

OTHER MACHINES

REFLOW OVEN

MSTR-800-1000-1200



REFLOW OVEN CONVECTION WITH 8-10-12 HEATING ZONES

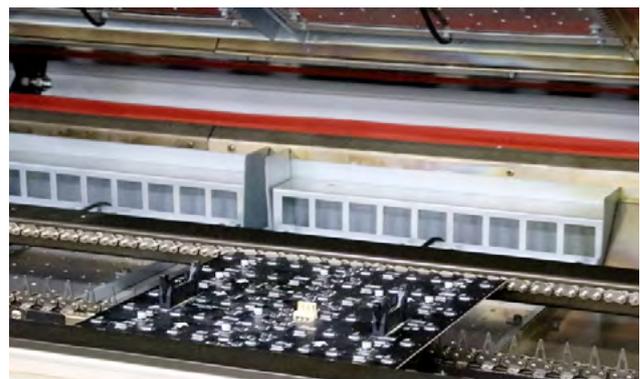
UNIQUE AND POWERFUL HEATING WAY AND THERMAL CONVECTION



The **MSTR series of reflow ovens, including the MSTR-800, MSTR-1000 and MSTR-1200**, are forced thermal convection reflow soldering ovens, used to join electronic components to a PCB printed circuit. The MSTR series is PC controlled, with a friendly interface and many software functions.

Tunnel structure of automatic conveyor is made up of **preheating zones, soldering zones and cooling zones**. The heating zones can be controlled separately through PID. Meshwork and chain convey the PCB synchronously and conveyor speed can be controlled by PID. Chain conveyor ensures that on-line connection between reflow oven and other equipment is accessible.

The MSTR series achieves an excellent temperature distribution and **stable heating process** by a carefully design, unique heating way and unique thermal convection. This thermal convection provides uniformity, saves electronic power and achieves the best soldering.



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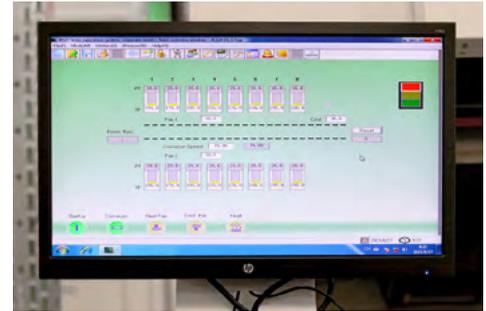
REFLOW OVEN

MSTR-800-1000-1200



TECHNICAL DETAILS

- **Configuration:** 8-10-12 heating zones + cooling
- **High quality components**
- **Central support system:** Plate holder (CBS Optional Included)
- **Nitrogen:** Ready to work with nitrogen
- **Internal Profiler:** KIC
- **Heating Zones Length:** 3892mm
- **Chain dimension:** 5mm (Optional 3 and 7)
- **Cooling system:**
 - Cooling zones depending on series
 - Separate flux management system
 - 6 motors cool down the PCBs very fast
- **Conveyor:** Possibility to soldering two-sides PCB board and link with other SMT equipment (SMEMA)
- **Security:** Alarm and drop board & block board detection function
- **Warranty:** 5 years on fans and resistors



Friendly interface. Full software functions



Air profile tested, Delta T in soldering zone is below 2°C

FEATURES

HEATING ZONES



All the heating zones are equipped with forced hot air circulation heating way. The hot air is spread symmetrical all over the chamber. This great thermal capacity is suitable for two-sides board. The temperature of every heating zone is controlled by PC through PID separately, independent hot air up & down. The real time temperature can be displayed through histogram.

COOLING SYSTEM



The most advanced exhaust air treatment and cooling system, let the oven provide the best cooling profile while keeping fresh off the soldering air inside the chamber. The air inlet valve in cooling zone, flexibly adjust the volume of the air, to avoid the cooling rate being too high or too low and affecting the soldering quality.

ELECTRIC PARTS



Conveyor, heating, cooling are controlled by inverters with stepless speed adjusting making the best soldering solution.

High quality power supply, with several filters, avoid all interference from affecting the performance of the machine.

