Digital Soldering station DSSLF04H

Instruction Manual

Thank you for purchasing a lead free soldering station. It is designed for lead free soldering. Please read this manual before operating the unit. Store this manual in a safe, easily accessible place for future reference.

1. Safety instructions

To prevent damage to the unit and ensure a safe working environment, be sure to comply with the following precautions.

- Appliance shall only be used with rated voltage and frequency. (Refer to the trademark back of equipment.)
- Don't use or stop the use if the appliance is damaged, especially the supply cord.
- This machine is equipped with a 3-wires grounding plug and must be plugged into a 3-terminal grounded socket. Do not modify plug or use an ungrounded power socket. If an extension cord is necessary, use only a 3-wire extension cord that provides grounding.
- Do not use the unit for applications other than soldering.
- Do not rap the soldering iron against the work bench to shake off residual solder, or otherwise subject the iron to severe shocks.
- Do not modify the unit.
- Use only genuine replacement parts.
- Do not wet the unit or use and disconnect the unit when your hands are wet and without to force the supply cord.
- The soldering process will produce smoke, so make sure the area is well ventilated.
- While using the unit, don't do anything which may cause bodily harm or physical damage.
- Children don't recognize the risks of electrical appliances. Therefore use or keep the appliance only under supervision of adults and out of the reach from children.

2. Product Overview

2.1 Product Specification

Power： 90W
Temperature range： 100℃~480℃
Range of sleeping time： 0~98min(0 instant sleeping， --- non-sleeping)
Temperature stability： ±2℃（Still air does not load）
Maximum ambient temperature： 40℃

Tip to grounding resistance：	＜2Ω
Heating components：	Electromagnetic heating body
Dimensions：	150(L)*165(W)*125(H)mm
Weight：	2.8Kg

2.2 Product Features：

1. Has a password lock function is conducive to control.
2. Push-button thermostat and an auto-sleep function.
3. To set the temperature of the upper and lower limits can be exceeded according to the temperature required implementation report to alarm.
4. The use of digital temperature calibration, easy to operate.
5. Can be equipped with a number of long-lived tip universal and easy to use.
6. Handle lightweight and comfortable to use.
7. ESD design。

3. Operation

3.1 Operation

Connected the station , in accordance with the channel setting required operating parameters.

1. Press "F1"、 "F2" or "F3" job-channel selection , the corresponding channel LED lights red.
2. Click "▲"and "▼"key to set the soldering temperature. (see 3.3 setting the temperature)。

   NOTE： 1、 If the password is locked, so that the station only can work in the current channel.

   2、 Soldering temperature setting range is limited to the channel's "upper and lower temperature rang"(see "4.3Setting the temperature range from top to bottom"),only in the range of settings.

3.2 Set temperature on-line

Temperature rising:

Press "▲"knob directly. If so, the setting temperature will raise 1℃ and the display window will display the set temperature. When loosen the "▲"knob, the display window will delay the set temperature about 2 seconds. If within 2 seconds of time, press the "▲"knob again, the setting temperature will raise 1℃ again. If press the "▲"knob and not loose at least 1 second, the setting temperature will rise rapidly. Till the needed temperature reaches, then loose the "▲"knob.

Temperature dropping:

Press "▼"knob directly. If so, the setting temperature will drop 1℃ and the display window will display the set temperature. When loose the "▼"knob, the display window will delay the set temperature about 2 seconds. If 2 seconds later, press the "▼"knob again, the setting temperature will drop 1℃ again. If press the "▼"knob and not loose at least 1 second, the setting temperature will drop rapidly. Till the needed temperature reaches, then loose the "▼"knob.

4. Set Parameters

4.1 Enter the menu setting

System, the initial password is"000" , this time, the work permit at a state job-channel switch is locked and can only work in the current channel.

1. Turn off the power switch.
2. And at the same time hold down the "▲"and "▼"button without letting go , and re-open the power switch, when the window is displayed "---" release that into the "settings menu" of job flow , the window display at this time required, enter your password(if not at 10 seconds to enter a password, then automatically exit the menu settings flow into the sate job.)
3. Password: Click "▲"or "▼" key, enter a password the first(100)value; then press "F3" button to confirm, enter the password of the second(10) numerical input. The way of the second(10) and third(a bit) input values is the same with the the first numerical input.
4. If the first input password is incorrect, then exit the menu settings flow into the state job.
5. If the correct password , the led window displays "SET", if correct, exit settings.

