



SUNEAST
日东科技

在线式选择性波峰焊

Online selective wave soldering machine

SUNFLOW 系列



- 自主研发电磁泵
Independent R&D electromagnetic pump
- 高精度喷雾机
High precision sprayer
- 热风红外预热系统
Hot air infrared preheating system
- 链条滚轮混合传动系统
Chain and roller hybrid drive system

www.suneast.com.cn



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资料仅供参考, 一切以合同所定内容为最终规格本产品资料更改恕不另行通知

公司简介

Company profile

日东科技1984年成立于香港,1999年在深圳建立工业园,2000年在香港上市(股票代码0365.HK),为芯成科技控股旗下核心企业。

日东科技配备了现代化的产业园和先进的研发实验设施,具有雄厚的研发、设计、生产、自动化、信息化装备制造的系统集成能力,销售网络遍布全球。与清华大学、香港中文大学、香港科技大学、哈尔滨工业大学达成技术战略合作研发实力达到国内外先进水平。

在粤港澳大湾区的核心地带,日东科技已服务半导体后端应用客户超过三十五年,公司的下游及终端客户包括华为、中兴、TCL、富士康、木林森、光弘、德赛、聚飞等。公司自主研发的回流焊、波峰焊、选择性波峰焊、垂直炉、印刷机等产品在行业内始终保持技术领先地位,为国内外众多知名企业提供了专业的电子装备解决方案。“龙门双驱同步跟随直线电机”已成功应用到多个高速、高精度的装备制造和加工领域,得到用户的广泛赞誉。新推出IC贴合机等半导体封装设备,是日东科技的又一匠心力作,助力国产芯片产业发展壮大。如今,日东科技已成为中国智能装备行业的领导者。

作为芯成科技控股的核心企业,日东科技将坚定集团的战略目标,打造成为高科技领域的世界级一流企业。

Founded in Hong Kong in 1984, Suneast technology established its industrial park in Shenzhen in 1999 and listed on the main board of Hong Kong stock exchange in 2000 (Stock Code: 0365. HK), which is the core enterprise under Sino ICT Holdings Limited.

With modern industrial parks and advanced R&D facilities, Suneast technology has strong system integration capabilities in R&D, design, production, automation and information equipment manufacturing. Its sales network is all over the world. Suneast technology has been achieved technical strategic cooperation with Tsinghua University, Chinese University of Hong Kong, Hong Kong University of Science and Technology and Harbin Institute of Technology, and its R&D capabilities has reached the advanced level at home and abroad.

In the core area of Guangdong-Hong Kong-Macao Greater Bay Area, Suneast technology has served semiconductor back-end application customers for more than 35 years, its downstream and end customers include Huawei, ZTE, TCL, Hikvision, MLS LIGHTING, DBG, DESAYSV AUTOMOTIVE, SHENZHEN MTC, JFLED, etc.

The independent R&D products, like reflow oven, wave soldering machine, selective soldering machine, vertical oven, printer and etc has always maintained a leading position in technology, and provided professional electronic equipment solutions for many well-known enterprises at home and abroad. The dual drive gantry synchronous follow linear motor technology has been successfully applied to a number of high-speed and high-precision equipment manufacturing and processing fields, and gains great praise by users. The new semiconductor packaging equipment, like chip bonder is the masterpiece of Suneast technology, which helps the development of domestic chip industry. Today, Suneast technology has become the leader of China's intelligent equipment industry.

As the core enterprise of Sino ICT Holdings, Suneast technology will strengthen the strategic goal of the group and become a world-class enterprise in the field of high technology.



产品目录

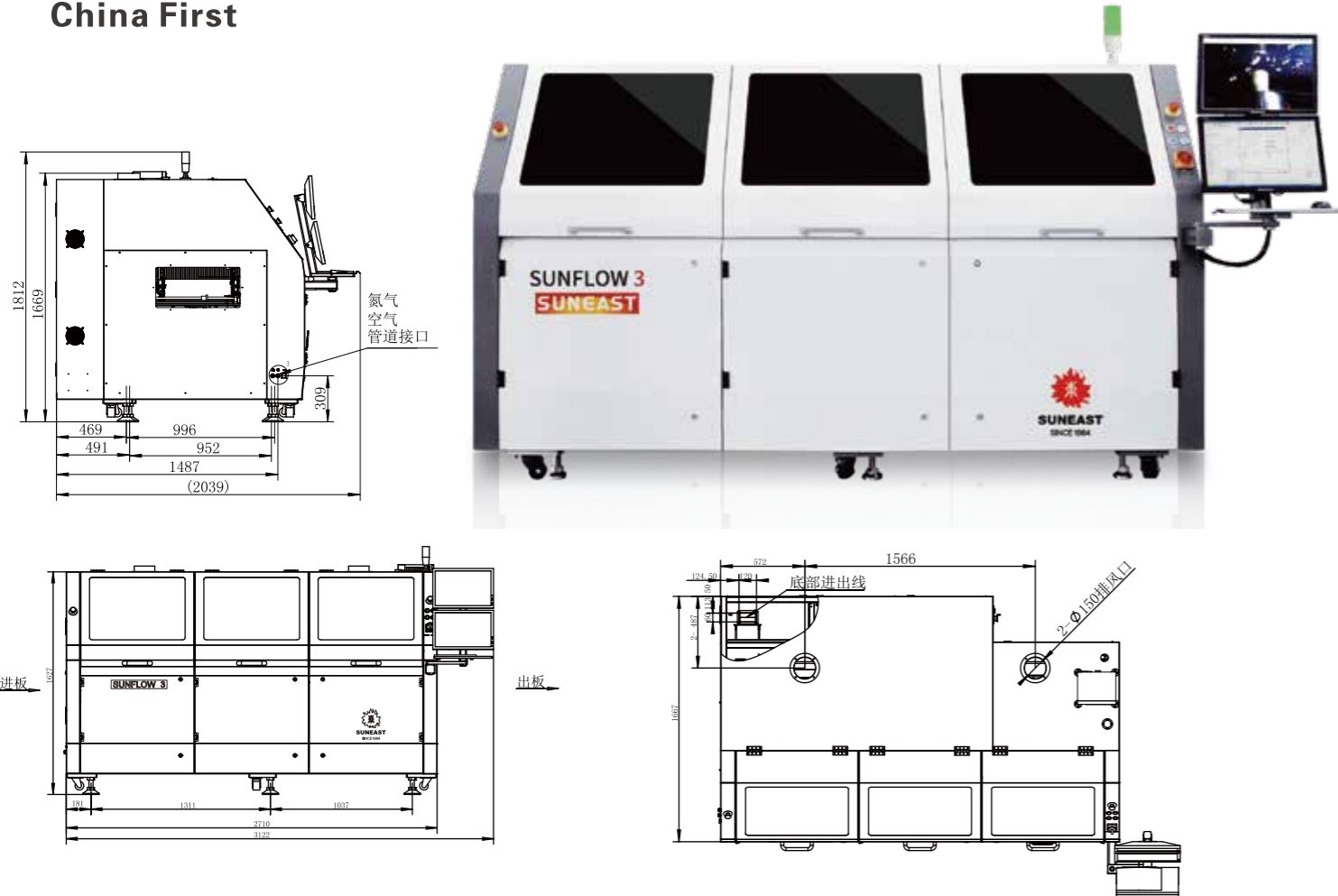
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Online selective soldering machine with electromagnetic pump SUNFLOW 3

中国首创
China First



特点 >>>

- 自主研发电磁泵
- 链条与滚轮混合传动系统
- 轨道自动调宽系统
- 高精度喷雾喷头
- 底部红外预热
- 顶部热风预热
- 支持在线/离线编程, 编程简便
- 可对PCB双面焊接
- 每个焊点可独立设置焊接参数
- 全程显示焊接状态

Feature >>>

- Independent R&D electromagnetic pump
- Chain and roller hybrid drive system
- Automatic rail width adjustment system
- High precision spray nozzle
- Bottom side infrared preheating
- Top side hot air convection heating
- Support online/offline programming, easy programming
- It can weld both sides of PCB
- Welding parameters can be set independently for each solder joint
- Display welding status throughout the whole process

标准机基本结构模块 Basic machine module

- 喷雾模块 Flux Module
- 预热模块 Preheat Module
- 焊接模块 (标准机配内径6mm喷嘴) Soldering Module (with inner 6mm nozzle)
- 传送系统 Conveyor System

基本工作原理: 喷雾头根据事先编制的程序控制PCB板移动到指定的位置后, 仅对需要焊接的部位喷涂助焊剂, 经喷雾和预热后, 电磁泵平台驱动电磁泵按预先设置程序移动到需要焊接的部位, 然后焊接。
Working Process: After PCB is moved to flux area, the spray head is targeted to the programed position and the flux is applied only to the solder joint to be made. After preheating, the electromagnetic pump moves to the target area and solder joint is made.

