浩宝微信公众号

浩宝微信视频号

浩宝抖音号

深圳市浩宝技术有限公司

SHENZHEN HB TECHNOLOGY CO.,LTD

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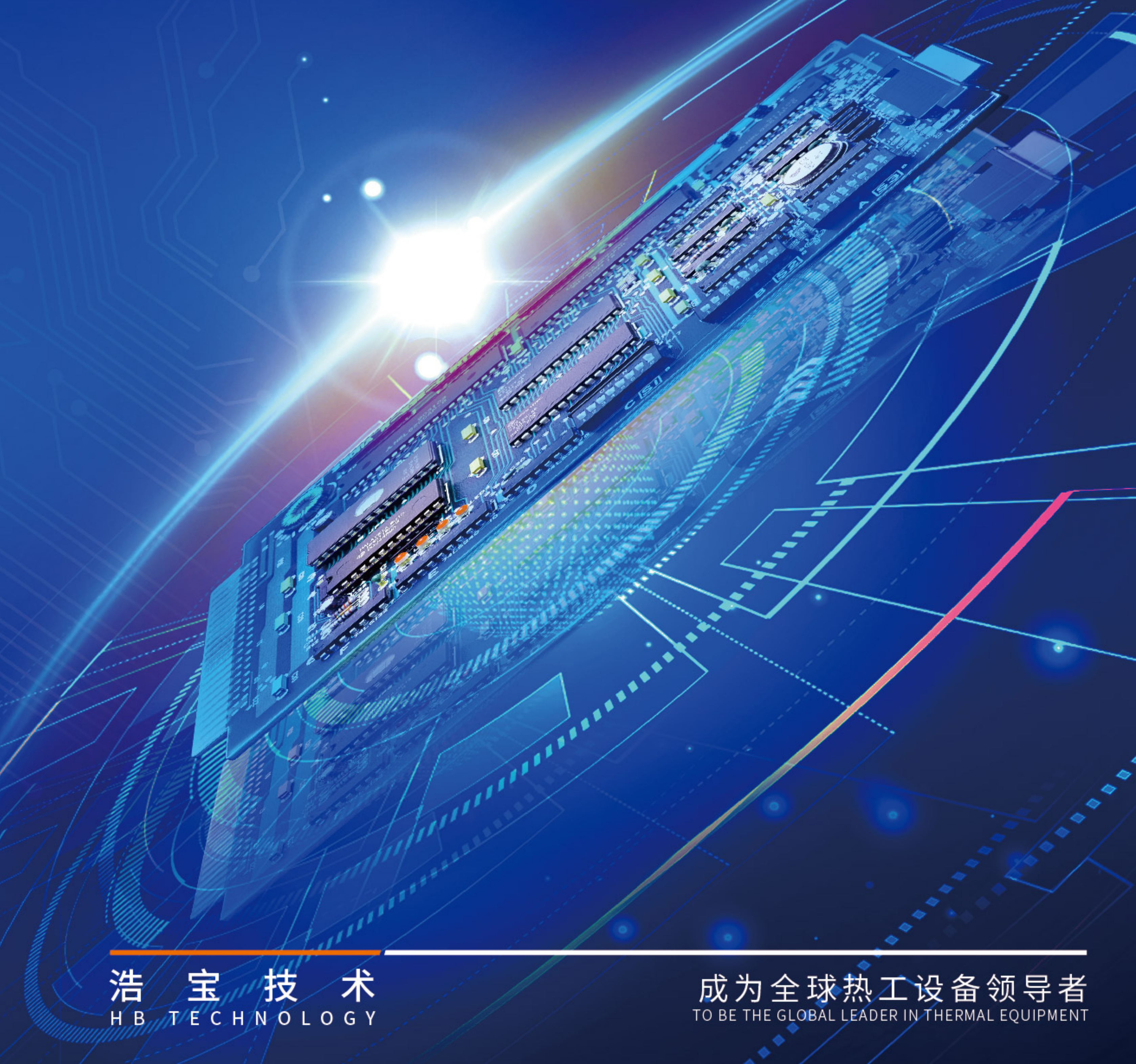
浩宝 · SMT焊接专家

SMT SOLDERING EXPERT



浩宝技术
HB TECHNOLOGY

成为全球热工设备领导者
TO BE THE GLOBAL LEADER IN THERMAL EQUIPMENT

使命
MISSION

自主创新，为全球客户提供卓越的热工设备及解决方案

INNOVATE INDEPENDENTLY, AND PROVIDE EXCELLENT THERMAL EQUIPMENT AND SOLUTIONS FOR GLOBAL CUSTOMERS

愿景
VISION

成为全球热工设备领导者!

TO BE THE GLOBAL LEADER IN THERMAL EQUIPMENTS!

价值观
VALUE

品质决定生存，持续改善
Continuously improve quality, which determines survival

提供个性化服务，客户至上
Provide personalized service, customer first

自主创新，精益求精
Independent innovation, keep improving

以奋斗者为根本
Strivers-oriented

全力以赴、锚定目标、坚持不懈为达成目标而全力拼搏
Spare no pains, anchor the goal, persevere and work hard to achieve the goal

以业绩为导向，以贡献体现价值
Guided by performance, reflecting value by contribution

公司利益大于个人利益
Company interests outweigh personal interests

价值共创、共享，风险共担
Value co-created and shared, and risk sharing

敬畏初心，感恩社会
Respect the original intention and be grateful to the society

诚信做人，诚恳做事，发扬利他精神
Be honest, do things sincerely, and carry forward the spirit of altruism

DIRECTORY
目录

浩宝概况

HB OVERVIEW

浩宝成立于2010年，是一家专业研发、生产和销售回流焊炉、波峰焊机、垂直固化炉、半导体焊接固化炉和锂电池真空烤箱、真空干燥线、电芯预热隧道炉等自动化设备的公司。

浩宝致力于成为全球热工设备领导者，为全球电子加工和新能源等行业提供优质、高效的解决方案，为客户提供系统、省心的服务。

浩宝公司具有强大的自主研发创新、工程设计制造和技术服务能力，连续多年被评为国家高新技术企业，2022年被评为深圳市专精特新企业。

Founded in 2010, HB Technology is a company specializing in the research and development, production and sales of automatic equipment such as reflow soldering ovens, wave soldering machines, vertical curing ovens, semiconductor soldering curing ovens and lithium battery Vacuum oven and vacuum drying lines.

HB Technology is committed to becoming the global leader in thermal equipment, providing high-quality and efficient solutions for global electronic processing and new energy industries, and providing customers with systematic and worry-free services.

HB Technology has strong independent research and development innovation, engineering design and manufacturing and technical service capabilities. It has been rated as a high-tech enterprise in China for many years, and will be rated as a specialized, refined and new enterprise in Shenzhen in 2022.

专注热工领域	Focus on thermal	13年	13 years
员工数量	Number of employees	400+人	400+ people
研发团队	R & D team	100+人	100+ people
专利数量	Number of patents	80+项	80+ items
软件著作权	Software copyright	14项	14 items
现代化厂房	Modern factory	30000m²	30000m²
年产量	Annual output	1800台套	1800 sets
直接客户	Direct customers	4000+家	4000+ companies
渠道客户	Channel customers	30+家	30+ companies
国家/区域市场	Country/regional market	40+个	40+ places

管理团队

MANAGEMENT TEAM

公司核心技术及管理团队脱胎于热工设备的头部企业，技术积累深厚，运营管理规范，团队优势互补。

The company's core technology and management team was born out of the head enterprise of thermal equipment, with profound technology accumulation, standardized operation management, and complementary team advantages.

李锦晖　董事长

1980年11月出生，中国共产党员，机电一体化专业。曾任职于自动化设备公司销售总监。2010年加入浩宝，先后担任销售总监、副总经理、总经理；成功开发华为、富士康、伟创力、比亚迪和深科技等客户。

LI JINHUI CHAIRMAN

Born in November 1980,Chinese Communists, majoring in mechatronics, worked as sales director of automation equipment company. Joined in HB since 2010 and served as sales director, deputy general manager and general manager successively; successfully developed customers such as Huawei, Foxconn, Flextronics, BYD and Shenzhen Technology.

罗文欣　总经理

1979年1月出生，电气工程及自动化专业。曾任职于富士康专案工程师、港艺和劲拓等公司技术负责人。2010年创立浩宝，负责加热焊接、固化和非标设备的研发，拥有多项发明专利，获评为首届“宝安工匠”。

LUO WENXIN GENERAL MANAGER

Born in January 1979, majoring in electrical engineering and automation. Worked for Foxconn, Hong Kong Art Precision and other companies. Founded HB in 2010, responsible for the research and development of curing equipment and lithium battery drying equipment, has a number of invention patents, and was awarded the first "Bao'an Craftsman".

何庆新　销售副总

1974年3月出生，应用电子专业。曾任职于日东科技SMT工程师、工程主管；劲拓自动化设备公司销售总监和高端焊接事业部总监；深圳市同达康电子设备有限公司总经理。2018年1月加入浩宝，任副总经理。

HE QINGXIN DEPUTY GENERAL MANAGER OF SALES

Born in March 1974, majoring in applied electronics. He used to work as SMT engineer and engineering director of Sunest Technology; Sales Director and High-end Welding Division Director of JT Automation Equipment Co., Ltd.; General Manager of Shenzhen TongdaKang Electronic Equipment Co., Ltd. Joined in HB since January 2018 as Deputy General Manager.

梁聪元　研发副总

1983年9月出生，机电专业。曾任职于深圳劲拓、新迪精密等公司研发经理，在热学、加热流体应用领域积累较多经验，拥有多项专利。2020年加入浩宝，任研发副总。

LIANG CONGYUAN DEPUTY GENERAL MANAGER OF R&D

Born in September 1983, majoring in electromechanical, Mr. Liang Congyuan used to work as the R&D manager of Shenzhen Jintuo, Xindi Precision and other companies. He has accumulated a lot of experience in the field of thermal and heating fluid applications, and has a number of patents. Joined in HB since 2020 as Vice President of R&D.

谢加云　制造副总

1970年9月出生，电子工程专业。曾任职于广州嘉林电子、新进电子集团等公司，任职生产经理、制造中心总监和副总经理。2018年3月加入浩宝，任制造副总。

XIE JIAYUN DEPUTY GENERAL MANAGER OF MANUFACTURING

Born in September 1970, majoring in electronic engineering, Mr. Xie Jiayun worked in Guangzhou Jialin Electronics, Xinjin Electronics Group and other companies as production manager, manufacturing center director and deputy general manager. Joined in HB since March 2018 as Vice President of Manufacturing.

王永红　研发总监

1973年10月出生，信息技术应用与管理专业。曾任九江建筑陶瓷总公司、登晖金属公司，负责精密电子产品和自动化设备的控制系统设计、编程、调试等。2011年加入浩宝，任电气和垂直炉研发总监。

WANG YONGHONG R&D DIRECTOR OF VERTICAL CURING OVEN

Born in October 1973, majoring in information technology application and management, he used to work in Jiujiang Building Ceramics Corporation and Denghui Metal Company, responsible for the control system design, programming and debugging of precision electronic products and automation equipment. He joined in HB since 2011 as the R&D Director of Vertical Curing Oven Division.

发展历程

DEVELOPMENT PATH

2023

开启T100数字化建设;研发推出在线式甲酸真空炉等;成为博世、联电等全球合格供应商。

Start T100 digital construction; Develop and promote online formic acid vacuum furnaces, etc; Becoming a globally qualified supplier for Bosch and Liandian.

2022

获评深圳市专精特新企业;与华科大博导合作开发半导体设备;IGBT氮气固化设备出货;获得快克股份战略投资;开启上市辅导。

Won the title of "Shenzhen Specialized Special New Enterprise".Collaborating with doctoral advisors at Huake University to develop semiconductor equipment; Shipment of IGBT nitrogen curing equipment; Obtaining strategic investment from KuaiKe Shares; Launch listing coaching.

2021

浩宝晋级深创赛半决赛,并获得宝创赛三等奖;浩宝垂直炉事业部分厂开业。

HB Technology entered the semi-finals of the Deep Creation Competition and won the third prize of the Baochuang Competition; Opened new factory for HB Technology's vertical curing oven business.

2020

浩宝入选深圳市工信局战略新兴产业扶持计划;浩宝研发人员罗文欣获评深圳市首届“宝安工匠”

HB Technology was selected as the Strategic Emerging Industry Support Plan of Shenzhen Municipal Bureau of Industry and Information Technology;Mr. Luo Wenxin, a researcher of HB Technology, was awarded "Baoan Craftsman".

2019

浩宝新一代料框式洁净固化炉面市

HB Technology's new generation of magazine-type clean curing oven came to the market.

2018

浩宝搬入约3万㎡新厂房,焊接设备制造规模将跃居同业第一位

HB Technology moved into a new plant of approximately 30,000 square meters, and the scale of welding equipment manufacturing would rank first in the industry.

2017

浩宝研发推出国内首款百级洁净垂直固化炉;成为华为全球合格供应商

HB R&D Launches the First Class 100 Clean Vertical Solidification Furnace in China; Got access to global AVL of HUAWEI.

2016

成为富士康全球合格供应商

Got access to global AVL of Foxconn.

2015

成为伟创力全球合格供应商

Got access to global AVL of flex.

2014

高端回流焊炉及第2代垂直加热炉推出,并获得专利

The high-end reflow oven and the second-generation vertical curing oven were launched and patented.

2013

第一台国产垂直固化炉在浩宝公司问世,并同时申请了相关专利

The first domestic vertical curing oven came out from HB Technology and applied for related patents at the same time.

2012

规模扩大一倍,并获得回流焊、波峰焊等18项专利技术

The scale increased twice. Obtained 18 patented technologies for reflow soldering and wave soldering.

2011

获得ISO国际质量认证和CE认证,同时设备出口至欧洲和东南亚

Passed ISO international quality certification and CE certification, and equipment was exported to Europe and Southeast Asia.

2010

浩宝公司深圳沙井总部正式成立

ShenZhen HB Technology Co.,Ltd Headquarters was officially established in Shajing.

资质荣誉
QUALIFICATION HONOR


高新技术企业
证书

国家高新技术企业
National High-Tech Enterprise


深圳市浩宝技术有限公司
深圳市专精特新企业

深圳市专精特新企业
Shenzhen Specialized Special New Enterprise


CIAS2023
2023年度封测优质供应商

CIAS2023年度封测优质供应商
CIAS 2023 High Quality Supplier for Sealed Testing


VA 远见奖
The 15th Vision Awards


宝安工匠
Bao'an Craftsman


《星湖杯》二等奖
"Star Lake Cup" Second Prize


深创赛晋级半决赛
Advance to the semi-finals


宝创赛三等奖
Baochuang Competition Third Prize

研发实力
R & D STRENGTH


罗文欣工匠创新工作室
深圳市宝安区总工会
二〇二二年四月

■ 拥有业内一流研发团队 BUILD A FIRST-CLASS R&D TEAM IN THE INDUSTRY

公司现拥有一百多人的研发团队，分为半导体设备、焊接设备、固化设备3大研发部。

The company now has a R&D team of more than 100 people, which is divided into three R&D departments: Semiconductor Equipment, welding equipment, and curing equipment.

■ 持续进行研发投入 CONTINUE TO INVEST IN R&D

浩宝注重研发创新，积极与高校及研究机构合作，建立新能源电池实验室和热工学实验室，未来研发投入占营收比例将不断升高，达到10~15%。

HB Technology concentrates on R&D and innovation, and actively cooperates with universities and research institutions to establish new energy battery laboratories and thermal engineering laboratories. In the future, the proportion of R&D investment in revenue will continue to increase, reaching 10-15%.

■ 注重知识产权管理 CONCENTRATES ON INTELLECTUAL PROPERTY MANAGEMENT

公司持续创新，建设知识产权管理体系，每年申请发明专利、实用新型专利及软件著作权等，累计已获得知识产权近百项。

The company continues to innovate, builds an intellectual property management system, applies for invention patents, utility model patents and software copyrights every year, and has accumulated nearly 100 intellectual property rights.

生产基地

PRODUCTION BASE

浩宝在华南建有两个生产基地，总面积超过3万㎡，拥有每年产出1800台套设备的产能。
未来，浩宝将建设超过10万㎡的浩宝科技产业园，为全球客户提供强大的产能配套服务。

HB Technology has two production bases in South China, with a total area of more than 30,000 square meters and an annual output of 1800 sets of equipment.
In the future, HB Technology will build a HB Technology Industrial Park with an area of more than 100,000 square meters to provide global customers with strong production capacity and supporting services.

精益制造 品质保证

LEAN MANUFACTURING, QUALITY ASSURANCE

■ 规模化的生产基地

浩宝目前在深圳宝安拥有2个生产基地，面积超过3万㎡。未来，浩宝将在华南、华东等地建设更多生产基地，以满足发展要求。

HB Technology currently has 2 production bases in Baoan, Shenzhen, with an area of more than 30,000 square meters. In the future, HB will build more production bases in South China and East China to meet development requirements.

