

## ESD-safe 2-in-1 Soldering and Hot Air Rework Station

Statement: The company reserves the right to improve & upgrade products, product specifications and design are subject to change without notice.

# OPERATION INSTRUCTION

English



Made in China

Thank you for purchasing this product. Please read the manual carefully before operating and keep this manual for future reference.

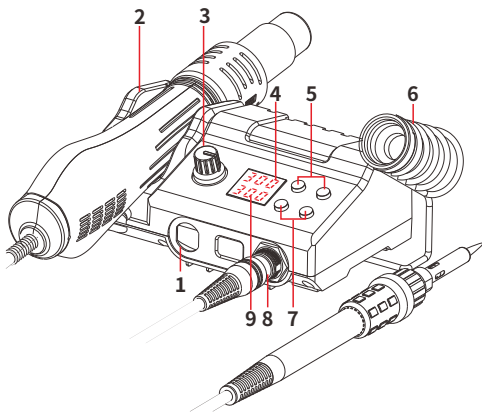
## SPECIFICATIONS

Main Unit Dimensions	L150×W90×H58mm ±5mm
Operating ambient temperature	0°C~40°C/32°F~104°F
<b>Hot Air Rework Station</b>	
Air Delivery	Brushless fan with smooth air delivery
Air Volume	≤120L/min
Temperature range	100~480°C/212°F~896°F
Display	LED Nixie
<b>Soldering Station</b>	
Temperature range	200°C~480°C/392°F~896°F
Display	LED Nixie
Soldering tip to ground resistance	<2 ohms

## I. APPLICATIONS

1. This unit is suitable for desoldering and soldering various types of components, such as SOIC, CHIP, QFP, PLCC, BGA, SMD. This is especially great for desoldering sockets pins.
2. This unit is applicable for heat-shrink, drying, paint removal, conformal coating removal, defrosting, pre-heating, glue soldering and more.

## II. PRODUCT DIAGRAM



1. Cord (Hot Air Gun)
2. Holder (Hot Air Gun)
3. Air Volume Adjustment Knob
4. Temperature Display (Hot Air Rework Station)
5. Temperature Adjustment Buttons (Hot Air Rework Station)
6. Soldering Iron Holder
7. Temperature Increase/Decrease Buttons (Soldering Station)
8. Receptacle (Soldering Iron)
9. Temperature Display (Soldering Station)

## III. OPERATION INSTRUCTIONS

### Hot Air Rework Station

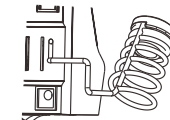
1. Place the rework station properly and place the hot air gun onto the hot air gun holder.
2. Install a suitable nozzle to the hot air gun (Use of large-diameter nozzle is recommended). Connect the station's power cord and plug it into the electrical outlet.
3. Turn ON the master power switch at the rear of the station. When the hot air gun's temperature display shows the value "---", it indicates that the hot air gun is in Standby mode. Set your desired temperature by pressing the temperature increase or decrease button, then pick up the hot air gun. The indicator light (the dot located at the bottom-right corner of the display) for the hot air gun will light up to indicate the air gun is operating. The indicator light will be constantly ON when heating up, blinking rapidly and regularly when the hot air gun stabilizes, and turned OFF when the air gun is cooling down. Set the desired air volume by turning the air volume adjustment knob. The hot air rework station is ready to operate once the hot air gun's temperature stabilizes. When the temperature is stabilized, the indicator light for the hot air gun will blink rapidly, and the high-precision PID program will track the hot air gun's actual temperature at high speed and execute temperature compensations. In this state, the hot air gun's temperature is stabilized with high stability and high precision.

**300** ← Indicator for program tracking temp. at high speed and making temp. compensation.

4. After the operation is complete, return the hot air gun to the holder. Press both the hot air station's temperature INCREASE and DECREASE buttons simultaneously to turn OFF the hot air station. Once turned off, the hot air station's indicator will be OFF, and the hot air gun begins cooling the heating element by continuing the cool air output until the hot air gun is cooled to below 100°C/212°F. Once done cooling, the hot air gun's temperature display will be turned off. When the hot air station is not in use for an extended period, power OFF the station and DISCONNECT the power cord.

