INSTRUCTION MANUAL

Thank you for choosing this type of Unsoldering Equipment with Hot Air. The product is designed for soldering and unsoldering without lead. Please read the User Guide thoroughly before use, and keep it in a safe place for future reference.
General Usage
1. Suitable for de-soldering and soldering BGA, SOIC, CHIP, QFP, PLCC package SMD IC, particularly suitable for de-soldering BGA module, computer motherboard, north and south bridge, all kind of mobile phone motherboard, SMT IC and LED lights.
2. Shrink, paint drying, adhesive removal, thawing, warming, plastic welding etc.

Feature
1. Using microcomputer processor, PID programmable temperature control technology, the program cycle every 20 milliseconds to detect the actual temperature of the heating element and a quick correction, rapid return temperature, temperature stability LED display, precision preheating station, air gun and soldering iron temperature.
2. Preheating station is to use a gauze layer having a high thermal effect, good thermal shock resistance, the ceramic as the substrate, high-quality nickel plated alloy wire once sintering. It has a high thermal effect, overall good thermal stability, uniform heating, high dielectric strength, clean, easy to install and so on features.
3. Air Gun heater use ceramic heater, heating elements firmly wrapped around the model ceramic, rapid and uniform heating. Use the upgraded version fan, the airflow larger than the ordinary fan, spiral out of the wind, long life.
4. Soldering iron part using Hakko heater, heating up rapidly, temperature stability, long service life; antistatic design to prevent electrostatic damage to delicate SMD components.
5. The machine has a self-test function fully intelligent over-temperature, short-circuit, overload and fault display and protection functions.
6. 853A preheating station practical and easy to operate, the card plate sliding bracket bearing technology, to move around freely durable, convenient card board, coupled with a fixed sliding bracket screws at the same time, the card board is solid and reliable.
7. 853AA/ H6 preheating station using the user-friendly design, the cover affixed with a high-temp, insulated protection pads to prevent scalding operation. The stent uses magnetic induction technology, card board bracket to prevent protective pads stick hood above, can rotate 360 degrees, flexible card board, it is suitable for the circuit boards of different shapes and sizes.
8. 853AA/ H6 temperature correction function to adapt to the environmental impact, or replace the heating elements, soldering iron tips etc. spare parts caused by temperature deviation, can use this function calibration temperature. The correction temperature range is -50°C ~ +50°C.
9. 853AA/ H6 has Celsius/Fahrenheit temperature display function, meet different market needs to design the temperature display mode, you can choose under customary interest.

Specification

<table>
<thead>
<tr>
<th></th>
<th>853A</th>
<th>853AA</th>
<th>H6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>AC 220V ±5%</td>
<td>AC 220V ±5%</td>
<td>AC 220V ±5%</td>
</tr>
<tr>
<td>Max power consumption</td>
<td>500W</td>
<td>1200W</td>
<td>1270W</td>
</tr>
<tr>
<td>Measurement</td>
<td>220(W)×73(H)×247(D)mm</td>
<td>220(W)×80(H)×320(D)mm</td>
<td>220(W)×80(H)×320(D)mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3.0Kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working environment</td>
<td>0<del>50°C/0</del>122°F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage environment</td>
<td>-20℃<del>80℃/68°F</del>176°F</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>853A</th>
<th>853AA</th>
<th>H6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>50<del>300℃ or 50</del>400℃/122<del>572°F or 122</del>752°F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Stability</td>
<td>±2℃</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display Type</td>
<td>LED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>120x120mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hot Air Reworks
Airflow type
Air Flow <130L/min
Temperature Range 100℃~480℃/212℉~986℉
Temperature Stability ±1℃
Display Type LED
Handle cable length >100cm

Soldering Iron
Temperature Range 200℃~480℃/392℉~986℉
Temperature Stability ±1℃
Tip of ground voltage <2mV
Tip ground impedance <20hm Ω
Display Type LED
Handle cable length >100cm

Performance Comparison Table

<table>
<thead>
<tr>
<th>Function</th>
<th>Model</th>
<th>853A</th>
<th>853AA</th>
<th>H6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional components</td>
<td>Preheating station + Hot air reworks</td>
<td>Preheating station + Hot air reworks + Soldering station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display type</td>
<td>LED</td>
<td>LED</td>
<td></td>
<td>LED</td>
</tr>
<tr>
<td>Fahrenheit/Celsius Conversion</td>
<td>NO</td>
<td>YES</td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>Temperature correction</td>
<td>NO</td>
<td>YES</td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>High temperature protection</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>Gun Type</td>
<td>Brushless fan</td>
<td>Brushless fan</td>
<td>Brushless fan</td>
<td></td>
</tr>
<tr>
<td>Control Temperature way</td>
<td>Digital PID</td>
<td>Digital PID</td>
<td>Digital PID</td>
<td></td>
</tr>
</tbody>
</table>

Operation
1. Preheating station part
A. 853A
1) Preheating station laid out → plugged
2) Move bracket card board will need to preheat the element is placed above the plate → move tighten the four screws on the bracket, fixed need to preheat components.
3. **853AA/H6**

1. **Preheating station laid out → plugged**

2. **Move bracket card board, select the appropriate orientation will need to preheat**

   Note: bracket above two pellets mouth.

