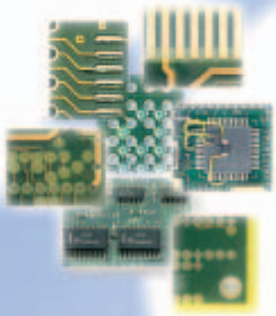


CIRCUITMEDIC⁺

First-aid kits for circuit boards,
time-tested and guaranteed.



intertronics

Tel: 01865 842842 Fax: 01865 842172
www.intertronics.co.uk



***First-aid kits for circuit boards,
time-tested and guaranteed.***

Circuit board repair is a challenge. So when the inevitable first-aid is needed, you should provide your operators with time-tested instruments designed and built for the job. The tools and materials in CircuitMedic kits have been used for decades by the most demanding commercial, medical and military electronics manufacturers.

CircuitMedic delivers quality and reliability proven through decades of in-the-field use.

CircuitMedic kits have been specifically designed to meet the requirements outlined in repair and rework guidelines published by IPC, the leading electronics manufacturing industry association.

World's #1 First-aid Kits for Circuit Boards.

- Meet electronics industry's highest requirements.
- Include in-depth instructions that follow recommended industry methods.
- Used by hundreds of major electronics manufacturers world-wide.
- Field-tested and used for over 20 years.
- Include 100% performance guarantee.

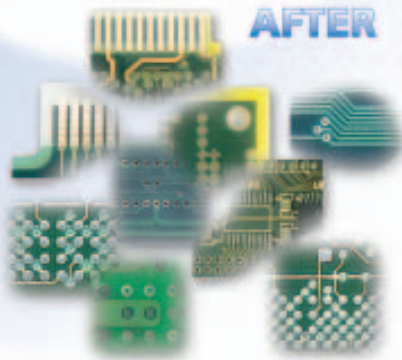
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BEFORE



AFTER



Professional Repair Kit

Applications

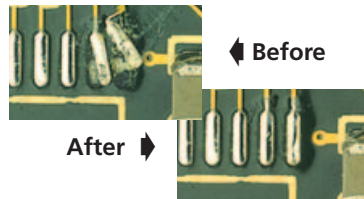
- Surface mount and BGA pad repair
- Circuit and land repair
- Plated hole repair
- Gold edge contact repair
- Solder mask and base board repair



201-2100 Professional Repair Kit, 120 VAC
201-2102 Professional Repair Kit, 230 VAC

Description

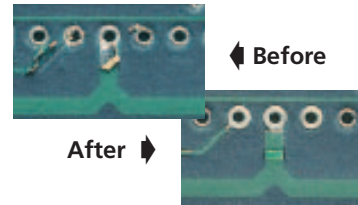
The Professional Repair Kit is the most complete and most versatile circuit board repair kit you'll find anywhere. It's the total package. The kit includes dry film, epoxy-backed circuit frames, the unique replacement circuits that require no messy liquid epoxy. There are eyelets and setting tools for plated through hole repair, Circuit Tracks to repair damaged circuits, epoxy and color agents for solder mask or base board repairs, and a comprehensive manual...all packaged in a convenient carry case. If you need to repair damaged circuit boards, the all-in-one Professional Kit is just what you need.



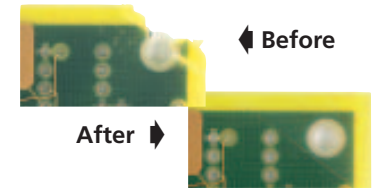
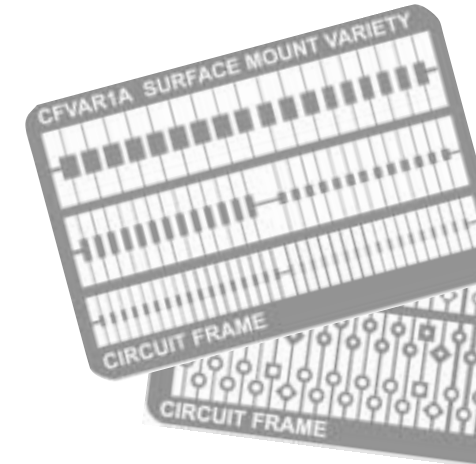
Includes replacement surface mount and BGA pads

