

Programmable Vacuum/Pressure Soldering Furnace



FOR HIGH PRODUCTION SOLDER ASSEMBLY OF ELECTRONIC COMPONENTS

The Model 5100 is a programmable vacuum and pressure furnace offered by SST International for production soldering of high reliability electronic components. Advanced technology, provided by the system, allows users to create void-free solder joints without the use of flux.

The Model 5100 provides precise automatic control of heating and cooling ramp rates. This system allows for rapid heating up to 450 °C and rapid cooling in an inert gas environment from vacuum levels below 10 millitorr to pressures up to 40 psig. Machine control is provided by an embedded control system operating in a Microsoft Windows® environment. An unlimited number of process profiles can easily be created and stored in the controller. An optional enhanced control system provides real-time profile graphing and data logging for quality control and off-line data analysis. Process heating is provided over the entire work area by a close-coupled planar infrared heating element. Custom-machined locating fixtures may be ordered to use with the standard heated platen. An optional rapid cooling system can be provided to cool the process area while still under vacuum.

TYPICAL APPLICATIONS

- Fluxless Soldering
- MMIC Die Attach
- Power Module Assembly
- Automotive Device Assembly
- Hermetic Package Sealing
- Fiber Optic Packaging
- Hybrid Assembly
- High Intensity LED Attach
- Eutectic Die Attach
- PV Solar Cell Assembly
- Flip Chip Soldering
- Lead-Free Soldering

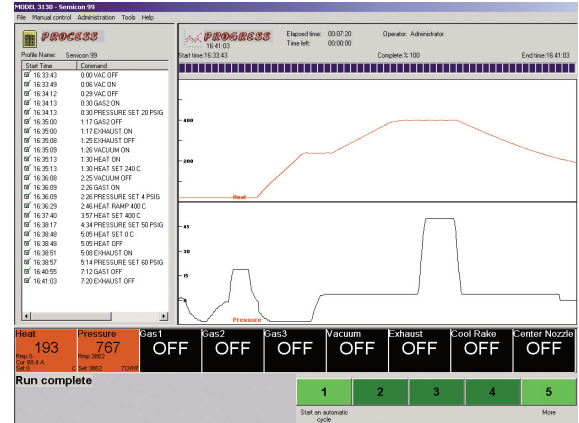


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CONTROL SYSTEM

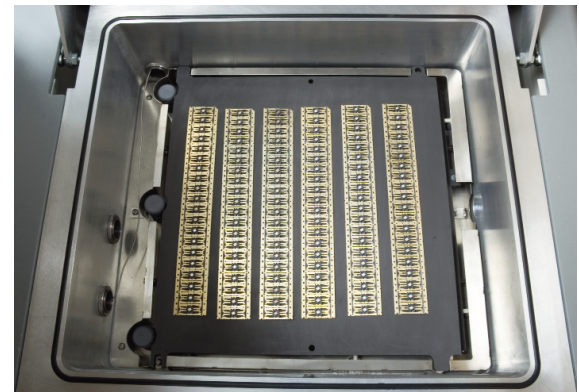
The 5100 utilizes a distributed logic system that links intelligent temperature and pressure controllers to a Microsoft Windows® based control. All process parameters are controlled automatically with user-edited programs for each application. Multiple temperature and pressure ramp and dwell cycles are easily programmed as time-based events. Vacuum levels, gas pressures and flow rates are independently programmable. Furnace operating characteristics are continuously monitored and the operator is alerted to any unusual conditions. The operator interface utilizes a color LCD display and a standard PC keyboard. An optional enhanced control system provides an operator touch screen, real-time graphing of temperature and pressure, together with data logging of all profile runs for quality control and process profile analysis.



Enhanced Operator Control Display

SELECTED 5100 OPTIONS

- Oil-Sealed or Dry Vacuum Pump
- Multiple Temperature Zone Measurement
- Moisture and Oxygen Analyzers
- Illuminated Chamber Viewport
- Additional Process Gas Input
- Enhanced Control System with Data Logging
- Rapid Cooling System
- Various Heated Target Plate Materials
- Custom Component Fixtures
- Cooling Water Recirculator
- Castors
- Light Tree
- Color Inkjet Printer



Large Thermal Work Zone

SPECIFICATIONS *

Operating Temperature Range	100 to 450 °C
Thermal Work Zone	12 x 12 in = 144 in ² (30.5 x 30.5 cm = 930 cm ²)
Minimum Vacuum Level	< 50 millitorr (< .067 mbar)
Maximum Chamber Gas Pressure Level	40 psig (3.7 bar)
Process Gasses	N ₂ required, (Ar He, forming gas optional) @ 90 psig (7 bar) minimum pressure
Electrical Service	208-240 volts, 50/60 Hz, three phase, 50 amps, 5 kW average, 20 kW maximum
Cooling Water Required	2 GPM (8 lpm) @ 20-25 °C, 2 kW minimum, 30 psig (3 bar) pressure differential
Work Surface Height	39 in (99 cm)
Overall Size (W x D x H)	43 x 34 x 55 in (108 x 86 x 140 cm)
Weight	1000 lb (455 kg)

* Specifications subject to change



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