

**AMERICAN**  
**BEAUTY TOOLS**

**ESICO**  
**TRITON**

Soldering Iron & Stations  
Product Manual



# INTRODUCTION

The names American Beauty & Esico Triton have been fixtures in the soldering tool market-place since the turn of the century. Our tools are a throw-back to a time when workers took pride in the tools they used and companies took pride in the tools they manufactured. Today, American Beauty and Esico Triton soldering tools are routinely chosen to tackle the most challenging soldering, brazing and thermal management applications with a diverse line of soldering irons and stations, solder pots, resistance soldering systems and accessories.

Our soldering irons and stations have been manufactured to provide a constant and reliable source of intense heat, suitable for the most demanding soldering jobs. At the heart of every soldering iron and station is our world famous, hand-crafted heating element. We combine premium steel cores, corrosion resistant nichrome wire and years of experience to wind heating elements that are unmatched in terms of both performance and longevity. Each element is then assembled into our unique single piece steel casing, eliminating unnecessary weaknesses caused by the more common welded casing. All of our soldering tips are milled from solid copper for the best thermal transfer, and then iron plated to protect from the harsh conditions associated with soldering. We finish off the design with US sourced wood handles for our mid and heavy-duty irons and ergonomic, high-temp plastic handles for our stations and pencil irons. All of this work is performed at our family run operation just outside of Detroit, Michigan.

With this type of tool, the operator plays an essential role in achieving quality end-results, avoiding injury and ensuring a long product lifespan. Please ensure that you take the time to read this manual carefully. It contains all the information required to understand how to safely and properly set-up, operate & maintain your American Beauty or Esico Triton tool. Additionally, please feel free to visit our full-service websites: [www.americanbeautytools.com](http://www.americanbeautytools.com) & [www.esicotriton.com](http://www.esicotriton.com) for links to instructional videos, product specifications, a technical blog, an on-line shopping cart and much more.

## Selecting a Location

Choosing a proper location in your facility to set-up your soldering operation is a commonly overlooked step in ensuring optimal soldering conditions. Then, you will want to take care to properly prepare your workspace to ensure a safe and efficient environment for your operators. To assist with this, we have created a checklist of considerations to guide you in selecting a location and preparing your workstation.

### ***Ideally your location is:***

- well ventilated
- away from high volume foot traffic zones
- properly marked with warning signage

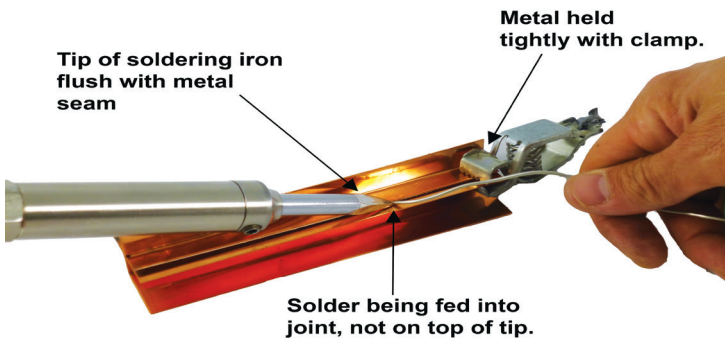
### ***Ideally your work space is:***

- not in direct path of airflow from AC or furnace vent
- preferably on inside wall, away from windows
- has suitable grounded outlet with voltage matching your tool (110-120 or 220-240 VAC)
- free from clutter and has adequate space to allow power cord to hang freely
- on a flat, level surface
- on a chemically and thermally resistant surface.
- it's always a good idea to include a fume extraction device when soldering inside a facility

Following these basic steps should ensure a suitably safe and efficient location for your soldering operation.

## Proper Set-up and Use of Soldering Iron and Stations

1. All of our soldering irons and stations come with a stand. Some stands may require minor assembly.
2. When installing your tip in your iron please ensure the tip is fully seated in the iron. This will help prevent premature burn out of the heating element.
3. Plug iron into an approved grounded outlet while iron is resting in the stand provided.
4. Provide ample time for your soldering iron to ramp up to temperature before attempting to feed solder to the tip. This time, ranging from 3-12 minutes depending upon size, can be used to clean the materials being soldered and apply flux, if necessary.
5. Place the tip of your soldering iron on the base metals to be soldered to bring them to temperature. **Note:** The base metals to be soldered should be clamped/fixtured tightly and be clean and free of coatings, oils, or contaminants.
6. Once the base metals have been heated to temperature, begin applying the appropriate solder for the application.
7. When finished, wipe the tip clean using a moist sponge and then apply fresh solder to re-wet the tip.
8. Unplug the iron and allow it to cool to room temperature prior to storing.



## Tool & Wattage Selection

If you find your soldering iron is taking a long time to recover the heat lost between applications, this is a good indication a higher wattage or larger iron is needed for this task.

Conversely, if the iron is too hot, you should step down the wattage to prevent premature burnout and tip degradation. If stepping down the wattage and size of your iron is not an option or a more “finely tuned” temperature is needed, we strongly recommend adding a Voltage Controller Unit (Model V3700 or EC-6) to your operation to regulate your iron’s output.