■ 完备的生产设施 COMPLETE PRODUCTION FACILITIES

浩宝生产车间配备CNC加工、车床加工、铣床加工、数字机床、激光切割等完备的各项生产设施。

HB Technology production workshop is equipped with complete production facilities such as CNC processing, lathe processing, milling machine processing, digital machine tools, and laser cutting.

■ 标准化的制造工艺 STANDARDIZED MANUFACTURING PROCESS

标准化的制造工艺，熟练的技术工人，量化指标，精益生产，确保产品品质精益求精。

Standardized manufacturing process, skilled technical workers, quantitative indicators, lean production to ensure product quality excellence.

■ 严格的品质管理 STRICT QUALITY CONTROL MANAGEMENT

完善的来料、产前、产中和产后检验，每完成一项工序，都必须经过专业检验，视品质为生命，持续改善。

Perfect incoming, pre-, during, and after production inspections. Every process completed must be professionally inspected. Quality is our life and we will continuously improve.

营销网络

MARKETING NETWORK

营销服务网络覆盖全球 MARKETING SERVICE NETWORK COVERING THE WORLD

浩宝技术注重国际化的战略布局，在全球多个国家和地方搭建了营销和服务网络。我们在东南亚、欧洲、美洲及澳洲均建立了销售和服务网络。

HB Technology concentrates on international strategic layout, and has built a marketing and service network in many countries and places around the world. We have built sales and service networks in Southeast Asia, Europe, America and Australia.

同时，浩宝技术在北京、上海、广州、深圳、杭州、苏州、青岛、成都、重庆、武汉、郑州及香港等地设有分公司或办事处。

At the same time, HB Technology has branches or offices in Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou, Suzhou, Qingdao, Chengdu, Chongqing, Wuhan, Zhengzhou and Hong Kong.

服务体系

SERVICE SYSTEM

浩宝技术拥有一支懂技术、善沟通、会服务的营销团队，不断为顾客创造价值。

HB Technology has a marketing team that understands technology, which is good at communication and can serve, and constantly creates value for customers.

产线规划及解决方案设计服务

Provide production line planning and solution design services

送货上门安装服务（含装拆箱、吊装）

Door-to-door installation service (including assembly and unpacking, hoisting)

上门调试及技术培训服务

On-site commissioning and technical training services

设备维修保养服务

Equipment maintenance service

驻场指导服务

On-site guidance service

服务热线：400-063-8899　　SERVICE LINE：400-063-8899

荣誉客户

HONORARY CUSTOMER

至今浩宝公司累计服务数千家客户，得到海内外客户的广泛好评

So far, HB Technology has served thousands of customers and was widely praised by customers at home and abroad.

手机/通讯 Mobile phone Communication	HUAWEI	xiaomi	vivo Hi-Fi&Smart	oppo	ZTE中兴
	FOXCONN 富士康科技集团	BYD	flex 伟创力	JABIL 捷普集团	DBG 光弘科技
	LUXSHARE ICT 立讯精密	Q Tech 丘钛科技	WINGTECH PROFESSIONAL SOLUTIONS 闻泰科技	LONGCHEER 龙旗	信维通信
半导体/功率半导体 Semiconductor Power semiconductor	HUAWEI	BOSCH 博世 科技成就生活之美	UAES 联合汽车电子	BYD	银茂微电子
	赛晶科技 SUN.KING TECH	Lcore 林众	SanDisk 闪迪	TKD 泰晶科技	Micron 镁光
汽车电子/零部件 Automotive Electronics Components	BOSCH 博世 科技成就生活之美	Continental The Future in Motion 大陆集团 动领未来	BYD 比亚迪汽车	ZF AFTERMARKET [pro]Tech 采埃孚「汽车」服务	UAES 联合汽车电子
	INOVANCE 汇川技术	JOHNSON ELECTRIC 德昌電機	ELITEGROUP 精英集团	Valen 法雷奥	KINWONG 景旺电子
	LENS 蓝思科技	HSAE 航盛	LITEON 光宝科技	imi 斯比泰	HARMAN
Mini LED	LG	SAMSUNG 三星	芯乐光 SmileLighting	dsbj 东山精密	APT 晶科电子 APT Electronics Ltd.
	AMTC 兆驰	国星光电 NATIONSTAR	瑞豐光電	COREACH 芯瑞达科技	SUIJING 穗晶光电
	BOE 京东方	TCL	三安光电 San'an Optoelectronics	Ledman 雷曼	国显光电 Nation Display
	FSL 佛山照明	LOHUA 罗化芯	SEOUL 首尔半导体	東旭集団 TUNGHSU GROUP	KONKA 康佳
消费电子/家电 Consumer Electronics Household electrical appliances	美的 Midea	DAIKIN 大金空调	Panasonic 松下电器	Lenovo 联想	xiaomi
	Goertek 歌尔股份	Skyworth 创维	TCL	LG	Galanz 格兰仕
新能源 New Energy	SUNWODA 欣旺达	DESAY 德赛	ATL 新能源科技	POWERAMP 新能安	SCUD 飞毛腿
PCB/FPC	KINWONG 景旺电子	安捷利	兴森科技 FASTPRINT	MEKTEC 紫翔	honFlex 弘信电子

注*仅列举部分合作企业，排名不分先后

设备一览

EQUIPMENT LIST

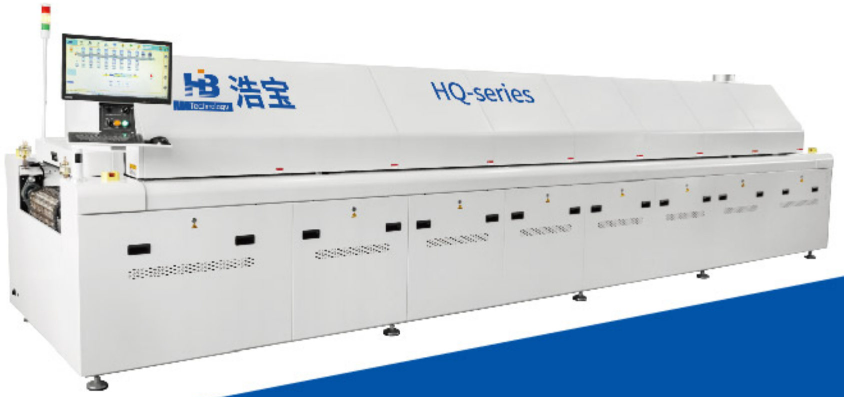
HQ无铅氮气回流焊

HQ SERIES LEAD FREE NITROGEN REFLOW OVEN

高性能 低能耗 更智能

Perfect performance Low energy consumption Intelligence

详见>>P16-19
For details>>P16-19



ER系列无铅回流焊

ER SERIES LEAD FREE REFLOW OVEN

中国回流焊设备引领者

The leader of Reflow soldering equipment in China

详见>>P20-23
For details>>P20-23

CR系列无铅回流焊

CR SERIES LEAD FREE REFLOW OVEN

回流焊炉用浩宝，焊接快速效益高

Using HB Reflow Oven, it' s will be high soldering efficiency.

详见>>P24-27
For details>>P24-27

全自动真空回流焊

HB VACUUM REFLOW OVEN

让品质不再空洞 让真空不再盲目

Make quality voidless, make vacuum real

详见>>P28-31
For details>>P28-31

浩宝半导体封装回流焊

HB SEMICONDUCTOR REFLOW OVEN

低残氧 高洁净 精控温 稳运输

Low residual oxygen, high cleanliness, precise temperature control, stable transportation

详见>>P32-35
For details>>P32-35

浩宝全自动无铅波峰焊

HB LEAD-FREE WAVE SOLDERING MACHINE

波峰焊机用浩宝 插件焊接快又好

Wave soldering machine uses Haobao plug-in to weld quickly and well

详见>>P36-39
For details>>P36-39

浩宝全自动选择性群焊

HB SELECTIVE MULTI-WAVE SOLDERING MACHINE

良率高 品质好 产能高

High yield, good quality and high capacity

详见>>P40-43
For details>>P40-43

浩宝全自动外置喷雾机

HB FULL AUTOMATIC EXTERNAL SPRAY

响应快速 定位精准 涂覆均匀 节省用料

Quick response, precise positioning, uniform coating, and material saving

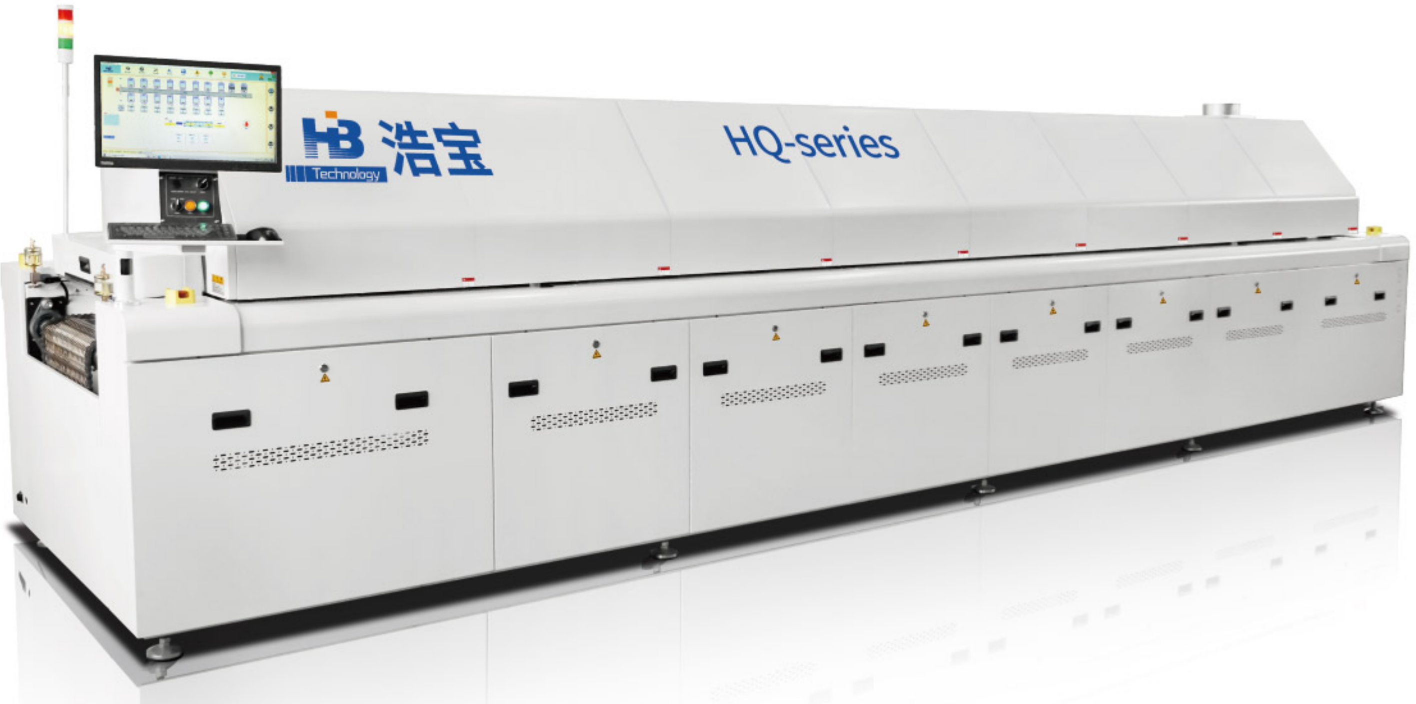
详见>>P44-45
For details>>P44-45

浩宝HQ无铅氮气回流焊

高性能 低能耗 更智能

HB HQ SERIES LEAD FREE NITROGEN REFLOW OVEN

Perfect performance Low energy consumption Intelligence



产品介绍 PRODUCT INTRODUCTION

- 浩宝HQ系列无铅氮气回流焊炉，是浩宝公司精英研发团队倾心研发的一款高端、高品质回流焊接设备，具有焊接品质好、生产效率高、使用能耗低和管理更智能等特点；荣获2021年第15届VA远见奖。
- 应用范围：可用于手机通讯、电脑、消费电子、Mini LED、汽车电子、医疗、航天军工、半导体等领域高要求、高品质的回流焊工艺。
- HQ series lead free nitrogen reflow oven is a high-end and high quality equipment and designed by R&D team of HB. With advantages of good soldering quality, high production efficiency, low energy consumption and intelligence management. This series reflow oven have won the 15th AV Visionary Award in 2021.
- Application: It' s apply for high demand reflow soldering process in fields of mobile communication, computer, consumer electronics, Mini LED, automotive electronics, medical, military industry and semiconductor.


手机通讯
Mobile communication


电脑
Computer


消费电子
Consumer electronics


Mini Led


汽车电子
Automotive electronics


医疗
Medical

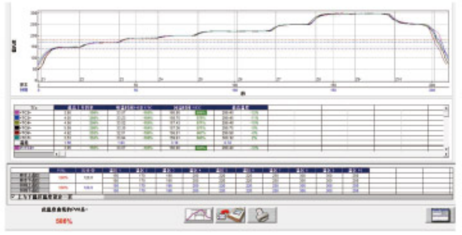

航天军工
Military industry

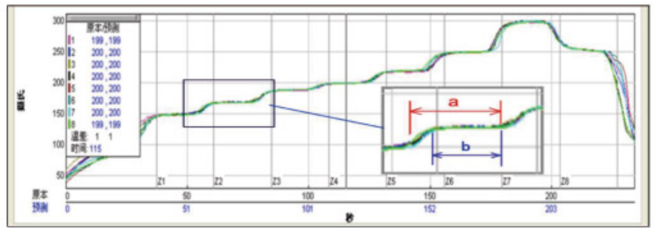

半导体
Semiconductor

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

焊接品质好
High reliability soldering process

- **配置高：**主要控制部件均采用全进口名牌电器元件，性能更稳定、可靠；加热丝经1200℃特高温处理，避免氧化，更耐用。
- **控温精度高，加热均匀：**设定温度与实际温度相差≤1.0℃，空载与满载温度波动偏差≤1.5℃，热补偿效率高，温度曲线可重复精度高。
- **High configuration:** The main electrical control components are foreign famous brand. The heating core is treated with high temperatures of 1200°C to avoid oxidation and more durable.
- **High precision temperature control:** The temperature difference between SV and PV ≤1.0°C. The temperature deviation on the PCB for one board load and the full board load is ≤1.5°C. High thermal compensation efficiency, high CPK class.


控温精准，温度曲线可重复精度高
High precision temperature control , High CPK Class

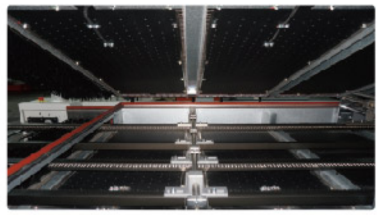


空载与满载温度波动小
Small temperature deviation on the PCB of one board load and full board load

- **残氧量低，有效避免元器件氧化：**炉膛采用全密闭式设计，残氧量可控制在10~200ppm以内。
- **洁净度高，满足无尘车间生产要求：**运输采用专利不锈钢滚子链条，变传统的“滑动摩擦”为“滚动摩擦”，不易产生金属等粉尘；底部采用高效排风过滤系统，使炉内更清洁，洁净度可达千级。
- **Low oxygen content, avoids the oxidation of components:** The furnace adopts a closed design, and the amount of residual oxygen can be controlled at 10 ~ 200 ppm.
- **High cleanliness class, meet the production requirements of dust -free workshops:** The conveyor chain use stainless steel roller type. It's change the sliding friction to rolling friction which not easy to produce metal dust. . There are a bottom exhaust filter system to make the furnace cleaner and the clean class can reach 1,000 levels.


全程充氮，避免元器件氧化
N_2 filling in every zone to avoid components from oxidation in production process

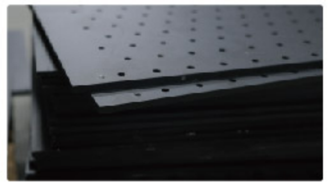

全密闭炉膛，耗氮少，残氧量低
Full closed furnace, low nitrogen consumption, low residual oxygen


不锈钢滚子链条，更洁净
Stainless steel roller chain, more cleaner

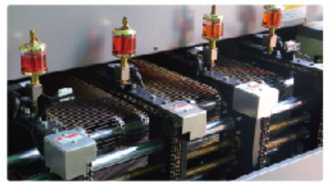
生产效率高
High production efficiency

- **加热效率高：**加热区采用模块化设计及三相电流热控制技术，可瞬间响应大负载时所需的大热量，胜任大载荷、高吸热率、厚载具、复杂而精密的产品焊接，保证热传递快速、精准；风道采用特殊工艺，热风加热的同时，可复加红外辐射传热，加热效率比市场其它设备增加20%。
- **运输快速、精准：**运输导轨采用分体式设计及伺服马达控制，运输更快速、平稳，正常生产链速可达到1600mm/min；特制导轨在保持刚性的同时，可迅速释放热膨胀，避免内应力产生“喇叭口”、“大肚子”等问题；不锈钢双排链条运输负荷大、震动小，更稳定、耐用。
- **可选择双轨双速，效率加倍：**以单机的成本和占地面积，产生双倍的产能和效益，节能达到60%。
- **High heating efficiency:** The heating zone adopts modular design and three-phase current heat control technology. It's can correspond to the large thermal required when meets big and thick pallet. Special processes in the air duct. Adopted technology nano coating heating fairing plate to let heat transfer more faster. And efficiency is 20% increased compared to other equipment in the market.
- **Fast and precise conveyor speed:** The conveyor rail is segment design, controlled by servo motor. Special guide rail design to quick release thermal expansion which make sure conveyor running smooth.
- **Option dual lane with dual speed:** In single machine price to make double productivity, save 60% energy.

