

让中国制造享誉世界
MAKE MADE IN CHINA RENOWNED WORLDWIDE

专注领域 Core Focus

3C、半导体、新能源、汽车
3C, Semiconductor, New Energy, Automotive

主营产品(核心单机及线体)

Core Products (Key Single Machines and Production Lines)

装联检测线: 焊锡、选焊、AOI/SPI、点胶、锁付、机器人等

半导体封测线: 纳米银预烧结贴片、甲酸真空回流炉、键合机、AOI等

UV打印线: 激光清洗、UV打印、AOI检测等

Assembly and Inspection Lines: Soldering, Selective Soldering, AOI/SPI, Dispensing, Screwdriving, Robotics, etc.

Semiconductor Packaging and Testing Lines: Nano-silver pre-sintered paste, Formic Acid Vacuum Reflow Ovens, Wire Bonders, AOI, etc.

UV Printing Lines: Laser Cleaning, UV Printing, AOI, etc.

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GREEN INTELLIGENT EQUIPMENT (SHENZHEN) CO.,LTD.



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企业视频频道
Enterprise Video Channel



企业官网
Enterprise Official Website



企业天猫
Enterprise Taobao

小红书 哔哩哔哩 快手 抖音 微博 优酷

GREEN

企业宣传册

CORPORATE BROCHURE

格润智能装备(深圳)有限公司
GREEN INTELLIGENT EQUIPMENT (SHENZHEN) CO.,LTD.

智能制造综合解决方案提供商
INTELLIGENT MANUFACTURING COMPREHENSIVE SOLUTION PROVIDER

格物致知 润泽万物

Investigate Things to Attain Knowledge, Nourish All Beings.

公司简介

COMPANY PROFILE

格润智能是一家国家级高新技术企业，专注于自动化装联及半导体封装测试设备的研发、制造与销售。自2006年成立以来，公司以运动控制、软件算法、视觉控制三大核心技术为基石，构建覆盖3C电子、新能源、半导体封装、汽车电子等领域的智能制造装备体系，形成“5+1+2”创新产品矩阵。

五大核心工艺设备：包括激光焊接、选择性波峰焊、AOI/SPI检测设备、高精度视觉点胶设备及多轴联动智能锁付设备，全面满足精密电子装联需求；

☑ 一大订制非标解决方案，突破自动化瓶颈，解锁柔性生产潜能；

两大前沿技术全球布局：半导体封测与UV打印，不仅实现高精度工艺控制，更填补了先进半导体封装核心装备与工业级超精密UV打印制造领域的技术空白。

目前，公司已累计获得数十项国家专利，并设立院士工作站作为高端研发平台，同时与德国汉堡大学、浙江大学等国内外知名学府共建联合研究中心，形成产、学、研深度融合的创新体系。

未来，格润智能将持续深化AI技术与智能制造的融合创新，助力中国制造向智能化、绿色化转型升级。

Green Intelligence is a national high-tech enterprise specializing in the R&D, manufacturing, and sales of automated assembly and semiconductor packaging and testing equipment. Since its establishment in 2006, the company has built its foundation on three core technologies—motion control, software algorithms, and vision control—to develop an intelligent manufacturing equipment system covering sectors such as 3C electronics, new energy, semiconductor packaging, and automotive electronics. This has resulted in an innovative product matrix referred to as “5+1+2.”

The five core process equipment categories include laser soldering, selective wave soldering, AOI/SPI inspection equipment, high-precision visual dispensing equipment, and multi-axis intelligent screw fastening equipment, comprehensively addressing the needs of precision electronic assembly.

One customized non-standard solution breaks through automation bottlenecks and unlocks the potential for flexible production.

Two cutting-edge technologies with global deployment—semiconductor packaging and testing, and UV printing—not only achieve high-precision process control but also fill technological gaps in advanced semiconductor packaging core equipment and industrial-grade ultra-precision UV printing manufacturing.

To date, the company has accumulated dozens of national patents and established an academican workstation as a high-end R&D platform. It has also collaborated with renowned institutions such as the University of Hamburg and Zhejiang University to build joint research centers, forming an innovation system that deeply integrates industry, academia, and research.

Looking ahead, Green Intelligence will continue to deepen the integration of AI technology and intelligent manufacturing, driving the transformation and upgrading of Chinese manufacturing toward smarter and greener practices.

企业文化

CORPORATE CULTURE

企业理念 Philosophy

客户第一、员工第二、股东第三

Customers 1st, Employees 2nd, Shareholders 3rd

企业使命 Mission

助力智能制造、振兴民族品牌

Empower Intelligent Manufacturing, Revitalize National Brands

企业愿景 Vision

让中国制造享誉世界

Global Renown for Chinese Manufacturing

价值观 Core Value

主动、正面、利他、精进、担当、感恩

Initiative, Positivity, Altruism, Excellence, Responsibility, Gratitude



资质荣誉

QUALIFICATION & HONOR

■ 认证证书 Certificate



■ 专利证书 Patent Certificate



专注领域及部分合作客户

FOCUS AREAS & COOPERATIVE CLIENTS

■ 3C电子 Consumer Electronics



■ 新能源 New Energy



■ 半导体封装 Semiconductor Packaging



■ 汽车电子 Automotive Electronics



* 部分客户，以上排名，不分先后

业务覆盖区域

BUSINESS SERVICE SCOPE

GREEN



已服务全球国家及地区 **20+**
Served countries and regions worldwide

● 总部 Headquarters
● 国内 In China
● 海外 Abroad

华南地区
SOUTH CHINA

广州/Guangzhou
东莞/Dongguan
深圳/Shenzhen
惠州/Huizhou
中山/Zhongshan
佛山/Foshan
.....

华北地区
NORTH CHINA

北京/Beijing
天津/Tianjin
太原/Taiyuan
保定/Baoding
秦皇岛/Qinghuangdao
石家庄/Shijiazhuang
.....

华东/华中地区
EAST CHINA / CENTRAL CHINA

上海/浙江/江苏/Shanghai/Zhejiang/Suzhou
杭州/宁波/温州/Hangzhou/Ningbo/Kunshan
苏州/南京/宿迁/Suzhou/Nanjing/Suqian
潍坊/青岛/Weifang / Qingdao
河南/安徽/江西/Henan/Anhui/Jiangxi
湖南/湖北/Hunan/Hubei
.....

西南地区
SOUTHWEST CHINA

重庆/Chongqing
成都/Chengdu
绵阳/Mianyang
贵阳/Guiyang
.....

海外
OVERSEAS

东南亚: 印尼、泰国、马来西亚、越南、菲律宾、柬埔寨
Southeast Asia: Indonesia, Thailand, Malaysia, Vietnam, Philippines, Cambodia
北美: 美国、墨西哥
North America: United States, Mexico
南美: 巴西
South America: Brazil
中东: 沙特、阿联酋、卡塔尔
Middle East: Saudi Arabia, UAE, Qatar
中亚: 乌兹别克斯坦
Central Asia: Uzbekistan
欧洲: 德国、俄罗斯、匈牙利、瑞士、土耳其
Europe: Germany, Russian, Hungary, Switzerland, Turkey
东亚: 日本、韩国
East Asia: Japan, South Korea

Contents

目录

01 企业简介

Company Profile

公司简介/ Company Profile	P01
企业文化/ Corporate Culture	P02
资质荣誉/ Qualification & Honor	P03
合作伙伴/ Focus Areas & Cooperative Clients	P04
业务覆盖范围/ Business Service Scope	P05

02 非标线体

Non Standard Line Body

SMT后段小单元线体/ SMT Small Unit Line	P11
家电行业自动组装机线体/ Automated Assembly Line for Home Appliances	P13
新能源行业自动组装机线体/ New Energy Automated Production Line	P15
3C数码行业点胶流水线/ Automatic Glue Spraying Line	P17

03 焊锡机系列

Soldering Machine Series

桌面式焊锡机/ Benchttop Soldering Machinet	P21
落地式焊锡机/ Floor Standing Vision Soldering Machine	P23
落地式激光焊锡机/ Floor Standing Laser Soldering Machine	P25
四轴机器人焊锡机/ Four Axis Robot Soldering Machine	P27

04 点胶机系列

Dispensing Machine Series

桌面式点胶机/ Desktop Dispensing Machine	P31
在线式点胶机/ Inline Dispensing Machine	P33
在线式四轴机器人点胶机/ Inline Four Axis Glue Dispensing Machine	P35
六轴机器人点胶机/ Six Axis Glue Dispensing Machine	P37

05 螺丝机系列

Screw machine series

桌面式肩并肩螺丝机/ Desktop Shoulder To Shoulder Screw Machine	P41
在线式四轴机器人螺丝机/ Inline Four Axis Robot Screw Machine	P43
落地式六轴机器人螺丝机/ Floor-Standing Six-Axis Collaborative Robot Screwdriving Machine	P45

06 视觉检测系列

Vision Inspection Series

3D AOI/ 3D Inline AOI Machine	P49
3D SPI/3D Solder Paste Inspection	P51
涂覆AOI/Coating AOI	P53
双面AOI/ Dual-Side AOI System	P55

07 选焊系列

Selection Welding Series

离线式选择性波峰焊/ Offline Selective Wave Soldering	P59
在线式集成选择焊/Online Integrated Selective Soldering	P61
在线式双缸选择性波峰焊/ Online Dual Cylinder Selective Wave Soldering	P63
在线式四缸选择性波峰焊/ Dual-Module Four-Pot Selective Soldering Machine	P65
在线式智能返修系统/Online Intelligent Rework System	P67
在线式锡珠清洗机/ Online Tin Bead Cleaning Machine	P69

08 半导体系列

Semiconductor Series

纳米银预烧结片机/ Nano-Silver Pre-Sintering Die Bonder	P73
在线式甲酸真空回流焊/ In-Line Formic Acid Vacuum Reflow Oven	P75
粗线超声波键合机-单头/ Heavy Wire Ultrasonic Bonding Machine-Single-Head	P77
粗线超声波键合机-双头/ Heavy Wire Ultrasonic Bonding Machine-Double Headed	P79
IGBT 引脚焊接机/ IGBT Pin Welding Machine	P81
半导体晶圆焊线AOI/ Semiconductor Die & Wire Bonding AOI	P83

09 UV打印系列

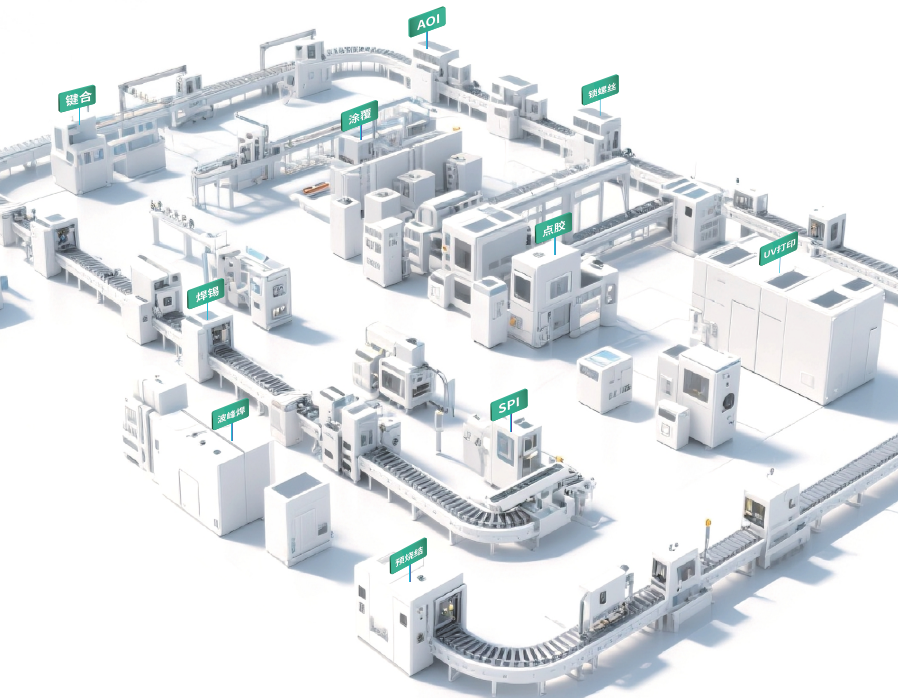
UV Printer Series

新能源行业UV打印设备/ UV Printing Equipment For New Energy Industry	P85
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*本手册内容截止至2025年6月产品版本(V2.0),最新配置如需打印请扫描二维码获取。

智能制造综合解决方案

INTELLIGENT MANUFACTURING INTEGRATED SOLUTION



行业解决方案

INDUSTRY SOLUTIONS

专注于解决行业的痛点, 为客户提供切实可行的解决方案

Our mission is to tackle the pervasive pain points within the industry and offer viable and implementable solutions to our clients.

● 3C电子行业 3C Electronics Industry



● SMT行业

SMT Industry



● 家电行业

Home Appliance Industry



● 半导体封测

Semiconductor Packaging and Testing



● 新能源行业

New Energy Industry



*以上为行业痛点代表性解决方案, 更多整线详情请咨询销售人员!

SMT后段小单元线体

SMT SMALL UNIT LINE

设备特点 Equipment Highlights

- 全套自动化解决方案，安全、简洁、高效
- 优秀的装配工艺，产线设备精密配合，自动化生产
- 身份识别，程序自动调用、防呆、数据统计等功能，实现制造智能化
- 视觉AOI检测，定位、胶路检测、激光测高、锁螺丝同心度检测、MES数据上传
- Complete automation solutions: safe, compact, and efficient
- Superior assembly processes, precise coordination of production line equipment, automated manufacturing
- Identity recognition, automatic program invocation, error-proofing, data statistics, and other features, achieving intelligent manufacturing
- Visual AOI inspection: positioning, glue path detection, laser height measurement, screw concentricity detection, and MES data upload



在线式点胶机
Inline Dispensing Machine



在线式激光焊锡机
Inline Laser Soldering Machine



在线式四缸选择性波峰焊
Inline four cylinder selective wave soldering



在线式视觉锁螺丝机
Inline Vision Screwdriving Machine

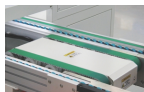


AOI自动光学检测机
AOI Machine

家电行业自动组装线体

AUTOMATED ASSEMBLY LINE FOR HOME APPLIANCES

①升降机
Front elevator



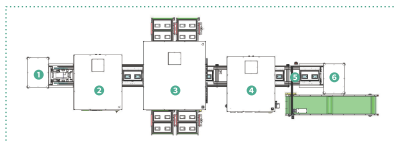
②加强铁组装机
Reinforcement iron assembly machine



③门衬组装机
Door liner assembly machine



仰视图Bottom view



设备特点 Equipment highlights

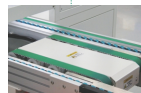
- 采用龙门双工作模块, 左右工作独立, 以满足需求节拍
- 同时放置1#2#两种不同加强铁, 满足换型不需要换料要求, 每个上料通道各装400PCS以上的加强铁, 有4个上料通道
- 灵活的自动调节吸盘结构, 满足各种产品的上料吸取
- 到位感应, 以及缺料感应, 位移传感器再次确认产品及其上升高度, 跨区龙门方式, 龙门可以前后上料区取料
- 吹出式螺丝供料方式, 每个螺丝锁附时间小于2S
- Adopt a gantry dual-work module with independent left and right working areas to meet the required cycle time.
- Simultaneously place two different types of reinforcement irons (#1 and #2) to meet the requirement of no material changover during model switching. Each feeding channel is equipped with over 400 PCS of reinforcement irons, and there are 4 feeding channels in total.
- Flexible automatic vacuum pad adjustment structure to accommodate the feeding and picking of various products.
- Position sensing and material shortage detection, with displacement sensors reconfirming the product and its lifting height.
- The cross-zone gantry method allows the gantry to pick materials from both front and rear feeding areas.
- Air-blow type screw supply method, with each screw fastening time under 2 seconds.



④视觉螺丝机
Visual screw fastening machine



⑤下料机
Unloading machine



⑥升降机
Rear elevator

新能源行业自动组装线体

NEW ENERGY AUTOMATED PRODUCTION LINE



■ 应用范围 Application Range

驱动, 适配器, PC电源, 桥堆, MOS管等中的散热片
Heat sinks in drivers, adapters, PC power supplies, bridge stacks, MOS tubes, etc

■ 细节展示 Details Show



■ 应用领域 Application Field

电子行业/汽车行业/玩具行业/电器行业等

Electronics industry / automotive industry / toy industry / electrical industry, etc

■ 设备特点 Equipment highlights

1. PLC控制系统, 操作接口采用简单易学的人机触摸屏控制
2. 送料/定位/涂胶/涂蜡/锁螺母全自动一次完成, 只需3-4秒
3. 自动检测, 有料启动, 无料停机
4. 自动上料/送料, 一条线体可省多个人工
5. 自动检测, 产量设定, 稳定性高, 效率高, 散热片种类兼容性强, 软件功能可选: 单产品或多体, 带螺母或无螺母直线式或多工位转盘式
6. PLC control system, and the operation interface adopts simple touch screen control
7. Feeding/positioning/forming/gluing/locking screw/assembly is completed automatically at one time, only 3-4 seconds
8. Automatic conveying, output setting, high stability, high efficiency, low heat dissipation
9. Automatic feeding/receiving products, one line body can save high efficiency
10. Automatic conveying, output setting, high stability, high efficiency, low compatibility of heat sink types, software functions optional: single crystal or multibody, with nut or nutless line or multi-position turntable

技术参数 Technical Specification

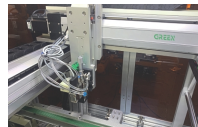
项目 Item	参数 Specification
型号 Model	AL-H1503C01
输入电源 Power supply	AC220V 63A 50-60HZ
智能电批扭力精度 Intelligent electric batch torque accuracy	±5%
定位方式 Positioning	销柱精密定位 Pin column precision positioning
最大功率 Max.power	15KW
输入气压 Input air pressure	0.6-0.8MPa
外形尺寸 Outer dimension(L*W*H)	7200*2000*2000(mm)

3C数码行业点胶流水线

AUTOMATIC GLUE SPRAYING LINE



■ 细节展示 Details Show



■ 设备特点 Equipment highlights

1. 整线针对3C行业产品点胶自动线, 通过输送线到达点胶工位, 进行自动点胶, 采用双层输送线进行治具回流, 采用气动喷射点胶。
2. 设备精度高, 设备重要标准件采用国际知名品牌, 保证设备的精度和稳定性。
3. 设备采用嵌入式运动控制卡加PLC控制, 可实现点/线/面/循环点胶作业。
4. 专用的操作软件, 易懂显示。
5. 超高性价比, 用最低的成本实现点胶智能化。
6. 程式文件可通过U盘上传/下载, 方便资料管理及保存。
7. 此线体应用范围非常广泛, 适合多种行业多种产品。
8. 点胶机线体设计采用自动翻转和升降机构组成, 只需一人上下料作业, 可大量节约作业时间和人工成本

1. The whole line is the automatic dispensing line for 3C products. It reaches the dispensing station and start dispensing. The double-layer conveyor line is used to reflow the fixture and dispensing with pneumatic jet valve.
2. The equipment has high precision, and the important standard parts of the equipment adopt international famous brands to ensure the precision and stability of the equipment.
3. The equipment adopts embedded motion control card plus PLC control system, which can realize point/line/surface/cycle dispensing operation.
4. With dedicated operating software which is easy to learn and use.
5. Super cost-effective, realize intelligent dispensing with the lowest cost.
6. Program files can be uploaded/downloaded through U disk, which is convenient for data management and storage.
7. It is suitable for products and requirements industries.
8. Automatic turning and lifting, only one person is required for loading and unloading operations, which can greatly save operation time and labor costs.