Scan here to see more information on our Voltage Controllers.



[www.americanbeautytools.com/v3700](http://www.americanbeautytools.com/v3700)  
[www.esicotriton.com/EC6](http://www.esicotriton.com/EC6)



## Add-ons & Accessories

**Anti-seize:** Various forms of anti-seize have been used throughout the years to prevent solder tips from becoming frozen into the soldering iron and making the tool unrepairable once either the tip or element fails. Feel free to use an anti-seize compound, however it does not take the place of proper cleaning and maintenance (page 8).

**Fluxes:** If you have cleaned your materials and are still having trouble with your soldering application, consider adding flux to your process. Flux is a compound that is used to lift tarnish films from a metal’s surface, keep the surface clean during the soldering process, and aid in the wetting and spreading action of the solder.


## Safety - Personal

Soldering irons and stations are extremely hot. Operators of these products should be made aware of and fully understand all of the warnings as they relate to the operation or use of these devices. Failure to observe the following safety instruction could result in serious injury.

- Only use the solder iron for it's intended use.
- Always wear Personal Protective Equipment (PPE) when operating your soldering iron. This includes safety glasses, protective gloves, and sleeves (if necessary) to cover your body.
- This tool is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of this tool by a person responsible for their safety.
- Do not operate soldering iron while under the influence of alcohol or drugs.

## Safety - Workspace

- Always operate the soldering iron in a well ventilated area. Some solders and fluxes release fumes that can be harmful. Proper attention should be given to these materials and the ventilation required to exhaust these fumes.
- Never leave a soldering iron unattended unless it is unplugged and completely cooled down.
- Be sure to properly label work area when in use to identify the dangers of a hot soldering iron.

 **PROPOSITION 65 WARNING:** Unless specifically stated, our tools & accessories are lead-free & RoHS Compliant. However, use of this product with lead-bearing solders (or any other chemicals found on the current Proposition 65 List) could expose the user to chemicals known to the State of California to cause cancer and/or birth defects or other reproductive harm.

## Safety - Device

- Most soldering irons and stations are available in both a low voltage (110-120VAC) and high voltage (220-240VAC) versions. Please consult your cord label to determine what version you have purchased and ensure your soldering iron is properly plugged in to the appropriate outlet.
- The tip temperature of your iron can reach in excess of 900°F. Mishandling of your iron can result in a serious burn or fire.
- Do not touch any metal parts of the iron while in operation.
- Do not use the iron for any application other than it's intended use.
- Do not leave a hot iron unattended.
- Do not use the iron with or around flammable items.
- Soldering will produce smoke. Make sure the soldering location selected is well ventilated.
- Always store the iron in the holder when not in use.
- Let the iron cool to room temperature before changing tips.
- Let the iron cool to room temperature prior to storage.
- Do not operate if supply cord is damaged. Please check out our repair service for replacing your cord. (Rear Cover)
- Never attempt to perform repair, replacement, diagnostics, or routine maintenance while unit is plugged in or still hot.
- Repairs should only be performed by a qualified technician familiar with the product.
- Do not modify the soldering iron or use it with damaged parts.

# MAINTENANCE & CARE

- While using the soldering iron, it is important to clean the tip regularly using a moist sponge or brass sponge to remove impurities and reduce oxidation.
- Avoid leaving the iron on for long periods of time (more than 20 minutes) without using it. This will cause your tip to become oxidized creating a “dry” tip that will lose heat conductivity and prevent solder from wetting to the tip surface.
- Periodically, after the iron and tip have cooled to room temperature, the tip should be removed from the iron and the shaft cleaned using an emery pad. This will help prevent the tip from seizing in the iron due to the excessive build-up of oxides and contaminants.

**Note:** Do not take a file to your soldering tip to clean it. Using a file on your soldering iron tip will lead to the removal of it's iron plating which will significantly degrade the life of the tip.

- Periodically cycle the set screws of your iron. This will help ensure they do not seize over time.
- You will notice a slight vibration occurring in your soldering iron. This is natural and a function of the alternating current passing through the nickel-chromium wire of the heating element. Routinely re-tighten the set-screw holding the soldering tip in place as this vibration can cause it to loosen over time.
- When cleaning the shaft of your soldering iron tip, you should also take the time to clean the bore (the cavity in which the tip sits) of your iron using a wire brush.

Why not let us show you how to perform basic maintenance on your soldering irons.