伺服电机精准快速传输
High precision date transmission system control by serve motor



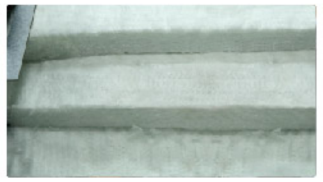
特制高效储热紊流板
Special high efficiency fairing plate



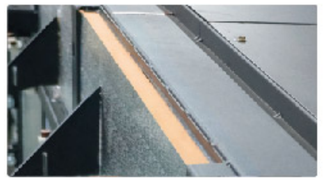
双轨双速，产能翻倍
Dual lane with dual speed to make double productivity

经济节能，在线式清洁、保养少
Energy -saving, less maintenance

- **低能耗，节省电费和氮气成本：**全新的设计结构及热学管理系统，多层物理性保温层，减少热能流失和氮气消耗量，有效降低能耗和使用成本，节能15%以上。
- **在线式运输清洁系统，持久干净：**采用高效能超声波清洗技术，利用空化作用，自动清洗、烘干链条，炉内运行更洁净、顺畅和安全，省去繁琐的链条拆装、清洗步骤。
- **Low energy consumption, saving electricity and nitrogen costs:** New design structure and thermal management system. Multi -layer physical thermal insulation layer. It's can reduce heater energy loss and nitrogen consumption, reduce energy consumption and cost, saving energy more than 15%.
- **Online transportation cleaning system, long-lasting cleanliness:** Adopting high-efficiency ultrasonic cleaning technology, utilizing cavitation effect, automatic cleaning and drying of chains, the operation inside the furnace is cleaner, smoother, and safer, eliminating the tedious steps of chain disassembly and cleaning.



超厚隔热棉
Ultra -thick heat heating cotton



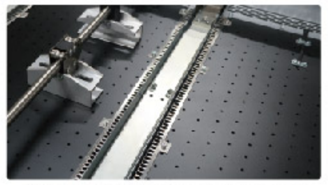
优质加厚炉膛隔热板
High -quality thickened furnace heat insulation plate

加强冷却，快速降温
Rapidly cooling

- **减少保养次数和时间，不耽误生产：**特别设计的多段式、易拆装的助焊剂回收系统，能大幅提高助焊剂回收效率，减少设备保养时间和频次，使用、维护更轻松。
- **Reduce maintenance times without delaying production:** Special design multi-segment of flux tube. Easy to remove and clean flux system. It's can reduce equipment maintenance time and frequency.

模块化设计，保养维护方便
Modular design

高效助焊剂回收系统
Efficient Flux Recycling System



助焊剂回收彻底，炉膛干净清洁
Flux recycling totally and clean

智能化生产和管理
Smart production and management

- **浩宝智能生产控制系统：**采用Win10操作系统，可自由切换中英文界面，操作简便；一体化软件+PLC结合，可对接工厂MES系统，实现工业4.0 大数据自动化采集和生产管理，支持IPC-HERMES标准以及IPC-CFX等标准。
- **数字化、智能化管理：**具备自我诊断、自动报警和自我修复等功能，可实时监控炉温、轨道、链速、马达等系统，记录、存储、整理和显示各种生产参数和故障信息，自动生成数据报表。
- **Smart Production Control System:** Win10 operating system, Chinese and English interface onscreen alternative is available, easy to operate, integrated software+PLC combination, which can connect the factory MES system to achieve industrial 4.0 production management, support IPC-HERMES, IPC-CFX standards and so on.
- **Smart management:** Intelligent diagnosis system has the functions of Trouble Remind, Alarm list-out, Report Saving. Option real-time monitoring system, it' s can records, storage, sorting and displaying various production parameters and alarm information, automatically generate data reports.

智能控制系统
Smart operator system

国际知名品牌PLC控制
Foreign famous brand components

数字化、智能化管理
Digital, smart management

- **智能节能系统：**可根据生产进度，在转班或闲时自动进入“节能模式”，节省用电和氮气等生产成本。
- **智能润滑保养系统：**可根据产品特性自动配置润滑方案，定时、定点、定量对运输链条进行自动润滑，配合导轨自清洁系统，可实现自动清洁、保养提醒、故障呼叫等智能化保养功能。
- **Intelligent energy saving system:** When factory change shift in the production process, it' s will be auto go to energy save mode. To save electricity and nitrogen costs.
- **Intelligent lubrication maintenance system:** Auto feed oil by metering pump in a constant pressure and constant volume. Make sure every drop of oil to brush onto the chain to lubricate.

参数规格 PARAMETER SPECIFICATION

浩宝HQ系列无铅氮气回流焊 HQ series Lead Free Nitrogen Reflow Oven

系统 System	项目 Item	HQ-0802D-N	HQ-1003-N	HQ-1003D-N	HQ-1203-N	HQ-1203D-N	HQ-1304D-N
尺寸及功率 Size and power	外形尺寸(长宽高) mm Dimension (L*W*H) mm	4990*1710*1650	6670*1470*1650	6670*1710*1650	7000*1470*1650	7000*1710*1650	7650*1710*1650
	排风量 Exhaust volume	10m³/min*2通道以上 10m³/min*2(Channel)					
	启动功率 Startup Power	39KW	48KW	48KW	59KW	59KW	59KW
	正常功率 Normal Power Consumption	9-11KW	10-12KW	11-13KW	12-14KW	13-15KW	14-16KW
加热系统 Heating System	加热区数量 Normal Power Consumption	上8个下8个 Top8 Bottom8	上10个下10个 Top10 Bottom10	上10个下10个 Top10 Bottom10	上12个下12个 Top12 Bottom12	上12个下12个 Top12 Bottom12	上13个下13个 Top13 Bottom13
	加热区总长度 Length of heating zone	3090mm	4120mm	4120mm	4670mm	4670mm	5050mm
	升温时间 Warming Time	约30分钟 Approx.30min					
	温度控制范围 Temperature Setting Range	室温-300°C Room temperature - 300 °C					
	温度控制方式 Temperature Control Type	PID闭环控制，SSR驱动 PID closed loop control, SSR driven					
	温控精度 Temperature Control Precision	±1°C					
	温区间温差 Temperature difference in temperature Zones	最大40°C Maximum 40 °C					
	预热区或焊接区最大温差 Max. temp. Difference between Preheat Zones or Solder Zones	最大80°C Maximum 80 °C					
	PCB板温度分布偏差 Temperature Deviation on PCB	±1.5°C					
	冷却区数量 No. of cooling zone	2个(上2下2) 2 (Top2 Bottom2)	3个(上3下3) 3 (Top3 Bottom3)	3个(上3下3) 3 (Top3 Bottom3)	3个(上3下3) 3 (Top3 Bottom3)	3个(上3下3) 3 (Top3 Bottom3)	4个(上4下4) 4 (Top4 Bottom4)
冷却系统 Cooling System	冷却区长度 Length of cooling zone	820mm	1250mm	1250mm	1250mm	1250mm	1425mm
	导轨结构 Rail Structure	整体分段式 Integral segmented					
运输系统 Transport System	导轨链条规格 Chain Spec	50-25标准导轨+标准单排 50-25 Standard Guide rail + standard single strand chain					
	导轨调宽方式 Rail Width Adjust Mode	电动+手动 By motor + by Manual					
	运输方向 Conveyor Direction	左→右(右→左 选项) L-R (R-L Option)					
	PCB过板宽度 Max. PCB size	单轨50-686mm，双轨50-280mm 50-686mm, Dual 50-280mm	50-400mm	50-400mm	50-686mm，双轨50-280mm 50-686mm, Dual 50-280mm	50-400mm	50-686mm，双轨50-280mm 50-686mm, Dual 50-280mm
	运输高度 Conveyor Height	900±20mm					
	运输速度 Conveyor Speed	300~2000mm/min					
	运输导轨固定方式 Fixed Rail Side	前端(后端选配) Front rail fixed (Rear rail fixed Option)					
	过板元件高度 Component Height	上30mm 下30mm Top 30mm Bottom 30mm					
	氮气覆盖区域 N_2 area coverage	全程氮气覆盖 Full range in every zone					
氮气系统 N_2 System	氧气浓度控制范围 O_2 concentration	全程充氮全程采样/焊接区采样/氧气浓度控制100-1000ppm可选 Full N_2, cycle sampling in every zone or sampling in soldering zone, option 100-1000PPM					
	氮气源 N_2 source	压力≥0.4mpa，气源浓度10ppm以上 Air pressure≥0.4mpa, Concentration 10PPM above					
电气配置 Electrical configuration System	电源 Power Supply	3∮380V 50/60HZ (3∮220V 50/60HZ 以技术协议为准) 3∮ 380V 50/60HZ (3∮ 220V 50/60HZ subject to technical agreement)					
	UPS系统 UPS system	标配 Standard configuration					
	报警显示 Alarm Display	声光一体(黄-升温，绿-恒温，红-异常) By sound and light Yellow warming;Green normal;Red abnormal					
	FLUX保养提示 FLUX Service Hints	软件提示保养周期 Software prompt maintenance cycle					
	参数存储 Data Storage	可存储多种设置参数 Process Data and Status Storage Unlimited					
	工业4.0互联工厂数据交换 IPC-CFX	选配 Option					
	机器间通讯标准 IPC-Hermes	选配 Option					

注：參數若有更改，恕不另行通知！The above contents are subject to change without further notice!

浩宝ER系列无铅回流焊

中国回流焊设备引领者

HB ER SERIES LEAD FREE REFLOW OVEN

The leader of Reflow soldering equipment in China

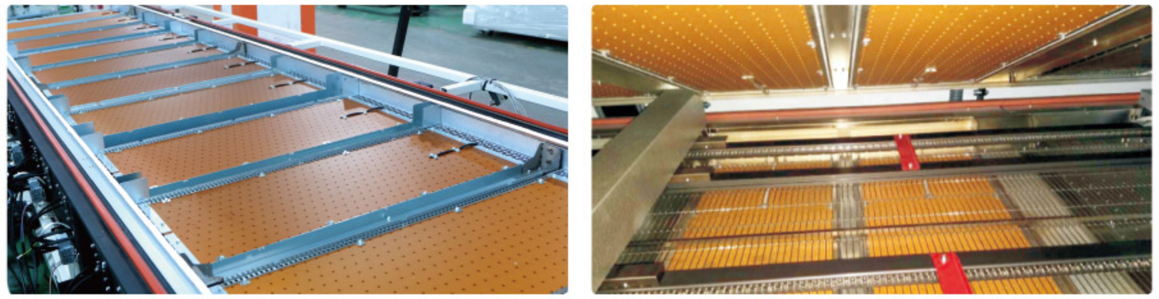
产品介绍 PRODUCT INTRODUCTION

- 浩宝ER系列无铅氮气回流焊炉，是浩宝公司精英研发团队倾心研发的一款高性价比、中高品质回流焊接设备，具有焊接品质好、生产效率高、使用能耗低等特点；
- 应用范围：可用于手机通讯、电脑、消费电子、汽车电子、医疗等领域高要求、高品质的回流焊工艺。
- HB ER series lead-free nitrogen reflow soldering furnace is a kind of high cost performance, medium and high quality reflow welding equipment developed by the elite R&D team of Haobao Company. It has the characteristics of good welding quality, high production efficiency, low energy consumption and more intelligent management;
- Application: It' s apply for high demand reflow soldering process in fields of mobile communication, computer, consumer electronics, automotive electronics and medical.

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

有效加热区长，加热效率高
Long effective heating zone with high heating efficiency

- 业内较长的有效加热区，上下合理分布，能量利用率高，热传导均匀充分，大大提高加热效率。
- 采用多层保温结构及密闭工艺，减少热量损失，炉体外壳温度降低15-20°C。
- The longer heating zone are able to get high production efficiency and throughput.
- Adopting a multi-layer insulation structure and sealed process to reduce heat loss, the temperature of the furnace shell is reduced by 15-20 °C.

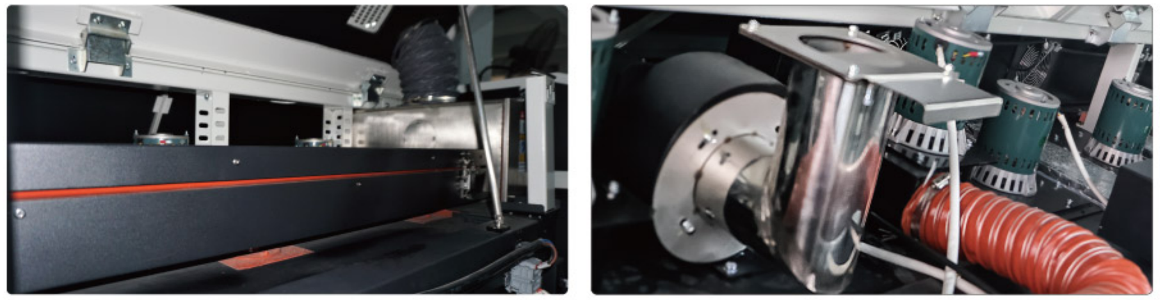


有效加热区高于业内同行，加热效率高

The effective heating zone is higher than other supplier, more higher heating efficiency

助焊剂回收高效、彻底
Efficient Flux Recycling System

- 采用新型助焊剂回收系统，回收更高效、更彻底，减少维护频率。
- Adopts new-type flux recycling system,reduce maintenance frequency.

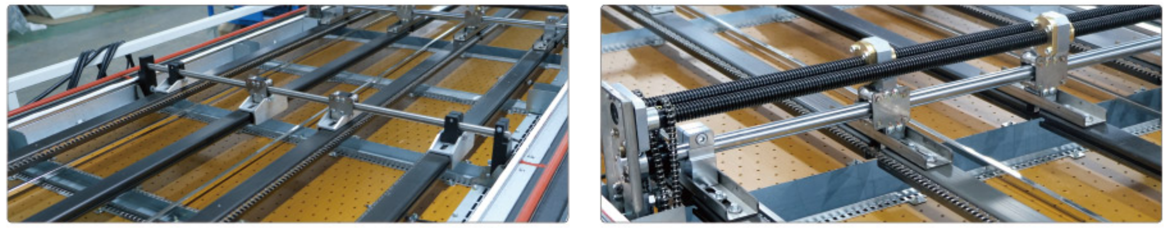


助焊剂回收系统，回收高效彻底

New flux recycling system, with efficient recovery

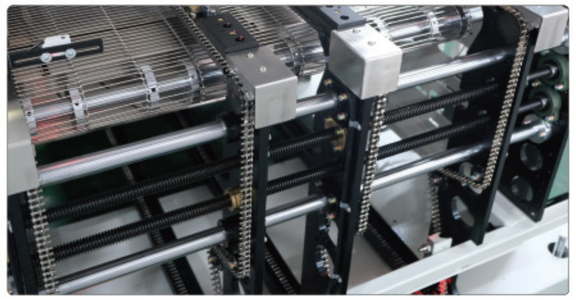
传输稳定不变形，可选择双轨双速，产能翻倍，节能60%
Stable transmission without deformation, with the option of dual track and dual speed, doubling production capacity, and saving 60% energy

- 导轨采用专利技术特殊硬化处理，坚固耐用；分段式设计释放应力，不易弯曲变形；全新调宽结构，杜绝喇叭口，生产不掉板。
- The rail is dealt with harden process to make it more stability. Segment design which can release pressure that make guide rail more durable, not easy to bend and deform. The new width adjustment structure to make sure no dorp board.