■ 技术参数 Technical Specification

项目 Item	参数 Specification
型 号 Model	AL-DPC01
输送方式 Delivery method	上下皮带线 Upper and lower belt line
翻转 Flip	自动翻转 auto flip
回流 Reflow	升降机上下回流 elevator up and down return
点胶行程 Dispensing stroke(X*Y*Z)	300°300°100(mm)
点胶方式 Dispensing method	高速气动喷射 high-speed pneumatic injection valve
运动速度 Movement speed	800mm/s
驱动方式 Drive method	伺服电机+丝杠+导轨 Servo motor+screw+precision guide rail
程序记录模式 Program recording mode	1000组 1000 Groups
重复精度 Repeatability	±0.01 mm
控制系统 Control system	运动控制卡+PLC+触摸屏 motion control card+PLC+touch screen
最大功率 Max.power	8KW
输入电源 Power supply	AC220V 32A 50Hz
可运动图形 Motion graph	点、直线、圆弧、椭圆、曲线、多段线、螺旋线、椭圆 Point, Line, Arc, Full Circle, Curve, Polyline, Helix, Ellipse
I/O信号 I/O signal	12 In puts/12 Out puts
显示方式 Display method	LED数导盒和触摸屏 LED teaching box and touch screen
清洗 Cleaning	自动擦胶 Automatic wipe function
胶量检测 Glue quantity detection	自动检测缺胶报警 Automatic detection of glue shortage alarm
选配 Optional	视觉机构 visual agency
外形尺寸 Outer dimension(L*W*H)	5400°760°1550(mm)

■ 应用范围 Application Range

手机、电脑、集成电路、平板、数码产品、电池组装、扬声器、机械部件密封、芯片绑定、半导体封装、LED封装点胶
Mobile phone, computer, integrated circuit, tablet, digital products, battery assembly, speaker Mechanical parts sealing, chip bonding, semiconductor packaging, LED packaging dispensing

焊锡机系列

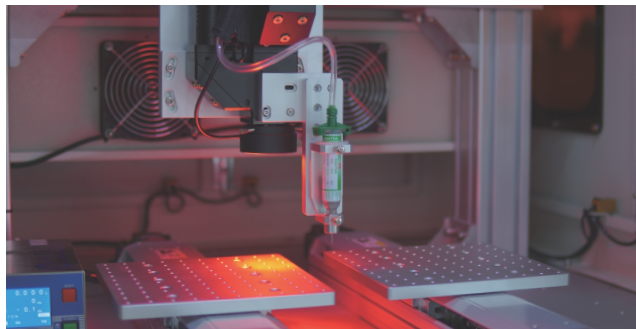
SOLDERING MACHINE SERIES

图片 Picture					
类型 Type	桌面式 Desktop style	落地式 Floor type	激光焊 Laser Welding	锡球焊 Solder Ball Welding	在线式四轴 In-Line 4-axis
行程(mm) Travel distance (mm)	300*300*100*360°	500*300*300*100*360°	500*300*300*100	500*300*300*100	600臂长Arm length)
重复精度(mm) Repetitive accuracy (mm)	± 0.05	± 0.05	± 0.02	± 0.02	± 0.02
移动速度(mm/sec) Moving speed (mm/sec)	X/Y (500) Z (300)	X/Y (500) Z (300)	X/Y (800) Z (400)	X/Y (800) Z (400)	7850/s(最大值max)
工作范围(mm) Scope of work (mm)	250*300	200*300	200*300	200*200	-
外形尺寸(mm) Dimensions (mm)	517*603*846	900*850*1700	950*1000*1830	1000*1100*1650	1200*1000*1850
标配 Standard configuration	温控器 Thermostat 送锡器 Solder Feeder 报警功能 Alarm Function 温度精度 Temperature Accuracy CCD视觉定位 CCD Vision Positioning 可用锡丝直径 Available Solder - Wire Diameter	温控器 Thermostat 送锡器 Solder Feeder 报警功能 Alarm Function 温度精度 Temperature Accuracy 可用锡丝直径 Available Solder - Wire Diameter 防护机罩 Protective Cover	激光锡丝或激光锡膏 Laser Soldering Wire or Laser Solder Paste 连续半导体激光器 Continuous Semiconductor Laser 300W风冷/1000W水冷 300W air cooling/1000W water cooling 连续半导体激光 Continuous Laser 同轴相机监控 Coaxial Camera Monitoring 500W像素相机 Standard with a 5-megapixel camera 风冷 Air Cooling	连续脉冲光纤激光器 Continuous-pulse fiber laser 锡球结构 Solder ball feeding mechanism CCD视觉定位 CCD Vision Positioning	温控器 Thermostat 送锡器 Solder Feeder 报警功能 Alarm Function 温度精度 Temperature Accuracy 可用锡丝直径 Available Solder - Wire Diameter 防护机罩 Protective Cover
选配 Optional	安全光栅 Safety Grating 防护机罩 Protective Cover 烟雾净化器 Smoke Purifier	CCD视觉定位 CCD Vision Positioning 安全光栅 Safety Grating 烟雾净化器 Smoke Purifier	蓝光半导体激光器 Blue Light Semiconductor Laser 连续半导体激光 Continuous Semiconductor Laser 烟雾净化器 Smoke Purifier	-	CCD视觉定位 CCD Vision Positioning 安全光栅 Safety Grating 烟雾净化器 Smoke Purifier

设备特点 Equipment highlights

1. 灵活焊接模式:支持多角度焊,点焊与拖焊,参数可自定义,适配高难度作业与微焊工艺。
2. 简易编程方法:可直接输入或通过示教功能确定焊点坐标,操作示教盒即可引导运动末端精准定位。
3. 稳定温控系统:采用威尔发热芯,升降温快,温度误差 $\pm 5^{\circ}\text{C}$,温度补偿迅速、热传导效率高。搭配威尔温控系统,保障温度均匀稳定,避免因温度波动致焊接质量问题。

1. Flexible Soldering Capabilities Supports diverse soldering modes including multi-angle, spot soldering, and drag soldering. Customizable parameters are ideal for high-complexity operations and micro-soldering process.
2. Simple Programming Provides two methods for solder joint coordinate determination: direct input and teaching function. The teaching pendant allows precise guidance of the motion end to solder joints.
3. Precise Temperature Regulation Equipped with a Weller heating element for rapid heating and cooling, with temperature error within $\pm 2^{\circ}\text{C}$. Features fast temperature compensation and high heat conduction. Paired with a Weller temperature control system, it ensures consistent temperature and avoids soldering quality issues due to temperature variations in automated operations.



应用范围 Application Range

电热水壶、电饭煲等产品的PCB焊点作业,电子产品:手机、平板电脑、笔记本电脑等内部元件的焊接,仪器仪表:各种精密仪器仪表的电路板焊接,LED灯具:LED灯条、LED模组等产品的焊接,通讯设备:交换机、路由器等通讯产品的电路板焊接

Home Appliances - Electric kettles, rice cookers; Consumer Electronics - Smartphones, tablets, laptops; Precision Instruments - Meters, testing devices; LED Lighting - LED Strips, modules; Networking Hardware - Switches, routers

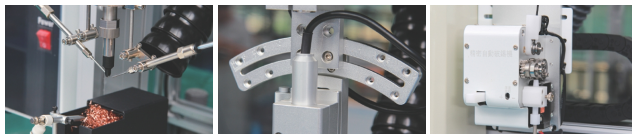


桌面式焊锡机

BENCHTOP SOLDERING MACHINE T



■ 细节展示 Details Show



■ 应用范围 Application Range

焊锡机广泛应用于需要高精度焊锡作业的领域,包括但不限于:小家电:如电热水壶、电饭煲等产品的PCB焊点作业,电子产品:手机、平板电脑、笔记本电脑等内部元件的焊接,仪器仪表:各种精密仪器仪表的电路板焊接,LED灯具:LED灯条、LED模组等产品的焊接,通讯设备:交换机、路由器等通讯产品的电路板焊接

Precision Soldering Solutions for: Home Appliances – Electric kettles, rice cookers; Consumer Electronics – Smartphones, tablets, laptops; Precision Instruments – Meters, testing devices; LED Lighting – LED Strips, modules; Networking Hardware – Switches, routers

■ 设备特点 Equipment highlights

- 高精度与稳定性:多轴联动设计,结合精密马达和导轨,实现高精度和重复定位精度(如 $\pm 0.05\text{mm}$)
- 灵活性:支持多种焊锡方式,如点焊、拖焊(拉焊)等,满足不同产品需求
- 智能化:配备自动清洗、破锡、锡渣回收等功能,减少人工干预,提高生产效率
- 温度控制:采用先进的温控算法,实现精确的温度控制和快速补温,确保焊接质量
- 易用性:通过示教盒编程,简化操作流程,支持多组记忆程序,方便快速切换产品

- Precision: Multi-axis design with $\pm 0.05\text{mm}$ repeatability
- Flexibility: Supports spot/drag soldering
- Automation: Auto cleaning, tin-breaking and dross recycling functions
- Temperature Control: PID algorithm ($50\text{--}450^\circ\text{C}$ $\pm 1^\circ\text{C}$)
- Usability: Teach pendant programming with 99 memory slots

■ 标配 Standard Configuration

温控器 Thermosnat	标配高频200W (150W/300W/400W/600W可选) High-Frequency 200W (Standard) (150W/300W/400W/600W Optional)
温度范围 Temperature Range	室温-450°C Room Temperature – 450°C
送锡器 Solder Feeder	标配带破锡功能 Standard with solder breaking function
报警功能 Alarm Function	温度异常报警/无锡报警 Alarm for Abnormal Temperature / No Solder
温度精度 Temperature Accuracy	$\pm 5^\circ\text{C}$ $\pm 5^\circ\text{C}$
可用锡丝直径 Available Solder Wire Diameters	$\leq 0.6\text{--}42.0\text{mm}$ (需更换配件) $\leq 0.6\text{--}42.0\text{mm}$ (Accessories need to be replaced)

■ 选配 Optional Configuration

CCD视觉定位 CCD Visual Positioning	标配500W像素相机+同轴光 Standard with a 5-megapixel camera + coaxial light
安全光栅 Safety Grating	光栅 Grating
防护机罩 Protective Cover	标配3030型材+透明PVC Standard with 3030 profile + transparent PVC
烟雾净化器 Smoke Purifier	小型 Small - sized

■ 技术参数 Technical Specification

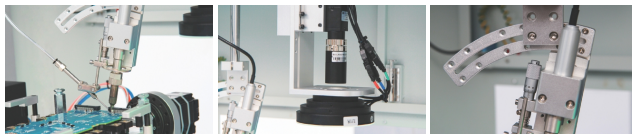
项目 Item	参数 Specification			
	单工位 Single-station	双工位 Dual-station		
型号 Model	GR-DH331R	GR-DH441R	GR-DH531R	GR-DH641R
X/Y/Z行程(mm) X/Y/Z Stroke(mm)	300*300*100*360*	400*400*100*360*	500*300*300*100*360*	600*400*400*100*360*
X/Y/Z重复精度(mm) X/Y/Z Repeatability Accuracy (mm)	$\pm 0.05\text{mm}$			
X/Y/Z最大移动速度(mm/s) X/Y/Z Max Moving Speed (mm/s)	X/Y轴(500) Z轴(300) X/Y Axis (500) Z Axis (300)			
X/Y/Z传动方式 X/Y/Z Transmission Mode	运动控制卡+手持控制盒 或 运动控制卡+工控机 Motion Control Card + Handheld Control Box or Motion Control Card + Industrial Computer			
负载 Load	步进电机+同步带+导轨 或 伺服电机+丝杆+导轨 Stepper Motor + Timing Belt + Guide Rail or Servo Motor + Lead Screw + Guide Rail			
工作范围(mm) Working Range (mm)	250*300	350*400	200*300	250*400
输入电源 Input Power Supply	AC220V/10A/50-60HZ			
输入气压 Input Air Pressure	0.5-0.7MPa			
最大功率 Max Power	850W			
外形尺寸(mm) 未含机罩 Overall Dimensions (mm)	517*603*846	617*703*846	717*603*846	817*703*846



■ 技术参数 Technical Specification

项目 Item	参数 Specification		
型号 Model	单工位 Single Station	双工位 Dual Stations	
	GR-LH441R	GR-LH531R	GR-LH6441R
X/Y/Z行程(mm) X/Y/Z Stroke(mm)	400*400*100*360"	500*300*300*100*360"	600*400*400*100*360"
X/Y/Z重复精度 (mm) X/Y/Z Repetability Accuracy(mm)	± 0.05mm		
X/Y/Z最大移动速度 (mm/s) X/Y/Z Max Moving Speed (mm/s)	X/Y轴 (500) Z轴 (300) X/Y Axis (500) Z Axis (300)		
X/Y/Z控制系统 X/Y/Z Control System	运动控制卡+手持控制盒 或 运动控制卡+工控机 Motion Control Card + Handheld Control Box or Motion Control Card + Industrial Computer		
X/Y/Z传动方式 X/Y/Z Transmission Mode	步进电机+同步带/导轨 或 伺服电机+丝杆/导轨 Stepper Motor + Timing Belt + Guide Rail or Servo Motor + Lead Screw + Guide Rail		
负载 Load	1轴平台工作负载10kg The working load of the X-axis platform is 10 kg		
工作范围 (mm) Working Range	350*400	200*300	250*400
输入电源 Input Power Supply	AC220V/10A/50-60HZ		
输入气压 Input Air Pressure	0.5~0.7MPa		
最大功率 Max Power	850W		
外形尺寸 (mm) Overall Dimensions (mm)	800*950*1700	900*850*1700	1000*950*1700

■ 细节展示 Details Show



■ 应用范围 Application Range

便携式电阻焊机被广泛应用于电子、通讯、汽车、汽配、金属等多个行业领域,具体包括但不限于:电子领域:用于各种电子元件、电路板、连接器的焊接;通讯领域:用于数据板、天线、无线通讯产品的焊接;汽车领域:用于车体、车架、机壳、洗衣机等家用电器的电路板和控制器的焊接;汽车领域:用于汽车电子元件、传感器、导航仪等产品;其他领域:储能电感线圈;储能电感线圈;逆变器、变频器等。

Hand Standing Vising Soldering Machine is widely used among products industries, including electronics, telecommunications, home appliances, automotive, and energy storage. Specific applications include but are not limited to: Electronics Industry: Electronic components, PCBs (Printed Circuit Boards), Connectors, etc. Telecommunications Industry: Soldering data cards, Interfaces, Antennas, and other communication products. Home Appliance Industry: Soldering PCBs and control boards in appliances such as air conditioners, washing machines, etc. Automotive Industry: Soldering car body, chassis, engine housing, etc. Other Industries: Energy storage inductors, inverter, frequency converter, etc.

■ 设备特点 Equipment highlights

1. 视觉系统: 利用高分辨率的摄像头和先进的图像处理技术, 对焊接接头进行精确检测和定位, 确保焊接过程的精度和一致性。
 2. 烙铁头与加热系统: 采用高纯度铜烙铁头和先进的加热系统, 能够精准、高效地融化焊料, 完成焊接过程。
 3. 自动送锡机构: 通过精密的机械传动, 实现锡丝的自动输送, 确保焊接过程中锡量的稳定和准确。
 4. 控制系统: 采用 PLC 控制技术, 实现对设备各部件的精确控制和协调, 确保焊接过程的稳定性和可靠性。
3. 系统优势: 该系统具有自动化程度高、生产效率提升显著、焊接质量稳定可靠、可适应多种产品需求等优点, 可以有效降低人工成本, 提高产品质量和一致性。
4. 系统应用: 适用于各种电子产品的焊接, 如电路板贴片、连接器焊接、小型元器件组装等, 广泛应用于消费电子、工业制造、汽车电子等领域。
5. 系统维护: 系统采用模块化设计, 维护简便, 故障率低, 可大大减少停机时间, 提高设备利用率。
6. 系统升级: 系统具备良好的可扩展性, 可根据未来生产需求进行灵活升级, 保持系统的先进性和竞争力。

标配 Standard Configuration

温控器 Thermostat	标配高頻200W (150W/300W/400W/600W可选) High - frequency 200W (Standard) (150W/300W/400W/600W/Optional)
温度范围 Temperature Range	室温~450°C Room temperature~450°C
烙铁器 Solder Iron	标配带破锡功能 Standard with solder breaking function
报警功能 Alarm Function	温度异常报警/无锡报警 Alarm for Abnormal Temperature / No Solder
温度精度 Temperature Accuracy	±5°C ±5 °C
可用烙丝直径 Available Solder Wire Diameters	40.6~42.0mm (需更换配件) 40.6~42.0mm (Accessories need to be replaced)
防护罩 Protective Cover	标配3030型材+透明PC Standard with 3030 profile + transparent PVC

选配 Optional Configuration

AI视觉焊缝识别与路径生成 AI Visual Weld Seam Recognition and Path Generation	标配500W像素相机+同轴光 Standard with a 5-megapixel camera + coaxial light
安全光栅 Safety Grating	光栅 Grating
烟雾净化器 Smoke Purifier	小型 Small-sized

落地式激光焊锡机

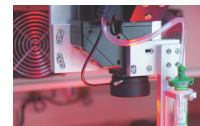
FLOOR STANDING LASER SOLDERING MACHINE



■ 技术参数 Technical Specification

项目 Item	参数 Specification			
型号 Model	单工位 Single-Station GR-LJ441	双工位 Dual-Stations GR-LJ6441		
X/Y/Z行程(mm) X/Y/Z Stroke(mm)	400*400*100	500*300*300*100	600*400*400*100	700*500*500*100
X/Y/Z重复精度 (mm) X/Y/Z Repeatability Accuracy(mm)	± 0.02mm			
X/Y/Z最大移动速度 (mm/s) X/Y/Z Max Moving Speed(mm/s)	X/Y轴 (800) Z轴 (400) X/Y Axis (800) Z Axis (400)			
X/Y/Z控制系统 X/Y/Z Control System	运动控制卡+工控机 Motion Control Card + Industrial Computer			
X/Y/Z传动方式 X/Y/Z Transmission Mode	伺服电机+丝杆+导轨 Servo Motor + Lead Screw + Guide Rail			
负载 Load	Y轴平台工作负载10kg The working load of the Y-axis platform is 10 kg			
工作范围 (mm) Working Range(mm)	350*400	200*300	250*400	300*500
输入电源 Input Power Supply	AC220V/10A/50-60HZ			
输入气压 Input Air Pressure	0.5~0.7MPa			
最大功率 Max Power	2KW	2.5KW		
外形尺寸 (mm) Overall Dimensions(mm)	950*1000*1830	950*1000*1830	1050*1000*1830	1150*1100*1830

■ 细节展示 Details Show



■ 应用范围 Application Range

通讯、军工、航天、汽车电子、医疗器械、手机等

Communications, Military, Aerospace, Automotive Electronics, Medical Devices, Smartphones, etc.

■ 设备特点 Equipment highlights

1.CCD自动拼图扫描定位后开始点锡膏,利用透镜或单聚焦光学系统进行一次性整板激光焊接

2.运动系统:6轴水平关节机械手+平台的结构

3.自动点锡膏系统:配武藏喷射锡膏阀(选配)

4.自动贴装预制焊片系统:贴片机构原理(选配)

1.After CCD automatic pattern scanning and alignment, solder paste is dispensed, then one-pass laser welding is performed using galvanometer scanning or single-focus optical system.

2.Motion system: 6-axis horizontal articulated robot with XY platform structure.

3Automatic solder paste dispensing system: equipped with Musashi jet paste valve (optional).

4Automatic solder preform mounting system: pick-and-place mechanism (optional).

标配 Standard Configuration

焊接类型 Soldering Type	激光锡丝 或 激光锡膏 Laser Soldering Wire or Laser Solder Paste
激光器类型 Laser Generator Type	连续半导体激光器 Continuous Semiconductor Laser
激光器波长 Laser Generator Wavelength	915nm 915nm
最大激光功率 Max Laser Power	300W风冷/1000W水冷 300W air cooling / 1000W water cooling
激光类型 Laser Type	连续半导体激光 Continuous Laser
焊接实时监控 Real-time Welding Monitoring	同轴相机监视 Coaxial Camera Monitoring
CCD视觉定位 CCD Visual Positioning	标配500W像素相机 Standard with 500W pixel camera
冷却方式 Cooling Method	风冷 Air Cooling

选配 Optional Configuration

激光类型(蓝光) Laser Type (Blue light)	蓝光半导体激光器 Blue Light Semiconductor Laser
激光器波长(蓝光) Laser Generator Wavelength (Blue light)	450nm 450nm
最大激光功率(蓝光) Max Laser Power (Blue light)	100W 100W
激光类型(蓝光) Laser Generator Type (Blue Light)	连续半导体激光 Continuous Semiconductor Laser
烟雾净化器 Smoke Purifier	小型 Small-sized

四轴机器人焊锡机

ONLINE FOUR AXIS ROBOT SOLDERING MACHINE



■ 细节展示 Details Show



■ 应用范围 Application Range

在线式机器人视觉焊锡机设备广泛应用于电子、汽车、家电、排插、通讯等行业，特别适用于对焊锡精度和效率要求较高的生产场景，如手机主板、电脑主板、汽车电子控制单元等精密电子元件的焊锡作业。

Inline Robotic Vision Soldering Machines: Applied in electronics, automotive, home appliances, power strips, and communications. Ideal for high-precision and high-efficiency soldering of precision electronic components (e.g., mobile phone/computer motherboards, automotive ECUs).

■ 设备特点 Equipment highlights

- 高精度定位 视觉识别系统结合机器人的高精度运动控制，确保焊锡位置的准确性。
 - 高效自动化 双皮带实现连续送料，机器人和PLC协同工作，提高生产效率。
 - 智能化管理 PLC具备强大的数据处理和逻辑控制能力，能够实现对整个焊锡过程的智能化管控。
 - 灵活性强 设备可根据不同工件的需求进行编程和调整，适应多种焊锡工艺。
 - 稳定性强 采用高品质部件和先进的制造工艺，确保设备的长期稳定运行。
- High-precision Positioning: The visual recognition system combined with the high-precision motion control of the robot ensures the accuracy of the soldering position.
 - High-efficiency Automation: The double-belt conveyor line enables continuous feeding. Production efficiency improved by the coordination work of the robot and the PLC.
 - Intelligent Management: The powerful data processing and logical control capabilities of the PLC can achieve intelligent management of the entire soldering process.
 - High Flexibility: The equipment can be programmed and adjusted according to the requirements of different workpieces to adapt to various soldering processes.
 - High Stability: The long-term stable operation of the equipment is ensured by high-quality components and advanced manufacturing processes.

