signal is generated by the generator, through the transducer, the signal is converted to high-frequency mechanical vibration, then pressurized it on the plastic workpiece, where temperature rises on the workpiece's surface and inner of the friction between the molecules, when the temperature reaches the melting point of the workpiece itself, the workpiece interface rapidly melts, and then fills in the space between the interface, when vibration stops, workpiece cooling under certain pressure and setting at the same time, where the perfect welding effect is achieved.

超声波焊接是熔接热塑性塑料制品的高科技技术，各种热塑性塑胶均可使用超声波熔接处理，而不需加溶剂、粘接剂或其他辅助品。其优点是提高生产率、降低成本、提升成品质量及安全生产。

超声波塑胶焊接原理是由发生器产生20kHz(或15kHz)的高压、高频信号、通过换能器，把信号转换为高频机械振动，加于塑料制件上，通过制件表面及内在分子间的摩擦而使接口温度升高，当温度达到此工作本身的熔点时，使制件接口迅速熔化，继而填充于接口间的空隙，当震动停止时，制件同时在一定的压力下冷却定型，达成完美的焊接效果。

System components

系统组件

※Energy supply

能量供应器

※Control level

控制级别

※Drive and rack

驱动器及机架

※Transducer

换能器

※Amplitude modulator

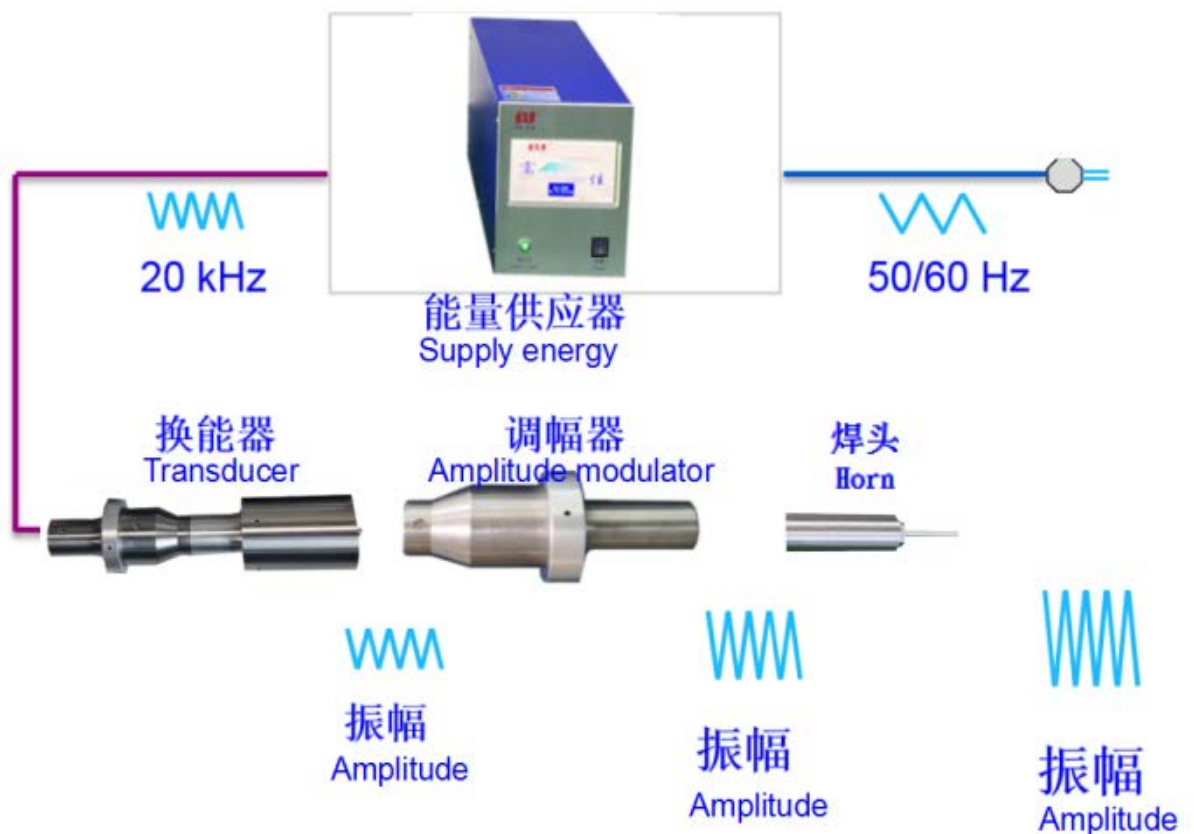
调幅器

※Horn

焊头

※Bottom fixture

底座



Ultrasonic frequency

超声波频率



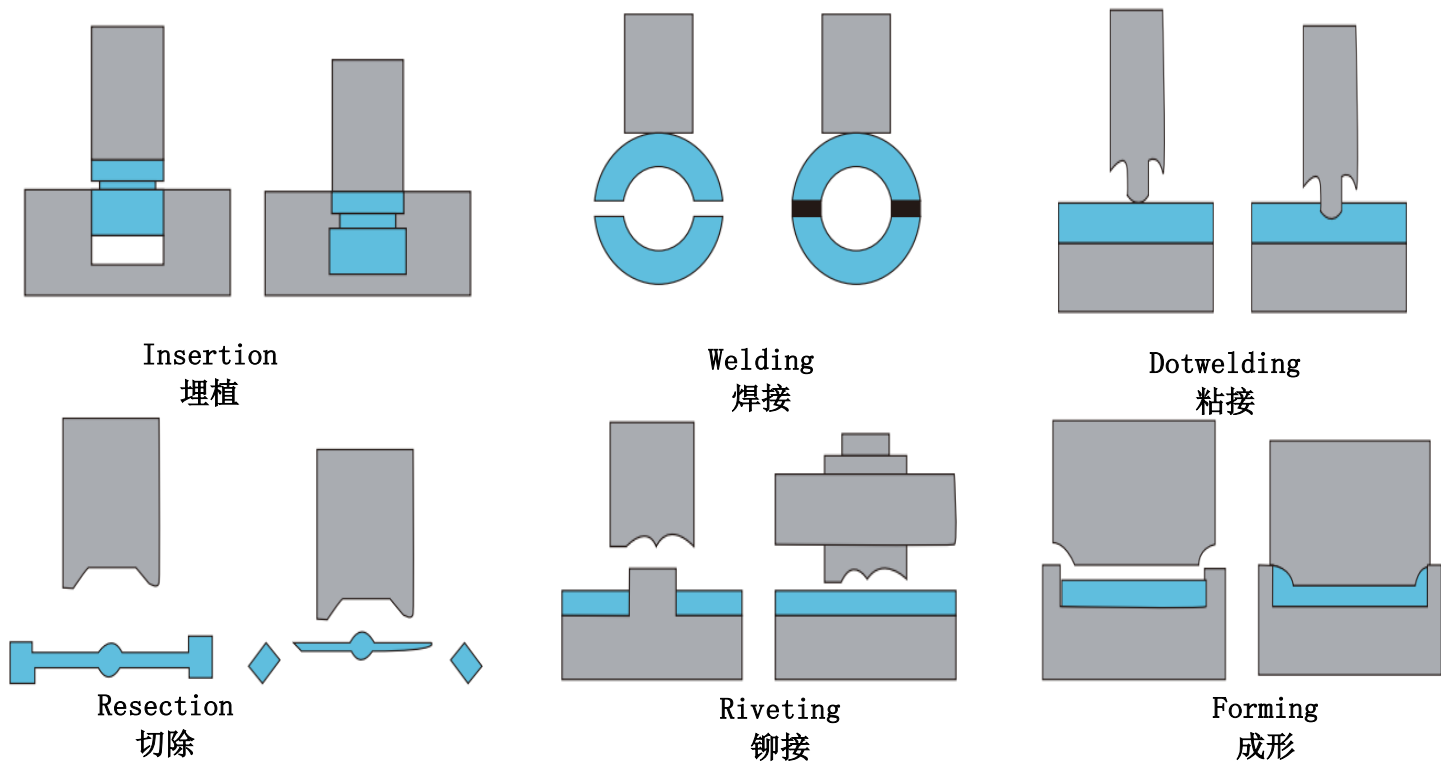
35kHz



20kHz



15kHz



Analysis chart of hot melt plastic welding 热熔塑膠焊接分析圖																	
EXCELLENT優良 GOOD好 FAIR普通	ABS	ACETAL	ACRILICS	CELLULOSICS	CYCOLOY-BOC	CYCOVIN	KYDEX	NORYL	PC	PE	PP	PS	PSL YSULFONE	PVC	SAN	POLYESTER	XT-POLYMER
綿苯乙饰两烯晴變																	
缩醛措脂																	
壓克力																	
鐵維素																	
ABC和PC合成物																	
壓克力和PVC合金																	
聚亞苯氧化物																	
尼龍																	
聚碱酸脂PC																	
聚乙怖PE																	
聚苯烯PP																	
聚苯乙烯PS																	
聚磯																	
聚氧乙烯PVC																	
苯乙桥丙烯晴																	
聚脂树脂																	
聚丙烯晴·奥龍																	

不同材料不同频率对应的振幅			
材料	15KHz	20KHz	35KHz
ABS	36-84	30-70	21-49
ASA	36-84	30-70	21-49
PC	72-120	60-100	42-70
PC/ABS	72-120	60-100	42-70
PEI	84-120	70-100	49-70
PES	84-120	70-100	49-70
PMMA	48-84	40-70	28-49
PPO	60-108	50-90	35-68
PS	36-84	30-70	21-49
PSU	84-120	70-100	49-70
PVC	48-96	40-80	28-56
SAN	36-84	30-70	21-49
CA, CAB, CAP	72-120	60-100	42-70
LCP	84-144	70-120	49-84
POM	84-144	70-120	49-84
PA	84-144	70-120	49-84
PBT	84-144	70-120	49-84
PET	96-144	80-120	56-84
PEEK	84-144	70-120	49-84
PE	108-144	90-120	63-84
PPS	96-144	80-120	56-84
PP	108-144	90-120	63-84

Company Mission
企业愿景

Making use of our innovative technology , we assist and promote more manufacturing enterprises to achieve industrial transformation and upgrading , Relying on the industrial 4.0 strategic plan , and principle of “efficiency, standard , responsibility and result”, Fu Jia is doing best to be a high-end equipment manufacturer and a strategic partner of world-class intelligent manufacturing plants.
利用企业自身创新技术，带动和协助更多生产制造企业实现工业转型升级，依托工业4.0战略计划，秉承“高效、标准、责任、结果”的经营方针，使富佳成为高端装备智造者和世界级智能制造工厂的战略合作伙伴。