   Note that bracket above two card board parts, usually with the following, if use above bayonet, you need to heat the components from the hot plate further, preheat temperature is a little lower.

3. **Open the master switch on the back of the chassis → open the preheating stage switch, the preheating plate heating → the set temperature can be preheated**

4. **Preheating station, hot air rework, soldering station can flexibly combine to use.**

   Preheating station, hot air rework, soldering station three functions are independent, you do not need to use.

2. **Hot air rework part**

   1. **The hot air gun rework station is laid out → handle frame is installed on the side of the chassis, air gun bracket is installed in the back of the chassis → fixed to the handle in the air gun handle frame.**

   2. **Open the back of the chassis whole switch → open the air switch, air gun switch heating → press air gun temperature plus button "△ or 1" and minus button "YES or ▽" to set temperature → adjust the airflow knob to the appropriate airflow → Gun to be wind indicator regularly means the flashing temperature stability will be able to normal operation.**

3. **After work, turn off the air gun switch, the machine automatically cut off the air gun heating body the power to enter the cooling heating element mode. When the temperature is below 100 °C, the air gun display window goes off and stop the wind.**

3. **Soldering station part**

   1. **The soldering iron handle → handle on the iron holder.**

   2. **Open the soldering iron power switch, heating elements begin to heating → press soldering iron temperature plus button "△ or 1" and minus button "YES or ▽" to set the appropriate temperature, when the soldering iron working indicator regular flash at high speed into the thermostat state can work properly!**

3. **After work, you can use the residue under high-temperature cleaning sponge cleaning up the soldering iron and re-coated with a new layer of solder, the soldering iron into the iron holder can turn off the power!**

4. **Attached: technical article—Rework the process (for reference only) Air gun with preheating station to facilitate the large flat IC, dual panel large components de-soldering**

   - **Remove the components**

     The successful rework first component removal location of the fault on motherboard, and the solder is heated to the melting point and then carefully scored the components from the board.

     Heating control is key factor in the rework, the solder must be fully melted, so as to avoid injury in the removed component plate and copper. While the temperature is not too high, to prevent the circuit board is heated excessively caused Motherboard distorted.

   - **PCB and component heating**

     Advanced rework system uses a microcomputer to control the heating process, with solder paste manufacturer specifications given parameters as possible, and using a combination of the top and bottom of heating.

     Bottom heating to complement the board due to pass of heat, while elevated board temperature, the top heating is used heating components, in addition the use of coders bottom heater can be eliminated due to local over-heating the circuit board caused by distortions.

Motherboard heating can be used three methods, namely conduction, convection, and thermal surface effects. Conduction heating when the heat source with the motherboard contacts (for example, using a hot plate), which on the rear components of the circuit board not applicable (if needed): The thermal effect of using an infrared (IR) energy, it is to be practical, but due to the board heating was proved is reward and assembled in the most effective and the most practical technology.

Components heating (or top heating) generally use a convection hot air nozzles, careful control of top heating components uniformly heated is extremely important, especially for SMT components is particularly critical (Figure 1).

![Figure 1](image)

To pay attention to avoid rework station nearby components reflow or blow away small chip components, the hot gas stream discharged by the nozzle must be isolated with these elements, the thin layer of shielding plate or the mask can be put in the surrounding components of the rework station. Mask technology is quite effective, but more trouble consuming, but can be used dedicated BGA rework nozzles, it can reduce the damage to the components in the vicinity of the demolition components and circuit boards in the process of unsoldering.

### Description for Function Setting

1. **The temperature correction function setting (Figure 2)**

   In the case of the boot, to press the air gun and preheat the cool button for 3 seconds, then preheat window show the factory default the correction temperature "00", if need to correct the working temperature of the preheating stage or electric iron, you can press button heating and cooling to make compensation of the respective temperature (compensation range: +50°C to -50°C). After 4 seconds, the program and exit the automatic memory, display windows show working temperature, the setting is completed.

![Figure 2](image)

2. **Celsius/Fahrenheit display the conversion feature setting (Figure 3)**

   In the case of the boot, pressing the air gun and the preheating station heating button for 3 seconds, then (853AA) the temperature display window shows °C or °F, (H6 )°C or °F are flashing in display window, then pressing air gun and preheat station warming button to set the status of Celsius or Fahrenheit, after set 4 seconds and the program is automatically memory setting and exit, the setting is completed.
WARNING
In view of could cause serious injuries of fire accidents, please strictly observe the following:
1. Must be confirmed well-connected handle and the machine, after that open the power supply switch, all the parts removal or installed, must be turn off the power supply switch, then operate it (High-Presure is dangerous!)
2. When the power supply is turned, the air gun or soldering iron outlet temperature higher than 100 to 200 degrees Celsius (212-392 degrees Fahrenheit). DO NOT touch the air gun or soldering iron metal part and preheat plate near the chassis, aluminum mesh, to replace nozzles or the tips and the tips and other parts, should turn off the power supply and cooling to room temperature, then operate it (High-temperature is risk)!
3. DO NOT use the machine near flammable things (Fire hazard is dangerous!)