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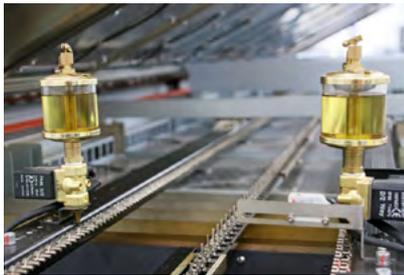
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FEATURES

CONVEYING CHAIN LUBRICATION



Automatic lubrication, dipping time and cycle can be set in the software.

Stainless steel chain: makes sure no rust and no PCB stuck, central support system to hold the big size PCB, avoid deformation.

Stainless steel central support chain: it holds the PCB well and guarantee a smooth process.

SECURITY



Temperature inspection: If the temperature exceeds the set range, it will alarm immediately.

Phase protector: when the power phase sequence is wrong the machine stops.

External main switch: Quick cut off the electricity in case of some accident.

FLUX COLLECTION SYSTEM



Flux collection system at both entrance and exit of the oven with 2 layers of filters makes sure there will be no flux pollution to the products and the chamber is clean. The exhaust air is uniformly collected and discharged to the outside.

OPTION FUNCTIONS

NITROGEN SYSTEM



Nitrogen system includes nitrogen closed-loop construction, pipes, N2 flow meter, external water chiller and oxygen analyzer.

N2 protection system can prevent solder paste from oxidization, improving the moisture of soldering points, reducing the faults rate during soldering process.

KIC INTERNAL PROFILER



Smart Reflow Analyzer. The Smart fixture with integrated profiler.

SRA Advantages:

- Laser technology for speed measurement
- Instant insight into oven stability
- Compatible with KIC ecosystem
- Profiler embedded in fixture

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MSTR-800-1000-1200



TECHNICAL SPECIFICATIONS

Model	MSTR-800	MSTR-1000	MSTR-1200
Heating zones quan.	Top 8, bottom 8	Top 10, bottom 10	Top 12, bottom 12
Heating zone length	3110mm	3892mm	4675mm
Weight	Approx:2400kg	Approx.:3200Kg	Approx: 2700kg
Exhaust capacity	11 /min×2	10m2/min×2	10m2/min×2
Control	Industrial computer	Industrial computer	Industrial computer
Cooling zones quan.	Top 3, bottom 3	Top 3, bottom 3	Top 3, bottom 3
Current plate	The same as vacuum oven	Thick copper plate	Thick copper plate
Dimension	5520*1430*1530mm	6300*1430*1530mm	7050x1430x1530mm
Color	Grey	Grey	Grey
Control system			
Electricity supply	3P 380V/220V 50/60HZ	3P 380V/220V 50/60HZ	3P 380V/220V 50/60HZ
Total power	64KW	80KW	96KW
Start power	32KW	36KW	42KW
Consumption power	9KW	10KW	11KW
Speed control	3 Inverters adjust	3 sections with 3 inverters	3 sections with 3 inverters
Warm up time	Approx.30 minutes	Approx: 30 minutes	Approx: 30 minutes
Temp. control range	Room temp. ~ 300°C	Room temp. ~ 300°C	Room temp. ~ 300°C
Temp. control accuracy	±1°C (static state)	±1°C (static state)	±1°C (static state)
Temp. control method	PID + SSR drive	Closed loop, PID + SSR	PID + SSR drive
PCB temperature deviation	±1.5°C	±1.5°C	±1.5°C
Data save	All profiles can be saved	All profiles can be saved	All profiles can be saved
Abnormal alarm	High, low temp. alarm	High, low temp. alarm	High, low temp. alarm
Conveying system			
Rail structure	2 sectional rails	2 segments structure	2 Sectional structure
Chain	Stuck-free stainless steel	Stainless steel stuck-free type	Stuck-free stainless steel type
PCB Max. width	50-460mm	50-460mm	50-400mm
Component height	Top/bottom 30mm	Top/bottom 30mm	Top/bottom 30mm
Conveying direction	Left to right	Left to right	Left to right
Rail fixed method	Front fix	Front fix	Front fix
Conveying height	900±20mm	900±20mm	900±20mm
Conveying method	Mesh+ chain	Chain+ CBS	Rail + chain
Conveying speed	300-1500mm	300-2000mm	300-2000mm
Lubrication	Automatic	Automatic	Automatic
Cooling system			
Cooling method	Forced air cooling Forced air cooling		
Heating features			
Heating zones	Top 8, bottom 8 (3110mm) can meet the need of the peak lead-free technique	Top 10, bottom 10 (3892mm) can meet the need of the peak lead-free technique	Top 12, bottom 12 (4675mm) can meet the need of the peak lead-free technique
Cooling zones	After cool down by air, PCB temp. is ≤70°C at the exit	After cool down by air, PCB temp. is ≤45°C at the exit	After cool down by air, PCB temp. is ≤70°C at the exit
Warm up time	From the normal temp. to set temp., approximate 30 minutes		
Warm up sequence	Warm up from two side, save the power and time		
Profile transfer time	<15min	<15min	<15min
Heating zone temp. control accuracy	±1°C	±1°C	±1°C
PCB temp. deviation	±1°C	±1.5°C	±1.5°C
Empty-> full load heat balance respond time	≤20 s	≤20 s	≤20 s