Features

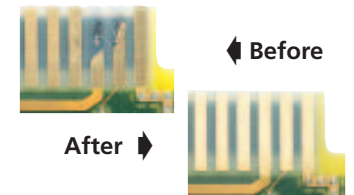
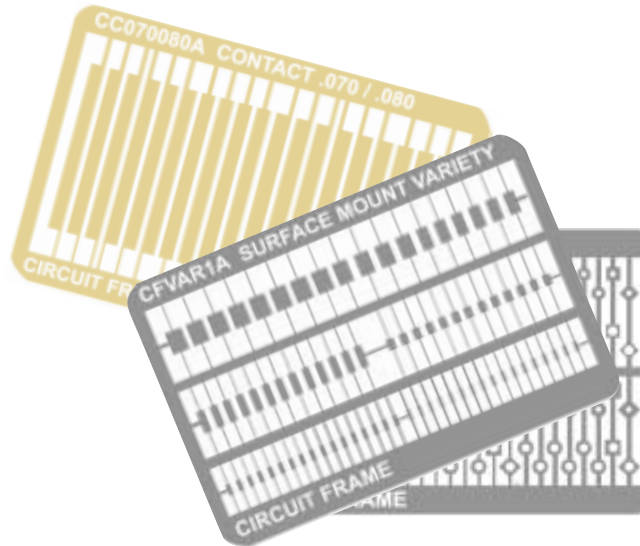
- Complete, has everything you need to repair most any type of circuit board damage
- Economical, easy to use, all kit components designed to save you time and money
- Convenient packaging, contents neatly arranged in handy carrying case
- Comprehensive Manual, a complete "how to" guide book on board repair and rework
- Industry approved, our most popular kit for board work that meets IPC guidelines
- Quality throughout, all components are prime quality, time-tested, to meet our high standards, and yours
- RoHS compliant



Eyelets and conductors for plated hole and circuitry repair



Includes replacement laminate and high strength epoxy for base board repair

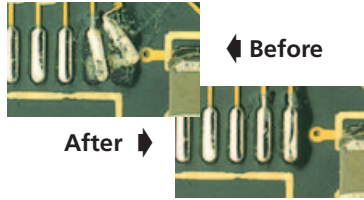


Includes replacement gold edge contacts

Micro Pad Repair Kit

Applications

- Surface mount and BGA pad repair



Use to repair damaged surface mount and BGA pads

Features

- Industry approved, meets IPC guidelines
- Complete, everything required to replace damaged surface mount and BGA pads
- Convenient packaging in ESD safe carry case
- Variety, hundreds of replacement pads plus custom shapes available
- RoHS compliant

201-1100
Micro Pad Repair Kit, 120 VAC

201-1102
Micro Pad Repair Kit, 230 VAC

Description

This kit includes the tools and materials needed to reliably replace damaged surface mount and BGA pads.

The unique Circuit Frames are made from rolled, annealed copper electroplated with tin and finished with a dry film adhesive backing. You simply select the appropriate size pad, trim it from the Circuit Frame and bond it to the circuit board surface. Included with the kit are a bonding iron and tips to match the various sizes of the surface mount and BGA pads.

A multifunctional liquid epoxy is included for over coating the lap solder joint formed between the replacement pad and connecting circuitry.

Step-by-step instructions for replacing surface mount and BGA pads are outlined in the manual included with each kit. This manual is an excellent tool for repair technicians and covers techniques that can be used in a variety of repair applications.

