

Precision Advanced Package Rework

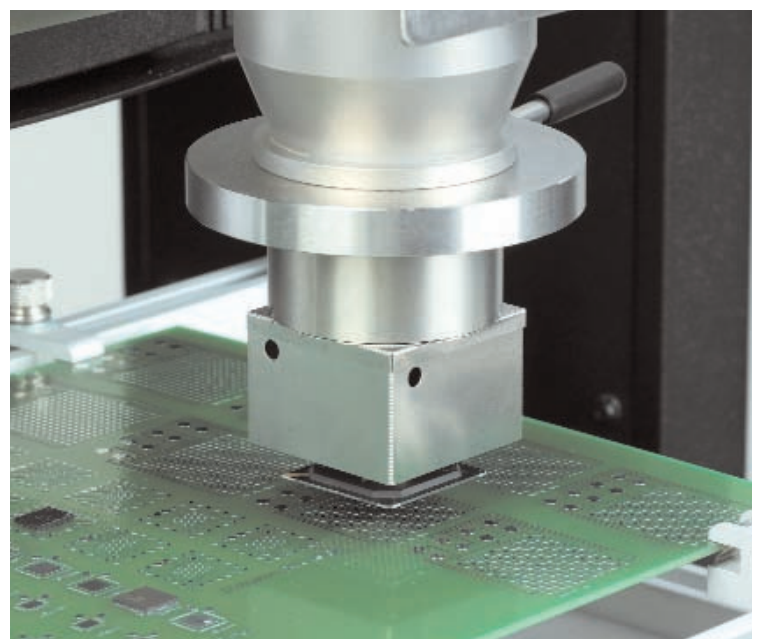
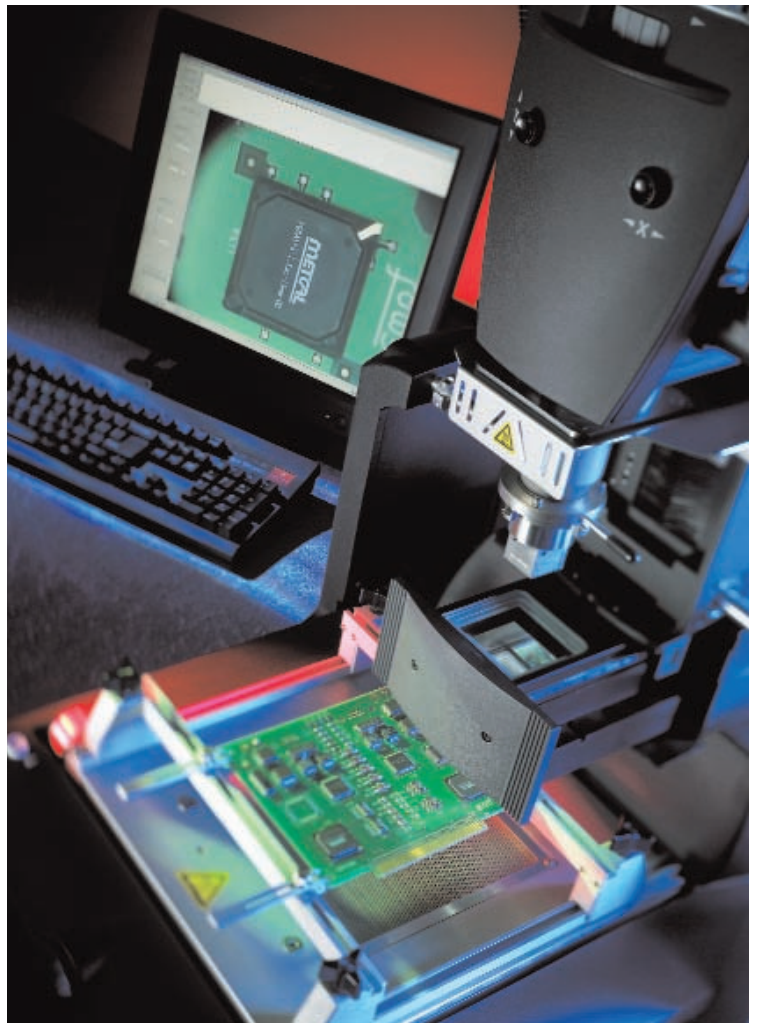
The APR-5000 Series Advanced Package Rework Systems incorporate state-of-the-art vision, and closed-loop time, temperature and airflow control. Precision placement and powerful software make the rework of complex array packages easy, fast and reliable.

