

USER MANUAL

TMT-HA600 HOT AIR TOOL



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WARRANTY

All equipment and accessories are warranted by Thermaltronics to be free from defects in materials and workmanship as follows:

Part Number	Description	Warranty Period
TMT-HA600-1	100-110V Hot Air Tool	1 Year
TMT-HA600-2	220-240V Hot Air Tool	1 Year
HA-HE600-1	100-110V Heating Element	30 Days
HA-HE600-2	220-240V Heating Element	30 Days

This warranty does not apply to equipment or goods which have been tampered with, misused, damaged through improper installation or used in a manner contrary to supplier instructions. Normal "wear and tear" of equipment or goods is not covered by this warranty. If the product should become defective within the warranty period, Thermaltronics will repair or replace it free of charge at its sole option. Warranty period is from the date of purchase by the original owner. If the date of purchase cannot be substantiated the date of manufacture will be used as the start of the warranty period.

WARNING:

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

This tool must be placed on its stand when not in use.

TMT-HA600 SPECIFICATIONS

Input Line Voltage:	TMT-HA600-1	100-110 VAC
	TMT-HA600-2	220-240 VAC
Power:		1300 Watts
Temperature Range:		100C - 480C (212F - 896F)
Pump:		Diaphragm
Air Flow (Max):		23L / min
Fuse:	TMT-HA600-1	250V 15A
	TMT-HA600-2	250V 8A
Size (W x H x D):		188mm x 127mm x 246mm
Weight:		3 KG
Certification Marks:		CE, ETL

INTRODUCTION

Congratulations on your purchase of the TMT-HA600 hot air tool. This unit has been tested and inspected by Thermaltronics prior to shipment, and with proper maintenance will give you years of reliable performance.

SYSTEM FEATURES

The TMT-HA600 hot air tool can be used for surface mount component removal and reflow on components such as SOIC, CHIP, QFP, PLCC and others.

Functions and Features

1. Digital display shows temperature and status.
2. Airflow meter provides visual feedback of air flow.
3. 1300W high power heater designed to work on very difficult applications, in the removal and reflow of surface mount components.
4. Large selection of high quality nozzles for rework on QFP, SOP, PLCC and SOJ components.

SAFETY PRECAUTIONS

Warning

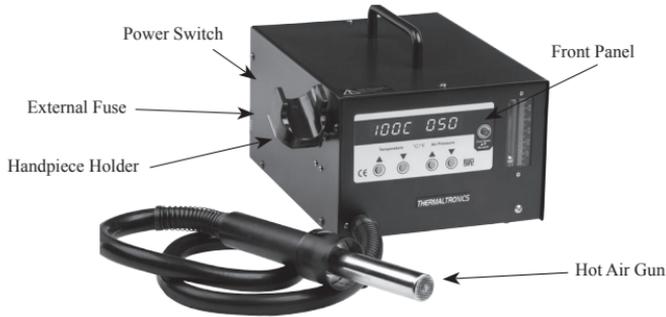
A fire may result if this equipment is not used with care and for intended applications. To avoid electric shock or injury, please follow the instructions below strictly:

1. The unit must be properly grounded.
2. The unit can reach extremely high temperatures when switched ON.
 - Do not use the device near flammable materials or gases
 - Do not touch heated parts, which can cause severe burns
 - Do not point the nozzle towards any part of the body
3. Never operate the equipment with wet hands.
4. Always disconnect the power cord and allow the unit ample time to cooldown before performing maintenance.
5. Use only genuine replacement parts.

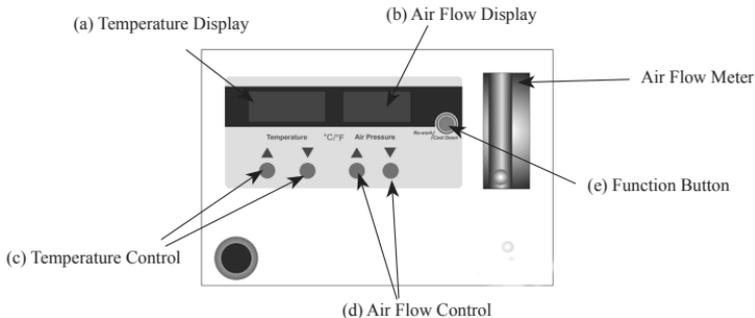
Caution

1. Use this equipment in a well-ventilated area, away from combustible equipment.
2. Disconnect the power cord if the unit is not used for an extended period of time.
3. Place handle in stand when not in use.
4. Handle with care.
 - Never drop or sharply jolt the unit.
 - The unit contains delicate parts that can be damaged if subjected to physical force.
 - Do not spill any liquids into the unit.
5. Do not operate on uneven surfaces.
6. Allow to cool down before storage.
7. Turn off the power when the unit is not in use.
8. Do not alter the unit in any manner.
9. When resting the handle in the handle holder, make sure there are no objects within 30cm of the nozzle, as nearby objects maybe damaged.
10. Do not apply excessive force when installing and removing nozzles.
11. Do not use pliers to pull the edges of the nozzle.
12. Do not over tighten the screw when installing a new nozzle.

