



T 1287 Hot Air SMD Rework Station

Operating Instructions



- Low vibration air pump • Suits leaded & lead free solder (RoHS)
 - Quality heating element • Rapid heat up • Long service life
- Includes 4 nozzles, SMD tweezer set, chip removal tool & spare heating element • Individual temperature & air flow adjustments
- Auto fan cooling extends tip life • ESD safe • Energy authority approved

OVERVIEW

Thank you for choosing the T 1287 SMD Rework Station – a great solution for your soldering equipment needs! This tool is specifically designed for soldering and desoldering Surface Mount Devices (SMDs) with temperature controlled hot air. The T 1287 will achieve marked improvements in the quality and efficiency of your rework tasks.

Please carefully read the operating manual prior to operation in order to maximize the advantages of using your new T 1287 SMD rework station, and keep this manual readily accessible for future reference.

WARNING: This appliance is not intended for use by children or infirm persons without assistance or supervision if their physical, sensory or mental capabilities prevent them from using it safely. Children should be supervised to ensure that they do not play with the appliance. Failure to observe this safety regulation could result in a risk to life and limb. The manufacturer or supplier shall not be liable for damage resulting from misuse of the unit or unauthorised alterations.

CAUTION

DO NOT WORK ON LIVE CIRCUITS

- Before working on any mains powered equipment, make sure that it is turned off, and the mains plug is removed from the power point. You must not undertake work on live parts.

DO NOT USE IF DAMAGED

- If the power lead becomes damaged or the soldering station becomes faulty, discontinue use immediately.

SAFETY PRECAUTIONS RECOMMENDED FOR OPERATION:

1. Ensure the voltage rating of the unit and your power supply is identical prior to use.
2. Check carefully for any damage that may have occurred during transportation.
3. Put the product on a safe and stable working table. The surface should be made of fire and heat resistant material, because the unit can reach very high temperatures and is potentially dangerous.
4. During the operation, the heater is extremely hot, and will cause serious burns if it makes contact with exposed skin. Use gloves and/or any other heat resistant tools to pick up the PCB assembly to eliminate the possibility of accidental burns.
5. Do not touch the unit or allow it to touch anything when in operation. Keep the hot air from the nozzle away from the eyes and face.
6. Do not use the product near combustible gases or flammable materials. Be sure the work area is well ventilated.
7. Turn the power switch OFF and allow the heater to cool before checking or replacing the heater and other parts, or prior to storing the unit. Do not modify the unit.
8. Do not block the air outlet of the nozzle, as this may damage the heating element.
9. Keep the appliance clean. This may be achieved with a damp cloth using a small amount of liquid detergent. NEVER submerge the unit in liquid or allow any liquid to enter the station. Never use any solvent to clean the case. Initially, the iron may emit white smoke, but this will soon dissipate.
10. This unit is designed for SMD rework and should not be used for any other purpose without first consulting the manufacturer or its authorized agent. Suitable for SOIC, CHIP, QFP, PLCC, BGA etc.
11. To improve the operating life of the heating element, it is recommended that the unit not be used continuously at high temperature with a low air flow level. Let the heating element cool for up to 20 minutes after using. Ensure that it is placed back on its cooling stand to cool down between rework operations. Also, do not switch the hand tool on while it is in the cooling stand. Failure to comply with these instructions may result in damage to the hand tool.

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12. When the power is switched off, the unit will briefly continue to blow cooling air through the pipe. Do not disconnect the plug during this cooling process.
13. Do not leave the machine unattended while switched on and operating. Turn off the machine and unplug the power cord when you are leaving and put the hot air nozzle in the holder on one side of the machine. Always replace the hand tool in its holder when not being used. The nozzle and the heating element remain hot after being switched off.
14. Do not use if damaged: If the pump stops working or the rework station becomes faulty, immediately discontinue using the unit. Only authorized technicians are able to safely repair the unit or replace parts. Do not disassemble the pump.

TO PREVENT ELECTRICAL SHOCK, TAKE THESE PRECAUTIONS:

1. Death or serious injury may result from electric shock. It is therefore essential to isolate the equipment from the mains before commencing maintenance or repairs. Remember to unplug in the power cord.
2. Always connect the unit to a grounded power socket.
3. Do not pour water/liquids or subject the heating surface to physical shock. This may damage the heater. Avoid contact with moisture.
4. The station must be switched off and the power cord must be unplugged before replacing the fuse in the AC socket at the rear side of the machine.
5. Turn the power switch off and remove the AC power cord by pulling the plug (not the cable) when the unit will remain unused for a long period of time.

