

DELUXE ELECTRONIC SOLDERING STATION KIT

**MODEL SL-5K
MODEL SL-5K-40
MODEL SL-5K-SPL**



Assembly and Instruction Manual

Elenco Electronics, Inc.

SOLDERING STATION KIT MODELS

These instructions are for the following electronic soldering stations. The model number of the electronic soldering station that you have received, is marked on the end of the carton.

- Model SL-5K** is supplied without an iron.
- Model SL-5K-40** is supplied with a 40 watt soldering iron, grounded plug, Model SR-6.
- Model SL-5K-SPL** is custom packaged with an iron of your choice of 25 to 60 watts, and other soldering aids. A separate packing slip of the additional items will be enclosed.

INTRODUCTION


The SL-5 series of soldering stations are quality products designed to give the professional, student and hobbyist greater control in quality soldering a broad range of soldering situations. The stations are available with variable wattage irons. The AC receptacle on the back of the station allows soldering irons of up to 300 watt. The AC receptacle also allows irons to be easily changed or replaced.

A special safety feature (patent pending) of the SL-5 is its ground fault detection circuit, which warns you if your station is not properly connected to earth

ground, if your hot and ground wires are reversed, or if your hot and neutral wires are reversed. This is important when working with today's static-sensitive electronic components and is critical for safety when working with high-voltage circuitry.


If you have received a solder practice kit SP-1A or SP-3B with this kit, do the solder practice first before assembling the solder station. Learning to solder properly is essential to good working electronic circuitry.

FEATURES

- Regulation of Temperature
-  Ground Fault Safety Circuit
- Heavy Steel, Non-Slip Base
- Iron Holder Funnel - Reversible, left or right side
- Steel Tray for Sponge Pad
- Sponge Pad
- Power On/Off with Indicator Light

SAFETY PRECAUTIONS

Like all electrical devices, the solder station must be handled with care. The soldering iron and tip can reach high temperatures and these simple safety rules should be followed.

1. If the problem indicator light  is on, do not use the soldering station at that outlet. A wiring problem may exist at the outlet. Refer to Problem Indicator Light Section on page 3 for details on problems.
2. Keep children out of reach of the soldering station.
3. To protect your eyes, use safety goggles.

4. Keep flammable material away from the soldering iron.
5. **DO NOT cool iron** by dipping it into any liquid or water.
6. Always assume that the tip is hot to avoid burns.
7. Work in an area that is well ventilated.
8. Be careful that the hot soldering iron tip or the barrel of the iron does not come in contact with any electrical cord.

SOLDER PRACTICE KIT

If the soldering station contains a soldering iron, remove only the soldering iron, the soldering station plastic housing, the sponge tray, sponge and the soldering iron holder (funnel) from the station box. Assemble them as shown in Figure 1.

You will temporarily use the station parts as a soldering iron stand until you have completed your solder practice and some of the assembly of your station. Proceed as follows:

- 1) Assemble the metal base to the soldering station body hold it in place temporarily by taping the base to the body with Scotch® tape (see Figure 2).
- 2) Insert the soldering iron holder (funnel) on either the right or the left side.
- 3) Insert the tray into the body of the soldering station.
- 4) Wet the sponge with preferably distilled or tap water and then place it into the tray.
- 5) Plug the soldering iron into an AC outlet and place the soldering iron into the iron holder (funnel).
- 6) You will now tin the tip by applying solder to the tip as *it heats up*. **DO IT** before the tip becomes too hot.
- 7) You are now ready to do your solder practice SP-1A or SP-3B or begin to assemble the circuitry of your soldering station.

Notice: Read Introduction to Soldering on page 4 before proceeding with your project.

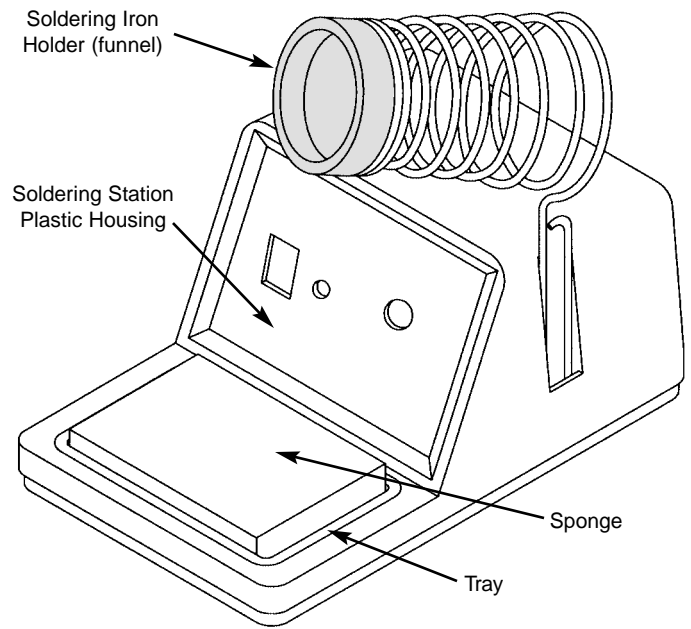


Figure 1

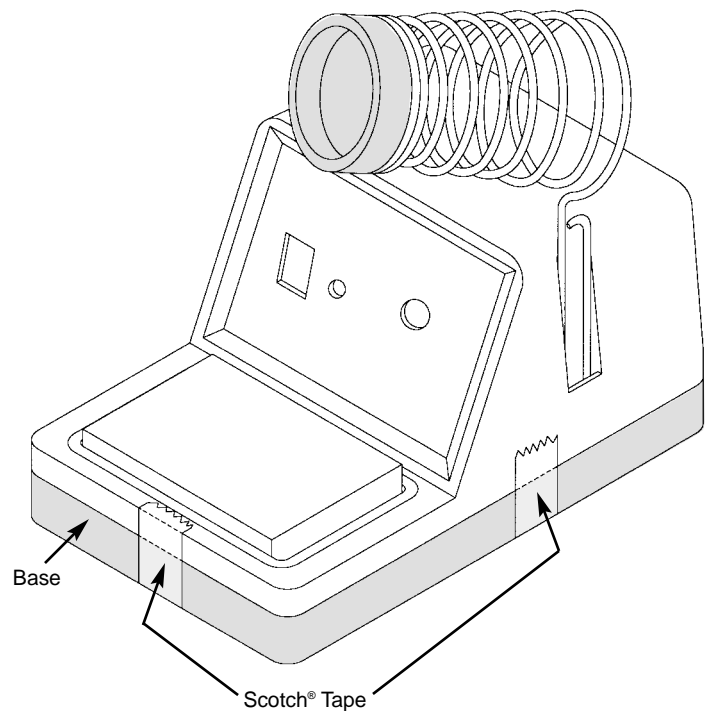


Figure 2

PROBLEM INDICATOR LIGHT

The SL-5 is equipped with a problem indicator light. The indicator turns on when the following problems are present at the outlet that it is plugged into:

1. Open Ground
2. Hot and Ground Reversed (bright when switch is OFF, Dim with switch ON)
3. Hot and neutral reversed (dim when switch is OFF, bright with switch ON)

If the On/Off switch does not light, when unit is turned on this may indicate the following:

1. The Soldering Station is not plugged into a live receptacle
2. An open Neutral
3. An open Hot Lead

The Problem indicator will not test for:

1. Ground and Neutral reversed
2. Ground and Neutral wired together
3. Ground Fault Interrupter (G.F.I) in circuit

The problem indicator light is **NOT** a comprehensive diagnostic instrument. Incorrect wiring of the output plug for soldering iron will **NOT** be detected by this circuit. Refer all indicated problems to Instructor or Qualified Electrician.

SOLDERING IRONS

Iron wattage varies up to 300 watt. For working on PC boards, irons ranging from 15 to 40 watt is suitable. If a heavy-duty soldering iron is required, a 60 watt iron should be considered. If you use an iron with a higher wattage rating than 40 watt, you may damage the copper tracks on the PC board. The higher wattage irons are best suited for heavy-duty electrical connections.

Soldering Iron Tip

The tip is the very important part of the iron. The material that the tip is made from is an essential factor. The soldering iron tip contains four different metals as shown in Figure 3. The core consists of copper. Since the copper is a soft material, it is plated with iron. Chrome plating is used on the area where no soldering takes place to prevent oxidation. Then the tip is plated with tin, because it can be easily cleaned.

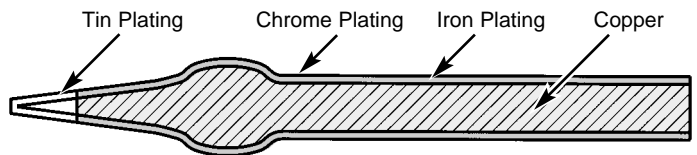


Figure 3

Tip Cleaning

A good clean solder tip makes soldering much easier. The tip should be tinned by lightly coating it with solder to prevent it from oxidizing. The tip can become pitted (black spots) from normal use. It is important to clean the tip by wiping it with a wet sponge or rag. For tips that need a good cleaning, the tip tinner and cleaner (#TTC1) should be used. **Never use a file or abrasive material to clean the tip.** Using such methods will damage the plating and ruin the tip. Do not remove the excess solder from the tip before storing. The excess solder will prevent oxidation.

Note: If you do not have much experience soldering, or no experience at all, you should try building one of our solder practice kits (Model SP-1A or SP-3B). Doing so will enhance your ability to solder, give you a better understanding of the basics of soldering, and reduce the risk of solder errors while building this kit.

INTRODUCTION TO SOLDERING

Almost every electronic device today has a printed circuit (PC) board. Whether you are assembling a PC board or repairing it, you must understand the basics of working with these boards.

A poorly soldered joint can greatly effect small current flow in circuits and can cause equipment failure. You can damage a PC board or a component with too much heat or cause a cold solder joint with insufficient heat. Sloppy soldering can cause bridges between two adjacent foils preventing the circuit from functioning.

Good soldering requires practice and an understanding of soldering principles. Solder (a tin-lead fusible alloy) is used to form a metallic union or joint between two metals.

For best results, the soldering iron should be at least 100°F above the melting point of solder (361°F). Generally, a minimum temperature of 650°F is desirable for printed circuit boards, while higher temperatures are needed for proper soldering to heavier terminals.

Listed below are some basic steps that should be followed to make good solder joints.

1. Make sure that the part that is to be soldered is clean.
2. Where possible, make good mechanical connections.
3. Use quality 63/37, 60/40, or 40/60 rosin core solder. NEVER USE ACID CORE SOLDER OR FLUX.
4. Apply heat to the base material or wires so that they become hot enough to melt the solder.
5. Slide the soldering iron away from the joint to leave a neat joint.
6. After removing iron, do not move joint.
7. On temperature sensitive components such as transistors, diodes, and IC's, avoid too much heat. Use a heat sink to dissipate heat away from the component.

