

ONYX29

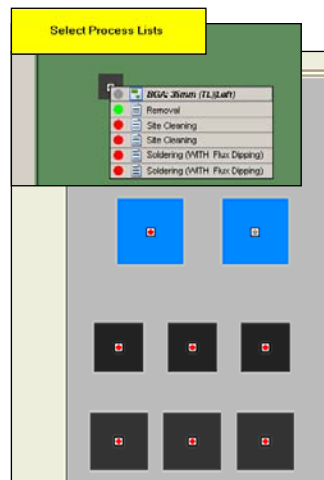
SMT Production Rework & Assembly



Enhanced Capability in Part Handling, Micro-Force Pick & Place Control, Dispensing, Alignment, Placement Accuracy, Preheat and Precision Reflow Control

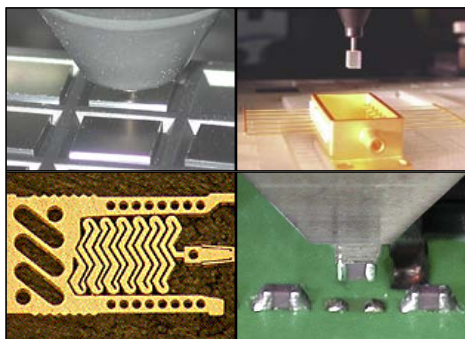
High Volume Rework

- Select any stored component location. Any or all process sequences can be chosen and automatically applied.
- Operator can choose any sequence for single or multiple assemblies; multiple sites with multiple or single processes; single site with multiple or single processes.
- Operator identifies fiducial and all processes are executed without nozzle positioning.



Delicate/Fine Pitch Component Handling

- Placement accuracy of 9 microns (0.0003") @ 3 sigma.
- Closed-loop force sensing placement system (four load cells) places device with 10 gram force. Real time digital display indicates actual and programmed value.
- Vacuum sensor insures component removal without solder displacement to adjacent areas.
- Component shuttle allows multiple (waffle tray, tape or custom) or single device pick up/drop off.

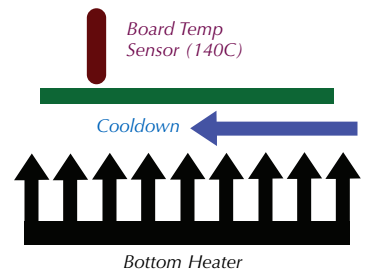


MICRO-FORCE PICK & PLACE

Powerful, Closed-Loop Process Heating

BOTTOM HEATER

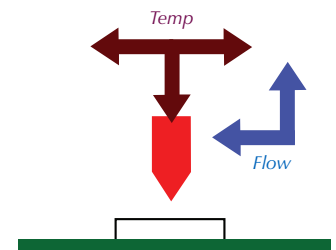
- Thermally balanced heating elements provide ultra-fast heat up with excellent thermal uniformity.
- Black ceramic, high-emissive coating dramatically increases radiant energy, providing the capability to pre-heat high thermal mass and lead free boards to the significantly higher preheat temperature (140C) required for lead-free rework.



- Uniform, overall heating minimizes PCB warpage and localized thermal stress of upper heating.
- Closed-loop board temperature sensor monitors and triggers board preheat to target temperature regardless of machine or board thermal conditions. Eliminates taping thermocouple to the assembly.
- Board cooling system provides fast, controlled cool down of component to control time over reflow. Promotes process repeatability and stabilizes machine conditions.

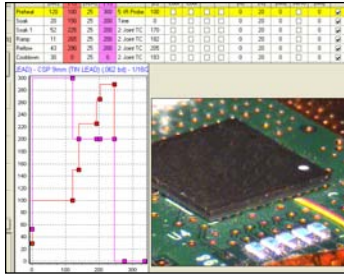
UPPER HEATER

- High Efficiency, 1000 watt patented element provides stable, precise heat to maintain uniform & repeatable joint temperatures.
- Closed-loop mass flow controller monitors and regulates precise air flow.
- Temperature and flow rate are auto-calibrated at multiple set points insuring machine to machine repeatability.



