

ATTEN INSTRUMENTS

- RF Microwave Instruments • RF Microwave Components
- Spectrum Analyzers • Regulated DC Power Supply
- Regulated AC Power Supply • Switching DC Power Supply
- Digital Storage Oscilloscope • Signal Generator • Attenuator • Amplifier
- 850 Rework Station • 936 Constant Temp Soldering Station
- Electronic Instruments • Electronic Tools

FRANCHISER

AT860D

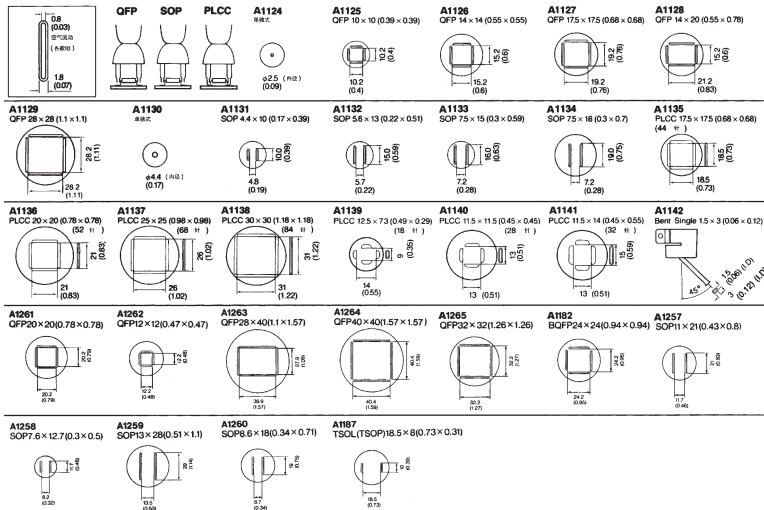
**SMD REWORK
STATION**

**Thermo-Control Digital-Display & Anti-Static
User's Manual**

List of accessories

AT860D	1 unit
Power cord	1 strip
nozzle	1 set
bracket	1 set
card	1 PC
User manual	1 copy

Nozzles



⚠ Caution:

The temperature of the nozzle is 400 °C so it may lead to injury, fire and other accident because of improper usage. Please abide by the following terms.

1. Don't make the rework station be against people or animals. And never use it as a hair drier, touch the heating element or blow the shin directly.
2. Never use it near the flammable gas or substance, or never put it beside them after use.
3. After use, the power should be off and it will be automatically off when the hot air temperature is lowered. (There is fuse inside, so great attention must be paid to superheat in case of accident.)
4. Never make the machine fall or shake heavily, never put the heavy things on it or press the buttons improperly.
5. Never operate with wet hands or wet wire in order not to result in short circuit or electronic shock.
6. Keep away from children.
7. Don't replace the original nozzles.
8. Temperature will vary from the models of the nozzles, which is normal.
9. When operation, please pay attention to the specifications of the power supply, for there are rework station with different specifications, so be careful of selection.

Characteristics

This model is a no-lead desoldering tool designed for the mid and high customers, which is suitable for the lab of R&D, production, scientific research and so on, and can desolder all kinds of SMD devices.

1. Constant temperature and closed-loop control circuit; accurate temperature.
2. High output power and rapid warming.
3. High flow diaphragm pump suitable for desoldering the large SMD components.
4. Three groups of storage function can bring a very fast mode of operation to the customers.
5. Intuitive double-header digital display of temperature and air volume can make the customers see the output condition of the equipment clearly.
6. Dormancy, automatic shutdown and other power-saving features.
7. Shortcut keys of handle can make users more convenient to adjust temperature and air volume.