Economical and easy-to-use, the APR-5000 Series deliver best-in-class BGA, CSP and QFN Rework functionality with professional performance at an affordable price. All machines incorporate the ideal combination of hardware features and automated software necessary for reworking today's high technology fine pitch array packages.

Easy-to-program multi-lingual software manages the five stages of the reflow profile: pre-heat, soak, ramp, reflow and cooling. In addition, board temperature can be monitored using flying thermocouples. Real-time adjustments can be made to all parameters while the profile is running.

To help guarantee uniformity and higher process yields, the APR-5000 Series incorporates powerful, efficient and fast response convective top reflow heater and bottom dual zone preheaters for fast ramp and tight delta temperature control across reworked component and uniform preheating across surface of the PCB.

The enhanced software is instructive and intuitive, walking the engineer through the steps of process development and then guiding the operator through the process steps to ensure consistent, repeatable execution of the automatic profile functions. Engineer also has the ability to associate tutorial to individual process file presenting step-by-step instructions that operator can reference quickly and easily in real-time.



Lead-Free Compatible

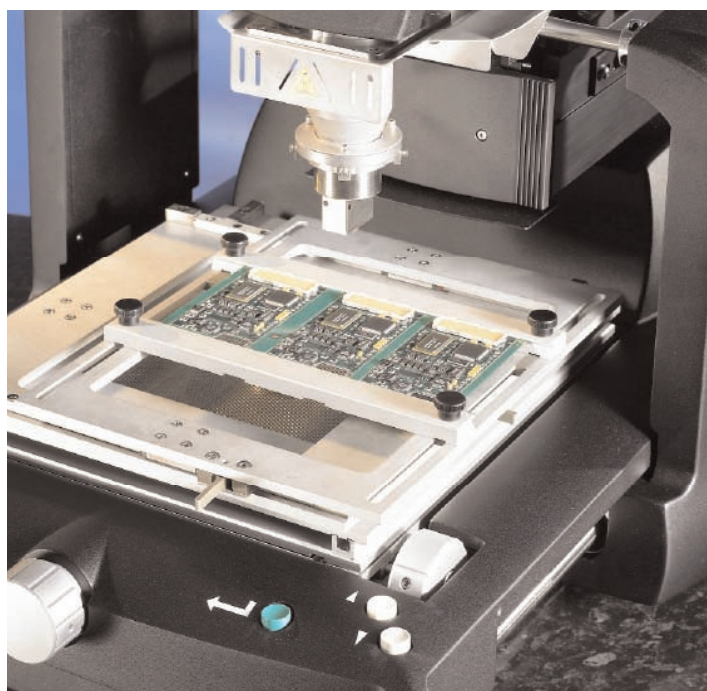
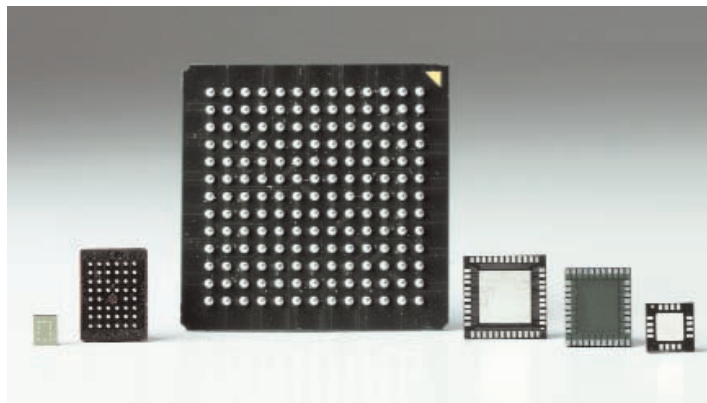
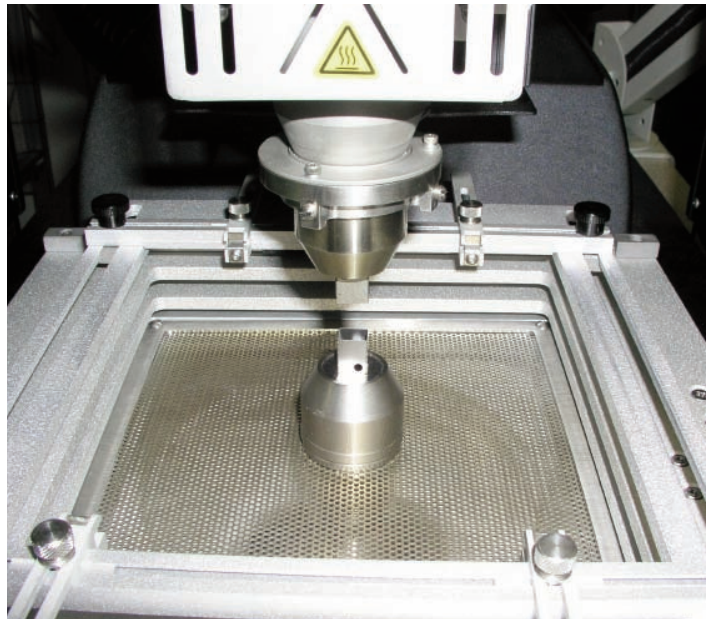
As the implementation of lead-free assemblies intensifies, the APR-5000 series Advanced Package Rework Systems have the power, size and sophistication to meet the required higher, cost-sensitive performance criteria.