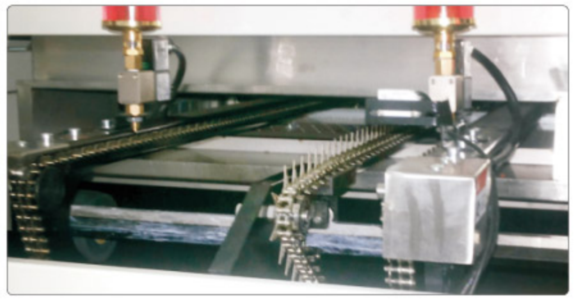


专利技术硬化平行导轨，经久耐用
Patented technology hardened parallel rails, durable

- 双轨双速传输链条，自动张紧设计，长效使用不松动，不掉板。增加中央支撑系统，防止PCB板加热后弯曲变形。
- Dual-lane dual speed conveyor chain, automatic tensioning design. Long-term use of chain does not loosen, and does not dorp of board.Optional centre board support to prevent the board to deform after heating.



双轨双速自动张紧链条
Dual-lane dual speed with automatic tensioning design



中央支持系统
Centre board support

精选知名优质配件，性能稳定可靠
Foreign famous brand electrical components, Stable and reliable performance

- 西门子PLC+模块化控制，性能稳定可靠，重复精度更高；主要控制和关键部件采用国外名牌原装进口件，保证设备经久耐用。
- The control system adopted with Siemens PLC & modular circuit to stabilized and accurate of repeat precision. Adopted foreign famous brand material as its major parts, which has guaranteed of durable and reliable.

主要控制和关键部件采用国外名牌原装进口件
The main control and key components are used famous foreign brands

氮气保护开放，焊接品质高，防止器件氧化
Open nitrogen protection, high welding quality, preventing device oxidation

- 为特殊要求客户开放氮气保护功能，炉膛内使用全面保护的密闭式设计，有效保护氮气不易流失，氮气消耗量低，在300-1000ppm的氧浓度环境下只在18m^3/H，氧气含量最低可至150ppm。
- The oven adopts a full enclosed design which is to prevent the N_2 losing. Under the circumstance of 300-1000ppm O_2, the consumption of N_2 is on 18m^3/H, the lowest Nitrogen content: 150ppm.

氮气保护系统，氮气消耗量低
the oven adopts a full enclosed design which is to precent the N_2 losing

参数规格 PARAMETER SPECIFICATION

浩宝ER无铅回流焊 HB ER series lead free reflow oven

系统 System	项目 Item	ER2-0803	ER2-0803D	ER2-1003	ER2-1003D	ER2-1203	ER2-1203D
尺寸及功率 Size and power	外形尺寸(长宽高) mm Dimension (L*W*H) mm	5730*1426*1560	5730*1656*1560	6520*1426*1560	6520*1656*1560	7290*1426*1560	7290*1656*1560
	排风量 Exhaust volume	10m^3/min*2通道以上 10m^3/min*2(Channel)					
	启动功率 Startup Power	30KW/32KW-N2	34KW/36KW-N2	34KW/36KW-N2	36KW/38KW-N2	38KW/40KW-N2	42KW/44KW-N2
	正常功率 Normal Power Consumption	10-11KW	11-12KW	11-12KW	11.5-12.5KW	12-13KW	13-14KW
加热系统 Heating System	加热区数量 Normal Power Consumption	上8个下8个 Top8 Bottom8	上8个下8个 Top8 Bottom8	上10个下10个 Top10 Bottom10	上10个下10个 Top10 Bottom10	上12个下12个 Top12 Bottom12	上12个下12个 Top12 Bottom12
	加热区总长度 Length of heating zone	3110mm	3110mm	3950mm	3950mm	4720mm	4720mm
	升温时间 Warming Time	约25分钟 Approx.25min	约30分钟 Approx.30min	约25分钟 Approx.25min	约30分钟 Approx.30min	约25分钟 Approx.25min	约30分钟 Approx.30min
	温度控制范围 Temperature Setting Range	室温-300°C Room temperature - 300 °C					
	温度控制方式 Temperature Control Type	PID闭环控制，SSR驱动 PID closed loop control, SSR driven					
	温控精度 Temperature Control Precision	±1°C					
	温区间温差 Temperature difference in temperature Zones	最大40°C Maximum 40 °C					
	预热区或焊接区最大温差 Max. temp. Difference between Preheat Zones or Solder Zones	最大80°C Maximum 80 °C					
	PCB板温度分布偏差 Temperature Deviation on PCB	±1.5°C					
冷却系统 Cooling System	冷却区数量 No. of cooling zone	3					
	冷却区长度 Length of cooling zone	1200mm					
运输系统 Transport System	导轨结构 Rail Structure	整体分段式 Integral segmented					
	导轨链条规格 Chain Spec	50-25标准导轨+标准单排 50-25 Standard Guide rail + standard single strand chain					
	导轨调宽方式 Rail Width Adjust Mode	电动+手动 By motor + by Manual					
	运输方向 Conveyor Direction	左→右(右→左 选项) L-R (R-L Option)					
	PCB过板宽度 Max. PCB size	50-400mm	50-700mm， 双轨50-280mm 50-700mm, Dual 50-280mm	50-400mm	50-700mm， 双轨50-280mm 50-700mm, Dual 50-280mm	50-400mm	50-700mm， 双轨50-280mm 50-700mm, Dual 50-280mm
	运输高度 Conveyor Height	900±20mm					
	运输速度 Conveyor Speed	300~2000mm/min					
	运输导轨固定方式 Fixed Rail Side	单轨：前端（后端选配）；双轨：1-4固定（2-3固定选配） Single lane: Front rail fixed (Rear rail fixed Option);Dual lane: 1・4 fixed or 2・3 fixed option					
	过板元件高度 Component Height	上30mm 下30mm Top 30mm Bottom 30mm					
氮气系统 N_2 System	氮气消耗量 N_2 Consumption	选配，单轨18-20m^3/hr 300-1000PPM；双轨25-30m^3/hr 300-1000PPM Option, Single lane: 18-20m^3/hr 300-1000PPM;Dual lane: 25-30m^3/hr 300-1000PPM					
电气配置 Electrical configuration System	电源 Power Supply	3∮380V 50/60HZ（3∮220V 50/60HZ 以技术协议为准） 3∮ 380V 50/60HZ (3∮ 220V 50/60HZ subject to technical agreement)					
	UPS系统 UPS system	标配 Standard configuration					
	报警显示 Alarm Display	声光一体（黄-升温，绿-恒温，红-异常） By sound and light Yellow warming;Green normal;Red abnormal					
	FLUX保养提示 FLUX Service Hints	软件提示保养周期 Software prompt maintenance cycle					
	参数存储 Data Storage	可存储多种设置参数 Process Data and Status Storage Unlimited					
	工业4.0互联工厂数据交换 IPC-CFX	选配 Option					
	机器间通讯标准 IPC-Hermes	选配 Option					

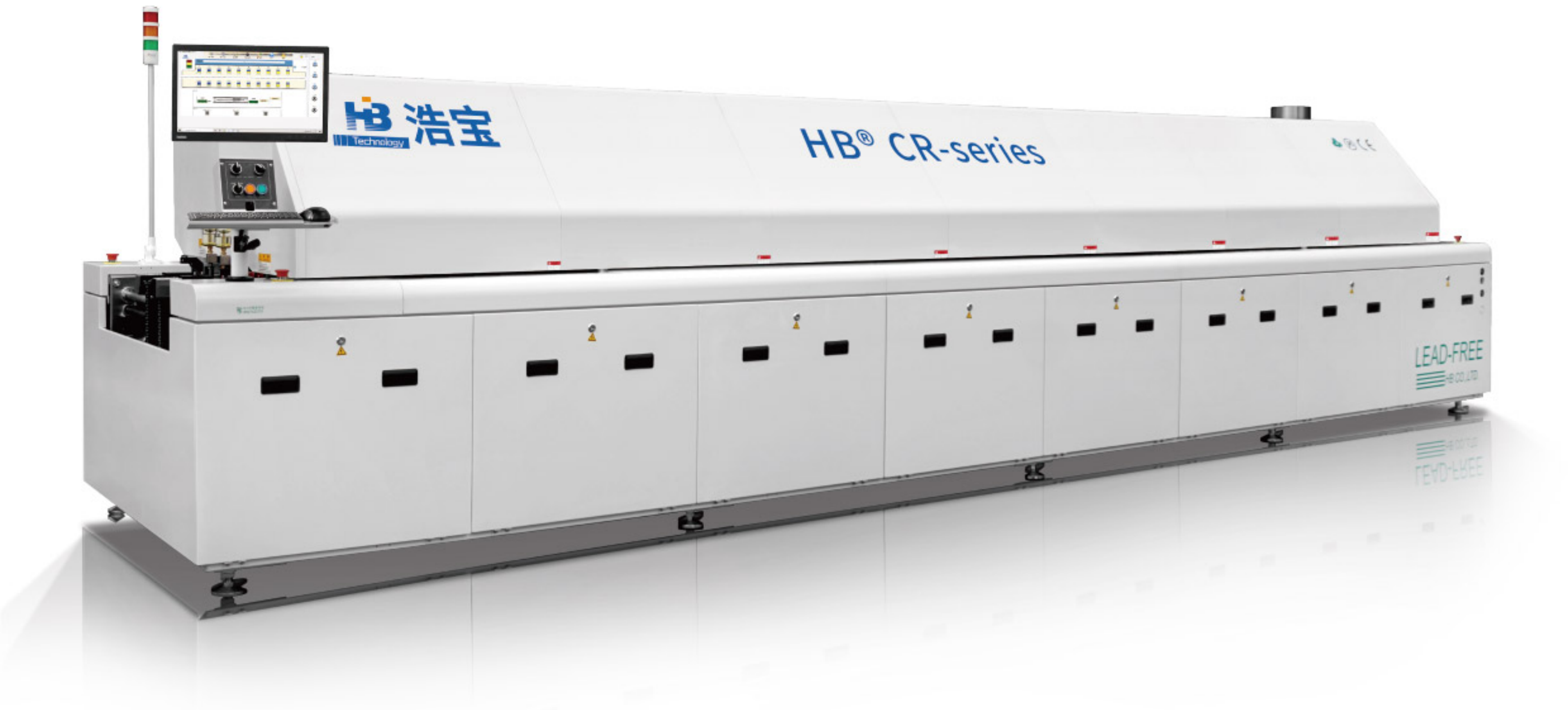
注：參數若有更改，恕不另行通知！The above contents are subject to change without further notice!

浩宝CR系列无铅回流焊

回流焊炉用浩宝，焊接快速效益高

HB CR SERIES LEAD FREE REFLOW OVEN

Using HB Reflow Oven, it’ s will be high soldering efficiency



产品介绍 PRODUCT INTRODUCTION

- 浩宝CR系列无铅氮气回流焊炉，是浩宝公司精英研发团队倾心研发的一款经济适用、品质有保障的回流焊接设备，满足各类无铅焊接工艺要求。
- 应用范围：可用于手机通讯、电脑、消费电子、汽车电子、LED 等领域的无铅回流焊工艺。
- HB CR series lead-free nitrogen reflow soldering furnace is an economical, applicable and quality guaranteed reflow welding equipment developed by the elite R&D team of Haobao Company, which meets the requirements of various lead-free welding processes.
- Application: SMT lead-free reflow soldering process can be used in mobile phone communication, computer, consumer electronics, automotive electronics, LED and other fields.

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

有效加热区长，加热效率高

Long effective heating zone with high heating efficiency

- 业内较长的有效加热区，上下合理分布，热传导均匀充分，大大提高加热效率；采用浩宝定制加热丝，加热效率高，使用寿命长。
- Long effective heating zone in the industry, with reasonable distribution from top to bottom, uniform and sufficient heat conduction, greatly improving heating efficiency; Adopting customized heating wire from HB, it has high heating efficiency and long service life.

有效加热区高于业内同行，加热效率高

The effective heating zone is higher than other supplier, more higher heating efficiency

国际名牌配件，性能稳定可靠

Adopted with foreign famous brand parts, stable and reliable performance

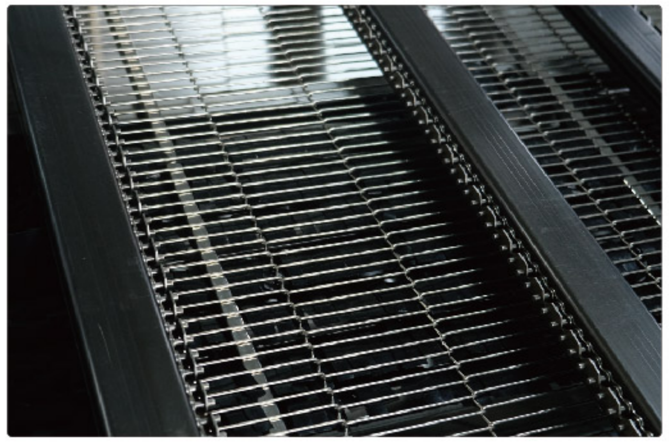
- 西门子PLC+模块化控制，性能稳定可靠，重复精度更高；
- 主要控制和关键部件采用国外名牌原装进口件，保证设备经久耐用；
- The control system adopted with Siemens PLC & modular circuit to stabilized and accurate of repeat precision.
- Adopted foreign famous brand material as its major parts, which has guaranteed of durable and reliable.

主要控制和关键部件采用国外名牌原装进口件

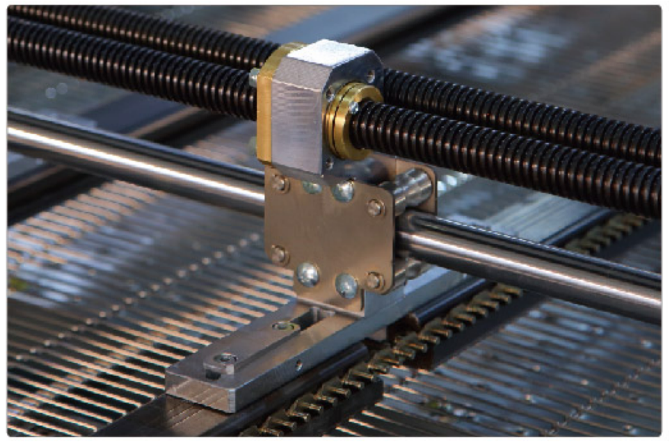
The main control and key components are used famous foreign brands

轨道平行好，传输稳定
Conveyor with well parallel and transmission is stable

- 导轨采用专利技术特殊硬化处理，分段式设计释放应力，坚固耐用，不易弯曲变形，不掉板。
- The rail is dealt with harden process to make it more stability. Segment design which can release pressure that make guide rail more durable, not easy to bend and deform also not dorp board.



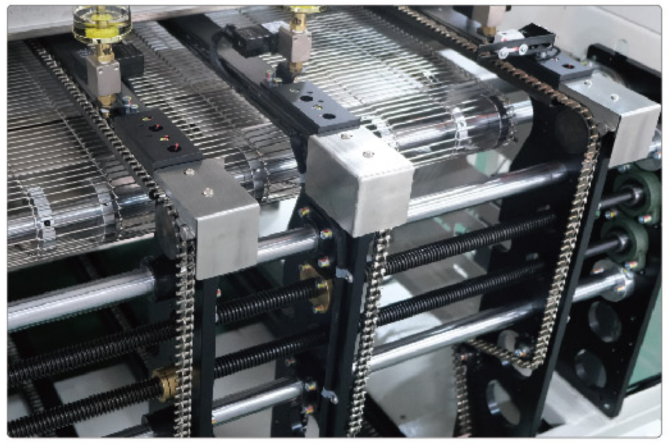
专利技术特殊硬化导轨
Patented technology special hardened guide rail



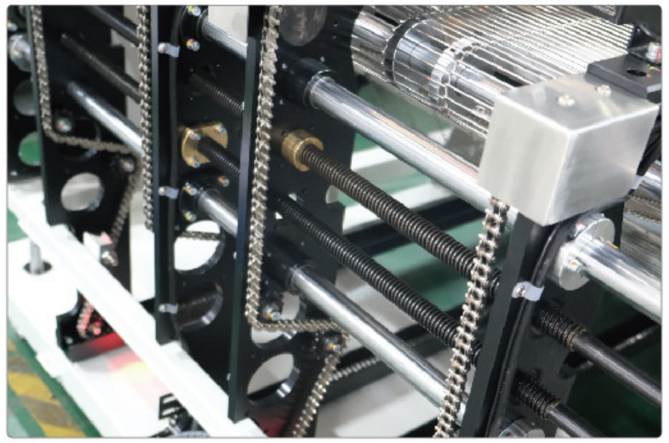
导轨分段式设计，释放应力
Guide rail segmented design, release pressure

网带加链条传输，适用多种产品
Mesh belt and chain transmission, suitable for various products

- 运输采用网带加链条双效运输，适应多种不同产品高效生产。
- 链条采用扣自动张紧设计，保证长效使用不松动，不掉板。
- The conveyor system adopts the both mesh belt and chain, which is suitable for the efficient production of various products.
- The chain adopts the automatic tensioning design to ensure that the long-term use is not loose and the board will not drop.



