



*Soldering Solutions*

User Manual for  
Soldering Irons



# TABLE OF CONTENTS

|   |       |
|---|-------|
| TABLE OF CONTENTS                         | 2     |
| INTRODUCTION                              | 3     |
| PRODUCT CONTENTS                          | 4-6   |
| SAFETY                                    | 7-8   |
| Safety - Personal & Workspace             | 7     |
| Safety - Device                           | 8     |
| SET-UP & OPERATION                        | 9-11  |
| Selecting a Location                      | 9     |
| Proper Use of Soldering Iron              | 10-11 |
| Tips and Tricks                           | 11    |
| MAINTENANCE & CARE                        | 12    |
| Solder Iron Tip                           | 12    |
| Solder Iron                               | 12    |
| ACCESSORIES                               | 13-14 |
| TROUBLE SHOOTING                          | 15-17 |
| Determining if Element Needs Replacement  | 16    |
| Determining if Cord-Set Needs Replacement | 17    |
| REPLACEMENT PARTS                         | 18-19 |
| WARRANTY & SERVICE DETAILS                | 20    |

## Company Information

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# INTRODUCTION

American Beauty has been a fixture in the soldering tool marketplace since 1894. Our tools are a throw-back to a time when people took pride in the tools they used and companies took pride in the tools they manufactured. Today, American Beauty® 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.

American Beauty Soldering Irons have been manufactured to provide a constant and reliable source of heat for the most demanding soldering joints ranging from applications as small as printed circuit board soldering to as large as industrial roofing jobs. All of our American Beauty soldering irons contain a compression wound nichrome wire heating element made from the highest quality materials for improved reliability during operation. And, all of our elements and irons are wound and assembled right here in the USA.

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 properly set-up, operate & maintain this American Beauty equipment. Additionally, please feel free to visit our full-service website ([www.americanbeautytools.com](http://www.americanbeautytools.com)) for links to instructional videos, product specifications, a technical blog, an on-line shopping cart and much more.

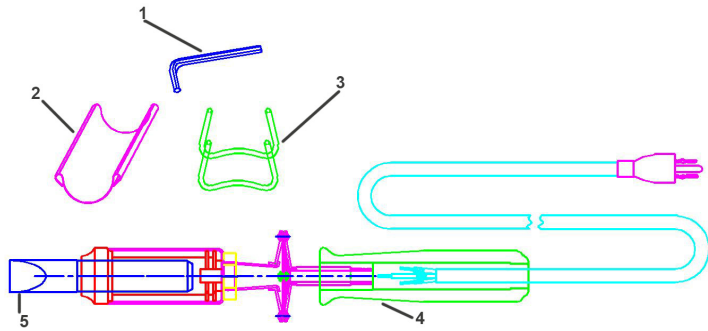
The following video demonstrates how to quickly get started using your soldering iron.



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

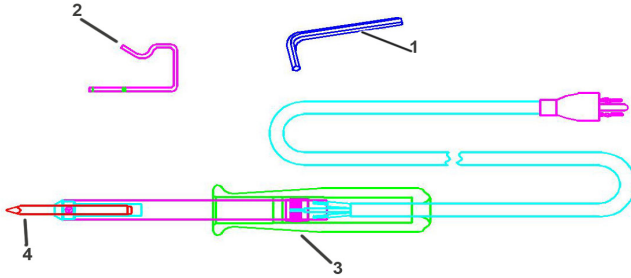
American Beauty soldering irons are classified into categories based on size and design. They include Heavy Duty Soldering Irons, Mid Size Soldering Irons, Pencil Style Soldering Irons, and Ergo Style Soldering Irons. Please use the model number of the iron that you purchased to identify what to expect in the box.

*Heavy Duty Soldering Irons  
Models 3138 through 3198*



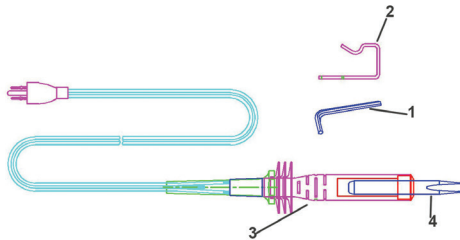
| Item | Description         | Quantity |
|------|---------------------|----------|
| 1    | Hex Key             | 1        |
| 2    | Tray                | 1        |
| 3    | Tray Legs           | 2        |
| 4    | Soldering Iron      | 1        |
| 5    | Tip (pre-installed) | 1        |