Multiple invention patents, utility patents.
多项发明专利，实用专利。

Product:60% welding equipment,40% automation.
营业比例：焊接类设备60%，自动化40%。

Market:60%domestic,40%oversea.
市场分布：国内60%，国外40%。

Design System: PDM management system.
设计运用：PDM管理系统。

Quality Certificate: ISO Certificate.
品质保证：ISO认证体系。

FJ-IHA5/IHS5 系列



Parameter
参数

Model 机型	FJ-IHA5		FJ-IHS5	
Ultrasonic frequency 超声波频率	20kHz	35kHz	20kHz	35kHz
Max power 最大功率	1200W/2000W 2600W/3200W	600W/1200W	1200W/2000W 2600W/3200W	600W/1200W
Voltage 电压	AC220V,50Hz	AC220V,50Hz	AC220V,50Hz	AC220V,50Hz
Up&down stroke of the stand 机座上下行程	180mm	120mm	180mm	120mm
Working stroke 工作行程	0mm-100mm	0mm-80mm	0mm-100mm	0mm-80mm
Decrease Accuracy 下降精度	±0.01mm	±0.01mm	±0.01mm	±0.01mm
vibration Range 振幅范围	10%-100%	10%-100%	10%-100%	10%-100%
Variable speed Thrust Range 可变速推力范围	0-150kGf	0-100kGf	0-150kGf	0-100kGf
Components 主要配置	Festo Cylinder 费斯托气缸 Transducer (1 se t) 换能器 (1套) Precision guide rail 精密导轨	Festo Cylinder 费斯托气缸 Transducer (1 se t) 换能器 (1套) THK Linear module THK 线性模组	Panasonic Servo Motor 伺服马达 Transducer(1 set) 换能器 (1套) Precision guide rail 精密导轨 THK screw THK丝杆	Panasonic Servo Motor 伺服马达 Transducer(1 set) 换能器 (1套) THK Linear module THK 线性模组 THK screw THK丝杆
Advantage 机型特点	1.Intelligent circuit,auto-frequency tracking 智能电路，自动追频 2.Multiple welding modes:Time;Depth;Energy;Power 多种焊接模式：时间；深度；能量；功率 3.Welding results storage 数据储存 4.Upper and Lower limit monitoring function 上下限监控功能 5.Pressure trigger 压力触发		1.Intelligent circuit,auto-frequency tracking 智能电路，自动追频 2.Multiple welding modes:Time;Depth;Energy;Power 多种焊接模式：时间；深度；能量；功率 3.Welding results storage 数据储存 4.Upper and Lower limit monitoring function 上下限监控功能 5.Adjustable trigger mode 触发速度可调节 6.Pressure trigger mode 压力触发 7.Stage welding mode 分段焊接模式	

FJ-S/SETR 系列



Parameter
参数

Model 机型	FJ-S		FJ-SETR	
Ultrasonic frequency 超声波频率	20kHz	35kHz	20kHz	35kHz
Max power 最大功率	1200W/2000W 2600W/3200W	600W/1200W	1200W/2000W 2600W/3200W	600W/1200W
Voltage 电压	AC220V,50Hz	AC220V,50Hz	AC220V,50Hz	AC220V,50Hz
Up&down stroke of the stand 机座上下行程	180mm	120mm	180mm	120mm
Working stoke 工作行程	0mm-100mm	0mm-80mm	0mm-100mm	0mm-80mm
Decrease Accuracy 下降精度	±0.03mm	±0.03mm	±0.02mm	±0.02mm
Vibration Range 振幅范围	10%-100%	10%-100%	10%-100%	10%-100%
Variable speed Thrust Range 可变推力范围	0-150kGf	0-100kGf	0-150kGf	0-100kGf
Components 主要配置	Panasonic Servo Motor 松下伺服 Generator(1 set) 换能器 (1套) Heavy guide 重型导轨 THK screw THK丝杆	Panasonic Servo Motor 松下伺服 Generator(1 set) 换能器 (1套) THK Linear module THK线性模组 THK screw THK丝杆	Panasonic Servo Motor 松下伺服 Generator(1 set) 换能器 (1套) Precision guide rail 精密导轨 THK screw THK丝杆	Panasonic Servo Motor 松下伺服 Generator(1 set) 换能器 (1套) THK Linear module THK线性模组 THK screw THK丝杆
Advantage 机型特点	1.Intelligent circuit,auto-frequency tracking 智能电路, 自动追频 2.Multiple welding modes:Time; Depth;Energy;Power 多种焊接模式: 时间; 深度; 能量; 功率 3.Welding results storage 数据储存 4.Upper and Lower limit monitoring function 上下限监控功能 5.Adjustable trigger mode 触发速度可调节 6. Trigger mode: time, depth 6.触发模式: 时间, 深度		1.Intelligent circuit,auto-frequency tracking 智能电路, 自动追频 2.Multiple welding modes::Time; Depth;Relative Depth;Energy;Power 多种焊接模式: 时间; 深度; 相对深度; 能量; 功率 3.Welding results storage 数据储存 4.Upper and Lower limit monitoring function 上下限监控功能 5.Adjustable trigger mode 触发速度可调节 6.Pressure trigger mode(Pressure mode is suitable for products with high inconsistency and nylon PP materials, where materials with narrow melting peaks are used in combination with relative depth) 压力触发 (压力模式, 适用于高度不一致的产品及尼龙PP材质的产品, 熔断峰值窄的材料与相对深度并用) 7.Stage welding mode 分段焊接模式	



Parameter
参数

Model 机型	FJ-A		FJ-PA		FJ-AETR	
Ultrasonic frequency 超声波频率	20kHz	35kHz	20kHz	35kHz	20kHz	35kHz
Max power 最大功率	1200W/2000W/ 2600W/3200W	600W/ 1200W	1200W/2000W/ 2600W/3200W	600W/ 1200W	1200W/2000W/ 2600W/3200W	600W/ 1200W
Voltage 电压	AC220V,50Hz	AC220V, 50Hz	AC220V,50Hz	AC220V,50Hz	AC220V,50Hz	AC220V,50Hz
Up&down stroke of the stand 机座上下行程	180mm	120mm	180mm	120mm	180mm	120mm
Working stoke 工作行程	0mm-80mm	0mm-80mm	0mm-80mm	0mm-80mm	0mm-80mm	0mm-80mm
Decrease Accuracy 下降精度	±0.05mm	±0.05mm	±0.03mm	±0.03mm	±0.02mm	±0.02mm
Vibration Range 振幅范围	10%-100%	10%-100%	10%-100%	10%-100%	10%-100%	10%-100%
Components 主要配置	SMC Cylinder SMC气缸 Generator(1 set) 换能器（1套） Heavy guide 重型导轨		Festo Cylinder 费斯托气缸 Generator(1 set) 换能器（1套） Heavy guide 重型导轨		Festo Cylinder 费斯托气缸 Generator(1 set) 换能器（1套） Precision guide rail 精密导轨	
Advantage 机型特点	1.Intelligent circuit,auto-frequency tracking 智能电路，自动追频		1.Intelligent circuit,auto-frequency tracking 智能电路，自动追频 2.Multiple welding modes:Time;Depth;Energy;Power 多种焊接模式：时间；深度；能量；功率 3.Welding results storage 数据储存 4.Upper and Lower limit monitoring function 上下限监控功能 5. Trigger mode: time, depth 5.触发模式：时间，深度		1.Intelligent circuit,auto-frequency tracking 智能电路，自动追频 2.Multiple welding modes:Time; Depth;Relative Depth;Energy;Power 多种焊接模式：时间；深度；相对深度；能量；功率 3.Welding results storage 数据储存 4.Upper and Lower limit monitoring function 上下限监控功能 5.Pressure/time/distance triggering (pressure mode, suitable for products with inconsistent heights and nylon PP materials, materials with narrow melting peaks and relative depth 压力时间/距离触发（压力模式，适用于高度不一致的产品及尼龙PP 材质的产品，熔断峰值窄的材料与相对深度并用	

FJ-A / PA / AETR 系列



Parameter
参数

Model 机型	FJ-A	FJ-PA	FJ-PA
Ultrasonic frequency 超声波频率	15kHz	15kHz	15kHz
Max power 最大功率	2600W/3200W/4200W	2600W/3200W/4200W	6500W/8000W
Voltage 电压	AC220V,50Hz	AC220V,50Hz	AC220V,50Hz
Up&down stroke of the stand 机座上下行程	350-400mm	350-400mm	350-400mm
Working stoke 工作行程	0mm-100mm	0mm-100mm	0mm-100mm
Decrease Accuracy 下降精度	±0.07mm	±0.05mm	±0.03mm
Vibration Range 振幅范围	10%-100%	10%-100%	10%-100%
Components 主要配置	SMC Cylinder SMC气缸 Generator(1 set) 换能器 (1套) Heavy guide 重型导轨	SMC Cylinder SMC气缸 Generator(1 set) 换能器 (1套) Heavy guide 重型导轨	SMC Cylinder SMC气缸 Generator(1 set) 换能器 (1套) Heavy guide 重型导轨
Advantage 机型特点	1.Intelligent circuit,auto-frequency tracking 智能电路，自动追频	1.Intelligent circuit,auto-frequency tracking 智能电路，自动追频 2.Multiple welding modes:Time; Depth;Energy;Power 多种焊接模式：时间；深度；能量；功率 3.Welding results storage 数据储存 4.Upper and Lower limit monitoring function 上下限监控功能	1.Intelligent circuit,auto-frequency tracking 智能电路，自动追频 2.Multiple welding modes::Time; Depth;Energy;Power 多种焊接模式：时间；深度；能量；功率 3.Welding results storage 数据储存



Features
功能特点

※The four-index divider is adopted, which integrates preloading, assembly, ultrasonic welding and automatic discharging, reduce manpower costs. 采用四分度分割器，集成预压、组装、超声焊接、出料自动一体化，省却人手。

※Designed with the four-station concept, it is equipped with four sets of positioning fixtures, and the front and rear shells are placed at the same time, which can be automatically grabbed and assembled, with high production efficiency. 以四工位理念设计，搭载四套定位治具，同时放置前后壳，自动抓取组装，生产效率高。

※Intelligent circuit,auto-frequency tracking. 智能电路，自动追频。

Parameter
参数

Model 机型	FJSG4040
Power supply 电源	AC220V ±5%
Power 功率	3200W
Frequency 频率	20kHz
Air source 气源	5.5kgf/cm2
Amplitude/power adjustable Range 振幅范围	20-100%
Ultrasonic working stroke 超声焊接工作行程	0-80mm
Deceleration distance 减速距离	5mm
Size of Machine 设备尺寸	L1300mm*W1300mm*2100mm

Precision Ultrasonic Welding Machine
精密超声波焊接机



Advantage
机型特点

※Applied to automobile door panel,the engine cover,the tank and other auto parts.
适用于汽车门板、发动机罩、油箱等汽车零部件。

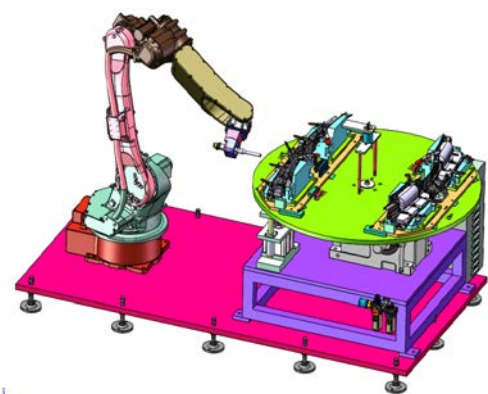
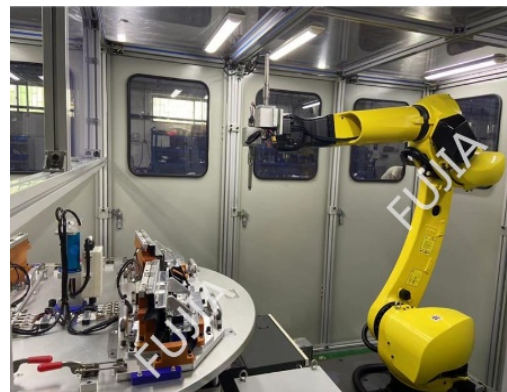
Parameter
参数

Power 功率	380V
Driving force 驱动力	Air pressue,hydraulic pressure 气压 液压
Temperature Rang 温度范围	85-260℃
Air Pressure Range 气压范围	0. 6-0. 8MPA
Machine Size 机器尺寸	L2000*W1100*H2200mm
Weld Time 焊接时间	10-60s/pcs

Welding sample
焊接样品



Flexible Ultrasonic Welding Machine
柔性超声波焊接机



Application
产品应用

Automotive, 3C Electron industry, Medical industry, Household industry, Packaging industry, Toys industry, Non-wovens/textiles and so on.
汽车行业, 3C电子行业, 医疗行业, 家居用品行业, 包装行业, 玩具行业, 无纺布/纺织行业等。

