Optical Inspection Systems

EasyBraid Co.

Easy Braid's
Desoldering Braid

Easy Braid's
Solder Soakers

Easy Braid's
Swabs

Easy Braid's
Wipes

Easy Braid's
Stencil Rolls

EASY BRAID CO.

Easy Braid Co. is a manufacturer of desolder wick with an emphasis on continuing advancement in desoldering technology. Established in 1989, Easy Braid Co. quickly achieved widespread recognition in the rework/repair industry with its competitive pricing and innovative product line.

With products, packaging and flux technologies constantly changing—particularly in the development of water soluble and no-clean fluxes, fine pitch components and arrays—high quality and consistent performance is essential. By manufacturing in compliance with our uniform quality standards, and through our strict adherence to Statistical Process Control (SPC), Easy Braid Co. can assure you the highest quality products and guarantee the consistency of that quality.

Easy Braid Co. utilizes the sales support and services of over 200 representatives located throughout the United States and in 20 additional countries spanning six continents. Our international sales base continues to grow and strengthen with each new Easy Braid advancement.

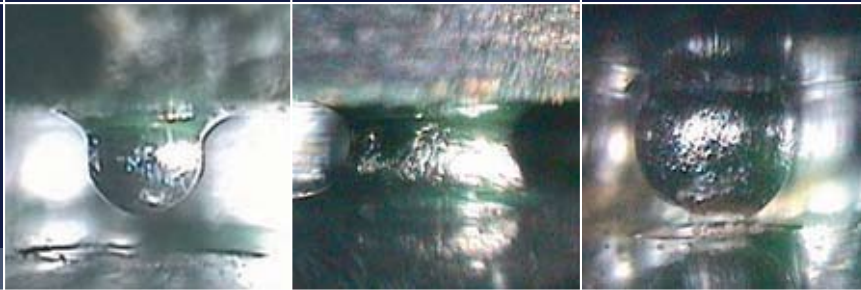## Superior Optical Inspection with Easy Braid's Unique Endoscope Lens

The VPI-1000 Series Optical Inspection Systems change the way technicians "see" array packages. For the first time, operators can check every solder ball, every joint and know the attachment has been performed to the original specification. The VPI-1000 Series Optical Inspection Systems get tighter, closer and lower than any other optical inspection system.

Unique to the VPI-1000 Series Optical Systems is Easy Braid's revolutionary endoscope lens. Capable of rotating 90° left/right and with a 5° angle of swing up/down on the VPI-1000 (180° and 20° on the VPI-1000-XL), operators can inspect under array packages with standoff heights as low as 0.002" (0.051mm) and with clearances of just 0.043" (1.1mm) between components. The lens design uses 2/3 fewer optical elements than other vision systems. As a result, much sharper and clearer direct images are relayed to the system's high resolution CCD camera as compared to the "shadowy" images relayed by other vision systems.

No Lens Change Required

Easy Braid's integrated optical design moves way beyond typical endoscopic systems and gradient lenses. While conventional designs relay an internal image repeated throughout the length of the endoscope, Easy Braid's lens has only one image—the image in front of the eyepiece. There's no need to change lenses; a simple turn of the adjustment ring allows operators to easily check for bridging, COLD solder joints, shorts and other process-related failures that some inspection systems, including X-ray, may not see.

A powerful white halide light floods the underside of the component with a brightness that replicates natural daylight, maximizing the amount of visual information that can be gathered. With the addition of a compact, high-resolution CCD camera, linked to a superior flat screen LCD display, the VPI-1000 Series Optical Inspection Systems creates an image of unparalleled clarity and sharpness.

Sophisticated Plug and Play Software

Standard on the VPI-1000 Series Optical Inspection Systems is Easy Braid's pioneering software. Featuring precise measurement and analysis tools, multi-focusing and image enhancement capabilities, defect diagnostics, an exhaustive defects library, preset calibrations and an easy-to-use CD manual, operators have the data available to measure, record, annotate, analyze and communicate component information.

Images are displayed in real-time, allowing quick and easy visual inspection to verify the soldering process, confirm quality assurance and identify and correct process defects. Images can also be captured and stored for future reference or reports. Documents can then be emailed or archived for use in training, research and development or quality assurance.

The integrated Process Defect Library comprises categorized images of sample defects and allows users to correctly match the image of their defect to those of the library and the convenient drop down menu then advises on possible causes of, and solutions to, that defect.

Setting the Standard

The original VPI-1000 Optical Inspection System sets the standard for post array package rework inspection. For the first time, rework technicians are able to look under a BGA package and view interior rows of balls and top/bottom connections.

Sleek and ergonomically designed, the compact nature of each separate feature ensures that a minimum of bench space is employed by the system as a whole, with dimensions of only 19.5" x 22" x 16" (495mm x 559mm x 406mm).