■ 标配 Standard Configuration

温控器 Thermostat	标配高频200W (150W/300W/400W/600W可选) High-Frequency 200W (standard) 150W/300W/400W/600W Optional)
温度范围 Temperature Range	室温-450°C Room temperature-450°C
送锡器 Solder Feeder	标配带破锡功能 Standard with solder breaking function
报警功能 Alarm Function	温度异常报警/无锡报警 Alarm for Abnormal Temperature / No Solder
温度精度 Temperature Accuracy	±5°C ±5°C
可用锡丝直径 Available Solder Wire Diameters	Φ0.6-Φ2.0mm (需更换配件) Φ0.6-Φ2.0mm/Accessories need to be replaced)
防护罩 Protective Cover	标配3030型材+透明PVC Standard with 3030 profile + transparent PVC

■ 选配 Optional Configuration

AI视觉焊锡识别与路径生成 AI Visual Weld Seam Recognition and Path Generation	标配500W像素相机+同轴光 Standard with a 5-megapixel camera + coaxial light
安全光栅 Safety Grating	光栅 Grating
烟雾净化器 Smoke Purifier	小型 Small - sized

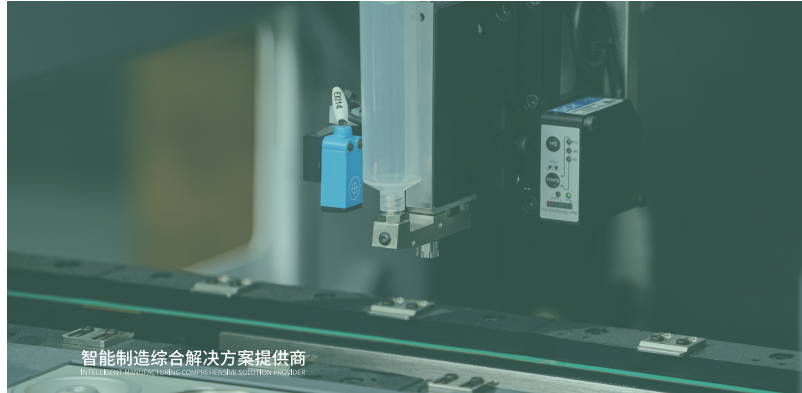
■ 技术参数 Technical Specification

项目 Item	参数 Specification
型号 Model	GR-OH600R GR-OH600R
机器人臂长(mm) Robot Arm Reach(mm)	600 600
重复精度 (mm) Repeatability Accuracy(mm)	第1+2关节 (±0.02) 第3关节 (±0.01) 第4关节 (±0.01) Joints 1+2 (±0.02 mm/s) Joint 3 (±0.01 mm/s) Joint 4 (±0.01)
最大移动速度 (mm/s) Max Moving Speed(mm/s)	第1+2关节 (7850) 第3关节 (1600) 第4关节 (2000) Joints 1+2 (7850 mm/s) Joint 3 (1600 mm/s) Joint 4 (2000/s)
控制系统 Control System	运动控制卡+工控机+PLC Motion Control Card+ Industrial Computer+PLC
传动方式 Transmission Mode	皮带线 Belt Conveyor
负载 Load	最大负载7kg Max Load 7kg
输入电源 Input Power Supply	AC220V/10A/50-60HZ AC220V/10A/50-60HZ
输入气压 Input Air Pressure	0.5-0.7MPa 0.5-0.7MPa
最大功率 Max Power	2.5KW 2.5KW
外形尺寸 (mm) Overall Dimensions(mm)	1200*1000*1850 1200*1000*1850

点胶机系列

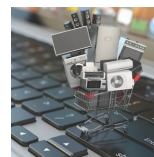
DISPENSING MACHINE SERIES

图片 Picture				
类型 Type	桌面式 Desktop	落地式 Floor standing	在线式 In-line	在线式四轴 In-line 4-axis
行程(mm) Travel range(mm)	500*300*300*100	800*500*500*100	350*650*100	600(臂长 arm length)
重复精度(mm) Repeatability(mm)	± 0.05	± 0.02	± 0.015	± 0.02
移动速度(mm/sec) Moving speed (mm/sec)	X/Y (500) Z (300)	X/Y (800) Z (400)	X/Y (1000) Z (500)	1600-7850
工作范围(mm) Working range(mm)	200*300	320*450	单轨 (350*500) / 双轨 (350*200) Single rail (350*500) / Two rail (350*200)	500*400
外形尺寸(mm) Overall dimensions(mm)	717*603*630	1300*1000*1650	835*1300*1450	1350*1200*1950
标配 Standard Configuration	点胶针筒 Dispensing syringe 点胶控制器 Dispensing controller	CCD视觉定位 CCD Visual Positioning 点胶针筒 Dispensing syringe 点胶控制器 Dispensing controller	CCD视觉定位 CCD Visual Positioning 输送轨道 Conveying rail 轨道调整方式 Rail width adjust method 轨道调整范围 Rail Width Adjustment Range 基板最小夹边距 Substrate Minimum Edge Clearance 基板厚度(含治具) Substrate Thickness (including fixture) 轨道离地高度 Rail elevation 传送方向 Conveying direction 定位机构 Positioning mechanism	CCD视觉定位 CCD Visual Positioning 轨道调整方式 Rail width adjust method 轨道离地高度 Rail elevation 传送方向 Conveying direction 定位机构 Positioning mechanism
选配 Optional accessories	阀体 Valve CCD视觉定位 CCD Visual Positioning 视觉胶路检测 Vision-based glue path inspection 测高 Height inspection 擦胶机构 Glue wiping mechanism 安全光栅 Safety Light Curtain 防护罩 Safety Guard	阀体 Valve 视觉胶路检测 Vision-based glue path inspection 测高 Height inspection 对针 Needle alignment 擦胶机构 Glue wiping mechanism 胶胶报警 Glue deficiency alarm 安全光栅 Safety Light Curtain 同步双阀 Asynchronous Dual-Valve System 同步多阀 Synchronized Multi-Valve System	阀体 Valve 视觉胶路检测 Vision-based glue path inspection 测高 Height inspection 称重系统 Weighing system 对针 Needle alignment 擦胶机构 Glue wiping mechanism 胶胶报警 Glue deficiency alarm 上下层轨道 Upper and lower rail 双轨输送 Two rail conveying 预加热模块 Preheating module 补气增压泵/电气比例阀 Booster Pump/Proportional Valve 同步双阀 Asynchronous Dual-Valve System 同步多阀 Synchronized Multi-Valve System 阀体材料旋转点胶 Valve-Body Tilting & Rotary Dispensing	阀体 Valve 视觉胶路检测 Vision-based glue path inspection 测高 Height inspection 称重系统 Weighing system 对针 Needle alignment 擦胶机构 Glue wiping mechanism 胶胶报警 Glue deficiency alarm 上下层轨道 Upper and lower rail 双轨输送 Two rail conveying 预加热模块 Preheating module 补气增压泵/电气比例阀 Booster Pump/Proportional Valve 同步双阀 Asynchronous Dual-Valve System 同步多阀 Synchronized Multi-Valve System 阀体材料旋转点胶 Valve-Body Tilting & Rotary Dispensing



智能制造综合解决方案提供商
INTELLIGENT MANUFACTURING COMPREHENSIVE SOLUTION PROVIDER

应用场景 Application scenarios



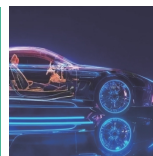
消费类电子
Consumer electronics



智能家居
Smart home



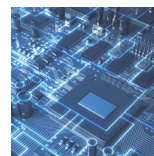
汽车电子
Automotive electronics



医疗行业
Medical industry



通讯电子
Communication electronics



SMT加工行业
SMT processing industry



桌面式点胶机

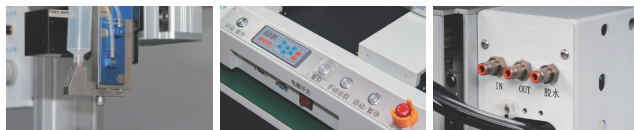
DESKTOP DISPENSING MACHINE



技术参数 Technical Specification

项目 Item	参数 Specification			
	单工位 single workstation		双工位 two workstation	
型号 Model	GR-DD331	GR-DD441	GR-DD5331	GR-DD6441
X/Y/Z行程(mm) X/Y/Z travel range(mm)	300*300*100	400*400*100	500*300*300*100	600*400*400*100
X/Y/Z重复精度 (mm) X/Y/Z repeatability (mm)	± 0.02mm			
X/Y/Z最大移动速度 (mm/s) X/Y/Z maximum speed (mm/s)	X/Y轴 (500) Z轴 (300) X/Y axis (500) Z axis (300)			
X/Y/Z控制系统 X/Y/Z control system	运动控制卡+手持控制盒 或 运动控制卡+工控机 Motion control card+handheld programmer or motion control card+ industrial PC			
X/Y/Z传动方式 X/Y/Z transmission method	步进电机+同步带+导轨 或 伺服电机+丝杆+导轨 Servo motor + synchronous Belt + guide rail or servo motor + lead screw + guide rail			
负载 Load capacity	Y轴平台工作负载10kg Y axis working station load capacity 10kg			
工作范围 (mm) Working range (mm)	250*300	350*400	200*300	250*400
输入电源 Power input	AC220V/10A/50-60HZ			
输入气压 Input air pressure	0.5~0.7MPa			
最大功率 Max equipment power	350W			
外形尺寸 (mm) Overall dimensions (mm)	517*603*630	617*703*630	717*603*630	817*703*630

细节展示 Details Show



优势应用 Advantageous applications

1. 底部填充 (Underfill)
2. 引脚包封 (pin encapsulating)
3. 精密涂覆 (conformal coating)
4. 堆栈封装 POP (package on packaging)
5. 围坝填充 (Dam fill)
6. SMT 红胶制程 (SMT red adhesive process)
7. COB 封装 (COB packaging)

设备特点 Equipment highlights

设备采用稳定的机械结构与丝杆驱动设计, 确保机台在高速运动过程中X/Y/Z三轴的运行精度, 达到理想的点胶效果。搭配不同种类和数量的阀体配置, 提高生产效率, 可满足不同工艺的点胶要求。

The machine adopts a stable mechanical structure and ball screw drive design, ensuring high-precision movement of the X/Y/Z axes during high-speed operation to achieve optimal dispensing results. Compatible with multiple valve types and configurations to improve production efficiency and meet various dispensing process requirements.

1. 适用于底部填充胶、硅胶、银浆、热熔胶、密封胶、红胶、UV胶、三防胶等市面上大部分胶水
2. 连续路径点胶, 实现整个喷射点胶过程维持点胶速度和方向的连续性; 尤其适合小器件紧密相连的高速连续运动点胶
3. 采用稳定的机械结构与丝杆驱动设计, 确保机台在高速运动过程中XYZ三轴的运行精度, 人性化的软件界面保证简单易用
4. 流体低液位报警, 减少因胶水不足引起的不良
5. 创新性的一键校正尽可能减少人为操作, 提高效率, 提高不同机台的点胶差异
6. 自动生成检测报告, 为后续良率分析以及产品可追溯性分析提供强有力的数据支持
1. Compatible with most adhesives: underfill, silicone, silver paste, hot melt, threadlocker, red glue, UV glue, conformal coating, etc.
2. Continuous-path dispensing maintains speed/direction stability, ideal for high-speed precision dispensing on dense small components.
3. Sturdy ball-screw design ensures XYZ-axis precision at high speeds. User-friendly software interface.
4. Low-fluid alarm prevents defects from adhesive shortage.
5. One-touch calibration minimizes manual adjustment and machine variance.
6. Auto-generated inspection reports support yield analysis and traceability.

标配 Standard Configuration

点胶针筒 dispensing syringe	30CC 30CC
点胶控制器 dispensing controller	国产 Made in China

选配 Accessories Configuration

阀体 Valve	压电阀/气动阀/螺针阀 根据胶水及工艺选配 Piezoelectric valve/pneumatic valve/screw valve adapted according to glue and process
AI视觉定位与补偿 AI Visual Positioning and Compensation	标配130万像素相机+三色同轴光 Standard 1.3M pixel camera+tricolor coaxial light
AI质量检测 AI Quality Inspection	断胶/溢胶 Glue Overflow/glue cutoff
测高 Height inspection	激光测高 Laser height inspection
擦胶机构 Glue wiping mechanism	喷嘴擦胶机构 或 针筒擦胶机构 Glue wiping mechanism or glue wiping mechanism
安全光栅 Safety Light Curtain	光栅 light curtain
防护机罩 Safety Guard	标配3030型材+透明PVC 3030 Profile+transparent PVC

在线式点胶机

INLINE DISPENSING MACHINE



■ 细节展示 Details Show



■ 设备特点 Equipment highlights

1. 整机采用方便维修前置式设计, 热处理后结构力学稳定, 系统运行更持久;
 2. 丝杆龙门模组采用直连方式, 易损部件少, 节约了购置成本;
 3. 直线电机龙门模组搭配微米分辨率光栅尺闭环控制, 精度更高更可靠;
 4. 根据不同的点胶工艺要求, 灵活应用多种相应的功能模块, 都可根据实时要求进行选配;
 5. 固体固定平台通用各种不同固体, 适用各种点胶工艺及胶水切换;
 6. 自动上下料, 减少人工干预, 提高设备效率与效率;
 7. 精准的定量控制, 通过视觉自动纠正补偿产品点胶位置的偏移量, 提高点胶作业良率;
 8. 可配置扫码系统, 对接MES系统, 实现大数据交互, 提高车间信息化管理水平;
 9. 可在点胶后实现对产品上胶路的外形检测, 如多胶, 少胶, 断胶, 胶路倾斜等。
- 1.The machine adopts a square tube welded structure with weight balancing design, heat-treated for enhanced mechanical stability and prolonged operational durability.
2.Linear screw gantry module features direct-drive connection, minimizing wear-prone components and reducing ownership costs.
3.Linear motor gantry module with micrometer-resolution optical encoder closed-loop control ensures superior precision and reliability.
4.Modular process configurations support flexible adaptation to various dispensing requirements, with machine optional feature integration.
5.Universal valve mounting platform accommodates multiple valve types for seamless process and adhesive switching.
6.Automated material handling reduces manual intervention, improving yield and efficiency.
7.Precise adhesive metering with vision-based positional offset compensation enhances dispensing yield.
8.Configurable barcode scanning system with MES for real-time production data integration and smart factory management.
9.Regret the appearance of the adhesive path on the product, such as excessive or insufficient adhesive, broken adhesive, and offset adhesive path.

标记 Standard Configuration

A1视觉定位与补偿 AI Visual Positioning and Compensation	标配130W像素相机+三色同轴光1.3M camera + coaxial tri-color lighting
输送轨道Conveying rail	7mm宽皮带带 单轨道输送7mm wide flat belt single rail conveying
轨道调宽方式Railwidth adjust method	自动调宽Automatic width adjustment
轨道调宽范围Railwidth Adjustment Range	50~500mm
基板最小板边缘Substrate Minimum Edge	5mm
基板厚度(含治具)Substrate Thickness (including fixture)	0.5~8mm
轨道离地高度Nozzle elevation	900±20mm
轨道前进/后退Dispensing direction	左进右出/右进左出/左进左出/右进右出:left in/out right, Right in/out left
定位机构Positioning mechanism	轨道前后两个产品顶升机构rail Dual-side Product Lifting Mechanism

选配 Accessories Configuration

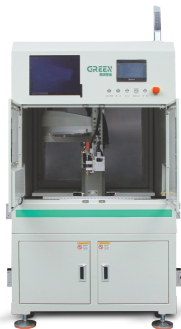
阀体Valve	压电阀/气动阀/螺杆阀 根据胶水及工艺选配 Piezoelectric Valve/Pneumatic Dispensing Valve/Screw Valve, based on adhesive and process
A1质量检测AI Quality Inspection	断胶/溢胶 Glue Cutoff/Leakage cuff 激光测量 Laser Measurement
称重系统Weighing System	德国赛多利斯/苏州纽曼 0.1mg/0.01mg
对针 Needle Alignment	针头自动对齐 Needle Automatic Alignment
擦胶机构Glue Wiping Mechanism	真空清洁 或 喷嘴擦胶机构 或 针阀擦胶机构 Vacuum Cleaning/Nozzle Valve/Needle Valve Wiping Mechanism
缺胶报警 Glue Deficiency Alarm	
上下层轨道Upper and Lower Tracks	增加下层回流轨道 Add a lower-layer return conveyor
双轨输送Dual-Rail Conveyance System	前后分排 Front-back parallel arrangement
预热模块Preheating Module	非接触式产品预热模块(材料位, 点胶位产品加热) Non-contact product preheating module(Feeding Station & Dispensing Station Product Heating)
排气增压压泵/电气比例阀Booster Pump/Proportional Valve	适用高精度点胶胶 Suitable for high-precision glue dispensing
同步多阀Synchronized Multi-Valve System	双阀不同步工作, 同一工位完成两种胶水点胶工艺 Dual-valve system with non-synchronous dispensing, enabling two-adhesive processes on a single platform 产品同步流, 方向一致, 2套或以上流同时对产品点相同胶水 Multi-valve synchronous dispensing with aligned product spacing and orientation 流体材料角度固定, 无死角/转角精准 Fluid-angle valve material angle fixed, 0° in a circular path at a fixed point 流体自动控制/精准, 产品侧面点胶 The valve automatic control, 0° in a vertical angled position for side-glue dispensing

■ 技术参数 Technical Specification

项目 Item	参数 Specification
型号 Model	GR-OD351
X/Y/Z行程(mm) X/Y/Z travel range(mm)	350*650*100
X/Y/Z重复精度(mm) X/Y/Z repeatability (mm)	± 0.015mm
X/Y/Z最大移动速度(mm/s) X/Y/Z maximum speed (mm/s)	X/Y轴(1000) Z轴(500) X/Y axis(1000) Z axis(500)
X/Y/Z控制系统 X/Y/Z control system	运动控制卡+工控机 motion control Card+Industrial PC
X/Y/Z传动方式 X/Y/Z transmission method	伺服电机+丝杆+导轨 或 直线电机(OXY) (伺服电机(Z) servo motor+ lead screw + guide rail or liner motor (XY) (servo motor (Z)
负载 Load capacity	轨道负载10kg rail load capacity 10kg
工作范围(mm) Working range (mm)	单轨(350*500)/双轨(350*200) single rail (350*500) /two rail (350*200)
输入电源 Power input	AC220V/10A/50-60HZ
输入气压 Input air pressure	0.5~0.7MPa
最大功率 Max equipment power	2.5KW
外形尺寸(mm) Overall dimensions (mm)	835*1300*1450

四轴机器人点胶机

INLINE FOUR AXIS GLUE DISPENSING MACHINE



■ 细节展示 Details Show



■ 设备特点 Equipment highlights

1. 涂于产品上的胶水宽度一致，具有点、线、面、弧、圆、不规则曲线连续补补等功能
2. 模块化的结构设计，便于维护、保养
3. 设备可以存储几百个工作程序文件
4. 设备有自动对针功能，保证每次重启设备后原点位置精准
5. 提前关胶功能，可以有效解决堵胶、拉丝的问题
6. 设备编写工作程序可进行点到点、块到块的复制，缩短程序编写时间，且简单易学
7. 设备由伺服螺杆压盘泵供胶，采用伺服电机控制螺杆旋转计量送出胶水，精度高，适合高粘度胶水，输送胶水平稳无波动
8. 设备具有自动排胶功能，防止胶阀内部胶水不流动干涸，堵住胶阀
1. The adhesive applied to the product has uniform width and supports continuous interpolation for points, lines, surfaces, arcs, circles, and irregular curves.
2. Modular structure design for easy maintenance and upkeep.
3. The equipment can store hundreds of working program files.
4. The device features an automatic needle alignment function, ensuring precise origin positioning after each restart.
5. Preemptive glue shut-off function effectively prevents issues such as glue piling and stringing.
6. The working program allows copying from point to point or block to block, shortening programming time and being simple to learn and use.
7. The dispensing system uses a servo screw pressure pump, where the servo motor controls the screw rotation to meter and dispense adhesive with high precision, making it suitable for high-viscosity adhesives with stable and smooth dispensing performance.
8. The equipment includes an automatic purging function to prevent dried adhesive and clogging caused by stagnant adhesive inside the valve.