网带加链条双效运输
Chain+Mesh belt



链条自动张紧设计
Chain automatic tensioning design

操作简单，管理方便
Simple operation and convenient management

- Win10 操作系统，中英文界面自由切换，操作简便；
- 具有故障诊断功能，可显示各种故障，自动在报警列表中显示及存储，控制程序可自动生成和备份各项数据报表，便于ISO9000管理。
- Win 10 operation system, Chinese and English interface onscreen alternative is available.
- Intelligent diagnosis system has the functions of Trouble Remind, Alarm list-out, Report Saving, All production date will be backup automatically and easily for ISO 9000 management.

参数规格 PARAMETER SPECIFICATION

浩宝CR无铅回流焊 HB CR series lead free reflow oven

系统 System	项目 Item	CR2-0802	CR2-0802D	CR2-1003	CR2-1003D	CR2-1203	CR2-1203D
尺寸及功率 Size and power	外形尺寸(长宽高) mm Dimension (L*W*H) mm	5310*1353*1490	5310*1583*1490	6520*1426*1560	6520*1656*1560	7290*1426*1560	7290*1656*1560
	排风量 Exhaust volume	10m³/min*2通道以上 10m³/min*2(Channel)					
	启动功率 Startup Power	28KW/30KW-N2	32KW/34KW-N2	34KW/36KW-N2	36KW/38KW-N2	38KW/40KW-N2	42KW/44KW-N2
	正常功率 Normal Power Consumption	9-10KW	10-11KW	11-12KW	11.5-12.5KW	12.5-13.5KW	13.5-14.5KW
加热系统 Heating System	加热区数量 Normal Power Consumption	上8个下8个 Top8 Bottom8	上8个下8个 Top8 Bottom8	上10个下10个 Top10 Bottom10	上10个下10个 Top10 Bottom10	上12个下12个 Top12 Bottom12	上12个下12个 Top12 Bottom12
	加热区总长度 Length of heating zone	3110mm	3110mm	3950mm	3950mm	4720mm	4720mm
	升温时间 Warming Time	约25分钟 Approx.25min	约30分钟 Approx.30min	约25分钟 Approx.25min	约30分钟 Approx.30min	约25分钟 Approx.25min	约30分钟 Approx.30min
	温度控制范围 Temperature Setting Range	室温-300°C Room temperature - 300 °C					
	温度控制方式 Temperature Control Type	PID闭环控制，SSR驱动 PID closed loop control, SSR driven					
	温控精度 Temperature Control Precision	±1°C					
	温区间温差 Temperature difference in temperature Zones	最大40°C Maximum 40 °C					
	预热区或焊接区最大温差 Max. temp. Difference between Preheat Zones or Solder Zones	最大80°C Maximum 80 °C					
	PCB板温度分布偏差 Temperature Deviation on PCB	±1.5°C					
冷却系统 Cooling System	冷却区数量 No. of cooling zone	2	2	3	3	3	3
	冷却区长度 Length of cooling zone	800mm	800mm	1200mm	1200mm	1200mm	1200mm
运输系统 Transport System	导轨结构 Rail Structure	整体分段式 Integral segmented					
	导轨链条规格 Chain Spec	50-25标准导轨+标准单排 50-25 Standard Guide rail + standard single strand chain					
	导轨调宽方式 Rail Width Adjust Mode	电动+手动 By motor + by Manual					
	运输方向 Conveyor Direction	左→右(右→左 选项) L-R (R-L Option)					
	PCB过板宽度 Max. PCB size	50-400mm	50-700mm，双轨50-280mm 50-700mm, Dual 50-280mm	50-400mm	50-700mm，双轨50-280mm 50-700mm, Dual 50-280mm	50-400mm	50-700mm，双轨50-280mm 50-700mm, Dual 50-280mm
	运输高度 Conveyor Height	900±20mm					
	运输速度 Conveyor Speed	300~2000mm/min					
	运输导轨固定方式 Fixed Rail Side	单轨：前端（后端选配）；双轨：1-4固定（2-3固定选配） Single lane: Front rail fixed (Rear rail fixed Option);Dual lane: 1・4 fixed or 2・3 fixed option					
	过板元件高度 Component Height	上30mm 下30mm Top 30mm Bottom 30mm					
氮气系统 N_2 System	氮气消耗量 N_2 Consumption	选配，单轨18-20m³/hr 300-1000PPM；双轨25-30m³/hr 300-1000PPM Option, Single lane: 18-20m³/hr 300-1000PPM;Dual lane: 25-30m³/hr 300-1000PPM					
电气配置 Electrical configuration System	电源 Power Supply	3∮380V 50/60HZ (3∮220V 50/60HZ 以技术协议为准) 3∮ 380V 50/60HZ (3∮ 220V 50/60HZ subject to technical agreement)					
	UPS系统 UPS system	标配 Standard configuration					
	报警显示 Alarm Display	声光一体（黄-升温，绿-恒温，红-异常） By sound and light Yellow warming;Green normal;Red abnormal					
	FLUX保养提示 FLUX Service Hints	软件提示保养周期 Software prompt maintenance cycle					
	参数存储 Data Storage	可存储多种设置参数 Process Data and Status Storage Unlimited					
	工业4.0互联工厂数据交换 IPC-CFX	选配 Option					
	机器间通讯标准 IPC-Hermes	选配 Option					

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*CR一代机得到认可，公司继续生产，具体参数不在上列。

浩宝全自动真空回流焊

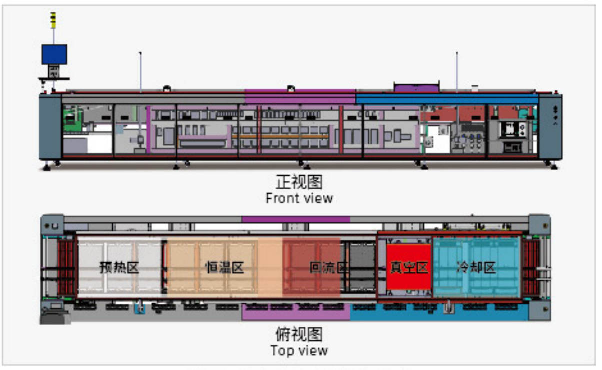
让品质不再空洞 让真空不再盲目

HB HV SERIES VACUUM REFLOW OVEN

Make quality voidless, make vacuum real

产品介绍 PRODUCT INTRODUCTION

- 浩宝HV系列真空回流焊设备，是浩宝技术组织研发团队自主开发、倾心打造的高端、高品质焊接设备；
- 适用于高精密、超高要求的半导体、航空航天、国防军工、医疗、汽车电子、5G通讯、LED等领域；
- 高效加热、精确控制，采用专利结构和加热技术，加热可达350℃，控温精度±1℃；
- 超强的真空能力，可大幅降低焊点空洞率，焊接更可靠；
- 别具匠心的真空腔体结构设计，真空上盖随上炉胆开启而开启，更容易维护保养；
- 真空区不再盲目，可实时监控温度及真空度，便于调整温度曲线，保持产品焊接高稳定性。

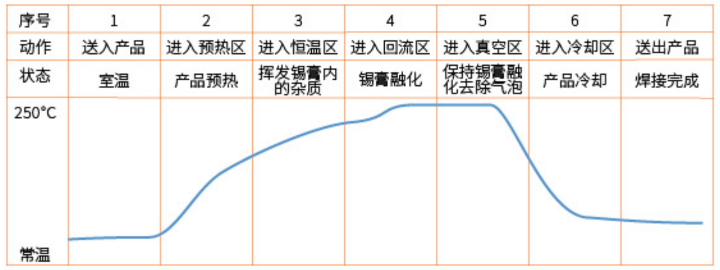


浩宝真空回流焊结构图

Structure diagram of HB vacuum reflow oven

- HB vacuum reflow oven is a high-end and high-quality soldering equipment independently developed and built by the R&D team of HB Technology.
- It is suitable for semiconductor, aerospace, national defense and military industry, medical care, automotive electronics, 5G communication, LED and other fields with high precision and ultra-high requirements.
- Efficient heating, precise control, patented structure and heating technology, heating up to 350 °C, temperature control accuracy ±1℃ .
- Strong vacuum capacity, can reduce the void rate by more than 90%, and greatly improve the reliability of solder joints.
- The unique structural design of the vacuum chamber, the vacuum upper cover will be opened when the top chamber opened, which is easier to maintain.
- Vacuum zone is no longer blind, real-time monitoring temperature and vacuum degree, easy to adjust temperature profile, maintain high soldering stability of products.

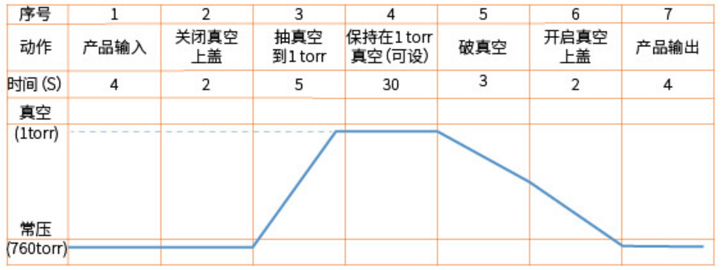
真空焊接原理 PRINCIPLE OF VACUUM SOLDERING



序号	1	2	3	4	5	6	7
动作	送入产品	进入预热区	进入恒温区	进入回流区	进入真空区	进入冷却区	送出产品
状态	室温	产品预热	挥发锡膏内的杂质	锡膏融化	保持锡膏融化去除气泡	产品冷却	焊接完成

真空回流焊全区示意图

Schematic diagram of vacuum reflow oven



序号	1	2	3	4	5	6	7
动作	产品输入	关闭真空上盖	抽真空到1 torr	保持在1 torr真空（可设）	破真空	开启真空上盖	产品输出
时间 (S)	4	2	5	30	3	2	4

真空区示意图

Schematic diagram of vacuum zone

引入真空条件

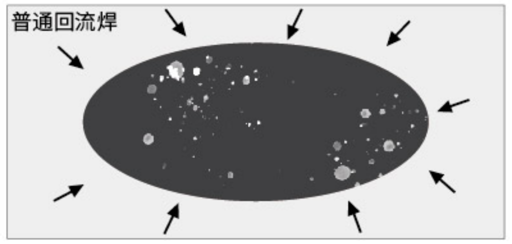
Conditions for introducing vacuum

- 真空焊接工艺是在回流焊接过程中引入真空环境的一种回流焊接技术。在产品进入回流区的后段，制造一个真空环境，提升焊接质量。
- Vacuum soldering technology is a kind of reflow soldering technology which introduces vacuum environment into reflow soldering process. After the product enters the reflow zone, a vacuum environment is created to improve the welding quality.

利用压力差 溢出气泡

Remove bubbles by pressure difference

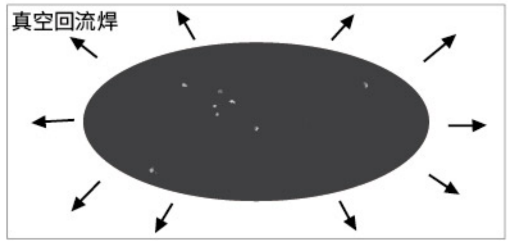
- 熔融状态的焊点外部环境接近真空，由于焊点内外压力差的作用，使得焊点内的气泡从中溢出，大幅降低焊点空洞率，提高焊点可靠性。
- The external environment of solder joints in molten state is close to vacuum. Because of the pressure difference between inside and outside the solder joints, bubbles in the solder joints overflow, which greatly reduces the void rate of solder joints and improves the reliability of solder joints.



普通回流焊焊接时因为空气气压影响，焊锡中的汽泡难以溢出，冷却后形成焊点空洞。

In common reflow soldering, because of the influence of air pressure, bubbles in solder are difficult to run off, and solder joint will be with empty after cooling.

VS



焊接时将熔融状态的盘置入负压真空中，利用压力差迫使气泡溢出，从而减少空洞。

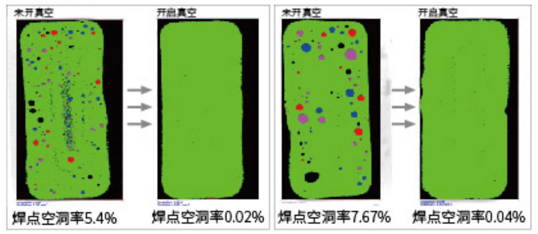
While soldering, the molten product is placed in negative pressure vacuum, and the pressure difference is used to force bubbles to run off, which can reduce voids.

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

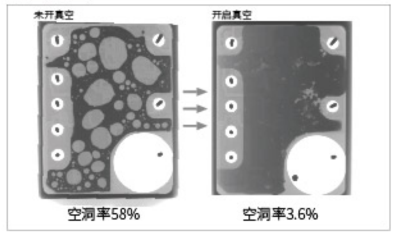
超强真空，大幅度减少空洞率
High reliability soldering process

- 超强的真空能力，低至-100KPa的真空度，可大幅度降低空洞率，提升焊点可靠性。客户实测，空洞率最低可达0.02%，焊点可靠。
- Super strong vacuum capacity, as low as 1 torr vacuum, can greatly reduce the void rate, improve the reliability of solder joints. According to customer's test, the lowest void rate can reach 0.02%, and the solder joint is reliable.

客户测试1

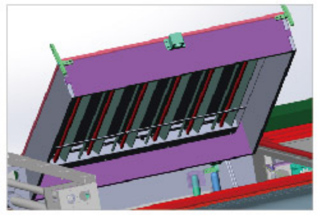


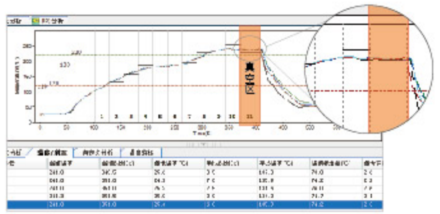
客户测试2



真空区不掉温
No temperature drop in vacuum zone

- 真空腔立体保温，并采用中波红外加热补偿，防止掉温，焊接品质和良率更高。
- The vacuum chamber is three-dimensional insulated, and medium-wave infrared heating compensation is adopted to prevent temperature drop, and the solder quality and yield are higher.

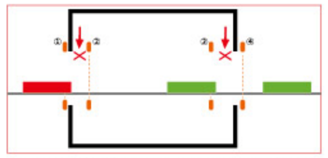




真空回流温度曲线测试图
Actual profile from vacuum reflow oven

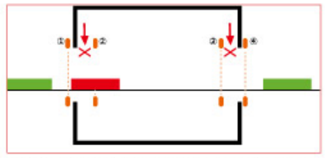
独具匠心多重感应技术
Unique triple induction technology

- 前中后多重感应技术，有效防止真空腔闭合时压板和卡板，生产更智能和放心。
- The front, middle and rear triple induction technology effectively prevents the pressure plate and clamping plate when the vacuum chamber is closed, and the production is more intelligent and assured.



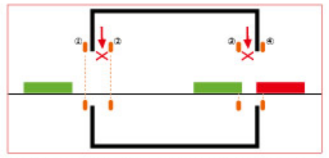
1号感应器感应到产品到达，真空炉盖不关闭。

Sensor No.1 sensed the arrival of production, and the vacuum furnace cover is not closed.



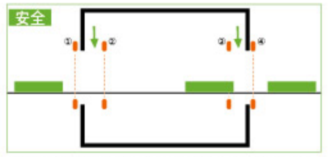
2号感应器感应到产品未离开，3号感应器未感应到产品到达，产品未完全进入安全区，真空炉盖不关闭。

Sensor No.4 sensed that product not yet leave, Sensor No. 2 sensor did not sense the arrival of the product, the product does not completely enter the safety zone, and the vacuum furnace cover is not closed.



4号感应器感应到产品未离开，真空炉盖不关闭。

Sensor No.4 sensed that product not yet leave, the vacuum furnace cover does not close.



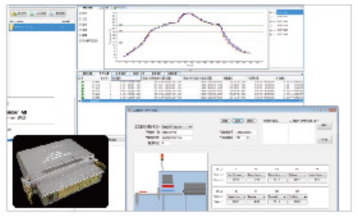
所有感应器均感应到产品安全，真空炉盖正常关闭。

All sensors sense that the product is safe and the vacuum furnace cover is closed normally.

真空区实时监控
Real-time monitoring in vacuum zone

- 真空区不再盲目，可实时监控温度及真空度，可配备专用温度测试仪，便于调整温度曲线，保持产品焊接的稳定性。
- Vacuum zone is no longer blind, real-time monitoring of temperature and vacuum can be equipped with a special temperature tester, easy to adjust the profile, maintain the stability of soldering products.