快速便捷的编程系统 Fast and comfortable programing

--软件 Software



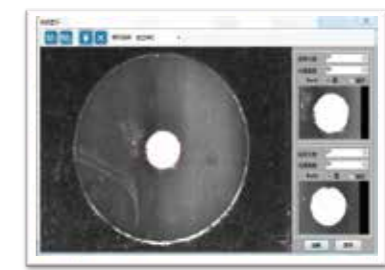
Gerber 文件编程
Gerber file program



在线屏幕编程
On-line screen program



图片编程
Picture program



MARK识别定位(选配)
MARK positioning and recognition (Option)

特色与优势 >>>

- 三种编程方式可供选择
Three programing can be chosen
- 支持离线编程
Offline programing

Feature and advantage >>>

- 每个焊点可提供不同焊接参数
Different parameter for every soldering point
- 过程数据记录
Process data record

SUNFLOW 3 在线式电磁泵选择性波峰焊

Online selective soldering machine with electromagnetic pump SUNFLOW 3

技术参数 Specifications

参数 Parameters	名称 Description	详细参数 Detailed parameters
机体参数 General Parameters	设备外形尺寸/Overall dimension(mm) (不含键盘,指示灯,显示器 Not include the keyboard, indicator light and monitor)	2710(L)*1670(W)*1630(H)
	设备重量/Equipment Weight (kg)	大约Approx.2000
	最大PCB板尺寸/Max PCB size(mm)	510(L)*450(W)
	最小PCB板尺寸/Min PCB size(mm)	120(L)*50(W)
	PCB顶部间隙/PCB Top Side Clearance (mm)	120
	PCB底部间隙/PCB Bottom Side Clearance (mm)	60
	PCB工艺边/PCB process edge (mm)	≥3
	传送带距离地面高度/Conveyor Height From Floor (mm)	900±20
	PCB传送速度/PCB Conveying Speed (m/min)	0.2-10
	PCB重量 Max/ PCB Weight (kg)	≤5
	PCB厚度 (包含治具)/PCB Thickness With Jig (mm)	1-6
	传送带可调范围/Conveyor Width Adjustment Range(mm)	50-450
	传送带调宽方式/Conveyor Width Adjustment Mode	电动/Electric
	PCB传送方向/PCB Conveying Direction	左向右 / Left to right
	空气进气压力/Air Input Pressure (Mpa)	0.6
	氮气供应/Nitrogen Supply	由客户提供/Offered by customer
	氮气进气压力/Nitrogen Input Pressure(Mpa)	0.6
	氮气消耗量/Nitrogen Consumption (m ³ /h)	1.5
	所需氮气纯度/ Required Purity of Nitrogen(%)	>99.999
	电源电压/Supply Voltage(VAC)	380
	频率/Frequency (HZ)	50/60
	最大功耗/Max Power Consumption (kw)	<28
	最大电流/Max Current(A)	<56
环境温度/Ambient Temperature (°C)	10-35	
机器噪音/Machine Noise Level (dB)	<65	
通讯接口/Communication Interface	SMEMA	
焊接系统 Soldering System	焊接X轴最大行程/Max. Soldering distance of X axis (mm)	510
	焊接Y轴最大行程/Max. Soldering distance of Y axis (mm)	450
	焊接Z轴最大行程/Max. Soldering distance of Z axis (mm)	60
	最小喷嘴外径/Min outer diameter of nozzle(mm)	5.5
	喷嘴内径/Nozzle inner diameter (mm)	2.5-10
	最大波峰高度/Max soldering wave height (mm)	5
	锡炉容量/Solder pot capacity (kg)	Approx.13kg(Sn63Pb)/锡炉solder pot Approx.12kg(lead-free)/锡炉solder pot
	最大焊接温度/Max soldering temperature (°C)	330
预热系统 Preheating System	锡炉加热功率/Soldering heating power (kw)	1.15
	预热温度范围/Preheat temperature range (°C)	<200
	加热功率/Heating power (kw)	24
喷雾系统 Spraying System	加热方式/Heating mode	热风+红外/Hot air+Infrared
	顶部预热/Top side preheating	热风/Hot air
	喷雾X轴最大行程/Max. stroke of X axis (mm)	510
	喷雾Y轴最大行程/Max. stroke of Y axis (mm)	450
	喷雾高度/Spray height(mm)	60
	定位速度/Location speed(mm/s)	<400
	喷嘴自动清洗功能/Spray head automatically cleaning	程序控制/Program control
	助焊剂箱体容量/Flux box capacity (L)	2

稳定高品质焊接 Stable high quality soldering

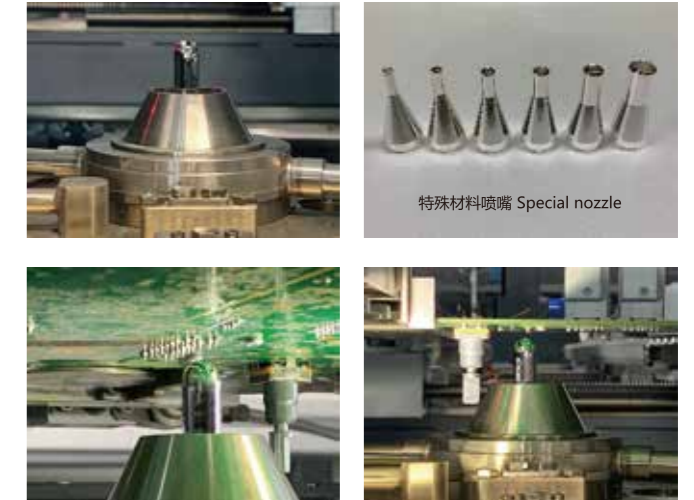
特色与优势

- 自主研发电磁泵
- 稳定波峰高度
- 特殊材料喷嘴
- 喷嘴拆换便捷
- 极低的维修率

Feature and advantage

- Electromagnetic solder pump
- Stable wave height
- Special solder nozzle
- Quick-change solder nozzles
- Low maintains required

——焊接模块/Soldering module



特殊材料喷嘴 Special nozzle

传输系统 Conveying system

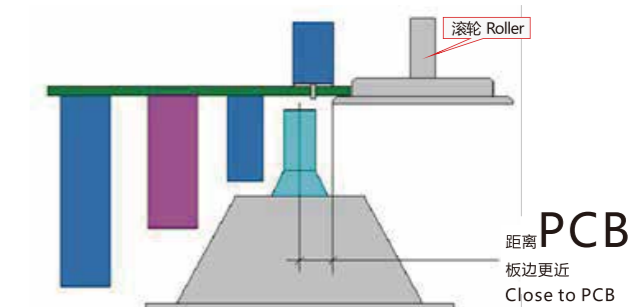
——传输轨道 Conveyor



滚轮传输系统 Roller transport system



链条传输系统 Chain transport System



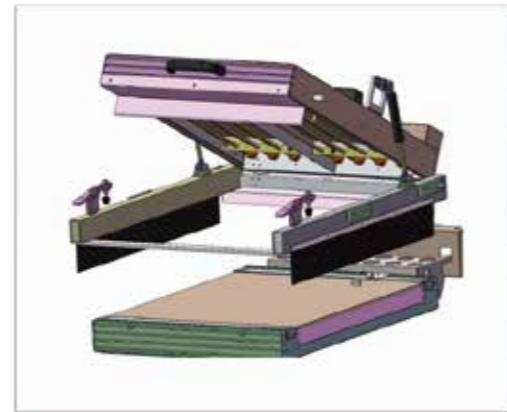
Sunflow 3 集成了链条传输系统与滚轮传输系统。其中，在预热模组与喷雾模组采用链条传动。焊接模组采用滚轮传动，可以极大的提升定位的准确性与重复精度。

Conveyor System combines chain and roller transports. Chain transport system is chosen in flux and preheating module. The soldering module use the roller transport which performs good in location board and repeatability.

完美预热 Perfect preheating



——预热模组 Preheating Module



Sunflow 3将上部预热与下部预热结合在一起,对无铅焊接或是多层PCB也有完美的表现。上部的热风预热已经在日东回流焊上应用多年,性能稳定,它可以将热量均匀的分散在PCB上。下部红外预热可以根据PCB的大小来打开不同区域预热管,节省能量。同时焊接模块也提供上部热风预热,可以保证在整个焊接过程中的预热温度,对完美发挥助焊剂性能提供保障。

Sunflow 3 combines top heater and bottom heater and it still performs perfectly even for the lead-free soldering or multi-layer boards. Top convection heater has been proved by Sun East Reflow machine for many years and it can offer an even temperature distribution over the complete board. Bottom IR emitter heater provides optional heating area according the custom board. At the same time, another top heater covers the soldering module and it can maintain the board temperature in all the cycle time.

