

# Lead-Free Reflow Oven S-8800



## Products Introduction:

- S-8800 lead-free reflow oven is Southern Machinery's mature product after many years of market testing. S-8800 Reflow oven has maintained a larger share of the market for many years.
- Its unparalleled heating performance and temperature control system meets the requirements of various welding processes, It is Southern Machinery 's crystallization of years technical research and development. S-8800 Lead-free reflow is high-end reflow products committed to keeping up with market demand to enhance customers competitiveness.
- Its new design concept fully meets the needs of increasingly diverse processes, and considering the future direction of the industry, entirely suitable for communications, automotive electronics, home appliances, computers and other consumer electronic products .

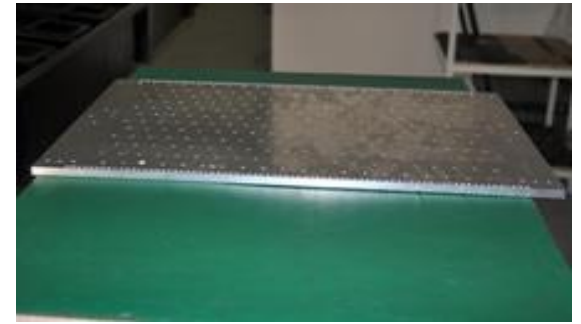
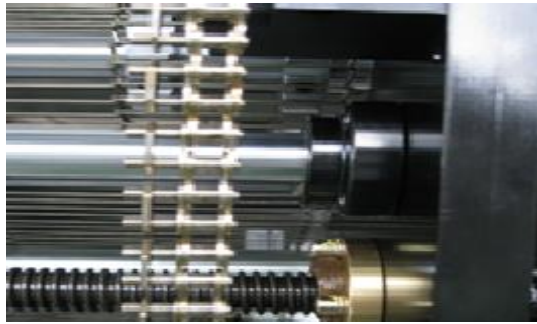
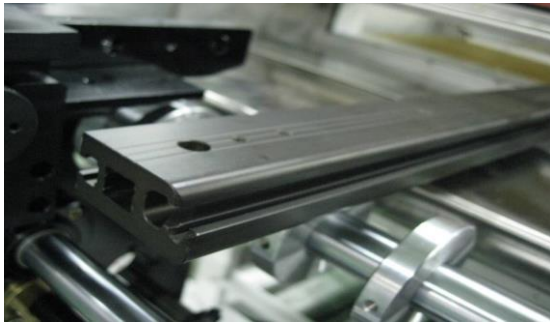
## FEATURES:

- Control System: PC + Siemens PLC control system, ensures temperature stability rate to be more than 99.99%.
- Use Nitrogen gas, Gas consumption:20-25m<sup>3</sup>/hr. @300ppm~1000pm
- Hot air system: The best temperature zone interval design makes optimum temperature uniformity and repeat.
- Monitoring Software:Windows interface, operator password management.Operation records, temperature curve measurement and analysis functions, virtual simulation, fault self-diagnosis, process monitoring, substrate transport dynamic display.
- Cooling System: New cooling zone, quick and easy adjustment, easily reach the cooling requirements of different slopes.
- Temperature protection: Using third-party over-temperature protection, and multiple layers protection .
- Products comply with CE, CCC, UL , other standards and specifications.
- User-friendly design: fault detection (such as heaters abnormal alarm, etc.), regular maintenance reminders, the economy functions and tool-free maintenance, reducing equipment failure rates.

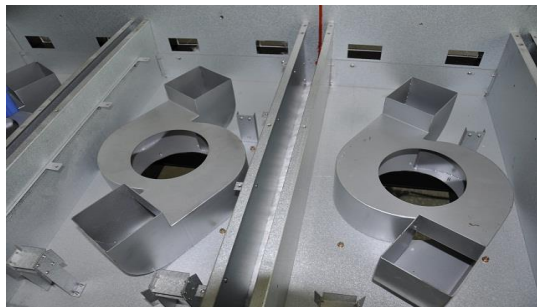
- Heating module: Transverse reflow design makes temperature from each zone is not influenced by neighbour to ensure accurate temperature curve, while ensuring a high production capacity and heat exchange capacity to achieve high adaptability .
- Hot air motor with independently inverter controlled, to meet a variety of lead-free processes.
- Machine using zero gas source design, furnace cover with motor lifting, safety rod support, providing significant security.
- Main parts:Imported main parts ensure equipment runs smoothly and lower the maintenance cost.
- Customers can choose optional flux processing system according to their own production features to ensure furnace chamber clean
- Closed-loop transmission speed control systems, transportation accuracy  $\pm 2\text{mm} / \text{min}$ , ensuring more stable transmission speed.
- Central support, dual transmission, external water cooling system is optional.