可实时监控真空区温度及真空度
Able to monitor the temperature and vacuum degree in real-time in vacuum zone



真空炉专用测试仪测试温度曲线
Profile tested by special profiler for vacuum reflow oven

参数规格 PARAMETER SPECIFICATION

浩宝全自动真空回流焊 HB Full-auto Vacuum Reflow Oven

系统 System	项目 Item	HV-0850	HV-1050	HV-1250
基本参数 **Basic Parameters**	外形尺寸 Dimension	L6896*W1470*H1580mm	L7456*W1470*H1580mm	L8016*W1470*H1580mm
	整机重量 Net weight	≤3200Kg	≤3500Kg	≤3800Kg
	入板方向 Conveyor direction	左向右（右向左） L→R(or R→L)		
	最小PCB尺寸 Min. PCB size	50 (W) X150 (L) mm		
	最大PCB尺寸 Max. PCB size	400 (W) X450 (L) mm		
	PCB 厚度 PCB thickness	≤4mm		
	PCB 上部空间 PCB Top clearance	30mm		
	PCB 下部空间 PCB Bottom clearance	30mm		
	PCB 边缘空间 PCB process edge	每边≥5mm each edge≥5mm		
传动模块 **Drive System**	轨道承重 Rail loading capability	轻载轨道3kg/m（重载轨道15kg/m） Light-duty: 3kg/m (Heavy-duty:15kg/m)		
	PCB 运输速度 Conveyor speed	300~2000mm/min		
	标准PCB 运输高度 Conveyor height	900±30 mm		
	宽度范围 Width adjust range	50-410mm		
	调宽方式 Width control mode	手动/电动/自动 By manual/Motor/Auto		
加热模块 **Heating System**	预热加热区 Preheat zones number	8个区（上下共16个） 8 (Top8Bottom8)	10个区（上下共20个） 10 (Top10 Bottom10))	12个区（上下共24个） 12 (Top12Bottom12))
	预热区有效加热长度 Preheating length	≤3370mm	≤4190mm	≤5010mm
	预热区加热方式 Heating mode in preheat zone	热风对流 Hot air convection		
	升温时间 Warm up time	≤30分钟 ≤30 min		
真空模块 **Vacuum system**	真空加热温区 Vacuum heating zone	1个区 1 zones		
	真空区加热长度 Vacuum heating length	≤600mm		
	真空区顶部加热方式 Heating mode in Vacuum zone	中波红外（可选） IR medium-wave (option)		
	真空度 Vacuum degree	-100KPa		
	真空泵抽气速度 Vacuum pump pumping speed	360m^3/h（60HZ交流电），300m^3/h（50HZ交流电） 360m^3/h(AC frequency 60 Hz),300m^3/h(AC frequency 50 Hz)		
	真空泵放置方式 Vacuum pump location	外置 External		
	持续工作声音 Working noise	<70db		
	设置温度 Set temperature	Max. 350°C		
冷却模块 **Cooling System**	冷却区 Cooling zone	3个区 3 zones		
	冷却方式 Cooling mode	冷水机（外置） Water chiller (external)		
	冷却区长度 冷却区长度	≤1050mm		
氮气模块 **N_2 System**	氮气耗量 N_2 consumption	氮气耗量35--45m^3/h (500ppm) 35--45m^3/h (500ppm)	氮气耗量45--55m^3/h (500ppm) 45--55m^3/h (500ppm)	氮气耗量45--65m^3/h (500ppm) 45--65m^3/h (500ppm)
	氮气纯度要求 N_2 concentration requested	99.999%		
	氮气压力要求 N_2 pressure requested	0.5Mpa		
	抽风管口径 Exhaust pipe size	3*ϕ200mm		
	排风量要求 Exhaust volume	15立方米/分钟 15m^3/min		
控制部分 **Control system**	Sytime	≥40s		
	电压 Voltage	3P5W 380V, 50/60Hz		
	功率 Power	114 KVA（含真空泵） 114 KVA (including vacuum pump)	125 KVA（含真空泵） 125 KVA (including vacuum pump)	136 KVA（含真空泵） 136 KVA (including vacuum pump)
	MES MES	Netware（选配） Netware (Option)		

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半导体回流焊炉

低残氧 高洁净 精控温 稳运输

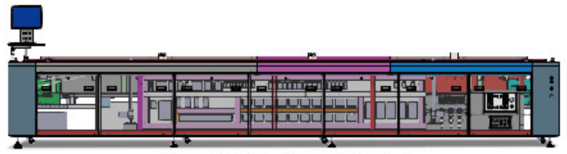
HB HY SEMICONDUCTOR PACKAGE REFLOW OVEN

Low residual oxygen, high cleanliness, precise temperature control and stable transportation

产品介绍 PRODUCT INTRODUCTION

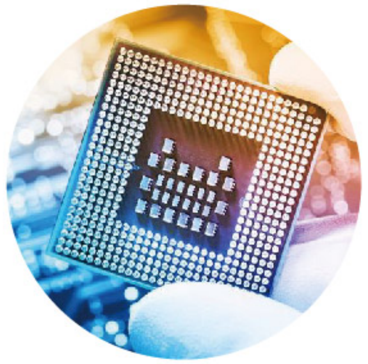
- 浩宝HY系列半导体封装回流焊炉，是浩宝技术组织研发团队精英倾力打造的自动化设备，设备长期运行可靠性高，性价比高，综合运营成本低。
- 广泛应用于倒装芯片、埋入式芯片、晶圆级半导体封装回流焊等工艺；
- 预留通讯接口，可对接MES和SEMI SECS/GEM。

- HB HY series semiconductor packaging reflow soldering furnace is an automatic equipment built by the elites of the research and development team organized by HB Technology. The equipment has high long-term operation reliability, high cost performance and low comprehensive operation cost.
- Widely used in flip chip, embedded chip, wafer level semiconductor packaging reflow soldering and other processes;
- A communication interface is reserved to interface with MES and SEMI SECS/GEM.



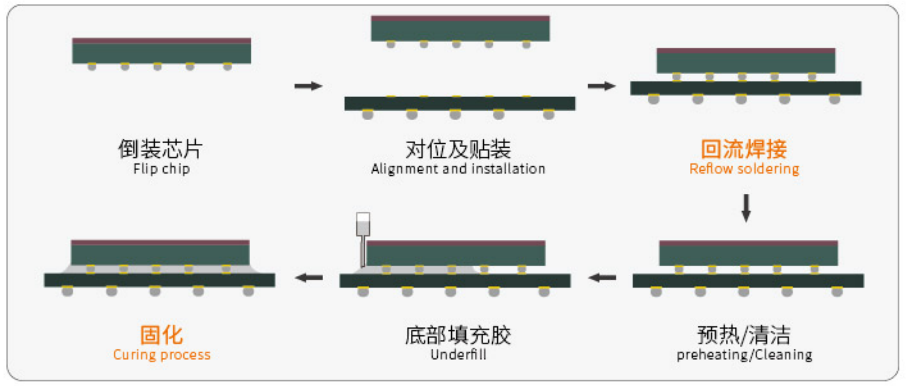
半导体封装回流焊炉结构图

Structure diagram of reflow soldering furnace for semiconductor packaging



半导体芯片封装

Semiconductor chip packaging



倒装芯片封装示意图

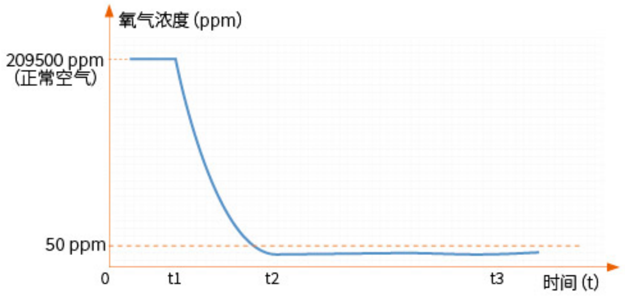
Schematic diagram of flip chip packaging

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

残氧量低，残氧量控制在50ppm以内

Low residual oxygen, Control residual oxygen within 50ppm

- 全程氮气控制，残氧量控制在50ppm以内，有效避免元器件的氧化，可选多温区实时显示。
- The whole process is controlled by nitrogen, and the residual oxygen content is controlled within 50ppm, effectively avoiding the oxidation of components. Multi-temperature zone real-time display is optional.

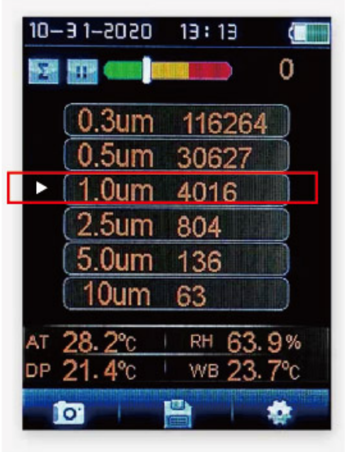


多温区实时监控

Multi-temperature zone real-time monitoring

千级洁净度，满足高等级无尘生产要求
Class 1000 cleanliness,Meet the requirements of high-level dust-free production

- 浩宝新型洁净技术，0.5um粒径浓度值≤35200，满足高洁净度、无尘车间生产要求。
- HB's new cleaning technology, with particle size concentration of 05m ≤ 35200, meets the production requirements of high cleanliness and dust-free workshop.



空气洁净度大于或等于表中粒径的最大浓度限制（PC/M³）

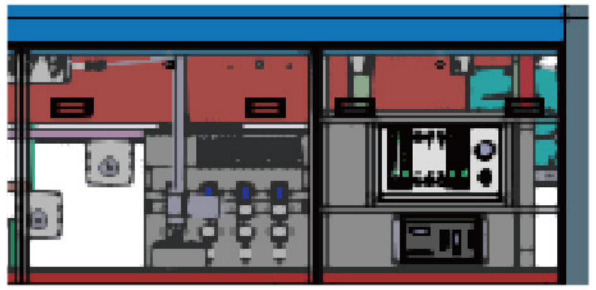
等级（N）	0.1μm	0.2μm	0.3μm	0.5μm	1μm	5μm
1	10	2				
2	100	24	10	4		
3	1000	237	102	35	8	
4（十级）	10000	2370	1020	352	83	
5（百级）	100000	23700	10200	3520	832	29
6（千级）	1000000	237000	102000	35200	8320	293
7（万级）				352000	83200	2930
8（十万级）				3520000	832000	29300
9（百万级）				35200000	8320000	293000

空气洁净等级表
Air cleanliness level table

高效加热，精确控温
Efficient heating and precise temperature control

- 最高运行温度400°C，控温精度±1°C，完全满足无铅工艺需要。
- The maximum operating temperature is 400 ° C, and the temperature control accuracy is ± 1C, fully meeting the requirements of lead-free process.

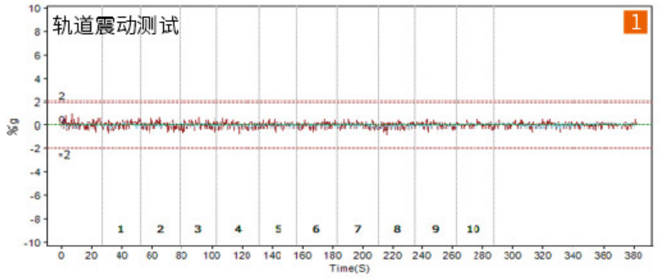
反馈式闭环温控
Feedback closed-loop temperature control



全新温控模组设计
New temperature control module design

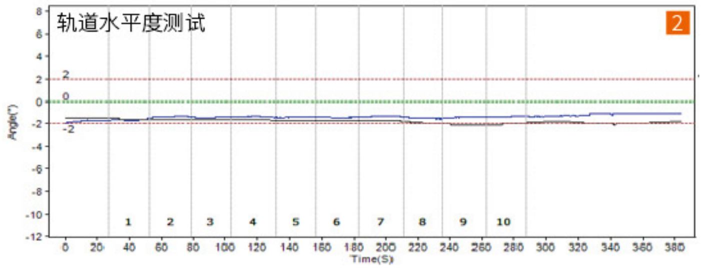
高平稳、低震动
High stability and low vibration

- 独特的轨道和网带运输系统，在水平度、震动度表现优秀，满足半导体封装的严苛需求。
- With its unique rail and mesh belt transportation system, it has excellent performance in levelness and vibration, meeting the stringent requirements of semiconductor packaging.



轨道X方向最大值约为1.0%g，轨道Y方向最大值约为-0.3%g

The maximum value of rail X direction is about 1.0% g, and the maximum value of rail Y direction is about -0.3% g



轨道X方向水平角度为0.8°，轨道Y方向水平角度为0.5°

The horizontal angle of rail X direction is 0.8 °, and the horizontal angle of rail Y direction is 0.5 °

参数规格 PARAMETER SPECIFICATION

HY系列半导体回流焊炉技术参数 HB Semiconductor Reflow Oven

系统 System	项目 Item	HY-0802D-N	HY-1003-N	HY-1003D-N	HY-1203-N	HY-1203D-N
尺寸及功率 Size and power	外型尺寸(L*W*H) mm Dimension	4990*1710*1650	6670*1470*1650	6670*1710*1650	7000*1470*1650	7000*1710*1650
	排风规格 Exhaust volume	10m³/min*2通道以上 10m³/min*2(Channel)				
	启动功率 Startup Power	39KW	48KW	48KW	59KW	59KW
	正常功率消耗 Normal Power Consumption	9-11kw	10-12kw	11-13kw	12-14kw	13-15kw
加热系统 Heating System	加热区数量 Normal Power Consumption	上8个下8个 Top8 Bottom8	上10个下10个 Top10 Bottom10	上10个下10个 Top10 Bottom10	上12个下12个 Top12 Bottom12	上12个下12个 Top12 Bottom12
	有效加热区长度 Length of heating zone	3090mm	4120mm	4120mm	4670mm	4670mm
	升温时间 Warming Time	25min	30min	30min	30min	30min
	温度设置范围 Temperature Setting Range	室温-400°C Room temperature - 300 °C				
	温度控制方式 Temperature Control Type	PID闭环控制，SSR驱动 PID closed loop control, SSR driven				
	温控精度 Temperature Control Precision	±1°C				
	温区间温差 Temperature difference in temperature Zones	预热区间最大40°C，预热与焊接区间最大80°C The maximum preheating interval is 40 °C, and the maximum preheating and welding interval is 80 °C				
	PCB板温度分布偏差 Temperature Deviation on PCB	±1.5°C				
冷却系统 Cooling System	冷却区数量 No. of cooling zone	2	3	3	3	3
	冷却区长度 Length of cooling zone	820mm	1250mm	1250mm	1250mm	1250mm
	冷水机 cooling-water machine	5P冷水机 5P water chiller				
运输系统 Transport System	轨道固定方式 Fixed Rail Side	前端固定/1、4轨固定 Single lane: Front rail fixed (Rear rail fixed Option);Dual lane: 1・4 fixed or 2・3 fixed option				
	导轨链条规格 Chain Spec	双排滚轴不锈钢链条+重载加硬导轨 Double row roller stainless steel chain+heavy-duty hardened guide rail				
	网带（选配项） Reticulum tape (Options)	选配网链，可选乙字网带、人字网链、重载网链 Optional network chain, including B-shaped network belt, A-shaped network chain, and heavy-duty network chain				
	链条润滑 chain lubrication	润滑泵自动注油，油余量监测报警 The lubricating pump is automatically filled with oil, and the oil margin monitoring alarm is given				
	过板元件高度 Component Height	上30下30（mm） Top 30mm Bottom 30mm				
	产品流向 Conveyor Direction	左→右(右→左 选项) L-R（R-L Option)				
	运输高度 Conveyor Height	900±20mm				
	运输速度 Conveyor Speed	200mm/min-2000mm/min				
氮气系统 N_2 System	氮气覆盖区域 N_2 area coverage	全程氮气覆盖 Full range in every zone				
	氧气浓度控制范围 O_2 concentration	全程可控，可选每个温区独立控制或自动巡检，氧气浓度控制50ppm The whole process is controllable, with the option of independent control or automatic inspection for each temperature zone,$O_2$50ppm				
	氮气源 N_2 source	压力≥0.4mpa，气源浓度10ppm以上 Air pressure≥0.4mpa, Concentration 10PPM above				
电气配置 Electrical configuration System	电源 Power Supply	AC380V 3ϕ5W 50/60Hz，选配AC220V AC380V 3ϕ5W 50/60Hz，选配AC220V				
	报警显示 Alarm Display	声光一体（黄-升温，绿-恒温，红-异常） By sound and light Yellow warming;Green normal;Red abnormal				
	flux保养提示 FLUX Service Hints	软件提示保养周期 Software prompt maintenance cycle				
	参数存储 Data Storage	可存储多种设置参数 Process Data and Status Storage Unlimited				
	UPS系统 UPS system	标配 Standard configuration				
	工业4.0互联IPC-CFX IPC-CFX	标配 Standard configuration				
	机器间通讯标准 IPC-Hermes	标配 Standard configuration				

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浩宝全自动无铅波峰焊

波峰焊机用浩宝 插件焊接快又好

HB FULL AUTOMATIC LEAD FREE WAVE SOLDERING

Use HB wave soldering, fast and good welding results

产品介绍 PRODUCT INTRODUCTION

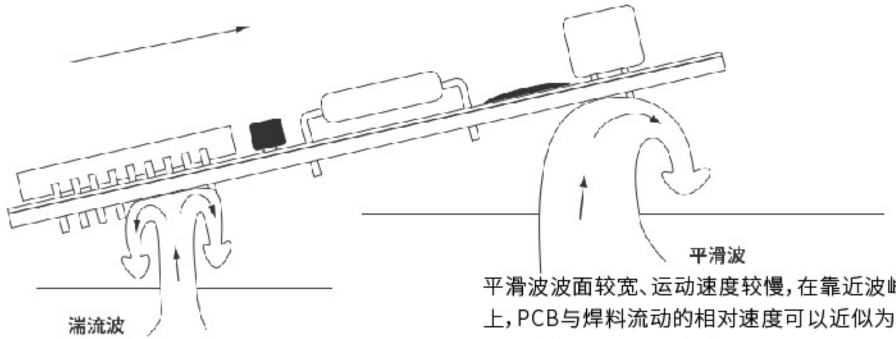
- 浩宝全自动无铅波峰焊机用于插件PCB的焊接，集合了国内外各大设备的优点，焊接快速、均匀，生产效益高。
- 适用于手机通讯、3C电子、家电、医疗、军工等领域插件焊接。

- HB Wave soldering is one machine that to weld of plug-in components on difference board. It's have gathered advantages all other's supplier equipment. Fast welding, uniform spray, high production efficiency.
- Application: It's apply for weld of plug-in components on difference board. Such as filed of mobile phone communication, 3C electronics, home appliances, medical, military-industrial and so on.