The innovative single reflow/ placement head and dual stage preheaters help achieve a consistently small Delta T across the board and the component. Thermal damage is precluded due to the system's precisely controlled preheater; lead-free profiles can be quickly developed via the system's five thermocouples; and closed-loop, computer controls and intuitive software help operators maintain the ideal process from start to finish.

The APR-5000 Series Advanced Package Rework Systems provide full convection in both reflow heater and dual pre-heaters to provide fast ramp and precise peak reflow temperature without thermal damage to sensitive components unsuitable for heating above 250°C. And with four heating zones and one cooling zone, the precise profiles needed for successful soldering/ desoldering of lead-free packages are easily delivered.

The APR-5000 Series Advanced Package Rework Systems are distinguished by innovation and flexibility. The dual stage convective pre-heater can be switched between inner and outer stage or on simultaneously at different temperatures in any zone to meet the higher rework requirement of lead-free with much faster process times.

Higher thermal performance can be achieved, attaching reflow nozzles to both the top reflow and bottom inner stage heaters set directly above and below reworked component. Bottom nozzle has added advantage in preventing thermal damage to adjacent components on the underside of the PCB. And newly designed thermal tweezer top nozzle provides integrated mechanical action pickup for devices with limited surface area instead of standard vacuum pickup, or melting switches and video connectors on the edges of PCBs which is a major issue today.