标配 Standard Configuration

A视觉定位与补偿AI Visual Positioning and Compensation	标配130W像素相机+三色同轴光 1*130 pixel camera + 1*Tricolor Coaxial Lighting
轨道调宽方式Rail Width Adjust Method	自动调宽 Adjustment
轨道离地高度Rail Elevation	900 ± 20mm 900 ± 20mm
传送方向Conveying Direction	左进右出/右进左出/左进左出/右进右出 L→R/R→L/L→L/R→R
定位机构Positioning Mechanism	顶升机构+侧推机构 Lifting Mechanism + Lateral Push Mechanism

选配 Accessories Configuration

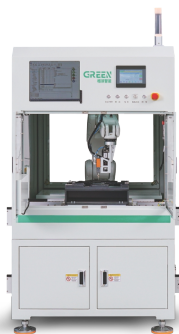
阀体Valve	压电阀/气动阀/螺杆泵 根据胶水及工艺选配 Piezoelectric Valve/Pneumatic Dispensing Valve/Screw Pump, based on adhesive and process
AI质量检测AI Quality Inspection	断胶/溢胶 Glue Start/Leakage cutoff
测高Height Inspection	激光测高 Laser Height Measurement
称重系统Weighing System	德国赛多利斯/苏州恒量 0.1mg Sartorius/China
对针Needle Alignment	针头自动对针 Automatic Needle Alignment
擦胶机构Glue Wiping Mechanism	真空清洗 或 棉筒擦胶机构 或 针筒擦胶机构 Vacuum Cleaning/Nozzle Valve/Needle Valve Wiping Mechanism
缺胶报警Glue Deficiency Alarm	
上下层轨道Upper and Lower Tracks	增加下层回流轨道 Add a lower-layer return conveyor
双轨输送Dual-Rail Conveyance System	前后排排 Front-to-back parallel arrangement
预热模块Preheating Module	非接触式产品预热模块(进料位、点胶位产品加热) Non-contact product preheating module (Feeding Station & Dispensing Station Product Heating)
储气增压压泵/电气比例阀Booster Pump/Proportional Valve	提高精度流量控制 Improve precision flow control
异步多阀Asynchronous Dual-Valve System	适用于高精度点胶工艺 Suitable for high-precision glue dispensing
同步多阀Synchronized Multi-Valve System	对产品同时工作，同一机头完成多种胶水点胶工艺 Dispersive system with asynchronous dispensing, enabling two-adhesive processes on a single platform
阀体倾斜旋转点胶Valve-Body Tilting & Rotary Dispensing	产品倾斜角度、方向一致，2支或2支以上液体同时对产品点相同胶水 Multi-valve synchronous dispensing with aligned product spacing and orientation
	液体材料角度固定，定点360°转圈画圈 Keep liquid material angle fixed, 360° circle path at a fixed point
	液体自动倾斜/垂直，产品侧面点胶 The valve automatically tilts to a vertical angle position for side-glue dispensing

■ 技术参数 Technical Specification

项目 Item	参数 Specification
型号 Model	GR-OD600R
机器人臂长(mm) Arm Length(mm)	600
重复精度 (mm) Repeatability (mm)	第1+2关节 (± 0.02) 第3关节 (± 0.01) 第4关节 (± 0.01*)
最大移动速度 (mm/s) Maximum Speed (mm/s)	第1+2关节 (7850) 第3关节 (1600) 第4关节 (2000*/s)
控制系统 Control System	运动控制卡+工控机+PLC Motion Control Card+Industrial PC+PLC
传动方式 Transmission Method	2.5倍速链 2.5X Differential Speed Chain
负载 Load Capacity	轨道负载20kg Rail load capacity 20kg
工作范围 (mm) Working Range (mm)	500*400
输入电源 Power Input	AC220V/10A/50-60HZ
输入气压 Input Air Pressure	0.5~0.7MPa
最大功率 Max Equipment Power	2.5KW
外形尺寸 (mm) Overall Dimensions (mm)	1350*1200*1950

六轴机器人点胶机

SIX AXIS GLUE DISPENSING MACHINE



■ 细节展示 Details Show



■ 设备特点 Equipment highlights

1. 上下六轴点胶机系列采用六轴机器人驱动, 可以集成各类点胶阀, 单/双组分泵送系统, 广泛运用于自动化点胶领域
2. 设备采用上下双层倍速链输送方式, 机台两边可以拼接上下游设备, 底部回流线实现载具托盘内部自循环
3. 编程界面简单明了, 常用图形 (圆、椭圆、矩形等) 可直接输入参数调用
4. 模块化的结构设计, 便于维护、保养
5. 设备承载能力强, 设备内部空间大
6. 全封闭式结构, 确保生产式安全、高效、低噪音
7. 设备编写工作程序可进行点到点、机器人关节联动编程, 缩短编写时间, 且简单易学

1. The upper and lower rail six-axis dispensing machine series is driven by a six-axis robot and can integrate various types of dispensing valves as well as single/dual-component pumping systems. It is widely used in automated dispensing applications.
2. The equipment adopts an upper and lower double-layer double-speed chain conveyor system. Both sides of the machine can be connected to upstream and downstream devices, while the bottom return line enables internal self-circulation of carrier trays.
3. The programming interface is simple and intuitive, allowing commonly used shapes (such as circles, ellipses, rectangles, etc.) to be directly invoked by inputting parameters.
4. The modular structural design facilitates easy maintenance and servicing.
5. The equipment features strong load-bearing capacity and a spacious internal workspace.
6. The fully enclosed structure ensures safe, efficient, and low-noise production.
7. The work programming for the equipment supports point-to-point and robotic joint-coordinated programming, reducing programming time while being easy to learn.

标记 Standard Configuration

A视觉定位与补偿 Visual Positioning and Compensation	标配130W像素相机+三色同轴光 1 x 130W camera + 1 x Tricolor Coaxial Lighting
轨道调宽方式 Rail Width Adjust Method	自动调宽 Auto-Adjustment
轨道离地高度 Rail Elevation	900 ± 20mm 900 ± 20mm
传送方向 Conveying Direction	左进右出/右进左出/左进左出/右进右出 L→R/R→L/L→L/R→R
定位机构 Positioning Mechanism	顶升机构+侧推机构 Lifting Mechanism + Lateral Push Mechanism

选配 Accessories Configuration

阀体 Valve	压电阀/气动阀/螺杆阀 根据胶水及工艺选配 Piezoelectric Valve/Pneumatic Dispensing Valve/Screw Valve, based on adhesive and process
A质量检测 A Quality Inspection	断胶/溢胶 Glue Overflow/Glue cutoff
测高 Height Inspection	激光测高 Laser Height Measurement
称重系统 Weighing System	德国奥多利斯/苏州纽曼 0.1mg Germany Ohaus / Suzhou Newman 0.1mg
对针 Needle Alignment	针头自动对针 Automatic Needle Alignment
擦胶机构 Glue Wiping Mechanism	真空清洁 或 喷嘴擦胶机构 或 针筒擦胶机构 Vacuum Cleaning/Nozzle Valve/Needle Valve Wiping Mechanism
缺胶报警 Glue Deficiency Alarm	
上下层轨道 Upper and Lower Tracks	增加下层回流轨道 Add a lower-layer return conveyor
双轨输送 Dual-Rail Conveyance System	前后并排 Front-to-back parallel arrangement
预热模块 Preheating Module	非连续式产品预热模块 (送料位、点胶位产品加热) Non-constant product preheating module (Feeding Station & Dispensing Station Product Heating)
补气增压泵/电气比例阀 Booster Pump/Proportional Valve	适用于高粘度胶水 dispensing Suitable for high-viscosity glue dispensing
同步多阀 Synchronized Multi-Valve System	产品影射加工, 同一机台完成两种胶水点胶工艺 Dissolutive system with non-synchronous dispensing, enabling two-adhesive processes on a single platform
阀体倾斜旋转点胶 Valve-body Tilting & Rotary Dispensing	产品影射加工, 同一机台完成两种胶水点胶工艺 Dissolutive system with non-synchronous dispensing, enabling two-adhesive processes on a single platform
	阀体材料角度固定, 定点360°转圈画圈 The valve body material angle is fixed, and the circle is drawn at a fixed point with a circular path at a fixed point
	阀体自动送料/垂直, 产品侧面点胶 The valve automatically feeds the product into a vertical fixed position for side-glue dispensing

■ 技术参数 Technical Specification

项目 Item	参数 Specification
型号 Model	GR-OD008
运动方式 Arm Length (mm)	六轴机器人
重复精度 (mm) Repeatability (mm)	±0.02 mm
最大移动速度 (mm/s) Maximum Speed (mm/s)	0-800
控制系统 Control System	运动控制卡+工控机+PLC Motion Control Card+Industrial PC+PLC
传动方式 Transmission Method	2.5倍速链
负载 Load Capacity	轨道负载20kg Rail load capacity 20kg
工作范围 (mm) Working Range (mm)	500*400
输入电源 Power Input	AC220V/10A/50-60HZ
输入气压 Input Air Pressure	0.5-0.7MPa
最大功率 Max Equipment Power	2.5KW
外形尺寸 (mm) Overall Dimensions (mm)	1350*1200*1950

螺丝机系列

SCREW MACHINE SERIES PRODUCTS

图片 picture				
类型 Type	桌面式 Desktop style	桌面式 Desktop style	落地式四轴 4-axis robot	在线式六轴 6-axis robot
行程(mm) Travel distance (mm)	500*300*300*100	300*300*100	600(臂长Arm length)	950(臂长Arm length)
重复精度(mm) Repetitive accuracy (mm)	± 0.05	± 0.05	± 0.02	± 0.03
移动速度(mm/sec) Moving speed (mm/sec)	X/Y (500) Z (300)	X/Y (500) Z (300)	7850/(s(最大值MAX))	210°/(s(最大值MAX))
工作范围(mm) Scope of work (mm)	200*300	250*300	500*400	500*400
外形尺寸(mm) Dimensions (mm)	785*680*900	960*740*900	1300*1000*1950	1400*1900*1950
标配 Standard configuration	螺丝供料器 Screw Feeder 电批 Electric Screwdriver 报警功能 Alarm Function	螺丝供料器 Screw Feeder 电批 Electric Screwdriver 报警功能 Alarm Function	CCD视觉定位 CCD Vision Positioning System 轨道调宽方式 Rail Width Adjustment Mechanism 轨道离地高度 Track Ground Clearance 传送方向 Conveying Direction 定位机构 Precision Positioning Mechanism 螺丝供料器 Screw Feeder 电批 Electric Screwdriver 报警功能 Alarm Function	CCD视觉定位 CCD Vision Positioning System 螺丝供料器 Screw Feeder 电批 Electric Screwdriver 报警功能 Alarm Function
选配 Optional	CCD视觉定位 CCD Vision Positioning System 安全光栅 Safety Light Curtain 防护机罩 Protective Machine Cover 扭力校正 Torque correction MES MES	CCD视觉定位 CCD Vision Positioning System 安全光栅 Safety Light Curtain 防护机罩 Protective Machine Cover	安全光栅 Safety Light Curtain	安全光栅 Safety Light Curtain

应用范围 Application Range

手机、汽车电子、平板、无线充、电子烟、手表、智能穿戴、遥控器、相机、路由器、机顶盒、游戏手柄、POS机等

Mobile Phones, Automotive Electronics, Tablets, Wireless Charging, E-Cigarettes, Smart Watches, Wearable Devices, Remote Controls, Cameras, Routers, Set-Top Boxes, Game Controllers, POS Machines, etc.



设备特点 Equipment highlights

进口配件，稳定耐用

闭环/伺服电机

智能伺服电机

台湾上银导轨

台湾TBI丝杆

日本欧姆龙光电

台湾明纬电源

PLC运动控制卡+手持盒显示屏控制

运行速度快，操作方便，学习简单

整机钣金+机加件结构，扎实、漂亮、精度高

Imported accessories, stable and durable

Closed loop/servo motor

Intelligent servo electric batch

Taiwan Silver Rail

Taiwan TBI lead screw

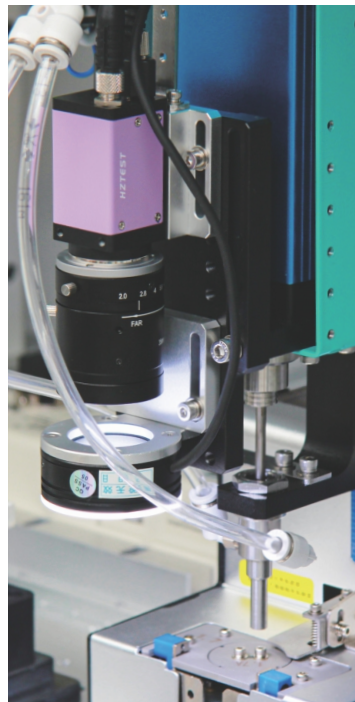
Omron Optoelectronics from Japan

Taiwan Mingwei Power

PLC motion control card+handheld box display screen control

Fast running speed, easy operation, and simple learning

Whole machine sheet metal+machined parts structure, solid, beautiful, high precision



桌面式肩并肩螺丝机

DESKTOP SHOULDER TO SHOULDER SCREW MACHINE



技术参数 Technical Specification

项目 Item	参数 Specification			
型号 Model	GR-DL333311D	GR-DL334411D	GR-DL444411D	GR-DL555511D
X/Y/Z行程(mm) X/Y/Z Travel (mm)	300*300*100	300*400*100	400*400*100	500*500*100
X/Y/Z重复精度 (mm) X/Y/Z Repeatability (mm)	± 0.05mm			
X/Y/Z最大移动速度 (mm/s) X/Y/Z Max. Speed (mm/s)	X/Y轴 (500) Z轴 (300) X/Y axis (500) Z axis (300)			
X/Y/Z控制系统 X/Y/Z Control System	运动控制卡+手持控制盒 或 PLC+触摸屏 或 运动控制卡+工控机 Motion Control Card + Handheld Pendant 或 PLC + Touchscreen 或 Motion Control Card + Industrial PC (IPC)			
X/Y/Z传动方式 X/Y/Z Drive Mechanism	步进电机+同步带+导轨 或 伺服电机+丝杆+导轨 Stepper Motor + Timing belt + Linear Guide Servo Motor + Ball Screw + Linear Guide			
负载 Payload	Y轴平台工作负载 10kg Y-axis Platform Payload: 10 Kg			
工作范围 (mm) Working Envelope (mm)	250*300	250*350	350*350	450*450
输入电源 Power Supply	AC220V/10A/50-60HZ			
输入气压 Air Pressure Supply	0.5~0.7MPa			
最大功率 Max. Power Consumption	1KW			
外形尺寸 (mm) Overall Dimensions (mm)	960*740*900	960*840*900	1160*840*900	1360*940*900

细节展示 Details Show



应用范围 Application Range

手机、汽车电子、平板、无线充、电子烟、手表、智能穿戴、遥控器、相机、路由器、机顶盒、游戏手柄、POS机等

Mobile Phones, Automotive Electronics, Tablets, Wireless Charging, E-Cigarettes, Smart Watches, Wearable Devices, Remote Controls, Cameras, Routers, Set-Top Boxes, Game Controllers, POS Machines, etc.

设备特点 Equipment highlights

- 支持漏检、滑牙、浮高等报警检测, 软件自带浮高修复功能
- 系统搭载松下PLC, 7寸触摸屏
- 可同时编辑999组不同的配方, 单个产品最多可锁付500颗螺丝
- 可兼容锁附M1-M5大小的螺丝
- Z轴可配置激光位移传感器 (测浮高)、下压力检测传感器 (选配项)
- 电批可搭载HIOS电批, 奇力速电批, 何服电批, 智能电批等 (选配项)
- 设备可根据客户需求上传MES, 如扭力、圈数、角度、扭力曲线图、锁付状态 (选配项)
- 可选择人工扫码与自动扫码 (选配项)
- 生产数据可追溯, 软件自带品质管控看板, 各类数据可以上传与下载 (选配项)
- Alarm Detection & Repair: Supports missed screws, stripped threads, floating height alerts; software includes auto-floating-height correction.
- Control System: Equipped with Panasonic PLC + 7" touchscreen.
- Recipe Management: Stores 999 editable recipes; single product supports up to 500 screw fastenings.
- Screw Compatibility: Compatible with M2-M6 screws.
- Z-Axis Sensors: Configurable laser displacement sensor (floating height measurement) and downforce sensor (optional).
- Electric Screwdrivers: Supports HIOS, Mileve, servo-driven, or smart screwdrivers (optional).
- MES Integration: Uploads data to MES (optional), including torque, rotation count, angle, torque curve graphs, and fastening status.
- Barcode Scanning: Manual or automatic barcode scanning (optional).
- Data Traceability: Production data fully traceable; software includes quality control dashboard. Data export/import supported (optional).

标配 Standard Configuration

螺丝供料器 Screw Feeder	吸气式供料器 Suction Feeder
电批 Electric Screwdriver	深丝微伺服电批 Deep-Thread Micro-Servo Wrench
适用螺丝 Applicable Screws	M1.0-M5.0
报警功能 Alarm Function	浮锁, 滑牙, 漏锁 Floating Lock, Slipage, Lock Failure

选配 Optional Configuration

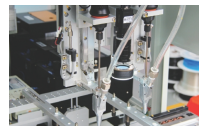
螺丝供料器 Screw Feeder	吹气式供料器 或 振动盘供料器 Blow Feeder or Bowl Feeder
电批 Electric Screwdriver	智能电批 Smart Electric Screwdriver
AI视觉定位与孔位识别 AI Visual Positioning and Hole/Bore Recognition	标配2500W像素相机+环形光 One-Touch Teaching, Wizard-Guided Interaction
AI参数优化与一键示教 AI Parameter Optimization and One-Touch Teaching	一键示教, 向导式交互 Standard Domestic Safety Light Curtain
防护机罩 Protective Cover	标配3030型材+透明PVC Standard 3030-Series Aluminum Profile + Transparent PVC

在线式四轴机器人螺丝机

ONLINE FOUR AXIS ROBOT SCREW MACHINE



■ 细节展示 Details Show



■ 应用范围 Application Range

手机、汽车电子、平板、无线充、电子烟、手表、智能穿戴、遥控器、相机、路由器、机顶盒、游戏手柄、POS机等
Mobile Phones, Automotive Electronics, Tablets, Wireless Charging, E-Cigarettes, Smart Watches, Wearable Devices, Remote Controls, Cameras, Routers, Set-Top Boxes, Game Controllers, POS Machines, etc.

■ 设备特点 Equipment highlights

1. 在线式结构, 送料平台移动实现产品进/出料, 四轴机器人联动实现螺丝锁付
2. IPC运动控制系统, 可视化编程, 数据保存无限制
3. 图形化显示锁付单位及锁付结果, 自动标注OK/NG螺丝点位, 查找直观快捷
4. 多用户、多级权限管理, 管理员可以新建账户并分配软件操作权限
5. CCD辅助示教螺丝坐标点, 消除人工目视定位误差; CCD视觉定位校正坐标点, 多组Mark点智能组合校正, 提升拍照直通率
6. 支持漏锁、滑牙、浮高报警检测, 软件自带浮高修复功能
7. Z轴可配置激光位移传感器(测浮高)、下压力检测传感器(选配项)
8. 电批可搭载HIOS电批、奇力速电批、伺服电批、智能电批等(选配项)
9. 设备可根据客户需求上传MES, 如拉力、圈数、角度、扭力曲线图、锁付状态
10. 可选择人工扫码与自动扫码(选配项)
11. 生产数据可追溯, 软件自带品质管控看板, 各类数据可以上传与下载(选配项)
12. 自动扭力点检, 存储扭力点检结果并可查询(选配项)
1. Online structural style: Moving feed platform for product loading/unloading, synchronized with 4-axis robot for screw driving.
2. IPC motion control system: Visual programming interface with unlimited data storage.
3. Graphical display: Real-time visualization of screw positions/results, auto-marking of OK/NG points for quick troubleshooting.
4. Multi-user & role-based access: Admins can create accounts and assign software operation permissions.
5. CCD-assisted teaching: Eliminates manual positioning errors; vision-based coordinate correction with multi-Mark-point alignment for higher imaging pass rate.
6. Comprehensive defect detection: Detects missed screws, stripped threads, floating screws (with auto-repair function).
7. Z-axis options: Laser displacement sensor (floating height measurement), pressure detection sensor (optional).
8. Compatible drivers: HIOS, Kileas, servo-driven, or smart electric screwdrivers (optional).
9. MES integration: Uploads torque, turns, angle, torque curves, and fastening status per customer requirements.
10. Barcode scanning: Manual or auto-scanning (optional).
11. Data traceability: Built-in quality control dashboard; supports data upload/download (optional).
12. Auto torque calibration: Stores and retrieves calibration records (optional).

■ 标配 Standard Configuration

AI视觉定位与孔位识别 AI Visual Positioning and Hole/Bore Recognition	标配500W像素相机+环形光 Standard 500W Camera + Ring Light
轨道调宽方式 Rail Width Adjustment Mechanism	自动调宽 Automatic width adjustment
轨道离地高度 track Ground Clearance	900±20mm
传送方向 Conveying Direction	左进右出/右进左出/左进左出/右进右出 L/RIO/LILO/RILIO/RIRO
定位机构 Precision Positioning Mechanism	顶升机构+侧推机构 Top lifting mechanism+mushie pushing mechanism
螺丝供料器 Screw Feeder	吸气式供料器 Suction Feeder
电批 Electric Screwdriver	深丝微伺服电批 Deep-Thread Micro-Servo Wrench
适用螺丝 Compatible Screw Types	M1.0-M5.0
报警功能 Alarm Function	浮锁, 滑牙, 漏锁 Floating Lock, Slippage, Lock Failure

■ 选配 Optional Configuration

螺丝供料器 Screw Feeder	吹气式供料器 或 振动盘供料器 Blow Feeder or Bowl Feeder
电批 Electric Screwdriver	智能电批 Smart Electric Screwdriver
AI参数优化与一键示教 AI Parameter Optimization and One-Touch Teaching	一键示教 向导式交互 One-Touch Teaching, Wizard-Guided Interaction

■ 技术参数 Technical Specification

项目 Item	参数 Specification
型号 Model	GR-OL600R
机器人臂长(mm) Robot Arm Length (mm)	600
重复精度(mm) Repeatability (mm)	第1+2关节(±0.02) 第3关节(±0.01) 第4关节(±0.01) Joint 1+2 (±0.02) Joint 3 (±0.01) Joint 4 (±0.01)
最大移动速度(mm/s) Maximum Speed (mm/s)	第1+2关节(7850) 第3关节(1600) 第4关节(2000)/s Joint 1+2 (7850) Joint 3 (1600) Joint 4 (2000)/s
控制系统 Control System	运动控制卡+工控机+PLC Motion Control Card + Industrial PC + PLC
传动方式 Drive Mechanism	2.5倍齿链 2.5x Timing Belt Drive
负载 Payload	轨道负载20kg Track Load Capacity 20kg
工作范围(mm) Working Range (mm)	500*400
输入电源 Power Input	AC220V/10A/50-60HZ
输入气压 Air Pressure Input	0.5-0.7MPa
最大功率 Maximum Power	1.5KW
外形尺寸(mm) Overall Dimensions (mm)	1300*1000*1950

落地式六轴机器人螺丝机

FLOOR-STANDING SIX-AXIS COLLABORATIVE ROBOT SCREWDRIVING MACHINE



技术参数 Technical Specification

项目 Item	参数 Specification
型号 Model	GR-OL950R
机器人臂长(mm) Robot Arm Length (mm)	950
重复精度 (mm) Repeatability (mm)	± 0.03
最大移动速度 (mm/s) Max. Speed (mm/s)	基座+肩部 (120°/s) 肘部 (150°/s) 手腕1+手腕2+手腕3 (210°/s) Base+Shoulders (120°/s) Elbow (150°/s) Wrist 1+Wrist 2+Wrist 3 (210°/s)
控制系统 Control System	运动控制卡+工控机 Motion control card+Industrial computer
传动方式 Drive Mechanism	伺服电机+中空旋转台 Servo motor+hollow rotary table
负载 Payload	机器人末端负载16kg Robot end load 16kg
输入电源 Power Supply	AC220V/10A/50-60HZ
输入气压 Air Pressure Supply	0.5~0.7MPa
最大功率 Max. Power Consumption	2.5KW
外形尺寸 (mm) Overall Dimensions (mm)	1400*1900*1950

■ 细节展示 Details Show



■ 应用范围 Application Range

主要用于汽车行业车灯、开关、尾灯、发动机等离线式锁付
Primarily Used for Offline Screw Fastening In Automotive Industry Applications Such As Headlights, Switches, Taillights, And Engines.