Safety Procedures

- Wear eye protection when soldering.
- Locate soldering iron in an area where you do not have to go around it or reach over it.
- Do not hold solder in your mouth. Solder contains lead and is a toxic substance. Wash your hands thoroughly after handling solder.
- Be sure that there is adequate ventilation present.

Solder

Solder is a fusible alloy composed of tin and lead. Some solder may contain small amounts of other material for use in special purposes to enhance its characteristics. Solder has a melting temperature around 361°F to 370°F, making it ideal for forming a metallic joint between two metals.

Solder is identified by the ratio of tin-to-lead. The most common ratios are 63/37, 60/40, and 40/60. Solder with a greater tin content melts at a lower temperature, takes less time to harden, and generally makes it easier to do a good soldering job. The ratio of tin is a main factor in the strength of the solder joint. Solder with a greater tin content has a greater holding ability under stress. Solder with a tin ratio of 60% is the strongest, while solder with less than 30% would be undesirable.

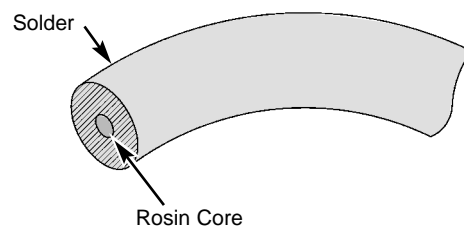


Figure 4

Surface Preparation

In order for the solder to adhere to the connection, the metals must be clean and free of nonmetallic materials. Flux in the solder can remove oxides from metal but not other materials like dirt or grease. To remove these, use a small steel brush or fine emery cloth.

Mechanical Connection

When all the surfaces are clean, the metals should have a solid mechanical connection. Wires should be tightly wrapped around each other or to the terminal. This will eliminate large gaps that create weak solder joints. Solder should not be used as a mechanical connection.

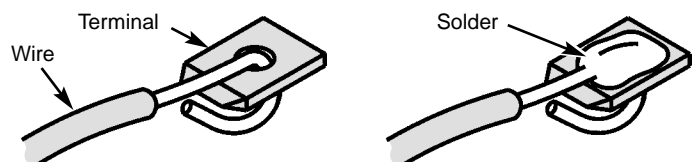


Figure 5

SOLDERING

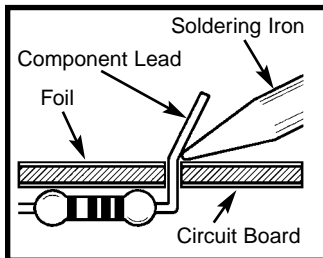
A poorly soldered joint can greatly affect small current flow in circuits and can cause equipment failure. You can damage a PC board or a component with too much heat or cause a cold solder joint with insufficient heat. Sloppy soldering can cause bridges between two adjacent foils preventing the circuit from functioning.

What Good Soldering Looks Like

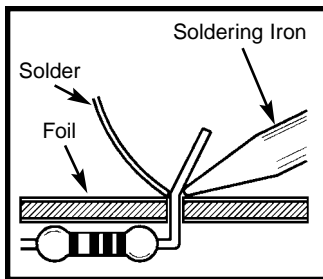
A good solder connection should be bright, shiny, smooth, and uniformly flowed over all surfaces.

Soldering a PC board

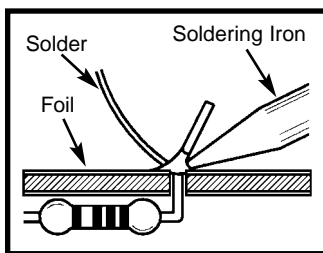
1. Solder all components from the copper foil side only. Push the soldering iron tip against both the lead and the circuit board foil.



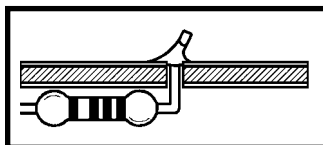
2. Apply a small amount of solder to the iron tip. This allows the heat to leave the iron and onto the foil. Immediately apply solder to the opposite side of the connection, away from the iron. Allow the heated component and the circuit foil to melt the solder.



3. Allow the solder to flow around the connection. Then, remove the solder and the iron and let the connection cool. The solder should have flowed smoothly and not lump around the wire lead.

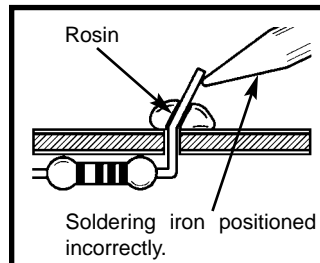


4. Here is what a good solder connection looks like.

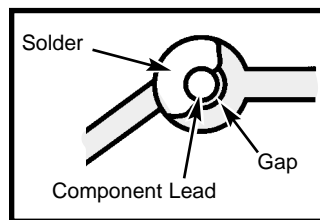


Types of Poor Soldering Connections

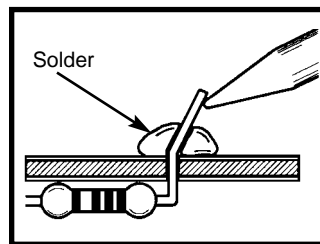
1. **Insufficient heat** - the solder will not flow onto the lead as shown.



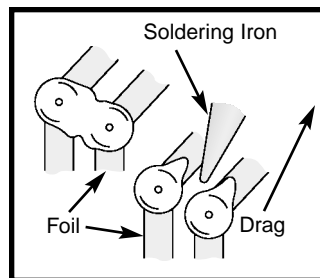
2. **Insufficient solder** - let the solder flow over the connection until it is covered. Use just enough solder to cover the connection.



3. **Excessive solder** - could make connections that you did not intend to between adjacent foil areas or terminals.



4. **Solder bridges** - occur when solder runs between circuit paths and creates a short circuit. This is usually caused by using too much solder. To correct this, simply drag your soldering iron across the solder bridge as shown.



Heat Sinking

Electronic components such as transistors, IC's, and diodes can be damaged by the heat during soldering. Heat sinking is a way of reducing the heat on the components while soldering. Dissipating the heat can be achieved by using long nose pliers, an alligator clip, or a special heat dissipating clip. The heat sink should be held on the component lead between the part and the solder joint.

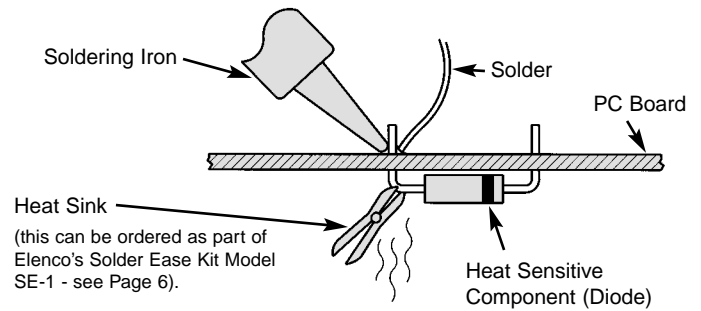


Figure 6

Soldering Surface Mount Components

1. Using tweezers, place the surface mount component on the PC board pads and secure in place with tape (see Figure 7A).

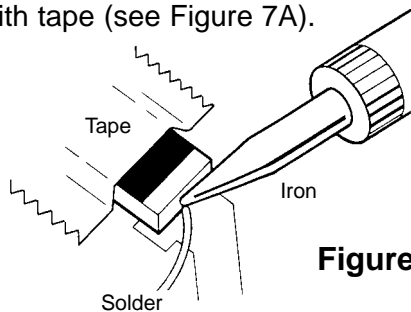


Figure 7A

2. Apply a small amount of solder to the soldering iron tip. This allows the heat to leave the iron and flow onto the foil.
3. Place the iron in contact with the PC board foil. Apply a small amount of solder simultaneously to the foil and the component and allow them to melt the solder.
4. Remove the iron and allow the solder to cool. The solder should have flowed freely and not lump up around the component.
5. Remove the tape and solder the other side of the component.

When soldering the transistors, diodes and integrated circuits, the following procedure may be used:

1. Place the component on the PC board pads and secure in place with tape.
2. Apply a small amount of solder to the soldering iron tip.
3. Place the soldering iron tip on top of the component lead to be soldered and apply solder simultaneously to the lead and the PC board foil.
4. Remove the iron and allow the solder to cool. The solder should have flowed freely and not lump up around the component.

After a component is completely soldered, each solder joint should be inspected with a magnifying glass. If the solder has not flowed smoothly, a bad solder joint is indicated. This occurs when the component and pad have not been heated sufficiently. To correct, reheat the connection and if necessary add a small amount of additional solder.

Another way to solder surface mount components is as follows:

1. Apply a small amount of solder to the soldering iron tip as shown in Figure 7B.
2. Using tweezers, hold the component on the PC board pads.
3. Apply the soldering iron simultaneously to the component and pad and allow the solder to flow around the component.
4. Remove the soldering iron and allow the connection to cool.

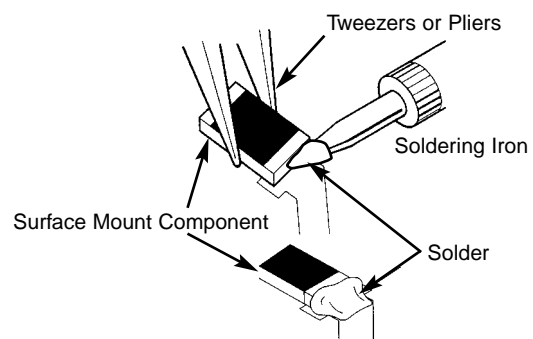


Figure 7B

CIRCUIT OPERATION

THYRISTOR

A thyristor is a controlled silicon diode which is not conductive in the reversed direction. It will only conduct in the forward direction when they are triggered by short pulse or steady voltage applied between the gate and cathode terminals (see Figure 8).

A thyristor family of semiconductors consists of several useful devices. The most commonly used are silicon-controlled rectifiers (SCR), triacs, and diacs. They can be thought of as a solid-state switch with three or more PN junctions.

TRIAC

The block construction of a triac is shown in Figure 9. The triac is like two SCRs connected in parallel in the opposite direction. The construction of the triac allows it to conduct in either polarity. The triac has only one gate that can be triggered by either polarity. The main function is to control power bilaterally in an AC circuit.

DIAC

The block construction of a diac or bi-directional diode is shown in Figure 10. The diac will not conduct in either direction until its "breakover voltage" (V_{BO}) is exceeded. Breakover points range from 20-36 volt. When this accrues, the device will conduct until the voltage across its terminals is below the "breakback voltage" (V_{BB}) typical 6V.