SYSTEM PANEL



FRONT PANEL



Front Panel

- (a) Temperature Display - Shows the set and actual temperature in Celsius or Fahrenheit
- (b) Air Flow Display - Shows the air flow
- (c) Temperature Control - Increase or Decrease the set temperature.
 - Temperature Range in Celsius - 100C to 480C
 - Temperature Range in Fahrenheit - 212F to 896F
- (d) Air Flow Control - Increase or Decrease the set air flow (range 15-99)
- (e) Function Button - Toggle the hot air tool between standby mode or operating mode. In System Settings, the button can be used to save settings. (see: System Settings)
 - "On" = Pushed Down Position, "Off" = Popped Up Position

UNPACKING/ASSEMBLY/OPERATION

Please read this manual and follow the directions before using the equipment. The carton contains:

1. TMT-HA600 Hot Air Tool
2. HTN-D50, HTN-D80, HTN-D100, HTN-D120 nozzles
3. HA-HE600 Heating Element
4. Vacuum Suction Pen
5. Power Cord

Important: Keep all shipping materials until satisfactory operation has been verified.

Assembly and Operation

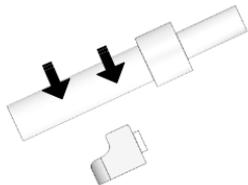
1. Remove TMT-HA600 Hot Air Tool from its box and place on a suitable work bench.
2. Remove the screw on the bottom of the unit marked in red wax. This screw is used to prevent the air pump from moving during shipping. **Warning: Failure to remove the screw before using the equipment can cause damage to the system.**
3. Select the proper nozzle and secure it to the handle.
4. Ensure the hot air gun is placed in the handpiece holder. (see Operation - Auto-Sleep Mode)
5. Connect the AC plug to a suitable AC power outlet.
6. Switch the power switch on the back of the unit to the "on" position.
7. To start rework push down the (e) Function Button into the "on" position (see Front Panel).
8. Lift the hot air gun from the holder
9. Adjust the air flow level using the (d) Air Flow Control (see Front Panel).
10. Adjust the temperature level using the (c) Temperature Control (see Front Panel). The (a) Temperature Display will change from showing the actual temperature to the set temperature while the temperature is being adjusted. After temperature adjustment is done, the Temperature Display will revert back to showing the actual temperature rather than the display temperature.
11. Wait for the actual temperature to reach the set temperature. The unit should then be ready.

Operation - Power Off

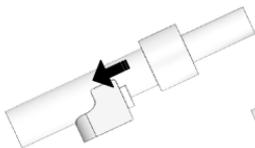
1. Place the hot air gun back into the holder.
2. Press the (e) Function Button (see Front Panel). This will start the auto cool process to accelerate cooling down the hot air gun. The display will show "OFF" once the heating element temperature has gone down below 80C (176F).
3. Switch off the unit.
4. Unplug if not used for extended periods of time.

Operation - Auto-Sleep Mode

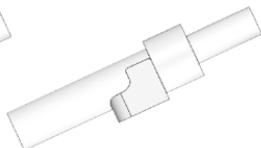
1. Once the hot air gun has been placed into the holder, the hot air gun will automatically go into standby mode once the sleep timer setting (default: 5 minutes) has been reached.
2. To wake the hot air gun from sleep mode, lift the hot air gun from it's holder or press any control button.



(a) place the handle onto the holder



(b) pull the handle downwards to secure in place



(c) Handle in locked position

Note: To ensure that the auto-sleep mode is activated, the hot air gun must be properly placed into the holder. The letter "L" will show next to the temperature indicating the hot air gun is "Locked".

SYSTEM SETTINGS

System Settings - Enter Menu

The system settings menu can be accessed by following the procedure below:

1. Turn off unit.
2. Ensure that the (e) Function Button is in the "on" position (pushed down).
3. Switch the power switch on the back of the unit to the "on" position.
4. While the letters "ESD SAFE" are scrolling across the display, simultaneously press and hold both (c) Temperature Control up and down buttons (see Front Panel).
5. If successful the digital display will show "SEL 1" (Select 1).