Welding sample
焊接样品



Parameter
参数

Input Power 输入电源	380V 50Hz
Total Power 总功率	10KW
Repearabitly 重复精度	±0.05
Tuentable Diameter 转盘尺寸	D1300mm
Fixture Dimension 夹具尺寸	L1000*W300mm
Machine Dimension 机器尺寸	L3000*W3000*H1950mm
Total Weight(ton) 总重量	2T

Automatic Ultrasound and Assembly Machine
自动超声组装机



Features
功能特点

※The six-index divider is adopted, which integrates preloading, assembly, ultrasonic welding and automatic discharging, reduce manpower costs.
采用六分度分割器，集成预压、组装、超声焊接、出料自动一体化，省却人手。

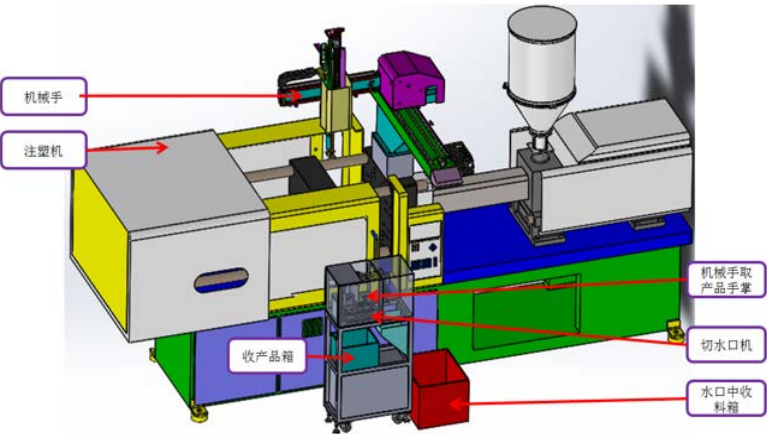
※The design concept of six workstations, automatic feeding, simultaneous placement of front and rear shells, connectors, automatic gripping and assembly, high production efficiency.
以六工位理念设计，搭载自动上料，同时放置前后壳，连接件，自动抓取组装，生产效率高。

※Intelligent circuit,auto-frequency tracking.
智能电路，自动追频。

Parameter
参数

Model 机型	FJ-5060
Power supply 电源	AC220V ±5%
Power 功率	6000W
Frequency 频率	50Hz
Amplitude/power adjustable Range 振幅范围	20-100%
Ultrasonic working stroke 超声焊接工作行程	0-100mm
Deceleration distance 减速距离	5mm
分割器精度	±15
Size of machine 设备尺寸	4125(L)X1600(W)X1950(H)

Ultrasonic Plastic De-gating Machine
超声波切水口机



Theoryz
原理

Using high-frequency ultrasonic vibration can quickly remove excess plastic nozzle material and separate plastic products. After injection molding of plastic products, it takes time and effort to cut unnecessary water openings. Using the ultrasonic nozzle cutting process, the nozzles of plastic products can be quickly separated, greatly improving production efficiency, instantly eliminating dozens of products, with extremely high efficiency.

利用超声波高频振动，可以快速去除多余的塑料水口料，分离塑料制品。塑料产品注射成型后，需要花费时间和精力来切断不必要的水口。采用超声波切水口工艺，塑料制品的水口可以快速分离，大大提高了生产效率，瞬间消除了几十个产品，具有极高的效率。

Features
功能特点

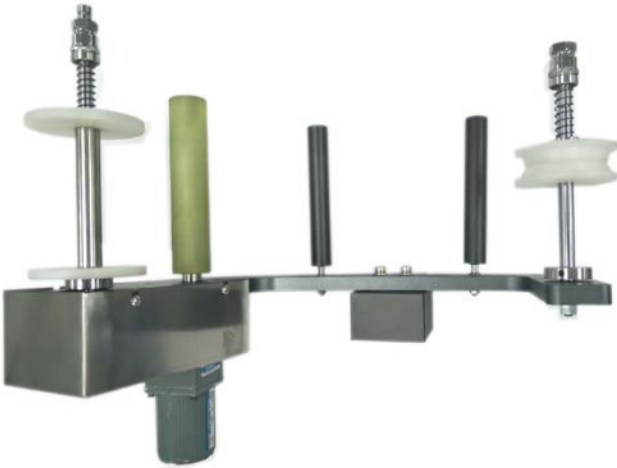
- ※High efficiency, fast, and reduce manpower costs.
效率高、速度快、省却人手。
- ※Flexible and suitable for different size of product.
灵活性大，可适合不同尺寸的产品。
- ※It can be used with the injection molding machine.
可与注塑机配套使用。
- ※Apply to injection molding and casting products.
适用于注塑、铸造件水口的切除。
- ※Clean cross-section, and easy automatic conversion.
截面清洁、易于转换。

Parameter
参数

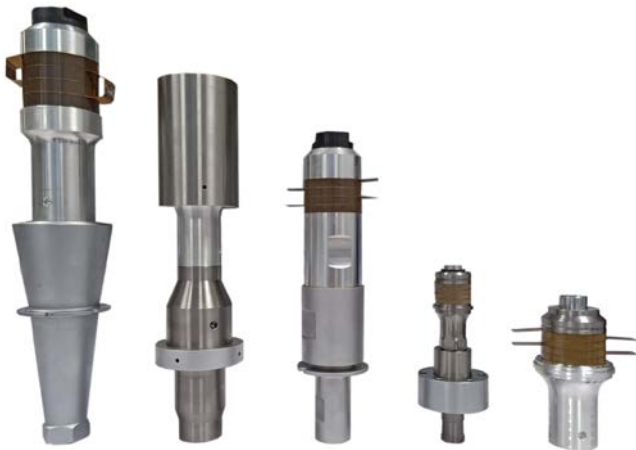
Model 机型	FJ-A
Ultrasonic Frequency 超声频率	20kHz
Power 功率	1200W/1800W/2600W/ 3200W
Voltage 电压	AC220V, 50Hz
Amplitude Range 振幅范围	10%-100%
Dimension 外形尺寸	900*520*1430mm

Film Roller mechanism specifications
卷膜机构规格

The max width of installing film 安装薄膜的最大宽度	165mm
The max length of moving film 薄膜移动的最大长度	150mm
Size of Film Roller 卷膜尺寸	800*270*340mm



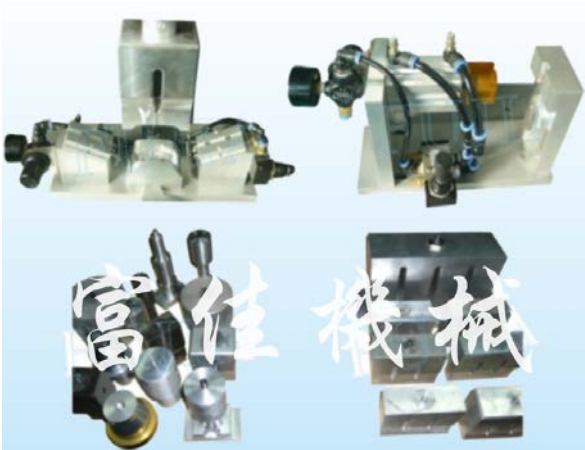
Film Roller
卷膜机构



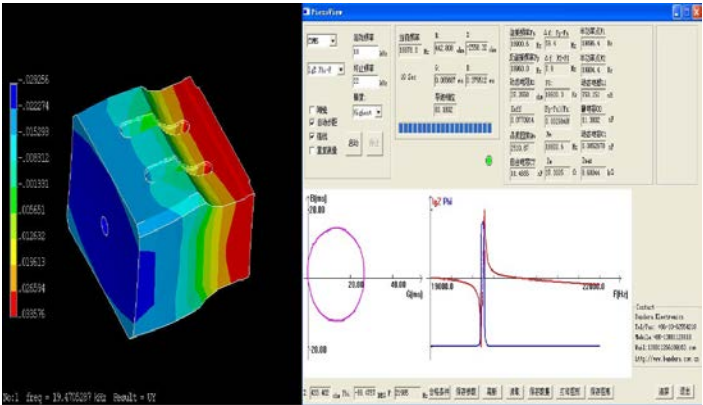
Ultrasonic transducer
超声波换能器



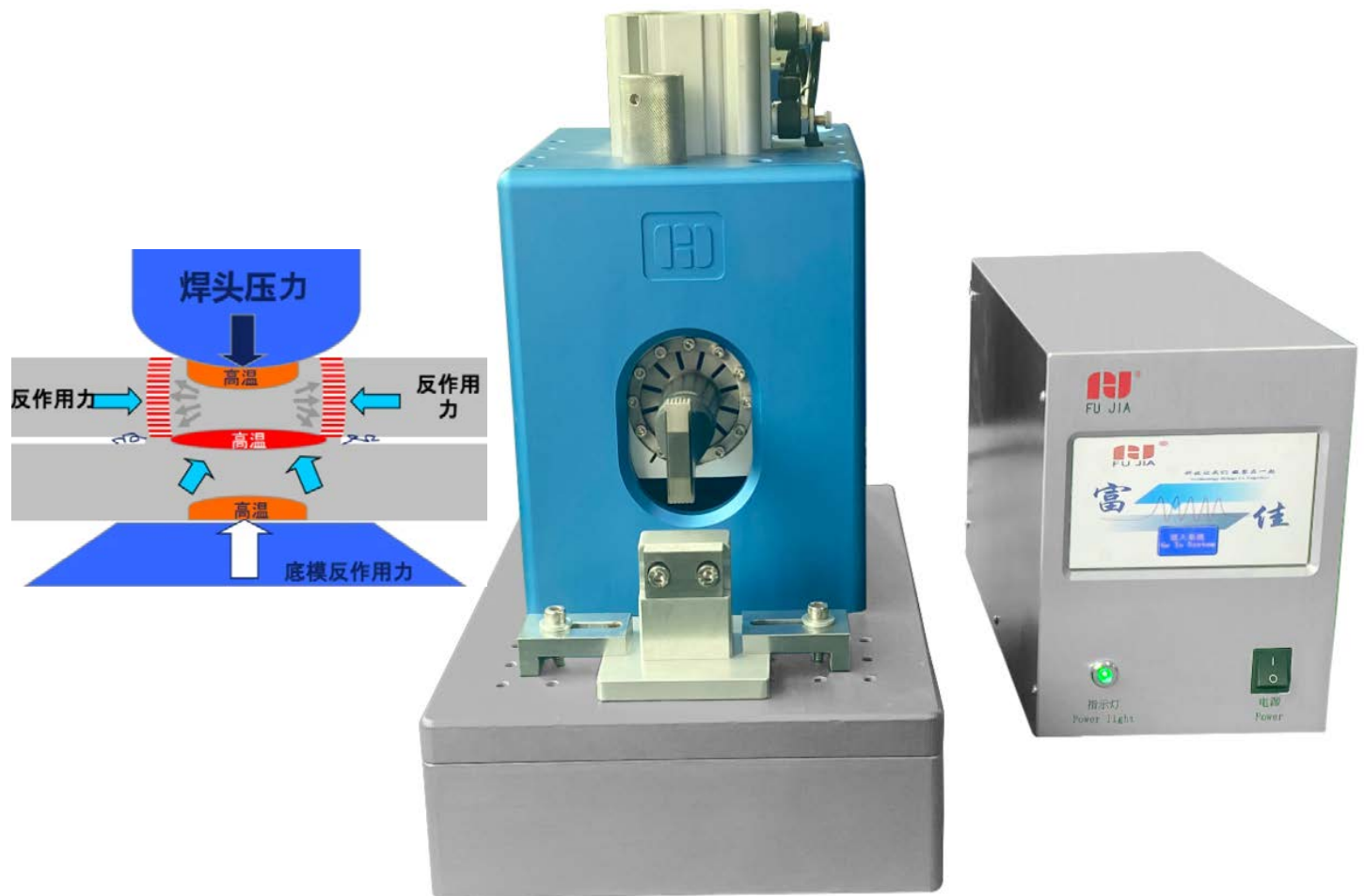
Sound enclosure
隔音箱



Ultrasonic fixture
超声波模具



Ultrasonic Mould Frequency Test Chart
超声模具频率测试波动图



Welding Theory

焊接原理

Using high frequency vibration wave to the two metal surfaces, which need to be welded. With pressure, the fusion between two metal surfaces from the molecular layer. It has advantages of high speed, energy saving, high fusion strength, good electrical conductivity, no spark, and close to the cold state processing, suitable for the variety of automated production.