CIRCUIT OPERATION

The circuit in Figure 11 is a basic full-wave triac phase control circuit. The variable resistor VR1 and capacitor C1 are a single-element phase shift network. When the voltage across C1 reaches break-over voltage of the diac D3, C1 is then partially discharged by the diac into the triac gate. The triac is then triggered (turned on) and conducts for the remainder of the half-cycle. The problem with this circuit is hysteresis, or snap back effect. The circuit will not operate until the resistor VR1 is turned up to an intermediate point. As the resistance of VR1 is decreased, the voltage across the capacitor C1 increases until the diac first fires at point A, the end of the half cycle. After the gate is triggered the capacitor voltage drops suddenly to approximately half the trigger voltage, causing a different initial condition. The capacitor charges to the diac trigger voltage at point B in the next half cycle.

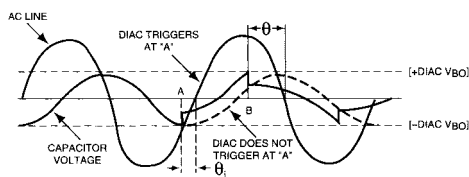


Figure 11

The addition of resistor R1 and diodes D1 and D2 in Figure 12 will eliminate the hysteresis problem. The additional parts reset the timing capacitor to the same level after each positive half cycle. This provides a uniform initial condition for the timing capacitor.

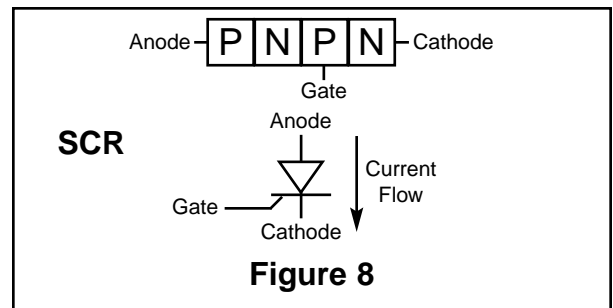


Figure 8

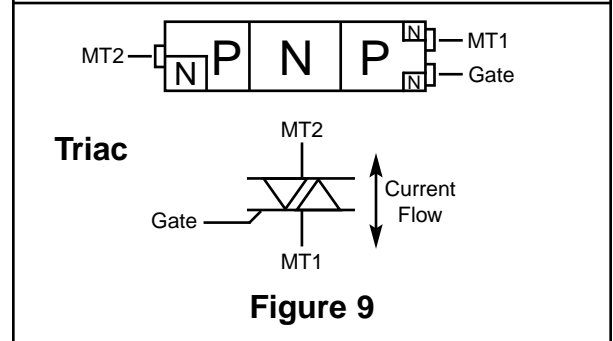


Figure 9

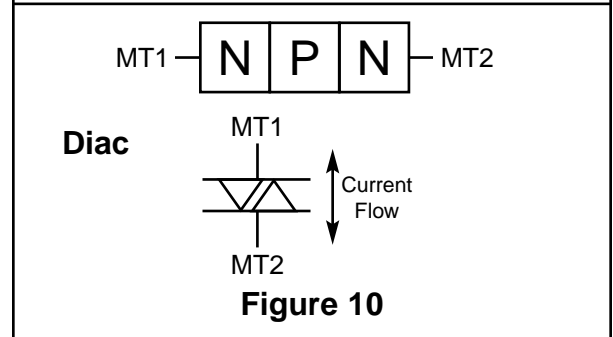


Figure 10

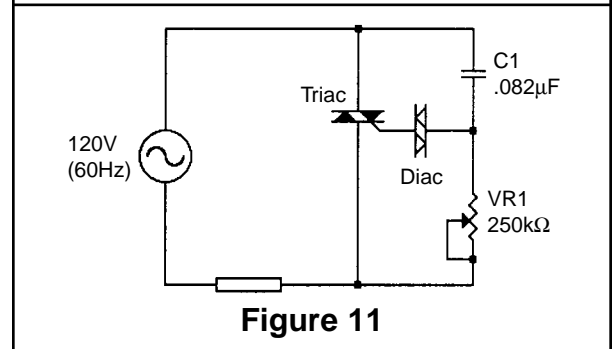


Figure 11

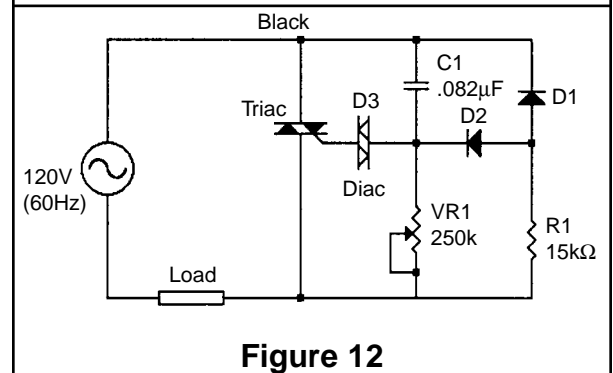


Figure 12

PARTS LIST

If you have completed the solder practice SP-1A or SP-3B (optional) and have assembled your soldering iron stand, you may now proceed to assemble your solder station.

Contact Elenco Electronics (address/phone/e-mail is at the back of this manual) if any parts are missing or damaged. **DO NOT** contact your place of purchase as they will not be able to help you.

Resistors

Qty	Symbol	Description	Part #
<input type="checkbox"/> 1	R3	Resistor 15k Ω 5% 1/4W (brown-green-orange-gold)	151500
<input type="checkbox"/> 1	R2	Resistor 15k Ω 5% 1W (brown-green-orange-gold)	151502
<input type="checkbox"/> 1	R1	Resistor 27k Ω 5% 1W (red-violet-orange-gold)	152702
<input type="checkbox"/> 1	VR1	Potentiometer 250k Ω PC Mount	192639

Capacitors

Qty	Symbol	Description	Part #
<input type="checkbox"/> 1	C1	.082 μ F 200V Mylar	248219

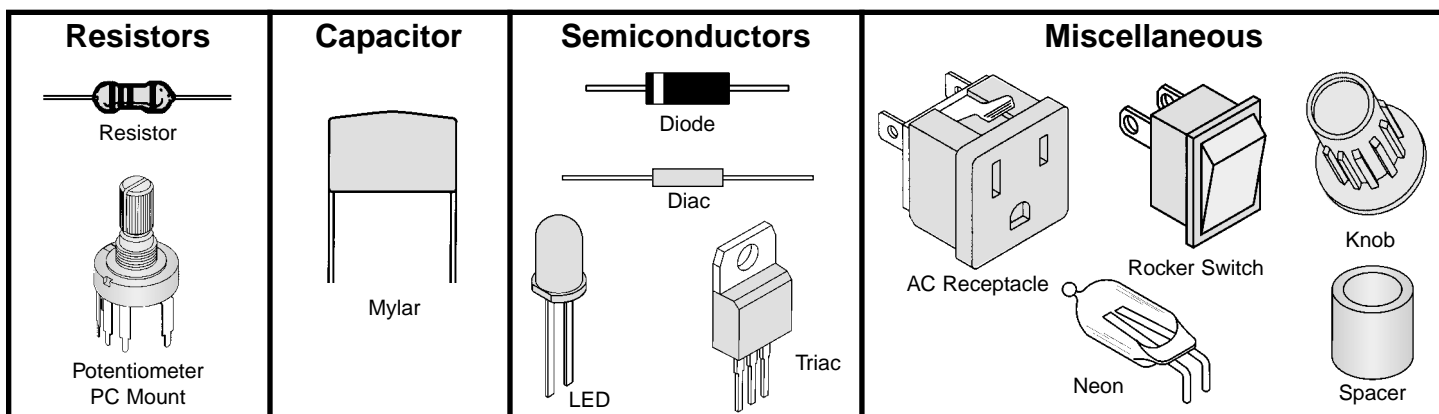
Semiconductors

Qty	Symbol	Description	Part #
<input type="checkbox"/> 4	D1 - D4	1N4004	314004
<input type="checkbox"/> 1	LED	Light Emitting Diode (LED) Red	350002
<input type="checkbox"/> 1	TR1	Triac BTA12400B / BTA08400B	364012
<input type="checkbox"/> 1	D5	Diac DB3 (marked D3 on PC board)	365761

Miscellaneous

Qty	Description	Part #	Qty	Description	Part #
<input type="checkbox"/> 1	PC Board	517036	<input type="checkbox"/> 1	Washer Pot	645015
<input type="checkbox"/> 1	Switch Rocker Illuminated	541204	<input type="checkbox"/> 4	Rubber Feet Small	662021
<input type="checkbox"/> 1	Neon (Symbol: LP)	585020	<input type="checkbox"/> 1	Soldering Iron Holder (funnel)	680026
<input type="checkbox"/> 1	Tray	610800	<input type="checkbox"/> 1	Label Front	723020
<input type="checkbox"/> 1	Base Metal	612204	<input type="checkbox"/> 1	Label Bottom	723021
<input type="checkbox"/> 1	Sponge	620000	<input type="checkbox"/> 1	Label Back	723022
<input type="checkbox"/> 1	Knob Push-on	622009	<input type="checkbox"/> 8"	Wire 20AWG Black Topcoat	813111
<input type="checkbox"/> 1	Body Plastic	623030	<input type="checkbox"/> 4"	Wire 20AWG Green Topcoat	813150
<input type="checkbox"/> 1	Spacer .25" #8	624124	<input type="checkbox"/> 8"	Wire 20AWG Blue Topcoat	813160
<input type="checkbox"/> 1	AC Receptacle	627004	<input type="checkbox"/> 1	Line Cord Round 3 Wire	862101
<input type="checkbox"/> 1	Cable Tie	628982	<input type="checkbox"/> 2"	5/16" Shrink Tubing	898120
<input type="checkbox"/> 4	Screw M12 X 3.5 Phil Truss	642108	<input type="checkbox"/> 1.5"	3/4" Shrink Tubing	899110
<input type="checkbox"/> 1	Nut Pot	644010	<input type="checkbox"/> 1	Solder Tube	9ST4

PARTS IDENTIFICATION



ASSEMBLE COMPONENTS TO THE PC BOARD

Care must be given to identifying the proper components and in good soldering habits. Place a check mark in the box after each step is complete.