*Mid Size Soldering Irons  
Models 3114 through 3125, & 3125E*



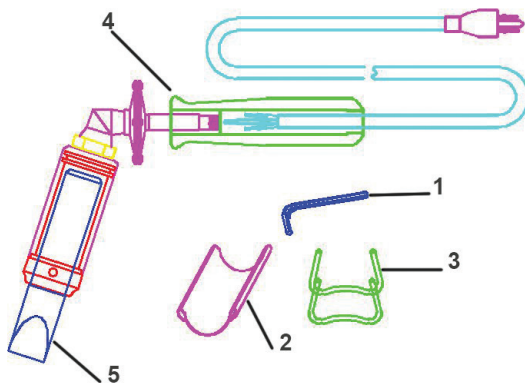
| Item | Description         | Quantity |
|------|---------------------|----------|
| 1    | Hex Key             | 1        |
| 2    | Solder Iron Stand   | 1        |
| 3    | Soldering Iron      | 1        |
| 4    | Tip (pre-installed) | 1        |

*Pencil Style Soldering Irons  
Models 3108 through 3112*



| Item | Description         | Quantity |
|------|---------------------|----------|
| 1    | Hex Key             | 1        |
| 2    | Solder Iron Stand   | 1        |
| 3    | Soldering Iron      | 1        |
| 4    | Tip (pre-installed) | 1        |

*Ergo Soldering Irons  
Models 3138E through 3198E*



| Item | Description         | Quantity |
|------|---------------------|----------|
| 1    | Hex Key             | 1        |
| 2    | Tray                | 1        |
| 3    | Tray Legs           | 2        |
| 4    | Ergo Iron           | 1        |
|      | Tip (pre-installed) | 1        |

**PROPOSITION 65 WARNING:** American Beauty 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.

Soldering irons 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.

## *Safety - Personal*

- 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.
- 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.

*Safety - Device*

- Most American Beauty soldering irons are available in both a low voltage (110-120VAC) and high voltage (220-240VAC) version. 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.
- Never attempt to perform repair, replacement, diagnostics, or routine maintenance while unit is plugged in.
- 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.



## *Selecting a Location*

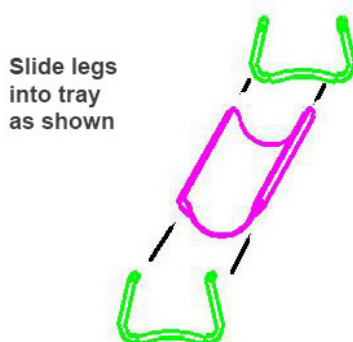
Choosing a good location to station your soldering iron is the first step to operating your iron safely and efficiently. To assist with this, we have created a checklist of considerations to guide you in selecting a location for your soldering iron.

- Area is well ventilated
- Surface is both flat and level
- Surface is both chemically and thermally resistant
- Area is away from high volume foot traffic zones
- Area is free from excess clutter
- Workspace is not in the direct path of airflow from AC or furnace vent
- Workspace is preferably on an inside wall, or at-least away from windows
- Workspace has access to a properly grounded outlet whose output voltage matches that of your tool. (110-120VAC or 220-240VAC)
- Workspace has adequate space that allows the power cord to hang freely

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

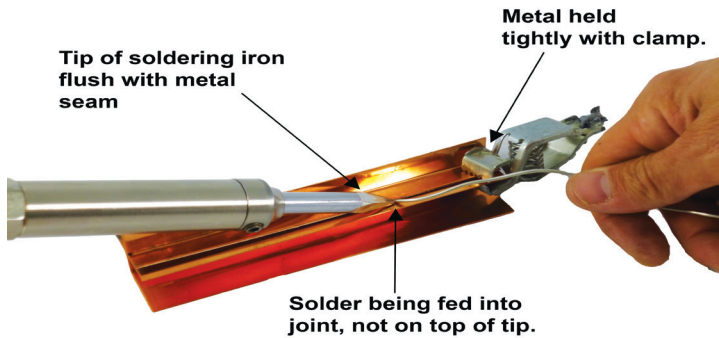
### Proper Use of Soldering Iron

1. For models 3138 through 3198, please set up the soldering iron tray as shown below. For all other models, please proceed to Step 2.



2. If installing a new or used 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 3-wire (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 (approx. 3-5min). This time 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/fixed 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 “tin” the tip by applying fresh solder to it.
8. Unplug the iron and allow it to cool to room temperature prior to storing.



## *Tips and Tricks*

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, American Beauty recommends adding a Voltage Controller Unit (Model V3700) to your set-up to regulate your iron’s output.

