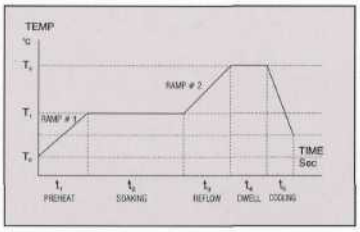
EMS *Gallant*

Hot Air Production Reflow Oven

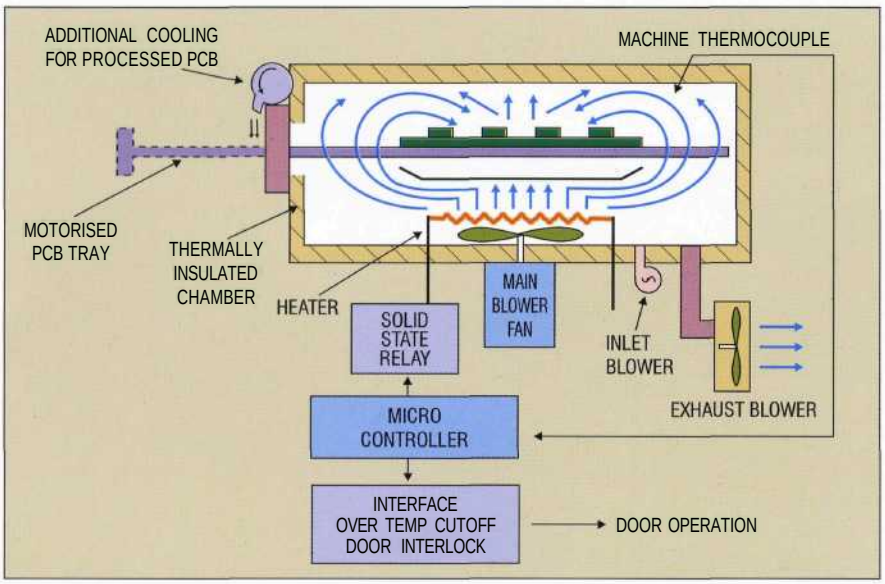
- **Efficient yet simple operation**
- **Flexibility in usage**
- **CE Approved**



SET PROFILE

ACHIEVED PROFILE

PRINCIPLE OF OPERATION



- The motorised PCB Tray Area is 18" x 18" (457.2 mm x 457.2 mm).

- The innovative design and a sealed chamber provides an ideal environment for reflow and guarantees the required oven profile.

- The temperature of hot air in the oven is sensed and is used to control the temperature of the heat source to achieve the right temperature profile by close loop control.

- A thermally insulated stainless steel body houses a Ni-Cr strip heat source which can be switched on/ off according to the set profile. Specially designed fan blades and air deflectors ensure hot air convection currents are directed perpendicular to the PCBs to get better heat exchange.

- During the cooling cycle, inlet blower directs ambient temperature air in the chamber while the exhaust blower removes hot air from the chamber for quick cooling.

- Though compact, the temperature profile generated, matches that of ovens with 8-10 zones.

SALIENT FEATURES

Designed for efficiency :

- This is a forced hot air convection type Reflow Oven, where air is directed at right angles to the board surface. This produces maximum turbulence and maintains even temperature across the width of the boards.

- The Reflow Profile has five time zones - with programmable control for each time zone.

  - Ramp selection and temperature setting for *Preheat* and *Reflow*

  - Time setting for *Soaking, Dwell* (reflow) and *Cooling.*

- Direct profile setting by setting each portion of profile through menu.

- Stores upto 50 profiles.

- A 600 mm Radial Fan creates an air curtain for cooling when tray comes out.

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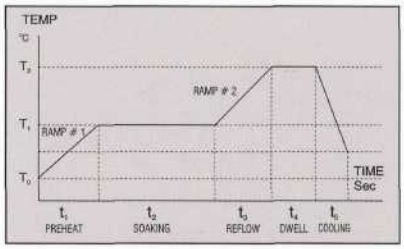
EASY TO OPERATE

FRONT OPERATING PANEL

- This compact, space saving, table top model is easy to operate and requires minimal operator training. PCBs to be soldered are kept stationary on a mesh tray in a sealed environment. The heater is switched on/ off by a microcontroller.
- An ingeneous menu driven software ensures required ramp of heating and cooling, and a repetition facility of 10 times. No additional computer is required for this.
- The motorised tray comes out automatically at the end of cycle for unloading and reloading of PCBs. A manual override is provided to open tray in case of power failure.
- No trial and error of adjusting temperatures and conveyor speed. The user simply keys in the required temperature, time and ramp.