### Soldering Station

1. Insert the soldering iron holder into the slot as shown in the graph, and press the holder in all-the-way.
2. Connect the soldering iron to the station and place the soldering iron into the iron holder.
3. Turn ON the master switch at the rear of the station, and the soldering station will begin heating. The station's operating indicator light (the dot located at the bottom-right corner of the display) will light up. The indicator will be ON constantly when the soldering iron is heating up, blink rapidly and regularly when the iron's temperature stabilizes, OFF when the soldering iron is cooling off. When the station's temperature is stabilized (with the operating indica-



tor light blinking rapidly and regularly), begin your operation. CAUTION: Before increasing the temperature to your desired value when using a brand new soldering iron tip, set the temperature to 250°C/482°F. When the iron's temperature is just hot enough to melt solder, tin the soldering iron tip with a layer of solder (use of rosin-core solder is recommended).

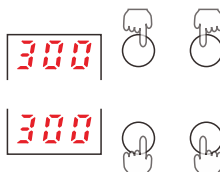
**300** ← Indicator for program tracking temp. at high speed and making temp. compensation.

4. When the operation is complete, use a dampened sponge or metal wool ball to clean the soldering iron tip. Re-tin the soldering iron tip with a new layer of solder, then put the soldering iron back to the holder. Press both the soldering station temperature INCREASE and DECREASE buttons at the same time to turn OFF the soldering station. If the station is not in use for an extended period, turn OFF the power switch and DISCONNECT the power plug.

## IV. FUNCTIONS CONFIGURATION

### Powering ON/OFF (Soldering Station & Hot Air Rework Station)

1. Turn ON the master power switch, and press both the hot air temperature INCREASE and DECREASE buttons at the same time to turn the hot air rework station ON or OFF.
2. Turn ON the master power switch, and press both the soldering station temperature INCREASE and DECREASE buttons at the same time to turn the soldering station ON or OFF.

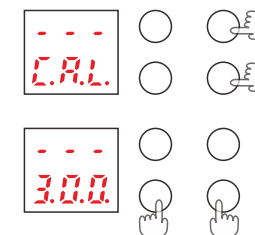


### Temperature Calibration

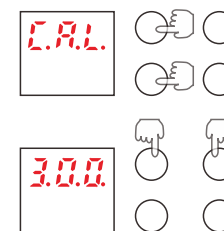
*Temperature discrepancies may occur due to the change in the environment's temperature or due to the replacement of the heating element, iron tip and other components. You can correct the discrepancies with this function. The temperature calibration function can significantly improve work efficiency and prolong the lifespan of the heating element.*

1. Temperature Calibration (Soldering Station)
  - 1-1. After the soldering station's temperature stabilizes, press and hold both the hot air and soldering station temperature INCREASE buttons for approximately 1 second. Upon entering the calibration interface, the display will alternate with the set temperature value and the value "CAL", along with 3 dots.

- 1-2. Press the soldering station temperature INCREASE or DECREASE button to input the measured temperature.
- 1-3. Once the input is done, press both the soldering station temperature INCREASE and DECREASE buttons to confirm the input. Then, the system will automatically calibrate the temperature and exit the temperature calibration interface.



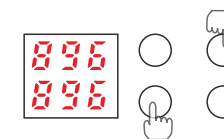
2. Temperature Calibration (Hot Air Rework Station)
  - 2-1. After the hot air station's temperature stabilizes, press and hold both the hot air and soldering station temperature DECREASE buttons for approximately 1 second. Upon entering the calibration interface, the display will alternate with the set temperature value and the value "CAL", along with 3 dots.
  - 2-2. Press the hot air station temperature INCREASE or DECREASE button to input the measured temperature.
  - 2-3. Once the input is done, press both the hot air station temperature INCREASE and DECREASE buttons to confirm the input. Then, the system will automatically calibrate the temperature and exit the temperature calibration interface.



### Fahrenheit/Celsius Display mode

*This function allows the station to adapt to user preferences in different regions*

1. Turn ON the master power switch.
2. Press and hold both the soldering station temperature DECREASE button and hot air temperature INCREASE button for approximately 2 seconds to enter the Celsius/Fahrenheit display mode interface.



### Hot Air Fail-Safe Protection

If the air gun abnormally stops blowing air during the operation, the system will automatically shut down the power of the heating element to prevent the air gun handpiece from burning out due to accumulated heat; this further enhances the product's safety.

### ● Sleep Mode (10-Minute)

The station will automatically self-detects its own operation status, and when the station detects no usage and movement for longer than 10 minutes, the soldering iron will enter sleep mode. This could effectively prevent the oxidization of the soldering iron tip, extend the lifespan of the soldering iron tip, save energy, and protect the environment.

#### To start-up from sleep mode:

- Shake the soldering iron handle a few times,
- press any button on the soldering station,
- Turn OFF and then turn ON the power switch.