利用高频振动波传递到每个需要焊接的金属表面，在加压的情况下，使两个金属表面相互摩擦而形成分子层之间的熔合，其优点具有快速，节能，熔合强度高，导电性好，无火花，接近冷态加工，适用配合自动化生产。

Advantage

特点

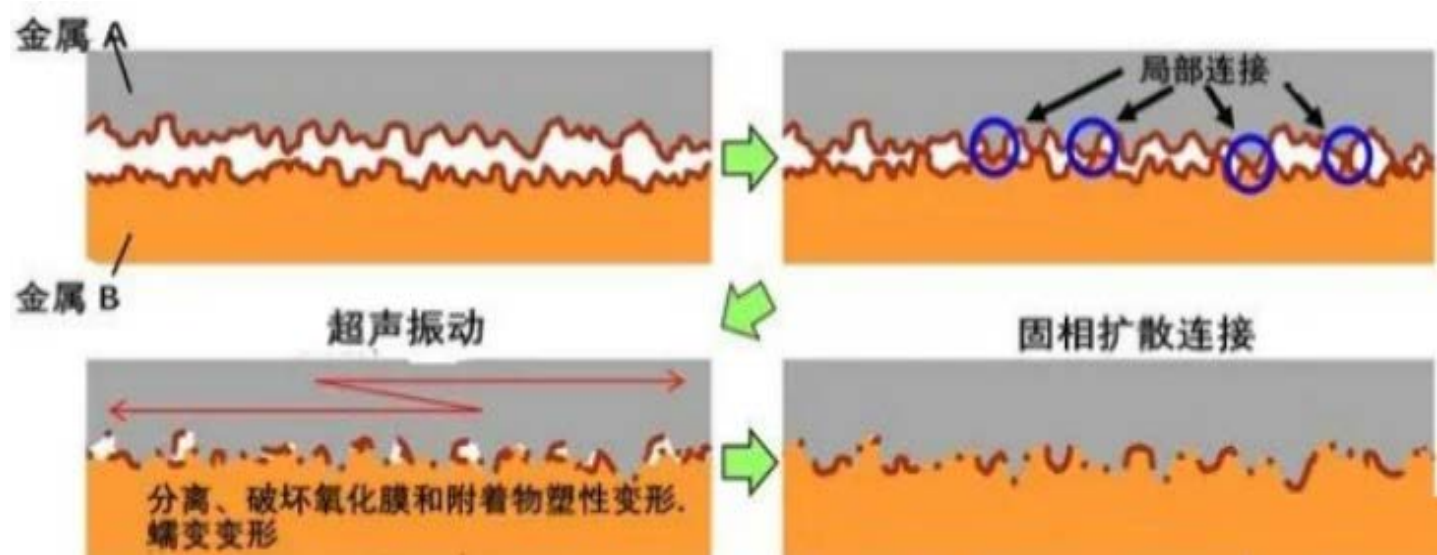
※It adopts pneumatic drive (cylinder).
采用气动驱动（气缸）。

※Original piezoelectric ceramic transducer from Germany.
德国原装压电陶瓷换能器。

※Depth mode, time mode, energy mode and pressure trigger mode.
深度模式、时间模式、能量模式、压力触发模式。

※The automatic frequency compensation circuit, the Welding results storage and it can be stored out.
频率自动补偿电路，数据可以储存导出。

Schematic diagram of ultrasonic metal welding connection
超声波金属焊接连接示意图



Parameter
参数

Model 机型	Frequency 频率	Power 功率	Weight 重量	Application 应用范围
FJMW2020	20kHz	2000W	70-90KG	Lithium battery, electronic products, household appliances and automobile manufacturing etc. 锂离子电池、电子产品、家用电器及汽车制造等各种行业。
FJMW2030	20kHz	3000W	70-90KG	
FJMW2042	20kHz	3000W	70-90KG	
FJMW2055	15/20kHz	5500W	70-90KG	
FJMW2060	15/20kHz	6000W	70-90KG	
FJMW2080	15/20kHz	8000W	70-90KG	

Welding sample
焊接样品





Features

功能特点

※Multi Functions Settings,Matches pneumatic/manual welding head,supply several welding schedule.

多功能设定。能独立配合气动焊头或手动焊头使用，提供重复焊接及多种焊接计划设定，方便快捷。

※Double Pulse, reduce spark effectively,especially for eletroplating workpiece.

双脉冲设定。有效减少火花，提高焊接质量，对有镀层的金属焊接效果更为明显。

※The maximum output current is displayed on the screen,convenient for users to set. 显示最大输出电流：方便使用者进行输出能量调节。

※Obvious effect for oxidized and rough metals due to ascending wave. 上升波形。可以对表面有氧化或连接面不平的金属提升焊接效果。

※Exchange the electrodes automatically after welding,so that it reduces the pressure of eletrodes.

自动电极正负替换设定：每次焊接放电后反转电流的正负极，在平衡焊接时，可以平衡正负极的负担

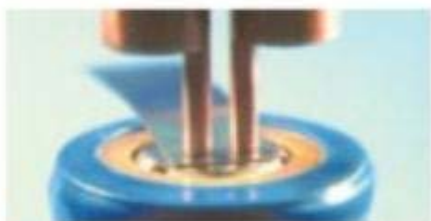
※Series connection function: the welding programs are arranged in series automatically. 串联功能。可以把数个焊接计划串联自动进行。

※Automatic welding buttons.Remotely control the functions of emergency stop.Welding suspend,welding schedule change and so on.

自动焊接按钮。可以通过接口，外部操作，紧急停止、焊接终止、焊接计划切换等功能。

Welding Sample

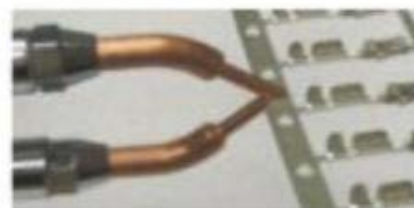
焊接样品



電池焊接
Battery Welding



導電端子焊接
Terminal Welding



帶狀端子焊接
Terminal Bar Welding

Automatic Welding for Lithium Battery
锂电池自动碰焊机



Application:
应用领域

Be suitable for all kinds of lithium battery.
多组式电池组件，电动工具充电电池。

Features
功能特点

- ※Six servo motors and precision ball screw.
6组伺服电机加精密滚珠丝杆，精密导轨。
- ※High-frequency electric resistance welding.
高频电阻焊。
- ※Cold air guns,speed the welding up.
冷气枪，加快焊接速度。
- ※Automatically grind welding head.
自动磨焊头。

Power 电源	AC220V,50Hz
Air pressure 气压	0.5-0.7Mpa
Welding pressure 焊接压力	6-20Pound
Productivity 产能	2s/Pcs
Size (m) 尺寸	1.1(L)*1.1(W)*1.8(H)
Weight 重量	400KG

AWTC Welding Machine
线束整形压方自动焊接机 □



Product Introduction
产品介绍

The automatic welding equipment for wire harness shaping and pressing is designed to improve the automation production level of the wire harness processing industry. This device combines precision mechanical design technology, intelligent robot control technology, machine vision technology, and computer technology, breaking through difficulties such as automatic wire harness shaping, pressing, welding and so on.

线束整形压方自动焊接设备，专为提高线束加工行业的自动化生产水平而设计。该设备结合了精密机械设计技术、智能机器人控制技术、机器视觉技术和计算机技术，突破了线束自动整形、压方和焊接的关键技术难点。

Advantage
优势

- ※High automation , reduces manual operations and improves production efficiency.
自动化程度高：减少人工操作，提高生产效率。
- ※Technological Innovation, Integrating multiple advanced technologies to ensure welding quality.
技术创新：集成多项先进技术，保证焊接质量。
- ※Energy saving and efficient, Compared with traditional processes, it has lower energy consumption and higher efficiency.
节能高效：与传统工艺相比，能耗更低，效率更高。
- ※Widely applicable, suitable for various wire harness processing, and with good market prospects.
应用广泛：可适用于多种线束加工场景，具有很好的市场前景。

Application
应用

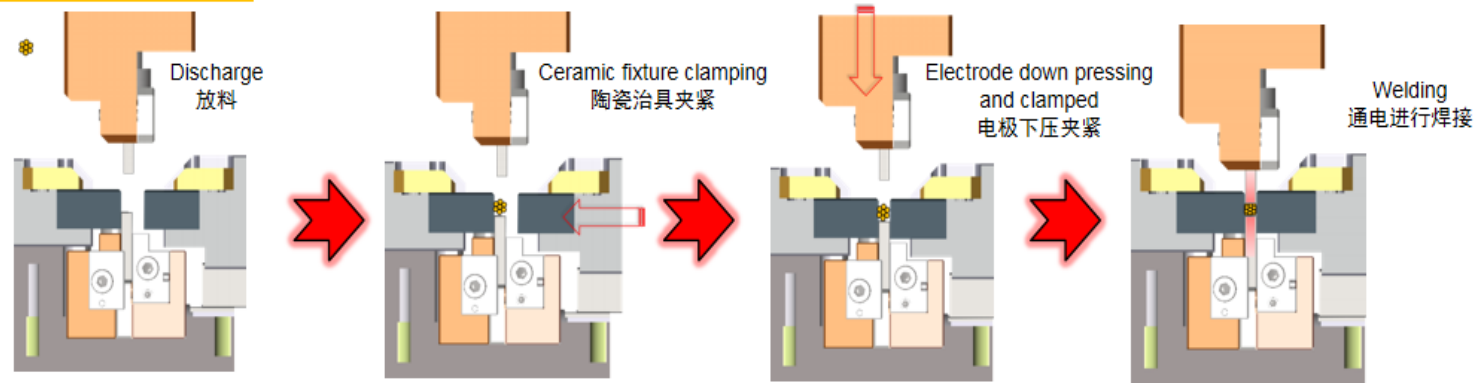
New energy, Automotive industry, Electrical industry, Precision electronic equipment, Aerospace industry ,Medical equipment manufacturing, Automated production lines
Special welding materials and so on.
新能源领域、汽车电子行业、电气行业、精密电子设备、航空航天领域、医疗设备制造、自动化生产线、特殊材料焊接等。

- ※自动整形与压方: 设备能够自动完成线束的整形和压方工作, 确保线束形状的标准化和统一性。
Automatic shaping and pressing: The equipment can automatically complete the shaping and pressing of the wire harness, ensuring the standardization and uniformity of the wire harness shape.
- ※高精度焊接: 采用先进的焊接技术, 实现高精度焊接, 提高线束连接的可靠性。
High precision welding: Advanced welding technology is used to achieve high-precision welding and improve the reliability of wire harness connections.
- ※智能控制: 集成智能控制系统, 实现生产过程的自动化控制, 减少人工干预。
Intelligent control: Integrating intelligent control systems to achieve automated control of the production process and reduce manual intervention.
- ※柔性配置: 设备设计灵活, 可根据不同的生产需求进行快速调整和配置。
Flexible configuration: The device design is flexible and can be quickly adjusted and configured according to different production.

