

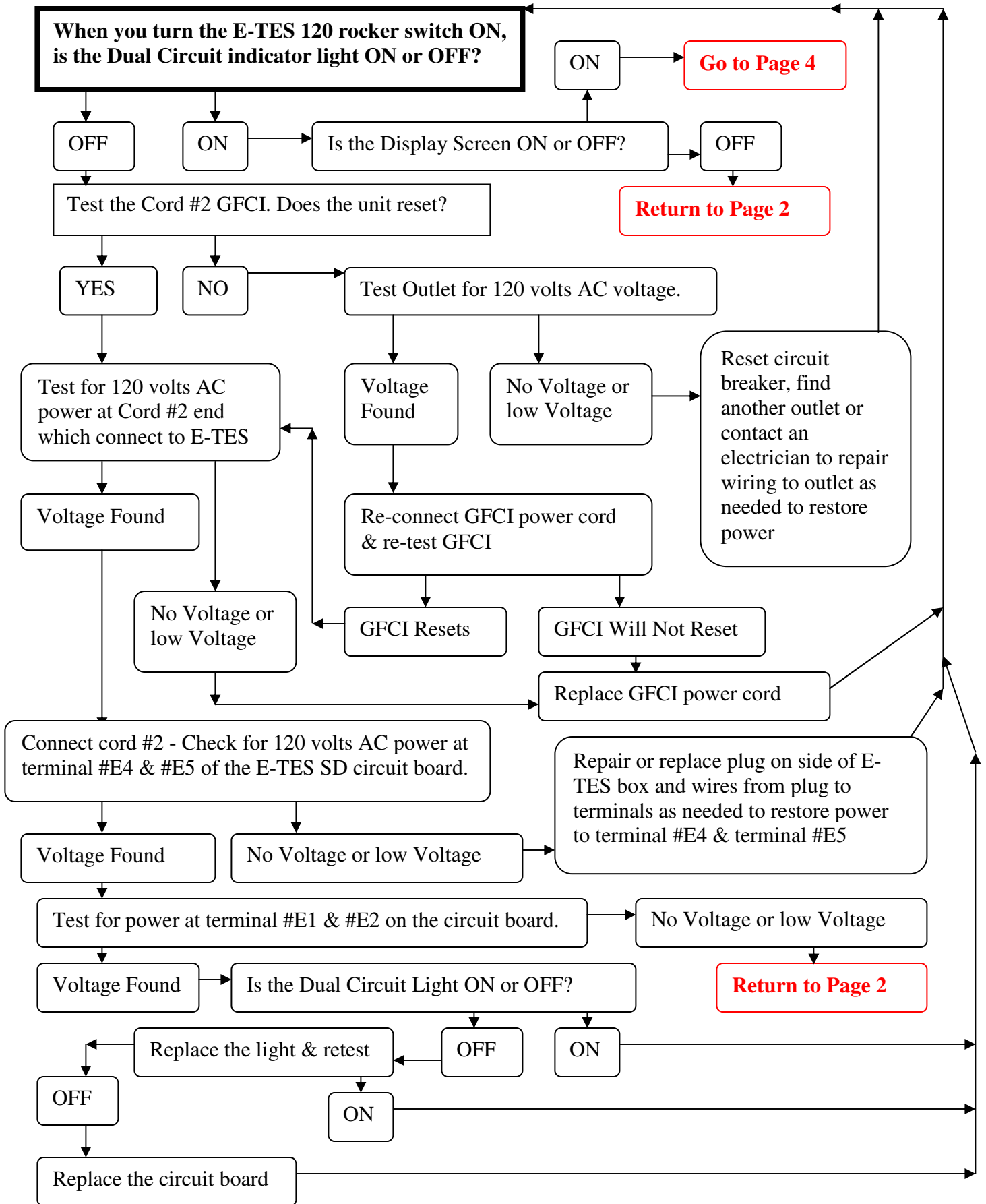
**This document outlines questions to ask and components to check during E-TES SD 120 volt troubleshooting. More detailed troubleshooting procedures are available in the E-TES SD 120 volt Troubleshooting Guide.**