Gold Contact Repair Kit

Applications

- Gold edge contact repair



201-1120
Gold Contact Repair Kit, 120 VAC

201-1122
Gold Contact Repair Kit, 230 VAC

Land Repair Kit

Applications

- Replacing damaged lands

Description

Problems with lifted or damaged lands on circuit boards? You'll find the solution in this kit that is specifically designed to make the repair process as simple and effective as possible. The handy, ESD safe carrying kit contains replacement lands in a wide variety of sizes, epoxy, bonding tips, tape, and many other items to help you do a professional job.

201-1110 Land Repair Kit, 120 VAC

201-1112 Land Repair Kit, 230 VAC

Description

Repairing gold edge contacts on circuit boards is delicate work, but this kit helps make the process easier and more reliable. Simply select the correct size and shape of gold plated contact from the Circuit Frames included in the kit and bond it in place. These unique replacement circuits have a dry film, adhesive backing that is activated and cured with heat and pressure. This IPC recommended repair method restores your boards to their original level of performance and reliability.

Note: When gold edge contacts become contaminated with solder, consider using the Gold Contact Plating Kit described on page 18.

Features

- Industry approved, meets IPC guidelines
- Dry film epoxy backing on Circuit Frames eliminates messy epoxies
- Replacement contacts are supplied nickel and gold plated
- Kit contains everything needed for gold edge contact repairs
- Circuit Frames supplied in variety of shapes and sizes or can be customized to meet your specific needs
- RoHS compliant

Applications

- Replacing damaged lands

Description

Problems with lifted or damaged lands on circuit boards? You'll find the solution in this kit that is specifically designed to make the repair process as simple and effective as possible. The handy, ESD safe carrying kit contains replacement lands in a wide variety of sizes, epoxy, bonding tips, tape, and many other items to help you do a professional job.

201-1110 Land Repair Kit, 120 VAC

201-1112 Land Repair Kit, 230 VAC

Features

- Complete, kit includes everything you need for land repair or replacement
- Industry approved, conform to IPC guidelines
- Step-by-step instructions included
- Dry film backing on replacement lands eliminates need for messy liquid epoxies
- Packaged in a handy ESD safe carrying case
- RoHS compliant



Circuit Frames

Applications

- Surface mount and BGA pad repair
- Gold edge contact repair
- Land repair
- Rework and modification of pads, contacts and lands



Description

Forget about replacing damaged circuits with messy glues and epoxy. Now, with innovative, cost-efficient Circuit Frames you can replace damaged circuits with a bond strength equal to the original, on bare or loaded circuit boards, with a bonding process that takes a mere 30 seconds.

Circuit Frames come in a wide variety of shapes and sizes, all with a dry film adhesive backing, activated and cured with heat and pressure.

Custom design and fabricating services are available if you have special size, shape or plating requirements. Hundreds of different shapes are available.

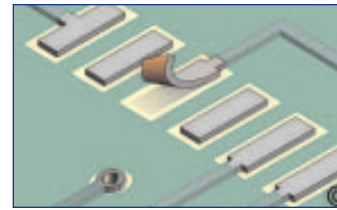
Visit our web site for a full selection.
www.circuitmedic.com/circuitframes

Material Specifications

Overall Size:	2.25" x 1.50" (57 mm x 38 mm)
Base Material:	Rolled Annealed Copper Foil .0014" (.036 mm) thick
Adhesive Backing:	Thermoset Phenolic Butral Film .0018" (.046 mm) thick
Bonding Temperature:	475°F ± 25°F (246°C ± 14°C)
Bonding Time:	30 seconds
Peel Strength:	Minimum 8 lbs/inch (1.43 kg/cm) After cure to FR-4 laminate
Shelf Life:	6 months Circuit Frames are stamped with an expiration date.

Plating Options

(S) Tin:	.0005" (.0127 mm) Bright Tin minimum
(G) Nickel / Gold:	.000050" (.00127 mm) Gold over .000100" (.00254 mm) Nickel minimum
(T) Tin / Lead:	.001" (.0254 mm) Tin / Lead minimum (optional)



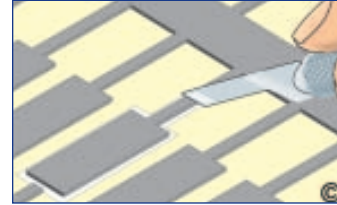
1. Evaluate the damaged circuits. If the base material is severely damaged it may have to first be repaired. See Kits, page 14 and 15.



