



Conformal Coating Removal Workstations

- * **ESD Safe Environment**
- * **No Chemicals**
- * **Selectively Strip any Component or an Entire Board**
- * **No PCB Contamination or Degradation**
- * **Reusable Media**
- * **Large Work Area**
- * **Quick, Efficient and Safe for Both the Operator and Your Printed Circuit Board**

...and much more

The **CCRCo** family of Conformal Coating Removal Workstations, the **CCR1000** and **CCR2000**, are **fully self-contained, non-chemical** bench top workstations designed for the removal of conformal coatings applied to printed circuit boards and other electronic assemblies or devices.

CCRCo has endeavored to provide the safest and most practical way of effectively remove conformal coatings. All necessary safety features required for both the operator **and** the printed circuit board are designed into each workstation.

Our workstations will remove the conformal coating from:

- ✓ A single test node
- ✓ An axial lead component
- ✓ A through hole IC
- ✓ A surface mount component
- ✓ An entire printed circuit board

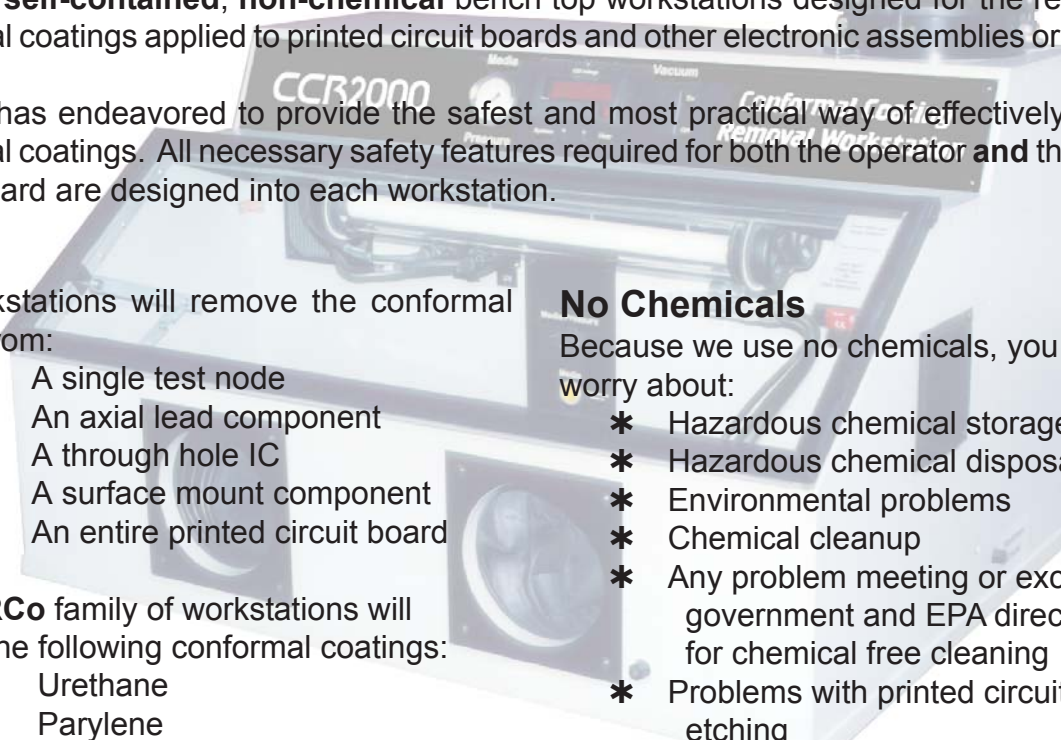
The **CCRCo** family of workstations will remove the following conformal coatings:

- ★ Urethane
- ★ Parylene
- ★ Epoxy
- ★ Silicone
- ★ Acrylic

No Chemicals

Because we use no chemicals, you don't worry about:

- * Hazardous chemical storage
- * Hazardous chemical disposal
- * Environmental problems
- * Chemical cleanup
- * Any problem meeting or exceeding government and EPA directives for chemical free cleaning
- * Problems with printed circuit board etching
- * Long term component degradation
- * Concerns about the repeated exposure of your employees to hazardous chemicals.



