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浩宝抖音号

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SHENZHEN HB TECHNOLOGY CO.,LTD

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本资料的技术信息如有
变动,恕不另行通知

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

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■ HB SEMICONDUCTOR EQUIPMENT

- Equipment list
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- HV Series Vacuum Reflow Oven
- HB Semiconductor Reflow Oven parameter
- Semiconductor Infrared Curing Furnace
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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.



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.



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".



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.



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.



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.

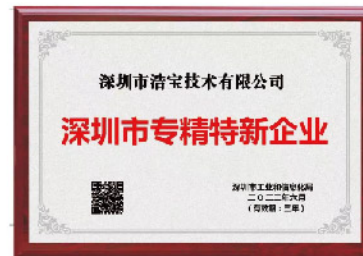


资质荣誉

QUALIFICATION HONOR



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



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



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



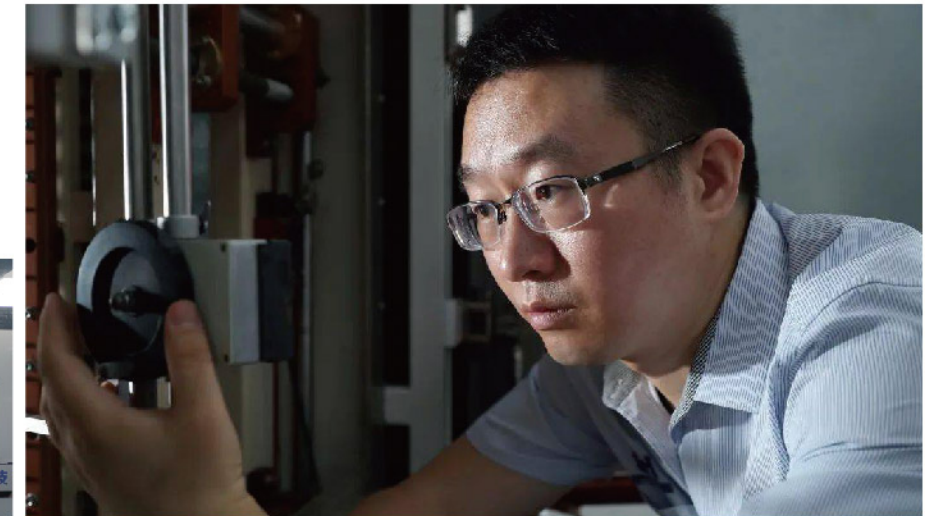
深创赛晋级半决赛
Advance to the
semi-finals



宝创赛三等奖
Baochuang Competition
Third Prize

研发实力

R & D STRENGTH



■ 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m²，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m²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m²。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

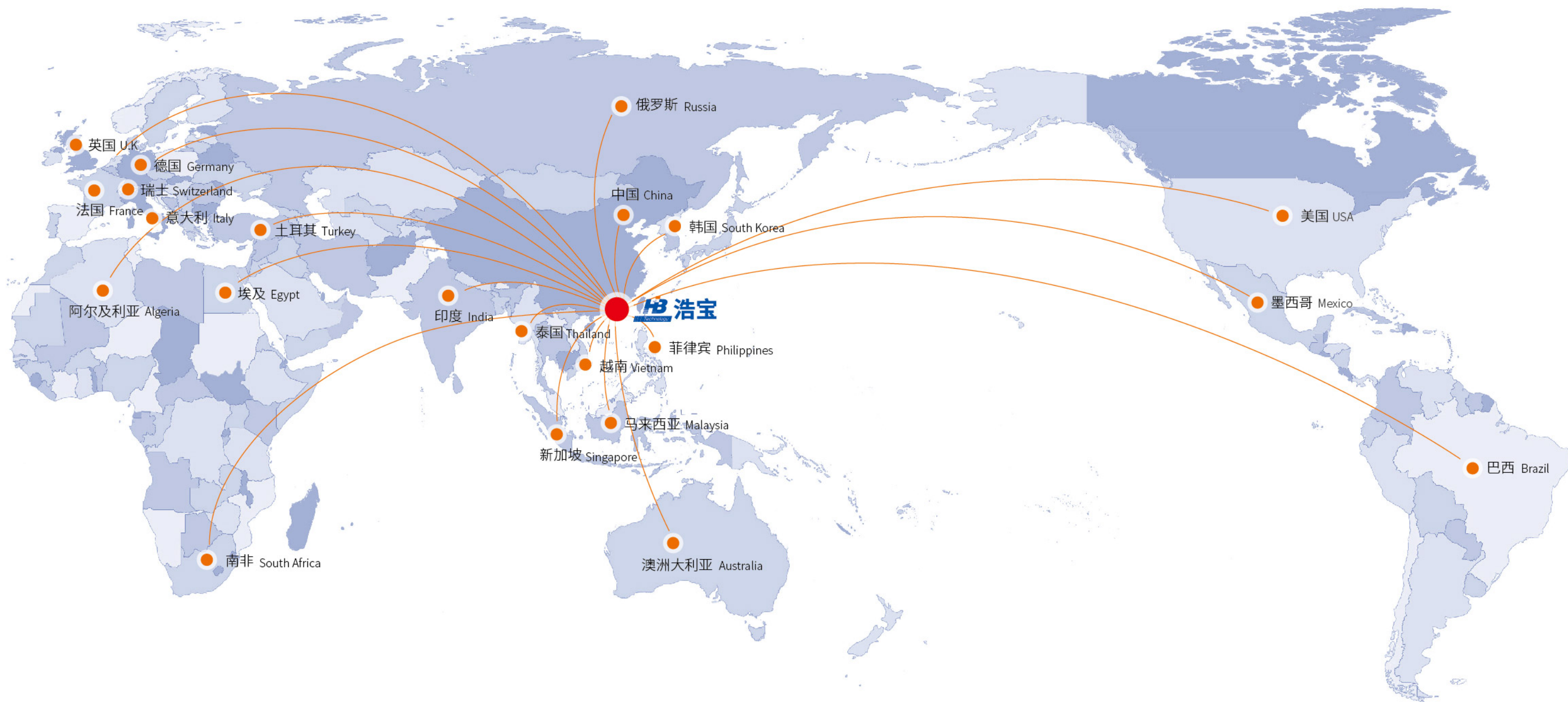
营销服务网络覆盖全球 MARKETING SERVICE NETWORK COVERING THE WORLD

浩宝技术注重国际化的战略布局, 在全球多个国家和地区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.



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	MI XIAOMI	VIVO Hi-Fi&Smart	OPPO	ZTE中兴
	FOXCONN 富士康科技集团	BYD	flex TP 创芯	JABIL 捷普集团	DBG 光弘科技
	LUXSHARE ICT 广达国际	丘钛科技 Q Tech	WINTECH 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	敏芯微电子
	赛晶科技 SUN.KING TECH	Leore 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 大陆集团 大站集团 动能未来	BYD 比亚迪汽车	采埃孚 汽车服务 [pro]Tech	UAES 联合汽车电子
	INOVANCE 汇川技术	JOHNSON ELECTRIC 德昌电机	ELITEGROUP 精英集团	Valen 法雷奥	KINWONG 景旺电子
	蓝思科技 LANS	HSAE 航盛	LITEON 光宝科技	IMI 斯比泰	HARMAN 哈曼国际
Mini LED	LG	SAMSUNG 三星	芯乐光 SmileLighting	usbj 东山精密	晶科电子 APT Electronics Ltd.
	兆驰 AMTC	国星光电 NATIONSTAR	瑞丰光电 RUIFENG	COREACH 芯瑞达科技	SUIJING 穗晶光电
	BOE 京东方	TCL	三安光电 San'an Optoelectronics	雷曼 Ledman	国显光电 Nation Display
	FSL 佛山照明	LOHUA 罗化芯	首尔半导体 SEOUL	東旭集团 TUNGSHU 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	MI 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 新旭通科技	POWERAMP 新能安	飞毛腿 SCUD
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



浩宝在线式甲酸真空炉

HB ONLINE FORMIC ACID VACUUM FURNACE

IGBT功率半导体无空洞、高可靠性焊接设备
IGBT power semiconductor cavity free, high reliability welding equipment

详见>>P15-18
For details>>P15-18

浩宝全自动真空回流焊

HB HV SERIES 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>>P19-22
For details>>P19-22



半导体回流焊炉

HB HQ SERIES LEAD FREE NITROGEN REFLOW OVEN

低残氧 高洁净 精控温 稳运输
Perfect performance Low energy consumption Intelligence

详见>>P23-26
For details>>P23-26



半导体红外固化炉

SEMICONDUCTOR INFRARED CURING FURNACE

快速固化 洁净焊接
Rapid solidification and clean welding

详见>>P27-30
For details>>P27-30

浩宝真空压力除泡烤箱

HAOBAO VACUUM PRESSURE DEFOAMING OVEN

除泡快 洁净度高 操作简便
Fast defoaming, high cleanliness, and easy operation

详见>>P31-34
For details>>P31-34



浩宝HBO系列洁净固化炉

HB HBO SERIES CLEANLINESS CLASS VERTICAL CURING OVEN

全自动 更洁净 更可靠
Fully automatic Cleaner More reliable

详见>>P35-38
For details>>P35-38

IGBT模块封装专用垂直固化炉

VERTICAL CURING FURNACE FOR IGBT MODULE PACKAGING

全自动 低残氧 高洁净 精控温

Fully automatic, low residual oxygen, high cleanliness, precise temperature control

详见>>P39-42

For details>>P39-42



浩宝半导体芯片固化炉

HB SEMICONDUCTOR CHIP CURING FURNACE

品质高 占地少 产能高

High quality, less land occupation, high production capacity

详见>>P43-46

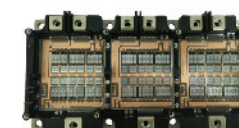
For details>>P43-46



浩宝在线式甲酸真空炉

IGBT功率半导体无空洞、高可靠性焊接设备

HB ONLINE FORMIC ACID VACUUM FURNACE
IGBT power semiconductor cavity free, high reliability welding equipment

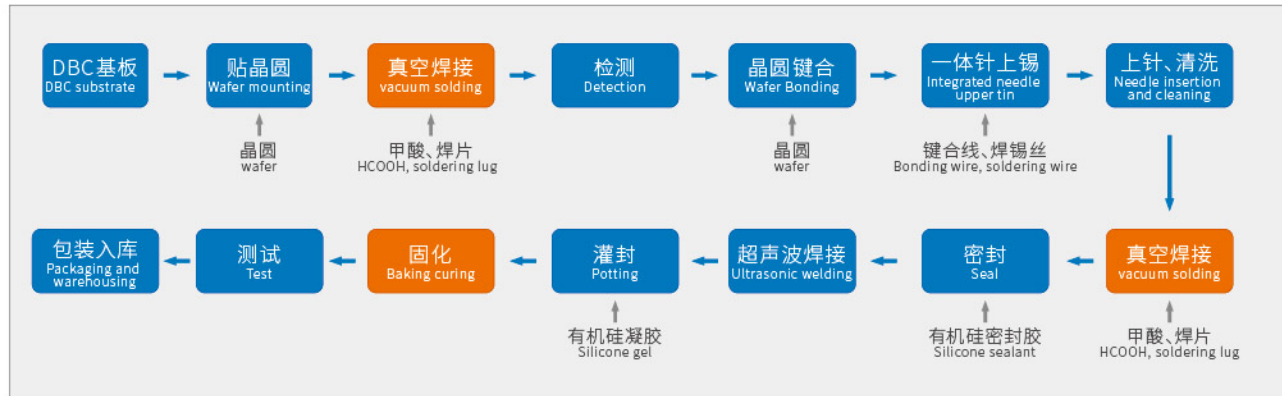


适用于功率半导体等无空洞、高可靠性的焊接封装

Suitable for soldered packaging with no voids and high reliability in power semiconductors and other applications

