

Programmable Vacuum/Pressure Furnace



FOR HIGH RELIABILITY MICROELECTRONIC PACKAGE ASSEMBLY

The 3130 is a programmable vacuum and pressure furnace offered by SST International for high reliability microelectronic package assembly. Advanced technology, provided by the system, allows users to create void-free solder joints without the use of flux. The 3130 is used in both production and research environments.

The system provides precise automatic control of heating and cooling up to 500 °C (1000 °C optional) in an inert gas environment from vacuum levels of below 50 millitorr to pressures exceeding 50 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. Run data is archived for quality control and off-line data analysis. Internet and intranet network connectivity is available as an option, permitting remote monitoring, troubleshooting and maintenance capabilities. Custom-designed resistive graphite heating fixtures (ordered separately) are matched to user application requirements for optimum system performance.

TYPICAL APPLICATIONS

- Flux-Free Soldering
- Fiber Optic Package Assembly
- MMIC Die Attach
- Power Device Assembly
- Hermetic Package Sealing
- Hybrid Assembly
- Glass-To-Metal Sealing
- Medical Device Assembly
- BGA Solder Ball Bumping
- Die, Component and Substrate Solder Attach

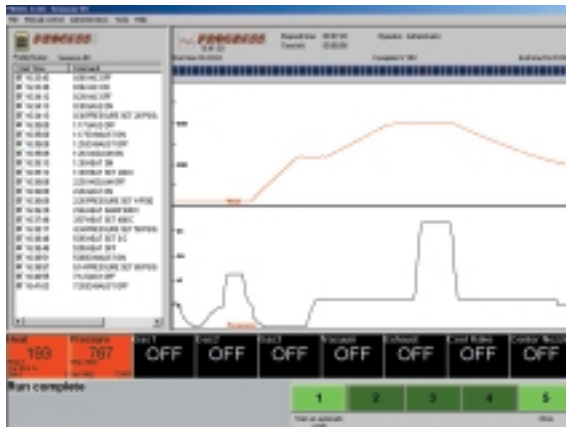


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CONTROL SYSTEM

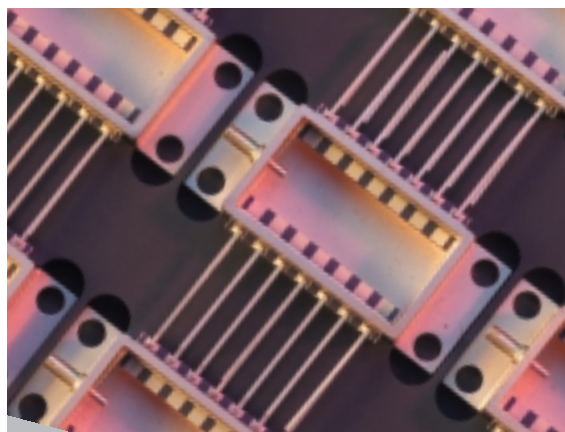
The 3130 utilizes a distributed logic system that links intelligent temperature and pressure controllers to a Windows® based central control. All process parameters are controlled automatically with user-edited programs for each application. Multiple temperature and pressure ramps and dwells are easily 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 features a color touch-screen display. For process engineers and maintenance personnel a standard computer keyboard with trackball is provided behind a locking front panel. All process profiles are stored directly on the system hard drive.



Color Touch-Screen Display

SELECTED 3130 OPTIONS

- Custom Graphite Tooling
- Oil-Free Dry Vacuum Pump
- Extended Temperature Range (1000 °C)
- Multiple Zone Temperature Recording
- Moisture Level Recording
- Internet Connectivity
- Cooling Water Chiller/Pump
- Light Tree
- Color Inkjet Printer
- CE Certification for European Market



Custom Graphite Tooling

SPECIFICATIONS*

Operating Temperature Range	RT to 500 °C (1000 °C option)
Thermal Work Zone	35 in ² (225 cm ²)
Minimum Vacuum Level	50 millitorr (.05 mbar)
Vacuum Pump Type and Speed (60/50 Hz)	Oil-sealed rotary vane - 12/10 CFM (325/275 lpm)
Maximum Chamber Gas Pressure Level	50 psig (4.5 bar)
Process Gasses (three inputs)	N ₂ required, (Ar, He, forming gas optional) @ 90 psig (7 bar) minimum pressure
Electrical Service	208-240 volts, 60 amps, 60/50 Hz, 1 phase, 5 kilowatt average, 15 kilowatt peak
Cooling Water Required	2 GPM (8 lpm) @ 20-25 °C, 2 kilowatt capacity minimum
Work Surface Height	38 in (96 cm) adjustable
Overall Size (W x D x H)	58 x 54 x 53 in (147 x 137 x 135 cm)
Weight	1200 lb (545 kg)

* Specifications subject to change



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