

**American Hakko Products, Inc.****P R O D U C T B U L L E T I N****Bulletin No:** PB198**Issue Date:** 06/25/04**Product:**

FR-1418 BGA Rework System

Part No:

FR1418-01

FR1418-02

Specification:

Unless otherwise stated specifications apply to both FR1418-01 and FR1418-02

Control System/Software:

- Embedded industrial microprocessor control
- HMI operator interface with LCD read-out panel
- Real-time PID control for forced convection hot gas top heater
- Programmable, multi-step heating/cooling cycle with 100 recipe nonvolatile memory
- Password protected, operator lock-out for programmable process variables
- Teach-mode profiling

**Heaters:**

- Forced convection top heater
- Full area array bottom preheater—low mass infrared type. FR1418-01 one bank 12" x 10"/750W, FR1418-02 two banks 12" x 20" /1500W
- Low, medium and high gas flow settings for top heater
- True proportional control of bottom heaters (20% to 100% power)

Hardware:

- Rigid gantry structure and system base constructed of heavy-walled aluminum
- CNC machined components for stability and accurate component placement
- Factory calibrated optics
- Thermocouple input ports (2) for real-time process monitoring and development
- Precision bearings for optics, Z-Axis and X-Y gantry
- PCB holding fixture with optional adjustable bottom-side support

From...

For pricing information, please contact your local American Hakko representative or our customer service department at (661) 294-0090.

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- Compliant heater head with built-in Theta adjustment
- High resolution video image vision system
- Fixed mirror

Board Handling Capacity:

- 2 inch x 2 inch minimum recommended board size
- 14 inch x 18 inch maximum recommended standard board size
- Able to repair boards with up to 2 inch tall components
- PCB thickness' up to 0.25 inch (6.4 mm)

Component Handling Capacity:

- 0.08 inch (2.0 mm) square minimum recommended component size
- 2 inch (51 mm) square maximum recommended component size
- Handles both grid array and leaded type components—BGA, CGA, QFP, LCC, TSOP, etc.
- Placement accuracy to +/-0.001 inches

Mechanical Specifications:

- Width: 28 inches
- Depth: 28 inches
- Height: 28 inches
- Weight: approximately 125 lbs
- Supply Air:
80 PSI, 5 CFM (Dry, Filtered)
1/8 inch NPT female inlet
3/8 inch (10mm) minimum supply line

Electrical Specifications:

- Volts: 120 single phase
- Amps: FR1418-01 15 amps, FR1418-02 20 amps

Comments:

Constructed of heavy-walled aluminum castings for unsurpassed precision and stability, the innovative FR-1418 BGA Rework System is a flexible system designed for the manual alignment and placement or removal of BGA, μ BGA, Flip Chip, CSP and other surface mount electronic components with precisely controlled solder reflow profiles. The system features a unique gantry style construction similar to that of a pick-and-place machine, which allows the PCB to remain stationary while the head moves to accomplish the X, Y, Z and Theta alignment. This design allows the capacity to easily rework boards up to 14 x 18 in a smaller footprint with simple board fixturing, a large preheater and powerful forced convection top heater.

The system top heater is a forced convection/hot gas type and is integrated into the automated placement head. The bottom heater is a large area, low mass infra-red heater that provides fast, efficient heating and eliminates board warping. The optical alignment system

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uses a CCD camera with a flat mirror and beam splitting prism for easy alignment of BGA and area array devices. The camera connects to a dedicated video monitor.

The control system features a powerful microprocessor, non-volatile memory and isolated thermocouple inputs. The operator interface is an HMI with an LCD read-out panel. The system has onboard storage for 100 recipes and multi-step heating/cooling profile capabilities.

The FR-1418 is available in two standard configurations. The FR1418-01 includes one bank of low mass infrared full area array bottom preheater. The FR1418-02 includes two banks of preheaters.

Contents:

Qty	P/N	Description
2	222-510	Bottom IR Heater Lamp 500W
2	222-511	Standard Optics Lighting Bulb 75W
3	222-512	Type K 36 Ga. Thermocouple
1	222-513	Standard Vacuum Cup 0.28 Dia.
1	222-514	Optics Calibration Tip
1	222-515	Optics Calibration Plate
1	222-400	Nozzle 14 x 14 mm
1	222-401	Nozzle 18 x 18 mm
1	222-402	Nozzle 22 x 22 mm
1	222-403	Nozzle 26 x 26 mm
1	222-404	Nozzle 30 x 30 mm
1	222-405	Nozzle 34 x 34 mm

Available:

June 28,2004

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