<input type="checkbox"/> D - 4" Green Wire		<input type="checkbox"/> R2 - 15kΩ 5% 1W Resistor (brown-green-orange-gold)
<input type="checkbox"/> C1 - .082μF 200V Capacitor		<input type="checkbox"/> R1 - 27kΩ 5% 1W Resistor (red-violet-orange-gold)
<input type="checkbox"/> TR1 - Triac BTA12400B (see Figure A)		<input type="checkbox"/> LED & Spacer (see Figure D)
<input type="checkbox"/> VR1 - 250kΩ Potentiometer (see Figure B)		<input type="checkbox"/> D1 - 1N4004 Diode (see Figure C)
<input type="checkbox"/> D4 - 1N4004 Diode (see Figure C)		<input type="checkbox"/> LP - Neon (see Figure E)
<input type="checkbox"/> D5 - Diac DB3 This is marked D3 on the PC board.		<input type="checkbox"/> D2 - 1N4004 Diode <input type="checkbox"/> D3 - 1N4004 Diode (see Figure C)
<input type="checkbox"/> R3 - 15kΩ 5% 1/4W Resistor (brown-green-orange-gold)		

Figure A

Mount the triac as shown. Bend the triac 90°. Solder and cut off excess leads.

Figure D

Slide the plastic spacer over the LED leads as shown. Mount the LED with the flat side in the same direction as marked on the PC board. Push the LED down so that it is snug against the spacer and PC board. Solder and cut off the excess leads.

Figure B

Mount the potentiometer as shown. Solder and cut off excess leads.

Figure C

Diodes have polarity. Mount them with the band in the correct direction, as marked on the PC board.

Figure E

Mount the neon as shown and bend it 90°. Solder and cut off excess leads.

SWITCH ASSEMBLY

- Apply the front label to the case as shown in Figure F. Inserting the PC board into the front case will aid in alignment of the label.
- Cut the black and blue wires so you have two 4" pieces of each color. Strip the insulation off of both ends to expose 1/4" of bare wire.
- Solder a 4" black wire to lug #1 as shown in Figure G.
- Solder a 4" blue wire to lug #3 as shown in Figure G.
- Insert the switch into the opening on the front as shown in Figure H.

- Strip the insulation off the black and white line cord wires to expose 1/2" of bare wire.
- Slip the 3/4" dia. shrink tubing over the line cord as shown in Figure I.
- Solder the black line cord wire to the #2 lug as shown in Figure I. Make sure the tubing is away from the soldering iron, so it will not shrink.
- Slip the shrink tubing over the wires and switch as shown in Figure J.
- Use a heat gun or hair dryer and shrink all of the tubing into place.

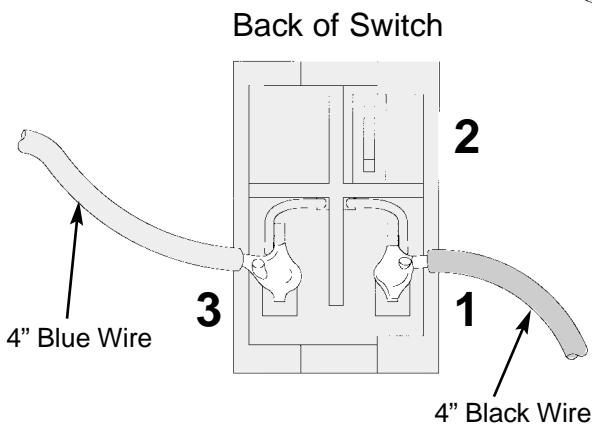
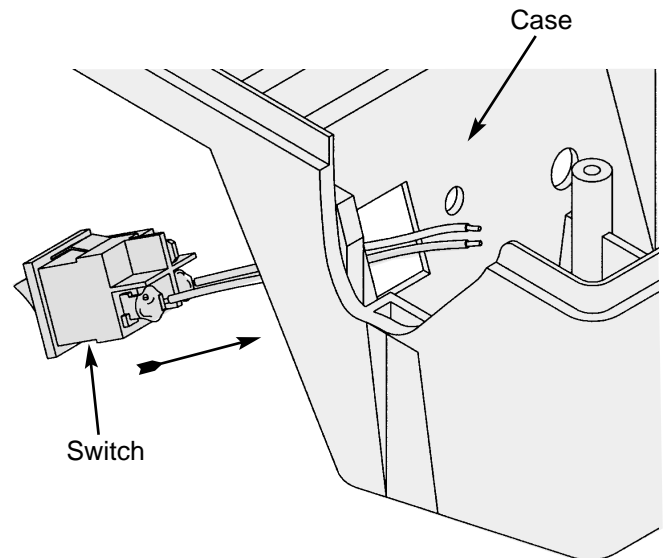
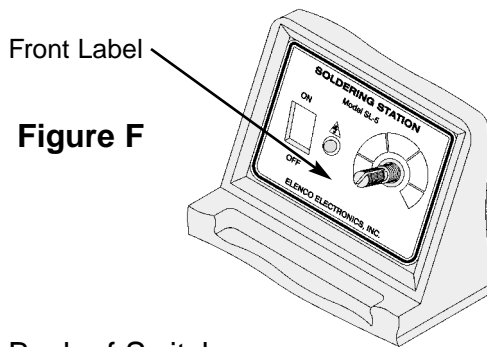


Figure G

Figure H

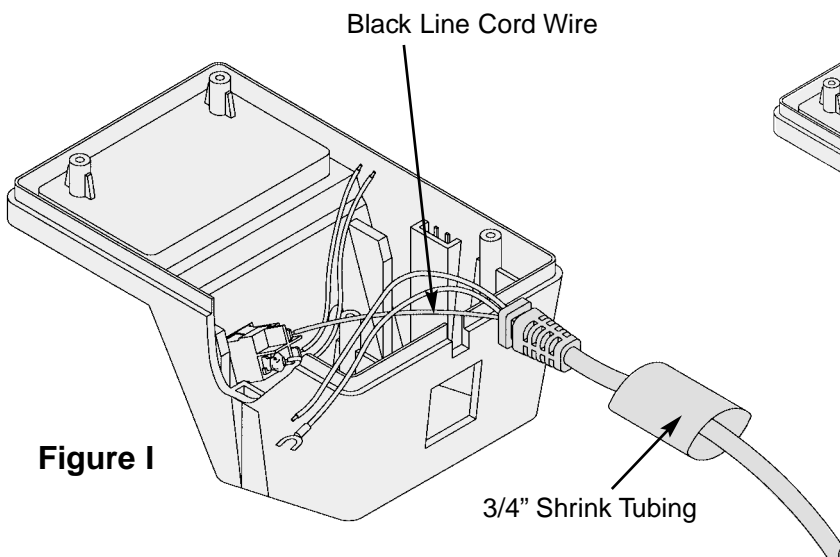


Figure I

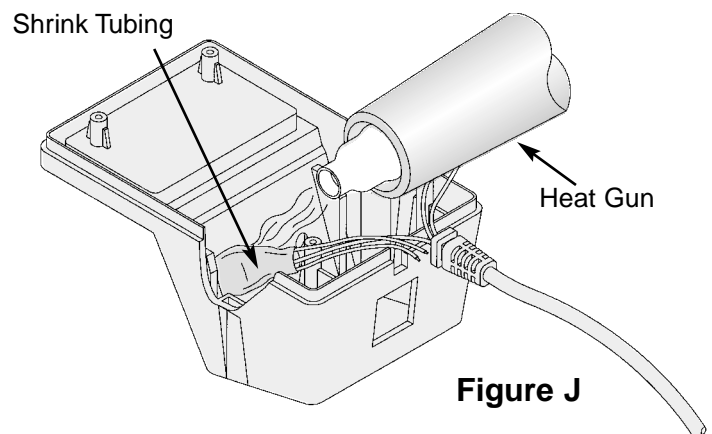


Figure J

AC RECEPTACLE ASSEMBLY

- Cut the 1", 5/16" dia. shrink tubing into two 1/2" pieces.
- Solder a 4" black wire to lug #2 as shown in Figure K.
- Snap the AC receptacle into the opening on the back as shown in Figure L.
- Insert the line cord strain relief into the case as shown in Figure L.
- Slide one piece of the 1/4" dia. tubing over the white line cord wire and attach the wire to lug #1 as shown in Figure M. **Do not solder it yet.**
- Insert a 4" blue wire through the tubing with the white wire and attach it to lug #1 (see Figure M).
- Solder both the white and blue wires to lug #1. Now slide the shrink tubing over the connection and shrink it into place (see Figure M).
- Slide the other 1/4" tubing over the black wire and lug, then shrink into place, as shown in Figure M.

Back of AC Receptacle

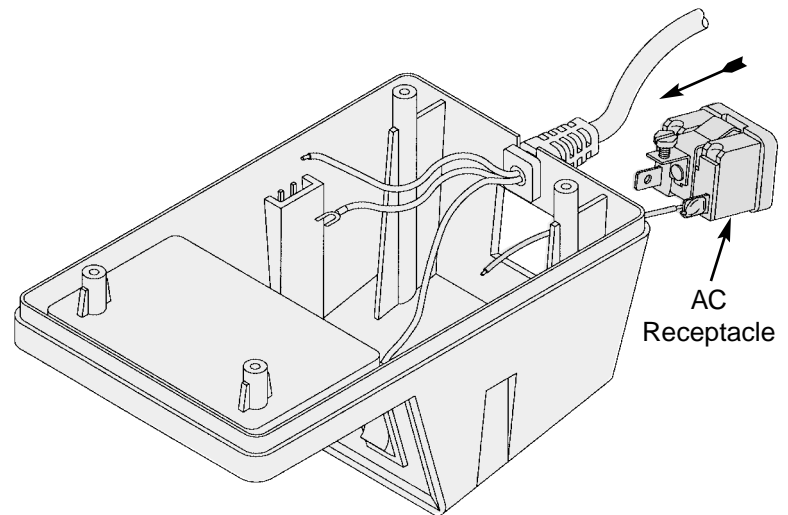
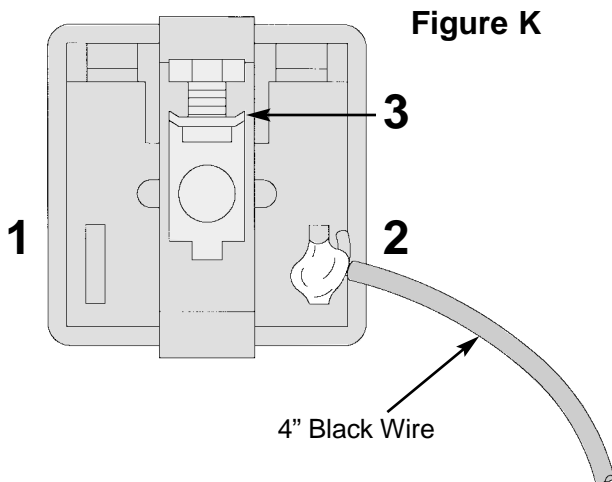