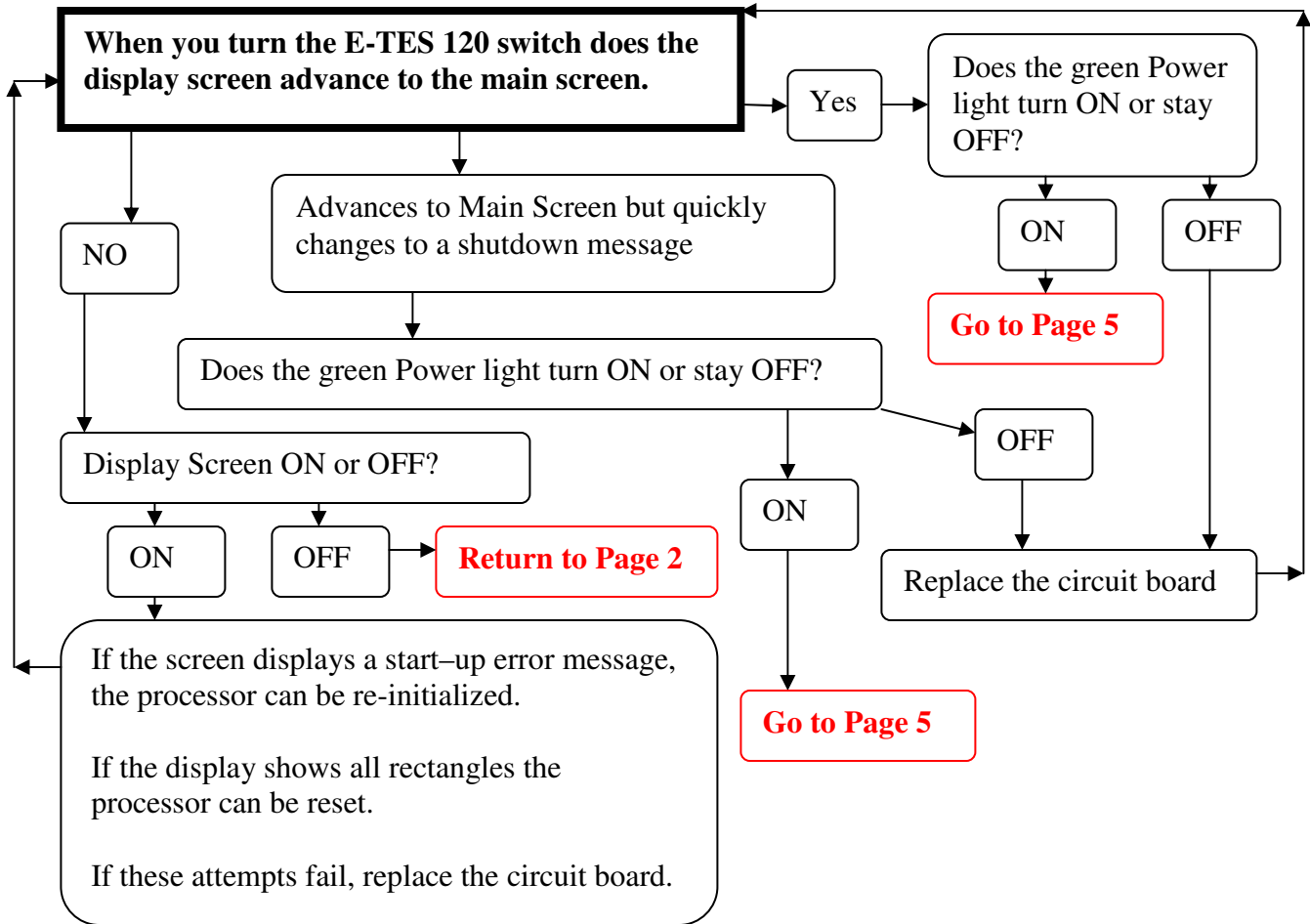
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|---|----------------------|
| <b>1. Display Screen OFF:</b>             | <b>Go to Page 2</b>  |
