



# SHENZHEN HB AUTOMATION EQUIPMENT CO.,LTD

**SALES DEPARTMENT**  
**JULY ,2013**

# Company profile

- ❖ **Shenzhen HB Automation Equipment Co., Ltd** ,is a professional organization in design and manufacturing . Our products include **Lead free reflow oven , Lead free Wave Soldering , N2 Lead free reflow oven , N2 Lead free wave soldering and SMT related equipment**. Early the headquarters set up in Hong Kong, which has devoted to provide the advanced equipment and excellent service for the worldwide electronics manufacturing industrial market for years.
- ❖ In order to response to the market needs , in 2008 **Shenzhen HB Automation Equipment Co.,Ltd** was established under the guidance of professional and excellent business concept ,which is aim to provide quick and overall technical support . So far we have the top excellent technology for research and innovation and manufacturing in China to manufacture and design such as the **Lead free reflow oven ,Lead free wave soldering, N2 Lead free reflow oven , N2 Lead free wave soldering, solder paste mixer, Buffer conveyor, Ultrasonic spray system, External fully-auto Flux Sprayer ,Automatic Loader/Unloader, Single /Dual Rails Turning Conveyors**

# Company profile

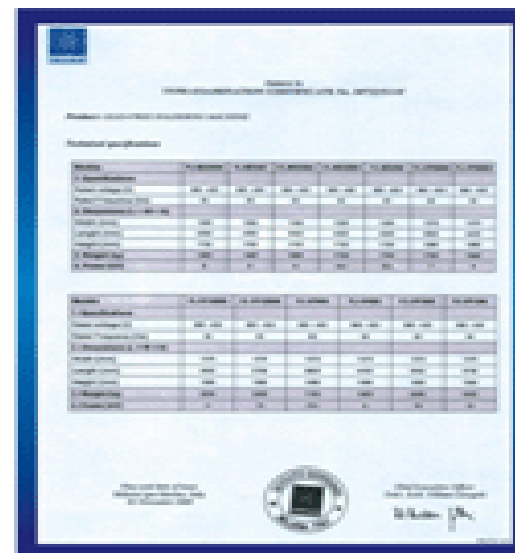
- ❖ Our products, services, and solutions are widely used in R&D, Electronics industry, Led industry. We are honorable to help the customer grow up, and to help them produce the perfect products for the general consumer. Based on the modern enterprise management conception, we are constantly strived to introduce the advanced management mode, adopt the good incentive mechanism. And now we are the high tech enterprise with **CE certification and ISO9001 certification and UL certification and so on .**



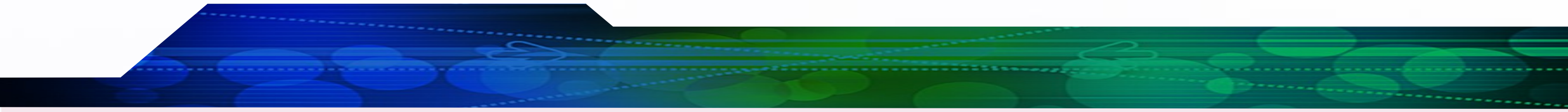
ISO9001-认证



ce-证书



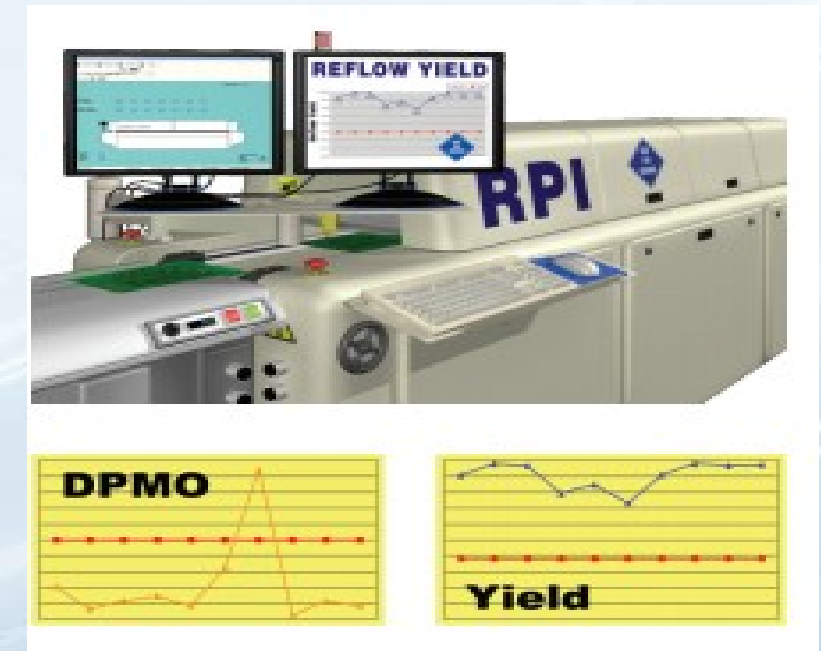
UL-证书



# Products introduction

With more than ten years experiences in the SMT industry , we have the top excellent technology in China .