Terms of Use
1. Please ensure the Hot’s outlet is clear, must free from any blockages or obstructions.
2. After the work is completed, the air gun handle pot the frame or turn off air gun switch, the machine automatically cooled to display “stop” the air, then turn off the whole device power switch in the back of the machine.
3. When using the machine standard three nozzles: big, middle, small nozzles other than the smaller nozzle, must separate air volume was adjusted to the maximum use of a lower temperature and in a short use. Avoid prolonged use of the damage to the air gun.
4. In regards to the usage requirements, choose the appropriate Hot air flow, different Hot air flow will cause the temperature to be slightly different, and please maintain the distance between the outlet and the object must be at least 2 mm.
5. When the iron is used for the first time, please pay attention to check the iron tip warming condition, when the tip can melt the tin wire, please plate some tin on tip, then adjust to the desired temperature.
6. The tip temperature should not be too high, too high temperature would weaken the tip function, when iron tip, can lowering the temperature.
7. Should be regularly use clean sponge to clean soldering tip, after use, should wipe clean soldering iron tip, plate new tin to prevent soldering iron tip oxide.
8. Preheat plate on the water structure, therefore, do not install the storage and use of contact with oil, water, and plastic pellets to prevent leakage and other security risks.
9. The preheat plate should avoid being forced to tap or hard objects collided causing accessory fracture, alloy resistance wire exposed affect the operating life.
10. The preheat plate DO NOT for prolonged use, and prevent chassis overheating.

Special instructions:
Dear User! Our air gun and soldering iron handle adopt high strength stainless steel tube, the machine must be inspected, or calibrated four times in normal working condition during the production process, the copper tube could be slight yellowing due to high temperature; When use the new machine first time, it is normal that the steel tube at tube at a slight yellowing, please be assured.

The do’s and don’ts
1. DO NOT install/De-install Nozzles with excessive force. DO NOT use pliers to pull the nozzle edge out, DO NOT light the nozzle’s bolt excessively.
2. Only install nozzles when the unit is cool (room temperature)
3. DO NOT use unit near flammable gas or liquid or any combustible material WHATSOEVER especially when using the unit in high-temperature operation. DO NOT face the hot air outlet or touch the soldering iron to the human body WHATSOEVER because it is very hot and can instantly burn the skin/body! When the first use the unit might start initially with white smoke, but this soon will go away.
4. Replacement heater, be careful not to damage the grounding line!
5. Replacement the cable should pay attention to the order and color, can not.

Display Notes
A. When the LED digital displays “---”, it means that the outlet temperature is below 100°C, the hot air rework station is standby mode, and the handle is placed on the handle’s rack.
B. When the LED digital displays “S-E”, it means that the Soldering Iron and Hot air rework’s sensor is having a problem or handle is un-plugged, if this the case it needs to replace the heating element (heating core’s element and sensor components)

Interchangeable Component Description
A. Replacement of Hot Air rework heating element (Figure 4)
1. Ensure the Hot Rework is fully cooled down before replacing the element.
2. Figure, loosen the two screws on the handle.
3. Turns the handle anticlockwise until it comes off and then remove the handle’s cover.
4. Gently takes out the fan, loosen the three screws to remove the fixed wiring board.
5. The wiring board vice versa, from the heater wiring board connection cable, pay attention to the connection location.
6. Remove from the heat pipe heat body with mica paper, careful not broken ground wire of the steel.
7. Wraps well with the new heater mica, inserted into the tube, the attention heater to install in place.
8. According to the original location of the connection to connect heater.
9. When the reversion process by open bottles and handle back.
B. Replacement of the soldering iron’s tip and soldering iron heating core’s element (Figure 5)
1. Unscrews the nut NO.1, and then removes the steel tube NO.2, followed by removing the tip which is going to be replaced.
2. For the replacement of heating core’s element can be performed by unscrewing the plastic cap NO.4, pull out gently the heating core’s element NO.6 along with the circuit board NO.7, please carefully remember the connection of spring NO.5.
3. The iron core from the circuit board welding, the replacement of the heating core, can be fitted well. Note that the order of the iron corewire connection.
C. Replacement of the preheating plate (Figure 6)
1. Remove the top cover.
2. Unscrew the screws.
3. Remove the warm-up bracket.
4. Pull out the clamp.
5. Remove the preheated plate.
INSTRUCTION MANUAL

Thank you for choosing this type of Un soldering Equipment with Hot Air. The product is designed for soldering and unsoldering without lead. Please read the User Guide thoroughly before use, and keep it in a safe place for future reference.