| <b>2. Dual Circuit Light OFF:</b>         | <b>Go to Page 2</b>  |
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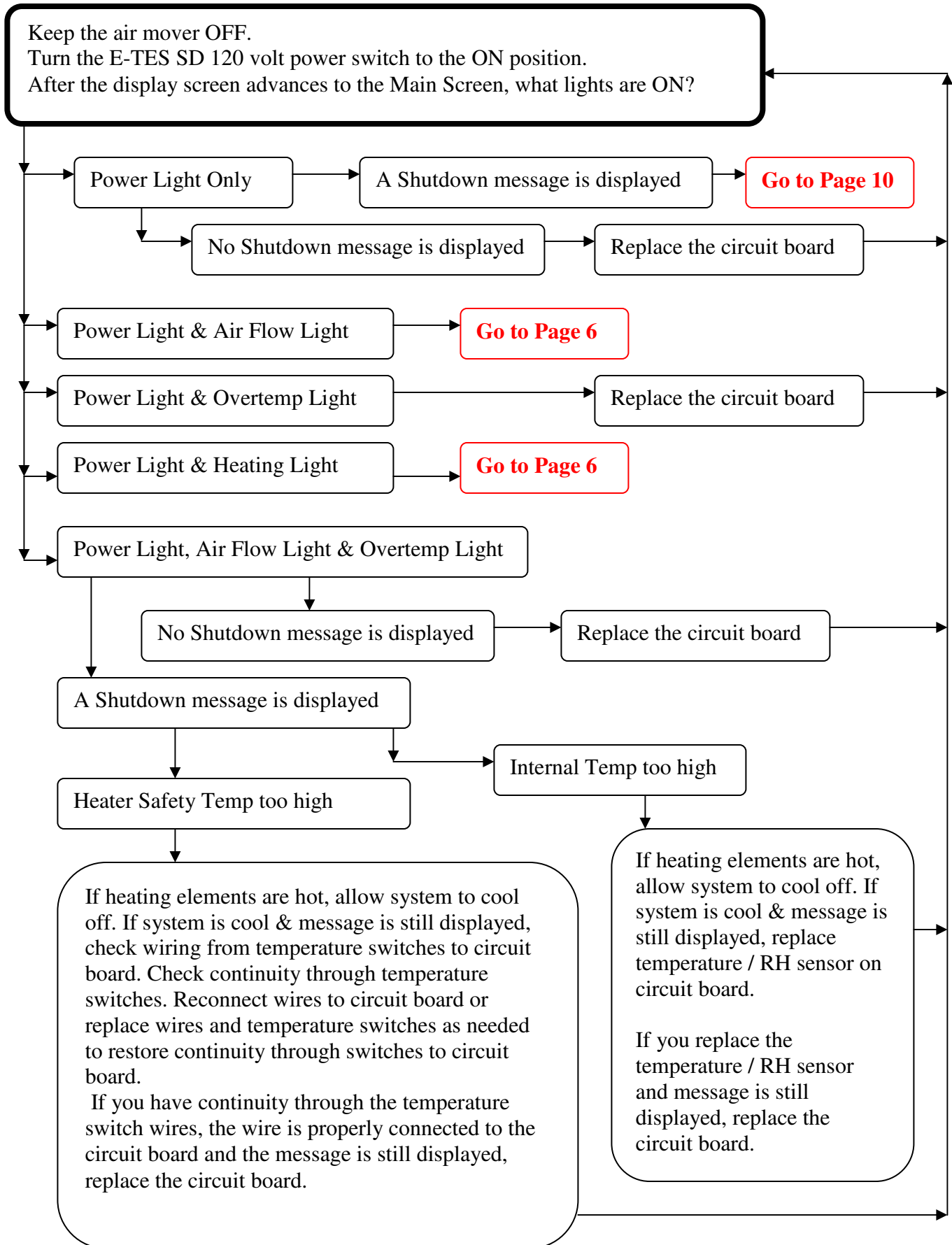
**E-TES 120 Operation & Testing Guidelines:**