- **Lead Free Hot Air Reflow Ovens**
- **Lead Free Wave Soldering System**
- **Reflow Process Insection & KIC Auto-Focus**
- **External Full-Auto Flux Sprayer**
- **U-Sonic Ultrasonic Flux Sprayer**
- **SMT Peripheral Equipment**



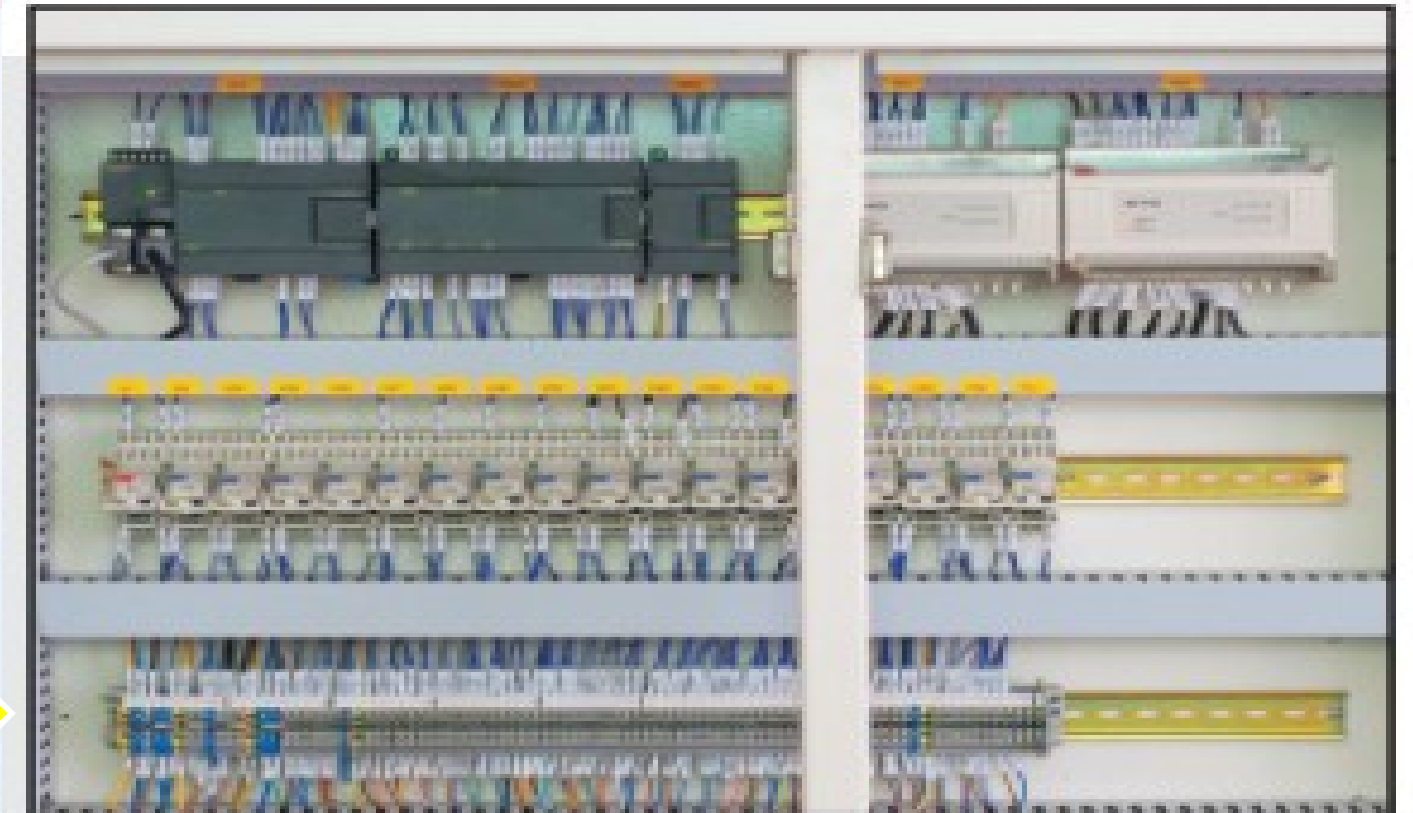
# Lead Free Hot Air Reflow Ovens

## ❖ Features

- Windows XP operation system ,Chinese/Eenglish can be switched online
- Standard 8 couples of up and down zones with patented air management system to make hot air convection more efficient and faster thermal compensation .
- PLC+PID closed loop control to achieve the temperature control and repeatable profiles
- Dual temperature sensors and dual safety control ,system shall cut off the power while abnormal case occurred .
- The various alarm functions : over temperature alarm ,abnormal speed alarm and board dropped alarm



- The digital control system adopted with SIEMENS PLC + Modular circuit to make the machine more stable and high repetitive precision .
- Adopted with the imported famous brand component as its major parts to achieve the high durable and reliable



- The rail is dealt with hardened process to make it more stability.
- The conveyor chain adopted with single Pin-plate design.

- The longer heating zones are able to get high production efficiency and throughput.



- Windows XP operation system, so simply as Chinese and English interface onscreen alternative is available.
- Intelligent Diagnosis System has the functions of Trouble Remind, Alarm, List-out, Report Saving.
- All production data will be backup automatically, and easily for ISO 9000 management.



Use the comprehensive protection closed design in the hearth to achieve the effective protection for the Nitrogen. The minimum Nitrogen content can be only 150 PPM



- Widened track structure, adapt to the wider PCB production.