CCR1000



- ✓ Both the **CCR1000** and **CCR2000** are fully, self-contained, bench top workstations designed for the removal of conformal coatings from printed circuit boards and other electronic devices. They are ESD safe and chemical free. The work area is brightly illuminated with both **white** and **UV lights**, user selectable.

- ✓ The **CCR1000** and **CCR2000** operate in the same exact manner with the **CCR2000** having one additional feature:
 - ⇒ **The ability to measure ESD levels to the printed circuit board as the conformal coating is being removed.**

CCR2000



Don't be fooled by converted metal de-burring micro-blasters. They will not do the job properly with the safety required for conformal coating removal.

ESD CHARACTERISTICS

To eliminate ESD with “bead blasting” technology requires a total system design concept, **not** adapting an off-the-shelf metal de-burring machine to try to do this very sensitive job.

CCRCo’s workstations are **statically controlled** to insure the protection of components on printed circuit boards during the stripping process. We have done this by:

- ✓ Incorporating a state-of-the-art **in-line** air/nitrogen ionizer with **auto-balancing** in our workstations. The ionizer is constructed with tungsten emitters so calibration should only have to be done every four years instead of monthly with standard ionizer bars.
- ✓ We combined the auto-balanced ionizer with our specially designed nozzle that feeds the ionized air into the media stream just before it leaves the nozzle, thus eliminating any ESD charge that has built up in the media chamber.
- ✓ A special thermo-set acrylic plastic media is formulated to be as ESD safe as technically possible.
- ✓ When the media is mixed with the ionized air you will get typical ESD readings in the single digits.
- ✓ To further insure a static free environment in the work chamber, we have designed our workstations to take ionized air and send it through a manifold just above the arm holes in the front of the unit. This floods the entire work chamber with ionized air, eliminating any possible static buildup, and neutralizes the ambient air that might enter the work chamber. This ensures that all elements in the work chamber (i.e.: inside surfaces, nozzle, viewing hood, lights, gloves, media, printed circuit board and operator) are at the same ground.
- ✓ The work chamber is fitted with a static resistant mat connected to a terminal post inside the work chamber.
- ✓ The workstation cabinet is constructed with ESD conductive laminate. The laminate, media chamber, static resistant mat and operator are all connected together. An external terminal is supplied on the side of the unit for connection to your house equipment ground. This guarantees that all work area surfaces are at ground.
- ✓ A **GROUND MONITORING SYSTEM** is included that constantly monitors to see if the operator, workstation, and your house ground are all connected. If the circuit is broken, you will receive an audible beep.

The ESD voltage levels generated by our workstations are far below the requirements set by private industry or any agency of the US government. Our **CCR2000** workstation even has a built in ESD voltage meter. A connection inside the work chamber allows you to attach a clip to your printed circuit board and directly read the ESD voltage being generated as you are removing the conformal coating from your board.

None of our competitors have this feature.

They don’t want you to see what the ESD readings are using their equipment.

CUTTING MEDIA

The cutting media used to remove conformal coatings is a key ingredient in CCRCo’s overall system design that **eliminates ESD** concerns, **minimize board clean up**, and drastically **lower overall operating costs**.

The media supplied with our workstations is made of thermo-set acrylic plastic, 40 – 60 mesh in size, and impregnated with anti-stat. This media generates the lowest levels of ESD of any media available. Because it is plastic, it does not leave a residue on the board after stripping. And because the media is reusable, our workstations are have **the lowest operating cost of any system available**.