稳定高品质焊接 Stable high quality soldering

——焊接模块 Soldering Module



焊接模组 Soldering module

Sunflow 3 采用电磁泵,相对于机械式泵,电磁泵运转过程中波峰稳定,没有运动的机械磨损,产生的废渣很少。此外焊接模组采用高精度的运动系统,来保证在焊接过程中准确性,同时配合特殊的工艺,可以极大的消除连锡现象。在用户使用体验方面, Sunflow 3 提供焊接监视相机以及波峰高度自动检测功能,极大提升用户体验。

Sunflow 3 offers electromagnetic pum system. There is no moving mechanical parts in pump system, so dust is little in process. The pump offer constant flow which translates into stable wave height. The soldering module has high precision axis system to ensure the accurate soldering path and with particular process, the system will eliminate the chance of bridging. Besides, process monitor screen and automatic soldering wave height detecting are very friendly for users.



焊接过程监视 Monitoring the soldering process

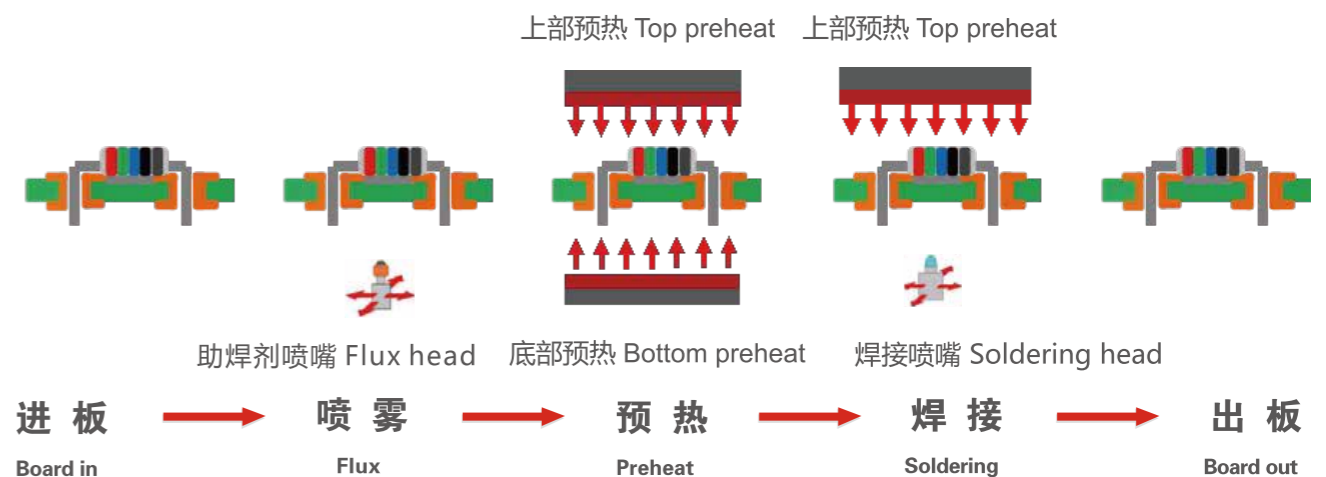
选择性焊接工艺过程 Selective soldering process

焊接工艺

- 运输PCB到喷雾模块
- 助焊剂喷嘴移动到指令位置,并对需要焊接的位置进行选择性喷雾
- 上部热风与下部红外模组对PCB进行预热
- 电磁泵根据编程路径进行焊接
- PCB传出

Working Process

- Transport the PCB to flux module
- Spray head move to programed area and flux is applied only to the soldering joint to be made
- Top-side and bottom-side preheat
- Programed electromagnetic pump soldering perfectly formed solder joint
- PCB is transported out



高精度喷雾 Fluxing with high precision

SUNFLOW 3 标准机采用德国进口精密滴喷嘴, 喷口直径130 μ m, 可以均匀的将助焊剂喷射在所需要焊接区域。最小喷射区域3mm, 比传统喷雾节省至少90%助焊剂。根据用户需求, 在喷雾区域大面积低精度的情况下, SUNFLOW 3 也提供喷雾式喷嘴, 使喷雾过程更加迅速。

The SUNFLOW 3 standard machine adopts precise nozzle with 130 μ m diameter which is imported from Germany and can uniformly spray flux in the required welding area. The minimum injection area is 3mm which saves at least 90% flux compared with the traditional spraying. If the spray area is large and with low precision based on user requirement, SUNFLOW 3 can also use normal spraying nozzle, to make the spray process more quickly.

——喷雾模块 Flux module



喷雾喷嘴 Spray nozzle



滴喷嘴 Drip nozzle

所有模块运动都采用伺服与滚珠丝杆的方式传动, 运动过程平滑、稳定, 重复精度可达0.05mm.

All the movements are driven by servo motor. The movements are stable and smooth. The precision accuracy is around 0.05mm.

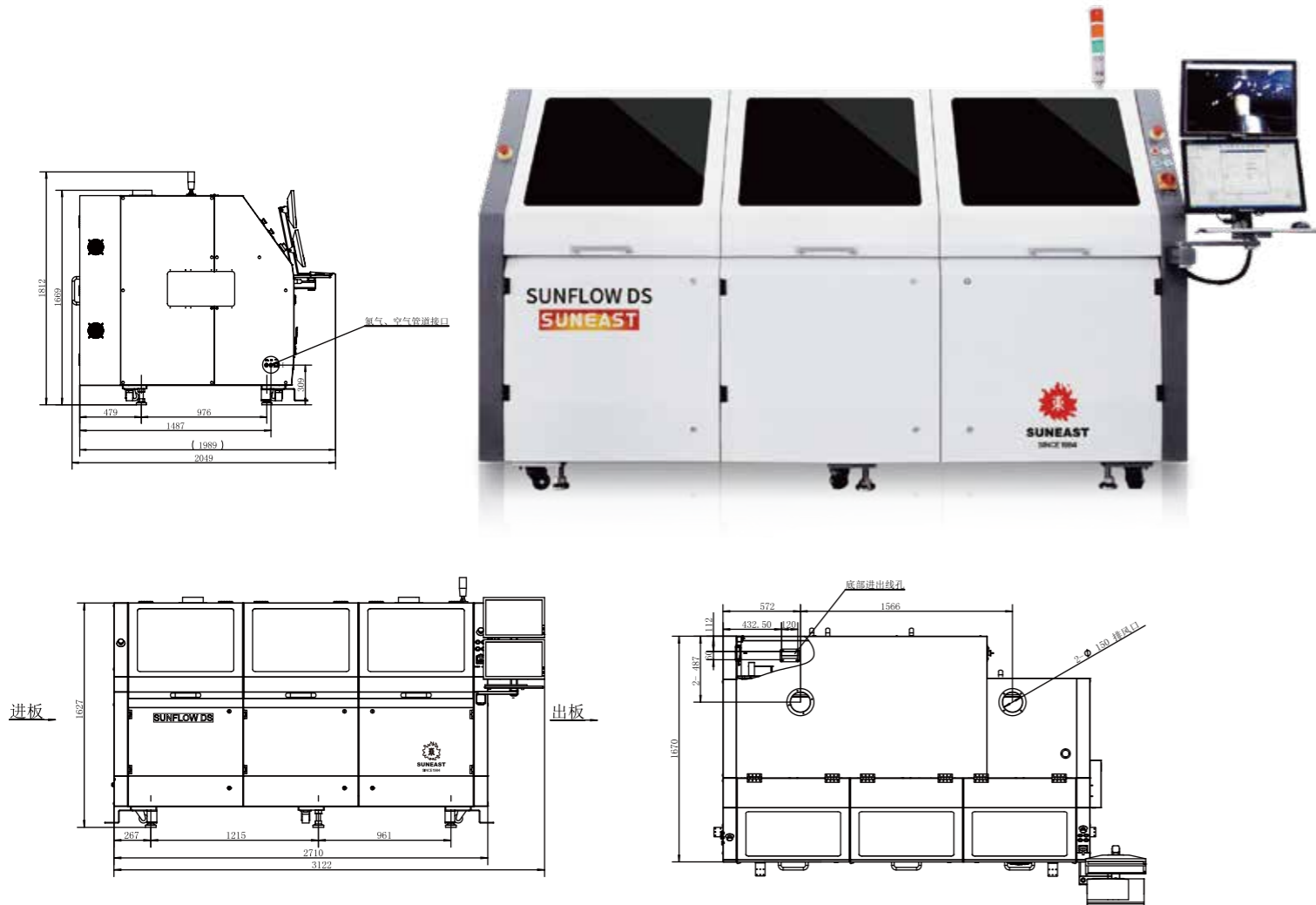
SUNFLOW DS 双电磁泵选择性波峰焊

Selective soldering machine with dual electromagnetic pumps SUNFLOW DS

中国首创 China First

荣获第四届工业设计“红帆奖”——金奖

SUNFLOW DS won the 4th Industrial Design Red Sail Award – Gold Award



特点 >>>

- 国内首创电磁泵技术
- 高效节能
- 顶尖品质
- 全程显示焊接状态
- 采用德国进口滴喷头，精度高

Feature >>>

- Pioneered electromagnetic pump technology in China
- High efficiency and energy saving
- Top quality
- Display and record the whole process welding status
- Use Germany brand drip nozzle with high precision