# 技術參數 Specifications

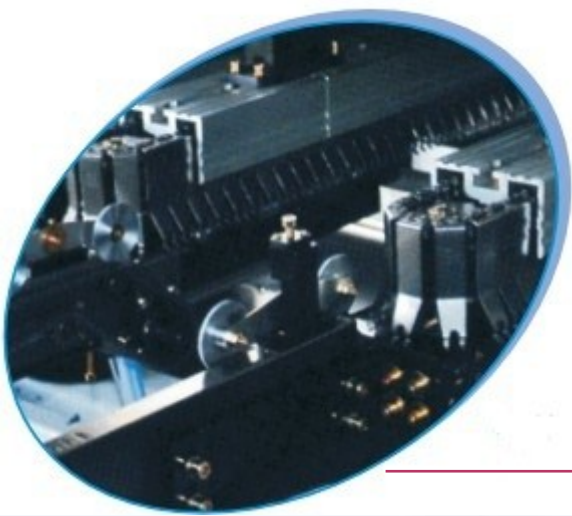
型號 MODEL	CS-0802	HS-0802	HS-0802-N	HS-1002	HS-1002-N	HS-1202	HS-1202-N
<b>機體參數 GENERAL</b>							
外型尺寸(L*W*H) Outside Dimension(L*W*H)	5310x1353x1490mm	5310x1353x1490mm	5310x1353x1490mm	6100x1353x1496mm	6100x1353x1496mm	6915x1353x1496mm	6915x1353x1496mm
顏色 Standard Color	計算機灰 Computer Grey	計算機灰 Computer Grey	計算機灰 Computer Grey	計算機灰 Computer Grey	計算機灰 Computer Grey	計算機灰 Computer Grey	計算機灰 Computer Grey
重量 Weight	Approx.2150KG	Approx.2200KG	Approx.2300KG	Approx.2400KG	Approx.2500KG	Approx.2600KG	Approx.2700KG
加熱區數量 Number Of Heating Zones	上Top8/下Bottom8	上Top8/下Bottom8	上Top8/下Bottom8	上Top10/下Bottom10	上Top10/下Bottom10	上Top12/下Bottom12	上Top12/下Bottom12
加熱區長度 Length Of Heating Zones	3121mm	3121mm	3121mm	3891mm	3891mm	4706mm	4706mm
冷卻區數量 Number Of Cooling Zones	上2 Top2						
整流板結構 Nozzle Plate	高溫板	8mm厚鋁板 Aluminium Alloy Plate					
排風量要求 Exhaust Volume	10M <sup>3</sup> /minx2(通道) Exhausts						
<b>控制系統 Control System</b>							
電源要求 Power Supply Requirement	3 phase,380V 50/60Hz(optional: 3 phase,220V 50/60Hz )						
總功率 Total Power	64KW	64KW	66KW	80KW	83KW	92KW	95KW
啓動功率 Power For Warm Up	28KW	28KW	32KW	34KW	36KW	38KW	40KW
正常功率消耗 Power Consumption	9KW	9KW	10KW	11KW	10KW	12KW	13KW
升溫時間 Warming Time	約 Approx.30 minute						
溫度控制範圍 Temp. Setting Range	室溫 Room Temp. --- 300°C						
溫度控制方式 Temperature Control Method	PID閉環控制 + SSR驅動 / PID Close Loop Control + SSR Driving						
溫度控制精度 Temperature Control Precision	± 1.0°C						
PCB板溫分布偏差 Temperature Deviation on PCB	± 1.5°C (by HB Board Test Standard)						
參數存儲 Data Storage	可存多種生產設置參數與狀況 Process Data and Status Storage (80GB)						
異常報警 Abnormal Alarm	溫度異常 ( 恆溫後超高溫或超低溫 ) Abnormal Temperature (Extra-high / Extra-low Temp.)						
掉板報警 Board Dropped Alarm	三色信號燈: 黃-升溫; 綠-恆溫; 紅-異常 Tower Light: Yellow Warming; Green-Normal; Red-Abnormal						

# Lead-Free Wave Soldering System

## ❖ Features

- ❖ The streamline design is completely modular with transparent Windows, which makes user more easily view and maintenance.
- ❖ Computer +PLC control system with Windows XP O/S
- ❖ The Rail width can be adjusted automatically by the order from the computer
- ❖ The Spray nozzle was driven by the stepping motor to make the soldering Flux uniformed distribution
- ❖ External air chiller to attain the great cold –down as per lead-free required .(optional)
- ❖ The weekly Operating schedule is available to the operator to start or turn off the machine .





Transportation system adopts the stepless electronic speed with closed-loop control



Spray Nozzle was driven by the stepping motor to ensure the flux will be coated evenly according to the PCB width



- The adjustable Micro-wind Circulation design.
- With the independent temperature control in 3 pre-heating zones to ensure the best heat efficiency

# Specifications

## Specifications

Dimension:( L×W×H (mm)

Weight

Power Supply

Startup Power

Operation Power Consumption

Control System

## Spray System

Transmission Method

Spray Pressure

Flux Flow Arrange

Auto Fill Flux

Exhaust

Exhaust Ducting Diameter

Exhaust Capacity

## Preheating System

Preheating Mode

Control Mode

Preheating Zone Number

Preheating Length (mm)

Preheating Temperature (°C)

Warm-up Time (min)

## HM-350/450

4430 × 1620 × 1710

Approx.2300 Kg

3P5W, 380V/220 50/60 HZ 63 A

26 kw

12 kw

電腦(Computer) + PLC

步進馬達(Step motor)

0.25 MPa~ 0.4 MPa

10~100 ml /min

S

上下抽風(Up&down exhaust)

Φ200

25 M<sup>3</sup> /min

微熱風 / 紅外(Hot air/IR tube is option)