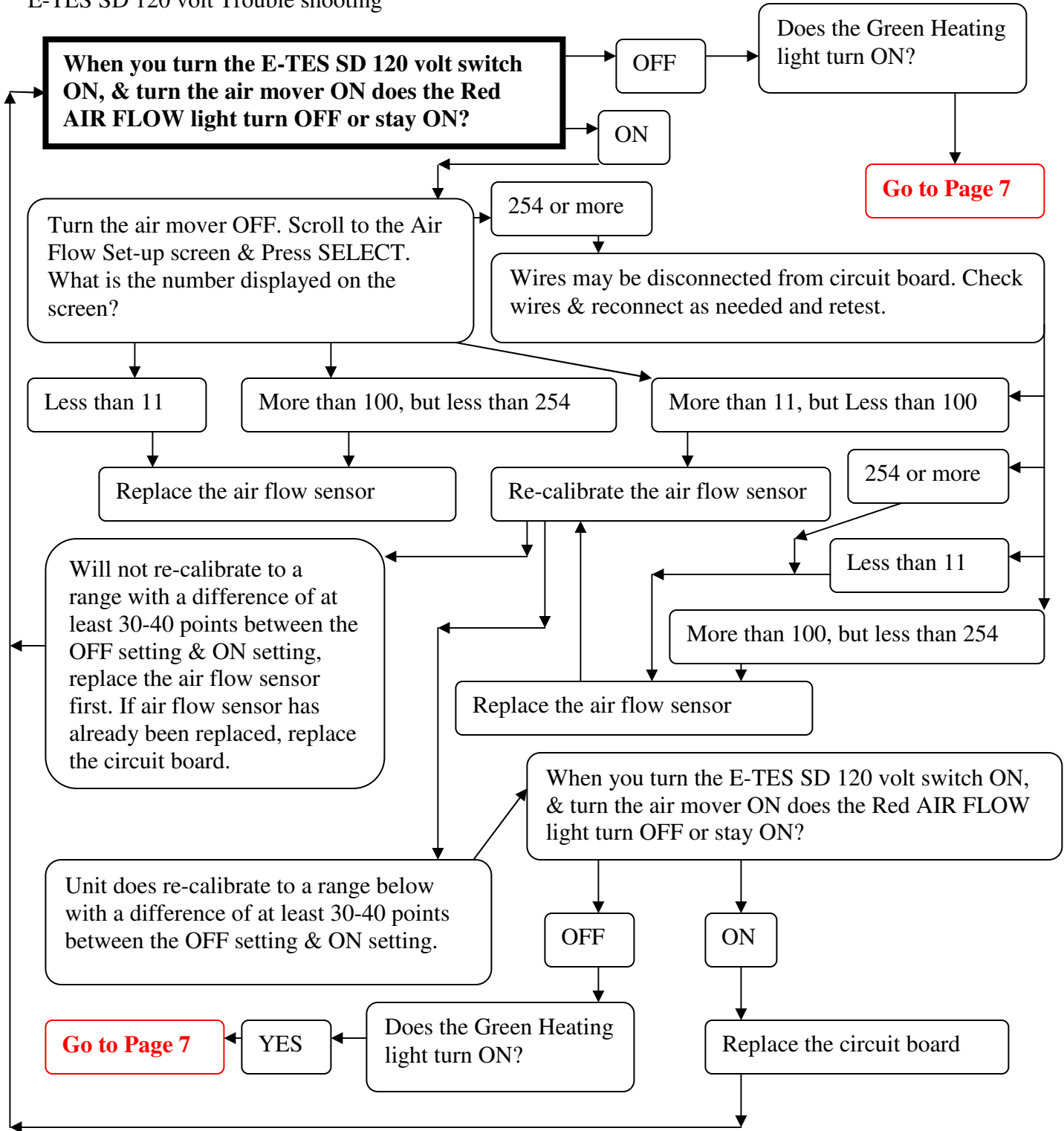
- 1. Before Running E-TES SD 120 volt unit be sure you have two separate circuits with the correct voltage and amperage rating for operating the E-TES SD 120 volt. (120 Volts AC – Minimum 20amp rating)**
- 2. Both power cords must be connected & powered to operate the E-TES SD 120 volt unit.**
- 3. Air Mover must be the correct size to fit into the opening on top of the E-TES. Snout must be angled properly to activate air flow sensor  
(Air mover snout must be at a 45° angle toward E-TES SD snout.)**
- 4. A clamp on amp meter is required to test amp draw.**
- 5. A multimeter is required to check continuity, resistance & voltage.**
- 6. Your outlet voltage may vary. The E-TES SD 120 volt unit will still operate, but the outlet voltage may affect some of the test readings. Test your outlet voltage & make adjustments to allow for differences in outlet voltage.**



