



Soldering Solutions

User Manual for Industrial &
Digital Mil-Spec Solder Pots



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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.

Your American Beauty solder pot has been manufactured to stand-up to the rigors of today's demanding production environment. Whether its a thermostatically controlled industrial pot or a digital mil-spec solder pot, elements from it's grey cast iron crucible, form a protective layer with the higher tin content in today's solders, making it a great choice when going Lead-free. All American Beauty® solder pots are RoHS compliant. Pre-tinning your clean wire and component parts reduces oxidation, contamination and helps ensure perfectly wetted solder joints. Dip soldering with an American Beauty solder pot is an easy and effective method of performing this essential operation.

With this type of tool, the operator plays an essential role in achieving quality end-results, avoiding injury and ensuring a long product lifespan. By it's very nature, a solder pot poses a hazard and can result in serious injury if not used properly. 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) 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 solder pot.



www.americanbeautytools.com/v/sp/quickstart

INDUSTRIAL SOLDER POTS

American Beauty solder pots are recognized throughout the industry for superior performance and tremendous durability. Customers have described our pots as ‘bullet proof’ and ‘glutton for punishment’. If your need is a solder pot that will work day after day, month after month, this is the product for you. Dross skimmers are available for all pots, providing a safer and more efficient dross removal method than paddles, spoons or sticks that contaminate solder and lower temperature.



Model	Description
MP-9	MiniPot
PF-MP-9	Prefilled MiniPot
300	One Pound Solder Pot
PF-300	Prefilled One Pound Solder Pot
600	Mid-Capacity Solder Pot
PF-600	Prefilled Mid-Cap. Solder Pot

INDUSTRIAL SOLDER POTS

Charging your solder pot (adding the initial load of solder) is a process that takes time and patience. If you have neither, why don't you just let us handle that part of the product life cycle? Available in our mini, one pound and mid capacity pot, not only is this convenient, its cheaper than buying the solder separately.



Replacement Part	Model #
Dross Skimmer Assembly for One Pound Pots	302
Dross Skimmer Assembly for Mid-Capacity Pot	602
Dross Skimmer Assembly for MiniPot	MP-9D
Heating Elements (Pair) for Mid-Capacity Pot	9300-2X
Heating Elements (Pair) for One Pound Pot	9301-2X
Heating Element for MiniPot	MP-9H
Thermostat for Model One Pound & Mid-Capacity Pots	8055
Voltage Controller for MiniPot	8058
Cord-set, Industrial Solder Pots	9303
Replacement Fuses (6 AMP)	8054-6

DIGITAL MIL-SPEC SOLDER POT

Your digital solder pot isn't cheap, but at least you sleep easy at night knowing you're operating within that very tight Mil-Spec temperature range. But are you? What happens to your piece of mind when, just prior to use, your technician cleans off the pot's surface dross with a room temperature spatula. American Beauty's Digital, Mil-Spec Compliant Solder Pots (One and Mid-cap) pots have integrated dross skimmers which eliminates this fluctuation.



Model	Description
D-MP-9	Digital Mil-Spec MiniPot
D-MP-9C	Digital Mil-Spec MiniPot - Ceramic
D-300	Digital Mil-Spec 1 lbs Solder Pot
D-300C	Digital Mil-Spec 1lbs Solder Pot - Ceramic
D-600	Digital Mil-Spec Mid-Capacity Solder Pot
D-600C	Digital Mil-Spec Mid-Cap. Solder Pot - Ceramic

DIGITAL MIL-SPEC SOLDER POT

Digital pots exceed the requirements of military specifications ANSI(J-STD-0018).

Digital LCD readout displays both preset and actual temperature in either °F or °C with the ability to easily switch between the two.

Pot controls temperature to $\pm 5^{\circ}\text{F}$ ($\pm 2.75^{\circ}\text{C}$) of a preselected setting from ambient to 800-900°F depending upon pot size.