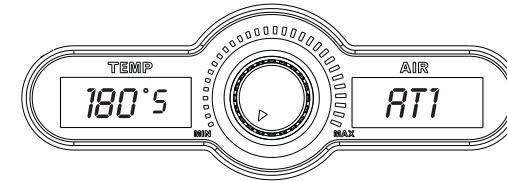
Careful of selection

1	Model	AT860D	Intelligent SMD Rework Station AT860D
2	Total Power	About 900W(max)	Heating 800W(max) Pump (Diaphragm) 40W
3	Temperature Range	150–500°C 302–932°F	Display Range of 3-bit LED Digital Tube
4	Temperature Unit	°C/°F	Changeable
5	Temperature Accuracy	± 10°C	Static
6	Calibration Temperature	± 50°C –58°F ~ +122°F	Display of LED 3-Digital Tube; The sign bit is showed on the 100-bit.
7	Setting Storage	Three Groups	Shortcut Storage with 1, 2, 3 levels
8	Air Volume Range	020 – 099 levels	Display of LED 3-Digital Tube
9	Dormancy	Left Screen “SLP” Right Screen “OFF”	Stopping heating, cold air delay and then being in the condition of dormancy and standby
10	Alarm	No Heating	H-E display when ringing
		over temperature	S-E display when ≥550°C ringing; then cutting off heating
11	Shutdown	Normal shutdown	Cold Air Delay Shutdown; Power off

Adjustment of factory mode

This mode has been finished in the factory. Generally speaking, there is no need to adjust. Only if the error is still comparatively large after the user's calibration, it will need adjusting.

- A. When the machine is in the cold state, select the proper temperature measuring instruments and fix the testing probe.
- B. Make the sign “CALL” on the multifunctional card correspond to the direction of the panel groove; insert the card into the groove; press on the storage key “3” on the front panel and at the same time make the power switch on.
- C. When 180 – second countdown is displayed on the screen of the temperature display, the shown unit is “s” and air volume is “AT1”; the machine is in the mode of factory adjustment. During the period, the equipment is into the process of constant temperature.



- D. When 180s countdown is over, the temperature meter is in the position of the current knob and flickers, and the current unit °C/°F sign is shown. And then adjust the multifunctional knob, and press ▲/▼ on the front panel or on the handle to make the temperature correspond to the actual temperature measured by the temperature-measuring instruments. Then the data input is finished. Lightly press the confirmation key ※ to confirm and save the result. After that, the adjustment is finished.

Remarks: Operation should be done by a professional, for nozzles are burnt at a high temperature.

Replacement of heater

To replace the heater, power should be cut off and the heater should be cooled.

1. Please refer to the following diagram to loosen the three fixed screws on the handle.
2. Dismantle the upper cover of the handle; pull out the ground wire on the duct and take out the duct.
3. Take out the heater from PCB board.
4. Insert the new heater into the PCB board and pay attention to the proper installation of the heater.
5. Contrary to the dismantling process, install the handle.

Power off

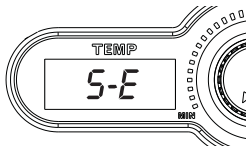
Please adjust the power switch to the position "OFF" when the operation is over. Then the system is into the mode of auto-cold delay shutdown. And the power will be automatically cut off after the equipment is cooled.



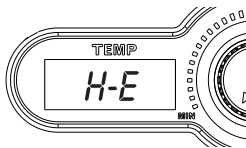
Fault detection

There is the function of automatical detection. If the equipment is out of order, it can be repaired according to the following methods when there are failures as follows

A.When "S-E" is displayed on the screen of temperature display with alarms, which last 20 times, it signifies that there is something wrong with the sensor or the circuit of the sensor. In this case, you only need to replace the heating element(integrated structure of heating element and sensor).



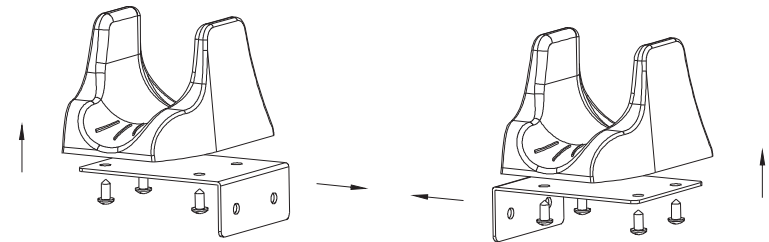
B.When "H-E" is displayed on the screen of temperature display, there is no hot air in the air nozzle and the digits flicker with alarms, which last 20 times, it indicates that the heating components are in the condition of open circuit or the connection of the heaters fails. If so, reset or replace the heating element.



Installation

The brackets for the handles must be installed when operating for the first time. Please see the following illustration.