标准机基本结构模块 Basic machine module

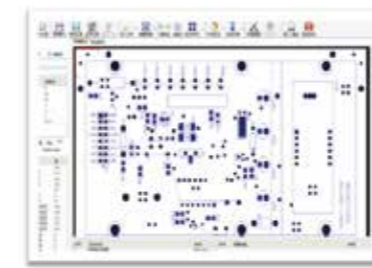
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- 预热模块 Preheat Module
- 焊接模块 (标准机配内径6mm喷嘴) Soldering Module (with inner 6mm nozzle)
- 传送系统 Conveyor System

基本工作原理：喷雾头根据事先编制的程序控制PCB板移动到指定的位置后，仅对需要焊接的部位喷涂助焊剂，经喷雾和预热后，电磁泵平台驱动电磁泵按预先设置程序移动到需要焊接的部位，然后焊接。

Working Process: After PCB is moved to flux area, the spray head is targeted to the programed position and the flux is applied only to the solder joint to be made. After preheating, the electromagnetic pump moves to the target area and solder joint is made.

快速便捷的编程系统 Fast and comfortable programing

——软件/ Software



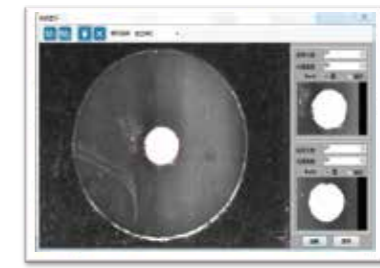
Gerber 文件编程
Gerber file program



在线屏幕编程
On-line screen program



图片编程
Picture program



MARK识别定位(选配)
MARK positioning and recognition (Option)

荣誉成就 >>>

- 荣获第四届工业设计“红帆奖”——金奖
- 荣获第八届“SMT China 远见奖”
- 荣获“一种推动液态金属的电磁泵组件”专利
- 荣获“一种用于传输液态金属的电磁泵”专利

Achievement >>>

- Won the 4th Industrial Design Red Sail Award - Gold Award
- Acquired the 8th SMT China Vision Awards
- Acquired the Electromagnetic Pump Assembly for driving Liquid Metal patent
- Acquired the Electromagnetic Pump for Conveying Liquid Metal patent

SUNFLOW DS 双电磁泵选择性波峰焊

Selective soldering machine with dual electromagnetic pumps SUNFLOW DS

技术参数 Specifications

参数 Parameters	名称 Description	详细参数 Detailed parameters
机体参数 General Parameters	设备外形尺寸/Overall dimension(mm) (不含键盘,指示灯,显示器 Not include the keyboard, indicator light and monitor)	2710(L)*1670(W)*1630(H)
	设备重量/Equipment Weight (kg)	2200
	最大PCB板尺寸/Max PCB size(mm)	510(L)*450(W)
	最小PCB板尺寸/Min PCB size(mm)	120(L)*50(W)
	双锡炉喷嘴中心最小距离/ Minimum distance between nozzle center of the two solder pots(mm)	95
	PCB顶部间隙/PCB Top Side Clearance (mm)	120
	PCB底部间隙/PCB Bottom Side Clearance (mm)	40
	PCB工艺边/PCB process edge (mm)	≥3
	传送带距离地面高度/Conveyor Height From Floor (mm)	850±25
	PCB传送速度/PCB Conveying Speed (m/min)	0.2-10
	PCB重量 Max/ PCB Weight (kg)	≤5
	PCB厚度 (包含治具)/PCB Thickness With Jig (mm)	1-6
	传送带可调范围/Conveyor Width Adjustment Range(mm)	50-450
	传送带调宽方式/Conveyor Width Adjustment Mode	电动/Electric
	PCB传送方向/PCB Conveying Direction	左向右 / Left to right
	空气进气压力/Air Input Pressure (Mpa)	0.6
	最大空气消耗量/Max Air Consumption (m³/h)	5
	氮气供应/Nitrogen Supply	由客户提供/Offered by customer
	氮气进气压力/Nitrogen Input Pressure(Mpa)	0.6
	氮气消耗量/Nitrogen Consumption (m³/h)	1.5/单锡炉single solder pot
	所需氮气纯度/ Required Purity of Nitrogen(%)	>99.999
	废弃排放量/Exhaust Volume (m³/h)	150*2
	电源电压/Supply Voltage(VAC)	380
	频率/Frequency (HZ)	50/60
	最大功耗/Max Power Consumption (kw)	<31
	最大电流/Max Current(A)	<60
	环境温度/Ambient Temperature (°C)	10-35
机器噪音/Machine Noise Level (dB)	<65	
通讯接口/Communication Interface	SMEMA	
焊接系统 Soldering System	焊接X轴最大行程/Max. Soldering distance of X axis (mm)	510
	焊接Y轴最大行程/Max. Soldering distance of Y axis (mm)	450
	焊接Z轴最大行程/Max. Soldering distance of Z axis (mm)	40
	最小喷嘴外径/Min outer diameter of nozzle(mm)	5.5
	喷嘴内径/Nozzle inner diameter (mm)	2.5-10
	最大波峰高度/Max soldering wave height (mm)	5
	锡炉容量/Solder pot capacity (kg)	Approx.13kg(Sn63Pb)/锡炉solder pot Approx.12kg(lead-free)/锡炉solder pot
预热系统 Preheating System	最大焊接温度/Max soldering temperature (°C)	330
	锡炉加热功率/Soldering heating power (kw)	1.15/锡炉solder pot
	预热温度范围/Preheat temperature range (°C)	<200
	加热功率/Heating power (kw)	24
喷雾系统 Spraying System	加热方式/Heating mode	热风+红外/Hot air+Infrared
	顶部预热/Top side preheating	热风/Hot air
	喷雾X轴最大行程/Max. stroke of X axis (mm)	510
	喷雾Y轴最大行程/Max. stroke of Y axis (mm)	450
	喷雾高度/Spray height(mm)	60
	定位速度/Location speed(mm/s)	<400
喷嘴自动清洗功能/Spray head automatically cleaning	程序控制/Program control	
助焊剂箱体容量/Flux box capacity (L)	2	

稳定高品质焊接 Stable high quality soldering

——焊接模块/Soldering module

特色与优势

- 自主研发电磁泵
- 稳定波峰高度
- 喷嘴切换便捷
- 特殊材料喷嘴
- 极低的维修率
- 双电磁泵设计,效率提升1倍
- 双喷头间距自动调整
- 焊接过程可记录



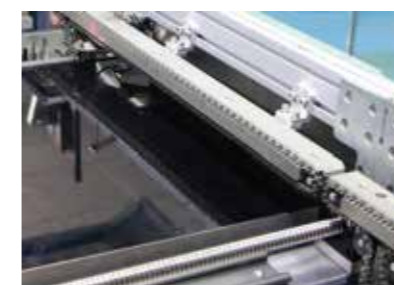
Feature and advantage

- Electromagnetic solder pump
- Stable wave height
- Quick-change solder nozzles
- Special solder nozzle
- Low maintains required
- Double electromagnetic pump design with double efficiency
- Nozzle spacing automatic adjustment
- Welding process can be recorded

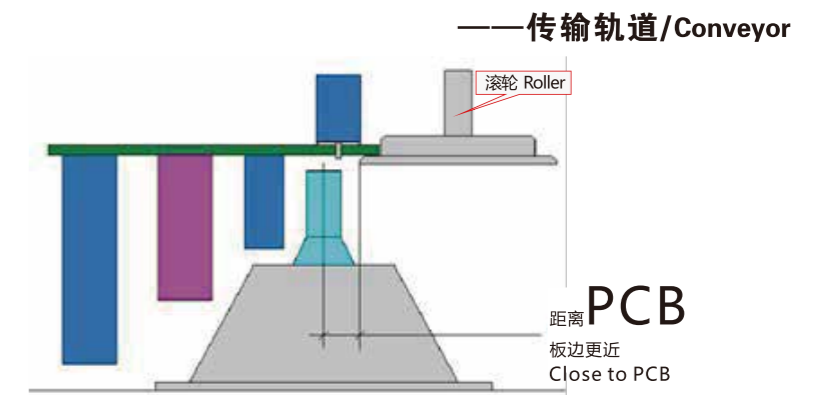
传输系统 Conveying system



滚轮传输系统 Roller transport system



链条传输系统 Chain transport System



Sunflow DS 集成了链条传输系统与滚轮传输系统。其中,在预热模组与喷雾模组采用链条传动。焊接模组采用滚轮传动,可以极大的提升定位的准确性与重复精度。

Conveyor System combines chain and roller transports. Chain transport system is chosen in flux and preheating module. The soldering module use the roller transport which performs good in location board and repeatability.