Calibration Service

All American Beauty Digital Mil-Spec solder pots can be calibrated. The process is outlined in the instruction sheet inserted within this booklet or found on our website at:

www.americanbeautytools.com/calibration

Additionally, you can find a detailed video showing the procedure on page 14 of this booklet. However, if you would prefer to have us perform the calibration service, please contact our customer service to discuss pricing and timing and request a return authorization.

Solder pots contain molten solder which is extremely hot. Operators of this product should be made aware of and fully understand all of the warnings as they relate to the operation or use of this device. Failure to observe the following safety instruction could result in serious injury.

Safety - Personal

- Only use the solder pot for its intended use as outlined in the introduction of this manual.
- Always wear Personal Protective Equipment (PPE) when operating your solder pot. This includes safety glasses, protective gloves, and sleeves (if necessary) to cover your body.
- Do not operate solder pot while under the influence of alcohol or drugs.

Safety - Workspace

- Always operate the solder pot 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.
- Do not operate the solder pot in the presence of water and/or combustible & heat sensitive materials.
- Never leave a solder pot unattended unless it is unplugged and completely cooled down. Caution: When cooling, solder will solidify on surface, but will remain molten beneath the surface for an extended period of time.
- Be sure to properly label work area when in use to identify the dangers of a hot solder pot.

Safety - Device

- American Beauty solder pots 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 solder pot is properly plugged in to the corresponding outlet.
- When in operation, a solder pot gets extremely hot to the touch. After a period of time, this can also include the adjustment knob. Extreme caution should be used when touching any part of the solder pot. Do not pick up pot at any time during operation.
- Always ensure that the solder pot has been properly turned off at the completion of its use:
 - The One Pound & Mid Capacity General, Industrial Use Solder Pots use a bi-metal thermostat to control temperature and should be turned to the lowest setting and unplugged to ensure they are “off”.
 - The Mini Pot & Digital Pots – come equipped with a “positive off” feature that can be both heard and felt. The unit may be unplugged as well as a secondary caution.
- Do not attempt to operate the solder pot with a frayed or damaged cord or with the base plate removed. this could expose the operator to an electrical shock.
- Do not attempt to remove the protective circuitry.
- Never attempt to perform routine maintenance, repairs, diagnostics, or install replacements while unit is plugged in.
- Repairs should only be performed by a qualified technician familiar with the product.
- Disconnect the power cord prior to performing any service or diagnostics on your solder pot. Failure to do so could cause serious harm and electric shock.

Selecting a Location

We have created a checklist of considerations to guide you in selecting a suitable location for your solder pot. Choosing a good location to station your solder pot is the first step to operating your solder pot safely and efficiently.

- 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

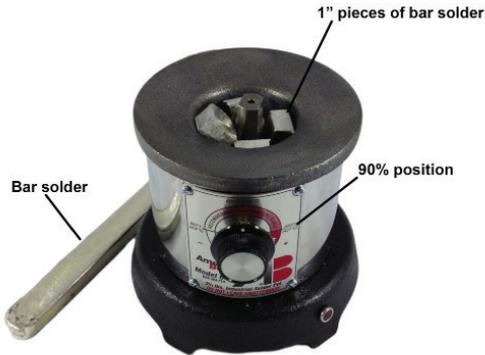
Following these basic steps should ensure a suitably safe and efficient location for the operation of your solder pot.

Charging the Solder Pot

“Charging” a solder pot is the common industry term that describes the process of adding solder to the solder pot for the first time. Follow these easy steps to get your pot ready for every-day usage.

1. Prepare solder ~ While many forms of solder can be used for the charging of your pot, we recommend bar solder, cut into 1” pieces.

WARNING: USE OF FLUX-CORE SOLDER DURING CHARGING CAN RESULT IN EXCESSIVE SMOKING.



