



405 S. Pioneer Blvd
Springboro, OH 45066
mcmelectronics.com

21-10130

SOLDERING STATION SMD REWORK **2in1**

THERMO-CONTROL ANTI-STATIC

Intelligent lead-free rework station

User's Manual

21-10130 is an intelligent lead-free rework station, which combines a rework station and a soldering station. It is suitable for repair, production, hobbyist, and educational use. It is easy to operate, user-friendly and space-saving.

To avoid damage to the equipment and insure the safety of the user, please read through the manual and retain it for future information.

Safety and Caution:

Caution

The temperature of the hot-air nozzle reaches 400°C, which can cause injury, fire and other accidents because of improper usage. Always take the following precautions:

1. Never use this station on or near other humans or animals.
2. Never operate or store near flammable gas or substances. Always use in a well ventilated area.
3. After use, switch the power off. The unit will continue its cooling phase and automatically shut off when the hot air temperature is lowered. Do not unplug the unit until cooling completes.
4. Do not shake, strike, drop, or otherwise abuse the main unit, hand pieces, or any buttons. Doing so could cause the unit to short out or not work properly.
5. Do not operate with wet hands or around moisture; this could result in a short circuit or electronic shock. Store unit in a cool, dry place.
6. Keep away from children.
7. Use only original parts; do not attempt to adapt unit for accessories that were not meant for this unit.
8. Temperature will vary from the models of the nozzles, which is normal.
9. Do not touch the iron tip or surrounding metals.
10. Change the components or tip after powering and waiting for unit to cool.
11. Do not use this device for work other than soldering.
12. When replacing tip, don't tap or bang unit on another surface to remove tip.
13. Never pull on the power cord to unplug unit; carefully grasp the end plug.
14. Avoid inhaling solder fumes and smoke; a fume absorber is highly recommended.
15. Always pay close attention to the hot ends while working; do not leave unit unattended
16. Please pay attention to the specifications of the power supply and what your specific work demands.

Characteristics:

1. This unit utilizes an advanced internal processor with thermo-control and thermo-stability to ensure a precise working temperature.
2. Dual LCD screen allows the user to see the temperature setting and the actual work temperature at a glance.
3. High output power for quick heat up to working temperature.
4. High flow diaphragm pump suitable for a variety of nozzles to desolder SMD components.
5. Automatic sleep mode and efficient power usage save energy.
6. Shortcut keys on the handle make it more convenient for the user to adjust temperature and air volume.
7. Three groups of storage functions for fast switching between different groups of temperature and hot-air volume.
8. All units are equipped with temperature compensation, which ensures a stable state of operation.
9. Indicator for malfunction alert.

Machine diagram:



List of Included Accessories	
Power Supply (main unit)	1 Unit
Power Cord	1 Strip
Nozzle	1 Set
Handpiece Bracket	1 Set
Handle	1 Piece
Iron Holder	1 Set
User Manual	1 Copy



WARNING: Place the iron or hand piece in their holding stands when not in use. Follow the follow precautions when using the hot air hand piece:

- Because of the high temperatures this device can achieve, the threat of fire or other burn damage is likely if this unit is not used with care, especially when used near flammable materials;
- Do not apply heat to the same place for a long time;
- Do not use near flammable gas or materials;
- Place the iron or hand piece on its stand after use and allow it to cool completely before storage;
- Do not leave the unit unattended when it is switched on;

Technical Specifications:

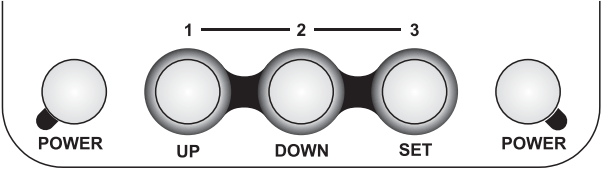
Total power	About 900W (max)	Heating:800W(max), pump (diaphragm):40W Soldering Station:50W
Range for temperature controlling	Hot Air Rework Station	100-500°C (212-932°F)
	Soldering Station	200-480°C (392-896°F)
Temperature unit	°C/°F	Convertible
Temperature controlling stability	Static	2°C
Temperature controlling accuracy	Static	10°C
Calibration range	Celsius	50°C ~ -50°C
	Fahrenheit	-58°F ~ 122°F
Malfunction alert	Heating elements	Displaying H-E
	Sensor	Displaying S-E