1. Please fix the bracket by tightening the four screws according to the illustration and your personal habit.
2. According to your selection, dismantle the two screws on the left or on the right, which fix the bracket of the handle.
3. Put the two installation holes of the bracket to the two fixed screw holes of the machine, and then tighten the dismantled two screws.
4. Put the components of the handle on the bracket to check if it is suitable.

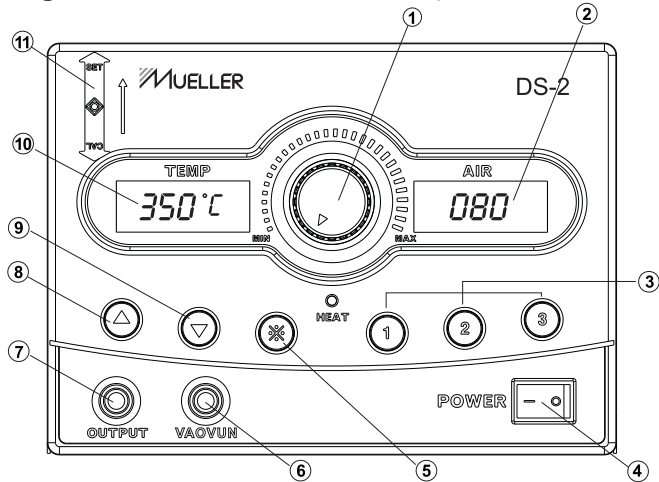


Button Instructions

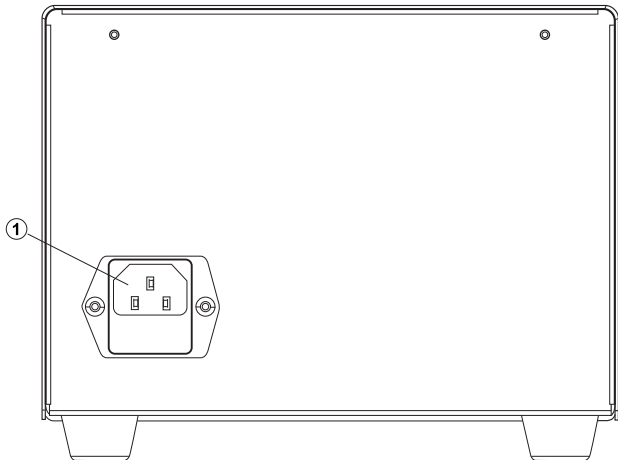
	※	Starting function and numerical value confirmation	
Mode No. 1 of Temperature Settings	▲	Increasing value by degrees	The sign SET should be upturned to set temperature
	▼	Value Descending	
Mode No. 2 of Temperature Settings	Adjusting Knob	Low adjustment on the left and high adjustment on the right	
Method of Storing data		Long press (> 3s) to save the button as shortcut	
Method of Taking data	1, 2, 3	In normal condition, press this button to read setting temperature	
Temperature Calibration	※	Long press(> 3s) to Start function and numerical value confirmation	The sign SET should be upturned to set temperature
	▲	Increasing value by degrees	
Adjustment of Air Volume	▼	Value Descending	Real-time Adjustment
	Adjusting Knob	Low adjustment on the left and high adjustment on the right	
	▲	Increasing value by degrees	
Buttons of handles	▼	Value Descending	Buttons on the same panel
	Button UP	Increasing value by degrees	
	Button DOWN	Value Descending	
	※	Press this button to switch cold and hot air	

Functional Diagram

1. Diagrams of Front and Back Panel; Function Instructions



- | | |
|---|------------------------------|
| 1. Multifunctional knob | 7. Output Port of Hot Air |
| 2. Air Volume Meter | 8. upward adjusting button |
| 3. Storage/adjustment button | 9. downward adjusting button |
| 4. power switch | 10. Temperature meter |
| 5. selection/confirmation key | 11. Multifunctional card |
| 6. Port of Suction Pen (no such function on AT860D) | |