Parameter
参数

◆ 电源 Power supply:	AC 380V/50Hz
◆ 额定功率 Rated power:	16 KW
◆ 设备尺寸规格 Size specifications:	L1650*W2300*H2000mm
◆ 焊接电源 Welding power supply:	IS-2200CR
◆ 焊接监测仪 Welding monitoring instrument:	MM-400B
◆ 最大压方线束 Maximum pressure square wire harness:	120mm ²
◆ 最大压力 Fmax:	20 KN
◆ 驱动&加压方式 Drive&Pressure Mode:	气缸驱动&加压
◆ 机头重量 Head weight:	350 KG
◆ 产能 Capacity:	120 pcs/H
◆ 压方焊电极材质 Material of electrode for square welding:	纯钨/钨钨
◆ 钎料焊电极材质 Solder welding electrode material:	TZM(钼锆钛合金)
◆ 电极座/电极夹材质Material of electrode holder/clamp:	铬铜CuCr/铬钨铜CuCrZr
◆ 过程监控 Process monitoring:	搭载焊接数据采集系统
◆ 触发控制 Trigger control:	机头搭载压力及位移传感器
◆ 冷却方式 Cooling method:	水冷内循环系统
◆ 功能配备 Functional equipment:	手动压方/自动钎料焊接/手动铜板焊接

Process Description
压方焊接过程说明

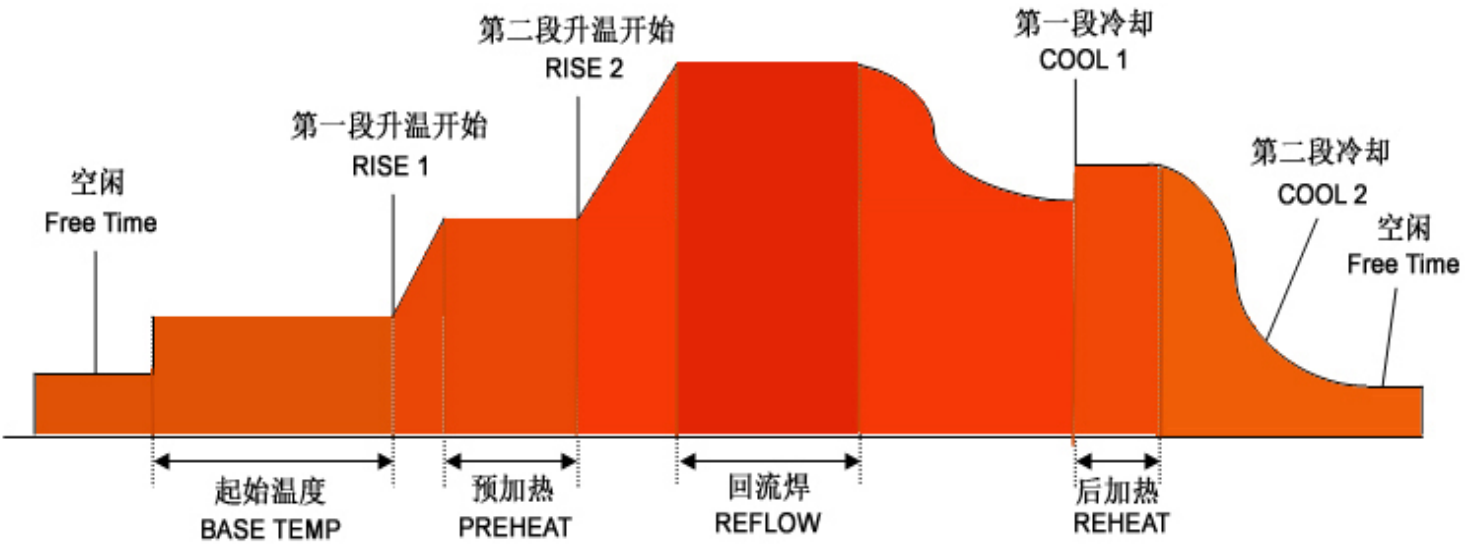


Welding Theoryz
焊接原理

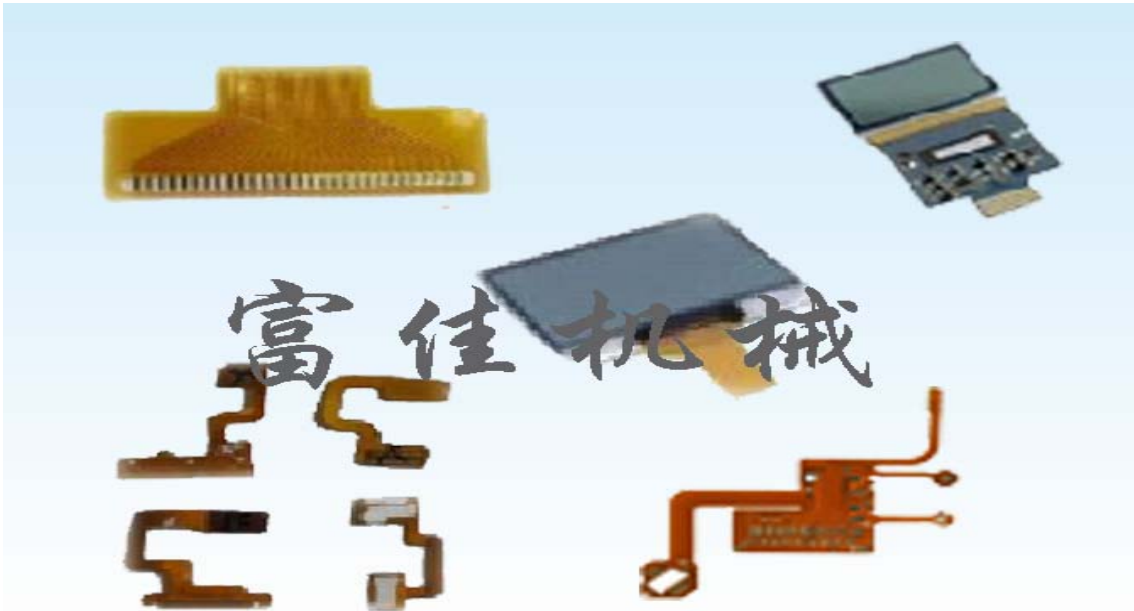
The temperature is detected by the thermocouple on the heating electrode, and the temperature is controlled by the welding power source. In order to obtain the desired waveform, when the temperature rises to the melting point of the solder, the two objects which are connected with the solder are fused together.