Function diagram:



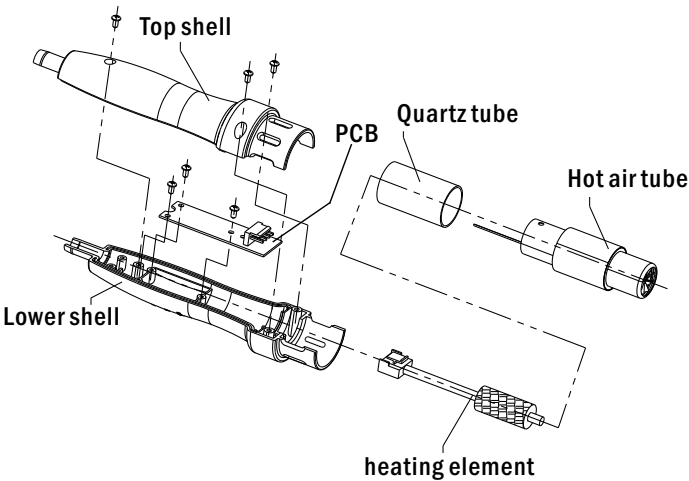
1 - Hot-air nozzle	8 - Soldering iron connection
2 - Hot-air hand piece bracket	9 - Iron holder
3 - Hot-air hand piece button group	10 - Sponge
4 - Hot air hand piece	11 - Soldering iron hand piece
5 - Soldering iron display	12 - Power switch
6 - Hot-air hand piece connection	13 - Hot air display
7 - Function buttons	

Button instructions:



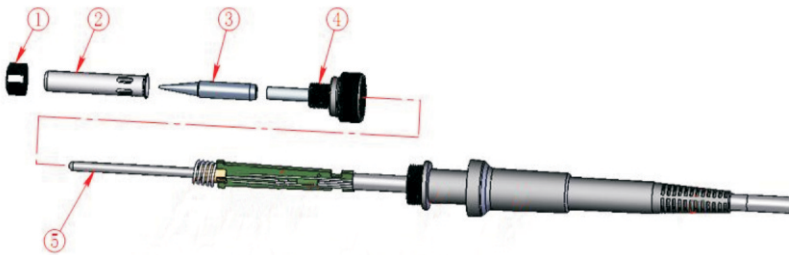
Position	Knob/Button	First function	Second function (short press < 2s)	Second function (long press > 2s)
Front Panel Buttons	POWER	Work and shutdown of the rework station	N/A	N/A
	UP	Increase value	Press with button: sets hot air settings to preset 1.	Press with button: saves current hot air settings to preset 1.
			Press after button: sets soldering iron temperature to preset 1.	Press with button: saves current soldering iron temperature to preset 1.
	DOWN	Decrease value	Press with button: sets hot air settings to preset 2.	Press with button: saves current hot air settings to preset 2.
			Press with button: saves current soldering iron temperature to preset 2.	Press with button: saves current soldering iron temperature to preset 2.
	SET	Set temperature and confirmation varies of settings	Press with button: sets hot air settings to preset 3.	Press with button: saves current hot air settings to preset 3.
			Press with button: saves current soldering iron temperature to preset 3.	Press with button: saves current soldering iron temperature to preset 3.
	POWER	Work and shutdown of soldering station	N/A	N/A
Hot-air Hand Piece Buttons	UP	To increase the set temperature or air value of hot-air station		
	DOWN	To decrease the set temperature or air value of hot-air station		
	⊗	Each press toggles between the ability to set the value of temperature, air volume, or to turn the hot air handpiece off (air will continue to flow through the nozzle until cooled).		

- E. Carefully install new heating element in PCB board.
F. Reassemble by reversing these steps.



Please follow the following steps for to replace the heating element in the soldering pencil:

- A. Power down and unplug unit; allow unit to cool completely.
B. Using the following diagram, unscrew the nut ①, remove the stainless steel cap ② and iron tip ③, then unscrew the fixed holder④, and desolder the heating element ⑤.
C. Install the new heating element and reassemble the iron by reversing the order of steps in “B”.