产品介绍 PRODUCT INTRODUCTION

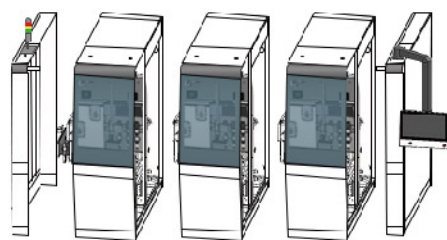
- 随着全球新能源的发展，功率半导体行业正在快速发展。IGBT模块等在封装焊接时有着低空洞率、高可靠性、消除氧化、高效生产等需求，而目前市场上用于IGBT的真空焊接设备存在诸多问题，例如焊接性能不达标、稳定性差、生产效率低，或者价格高、交期长等问题。
- 针对功率半导体行业的需求和痛点，浩宝技术联合华中科技大学教授团队，潜心研发出一款高可靠、高稳定、高效率的在线式甲酸真空焊接炉，为功率半导体制造或封装厂家带来优秀的封装焊接方案。
- 应用范围：功率半导体（IGBT模块、MOSFET器件）、高级封装、微电子混合组装、光电封装、气密性封装、晶圆级封装、UHB LED 封装、MEMS 封装等。
- With the development of global new energy, the power semiconductor industry is rapidly developing. IGBT modules have low void ratio, high reliability, elimination of oxidation, and efficient production requirements during packaging and welding. However, there are many problems with vacuum welding equipment used for IGBT in the current market, such as substandard welding performance, poor stability, low production efficiency, or high prices and long delivery times.
- In response to the needs and pain points of the power semiconductor industry, HB Technology has collaborated with a team of professors from Huazhong University of Science and Technology to develop a highly reliable, stable, and efficient online formic acid vacuum welding furnace, providing excellent packaging and welding solutions for power semiconductor manufacturing or packaging manufacturers.
- Application scope: Power semiconductors (IGBT modules, MOSFET devices), advanced packaging, microelectronic hybrid assembly, optoelectronic packaging, airtight packaging, wafer level packaging, UHB LED packaging, MEMS packaging, etc.



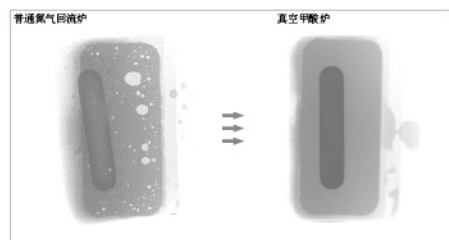
IGBT生产工艺流程图
IGBT production process flowchart

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

- 焊接品质高可靠**
High and reliable welding quality
- 采用预热区、加热区和冷却区模块化设计，每个区真空度及温度均可独立控制，可根据工艺要求设置多段真空曲线及温度曲线，焊接结果可重复、可追溯。
- 高气密性的结构设计和焊接装配工艺，快速抽真空，真空度可达1~10Pa，实现更低的焊接空洞率，单个空洞率<1%，总空洞率≤2%。
- 支持氮气、氮气+甲酸气氛环境，可精准控制，高效的甲酸注入及回收系统，焊接不需助焊剂，通过气体还原消除氧化物，焊后无残留、免清洗。
- 炉内残氧量低，≤10 ppm，有效防止金属氧化。
- Adopting modular design for preheating zone, heating zone, and cooling zone, each zone's vacuum degree and temperature can be independently controlled. Multiple vacuum and temperature curves can be set according to process requirements, and welding results can be repeated and traceable.
- High airtightness structural design and welding assembly process, rapid vacuum extraction, vacuum degree up to 1-10Pa, achieving lower welding porosity, single porosity<1%, total porosity ≤ 2%.
- Supports a nitrogen, nitrogen+formic acid atmosphere environment, with precise control and efficient formic acid injection and recovery system. Welding does not require flux, and oxides are eliminated through gas reduction. After welding, there is no residue and no cleaning is required.
- Low residual oxygen content, ≤ 10 ppm, effectively preventing metal oxidation.



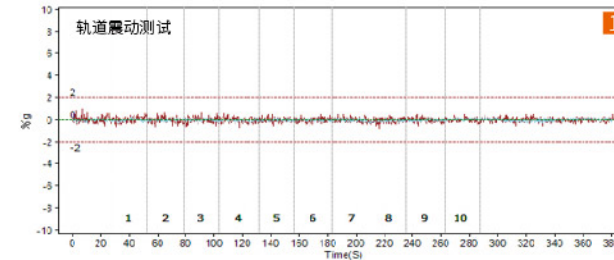
模块化设计，各真空区独立控制
Modular design, independent control of each vacuum zone



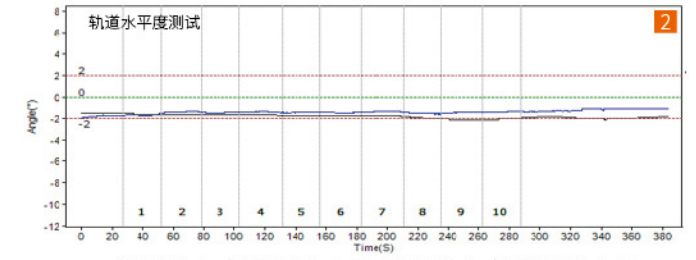
普通氮气回流炉、真空甲酸炉焊接对比图
Comparison diagram of welding between ordinary nitrogen furnace and vacuum formic acid furnace

设备运行高稳定 High stability of equipment operation

- 采用国际一流电器等元器件，每一种经过精心选型和调配，确保设备运行的稳定可靠。
- 运输系统采用伺服电机及特有的传输结构设计，振幅小，精准平稳，避免位移。
- Adopting international first-class electrical appliances and other components, each type has been carefully selected and allocated to ensure stable and reliable equipment operation.
- The transportation system adopts servo motors and a unique transmission structure design, with small amplitude, precision and stability, and avoids displacement.



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



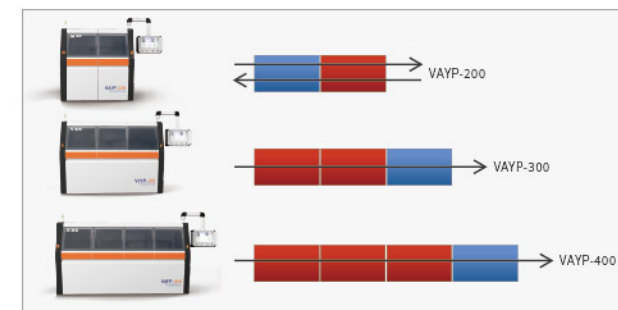
轨道X方向水平角度为0.8°，轨道Y方向水平角度为0.5°
The horizontal angle of rail X direction is 0.8°, and the horizontal angle of rail Y direction is 0.5°

- 自主开发的软件控制系统，可实时监控设备运行状态，自动进行数据存储，具备三级权限管理，可对接MES等。
- A self-developed software control system that can monitor the operating status of devices in real time, automatically store data, have three-level permission management, and can interface with MES, etc.

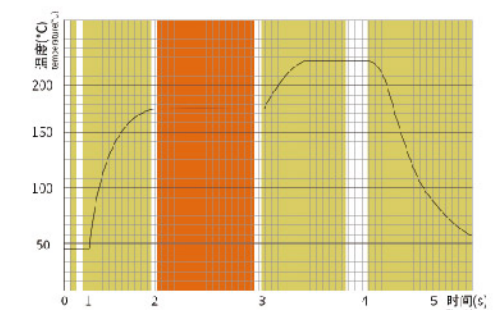


车间生产高效率 Workshop production efficiency

- 在线式三腔、四腔真空焊接设备，全自动生产，满足大批量IGBT模块封装生产需求。
- 设备采用模块化设计，可从两腔升级到三腔、四腔，实现从小批量生产扩展到大批量生产。
- 加热、冷却效率高，精准控温，升降温速率≥3℃/S，抽真空、充氮气或甲酸速度快，整体连续工艺时间4~10min/托盘，满足高效生产要求。
- 加热系统采用特制发热模块，接触式加热，使用寿命长，大幅降低使用和维护成本，提升生产效益。
- Online three chamber and four chamber vacuum welding equipment, fully automatic production, meeting the needs of large-scale IGBT module packaging production.
- The equipment adopts modular design, which can be upgraded from two chambers to three or four chambers, achieving the expansion from small-scale production to large-scale production.
- High heating and cooling efficiency, precise temperature control, temperature rise and fall rate ≥ 3 °C/S, fast vacuum pumping, nitrogen or formic acid filling, and overall continuous process time of 4-10min/tray, meeting the requirements of efficient production.
- The heating system adopts a specially designed heating module with contact heating, which has a long service life, greatly reducing usage and maintenance costs, and improving production efficiency.



两腔到四腔，小规模扩展到大批量生产
Two to four chambers, small-scale expansion to mass production



参数规格 PARAMETER SPECIFICATION

浩宝在线式甲酸真空炉技术参数 Technical parameters of HB online formic acid vacuum furnace

项目 Item	项目 Item	VAYP-200	VAYP-300	VAYP-400
1	设备尺寸 Equipment size	L1840*W1650*H2250mm	L2600*W1650*H2250mm	L3360*W1650*H2250mm
2	总功率 Power	30kw	41kw	52kw
3	重量 Weight	1800KG	2500KG	3200KG
4	电源 Power supply	AC380V, 50HZ	AC380V, 50HZ	AC380V, 50HZ
5	产品承重 Product load-bearing	50kg	50kg	50kg
6	焊接面积 Welding area	400mm*350mm	400mm*350mm	400mm*350mm
7	腔体数量 Number of cavities	2	3	4
8	横向温差 Lateral temperature difference	±1%	±1%	±1%
9	控温精度 Control accuracy	±1°C	±1°C	±1°C
10	温度范围 Temperature range	室温~450°C RT~450°C	室温~450°C RT~450°C	室温~450°C RT~450°C
11	氧含量 Oxygen content	≤10ppm	≤10ppm	≤10ppm
12	极限真空度 Extreme vacuum degree	1Pa	1Pa	1Pa
13	冷却方式 Cooling method	水冷+风冷 Water cooling+air cooling	水冷+风冷 Water cooling+air cooling	水冷+风冷 Water cooling+air cooling
14	加热方式 Heating method	接触式加热 Contact heating	接触式加热 Contact heating	接触式加热 Contact heating
15	炉膛高度 Furnace height	100mm	100mm	100mm
16	升温速率 Heating rate	≥3°C/S	≥3°C/S	≥3°C/S
17	降温速率 Cooling rate	≥3°C/S	≥3°C/S	≥3°C/S

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

浩宝全自动真空回流焊

让品质不再空洞 让真空不再盲目

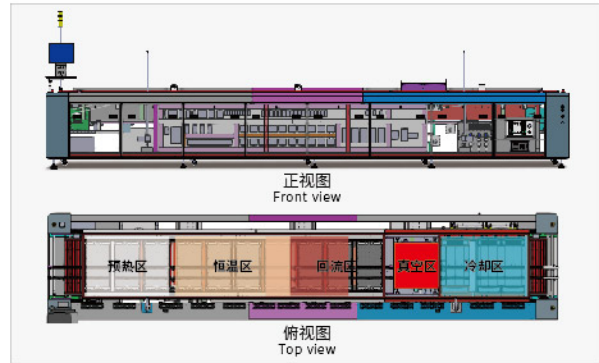
HB HV SERIES VACUUM REFLOW OVEN

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;
- 适用于高精度、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°C .
- 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.