2. Remove the defective pad and scrape off any soldermask from the connecting circuit. Tin with solder.



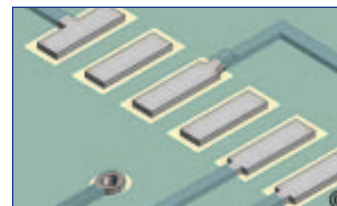
3. Select a replacement pad that matches the missing pad. Scrape off the adhesive bonding film from the solder joint area on the back of the new pad.



4. Cut out the new pad from the Circuit Frame.



5. Place the new pad in position using tape. Tack in place for 5 seconds using a bonding iron. Remove the tape and bond for additional 30 seconds using a bonding iron.



6. If the new pad has a connecting circuit, lap solder the circuit of the new pad to the circuit on the circuit board surface.



Applications

- Surface mount and BGA pad repair
- Land repair
- Gold edge contact repair

Features

- Precision design, permits bonding of very small surface mount and BGA pads
- Heavy duty construction, ensures platform stability
- Built-in calibration slide maintains regulated bonding force
- Temperature controller maintains uniform bonding temperature.

Description

Repair technicians appreciate the accuracy of this calibrated Bonding Press, especially when repairing surface mount and BGA pads. The press not only gives the operator better control over the bonding process, but also ensures optimal adhesion and repeatability. Includes a built-in calibration slide to maintain a regulated bonding force depending upon the circuit pattern size and shape. Optional digital temperature controller maintains a uniform temperature throughout the 30-second bonding cycle.



Circuit Bonding System is ideally suited for bonding small patterns including surface mount and BGA pads.

Specifications

Frame Construction: 11 gauge steel
 Throat Depth: 12 in. (30.0 cm)
 Throat Height: 7" (17 cm)
 Vertical Travel: 7" (17 cm)
 Weight: 10 lb. (4.5 kg.)
 Power Input: 85 to 265 VDC / VAC
 50 to 400 Hz 5 VA max.

Temperature Controller

Range: Ambient to 990°F (532°C)
 Resolution: 1°F (1°C) [Base Settings]
 Power Consumption: 5 VA max.
 Heat Output: 20 Watts
 Heat Up Time: 10 minutes

115-3118 Circuit Bonding System with Temperature Control, 120 VAC

115-3119 Circuit Bonding System with Fixed Temperature, 120 VAC

115-3218 Circuit Bonding System with Temperature Control, 230 VAC

115-3219 Circuit Bonding System with Fixed Temperature, 230 VAC

Applications

- Repairing damaged or missing circuits



Features

- Meets IPC recommended guidelines
- Versatile, conform to any circuit pattern
- Convenient packaging, easy to use
- Includes 8 different sizes
- RoHS compliant

Description

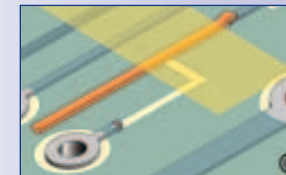
It's now easier than ever to repair damaged circuits, thanks to Circuit Tracks. Circuit Tracks are rectangular shaped conductors made of 99.9% pure copper. These rectangular ribbons closely conform to the original conductor dimensions. After soldering in place the replacement Circuit Track is bonded using prepackaged epoxy included in the kit. This kit is a great time and labor-saver and an easy solution to repairing missing or damaged circuits and conductors.



201-3130 Circuit Track Kit, 120 VAC



1. Remove damaged conductor.



2. Solder one end.



3. Form the shape.



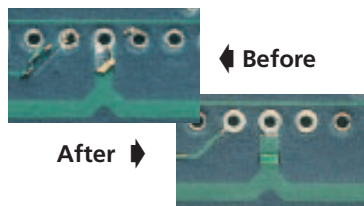
4. Overcoat with epoxy.

