

MEDIA FOR



1998 *SMT* VISION AWARDS WINNERS

ADHESIVES, COATINGS AND ENCAPSULANTS

Microcure 5100

The Lambda Technologies MicroCure 5100 curing system features patented Variable Frequency Microwave (VFM) technology. This eliminates the hot spots and arcing associated with conventional microwave technology, allowing significantly faster curing of standard, qualified encapsulants and adhesives. By reducing cure times to five minutes or less, VFM meets the critical industry challenge of providing increased throughput for advanced packaging technologies. Applications include cavity dam & fill, glob-top, underfill and bonding, for die-attach, BGA, multi-chip module, chip-on-board/direct chip-attach and chip-scale packaging.

[Lambda Technologies Inc.](#)

ASSEMBLY TOOLS

Direct Die Feeder

Hover-Davis has made a component feeder that removes and presents bare die directly from a vertically mounted 4 to 8" wafer. The Direct Die Feeder attaches to the feeder bay of existing pick-and-place machines and delivers die as small as 1mm, with circuit up or down, at a rate of 1 per sec (6/sec in burst mode). The internal vision system or wafer mapping assures that known bad die are rejected and the vertical form factor allows the system to consume only 3" (80 mm) of feeder space.

[Hover-Davis](#)

CLEANING

Model 5000

The Model 5000 is designed to safely wash, rinse and dry any size stencil in less than six minutes without the use of hot wash solutions or hot drying air. Dual tank processing allows the Model 5000 to clean more than 500 stencils using the same amount of chemistry that it took to clean just 70 stencils (5 gallons). Certified environmentally safe, performance guaranteed, low chemistry and energy consumption, and competitive pricing makes the Model 5000 the ideal system for cleaning stencils, misprinted PCBs, pallets and tooling.

[Smart Sonic Corp.](#)

COMPONENTS

Solder-Flux Bearing Clip

The Teka Solder-Flux Bearing clip eliminates secondary processes for through-hole components on

mixed technology PCBAs and overcomes the limitations of the intrusive reflow process. The product is an inexpensive stamping that carries a precise amount of flux-cored solder wire. Solder volume is controlled by varying the diameter of the solder wire and, because it starts with solid solder, a significant increase in volume is achieved as compared to solder paste. The increased solder volume allows for a larger plated through-hole, thereby facilitating automatic placement of the connector.

[Teka Interconnection Systems](#)

CONTRACT SERVICES

TIME 2.1

TIME 2.1 is an extranet application that permits customers to log on to the AVEX Electronics website and retrieve secure, real-time factory data without any custom systems integration or maintenance. Customized reports regarding work in process, product status, inventory levels, test results and scheduling commitments are accessible to customers 24 hours a day. Customers can make timely market decisions about product introductions and availability, shipping updates and a host of additional strategic and tactical issues, which can shorten time-to-market.

AVEX Electronics Inc., now [Benchmark Electronics](#)

DISPENSING EQUIPMENT

CA100

Composed of only six parts, the CA100 utilizes a unique "floating diaphragm" concept to accurately apply cyanoacrylates and other low viscosity fluids. Material pressure to the valve forces a patented silicone disc to float and allow material through the fluid body and out the needle. The disc employs a Teflon film embedded into the wetted side. Applying air pressure to the top of the diaphragm forms a seal that shuts off the valve. The diaphragm is the only wearable part of the valve and changing a diaphragm takes less than two minutes.

[Precision Valve & Automation, Inc.](#)

INSPECTION

RTX-2500

Glenbrook Technologies' RTX-2500 programmable real-time X-ray inspection workstation uses advanced inspection technology to improve throughput and quality in high-value assembly processes using leading-edge packages. Automatic functions of the RTX-2500 include performing inspections on multiple sites, recalling programs for process repeatability and capturing images for a variety of applications. The RTX-2500 incorporates Glenbrook's patented X-ray camera technology for high-resolution, high-sensitivity images across a broad range of X-ray energies.

[Glenbrook Technologies Inc.](#)

PICK-AND-PLACE

TIM-5000

Direct Drive Head technology provides significant increases in placement accuracy for advanced components on Sanyo's TIM-5000 flexible, fine-pitch placement system. The Direct Drive Head incorporates a micro-stepper motor and placement head in a single unit for smooth, continuous 360° rotation. With 51,200 pulses per revolution, the unit achieves theta resolution of 0.007°. The innovative motor in the Direct Drive Head eliminates more than forty parts (gears, linkages, belts), dramatically reducing maintenance requirements. Each head is individually controlled, allowing parameters for

vacuum pressure and pick-up speed to be pre-programmed.