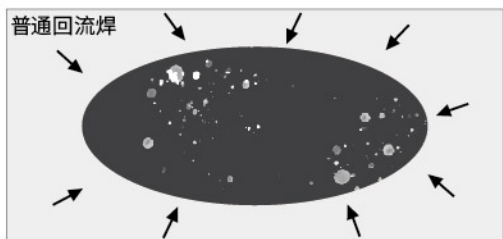
真空焊接原理 PRINCIPLE OF VACUUM SOLDERING

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
250℃							
常温							

真空回流焊全区示意图
Schematic diagram of vacuum reflow oven

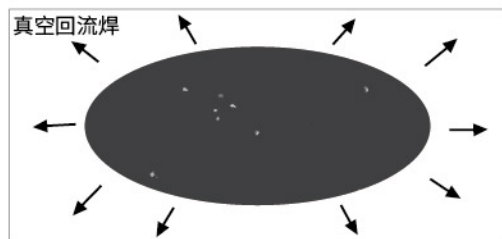
序号	1	2	3	4	5	6	7
动作	产品输入	关闭真空上盖	抽真空到1 torr	保持在1 torr真空(可设)	破真空	开启真空上盖	产品输出
时间(S)	4	2	5	30	3	2	4
真空(1torr)							
常压(760torr)							

真空区示意图
Schematic diagram of vacuum zone



普通回流焊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.

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

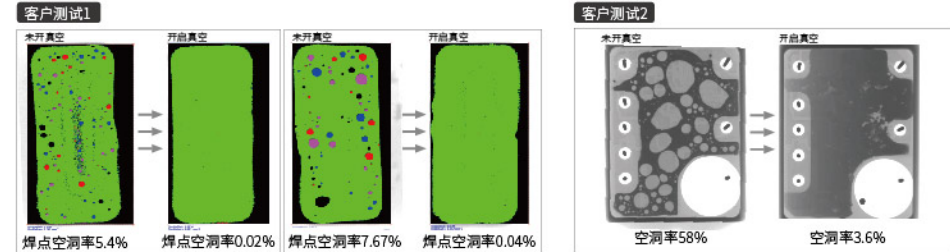
Remove bubbles by pressure difference

- 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.

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

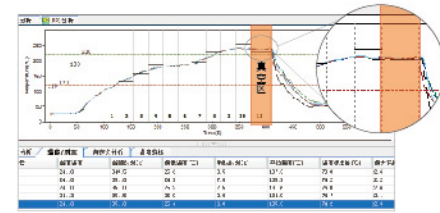
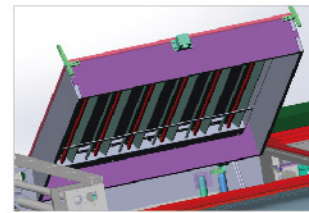
超强真空,大幅度减少空洞率 High reliability soldering process

- 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.



真空区不掉温 No temperature drop in vacuum zone

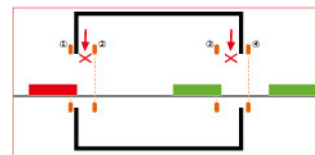
- 真空腔体立体保温,并采用中波红外加热补偿,防止掉温,焊接品质和良率更高。
- The vacuum chamber is three-dimensional insulated, and medium-wave infrared heating compensation is adopted to prevent temperature drop, and the solder quality and yield are higher.



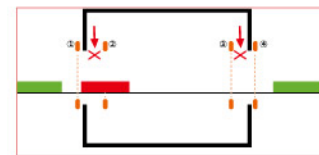
真空回流温度曲线测试图
Actual profile from vacuum reflow oven

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

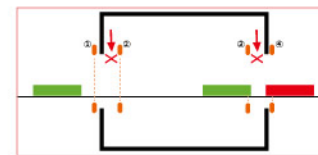
- 前中后多重感应技术,有效防止真空腔闭合时压板和卡板,生产更智能和放心。
- The front, middle and rear triple induction technology effectively prevents the pressure plate and clamping plate when the vacuum chamber is closed, and the production is more intelligent and assured.



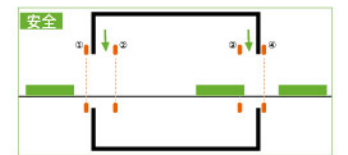
1号感应器感应到产品到达,真空炉盖不关闭。
Sensor No.1 sensed the arrival of production, and the vacuum furnace cover is not closed.



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.2 sensed that product not yet leave, Sensor No.3 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.



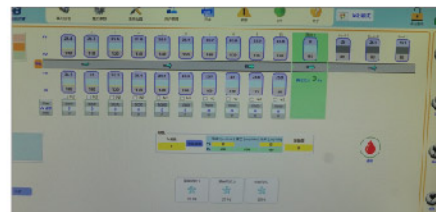
4号感应器感应到产品未离开,真空炉盖不关闭。
Sensor No.4 sensed that product not yet leave, the vacuum furnace cover does not close.



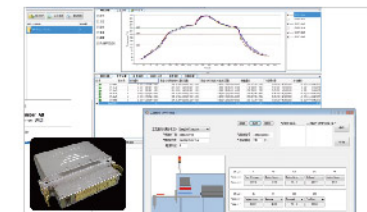
所有感应器均感应到产品安全,真空炉盖正常关闭。
All sensors sense that the product is safe and the vacuum furnace cover is closed normally.

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 (Top10Bottom10)	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	360m³/h (60HZ交流电), 300m³/h (50HZ交流电) 360m³/h(AC frequency 60 Hz),300m³/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--45m³/h (500ppm) 35--45m³/h (500ppm)	氮气耗量45--55m³/h (500ppm) 45--55m³/h (500ppm)	氮气耗量45--65m³/h (500ppm) 45--65m³/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 15m³/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)		

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

半导体回流焊炉

低残氧 高洁净 精控温 稳运输

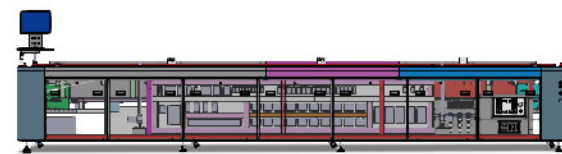
HB HY SEMICONDUCTOR PACKAGE REFLOW OVEN
Low residual oxygen, high cleanliness, precise temperature control and stable transportation



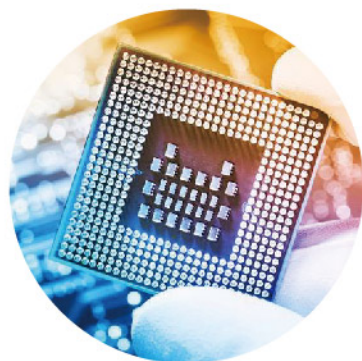
产品介绍 PRODUCT INTRODUCTION

- 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。

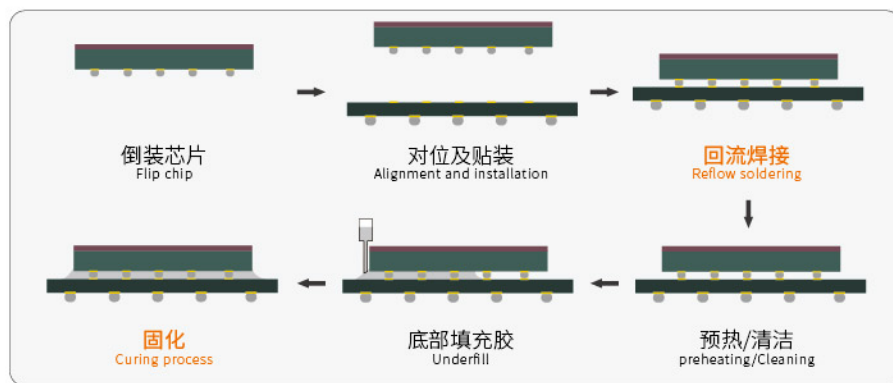
- HB HY series semiconductor packaging reflow soldering furnace is an automatic equipment built by the elites of the research and development team organized by HB Technology. The equipment has high long-term operation reliability, high cost performance and low comprehensive operation cost.
- Widely used 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



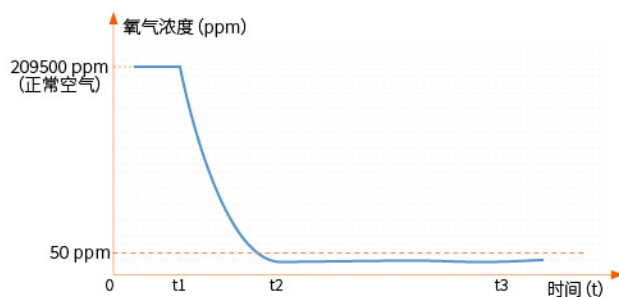
半导体芯片封装
Semiconductor chip packaging



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

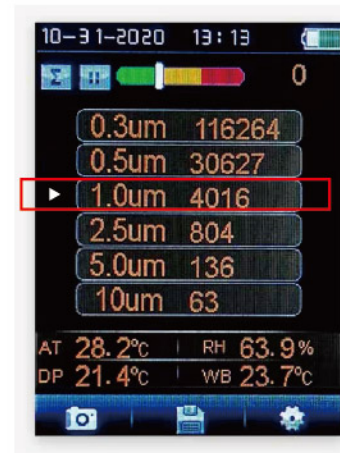
- 残氧量低，残氧量控制在50ppm以内
Low residual oxygen, Control residual oxygen within 50ppm
- 全程氮气控制，残氧量控制在50ppm以内，有效避免元器件的氧化，可选多温区实时显示。
- The whole process is controlled by nitrogen, and the residual oxygen content is controlled within 50ppm, effectively avoiding the oxidation of components. Multi-temperature zone 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 0.5um ≤ 35200, meets the production requirements of high cleanliness and dust-free workshop.

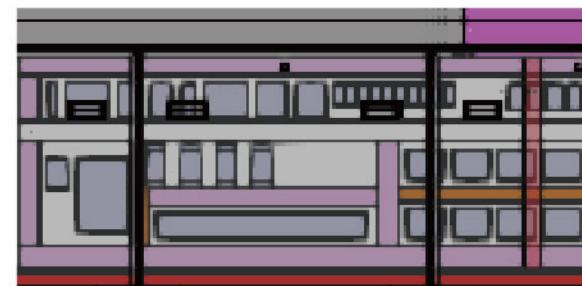


空气洁净度大于或等于表中粒径的最大浓度限制 (PC/M³)						
等级 (N)	0.1μm	0.2μm	0.3μm	0.5μm	1μm	5μm
1	10	2				
2	100	24	10	4		
3	1000	237	102	35	8	
4 (十级)	10000	2370	1020	352	83	
5 (百级)	100000	23700	10200	3520	832	29
6 (千级)	1000000	237000	102000	35200	8320	293
7 (万级)				352000	83200	2930
8 (十万级)				3520000	832000	29300
9 (百万级)				35200000	8320000	293000

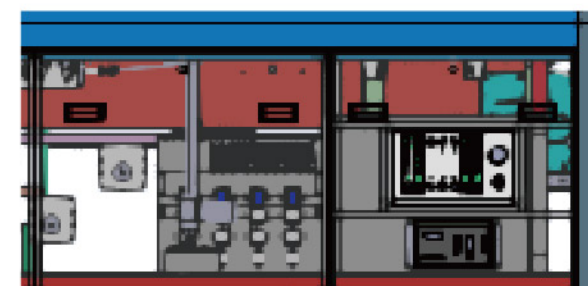
空气洁净等级表
Air cleanliness level table

- 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.