(Cont'd from pg 10)

Group these pieces into a mound inside the solder pot's crucible. We find that this ensures maximum surface contact between solder pot and solder to speed up initial melting, while avoiding the chance of larger pieces 'flipping' during melting and causing potential burn hazard.

2. Plug in solder pot ~ Turn the pot's temperature dial to approximately 90% of maximum output.
3. Add additional solder ~ As required, carefully add additional pieces of solder to the growing solder bath, until the solder level reaches the top of the crucible, but not over the crucible 'lip'.

Note: A molecular bond forms between the tin in the solder and the iron in the crucible during the initial charging. This creates a protective layer which will prevent future degradation of your solder pot from the tin found in most solder. Do not disturb this layer.

Watch a video on the proper technique to charge your solder pot.



www.americanbeautytools.com/v/sp/charging

Setting the Proper Temperature

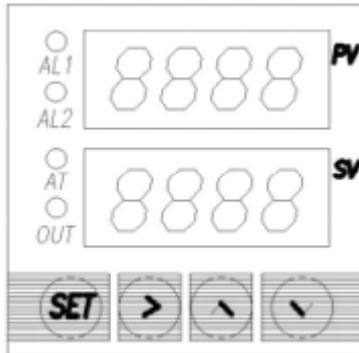
As a general rule the temperature of the solder bath should be set to approximately 100°F to 150°F above melt temperature of the solder alloy being used. This prevents excess solder usage while ensuring your bath always stays liquid.



Note: Temperature markings on the faceplate of your American Beauty solder pot can be used as a general guide. Follow the outlined steps for setting a more precise operating temperature.

1. Use a standard testing device complete with thermal couple(s). Place a thermal couple into the center of your solder bath.
2. Increase the temperature of the solder bath by turning the control knob in a clockwise direction. Decrease by turning counter-clockwise.
3. Once you have determined the appropriate setting for your particular application, record that setting for future reference. Many operators choose to physically mark/notch the faceplate on the solder pot itself.
4. When additional solder is added to the solder bath, a slight dip in the overall temperature of the pot will occur. Plan accordingly.

Understanding Display



PV: Present Value ~ Actual Temperature of the solder pot.

SV: Set Value ~ Target Temperature of the solder pot.

AT: Auto-tune indicator ~ Solder pot is actively learning' when light is flashing.

OUT: Output Indicator ~ Solder Pot is actively heating when light is on.

SET: Functions as enter button.

Initial Use & Auto-Tune

Every digital solder pot is tested, auto-tuned & calibrated at our facility prior to shipping. This procedure is performed without solder and at a selected temperature that ensures the solder pot and all of its temperature control componentry are functioning properly. After solder has been added for the first time (charging) and its optimal operating temperature has been selected, we strongly recommend running the Auto-Tuning feature on the pot. This allows the solder pot to 'learn' how to best maintain the solder bath at the desired temperature within the tightest specifications.

Any time there is a change to the solder pot (solder, location, set temperature), its a good idea to repeat this step.

For specific instructions on how to Auto-Tune your Digital Solder pot, refer to the Instruction Sheet that has been inserted into this manual, or follow the link below.

If a picture is worth a thousand words, then a video is worth a thousand pictures! If you would prefer written directions for each of these topics, you'll find an insert in this booklet. Finally, you can always contact our technical support if you need a little more hands-on assistance.

Setting up your Digital Pot

Watch a video on the proper technique to set-up your solder pot.



www.americanbeautytools.com/v/sp/digitalsetup

Changing Between °C & °F

The following video demonstrates how to quickly switch between °C & °F.



www.americanbeautytools.com/v/sp/ctof

Calibration Procedure

Watch this video prior to (or during) calibrating your digital solder pot to make life easier.



www.americanbeautytools.com/v/sp/calibrate

Proper use of Solder Pot

1. Prepare item to be tinned (free and clean of unwanted contaminants).
2. For items requiring flux, dip component into flux and remove ensuring no excess (dripping).