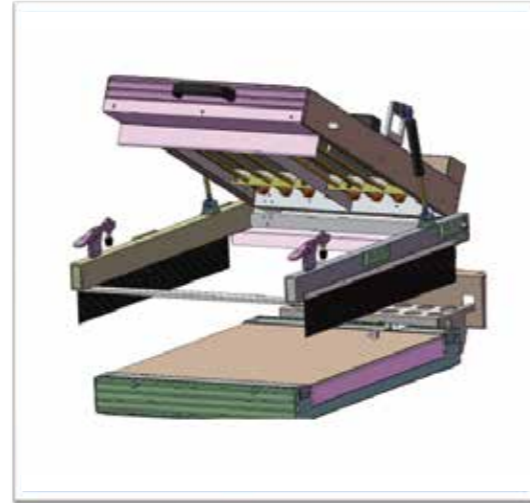
完美预热 Perfect preheating



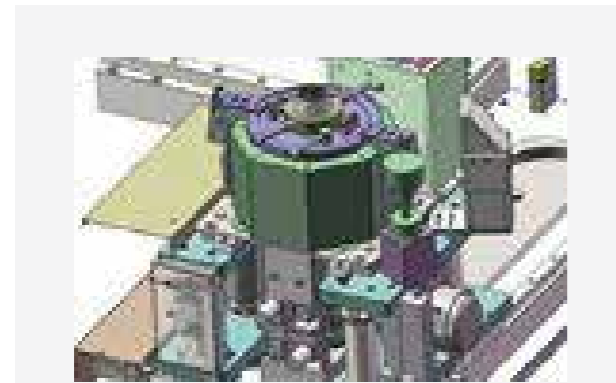
Sunflow DS 将上部预热与下部预热结合在一起，对无铅焊接或是多层PCB也有完美的表现。上部的热风预热已经在日东回流焊上应用多年，性能稳定，它可以热量均匀地分散在PCB上。下部红外预热可以根据PCB的大小来打开不同区域预热管，节省能量。同时焊接模块也提供上部热风预热，可以保证在整个焊接过程中的预热温度，对完美发挥助焊剂性能提供保障。

Sunflow DS combines top heater and bottom heater and it still performs perfectly even for the lead-free soldering or multi-layer boards. Top convection heater has been proved by Sun East Reflow machine for many years and it can offer an even temperature distribution over the complete board. Bottom IR emitter heater provides optional heating area according the custom board. At the same time, another top heater covers the soldering module and it can maintain the board temperature in all the cycle time.

——预热模组/Preheating Module



稳定高品质焊接 Stable high quality soldering



焊接模组 Soldering module

SUNFLOW DS 采用电磁泵，相对于机械式泵，电磁泵运转过程中波峰稳定，没有运动的机械磨损，产生的废渣很少。此外焊接模组采用高精度的运动系统，来保证在焊接过程中准确性，同时配合特殊的工艺，可以极大的消除连锡现象。在用户使用体验方面，SUNFLOW DS 提供焊接监视相机以及波峰高度自动检测功能，极大提升用户体验。

——焊接模块/Soldering Module



焊接过程监视 Monitoring the soldering process

SUNFLOW DS offers electromagnetic pump system. There is no moving mechanical parts in pump system, so dust is little in process. The pump offer constant flow which translates into stable wave height. The soldering module has high precision axis system to ensure the accurate soldering path and with particular process, the system will eliminate the chance of bridging. Besides, process monitor screen and automatic soldering wave height detecting are very friendly for users.

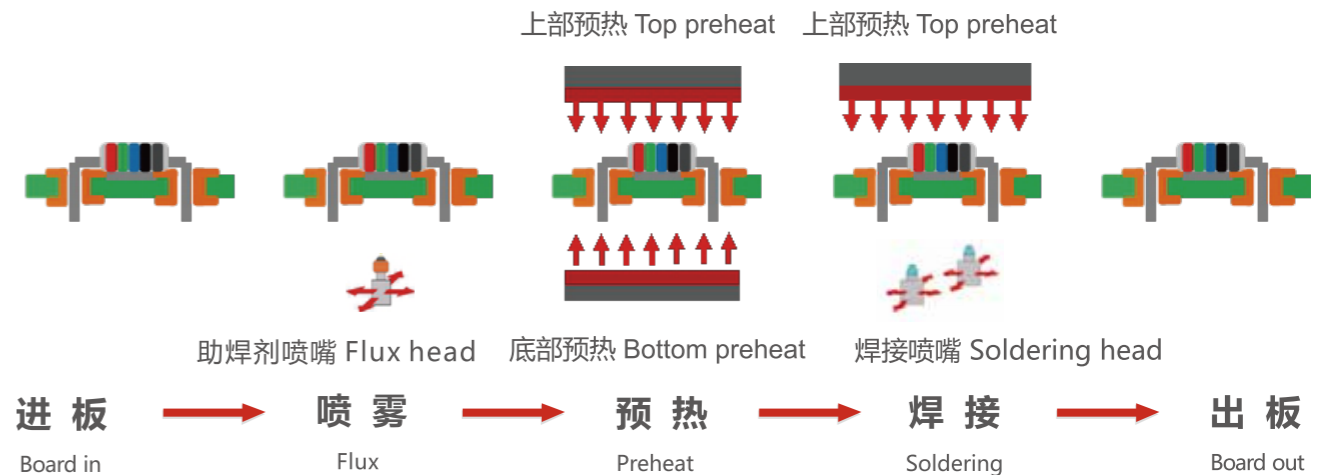
选择性焊接工艺过程 Selective soldering process

焊接工艺

- 运输PCB到喷雾模块
- 助焊剂喷嘴移动到指令位置，并对需要焊接的位置进行选择性喷雾
- 上部热风与下部红外模组对PCB进行预热
- 电磁泵根据编程路径进行焊接
- PCB传出

Working Process

- Transport the PCB to flux module
- Spray head move to programed area and flux is applied only to the soldering joint to be made
- Top-side and bottom-side preheat
- Programed electromagnetic pump soldering perfectly formed solder joint
- PCB is transported out



高精度喷雾 Fluxing with high precision

SUNFLOW DS标准机采用德国进口精密滴喷嘴，喷口直径130μm，可以均匀的将助焊剂喷射在所需要焊接区域。最小喷射区域3mm，比传统喷雾节省至少90%助焊剂。根据用户需求，在喷雾区域大面积低精度的情况下，SUNFLOW DS 也提供喷雾式喷嘴，使喷雾过程更加迅速。

The SUNFLOW DS standard machine adopts precise nozzle with 130μm diameter which is imported from Germany and can uniformly spray flux in the required welding area. The minimum injection area is 3mm which saves at least 90% flux compared with the traditional spraying. If the spray area is large and with low precision based on user requirement, SUNFLOW DS can also use normal spraying nozzle, to make the spray process more quickly.

——喷雾模块/Flux module



喷雾防堵检测 Spray blocking detection



滴喷嘴 Drip nozzle

所有模块运动都采用伺服与滚珠丝杆的方式传动，运动过程平滑、稳定，重复精度可达0.05mm。

All the movements are driven by servo motor. The movements are stable and smooth. The precision accuracy is around 0.05mm.