## Details Refer:

### 1. Transportation system and rectifying plate structure

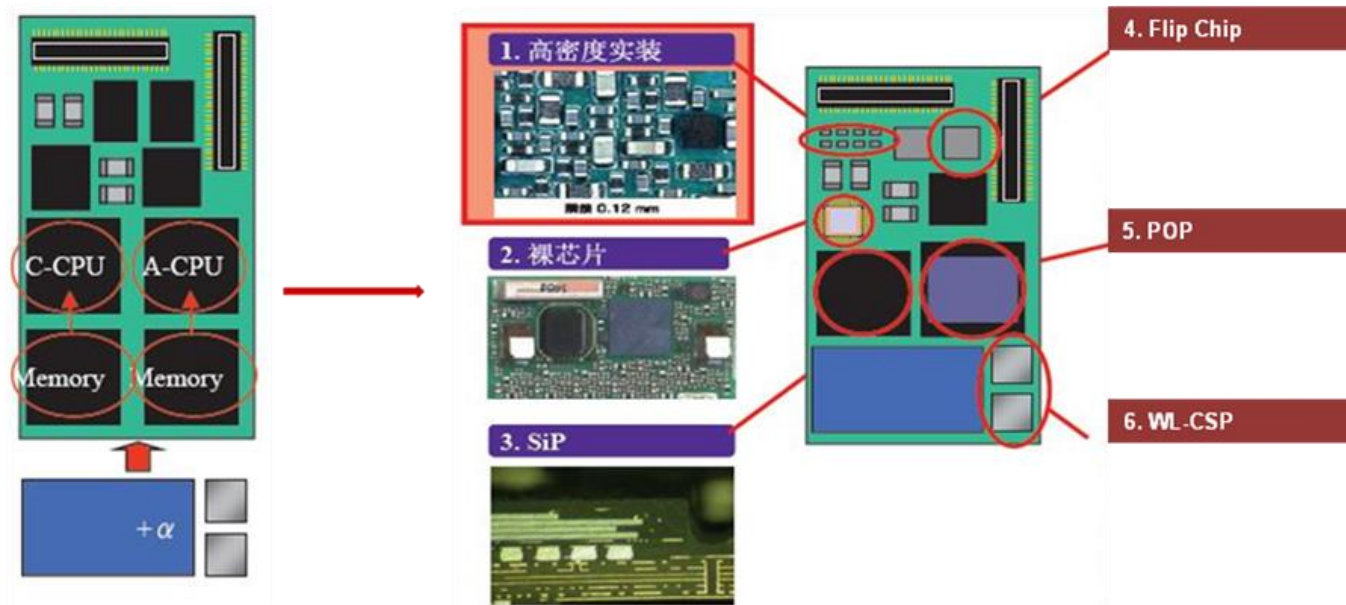


### 2. Chamber and high temperature structure parts



### 3.Application

Widely used in high precision products like 01005-QFP, BGA, CSP, Flip, and POP, automotive electronics, mobile devices, home appliances, communications, LED, semiconductor and other industries.