■ 设备特点 Equipment highlights

1. 单机离线式设计, 进料平台移动实现产品进/出料, 六轴机器人联动实现螺丝锁付
 2. IPC运动控制系统, 可视化编程, 数据保存无限制
 3. 图形化显示锁付点及锁付结果, 自动标记OK/NG螺丝点位, 查找直观快捷
 4. 多用户、多级权限管理, 管理员可以新建账户并分配软件操作权限
 5. CCD辅助示教螺丝坐标点, 消除人工目视定位误差; CCD视觉定位校正坐标点, 多组Mark点智能组合校正, 提升拍照直通率
 6. 支持漏锁、滑牙、浮高报警检测, 软件自带浮高修复功能
 7. Z轴可配置激光位移传感器 (测浮高)、下压力检测传感器 (选配项)
 8. 电批可搭载HIOS电批、奇力速电批、伺服电批, 智能电批等 (选配项)
 9. 设备可根据客户需求上传MES, 如扭力、圈数、角度、扭力曲线图、锁付状态
 10. 可选择人工扫码与自动扫码 (选配项)
 11. 生产数据可追溯, 软件自带品质管控看板, 各类数据可以上传与下载 (选配项)
 12. 自动扭力点检, 存储扭力点检结果并可查询 (选配项)
1. Stand-alone offline design: Moving feed platform for product loading/unloading, synchronized with 6-axis robot for screw driving.
 2. IPC motion control system: Visual programming interface with unlimited data storage.
 3. Graphical display: Real-time visualization of screw positions/results, auto-marking of OK/NG points for quick troubleshooting.
 4. Multi-user & role-based access: Admins can create accounts and assign software operation permissions.
 5. CCD-assisted teaching: Eliminates manual positioning errors; vision-based coordinate correction with multi-Mark-point alignment for higher imaging pass rate.
 6. Comprehensive defect detection: Missed screws, stripped threads, floating screws (with auto-repair function).
 7. Z-axis options: Laser displacement sensor (floating height measurement), pressure detection sensor (optional).
 8. Compatible drivers: HIOS, Kileves, servo-driven, or smart electric screwdrivers (optional).
 9. MES integration: Uploads torque, turns, angle, torque curves, and fastening status per customer requirements.
 10. Barcode scanning: Manual or auto-scanning (optional).
 11. Data traceability: Built-in quality control dashboard; supports data upload/download (optional).
 12. Auto torque calibration: Stores and retrieves calibration records (optional).

■ 标配 Standard Configuration

AI视觉定位与孔位识别 AI Visual Positioning and Hole/Bore Recognition	标配500W像素相机+环形光 Standard 500W Camera + Ring Light
螺丝供料器 Screw Feeder	吸气式供料器 Blow Feeder or Bowl Feeder
电批 Electric Screwdriver	深螺纹伺服电批 Deep-Thread Micro-Servo Wrench
适用螺丝 Applicable Screws	M1.0~M5.0
报警功能 Alarm Function	浮锁、滑牙、漏锁 Floating Lock, Slippage, Lock Failure

■ 选配 Optional Configuration

螺丝供料器 Screw Feeder	吹气式供料器 或 振动盘供料器 Blow Feeder or Bowl Feeder
电批 Electric Screwdriver	智能电批 Smart Electric Screwdriver
AI参数优化与一键示教 AI Parameter Optimization and One-Touch Teaching	一键示教 向导式交互 One-Touch Teaching, Wizard-Guided Interaction

以AI赋能AOI

AI-POWERED AOI REVOLUTION

赋能PCBA质检 卓越提升产品质量 重新定义检测标准

Enhancing PCBA Inspection, Exceptional Quality, Redefining Standards

核心优势Core Advantages

一键编程
3-15 min
1-Touch Programming

缺陷漏检率
< 100 dppm
Escape Rate

小板直通率
> 90 %
Small Board FPY

大板直通率
> 70 %
Large board first-pass yield

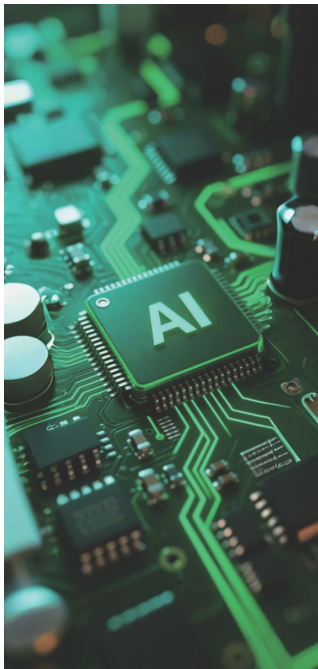
误报率**< 0.3 %**
False alarm rate < 0.3%

AI智能体Artificial Intelligence

AI一键编程
AI One-click Programming
无需AOI工程师介入
No AOI Engineer Intervention Required

AI智能检测
AI Intelligent Inspection
融合多模态与自适应AI算法
Integrates Multi-modal and Adaptive AI Algorithms

AI训练平台
AI Training Platform
无需专业人员运维管理
No Professional Personnel Required for Operation and Management



开启一键编程新时代 效率飞跃

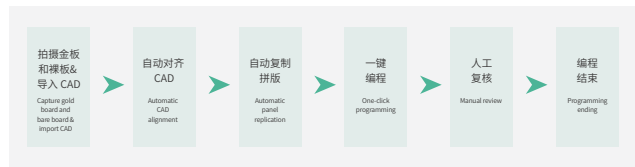
NEW ERA OF ONE-CLICK PROGRAMMING: EFFICIENCY LEAP

格润AOI+AI智能体检测设备采用深度学习算法，自动提取特征，无需AOI工程师介入即可检测金板上元器件及关键区域，实现一键自动编程，极大提升检测效率，引领智能检测新模式。

Green AOI + Artificial Intelligence Inspection Equipment adopts deep learning algorithms to automatically extract features. It inspects components and critical areas on gold boards without requiring AOI engineer intervention, achieving one-click automatic programming. This greatly enhances inspection efficiency and pioneers a new intelligent inspection paradigm.

元器件编程流程（全板跑1次）

Component Programming Process (Full Board Run Once)



自动提取特征

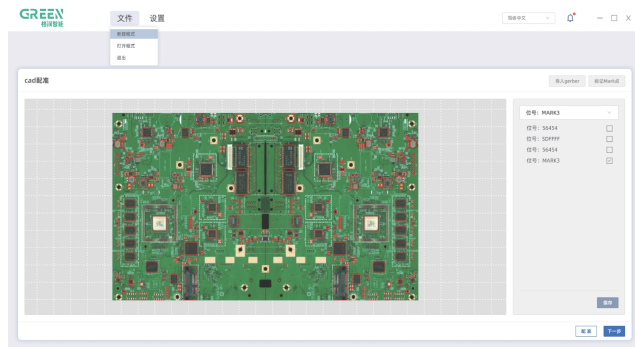
Automatic Feature Extraction

不需要AOI工程师介入

No AOI Engineer Intervention Required

编程时间3-15分钟

Programming Time 3-15 Minutes



通过自研AI算法，自动识别元器件，覆盖市场上**90%**元件类型
Through proprietary AI algorithms, automatic component recognition covers 90% of component types on market

AI对元件识别准确率**≥95%**
AI component recognition accuracy ≥ 95%

3D AOI

3D INLINE AOI MACHINE

小角度4路投影系统, 更大程度消除小间距遮挡, 突破性摩尔条纹算法, 进一步减少CT时间
Small-angle 4-path projection system minimizes small spacing shadows. Breakthrough Moiré pattern algorithm further reduces CT time.

- 简易编程, 不停机调, AI识别, AI检测
- 1200万彩色高速工业相机
- 四向可编程数字光栅
- 15μm高解析度光学
- 双驱动提供高速度、高精度的运动控制
- 超大视野60mm x 45mm
- 多台联机操作控制
- 高精度还原3D建模, 可高效检测:
浮高、翘起、夹件、虚焊、异物、共面等等不良。对黑元件、异形元件、金属元件、镜面元件亦能完美呈现, 提升了检测效率。

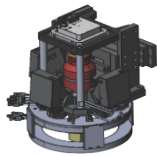
- Simple programming, On-the-fly Adjustment, AI recognition, AI inspection
- 12MP high-speed color industrial camera
- Four-way programmable digital grating
- 15μm high-resolution optics
- Dual-drive system for high-speed and high-precision motion control
- Maximum field of view: 60mm x 45mm
- Multi-Machine Networked Control
- High-accuracy 3D modeling for efficient inspection of:
Floating components, warping, trapped debris, cold solder joints, foreign objects, coplanarity, etc. Capable of inspecting black components, irregular components, metal components, and mirror surfaces, enhancing detection efficiency.



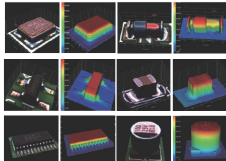
应用领域 Application area

产品广泛应用于航空、智能手机、汽车制造、平板电脑、FPC、数码相机、显示屏、背光LED、医疗设备、MINI LED、半导体、工业控制等电子领域
Aviation, smartphones, automotive manufacturing, tablets, FPCs, digital appliances, displays, backlights, LEDs, medical devices, Mini LEDs, semiconductors, industrial controls, and other electronics fields.

真3D检测Real 3D Inspection



3D检测效果3D Inspection Results



技术参数 Technical Specification

项目 Item	参数 Specifications
PCB厚度范围 PCB Thickness Range	0.4-6mm
PCB工艺边宽 PCB Process Edge Width	3mm
PCB尺寸范围 PCB Size Range	单轨模式: Min:50*50mm/Max500*460mm Single-track mode: Min 50 X 50mm / Max 500 X 460mm
适应最小元件 Minimum Component Size Supported	0201
贴片 Placement Defects	缺件、偏移、歪斜、立碑、侧立、翻件、极性反、错件、破损、桥接、IC弯脚 Missing components, misalignment, skewed, tombstoning, bilboard, flipped components, polarity errors, wrong components, cracks, bridging, IC bent pins
回流炉后 Reflow Defects	缺件、偏移、立碑、侧立、翻件、极性反、错件、破损、桥接、浮高、空焊、IC翘脚 Missing components, misalignment, tombstoning, ripped components, polarity errors, wrong components, cracks, bridging, High position, voids, IC warped pins
PCB翘曲度 PCB Flatness	≤5mm(有夹具辅助矫正变形)可消除PCB变形影响 ≤5mm/L (Fixtures assist in correcting deformation to eliminate PCB warping effects)
相机像素 Camera Resolution	1200万彩色高速工业相机 12MP color high-speed industrial camera
光学分辨率 Optical Resolution	15μm
FOV尺寸 FOV Size	60*45mm
检测速度 Inspection Speed	0.45/FOV 0.45/sec/FOV
投影仪 Projector	4路DLP投影仪 4-Pathway DLP projector
软件语言 Software Language	中文 Chinese
条形码识别 Barcode Recognition	智能识别一维、二维条形码 Supports 1D/2D barcode smart recognition
SPC数据采集分析 SPC Data Analysis	标配标准版SPC Standard SPC module included
条码扫描 Barcode Scanning	相机直接扫描/外置条码枪 Direct camera scanning / external barcode scanner
MES功能 MES Function	MES数据库联网 MES data tracking
人工智能 AI Capability	AI大数据训练中心 AI big data training center
驱动方式 Drive Method	伺服电机 Servo motor
轨道模式 Track Mode	单轨 Single-track
PCB允许元件高度 Max Component Height Tolerance	上:35mm/下:25mm ±35mm (upper)/25mm (lower)
机架结构 Frame Structure	丝杆、导轨 Lead screw and linear guides
导轨宽度调整方式 Track Width Adjustment	自动调宽 Auto-width adjustment
导轨高度 Track Height	900mm±20mm 900mm±20mm
PCB传输方向 PCB Conveyance Direction	左→右、右→左、左→左、右→右 L to R, R to L, L to L, R to R
电脑主机 Computer	工业PC 128G内存/1T/1TB硬盘/Windows 10 64位 Industrial PC, 128GB RAM / 1TB HDD / Windows 10 64-bit
电源及功率 Power	AC220V/2KW AC 220V, 2KW
工作气压 Working Air Pressure	0.35-0.55mpa 0.35-0.55MPa
设备重量 (kg) Weight & Size	800kg 800kg, L1100mm × W1450mm × H1550mm

3D SPI

3D SOLDER PASTE INSPECTION

- 操作简单易学
- 多台机联机操作控制
- 独创在线不停机调试模式
- 可编程数字条纹光栅3D量测
- 高精度丝杆导轨平台
- 工业4.0多机器远程控制管理
- 系统SPC统计分析数据

Simple and easy to operate
Multi-machine synchronized control
Unique online debugging without downtime
Programmable digital grating 3D system
High-precision lead screw and linear guide platform
Industry 4.0 multi-machine control management
SPC statistical analysis

有效检测把控锡膏印刷制程不良
Height, Area, Volume, Short, Position, Paste Missing, Insufficient Solder, Offset, Solder Slump, etc.



应用领域Application area

产品广泛应用于航空、智能手机、汽车制造、平板电脑、FPC、数码家电、显示屏、背光源、LED医疗设备、MINI LED、半导体、工业控制等电子领域
Aviation, smartphones, automotive manufacturing, tablets, FPCs, digital appliances, displays, backlights
LEDs, medical devices, Mini LEDs, semiconductors, industrial controls, and other electronics fields.



技术参数 Technical Specification

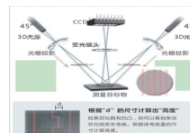
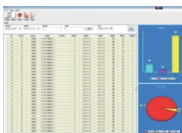
项目 Item	参数 Specifications
设备型号 Model	GR-SPI-0515-S/D GR-SPI-0515-S/D
PCB厚度范围 PCB Thickness Range	0.4-6.0mm 0.4-6.0mm
PCB最大尺寸范围 PCB Maximum Size Range	单轨轨模式:Max:510*560mm/双轨模式:Max:510*300mm Single-track: 510×560mm/Dual-track: 510×300mm
适应最小元器件 Minimum Component Size Supported	标配0201/选配01005 Standard: 0201, Optional: 01005
PCB参数 PCB Parameters	0.5mm-6.0mm ≤5.0kg 0.5-6.0mm (≤5.0kg)
检查项目 Inspection Items	高度、面积、体积、短路、位置、漏印、少锡、偏移、坍塌等问题 Height, Area, Volume, Short, Position, Paste Missing, Insufficient Solder, Offset, Solder Slump, etc.
锡膏高度检测范围 Solder Paste Height Range	500µm 500um
弯板补偿 Warpage Compensation	±5µm ±5um
相机品牌、像素 Camera Brand & Resolution	500万高速工业相机/1200万高速工业相机 5MP color high-speed camera/12MP color high-speed camera
光学分辨率 Optical Resolution	标称15µm/选配10µm Standard: 15µm/Optional: 10µm
光源 Light Source	可编程数字光栅+红绿蓝光源 Programmable digital grating + RGB light
检测速度 Inspection Speed	0.35S/FOV 0.35s/FOV
检测尺寸 Inspection FOV Size	61.32mm X 45.99mm 61.32×45.99mm
对应各种颜色基板 Substrate Color Compatibility	可对应各种颜色基板 Compatible with all colors
测试画面 Test Display Mode	彩色3D和2D 3D color & 2D images
运动机构 Motion Mechanism	丝杆导轨 Lead screw and linear guides
解析精度 Resolution Accuracy	2µm 2um
移动速度 Movement Speed	800mm/sec 800mm/sec
轨道宽度调整 Track Width Adjustment	自动调整+手动调整 Auto + manual adjustment
电路板输送/固定 PCB Conveyance/Fixation	皮带输送+气动夹头 Belt conveyance + pneumatic clamping
输送方向 Conveyance Direction	左→右, 右→左, 左→左, 右→右 L to R, R to L, L to L, R to R
零件高度限制 Component Height Limit	上限: 20mm 底端: 35mm Upper: 20mm / Lower: 35mm
外形尺寸(长*宽*高) Dimensions (W×D×H)	960x1508x1500mm 960x1508x1500mm
重量 Weight	850KG 850kg
电源及功率 Power	AC220V/2KW AC220V/2KW
电脑配置、系统 Computer Configuration & OS	64G内存/i5-12代/1TB硬盘/256G固态硬盘/Windows 10 64位 64GB RAM / 12th gen i7 / 1TB HDD + 256GB SSD / Win10 64-bit
编程模式、数据输出类型 Programming Mode & Data Output	Gerber Data 2/4D/2/4X, PCB扫描图片编程 Gerber 2/4D/2/4X, PCB scan image programming
SPC数据采集分析 SPC Data Collection & Analysis	标称标准SPC Standard SPC module
选配功能 Optional Features	MES数据互联, 外置条码枪, 贴片机badmark共享 MES database integration, external barcode scanner, badmark sharing with placement machines

SPC数据采集分析SPC Data Acquisition and Analysis SPC Real-Time Data Statistics & Reporting:

SPC实时数据统计、报表生成,实时统计过程数据并建立强大数据库分析各种重要数据,提供供给使用者强有力的品质管理,完整多样的SPC工具并支持不同格式的数据输出
Generates real-time process statistics and builds a robust database for critical data analysis. Provides comprehensive quality control support with diverse SPC tools and multi-format data export.

多样化的条码识别功能,可以选用主相机或外置条码读取一维码及二维码,并支持手工输入条码功能
Supports QR code/barcode reading via main camera or external scanner. Includes manual barcode input functionality.

在特定角度投射条纹光线,并由不同角度相机进行投射图像的收集,通过测量每一个像素范围内的高度值、面积值,再以两者相乘,对测量范围内各个进行精确计算,就可以得到各个点平均高度,得出面积、体积、高度等各类数据
Project structured light patterns at specific angles, captured by multi-angle cameras. By measuring height and surface elemental area per pixel, then multiplying these values, precise calculations yield average height per point, generating area/volume/height metrics.



涂覆AOI

COATING AOI

在线型三防漆检测AOI产品主要适用于PCBA三防漆涂覆制程中,多涂、少涂、气泡、异物、飞溅、厚度、统计和分析,有利于提高产能,提升品质,改善制程,AOI检测原理是采用拍照技术将被检测物体的反射光强,以矢量化的灰阶值输出,通过与标准图像的灰阶值进行比较,分析判定缺陷并进行分类的过程

In-line Conformal Coating AOI systems are specifically designed for the PCBA conformal coating application process. They detect defects such as over-coating, under-coating, bubbles, foreign objects, splashes, and measure coating thickness, while also providing statistics and analysis. This technology significantly enhances productivity, improves product quality, and optimizes the manufacturing process. The AOI inspection principle involves capturing images of the object under inspection. The reflected light intensity from the object is then converted into vectorized grayscale values. These values are compared against those of a standard image. Through this comparison, defects are analyzed, identified, and classified.



应用范围 Application Range

产品广泛应用于航空、智能手机、汽车制造、平板电脑、FPC、数码相机、显示屏、背光 LED、医疗设备、Mini LED、半导体、工业控制等电子领域。Aviation, smartphones, automotive manufacturing, tablets, FPCs, digital appliances, displays, backlights, LEDs, medical devices, Mini LEDs, semiconductors, industrial controls, and other electronics fields.

检测项目 Application Fields

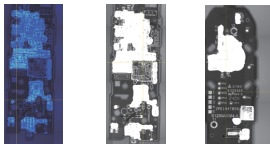
适用于三防漆涂覆检测,多涂、少涂、气泡、异物、飞溅、厚度,并可兼容线路板元器件,不换硬件,不改软件,只需要在设备调试中切换光源,就能达到兼容检测线路板元器件:立碑、破焊、虚焊、漏焊、桥连等。

Suitable for the inspection of conformal coating application, including over-coating, under-coating, bubbles, foreign objects, splattering, and thickness. It is also compatible with the inspection of PCB components. Without the need for hardware changes or software modifications, simply by adjusting the equipment and switching the light source, it can detect PCB issues such as tombstoning, cracks, cold solder joints, missing solder, and bridging.