通过加热电极上安装热电偶，对温度进行实时监测，并通过焊接电源，进行温度控制，从而可以获得所需的波形。当温度升到焊锡的熔点后，与之相接触的两个物体熔接在一起。

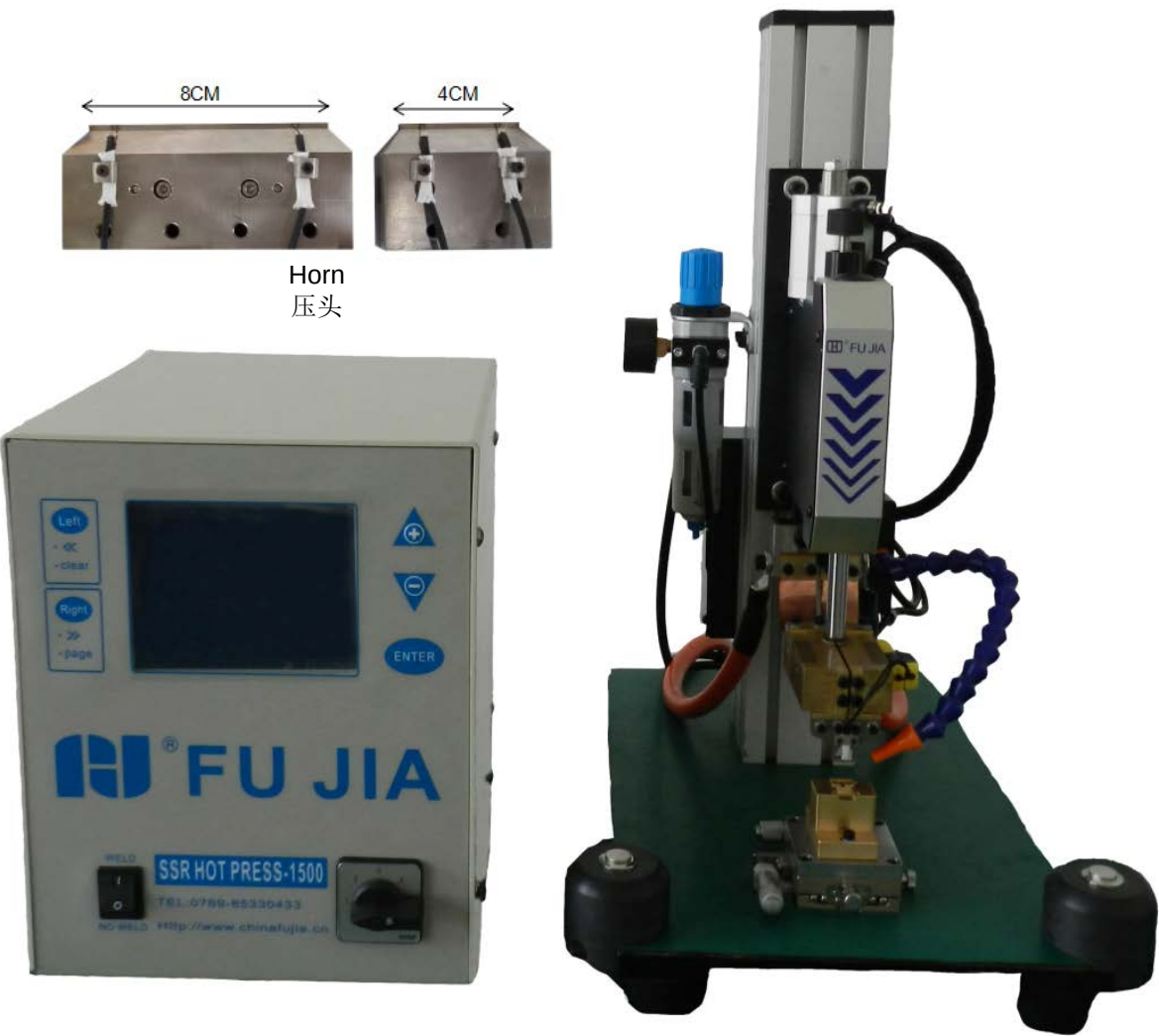
Output temperature waveform
输出温度波形



Welding sample
焊接样品



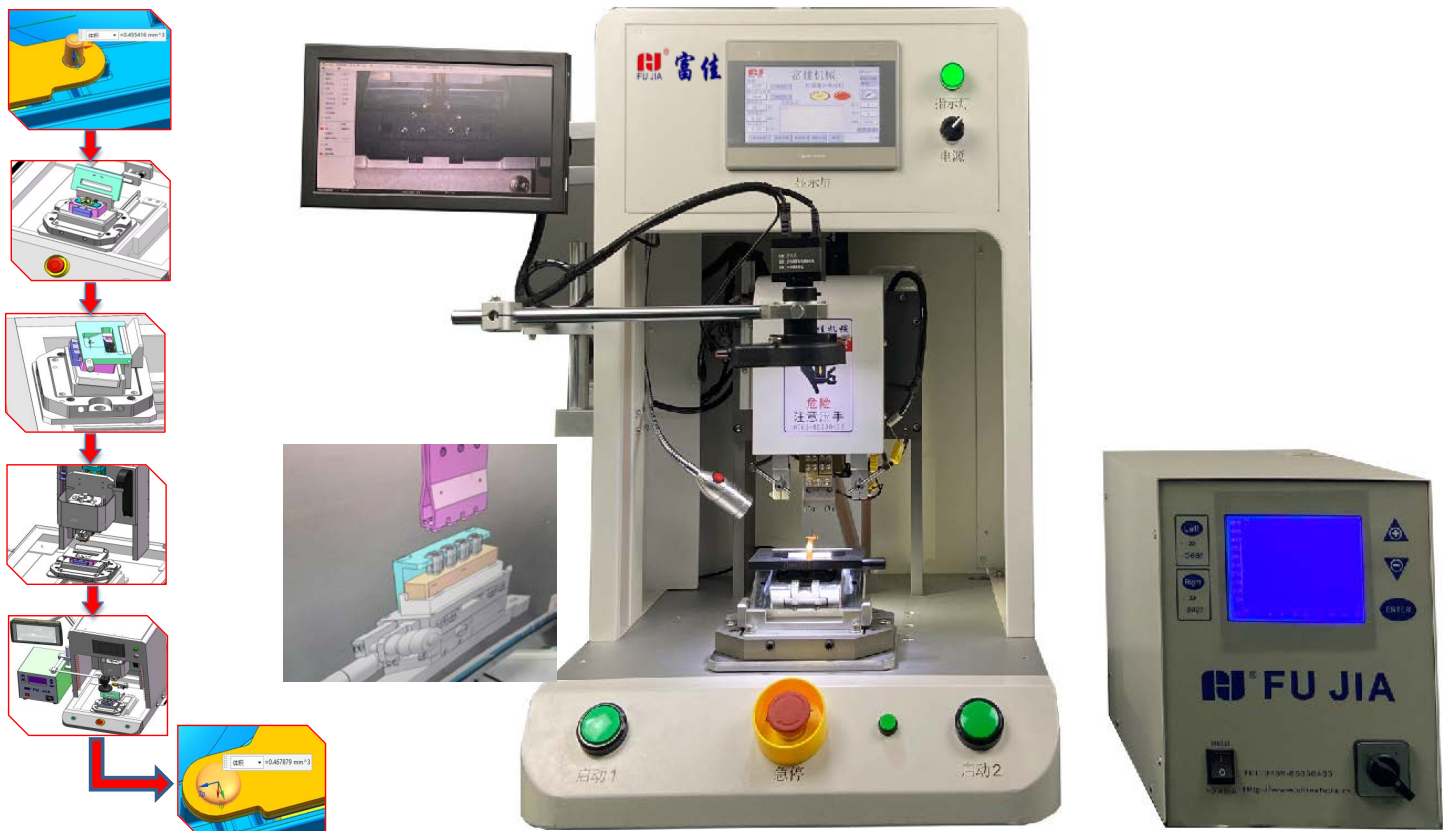
Hot Bar Welding Machine
Hot Bar 焊接机



Para
参数

Model 机型	FJ-HP-1500	FJ-HP-2000	FJ-HP-4000
Power 功率	AC220V	AC220V	AC220V
Circuit Breaker Capacity 断路器容量	15A	20A	40A
Secondary Voltage 次级电压	AC2.4	VAC5	VAC8
Temperature Rang 温度范围	50°C-650°C	50°C-650°C	50°C-650°C
Cooling Type 冷却方式	Air Cool 风冷	Air Cool 风冷	Air Cool 风冷
Air Pressure Range 气压范围	0.3MPA-0.6MPA	0.3MPA-0.6MPA	0.6MPA
Cylinder Stoke 气缸行程	25mm	25mm	25mm
Elevated Pressure Range 加压范围	4N	4-10N	4-12N

Pulse Welding Machine
脉冲热压机



Pulse Welding Thoery
脉冲焊接原理

Pulse heating is the heating and welding method of the filter material and the rubber part through the specially designed heating head. It is the use of pulse current through the metal (titanium) and other high resistance material generated by the Joule heat. At the same time, a heat spot is connected to the front end of the heating nozzle, and the generated electric power is fed back to the control power supply in real time to ensure the correctness of the welding temperature. And use a servo motor to accurately control the degree of welding.

脉冲加热是利用脉冲电流，流过金属（钛）等高电阻材料时产生的焦耳热，通过特定设计的加热头，将过滤材料与胶件去加热焊接的方式。同时在加热咀的前端连接有热电偶、由此而产生的起电力实时反馈回控制电源来保正设定焊接温度的正确性。並且用伺服马达，精確控制熔接度。

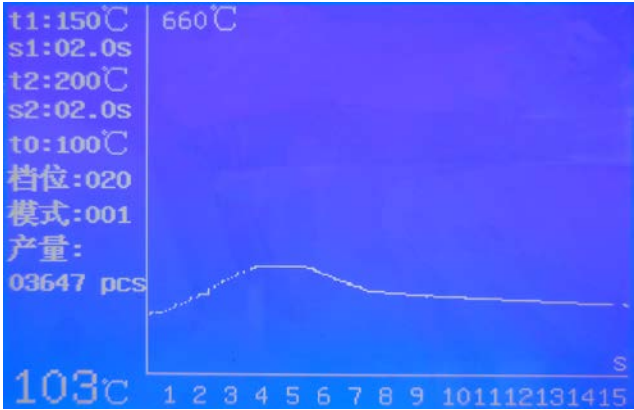
Features
功能特点

- ※The welding mode is one out one.
一出一一的焊接模式。
- ※Pluse Heating, Titanium Alloy Pressure Head, Fast Heating, Several Segment Heating.
脉冲加热，配钛合金压头，实现快速加热。
- ※Real-time monitoring of temperature change of heat press head through temperature curve.
通过温度曲线实时监控热压头温度变化。
- ※CCD amplification display function to auxiliary judgment of heat melting effect.
CCD放大显示功能，辅助判断热熔效果。

Parameter
参数

Working Power 工作功率	1500W
Welding Pressure 焊接压力	0.5-0.7Mpa
Up-down Stroke Accuracy 上下行程精度	±0.02mm
Cycle Time 熔接周期	5-8s

Mesh/Membrance Welding Machine
网膜焊接机



Temperature Chart
温度曲线图



Welding sample
焊接样品



Features
功能特点

- ※The welding mode is one out one.
一出一一的焊接模式。
- ※Titanium Alloy Pressure Head
钛合金压头
- ※Real-time monitoring of temperature change of heat press head through temperature curve.
通过温度曲线实时监控热压头温度变化。
- ※CCD amplification display function to auxiliary judgment of heat melting effect.
CCD放大显示功能，辅助判断热熔效果。

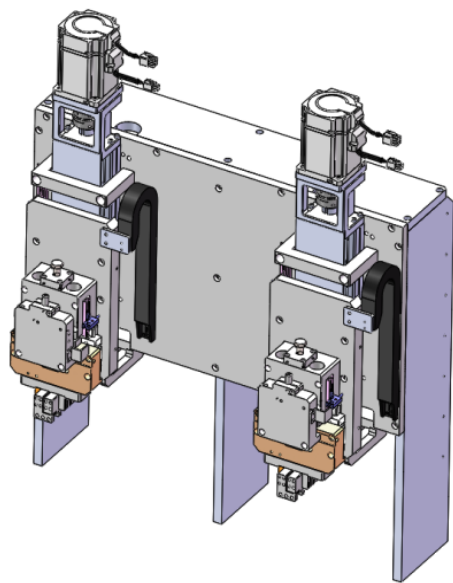
Application
产品应用

Electron industry 电子行业	Earphone 耳机
Medical industry 医疗行业	Blood filter 血液过滤器
Auto industry 汽车行业	Automotive lighting 车灯
Commodity industry 日用品行业	Electric toothbrush 电动牙刷

Parameter
参数

Power 电源	AC 220V/50Hz
Working Power 工作功率	1000-8000W
Welding Pressure 焊接压力	0.5-0.7Mpa
Up-down Stroke Accuracy 上下行程精度	±0.02mm
Cycle Time 熔接周期	5-8s
Axis Z Stroke Length Z轴行程	0-90mm

Double-position Mesh/Membrance Welding Machine
双工位网膜焊接机



Pressure trigger position
压力触发装置



Product Introduction
产品介绍

The machine use double-position welding,High utilization rate,Applied to welding of various products.The motion axis adopts servo modular control with high repetition accuracy. The fixture adopts a precision micrometer platform, which is visual and convenient for adjustment.
采用双工位平台焊接，利用率高、适用多种产品焊接。运动轴采用伺服模组化控制，重复精度高。治具采用精密千分尺平台，可视化、方便调节。

Features
功能特点

- ※Use double-position welding,High utilization rate,Applied to welding of various products.
利用率高：双工位单独控制，可焊接多款产品。
- ※High positioning accuracy, repetition accuracy: ±0.01MM.
定位精度高，重复精度：±0.01MM。
- ※Modular design, rapid replacement of fixture.
模块化设计，快速更换夹具。
- ※Applied to welding of various products.
兼容性好：兼容多行业产品焊接。

Parameter
参数

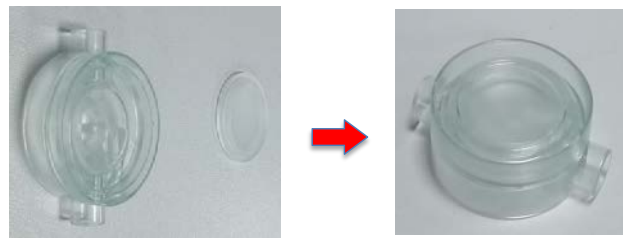
Power 电源	AC 220V/50Hz
Working Power 工作功率	1000-8000W
Welding Pressure 焊接压力	0.5-0.7Mpa
Up-down Stroke Accuracy 上下行程精度	±0.02mm
Cycle Time 熔接周期	5-8s
Axis Z Stroke Length Z轴行程	0-90mm
Production capacity 产能	3-8 s/pcs

Single-position servo Membrane welding machine (Medical product)
单工位伺服网膜焊接机(医疗用品)



The machine main components material is 304 stainless steel
机器的主要结构件为304不锈钢材质

Welding sample
焊接样品



Parameter
参数

Model 机型	FJ-5035
Power 工作功率	1000-8000W
Welding Pressure 焊接压力	0.5-0.7Mpa
Up-down Stroke Accuracy 上下行程精度	±0.02mm
Cycle Time 熔接周期	5-8s
Axis Z Stroke Length Z轴行程	0-90mm
Production capacity 产能	3-8 s/pcs