APR-5000-DZ Advanced Package Rework System

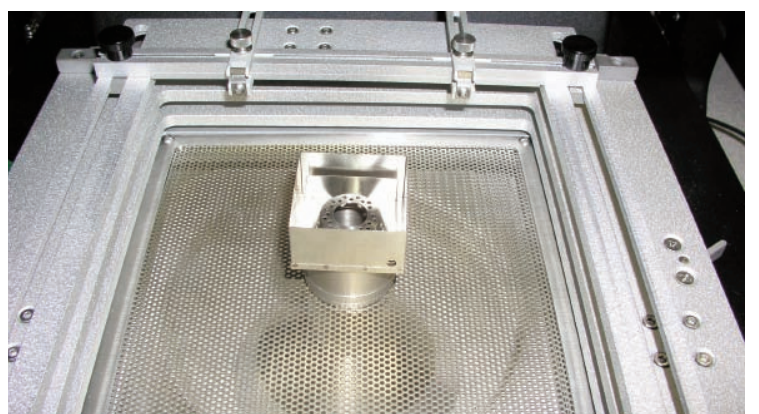
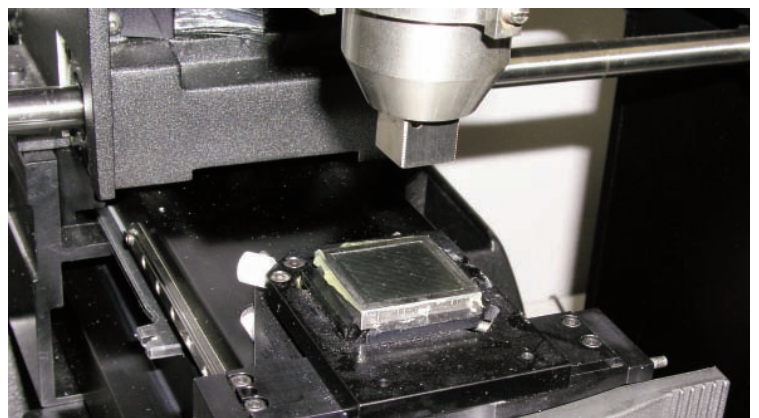
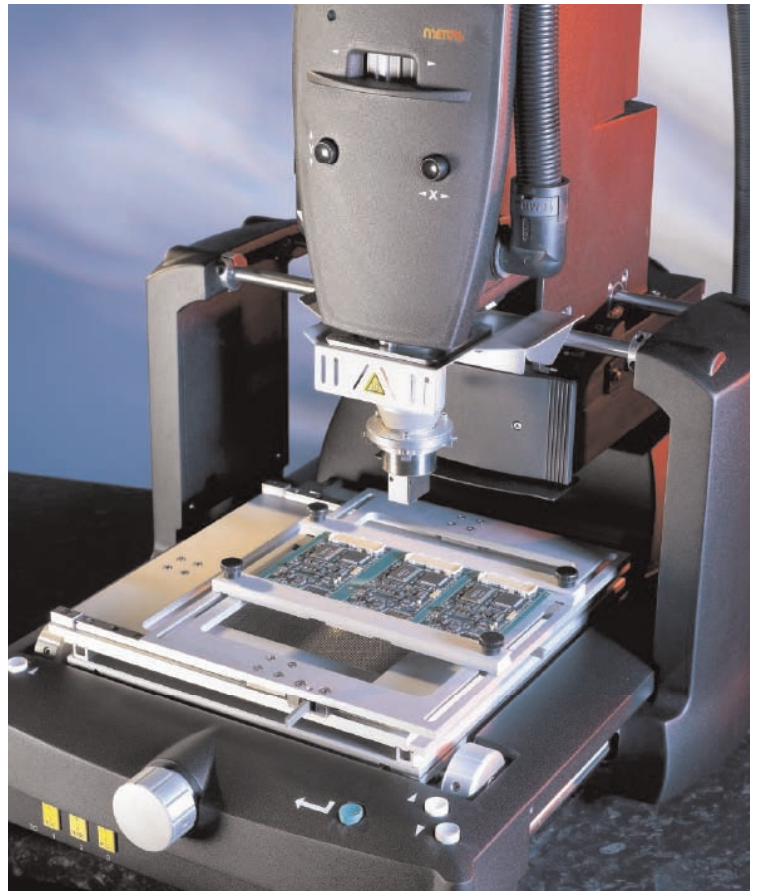
Design and functionality come together in the compact and powerful APR-5000-DZ Advanced Package Rework System. This system provides closed-loop control, optimized vision and precise component placement on a compact platform of 19" x 30" (483mm x 762mm). Self contained pumps are standard on this compact platform allowing for easy benchtop setup.

Capable of handling boards up to 15" x 7.75" (381mm x 197mm) with standard fixtures (larger PCB Holder options exist if required) with a placement accuracy to 0.001" (0.025mm) and interconnection pitches as low as 0.012" (0.3mm), the APR-5000-DZ is ideal for reworking smaller assemblies such as cell phones and laptop computers.