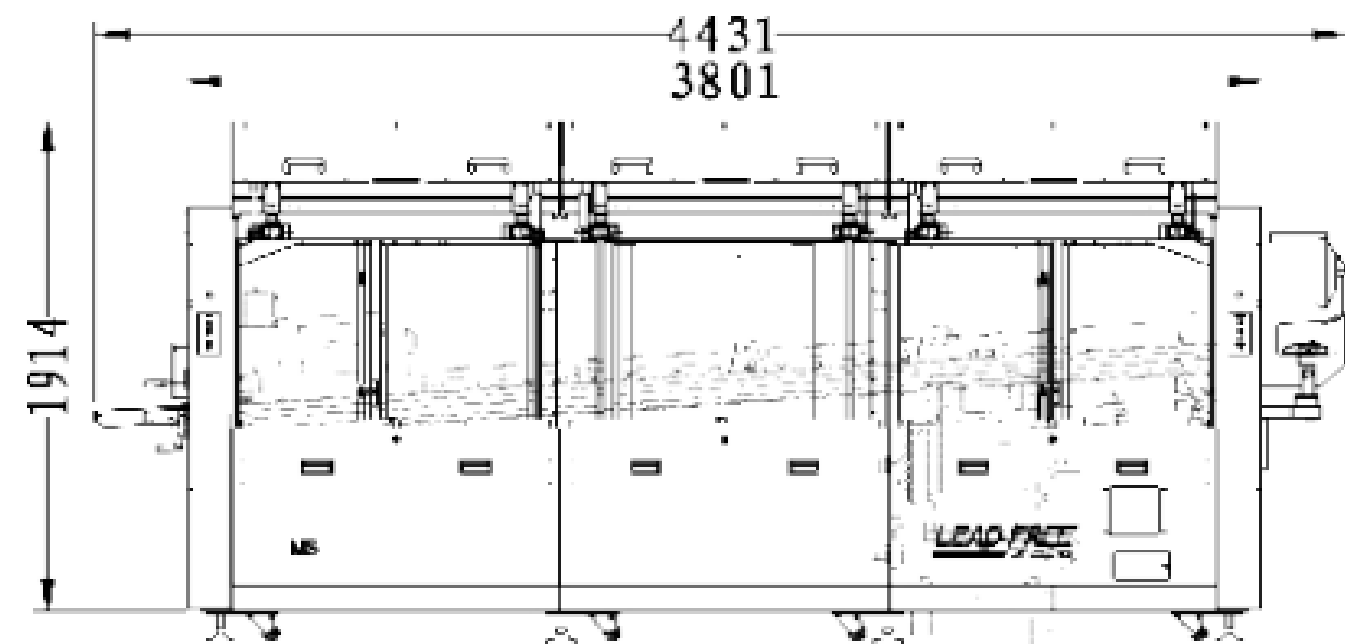
PID+SSR

3

1800

室溫(Room temperature) ~ 250°C

Approx.15 min (setting:150°C)



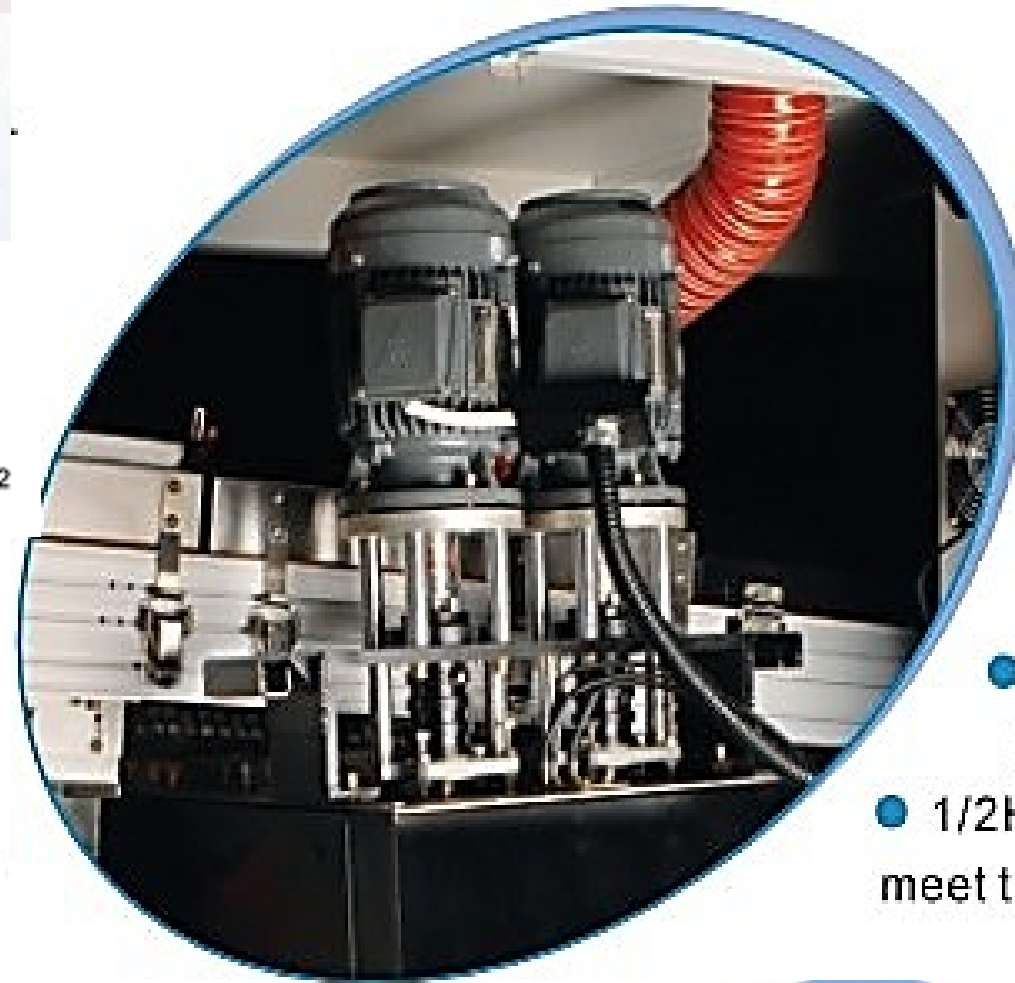
## ( 選配項目: Nitrogen system for HM-450-N )

Adopt N<sub>2</sub> flow control panel with oxygen analyzer and easy for adjustment and over-view.

