



INSTRUCTION MANUAL

FOR

LF-399D

&

LF-389D

**TEMPERATURE CONTROLLED
SOLDERING STATION**

INTRODUCTION

Thank you for purchasing our soldering station – the best solution for your soldering equipment needs! We believe that you will be more than satisfied with many features and the versatility of your new soldering station. Please carefully read the instruction manual prior to operation to maximize the advantages of using your new soldering station.



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 appliance.

If the supply cord is damaged, it must be replaced by the manufacturer, or its service agent or similarly qualified persons in order to avoid a hazard.

Failure to observe the safety regulation will result in a risk of life and limb. The manufacturer shall not be liable for damage resulting from misuse of the unit or unauthorized alterations.



CAUTION:

REMEMBER, THE TIP IS HOT!

- ◆ Keep the soldering tip and heating element away from the body, clothes and flammable material when in operation. Always replace the solder wand to its original holder when not being use. The soldering tip and the heating element are still remaining hot after being switched off. Ensure that you do not touch the soldering tip and the heating element.

This tool must be placed on its stand when not in use.

DO NOT WORK ON LIVE CIRCUITS

- ◆ Before working on any mains powered equipment, make sure that it is turned off, and the mains plug is removed from the power point. You must not undertake work on live parts.

DO NOT USE IF DAMAGED

- ◆ If the power lead becomes damaged or the soldering station becomes faulty, discontinue use immediately. To comply with safety standards, the power lead must only be replaced by authorized technicians as special purpose tools are required. Only the technician is permitted undertake repairs. Use the original replacement part only.

REMEMBER UNPLUG IN THE POWER CORD

- ◆ The station must be switched off and the power cord must be unplugged before replacing the fuse in the P.C.B.

Caution: Soldering irons operate at high temperatures and can easily burn the skins and/or objects. Do not touch the tip and heater at any time and to keep it a safety distance from flammable materials while the unit is on or while being cooling. Please allow a sufficient time for it to cool before changing tips or servicing the unit!

PRODUCT DESCRIPTION

Both LF399D/LF-389D digital readout electronically temperature controlled soldering stations have been designed to meet the present and future soldering needs of the electronic production industry, hobbyist and students.

The LF-399D & LF-389D rated current have 220-240Vac, 50Hz or 100-120Vac, 60Hz for option. Both incorporate electronic circuitry which enables the user to adjust the temperature from 150°C(392°F) through 480°C(896°F) without changing the tip. The temperature is maintained to within $\pm 5^{\circ}\text{C}$ (9°F) of its idling temperature through the use of its PTC characteristic. Both engineer the heater failed detection, if the heater circuit fails the display will read “H-E” and will automatically cut off the heater power. Also the temperature can be locked by “password” code that is convenient for production line management.

The electronic “ZERO VOLTAGE” switching protects voltage and current sensitive components, such as “CMOS” devices, against transient voltage spikes that can be caused by switching the power or heater on/off or other environmental conditions.

The highly insulated ceramic heating element with heater insulation exceeds 100M ohms. The specifically design heater brings the temperature up to approximately 565-650°C (1050-1200°F) at full setting in about one minute. This results in very fast heat-up, instant recovery and superior heat transmission.

The ergonomic and slender soldering iron designs with a comfortable rubber grip that prevents operator fatigue. The soldering iron is attached to the base unit using a non-burning silicone rubber cord.

The tip is grounded through the power unit to ensure leakage of less than 0.4milivolt, and a wide selection of long-lasting, iron clad, nickel/chrome plated and pre-tinned tips are available to meet all your soldering needs.

OPERATING INSTRUCTIONS

Caution: Check carefully for any damage during transportation and ensure that the working voltage matches your power supply before plugging in the station.

1. Ensure that the base unit power switch is in the “OFF” position.
2. Plug in AC power cord and turn “Mains power switch” to “ON” position then LED display will be ON and show the temperature value.
3. Press the “▲” key up until the temperature to 250°C (482°F) (If set to degrees Centigrade, the temperature display window of the upper right corner shows °C, if set to degrees Fahrenheit, the temperature display window of the upper right corner shows °F). Then tin the surface of the tip by applying a new covering of solder after being warmed to protect tip and extend its life.
4. Press the key “▲” or “▼” to choose the desired temperature. When the temperature reaches to the desired temperature that the heating indicator light will be flashed on and off to maintain the set temperature. The unit now is ready for use.