Applications _____

- Plated through hole repair and rework

Features _____

- Eyelets meet IPC guidelines
- Versatile, has everything you need to repair plated holes in wide variety of sizes



Eyelets and conductors for plated hole and circuitry repair



201-3140 Plated Hole Repair Kit

Description _____

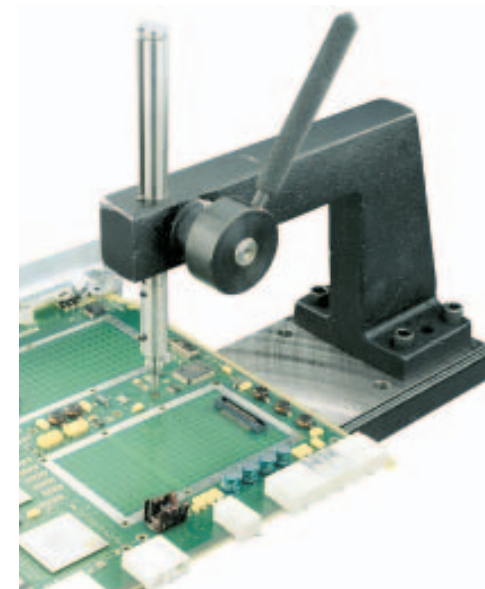
Here are all the tools and materials you'll need to repair damaged plated through holes in circuit boards. The kit includes a variety of eyelet sizes, carbide ball mills for drilling and setting tools to form the eyelets conforming to IPC guidelines. Eyelets are made of pure copper electroplated with tin. Eyelet tooling is hardened steel.

Applications _____

- Precise forming of eyelets for plated hole repair

Features _____

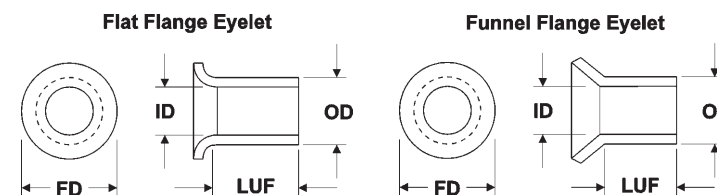
- Heavy duty construction for stable eyelet forming per IPC guidelines
- Wide variety of tooling available, can form any commercially available eyelet



Description _____

This rugged, heavy duty press precisely forms eyelets in circuit boards for repair or assembly. Has 9" throat depth to accommodate 18" wide circuit boards.

110-5202 Eyelet Press



Visit our web site for a selection of eyelets.
www.circuitmedic.com/eyelets

Applications

- Repairing damaged board corners and edges
- Repair of surface damage and solder masks
- Repair of non-plated holes

Features

- Versatile, complete, includes everything you need for base board repair
- Meets IPC guidelines
- High strength, high temperature epoxy withstands demanding physical environments
- Color agents permit matching of board colors
- FR4 laminate for compatible baseboard transplant applications



201-3110 Base Board Repair Kit

Description

Most types of damage to base board material can be repaired with this versatile repair kit.

There are sections of FR4 to replace damaged board corners, edges and holes. The edge sections have a specially machined tongue along one edge to fit within a groove cut into the board edge. The kit includes epoxies, color agents, and dispensing cartridges.



115-1322 Epoxy Kit

Applications

- Repairing solder mask
- Over coating and bonding circuitry
- Repairing base board defects



Features

- Clear, can be tinted with coloring agents
- High strength and temperature, withstands demanding physical environments
- Two-compartment packaging, eliminates mixing errors

Description

This kit contains 10 packages of clear, low viscosity, superior strength epoxy, precisely measured out into two-compartment plastic packages so it's easy to use and there's no measuring. Once cured, this epoxy makes an effective electrical insulator with good high temperature, mechanical, and impact resistance properties. The epoxy can be used to fill in holes, gaps, burns or to inject into delaminated locations. The kit also contains mixing sticks, mixing cups and foam swabs.