# Specifications

S - Standard, O - Option, M - Manual, A - Auto, N/A - Not Available)

Specifications	S-8800	S-1000	Specifications	S-8800	S-1000
Dimension (L*W*H)mm	5310x1353x1490	6100x1353x1490	Board Dropped Alarm	S	S
Standard Color	Computer Grey	Computer Grey	Electrical SMEMA Interface	S	S
Weight	Approx.2150KG	Approx.2400KG	Computer	Lenovo	Lenovo
Number Of Heating Zones	Up8/Bottom8	Up10/Bottom10	Max.Width Of PCB	400mm	400mm
Length Of Heating Zones	3121mm	3891mm	Temperature Deviation on PCB	± 1.0°C	± 1.0°C
Rail Width Adjustment	A and M(Multi mode)	A and M(Multi mode)	Max. Temp. Gap Between Preheat Zones Setting	40°C	40°C
Rail Number	1 Lane or 2 Land	1 Lane or 2 Land	Temperature Control Precision	± 1.0°C	± 1.0°C
Exhaust Volume	10M <sup>3</sup> /minx2 Exhausts	10M <sup>3</sup> /minx2 Exhausts	Conveyor Height	900+/-20mm	900+/-20mm
Control System	PLC+Computer	PLC+Computer	Length Of Cooling Zones	600mm	600mm
Transmission Agent	Chain + Mesh	Chain + Mesh	Center Support	O	O
Electric Supply Required	3phase,380V 50/60Hz	3phase,380V 50/60Hz	Siemens PLC	S	S
Power For Warm Up	30KW	36KW	Lubrication Auto-Afflux	S	S
Power Consumption	8KW	12KW	Ups	S	S
Warming Time	Approx.25 minute	Approx.25 minute	Temp. Thermocouple Slot	S	S
Temp. Setting Range	Room Temp.-- 350°C	Room Temp.-- 350°C	Driven Top Hood Opening	A	A
Oil Supply	A and M(Multi mode)	A and M(Multi mode)	Temperature Control Method PID + SSR	S	S
Conveyor Speed Range	200 ~ 2000mm/min	200 ~ 2000mm/min	Number of Cooling Zones	2	2
Components Clearance	Top/ Bottom is 25mm	Top/ Bottom is 25mm	On Line Editing	S	S
Conveyor Direction	L→R (Option: R→L)	L→R (Option: R→L)	Max.Temp.Gap Between Preheat & Reflow Setting	80°C	80°C
Commutated Element	Aluminum Alloy Plate (8mm)	Aluminum Alloy Plate (8mm)	Max. Temp. Gap Between Reflow Zones Setting	50°C	50°C
Fixed Rail Side	Front Fixed (Option:Rear Fixed)	Front Fixed (Option:Rear Fixed)	Process Data & Status Storage	S	S
Cooling Method	Forced-Air Motor and fan (Standard)	Forced-Air Motor and fan (Standard)	Temperature Alarm	S	S

Temp. Setting Range	Room Temp.-- 350°C	Room Temp.-- 350°C	Driven Top Hood Opening	A	A
Oil Supply	A and M(Multi mode)	A and M(Multi mode)	Temperature Control Method PID + SSR	S	S
Conveyor Speed Range	200 ~ 2000mm/min	200 ~ 2000mm/min	Number of Cooling Zones	2	2
Components Clearance	Top/ Bottom is 25mm	Top/ Bottom is 25mm	On Line Editing	S	S
Conveyor Direction	L→R (Option: R→L)	L→R (Option: R→L)	Max.Temp.Gap Between Preheat & Reflow Setting	80°C	80°C
Commutated Element	Aluminum Alloy Plate (8mm)	Aluminum Alloy Plate (8mm)	Max. Temp. Gap Between Reflow Zones Setting	50°C	50°C
Fixed Rail Side	Front Fixed (Option:Rear Fixed)	Front Fixed (Option:Rear Fixed)	Process Data & Status Storage	S	S
Cooling Method	Forced-Air Motor and fan (Standard)	Forced-Air Motor and fan (Standard)	Temperature Alarm	S	S
•Use Nitrogen gas, AIR consumption	20-25m³/hr. @300ppm~1000pm	20-25m³/hr. @300ppm~1000pm			

# Temperature test:

Test parameters:

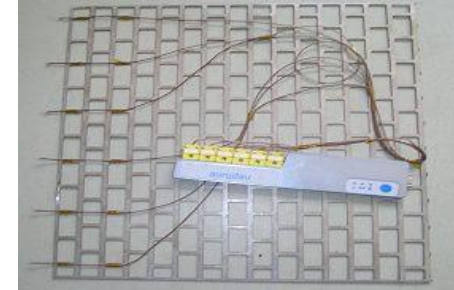
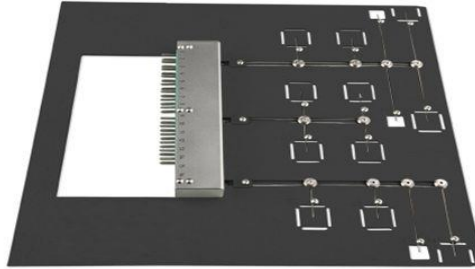
- Temperature control accuracy: compare the measured data with the setted temperature (each temperature zone), takes the maximum value, the value should be less than 1 °C.
- Lateral temperature difference: compare the max tested data with the minimum value (by each temperature zone), the value should be less than 1 °C.
- Thermal compensation capability: the higher over board density, the smaller temperature repeat and better thermal compensation,reference standard  $\pm 2$  °C.
- Module effective utilization assessment: Module effective utilization refers to the ratio of the actual efficient hot air time and effective heating theory module, equipment zone effective utilization "preferably should be above 65%, it will be better that can reach 80% or more.
- Heat exchange efficiency assessments: estimate the tested temperature difference under the same test conditions.



取样点	3:7.0
Channel 1	300.1
Channel 2	300.5
Channel 3	300.3
Channel 4	300.0
Channel 5	299.8
Channel 6	300.2
温差	0.9

250.5	190.3
250.5	189.7
250.6	189.6
250.9	190.4
250.8	190.1
250.7	190.3
0.3	0.8



## Test result

	Rehm/ERSA	BTU	A Company	B Company	Southern Machinery
<b>Temp. control accurate</b>	$\pm 0.5^{\circ}\text{C}$	$\pm 1^{\circ}\text{C}$	$\pm 1^{\circ}\text{C}$	$\pm 1^{\circ}\text{C}$	$\pm 1^{\circ}\text{C}$
<b>Maintenance</b>	Good	Good	Normal	Normal	Normal
<b>Air Transverse temperature</b>	$< 2^{\circ}\text{C}$	$< 2^{\circ}\text{C}$	$< 2^{\circ}\text{C}$	$< 3^{\circ}\text{C}$	$< 3^{\circ}\text{C}$
<b>Temp. Repeat</b>	$< \pm 1^{\circ}\text{C}$	$< \pm 1^{\circ}\text{C}$	$< \pm 1.5^{\circ}\text{C}$	$< \pm 1.5^{\circ}\text{C}$	$< \pm 1^{\circ}\text{C}$
<b>Setted and real tested temperature</b>	$< 10^{\circ}\text{C}$	$< 10^{\circ}\text{C}$	$< 12^{\circ}\text{C}$	$< 12^{\circ}\text{C}$	$< 12^{\circ}\text{C}$
<b>PCB Transverse temperature</b>	$< \pm 1^{\circ}\text{C}$	$< \pm 1^{\circ}\text{C}$	$< \pm 1.5^{\circ}\text{C}$	$< \pm 1.5^{\circ}\text{C}$	$< \pm 1.5^{\circ}\text{C}$
<b>Slope of cooling zones</b>	$(-1\sim 8)^{\circ}\text{C/s}$	$(-1\sim 8)^{\circ}\text{C/s}$	$(-1\sim 8)^{\circ}\text{C/s}$	$(-1\sim 5)^{\circ}\text{C/s}$	$(-1\sim 5)^{\circ}\text{C/s}$

## TOP Advantage:

- **Simple:** Combined with advanced international concepts, easy to understand, easy to learn, easy to maintain.
- **Expertise:** Learn imported reflow oven's advanced design concepts, and the machine core components are using imported top brands.
- **Hedging:** Import hardware configuration, low failure rate in production, more than a decade service life.
- **Safety:** Based on the general rules of international design, close to imported reflow rating, the highest security level.
- **Stable:** Mature software, hardware and top production processes ensures stability of each equipment.

## Welcome inquiry

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