



Instruction Manual

for

High-Power Desoldering Station

LF-6000

(For lead free operations)

 **Warning:**

This appliance is not intended for use by children or other persons without assistance or supervision if their physical, sensory or mental capabilities prevent them from using it safely. Children should be supervised to ensure that they do not play with the appliance.

INTRODUCTION

Thank you for selecting Xytronic's high power electronic desoldering station – the best solution for your desoldering equipment needs especially for the lead free desoldering reworks to meet RoHS requirement! We believe you will be more than satisfied with the many features and the versatility of your new desoldering station. **Please carefully** read the instruction manual to maximize the advantages of using your new soldering/desoldering station.

KEY FEATURES

- **EXTERNAL CALIBRATION PORT:** The LF-6000 has a calibration port on the front panel for quick, convenient and precise temperature adjustments.
- **DELAYED SUCTION:** To eliminate the problem of solder clogging up the tip, a delayed switch feature has been incorporated for both units that allow the pump to continue sucking for 1.5 seconds after the actuator switch is released.
- **ENERGY SAVER:** After the station has been idle for more than 15 minutes, this new feature will automatically kick in. When the "Pause" LED is lit, the energy saver feature has engaged, decreasing tip temperature by 1/3 which cuts power consumption and extends tip life.
- **CELSIUS/FAHRENHEIT SWITCH:** To address the global market place, a convenient switch has been incorporated to easily convert from one common measure to another.

PRODUCT DESCRIPTION

The high power desoldering station has a self-contained, oil free, maintenance free, and quiet running vacuum pump which is electronically controlled and will not overload with continuous use, eliminating the need for additional shop air. The vacuum pump provides up to 50cm/Hg (20in/Hg) suction power, activated by a push button switching circuit located on the desoldering iron housing. Internal solder collector in handpiece is quickly and easily removed for cleaning. The inside mesh.

aluminum cooling strip has better solder chip adherence. Also the ventilation slots makes for a cooler handle, improving operator comfort.

LF-6000 incorporates electronic circuitry which enables the user to fine tune desoldering tip temperature from 300°C (572°F) through 450°C (842°F) without changing tips or heating elements. The desoldering iron is equipped with a precision wound nichrome heating elements which offers 32V/100W output. Also there is an optional HAP80 Hot Air Pencil can be interchangeable easily on the desoldering iron.

The temperature is maintained within $\pm 3^{\circ}\text{C}$ ($\pm 6^{\circ}\text{F}$) of its operating temperature by a thermocouple sensor to ensure maximum temperature as close to the working surface of the tip as possible. This results in both a rapid heat up, fast recovery and exacting temperature control with minimal overshoot.

The revolutionary “Zero Voltage” electronic switching design also protects voltage and current sensitive components (CMOS devices etc.) against damaging current and transient voltage spikes commonly produced by less efficient, mechanically switched stations. The power unit is isolated from the A.C. line by a transformer and allows only 32Vac to drive the heating elements. An external calibration port locating under the digital display on the face of the unit for quick, convenient and precise temperature adjustments.

The LF-6000 has been developed to meet the present and future needs of the electronic production industry and is ideal for use at any AC outlet. Engineered to meet the demanding needs of the hobbyist, service & repair technician as well as production people alike.

WORKING TEMPERATURE

To meet RoHS requirements, the common 60/40 lead solder alloys are not allowed in the production process. Lead free solder alloys require a working temperature of 30°C (54°F) higher than previous generation electrical soldering. The working temperature of solder is detailed below and can vary from manufacture to manufacture.

Melting point	220°C (428°F)
Normal operation	300-360°C (572-680°F)
Production line operation	360-410°C (680-770°F)

When the iron's working temperature is set within the parameters suitable for the type of solder being used, a good joint assured. Too low of a temperature will slow the rate of solder flow while a high temperature setting might burn the flux in the solder and emit a heavy, white smoke resulting in a dry joint or permanent damage to the printed circuit board (P.C.B) and may also shorten tip life.

DESOLDERING: Recommend tip working temperature are detailed below and can vary from joint to joint.