Specifications

Packaging:	2 gram Packages
Color:	Clear (transparent)
Pot Life:	30 minutes
Cure Cycle:	24 hours at room temperature, or 1 hour at 165°F (74°C)
Viscosity, Mixed:	1900 cps at 77°F (25°C)
Operating Temperature:	76°F – 284°F (-60°C – 140°C)
Hardness:	88 Shore D
Dielectric Strength:	410 volts/ mil

Color Agents



Applications

- Blend with epoxy to match board color

Features

- Wide selection to match board colors
- Compatible, mixes well with epoxy.

Description

Matching epoxy to the color of the circuit board being repaired is a simple process when you use a color agent.

115-9102

115-9185

115-9293

115-9348

115-9358

115-9376

115-9424

115-9457

115-9560

115-9561

115-9995

115-9996

Applications

- Multipurpose machining, grinding and cutting for circuit board repair and rework



110-4102

Micro-Drill System, 120 VAC

110-4103

Micro-Drill System, 230 VAC

Features

- Dental quality construction for delicate board work
- Flexible telephone-style coil cord eliminates cumbersome drive cables
- Quick change chuck for easy bit replacement
- Versatile, forward, reverse and variable speeds
- Small, lightweight, ergonomically designed hand piece reduces fatigue
- Complete, includes ball mills, abrasives bits and cutting discs

Description

The Micro-Drill is a workhorse in a kit. This versatile powerhouse is ideal for milling, drilling, grinding, cutting and sanding circuit boards. It removes coatings, cuts circuits, cuts leads, drills holes, cuts slots, shapes FR-4 and performs many other procedures using various interchangeable bits. Unlike other hand-held tools, the Micro-Drill has a tiny, high speed DC motor in the hand piece, eliminating cumbersome drive cables and giving the technician better control. A separate power supply keeps the hand piece lightweight and reduces fatigue. Power is supplied by a panel switch or foot switch for ease of use.

Features

- Heavy duty surgical grade construction

Description

Specially designed tools crafted from surgical quality chrome steel with tips hardened to withstand the rigors of demanding detail work. Tufted foam grips reduce operator fatigue.

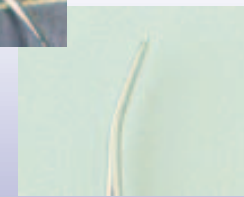


115-1402 Tech-Pro Tool Kit

Individual Item Part numbers shown below.



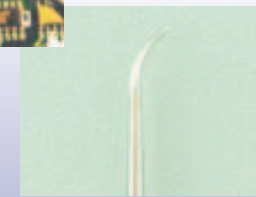
Burnisher (115-1412)



Burnish scratches in gold contacts. Blend solder joints.



Pick (115-1414)



Mark or scribe surfaces. Punch holes in thin materials.



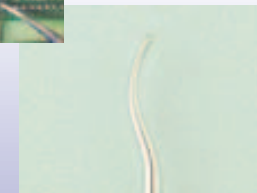
Scraper (115-1416)



Remove burned material or excess epoxy. Cut circuits and other thin materials.



Wire Guide (115-1418)



Form bends in wires. Hold wires during soldering and bonding.

Gold Contact Plating Kit

Applications

- Plating gold edge contacts

Features

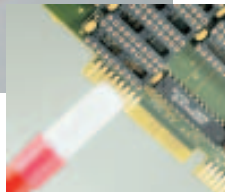
- Designed specifically for gold contact plating
- Plating probes use pre-wrapped plating anodes
- Conforms to IPC guidelines
- Variable DC power supply provides accurate voltage



201-6100
Gold Contact Plating Kit, 120 VAC

115-3804
Plating Solution Kit, 1 oz. each

115-3805
Plating Solution Kit, 5 oz. each



Standard Plating Probes (left) use pre-wrapped, screw on plating anodes to end the common problems associated with loosely wrapped cotton anodes. Small Plating Anodes (right) handle the smallest contacts and pins.