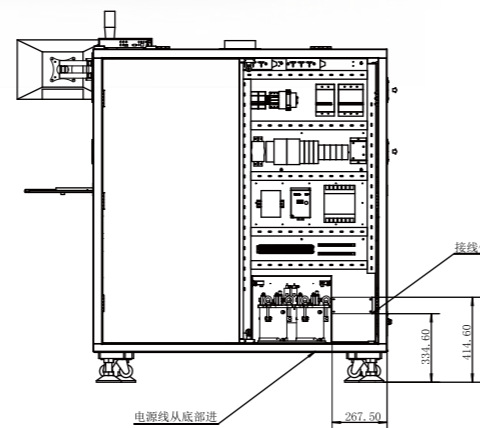
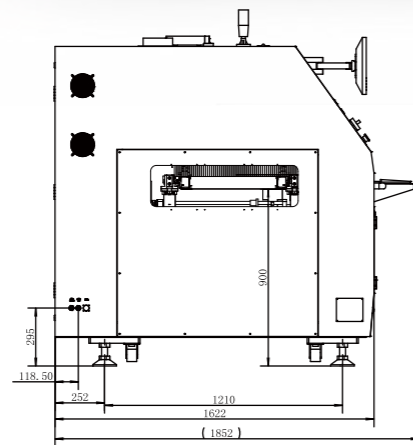
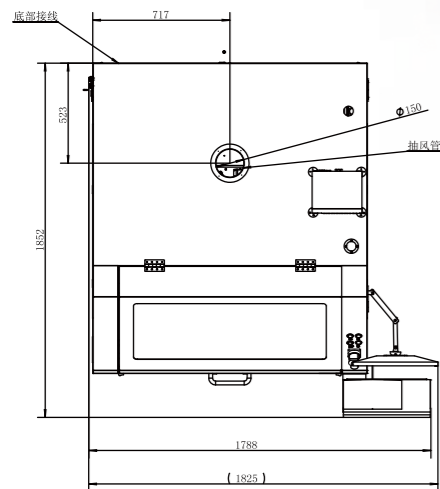
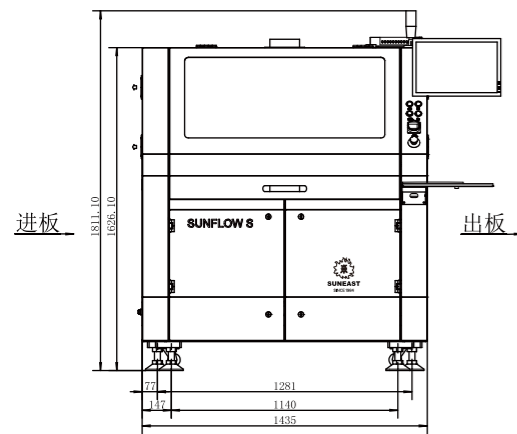
SUNFLOW S 在线式独立焊接机

Online independent selective soldering machine SUNFLOW S

电磁泵焊接技术 Electromagnetic pump welding technology

设备外形尺寸图

Machine overall dimensions drawing



特点 >>>

- 自主研发电磁泵
Independent R&D electromagnetic pump
- 采用滚轮输送系统, 增大焊接空间
Roller conveyor system, increase the welding space

Feature >>>

- 模块化设计, 易维护
Modular design, easy to maintain
- 全程显示焊接状态
Display welding status throughout the whole process

SUNFLOW S 在线式独立焊接机

Online independent selective soldering machine SUNFLOW S

技术参数 Specifications

参数 Parameters	名称 Description	详细参数 Detailed parameters
机体参数 General Parameters	设备外形尺寸/Overall dimension(mm) (不含键盘,指示灯,显示器 Not include the keyboard, indicator light and monitor)	1435(L)*1800(W)*1670(H)
	设备重量/Equipment Weight (kg)	1050
	最大PCB板尺寸/Max PCB size(mm)	510(L)x450(W)
	最小PCB板尺寸/Min PCB size(mm)	120(L)x50(W)
	PCB顶部间隙/PCB Top Side Clearance (mm)	120
	PCB底部间隙/PCB Bottom Side Clearance (mm)	60
	PCB工艺边/PCB process edge (mm)	≥3
	传送带距离地面高度/Conveyor Height From Floor (mm)	900±20
	PCB传送速度/PCB Conveying Speed (m/min)	0.2-10
	PCB重量 Max/ PCB Weight (kg)	≤5
	PCB厚度 (包含治具)/PCB Thickness With Jig (mm)	1-6
	传送带可调范围/Conveyor Width Adjustment Range(mm)	50-450
	传送带调宽方式/Conveyor Width Adjustment Mode	电动/Electric
	PCB传送方向/PCB Conveying Direction	左向右 / Left to right
	空气进气压力/Air Input Pressure (Mpa)	0.6
	氮气供应/Nitrogen Supply	由客户提供/Offered by customer
	氮气进气压力/Nitrogen Input Pressure(Mpa)	0.6
	氮气消耗量/Nitrogen Consumption (m³/h)	1.5
	所需氮气纯度/ Required Purity of Nitrogen(%)	>99.999
	电源电压/Supply Voltage(VAC)	380
	电压容差/Voltage Tolerance Range (%)	6-10
	频率/Frequency (HZ)	50/60
最大功率/Max Power Consumption (kw)	<12	
最大电流/Max Current(A)	<25	
环境温度/Ambient Temperature (°C)	10-35	
机器噪音/Machine Noise Level (dB)	<65	
通讯接口/Communication Interface	SMEMA	
焊接系统 Soldering System	最小喷嘴外径/Min outer diameter of nozzle(mm)	5.5
	喷嘴内径/Nozzle inner diameter (mm)	2.5-10
	最大波峰高度/Max soldering wave height (mm)	5
	锡炉容量/Solder pot capacity (kg)	Approx.13kg(Sn63Pb)/锡炉solder pot Approx.12kg(lead-free)/锡炉solder pot
	最大焊接温度/Max soldering temperature (°C)	330
锡炉加热功率/Soldering heating power (kw)	1.15	
预热系统 Preheating System	预热温度范围/Preheat temperature range (°C)	<200
	加热功率/Heating power (kw)	6
	加热方式/Heating mode	热风/Hot air

快速便捷的编程系统 Fast and comfortable programming

——软件/ Software



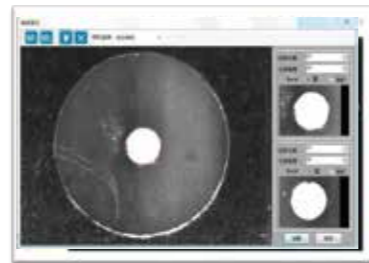
Gerber 文件编程
Gerber file program



在线屏幕编程
On-line screen program



图片编程
Picture program



MARK识别定位(选配)
MARK positioning and recognition (Option)

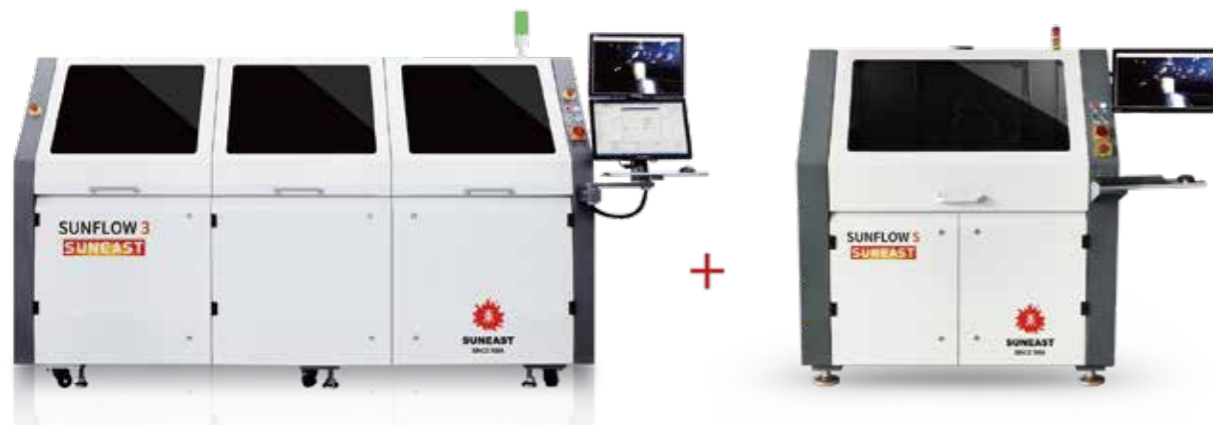
特色与优势 >>>

- 三种编程方式可供选择
Three programming can be chosen
- 支持离线编程
Offline programming

Feature and advantage >>>

- 每个焊点可提供不同焊接参数
Different parameter for every soldering point
- 过程数据记录
Process data record

满足高产能的解决方案 Solutions to meet the high productivity



- 模块化设计满足灵活性与高产能的要求
Modular design meet the requirements of flexibility and high productivity
- 适合双拼板，产能加倍
Suitable for double makeup, double capacity
- 满足拼板需要两种规格喷嘴完成的场合
Meet the makeup need two specifications nozzle to complete

稳定高品质焊接 High quality soldering

特色与优势

- 波峰稳定
- 喷嘴拆换便捷
- 高质量喷嘴
- 占地空间小
- 节能
- 换线快

Feature and advantage

- Wave stability
- Quick-change solder nozzles
- High quality nozzle
- Small occupation space
- Energy saving
- Line change fast