### ● Automatic Shutdown (Soldering Station)

Once the soldering station is in sleep mode, the system begins counting down. If the soldering station did not exit sleep mode in 20 minutes, the soldering station turns OFF automatically to conserve energy and protect the environment.

## V. MAINTENANCE AND PRECAUTIONS

### ● Hot Air Rework Station

- Keep the air outlet clear and free of blockages at all times.
- The installation of the hot air nozzles MUST be carried out ONLY when the steel pipe and nozzle have cooled. Install the nozzle correctly, DO NOT install the nozzle with brute force, pull the edge of the nozzle with tweezers, or over-tighten the screws.
- Select the appropriate nozzle based on your operation requirement (temperature may vary when using nozzles in different diameters). When using nozzles smaller than the standard machine nozzles, you MUST use the maximum air volume with a relatively lower temperature setting. Complete this operation in the shortest possible duration to avoid damaging the hot air gun.
- Keep a minimum distance of 2mm between the object and the hot air gun's air outlet.
- DO NOT allow the hot air to come in direct contact with facial parts, and beware of the danger of burn injuries. Upon the first use, the hot air gun may emit white fumes, and the white fume will dissipate in a short while.

#### NOTE:

*The station's hot air gun and soldering iron handles use high-strength stainless steel tubes. The station goes through 4 times or more testing, inspection, and calibration procedures before rolling off the assembly line. The steel tube may exhibit light bronze color as a result of our quality control efforts. It is normal to have a slightly bronzed steel tube when using a brand-new station, rest assured for regular usage.*

### ● Soldering Station

- If a layer of oxidization forms on the surface of the soldering iron tip, a misconception can be created that the soldering tip cannot heat up properly to melt the solder and do the tinning. But the actual temperatures of both the heating element and soldering tip are high. In such an instance, please do not increase the temperature value confusedly but use a metal wool ball to remove the oxidization following the steps below:

**A. Set the temperature to 300°C (572°F).**

**B. Once the temperature has stabilized, gently rub the soldering iron tip inside the metal wool ball.**

**C. When the oxidization is partially removed, continue applying solder onto the tip while rubbing it until the solder completely adheres to soldering iron tip. If the tip is too severely oxidized beyond cleaning, replace the tip with a new one.**

- DO NOT use metal files to remove the oxidization on the soldering iron tip. If the soldering iron tip deforms or rusts, replace it with a new tip.
- DO NOT apply excessive force on the soldering tip when soldering. Doing so will not only damage the iron tip but also not improve the heat transfer.
- When placing the soldering iron back in its holder to idle after a high-temperature operation, adjust the temperature to 250°C (482°F) or below for idling. Failure to do so, and leaving the soldering iron tip to idle on a high-temperature setting will cause the accelerated aging of the heating element, and shorten the lifespan of the heating element and soldering iron tip.
- After every operation, always clean the soldering iron tip, then coat it with a layer of solder to prevent its oxidization.

## VI. TROUBLESHOOTING

- The display shows "S-E" – This is an indication that the sensor module of the soldering station or the sensor module of the air gun is faulty. In such an instance, you need to replace the respective heating element (the heating element and the sensor modules). The other possible cause is that the iron handpiece is not attached to the station (please power OFF the station, attach the iron handpiece to the station then turn ON the station again).
- The display shows "F-1/F-2" - This indicates that the air gun is in Hot Air Fail-safe mode; please check the air gun and its power circuit.
- SLP – This is an indication that the soldering station is in Sleep Mode
- When replacing the heating element, take notice of the original connecting order and colors of the wires which MUST NOT be connected incorrectly.



# Tip style (specifications and sizes)

900M Series Tip Out Diam  $\phi$  6.5mm

 900M-T-K 30°C/54°F 5.0mm 15mm	 900M-T-R 0°C 3.2mm 5.0mm 17mm	 900M-T-RT 0°C 2.0mm 4.2mm 17mm	 900M-T-SI 0°C 2r 13mm	 900M-T-I -10°C/-18°F 2r 17mm	 900M-T-H -20°C/-36°F 3.5mm 1.5mm 25° 19mm	 900M-T-1.8H -10°C/-18°F 1.8mm 7.5mm 25° 14mm	 900M-T-S4 0°C 2.0mm 15mm
 900M-T-LB -10°C/-18°F 2r 25mm	 900M-T-0.5C 0°C 15mm 45° $\phi$ 0.5mm	 900M-T-0.8C 0°C 17mm 45° $\phi$ 0.8mm	 900M-T-1C 0°C 15mm 45° $\phi$ 1.0mm	 900M-T-1.5CF 0°C 15mm 60° $\phi$ 1.5mm	 900M-T-2C 0°C 17mm 45° $\phi$ 2.0mm	 900M-T-3C 0°C 17mm 45° $\phi$ 3.0mm	 900M-T-4C 0°C 17mm 45° $\phi$ 4.0mm
 900M-T-0.8D 0°C 17mm $\phi$ 0.8mm	 900M-T-1.2D 0°C 17mm $\phi$ 1.2mm	 900M-T-1.6D 0°C 17mm $\phi$ 1.6mm	 900M-T-2.4D 0°C 17mm $\phi$ 2.4mm	 900M-T-3.2D 0°C 17mm $\phi$ 3.2mm	 900M-T-1.2LD -10°C/-18°F 25mm $\phi$ 1.2mm	 900M-T-SB 0°C 14mm 2r 2mm	 900M-T-B 0°C 17mm 5r