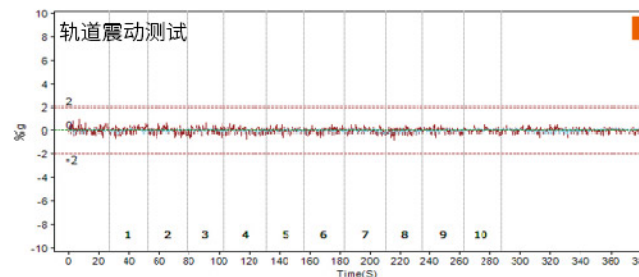
反馈式闭环温控
Feedback closed-loop temperature control



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

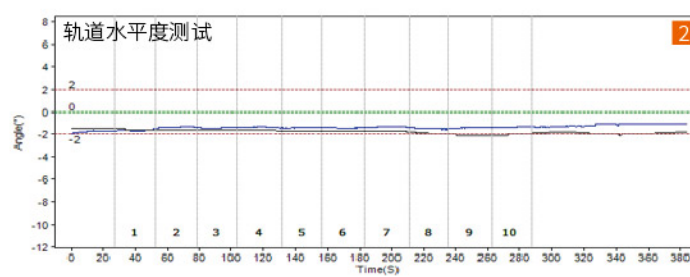
- 高平稳、低震动
High stability and low vibration

- 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℃ 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℃				
	温区间温差 Temperature difference in temperature Zones	预热区间最大40℃, 预热与焊接区间最大80℃ The maximum preheating interval is 40 °C, and the maximum preheating and welding interval is 80 °C				
冷却系统 Cooling System	PCB板温度分布偏差 Temperature Deviation on PCB	±1.5℃				
	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				
氮气系统 N₂ System	运输速度 Conveyor Speed	200mm/min-2000mm/min				
	氮气覆盖区域 N₂ area coverage	全程氮气覆盖 Full range in every zone				
	氧气浓度控制范围 O₂ 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,O₂50ppm				
电气配置 Electrical configuration System	氮光源 N₂ source	压力≥0.4mpa, 气源浓度10ppm以上 Air pressure≥0.4mpa, Concentration 10PPM above				
	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				

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

半导体红外固化炉

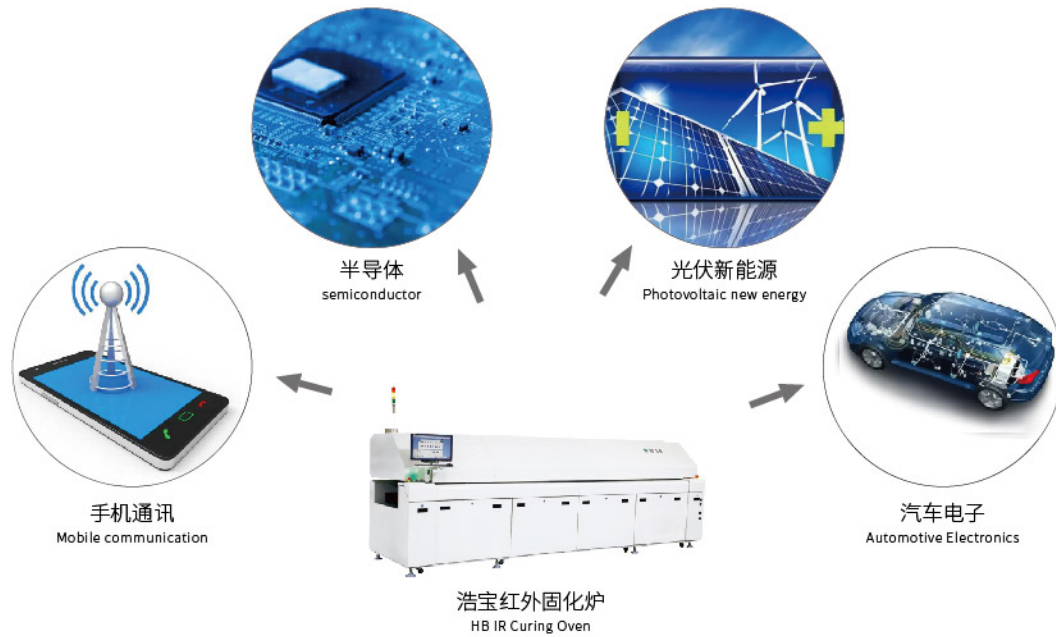
快速固化 洁净焊接

HB SEMICONDUCTOR IR CURING OVEN
Fast Curing Less Bubble



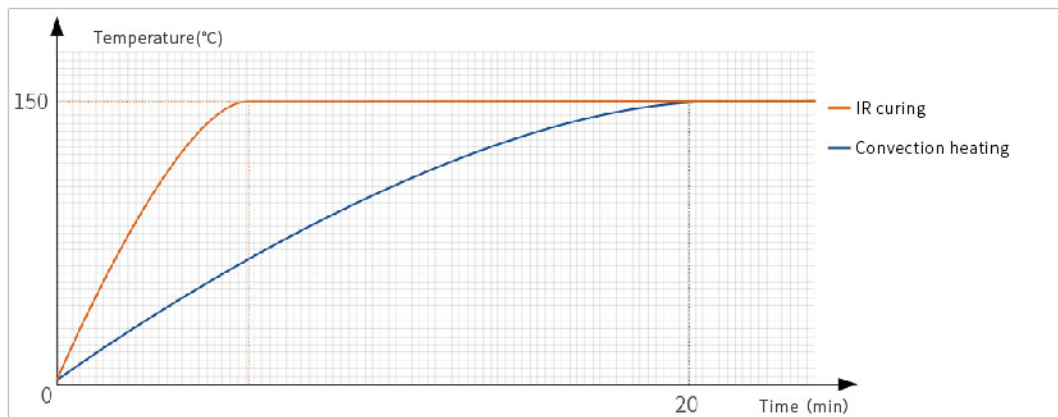
产品介绍 PRODUCT INTRODUCTION

- 浩宝一直坚持持续研发最新的固化炉技术, 我们的设备具有更高效、更好品质、更稳定的性能, 可有效增强材料的结合性, 释放应力, 广泛应用于多种树脂固化和烘干的生产工艺。
- 应用范围: 适用于手机通讯、半导体、光伏新能源、汽车电子等电子行业及其他各种行业中。
- HB has always insisted on continuous research and development of the latest curing furnace technology. Our equipment has higher efficiency, better product quality, more stable performance, and may have stronger material bonding and release application force. It is widely used in the production process of multiple resin solidification and drying.
- Application: It is suitable for mobile communication, semiconductor, photovoltaic new energy, automotive electronics and other electronic industries.



核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

- 升温快, 产能大幅度提升
Fast warming up, and increased production capacity.
- 红外线直接加热产品, 固化速度约为对流加热固化时间的1/2~1/5, 产能大幅度提升。
- The product is directly heated by infrared quartz lamp, and the curing speed is about 1/2~1/5 of the convection heating curing time, and the production capacity is greatly improved.



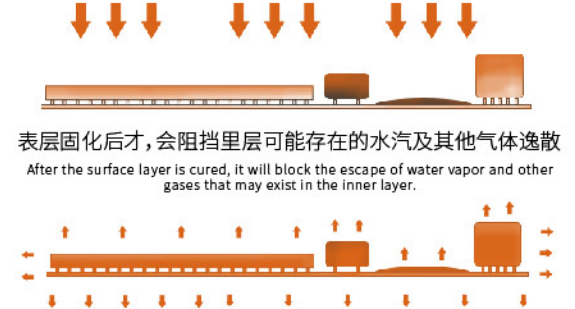
升温快, 大幅度提升产能
Fast warming up, and increased production capacity.

- 控温精准, 固化质量高
Accurate temperature control, high curing quality

- 多温区独立控温, PID闭环控制+SSR驱动, 控温精准、均匀, 由内而外快速升温, 固化质量高、品质稳定性好。
- Independent temperature control in multiple temperature zones, PID closed-loop control + SSR drive, precise and uniform temperature control. Rapid heating from inside to outside, high curing quality.



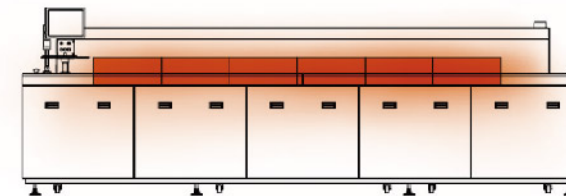
上下双向加热灯光, PCB板加热均匀
Top and bottom heating tube, PCB heated evenly.



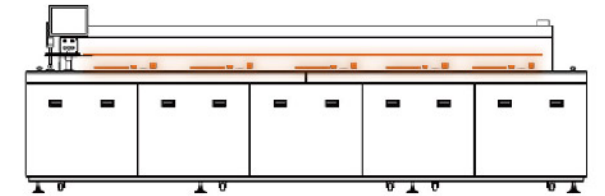
由内而外, 与逸散方向一致, 不易褶皱鼓泡等
Curing from the inside to the outside, consistent with the escape direction, not easy to have air bubbles.

- 能量利用率高, 能耗少, 更节能
High energy utilization rate, less energy consumption and more energy saving

- 无需加热空气, 能量传输过程中几乎没有损耗, 起停速度快、热散失少, 生产更节能。
- There is almost no loss in the process of energy transmission, the speed of start and stop is fast, the heat loss is small, and the production is more energy-saving.



传统热风加热固化炉热散失严重
Curing by hot air will be loss more heater



红外固化炉无需加热空气, 热散失少
Curing by IR, no need heat air and less heat loss

- 占地少, 产线规划灵活
Save the floor space, the production line plan is more flexible.

- 体积小, 与热风式或隧道式加热固化炉相比, 占地减少三分之一到二分之一。
- Small size, compared with tunnel curing oven, occupying 1/3 less space.



传统加热炉
Tunnel Curing Oven



红外固化炉
IR Curing Oven

参数规格 PARAMETER SPECIFICATION

浩宝红外固化炉 HB IR Curing Oven

系统 system	项目 Item	HBC-600
尺寸及功率 Size and power	外形尺寸 (长宽高) Dimension(L*W*H)mm	4400*1400*1635
	排风量 Exhaust Volume	10m³/min*2通道 10m³/Min * 2 channels
	电源 power supply	3 φ 380V/220V 50/60HZ
	启动功率 Starting power	22KW
	正常功率 Normal power	12KW
加热系统 Heating System	加热区数量 No. of heating zone	上6个下6个或上7个下7个 Top6 down 6 or Top 7 down 7
	加热区总长度 Length of heating zone	3100mm
	升温时间 Warming Time	约5-15min About 5-15min
	温度控制范围 Temperature control range	室温-200°C Room temperature -200 °C
	温度控制方式 Temperature Control Type	PID闭环控制 SSR驱动 PID closed-loop control SSR drive
	温控精度 Temperature Control Precision	±1°C
	PCB版温度分布偏差 Temperature Deviation on PCB	±5°C
冷却系统 cooling system	冷却区数量 NO. of cooling zone	1个或2个 1 or 2
	冷却方式 Type of cooling	自然风冷 High speed air-cooled
运输系统 Conveyor System	轨道界沟 Rail Structure	整体分段式 Subsection Interated Type
	PCB最大宽度 Max. PCB Size	500mm
	链条结构 Chain structure	单链扣 (选配:双链扣、重载拖板) Single pin buckles anti-jamming type Chain, pin length: 5mm (Option: double pin buckles)
	过板元件高度 Space component height	上60mm下60mm (选配:上/下100mm) Top 60mm, bottom 60mm (Option: Top 100mm, bottom 100mm)
	润滑油加注方式 Lubrication Mode	可设定自动或手动 Automatic or manul lubrication
	运输带高度 Conveyor Height	900±20mm
	运输方向 Conveyor Direction	左→右 (选配:右→左) L->R (option: R->L)
	运输速度 Conveyor Speed	300-2000mm/min
	运输轨道固定方式 Fixed Rail Side	前端 (选配:后端) Front Rail Fixed(Option: Rear Rail Fixed)

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浩宝真空压力除泡烤箱

除泡快 洁净度高 操作简便

HB VACUUM PRESSURE DEFOAMING OVEN
Fast remove bubble, High clean class, Easy operation



产品介绍 PRODUCT INTRODUCTION

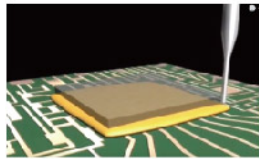
- 随着全球电子产业的极大发展,越来越多的产品制程需要贴合、底部填充、灌注封胶或涂覆胶等工艺。但是在上述工艺制程中,贴合面、胶水或银浆中经常会产生气泡或空洞,导致产品密封性差、散热性差,严重影响产品可靠性、一致性,降低良率,甚至造成电子元器件功能失效,发生质量事故。如何有效消除制程中的气泡呢?浩宝技术研发团队推出的真空压力除泡烤箱,除泡快、洁净度高、操作简便。
- With the great development of global electronic products, more and more product processes need to be DAF/OCA, under-fill, potting and coating. However, in the above process, air bubbles or void are often produced in the collocation surface, which causes poor product sealing, poor heat dissipation, seriously affect product reliability, consistency, and reduce yields. It even caused the function of electronic components to fail and occur in quality accidents. What if the bubbles in the process are effectively eliminated? The vacuum pressure defoaming oven which make from HB Technical R & D team is solved those issue.