SPECIFICATIONS

Model	LF-399D		LF-389D	
Input	220-240Vac, 50Hz	100-120Vac, 60Hz	220-240Vac, 50Hz	100-120Vac, 60Hz
Output	80W		60W	
Fuse (Fast type)	1A	2A	0.5A	1A
Temperature Range	150°C -480°C (302°F -896°F)			
Temperature Correction Range	+99°C ~-99°C /+210°F ~-210°F			
Default Setting	150°C /302°F			
	Temperature correction value“00”			
Figure Dimension	105 x 90 x 90mm (W x H x D)			

TEMPERATURE SETTING: (No password set)

Increase temperature: By pressing “▲” key one time, the digital will be increase “1” numeral. If pressing “▲” key over 2 seconds then the digital numerals will be forwarded counting continuously till the temperature up to what you desire to set.
Decrease temperature: By pressing “▼” key, the same procedure as above.

PARAMETER SETTING:

1. Press “SET” key and hold for at least 4 seconds until display shown “— — —” sign then release the “SET” key. The sign “— — —” starts to flash and reminding the user to input the mode lock password “010” (fixed). If the user inputs the same number as “010”, the unit will enter the modes selection procedure, otherwise, the unit will be back from the current mode automatically.
2. After the unit enters the Modes selection, the LED will display “F-0” and flash. Press “▲” or “▼” key to select modes. If the user doesn’t press “▲” or “▼” key within 15 seconds or press “SET” key one time, then the unit will be immediately back from the Parameter Set status.

For example: F-0 → F-1 → F-2 → F-3



3. Password Setting:

When the LED displays “F-1” flashes, press “SET” key one time and the unit enters the Password Set status. At this moment, the LED displays the pre-set value. Press “▲” or “▼” key to change password set value. If the user sets “000” that means the unit will be under the status of no password. If the user sets “100” then means the unit will be under the password status. Pressing “SET” key once to finish password setting and the unit will backup mode, the user can continue set other modes or back from the setting mode.

4. Temperature Correction Setting:

Press “SET” key once when the LED displays “F-2” and flashes that the unit enters the Temperature Correction Mode. At this moment, the LED displays preset correction value.

- A: Operation of Centigrade temperature correction (+99°C ~ -99°C)
Press “▲” or “▼” key to change the temperature correction value. The first digit “— ” means minus (actual temperature is down), “No display” means plus (actual temperature is up).
- B: Operation of Fahrenheit temperature correction value [(+178°F ~ -178°F) for LF-389D and (+210°F ~ -210°F) for LF-399D]
Press “▲” or “▼” key to change the temperature correction value. When the numbers is sparkling on LED displays, it means minus value (actual temperature is down), when the numbers stop sparkling, it means plus value (actual temperature is up). Press “SET” key once to finish the temperature correction and the unit automatically backup mode. The user may continue set other modes or back from the current setting mode.

Example for temperature correction: The current set temperature value is 200°C, but the actual temperature is only 190°C. So it needs to correct by +10°C.

Correction method: if the current correction value is 00 or -00; then change it to 10. If the current correction value is -20, then change it to -10. If the current correction value is 20, then change it to 30.

5. Fahrenheit and Centigrade (Celsius) temperature selection

When temperature display window shows "F-3" and blinking, press the "SET" button, at this time, the system enters the degrees Fahrenheit and Centigrade temperature selection function, indicating the temperature of the window shows the current status. Press "▲" or "▼" key to change the temperature selection status. It expressed as degrees Celsius temperature value If set to °C; it shows as degrees Fahrenheit temperature if set to °F.

WORKING TEMPERATURE

To meet RoHS requirement, the 60/40 solder alloys are not allowed in the production process. The lead free solder alloys require a working temperature of 30°C (54°F) higher than previous generation electrical soldering. A low iron temperature will slow the rate of flow of the solder. A high temperature will burn the flux in the solder, which in turn will emit a heavy white smoke resulting in a dry joint, or damage to the P.C.B. When the tip working temperature is set to the correct temperature parameters suited to the particular solder being used, a good joint is assured.

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)

IMPORTANT: The temperature above 410°C (770°F) is not recommended for normal soldering functions, but can be used for short periods of time when high temperatures are required. **Please note** that the lead free solder alloys require a higher soldering temperature which shortens tip life.