PRODUCT FEATURES:

- ? Specially-designed intelligent chip microcomputer control system
- ? Easy to read digital LED displays with simple to use operating buttons to control temperature and air flow.
- ? The temperature can be locked by a “password” code that is convenient for production line management.
- ? Quick heating high-power heating element, with a maximum of 600W.
- ? Ideally suited to desoldering ICs such as: QFP, SOP, PLCC or SOJ chips etc.
- ? The built in static-free circuit design is safe for the sensitive circuit components elements like CMOS ICs.
- ? Auto shutoff handpiece cradle (Air power is shut off when handpiece is placed in cradle)
- ? Auto-cooling design: When the power is switched off, the cooling system begins automatically, and the temperature will drop gradually down to 100 degrees Celsius (212°F) to protect the heating element from burning out.
- ? Sensor / Pump Failed Detection - If the sensor circuit fails, the display reads ‘S-E’ and the power to the heating nozzle is cut. If the pump circuit fails, the display reads ‘P-E’ and the power is cut to the heating nozzle.
- ? Heating element auto-protecting function: When the heating element reaches a high temperature, this function automatically protects the element, and thereby preventing the element from premature failure.

INSIDE THE BOX:

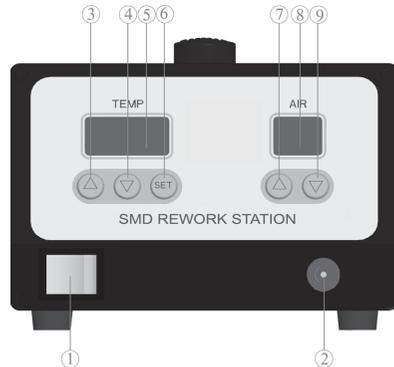
- ? T 1287 Workstation and air pump handle / pencil.
- ? Nozzles: 10mm x 10mm; 14mm x 14mm; 4mm dia; 7mm dia.
- ? Pliers (Tweezer) – 4 different sets, non-magnetic stainless steel.
- ? Heating elements.
- ? IC removing wire tool.

PRODUCT DESCRIPTION

The temperature-controlled LF-852DII Hot-Air SMD rework station has been built around an intelligent microcomputer chip, which is specially designed to work with lead free SMD chips such as SOIC, CHIP, QFP, PLCC, BGA etc. It also meets RoHS standards requirement. This appliance is equipped with a high-power heating element that heats up quickly. High-quality sensors and consistent heat-transfer technology ensure precise temperature regulation. The aluminum housing is strong and acts as a reliable heat sink and is resistant to electro-magnetic interference.

FIGURE 1. FRONT PANEL:

1. Main power switch
2. Hot air pencil input
3. Temperature increase (UP)
4. Temperature decrease (DOWN)
5. Temperature display
6. SET function key
7. Hot air flow increase (UP)
8. Air flow level display
9. Hot air flow decrease (DOWN)



INSTALLATION

1. Select the Nozzle that matches the size of the IC. Attach the nozzle when both the heating element and the nozzle are cool and the unit is turned off and unplugged.
2. Loosen the screw on the nozzle. Attach nozzle.

IMPORTANT: Do not force the nozzle or pull on the edge of the nozzle with pliers. Also, do not tighten the set-screw too tightly.

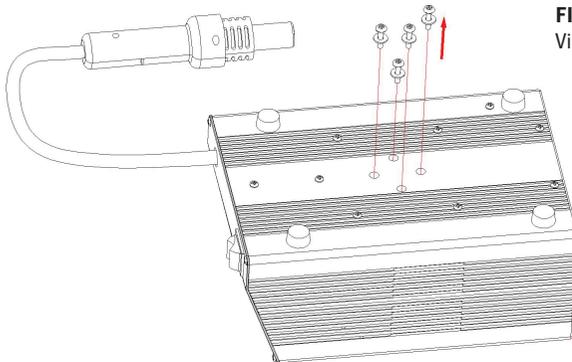


FIGURE 2.

View showing base of solder station

3. In order to protect the pump during transportation, the pump in the machine is tightened by the 4 screws under the bottom enclosure. Please unscrew the 4 screws before the machine is first used. (See Figure 2 above)
4. Ensure that the base unit power switch is in the off position. Check carefully for any damage that may have occurred during transportation and ensure that the working voltage matches your power supply before plugging in the station.
5. Plug in the AC power cord and turn the main power switch to on. The temperature LED and airflow LED displays will be on and show the value.

OPERATION

TEMPERATURE SETTING:

1. Press ▲ or ? key on the left side of the front panel to choose the desired temperature. When the temperature reaches the desired setting, the heating indicator light will flash on and off to maintain the set temperature. The temperature will change 1 degree by pressing the keys ▲ or ? at any time.
2. To increase the temperature: Press the ▲ key once, and the display will increase 1 numeral. For fast increment of the temperature setting, press and hold the ▲ key for 2 seconds until you reach the desired temperature.
3. To decrease the temperature press ? key, following the same procedure as above.

AIRFLOW SETTING:

1. Press ▲ or ? key to choose the desired air flow on the right side of the front panel. The speed will change by 5 degrees each time the keys ▲ or ? are pressed, either up or down in value respectively.
2. After adjusting the air flow, wait for the temperature to stabilize before using the unit.

PARAMETER SETTING:

1. Press SET key and hold until display shows '— — —'
2. Release the SET key. The display '— — —' will start to flash.
3. Input the factory default lock setting of '010' by incrementing the ▲ key.
4. Press SET key again and the display will show 'F-0' and flash. There are two parameters that can be set.
 - a. Parameter 'F-1' is temperature lock setting.
 - b. Parameter 'F-3' is to change between Fahrenheit and Centigrade (Celsius) temperature selection.
5. To select parameter setting, press the ▲ or ? to scroll through to the parameter required.

