

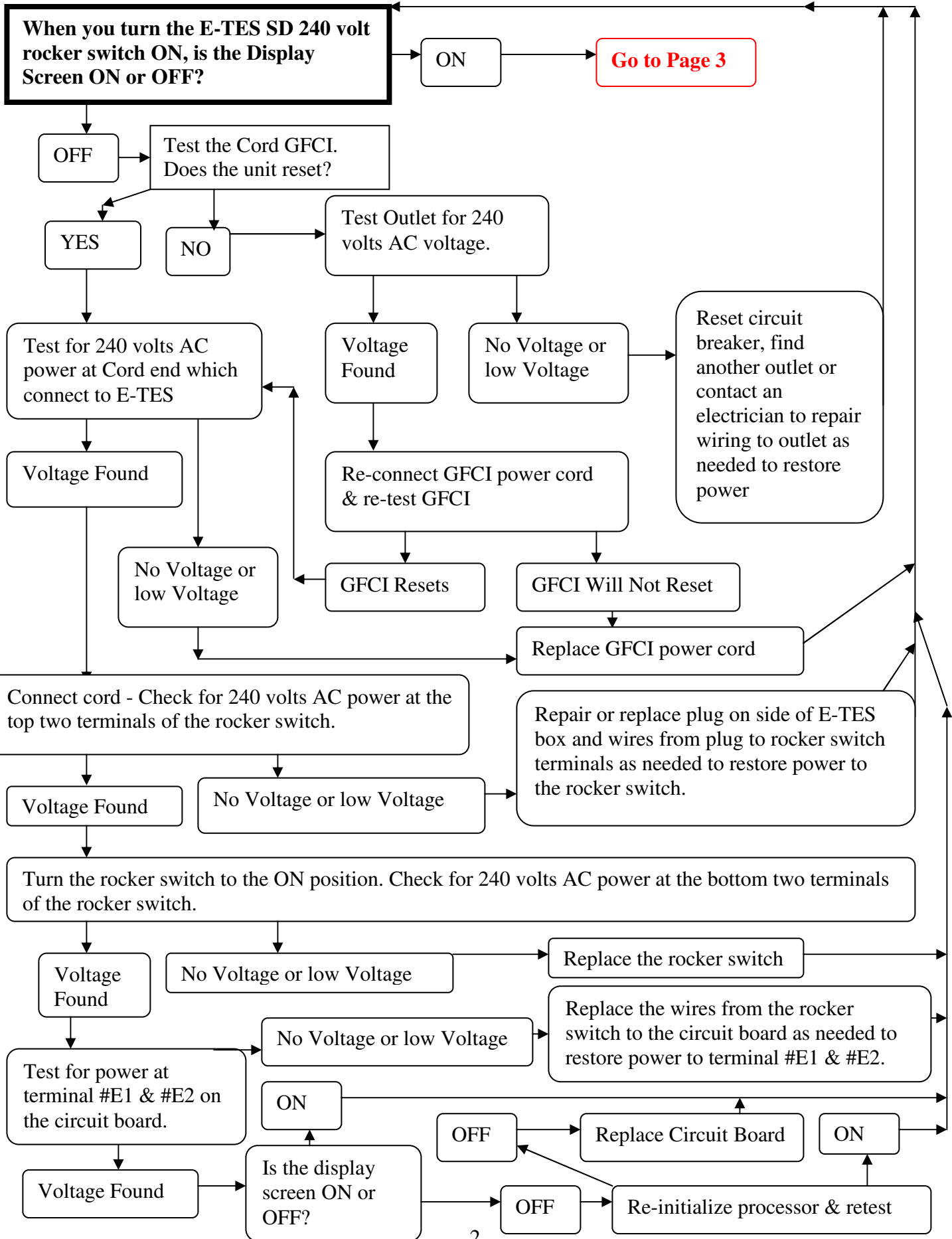
This document outlines questions to ask and components to check during E-TES SD 240 volt troubleshooting. More detailed troubleshooting procedures are available in the E-TES SD 240 volt Troubleshooting Guide.