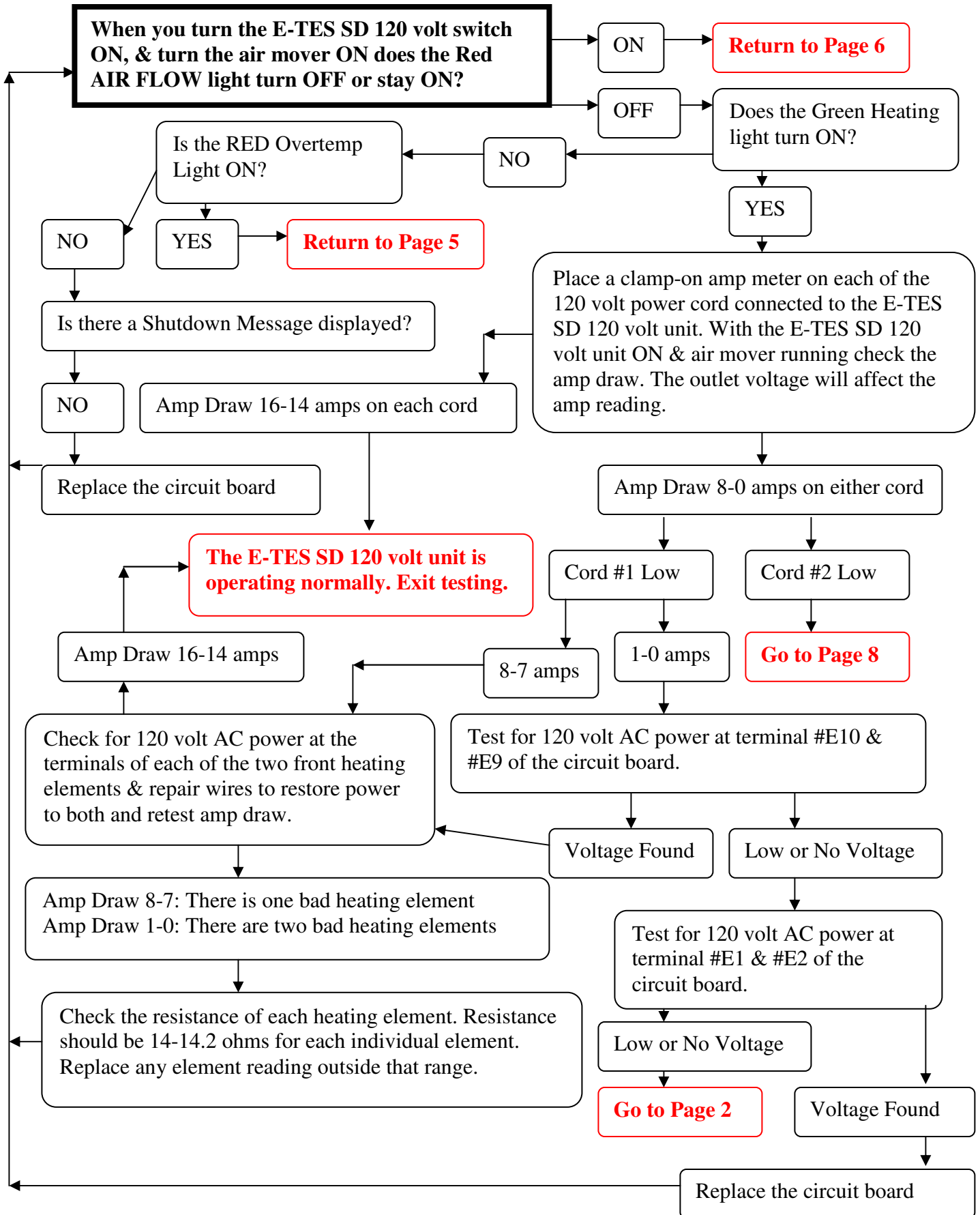


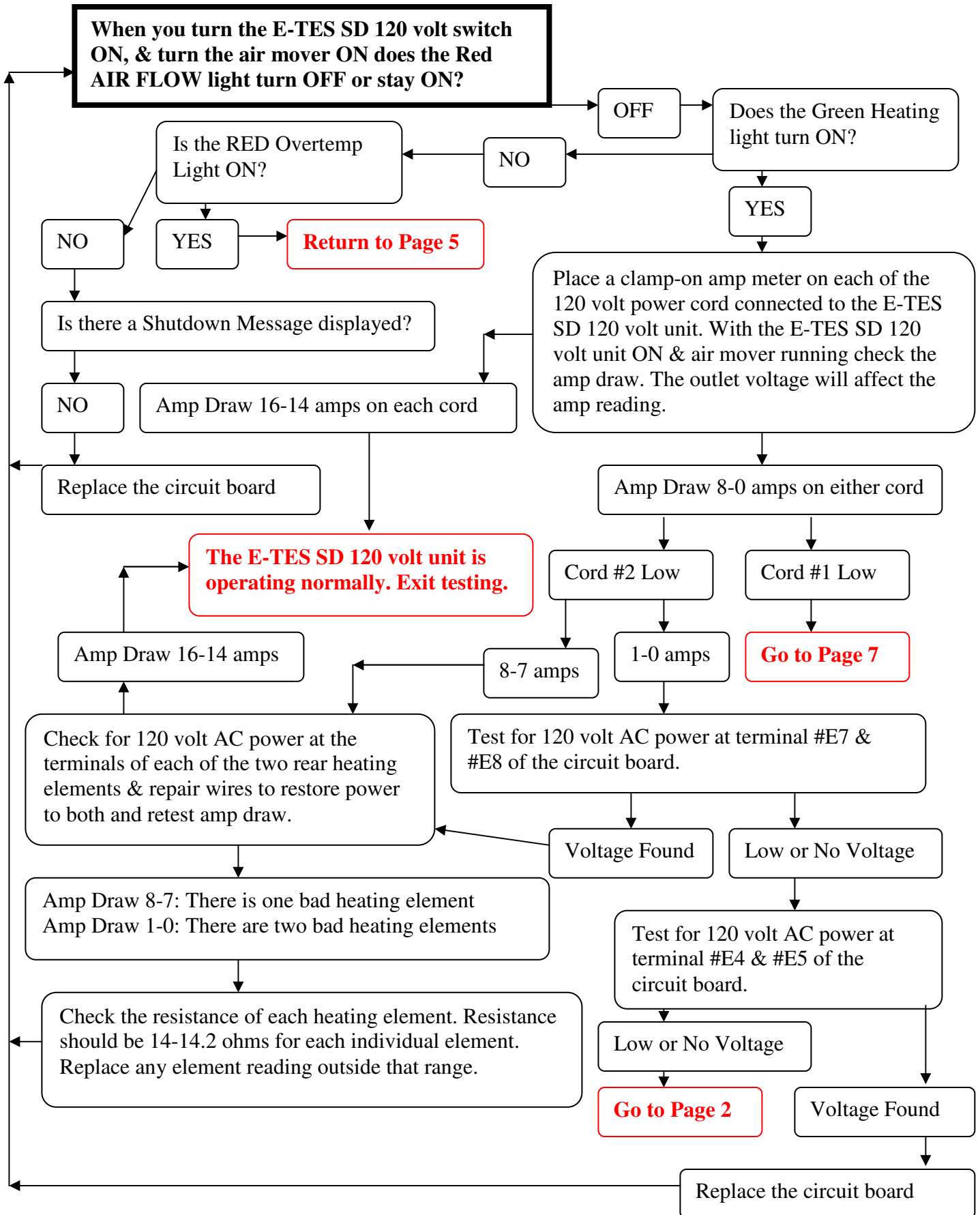






E-TES SD 120 volt Trouble shooting







**Air Temperature  
100F > 95F**

(Current Temp greater than preset level)