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Heating zones separately close function	Every heating zone can be closed separately on computer. When the bottom heating zones are closed, the PCB two sides temp. different reaches max.(PCB of different material, thickness, size, the temp. difference value is different.)		
Heating parts			
Hot air motor	Import anti high temperature motor. RPM:2800rpm. Adopts inverter to control, can adjust the speed of motor from 0 to 3000, stepless. Motor warranty: 5 years		
Heater	The heater is specially made with high efficiency and sensitivity. Warranty: 5 years		
Air lane structure	Highly efficient air lane, provides abundant air		
Exhaust system	Forced exhaust device, ensure no escape of flux		
Transmission parts			
Anti torque rail	High strength and hardened rail is very durable and wear resistant		
Rail parallelism	±0.3mm		
Chain stretch out length	Standard: 5mm, the chain is anti-stuck type, solve the soldering problem of small PCB		
C/V speed set min.unit range	0.01m/min, 0-2m/min		
C/V speed deviation range	Computer close loop, within ±2%		
Chain tension device	Automatic adjust by spring, avoid the chain stuck due to the heating		
Conveying motor	Panasonic adjustable motor		
Chain lubrication	Controlled by PC, lubrication cycle and time can be set (3 modes: fine, standard, economical and manual lubrication in software)		
Rail width-adjusting	Independent adjusting	Independent motorized adjusting	Independent adjusting
Machine structure			
Frame	The frame is well soldered, firm and durable		
Door	Dismountable structure, provide wide space for maintenance		
Hood open method	Double electric cylinder to open the hood, with self-lock function, safe and reliable		
Cover open method	Self-made holder, easy to clean up		
Electrical parts and control performance			
Control system	Industrial PC. PLC+ Modular + PID, stable and reliable, with high repeat accuracy		
Operation interface	Windows 7		
Machine & operator safety	With creepage protector		
Electric part	All electric parts are imported, very durable, ensure the machine runs stably		
Working mode	Three working mode: operation, edition and presentation with on-line editing function		
Real time monitor	Generate the operation record daily, if there happen some problems, the responsible operator will be found easily.		
Temperature profile	Generate the profile for each zone daily, user can review and analyze. This function is not for PCB profile testing, just for inspecting when some problem happens in a certain zone		
Production database	Generate production statement for all kinds of PCB and statistics, printable		
Alarm list	The system saves all alarm information for user to review the alarm item and time		
Alarm system	The system enters cool down mode when the alarm is strict		
Profile test	With temp. profile testing function can analyze according to the profile		
Abnormal alarm	1.PCB runs abnormally - 2.Operation abnormal - 3.Temperature abnormal - 4.Conveyor speed abnormal - 5.Hot air devices abnormal		
Flux recycle device	Standard configured. When use nitrogen, as it is closed recirculation, if the flux fog cannot be spread, it will pollute the PCB		
Other features			
SMEMA	Available for both upstream and downstream		
UPS	Available. To protect control section and for conveyor in case of main input power failure		
After-sales services			
Warranty	2 years for the whole machine, 5 years for motors, heaters		
Out of warranty	Charge only the cost for parts		
Service respond time	12 hours		



MSTECH

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Innovation | Precision | Performance



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