——焊接模块/Soldering module



特殊材料喷嘴 Special nozzle

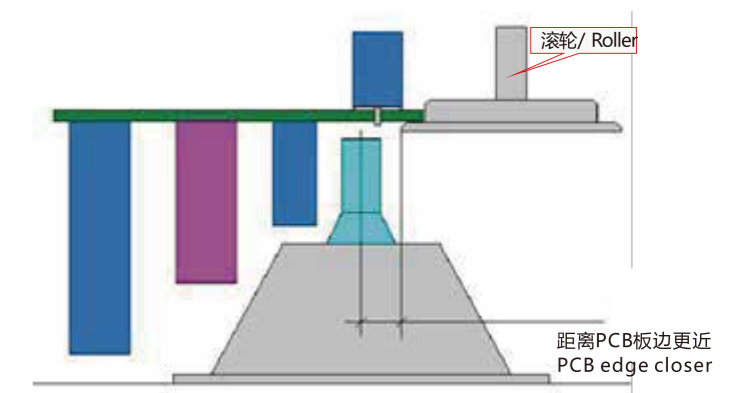


传输系统 Conveying system

——传输轨道/Conveyor



滚轮传输系统 /Roller transport system



滚轮/ Roller

距离PCB板边更近
PCB edge closer

Sunflow S传输系统采用的是滚轮输送，增大焊接空间，更有利于靠近板边元件的焊接。

Sunflow S transmission system adoption a roller conveyor, increase welding space, better close to the edge components of welding

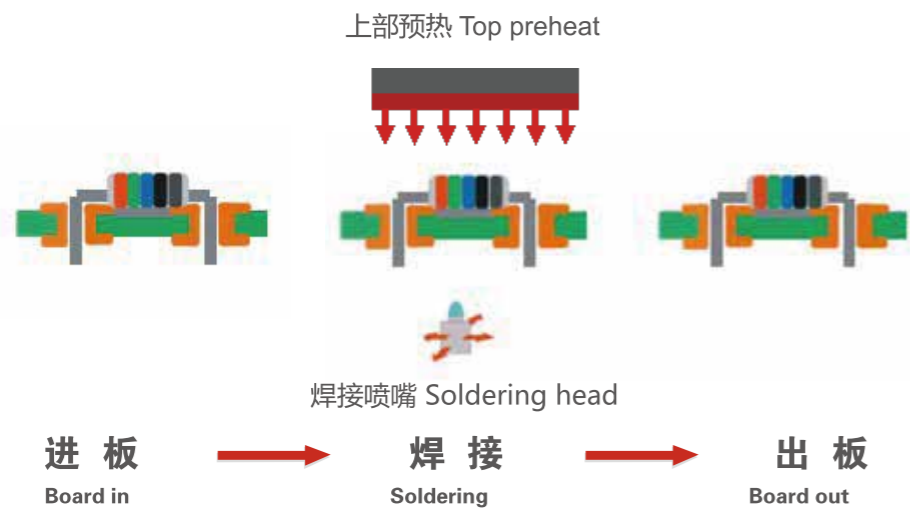
选择性焊接工艺过程 Selective soldering process

焊接工艺:

- 传送PCB板到指定位置
- 电磁泵根据编程路径进行焊接，同时顶部热风预热
- PCB传出

Working process:

- Send a PCB to the specified location
- Electromagnetic pump according to the programming path for welding, at the same time at the top of the hot air preheating
- PCB is transported out



基本结构模块 The basic structure module



Sunflow S 采用电磁泵，相对于机械式泵，电磁泵运转过程中波峰稳定，没有运动的机械磨损，产生的废渣很少。此外焊接模组采用高精度的运动系统，来保证在焊接过程中准确性，同时配合特殊的工艺，可以极大的消除连锡现象。在用户使用体验方面，Sunflow S 提供焊接监视相机以及波峰高度自动检测功能，极大提升用户体验。



Sunflow S offers electromagnetic pump system. There is no moving mechanical parts in pump system, so dust is little in process. The pump offer constant flow which translates into stable wave height. The soldering module has high precision axis system to ensure the accurate soldering path and with particular process, the system will eliminate the chance of bridging. Besides, process monitor screen and automatic soldering wave height detecting are very friendly for users.

SUNFLOW FS 迷你选择焊

Mini Selective Soldering System SUNFLOW FS

电磁泵焊接技术 Electromagnetic pump welding technology

设备外形尺寸图

Machine overall dimensions drawing



特点 >>>

Feature >>>

- 标配喷雾、预热和焊接单元，可以在较小的机器空间内完成整个焊接工艺。
Equip with spraying, preheating and welding units which can complete the whole welding process in a small machine.
- 回转式轨道设计，可以让操作者在机器的同一侧完成PCB的上下料。
Rotary track design which allows loading and unloading PCB on the same side of the machine.
- 占地面积小，比标准SUNFLOW 系统机器短很多。
Cover small area, shorter than the standard SUNFLOW machine.
- 焊接过程实时监控，过程记录。
Real time monitoring and recording of welding process.

SUNFLOW FS 迷你选择焊

Mini Selective Soldering System SUNFLOW FS

技术参数 Specifications

参数 Parameters	名称 Description	详细参数 Detailed parameters
机体参数 General Parameters	设备外形尺寸/Overall dimension(mm) (不含键盘,指示灯,显示器 Not include the keyboard, indicator light and monitor)	1435(L)*1800(W)*1670(H)
	设备重量/Equipment Weight (kg)	大约Approx.1050
	PCB顶部空间/PCB Top Side Clearance (mm)	120
	PCB底部间隙/PCB Bottom Side Clearance (mm)	60
	PCB工艺边/PCB process edge (mm)	≥3
	传送带距离地面高度/Conveyor Height From Floor (mm)	900±20
	PCB传送速度/PCB Conveying Speed (m/min)	0.2-10
	PCB重量 Max/ PCB Weight (kg)	≤5
	PCB厚度 (包含治具)/PCB Thickness With Jig (mm)	1-6
	传送带可调范围/Conveyor Width Adjustment Range(mm)	50-450
	传送带调宽方式/Conveyor Width Adjustment Mode	电动/Electric
	PCB传送方向/PCB Conveying Direction	左向右 / Left to right
	空气进气压力/Air Input Pressure (Mpa)	0.6
	氮气供应/Nitrogen Supply	由客户提供/Offered by customer
	氮气进气压力/Nitrogen Input Pressure(Mpa)	0.6
	氮气消耗量/Nitrogen Consumption (m³/h)	1.5
	所需氮气纯度/ Required Purity of Nitrogen(%)	>99.999
	电源电压/Supply Voltage(VAC)	380
	频率/Frequency (HZ)	50/60
	最大功耗/Max Power Consumption (kw)	<12
最大电流/Max Current(A)	<25	
环境温度/Ambient Temperature (°C)	10-35	
机器噪音/Machine Noise Level (dB)	<65	
通讯接口/Communication Interface	SMEMA	
焊接系统 Soldering System	焊接X轴最大行程/Max. Soldering distance of X axis (mm)	510
	焊接Y轴最大行程/Max. Soldering distance of Y axis (mm)	450
	焊接Z轴最大行程/Max. Soldering distance of Z axis (mm)	60
	最小喷嘴外径/Min outer diameter of nozzle(mm)	5.5
	喷嘴内径/Nozzle inner diameter (mm)	2.5-10
	最大波峰高度/Max soldering wave height (mm)	5
	锡炉容量/Solder pot capacity (kg)	Approx.13kg(Sn63Pb)/锡炉solder pot Approx.12kg(lead-free)/锡炉solder pot
	最大焊接温度/Max soldering temperature (°C)	330
	锡炉加热功率/Soldering heating power (kw)	1.15
预热系统 Preheating System	预热温度范围/Preheat temperature range (°C)	<200
	加热功率/Heating power (kw)	6
	顶部预热/Top side preheating	热风/ Hot air
喷雾系统 Spraying System	喷雾X轴最大行程/Max. stroke of X axis (mm)	510
	喷雾Y轴最大行程/Max. stroke of Y axis (mm)	450
	喷雾高度/Spray height(mm)	60
	定位速度/Location speed(mm/s)	<200
	助焊剂箱体容量/Flux box capacity (L)	2

标准机基本结构模块 Basic machine module

- 喷雾模块 Flux Module
- 预热模块 Preheat Module
- 焊接模块 (标准机配内径6mm喷嘴) Soldering Module (with inner 6mm nozzle)
- 传送系统 Conveyor System

基本工作原理: 喷雾头根据事先编制的程序控制PCB板移动到指定的位置后, 仅对需要焊接的部位喷涂助焊剂, 经喷雾和预热后, 电磁泵平台驱动电磁泵按预先设置程序移动到需要焊接的部位, 然后焊接。

Working Process: After PCB is moved to flux area, the spray head is targeted to the programed position and the flux is applied only to the solder joint to be made. After preheating, the electromagnetic pump moves to the target area and solder joint is made.

