



## CircuitWorks® — Portable Solutions for Your Electronic Needs

**CircuitWorks®** brand's comprehensive line of conveniently packaged and precision dispensing rework and repair products makes circuit board repair and prototyping faster, easier and more accurate. Advanced-formula materials packaged in unique delivery systems ensure superior performance and pinpoint accuracy. The full range of products meets all of the technicians needs for electronics rework and prototyping — repairing, cleaning, protecting, lubricating, bonding, and restoring electrical conductivity to circuit boards and components.

**CircuitWorks® Products** are compliant with IPC-7711 Rework of Electronic Assemblies, and ANSI/J-STD-001.

**All CircuitWorks®** branded products are available on folded blister cards complete with multi-lingual instructions and regulatory information.

**CircuitWorks® Repair and Prototype Tools** are grouped in the following product areas: Repair/Cleaning Products; Adhesives/Epoxies; and Lubricants.

## Lubricants



**CircuitWorks®**

### **Boron Nitride Heat Sink Grease**

The syringe dispenser for precise application of an ultra-high efficiency, thermally conductive grease

- Provides maximum thermal conductivity with superior dielectric properties
- Silicone free compound will not harden or dry out
- Electrically insulative; noncorrosive and nonflammable
- Thermally stable from -99.4°F/-73°C to 392°F/200°C
- Exceeds MIL-C-47113 for Thermal Conductivity

#### **Applications:**

- Formulated for maximum heat transfer between circuit components and heat sinks without electrical conductivity

**CW7250**

3.4 g (0.12 oz)



**CircuitWorks®**

### **Silicone Free Heat Sink Grease**

The convenient syringe dispenser for precise application of silicone free heat-sink grease

- Silicone free compound will not harden or dry out
- Excellent thermal conductivity and dielectric properties
- Non-corrosive
- Thermally stable from -5°F/-15°C to 392°F/200°C
- Exceeds MIL-C-47113 for thermal conductivity

#### **Applications:**

- Excellent heat transfer between circuit components and heat sinks, without any silicone migration

**CW7270**

8 g (0.28 oz)

### **CircuitWorks® Heat Sink Grease**

The tube dispenser for precise application of silicone compound that facilitates heat transfer away from electronics and electrical components

- Excellent thermal and dielectric properties
- Will not dry out, harden, or melt
- Noncorrosive and nonflammable
- Thermally stable from -40°F/-40°C to 342°F/172°C
- Meets MIL-DTL-47113D Type I

#### **Applications:**

- Facilitates heat transfer between circuit components and heat sinks

**CT40-5**

142 g (5 oz)

### **CircuitWorks® Silver Conductive Grease**

The syringe dispenser for precise application of grease to provide superior electrical and thermal conductivity, lubrication and protection

- Maximum electrical and thermal conductivity
- Protects against moisture and corrosion
- Thermally stable over a wide temperature range
- Conductive lubricant containing pure silver

#### **Applications:**

- Fills connector gaps to maximize electrical and thermal conductivity
- Controls static discharge
- Grounds circuits

**CW7100**

6.5 g (0.23 oz)

### **CircuitWorks® Gold Guard™ Pen**

The pen for cleaning and lubricating gold and other noble metal contacts and connectors

- Cleans and leaves protective polyphenyl ether lubricant in one step
- Chisel tip marker for exact delivery to the contact
- Safe on plastics

#### **Applications:**

- Cleans and lubricates gold contacts
- Extends life of noble metal contacts

**CW7400**

8.5 g (0.3 oz)





## Repair/Cleaning Products



### CircuitWorks® Conductive Pen

The pen dispenser for drawing highly conductive silver traces, jumpers and shielding with precision and control

- Quickly creates conductive silver traces
- Valved pen tip for easy applications
- Solderable at low temperatures
- Dries in minutes at room temperature
- Choice of Micro Tip for fine lines or Standard Tip for wider lines

#### Applications:

- Repairs traces
- Links components
- Makes smooth jumpers
- Shields electronics

<b>CW2200STP</b>	Standard Tip	8.5 g (0.3 oz)
<b>CW2200MTP</b>	Micro Tip	8.5 g (0.3 oz)

### CircuitWorks® Nickel Conductive Pen

The pen dispenser for economically drawing conductive traces, jumpers and shielding