Figure L

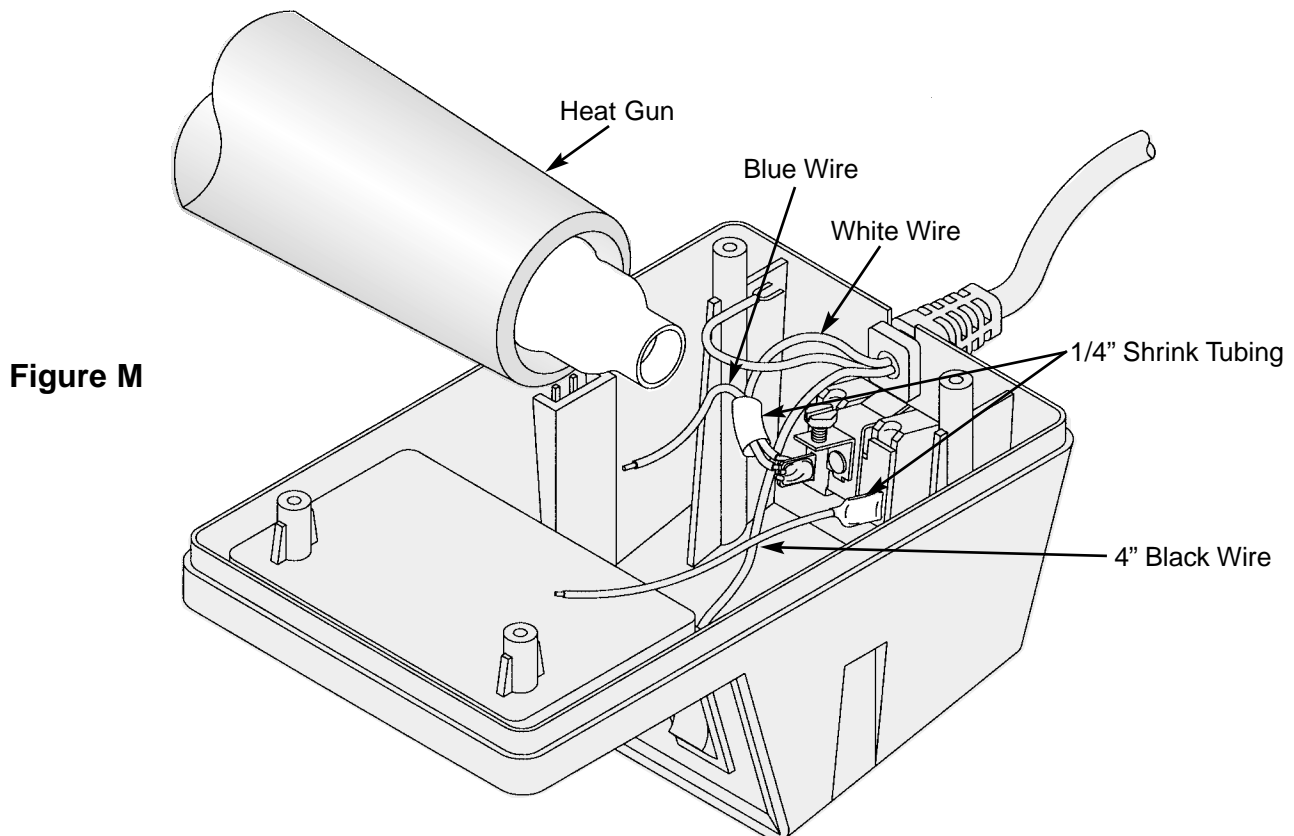


Figure M

SOLDERING WIRES TO THE PC BOARD (see Figure N)

- Solder the black wire from the switch to point A.
- Solder the blue wire from the switch to point B.
- Solder the blue wire from the AC receptacle to point C.
- Solder the black wire from the AC receptacle to point E.
- Make a loop on the end of the green wire from point D on the PC board. Loosen the ground screw on the AC receptacle. Place the looped wire and the lug from the line cord under the screw and then tighten it.

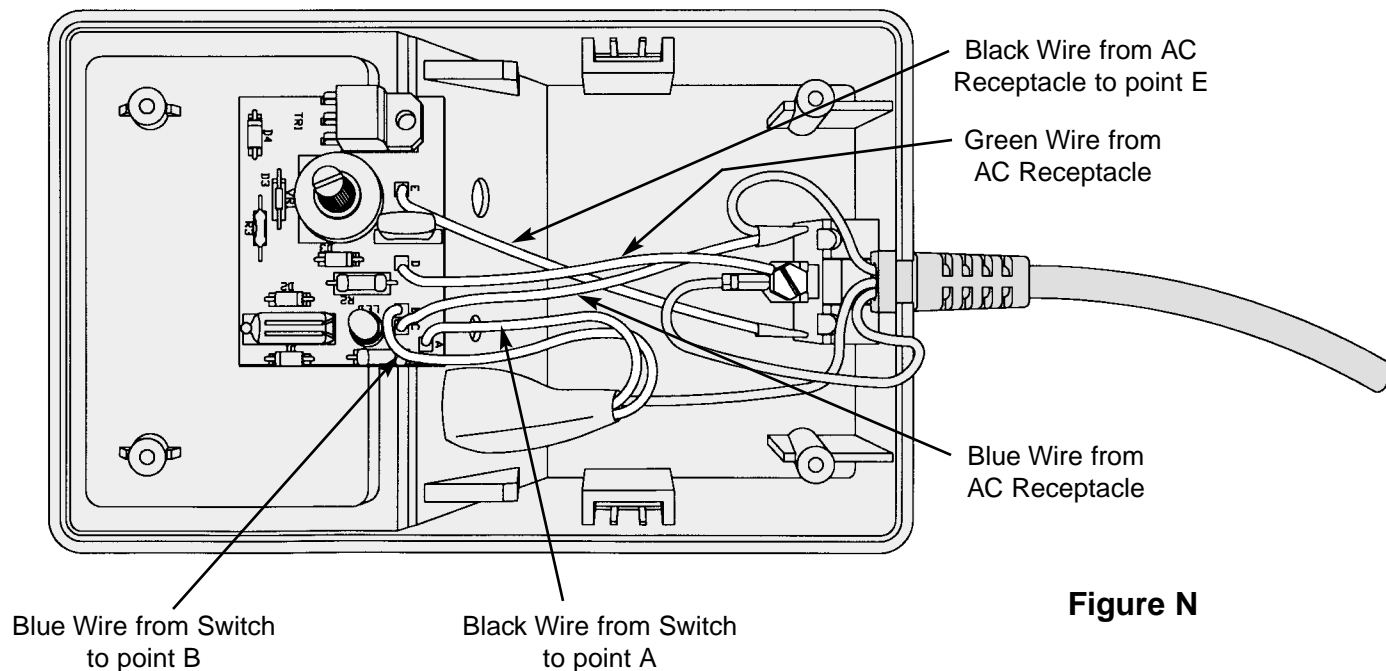


Figure N

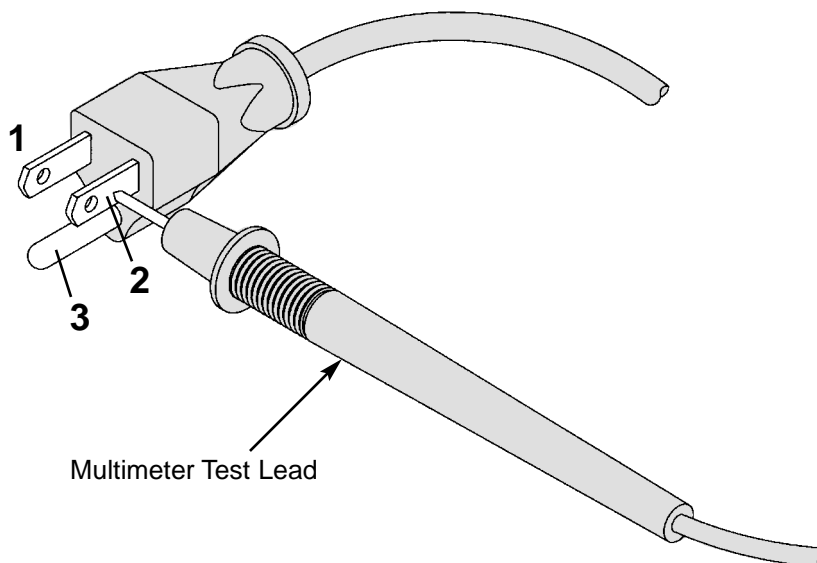
TESTING (see Figure O)

If you do not have a multimeter continue to page 12.

Check wiring if your readings are different.

- Set the power switch to the off position. Use a multimeter and measure the resistance as listed:
 1. Pin 1 to pin 2 Infinite
 2. Pin 1 to pin 3 Infinite
 3. Pin 2 to pin 3 Infinite

Figure O



Check your wiring if your readings are different.

- Measure the resistance from pin #1 on the plug to point A on the foil side of the PC board as shown in Figure P.
Switch set to OFF Infinite
Switch set to ON less than 1Ω
- Measure the resistance from point E on the foil side of the PC board to pin #2 of the AC receptacle as shown in Figure Q. It should be less than 1Ω .
- Measure the resistance from pin #2 of the plug to point B on the foil side of the PC board as shown in Figure R. It should be less than 1Ω .
- Measure the resistance from pin #2 of the plug to lug #1 of the AC receptacle as shown in Figure S. It should be less than 1Ω .

