

SHENZHEN ATTEN TECHNOLOGY CO.,LTD.

- Soldering Iron
- Soldering Station
- Hot Air Rework Station
- Multi-function Rework System
- Switching DC Power Supply
- Regulated DC Power Supply
- Solder smoke purify machine
- Programmable Power Supply

ATTEN



GT-1028 Hot Air Desoldering Station User Manual

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MADE IN CHINA
CBN035435(A)


SHENZHEN ATTEN TECHNOLOGY CO.,LTD.



Copyright

- The design of this product (including software) and its accessories are under tutelage of laws. Any action to violate relevant right of our product will be penalized by the law. Please consciously observe relevant local laws in the use of this product.
- **Thank you for purchasing this hot air de-soldering station. Please read this manual carefully and pay attention to warnings and precautions mentioned herein before using this product.**

 Warning you against the risk of electric shock.

 Warning you against the risk of physical injury.

Assumption for user

- We assume that user have common sense and basic relevant electrical operation knowledge before using this product. Children shall not play with the appliance without supervision.

ATTENTION: To avoid damaging to unit and keep operation safe, please read the instruction manual ahead and keep it accessible for any operator.

Safety

- To avoid electric shock, injury to user or causing fire, please comply with the following items.
- To ensure your safety and avoid damage to the unit, please use parts and accessories that have been approved or recommended by our factory.

Warning

- When using this product, the temperature of the hot air gun nozzle can reach 100-500°C. In view of the unreasonable application may cause burns or fire, the following items should be strictly observed during use:
- Keep this product away from flammable materials.
- Keep this product out of children's reach.
- Do not use this product if you are inexperienced or have no sufficient necessary knowledge without the guidance of related personnel.
- Do not use this product under wet environment or with wet hands to prevent electric shock.
- Do not modify this product or its accessories without authorization.
- Please turn off the power when replacing parts, and do not resume the use until the equipment is completely cooled down.
- Please use the accessories from the original factory when replacing the product parts.
- Make sure to turn off the power switch when the equipment is temporarily stopped or out of use.

Caution

- To ensure the normal operation of this product's ESD function, only three-core power cord shall be used as the host connecting line.
- Do not play or do other similar dangerous actions when using this equipment, because it can easily lead to injury to others or yourself.
- Do not use this product for purposes other than de-soldering.
- Do not modify this product and its accessories, otherwise the original warranty will be invalidated or damage may occur to the product.
- When plugging and unplugging the power cord and handle plug, please hold the plug body and do not pull the cord.
- Do not hit the product or its accessories too hard during the operation; otherwise damage may occur to the product.

Disclaimer

- We will take no responsibility for any personal injury or property damage caused by reasons other than the product quality problem, which may include force majeure (natural disasters, etc.) or personal behavior during the operation of this product.
- This manual is organized, compiled and released by SHENZHEN ATTEN TECHNOLOGY CO., LTD. According to the latest product features. We will not be responsible for further notice of the subsequent improvement of the product and this manual.

After-sales contact

- If the machine fails, or cannot work normally due to unknown reasons, please contact the local dealer or manufacturer for consultation.
- After-sales service department Tel: (+86) 0755-8602 1266

Product warranty card

This product is guaranteed for two years from the date of purchase.
If any quality problem is found within the guarantee period, we will response for the maintenance free of charge on presentation of this card and the receipt.

Note: This warranty card must be attached when this product is returned to the factory for maintenance, otherwise free maintenance will not be accepted.

Thank you for your cooperation!

Product Certification

Product Model: _____ Product NO.: _____

Inspector: _____ EX-Factory date: _____

Salesperson: _____ Sold Date: _____

This product test result is qualified and met the technical standard.