- Quickly creates conductive nickel traces on most surfaces
- Easy and economical to use
- Valved pen tip for easy applications
- Dries in minutes at room temperature

#### Applications:

- Economically repairs traces, links components, and shields electronics

<b>CW2000</b>	Standard Tip	9 g (0.32 oz)
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### CircuitWorks® Flex Conductive Pen

The micro-tip pen for drawing conductive traces on flexible and ITO surfaces

- Quickly creates flexible conductive silver traces on flex circuitry
- Micro tip for precise applications
- Dries in minutes at room temperature
- Highly adherent silver-based polymer system

#### Applications:

- Repairs conductive traces on flexible circuits and indium tin oxide components

<b>CW2900</b>	8.5 g (0.3 oz)
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### CircuitWorks® Overcoat Pen

The pen dispenser for precise application of a tough protective acrylic conformal coating

- Simple to use, single component system
- Hard, durable coating
- High dielectric strength helps prevent electrical discharge
- Dries quickly at room temperature
- Protects against moisture and abrasion damage
- Meets requirements of MIL-I-46058C and IPC-CC-830A
- Choice of clear, green or blue coating

#### Applications:

- Insulates and protects conductive pen traces
- Repairs permanent solder mask
- Prevents shorting and arcing

<b>CW3300C</b>	Clear	4.9 g (0.16 oz)
<b>CW3300G</b>	Green	4.9 g (0.16 oz)
<b>CW3300B</b> <i>NEW!</i>	Blue	4.9 g (0.16 oz)

### CircuitWorks® Epoxy Overcoat

The conveniently-packaged epoxy system that provides a tough, thermally stable, epoxy protective conformal coating

- Provides a hard, durable, protective green coating
- Excellent dielectric properties; help prevent electrical discharge
- Protects against moisture and abrasion
- Ideal for pre-reflow solder resist repair
- Service temperature from -55°F/-48°C to 600°F/315°C
- Meets the requirements of IPC-7721, 2.4.1

#### Applications:

- Ideal for repairing permanent solder mask before reflow applications
- Protects circuits and prevents shorting and arcing

<b>CW2500</b>	12 g (0.42 oz) total
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### CircuitWorks® Rubber Keypad Repair Kit

The conveniently-sized kit for permanent repair of rubber keypads

- Restores electrical conductivity to worn carbon contacts
- Forms a tough, flexible, wear-resistant surface
- Repairs over 50 rubber button contacts

#### Applications:

- Restores rubber and telephone keypads
- Restores flexible carbon contacts

#### Single Pack

<b>CW2605</b>	Adhesive	3 g (0.1 oz)
	Curing Agent	0.3 g (0.01 oz)

## CircuitWorks® Flux Dispensing Pen

The pen for applying flux with precision and control

- Chisel tip marker provides exact delivery of flux to surface
- Easily removed with appropriate CircuitWorks® Flux Remover Pen

### Applications:

- All soldering applications where water soluble, rosin or no clean flux is required

### Water Soluble Flux Dispensing Pen:

**CW8300** 9 g (0.32 oz)

- Applies a neutral pH organic water soluble flux for rapid soldering
- Chisel tip marker provides exact delivery of flux to surface
- Flux meets ANSI/IPC J-STD-004, ORH1 Classification
- Easily removed with water or Flux-Off® Water Soluble
- RoHS Compliant

### Lead-Free Flux Dispensing Pen:

**CW8400** 9 g (0.32 oz)

- Applies a noncorrosive, halide free, no clean flux for high temperature, lead-free application
- Can also be used to for Tin/Lead fluxes
- Flux meets Bellcore TR-N-NWT-000078 and IPC SF-818 for Surface Insulation Resistance
- Flux meets ANSI / IPC J-STD-004, Type ROL0
- Easily removed with Lead-Free Flux Remover Pen, or Flux-Off® Lead-Free Flux Remover
- RoHS Compliant

### No Clean Flux Dispensing Pen:

**CW8100** 9 g (0.32 oz)

- Applies a patented noncorrosive, halide free, organic no clean flux
- Flux meets Bellcore TR-N-NWT-000078 and IPC SF-818 for Surface Insulation Resistance
- Flux meets ANSI/IPC J-STD-004, Type ROL0
- RoHS Compliant

