



2900

Soldering Station

INSTRUCTION MANUAL

Thank you for purchasing model 2900 Soldering station.
Please read manual before using the unit.
Keep manual in an accessible place for future reference.

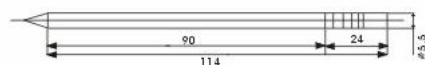
FEATURES:

- Soldering station that has excellent thermal recovery allowing lead-free soldering without large increase in tip temperature.
- Utilizes integrated ceramic heater, sensor, control circuit and tip.
- Effortless replacement of soldering iron tip cartridges.
- Highly dependable transformer provides 24V output for the soldering unit and assures safe soldering.
- Has variable temperature setting range from 200°C - 480°C shown on digital temperature display.
- Optional setting of 30-minute auto sleep mode function when station is idle.
- Seventy watt large heat capacity allows faster temperature recovery during heavy soldering, reducing the reaction time even at lower temperature settings.

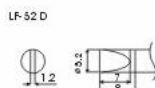
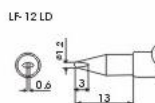
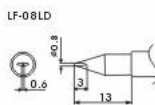
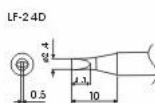
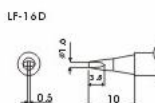
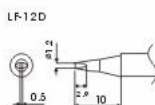
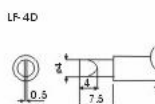
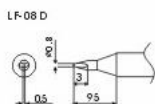
Manufacturer:
AOYUE TONGYI ELECTRONIC EQUIPMENT FACTORY
Jishui Industrial Zone, Nantou, Zhongshan City,
Guangdong Province, P.R.China
<http://www.aoyue.com>

SOLDERING IRON TIPS WITH HEATING ELEMENT

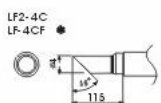
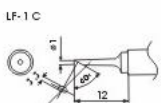
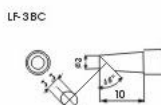
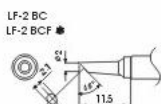
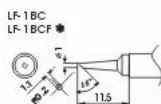
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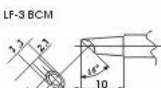
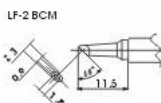
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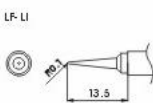
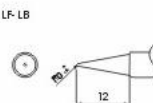
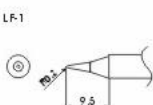
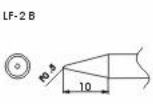
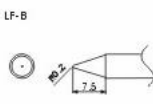
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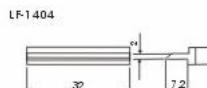
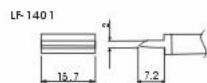
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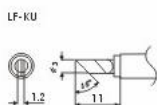
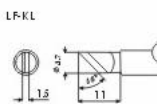
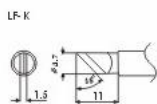
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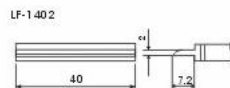
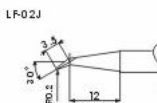
Tunnel Type



Blade Type



Sharp-Bent Type



* These tips are retinned on the soldering surface only.

TROUBLESHOOTING GUIDE



Before checking the inside part of the station or replacing parts, be sure to disconnect the power plug. Failure to do so may result in electric shock.

- The unit does not operate when the power switch is turned on.

CHECK: Is the power cord and/or the connection plug disconnected?

ACTION: Connect it.

CHECK: Is the fuse blown?

ACTION: Investigate why the fuse blew and then replace the fuse. If the cause can not be determined, replace the fuse. If the fuse blows again, send the unit for repair.

- The tip does not heat up. Sensor error is displayed.

CHECK: Is the power cord and/or the connection plug connected?

ACTION: Connect it.

CHECK: Is the tip inserted properly?

ACTION: Insert the tip completely.

CHECK: Is the connection cord and/or the heater/sensor broken?

ACTION: See the appropriate section of this manual regarding how to check the connection cord and/or the heater/sensor for breakage.

- Solder does not wet the tip.

CHECK: Is the tip temperature too high?

ACTION: Set appropriate temperature.

CHECK: Is the tip contaminated with oxide?

ACTION: Remove the oxide (see Tip maintenance on p.8)

- The tip temperature is too high.

CHECK: Is the connection cord broken?

ACTION: See "Checking the connection cord for breakage" on p.10

CHECK: Is there a temperature offset ?

ACTION: Calibrate.

- The tip temperature too low

CHECK: Is the tip contaminated with oxide?

ACTION: Remove the oxide (see Tip maintenance on p.8)

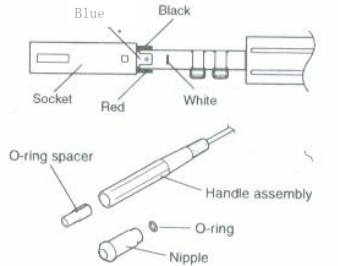
CHECK: Is there a temperature offset ?