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

双波峰焊接，浸润性好，焊接质量稳定
Low residual oxygen

- 波峰焊双峰焊接，焊接质量好，焊点一致性好，性能稳定。
- The whole process is controlled by nitrogen, and the residual oxygen content is controlled within 50ppm, effectively avoiding the oxidation of components. Multi-temperature zone real-time display is optional.



湍流波能够较好地渗入到一般难以进入的密集焊区，有利于克服排气、遮挡形成的焊接死区，提高焊料到达死区的能力，大大减少了漏焊以及垂。

Omega Wave

The Omega Wave(Wave 1) can be better infiltrated into the dense welding area that is difficult to enter. That's help for exhaust, blocking the welding dead areas, improving the ability to reach the dead area, reducing the leakage welding.

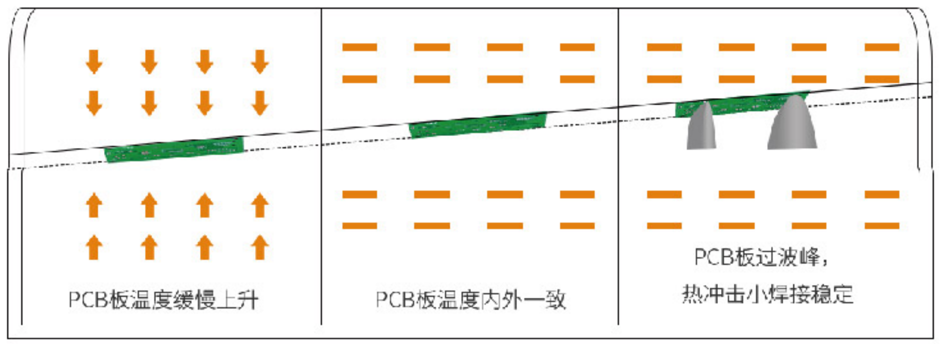
平滑波波面较宽、运动速度较慢，在靠近波峰表面的中心区域上，PCB与焊料流动的相对速度可以近似为零。在这样一种相对静止的情况下，焊料能够充分润湿、扩展，有利于形成充实的焊点。

Lambda Wave

The Lambada Wave(Wave 2) surface is wider and the speed of exercise is slow. On the center of the surface near of the wave, the relative speed of PCB and solder flow can be approximately zero. Under such a prohibition, the solder paste can be wet and extended. It's conducive to forming a fulfilling solder joint.

不损伤PCB板及元器件
Do not damage the PCB board component

- 焊接前充分预热，焊接时PCB板仅接触焊锡波峰，无需将PCB浸入焊锡中导致变形，元器件受热冲击小，不易损坏。
- The board have preheated and only exposed to the wave peak during welding. There is no need to immerse the PCB into the welding so that avoid deformation.

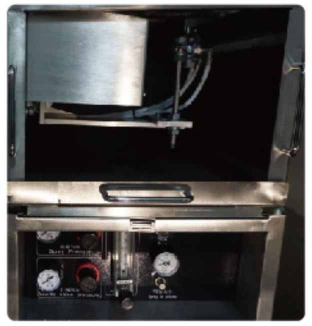


波峰焊过板示意图
Schematic diagram of board move in wave soldering

全自动喷雾系统，助焊剂涂覆精准均匀，节省助焊剂

Full automatic flux system. Uniform spray and saving flux

- 采用浩宝全自动喷雾系统，可保证助焊剂有效穿透PCB板，喷雾位置用量精准、涂覆均匀，可有效节省助焊剂节省成本。
- 可采用外置喷雾机方案，防火，安全，易保养。
- A full automatic flux system make sure flux spray uniform and precision movement. It's also save flux and cost.
- Optional external flux sprayer, more safety and more easy maintenance.



内置动喷雾系统
Build in flux spray system

可选外置全自动喷雾机，安全易保养
Optional external flux sprayer machine

人工需求少，生产效率高

Less labor demand, high production efficiency

- 上下料接驳机全自动在线生产，生产所需人工少，生产效率高。
- A full automatic production line with inlet and outlet conveyor. There are few labor demand and high production efficiency.

自动进板机
Inlet buffer conveyor

波峰焊机
Wave soldering

自动出板机
Outlet buffer conveyor

全自动在线生产
Full automatic DIP production line

参数规格 PARAMETER SPECIFICATION

全自动无铅波峰焊 Full Automatic Lead Free Wave Soldering

系统 System	项目 Items	HWS-350	HWS-450	HWE-350	HWE-450
机身 Size and power	外形尺寸(mm) Dimension (mm)	轻载：4365*1640*1755；重载：4450*1640*1770 Light Load: 4365*1640*1755mm, Heavy Load: 4450*1640*1770mm		重载：4010*1640*1770 Hevey Load: 4010*1640*1770mm	
	电压 Power Supply	3P5W 380V, 50/60Hz			
	功率 Total Power	MIN：34KW（根据选项会增加） MIN: 34KW(Increase as option)			
运输系统 Transport system	控制方式 Control Mode	PC+PLC			
	入板方向 Conveyor Direciton	左向右&右向左（选配项） L→R(R→L) Option			
	PCB运输速度 Conveyor Speed	300~2000mm/min			
运输系统 Transport system	PCB板宽度范围 PCB Width Range	50-350mm	50-450mm	50-350mm	50-450mm
	调宽方式 Width Adjustment Mode	手动/电动/自动（选配项） Manual/Motor/Auto(Auto as option)			
	标准PCB运输高度 Inlet Conveyor Height	750±30 mm（增高，机架底部垫高） 750±30 mm (Option: Increase foot cup height)		802±30 mm（增高，机架底部垫高） 802±30 mm (Option: Increase foot cup height)	
	PCB运输角度 Conveyor Rail Angle	4°~7°可调 4°~7° adjustable			
	PCB板最大承重 Load bearing range of Board	轻载：单片5KG，总量20KG；重载：单片10KG，总量60KG Light Load: Single board 5KG, total weight 20KG, Heavy Load: Single board 10KG, total weight 60KG			
	PCB元件高度 Component Height	上:120mm，下:25mm Top:120mm, Bottom:25mm			
预热系统 Preheat system	加热方式 Preheat Mode	热风&红外（选配项） Hot air or IR(IR as option)			
	预热温区数量 No.of Preheat Zone	3段（外置喷雾可选4段） 3 (Optional 4 zones with external sprayer machine)		3	
	设置温度 Setting Temperature	Max. 250°C			
	预热长度 Length of Preheat Zone	1800mm（2200mm分4段独立控制） 1800mm(Option: 2200mm 4 zones)		1800mm	
	单个温区加热功率 Heating Power of One Preheat Zone	热风：2*3=6 KW（发热丝）；红外：6*1.5=9KW（铯灯） Hot air: 2*3=6 KW(Hot air heater); IR: 6*1.5=9KW(Casium lamp)			
焊接系统 Soldering system	锡炉容量 Solder Pot Capacity	铸铁锡炉500KG(钛锡炉520KG) Cast iron 500KG, (Titanium: 520KG)			
	喷嘴配置 Wave Nozzle Configuration	双波峰，紊流波（四排孔）+宽平波，宽平波的有效宽度60毫米 Dual wave. Wave 1 is Omega Wave (four -row) and wave 2 is Lambda Wavewhich the effective width of the wave 2 is 60 mm			
	喷嘴宽度 Nozzle width	350mm	450mm	350mm	450mm
	波峰稳定度 Wave stability	±0.1s @ 3 sigma			
	最高温度 Solder Pot Max. Temperature	极限温度300°C；最高使用温度280°C Ultimate temperature /300°C; Max usage temperature 280°C			
	多点温差 Temperature Deviation	任意两点温差≤5°C Any two points of temperature difference ≤5 °C			
	加热功率 Heating Power	10.8KW	10.8KW	10.8KW	10.8KW
	锡波高度 Wave Height	MAX:15mm	MAX:15mm	MAX:15mm	MAX:15mm
	锡波驱动 Wave Drive	马达 Motor			
喷雾系统 Flux spary system	喷涂方式 Spraying Method	全喷&选喷（选配项） Full spray& Selective spray(option)		外置喷雾机（选配项） Only option external flux spray machine ((option))	
	喷雾高度 Spraying Height	60~100 mm		/	
	喷雾行程 Distance of Spray	360 mm	460 mm	/	
	喷雾移动速度 Spray Movement Speed	Max. 500mm/s（步进马达） Max. 500mm/s (step motor)		/	
	喷头与PCB板垂直 The nozzle and PCB board are kept vertical	调节角度时不影响 It does not affect the adjustment angle		/	
	助焊剂流量调节 Flux Flow	10~100ml/min（玻璃转子流量计） 10~100ml/min(Glass type rotameter)		/	
	助焊剂缓冲箱容量 Flux Buffer Tank Capacity	2 L（可选配外置助焊剂桶） 2 L(Option external flux tank)		/	
	气压 Air Pressure	0.25~0.4 Mpa		/	
	耗气量 Air Consumption	7立方米/小时 7m³/H		/	
氮气系统 N_2 system	供氮气压 N_2 supply pressure	>0.2MBar			
	充氮方式 N_2 filling mode	开放式氮气&封闭式氮气（选配项） Open nitrogen & closed nitrogen (Option)			
	供氮纯度要求 N_2 purity requirements	99.999%			
	充氮区域检测 Nitrogen filled area detection	500PPM以下（封闭式有） 500PPM below(only have closed nitrogen)			
冷却系统 Cooling system	冷却方式 Cooling mode	自然冷却&冷风机（可选） Natural air cooling& air cooler(Option)			
	长度 Length of cooling zone	300 mm（上下双面）自然风冷 3300 mm (double -sided up and down) Natural air cooling			

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全自动选择性群焊

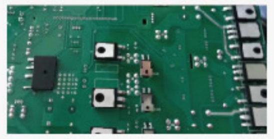
良率高 品质好 产能高

FULLY AUTOMATIC SELECTIVE GROUP WELDING

High yield, good quality, and high production capacity

产品介绍 PRODUCT INTRODUCTION

- 如今电路板越来越多元化，精细化，微小化。浩宝公司推出的全自动选择性群焊可以有效解决对于大热容量，插件引脚密集，双面元器件和多层线路板等问题，普通波峰焊难以达到透锡要求，焊接时热冲击过大损伤元器件，虚焊，连焊等问题。
- 适用于双面都有元器件导致普通波峰焊难以焊接及普通波峰焊难以达到透锡要求的PCB产品。
- Nowadays, circuit boards are becoming increasingly diversified, refined, and miniaturized. The fully automatic selective group welding launched by Haobao Company can effectively solve the problems such as large heat capacity, dense plug-in pins, double-sided components and multi-layer circuit boards. Common wave soldering can not meet the requirements of tin penetration, excessive thermal shock during welding can damage components, faulty soldering, continuous soldering and other problems.
- Suitable for PCB products with components on both sides that make it difficult to solder with ordinary wave soldering and difficult to achieve tin penetration requirements with ordinary wave soldering.



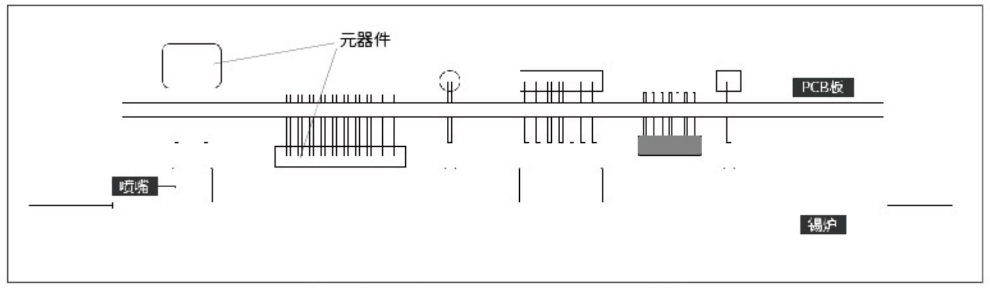
不能过波峰焊的双面PCB板
Double sided PCB board that cannot be soldered through wave soldering

普通波峰焊不能达到透锡要求的PCB板
PCB boards that cannot meet the requirements for tin penetration through ordinary wave soldering

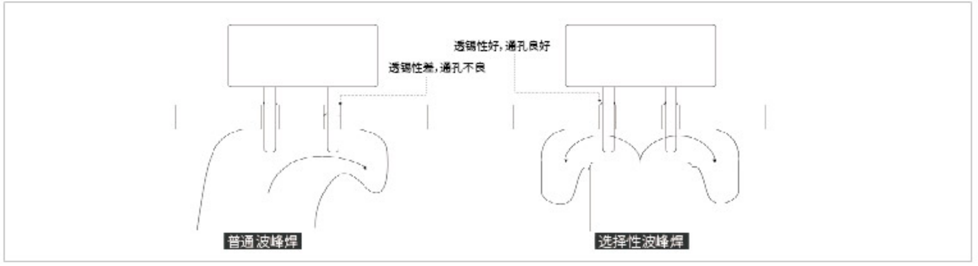
核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

焊接质量可靠，良率好
Reliable welding quality and good yield

- 有效解决双面元器件PCB板不能过波峰焊的问题，选择性群焊提供更为强劲的动态锡波，有效减少通孔透锡不良，焊接质量稳定可靠。
- Effectively solving the problem of double-sided component PCB boards not being able to pass through wave soldering, selective group soldering provides more powerful dynamic tin waves, effectively reducing poor tin penetration through holes, and ensuring stable and reliable soldering quality.



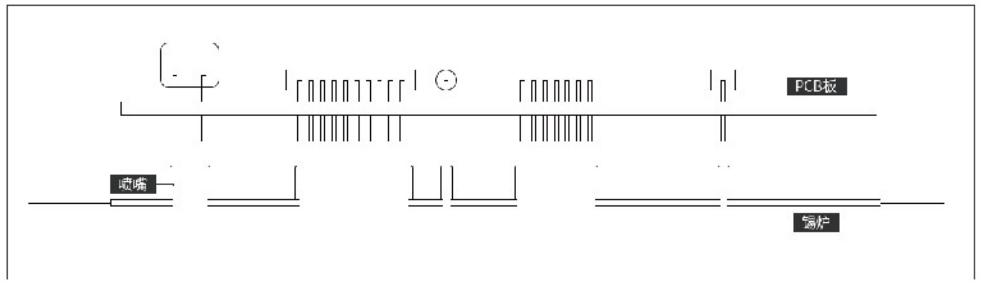
有效解决双面元器件PCB板的焊接问题
Effectively solving the welding problem of double-sided component PCB boards



选择焊可以有效减少细小引脚透锡不良的问题
Selective soldering can effectively reduce the problem of poor tin penetration in small pins

有效减少焊点内应力及元器件的损伤
Effectively reduce internal stress in solder joints and damage to components

- 点对点焊接，可个性化设个各个焊点的参数，无需整块PCB板接触焊锡，有效减少焊接时对产生的应力，及元器件的热冲击损伤。
- Point to point welding can personalize the parameters of each welding point without the need for the whole PCB board to contact solder, effectively reducing the stress generated during welding and thermal shock damage to components.