[Nissei Sangyo America Ltd.](#)

PRINTING

ProFlow DirEKt Imaging

ProFlow DirEKt Imaging uses two independent, separately programmed forces to manipulate the transfer head assembly. The first force lowers the assembly to the stencil surface, reducing stencil wear. The second propels the paste through the stencil apertures. The fully enclosed assembly eliminates tram lines, improves stencil-to-board gasketing and reduces underscreen cleaning cycles by a factor of five. The airtight ProFlow paste cassette eliminates any contact between the paste and the air, operator or work area.

[DEK](#)

REWORK and REPAIR

SolderQuik BGA Preform

The SolderQuik BGA Preform consists of an array of solder spheres embedded in a water-soluble paper/polymer carrier. After applying flux, simply align the component to the preform with an inexpensive fixture. After reflow, just moisten the carrier and peel it off. SolderQuik Preforms eliminate the need for stencils, loose solder balls, and solder paste in the reballing process. Reballing a component with preforms requires only a few seconds of labor and very little operator skill. This process works well with most reflow equipment and alongside any rework station.

[Winslow Automation Inc.](#)

SOFTWARE

Auto-Predict Software

Auto-Predict software from KIC Thermal Profiling calculates optimal recipes within minutes, minimizing set-up time and increases the accuracy of the thermal profile, maximizing throughput and quality. Instead of searching for optimal setpoints and conveyor speed, the user enters profile specifications (Peak Temp. = $215^{\circ} \pm 10^{\circ}\text{C}$, Max. Slope = 3.0°C , etc.) into the program. Thousands of potential recipes are then calculated and ranked by how well they fit the specifications. In minutes, the user has 20 or more "in spec" recipes to choose from.

[KIC Thermal Profiling](#)

SOLDERING EQUIPMENT

TOWER Modular Vertical Stationary Reflow Oven

TOWER Modular Vertical Stationary Reflow (MVSR) technology combines the thermal precision/small footprint of stationary reflow with in-line conveyor oven speed. TOWER multitasks board assembly using patented "mini-ovens" providing the equivalent of eight conveyor lanes — each with an independent profile and board size. Multiple pick-and-place lines dedicated to specific board types are routed to a single TOWER for box build assembly. Stationary reflow eliminates profiling variables like conveyor speed and zone temperature settings. Components once dedicated to wave/hand soldering can now be reflowed.

[Research International](#)

SOLDERING MATERIALS

TSF 6502

Kester's TSF 6502 is semiconductor-grade product developed for the attachment of balls to a variety of substrates. The distinguishing features of Kester's TSF 6502 is it's high activity in a no-clean flux material. The TSF 6502 is capable of soldering to nickel substrates and unlike water-soluble flux residues, the TSF 6502 residues can remain on the assembly surfaces with out creating any electrical conductivity issues. The TSF 6502 is a tacky, high viscosity flux that can be dispensed, screen printed, stencil printed or used in thin film deposit transfer operations.

[Kester Solder](#)

TESTING

HP 3070 Series 3

The HP 3070 Series 3 reportedly generates the fastest in-circuit tests. The system's capabilities include: new system hardware and design — a test time improvement that retains test quality and stability expected and 100 percent compatibility with tests developed on previous generation HP 3070 test systems; a new reporting tool to assist test engineers in tuning test programs for maximum speed; new operator ergonomics; and HP JOT Automation — a jointly-developed dual-well test-handler that virtually eliminates test handling time through the test cell.

Hewlett-Packard, now [Agilent Technologies](#)

Links referenced within this article

Lambda Technologies Inc.

<http://www.microcure.com>

Hover-Davis

<http://www.hoverdavis.com>

Smart Sonic Corp.

<http://www.smartsonic.com>

Teka Interconnection Systems

<http://www.tekais.com>

Benchmark Electronics

<http://www.avex.com>

Precision Valve & Automation, Inc.

<http://www.pvalve.com>

Glenbrook Technologies Inc.

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<http://www.winslowautomation.com>

KIC Thermal Profiling

<http://www.kicthermal.com>

Research International

<http://www.research-intl.com>

Kester Solder

<http://www.kester.com>

Agilent Technologies

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