Description

Here's the perfect kit for replating solder-contaminated gold edge contacts or contacts that don't meet the minimum thickness specification. The kit includes a DC power supply and all the tools and materials needed for gold edge contact plating. Plating probes use pre-wrapped, screw-on plating anodes to end the common problems associated with loosely wrapped cotton anodes. Plating solutions are available separately.

Flextac™ Wire Dots

Applications

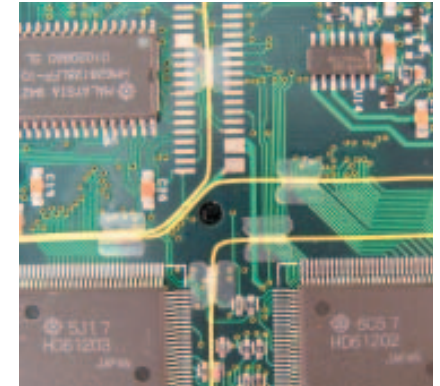
- Bonding jumper wires to circuit boards

Features

- Easy to use
- No super glue, no hot melts, no mess



◀ Bonding jumper wires with adhesives is difficult, time consuming and messy.



▶ Flextac Wire Dots are the neatest product for keeping jumper wires in place. Easy to use. No super glue and no mess.

Description

Flextac Wire Dots are a jumper wire tacking system consisting of pre-cut shapes of a thin, flexible polymer film membrane coated on one side with a high performance, electronics grade permanent pressure sensitive adhesive resulting in a highly conformable, high strength bond. Flextac Wire Dots have very good initial bond strength that generally increases as a function of time. High humidity has a minimal effect on adhesive performance. Bond strengths are actually slightly higher after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

310-2100

Flextac Wire Dots, Variety Pack All 4 Sizes



310-0651
Round Flextac Wire Dots
6.5 mm (.256 in.) Diameter
Package 370



310-1001
Round Flextac Wire Dots
10.0 mm (.394 in.) Diameter
Package 210



310-0652
Square Flextac Wire Dots
6.5 mm (.256 in.) Diameter
Package 450



310-1002
Square Flextac Wire Dots
10.0 mm (.394 in.) Diameter
Package 210

Applications

- Applying solder paste for BGA rework

Features

- Self-stick adhesive backing seals around pads to prevent solder paste bleed
- Laser cut ensures precise aperture size
- Disposable, reduce operator exposure to hazardous chemicals
- Flexible, conform to board surface
- Fold-up sides for easy placement and solder paste containment
- Low cost



Since Flextac Rework Stencils are disposable, they make it easy to meet RoHS compliance. No stencil cleaning, no worry about stencil cross-contamination.



Description

If you've been using metal stencils for BGA rework, we have some great news for you. Flextac Stencils... a creative new product that's a major improvement over what you may be using now. These flexible solder paste stencils are laser cut from high quality, anti-static polymer film with a residue-free adhesive backing. Because they're self-sticking, no tape or fixturing is needed. The adhesive seals around each BGA pad to prevent solder paste from bleeding under the stencil when solder paste is applied. Flextac Stencils are easy to use and leave no residue on the board surface.

Flextac Stencils are the solution to the problems associated with metal stencils such as warping and not sitting flat if the circuit board is uneven. Flextac Stencils also do away with tedious stencil cleaning and greatly reduce operator exposure to solder paste.

Flextac Stencils are available in a wide range of sizes and custom sizes are available.

201-3120 Flextac BGA Rework Stencil Kit

See the complete selection on our web site: www.circuitmedic.com/stencils

Step 1.

Select the proper size and fold up the side tabs. The side tabs prevent overspill of solder paste onto the circuit board surface.



Step 2.

Peel off the cover film exposing the adhesive back. This tape-like adhesive holds the stencil in place and seals around each BGA pad to prevent solder paste bleed.