Heat Plate Plastic Welding Machine
热板焊接机



Welding Sample
焊接样品

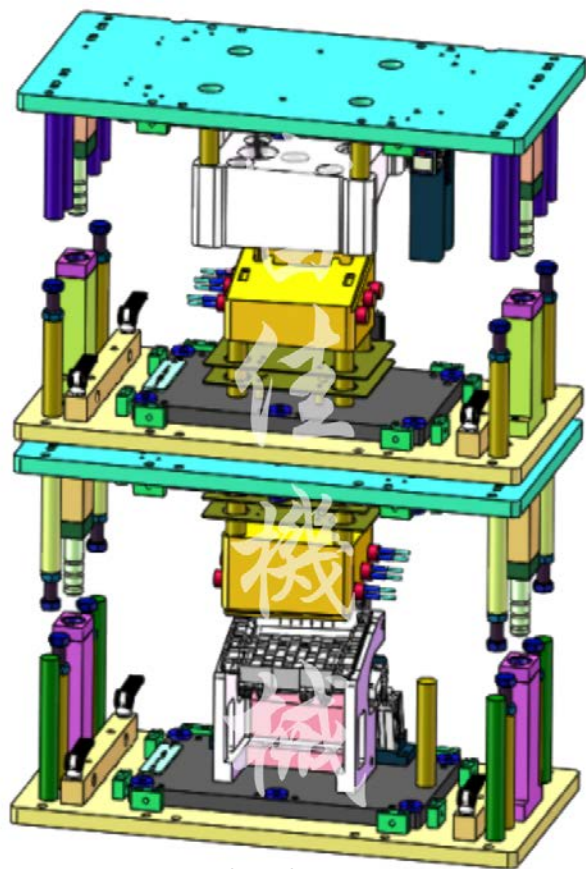


Application
应用

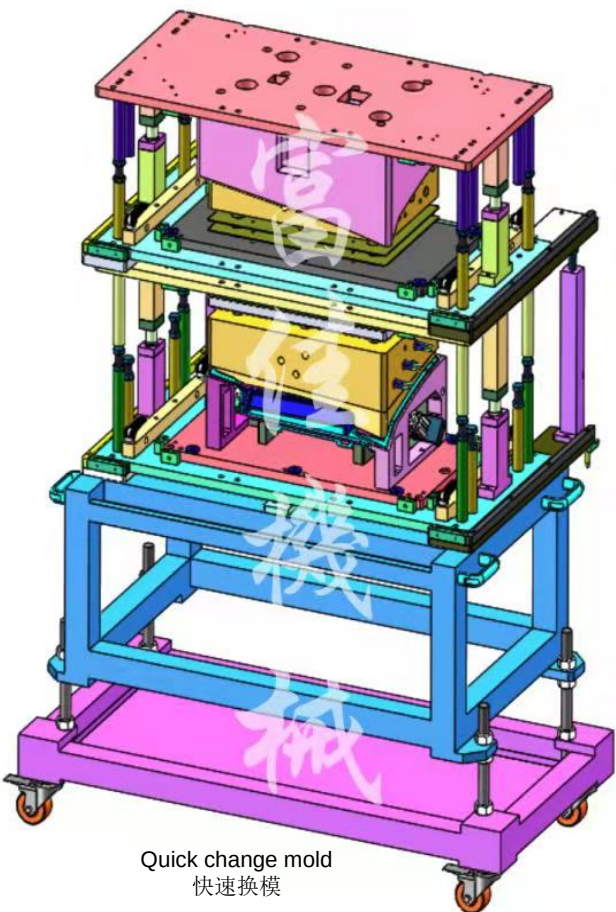
- ※ Automobile -- automotive upholstery,air valves,automotive radar,air filter.
汽车行业 -- 汽车内饰件、气阀、汽车雷达、空气过滤器等。
- ※ Medical--blood analyser,fluid containers, etc.
医疗器材 -- 血液分析仪、液体过滤槽等。
- ※ Household--steam iron water tank,large size lamp-chimney,shower head.
家电产品 -- 蒸汽熨斗水箱、大型灯罩、花洒喷头。
- ※Printing supplies- ink cartridge,toner cartridge.
打印耗材 -- 墨盒及碳粉盒。

Adaptive
适用材料

ABS	ASA	POM	PA
PBT	PC	PC/ABS	PC/PBT
PC/PBT	PE	PET	PMMA
PPO	PPS	PP	PS



Universal
通用型



Quick change mold
快速换模

Machine Parameters
机器参数

Model 机型	Universal 通用型			Quick change mold 快速换模	
	FJR300-B	FJR400-B	FJR500-B	FJR600	FJR700
Weight(ton) 重量 (吨)	1	1.2	1.5	2	2.5
Dimension(mm) 外形尺寸	L1000*W1200*H1800	L1300*W1500*H2100	L1300*W1600*H2200	L1550*W1600*H2800	L2400*W1800*H3600
Mould Installation Size(mm) 模板安装尺寸	L450*W300	L550*W400	L550*W500	L750*W400	L1400*W600
Upper mould stroke(mm) 上模板行程	180	250	250	500	500
Lower mould stroke(mm) 下模板行程	180	250	250	400	400
Heat plate stroke(mm) 热模板行程	400	500	500	500	500
Power (kw) 功率	16	16	18	30	90
Input Power 输入电源	380V 50Hz				
Drive mode 驱动方式	Pneumatic Control/Hydraulic Control/Servo Control 气动/油压/伺服				



Welding sample
焊接样品



Infrared Plastic Welding Theory
红外线熔接原理

In a non-contact manner, a focused infrared beam transmits heat energy to the targeted weld area, Under the action of infrared energy, the plastic surface is rapidly heated and plasticized. After the temperature reaches the welding requirements, the cylinder or servo motor will push the plastic welding surface to generate certain pressure, which then allowed to re-solidify and weld the two components tightly.

采用非接触方式，聚焦的红外光束将热能传送到材料被照射部位表面。塑料表面在红外能量作用下快速升温加热被塑化，表面温度达到焊接要求后，配合气缸或伺服电机推动塑料焊接面产生一定的压力，实现两部件间的紧密熔接。

About Infrared
红外线应用

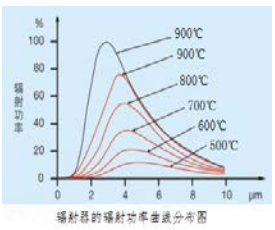
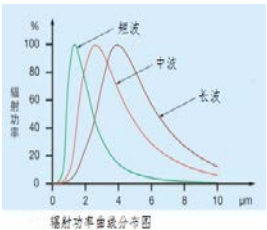
Infrared radiation is the term used to describe the emission and transmission(propagation) of electromagnetic waves within the spectral range above visible light from 0.7 μm up to around 80 μm . This emission and transmission of the electromagnetic waves is associated with the specific, directional transport of energy. The transmission of energy does not require the transport medium and is therefore also possible in the vacuum.

红外线辐射是指波长范围在0.7 μm 到80 μm 之间的电磁波的发射和传播。其发射和传送过程中伴随着明显的定向能量传播。红外线辐射能的传输无需交换媒介，即使在真空中也可以传输。

归 类	波 长
微波	100 μm
红外射线	10 μm
可见光	1 μm
紫外线	0.1 μm

Infrared radiation are classified according to their wavelength maximum of the spectral radiant power into short, medium and long-wave radiators. In general, the higher the temperature of a radiator, the shorter the wavelength of the radiation. The medium and long-wave radiators, wavelength range from 2-10 μm , are often used in practice. Temperature range from 500 $^{\circ}\text{C}$ –900 $^{\circ}\text{C}$.

根据其峰值波长的大小，红外线辐射器可分为短波、中波、长波辐射器三种，通常，辐射器的温度越高，其射线的波长越短，在实际应用中，一般使用中波和长波辐射器，波长2-10 μm 。温度为500 $^{\circ}\text{C}$ 至900 $^{\circ}\text{C}$ 之间。



Advantages of infrared Plastic Welding
红外线熔接特点

※Energy-saving and environment friendly, no contamination.
环保节能，无污染。

※Fast heat up speed and accurate temperature control (+/- 1 $^{\circ}\text{C}$) .
升温迅速，温控精准 (+/- 1 $^{\circ}\text{C}$) 。

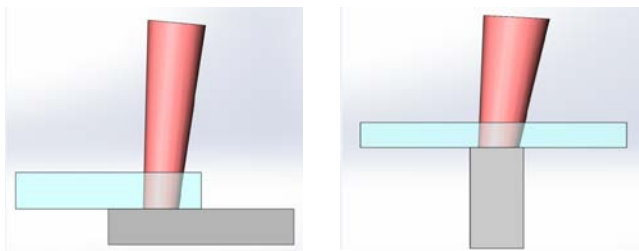
※Non-contact heat input welding with high temperature permeability.
非接触性焊接，温度渗透性高。

※High joining strength, clean welding area, no flash, no loose particle, no damage to the product.
拉伸强度高，焊接区域干净、无烟、无毛刺及粉尘。

※low maintenance cost, extra long infrared radiator life time (up to around 20K-60K hrs).
维护成本低，红外线辐射器使用寿命超长（约2万至6万小时）。

※Ideal for most common thermoplastics materials, especially Polycarbonate(PC), Polyacetal(POM), Polyamid(Nylon, PA), Polypropylene(PP).
适合多数热塑性材料，如聚碳酸酯（PC）聚甲醛（POM）聚酰胺（尼龙，PA）聚丙烯（PP）。

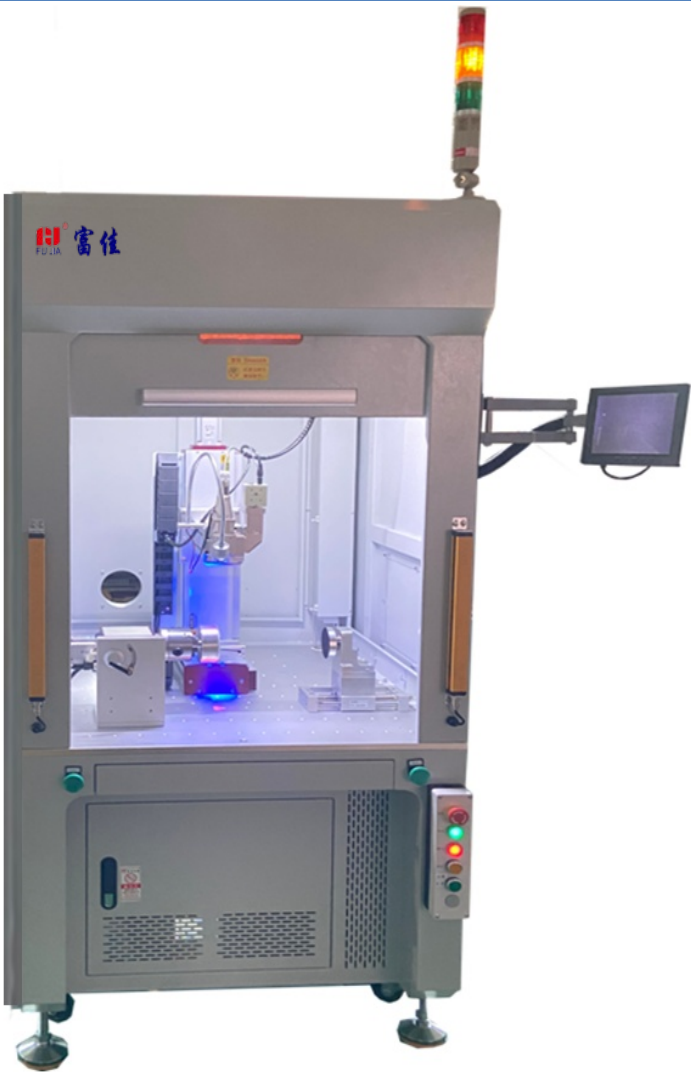
Interface mode of laser welding
激光焊接的接口方式



Stacking interface
叠接接口

T-shaped interface
T型接口

Welding sample
焊接样品



Principles of Laser Welding
激光熔接原理

Laser welding is the efficient and precise welding method that utilizes high-energy density laser beam as a heat source. Laser plastic welding is also called laser penetration welding.
激光焊接是利用高能量密度的激光束作为热源的一种高效精密焊接方法。激光塑料焊接又叫激光穿透焊接。

Features
功能特点

- ※ Non-contact welding.
非接触性焊接。
- ※ No vibration generated.
无振动产生。
- ※ High welding accuracy.
焊接精度高。
- ※ No dust or overflow.
无粉尘无溢胶。
- ※ High welding strength.
焊接强度高。
- ※ Easy to automate integration and mass production.
易于自动化集成与批量生产。

Parameter
参数

Power 电源	AC220V ± 10%, 50/60Hz
Laser wavelength 激光波长	915nm
Fiber optic interface 光纤接口	D80
Fiber core diameter 光纤纤芯直径	200um
Aiming and positioning 瞄准定位	With red light indication 带红光指示
Cooling method 冷却方式	forced air cooling 风冷

The Theory Of High-frequency Machine 高周波原理

Stable frequency

This machine complies strictly with the regulations of CISPR. It adopts the 27.12/40.68 MHZ industrial wave-band and with a design of a frequency stabilizer and frequency magnetism leaking onroller, giving tiny affection to other equipment.

Spark Suppression

The easy-adjusted coherence machine can be used in output power of this machine. The vibration current can be set up in according to the size machine and its thickness, thus the equality of welding quality of the products can be guaranteed.

Safety

An over-voltage and over current gadget is used in this machine. It can cut over voltage automatically for protecting vibration tube and rectifier and avoid the shifting of frequency which causes incorrect operating at the same time.