快速便捷的编程系统 Fast and comfortable programing

——软件/ Software



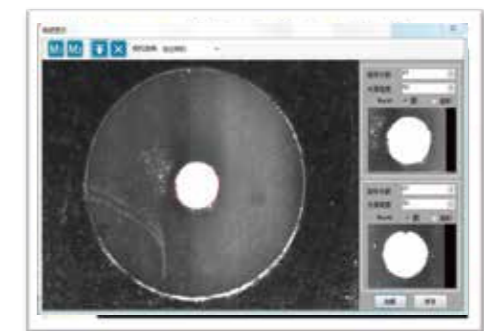
Gerber 文件编程
Gerber file program



在线屏幕编程
On-line screen program



图片编程
Picture program



MARK识别定位(选配)
MARK positioning and recognition (Option)

稳定高品质焊接 Stable high quality soldering

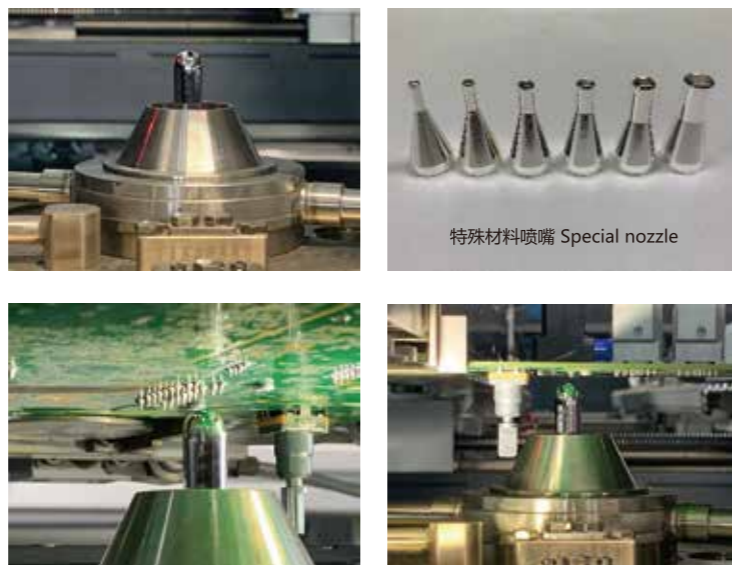
特色与优势

- 波峰稳定
- 喷嘴拆换便捷
- 高质量喷嘴
- 占地空间小
- 节能
- 换线快

Feature and advantage

- Wave stability
- Quick-change solder nozzles
- High quality nozzle
- Small occupation space
- Energy saving
- Line change fast

——焊接模块/Soldering module



稳定高品质焊接 Stable high quality soldering

——焊接模块/Soldering module



SUNFLOW FS 采用电磁泵，相对于机械式泵，电磁泵运转过程中波峰稳定，没有运动的机械磨损，产生的废渣很少。此外焊接模组采用高精度的运动系统，来保证在焊接过程中准确性，同时配合特殊的工艺，可以极大的消除连锡现象。在用户使用体验方面，SUNFLOW FS 提供焊接监视相机以及波峰高度自动检测功能，极大提升用户体验。

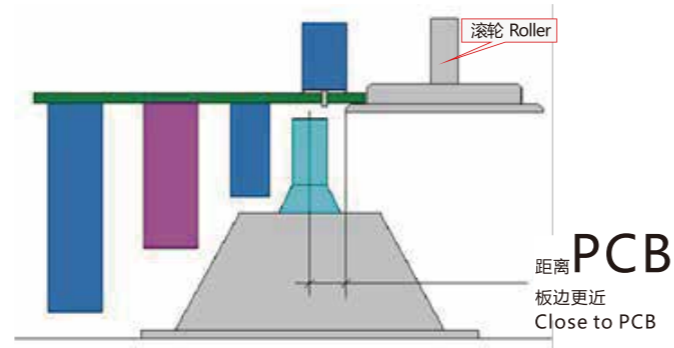
SUNFLOW FS offers electromagnetic pump system. There is no moving mechanical parts in pump system, so dust is little in process. The pump offer constant flow which translates into stable wave height. The soldering module has high precision axis system to ensure the accurate soldering path and with particular process, the system will eliminate the chance of bridging. Besides, process monitor screen and automatic soldering wave height detecting are very friendly for users.

传输系统 Conveying system

——传输轨道/Conveyor



滚轮传输系统 Roller transport system



Sunflow FS 传输系统采用的是滚轮输送，增大焊接空间，更有利于靠近板边元件的焊接。

Sunflow FS transmission system adoption a roller conveyor, increase welding space, better close to the edge components of welding

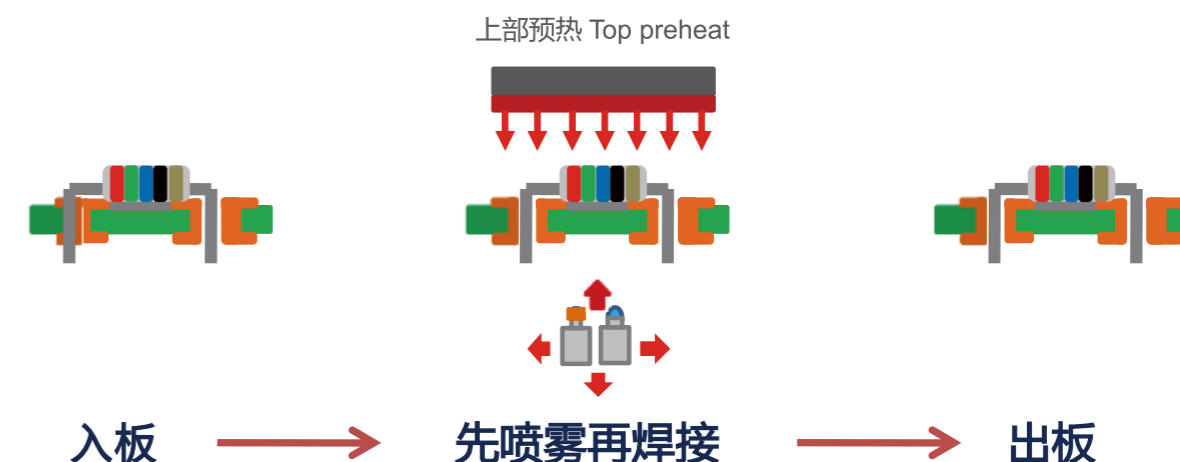
选择性焊接工艺过程 Selective soldering process

焊接工艺:

- 传送PCB板到指定位置
- 根据设定程序对PCB板进行选择性喷雾、预热、焊接。
- PCB传出

Working process:

- Send a PCB to the specified location
- PCB selective spraying, preheating and soldering are according to the setup program.
- PCB is transported out



高精度喷雾 Fluxing with high precision

——喷雾模块/Flux module

SUNFLOW FS标准机采用德国进口精密滴喷嘴，喷嘴直径130μm，可以均匀的将助焊剂喷射在所需要焊接区域。最小喷射区域3mm，比传统喷雾节省至少90%助焊剂。根据用户需求，在喷雾区域大面积低精度的情况下，SUNFLOW FS 也提供喷雾式喷嘴，使喷雾过程更加迅速。

所有模块运动都采用伺服与滚珠丝杆的方式传动，运动过程平滑、稳定，重复精度可达0.05mm。

The SUNFLOW FS standard machine adopts precise nozzle with 130 μm diameter which is imported from Germany and can uniformly spray flux in the required welding area. The minimum injection area is 3mm which saves at least 90% flux compared with the traditional spraying.

All the movements are driven by servo motor. The movements are stable and smooth. The precision accuracy is around 0.05mm.

基本结构模块 The basic structure module



顶部预热 /At the top of the preheating

Sunflow FS 采用电磁泵，相对于机械式泵，电磁泵运转过程中波峰稳定，没有运动的机械磨损，产生的废渣很少。此外焊接模组采用高精度的运动系统，来保证在焊接过程中准确性，同时配合特殊的工艺，可以极大的消除连锡现象。在用户使用体验方面，Sunflow FS 提供焊接监视相机以及波峰高度自动检测功能，极大提升用户体验。



焊接过程监视 / Monitoring the soldering process

Sunflow FS offers electromagnetic pump system. There is no moving mechanical parts in pump system, so dust is little in process. The pump offer constant flow which translates into stable wave height. The soldering module has high precision axis system to ensure the accurate soldering path and with particular process, the system will eliminate the chance of bridging. Besides, process monitor screen and automatic soldering wave height detecting are very friendly for users.

企业风采

CORPORATE STYLE



客户群体

CUSTOMER GROUP