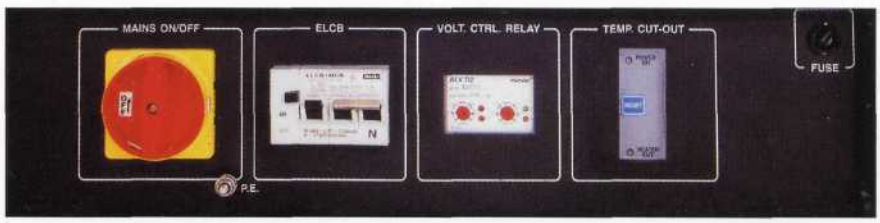
PROFILE SETTING AND OPERATION



PROFILE #01
SETTING MODE
→ SELECT RAMPS
RAMP 1 # °C/Sec
RAMP 2 # °C/Sec
→ SELECT TEMPERATURES
T_1 °C
T_2 °C
→ SELECT TIME INTERVAL
TIME t_2 # Sec
TIME t_4 # Sec
→ SELECT TIME INTERVAL
TIME t_5 # Sec
→ PLACE PCBs ON TRAY
PRESS "TRAY IN"
TRAY GOES INSIDE
→ PROFILE # 1
REP # 0
READY FOR START
→ END OF CYCLE
TRAY COMES OUT
AUTOMATICALLY

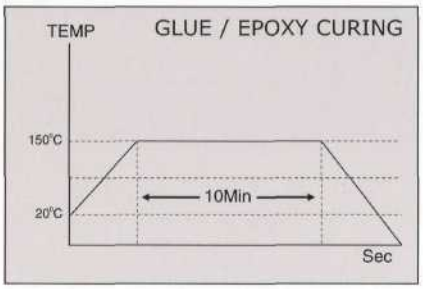
SAFETY

- It incorporates overvoltage, undervoltage, overcurrent, sensing and cut-off, earth leakage circuit breaker, overtemperature cut-off to protect the machine and PCBs.
- The oven complies to 'CE' standards as regards safety and EMI/EMC requirements.



PROTECTIVE INTERLOCKS

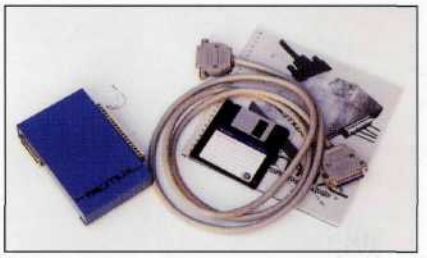
OFFERS FLEXIBILITY



- Can be used effectively to cure glue and epoxy used in wavesoldering of SMT components and sealing.
- Component temperature cycling for QC purpose is possible.
- Profile repeatation facility of 10 times.

OPTIONAL TEMPERATURE PROFILER :

- An 8 channel temperature profiler with operating software is available to check the profile on an external PC.
- The profile can be seen on monitor when the cycle is in progress. Raw data, graphical displays, print-outs are available.



TEMPERATURE PROFILER KIT

SAMPLE THROUGHPUT :

- PCB Size = 4" x 4" (101.6 x 101.6 mm)
- No. of PCBs in a tray 18" x 18" (457.2 X457.2 mm) = 20
- Profile Cycle Time = 7 min (420 secs.)
- Loading & Unloading = 2 min (120 secs.)
- Total time for 18 PCB = 540 secs.
- Average throughput = 28 secs, per PCB

SPECIFICATIONS :

- **Supply** : 220~240V* A.C., 50/60 Hz, Single Phase
- **Power** : 12 KVA (peak)
- **No. of profiles in memory: 50**
- **Display** : 16 x 2 Big character backlit LCD
- Exhaust duct dia. 63 mm. External blower requirement 5 cubic mtr. per minute
- **Dimensions : 980** mm **(L) x** 980 mm **(W) x 720** mm (H)
- **Weight : 170** Kgs.
- **Optional** : Temperature profiler

** Any other voltage available on request as option with prior confirmation.*

FEATURES	BENEFITS
Pure hot air convection	Improved board uniformity without affecting stability of smaller components. This ensures that no shadowing, no scorching, no colour sensitivity, no hot spot and no damage to component takes place.
Rugged construction, stainless steel body. Still weight of 170 Kgs.	Ideal for years of multishift use.
Sealed environment	No Leakages; thus, ideal environment for reflow.
Small footprint of 1mtr. x 1mtr.	Same performance as an 8/10 zone longer machine, while saving space.
Single menu software	Direct profile setting saves time and requires minimum operator training.
Zero warm-up time	Can start reflow cycle right from power on, hence saves machine time.
Power consumption 12KVA; but Duty Cycle 50% (approx.)	Average power consumed is less, thus saving power cost.
Easy for cleaning	All parts accessible by removing top cover. This ensures quick and easy cleaning.
Safety	Over/under voltage, over current, over temperature cut-off alarms ensure safety of machine and PCB. Compliance to 'CE' standards.

The specifications in this catalogue are subject to change without prior notice.