

# OPERATING INSTRUCTIONS

## AMERICAN BEAUTY RESISTANCE SOLDERING SET

### SET-UP

Plug the power unit into the foot switch receptacle. Plug the foot switch into a properly grounded 120v ac outlet. Depress and hold the foot switch. The light on the power unit will come on, indicating that the unit has power. The light will go out when the foot switch is released. After this test, unplug footswitch and continue with set-up below.

Tweezer connector pins and sockets on the front of the power unit are tapered to provide a secure electrical and mechanical connection. Insert pins into power unit sockets with a slight twist to assure a tight fit. There is no concern for polarity since the power supply delivers alternating current.

The tweezer electrodes are stainless steel with a copper jacket. Only the shiny stainless steel core is to touch the workpiece while soldering. If necessary, remove some of the copper jacket with a file to insure that the copper jacket does not come in contact with the workpiece. Tweezer electrodes can be bent, flattened, notched or slotted to better accommodate an application. To insure proper electrical conductivity, tip of electrodes must be kept clean with a file or sandpaper.

### SOLDERING PROCEDURE

Determining the proper power setting will be dictated primarily by the workpiece and then by your personal preference. It is strongly recommended that you experiment on scrap pieces until you become more familiar with the use of your resistance soldering unit. In general, very small, delicate items will require a lower setting. Larger items require a higher setting or a longer dwell time. Trial and error, using test pieces that are the same size and material as the workpiece, is the best method for determining the proper power setting. Set the power unit at 50% and solder, noting the time required for the solder to flow evenly in the joint. Work up and down the dial in 5% increments until you find the high and low extremes. You can then decide on your preferred setting between these points. Your goal is the fastest setting at which you are comfortable. A low power setting with excessive dwell time tends to allow heat-sinking into areas adjacent to the joint. High settings can produce dwell times so short that you have little measure of control. Dwell times of less than one second are not recommended. Be certain metal to be joined is bright and clean. Use steel wool, a file or sandpaper to clean if necessary.

The actual soldering procedure is simple. Contact the workpiece with both electrodes of the tweezer. Make contact as close to the solder joint as possible. Depress and hold the foot switch. Apply solder to the joint as it heats and release

the foot switch when the solder flows. Allow the joint to cool undisturbed until the solder sets. Use caution when soldering. Always wear eye protection and avoid inhaling fumes generated by solder and flux. Do not touch parts until they have cooled.

Power units set higher than 50% require a 50% duty cycle. For example, if it takes 10 seconds for the solder to flow on an application and the power unit is set higher than 50%, then you must let the power unit rest for 10 seconds before soldering again. (10 seconds on, 10 seconds off; 15 seconds on, 15 seconds off, etc.) Never run the unit continuously on any power setting for more than 45 seconds. If you cannot get the solder to flow in that amount of time the setting is too low, the work is too large for the unit or there is a problem with the set-up or approach. Check the electrodes and connections. For some applications, the use of the optional single carbon electrode and ground clip may be more suitable.

When soldering pieces of greatly different sizes, consider tinning (applying solder to) each piece separately and joining them by reflowing the solder, adding just enough new solder to complete the joint.

Trial and error may seem time consuming at first, but you will find that as you become more accustomed to the equipment you will be able to predict dwell times with less and less trial and error and that you will become more proficient with time and practice.

### OPTIONAL SINGLE ELECTRODE HANDPIECE

Plug single electrode handpiece into one socket on power unit, and ground lead with clip into the other socket. Attach clip as close to the solder joint as possible. Touch joint with tip of single electrode and depress foot switch until solder flows. Single electrode is copper jacketed carbon and cannot be bent. As with tweezer electrode, keep tip of single electrode clean.

If you have any problems:

1. Check your power outlet.
2. Check the fuse in the power unit and replace, if necessary, with AGC3, 3 amp fuse.
3. Check the connections. Handpiece to power unit and electrodes to handpiece.
4. Check to see if the electrodes are fouled with burnt flux. Clean, if necessary with steel wool, fine sandpaper or by filing.
5. Check that the workpiece is clean and free of oil and that the electrodes are making contact.

**If you are still having difficulty after checking all of the above, call our customer service department at 313/875-2505, M-F, 8:30 am to 4:30 pm, eastern time. Please do not call your place of purchase. Most problems can be solved with a simple phone call to us.**

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