Common communication protocols

- 02 06 00 01 FF 00 CRC Restore factory

- 02 06 00 02 FF 00 CRC Turn on air gun
02 06 00 02 00 00 CRC Turn off air gun
02 03 00 02 00 01 CRC Query the air gun, switch status 1 on 0 off

- 02 03 00 11 00 03 CRC Read the running temperature, air volume, and time
Read the return of the running temperature, air volume, and time command: 02 03 04 01 2C 00 32 00 12 CRC
Temperature: 0x012c=300°C Air volume: 0x0032=50% Time: 0012=18s

- 02 06 00 21 00 38 CRC Set air volume: 0x38=56%, Value: 1~99
02 03 00 21 00 01 CRC Query the set air volume

- 02 06 00 22 01 41 CRC Set the temperature: 0x141=321°C, Value: 100~500
02 03 00 22 00 01 CRC Query the temperature
02 06 00 23 00 11 CRC Set timing set working time (off <10)
02 06 00 23 00 01 CRC View the timing work time

● For more communication protocol commands, please contact the manufacturer.

The Troubleshoot Guide

| Fault code or fault description | Likely causes of the faults |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| E2: Open circuit of heating core | 1. The heating core is damaged; replace the heating core. 2. The sensor lead is in open circuit; inspect the soldering pencil lead. |
| E3: Sensor Error | Poor contact of air gun connector or handle. |
| E4: No zero-cross signal | The zero-cross sensor is damaged or the mains frequency is wrong. |
| E5: SCR Damage | SCR breakdown |
| E6: Over-temperature protection | The short circuit occurs to the temperature sensor in the heating core; pleas replace the heating core. |
| Screen display fault | In case the problem occurs, you can try to adopt the following measures to solve it. if the problem still cannot be solved, please return the equipment to the original factory for inspection. 1. Check if the socket switch is on. 2. Check if there is voltage on the socket. 3. Check if the plug with the power line is loose. 4. Check if the fuse is damaged (if so, please replace the fuse according to the specifications) |
| Inaccurate temperature | 1. Use user temperature compensation function to correct the temperature. 2. Replace the heating core with one produced and sent by the original factory. |
| Display of messy code | 1. In case there is strong interference source from the outside environment, please change the application environment or evacuate from the interference area. 2. In case the internal circuit is abnormal, please send the equipment to the designated after-sales outlet for maintenance. |

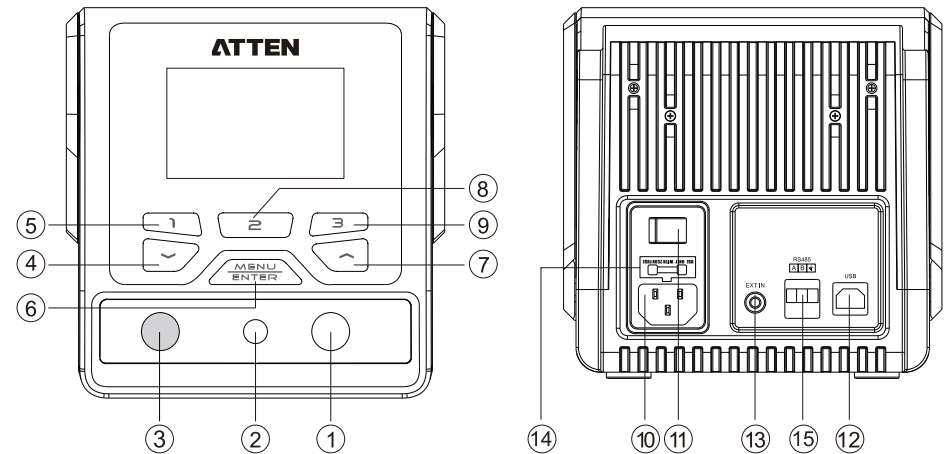
Packing list and description of each component

● Packing list

| S/N | Name | Quantity |
|-----|--------------------|----------|
| 1 | GT-1028 host | *1PCS |
| 2 | Power cord | *1PCS |
| 3 | Hot air gun handle | *1PCS |
| 4 | Hot air gun nozzle | *3PCS |
| 5 | Hot air gun holder | *1PCS |
| 6 | USB cable (A to B) | *1PCS |
| 7 | User manual | *1PCS |

| S/N | Name | Quantity |
|-----|-------------------------------------------------------------------------------------------------|----------|
| 8 | Vacuum pen (included tool box) | *1PCS |
| 9 | Bent suction nozzle | *2PCS |
| 10 | Straight suction nozzle | *2PCS |
| 11 | 4.5mm suction disc *3 6.5mm suction disc *3 9.5mm suction disc *3 13mm suction disc *3 | *12PCS |
| 12 | Certificate | *1PCS |