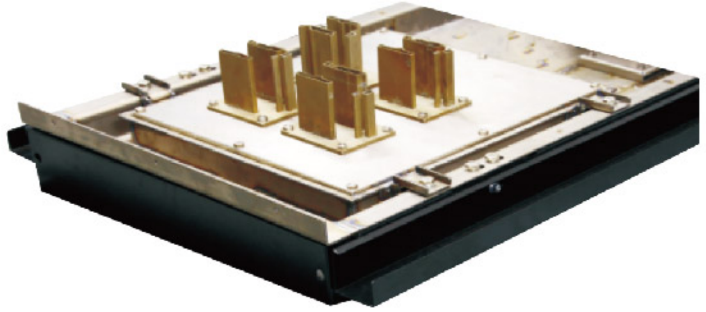
仅焊脚处接触锡浆，热冲击小
Only solder leg contacts solder paste, with low thermal shock

产能大幅度提升

Significant increase in production capacity

- 多个喷头同时实施个性化焊接，解决了普通选择焊单点焊接效率低下问题，效率提升数倍到数十倍，大幅度降低生产时间成本。

- Multiple nozzles are simultaneously used for personalized welding, solving the problem of low efficiency in single point welding with ordinary selection welding. The efficiency is increased by several to tens of times, greatly reducing production time and costs.



多喷头点对点同时焊接，大幅度提升产量

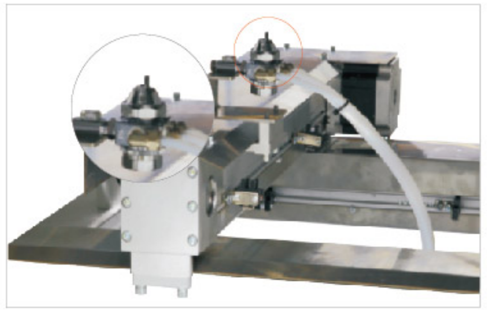
Multiple nozzle point-to-point simultaneous welding, significantly increasing production

节省助焊剂、焊锡，减少生产成本

Save flux and solder, and reduce production cost

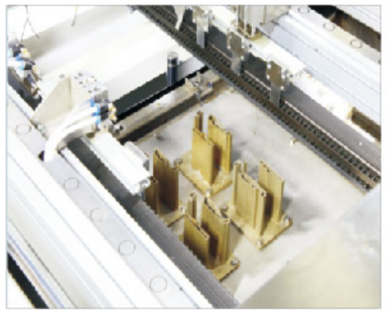
- 仅对需要焊接的点喷涂助焊剂，大幅度减少助焊剂的消耗；大幅度减少锡浆与氧气的接触面积，有效减少锡浆形成氧化物，减少生产成本。

- Only spray flux on the points to be welded, greatly reducing the consumption of flux; Significantly reduce the contact area between the tin slurry and oxygen, effectively reduce the formation of oxides in the tin slurry, and reduce production costs.



选择性喷涂，节省助焊剂

Selective spraying saves flux



锡浆与氧气的接触面积小，氧化少

The contact area between tin slurry and oxygen is small, resulting in less oxidation

参数规格 PARAMETER SPECIFICATION

全自动选择性群焊技术参数 Technical parameters of fully automatic selective group welding

系统 system	项目 Item	规格 Specification	备注 Remark
机身 **Body**	结构形式 Structure	3段机架 three seament	可拆分组合 available to splitting and combining
	外形尺寸 Machine dimension	L5223*W1353*H1720mm	机器长度可订制 available to customizd machine length
运输系统 **Board Handling**	适应PCB尺寸 PCB Size	50*120~350*350m (选项50*120~450*450) 50*120~350*350m (option 50*120~450*450)	含载具 ncludina the fixtures
	最大PCB重量 Max PCB weight	5KG	含载具 ncludina the fixtures
	PCB总重量 PCB total weight	20KG	
	PCB 上部空间 PCB upper spac	100mm	
	PCB 下部空间 PCB lower Spacee	50mm	
	PCB边缘空间 PCB process edge	≥4mm	
	PCB运输高度 PCB conveyor height	750±50mm	
	PCB板运输速度 PCB conveyor speed	0.5~10m/min	变频器调速 frequency converter control
	PCB板运输方向 PCB conveyor direction	L-R (选配R-L) L-R (option R-L)	
	运输报警 Conveyor alarm	实时卡板报警、掉板报警; Real-time alarm card board , plate alarm;	
	调宽方式 Width adlustments	手动/电动/自动 (选配项) Manual /Motorized/Automatic (option)	
助焊剂喷雾系统 **Fluxer Spray**	喷雾高度 Spraying height	70~100mm	
	喷雾行程 Spraying travel	350*350mm (选项 450*450mm) 350*350mm (option 450*450mm)	
	喷雾平台 Spraying platform	XY Table+进步控制系统 XY Table+stepper control system	可编程控制 programmable
	喷雾移动速度 Spraying nozzle movement speed	最大500mm/s Max 500mm / s	进步马达 stepper motor
	重复定位精度 Re-position accuracy	±0.25mm	综合精度 general accuracy
	喷雾均匀性 Spraying uniformity	±3%	
	重复精度 Spraying accuracy	±1%	
	喷嘴自动清洗 Nozzle self-cleaning	压缩气体清洗 compression air cleaning	
	助焊剂流量 Flux Flow	10~100ml/min	流量计控制 Flow meter control
	助焊剂缓冲箱容量 Flux buffer capacity	2L	可配外置容器 available to have the external container
	气压 Air pressure	0.4Mpa	
	耗气量 Air consumption	7m³/H	
预热系统 **Preheater**	预热温度 Pre-heating	最大180°C (PCB板底温度) 最大150°C (PCB板面温度) Max 180°C (PCB bottom surface) Max 150°C (PCB upper surface)	
	设置温度 Temp . setting	Max.300°C	
	控温精度 Temp . control	±2°C@3 Sigma	
	PCB 温度均匀性 PCB heating niformityl	5°C@3 sigma	标准测试版 Standard board
	加热方式 Heating method	热风+红外补偿 hot air + IR compensation	1.8M长3段式热风预热 1.8m , 3 independent pre-heating zone
	加热功率 Heating power	3X3KW+6X1KW	
	顶部加热 Top heating	热风预热 Hot air	选项 Option
	锡炉容量 Solder capacity	300~400KG	
	控温精度 Tem . Control	±1°C@3 sigma/Cpk≥1.33	
	最高温度 Max temperature	极限温度300°C，最高使用温度280°C Highest300°C, highest used temperature 280C	
	加热功率 Heating power	12X1KW	
锡炉 **Solder**	锡波高度 soldering wave heights	0~4mm	
	锡炉进出 Solder pot in / out	电动 电动	
	锡炉升降平台 Solder up / down	滚珠丝杆+进步控制系统 ball screw+stepper control system	
	锡炉升降行程 Solder up / down travel	50mm	
	锡波驱动 Solder wave driving	马达 High precision motor	变频器调速 frequency converter control
	化锡时间 Solder melting time	<2hr	
	锡炉 Solder pot	工业钛材 Ti-alloy	
	焊接喷口 Soldering nozzle	非标订制 customized	
电器系统 **Control System**	PCB定位 PCB position	XYZ气缸夹紧定位 XYZ axis air cylinder clamping	
	电压 Power supply	3P5W 380V,50/60Hz	
	总功率 Total Power	36KW	
	正常功率 Normal Power	7KW	
	耐压 withstand voltage	1500V 5S	
	接地电阻 Grounded resistance	<10hm	
	绝缘电阻 nsulation resistance	>25Mohm	
	接口 connector	前/后电箱内电源插座，助焊剂，机架对接， ront and back power plug, Netware . Air	

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SOP 在线选择性喷雾机

响应快速 定位精准 涂覆均匀 节省用料

SOP IN-LINE SELECTIVE FLUXING SPRAYER

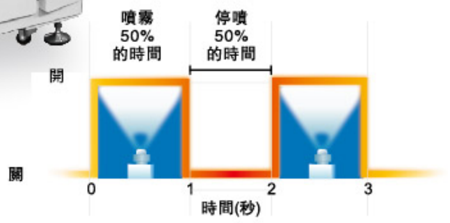
Quick response, precise positioning, uniform coating, and material saving

特点 FEATURES

- 高频的开关速度和先进的时间控制模式，确保均匀覆盖而无浪费；
- PWM流量控制技术，系统响应速度快，精度高，更稳定；
- 根据喷雾区域的实际情况，可实现电喷、线喷；
- 喷雾过程类似传统波峰焊，不需要停板，保证过板效率；
- 每个点的喷雾量可以单独控制；
- 采用图像编程系统，仅需简单培训即可操作，10分钟即可学会；
- 伺服电机驱动喷头摆动，可靠平稳，噪声小；
- PLC+ HMI控制系统，稳定可靠；采用光线对射感应器，计数更精准。

PWM

流量控制



- Adopts the high speed-frequency switch and advanced time-control mode to ensure the spraying uniformly and avoid the unnecessary waste"
- PWM flux flow control"
- According to the requirements of spraying on the PCB any area to realize the dot to dot spraying and line spraying "
- The spraying is similar with the traditional wave soldering machine , so don't need to stop the PCB and improves extremely the spraying efficiency.
- For the flow of any dot spraying can be controlled independently.
- Easily image programming system just needs 10 minutes to acquire."
- Equipted with the servo motor driven to make the nozzle moving stable and reliable in a extremely lower noise."
- PLC+HMI control system"
- Adopts the fiber optic correlation sensor to make the count more accurate.

参数规格 PARAMETER SPECIFICATION

SOP 在线选择性喷雾机 SOP In-line selective Fluxing sprayer

Items		Specification Specification	Comment	Remark
Work Piece		SOP-350		
最小PCB尺寸	Min PCB size	L120mmW60mm		
最大PCB尺寸	Max PCB size	L550mmW450mm	含治具 Includes the fixtures	According to the PCB size
PCB 厚度	PCB thickness	0.5~6mm		
PCB工艺边	PCB process edge	4mm		
PCB上部空间	PCB upper space	≤120mm		
PCB下部空间	PCB down space	≤50mm		
Board Handling				
传输系统	conveyor system	自动 Automatic		
传输速度	conveyor speed	300~2000mm/min	无极调速 stepless speed adjustments	
宽度调节范围	Width adjustmen	50~450mm	电动调宽 Motorized adjustment	(无手动)NON-MANUANLTYPE
连喷喷雾速度(XY平台)	Spraying speed (XY direction)	MAX.100mm/s		
移动定位速度(XY平台)	Moving position speed (XY direction)	MAX.1000mm/s		
定位精度(XY平台)	Position accuracy	±0.25mm		
Fluxer Spray				
工作方式	Working principles	PCB板动，喷头通过XY平泰同时动 PCB moving,while the nozzle is running at the XY direction		
PCB数据导入方式	PCB information Import method	坐标手动输入 Coordinates manually input	可升级图片导入 Upgrades Picture import	
喷头类型	Nozzle type	ST-6(Mouth diameter ¢ 1.0mm ¢ 1.3mm)		Optional
喷头雾化状态	Nozzle spray pattern	同普通波峰焊 ¢10~30mm the same with common wave soldering ¢10~30mm		
助焊剂供给方式	Flux supply	自动Auto-feeding		
喷雾工作气压	Air supply	0.35Mpa~0.45MPa		
助焊剂流量	Flux flow	10~100 ml/min	手动调节Manual adjustment	
助焊剂过滤	Flux filtration	双重多级过滤 Double multi-phase		环保 Environmental protection
Control System				
电源	Power	220VAC,50Hz		
总功率	Potal power	1KW		
工作功率	Working power	0.8KW		
电压波动	Voltage fluctuation	±10%		
Frame				
外形尺寸	(L*W*H)Dimension	1515x1770x1600		
工作高度	Conveyor height	750+20		
轨道角度	Conveyor angle	角度4-7°可调 Angel adjustable 4-7°	手动调节 Manual adjustment	
重量	Weight	300Kg		
Safety Compliance				
元件	Electrical components	CE		
电线/电缆/接头	Wire	CE		

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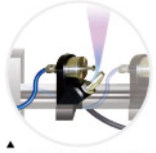
US 外置式助焊剂喷雾机

EXTERNAL FLUXING SPRAYER

特点 FEATURES

- 可与全自动波峰焊机在线接驳，实现全自动化生产；
- 采用PLC+触摸屏控制，全数字化设定和显示，操作简易；
- 采用进口名牌步进马达驱动，传送速度平稳可靠，确保助焊剂涂覆均匀。

- For grouping with soldering machine to be integrated soldering system.
- Equipped with high quality step motor to assure con- veying speed stability & reliably and the uniformity of flux spraying.
- PLC and LCD touch panel operation, digitally setting and displaying for flux value.



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可选配 超声波助焊剂喷雾系统

The Ultrasonic Flux Spraying System is optional

参数规格 PARAMETER SPECIFICATION

US 外置式助焊剂喷雾机 US External fluxing sprayer

外形尺寸(LxWxH)	Dimensions	1340x1330x1450(mm
PCB宽度	PCB Width	50~450mm
PCB运输高度	Conveyor Height	750+20mm
PCB运输方向	Conveyor Direction	L-R(option:R→L)
PCB运输速度	Conveyor Speed	0~2400mm/min
助焊剂槽容量	Capacity of Flux Tank	20L
气源	Air Supply	5~7Kg/cm²
电源	Power Requirements	3Φ,380V,50/60Hz
重量	Weight	300Kg
总功率	Total Power	1KW
正常功率	Normal Power	0.8KW

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浩宝还有更多类型设备

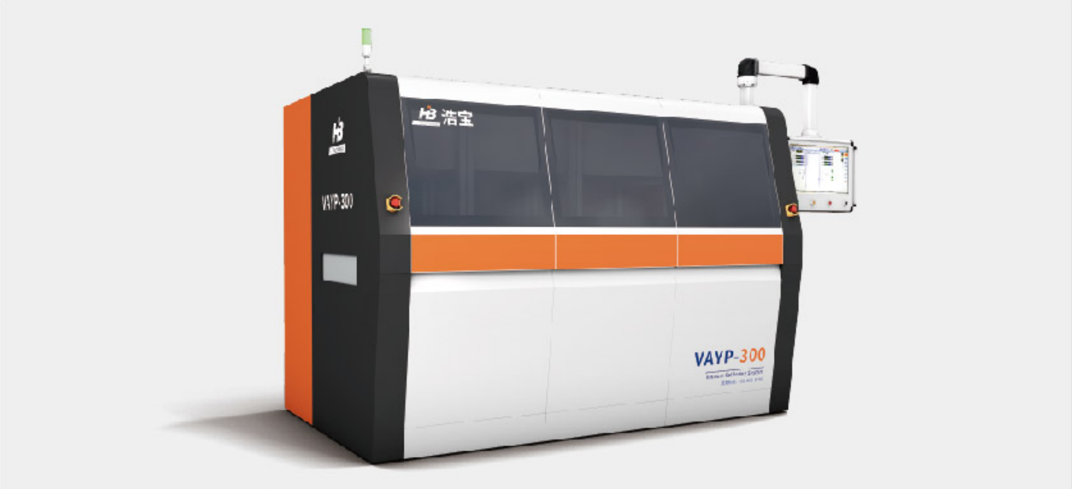
MORE TYPES OF DEVICES

固化设备
CURING EQUIPMENT

- HBO在线式洁净垂直固化炉
  HBO Cleanliness Class Vertical Curing Oven
- HBZ-垂直固化炉
  HBZ-Vertical Curing Oven
- 浩宝HVO高精密垂直固化炉
  HVO High Precision Vertical Curing Oven
- 浩宝HAO精密节能垂直固化炉
  HAO Energy-saving Vertical Curing Furnace
- HBZ-超长板垂直固化炉
  HBZ - 1500 Vertical Curing Furnace
- 红外固化炉
  Infrared Curing Oven
- 无极灯UV固化机
  Electrodeless Lamp UV Curing Oven
- Mini LED 分段控温固化炉
  Mini LED Package Curing Oven
- 汽车电子烘烤固化炉
  Automotive electronic curing furnace
- 3C、Mini LED、汽车电子、半导体等领域非标订制固化炉
  Non-standard customized curing oven in 3C, Mini LED, automotive electronics, semiconductor and other fields

半导体设备
Semiconductor Equipment

- 浩宝在线式甲酸真空炉
  HB online formic acid vacuum furnace
- 半导体封装回流焊
  Semiconductor Package Reflow Oven
- IGBT模块封装专用固化炉
  IGBT module packaging curing furnace
- 真空压力除泡烤箱
  Vacuum Defoaming Oven
- 真空气相焊接炉
  Vacuum gas phase welding furnace
- 洁净无氧/氮气烤箱
  Clean oxygen free/nitrogen oven



专注热工领域，自主创新，为全球客户
提供卓越的热工设备及解决方案

CONCENTRATE ON THE THERMAL FIELD, INNOVATE INDEPENDENTLY, AND PROVIDE EXCELLENT THERMAL EQUIPMENT AND SOLUTIONS FOR GLOBAL CUSTOMERS