轨道Rail



有效检测Valid Inspection



技术参数 Technical Specification

项目 Item	参数 Specifications
设备型号 Model	GR-AOI-0515-T GR-AOI-0515-T
PCB厚度范围 PCB Thickness Range	0.3-6mm 0.3-6mm
PCB工艺边宽 PCB Process Edge Width	3mm 3mm
PCB尺寸范围 PCB Size Range	单轨模式:Min:50*50mm/Max:510*560mm Single-track mode: Min 50×50mm / Max 510×560mm 双轨模式:Min:50*50mm/Max:510*300mm Dual-track mode: Min 50×50mm / Max 510×300mm
适应最小元器件 Minimum Component Size Supported	标靶 0201/选靶 01005 Standard: 0201 / Optional: 01005
检测项目 Inspection Items	多涂、少涂、气泡、异物、飞溅、厚度(三防漆) Over-coating, Under-coating, Bubbles, Foreign Objects, Splatter, Coating Thickness (Conformal Coating)
兼容检测 Compatibility Inspection	兼容测试线路板元器件:立碑、破焊、虚焊、漏焊、桥连等 Tombstoning, Component damage, insufficient solder, Missing solder, Solder bridging, etc.
PCB翘曲度 PCB Flatness	≤5mm(有辅助矫正变形)可消除PCB变形影响 ≤5mm (with fixture assisted deformation correction to eliminate PCB warping)
相机像素 Camera Resolution	500万彩色高速工业相机/1200万彩色高速工业相机 5MP / 12MP color high-speed industrial camera
光学分辨率 Optical Resolution	标靶15μm/选靶10μm, 20μm Standard: 15μm / Optional: 10μm, 20μm
FOV尺寸 FOV Size	60°45mm 60°45mm
检测速度 Inspection Speed	0.45 sec/FOV 0.45 sec/FOV
条形码识别 Barcode Recognition	智能识别一维、二维条形码 Supports 1D/2D barcode smart recognition
SPC数据采集分析 SPC Data Analysis	标靶标准版SPC Standard SPC module included
条码扫描 Barcode Scan	选配:相机直接扫描/外置条码枪 Optional: Direct camera scanning / external barcode scanner
MES功能 MES Function	选配:MES数据库联网 Optional: MES data framework integration
人工智能 AI	AI大数据训练中心 AI big data training center
驱动方式 Drive Method	伺服电机 Servo motor
轨道模式 Track Mode	单轨/双轨 Single-track
PCB允许元件高度 Max Component Height Tolerance	上:35mm/下:25mm 35mm (upper)/25mm (lower)
机架结构 Frame Structure	丝杆、导轨 Lead screw and linear guides
导轨宽度调整方式 Track Width Adjustment	自动调整 Auto-width adjustment
导轨高度 Track Height	900mm±20mm 900mm ± 20mm
PCB传输方向 PCB Conveyance Direction	左→右,右→左,左→右,右→左 L to R, R to L, L to R, R to L
电脑主机 Computer	工业PC128G内存/17/1TB硬盘/Windows10 64位 Industrial PC, 128GB RAM / 1TB HDD / Windows 10 64-bit
电源及功率 Power	AC 220V/2KW AC 220V, 2KW
工作气压 Working Air Pressure	0.35-0.55mpa 0.35-0.55MPa
设备重量 (kg) Weight & Size	800kg 1100mm*1450mm*1650mm 800kg, 1100mm × 1450mm × 1650mm

双面AOI

DUAL-SIDE AOI SYSTEM

- AI智能一键编程,操作简单易学
- 强大的检测能力,有效截止器件和焊点不良
- 实时检测,快速定位不良,实行产线控制
- 数据可追溯,强大的SPC统计分析
- 可支持多种机种共线生产,程序自动调用
- 实时语音播报不良
- 简单、直观、智能、全面的程序制作流程
- AI one-click programming, simple and easy to operate
- Powerful detection capabilities for effective identification of component and solder joint defects
- Real-time inspection, rapid defect localization, and production line control
- Traceable data with robust SPC statistical analysis
- Supports multi-model co-line production with automatic program switching
- Real-time voice alerts for defects
- Simple, intuitive, smart, and comprehensive programming workflow



应用范围 Application Range

产品广泛应用于航空、智能手机、汽车制造、平板电脑、FPC、数码相机、显示屏、背光、LED、医疗设备、Mini LED、半导体、工业控制等电子领域
Aviation, smartphones, automotive manufacturing, tablets, FPCs, digital appliances, displays, backlights, LEDs, medical devices, Mini LEDs, semiconductors, industrial controls, and other electronics fields.

检测项目 Application Fields

波峰焊炉后 异物、污损、焊点的多锡、少锡、连锡、不出脚、空焊、锡洞、锡珠、错件、漏件等不良缺陷检测
Post-wave soldering defects: contamination, solder bridging, insufficient/excess solder, missing leads, voids, solder balls, wrong missing components, etc.



短路
Short Circuit

锡洞
Solder Voids

假焊
Cold Solder Joints

虚焊
Insufficient Solder

短路
Short Circuit



短路
Short Circuit

假焊
False solder

崩裂
Crack

偏移
Misalignment

污脏/异物
Contamination/foreign matter

技术参数 Technical Specification

项目 Item	参数 Specifications
设备型号 Model	GR-AOI-0515-TB GR-AOI-0515-TB
PCB厚度范围 PCB Thickness Range	0.3-6mm
PCB工艺边宽 PCB Process Edge Width	3mm
PCB尺寸范围 PCB Size Range	单轨模式:Min:50*50mm/Max:510*560mm Single-track mode: Min:50×50mm / Max:510×560mm 双轨模式:Min:50*50mm/Max:510*300mm Dual-track mode: Min:50×50mm / Max:510×300mm
适应最小元器件 Minimum Component Size Supported	标配 0201/选配 01005 Standard: 0201 / Optional: 01005
顶部 Top	上照检测放点: 缺件、偏移、歪斜、立碑、侧立、翻件、极性反、错件、破焊、桥接、IC弯脚 Missing components, misalignment, skewed, tombstoning, billboard, flipped components, polarity errors, wrong components, cracks, bridging, bent IC leads
底部 Bottom	下照检测焊点: 短路、露铜、引脚未出、缺件、针孔、少锡、SMT物料本体及焊锡问题 Missing components, misalignment, tombstoning, billboard, flipped components, polarity errors, wrong components, cracks, bridging, high position, voids, IC warped pins
PCB翘曲度 PCB Flatness	≤5mm(有夹具辅助矫正变形)可消除PCB变形影响 ≤5mm (with fixture-assisted deformation correction to eliminate PCB warping)
相机像素 Camera Resolution	500万彩色高速工业相机/1200万彩色高速工业相机 5MP / 12MP color high-speed industrial camera
光学分辨率 Optical Resolution	标配15μm/选配10μm, 20μm Standard: 15μm / Optional: 10μm, 20μm
FOV尺寸 FOV Size	60°45mm 60°×45mm
检测速度 Inspection Speed	0.45 sec/FOV 0.45 sec/FOV
条形码识别 Barcode Recognition	智能识别一维、二维条形码 Supports 1D/2D barcode smart recognition
SPC数据采集分析 SPC Data Analysis	标配标准版SPC Standard SPC module included
条码扫描 Barcode Scan	选配:相机直接扫描/外置条码枪 Optional: Direct camera scanning / external barcode scanner
MES功能 MES Function	选配:MES数据库联网 Optional: MES data framework integration
人工智能 AI	AI大数据训练中心 AI big data training center
驱动方式 Drive Method	伺服电机 Servo motor
轨道模式 Track Mode	单轨/双轨 Single-track
PCB允许元件高度 Max Component Height Tolerance	上:35mm/下:25mm 35mm (upper)/25mm (lower)
机架结构 Frame Structure	丝杆、导轨 Lead screw and linear guides
导轨宽度调整方式 Track Width Adjustment	自动调整 Auto-width adjustment
导轨高度 Track Height	900mm±20mm 900mm±20mm
PCB传输方向 PCB Conveyance Direction	左→右, 右→左, 左→右, 右→左 L to R, R to L, L to R, R to L
电脑主机 Computer	工业PC 128G内存/17TB硬盘/Windows 10 64位 Industrial PC, 128GB RAM / 17TB HDD / Windows 10 64-bit
电源及功率 Power	AC 220W/2KW AC 220V, 2kW
工作气压 Working Air Pressure	0.35-0.55mpa 0.35-0.55MPa
设备重量 (kg) Weight & Size	800kg 1100mm*1450mm*1650mm 800kg, L1100mm × W1450mm × H1650mm

选择性波峰焊系列

SELECTIVE WAVE SOLDERING SERIES

配置方案 Configuration plan



* 客户可根据实际产能需求选择不同的配置方案
Customers can select a suitable configuration based on actual production capacity demands.

模块介绍 Module Introduction



助焊剂喷雾模块 Flux Spray Module

采用德国原装进口喷头, 喷嘴直径130um;
Utilizes German original imported nozzles with a nozzle diameter of 130um;
喷雾直径可小至2mm大幅度降低离子污染;
Spray diameter can be as small as 2mm, significantly reducing ionic contamination;
有效节省助焊剂使用量, 选择性喷雾比传统喷雾节省至少90%的助焊剂;
Selective spray saves at least 90% flux than traditional spray;
帮助焊剂过滤器, 有效防止喷头堵塞;
Equipped with a flux filter to effectively prevent nozzle clogging;
进口压电式喷射阀与微量雾化阀可选;
Imported piezoelectric jet valve and micro-atomization valve options are optional;
X/Y两轴伺服马达控制, 定位精度达±0.15mm。
X/Y dual-axis servo motor control with positioning accuracy up to ±0.15mm.



预热模块 Preheating Module

预热分上下独立温控, 顶部采用热风对流预热, 底部采用短波红外预热,
Preheating with independent top and bottom temperature control, air heating for top and infrared short wave for bot tom parts,
提高热效率的同时确保温度的均匀性。
Improve thermal efficiency while ensuring temperature uniformity.



焊接模块 Soldering Module

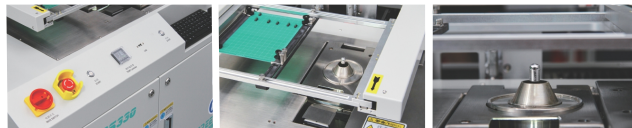
PCB板不动, X/Y/Z三轴平台移动, 针对编程的点进行焊接;
X/Y/Z three-axis platform movement, welding for programming points;
基于产品不同元器件工艺需求, 设置不同焊接速度、时间等参数满足焊接性能;
Optimize weld settings per component for performance;
锡炉电磁泵线圈采用进口品牌, 确保波峰平稳可靠;
The tin furnace pump's coil is, ensuring stable waveform;
根据配置需求可选择单缸, 双缸同步, 双缸异步运动等多种方式;
Single or dual cylinder (sync/async) motion configurable;
锡炉氮气在线加热装置, 保证锡嘴良好的润湿性以及减少氧化物产生;
Tin furnace nitrogen online heating device;
波峰高度在线监控, 锡炉高低液位实时监控。
Real-time monitoring: wave peak height & tin furnace liquid level.

离线式选择性波峰焊

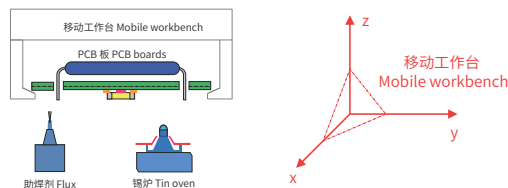
OFFLINE SELECTIVE WAVE SOLDERING



■ 细节展示 Details Show



■ 系统工艺路线 System Process Steps



■ 应用领域 Application Field

选择性波峰焊广泛应用于汽车制造、光伏储能、仪器仪表、军工、航空航天、船舶、医疗电子、家用电器等领域。
Selective wave soldering is widely used in fields of automotive manufacturing, photovoltaic energy storage, measuring instruments & meters, military, aerospace, shipbuilding, medical electronics, and household appliances.

■ 设备特点 Equipment highlights

1. 领先的离线选择性焊接系统, 旨在满足大批量、低体积的生产要求
2. 新的创新功能使GRW-OS300适合未来需求, 具有几乎无限的可能性
3. 助焊剂应用由系统控制, 这实现了安全的自动化生产
4. 确保生产高效、安全、均质
5. 即使是最复杂的 PCB 也能生产
6. 新的焊接模块将系统灵活性推向全新的维度

1. Leading off-line selective soldering system, designed to achieve large-batch, small-size production;
2. Innovative functions enable GRW-OS300 meet ramp-up production demand in future;
3. System controlling flux application, realizing safely automatic production;
4. Ensure efficient, safe and homogeneous production;
5. Suited for complex PCB, even the most complex PCB;
6. Extraordinary soldering module maximum improve high-flexibility of the system.

■ 技术参数 Technical Specification

项目 Item	参数 Specification	
型号 Model	GRW-OS300	GRW-OS450
机器尺寸 Equipment Dimension	L1100 x W860 x H1550mm	L1350 x W1360 x H1600mm
PCB板尺寸 PCB Dimension	L300 x W250	L450 x W400
运动精度 Motion Accuracy	±0.25mm	±0.05mm
放板高度 Board placement height	970±30mm	1150±30mm
锡炉 Tin oven pot	电磁泵/机械泵可选 Electromagnetic pump/mechanical pump optional	
锡渣量 Tin scrap weight within oven per week	电磁泵: 0.5kg/锡炉/周 机械泵: 0.7kg/锡炉/周 Electromagnetic pump: 0.5kg/tin pot/week Mechanical pump: 0.7kg/tin pot/week	
氮气消耗 Consumption of Nitrogen	1.5-2m³/h/炉 1.5-2m³/h/ tin pot	
熔锡时间 Tin melting time	电磁泵: 75min 机械泵: 30min Electromagnetic pump: 75min Mechanical pump: 30min	
锡槽容量 Tin tank capacity	13kg 13kg	
喷雾阀 Spray valve	雾化阀/喷射阀可选 Atomizing valve/injection valve optional	

在线式集成选择焊

ONLINE INTEGRATED SELECTIVE SOLDERING



技术参数 Technical Specification

项目 Item	参数 Specification
型号 Model	GRW-1/14
机器尺寸 Equipment Dimension	L1500*W1650*H1650mm
轨道可调范围 Rail adjustable range	100-400mm
PCB板尺寸 PCB dimension	L400*W400
运输高度 Conveyor height	900±30mm
锡炉 Tin oven pot	电磁泵/机械泵可选 Electromagnetic Pump/Mechanical Pump (Optional)
锡渣量 Tin scrap weight within oven per week	电磁泵: 0.5kg/锡炉/周 机械泵: 0.7kg/锡炉/周 Electromagnetic Pump: 0.5kg/Pot/Week Mechanical Pump: 0.7kg/Pot/Week
氮气消耗 Consumption of Nitrogen	1.5-2m³/h/炉 1.5-2m³/h/Pot
熔锡时间 Tin melting time	电磁泵: 75min 机械泵: 30min Electromagnetic Pump: 75min Mechanical Pump: 30min
锡槽容量 Tin tank capacity	电磁泵: 15kg/机械泵: 13kg Electromagnetic Pump: 15kg Mechanical Pump: 13kg
可选功能 Optional functions	喷雾检测/板温检测/自动加锡/CCD定位/条码扫描 Spray Detection/Board Temperature Detection/Auto Tin Feeding/CCD Positioning/Barcode Scanning

细节展示 Details Show



设备特点 Equipment highlights

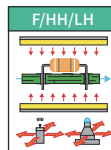
1. 喷雾、预热、焊接全制程高度集成, 极致空间优化
 2. 轻量化灵动机身, 柔性组线无忧
 3. 卓越焊接性能, 品质跃级保障
 4. 动态协同作业, 广谱适配能力
 5. 小批量多品种, 敏捷响应市场
1. Highly integrated process of spraying, preheating, and soldering with optimized space utilization.
 2. Lightweight and agile body, enabling flexible production line integration without constraints.
 3. Exceptional soldering performance, delivering leap-forward quality assurance.
 4. Dynamic collaborative operation with broad-spectrum compatibility.
 5. Ideal for small-batch, multi-variety production, ensuring swift response to market demands.

应用领域 Application Field

选择性波峰焊广泛应用于汽车制造、光伏储能、仪器仪表、军工、航空航天、船舶、医疗电子、家用电器等领域。

Selective wave soldering is widely used in fields such as automotive manufacturing, photovoltaic energy storage, measuring instruments/meters, military, aerospace, shipbuilding, medical electronics, and household appliances.

配置方案 Configuration plan



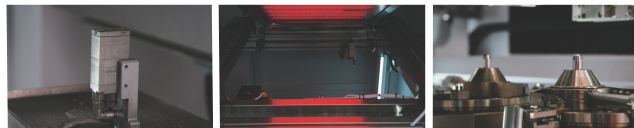
喷雾+预热+焊接
Flux Spraying+ Preheating+Soldering

在线式双缸选择性波峰焊

ONLINE DUAL CYLINDER SELECTIVE WAVE SOLDERING



细节展示 Details Show



设备特点 Equipment highlights

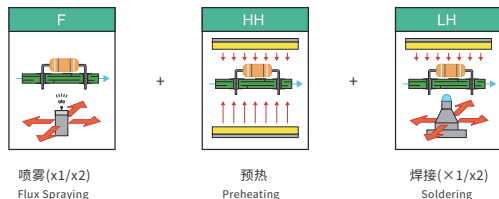
1. 喷雾+预热+焊接完整型一体化设计
 2. 波峰平稳、维护简单，机械泵与电磁泵可选
 3. 可用于单锡炉或双锡炉焊接
 4. 过板最大宽度可达600mm
 5. 适用于大批量生产
1. Spray+preheating+Soldering integrated design
 2. Stable peak and easy maintenance, mechanical pump and electromagnetic pump are optional
 3. Can be used for single tin furnace or double tin furnace Soldering
 4. The maximum width of the board can reach to 600mm
 5. Suitable for large-scale production

应用领域 Application Field

选择性波峰焊广泛应用于汽车制造、光伏储能、仪器仪表、军工、航空航天、船舶、医疗电子、家用电器等领域。

Selective wave soldering is widely used in fields such as automotive manufacturing, photovoltaic energy storage, measuring instruments, military, aerospace, shipbuilding, medical electronics, and household appliances.

配置方案 Configuration plan



技术参数 Technical Specification

项目 Item	参数 Specification		
型号 Model	GRW-3/15	GRW-3/25	GRW-3/25Z
机器尺寸 Equipment Dimension	L2850 x W1655 x H1650mm		
轨道可调范围 Rail adjustable range	50-600mm		
PCB板尺寸 PCB dimension	L500 x W600mm	L500 x W500mm	
运输高度 Conveyor height	900±30mm		
锡炉 Tin oven pot	电磁泵/机械泵可选 Electromagnetic pump/mechanical pump optional		
锡流量 Tin scrap weight within oven per week	电磁泵: 0.5kg/锡炉/周 机械泵: 0.7kg/锡炉/周 Electromagnetic pump: 0.5kg/tin pot/week Mechanical pump: 0.7kg/tin pot/week		
氮气消耗 Consumption of Nitrogen	1.5-2m³/h/炉 1.5-2m³/h/tin pot		
熔锡时间 Tin melting time	电磁泵: 75min 机械泵: 30min Electromagnetic pump: 75min Mechanical pump: 30min		
锡槽容量 Tin tank capacity	13kg 12kg		
可选功能 Optional functions	喷雾检测/板温检测/自动加锡/CCD定位 Spray detection/board temperature detection/automatic tinning/CCD positioning		

在线式四缸选择性波峰焊

DUAL-MODULE FOUR-POT SELECTIVE SOLDERING MACHINE GRW-5/25Z



■ 细节展示 Details Show



■ 设备特点 Equipment highlights

1. 喷雾+预热+焊接1+焊接2模块化设计, 配置灵活可自由扩展
2. 配有双焊接模组, 四个锡炉焊槽, 大大提高生产效率
3. 根据客户不同要求, 实现不同的模组搭配
4. 具有高灵活性、高产能、更低的投入成本
5. 一体化全功能性机型, 整机内部同时有 10 件 PCB 板或 5 个治具 (2PCB/治具) 分别在喷雾, 预热及焊接处工作, 提高机器整体产能
6. 独立的喷雾运动平台与独立的焊接运动平台
7. 焊接质量高, 大幅提升焊接的直通率
8. MEMA 在线运输, 支持客户进行灵活组线
9. 全电脑控制, 参数均在电脑上设定与保存, 生成配置文件, 便于追溯与保存

Modular Design: Spray + Preheating + Soldering 1st + Soldering 2nd

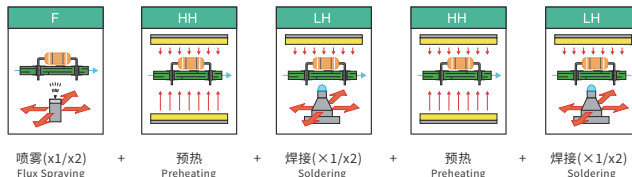
1. Flexible configuration with free expandability.
2. Equipped with dual soldering modules and four soldering pots, significantly improving production efficiency.
3. Flexible module combinations to meet diverse customer requirements.
4. High flexibility, high production capacity, and lower upfront investment costs.
5. All in one machine, can accommodate 10 boards or 5 pallet (2PCB/pallet), one in spray flux, one is preheating, another in soldering.
6. Individual spray flux table & soldering table.
7. High soldering quality.
8. MEMA inline transport.
9. Fully computer-controlled, all parameters digitally configured and stored. Configuration files generated for traceability and archival purposes.

■ 应用领域 Application Field

选择性波峰焊广泛应用于汽车制造、光伏储能、仪器仪表、军工、航空航天、船舶、医疗电子、家用电器等领域。

Selective wave soldering is widely used in fields such as automotive manufacturing, photovoltaic energy storage, instrumentation, military, aerospace, shipbuilding, medical electronics, and household appliances.

