



Freedom 3000 Plus Rework Station

System Overview

The Conceptronic Freedom 3000+ printed circuit board repair station is designed for component rework, low volume prototype reflow soldering and process development. The Freedom 3000+ machine structure is accurate, rigid, and stable in order to repeatedly place and solder SMT components. A central plate provides integrated mounting features for permanent and precise alignment of all critical sub-assemblies. Circulating, linear ball bearings are used for the placement/heater head, optics train, and XY table.

Top and bottom forced hot gas heaters are standard. The heaters are computer controlled, and feature independent “variable” set-point temperatures and airflows. The top heater head is motorized for automatic component placement and removal. The software has built-in support for an optional 4 Zone “Honeycomb” Infrared Preheater for efficient preheating of large PCB assemblies.

The Freedom 3000+ control system features user-friendly Microsoft Windows™ software for processing development and general operation. The software runs on an integrated Pentium™ computer. The computer communicates with an internal, industrial PLC for reliable I/O control. The entire system is designed for maximum flexibility and ease of use with fast, accurately controlled heating and precise, repeatable placement.



Semi- Automated Rework Station

- Vision System
- Placement & Removal

Powerful Rework Station

- 1200W Convection Nozzle
- 1200W Underboard Heater
- 5000W Honeycomb preheater

- PB-Free Certified
- Accurate
- Rapid / Repeatable
- Robust / Reliable

Contact Information

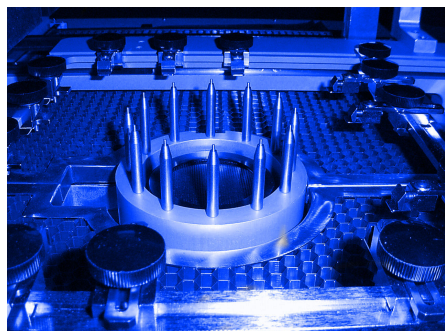
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Standard Features

- Factory calibrated optics
- Fixed mirror (recommended for viewing and aligning components less than 60 x 60 mm)
- Thermocouple input ports (6) for real-time process monitoring and development
- Precision bearings for optics, Z-Axis, and X-Y Table
- PCB positioning table with X-Axis and Y-Axis fine adjust
- Breakaway heater head with built-in Theta adjustment
- Rigid station base made of high-stability, CNC machined aluminum for accuracy and durability
- High, Medium and Low gas flow settings for top and bottom process heaters
- Air or nitrogen heater operation with separate air and nitrogen inputs standard.
- Vacuum pump, & vacuum wand attachment for component handling.
- Universal Board holding fixture.
- Vacuum Part Pick Up Sensing switch, tells PLC found part and picks up
- Color Vision System, camera, lens, frame grabber card
- Manual Optics Train Control for most rapid cycle times is standard
- Wide-Array adjustable under board support for minimal stress and guaranteed repeatable z-axis positioning.



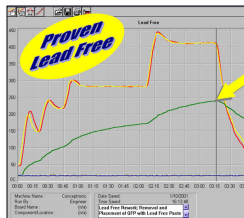
Wide Array Under Board Support with Vertical Z-Axis Adjustment.

Control System

- Intel Pentium™ based PC
- Hard Disc Drive, 3.5" floppy disk drive, CD ROM drive
- Industrial-duty programmable logic controller (PLC) for reliability and I/O control
- Real-time PID control for forced convection hot gas heaters
- Keyboard/Mouse
- 15" LCD Monitor

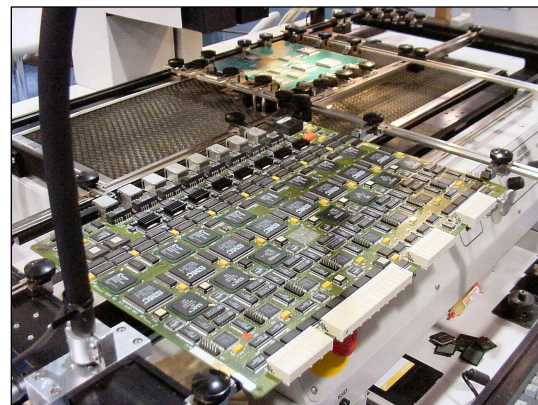
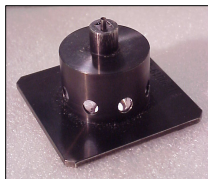
Software

- MICROSOFT WINDOWS™
- Conceptronic WINDOWS™ based custom operating software
- Pre-programmed process recipes for rapid set-up and process development.
- Password protected engineering access
- Learn-and-repeat interactive profiling
- Data-logging with report generation
- Process graphing
- Virtually unlimited profile flexibility (multiple flow rates, temp set points, etc.)
- Virtually unlimited profile storage



Component Handling Capacity

- 1 x 2 mm minimum recommended component size
- 80mm square maximum recommended component size
- Handles both grid array and leaded type components. (BGA, CGA, QFP, LCC, TSOP, FLIP-CHIP, and many others)
- Placement Accuracy to better than 0.001 inches
- Able to repair boards with up to 2.4 inch tall components

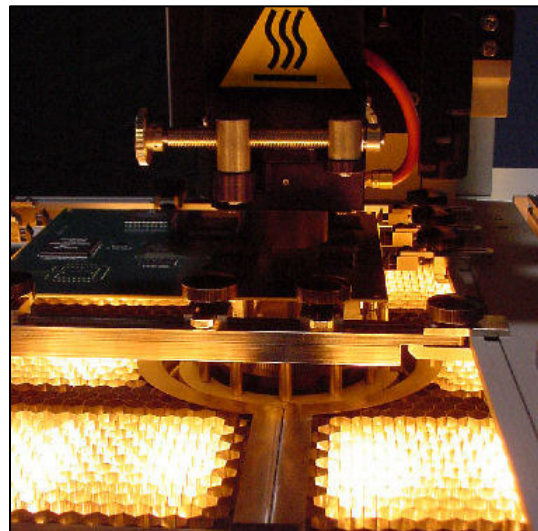


Board Handling Capacity

- 14 x 14 compact size
- 20 x 20 standard size
- 24 x 36 large board
- 2 inch x 2 inch (5 cm x 5 cm) minimum recommended board size
- 20 inch x 20 inch (50.8 cm x 50.8 cm) maximum recommended board size
- PCB Thickness' up to 0.25 inch (6.4 mm)

Options

- Split mirror (wider field of view recommended for parts larger than 60 x 60 mm), bigger part)
- Auto shuttle with calibrated positioning for component pickup.
- Closed loop Pressure Sensing Z-axis control.
- 360 degree rotating nozzle.
- Under board Preheater



4 Zone Under Board Preheater