● Outline drawing



- | | |
|--------------------------------|-------------------------------------------|
| ① Hot air gun handle interface | ⑩ Power plug, connected to rated AC power |
| ② Vacuum pen interface | ⑪ Power master switch |
| ③ Infrared receiver | ⑫ USB |
| ④ “~”Key | ⑬ External switch interface |
| ⑤ “1”Key | ⑭ Power fuse |
| ⑥ Confirm/Menu key | ⑮ Communication interface |
| ⑦ “^”Key | |
| ⑧ “2”Key | |
| ⑨ “3”Key | |

Technical parameters

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Model | GT-1028 |
| Rated operating voltage | AC 230V ±10% 50Hz / (110V±10% 60Hz) |
| Rated power | 1200W |
| Max Power | 1300W |
| Heater Power | 1300W |
| Power fuse | T8A (AC 250V) / T12A (AC 125V) |
| Temperature range | 100°C~500°C / 212°F-932°F |
| Air volume range | 1%~100% |
| Timing time | 10~900s (Can be turn off) |
| Temperature unit | °C/°F, °C by default |
| Air flow | 120L / Min (Max) |
| Multiple alarm and protection functions | Heater open circuit alarm, sensor fault alarm, zero crossing signal alarm, SCR damage alarm, over-temperature protection alarm |
| Password protection function | Available (Off by default) |
| Alarm function | Available (On by default) |
| User temperature compensation | ±50°C / ±90°F |
| Multiple language for user interface | Support Chinese / English interface |
| Heating power display | 5 dynamic power bars |
| Temperature adjustment step | Long press for 10 units adjustment, short press for 1 unit adjustment |
| Air volume adjustment step | Long press for 2 units adjustment, short press for 1 unit adjustment |
| Vacuum pressure | -80Kpa |
| Rapid temperature / air volume / time | 3 groups of temperature/air volume/time, can be called quickly |
| Working conditions | Temperature 0°C~40°C Relative humidity<85%RH |
| Dimension | 315 (L) x 252 (W) x 127 (H) mm |
| Weight (N.W.) | Approx. 4.78Kg |


Boot-up screen

- After the station has been switched on, the display will turn on and show the system version number for 2 seconds.(Its version will be different according with version updated, such as Ver: xx, xx stands for any number)



(Means Ver: 0.1 version)

Manual temp compensation

In the common setting interface select  temp compensation function, press “^” “v” key to manually adjust the temperature parameters to complete the temperature calibration. (Temperature compensation range ±50°C / ±90°F)

Note: User can calibrate temperature by this function if the displayed temperature is much different from actual-measured temperature after changed a new heater or handle. Its calibration method can be referred as below:

- Set the this handle required temp to a suitable temperature like 350°C/662°F.
- After this setting temperature is stable, use temperature tester to measure the actual temperature.
- For example, its actual-measured temperature is 365°C/689°F, we can get conclusion that the actual measured temperature compared to the setting temperature is 15°C/27°F higher.
- Then set the calibrate temperature to -15°C/-27°F to compensate the error of output temperature.

Communication description

- 1. This protocol applies to RS 232, RS 485, RS 422 and other serial communication interface between devices.**

Work in a half-duplex mode. Data transmission is initiated by the host, and transmits data back to the host after receiving data from the host. The slave should not actively transmit data to the host at any time, and there cannot be two data transmitted on the bus at the same time.