Step 3.

Place in position using the handy side tabs. Once in place the adhesive back will prevent movement.



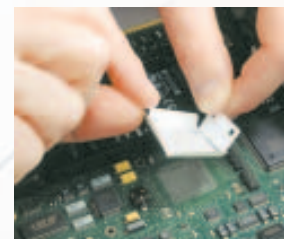
Step 4.

Apply paste using a standard metal squeegee. You can make several passes with the squeegee to ensure paste is fully deposited in each opening.



Step 5.

Remove the stencil and save for another reuse, or dispose. You're now ready to place a new BGA component.



The perfect stencil for RoHS compliance.

Lead Solder Test Kit

Applications

- Is that leaded solder or lead-free? It's a question that's not always as easy to answer.

Features

- Self-stick adhesive backing seals around pads to prevent solder paste bleed
- Laser cut ensures precise aperture size
- Disposable, reduce operator exposure to hazardous chemicals
- Flexible, conform to board surface
- Fold-up sides for easy placement and solder paste containment
- Low cost

201-5100 Lead Solder Test Kit

201-5102 Lead Solder Test Kit Refill



Description

Now with a quick 2 minute test you can confirm whether circuit boards, components or any solder surface contains lead. The Testing Solution contained in the kit is a non-toxic, mild acid solution similar to vinegar. It is easily removed from the product after testing by cleaning with water. This kit is not designed to accurately confirm if products are lead-free. The test confirms the presence of lead. Lead must be in sufficient measurable quantities as found in SN 63/37 or SN 60/40 solders.

Here is how it works. You apply 3-4 drops of the Test Solution to the tip of a Cotton Swab. You then rub the tip of the Cotton Swab on the surface to be tested for 60-90 seconds. Next you dab the tip of the Cotton Swab onto the yellow test dot on the Leaded Solder Test Card and hold for 1 second. If the yellow test dot changes color, lead is present. If the yellow test dot remains unchanged, or turns a slightly lighter shade of yellow, lead is not present.

Soldering and Rework Skills Practice Kits

Features

- Include components needed to practice for IPC certification



Description

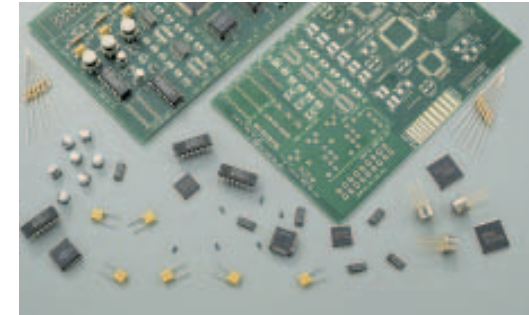
Are your new soldering operators skilled enough to work on your valuable products? Have they practiced enough to go for certification? The best way to find out is to order our Skills Practice Kits that let's them work on actual projects until they develop the expertise they need. We provide the components and practice board and you decide when they're ready.

201-4150 Soldering Skills Practice Kit

201-4250 Rework Skills Practice Kit

Visit our web site for a complete list of items included:

www.circuitmedic.com/practice



Repair Skills Practice Kit

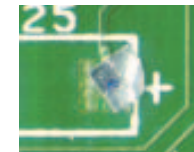
Features

- Include components needed to practice for IPC certification

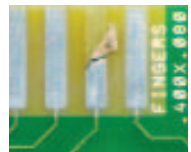
Description

Now you can brush up on your circuit board repair skills and give yourself a definite advantage toward becoming certified. Using our Repair Skills Practice Kit and the projects and tools it contains, you can make the repairs and sharpen your skills until you're ready for certification.

201-4350 Repair Skills Practice Kit



Damaged surface mount pad.



Damaged edge contact.



Damaged land.



Damaged conductor.



Damaged plated hole.



Damaged base board.

First-aid kits for circuit boards, time-tested and guaranteed.

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