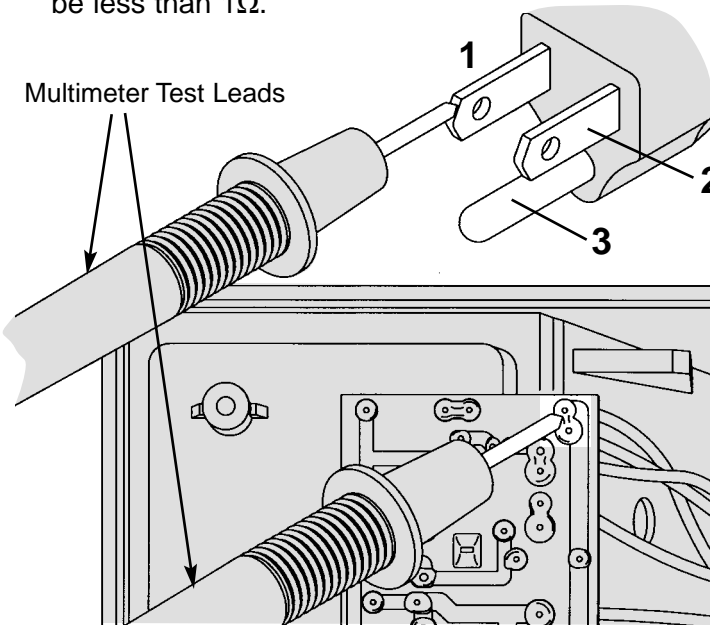


Figure P

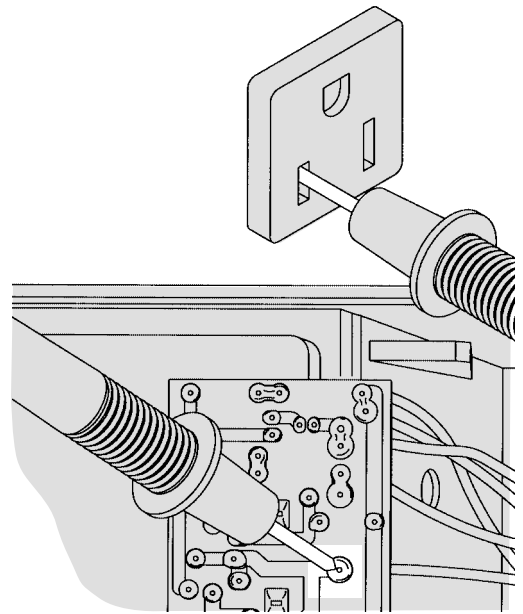


Figure Q

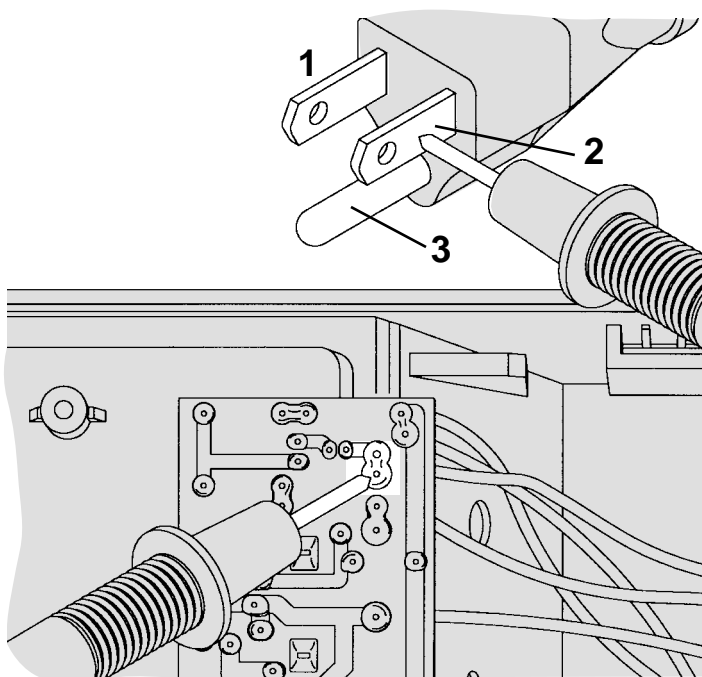


Figure R

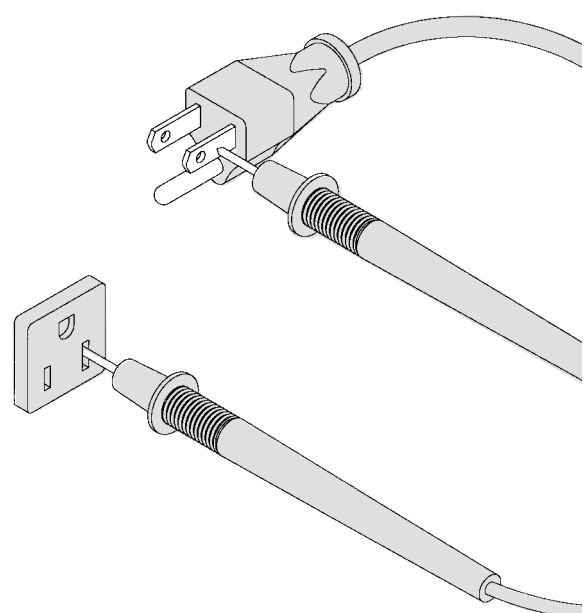
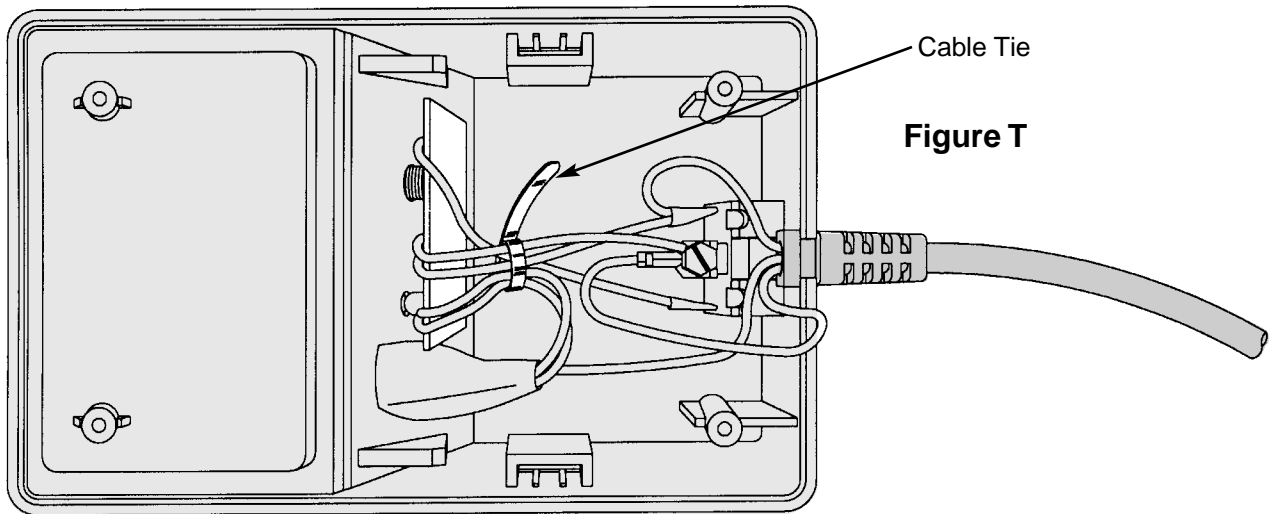


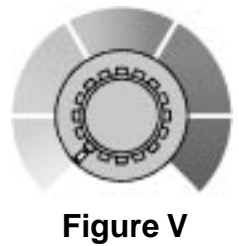
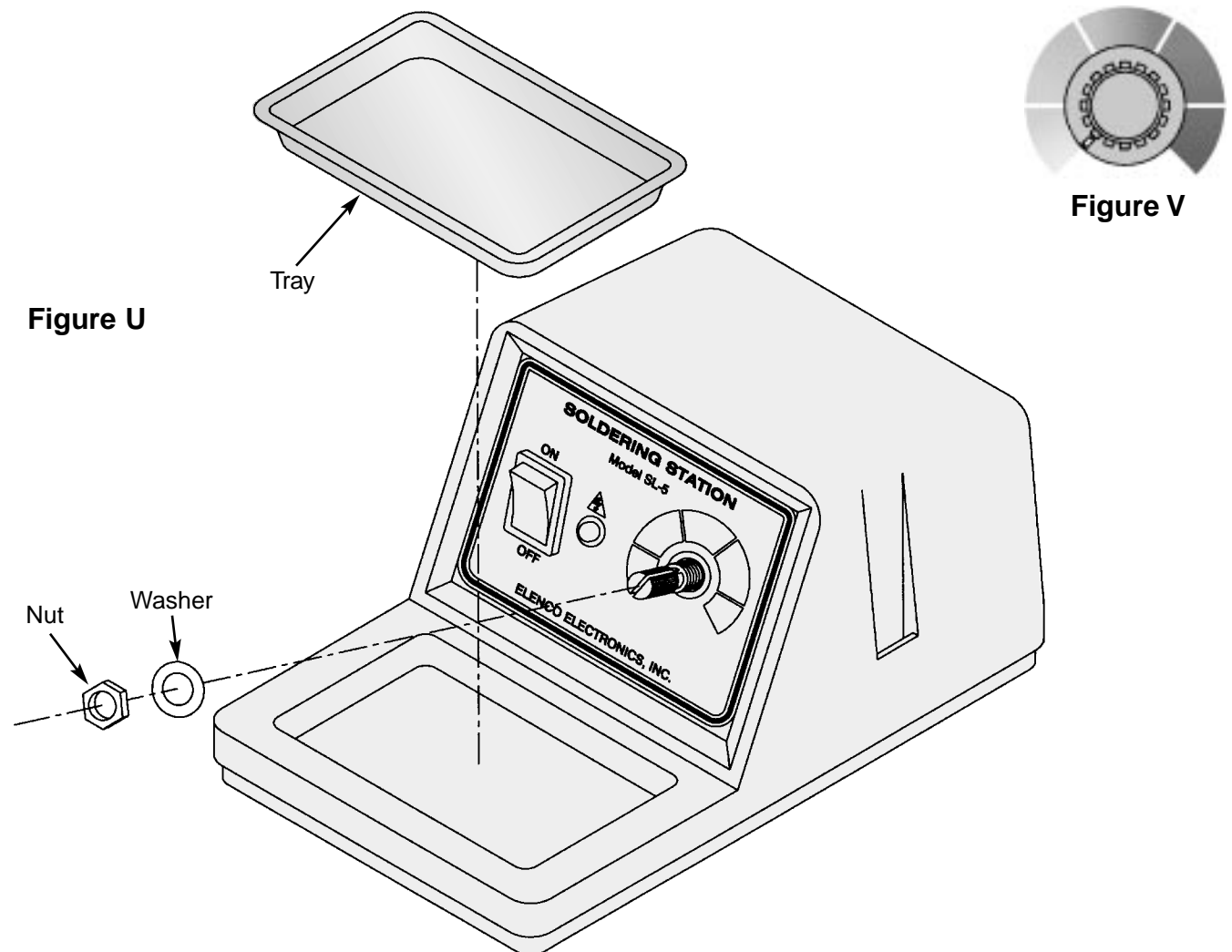
Figure S

MOUNTING PC BOARD TO CASE

- Insert the PC board into the case by aligning the pot and LED with the holes in the case as shown in Figure T.



- Use the cable tie to secure the wires as shown in Figure T.
- Secure the PC board to the case with a washer and nut (see Figure U).
- Turn the pot fully counter-clockwise and push on the knob in the position shown in Figure V.
- Install the tray by pushing down on it until it is flush with the case (see Figure U).