周率穩定

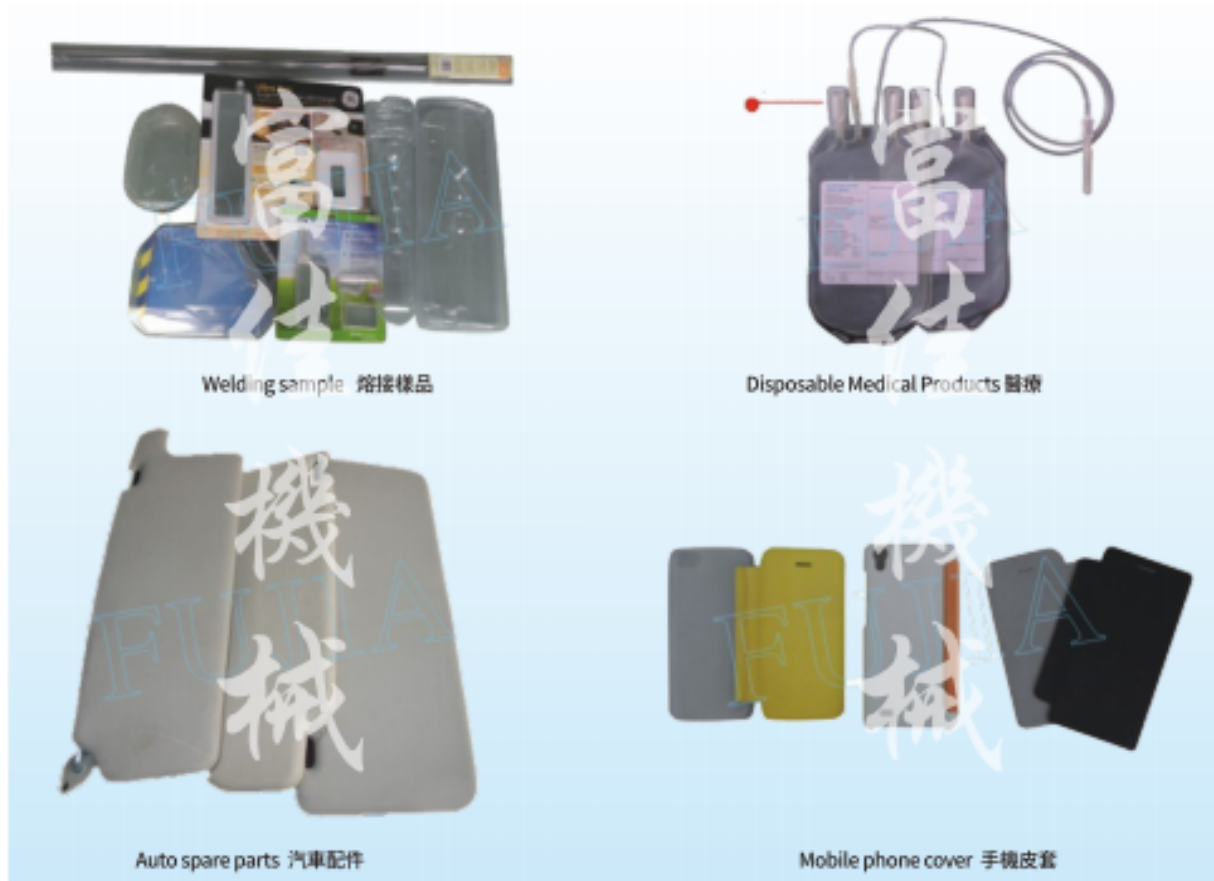
本機嚴格按照國際“無線電幹擾委員會”(CISPR)的規定,採用工業波段27.12/40.68MHZ,並設計有周波穩定器和周波漏磁抑制器,封外界設備的幹擾極小。

火花抑制

本機設有高靈敏度火花抑制電路,能準備檢出產生火花的不平衡電流,于產生火花瞬間迅速切斷振蕩回路抑制火花,使模具、原料及產品的損害降到最低程度。

安全保護:

本機設有過壓、過流保護裝置,在工作異常時可自動切斷高壓以保護震蕩管及整流器,同時可避免不當操作引起的頻率漂移。



Single-head push table high-frequency wave
單頭推臺式高周波



Advantages:

- A Toshiba tube is installed in this machine, so it is stable and reliable in output.
- High sensitive spark depressing circuit is used for preventing mould damage with the movable table style structure, it can save time and with the movable table style structure, it can save time and energy and can be operated easily.
- With a double cylinder working table location fixing gadget, it can fix location precisely
- It is assembled of whole set of high quality components and is stable.

機型特點

- 日本東芝電子管，輸出穩定可靠。
- 高靈敏度火花抑制，電路防止損壞模具。
- 推臺式結構，省時省力，操作便捷。
- 雙氣缸工作臺面定位裝置，定位準確。
- 全套優質元氣件組裝，性能穩定。

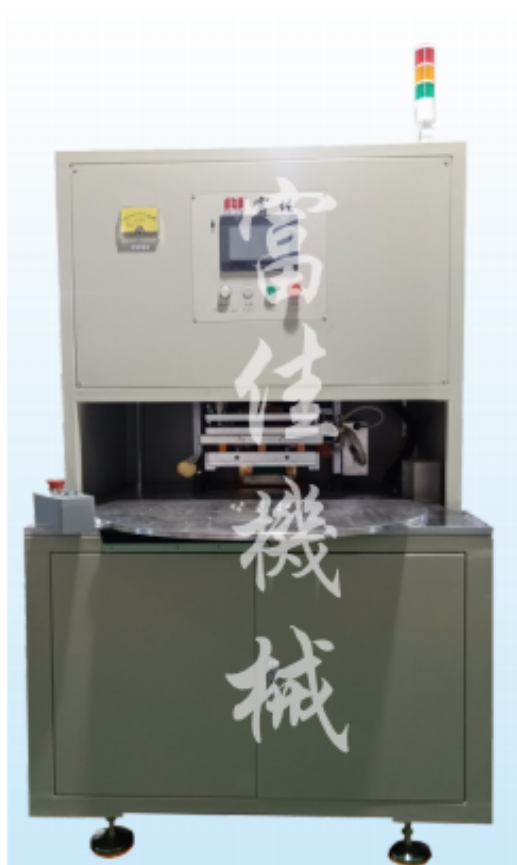
Servo frequency
伺服高周波机

Parameters
主要技術參數

焊接功率 Welding Power	0%-100% (ADJ)
焊接電壓 welding voltage	150V-380V (ADJ)
焊接電流 welding current	200Ma-1200Ma (ADJ)
最大焊接壓力 Max.Welding Pressure	300kg (ADJ)
焊接時間 Welding Time	3s-10s
行程精度 Stroke Range	≤0.1mm
模板最大行程 Max.Formwork Stroke Range	120mm
上模板溫度 Upper Formwork temperature	RT-200°C (ADJ)
火花保護電壓 Spark Protection Voltage	18VDC-30VDC (ADJ)

Specification
機器規格

型號 Model	FJ-5080
機身尺寸 Dimension	1060*1250*1180mm
機身重量 Weight	600KG
高頻振蕩頻率 Oscillation frequency	27.12MHz±0.5MHz
高頻輸出功率 Output power	5KW





Features
功能特点

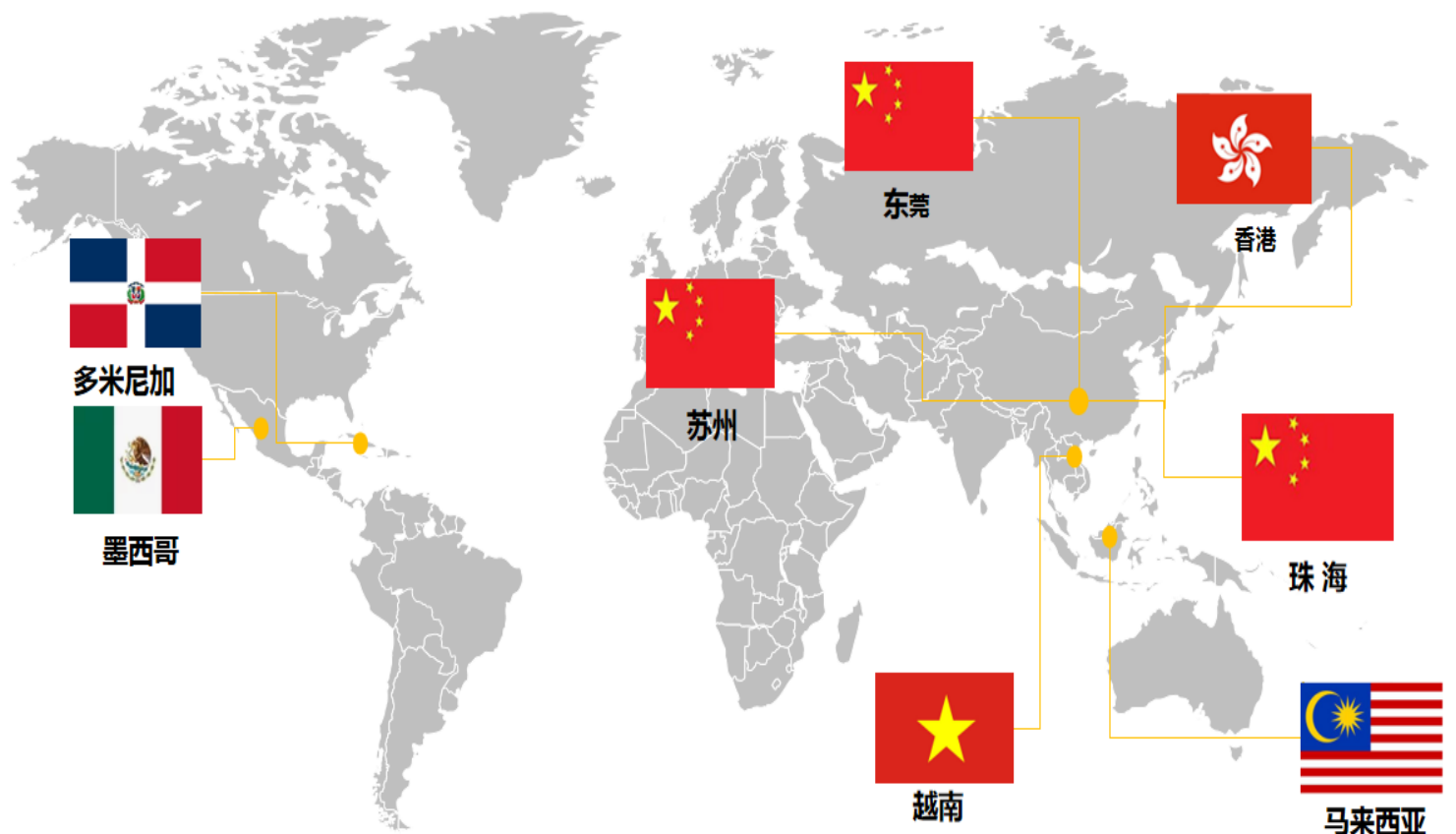
※It can matched with automatic equipment,such as heat pressing, dispensing, screw locking, etc.
可搭配热压、点胶、螺丝锁附等自动化设备。

※The upper and lower double-layer track design is adopted, and the fixture can be embedded into the line body to realize the on-line automatic cycle production.
采用上下双层轨道设计，配合载具，可嵌入线体实现自动循环生产。

※The width of the spare track can be adjusted and customized, covering the wide range of product sizes. It is equipped with profiling high-precision positioning fixture to meet the quality requirements of production welding.
设备轨道宽度可调可订制，涵盖产品大小范围广，搭载仿形高精度定位载具，满足生产熔接品质要求。

Parameter
参数

Model 机型	FJH207-1N
Power supply 电源	AC220V ±5%
Power 功率	2000W
Frequency 频率	50Hz
Temp accuracy 温控精度	±2-5℃
Pressure accuracy 压力精度	±1KG
Repetition accuracy 重复精度	±0.02mm
Track adjustment range 轨道调节范围	210-350mm
Driver mode 驱动方式	Servo motor drive with pressure display 伺服电机驱动，带压力显示



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