5.Standby

By pressing the POWER button at the right of panel, the iron will go into a standby mode (diagram 2). If you power the entire unit off with the main power switch, the unit will remain in this standby mode until the heating element temperature are below 100°C.

Standby state of screen B



(diagram 2)

6.Error/Fault indication

- A. When "H-E" is displayed and there is no temperature (diagram 19), there is a fault with the heating element.
- B. When "S-E" is displayed there is a fault in the temperature sensor or the sensor circuit (diagram 20).

Heating Element Error



(diagram 19)

Sensor Error



(diagram 20)

III. Conversion of temperature unit

While the unit is powered off, simultaneously hold the UP, DOWN and SET buttons while then turning on the main power switch to switch °C/°F.

IV. Replacement of heater

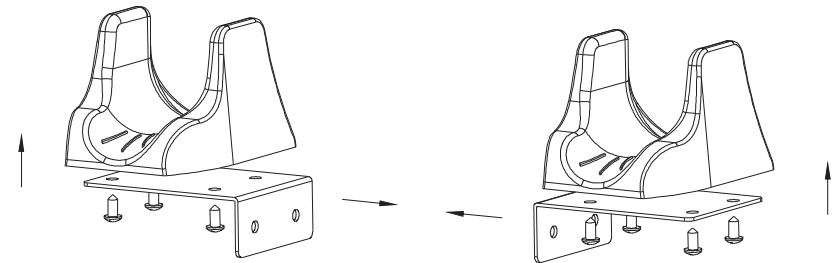
Please follow the following steps for the successful replacement of the heating element of hot-air rework station:

- Power down and unplug the unit; allow unit to completely cool.
- Loosen the three screws of the handle, as shown in the diagram.
- Dismantle the upper cover of the handle, pull out the ground wire on the duct and remove the fan.
- Remove the heating element from the PCB board.

Installation:

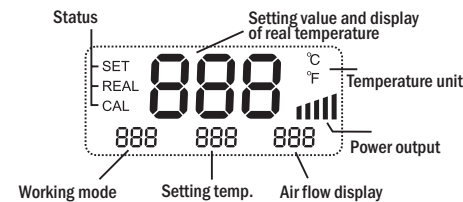
The hot-air hand piece bracket can be installed on either side of the main unit. Please see the following illustration:

- Choose which side you prefer the hand piece bracket to be attached to, and fix the plastic holder to the bracket by tightening the four screws to the base (as shown in illustration below)
- Align the two side holes of the bracket with those on either side of the main unit, and attach with two screws. Check stability by placing hand piece in bracket.

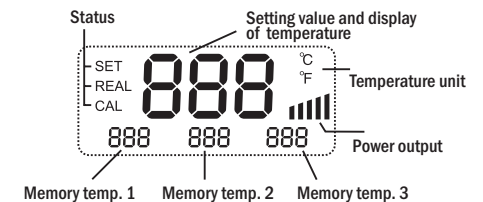


Introduction for LCD display:

SMD Reqork Display



Soldering Station Display



LCD displays

- Display " - - - " means the device is in standby mode
- The top display shows the working state of rework station, and the bottom shows that of the soldering station
- Mode " P _ _ " means rework station is under the normal setting condition.
- Mode " P 0 1 " means rework station is set to preset 1.
- Mode " P 0 2 " means rework station is set to preset 2.
- Mode " P 0 3 " means rework station is set to preset 3.
- Both displays read " OFF " in the temperature when the device is in standby.
- The SMD display will read "SLP" when the unit is in automatic sleep mode.

Power:

When you switch the main power on, the unit will be in standby mode.

Standby of SMD Rework



(diagram 1)

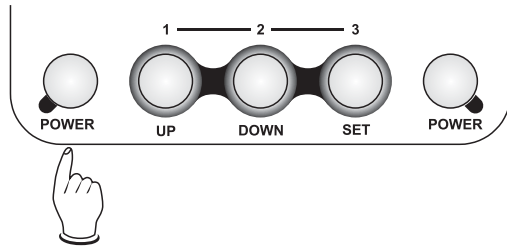
Standby of Soldering Station



(diagram 2)

I. REWORK STATION

1. Power on the rework station hot air feature by using the POWER button on the left side of the controls.



2. If the handle is on the bracket, the unit will remain in sleep mode (Standby) until hand piece is lifted from the bracket. When hand piece is used, the display will show the setting temperature for approximately 3 seconds (diagram 4) and then displays the actual temperature (diagram 5).