Operation for small joint	350-380°C (662-716°F)
Operation for larger joint	380-410°C (716-770°F)

IMPORTANT: The temperature above 410°C (770°F) is not recommended for normal desoldering functions, but can be used for short periods of time when high temperatures are required.

OPERATING INSTURCTIONS

1. Ensure that the working voltage matches your power supply before beginning use.
2. Check carefully for any damage during transportation.
3. This unit contains:
 - A: DIA80: Desoldering iron assembly with tip.
 - B: Desoldering iron holder with tip cleaners
 - D: AC Power cord with plug.
 Accessories included:
 - a. One cleaning brush
 - b. One cooling strip
 - c. One 0.7 \$ probe
 - d. 10pcs of filters

4. Optional part:

HAP60: 32V/80W Hot air blow pencil can be interchangeable with DIA80.

OPERATING PROCEDURES

1. Ensure that the base unit power switch is in the 'OFF' position.
2. Plug in the desolder wand and connect "Vacuum tube" to "VAC".
3. Connect AC power cord to mains "In-Let".
4. Set "Temperature control knobs" to "MIN".
5. Switch "Mains power switch" to "ON" position, then pilot lamp will be "ON".
6. Tin the surface of the tip by applying a new covering of solder to protect it.
7. Set "Temperature control knob" to the desired temperature about 3 minutes after being warmed. The unit will be ready for use once it reaches preset temperature – indicated by the pilot light going off.
8. A slide switch below the digital display allows the operator to toggle between Fahrenheit and Celsius temperature readout.
9. You can preset the temperature setting by pushing the slide switch to "SET" position. Use the temperature controlled knob to set the desired temperature. Then slide the switch to "READ". The temperature will then maintain a $\pm 3^{\circ}\text{C}$ ($\pm 5^{\circ}\text{F}$) with the display showing actual tip temperature.

PLEASE NOTE: If the unit is idle for more than 15 minutes, an energy saving feature will automatically engage (evident by the green "PUASE" indicator light), reducing idle temperature by 1/3 and extending your tip's life. Activating the red suction button on the desolder handle will disengage the power saving feature and the unit will immediately ramp up to the preset temperature.

CAUTION: Desoldering iron operates at high temperature and can easily burn people or objects. **Do not touch** the tip and heater at any time and keep it a safe distance from flammable materials while the unit is on or while it's cooling as they will still be hot. Please allow a sufficient time for it to cool before changing tip or servicing the unit.

NEW FEATURE FOR LF-6000

There is a calibration port on the front panel. This calibration is to be used in conjunction with an external thermometer. Place the tip on the thermometer, if the actual tip temperature reads higher or lower than the display on the thermometer temperature, then using a 2mm precision screwdriver to calibrate the temperature.



IMPORTANT

DESOLDERING

1. Only activate the vacuum after the solder has completely melted. Melting is accomplished by moving the hot tip around the lead leaving visible melted solder on the component side of the P. C. B.

See Fig. 1 & 2.

FIG. 1

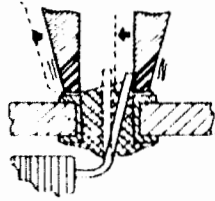
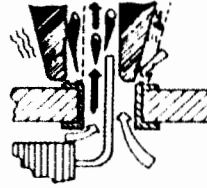


FIG. 2



2. Release the vacuum switch only after the solder on the tip has been removed, otherwise the tip may clog.
3. Add solder to the joint of the component and allow the solder to melt completely for improved desoldering.
4. Remove the solder collector and clean it after no more than 200 applications. However, daily cleaning is strongly recommended.
5. Replace the cotton pad in the solder collector and the in-line filter when they begin to turn yellow.
6. If there is insufficient vacuum, use the spring wire included to clean the tip and also check the in-line filters.
7. Be sure that all filters are in place during operation or damage to the vacuum pump may occur.
8. Follow the steps outlined in the OPERATING PROCEDURE section of this manual if a new tip is to be installed.

COMMON CAUSES FOR TIP FAILURES

1. Tip temperatures higher than 410°C (770°F).
2. The tip working surfaces are not tinned while the iron idling.
3. Lack of flux in soldering, wicking, repair, and touch-up operations.
4. Wiping the tip on a high sulfur content, dirty or dry sponge.
5. Contact with organic substances such as plastic, resin, silicone, grease and other chemicals.
6. Impurities in the solder and/or low tin content.