COMMON CAUSES OF TIP UNWETTING

1. Tip temperature higher than 410°C (770°F).
2. The tip working surfaces are not well tinned while the iron idling.
3. Lack of flux in soldering, wicking, repairing, and touch-up, etc operation.
4. Wiping tip on a high sulphur content sponge, dirty or dry sponge and/or rag.
5. Touching with organic, such as plastic resins, silicone grease and other chemicals.
6. Impurities in solder and low tin content.

CARE OF TIPS

 **Caution:** The soldering 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.

IMPORTANT - Remove the tip and clean after every usage or at least once a week. Remove any loose build up in the tip retaining assembly to prevent tip freezing. The solder tips supplied are iron clad pure copper and if used properly will give a long life.

1. Always keep tips tinned before returning to the holder, switching off or storing for any period of time. Wipe only before using.
2. Don't keep iron set at high temperature for long periods of time as this will break down the surfaces of the tip.
3. Don't give any excessive pressure on a tip or rub a tip on a joint. It does not improve the heat transfer but only damages the tip.
4. Never clean the tip with abrasive materials or a file.
5. Don't use a flux containing chloride or acid, use only rosin or activated rosin fluxes.
6. If any oxide does form, it can be cleaned by lightly rubbing with a 600-800 grit emery cloth, isopropyl alcohol or equivalent, then wrap rosin-core solder around the newly exposed surfaces and heat, flood the tinned areas with rosin-core solder after wrapped rosin-core solder melted.

NEW TIP

Used according to the following procedures if a new tip were installed at any time, it will give the tip much longer life.

1. Turn "Mains power switch" to "ON" position and set temperature to 250°C (392°F).
2. Flood the tinned surfaces with rosin-core solder when temperature reaches 250°C (392°F).
3. Set at desired temperature after warming for few minutes.
4. The iron will be ready for use once it reaches the preset temperature.

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

MAINTENANCE

TIP REPLACEMENT AND DRESSING

Tip can be changed or replaced simply by unscrewing the knurled nut barrel assembly. The station must be switched off and allowed to cool before this operation as damage may result if the system is left on without the tip inserted.

After removing the tip, blow out any oxide dust that may have formed in the tip retaining area of the barrel. Be careful to avoid getting dust in your eyes. Replace the

tip and screw back the knurled nut barrel assembly using only firm hand pressure to tighten. Pliers should only be used to tighten the nut to avoid burning your fingers, but care should be taken not to over-tighten as this would damage the element.

GENERAL CLEANING

The outer cover of the iron and station may be cleaned with a damp cloth using small amounts of liquid detergent. Never submerge the unit in liquid or allow any liquid to enter the case of the station. Never use any solvent to clean the case.

SERVICE

If the iron or station should become faulty or, for some reason not operate normally, the system should be returned to the service department of your authorized dealer or agent.

WARNING: Keep out of the reach of children.

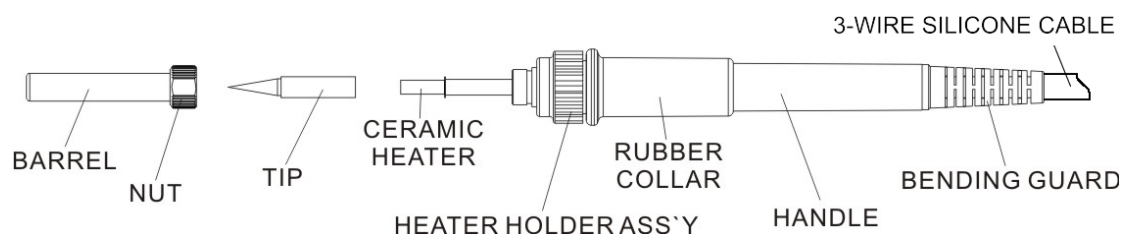
WARNING: Do not inhale solder fumes.

WARNING: Keep tip and heating element away from the body and clothes while in operation.