- 2. This protocol is transmitted in a standard Modbus RTU communication format, and can conduct one-to-one or one-to-many communication.**

- 3. Fixed Baud rate of 38400.**

- 4. Serial Port Bytes**

Data length: 1 start 8 data bit 1 stop

| | | | | | | | | | |
|-------|----|----|----|----|----|----|----|----|------|
| Start | b0 | b1 | b2 | b3 | b4 | b5 | b6 | b7 | Stop |
|-------|----|----|----|----|----|----|----|----|------|

- 5. Message frame in RTU mode**

| Start position (4 char) | Device address | Function code | Data | CRC verification | final character (4 char) |
|-------------------------|----------------|---------------|--------|------------------|--------------------------|
| T1-T2-T3-T4 | 8Bit | 8Bit | n*8Bit | 16Bit | T1-T2-T3-T4 |

Data register parsing

- Instruction example parsing**

Machine with an address of 2.

The register starting address uses an absolute address.

Read the air volume command, read the current air volume register address is 0x11, and the air volume value is 0x32=50.

| | | | | | | | | |
|-----|---------------|---------------|------------------|---------------------|-------|----|----|----|
| TX: | 02 | 03 | 00 | 11 | 00 | 01 | D4 | 3C |
| | Slave address | Function code | Register address | Number of registers | CRC16 | | | |
| RX: | 02 | 03 | 02 | 00 | 32 | 7D | 91 | |
| | Slave address | Function code | Bytes | Number of registers | CRC16 | | | |

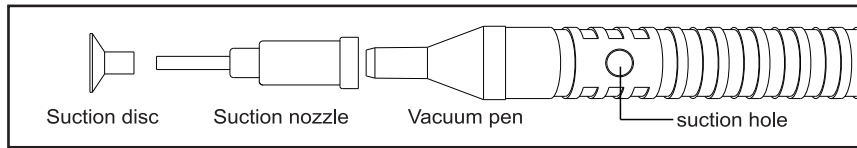
- Set temperature command:**

The value of the register for setting temperature is 0x22, and the temperature value is 0x0141=321 °C

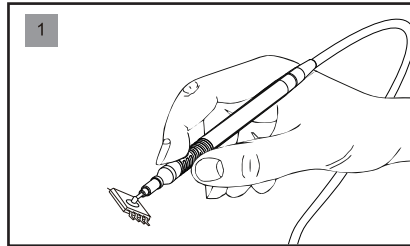
| | | | | | | | | |
|-----|---------------|---------------|------------------|---------------------|-------|----|----|----|
| TX: | 02 | 06 | 00 | 22 | 01 | 41 | E8 | 53 |
| | Slave address | Function code | Register address | Number of registers | CRC16 | | | |
| RX: | 02 | 06 | 00 | 22 | 01 | 41 | E8 | 53 |
| | Slave address | Function code | Register address | Number of registers | CRC16 | | | |

Use method of vacuum pen

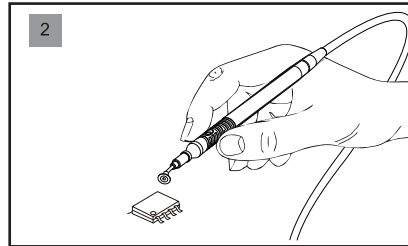
- In the text working interface, press “ $\frac{\text{MENU}}{\text{ENTER}}$ ” + “2” key to turn on/off the vacuum pen.



Insert the head of the suction nozzle into the hole of the suction disc, and insert the vacuum pen to the end of the nozzle to complete the assembly.




When the vacuum pen function is enabled, the vacuum pen can be operated. Block the air hole of vacuum pen with the finger, and the SMD components can be sucked in.





Loosen the air hole, and put down the components.