CARE OF TIPS

CAUTION: The desoldering iron can reach very high temperature. Be sure to turn the unit off prior to carrying out any maintenance or trouble shooting steps listed below!

IMPORATNT:

Remove the tip and clean after each moderate to heavy use or daily for light usage.

Remove any loose build up in the tip retaining assembly to prevent tip freezing.

The desoldering tips supplied are iron clad copper and if used properly should maintain optimum life.

1. Always tin the tip before returning it to the holder, turning off the station, or storing it for long periods of time. Wipe the tip on a wet sponge or our tip cleaner 460 prior to use.
2. Keeping the iron set at high temperatures (more than 400oC or 750oF) will shorten tip life.
- 3 Do not use excessive pressure on the tip or rub the joint with the tip while desoldering, it does not improve the heat transfer and may damage the tip.
4. Never clean the tip with a file or abrasive materials.
5. Do not use fluxes which contain chloride or acid. Use only rosin or resin activated fluxes.
6. If an oxide film forms, it can be removed by careful buffing with 600-800 grit emery cloth, isopropyl alcohol or equivalent and then the tinned areas with rosin-core solder after the resin-core has melted.

NEW TIPS

Applying the following steps give the tip optimum life.

1. Set temperature to min. then turn the main power switch to the "ON" position.
2. Set desoldering tip temperature to min. Coat the tinned surfaces with rosin-core solder.
3. Set to the desired temperature about 3 minutes after being warmed that the station will be ready for sue once it reaches preset temperature.

IMPORTANT: Remove and clean the tip daily. If a new tip is installed, remove any loose build up on the tip and barrel assembly, otherwise the tip may fuse to the heating element or retaining barrel.

METHOD TO CHECK FOR LOSS OF SUCTION

The following procedures should be used on LF-6000 to check whether loss of suction is due to the tip, solder collector, tube or in-line filter.

CAUTION: THE DESOLDER SWITCH MUST BE “OFF” AND ALLOW THE IRON TO COOL BEFORE ATTEMPTING THE FOLLOWING PROCEDURES:

1. Disconnect vacuum tube from the fitting on the front panel, place finger over the hole of the fitting, depress vacuum switch and you should have a strong vacuum. If not, send back to your nearest service center for pump repair.
2. Disconnect the inline filter from the iron assembly, depress vacuum switch, replace filling of the in-line filter if there is little vacuum pressure or the filters are discolored.
3. Remove solder collector from desolder iron assembly, place finger over the hole of the collector, depress vacuum switch. There is little suction clean or replace the collector tube.
4. Depress vacuum switch, clean the tip tube with spring wire provided if there is no suction per the “Procedure for Cleaning Clogged Tip” section below.

MAINTENANCE

DESOLDER TIP REPLACEMENT AND DRESSING

Desolder tips can be changed or replaced simply unscrewing the barrel nut assembly. The station must be turned off and allowed to cool before this operation. If the system is left on without a tip in place, damage to the iron assembly may occur! After removing the tip, blow out any oxide dust that may have formed in the tip receptacle. Be careful not to get dust in your eyes. Replace the tip according to Figures 3-9 and hand tighten the securing screw for the barrel nut assembly. Pliers can be used to avoid contact with hot surfaces **BUT SHOULD BE USED WITH CAUTION** because over tightening may cause damage to the element or fuse the tip to the element.

PROCEDURES FOR CLEANING CLOGGED TIPS

CAUTION: This procedure is to be working in high temperature. Be careful to avoid burning your fingers during this operation.

1. Be sure that the spring wire (included) will not go through the nozzle of the desolder tip.
2. Adjust the heating element to a higher temperature allowing the clogged solder to melt. Clean the tip by sliding the spring wire up and down until the passage is clear. (See Fig. 3)

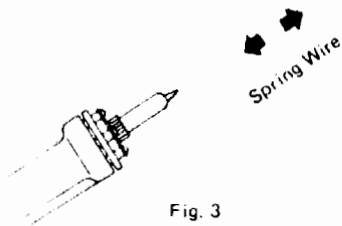


Fig. 3

Clean the stainless steel tube by moving spring wire up and down.