Standby/Sleep Mode



(diagram 3)

Setting Temperature



(diagram 4)

Actual Temperature

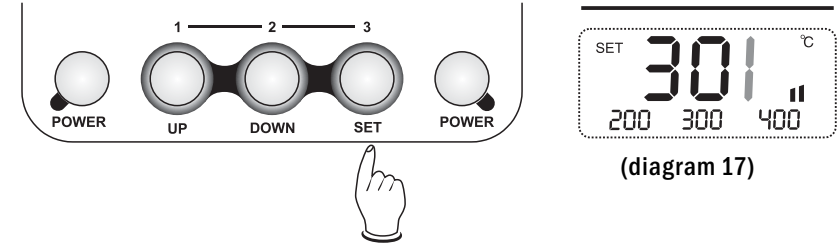


(diagram 5)

3. Temperature Settings

There are two methods to set temperature of hot-air rework station.

- A. On the main unit, press the SET button until the temperature value on the top display flashes. Adjust the temperature using the UP and DOWN buttons.

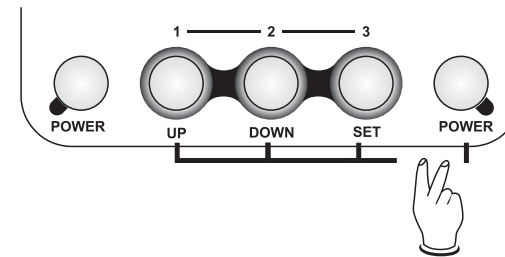


(diagram 17)

3.Preset keys programming

To set a new preset on, first adjust the temperature to the desired value to be stored. Then simultaneously hold down (approximately 3 seconds) POWER button and at the left of panel along with the desired preset button (1, 2, or 3) until you hear the confirmation beep, the program position will be displayed above "Mode".

To use one of the presets, momentarily (less than 1 second) press the left POWER button and the desired preset (1, 2, or 3). The preset value will be active.



4.Temperature calibration

While unit is powered on, hold down both POWER button right of the panel and "X" button on the hand piece to calibrate soldering station temperature (diagram 18). Temperature value can be adjusted by pressing UP or DOWN buttons. Pressing the SET button to confirm storage and exit the calibration (diagram 11).



(diagram 18)

10. Error/Fault indication

- A. When "H-E" is displayed and there is no temperature (diagram 13), there is a fault with the heating element.
- B. When "S-E" is displayed there is a fault in the temperature sensor or the sensor circuit (diagram 14).

Heating Element Error



(diagram 13)

Sensor Error

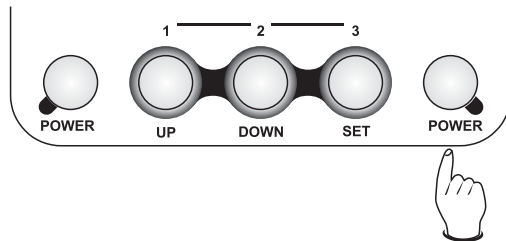


(diagram 14)

II. SOLDERING STATION

1. Power on

From the standby mode, press the POWER button to the right of the controls. The setting temperature (with SET) is displayed for about three seconds, then the actual temperature (with REAL) is displayed while the unit heats up.



Temperature Setting



(diagram 15)

Actual Temperature



(diagram 16)

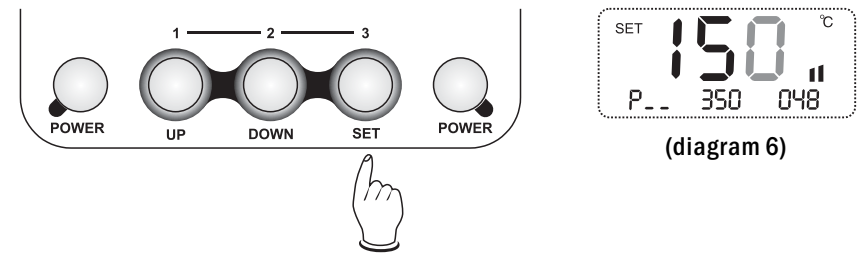
2. Temperature setting

On the main unit, press the SET button until the temperature value on the bottom display flashes. Adjust the temperature using the UP and DOWN buttons (diagram 17).