Nitrogen consumption: 25m<sup>3</sup>/hr. → 500ppm concentration of O<sub>2</sub>



- Forced air cooling system to attain the cold-down slope as per Lead-Free required.
- Conveyor angle can easily be adjusted by manual.



- Standard Full Titanium solder pot for Lead-Free production.
- 1/2HP high power Mechanical pump to meet the wave as high as 15mm.



- Solder Pot in/out and up/down driven by motorized system with security device to avoid any damage cause of incorrect operating.

# Reflow Process Inspection & KIC Auto-Focus

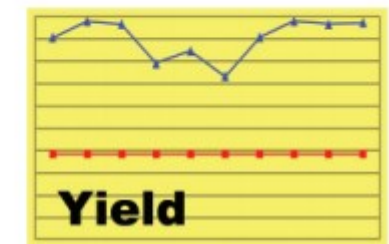
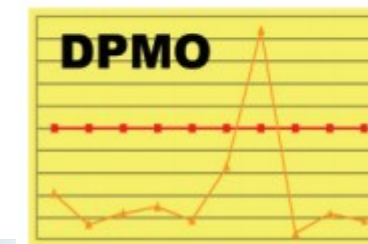
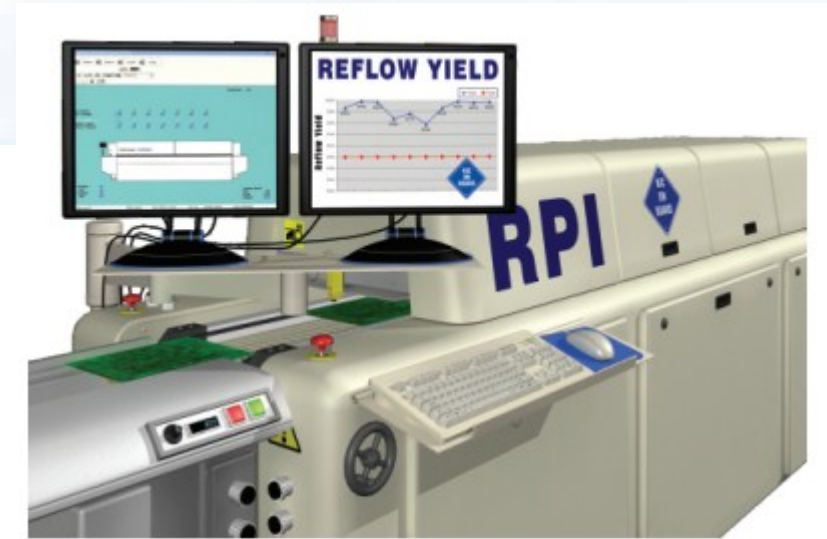
## Reflow Process Inspection

### KIC RPI Reflow Process Inspection

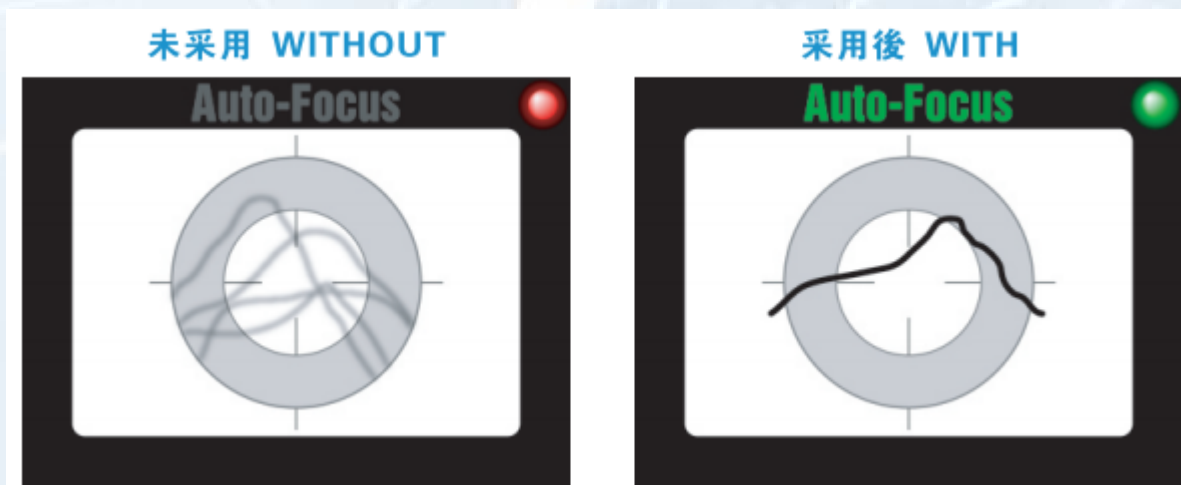
Inspecting & Measuring the performance of the Reflow Thermal Process . Two In-line charts are available:

- Process Yield Charts
- Defects Per Million Opportunities Charts ( DPMO)

A glance on any of these rolling reports will let managers better understand the health of their reflow process. Such timely information empowers decision makers to make better decisions that will ultimately lead to improved quality and productivity and thus enhanced profitability.