3. Unscrew the barrel nut assembly as in Figures 4 & 5.

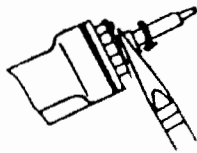


FIG-4

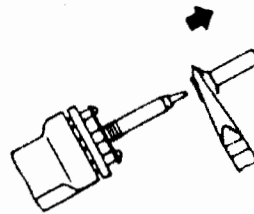


FIG-5

4. Remove the tip by using a pliers as in Figures 6 & 7.

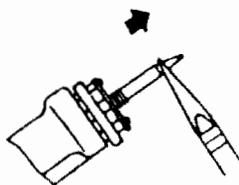


FIG-6

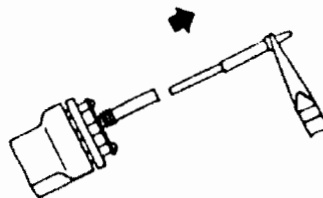


FIG-7

5. Insert the stainless tube of the tip back in the barrel to melt the solder in around 5 seconds as in Figure 8.

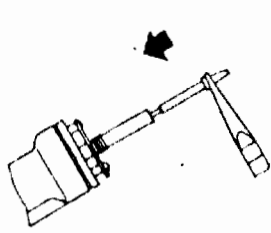


FIG-8

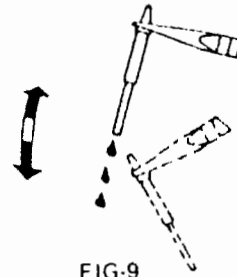


FIG-9

6. Remove again and shake out any loose melted solder in the tip per Figure 9, the tip should now be unclogged. Replace the tip and screw back the retaining barrel nut assembly but care should be taken not to over tighten!

PROCEDURES FOR CLEANING THE SOLDER COLLECTOR

CAUTION: The switch must be turned "OFF" and the iron allowed to cool before this operation.

1. Hold iron as in Figure 10. Press and turn the red knob at the butt of the iron.

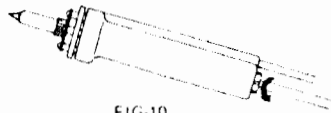


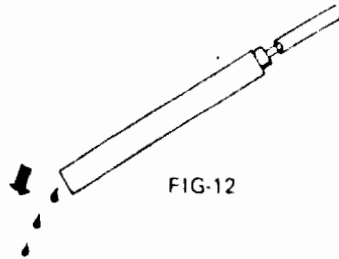
FIG-10

2. Slide out the solder collector as in Figure 11. (CAUTION: The solder collector is glass and thus retains heat, handle with care!)

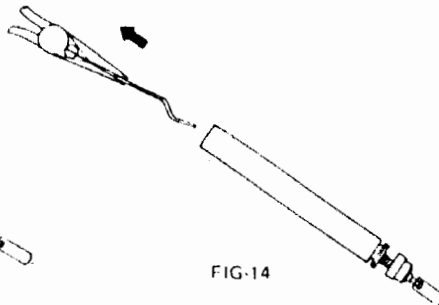
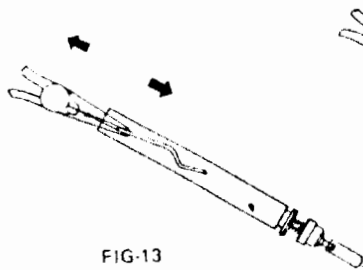


FIG-11

3. Point the collector down while shaking slightly (see Figure 12.) and the waste solder will fall out. This task must be carried out periodically for proper operation of the station.



4. Remove cooling strip with a pair of long nose pliers or tweezers. (see Figures 13 & 14)



5. Clean the cooling strip and glass collector with wire brush (included).

PROCEDURE FOR REPLACING FILTERS

SOLDER COLLECTOR FILTERS

1. Be sure the iron/filter assembly have cooled.
2. Hold iron as in Figure 10, press/turn red knob on the butt of iron.
3. Remove solder collector (see Figure 11).
4. Disassemble the solder collector into 2 pars (see Figures 15 & 16).