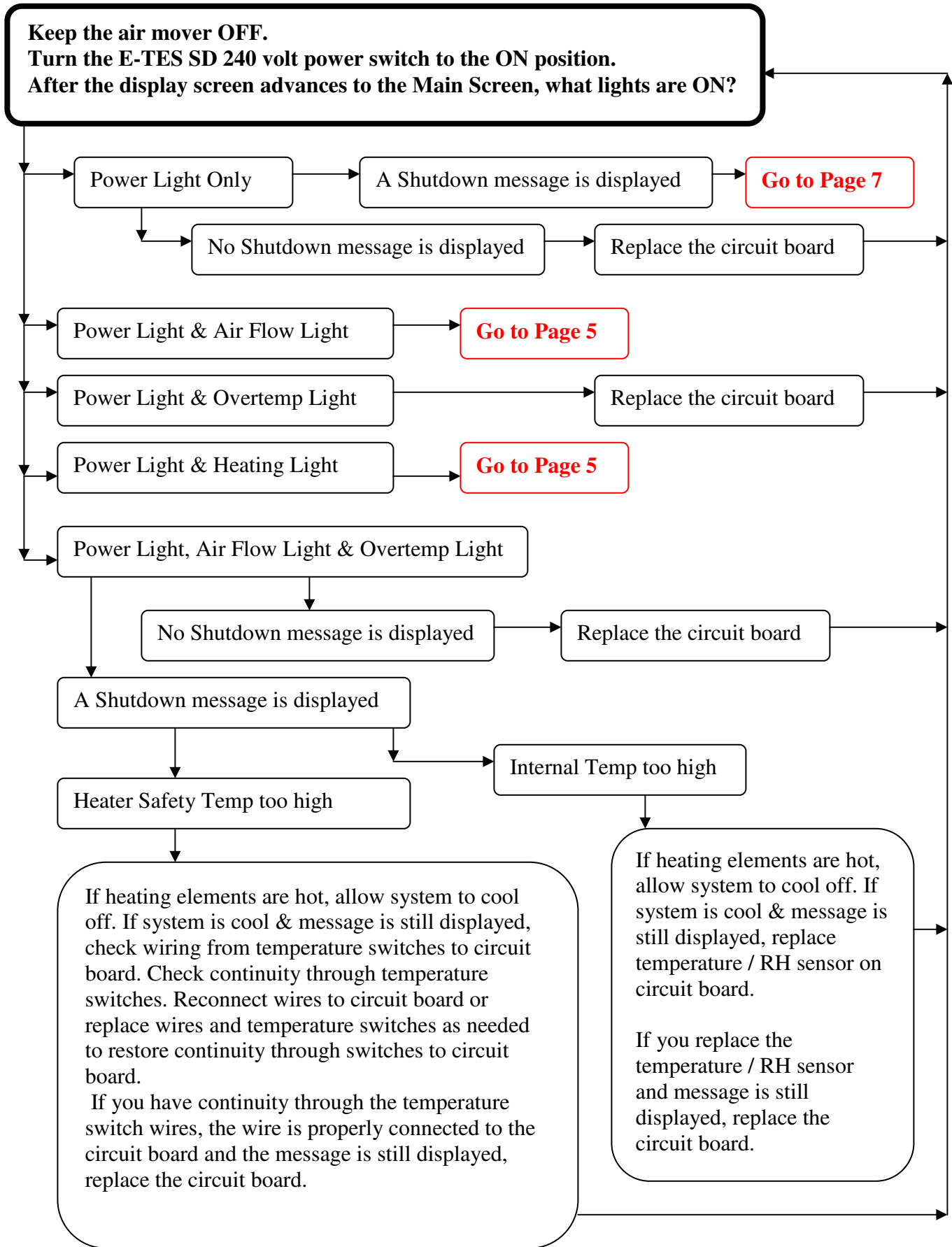
- | | |
|---|---------------------|
| 1. Display Screen OFF: | Go to Page 2 |
| 2. Power Light OFF: | Go to Page 3 |
| 3. Heating Light OFF: | Go to Page 4 |
| 4. Overtemp Light ON: | Go to Page 4 |