NOTE: that the unit returns to normal operation after 15 seconds if no key is pressed.

TEMPERATURE ADJUSTMENT LOCKOUT SETTING:

When the LED displays 'F-1' and flashes, press SET key and the unit enters the temperature adjustment lockout status. At this moment, the LED displays the preset value. If '000' is set, this means the unit has no temperature lock. Press ▲ or ? key to change temperature adjustment lockout value. The temperature adjustment lockout is number '100'. Once the number is entered, press SET key again to finish setting. The user can now continue to set other parameters.

FAHRENHEIT AND CENTIGRADE (CELSIUS) TEMPERATURE SELECTION:

When the display shows 'F-3' and is flashing, press the SET button. The display will show the current setting for Celsius °C or Fahrenheit: °F. To change the temperature selection setting, press ▲ or ? key. To save the setting, press SET key.

RECOMMENDED SOLDERING TEMPERATURES:

A low iron temperature will slow the flow of solder. A high temperature will burn the flux in the solder, which in turn will emit a heavy white smoke, resulting in a dry joint or damage to the PCB. When the tip working temperature is within the correct parameters suited to the particular solder being used, a good joint is assured.

The most common solder alloy used in the electronics industry is 60% tin, 40% lead (60/40). The tip working temperature of solder is detailed below and can vary slightly from manufacturer to manufacturer.

Melting point	215°C (419°F)
Normal operation	320°C (608°F)
Production line operation.....	380°C (716°F)
Desoldering operation for small joint	320°C (608°F)
Desoldering operation for larger joint.....	400°C (752°F)

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To meet RoHS (European requirement for lead-free solder), the 60/40 solder alloys are not allowed in the production process. The RoHS lead-free solder alloys require a working temperature of about 30°C (54°F) higher than typical 60/40 lead/tin soldering. The lead free solder working temperature is detailed below and can vary from manufacturer to manufacturer.

Melting point	220°C (428°F)
Normal operation	300-360°C (572-680°F)
Production line operation.....	360-410°C (680-770°F)

IMPORTANT: The temperature above 410°C (770°F) is not recommended for normal soldering functions, but can be used for short periods of time when high temperatures are required. Please note that the lead free solder alloys require a higher soldering temperature which shortens tip life.

QFP (Quad Flat Package) De-soldering for ICs:

1. Melt the solder: Hold the iron so that the nozzle is located directly over but not touching the IC, and allow the hot air to melt the solder. Be careful not to touch the leads of the IC with the nozzle.
2. Remove the IC: Once the solder has melted, remove the IC by lifting it out with the pliers (tweezers).
3. Turn the power switch off: After the power switch is off, an automatic blowing function begins sending cool air through the pipe, in order to cool both the heating element and the handle. So do not disconnect the plug during this cooling process.
4. In case you don't use the unit for a long time, disconnect the plug.
NOTE: About a minute after the power is switched off, the temperature will drop to 75°C (167° F), and the power will automatically shut off.
5. Remove any remaining solder: After removing the IC, clean the remaining solder chips with a wick or desoldering tool.

NOTE: For SOP, PLCC etc. it is recommended that tweezers are used to desolder.

QFP Soldering:

1. Apply the solder paste: Apply the proper quantity of solder paste and flux (preferably no-clean) and place the SMD on the PCB.
2. Preheat SMD.
3. Soldering: Heat the lead frame evenly.
4. Washing: When soldering is completed, wash the area with a defluxer.

NOTE: While there are many advantages of hot air SMD rework, it is also possible to have defects for soldering BGA. It is recommended that all soldering joints be closely inspected.

T 1287 SPECIFICATIONS

Voltage input:	240V AC
Wattage:	1000W
Heating element:	Nichrome
Temperature range:	100-480°C
Air flow capacity:	1.5L/min - 70L/min
Weight:	4.9kg
Dimensions:	283W x 190D x 120Hm

MICRON

COMMONLY USED ACRONYMS FOR SOLDERING INTEGRATED CIRCUITS (ICs)

SMD: Surface Mounted Device.

SOIC: Small Outline Integrated Circuit

SOP: Small Outline Package

QFP: Quad Flat Package

PLCC: Plastic Lead Chip Carrier

BGA: Ball Grid Array

PCB: Printed Circuit Board

SOJ: Small Outline J-leaded

IMPORTANT SERVICE NOTE:

There are no user serviceable parts inside the unit. Do not open the unit.

If the iron or station should become faulty or, for some reason not operate normally, the system should be returned to the service department of your authorised dealer or service agent, or a similarly qualified person in order to avoid a hazard.

WARRANTY:

For repair or service please contact your place of purchase. Note: Under no circumstances should you attempt to repair the player yourself or via a non-authorised Altronics service centre as this will invalidate the warranty! During the warranty period, we undertake to repair or replace your product at no charge if found to be defective due to a manufacturing fault. The warranty excludes damage by misuse, neglect, shipping accident, incorrect installation or no fault found.

NOT FIELD SERVICEABLE.

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