The APR-5000-DZ System incorporates powerful, efficient and fast response convective top reflow heater and bottom dual zone pre-heaters for delivering fast ramp and tight delta temperature control horizontally, across the surface of PCBs up to 0.25" (6.35mm) thick, and vertically between the die and ball of the reworked components.

The single reflow/ placement head can be moved to the correct position for rework allowing PCB assemblies with 2" (50mm) underside components to be stationary mounted above the pre-heater. An optional XY table (APR-TAB) can be added to minimize operator fatigue and is ideal for small PCB assemblies with less than .25" (6.4mm) underside components. In addition, the APR-5000-DZ-TAB is an APR-5000-DZ system with a pre-assembled XY table.

The system also incorporates an exclusive integral vision system that makes viewing, aligning and accurately placing a component easy by allowing operators to simultaneously view the topside of the PCB and a superimposed image of the underside of the component. Then, with micrometer adjustment, images can be accurately aligned in the X, Y & Theta axes prior to placement. In addition, integrating the vision system with the machine's software eliminates the need for multiple monitors.



APR-5000-XLS Advanced Package Rework System

The APR-5000-XLS Advanced Package Rework System provides board capability with small board precision. This system performs precise, cost effective rework of the widest range of PCBs and component types, from large boards up to 24.5" x 24.5" (622mm x 622mm) to components down to 0.020" x 0.010" (0.5mm x 0.25mm).

The flexible APR-5000-XLS System incorporates dual stage pre-heaters and has the thermal capacity and control to execute precise profiles of both large and small PCBs, delivering uniform temperature control horizontally, across the surface of PCBs up to 0.25" (6.35mm) thick, and vertically between the die and ball of the reworked component.

Motorized X,Y, Z adjustments speed placement and help ensure process repeatability. In addition, motorized Theta axis provides 360° rotation to simplify component orientation. Together, these advanced controls reduce operator fatigue, improve placement accuracy and provide process consistency.



Featured on the APR-5000-XLS Advanced Package Rework System is an innovative Split Vision System, which allows operators to view the opposite corners of a component, including splitting on rectangular components, with the necessary magnification to make its placement and registration fast and accurate.

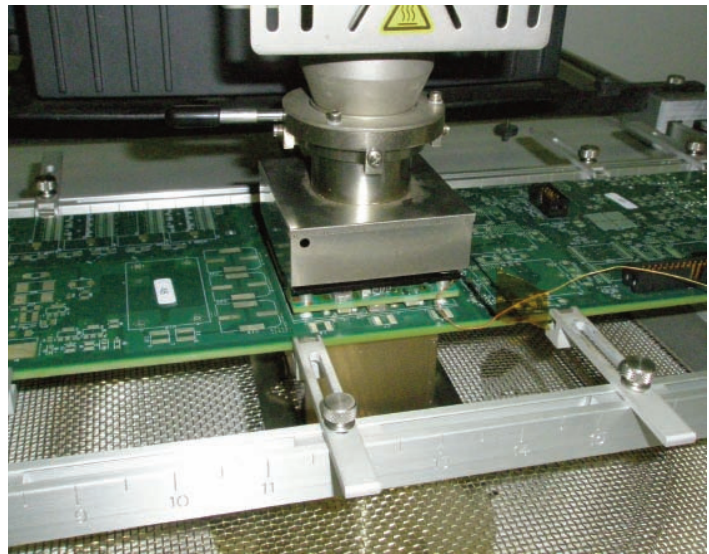
Improved performance

New features:

- New dual simultaneously operating subzones provides additional power for faster and safer rework operations.
- New software enables fast and easy profiling
- New subzone design speeds up the process while allowing the operating temperatures to remain lower protecting the component and PCB

Key benefits:

- Increased Productivity
- Precise thermal control across critical assembly regions
- Reduction of rework cycle time protects the component under rework from thermal damage.
- Better management of the narrow lead-free process window without reaching excessive peak temperatures that damage components, connectors, other solder joints and the PCB substrate



New circuit breaker / power switch with easy front access