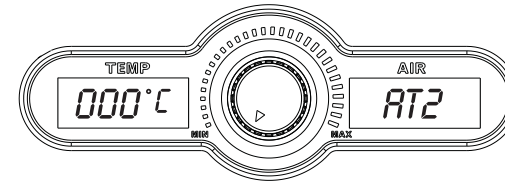


1.fused socket

Caution:
AC 220V/5A 110V/10A

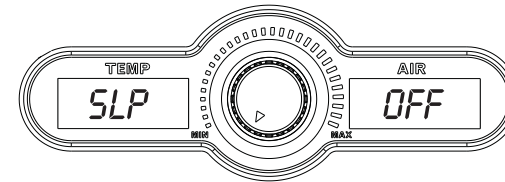
Conversion of temperature unit

There are functions of conversion between Celsius degree and Fahrenheit to facilitate the reading habits of different users. When the power is on, insert the multifunctional card into the groove according to the direction of sign SET (same as temperature adjustment). Press on the storage key "I" on the front panel, and meanwhile make the power switch on. When the machine makes a sound "Di", the conversion of the unit sign "°C/°F" is finished. And the temperature value and unit sign are displayed on the temperature meter, which signified that this setting is finished.



Function of dormancy and standby

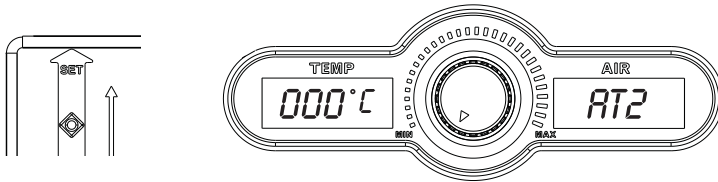
During operation, if the machine is not used for the moment, the only thing to do is to put the handle on the bracket; then the equipment will be automatically in the dormancy condition and the heater also stops heating. When the temperature fall to 150°C, "SLP" is displayed on the temperature meter; after "OFF" is displayed on the air volume meter, the pump stops working and the equipment is in the mode of dormancy and standby. The heater can be protected better by this function, for example, it can extend the service life, save energy and be environment-friendly. When the handle of the rework station is taken again, the machine will be the resumption of the previous working condition.



at the same time, record the temperature setting value T1. Make the power off and then insert the multifunctional card in to the groove corresponding to the arrowhead direction; select the proper temperature measuring instruments; fix the testing probe, then make the power on to observe the actual temperature measured by the instruments after the stability of the temperature and record this value T2. Long press (> 3s) of ※ value (in the factory, it is 000 °C or 032°F is displayed on the temperature meter; and "AT2" is shown on the air volume meter, which means it has been in the compensation mode.

Please refer to the following formula to calculate the temperature compensation value. And temperature value can be calibrated by pressing ▲/▼ on the panel or on the handle (there is no adjusting function for the multifunctional knob for the moment).

Temperature compensation value = T2 – T1

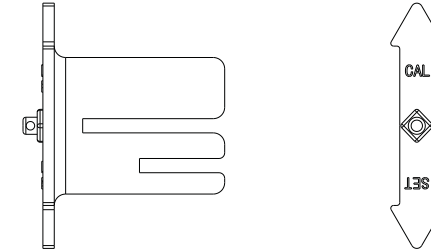


Example 1: If actual testing temperature is 320°C, and display temperature is 300°C, the compensation temperature is 280-300= -20°C, Then this time the input calibration value is -20°C which can be achieved by adjusting the upward adjusting button.

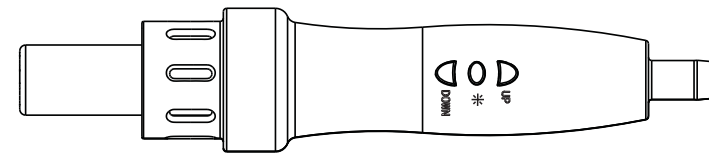
Example 2: If actual testing temperature is 280°C, and display temperature is 300°C, the compensation temperature is 280-300= -20°C, Then this time the input calibration value is -20°C, which can be achieved by adjusting the downward adjusting button. After input, long press (> 3s) of ※ on the panel or on the handle, confirm and save this calibration value. Then settings are finished and the machine will be automatically in the normal working condition.

- Remarks:**
1. Nozzles must be replaced by skilled operators after cooling, for nozzles are burnt at the high temperature.
 2. During settings, If buttons are not pressed consecutively in 10 seconds, the machine will exit from the setting condition, which means this setting is invalid.