4.2 Menu and parameter setting approach

1. Settings in the menu interface, there are six menu options: "-1-"、"-2-"、"-3-"、"-4-"、"-5-"and "-6-". Click the"▲"or "▼"button can select menu, and then click to confirm "F3" key while entering the menu parameter settings.

2. In the menu settings interface has six menu options: click the menu button can select, and then click "F3" button to confirm, to enter the menu parameter settings.

    "-1-"：Exit the menu settings . Click the button to confirm that the "F3" key to exit the menu and parameter settings, access to job status.

    "-2-":Set the upper and lower temperature range, unit：' 。

    "-3-": Sleeping set-up time , unit: min

    "-4-":The value of the temperature alarm settings, units: ' 。

    "-5-"：Set the alarm sound.

    "-6-"：Set up a new password.

3. Set up the parameters, click the confirmation "F3" key to exit the state of current settings back to "-1-" state, once again click the confirm button "F3" Then exit the menu settings.

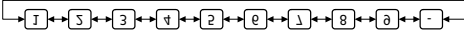## 4.3 Upper and lower temperature range settings

1. When entering the menu settings ,select "-2-" ,click the confirmation key "F3", enter the upper and lower temperature range of settings, window display [CF".

2. "F" displays about one second after the show "F1", at this time the RED indicator light does not shine.

3. Click the "▲"or "▼" button to change the channel settings to be F1.F2 or F3, then click "F3" key to enter the channel selection up and down temperature range settings window, "d1" displays about one   second after enter in the temperature settings window, select channels at this time the red LED indicator light , LED light window median hundred.

4. Click the "▲"or "▼"key to set the temperature of the upper and lower temperature range (see "temperature settings"). [D1" of the temperature input is complete, click the confirmation key "F3", enter the parameter "d2" input; "d2" of the temperature input click the "F3"key, exit the whole temperature range of settings, return"-1-".

5. D1, d2 parameters of the upper and lower limits for the temperature range](d1-d2)or

(d2-d1)B,these two parameters set the parameter value is larger that the channel temperature of the lower limit of the crossing. If d1 and d2 parameters will be set to the same temperature, the temperature in the channel lock up.
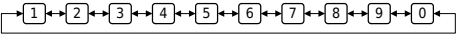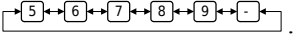
For example : to enter the menu settings "-2-", Channel selection "F1", F1 channel indicator light. Will be " d1" is set to 100°C, "d2" is set to 380°C, the "d1" is for the F1 channel of the lower limit temperature , the "d2" is for the F1 channel of the upper limit temperature . The station is working in F1 channel at the time, temperature settings range from 100°C-380°C.

4.4 Set up sleeping time

When entering the menu settings, select "-3-", click the confirmation key "F3", enter the setting-up sleeping time , the window shows [SLE".

1. Window displays [SLE" about one second after entering the sleeping time setting window. Click the "▲"or "▼" button to change the 10 value (as shown) ⌐7↔5↔3↔4↔2↔0↔1↔8↔a↔-⌐ ,enter the ten digits are finished , click confirm button "F3" to enter single-digit numerical input.

2. / it values input method with the 10 value, a numerical input spaces are finished, click confirm button "F3" ,exit the sleeping time settings , return "-1-".

3. Sleeping time range:0-98 or "-- ". "-" That it will sheep time is set to "OFF" ,the work will not be sleep. "0" for immediate sleep. When the sleeping begin within an hour of non-use of soldering units, soldering units will automatically shutdown.

4.5 Set up temperature alarm value

1. When entering the menu settings, select "-4- " and enter the value of the temperature alarm settings, window displays "ALA"

2. "ALA" displays   about one second after entering the temperature alarm settings window. Click the "▲"or"▼" button to change the 10 value (as shown) ,⌐1↔2↔3↔4↔5↔6↔7↔8↔9↔0⌐ click the confirmation key "F3" to enter single-digit numerical input.

3. Click the "▲"or "▼" button to change a bit value (as shown) , ⌐5↔6↔7↔8↔9↔-⌐ . Numerical input bits are finished , click "F3" button,   exit alarm settings, return"-1-".

4. Temperature alarm range: 5-99 or "--". "--"shows when the actual value of warming or cooling temperature is lower than a set value or higher than the numerical value, the station is without warning.

4.6 Setting alarm sound

1. When entering the menu settings , select "-5-", and enter the alarm sound settings, window displays "SPE".
2. Click "▲"or "▼" to select whether the alarm sound, "ON" shows that has alarm sound, "OFF" shows that has no alarm sound.
3. After select "ON" or "OFF", Press F3 button to confirm(after the success of the system is set to issue a "di" sound), and the system return "-1-"status.