3. Dip and withdraw component into molten solder using a smooth and even motion.



MAINTENANCE & CARE

It is critical to maintain a level of operator consistency after the soldering process has been properly established. While it can be easy to become complacent, one must always remember that a solder pot maintains a bath of molten solder at temperatures as high as 900°F that can easily lead to serious injury.



Use dross skimmer to remove residue that develops at surface of molten solder, prior to dipping any components or parts into the solder bath. Integrated skimmer moves dross onto the lip of the solder pot crucible where it dries up and can be easily removed.



Solder should be replenished regularly by adding small amounts of solder that can quickly assimilate with the rest of the solder bath. This limits the temperature variation caused by adding large amounts of solder at one time.

Purging the Pot

There may be times when it will be necessary to remove existing solder alloy from your solder pot crucible.

Caution: The solder pot will be extremely hot during this process. Use appropriate PPE that will protect you from these high temperatures.

1. Ensure work area is smooth, level, and unobstructed.
2. Plug in the solder pot and heat until the entire solder bath has turned into its liquid state.
3. When solder has completely melted, remove dross skimmer (if necessary) and unplug solder pot.
4. Carefully pour hot molten solder slowly into a temperature resistant container.
5. Allow solder in container to solidify and completely cool down before further handling.
6. Invert the now empty solder pot onto a sheet of aluminum foil over a heat resistant surface.
7. Plug the solder pot back in and turn the thermostat control knob to its maximum heat setting. Allow the solder pot to heat for 15-20 minutes. Any remaining dross will cinder away to a fine ash.
8. Unplug the solder pot and allow it to completely cool down.
9. Using a natural bristle brush remove all of the ash from the inside of the solder pot's crucible. Take special care not to damage the surface of the crucible as this is your pot's protective layer.

The idea of purging your solder pot can be scary. Watch how we do it.



www.americanbeautytools.com/v/sp/purging

TROUBLE SHOOTING

Problem Description	Solution
The solder is contaminated.	Purge solder pot and replace solder (pg. 13).
There is a residue on top of the solder.	Use Dross Skimmer to remove residue (pg. 12).
Solder pot does not turn on.	<ol style="list-style-type: none"> 1. Is the power cord connected? <ul style="list-style-type: none"> • Connect power cord to outlet. 2. Is the GCFI tripped on your outlet? <ul style="list-style-type: none"> • Unplug your pot, reset the GCFI, and reconnect the power cord. 3. Has solder pot fuse blown? <ul style="list-style-type: none"> • Remove fuse from cordset plug. If blown, replace. (Model 8054-6)
Solder pot does not turn off or is overheating.	<p>Thermostat's electrical contacts may have become welded together.</p> <ul style="list-style-type: none"> • Replace Thermostat (300 & 600) or Voltage Controller (MP-9)
The solder pot is heating but is no longer getting hot enough.	One of the heating elements may have expired. Replace the element(s).

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



www.americanbeautytools.com/v/sp/

Solder Bars

Model	Description
CS-PBF3	Solder, Meter Bar, Lead Free
CS-PB50-3	Solder, Meter Bar, Lead Bearing
CS-PBF4	Solder, Regular Bar, Lead Free
CS-PB50-4	Solder, Regular Bar, Lead Bearing

Fluxes

Model	Description
CS-FX2	Regular Flux, 2oz
CS-FX3	Regular Flux, 4 oz
CS-FX4	Ruby Fluid Liquid Flux, 2oz
CS-FX5	Ruby Fluid Liquid Flux, Pint
CS-FX6	Ruby Fluid for Stainless Steel, 2oz
CS-FX7	Ruby Fluid for Stainless Steel, Pint

Other Accessories

Model	Description
CS-TT2	Sal Ammoniac Block
SS-8	Solder Sucker Bulb
CS-ABKIT	Soldering Iron Maintenance Kit

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

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