■ 配置方案 Configuration plan



■ 技术参数 Technical Specification

项目 Item	参数 Specification		
型号 Model	GRW-5/15	GRW-5/25	GRW-5/25Z
机器尺寸 Equipment Dimension	L4600 x W1650 x H1650mm		
轨道可调范围 Rail adjustable range	50-600mm		
PCB板尺寸 PCB dimension	L500 x W600mm	L500 x W500mm	
运输高度 Conveyor height	900±30mm		
锡炉 Tin oven pot	电磁泵/机械泵可选 Electromagnetic pump/mechanical pump optional		
锡渣量 Tin scrap weight within oven per week	电磁泵: 0.5kg/锡炉/周 机械泵: 0.7kg/锡炉/周 Electromagnetic pump: 0.5kg/tin pot/week Mechanical pump: 0.7kg/tin pot/week		
氮气消耗 Consumption of Nitrogen	1.5-2m³/h/炉 1.5-2m³/h/tin pot		
熔锡时间 Tin melting time	电磁泵: 75min 机械泵: 30min Electromagnetic pump: 75min Mechanical pump: 30min		
锡槽容量 Tin tank capacity	13kg		
可选功能 Optional functions	喷雾检测/板温检测/自动加锡/CCD定位 Spray detection/board temperature detection/automatic tinning/CCD positioning		

在线式智能返修系统

ONLINE INTELLIGENT REWORK SYSTEM



■ 设备特点 Equipment highlights

1. AOI检测, 选择焊修补, 实现整线自动化
2. AI智能算法, 高精度定位与识别
3. 模块化联机架构, 极高通讯交互
4. 全链路数据溯源, 智慧工厂基石
5. 一体化智能生态, 全流程无人化

1. AOI inspection and selective soldering repair enable fully automated production lines.
2. AI intelligent algorithms ensure high-precision positioning and recognition.
3. Modular connectivity architecture with minimalist communication interfaces.
4. End-to-end data traceability, laying the foundation for smart factories.
5. Integrated intelligent ecosystem achieving a fully unmanned process.

■ 应用领域 Application Field

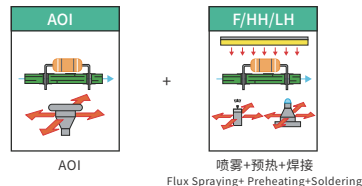
选择性波峰焊广泛应用于汽车制造、光伏储能、仪器仪表、军工、航空航天、船舶、医疗电子、家用电器等领域。

Selective wave soldering is widely used in fields such as automotive manufacturing, photovoltaic energy storage, measuring instruments, military, aerospace, shipbuilding, medical electronics, and household appliances.

■ 技术参数 Technical Specification

项目 Item	参数 Specification
PCB厚度范围 PCB Thickness Range	0.4-6mm
PCB尺寸范围 PCB Size Range	单轨模式: Min:50*50mm/Max:500*460mm Single-track mode: Min 50×50mm / Max 500×460mm
适应最小元器件 Maximum Component Size Supported	0201
炉后不良 Post-Reflow Defects	连锡、拉尖、虚焊、包焊、漏锡、引脚未出等 Solder Bridging, Solder Icicles, Cold Solder Joints, Excessive Solder, Exposed Copper, Insufficient Pin Protrusion
相机像素 Camera Resolution	1200万彩色高速工业相机 12MP color high-speed industrial camera
光学分辨率 Optical Resolution	15um
FOV尺寸 FOV Size	60°*45mm 60°x45mm
检测速度 Inspection Speed	0.4S/FOV 0.4S sec/FOV
条码扫描 Barcode Scanning	相机直接扫描/外置条码枪 Direct camera scanning / external barcode scanner
MES功能 MES Function	MES数据库联网 MES data tracking
人工智能 AI Capability	AI大数据训练中心 AI big data training center
型号 Model	GRW-1/15F
机器尺寸 Equipment Dimension	L1500°*W1650°*H1650mm
轨道可调范围 Rail adjustable range	100-500mm
PCB板尺寸 PCB dimension	L500°*W500
运输高度 Conveyor height	900±30mm
选择 返修	电磁泵/机械泵可选 Electromagnetic Pump/Mechanical Pump (Optional)
锡炉 Tin oven pot	电磁泵: 0.5kg/锡炉/周 机械泵: 0.7kg/锡炉/周 Electromagnetic Pump: 0.5kg/Pot/Week Mechanical Pump: 0.7kg/Pot/Week
锡渣量 Tin scrap weight within oven per week	电磁泵: 15kg/机械泵: 13kg Electromagnetic Pump: 15kg Mechanical Pump: 13kg
氮气消耗 Consumption of Nitrogen	1.5-2m³/h/炉 1.5-2m³/h/Pot
熔锡时间 Tin melting time	电磁泵: 75min 机械泵: 30min Electromagnetic Pump: 75min Mechanical Pump: 30min
锡槽容量 Tin tank capacity	电磁泵: 15kg/机械泵: 13kg Electromagnetic Pump: 15kg Mechanical Pump: 13kg
可选功能 Optional functions	喷雾检测/板温检测/自动加锡/CCD定位/条码扫描 Spray Detection/Board Temperature Detection/Auto Tin Feeding/CCD Positioning/Barcode Scanning

■ 配置方案 Configuration plan



在线式锡珠清洗机

ONLINE TIN BEAD CLEANING MACHINE



技术参数 Technical Specification

项目 Item	参数 Specification
型号 Model	GRX-1/15
机器尺寸 Equipment Dimension	L1050 x W1650 x H1650mm
轨道可调范围 Rail adjustable range	50-500mm
清洗范围 Cleaning scope	L500 x W500mm
运输高度 Conveyor height	900±30mm
重量 Height	800kg
功率 Power	2kw
传送方式 Conveyor method	滚轮运输 Roller transportation
净空 Clearance	上:120 下:60
清洁方式 Cleaning method	毛刷清洗 Brush Cleaning
产品重量PCB PCB Product weight	小于30kg

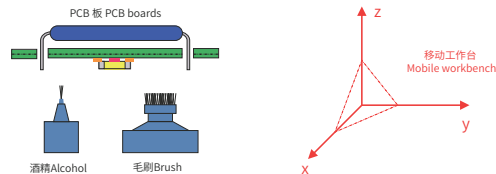
细节展示 Details Show



设备特点 Equipment highlights

1. 清洁精度高: 精准参数控制, 能够对每个焊点的清洁参数进行单独设置和精确调整;
 2. 清洁灵活性强: 适应多种元件, 搭配不同清洁头可以清洁各种不同类型的焊盘锡珠;
 3. 清洁品质高: 自主设电毛刷头, 可减少对元件的静电损伤;
 4. 操作简便: 采用图形化编程或示教编程方式, 具有直观、易懂的操作界面;
 5. 全面覆盖: 适用于复杂结构 (如细间距元件、盲孔等), 清洗无死角;
 6. 减少缺陷: 避免锡珠残留导致的电气短路或信号干扰, 清除腐蚀性助焊剂, 保护金属焊点。
1. High cleaning accuracy: precise parameter control, able to individually set and accurately adjust the cleaning parameters for each solder joint;
 2. Strong cleaning flexibility: Suitable for multiple components, with different cleaning heads to clean various types of solder pads and solder beads;
 3. High cleaning quality: Independently designed anti-static brush head can reduce static damage to components;
 4. Easy to operate: using graphical programming or demonstration programming methods, with an intuitive and easy to understand operating interface;
 5. Comprehensive coverage: suitable for complex structures (such as fine pitch components, blind holes, etc.), cleaning without dead corners;
 6. Reduce defects: Avoid electrical short circuits or signal interference caused by residual solder beads, remove corrosive soldering flux, and protect metal solder joints.

系统工艺路线 System Process Steps



应用领域 Application Field

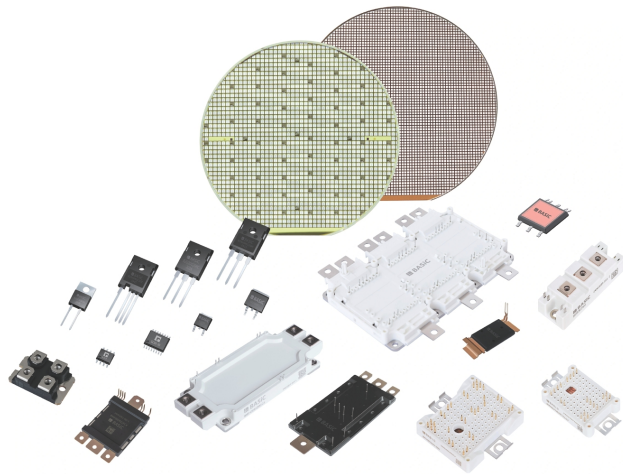
广泛应用于汽车制造、光伏储能、仪器仪表、军工、航空航天、船舶、医疗电子、家用电器等领域。

Selective wave soldering is widely used in fields of automotive manufacturing, photovoltaic energy storage, measuring instruments, military, aerospace, shipbuilding, medical electronics, and household appliances.

半导体系列

EMICONDUCTOR SERIES

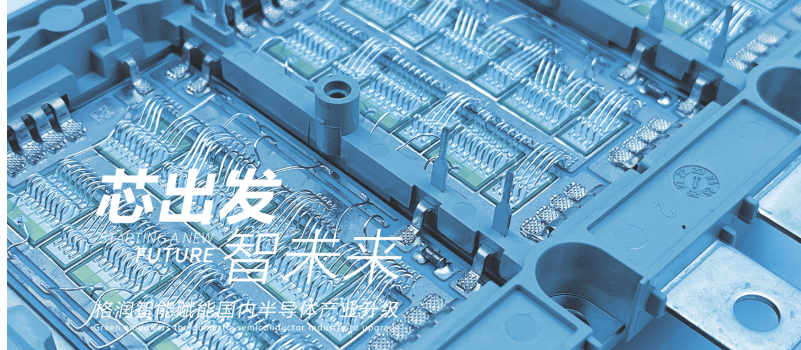
专注于高端半导体封装设备的研发与制造,致力于为全球集成电路、光电器件及微电子领域提供精密、高效的键合解决方案。事业部拥有自主研发的核心技术平台,产品涵盖多类键合工艺,以高精度、高可靠性及智能化水平,广泛应用于先进封装产线,助力5G、人工智能、汽车电子等产业发展。我们坚持以技术创新驱动,为客户创造价值,推动国产高端装备的进步与突破。



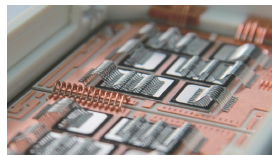
应用范围 Application scope

新能源动力电池、光伏逆变器、变频器、汽车电子、储能、IGBT、BMS电池安全控制板、Si、SiC、GaN、GaAs 等等芯片和模块等

New energy power batteries, PV inverters, frequency converters, automotive electronics, energy storage, IGBT, BMS battery safety control boards, Si, SiC, GaN, GaAs, and other chips and modules.



应用领域 Application Fields



IGBT



新能源动力电池



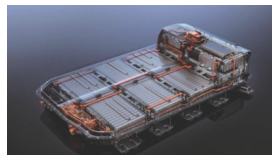
光伏逆变器



汽车电子



储能



BMS 电池安全控制板

纳米银预烧结贴片机

NANO-SILVER PRE-SINTERING DIE BONDER



适用工艺 Applicable Processes

适用于采用银膜、银膏等连接材料工艺

Suitable for processes using silver film, silver paste, etc. as connection materials

设备特点 Equipment highlights

1. 不需要更换轨道上加热基板底座, 直接兼容行业产品
 2. 设备占地面积行业最小
 3. 压力精度可达 1%, 并且压力设定时间不受限, 行业内一般时间为最长 3-5 秒; D、温度精度可达 1%
 4. 芯片晶圆头带温度加热和力控, 有效保证芯片良品率
 5. 可自动更换热压贴头
- No need to replace the heating substrate base on the track; directly compatible with industry-standard products.
Smallest footprint in the industry.
Pressure accuracy reaches $\pm 1\%$, with no time limit on pressure setting (industry standard typically max. 3-5 seconds); Temperature accuracy reaches $\pm 1\%$.
The die bonding head features temperature heating and force control, effectively ensuring chip bonding yield rate.
Automatic changeover of thermocompression bonding heads.

工艺流程 Process Flow



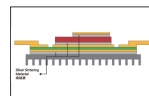
陶瓷板



纳米银膜/膏



芯片



烧结结构

功能介绍 Function Introduction

1. 通用工艺: 冷贴合、热贴预烧结、热贴烧结等工艺
2. 适用产品: IGBT, SiC, 射频功率器件, 大功率激光器
3. 贴头特点: 360°旋转+压力 30kg+300°C加热高温, 压力和温度值精度 $\pm 1\%$
4. 平台特点: 具备 350°C加热高温+真空吸附+氮气保护
5. X/Y精度: $\pm 10\mu\text{m} @ 3\sigma$
6. 可 In-Line 生产和离线生产
7. 具备自动 8 寸 Wafer、4 寸 Tray 等自动上下料系统
8. 作业区域: 400*300mm (长*宽)

Applicable Processes: Cold bonding, Hot placement with pre-sintering, Hot placement with sintering, etc.

Suitable Products: IGBT, SiC, RF power devices, high-power lasers, etc.

Bond Head Features: 360° rotation + 30kg force + 300°C heating. Force and temperature precision: $\pm 1\%$.

Platform Features: Equipped with 350°C heating + Vacuum adsorption + N2 environment.

X/Y Accuracy: $\pm 10\mu\text{m} @ 3\sigma$.

Compatible with: Both In-Line production and Offline production.

Equipped with: Automatic loading/unloading systems for 8-inch wafers, 4-inch trays, etc.

Work Area: 400*300mm (L*W).

技术参数 Technical Specification

项目 Item	参数 Specifications
贴片种类 Component Type	银膜、银膏、芯片、电阻、铜片、锡片、金键片等等 Silver film, Silver paste, Chips, Resistors, Copper sheets, Tin sheets, AuSn sheets, etc.
适用工艺 Compatible Process	兼容银膜和银膏工艺 Compatible with silver film and silver paste processes
Wafer Table (选配) Wafer Table (Optional)	8" (有效工作区域: $\phi 200\text{mm}$) 8" (Effective working area: $\phi 200\text{mm}$)
轨道宽度 Conveyor Width	400*300mm (标准) 400*300mm (Standard)
轨道工作高度 Conveyor Working Height	950 $\pm 20\text{mm}$ 950 $\pm 20\text{mm}$
Tray 尺寸 (选配) Tray Size (Optional)	4" 4"
飞轮 (选配) Feeder (Optional)	2 套 (最多) 2 sets (Max.)
银膜供料治具尺寸 (选配) Silver Film Feeding Fixture Size (Optional)	260*80mm (片料) 260*80mm (Sheet material)
die Size Die Size	0.2" 0.2~0.25" 25mm 以内 0.2" 0.2~0.25" 25mm
die thickness Die Thickness	0.05~5mm 0.05~5mm
多针顶针 (音圈电机式) Multi-Pin Ejector (VCM Type)	自主设定 (精度 $\pm 0.005\text{mm}$) Customizable (Accuracy $\pm 0.005\text{mm}$)
顶针系统温度 Ejector System Temperature	<100°C <100°C
X/Y placement accuracy X/Y Placement Accuracy	$\pm 10\mu\text{m} @ 3\sigma$ $\pm 10\mu\text{m} @ 3\sigma$
Theta placement accuracy Theta (θ) Placement Accuracy	$\pm 0.1^\circ @ 3\sigma$ $\pm 0.1^\circ @ 3\sigma$
效率 (UPH) Efficiency (UPH)	UPH1200~1500 UPH1200~1500
贴头压力及精度 Placement Head Pressure & Control Accuracy	$\leq 30\text{kg} \pm 2\%$ $\leq 30\text{kg} \pm 2\%$
贴头温度及精度 Placement Head Temperature & Control Accuracy	300°C $\pm 2\%$ 300°C $\pm 2\%$
贴合平台温度 Placement Platform Temperature / Bonding Platform Temperature	300°C $\pm 2\%$ 300°C $\pm 2\%$

在线式甲酸真空回流焊

IN-LINE FORMIC ACID VACUUM REFLOW OVEN



设备特点 Equipment highlights

该设备具体分为:传动部分、加热及焊接区、真空单元、冷却区及松香回收系统。

The machine is divided into: transmission system, heating/welding zone, vacuum unit, cooling zone, and flux recovery system.

1. 传动部分 Transmission System

此结构贯穿整个设备,分为三段:加热区、真空单元及冷却部分。

This structure runs through the entire equipment and is divided into three stages: heating zone, vacuum unit, and cooling section.

2. 加热及焊接区 Heating & welding Zone

各个温区温度可以单独调节,确保实现灵活稳定的焊接制程,满足无铅焊片焊接制程的工艺,产品在此过程中实现满足客户要求的焊接工艺。

Each temperature zone can be individually adjusted to ensure a flexible and stable soldering process, meeting the requirements of lead-free soldering. This enables the product to achieve customer-specified soldering quality standards throughout the process.

3. 真空单元 Vacuum Unit

产品从焊接区直接进入真空单元,DBC焊点处于熔融状态,开启真空制程,使真空压力低至1mbar,空洞等内部气体从熔融状态的焊点中溢出,可以将空泡率降至1-3%以下。

The product moves directly from the welding zone into the vacuum unit while the DBC solder joints remain in a molten state. The vacuum process is then initiated, reducing the pressure to as low as 1 mbar. This allows internal gases, such as voids and pores, to escape from the molten solder joints, effectively reducing the voiding rate to below 1.3%.

4. 冷却区 Cooling Zone

产品从真空单元出来直接进入冷却区,同标准回流焊冷却功能相似,满足一定的冷却斜率及降低板温,进入下道工序,此时焊接制程完成。The product exits the vacuum unit and directly enters the cooling zone, which functions similarly to standard reflow oven cooling. It ensures a controlled cooling rate and reduces the board temperature to meet process requirements before proceeding to the next stage. At this point, the soldering process is completed.

5. 松香回收系统 Flux Recovery System

同标准回流焊功能相同,将松香通过冷却回收至特定的结构里面,定期的保养,减少设备的维护及环境污染。

Similar to the standard reflow soldering function, the flux is recovered through cooling into a dedicated structure. This enables periodic maintenance, reducing equipment servicing needs and environmental pollution.

技术参数 Technical Specification

项目 Item	参数 Specifications
型号 Model	GR-400
加热方式 Heating Method	金属加热平台,电阻加热方式,分区独立控制,产品接触式传导热量 Metal Heating Platform, Resistive heating, zone-independent control, conductive heat transfer via contact
加热温区 Heating Zone	3个
冷却区 Cooling Zone	1个
温度范围 Temperature Range	最高温度 400°C 400°C
加热平台均匀度 Heating Platform Uniformity	±3°C ±3°C
极限真空度真空度 Ultimate Vacuum Level	100pa 10 Pa
真空区 Vacuum Zone	4个
冷却方式 Cooling Method	金属冷却平台,配置水冷却系统,产品接触式降温,达到快速冷却的效果 Metal Cooling Platform, equipped with water-cooling system for rapid conductive cooling
送料方式 Feeding Method	步进电机控制升降;电机传动送料; Stepper Motor-Driven Lift & Feed Mechanism
送料接口 Feeding Interface	送料高度 900mm±20MM 接驳自动运行送料生产; Feed Height 900 mm ± 20 mm (automated production feed compatibility)
产品最大尺寸 Maximum Product Dimensions	280*410mm 280 × 410 mm
炉膛高度 Chamber Height	80mm 80 mm height
产能 Production Capacity	UPH ≤ 8min/套 (连续生产/出料时间); (HPD二次焊UPH ≤ 12min/套) UPH ≤ 8 min/set (continuous production); ≤ 12 min/set for HPD Secondary Welding
加热平台材质 Heating Platform Material	高分子合金材料+表面特殊处理 Polymer Alloy + specialized surface treatment
气泡率 Bubble Rate	单个 < 1%, 整体 < 3% < 1% (single unit); < 3% (batch)
气体 Process Gas	氮气、甲酸气体、氢气 Nitrogen, Formic Acid, Hydrogen
氮气消耗 Nitrogen Consumption	约 50L/min 50 L/min (adjustable)
最低含氧量 Minimum Oxygen Level	≤ 10ppm ≤ 10 ppm purity
甲酸使用量 Formic Acid Usage	约 30-100L/min 30-100 L/min (adjustable)
功率 Power Rating	最大功率: 35KW 工作功率: 10-15KW Max Power: 35 kW; Operating Power: 10-15 kW
控制方式 Control Method	嵌入式工业触摸屏加plc Embedded Industrial Touch PC+PLC
操作系统 Operating System	LINUX 系统 Linux OS
电源标准 Power Supply Standard	380V 三相五线制, 10 mm² 铜线 380V 3-Phase 5-Wire, 10 mm² copper cable
外形尺寸 Overall Dimensions	L4500 x W1800 x H1800 mm (LxWxH) 4500 (L) × 1800 (W) × 1800 (H) mm
设备重量 Equipment Weight	3000KG 3000 kg

安全系统 Security system

低温报警、超温报警	Low-Temperature Alarm, Over-Temperature Alarm
真空度检查报警	Vacuum Level Check Alarm
氮气注入故障报警	Nitrogen Injection Failure Alarm
冷却水压力检测系统, 低压报警	Cooling Water Pressure Monitoring System, Low-Pressure Alarm
气压检测系统, 高低压报警	Gas Pressure Monitoring System, High/Low-Pressure Alarm
舱门未到检测	Chamber Door Position Detection
一键式切断加热部分电源	One-Touch Power Cutoff for Heating Module

硬件配置 Hardware configuration

设备主机1 台	Main Unit × 1
控制系统1 套	Control System × 1 Set
氮气控制系统1 套	Nitrogen Control System × 1 Set
甲酸还原气体控制系统1 套	Formic Acid Reduction Gas Control System × 1 Set
真空泵4 台	Vacuum Pumps × 4
自动进出料系统2 套	Automatic Loading/Unloading Systems × 2 Sets

粗线超声波键合机

HEAVY WIRE ULTRASONIC BONDING MACHINE

GR-W01

GR-W01创新设计上做延续了平台的策略,可以在同一个设备底座上采用不同焊线技术及换能器频率。不同尺寸工作区域的数量确保了整套封装技术的最高灵活性,GR-W01再次实现创新性技术突破,成为行业工作台面接近1m²的引线键合设备。产品性能优异;零故障制造;虽然工作距离长,但模组可始终保持无震动,实现高精度定位

GR-W01 continues the platform's innovative design strategy, enabling the integration of different wire bonding technologies and transducer frequencies on the same equipment base. The availability of multiple working area sizes ensures maximum flexibility for the entire packaging process. Once again, GR-W01 achieves a groundbreaking technological breakthrough, standing out as the industry's first wire bonder with a worktable approaching 1m².