芯片黏结
(DAF)



屏幕贴合
(OCA)



底部填充胶
(Underfill)



灌注封胶
(Potting)



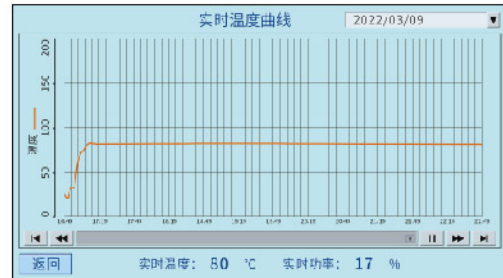
涂覆胶
(Printing)

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

- 除泡快, 大幅提高UPH产能**
Fast remove bubble, improve production capacity
 - 国标容器、稳压设计:** 采用国家标准安检合格的压力容器, 特殊的压力稳定设计, 最大压力10kg/cm², 精度±0.1kg/cm²; 正负压力便捷切换, 真空+压力有效消除气泡或空隙;
 - 升温、降温快:** 升温速率≥6°C/min, 从室温加热到工作温度<30min; 空载情况下, 从150°C降至60°C<30min;
 - 温度控制精准:** 温控系统采用PID控制系统和电子感应技术, 多点实施监控, 精度可达±3°C。
- National standard container, stabilization design:** Pressure containers with national standard security inspection, special pressure stable design, maximum pressure 10kg/cm², accuracy ± 0.1kg/cm². Positive and negative pressure switching, vacuum+pressure effectively eliminate air bubbles.
- Fast warming up and cool down:** Warming up speed ≥6°C/min, from room temperature to heating temperature <30mins. Under empty loading situation, from 150°C to 60°C <30mins.
- Precision temperature control:** The temperature control system adopts the PID + electronic induction technology, with multi -point real -time monitoring, and the accuracy can reach ± 3°C.



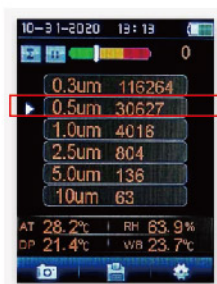
压力测试曲线
Pressure test profile



温度测试曲线
Temperature test profile

- 洁净度高, 避免污染**
High cleanliness, avoid pollution

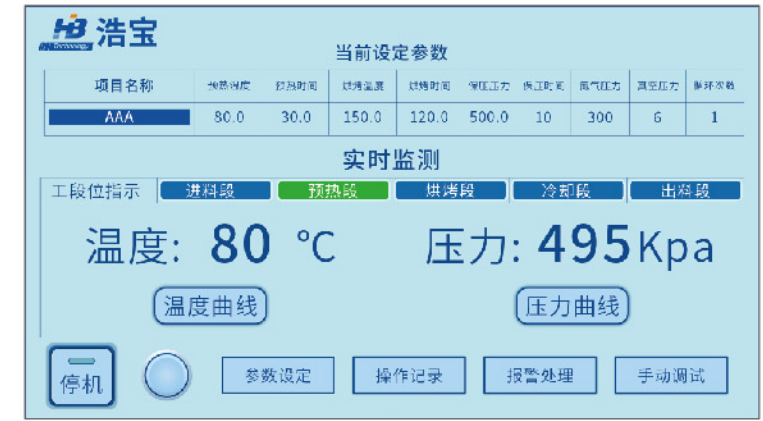
- 腔体内采用SUS304高等级不锈钢及洁净技术, 洁净度达Class1000。
- The chamber adopts SUS304 high -grade stainless steel and cleaning technology, clean class at 1K.



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

- 操作简便, 管理省心**
Easy operation, better management

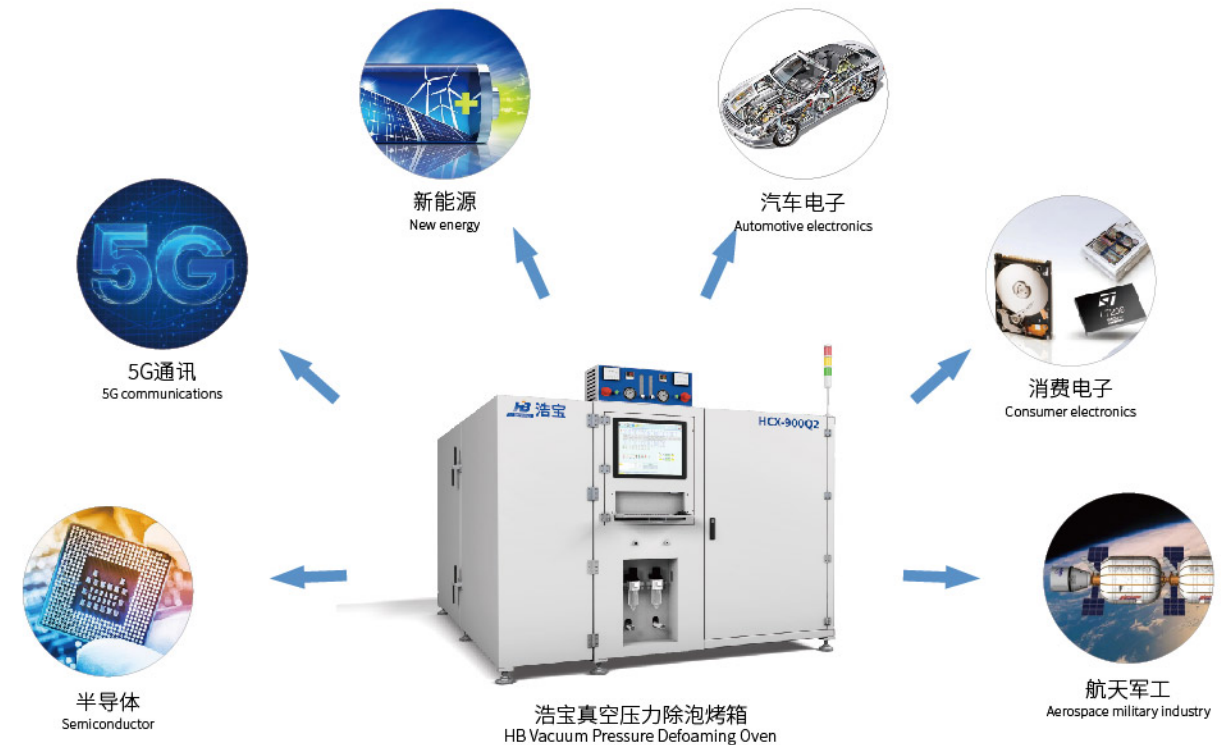
- 采用PC+PLC控制, 软件界面简单、清晰、人性化, 操作简便;
- 机台压力、温度和时间等状态实时显示, 实时监控;
- 具有完善的多重安全装置及自动报警、提醒功能: 如漏电路断路器、超温保护装置、设备异常蜂鸣器警示、超压防止保护装置、密封门安全阀等。
- Using PC+PLC control, the software interface is simple, clear, humanized, and easy to operate.
- The machine pressure, temperature and time are displayed in real time. Real -time monitoring.
- With complete multiple safety devices and automatic alarm and reminder functions. Such as leakage circuit breaker, over-temperature protection device, warning abnormal alarm, over pressure prevent protection device, seal safety valve, etc.



实时监控
Real time monitoring

应用领域 APPLICATION FIELDS

- 可应用于半导体、5G通讯、新能源、汽车电子、消费电子、航天军工等领域的芯片黏结 (DAF)、屏幕贴合 (OCA)、底部填充胶 (Underfill)、灌注胶 (Potting) 或印刷涂覆胶 (Printing) 等工艺制程中, 可有效消除气泡, 增加粘附力和密封性, 提高产品良率、一致性和可靠性。
- It's can be applied in the process of DAF, OCA, Underfill, Potting and printing of semiconductor, 5G communications, new energy, automotive electronics, consumer electronics, aerospace military industry and other fields. It can effectively eliminate bubbles, increase adhesion and sealing, improve product yields, consistency and reliability.



参数规格 PARAMETER SPECIFICATION

浩宝真空压力除泡烤箱技术参数 HB Vacuum Pressure Defoaming Oven

序号 No.	项目 Item	HCX-600Q1	HCX-900Q1	HCX-600Q2	HCX-900Q2
1	内尺寸(W*D*H) Inner size(W * D * H)	400*400*400mm	600*600*600mm	400*400*400mm*2	600*600*600mm*2
2	外尺寸(W*D*H) Dimension size(W * D * H)	1450*2000*1400mm	1750*2220*1690mm	1450*2000*2000mm	2690*2220*1690mm
3	电源 Power supply	AC220/380V 50/60HZ 19KW	AC220/380V 50/60HZ 24KW	AC220/380V 50/60HZ 19KW*2	AC220/380V 50/60HZ 24KW*2
4	烘烤产品极限尺寸 Curing products limiting size	≤L380×W380mm	≤L580×W580mm	≤L380×W380mm	≤L580×W580mm
5	温度范围 Temperature Setting Range	常温~200℃ RT~200℃			
6	温度控制 Temperature Control Type	自动PID控制、电子感应 PID auto control+ Sensor			
7	温度均匀度 Temperature Deviation on PCB	±3℃ (空载) ±3℃ (Empty loading)			
8	升温速率 Warming slope	平均升温速率>6℃/min Average >6℃/min			
9	降温时间 Cooling slope	150℃→60℃<30min (空载) 150℃→60℃<30min(Empty loading)			
10	工作压力 Working pressure	-0.1Mpa~1Mpa			
11	进气口 Air inlet	Air Φ1/2” ;N2 Φ1/2”			
12	排气口 Exhaust Port	Φ3/4”			
13	材质 Material	内部SUS304, 外部Q235 烤漆 Inner SUS304, Outlet Q235 paint			
14	控制方式 Control Mode	触摸屏+PLC Touch screen+PLC			
15	电热 Heater	特制不锈钢翅片加热管 Special stainless steel finned heating tube			
16	安全装置 Safety device	漏电断路器、超温保护装置、设备异常蜂鸣器警示、超压防止保护装置、密封门安全阀 Leakage circuit breaker, Over -temperature protection device, Warning abnormal alarm , Over pressure prevent protection device, Seal safety valve			

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

HBO在线式洁净垂直固化炉

全自动 更洁净 更可靠

HB HBO ONLINE CLEANLINESS CLASS VERTICAL CURING OVEN

Fully automatic | Cleaner | More reliable



适用于毫米波雷达、传感器、摄像头、Mini LED的烘烤固化

Suitable for curing process of millimeter wave radar, sensor, camera and Mini Led.