2. Inserting card



3. Handle

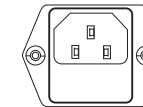


Operation Instructions

⚠ Remark: All the temperature parameters in the user manual are tested in the condition of "080" level's air volume, connecting to nozzle AT-1130 and 2 mm away from the nozzle exit.

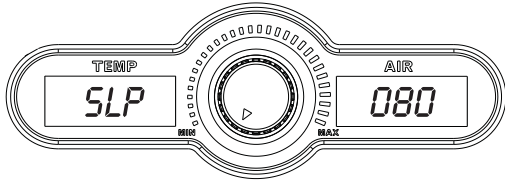
1. Power On

Connecting the socket on the back panel to the plug and make the power switch on. (Please recheck and confirm if the voltage of the power supply complies with the input voltage of the equipment).

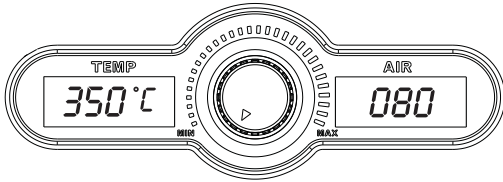


Power-on States of the equipment (2 states)

A. The handle is put on the bracket, the equipment is in the state of dormancy, and temperature display is SLP (please refer to the operation instructions term 7). Please see the following diagram:

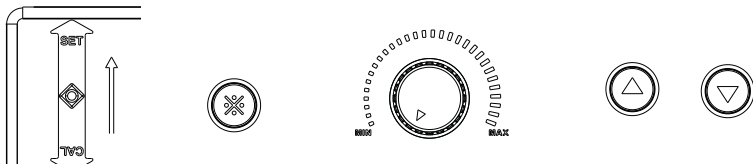


B. The handle is not put on the bracket. When power is on, it will display the setted temperature and air volume of last time. 3 seconds later, it will be changed into the actual temperature. (It will be the default parameters of factory settings for the first time: temperature 350°C; air volume, 80 level; temperature compensation, 0°C; temperature unit: °C) Please see the following diagram:



2. Adjustment of temperature parameters

Insert the multifunctional card upward into the panel, press ※ on the panel or on the handle and then the sign bit of temperature meter flickers, which signifies that it has been into the mode of temperature adjustment. The multifunctional knob on the rotating panel can be used to adjust temperature rapidly; and press ▲/▼ on the panel or on the handle to adjust temperature accurately. Skilled operators can use knobs and buttons together to make a rapid and accurate adjustment. When temperature adjustment is finished, press ※ again, which will make the setted temperature saved automatically and perform this working condition.



In the default condition, when the selection/confirmation key is not pressed in the mode of set card, multifunctional knob, upward adjusting button and downward adjusting button can only be used to adjust the flux of the pump.

Remarks: During settings, if the confirmation key is not pressed in 10 seconds, settings will exit automatically and be back the current working condition.

3. Flux settings of the pump

During the normal condition, the multifunctional knob on the adjustment panel can be used to adjust and set air flow; or press ※ on the panel or on the handle to adjust air flow accurately; and it is more rapid and accurate to use knobs and buttons together.



4. Storage settings

On **860D**, there are particularly storage function with 3 channels, which can save the often-used temperature value and value of air flow to be three conditions for the convenience of the shortcut operation of the users.

Storing method: Insert the multifunctional card upward into the panel, and adjust settings of temperature and air volume to the required values separately (referring to term 2 and 3); then long press (> 3s) of one of the shortcut keys on the panel so that the equipment makes sound "Di Di Di", which shows that the temperature and air flow on the current working condition have been saved to the corresponding shortcut channels.

Adjusting method: During operation, press shortcut key 1, 2, or 3 (< 3s) to adjust the setting value stored on this channel, and then the equipment will be in this working condition immediately.



Settings of temperature compensation

The machine has been calibrated strictly in the factory. During long-time operation, if heating element and nozzle need to be replaced, the temperature must be recalibrated. Please be guided by the following methods.

Take the handle, insert the multifunctional card in to the groove corresponding to the arrowhead direction, and then adjust the temperature to the proper value (for example, temperature 300°C);