[www.americanbeautytools.com/v/si/maintenance](http://www.americanbeautytools.com/v/si/maintenance)



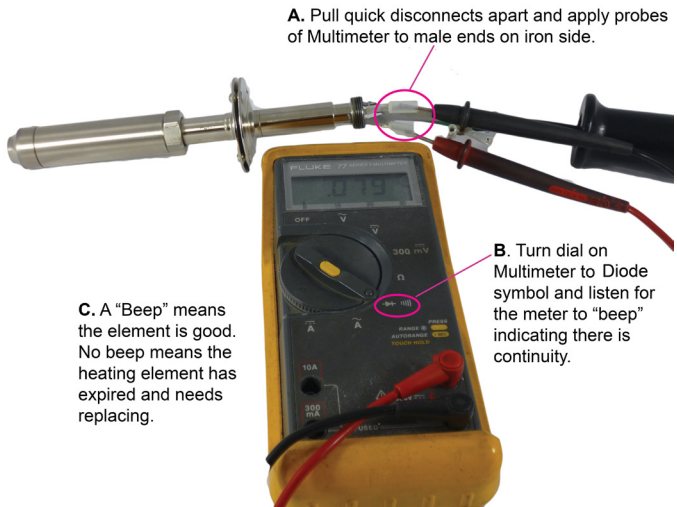
# TROUBLE SHOOTING

Problem Description	Solution
Soldering iron produces NO heat.	<ol style="list-style-type: none"> <li>1. Is the power cord connected?               <ul style="list-style-type: none"> <li>• Connect power cord to outlet</li> </ul> </li> <li>2. Is the GCFI tripped on your outlet?               <ul style="list-style-type: none"> <li>• Unplug your iron, reset the GCFI, and reconnect the power cord.</li> </ul> </li> <li>3. Determine if the heating element needs replacing. (See Next Page)                Replace Heating Element with the appropriate model for your soldering iron. (See Data Sheet)</li> </ol>
Soldering iron heats up intermittently.	<p>Determine if there is a break in the cord-set. (Pg. 11)</p> <ul style="list-style-type: none"> <li>• Replace Cord-set with the appropriate model for your soldering iron. (See Data Sheet)</li> </ul>
Soldering tip cannot be removed.	<p>Tips seize from oxidation build-up on both the shank of the iron tip &amp; inside walls of the soldering iron. Both the tip and heating element will need to be replaced.</p>
Soldering iron no longer seems to reach the same top temperatures.	<p>Our soldering irons are 'full-output' irons, meaning they either operate at maximum potential or they completely expire. 'Less' heat is almost always a result of poor cleanliness.</p> <ul style="list-style-type: none"> <li>• Use our Maintenance Kit to clean the oxidation from both the shank of the iron tip &amp; inside walls of the soldering iron.</li> </ul>

**Warning:** Disconnect the power prior to performing any service or diagnostics on your solder iron. Failure to do so could cause serious harm and electric shock. Service to your iron should be performed by qualified personnel to avoid injury or damage.

## Determining if Heating Element has Expired and Needs to be Replaced

1. Disconnect the handle from the body of the iron. Process may be different depending upon your soldering iron.
2. Slide the handle down on the cord and remove any cloth tape or protective insulation.
3. Perform Continuity Test (See instructional picture below).



See link to Repair Videos (see Rear Cover).

## Determining if Cord-Set Needs to be Replaced

1. Steps #1 and #2 are the same as in the procedure for Determining if the Element Needs to be replaced (pg. 10).
2. Perform Cord-set Continuity Test (see picture below).
  - A. Turn Multimeter to the indicated Diode symbol. Multimeter will “beep” to indicate continuity exists and that electricity can travel unabated to the soldering iron’s element.
  - B. Pull quick disconnect apart. Place one probe in the female end of one of the connectors on the cord side.
  - C. Place the other probe on one of the blades of the cord-set and listen for a “beep”. If you do not hear a beep, try the other blade. Repeat for remaining quick disconnect. If a “beep” cannot be heard on both blade/connector combinations, or if the beeping stops momentarily at any point, this indicates a break in the cord-set.



See link to Repair Videos (see Rear Cover).

## Warranty Details

Both American Beauty and Esico Triton Tools are warrantied to be free from defects in material and workmanship as outlined below. No warranty is made with respect to products which have been altered, subjected to abuse or improperly used.

### Consumable Parts - NOT COVERED

Items include such parts as Soldering Iron Tips, Desoldering Braid, Resistance Soldering Elements and Electrodes, etc.

### Serviceable Parts - 90-DAY PERIOD

Items include such parts as are Heating Elements, Thermostats, Voltage Controllers, Cord-sets, etc. It is the customer's responsibility to make themselves aware of proper operating parameters, that when not followed, can greatly reduce the life-span of this type of part.

### Standard Products - 3-YR PERIOD

These items include all American Beauty and Esico Triton soldering tools that don't fall into the two categories highlighted above. They include soldering irons, solder pots, soldering stations, resistance soldering systems and thermal wirestripping systems, etc. Visit our websites for full details: [www.americanbeautytools.com/warranty](http://www.americanbeautytools.com/warranty) [www.esicotriton.com/warranty](http://www.esicotriton.com/warranty)

## *Repair Service*

Eventually even the toughest soldering tools require minor repair work. We have expanded our internal repair department and reassigned our most experienced technicians to work on repairs. We implemented customized software to ensure accurate and timely processing of all returned products. Save yourself unnecessary downtime and aggravation by taking advantage of our world-class repair and refurbishment service. Call us today at 800-550-2510 or visit either of our websites to make arrangements.

Watch our technician perform a few of the more basic repairs.



[www.americanbeautytools.com/v/si/repairs](http://www.americanbeautytools.com/v/si/repairs)