Scan here to see more information on our Voltage Controller. Also see the Accessories section on page 13.



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

### *Solder Iron Tip*

- While using the soldering iron, it is important to clean the tip regularly using a moist sponge or dry dross sponge to remove impurities and reduce oxidation.
- Avoid leaving the iron on for long periods of time (more than 1hr) without using it. This will lead to your tip becoming covered with oxide 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 American Beauty Paragon 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.

### *Soldering Iron*

- Periodically cycle the set screws of your iron. This will help ensure they do not seize 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)

**American Beauty offers maintenance kits for your soldering irons. See next page.**

# ACCESSORIES

American Beauty offers a full line of accessories to make your soldering experience as easy and enjoyable as possible.

We have listed a couple suggestions below to help make American Beauty your one-stop shop for soldering needs.

## *V3700/V3600*



For users who need a larger iron for thermal recovery, but are trying to hold a controlled temperature setting that is lower than the output of your iron to help control or prevent thermal damage, you are in luck. American Beauty's model V3700 (larger irons) and model V3600 (smaller irons) voltage controllers will not only improve your process control, it will also extend the life of your iron's heating element.

## *Maintenance Kits*



As discussed in this manual, the cleaning of your iron and tip are an integral part of maintaining your iron and extending its life. American Beauty offers a maintenance kit (Model CS-ABKIT) for your iron.

*Brass Sponge Solder Tip Cleaner  
& Tip Tiner*

Model CS-BS1

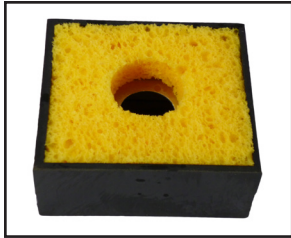


Model CS-TT1



*Wet Sponge Solder Tip Cleaner*

'Well Type'  
Model 481



'One Pass'  
Model 480



*Solder & Flux*

Solder, Models  
CS-PBF1 & CS-PBF2



Flux, Models  
CS-FX1, CS-FX2, CS-FX3



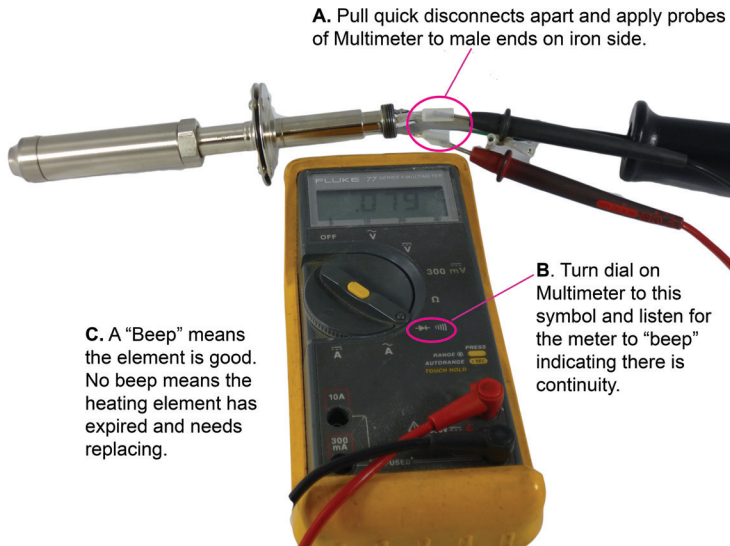
# TROUBLE SHOOTING

| 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. (Pg. 16)               <ul style="list-style-type: none"> <li>• Replace Heating Element with the appropriate model for your soldering iron. (Pg. 18)</li> </ul> </li> </ol> |
| Soldering iron heats up intermittently.                            | <p>Determine if there is a break in the cord-set. (Pg. 17)</p> <ul style="list-style-type: none"> <li>• Replace Cord-set with the appropriate model for your soldering iron. (Pg. 18)</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. (Pg. 18,19)</p>  |
| Soldering iron no longer seems to reach the same top temperatures. | <p>American Beauty 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 Maintenance Kit (Pg. 13) 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 cord 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 the Heating Element has Expired and Needs to be Replaced*

1. Disconnect the handle from the body of the iron.
  - For Models 3114 through 3198, rotate the handle counterclockwise to unthread the iron from the handle.
  - For Models 3108 through 3112, loosen the set screw in the handle until the iron is loose in the handle.
2. Slide the handle down on the cord and remove the cloth tape.
3. Perform Continuity Test (See instructional picture below).



See link to Repairs Video on pg. 18.