4.7 Setting new password

1. When entering the menu settings, select "-6-", enter the password modify status window shows "PAS".
2. "PAS" shows about one second after entering the new password settings window, the window shows the median "---", hundred bit bright.
3. Click the "▲"or "▼" button, select a password the first value. After the completion click "F3" button to confirm. To enter the password of the second numerical input (the median ten-bit-bright), 10 and a digital numerical input is complete, click "F3" key , enter the new password a second input.
4. Window displays "---"again, Re-enter new password by the above-mentioned method of Step 3. If the two password is the same, the window displays "OK". Password settings is successful, it return "-1-" status after 1 second.
5. If the input two passwords are not the same, then exit the password settings,return"-1-".
6. after setting up the new password successfully, Soldering units can only work on the current channel, if you want to change the channel, we must re-enter a password.

For example: Current channel for F1, if you want to select F2, you press the F2 key, window displays"---", At this point enter the new password, Channel will switch to F2, while F1 channel lock can not be used.

5. Calibrating the Iron Temperature

The Soldering Iron should be recalibrated after changing the iron or replacing the heating element or tip.

Method of recalibrating temperature: Use the thermometer to calibrate.

1. Set the unit's temperature to a certain value.
2. When the temperature stabilizes, measure the tip's temperature with thermometer and write down the reading.
3. Press "F3" button not loose and press the "▲"and "▼" buttons simultaneously, the soldering station enters into calibration mode.
4. At the moment, the 100's digit of LED display temperature is flashing. Press the "▲" and "▼" buttons to select the value and press the "**F3**" button to select the digit. Press "**F3**" button after inputting the reading. Here, the calibration operation has been finished.
5. When inputting calibration temperature, if the value of calibration temperature is error and the station have protection function after input the calibration temperature and press * button, the 100's digit of display temperature will flash.
6. If the temperature still has deflection, you can repeat calibration in accordance with above steps.

   ` We recommend to use the 191Ⅵ92 thermometer for measuring the tip temperature.
   ` If the unit is locked by password, it will not be able to calibrate and you must input the right password.

6. Error messages

' arious error message will be displayed when there is something wrong with the unit. If the following message is displayed, see the trouble shooting guide.

"**S-E**" If there is a failure in the sensor or anywhere in the sensor circuit, will be displayed and power to the soldering iron will be cut off.

"**H-E**" If power can't be sent to soldering iron, the display window will show "H-E". This indicates the possibility of a heater malfunction.

7. To select the correct tip for a solder application

7.1 How to choose the tip

1. Select a tip that maximizes contact area between the tip and solder joint. Maximizing contact area gives the most efficient heat transfer, allowing operators to produce high quality solder joints quickly.

2. Select a tip that allows good access to the solder joint. Shorter tip lengths allow more precise control. Longer or angled may be needed for soldering densely populated boards.
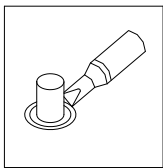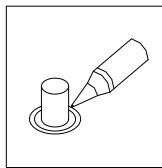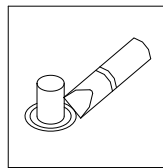
Correct   Small   big

7.2 Tip care and use

7.2.1 Note the use of tip

1. High soldering temperatures can degrade the tip. Use the lowest possible soldering temperature. The excellent thermal recovery characteristics ensure efficient and effective soldering event at low temperatures. This also protects the sensitive components from thermal damage.

2. Clean the tip regularly with a cleaning sponge, as oxides and carbides from the solder and flux can form impurities on the tip. These impurities can result in defective joints or reduce the tip's heat conductivity.

3. When using the soldering iron continuously, be sure to loosen the tip and remove all oxides least once a week.

This helps prevent reduction of the tip temperature.

Never leave the soldering iron sitting at high temperature for long periods of time, as the tip's

4. Solder plating will be covered with oxide, which can greatly reduce the tip's heat conductivity

5. Wipe the tip and coat it with fresh solder. This helps to prevent tip oxidation.

7.2.2 Inspect and Clean the Tip

1. Set the temperature to 250' .
2. When the temperature stabilizes, clean the tip with the cleaning sponge and check the condition of the tip.
3. If there is black oxide on the solder-plated portion of the tip, apply new solder (containing flux) and wipe the
4. tip on the cleaning sponge. Repeat until the oxide is completely removed. Coat with new solder. The solder protects the tip from oxidation and prolongs the life of the tip.
5. If the tip is deformed or heavily eroded, replace it with a new one.