产品介绍 PRODUCT INTRODUCTION

- 浩宝是国内第一家自主研发垂直固化炉的公司，HBO系列洁净固化炉是浩宝公司研发的一款高精度、高洁净度垂直固化炉，具有结构先进、洁净度高、运输平稳精准、固化品质高等特点。设备可对接MES系统，实现工业互联网4.0管理。
- 应用范围：适用于毫米波雷达、传感器、摄像头、Mini LED等领域的点胶、涂覆工艺的烘干固化或老化。
- HB is the first company to research and development vertical curing oven in China. The HBO series clean curing furnace is a high-precision and high cleanliness vertical curing furnace developed by HB. With advanced structure, high cleanliness, stable transportation, and high curing quality. Equipment can be connected to the MES system to achieve industrial 4.0 management.
- Application: Suitable for drying, curing or aging of dispensing and coating processes in fields such as millimeter wave radar, sensors, cameras, Mini LED, etc.

核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

- 洁净度高, 满足无尘生产要求
High level of cleanliness, meet dust-free production requirements
- 可按需求定制万级、千级、百级的高洁净度设备, 满足不同产品的无尘生产的工艺要求。
- It's can custom made the cleanliness level as 10000, 1000 or 100 according to demand to meet the process requirements of high clean production of different products.

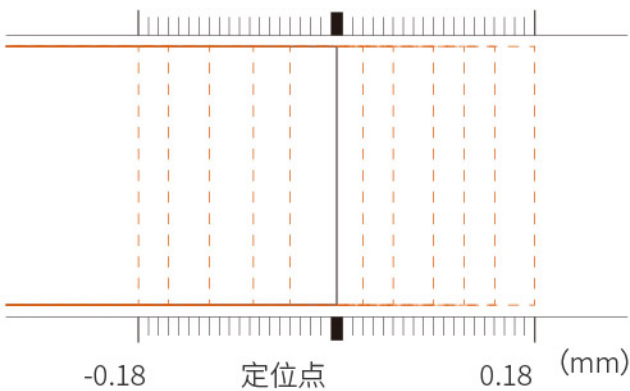


空气洁净度等级 (N)	大于或等于表中粒径的最大浓度限值(pc/m³)					
	0.1μm	0.2μm	0.3μm	0.5μm	1μm	5μm
1	10	2				
2	100	4	10	4		
3	1000	23.7	102	35	8	
4 (十级)	10000	2370	1020	352	83	
5 (百级)	100000	23700	10200	3520	832	29
6 (千级)	1000000	237000	102000	35200	8320	293
7 (万级)				352000	83200	2930
8 (十万级)				3520000	832000	29300
9 (一百万级)				35200000	8320000	293000

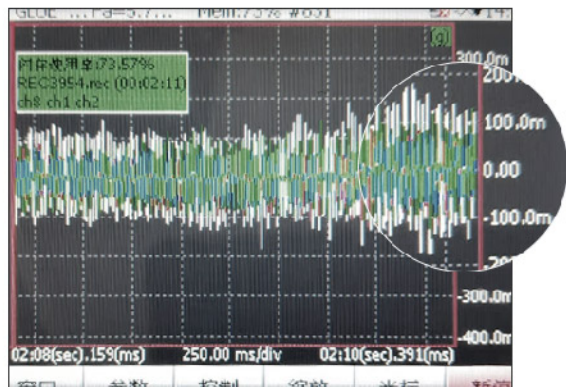
满足高洁净车间生产需求
Meet the requirements of high clean production workshop

- 定位精准, 运输平稳
Precise positioning, stable transportation

- 采用浩宝智能定位技术, 定位精度高达 $\pm 0.18\text{mm}$; 采用新型滚针传动, 传输时震动幅度降至 $\pm 100\mu\text{m}$ 以内, 升降夹紧精度可达 $\pm 18\text{mm}$, 满足高端产品的精密生产需求。
- Using intelligent positioning technology, the positioning accuracy is as high as $\pm 0.18\text{mm}$. Using the new needle drive, transmission vibration amplitude is reduced to within $\pm 100\mu\text{m}$. The accuracy of lift and clamping can reach $\pm 18\text{mm}$ to meet the precision production needs of high end products.



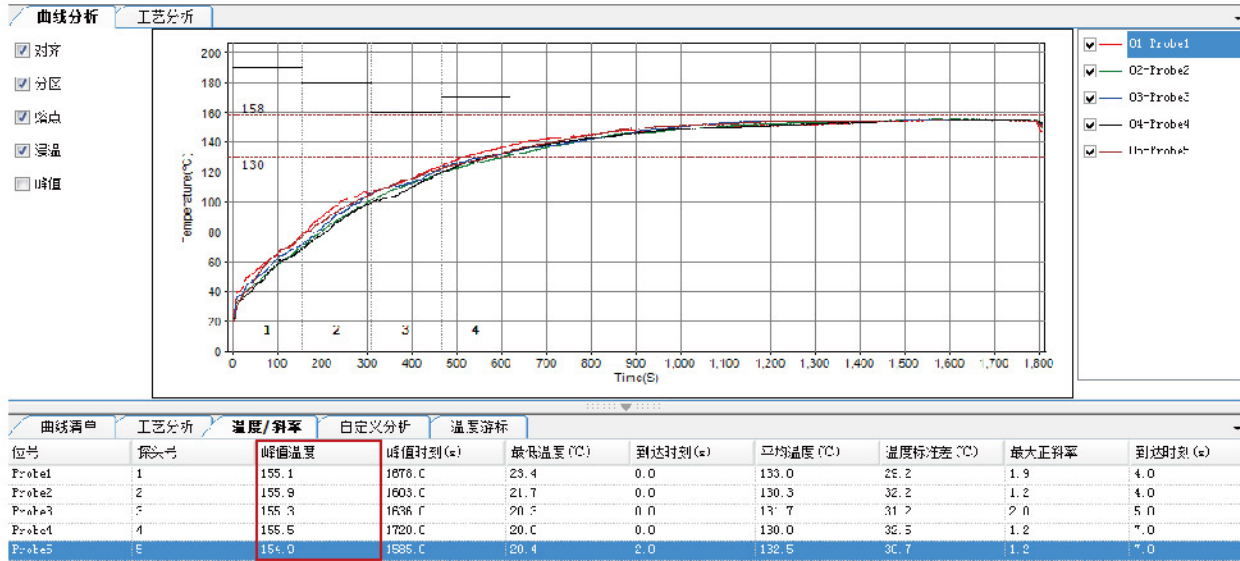
传动定位精准
Accurate transmission positioning



传输平稳震动低
Smooth transmission with low vibration

- 控温精准, 固化品质高
Temperature control precision, improved the curing quality results

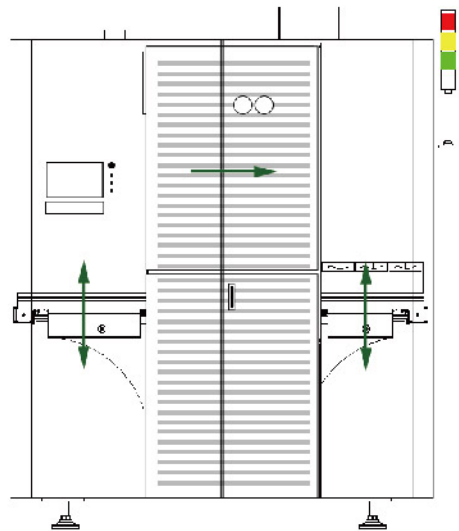
- 采用双腔体、双加热系统、双过滤系统及浩宝先进控温技术, 控温精度高达 $\pm 1^\circ\text{C}$ 。炉内温度均匀性好, 固化品质高, 品质稳定。
- Dual chamber, dual heating system, dual filtration system, and advanced temperature control technology from HB. Temperature control accuracy at $\pm 1^\circ\text{C}$. Perfect temperature uniform in the oven. Good results for curing quality to make products quality.



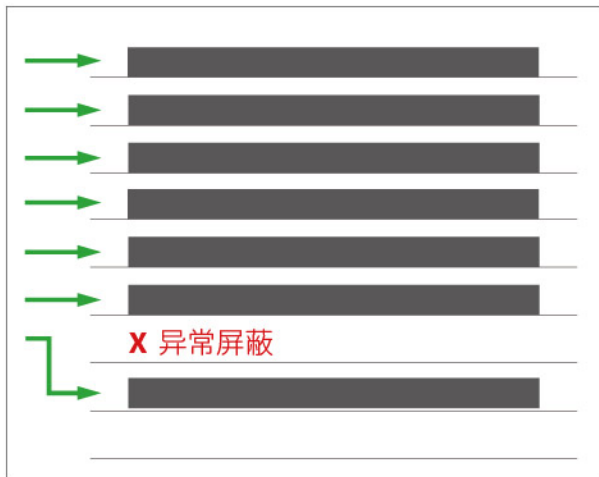
温度测试图
Temperature test profile

- 更出色, 更稳定, 更智能
Better Stable Smarter

- 将老款139个零件优化至更先进的50个以内, 结构更简洁, 不易出故障, 先进的零件性能更出色, 稳定性更强。
- 采用浩宝智能控制系统, 可屏蔽异常层 (屏蔽后, 异常层不再进板)。
- Optimize the 139 parts of the standard models to 50 more advanced. The structure is more concise, it is not easy to fail, and parts are better and stable.
- Intelligent Control System, it can shield the abnormal layer (after blocking, the abnormal layer will no longer enter the board)



设备结构示意图
Equipment structure diagram



屏蔽后, 进板自动跳过异常层
After shielding, the inlet board automatically skip the abnormal layer

参数规格 PARAMETER SPECIFICATION

HBO在线式洁净垂直固化炉 HBO Online Cleanliness Class Vertical Curing Oven

系统 System	项目 Item	HBO-250
机身 Body	最大外形尺寸(mm) Max. Demension (mm)	L2100*W2200*H2050
	设备重量 Weight	≤2500kg
	整机功率 Total power	30KW
	控制方式 control mode	PLC+PC
板处理 Board Handling	过板尺寸尺寸 Max. PCB size (W*L)	L50~300mm*W70~250mm
	产品单重 Products Weight	≤2KG
	产品高度 Space height for products	≤8mm
	工艺边尺寸 Process side	5mm
	总层数 Total layers No.	2腔体*15层*2块板/层 (共60块板) 2 Heating chamber*15layers*2pcs (Total 60pcs)
	层间距 (mm) Layer spacing (mm)	32
	层间有效高度 (mm) Effective height between layers (mm)	28
	入板高度 Coveyor Height	900±30mm
	工作节拍 Cycle time	≥30s
	前后接驳 In / Out Feed Conveyor	无接驳 Not Available
	轨道数 Number of conveyor	2
	轨道调节方式 Conveyor Rail Width Adjust	手动 Manual
加热系统 Heater System	温度设置 Set Temperature	≤200℃
	发热丝功率 Heating Power	18KW
	控温精度 Temperature Control precision	±1℃
	炉温偏差 Inner Temperature Difference	±2℃
冷却系统 Cooling System	冷却模式 Cooling Mode	可选配 Option
氮气系统 N ₂ System	氮气配置 N ₂ configuration	可选配 Option
洁净系统 Clean System	洁净要求 Clean Class	可选配 (具备万级, 千级, 百级) Option (level 10000, 1000, 100)
气体检测 Gas Detection	危险气体检测 Hazardous Gas Detection	可选配 Option

注: 本资料设备图片仅供参考; 参数若有更改, 恕不另行通知!
The equipment images in this document are for reference only; The above contents are subject to change without further notice!