## KIC Auto-Focus



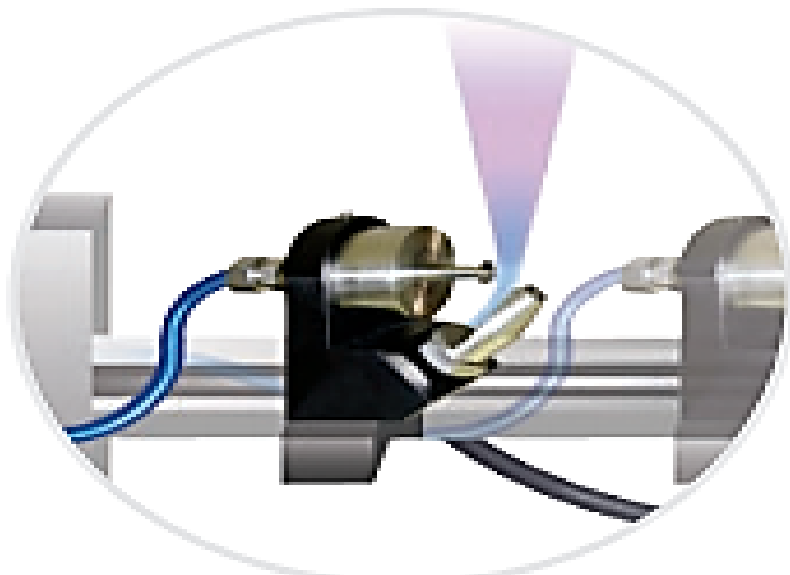
Intelligent profile prediction software :

- Get your NPI (New Product Introduction) profiles in specs within seconds
- Maximize your reflow process throughput by finding the fastest possible conveyor speed
- Optimize your process
- Minimize oven energy consumption

# External Full-Auto Flux Sprayer

## ❖ Features

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



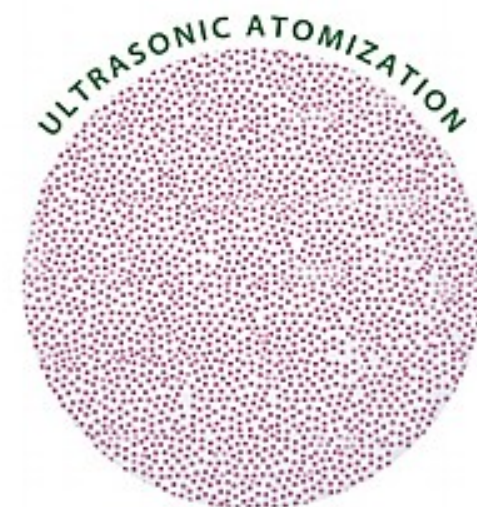
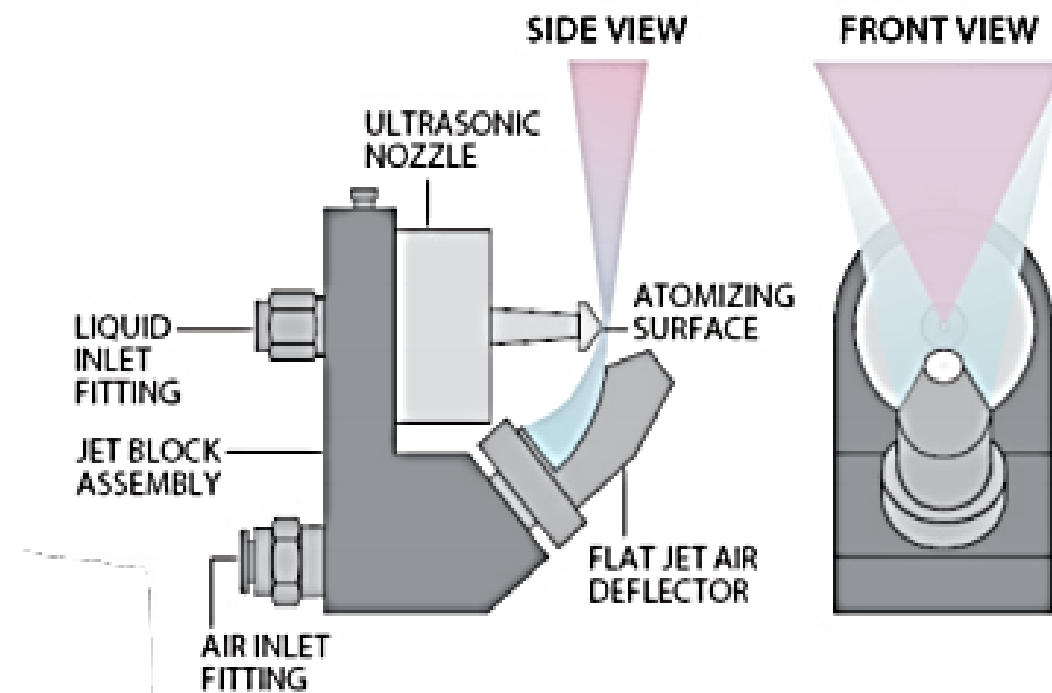
# U-Sonic Ultrasonic Flux Sprayer



## Advantage

### The Advantages of Ultrasonic Flux Spray Nozzle:

- Minimized the wastage and over-spray by rationing of flux spraying capacity.
- U-SONIC flux spray is easily attained to uniformity, and well adhesive power to avoid flux drop.
- Ultrasonic atomization can deliver flux over a wide range of flow rates, Capable of running very sticky rosin flux with no dogging.
- Larger Jet-Orifice to prevented clogging after a long rest.
- Titanium structure is higher reliability and durability as prevent to Chemical-erodent.



# SMT Peripheral Equipment

## INLET BUFFER CONVEYOR

- Apply to connect the Insertion Line and Wave Soldering entry.
- The width and angle of rails can be adjusted manually.
- The Buffer Conveyor works stable and reliable.