FINAL ASSEMBLY

- Attach the metal base to the chassis with four M12 X 3.5 screws and rubber feet (see Figure W). Apply the bottom label as shown.
- Insert the iron holder into the slot on either the right or the left side as shown in Figure Y. Set the power switch to the OFF position.
- Apply the back label as shown in Figure X.

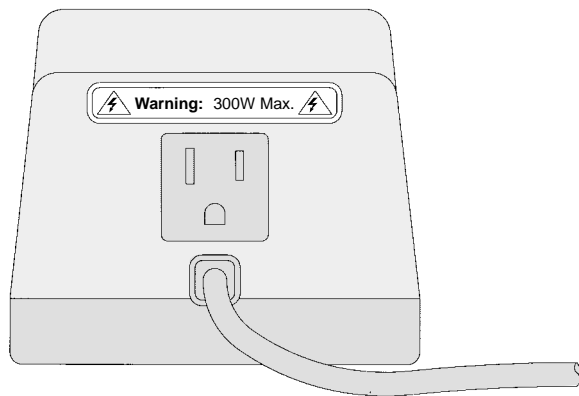
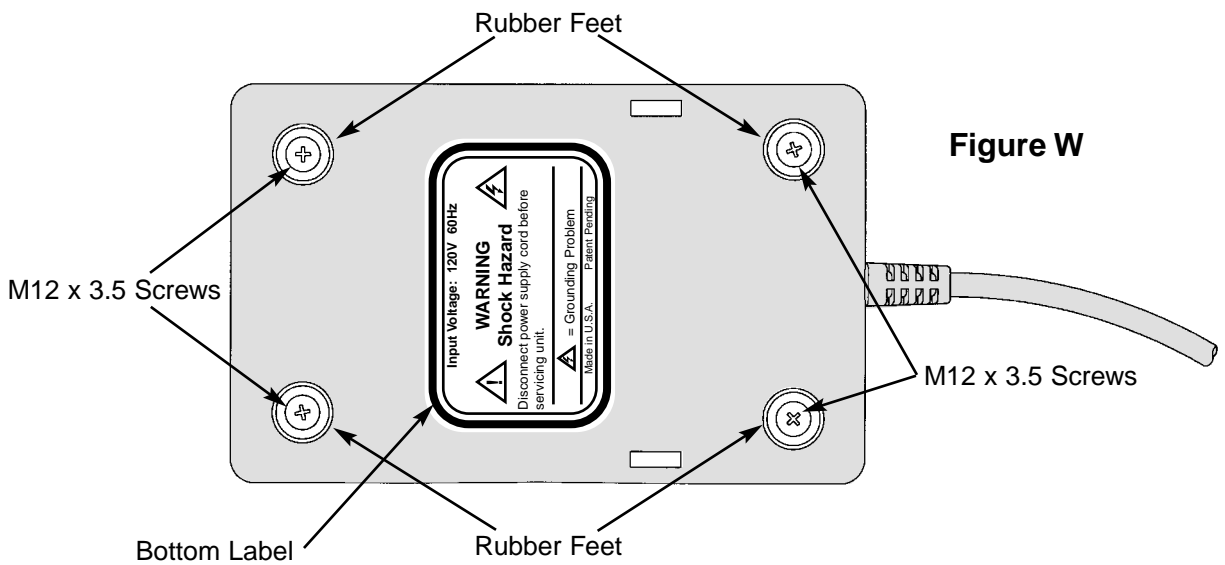


Figure X

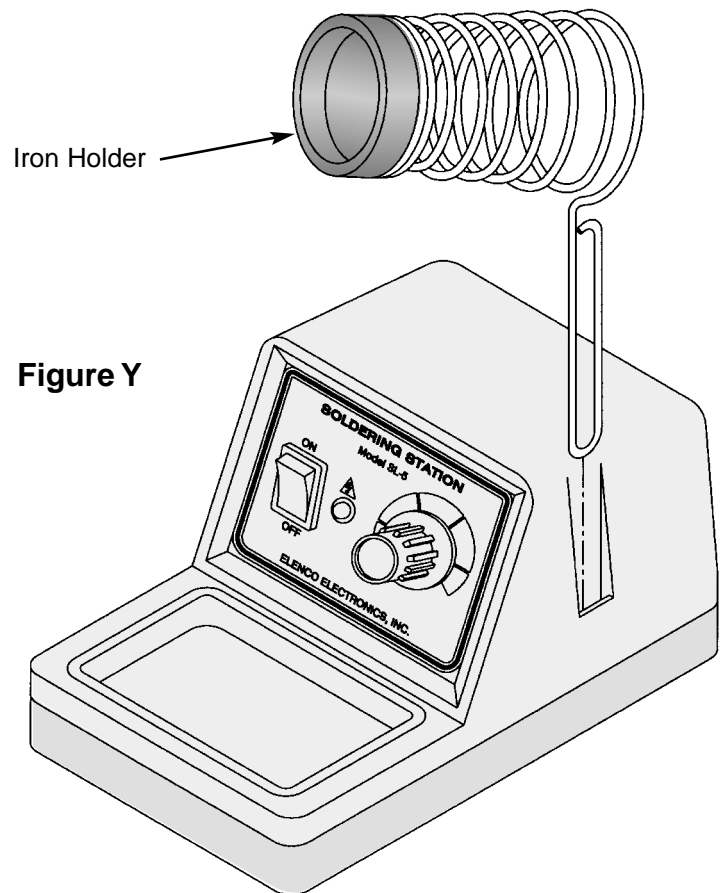


Figure Y

VOLTAGE TEST

If you do not have a multimeter continue to the OPERATION Section.

- Place the iron into the holder. Plug your soldering iron cord into the AC receptacle on the back. Adjust it for a 1/4" gap so you can measure the AC voltage, as shown in Figure Z.

- Set the temperature control to minimum and plug the SL-5 AC cord into an outlet. Turn the power switch to ON. The switch should illuminate. Measure the voltage across the soldering iron plug as shown in Figure AA. Rotate the temperature control knob clockwise and measure the AC voltage. Range 25 $\frac{+25}{-23.5}$ — 120V.

- If the measured voltages do not agree, turn the power switch off and unplug from AC outlet. Check the wiring and parts on PC board.