**Surface Temp  
120F > 100F**

(Current Temp greater than preset level)

When Air Temperature or Surface Temperature measured from a probe connected to either the Air Temp or Surface Temp port is greater than preset limit, the E-TES SD heater will be shut off and this shutoff message will be displayed, flashing.  
If no probe connected the E-TES SD will not read the 0 as an active reading and will not shut the E-TES SD heater OFF no matter what the preset level is.  
Reset limit as needed when temperature probes are to be connected.

**Moisture 1 Value  
10% < 15%**

(Current Value less than preset level)

**Moisture 2 Value  
10% < 15%**

(Current Value less than preset level)

Moisture content value measured from either Moisture Probe 1 or 2 is less than preset limit, the E-TES SD heater will be shut off and this shutoff message will be displayed, flashing.  
If no probe connected or probe pins are not pressed into the wet material, the E-TES SD will read the 0 as an active reading and shut the E-TES SD heater OFF if the preset limit is above 0.  
Reset limit as needed or replace probe.

**Internal Temp  
Too high 150F**

When the internal E-TES SD temperature is over 150°F the message will be displayed and the heater will be shutoff. It can also be displayed if the internal temperature sensor is bad or the circuit board is bad.

**Heater Safety  
Temp too high**

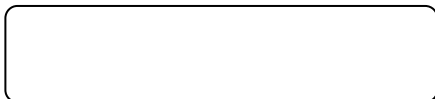
If the measured surface temperature of the heating elements is over 250°F. This message will be displayed and the heater will be shutoff. This message will also be displayed if the temp switch wires are loose, the wires are cut, switches bad or circuit board bad

**Start-up Error  
Please Restart**

The processor has detected a bad reading & has shutdown to protect the system. To remove this code & allow operation of the E-TES SD, re-initialize the processor. Press and hold both the UP & DOWN buttons as you turn the E-TES SD power switch



(Display showing all rectangles)



(Display ON, but blank)

The processor has locked up and must be reset. To reset the unit it must be unplugged & the switch OFF. There is a reset button just behind the front panel. Push a toothpick or paper clip through the small hole just above the USB port to push & hold the button for 5 seconds to reset the processor. You will need to reset the E-TES SD date & time clock as well as reset your probe limits.

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**Not Heating: What lights are ON?**

**No Lights are ON (Page 2):**

- Circuit Breaker – No power at Outlets
- GFCI's not reset
- GFCI cords bad
- Loose wires / Bad wires
- Bad Rocker switch
- Bad Cord #1
- Bad Cord #1 & Cord #2
- Bad Dual Circuit Indicator Light
- Bad Circuit Board

The most common cause would be the failure to reset the GFCI's on the power cords, or plugging into outlets which are not powered. Remember that the E-TES SD display will light up & the heater will operate (at half power) if there is no power supplied to Cord #2 as long as there is power supplied to Cord #1. The dual circuit indicator must be ON indicating there is power to both cords, on separate circuits for proper E-TES SD 120 operation. If the outlet has power the GFCI should be set & tested before the GFCI cord is connected to the E-TES SD. If the GFCI does not reset, the cord will need to be replaced. (NM4407)

After checking outlets & cords, proceed to other tests as needed.

**Dual Circuit Indicator Light OFF**

**Display OFF (Page 2):**

- Circuit Breaker – No power at Outlet
- GFCI not reset on Cord #1 or both cords
- GFCI bad on Cord #1 or both cords
- Loose wires / Bad wires
- Bad Rocker switch
- Bad Cord #1 or both cords
- Bad Dual Circuit Indicator Light
- Bad Circuit Board

The most common cause would be the failure to reset the GFCI's on the power cords, or plugging into outlets which are not powered. Since the display is OFF, there is probably no power supplied to Cord #1. If the outlet has power the GFCI should be set & tested before the GFCI cord is connected to the E-TES SD. If the GFCI does not reset, the cord will need to be replaced. (NM4407)

After checking outlets & cords, proceed to other tests as needed.