Model	IN-350A	IN-450A
Dimension	1000 × 757 × 750(mm)	1000 × 857 × 750(mm)
PCB Width	50~400mm	50~500mm
PCB Direction	L→R (R→L option)	
Speed	0~2000mm/min	
Motor	Single Phase 單相220VAC 15W	
Power Supply	Single Phase 單相220VAC 50/60Hz	
Transmission Length	1000mm	
Conveyor Hight	750 ± 20mm	
Belt Material	防靜電皮帶 ESD belt	
Weight	Approx.40kg	Approx.43kg



## UNLOADING BELT CONVEYOR



- Apply to connect Production Line and Wave Soldering exit.
- Unloading the soldered PCBs and further cooling.
- 3 rows of cooling fans designed to ultimately reduce the heat of PCB and components.
- Belt materials selectable: Stainless steel mesh, Anti-static belt & Slip Against Anti-static type.
- The conveying speed is adjustable, works stabilized & reliable.

Model	OU-400	OU-500
Dimensions	1300 × 555 × 1200(mm)	1300 × 655 × 1200(mm)
Conveyor Width	400mm	500mm
PCB Direction	L→R (R→L option)	
Conveyor Speed	0~2000mm/min	
Motor	Single Phase 单相220VAC 250W	
Power Supply	Single Phase 单相220VAC 50/60Hz	
Conveyor Length	430mm + 870mm	
Height Adjustable	750~1200mm	
Weight	Approx.40kg	Approx.43kg

# HLD/HULD Series Automatic Loader/Unloader



- Reliable and stable of the controlling is equipped with Micro-computer.
- LCD monitor with user-friendly control mode is easily to operation.
- Multi function Sound and Light Alarm to awake the operators when trouble.
- That is compatible to all of the kind of standard PCB Magazine.
- The pitch of PCBs is available adjusted according to the components height of board.
- The board pusher is onboard with the Unloader machine.
- Equipped with PCBs auto-counter is easily for statistical.
- Available to communications with other devices by SMEMA plug outlet.



Model	HLD-400B/HULD-400B	HLD-400C/HULD-400C	HLD-400D/HULD-400D
Dimension (LxWxH) mm	HLD: 1646 × 726 × 1250	HLD: 2071 × 806 × 1250	HLD: 2359 × 866 × 1250
	HULD: 2440 × 726 × 1250	HULD: 3015 × 806 × 1250	HULD: 3515 × 866 × 1250
Board Size	330 × (60-250)mm	400 × (60-330)mm	525 × (60-400)mm
Conveyor Height	900 ± 20mm		
PCB Direction	L → R (R → L option)		
Pitch Selective	10,20,30,40,50(mm)		

## BUFFER CONVEYOR

- Exact thread shaft structure to ensure the adjustment of rail width parallel.
- Lighting, SOP rack, ESD rubber material and Aluminum Alloy material for platform is selectable.
- Available to communications with other devices by SMEMA signal plug.
- Used durable Anti-Static belt with strengthen Alum. Alloy Rail to be reliable.

Model	HC-350C	
Dimensions	鋁型材護邊 Rail Length × 734 × 910(mm)	
	防靜電臺板護邊 Rail Length × 794 × 910(mm)	
PCB Width	50~350mm (Option:Width Max.300; 400; 450mm)	
Conveyor Height	900 ± 20mm (Option:950 ± 20mm)	
PCB Direction	L→R (R→L option)	
Conveyor Speed	0~10000mm/min	
Power Supply	單相220VAC 50/60Hz (Option:110VAC)	
Power Consumption	Approx.80W	
Rail Length	0.5m, 0.8m, 1m, 1.2m, 1.5m ,2.0m (或特定的 or Special Size)	
Control System	繼電器 Relay Board (2Sensor without Stopper) Option:PLC	
No. of Drives	1 Belt (Option:2 Belts; 3Belts)	
Foot Switch	標準 Standard	
Lighting	選配 Option	
SOP Rack	選配 Option	
Platform Material	防靜電皮 ESD Rubber Mat. / 鋁材 Aluminum Alloy	
Communication Plug	SMEMA Signal plug for up&down line	
Weight	約Approx. 75Kg	約Approx. 80Kg



# SP series printing machine

- ❖ Adopted with the high speed rail and inverter motor to achieve the high printing accuracy and precision
- ❖ Knife Supporters are adjustable to select the suitable printing position .
- ❖ The printing plate has a fixed groove and PIN ,which is convenient for installation and adjustment.
- ❖ Suitable for double-sided printing or single side printing.
- ❖ With the automatic counting function, it's convenient for production statistics.
- ❖ Man-machine interface has a screen saver to ensure the long use-life
- ❖ The printing speed can be adjusted according to the order from the Man-machine interface .

Model	SP-3040	SP-3040A	SP-3040B
Dimenions	L900xW680xH1500mm	L1200xW680xH1500mm	L1600xW680xH1500mm
Platfrom Size	W320xL500mm	W320xL710mm	W320xL1250mm
Formwork Frame Size	450x570mm	450x880mm	450x1430mm
PCB Size	300x400mm	300x600mm	300x1200mm
PCB Thickness	0~100mm		
PCB Positioning Mode	PCB Outside Or Positioning		
PCB Tuning Range	Front/Back $\pm 10$ mm R/L $\pm 10$ mm		
Printing Prscision	$\pm 0.05$ mm		
Printing Repeat Prscision	$\pm 0.02$ mm		
Printing Minimum Clearance	0.35mm		
Air Supply	4~6Kgf/cm <sup>2</sup>		
Power Supply	220V 50/60Hz 100W		
Weigt	200kg	220kg	250kg