7.2.3 Maintenance

1. Why a "Detinned" tip fails to work?

A detinned tip is one not wetted with solder. This exposes the plating to oxidation and degrades the heat transfer efficiency of the tip. Detinning is caused by:

2. Extending tip life

1. Tin the tip before and after each use. This protects the tip from oxidizing, and prolongs tip life.
2. Do the job at the lowest temperature. Lower temperatures decrease tip oxidation and are easier on the components being joined.
3. Use fine point tips only when necessary. The plating on fine precision tips is less durable than the plating on blunter tips.
4. Do not use the tip as a prying tool. / ending the tip can cause the plating to crack, shortening tip life.
5. Use the minimum activation flux necessary to do the job. Higher activation flux is more corrosive to the tip plating.
6. Extend tip life by switch the system off when not in use.
7. Don't apply pressure to the tip. More pressure does not equal more heat. To improve heat transfer, use solder to form a thermal bridge between the tip and the solder joint.

3. To restore a detinned tip

1. Remove the tip form the solder handle and allow the tip to cool down.

2. Remove scale and oxides from the timed area of the tip with 80-grit abrasive polyurethane foam stock or a 100-grit emery cloth.

3. Wrap rosin core solder (! 0.8mm diameter or larger) around the newly exposed iron surface, insert the tip into the handle, and turn on the power switch.

NOTE: Detinned tips are preventable with proper daily care&

# 8. **Checking and replacing parts of soldering iron**

When there is something wrong with soldering iron, you can check and test it. If it is broken, replace the broken element.

1. Checking soldering iron

Disconnect the plug and measure the resistance value between the connecting plug pins as follows:

1. If the values of   [a' and [b' are outside the value in the following table, replace the heating element (sensor) and Vor cord assembly. Refer to the following steps.

2. If the value of [c' is over the below value, remove the oxidization film in joint of tip and heat element by lightly rubbing with sand-paper or steel wool the points.

a. / etween pins 4∞5 (Heating Element)   Under   4Ω(Normal)

b. / etween pins 1∞2 (Sensor)   Under   10Ω(Normal)

c. / etween pins 3∞ Tip   Under   2Ω
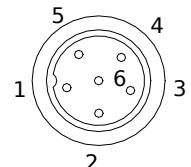
tip on the cleaning sponge. Repeat until the oxide is completely removed. Coat with new solder. The solder

Note: The soldering iron must be equipped with tip, when check b and c items.

8.2 Disassembling the handle

1. Outward pull tip– ,anti-clockwise spin gently inserts a pressure ring and removed,, .

2. Outward pull limit inserts   . (Toward the direction of pulling tip.)

3. (11)from the handle in the heating elements drawn (tip toward the direction of pulling).

4. will handle gently move the top line will top out wiring board .

5. Can not use metal tools (such as pliers), but should be put to use anti-scalding heat pad components and inlaid pieces drawn from the handle.

8.3 Checking the heating element

Measure the heating element when it comes back to room temperature:

1. Resistance value of heating element (shield wire) under 4Ω.

2. Resistance value of sensor (Red and green wire) under 10Ω.

If the resistance value isn't normal, replace the heating element.
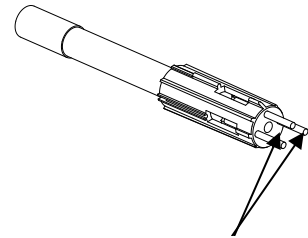
Heating component pin

8.4 Peplacement of heating component or sensor

If the resistance value anomaly, have to replace the heating elements or sensor. About the replacement procedure , please refer to replacement parts within the specification. Replacement of heating elements. Please proceed to the following matters.

Testing heating element

1. Measure the resistance value between pins 4 and 1 or 2, pins 5 and 1or 2, pins 3 and 1 or 2, pins 3 and 4 or 5. If it is not , the heating element and sensor or vibrator switch are touching. This will damage the PC/ .

2. Measure the resistance value [a', [b' and [c' to confirm that the leads are not twisted and that the grounding wire is properly connected.。

3. Determine the pin has been inserted in place.

8.5 Iron handle broken line

Test iron pin plugs and end plate of the resistance value between the wires. Resistance value should be 0 ohms, if greater than 0 ohms, or , wires should be replaced.

Pin1 - blue   Pin2 - red

Pin3 -green   Pin4   shield wire

Pin5   Line the inner shield(white)   Pin6   white

9. TIP

700-1C	700-2C	700-3C
700-1.2D	700-1.6D	700-2.4D
700-3.2D	700-B	700-2B
700-I	700-K	700-SK