Superior Performance; zero-Failure Manufacturing despite the long working distance, the module maintains vibration-free operation, ensuring high-precision positioning.



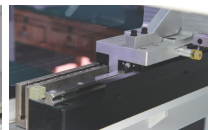
GR-W01粗线焊机可以为IGBT、智能功率模块和混合装配行业中的任意焊接难题提供完美的解决方案

The GR-W01 Heavy Wire Bonding Machine delivers the perfect solution for any bonding challenge in IGBT, intelligent power modules (IPMs), and hybrid assembly industries.

技术参数 Technical Specification

项目 Item	参数 Specification
X轴 X-Axis	300mm/可选行程定制 300 mm / Customizable Stroke (Optional)
Y轴 Y-Axis	300mm/800mm,可选行程定制 300 mm / 800 mm, Customizable Stroke (Optional)
Z轴 Z-Axis	标准50mm,可选行程50-100mm Standard 50 mm, Optional 50-100 mm
R轴 R-Axis	配备绝对编码器的 +/-220度交流伺服马达,分辨率0.0035度 AC Servo Motor with Absolute Encoder (±2.2°), Resolution: 0.0035°
不含信号打高度 Height (Excluding Signal Light)	1815mm 1815 mm
重量 Weight	1400kg 1400 kg
工作高度 Working Height	符合 SEMAMA850-1050mm SEMI MA850-1050 mm Standard
电源 Power Supply	220V 220 V
功率 Power Consumption	1KW 1 kW
压缩空气 Compressed Air Requirement	0.5-0.7MPa/需洁净干燥空气 0.5-0.7 MPa (Clean, Dry Air)
机器规格 Dimensions (L × W × H)	W750*L1200*H1850(mm) 750*1200*1850 mm

细节展示 Details Show



应用范围 Application scope

新能源动力电池、光伏逆变器、变频器、汽车电子、储能、IGBT、BMS电池安全控制板等

New energy power batteries, PV inverters, Frequency converters, Automotive electronics, Energy storage systems, IGBT modules, BMS (Battery Management System) safety control boards.

设备特点 Equipment highlights

1. 利用快速系统切换,在一个机器平台中实现粗线与带屑的整合
 2. 通过焊接过程控制系统,针对多变的材料表面实现焊接参数的实时调整,确保可重复的焊接质量
 3. 通过在工业4.0/OT编程方面的无缝集成,确保过程透明性
 4. 通过可供选择的多种超声波频率实现最佳的材料匹配,促进过程的稳定性
 5. 由单一供应商集成工艺过程技术与自动化
1. Integrated heavy wire & ribbon bonding within a single machine platform through rapid system switching.
 2. The welding process control system enables real-time parameter adaptation to variable material surfaces, ensuring repeatable weld quality.
 3. Seamless Industry 4.0/OT integration guarantees full process transparency.
 4. Multi-frequency ultrasonic compatibility optimizes material matching for enhanced process stability.
 5. Unified process-automation integration from a single source provider.

机器规格 Machine specifications

图像识别 Image recognition	
图像识别单元 Image Size	图像体识别传统模式 Traditional Image Recognition
识别时间 Recognition Time	每个图像识别最多2毫秒 Each Recognition Cycle <2 ms
基准修正 Alignment Correction	Flexsearch, 包括相位的单点识别,两点识别 FlexSearch; Single-Point Recognition (Including Phase Angle), Dual-Point Recognition
摄像头 Camera	相位角修正 +/-5% Phase Angle Correction: ±5%
分辨率 Resolution	移动CCD摄像头,微米级精度像素 Moving CCD Camera with Micron-Level Pixel Accuracy
图像尺寸 Image Size	2-30厘米/像素;使用不同的光学器件可调节 2-30 cm/Pixel (Adjustable via Optical Components)
自动工装模式 Automatic tooling mode	
定位针式步进传输 Pin-Type Stepper Transmission	皮带式步进传输 Belt-Driven Stepper Transmission
封装形式 Packaging Form	平面基板,例如陶瓷基板、PCB或工作托盘 Flat Substrates (e.g., Ceramic Substrates, PCBs, or Workpiece Trays)
自动送料 Automatic Conveyor Line	可能集成定制自动产品,AGV模式 Customizable Automated Handling (AGV Mode Available)
标准有效焊接行程 Standard Effective Welding Stroke	300°/300,300°/900(mm)
行程定制化 Customizable Stroke	根据不同产品定制行程,比如汽车动力电池包 Expandable Travel Range (e.g., for Automotive Battery Packs)
机器规格 Machine specifications	
X/Y轴 X/Y Axis	线性编码器分辨率优于0.1μm Linear Encoder Resolution <0.1 μm
R轴 R Axis	配备绝对编码器的±220度交流伺服马达,分辨率0.0035度 ±220° AC Servo Motor with Absolute Encoder (Resolution: 0.0035°)
Z轴 Z Axis	可选60mm(2.36英寸);配备绝对编码器的交流伺服马达分辨率0.5μm Optional 60 mm (2.36") Stroke with AC Servo Motor (Resolution: 0.5 μm)
位置精度 Positioning Accuracy	<±5 μm @3倍标准差,包括图像/引线/劈刀/应用 <±5 μm @3σ (Includes Image/Wire/Bonder/Application)
产品上的可重复性 Repeatability on Product	<±3 μm @3倍标准差,包括图像/引线/劈刀/应用 <±3 μm @3σ (Includes Image/Wire/Bonder/Application)
显示器 Display	21英寸平面显示器 21" Flat Display
显微镜 Microscope	立体变焦显微镜,灯光可调节 Stereo Zoom Microscope with Adjustable Lighting
连接 Connection	SEMA, USB, RJ45, Digital I/O
操作系统 Operating System	实时,基于Unix®的多任务操作系统 Real-Time Unix®-Based Multitasking OS
认证 Certification	SEMI52, CE

粗线超声波键合机

HEAVY WIRE ULTRASONIC BONDING MACHINE

GR-W02

GR-W02创新设计上做延续了平台的策略,可以在同一个设备底座上采用不同焊线技术及换能器频率.不同尺寸工作区域的数量确保了整套封装技术的最高灵活性,GR-W02再次实现创新性技术突破,成为行业工作台面接近1m²的引线圈合设备.产品性能优良;零故障制造;虽然工作距离长,但机模组可始终保持无震动,实现高精度定位



GR-W02 continues the platform's innovative design strategy, enabling the integration of different wire bonding technologies and transducer frequencies on the same equipment base. The availability of multiple working area sizes ensures maximum flexibility for the entire packaging process. Once again, GR-W02 achieves a groundbreaking technological breakthrough, standing out as the industry's first wire bonder with a worktable approaching 1m².

Superior Performance ; zero-Failure Manufacturing ,despite the long working distance, the module maintains vibration-free operation, ensuring high-precision positioning.

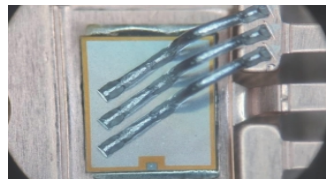
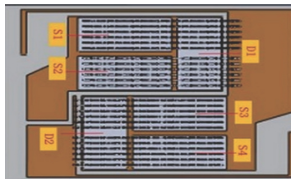
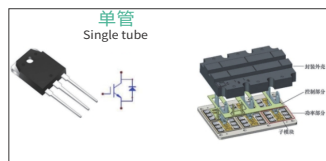
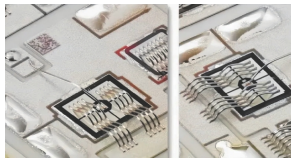
GR-W02粗线焊线机可以为IGBT、智能功率模块和混合装配行业中的任意焊接难题提供完美的解决方案

The GR-W02 Heavy Wire Bonding Machine delivers the perfect solution for any bonding challenge in IGBT, intelligent power modules (IPMs), and hybrid assembly industries.

技术参数 Technical Specification

项目 Item	参数 Specification
XY运动范围 XY Motion Range	100mm (X)×100mm(Y) 100mm (X) × 100mm (Y)
XY运动精度 XY Motion Accuracy	线性直线电机 0.1μm分辨率 Linear Motor, 0.1μm resolution
超声缝合重复定位 Ultrasonic Bonding	±0.02mm, 包括图像/引线/剪刀/应用 ±0.02mm (includes image/wire/capillary/application alignment)
电源要求 Repeatability & Power	电气180~240V AC单相, 50/60Hz, 4.0kVA 180~240V, AC single-phase, 50/60Hz, 4.0kVA
设备外形尺寸 Equipment Dimensions	1820mm×1260mm×1700mm 1820mm × 1260mm × 1700mm
Z轴行程以及精度 Z-Axis Travel & Accuracy	音圈电机, 50mm Z轴行程, 0.1μm分辨率 Voice Coil Motor, 50mm travel (Z-axis), 0.1μm resolution
R轴 R-Axis	扭矩电机驱动, ±220°, 0.1μm分辨率 Torque Motor Drive, ±220°, 0.1μm resolution
控制系统 Control System	工业电脑+伺服 Industrial PC + servo drive
压缩气压/可选 Compressed Air Pressure/Optional	0.5~0.7MPa, 清洁的干燥空气 0.5~0.7MPa, clean dry air
重量 Weight	1200kg 1200kg

■ 细节展示 Details Show



■ 应用范围 Application scope

MOS TO220、TO220F、TO247、TO252、TO263等系列产品或单排或多排,DBC IGBT模块等功率器件

MOSFET packages (TO220, TO220F, TO247, TO252, TO263, etc.) in single-row or multi-row configurations, DBC-based IGBT modules, and other power semiconductor devices.

■ 粗线和焊头规格 Heavy wire and welding head specifications

粗线规格 Wire Configuration

- 圆线100-500微米
153 Series: For aluminum wire
Round Wire, 100-500 μm
- (4.20 mil)
4.20 mil

引线材料

- 铝, 铜
Aluminum, Copper

配置

- 高速高精度龙门双驱系统
High-Speed, High-Precision Gantry Dual-Drive System
- 高精度动态锁焊系统
High-Precision Dynamic Frequency-Locking Welding System
- 自动力校
Auto Force Calibration

切线方式

- 主动式: 切割深度适用于前切
Active Type: Cutting depth optimized for front-cut applications

焊臂剪刀

- 153系列适用于铝线
153 Series: For aluminum wire
- 595系列适用于铜线
595 Series: For copper wire
- GRN实验室开发的专用剪刀
GRN Lab-Developed Custom Capillaries

换能器频率

- 60, 80, 120kHz标准频率
Standard Frequencies: 60, 80, 120 kHz
- GRN实验室开发的专用换能器
GRN Lab-Developed Custom Transducers

超声发生器

- GRN, 数字30-250kHz
GRN Digital, 30-250 kHz
- 分辨率: < 1 Hz
Resolution: < 1 Hz
- 分辨率最大值: 100W, 可编程
Max. Power: 100 W (programmable)

压力

- 50-1500g, 可编程小于150克以内精度±5g
Range: 50-1500 g (programmable) < 150 g: ±5 g accuracy
- 大于150克以上时为±3%
> 150 g: ±3% accuracy
- 可调压力步进为1g
Adjustable Step: 1 g

识别模式

- 特征查找, 单点PR与角度
Feature Search, Single-Point PR & Angle
- 增强模式自主研发视觉系统
Enhanced Mode with Proprietary Vision System

耗材

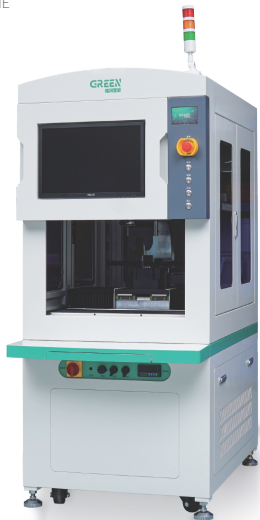
- 可以实现最佳的引线进给和控制
Optimized lead feeding and control
- 新型切刀具有硬化表面, 可以实现超
New hardened blade cutter for ultra-long lifespan

速度

- 根据应用, 可达每秒每根线
Application-dependent, up to per-wire-per-second performance

IGBT 引脚焊接机

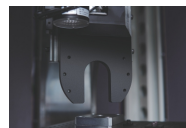
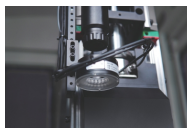
IGBT PIN WELDING MACHINE



高精度 高效率 高柔性

High precision, high efficiency, high flexibility

细节展示 Details Show



技术参数 Technical Specification

项目 Item	参数 Specifications
设备尺寸 Equipment Dimension	1162mm (L) × 800mm (W) × 1800mm (H) Approx. 1162mm (L) × 800mm (W) × 1800mm (H)
设备重量 Equipment Weight	Approx. 610 kg Approx. 610 kg
上下料方式 Loading/Unloading Method	人工上下料 自动上下料 Manual Automatic
产品焊点定位方式 Solder Joint Alignment Method	超声波(可任意阵列) Customizable (arbitrary array)
超声波频率 Ultrasonic Frequency	20 kHz or 40 kHz 20 kHz or 40 kHz
超声波焊接功率 Ultrasonic Welding Power	3000W 3000W
焊接面积 Welding Area	可根据客户定制 (mm ²) Adjustable per customer requirements (mm ²)
焊接铜片厚度 Copper Sheet Thickness for Welding	0.5 ~ 1.5mm 0.5-1.5 mm
工作行程XY X-Y Axis Travel Range	450 x 350mm 450 x 350 mm
Z轴运动行程 Z-Axis Motion Travel	150mm 150 mm
超声波控制方式 Ultrasonic Control Method	振幅控制, 能量控制, 熔深控制 Amplitude control, Energy control, Penetration depth control
定位精度 Positioning Accuracy	5μm 5 μm
相机分辨率 Camera Resolution	500万 5 million cycles
供气要求 Gas Supply Requirements	>0.6Mpa >0.6 MPa
设备总功率 Total Equipment Power	4KW/AC 220V 4 kW / AC 220V
焊接时间 Welding Time	4秒/点 4 sec/point

半导体固晶焊线AOI

SEMICONDUCTOR DIE & WIRE BONDING AOI



设备特点 Equipment highlights

全自动2D和3D固晶&焊线光学检测设备
自主知识产权的核心检测算法及光学模组应用
采用2500万像素视觉系统

Fully automatic 2D/3D die & wire bonding optical inspection system optical inspection equipment
Core inspection algorithms with proprietary intellectual property rights and applications of optical modules
Equipped with a 25-megapixel vision system

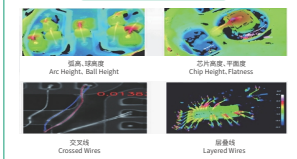
检测项目 Testing items

IC, FC, GBT, SP, PM, MOSFET, CO, LED, 存储芯片、逆变器、分立器件、光通讯、引线框架等产品检测
IC, FC, GBT, SP, PM, MOSFET, CO, LED, memory chips, inverter, discrete devices, optical communication, lead frame, and other products

焊点检测 (Solder Joint Inspection)



3D检测 (3D Inspection)



细节展示 Details Show



产品参数 Product parameters

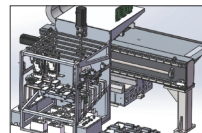
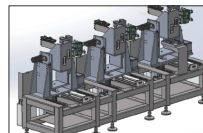
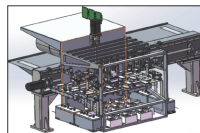
项目 Item	参数 Specifications
上下料模块 Loading/Unloading Module	双轨皮带式上下料,有效减少料盒输送对产品的影响,可根据配方设定相应不同规格料盒上下料 Dual-Conveyor Belt Loading System, Minimized tray impact, Recipe-driven multi-size tray compatibility
扫描枪 Scanner Gun	配置手持扫码枪读取批次信息条形码 Equipped with handheld scanner for batch tracking barcode reading
料片上料推杆 Material Feeding Push Rod	上料推杆具有过载保护功能推力大小可调 Overload protection function, adjustable thrust
传送方式 Transport Mode	轨道式/皮带式,宽度根据产品大小可调节 Rail-type/Belt-type, width adjustable based on product size
视觉检测系统 Visual Inspection System	具有多种倍率的2D和3D选项配置 2D and 3D options at multiple magnifications
检测功能 Inspection Mode	设备具有全检和抽检两种检测模式 Two modes: Full inspection mode, Sampling inspection mode
次品标识 Defect Marking	点墨模块、夹线模块、激光模块 Inkjet module, Clamping module, Laser module
选检模块 Optional Module	智能读码器 Smart code reader 可实现高效读取框架二维码与检测结果的e-mapping对应 Supports efficient QR code reading and e-mapping correspondence with inspection results
缓存复判 NG Product Buffer & Re-inspection	主检检测NG产品进行垂直缓存,自动定位到NG位置,人工进行复判 NG products are vertically buffered after primary inspection, auto-positioned for manual re-inspection.
表面缺陷相机参数 Surface Defect Camera	标配为2500万像素(可根据情况进行选配) Standard: 25MP (configurable based on requirements)
框架兼容尺寸 Frame Compatible Dimensions	长度: 80mm~320mm 宽度: 20mm~135mm Length: 80mm~320mm, Width: 20mm~135mm
设备重量 Equipment Weight	1050kg 1050kg
设备尺寸 Equipment Dimensions	W1.6m*L1.68m*H1.8m W1.6m * L1.68m * H1.8m

新能源行业UV打印设备

UV PRINTING EQUIPMENT FOR NEW ENERGY INDUSTRY



■ 细节展示 Details Show



■ 设备特点 Equipment highlights

- 1、成本低:综合材料成本比传统包蓝膜低30%以上
- 2、品质好:剪切力是传统包蓝膜的5-6倍,可达15-19MPa
- 3、效率高:高速机可达50ppm (以常见的230Ah电芯为例)
- 4、良率高:一次良率可达98%以上
- 5、损耗低:油墨利用率可达99%以上
- 6、绝缘好:DC4000V, 60S, 重复25次, 漏电流 $\leq 0.1\text{mA}$, 最高到DC6000V

Low Cost: Material cost savings >30% vs. traditional blue film wrapping

Superior Quality: Shear strength 5-6x higher than blue film (15-19 MPa)

High Efficiency: High-speed model: 50 ppm (e.g., 230Ah battery cell)

High Yield Rate: First Pass Yield (FPY) >98%

Low Waste: Ink Utilization Rate >99%

Premium Insulation: Withstand Voltage: DC 4000V/60s (25 cycles), leakage $\leq 0.1\text{mA}$ Max. configurable: DC 6000V

■ 标配 Standard Configuration

视觉定位 Visual Positioning System	CCD精准引导打印区域、避空区域 CCD precision guidance for print/avoidance zones
1PASS顶喷 Single-Pass Top Coating	顶面1PASS实现100um涂层打印 Single-pass top coating achieves 100um thickness
补棱工艺 Edge Reinforcement Process	电芯棱边可单独补棱, 确保边缘涂层效果 Edge reinforcement ensures uniform corner coverage
侧喷工艺 Side Coating Process	电芯侧面1PASS实现100um涂层打印 Single-pass side coating achieves 100um thickness
预固+终固化 Pre-cure & Final Cure	预固化结合终固化工艺, 确保涂层致密均匀性 Pre-cure + final cure ensures coating density/uniformity

■ 选配 Accessories Configuration

涂层厚度检测 Coating Thickness Inspection	电芯棱边、六面的在线涂层厚度检测系统 测量范围: 10-1000um, 测量精度: 目标值2% In-line Coating Thickness Inspection System (Cell Edges & 6 Surfaces) Measurement range: 10-1000 μm Accuracy: $\pm 2\%$ of target value
返修 Rework	激光在线涂层返修 Laser-based In-line Coating Rework

■ 技术参数 Technical Specification

项目 Item	参数 Specifications
兼容产品 (mm) Compatible Size (mm)	352.3mm×71.7mm×207.2mm (628K电芯) 兼容常规方壳、刀片电芯 352.3×71.7×207.2 (628K battery cell) Compatible with standard prismatic/blade battery cells
设备尺寸 (mm) Dimensions (mm)	标准单机设备尺寸: L8400*W2900*H3000 (mm) 可按客户需求产品、场地, 定制设备尺寸 Standard: L8400×W2900×H3000 Customizable per product/site requirements
节拍 (ppm) Speed (ppm)	标准单机: 12PPM, 根据需求12-30PPM可选 Standard: 12 PPM Configurable: 12-30 PPM
一次良率 First Pass Yield	$\geq 98\%$
稼动率 Operational Availability	$\geq 99\%$
涂层厚度 Coating Thickness	涂层厚度范围: 50-150um, 厚度精度 $\pm 10\text{um}$ 50-150 μm Thickness precision: $\pm 10\text{um}$
耐压性能 Withstand Voltage	DC4000V, 60S, 重复25次, 漏电流 $\leq 0.1\text{mA}$ DC 4000V, 60s (25 cycles) Leakage current $\leq 0.1\text{mA}$
绝缘性能 Insulation Performance	DC1000V, 60S, $\geq 1\text{G}\Omega$ DC 1000V, 60s, $\geq 1\text{G}\Omega$
通道数 Print Heads	2
油墨利用率 Ink Utilization Rate	$\geq 99\%$