ACTION: Calibrate.

MAINTENANCE

● Checking the connection cord for breakage.

- 1. Remove the soldering tip and the nipple.
- 2. Push the socket out from inside the handle assembly.
- 3. Measure the resistance values between the connector and the lead wires at the socket as follows:
 - Pin 1 - Red (+)
 - Pin 3 - Blue (ground)
 - Pin 5 - Black (-)If any value exceeds 0Ω or is ∞ , replace the handle assembly.



 Do not loose the O-ring located inside the nipple. When reassembling, match the convex part of the handle assembly with the concave parts of the O-ring spacer and socket.

● Check the grounding

- 1. Unplug the power cord from the power receptacle.
- 2. Remove the fuse holder.
- 3. Replace the fuse.
- 4. Put the fuse holder back in place.

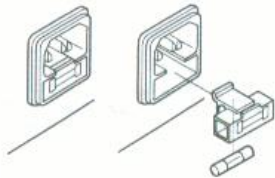


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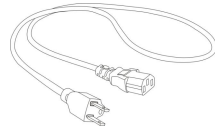
PACKAGE INCLUSION



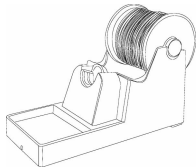
2900 Soldering Station



B010 Soldering Iron



Power Cord



2630 Soldering Iron Holder



Soldering Iron Tip w/
Heating Element
(LF-2B)



30150J Heat Resistant Pad

SAFETY PRECAUTIONS



CAUTION

When power is ON, tip temperatures will be between 200 and 480°C. To avoid injury or damage to personnel and items in the work area, observe the following:

- Do not touch the tip or the metal parts near the tip.
- Do not allow the tip to come close to, or touch flammable materials.
- Inform others in the area that the unit is hot and should not be touched.
- Turn the power off when not in use or left unattended.
- Turn the power off when changing parts or storing the station.

To prevent accidents or damage to the station, be sure to observe the following:

- Do not use the station for applications other than soldering.
- Do not allow the station to become wet or use it when hands are wet.
- Do not strike the iron against hard objects to remove excess solder as this will damage the iron.
- Remove power and iron cords by holding the plug—not the wires.
- Be sure the work area is well ventilated. Soldering produces smoke.

MAINTENANCE

4. When the unit is not being used and the auto sleep mode shutoff is not active

Never allow the unit to stay idle at high temperature for extended periods. This will allow the tip to become oxidized. Turn the power switch OFF if it is to be out of service for several hours. It is advisable to pull the power plug as well.

5. Inspecting and cleaning the tip

This procedure, if followed daily will materially add to tip life.

1. Set the temperature to 250°C.
2. When the temperature stabilizes, clean the tip and check its condition. If the tip is badly worn or deformed, replace it.
3. If the solder plated part of the tip is covered with black oxide, apply fresh solder containing flux and clean the tip again. Repeat until all the oxide is removed then coat the tip with fresh solder.



Never file the tip to remove oxide.

4. Turn the power OFF and remove the tip using the heat resistant pad. Set the tip aside to cool.
5. Remaining oxides such as the yellow discoloration on the tip shaft can be removed with isopropyl alcohol.

B. Checking Procedure



Unless otherwise directed, carry out these procedures with the power switch OFF and the power cord UNPLUGGED.

- Check for a broken heater

Verify the electrical integrity of the heater and sensor. Measure the resistance of the heater and sensor while at room temperature. It should be 7.5 - 12 Ω . If the resistance exceeds these limits, replace the tip.



- Check the grounding line

1. Unplug the soldering iron cord from the station.
2. Measure the resistance value between Pin 3 and the soldering iron tip.
3. If the value exceeds 2 Ω (at room temperature), perform tip maintenance. If the value still does not decrease, check the connection cord for breakage.



OPERATION

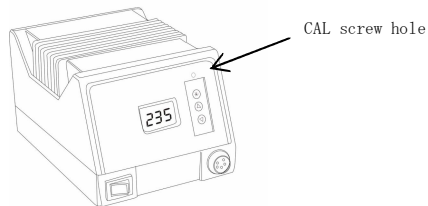
D. Calibrating the iron temperature

This method requires measuring the tip temperature with a tip thermometer and is recommended for the most accurate process control.

1. Measure the tip temperature through an external thermometer.

NOTE: Allow the tip temperature to become stable.

2. When the temperature stabilizes, Insert a straight edge (-) screwdriver or small plus (+) screwdriver to the small hole above the control buttons.



3. Turn the screw counterclockwise to increase the temperature and clockwise to reduce the temperature. Slowly adjust until the temperature offsets.