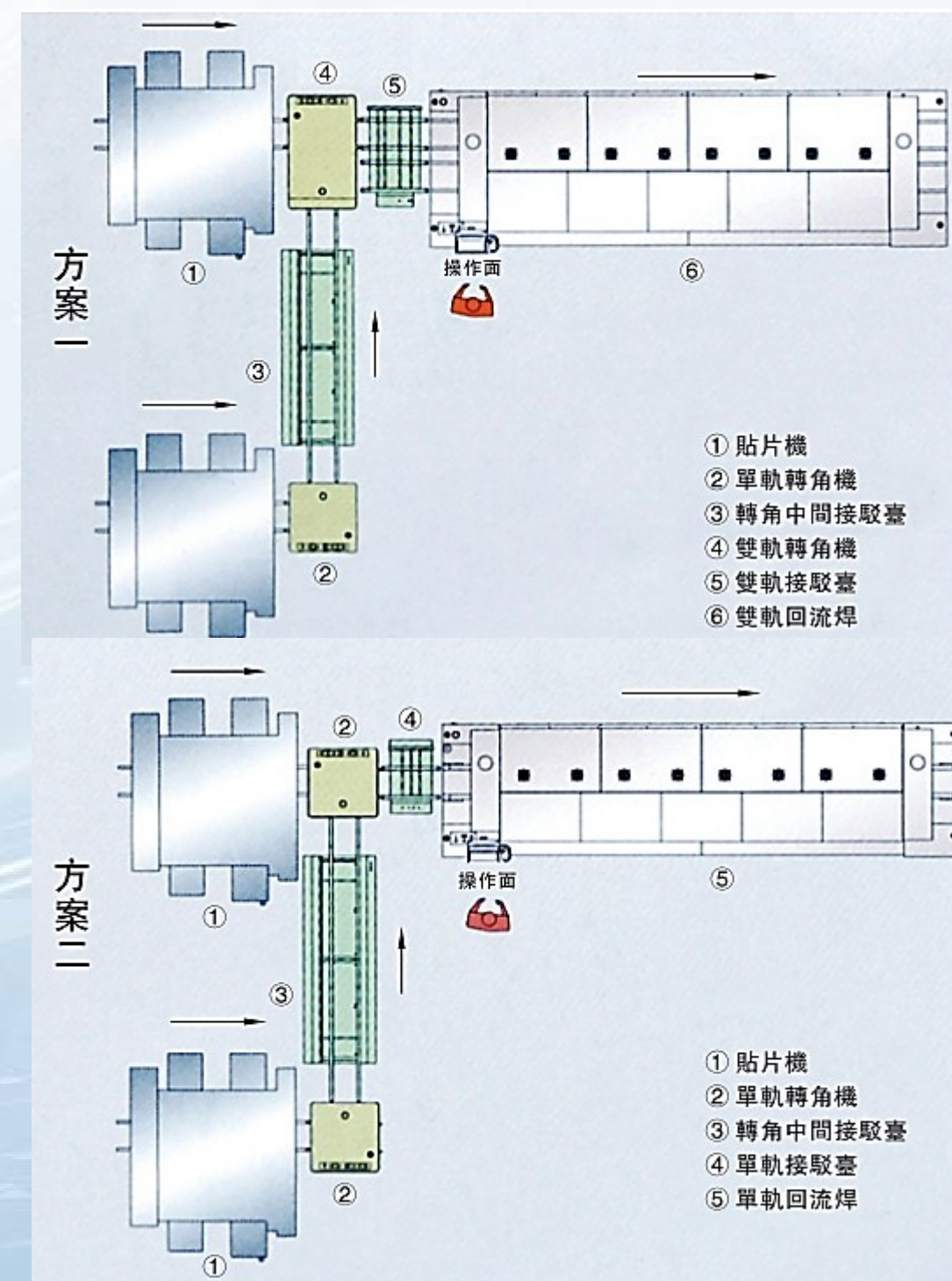
## Single / Dual Rails Turning Conveyors



- Applied to MCU programmable controller with tower light indicators.
- The frame was made by Aluminum alloy with enclosed design to ensure the safety of operation.
- The turning & extension rails are driving by high precision step motors.
- The Multi-sensors are applied to control the switch for positioning.
- The PCB board can be totally protected by smooth and precise rotation.
- The side door can be opened for easy maintenance.

# Single / Dual Rails Turning Conveyors

Model	HZ-300單軌轉角輸送機	HZ-400雙軌轉角輸送機
Name	Single Rail Turning Conveyors	Dual Rails Turning Conveyors
Description	用于調整生產線上PCB的運行方向 (如旋轉90度、180度、270度) To change the flow direction of PCB in SMT line	用于實現將兩條生產綫中的PCB轉入 一臺雙軌回流焊中焊接 To make the PCB of two SMT lines into one Oven
Dimension (L*W*H)	700 × 700 × 1250mm	1150 × 700 × 1230mm
Weight	Approx: 250Kg	Approx: 350Kg
PCB Size (W*L)	50 × 50 300 × 400mm	50 × 50 250 × 400mm
PCB Thickness	最小0.6mm, more than 0.6mm thickness	
Conveyor Height	900 ± 20mm	
Conveyor Direction	左→右 右→左 (根據綫體擺放位置而定) Left To Right Or Right to Left	
Rails Fixed	前端固定或後端固定 Front Fixed Or Rear Fixed	
Cycle Time	Approx: 18s	直通: 約3S 轉角: 約18S
Power Supply	單相 Single Phase 200VAC	
Power Consumption	Max: 300VA	
Air Source	N/A	
Communication	帶標準 SMEMA Signal Available	





*Thank you !*

**SHENZHEN HB AUTOMATION EQUIPMENT CO.,LTD**