IGBT模块封装专用固化炉

全自动 低残氧 高洁净 精控温

VERTICAL CURING FURNACE FOR IGBT MODULE PACKAGING
Fully automatic, low residual oxygen, high cleanliness, precise temperature control



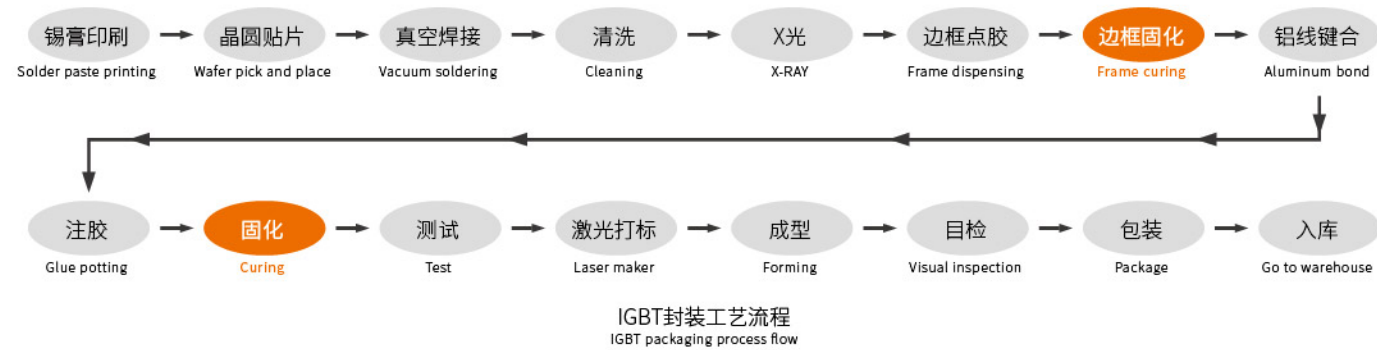
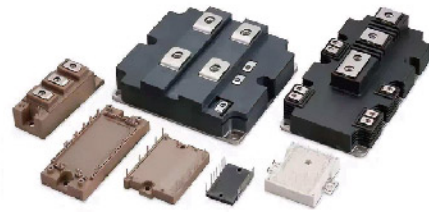
产品介绍 PRODUCT INTRODUCTION

■ 新能源产业快速发展, 电动车、充电桩、光伏等市场对IGBT功率半导体芯片和模块的需求迎来爆发式增长。但IGBT模块封装固化具有效率低、良品率低等痛点, 其原因主要在于封装设备的自动化程度不高、封装过程中器件容易出现氧化、温度均匀性和洁净度难以有效控制, 导致IGBT模块的出品一致性降低, 成本居高不下。

■ 针对以上痛点, 浩宝技术团队研发出一款专门用于IGBT模块封装的垂直固化炉, 可全自动生产, 避免器件氧化, 均温性好, 洁净度高, 为IGBT功率半导体封装制造企业带来高效率、高良品率的解决方案。

• The rapid development of the new energy industry, the demand for IGBT power semiconductor chips and modules in markets such as electric vehicles, charging piles, and photovoltaic markets has ushered in rapid growth. However, there are difficult for IGBT curing process such as low-efficiency and low yield rate. The main reason is level of equipment. During the packaging process, products easy to oxidation, the temperature uniformity and cleanliness are difficult to effectively control, resulting in a reduction in the consistency of the production of the IGBT module, and the cost is high.

• In response to the above difficulties, the HB team has developed a vertical curing oven specially used for IGBT module packaging, which can be fully produced automatic production, avoiding the oxidation of the products, good average temperature, high cleanliness, and bringing IGBT power module manufacturing enterprises a efficient, high -quality product solution.



核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

■ 全自动生产和管理, 大幅减少人工

Full automatic production process and management, largely reduced labor cost

• 设备采用模块化结构, 实现了上下料、烘烤、冷却、缓存等全自动、在线式生产, 生产效率高, 产能可根据客户需求进行增减、调整。它避免了传统封装工艺的多项弊病, 比如传统烘烤固化设备需要人工手动操作, 工作量大、效率低, 固化品质不一致, 高温容易造成人员被烫伤等问题。该设备还可对接MES系统, 实现工业4.0, 对设备进行远程监控和智能管理。

• The equipment adopts a modular structure, achieving full auto online production such as loading, unloading, curing, cooling and buffer etc... The production capacity can be increased or decreased according to customer needs. It avoids multiple drawbacks off traditional packaging. For example, traditional baking or curing equipment requires manual operation, large workload, low efficiency, inconsistent curing quality, and also high temperatures can easily cause people to be burned. The device can also interface with the MES system to achieve industrial 4.0, enabling remote monitoring and intelligent management.



浩宝IGBT固化炉
HB IGBT curing oven

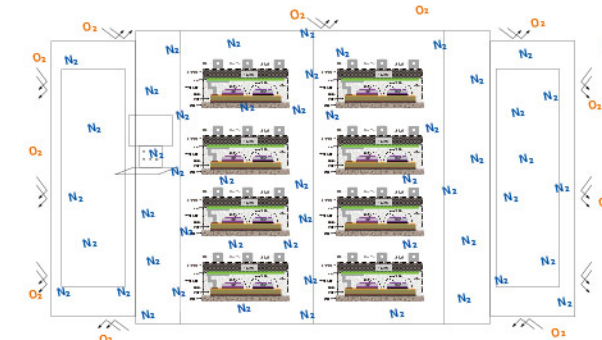
中央系统控制全自动生产 (可对接MES系统)
Central system control fully automatic production (can be connected to MES system)

■ 低残氧量, 避免器件氧化

Low residual oxygen content to avoid product oxidation

• 设备采用独特结构设计, 已申请发明专利, 可保证在传输、加热、冷却和缓存过程中残氧量控制在1000PPM以内, 有效避免金属等热敏性器件的氧化。

• The equipment adopts a unique structural design that has approved invention patent to ensure that the amount of residual oxygen in the process of transmission, heating, cooling and buffer is controlled within 1000ppm.



设备采用独特结构设计, 炉内残氧量低

The equipment adopts a unique structural design, with low residual oxygen content in the furnace

■ 高洁净度, 满足无尘化生产要求

High cleanliness, meeting the requirements of dust-free production

• 设备密闭性好, 并采用高效过滤和清洁系统, 使得封装过程达到千级洁净度, 满足无尘化生产要求。

• The equipment is well sealed, and the efficient filtration and cleaning system is adopted to make the packaging process reach the thousand-level cleanliness and meet the requirements of dust-free production.

空气洁净度大于或等于表中粒径的最大浓度限制 (PC/M ³) Greater than or equal to the maximum concentration limit of particle size in the table (pc/m ³)						
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 class

■ 高均温性, 出品一致性好

High average temperature, good product consistency

• 设备采用优秀的加热、温控模块及独特的风道、腔体设计, 炉内多点温度检测、控制, 可确保高的加热效率和温度均匀、稳定, 使得烘烤固化均匀, 出品一致性高。

• The equipment adopts excellent heating and temperature control modules, as well as unique air duct and cavity design. Multiple temperature detection and control points in the furnace can ensure high heating efficiency and temperature uniformity and stability, ensuring uniform curing, and high product consistency.

温度实时监控(°C)									
1(°C)	119.7	9(°C)	120.3	17(°C)	119.4	上限	130.0	设定值 120°C	
2(°C)	119.8	10(°C)	119.7	18(°C)	120.8	下限	0.00		
3(°C)	120.5	11(°C)	119.5	19(°C)	120.3				
4(°C)	119.6	12(°C)	120.3	20(°C)	119.8				
5(°C)	120.2	13(°C)	120.4	21(°C)	119.3				
6(°C)	120.5	14(°C)	119.5	22(°C)	120.1				
7(°C)	119.6	15(°C)	119.8	23(°C)	120.6				
8(°C)	119.4	16(°C)	120.7	24(°C)	120.9				

炉内多点温度实时监控

Real time monitoring of multi-point temperature inside the furnace



温度测试曲线

Temperature test curve

参数规格 PARAMETER SPECIFICATION

IGBT模块封装固化炉技术参数 Technical parameters of IGBT module packaging curing furnace

系统 System	序号 No.	项目 Item	规格 Spec.	备注 Remarks
设备参数 Basic Parameter	1	外型尺寸 (mm) External dimensions (mm)	L:(2000~4500)W:(1800~2500)H:(2100~2450)	根据产品及产能而定 Based on product and production capacity
	2	重量 weight	约1800KG Approx.1800KG	
	3	加热区数量 Number of heating zones	4组加热模块 4 sets of heating modules	
	4	排风量要求 Exhaust air volume requirements	10M3/h*2(通道) 10M3/h*2(Exhausts)	Φ 200管径 Pipe diameter of Φ 200
	5	电源要求 Power requirements	3P5L 380V 50/60Hz	
控制系统 Control System	6	升温时间 Heating time	约15 minute Approx 15 minute	
	7	温度设定范围 Temperature setting range	室温~250℃可设定 RT~250℃ can be set	制程常用温度130~180℃ Common temperature in the manufacturing process: 130~180 °C
	8	烘烤时间 baking time	30~60min	
	9	温度控制方式 Temperature control method	PID闭环控制+SSR驱动 PID closed-loop control+SSR drive	
	10	温度控制精度 Temperature control accuracy	±1.0℃	
	11	PCB板温分布偏差 PCB board temperature distribution deviation	±3.0℃	
	12	参数存储 Parameter storage	可存多种生产设置参数与状况 可存多种生产设置参数与状况	
	13	异常报警 Abnormal alarm	温度异常(恒温后超高温或超低温) Abnormal temperature (ultra-high or ultra-low temperature after constant temperature)	
	14	报警显示 Alarm display	声光一体(黄一升温:绿一恒温:红一异常) Integrated sound and light (yellow heating: green constant temperature: red abnormal)	
运输系统 Transport System	15	层数 Number of layers	10~40	根据需求定制 Customized according to needs
	16	产能 capacity	30pcs/H	根据需求定制 Customized according to needs
	17	节拍 rhythm	120S	根据需求定制 Customized according to needs
	18	轨道调宽 Track widening	130-400mm, 自动调宽 130-400mm, automatic width adjustment	
	19	治具堆叠间距 Stacking spacing of fixtures	90mm	
	20	产品尺寸 (mm) Product size (mm)	L(200-450) W(200-450) H(20-60)	根据需求定制 Customized according to needs
	21	入/出板高度 Height of board entry/exit	900±30mm	
	22	产品重量 Product weight	2-6kg	
其它 Other	23	洁净度等级 Cleanliness level	千级 Thousand class	
	24	充氮 Nitrogen charging	选配 Optional	
	25	氧含量 oxygen content	全区氧浓度≤1000ppm Oxygen concentration in the entire area ≤ 1000ppm	
	26	系统 system	正版Win10 Win10	

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

浩宝半导体芯片固化炉

品质高 占地少 产能高

HB Semiconductor Chip Curing Furnace

High quality, less land occupation, high production capacity



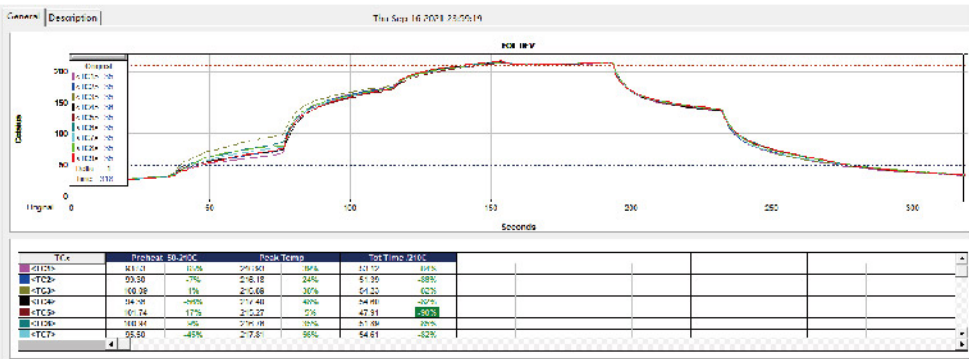
产品介绍 PRODUCT INTRODUCTION

- 摄像头在智能手机里的重要性正日益提升,相机的性能离不开摄像头芯片的不断进化。但芯片越来越轻薄短小,需求量越来越大,传统的封装固化工艺和设备已经无法满足其严苛的生产要求。如何保证摄像头芯片封装固化的高品质、高良率和高效率呢?浩宝研发推出国内首款半导体芯片双轨洁净固化炉,有效解决了摄像头芯片的封装固化难题。
- The importance of cameras in smartphones is increasingly increasing, and the performance of cameras cannot be separated from the continuous evolution of camera chips. However, as chips become thinner and shorter, the demand for them is increasing, and traditional packaging and solidification processes and equipment are no longer able to meet their stringent production requirements. How to ensure the high quality, yield, and efficiency of camera chip packaging and solidification? Haobao R&D has launched the first domestic dual track clean curing furnace for semiconductor chips, effectively solving the packaging and curing problem of camera chips.