For small to medium volume manufacturers, the VPI-1000 Optical Inspection System offers impressive functionality in an economical optical inspection system. High volume facilities can use the system to supplement X-ray inspection for optimum quality and improved process control. With on-screen magnification of 5X to 245X and focus distance of 0-3" (0-76mm), manufacturers can be assured that they are using a unique system capable of thoroughly examining even the most advanced array packages.

High-end Visual Inspection for Large PCBs

The VPI-1000-XL Optical Inspection System is the most flexible and versatile optical inspection system available for inspecting larger PCBs, which are becoming increasingly common in applications such as cellular base stations, data communications and network servers.

The system's innovative articulating arm, which holds and positions the endoscope lens, is capable of spanning up to 24" (610mm), allowing it to cover the entire area of 36" x 36" (914mm x 914mm) PCB, without requiring a lens change. This means that no lens changes are needed to inspect all aspects of a board, including wire bonds, through-holes, J-legs, gull wings, leaded heel fillets, solder paste and adhesive deposits, making the inspection process simpler, faster and less expensive than with competing systems. Apertures can also be inspected with ease.

Following Easy Braid's tradition for innovation, the VPI-1000-XL Optical System features four adjustable supports, enabling it to hold round, rectangular, square or L-shaped PCBs.

Optical Versus X-Ray Inspection

Optical inspection provides a cost-effective, high-quality alternative to X-ray inspection. While X-ray is the only solution for identifying internal defects, such as voids, it requires specific technical training to interpret the images and identify defects. However, with optical systems, and especially those equipped with Easy Braid's endoscope lens, defects can be easily recognized by any operator with basic soldering and rework experience. Defects that can be invisible with X-ray, such as unsoldered joints, non-wetting and flux contamination, can be clearly identified and displayed live on screen.

TECHNICAL SPECIFICATIONS

	VPI-1000	VPI-1000-XL
Magnification	Standard: 5X - 245X Full Screen: 460X	Standard: 5X - 245X Full Screen: 460X
Field of View	0.60" - 0.25" (1.5mm - 6.35mm)	0.60" - 0.25" (1.5mm - 6.35mm)
Focus Distance	0 - 3.0" (0 - 76mm)	0 - 6.0" (0 - 152.4mm)
Minimum Standoff (distance from top of PCB to underside of component)	0.002" (0.051mm)	0.002" (0.051mm)
Minimum Distance Between Components Mirrored Tip VPI-MT1	(0.05" - 0.06") (1.3mm - 1.5mm)	0.05" - 0.06" (1.3mm - 1.5mm)
Lens Rotation Movement	90° Left/Right Horizontal	180° Left/Right Horizontal/Vertical
Lens Angle Adjustment	5° Swing Up/Down	20° Swing Up/Down
Arm Span	9.25" (235mm)	24" (610mm)
Arm Movement	Not Applicable	Articulates to Access Entire Board
XY Movement	4" (102mm) in Both X and Y	4" (102mm) in Both X and Y
Z Axis	3.25" (83mm)	Unrestricted Movement
Board Holder (Maximum Size)	18" x 16" (457mm x 406mm)	36" x 36" (914mm x 914mm)
System Dimensions (W x D x H)	19" x 22" x 16" (495 x 559 x 406mm)	20" x 30" x 32" (508 x 762 x 813mm)
Weight	35 lbs (16kg)	60 lbs (27kg)
Lighting	Metal Halide 5500°k Renders True Color Images	Metal Halide 5500°k Renders True Color Images
Warranty	One Year, Excluding Consumables	One Year, Excluding Consumables

SYSTEMS

VPI-1000-SYS
Optical Inspection System to Inspect Boards up to 18" (457mm)

VPI-1000-XL-SYS
Optical Inspection System to Inspect Boards up to 36" (914mm)

Systems will be configured with desktop PC and monitor. Final pricing will depend on configuration and language version.

SYSTEMS INCLUDE

VPI-SPC Pentium IV® PC Complete with Operating System, Microsoft® Office, VPI Software, Graphics Card, Frame Grabber and Cables

17" LCD Color Flat Panel Monitor

Mirrored Tips (3)

SMT Inspection Tip (1)

Fiber Optic Tips (2)

Fiber Optic Lenses (2)

OPTIONAL ACCESSORIES

VPI-SMT1 Inspection Tip (1)

VPI-MT1 VPI Mirrored Tip (Pack of 3)

VPI-MT2 Premium 90° Mirrored Tip (1)

VPI-FOT Flat Fiber Optic Tip (Pack of 2)

VPI-L Replacement Lamp

VPI-FOL Fiber Optic Glass Lenses (Pack of 2)

VPI-BH Adjustable Board Holder for the VPI-1000

VPI-1000 Optical Inspection Systems

DISTRIBUTED BY:

A firm commitment

to excellence with a

global perspective and

an eye to the future.

REPRESENTED BY:

EasyBraid Co.

An electronics rework and repair leader