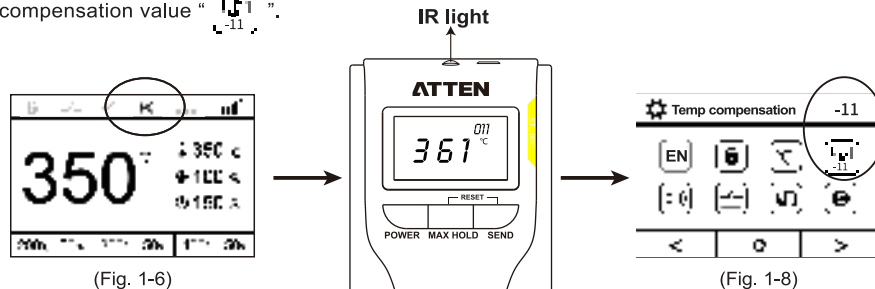
IR temperature calibration function

- In the text working interface, press “ $\frac{\text{MENU}}{\text{ENTER}}$ ” + “3” key to turn on/off the IR temperature calibration function.

(Fig. 1-6) Means: IR function is turn on (text working interface display  icon).

(Fig. 1-7) Means: Used with ATTEN temperature tester (ST-1090), the temperature tester infrared light should be aligned with the infrared receiver of the station, the distance should not exceed 10cm, turn on the hot air gun, align the air outlet with the thermometer temperature sensing point, after the temperature on thermometer screen is stable, press the thermometer "SEND" key, at this time The “” in the text working interface turns gray indicates the temperature calibration completed.

(Fig. 1-8) Means: Entering the common setting interface, you can check the current temperature compensation value “”.



(Fig. 1-6)

Temperature tester (Fig. 1-7)

(Fig. 1-8)

Working status

- Working normally

(Fig. 1-1) Means: Real temperature is 350°C, air volume is 100%, timing work time is 150s.

- Standby mode

(Fig. 1-2) Means: When hot air gun putting on the holder, the hot air gun does not blowing air. It will recover to normal work when taking this handle up.

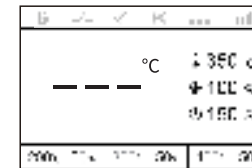
- Sleeping mode

(Fig. 1-3) Means: The hot air gun under sleeping mode, it can not work by taking up the handle. It needs to recover to work by pressing power button on hot air gun.

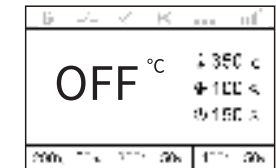
(Note: The default sleep time is 30 minutes. Turn on the station power switch again and the hot air gun will automatically enter the sleep mode)



(Fig. 1-1)



(Fig. 1-2)



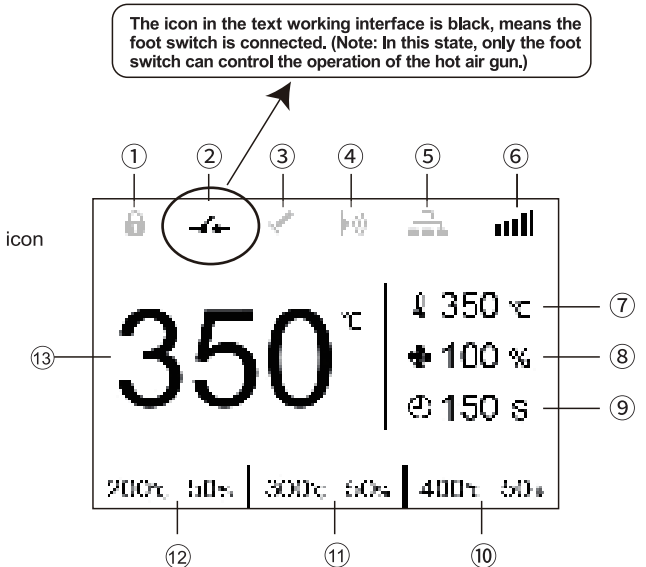
(Fig. 1-3)

Text working interface icon definition

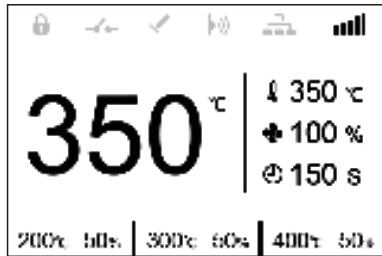
- The gray icon on the top of the interface indicates that this function is not turned on.
- The black icon on the top of the interface indicates that this function is turned on.