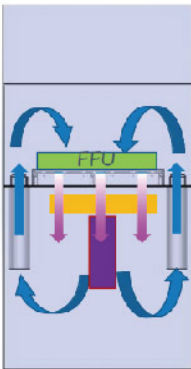
核心技术及优势 CORE TECHNOLOGY AND ADVANTAGES

固化品质高 High curing quality

- 炉膛采用分段式独立加热,各温区控温精准,控温精度可达 $\pm 1^{\circ}\text{C}$,最高温度可设置 300°C ;相邻加热区不串温,温差可达 100°C ,满足各种温度曲线固化工艺的要求;
- 炉内高洁净风道设计,先进的多重过滤系统,生产时炉内环境可以达到百级洁净度,满足无尘生产需求;
- 冷却区采用高效水冷系统,产品输出时温度可降至 50°C 左右;
- The furnace adopts segmented independent heating, with precise temperature control in each temperature zone. The temperature control accuracy can reach $\pm 1^{\circ}\text{C}$, and the maximum temperature can be set to 300°C ; Adjacent heating zones do not have a series of temperatures, with a temperature difference of up to 100°C , meeting the requirements of various temperature curve curing processes;
- The design of the high clean air duct inside the furnace and the advanced multiple filtration system can achieve a cleanliness level of 100 levels during production, meeting the requirements of dust-free production;
- The cooling area adopts an efficient water cooling system, which can reduce the temperature of the product output to around 50°C ;



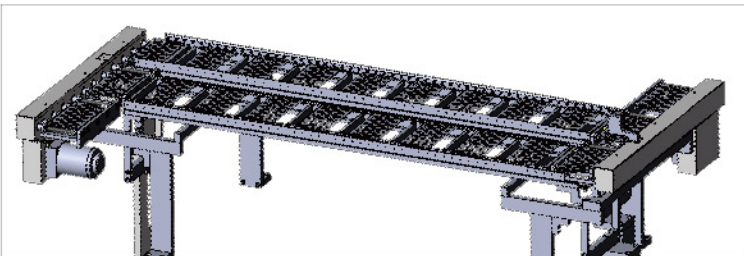
温度测试曲线
Temperature test curve



百级洁净风道
Class 100 clean air duct

生产效率高 High production efficiency

- 独特的步进双轨搬运系统,采用SSR驱动,全自动双线高效生产,运输精准快速,产能为单轨的两倍,UPH可达4000pcs;
- Unique stepper dual track transportation system, driven by SSR, fully automatic dual track efficient production, precise and fast transportation, with a production capacity twice that of single track, and UPH up to 4000pcs;



注:UPH非固定值,根据产品不同而变化。
Note: UPH is not a fixed value and varies depending on the product.

UPH >4000pcs

- 24PCS/料盘
85料盘/轨道
85×24×2=4080
- 24PCS/material tray
85 material tray/track
85×24×2=4080

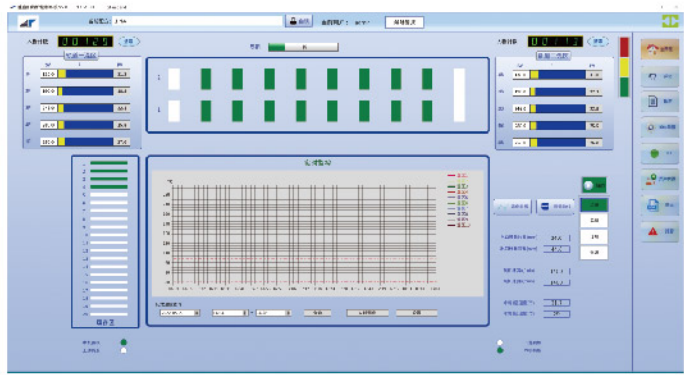
占地少 Small footprint

- 设备设计布局科学,整体机身比传统固化炉更小巧(长1.4m,宽1.8m,高1.7m,升起后高2.1m,),可大幅减少占地面积,方便产线集约式规划。
- The equipment design layout is scientific, and the overall body is smaller than traditional curing furnaces (1.4m in length, 1.8m in width, 1.7m in height, and 2.1m in height when raised), which can significantly reduce the floor area and facilitate intensive production line planning;



管理、维护方便 Easy management and maintenance

- 设备搭载浩宝智能控制系统、MES系统,可实时监控和记录各温区温度、曲线及过板等数据,生产管理方便。
- 主机可升降,接驳机可推拉,设备日常维护检修更加方便、快捷,节省维护保养时间和成本。
- The equipment is equipped with Haobao intelligent control system and MES system, which can monitor and record real-time temperature, curve, and plate passing data of each temperature zone, making production management convenient.
- The host can be lifted and lowered, and the connecting machine can be pushed and pulled, making daily maintenance and repair of the equipment more convenient and efficient, saving maintenance time and costs.



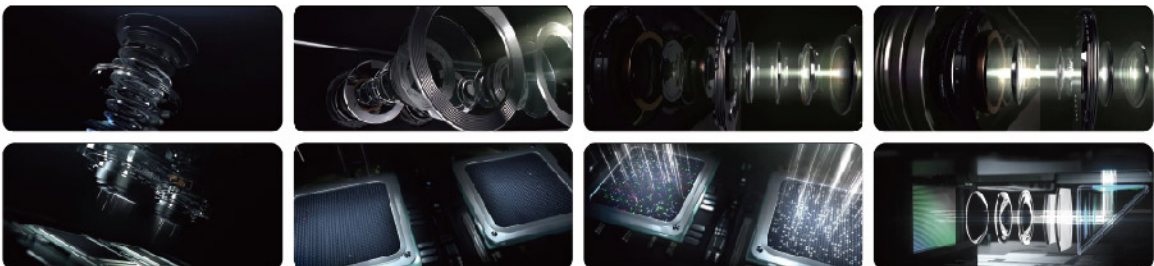
智能监控操作系统
Intelligent monitoring operating system



快捷维护设计
Quick maintenance design

应用领域 APPLICATION AREA

- 浩宝半导体芯片固化炉,可用于摄像头等半导体芯片的封装固化,具有品质高、良率高、产能高和占地小等优点,已获得世界500强企业的验证和使用。
- HB semiconductor chip curing furnace can be used for packaging and solidification of semiconductor chips such as cameras. It has the advantages of high quality, high yield, high production capacity, and small footprint, and has been verified and used by Fortune 500 companies.



参数规格

PARAMETER SPECIFICATION

浩宝半导体芯片固化炉技术参数 Technical parameters of HB semiconductor chip curing furnace

序号 No.	项目 Item	HQP-75B05-D
1	外型尺寸 (L*W*H) External dimensions (L * W * H)	L1400MM*W1800MM*H2100MM
2	重量 weight	约1500KG Approx.1500KG
3	加热区数量 Number of heating zones	5加热区, 双轨 (共10温区) 5 heating zones, dual track (10 temperature zones in total)
4	废气排气口数量 Number of exhaust ports	1PCS
5	水冷装置 Water cooling device	2PCS
6	水压 hydraulic pressure	4 Bar min
7	压缩空气气压 Compressed air pressure	0.4 MPa
8	电源要求 Power requirements	3 Phase 380V 50/60 HZ
9	加热功率 heating power	15 KW
10	温度设定范围 Temperature setting range	室温---300°C RT---300°C
11	温度控制方式 Temperature control method	PID闭环控制+SSR驱动 PID closed-loop control+SSR drive
12	温度控制精度 Temperature control accuracy	±1.0°C
13	工作环境温度 Working environment temperature	5-60°C
14	参数存储 Parameter storage	扫码过 MES Scan through MES
15	异常报警 Abnormal alarm	温度异常 (恒温后超高温或超低温) Abnormal temperature (ultra-high or ultra-low temperature after constant temperature)
16	水冷温度 Water cooling temperature	15±2°C
17	入板高度 Height of board entry	950±20mm
18	CT(节拍) CT (beat)	21 S (3600/170=21s)
19	固化产能 (UPH) Solidification capacity (UPH)	>4000(170盘x24 PCS/盘) >4000(170handx24 PCS/hand)
20	料盘尺寸 Tray size	L150mm×W75mm×H2mm(24 PCS/盘) L150mm×W75mm×H2mm(24 PCS/hand)
21	无尘等级 Dust free level	百级无尘 (外观电脑白烤漆, 内腔不锈钢) Class 100 dust-free (exterior computer white paint, interior stainless steel)
22	板子计数 Board Count	具备 Have
23	温度曲线记录功能 Temperature curve recording function	具备 Have

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

浩宝还有更多类型设备


MORE TYPES OF DEVICES

焊接设备


SOLDERING EQUIPMENT




- 真空回流焊炉
Vacuum Reflow Oven
- 无铅氮气回流焊炉
Lead Free Nitrogen Reflow Oven
- 无铅波峰焊机
Lead-free Wave Soldering Machine
- 选择性群焊设备
Selective Multi-wave Soldering Machine




无铅氮气回流焊
Lead Free Nitrogen Reflow Oven



真空回流焊
Vacuum Reflow Oven



无铅波峰焊
Lead-free Wave Soldering



选择性群焊
Lead-free Wave Soldering

固化设备

CURING EQUIPMENT



- HBO在线式洁净垂直固化炉
HBO Online Cleanliness Class Vertical Curing Oven
- HBZ-垂直固化炉
HBZ-Vertical Curing Oven
- 浩宝HVO高精垂直固化炉
HVO High Precision Vertical Curing Oven
- 浩宝HAO精密节能垂直固化炉
HAO Precision Energy-saving Vertical Curing Furnace
- HBZ-超长板垂直固化炉
HBZ - Ultra Long Plate 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 baking and curing furnace



HBO在线式洁净垂直固化炉
HBO Online Cleanliness Class Vertical Curing Oven



HBZ-垂直固化炉
HBZ-Vertical Curing Oven



浩宝HVO高精垂直固化炉
HVO High Precision Vertical Curing Oven



浩宝HAO精密节能垂直固化炉
HAO Precision Energy-saving Vertical Curing Furnace