Extraordinary Software Capabilities

- Simple, fast and easy first run, automatic thermal profiling with on-the-fly adjustments. Removal, site cleaning and replacement programs are automatically built and immediately ready to run.
- Automatic process sequences with site pad cleaning x, y and z motion of programmed pattern.
- Advanced motion, heating and peripheral routines may be added to any program sequence.



Large, Clear Image for Component Alignment

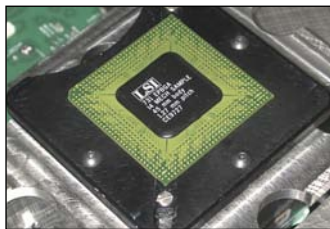
- Multi field of view automatically indexes to any of the four device corners or center.
- Independent pad (white) and component lead (green) lighting with intensity, brightness and contrast control adjustment. High magnification with electronic zoom (automatic).
- Can handle components up to 3.0" (75mm).

Site Pad Cleaning

- Standard & Micro site clean nozzles provide capability for any assembly to remove residue solder using a non-contact composite vacuum tip. Ultra-micro contact tip for micro assemblies.

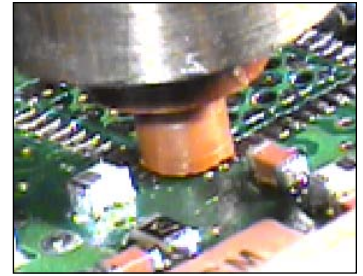
Recommended Options

- **Pivoting IR Sensor w/Laser Pointer** (0029.11.041) - Provides process repeatability by insuring that the board is at the exact same target temperature each time before localized reflow begins.
- **Component Shuttle, Auto V2** (0029.02.042) - Provides a safe, repeatable location for component pick up, flux dipping and drop off away from the heated work area.
- **Site Cleaning System** (0029.03.012) - **Includes standard and micro nozzles** for complete removal of residual site solder on virtually any site.
- **Universal Insertion Tool** (AU4LGA45SQ) - Mechanically self-centers any square device for accurate pick up. Used in conjunction with automatic component shuttle.
- **Direct View Camera** (0029.04.041) - Provides high magnification site viewing including the ability to verify when component reflow has occurred.



- Air flow heats the pads after component is removed.
- Pattern programmed with automatic length and width control. Vacuum height sensor automatically and continuously adjusts to the safe tip height above the pads regardless of residual solder deposit or board thickness.

- Promotes clean, uniform pads for replacement device or uniform solder deposit, insures no component misalignment or uneven solder deposits.



- Enhances paste dipping or dispensing, flux dipping or dispensing, and paste stencil usage.

- Damaging effects of manual processes (wick, desoldering tools) can cause pad, mask and assembly damage due to scraping and overheating by operator are eliminated.

Integrated Dispensing System

- Pattern programmed software controls volume of solder dots or lines down to 0.010" diameter.
- Placement accuracy is within 9 microns @ 3 sigma.
- Time-Pressure system with programmable dispense time, depart height, speed and transfer height.
- Can be used with solder paste, epoxy, under fill or flux.

Other Options

- **Ergonomic Workstation with CPU Holder** (1003.05.010)
- **Monitor Stand Option for Workstation** (1003.05.005)
- **Nozzle Stand Option for Workstation** (1003.05.006)
- **Locking Drawer Option for Workstation** (1003.05.007)
- **70mm Topside Clearance** (Std is 30mm) (0029.01.052) - Provides increased top side clearance for assemblies with vertical daughter cards or tall devices that exceed the standard 30mm (1.2") top side clearance.
- **Fume Extraction Manifold** (300.00.547) - Removes flux vapors from the environment for health and safety.
- **Dispensing System** (0029.08.010) - On-machine dispensing of flux, solder paste, adhesive, epoxy or underfill.
- **Paste-On-Device Stencil Adapter** (0024.24.111) - Component specific stencil applies solder paste directly to the component spheres.
- **Lead Free Rework Training Kit** (1023.02.010)
- **4 Additional Thermocouple Ports** (300.00.504)
- **Recommended Spare Parts** (0029.00.040)
- **Thermocouple Organizer** (0024.90.047)