MAINTENANCE

A. Tip Maintenance

1. Tip Temperature

High temperature shortens tip life and may cause thermal shock to components. Always use the lowest possible temperature when soldering. The excellent thermal recovery characteristics of the 2900 station ensures effective soldering at low temperature.

2. Cleaning

Always clean the soldering tip before use to remove any residual solder or flux adhering to it. Use a clean and moist cleaning sponge. Contaminants on the tip have many detrimental effects including reduced heat conductivity which contribute to poor soldering performance.

3. After use

Always clean the tip and coat it with fresh solder after use. This guards against oxidation.

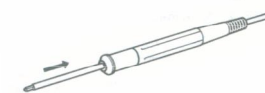
SPECIFICATIONS

Power Input :	220 V
Power Consumption :	70 W
Soldering Iron Output Voltage :	24 V
Solder Iron Temperature Range :	200 - 480 °C
Tip to Ground Resistance :	< 2 Ω
Tip to Ground Potential :	< 2mV
Dimension :	110 (w) x 90 (h) x 155 (d) mm
Weight :	3 Kg

ASSEMBLY AND PREPARATION

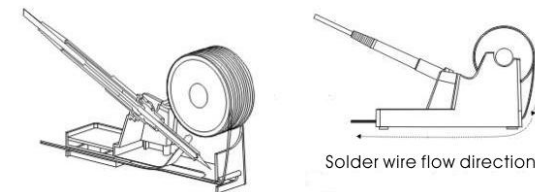
A. Hand piece

Insert the tip fully into the hand piece.




B. Soldering Iron

1. Install solder wire to the solder iron holder.




2. Attach the soldering iron to the 5-pin output at the bottom right area of the station.
3. Place soldering iron to the soldering iron stand as shown in the figure above.

 Dampen the sponge with water and squeeze dry before using. The tips maybe damaged when used with dry sponge.

C. Soldering Station




1. Insert the power cord into the receptacle at the back of the station.
2. Plug the power cord into a grounded wall socket. The station is protected against electrostatic discharge and must be grounded for full efficiency.

 Be sure the power switch is OFF before connecting or disconnecting the soldering iron cord. Failure to do so may result in damage to the circuit board.

CONTROLS, DISPLAY & BUZZER

A. Controls

The front panel of the soldering station has the following controls:

-  - Reset button
-  - Increases the value of the set temperature
-  - Decreases the value of the set temperature

B. Display

The station has a three-digit display element and a heater lamp.



Depending upon the selected mode, the three-digit display will indicate:


- Normal mode: sensor temperature in °C (tip temperature)
- Data entry
- Error detection

The single heater lamp will blink when the station increases and reaches its set temperature. No blinking shall be noticed when the temperature is decreasing.

C. Buzzer



An audible buzzer is provided to alert the operator when:

- The station has reached the set temperature.
- A failure has occurred in the sensor or heater (including the sensor circuit). The buzzer will sound continuously.
- The 30-minute sleep mode is activated and the power to the heating element is shut off.


 The soldering station is preset at 200°C. The soldering iron temperature will rise to 200°C (lowest temperature setting) when the station is turned on.

OPERATION

A. Changing the temperature setting





1. Turn the power ON. When error signal beep is heard, press the reset button.
2. Press the  and  button to set the desired temperature in degrees Celsius.

NOTE: Temperature can be set from 200 - 480°C. An increment/decrement of 2°C will be set whenever the temperature adjusting button is pressed. Press button steadily for large difference in desired temperature.

 Tip temperature rises quickly to desired setting. A beep sound will be heard when desired temperature has been reached. Temperature drop is dependent on the surrounding environment and takes time to cool down.


B. Auto sleep mode shutoff

This is an **optional setting**. When it is activated and the soldering iron is not used or kept idle for 30 minutes, the power to the heating element will be shutoff automatically and the buzzer will beep three times. To turn on the function

1. In a simultaneous manner, press the  and  button together, then
2. Turn on the power switch without releasing the pressed buttons.
3. The display will show  indicating that the 30 minute idle time sleep mode is turned on.
4. After 30 minutes of idle time, the buzzer beeps and the temperature decreases to room temperature. When heating element power has been shutoff, the display will show 

Note: The power will be turned on if you hit any button before the temperature decreases to room temperature.

5. To begin soldering, press the reset button.

 If the reset button is pressed after setting the auto sleep mode, the option will be void. To turn on the 30-minute sleep mode again, turn off the power switch and repeat steps 1 & 2.

C. Replacing the tip

1. Always turn the power OFF when removing or inserting a tip.
2. When the tip is hot, hold it with the heat resistant pad and pull it out.
3. Insert the new tip fully into the handle. If the tip is not fully inserted, the display will show a sensor error when power is turned on. 