### Rosin Flux Dispensing Pen:

**CW8200** 9 g (0.32 oz)

- Applies a noncorrosive, nonconductive Type R flux
- Flux meets MIL-F-14256 F Type R and ANSI/IPC J-STD-004, Type ROL0
- RoHS Compliant



## CircuitWorks® Lead-Free Flux

The convenient, easy-to-use flux for lead-free applications

- Flux is noncorrosive and halide-free
- High thermal stability
- Excellent material compatibility
- Fast drying
- RoHS compliant
- Can be used for soldering with lead-free or Tin/Lead solders
- Flux passes J-STD-004 Surface Insulation Resistance Testing IPC-TM 650 Test Method 2.6.3.3

### Applications:

- Printed circuit boards
- Chip carriers
- Surface mount device pads
- Switches and sockets

**CW3220** 32 ounces (1 qt)



## CircuitWorks® Lead-Free Pocket Solder

The lead free, high purity pocket sized solder dispenser for convenient rework and repair

- Precision manufactured Lead-Free solder alloy
- 96.5% Tin (Sn), 3.0% Silver (Ag), 0.5% Copper (Cu)
- Type ROL0 flux per IPC J-STD-004
- Ensures even, reliable solder connections
- Cleans and wets heavily tarnished copper surfaces
- RoHS Compliant

### Applications:

- SAC 305 for soldering lead-free applications

**S200** 1.0 mm (0.04") Diameter,  
3.18 m (125") Length





## CircuitWorks® Lead-Free Flux Remover Pen

The pen for removing lead-free flux with precision and control

- Completely removes lead free flux residues in seconds
- Can also be used to remove Tin/Lead fluxes
- Marker dispenser provides controlled and exact application
- Dries fast
- RoHS Compliant

**CW9400**

9 g (0.32 oz)

## CircuitWorks® Flux Remover Pen

The pen for precise removal of flux from printed circuit boards

- Completely removes flux in seconds
- Spot cleans tight tolerance areas on circuit boards
- Marker dispenser provides controlled spot cleaning
- Dries fast
- RoHS Compliant

### Applications:

- All cleaning applications where rosin or no clean flux must be removed

### No Clean Flux Remover Pen:

**CW9100** 9 g (0.32 oz)

### Rosin Flux Remover Pen:

**CW9200** 8 g (0.28 oz)

## CircuitWorks® Conformal Coating Remover Pen

The pen for precise removal of silicone, acrylic and urethane coatings from PCBs

- Spot cleans tight tolerance areas on circuit boards
- Marker dispenser provides controlled and exact application
- Evaporates quickly
- Provides low surface tension for superior wetting
- Low VOC content

### Applications:

- Removes most types of conformal coatings

**CW3500**

9 g (0.32 oz)

## CircuitWorks® The Mighty Pen®

The powerful universal cleaning pen

- Outstanding cleaning ability
- Marker dispenser provides controlled and exact application
- Mild citrus aroma
- U.S. Patent 6,677,291 and 6,677,292, and foreign patents

### Applications:

- General purpose cleaning and refurbishing of equipment
- Removes ink stains, label adhesives, and difficult to remove soils

**CW3700**

11 g (0.39 oz)





## Adhesives/Epoxies



### CircuitWorks® Conductive Epoxy

The conveniently-packaged epoxy for precision repairs and high-strength conductive bonding

- Conductive silver epoxy provides excellent electrical conductivity
- High strength conductive bond
- Repairs defective traces and creates jumpers on boards
- Quick solderless electronic connections

#### Applications:

- Repairs traces and temperature sensitive circuits
- Makes high-strength solderless conductive connections

**CW2400** Adhesive 7 g (0.25 oz)  
Hardener 7 g (0.25 oz)



All CircuitWorks® branded products are available on folded blister cards complete with multi-lingual instructions and regulatory information.

### ITW Chemtronics® — Offering you the right products for your applications.

Still not sure which product is right for your application? ITW Chemtronics' sales and technical services staff are ready with expert guidance on product selection – ensuring that you have the information necessary to make the right choice.

Call your local ITW Chemtronics sales representative for expert guidance with your application needs.

### Need Technical Information?

Call our technical hotline at 770-424-4888 ext. 137 or e-mail [AskChemtronics@chemtronics.com](mailto:AskChemtronics@chemtronics.com). Visit us on the web at [www.chemtronics.com](http://www.chemtronics.com).

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