Other media’s, such as biological media’s (wheat starch and walnut shells), leave a residue on the board that requires extensive cleaning and they also generate ESD voltage levels exceeding 25,000 volts in most cases. Sodium bicarbonate is the most popular media with our competitors and generates high ESD levels (3,000 volts). Sodium bicarbonate also requires an additional cleaning step after use.

OPERATING COSTS

Gillette and Schick, being leaders in the ‘razor blade’ theory of sales, take a back seat to our competitors when it comes to selling cutting media for conformal coating removal. Let’s look an example of how much cutting media can cost you:

A 25 pound box of sodium bicarbonate, the favorite ‘recommended’ media of our competitors, costs \$68.50 per box. (Sodium bicarbonate is also ESD unfriendly at ±3000 Volts). That works out to \$2.74 per pound.

CCRCo includes 30 pounds of our ESD friendly, reusable media, with your initial shipment. Our media can be reused, over and over, until it finally breaks down into a fine dust. To determine how long our media will last is a factor of the hardness of the conformal coating that is being removed. Polyurethane and epoxy are the hardest conformal coatings, acrylic and UV curable coating are a little softer, and parylene and silicones are the easiest to remove because parylene is so thin and silicone is soft.

If we use the worst case scenario, removing either polyurethane or epoxy conformal coatings, you will be able to recycle our media about 50 times before it loses its properties. Now let’s do the math:

1. 30 pounds of CCRCo’s media x 50 cycles equals 1,500 pounds of equivalent media usage of any other media type.
2. 1,500 pounds of sodium bicarbonate @ \$2.74 per pound equals \$4,110.00 in additional media costs.

The table below shows this same calculation for all three groups of conformal coating types.

We are not sure if the sodium bicarbonate sold by our competitors is fit for human consumption, but if it is, make sure you give some to your boss before you spend this much money on cutting media.

Conformal Coating Types	CCRCo Media Recycle Times	Equivalent Media Usage (Pounds)	Sodium Bicarbonate Equivalent Media Cost
Epoxy or Polyurethane	50	1,500	\$4,110.00
Acrylic or UV Curable Urethane	75	2,250	\$6,165.00
Silicone or Parylene	100	3,000	\$8,220.00

Specifications

6 **General:**

- ★ Power Requirements: 110 VAC / 60 Hz or 220 VAC / 50 Hz
- ★ Dimensions: 20" H x 34" W x 24" D
- ★ Work Area: 14.25" H x 32.0" W x 12.5" D
- ★ Weight: 145 pounds
- ★ Shipping Weight: 220 pounds
- ★ Nozzle: Specially Designed Tempered Glass, 1.5mm orifice
- ★ Cutting Pressures: 30 to 110 psi
- ★ Air Ionization Process: Auto Balancing NilStat Technology
- ★ Workplace Lighting: 15 Watt White Fluorescent Tube and 15 Watt Ultra-Violet Tube

6 **Supplied with Each Workstation:**

- ★ 30 pounds of Media
- ★ Air Operated Vacuum System for Media Recycling
- ★ Recycling Screen
- ★ Media Measurement Dispenser
- ★ Wrist Strap
- ★ 3 Pairs of ESD Gloves
- ★ Power Cord

6 **User Supplies:**

- ★ Power
- ★ Compressed Air or Nitrogen, 110 psi @ 10 CFM minimum (Dry Air Required)

6 **Operator Controls:**

- ★ Media Pressure Regulator
- ★ Media / Clean Air Toggle Switch
- ★ White Light (On / Off Switch)
- ★ UV Light (On / Off Switch)
- ★ Foot Switch (Nozzle Control)

6 **Construction Specifications:**

- ★ Case: Conductive ESD Laminate over Wood
- ★ Media Chamber: Steel - 5 pound capacity
- ★ Work Chamber Air Extraction Process: Vacuum
- ★ Tube Fittings: Swagelok
- ★ Safety Cut-off Switches: Rear Door and Front Panel

6 **Warranty:**

- ★ One Year, Parts and Labor

Specifications Subject to Change Without Notice



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