- Icon definition

- ① Lock icon
- ② Foot switch icon
- ③ Vacuum pen icon
- ④ Infrared receiver icon
- ⑤ Net master-slave device icon
- ⑥ Power bars
- ⑦ Set temperature
- ⑧ Set air volume
- ⑨ Set timing work time
- ⑩ Rapid parameter 3
- ⑪ Rapid parameter 2
- ⑫ Rapid parameter 1
- ⑬ Real-time temperature



Text working interface



(When the countdown reaches 10s, the buzzer will ring)

● Short press “ \vee ” “ \wedge ” key

(Temperature, air volume, timing work time) parameters are reduced or increased in one unit.

● Long press “ \vee ” “ \wedge ” key

(Temperature, air volume, timing work time) parameters rapidly reduce or increase.

● Rapid parameter retrieve:

Short press “1”, “2”, and “3” keys to quickly retrieve the parameters (temperature, air volume, timing work time).

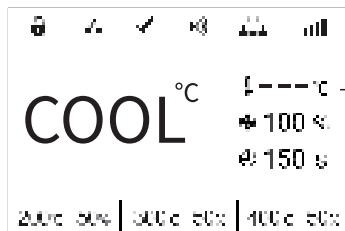
● Quick storage of parameters:

Long press “1”, “2”, and “3” keys to store the current (temperature, air volume timing work time) parameter in the corresponding shortcut key.

Text working interface “MENU” key definition

- **Short press “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key**
The cursor can be switched back and forth in the settings of temperature, air volume and timing work time.
- **Long press “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key**
Enter into the main setting menu interface.
- **Press “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key + “1” key**
Switch between text working interface and curve working interface
- **Press “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key + “2” key**
Turn on or off vacuum pen. (Please refer to page 11 for the usage of this function)
- **Press “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key + “3” key**
Turn on or off infrared temperature calibration function.

Cool air function



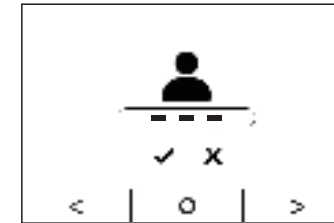
(Fig.1-4)

Real-time temperature is lower than 100°C

- The hot air gun enter into cool air mode when the setting temperature value is under 100°C, and the cool air mode display COOL (Fig. 1-4) and the heater does not heat, the hot air gun blows cool air then the heater quickly cool down.

Password setting interface

- select Press “2” key or “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key to enter the password setting interface.



● Cursor switch:

Short press “1” or “3”key, the cursor can be switched back and forth in the Password setting interface.

● Password setting:

Press “ \wedge ” “ \vee ” key to set the password.

“” Confirmed password setting

“” Cancel password setting

Password value can be set between 1-999

“ - - - ” Indicates no password

Factory reset

- select Press “2” key or “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key to enter the factory reset interface.



● Function switch:

Short press “1” or “3”key, to select “” to confirm factory reset or “” to cancel factory reset, and then press “2” or “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key to confirm the selection.

Key operation instructions

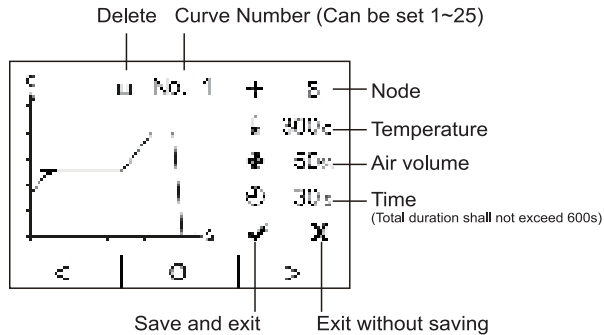
- select Press “2” key or “ $\frac{\text{MENU}}{\text{ENTER}}$ ” key to enter the key operation interface, in this interface press any key can exit.