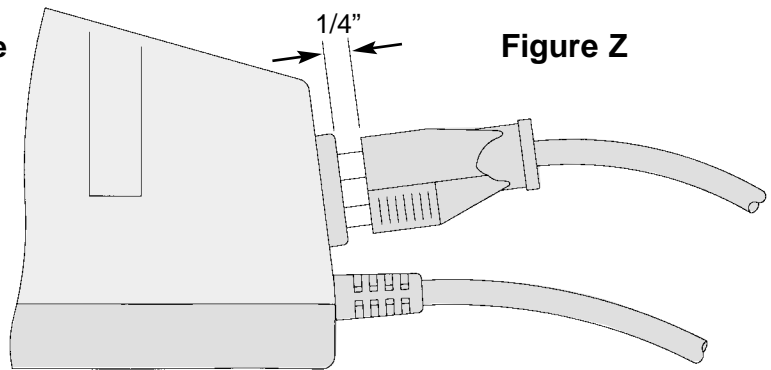


Figure Z

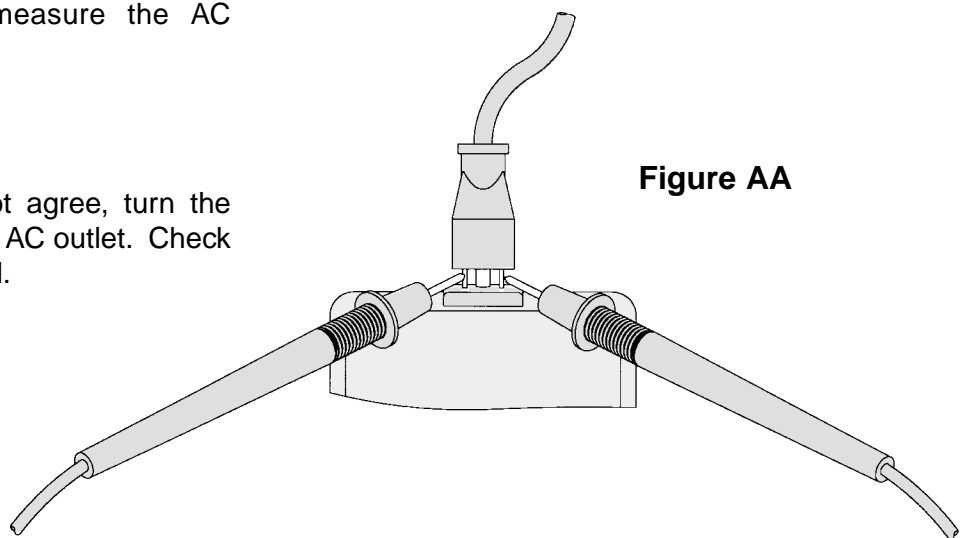


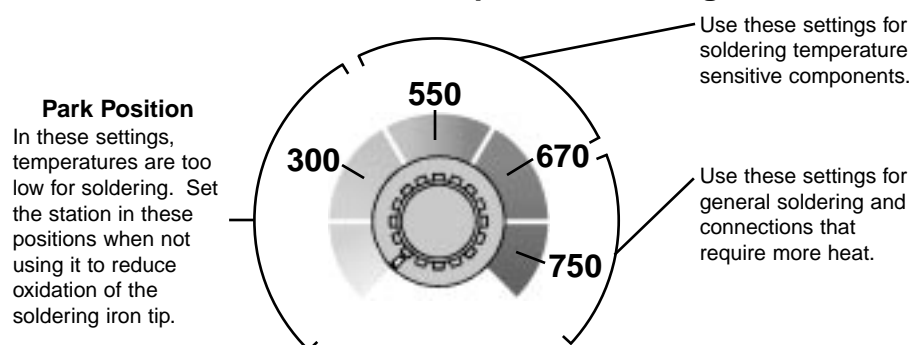
Figure AA

OPERATION

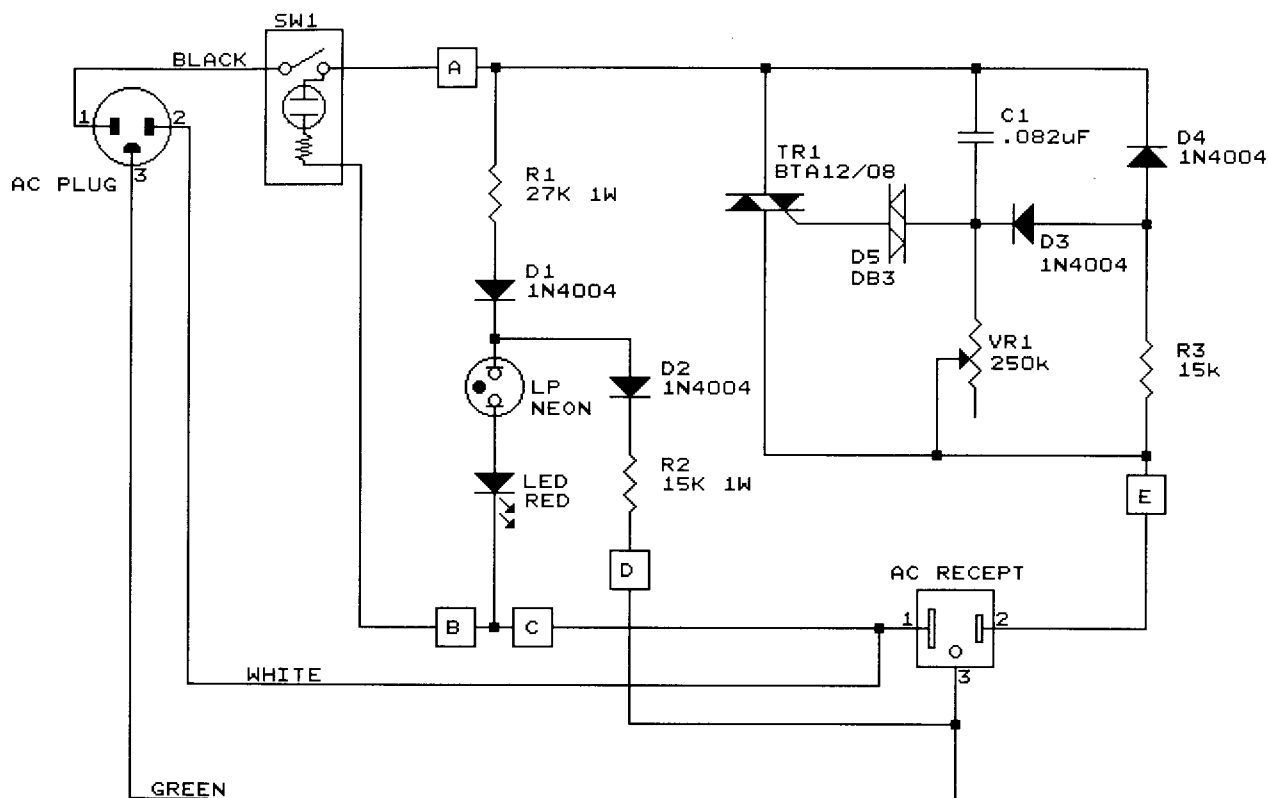
Wet the sponge with preferably distilled or tap water, and then place it into the tray. Plug the soldering iron line cord into the AC receptacle on the back, and then insert it into the holder. Make sure the On/Off switch is set to the Off position and the control knob at minimum. Plug the line cord of the SL-5 into a

120VAC receptacle. Turn the power switch On and the switch should illuminate. Set the temperature control knob midway. Allow the iron to heat up for a few minutes. Now set it to the desired temperature. See the chart for relative temperatures. Using the lowest power setting will protect sensitive devices.

General Areas of Temperature Settings

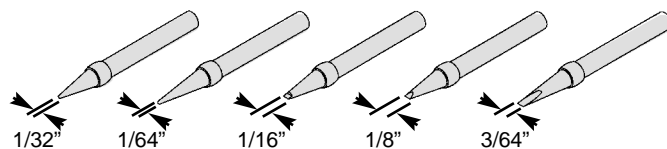


SCHEMATIC DIAGRAM



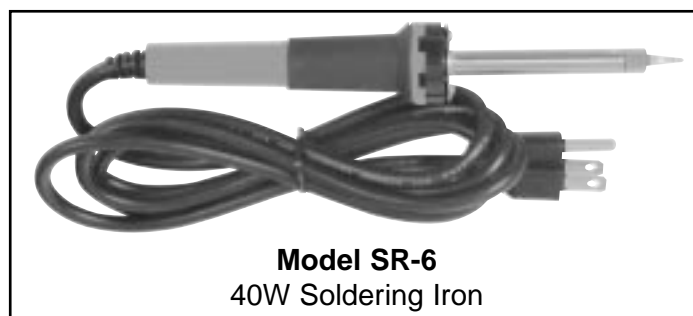
TIP SIZES

The tip sizes and shapes greatly effects the heating and heat-recovery. Today, tips are manufactured in a variety of different shapes (see figure below). The SR-6 comes with a conical shape, (#SR-2BT2) one of the most common. Having a choice of tip styles allows you to choose the one best suited for your soldering needs. Due to the high heat, removable tips can bond themselves to the heating element if left in place for extended periods. Periodic removal of the tip is therefore advisable.

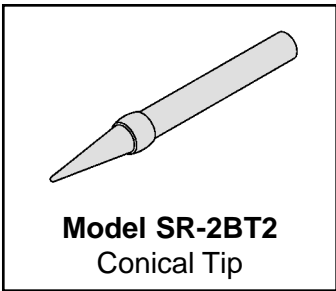


Tip Package Model TIPK-1

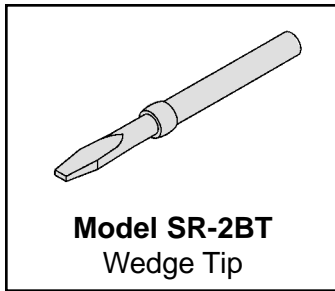
Replacements and Optional Solder Aids for SL-5 Series Solder Station



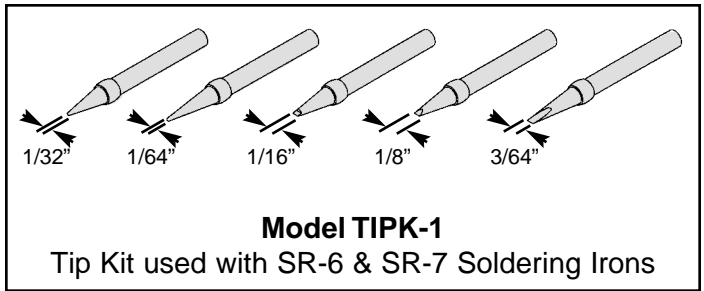
Model SR-6
40W Soldering Iron



Model SR-2BT2
Conical Tip



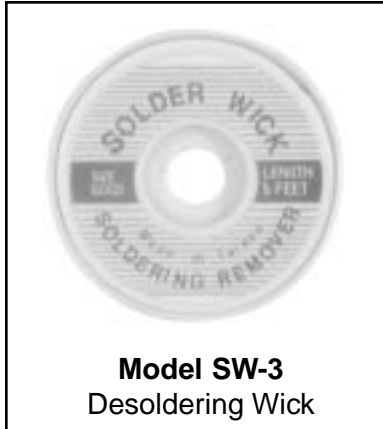
Model SR-2BT
Wedge Tip



Model TIPK-1
Tip Kit used with SR-6 & SR-7 Soldering Irons



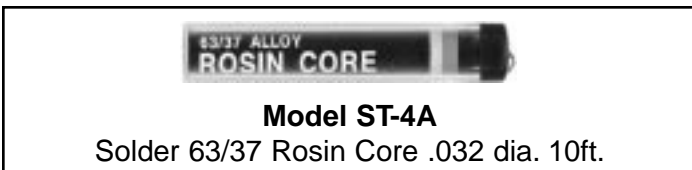
Model TTC-1
Tip Tinner/Cleaner



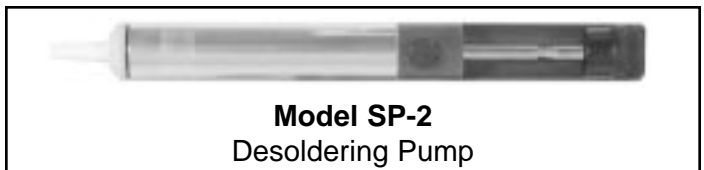
Model SW-3
Desoldering Wick



Model SE-1
Solder Ease Kit



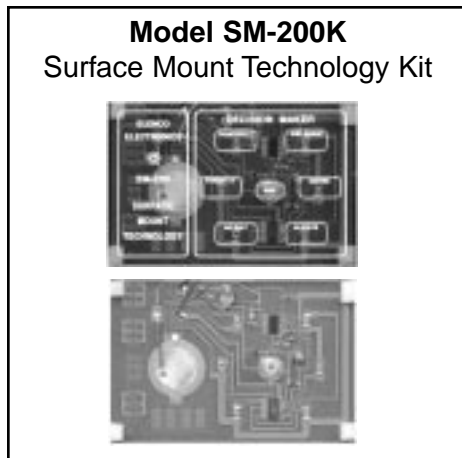
Model ST-4A
Solder 63/37 Rosin Core .032 dia. 10ft.



Model SP-2
Desoldering Pump



Model SP-1A
Solder Practice Kit



Model SM-200K
Surface Mount Technology Kit



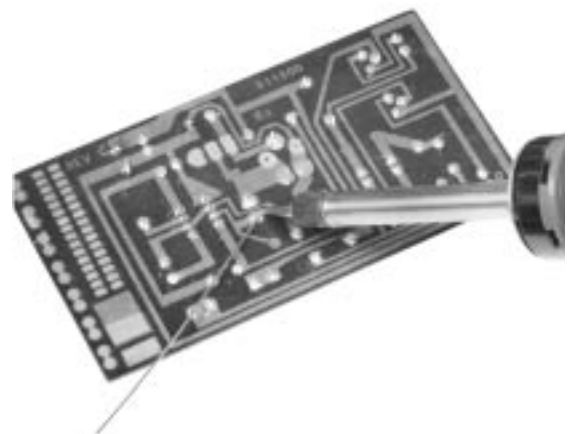
Model SP-3B
Solder Practice Kit

Soldering Techniques Training Video

Model VID-901VHS
Model VID-901DISC

VHS Cassette
Compact Disc

This video has been prepared to introduce the student or technician to basic soldering techniques. You learn to solder the proper way by watching step-by-step in how to properly solder and desolder a variety of solder connections. You will learn about different soldering irons, soldering equipment and tools that are used in the electronic industry. The program is approximately 45 minutes with an overview booklet. **Suggest using the video in conjunction with solder practice kits SP-1A, SP-3B, or SM-200K.**



Elenco Electronics, Inc.

150 W. Carpenter Avenue

Wheeling, IL 60090

(847) 541-3800

<http://www.elenco.com>

e-mail: elenco@elenco.com