## For reference: compatible parts

### Nozzle style (specifications and sizes)

The nozzles sizes match with their corresponding IC sizes.

 Airflow 0.8 (0.03) 1.8 (0.07)	QFB	SOP	PLCC	SOJ	BGA(CSP)	A1325 Single-tube $\phi$ 1.5x5.10 (0.06x0.02-0.39) Pin distance adjustable 5(0.2) 5-10mm 10(0.39)	 Front nozzle 1.5(10) (0.06)
A1125 QFP 10x10 (0.39x0.39)	A1126 QFP 14x14 (0.55x0.55)	A1127 QFP 17.5x17.5 (0.68x0.68)	A1128 QFP 14x20 (0.55x0.78)	A1129 QFP 28x28 (1.1x1.1)			
 10 (0.39) A:10.2(0.4) B:10.2(0.4)	 15 (0.59) A:15.2(0.6) B:15.2(0.6)	 19 (0.75) A:19.2(0.76) B:19.2(0.76)	 21 (0.83) A:15.2(0.6) B:21.2(0.83)	 29 (1.14) A:29.7(1.17) B:29.7(1.17)			
PLCC 17.5x17.5 (44pins) A1135 (0.68x0.68)	PLCC 20x20 (52pins) A1136 (0.78x0.78)	PLCC 25x25 (68pins) A1137 (0.98x0.98)	PLCC 30x30 (84pins) A1138 (1.18x1.18)	PLCC 12.5x7.3 (18pins) A1139 (0.49x0.49)			
 15 (0.59) A:18.5(0.73) B:18.5(0.73)	 19 (0.75) A:21(0.83) B:21(0.83)	 24 (0.94) A:26(1.02) B:26(1.02)	 26 (1.02) A:26(1.02) B:26(1.02)	 6.9 (0.27)			
PLCC 11.5x11.5 (28pins) A1140 (0.45x0.45)	PLCC 11.5x14 (28pins) A1141 (0.45x0.55)	BOFP 24x24 (0.94x0.94) A1182	TSOL 18.5x8 (0.73x0.31) A1187	SOP 11x21 (0.43x0.83) A1257			
 10(0.39) A:13(0.51) B:13(0.51)	 10(0.39) A:15(0.59) B:13(0.51)	 21(0.83) A:24.2(0.95) B:24.2(0.95)	 18.5(0.73)	 11.7(0.46)			
A1258	A1259 SOP 13x28 (0.51x1.1)	A1260 SOP 8.6x18 (0.34x0.71)	A1261 OFP 20x20 (0.78x0.78)	A1262 OFP 12x12 (0.47x0.47)			
 8.2(0.32)	 13.5(0.53)	 8.7(0.34)	 21(0.83)	 12(0.47)			
A1263 QFP 28x40 (1.1x1.57)	A1264 QFP 40x40 (1.57x1.57)	A1265 QFP 32x32 (1.26x1.26)	A1124 Single-tube $\phi$ 2.5 (1.1x1.57)	A1130 Single-tube $\phi$ 4.4 (0.17)			
 39(1.54) A:27.2(1.09) B:39.7(1.56)	 39(1.54) A:40.2(1.58) B:40.2(1.58)	 31(1.22) A:32.2(1.27) B:32.2(1.27)	 2.5(10) (0.09)	 4.4(10) (0.17)			
A1131 SOP 4.4x10 (0.17x0.39)	A1132 SOP 5.6x13 (0.22x0.51)	A1133 SOP 7.5x15 (0.3x0.59)	A1134 SOP 7.5x18 (0.3x0.7)	A1142 Curved single tube 1.5x3 (0.06x0.12)			
 4.8(0.19)	 5.7(0.22)	 7.2(0.29)	 7.2(0.28)	 1.5(10) (0.06x0.12)			