Key instructions




- “MENU” key + “1” key:
Switch between text & curve interface.
- “MENU” key + “2” key:
Turn vacuum pen on/off.
- “MENU” key + “3” key:
Turn the infrared function on/off.
- Long press “1,2,3” key:
Save shortcut parameters. **Press any key to exit**

Curve-editing interface

- select  Press "2" key or " $\frac{\text{MENU}}{\text{ENTER}}$ " key to curve-editing interface.



● Curve setting steps:

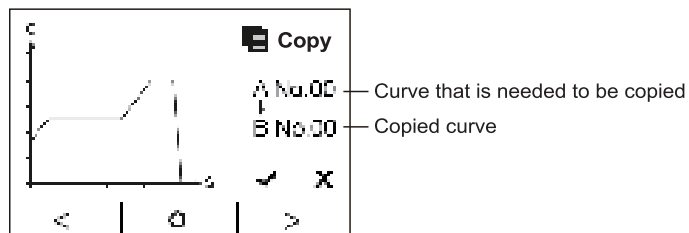
Select curve code ( curve code can be deleted), and then select node to set temperature, air volume and time. Select  save settings and exit .(select  exit without saving).

Note: Add a node: adjust the node serial number, and then set the corresponding temperature, air volume, and time.

Delete a node: just select the corresponding temperature, air volume and time, press "∧" "∨" to adjust, and set them to "—".

Curve copy interface

- select  Press "2" key or " $\frac{\text{MENU}}{\text{ENTER}}$ " key to copy curve interface.



● Cursor switch:

Short press "1" or "3" key, the cursor can be switched back and forth in the curve copy interface.

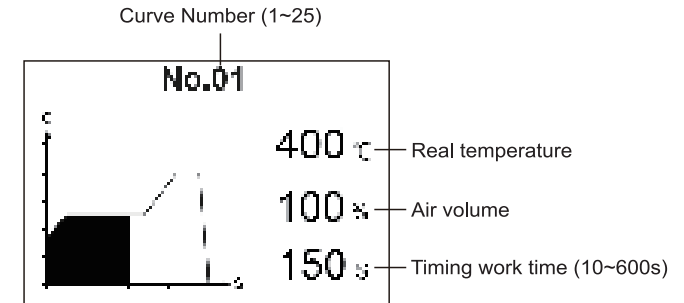
● Curve code setting:

Short press "∧" "∨" key, to set the A curve / B curve code. (Can be set 1~25)

● Curve copy:

After selected the A and B curves, select "  " to confirm copy ("  "Cancel copy).

Curve working interface



(When the curve is at the highest point, the buzzer will ring)

● Rapid curve retrieve:

Under the curve working interface, short press "1", "2" and "3" key to quickly retrieve the corresponding curvenumber.(Curve editing method is available on page 9)

● Short press "∨" "∧" key

Curve numbers is reduced or increased in one unit.

● Long press "∨" "∧" key

Curve numbering rapidly decreases or increases.

● Start hot air gun:

In the curve work interface hot air gun can't work when you pick up hot air gun directly, it needs to press the button on the handle or short press "MENU+3" key to resume work.

Curve working interface "MENU" key definition

- Long press " $\frac{\text{MENU}}{\text{ENTER}}$ " key
Enter into the main setting menu interface.
- Press " $\frac{\text{MENU}}{\text{ENTER}}$ " key + "1" key
Switch between text working interface and curve working interface
- Press " $\frac{\text{MENU}}{\text{ENTER}}$ " key + "2" key
Turn on or off vacuum pen. (Please refer to page 11 for the usage of this function)
- Press " $\frac{\text{MENU}}{\text{ENTER}}$ " key + "3" key
Pick up the hot air gun and short press these combination keys, the hot air gun begins to work, and short press the hot air gun again to stop working.

Menu setting interface

● Function switch:

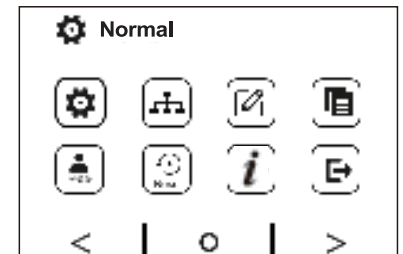
Short press "1" key and "3" key, to switch the cursor back and forth in the menu settings interface .