B. You can also set the hot air temperature from the hand piece controls.

Press the "⌘" button until the temperature flashes. Use the UP and DOWN buttons on the hand piece to adjust the temperature.

Notice: If you press and hold UP or DOWN buttons while setting the temperature or air flow, the value will quickly jump for faster adjustment



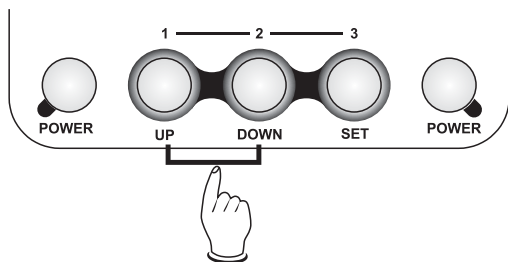
(diagram 6)

4. Hot-air volume settings

There are two methods to set hot-air volume of the rework station:

A. On the main unit, press the UP and DOWN buttons while the "Real" temperature is being displayed on the top display. If the unit is in a temperature setting mode, just press the SET button until the "Real" temperature is displayed, and the °C/°F is flashing.

B. You can also set the hot-air volume via the hand piece of the rework station. Press the "⌘" button until the air volume value flashes. Use the UP or DOWN buttons on the hand piece to adjust the hot-air volume.

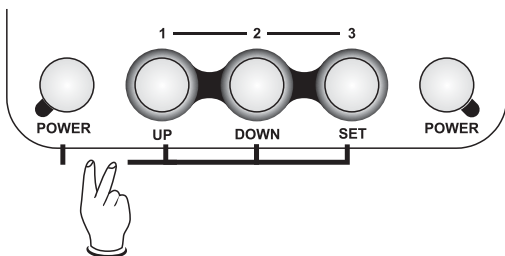


(diagram 7)

5. Storing the Temperature values

To set a new preset on, first adjust the temperature and air volume to the desired value to be stored. Then simultaneously hold down (approximately 3 seconds) POWER button and at the left of panel along with the desired preset button (1, 2, or 3) until you hear the confirmation beep, the program position will be displayed above "Mode".

To use one of the presets, momentarily (less than 1 second) press the left POWER button and the desired preset (1, 2, or 3). The preset value will then be active.



Working state of Preset 1



(diagram 8)

Working state of Preset 2



(diagram 9)

Working state of Preset 3



(diagram 10)

6. Temperature compensation and calibration

While unit is powered on, hold down both POWER button left of the panel and "X" button on the hand piece to calibrate soldering station temperature (diagram 11). Temperature value can be adjusted by pressing UP or DOWN buttons. Pressing the SET button to confirm storage and exit the calibration.



(diagram 11)

7. Auto Sleep Function

When the unit is powered on, and the hot air rework station is in working mode, the unit will go into an automatic sleep mode when the hand piece is placed in the holding bracket. When the hand piece is removed, the unit will heat up to the last used settings. While in sleep mode, the unit will display "SLP" when the real temperature falls below 100°C. (diagram 3)

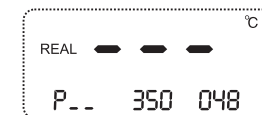
Screen A: Standby



(diagram 3)

8. Switching heater instantly on/off

While using hot air hand piece, continually press "X" button until the display reads "---" will temporarily turn off the heat, but continue to deliver air through the nozzle. Press "X" again to return power to the heating element.



(diagram 12)

9. Standby

The device will display real current temperature and air volume, and will go into a low-power standby mode after pressing POWER button at the left of the controls (diagram 1A). When nozzle falls below 100°C during standby mode, the unit will display "---" (diagram 1). If power is off, and the station power is switched off, the entire unit will power off after the temperature falls below 100°C.



(diagram 1A)



(diagram 1)