## Determining if the 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. 16).
2. Perform Cord-set Continuity Test (see picture below).
  - A. Turn Multimeter to the indicated symbol. Multimeter will “beep” to indicate continuity exists and that electricity can travel unabated to the soldering iron’s heating 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 Repairs Video on pg. 18.

## Replacement Parts List

American Beauty offers a full line of replacement parts for your Soldering Iron. Repairs are straight forward, however for those wanting the work done for them, please see our website [www.americanbeautytools.com/repair](http://www.americanbeautytools.com/repair) to take advantage of our Repair and Refurbish program.

| Replacement Handle & Cordset |                              |
|------------------------------|------------------------------|
| Iron Model #                 | Replacement Handle & Cordset |
| All Models 3138-3198         | 3919                         |
| All Models 3125              | 3918                         |
| All Models 3114              | 3917                         |
| All Models 3108-3112         | 3916                         |

| Replacement Heating Elements |                            |
|------------------------------|----------------------------|
| Iron Model #                 | Replacement Element Part # |
| 3198-550                     | 9279-550                   |
| 3178-300                     | 9277-300                   |
| 3158X-250                    | 9275X-250                  |
| 3158-200                     | 9275-200                   |
| 3138X-175                    | 9273X-175                  |
| 3138-150,130,100             | 9273-150,130,100           |
| 3125-75,60                   | 9271-75,60                 |
| 3114-75,60                   | 9270-75,60                 |
| 3112-60,50,40                | 9012-60,50,40              |
| 3110-35,30,25                | 9010-35,30,25              |
| 3108-30,25,20                | 9014-30,25,20              |

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

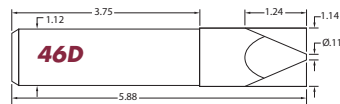
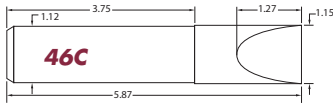


[www.americanbeautytools.com/v/si/repairs](http://www.americanbeautytools.com/v/si/repairs)

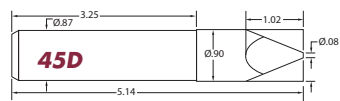
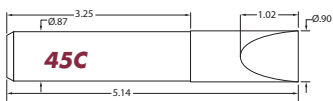
The following chart highlights our most popular styles of tips for each of our irons. Many other shapes and tip styles are available on our website at [www.americanbeautytools.com/tips](http://www.americanbeautytools.com/tips).

\*Irons with E and/or X designators use the same tips and accessories as base model.

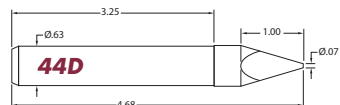
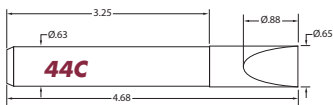
**46 Series Tips Used in 3198 Irons**



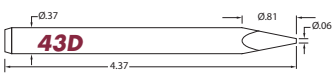
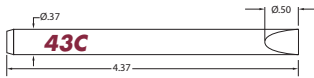
**45 Series Tips Used in 3178 Irons**



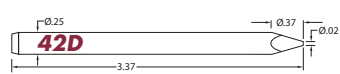
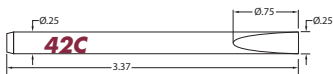
**44 Series Tips Used in 3158 Irons**



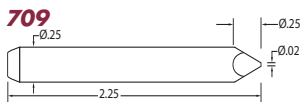
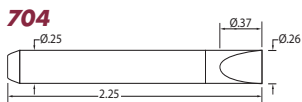
**43 Series Tips Used in 3138 Irons**



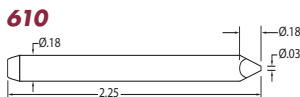
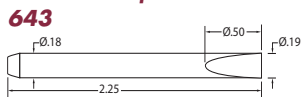
**42 Series Tips Used in 3114 and 3125 Irons**



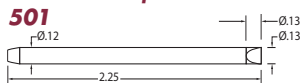
**700 Series Tips used in 3112 Irons**



**600 Series Tips used in 3110 Irons**



**500 Series Tips used in 3108 Irons**



## *Warranty Details*

American Beauty 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 American Beauty Products - 3-YR PERIOD

These items include all American Beauty soldering tools that don't fall into the two categories highlighted above.

Complete warranty details can be located on our company website at [www.americanbeautytools.com/warranty](http://www.americanbeautytools.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 American Beauty's world-class repair and refurbishment service. Contact us today to make arrangements, or visit [www.americanbeautytools.com/repair](http://www.americanbeautytools.com/repair)