● Function selection:

Short press "2" key or " $\frac{\text{MENU}}{\text{ENTER}}$ " key, to confirm the selected function in menu setting interface.

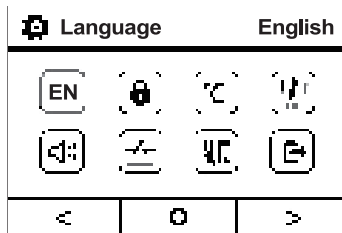
● Quick exit:

Long press " $\frac{\text{MENU}}{\text{ENTER}}$ " to save no parameters, and quickly exit the current Interface.



Common setting interface


- Select  press “2” key or “MENU ENTER” key to enter the common setting interface.



- **Function switch:**

Short press “1”, “2”, “3”, and “MENU ENTER” key, the cursor can switch back and forth in the common setting interface.

- **Language Setting:**


Select , press “ \vee ” “ \wedge ” key to switch between Chinese and English.

- **Parameter lock:**


Select , press “ \vee ” “ \wedge ” key to switch (unlock, locked 1, locked 2) parameter.

 Unlock  Level 1 locked (locked all parameters)  Level 2 locked (except shortcut key unlock, other parameters locked)


- **Temperature unit:**

Select , press “ \vee ” “ \wedge ” key to switch between °C / °F temperature units.

- **Temperature compensation:**

Select , short press “ \vee ” “ \wedge ” key to reduce or increase parameter in one unit, long press “ \vee ” “ \wedge ” key to rapidly reduce or increase parameter.

- **Buzzer:**

Select , press “ \vee ” “ \wedge ” key to open or close the buzzer.

Text work interface this icon is black, means that the foot switch is connected

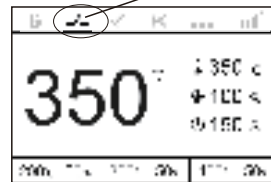
- **Foot switch mode:**

Select , press “ \vee ” “ \wedge ” key to switch between foot switch jog and continue mode.


In jog mode: Auto-heating mode is invalid.

In continue mode: Timing setting is invalid.

(Note: When using an external foot switch, only the foot switch can control the heat gun to work)



- **Heating mode:**


Select , press “ \vee ” “ \wedge ” key to switch between automatically and manually heating mode. (Only valid in the text interface, and it's automatically by default)

In automatically mode: When the hot air gun is placed on the handle bracket, the hot air gun does not blow air, and pick up the hot air gun again, it will resume to work.

In manually mode: Control the hot air gun to start/stop operation by the button on the hot air gun handle.

Common setting interface

- **Return**

select  Press “2” key or “MENU ENTER” key to return.

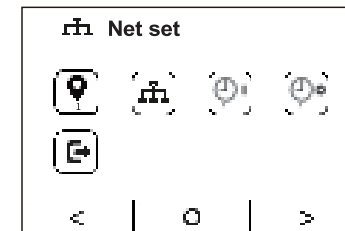
Note: Confirmed return, the save setting prompt will pop up (Figure 1-5), select “ \checkmark ” the station will save the parameters set in the current page, and select “X” the current parameter will not be saved).



(Fig.1-5)

Net setting interface


- select  Press “2” key or “MENU ENTER” key to enter the Net setting interface.



- **Function switch:**

Short press “1” “2” “3” “MENU ENTER” key, the cursor can be switched back and forth in the network setting setup interface.


- **Net address:**

Select , Press “ \vee ” “ \wedge ” to switch over the net address parameters. (The default is 1; 0-255 swappable.)

- **Net mode:**

Select , Press “ \vee ” “ \wedge ” to switch between master and slave mode.

- **Power-on / shutdown delay:**

Select , Press “ \vee ” “ \wedge ” to set the startup / shutdown delay for 0 to 900s. (Only valid in master mode, need to be used with ATTEN smoke purify machine)