Selection Menu	Function
1	Hot Air Gun Sleep Timer
2	Temperature Scale Adjustment
3	AC Line Frequency Selection
4	Hot Air Gun Temperature Calibration

System Settings - Hot Air Gun Sleep Timer

Once the hot air gun is placed into the holder. The system will go into sleep mode once the sleep timer has been reached (default is 5 minutes). Use the following procedure to set the sleep timer:

1. Follow System Settings - Enter Menu procedures.
2. Use the (d) Air Flow Control down button to adjust system selection menu to SEL 1.
3. Press the (d) Air Flow Control up button to confirm the selection.
4. The display will show "t" (timer) and x (x = minutes). The sleep timer is adjustable from 5 to 60 minutes with "off" representing the auto-sleep mode is turned off.
5. Press the (d) Air Flow Control up and down buttons to adjust the sleep timer.
6. To save the selected settings and exit from the menu press the (e) Function Button.

System Settings - Temperature Scale Adjustment

By default, the temperature scale has been set by the factory. For manual override follow the procedure below:

1. Follow System Settings - Enter Menu procedures.
2. Use the (d) Air Flow Control down button to adjust system selection menu to SEL 2.
3. Press the (d) Air Flow Control up button to confirm the selection.
4. The display will show "c" (celsius) or "f" (fahrenheit).
5. Press the (d) Air Flow Control up and down buttons to adjust the temperature scale.
6. To save the selected settings and exit from the menu press the (e) Function Button.

System Settings - AC Line Frequency Selection

By default, the line frequency has been set by the factory. For manual override follow the procedure below:

1. Follow System Settings - Enter Menu procedures.
2. Use the (d) Air Flow Control down button to adjust system selection menu to SEL 3.
3. Press the (d) Air Flow Control up button to confirm the selection.
4. The display will show "-50" (50 Hz) or "-60" (60 Hz).
5. Press the (d) Air Flow Control up and down buttons to adjust the AC Line Frequency.
6. To save the selected settings and exit from the menu press the (e) Function Button.

System Settings - Hot Air Gun Temperature Calibration

By default, the temperature calibration has been set by the factory. For manual override follow the procedure below:

1. Follow System Settings - Enter Menu procedures.
2. Use the (d) Air Flow Control down button to adjust system selection menu to SEL 4.
3. Press the (d) Air Flow Control up button to confirm the selection.
4. The display will show "Add XXX" or "Sub XXX". (Add = add offset, Sub = subtract offset, XXX = temp. offset)
5. Press the (d) Air Flow Control up and down buttons to adjust the temperature offset.
6. To save the selected settings and exit from the menu press the (e) Function Button.

FREQUENTLY ASKED QUESTIONS

Q: The unit has no power.

A: Check if the unit is switched on and the power cord is plugged in. Verify that the fuse has not blown out. Pick up the hot air gun, the unit may just be in sleep mode.

Q: The unit is very noisy and vibrating too much.

A: Verify that the shipping screw on the bottom of the unit marked in red wax has been removed.

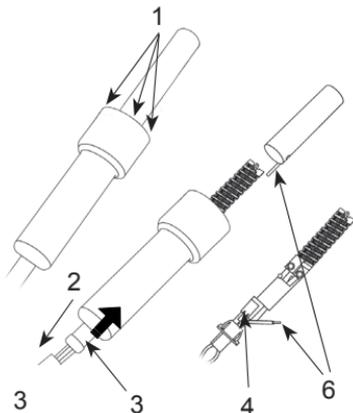
Q: The actual temperature is not increasing.

A: Pick up the hot air gun, the unit may just be in sleep mode. The overheat protection may be engaged, power off unit to cooldown and then power back on. Lastly, check if the heating element is damaged, replace if damaged.

Q: Temperature display is always above 500, after a few minutes the display shows "Off".

A: The thermal sensor may be broken and needs to be replaced.

Q: Replacing the heating element.



Caution: Disconnect power before replacing heater element.

1. Remove the three screws holding the heater pipe in place.
2. Pull back the air tube from the back of the hot air gun
3. Push forcefully up on the inner tube to unseat the internal heating assembly from the outer shaft.
4. Disconnect the heater connector, pull back the heat shrink tube and desolder thermocouple wires.
5. Insert a new heating element (HA-HE600).
6. Reassemble the hot air gun in the reverse order it was disassembled.

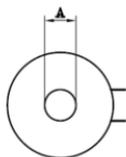
Note: Ensure the ground wire is properly connected to the heater pipe.

Q: Other problems

A: Please contact your vendor or Thermaltronics: support@thermaltronics.com.