**Dual Circuit Indicator Light OFF**

**Display ON (Page 3):**

- Both Cords on same circuit.
- Circuit Breaker – No power at Outlet of Cord #2
- GFCI not reset on Cord #2
- GFCI on Cord #2 bad
- Loose wires / Bad wires
- Bad Cord #2
- Bad Dual Circuit Indicator Light

The most common cause would be the failure to reset the GFCI's on the power cords, or plugging into outlets which are not powered. Since the display is ON, there is power supplied to Cord #1, so Cord #2 is the problem. If the outlet has power the GFCI should be set & tested before the GFCI cord is connected to

E-TES SD 120 volt Trouble shooting

the E-TES SD. If the GFCI does not reset, the cord will need to be replaced. (NM4407) After checking outlets & cords, proceed to other tests as needed.

**Heating Light OFF (Page 4):** Air Flow Light ON  
Overtemp Light ON  
Shutdown Message Displayed  
Bad Circuit Board

It is normal for the Heater Light to turn OFF during operation, whenever any of the probe temperatures or moisture levels reach the preset limits. The reason for the shutdown should be displayed either by a red indicator light (AIR FLOW or OVERTEMP) or a shutdown message. Make sure all probe temperatures are set properly and that the exhaust controls are set to keep the room and E-TES from becoming too hot.

If the air flow switch is turning on & off, check the direction of the air mover snout. It must be angled properly to activate the air flow sensor. Re-calibrated or replace the air flow sensor as needed.

**Air Mover ON,**

**Red Air Flow Light ON (Page 6):** Restricted Air Flow  
Air Mover Snout Not angled properly  
Air Flow Sensor not calibrated.  
Air Flow Sensor wires disconnected from circuit board  
Bad Air Flow Sensor  
Bad Wires  
Bad Circuit Board

When using an Octi-Dry or snout duct kit the air flow may be restricted & not allow enough air flow to activate the air flow sensor. Open one end of the Octi-Dry or add an extra duct to increase the air flow. If the air flow switch is turning on & off, check the direction of the air mover snout. It must be angled properly to activate the air flow sensor. Re-calibrated or replace the air flow sensor as needed. If Air Flow off reading is at 254 the air flow sensor wires have become disconnected from the circuit board. The red three wire connector snaps onto the three pin connector near the lower left corner of the circuit board.

**Unit Cool,**

**Red Overtemp Light ON (Page 6):** Temperature switch wires disconnected from circuit board.  
Bad wires  
Bad Temperature Switches  
Bad Internal Temperature Sensor  
Bad Circuit Board.

The most common cause is that the temperature switch wires have become disconnected from the circuit board. The red two wire connector snaps onto the two pin connector next to the battery near the center of the circuit board. The two wires from the temperature switches have continuity when the temperature switches are below 250°F. Test for continuity and repair wires or replace switches as needed.

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**Heating Light ON,**

**Unit Not Heating (Page 6):**

Bad Heating Elements

Loose wires

Bad wires

Bad Circuit Board.

No power from Cord #2

Even though the unit is heating the temperature output may seem too low if:

Air Flow too high

Ambient Air Temperature too low

No power from Cord #2 (Operating on 1/2 power)

Use a clamp on amp meter to test the amp draw of the unit when the heating light is on. If the cord is drawing 11-12amps on both cords it is heating OK. Older 3500watt units will draw 14-15amps per cord and 4000watt units will draw 15-16amps per cord. If the amp draw is low test for power to the heating elements. Power found – replace the element or if no power is found the circuit board may be bad. The resistance of each heating element can be tested to determine if it is functional.

The normal E-TES SD 120 outlet temperature should be 20-30 degrees higher than the ambient air temperature entering the air mover. Turning the speed of the air mover to its lowest setting and restricting the air flow will slow the velocity of the air flow through the heating elements allowing the temperature to increase more, as long as there is still sufficient flow to keep the air flow sensor activated.