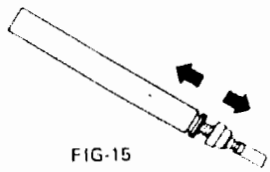


FIG-15

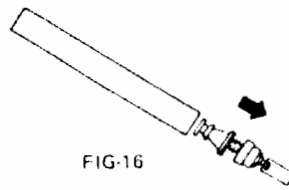


FIG-16

5. Remove old cotton filter and replace (see Figures 17 & 18).

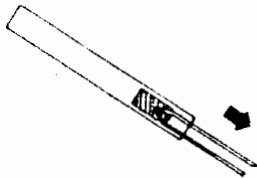


FIG-17

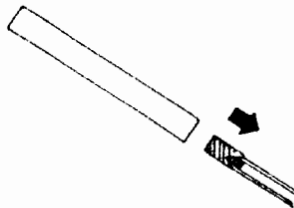


FIG-18

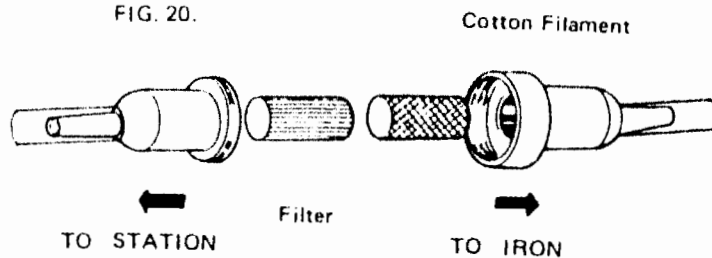
IN LINE FILTERS

1. Unscrew in line filter (see Figure 19) and then pull apart (Figure 20).

FIG-19

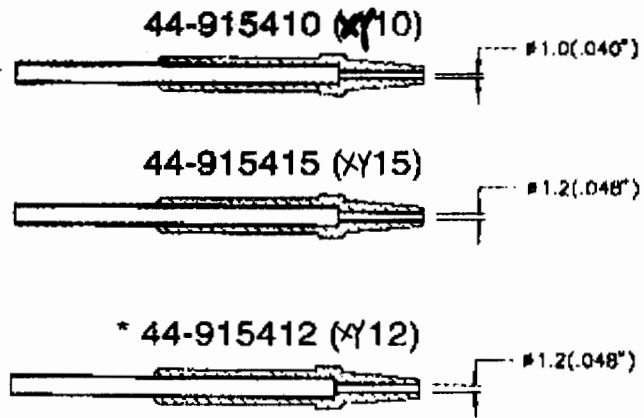


FIG. 20.



2. Replace the filter (lined portion) and cotton filament (shaded portion) as in Figure 20.

INTERCHANGEABLE DESOLDERING TIPS



IMPORTANT: Maintenance note for DIA80 Desoldering Iron

Change of Cotton Filament (76-1411030):

Please note that the cotton filament cannot be washed with the water. Water drops would be sucked into the Pump and may cause the pump damaged within 1 to 2 months. If you wash with the water, **Cotton filament** will turn solid and will stop the DIA80 working well. Please change **at least** once 3 to 5 days if you use **8 hours** per day.

Change of Charcoal Filter (78-151500):

Charcoal filter will turn solid if you wash with the water. If you use 8 hours per day that the Charcoal filter has to be changed within 3 weeks. On the other hand, if you wash the Charcoal filter and do not dry properly, water drops will be sucked into the Pump and may cause the pump damaged easily.

Change of Glass Solder Collector (75-160110):

Glass solder collector will be broken easily if the client knocked the DIA80 against the desktop. The glass collector also needs to be changed every 3 to 5 months usage.

Maintenance for Desoldering Heater and Tip:

To prevent the desoldering tip being stuck by solder, the desoldering tip has to be cleaned by a Probe after every time usage. In such ways, desoldering tip's life can be lasting longer. Desolder Heater would be probably broken when you remove the desoldering tip with a pliers careless in hot condition. Slightly remove the tip with pliers or may use the anti-rusty cleaner when the tip clogged with the heater and do not forced open. Please read the "**Procedure for Cleaning Clogged Tips**" carefully on page.10 on the manual.