ORDERING GUIDE

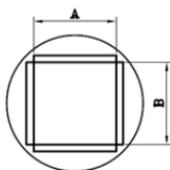
SPARE PARTS & NOZZLES



PART#	DESCRIPTION
HA-HE600-1	100-110V Heating Element for TMT-HA600-1
HA-HE600-2	220-240V Heating Element for TMT-HA600-2

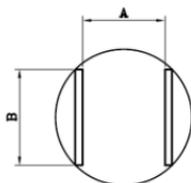
PART#	DESCRIPTION	A mm (in)
HTN-D50	Nozzle 5.0mm	5.0
HTN-D80	Nozzle 8.0mm	8.0
HTN-D100	Nozzle 10.0mm	10.0
HTN-D120	Nozzle 12.0mm	12.0

PLCC, QFP, BQFP



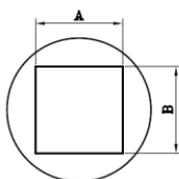
PART#	DESCRIPTION	A mm (in)	B mm (in)
HTN-PL20	Nozzle 11.9mm x 11.9mm, PLCC-20	11.9	11.9
HTN-PL28	Nozzle 14.5mm x 14.5mm, PLCC-28	14.5	14.5
HTN-PL32	Nozzle 16.9mm x 14.3mm, PLCC-32	16.9	14.3
HTN-PL44	Nozzle 19.5mm x 19.5mm, PLCC-44	19.5	19.5
HTN-PL52	Nozzle 22.0mm x 22.0mm, PLCC-52	22.0	22.0
HTN-PL68	Nozzle 27.0mm x 27.2mm, PLCC-68	27.0	27.2
HTN-PL84	Nozzle 32.4mm x 32.4mm, PLCC-84	32.4	32.4
HTN-QF48	Nozzle 8.4mm x 8.4mm, QFP-48	8.4	8.4
HTN-QF44	Nozzle 13.4mm x 13.4mm, QFP-44	13.4	13.4
HTN-QF80	Nozzle 17.3mm x 17.3mm, QFP-52,80	17.3	17.3
HTN-QF100	Nozzle 23.4mm x 18.1mm, QFP-64,80,100	23.4	18.1
HTN-QF160	Nozzle 31.2mm x 31.2mm, QFP-120,128,144,160	31.2	31.2
HTN-BQ100	Nozzle 22.4mm x 22.4mm, BQFP-100	22.4	22.4
HTN-QF240	Nozzle 34.5mm x 34.5mm, QFP-240	34.5	34.5
HTN-BQ196	Nozzle 37.7mm x 37.7mm, BQFP-196	37.7	37.7
HTN-QF208	Nozzle 29.8mm x 29.8mm, QFP-208	29.8	29.8

SO, TSOP



HTN-SC16	Nozzle 6.8mm x 10.2mm, SOIC 14, 16	6.8	10.2
HTN-SL16	Nozzle 10.6mm x 10.8mm, SOL 14, 16	10.6	10.8
HTN-SL20	Nozzle 10.6mm x 13.3mm, SOL 20, 20J	10.6	13.3
HTN-SL24	Nozzle 10.6mm x 15.9mm, SOL 24, 24J	10.6	15.9
HTN-SL28	Nozzle 10.6mm x 18.4mm, SOL 28	10.6	18.4
HTN-SL44	Nozzle 16.0mm x 27.9mm, SOL 44	16.0	27.9
HTN-SJ32	Nozzle 13.5mm x 20.6mm, SOJ 32	13.5	20.6
HTN-SJ40	Nozzle 13.5mm x 25.4mm, SOJ 40	13.5	25.4
HTN-TS24	Nozzle 17.0mm x 7.1mm, TSOP 20-24 PIN	17.0	7.1
HTN-TS32	Nozzle 21.0mm x 9.1mm, TSOP 28-32 PIN	21.0	9.1
HTN-TS40	Nozzle 21.0mm x 10.8, TSOP 40 PIN	21.0	10.8
HTN-TS48	Nozzle 21.0mm x 13.3mm, TSOP 48 PIN	21.0	13.3
HTN-TS24B	Nozzle 10.2mm x 18.4mm, TSOP 20-24 PIN	10.2	18.4
HTN-TS44	Nozzle 12.7mm x 19.8mm, TSOP 24-28/40-44 PIN	12.7	19.8

BGA



HTN-B1010	Nozzle 10.0mm x 10.0mm	10.0	10.0
HTN-B1313	Nozzle 13.0mm x 13.0mm	13.0	13.0
HTN-B1616	Nozzle 16.0mm x 16.0mm	16.0	16.0
HTN-B1919	Nozzle 19.0mm x 19.0mm	19.0	19.0
HTN-B2828	Nozzle 28.0mm x 28.0mm	28.0	28.0
HTN-B3030	Nozzle 30.0mm x 30.0mm	30.0	30.0
HTN-B3232	Nozzle 32.0mm x 32.0mm	32.0	32.0
HTN-B3636	Nozzle 36.0mm x 36.0mm	36.0	36.0
HTN-B3939	Nozzle 39.0mm x 39.0mm	39.0	39.0
HTN-B4141	Nozzle 41.0mm x 41.0mm	41.0	41.0
HTN-B4343	Nozzle 43.0mm x 43.0mm	43.0	43.0
HTN-B4545	Nozzle 45.0mm x 45.0mm	45.0	45.0



Support Email: support@thermaltronics.com

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