SOLDERING IRON ASSEMBLY

105U (For 100-120Vac) / 105V (For 220-240Vac) for LF-389D

i80U (For 100-120Vac) / i80V (For 220-240Vac) for LF-399D



REPLACEMENT PARTS :

Part No.	Description
28-0135701	Barrel
42-030102	Nut
79-507041	Ceramic Heater 230V/80W for LF-399D
79-407041	Ceramic Heater 120V/80W for LF-399D
79-504541	Ceramic Heater 230V/60W for LF-389D
79-404541	Ceramic Heater 120V/60W for LF-389D
27-010011	Heater holder ass'y
50-210531	Spiral spring ground wire
52-021013	Silicone rubber collar

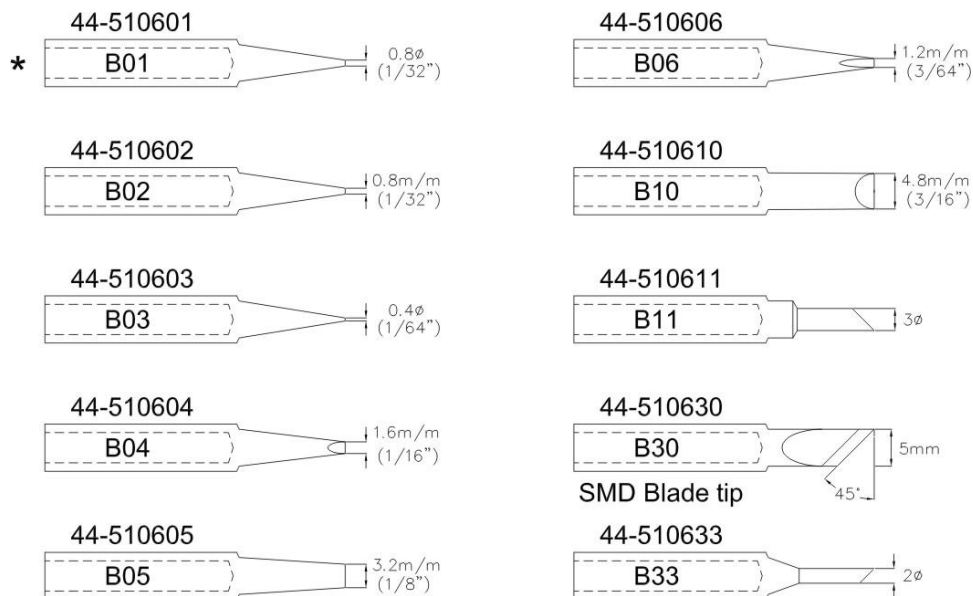
26-160240	handle
26-170241	Bending guard
34-031091	3-wire silicone cable
66A213098	Heater PCB with cable fixing clip
66A323173SV	Main P.C.B assembly for 220-240V
66A323173SU	Main P.C.B assembly for 110-120V

ACCESSORY :

*105C Soldering iron stand.

*Cleaning brush P/N#459

REPLACEMENT TIPS:



* Denotes Standard tip

FUSE REPLACEMENT :



CAUTION: The station must be switched off and the power cord must be unplugged before replacing the fuse in the P.C.B.

REPLACEMENT PROCEDURES:

1. Unplug in the power cord from the AC socket.

2. Unscrew the nut at the rear side of LF-389D / LF-399D as in Figure 1.



Fig. 1

3. Open the panel and take it out as in Figure 2.



Fig. 2

4. Replace the fuse as in Figure 3.

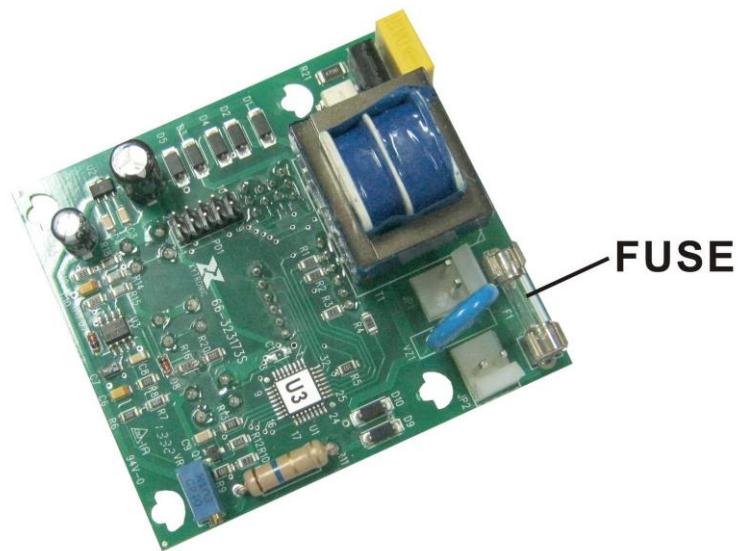


Fig. 3