| 5. Air Flow Light ON: | Go to Page 5 |
| 6. Heating Light ON – Not Heating: | Go to Page 6 |
| 7. Shutdown Messages: | Go to Page 7 |
| 8. Troubleshooting Guide Outline: | Go to Page 8 |

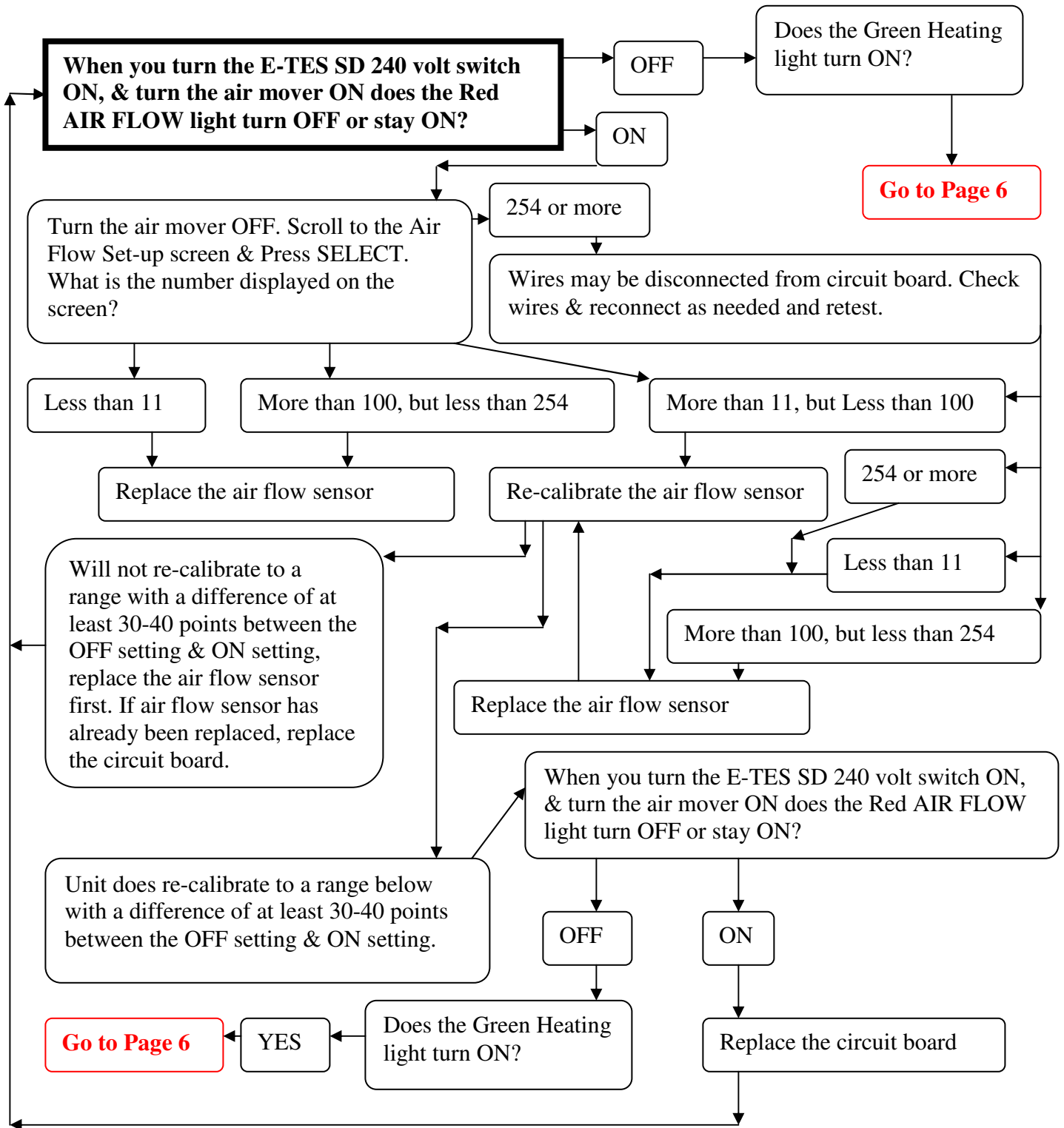
E-TES SD 240 Operation & Testing Guidelines:

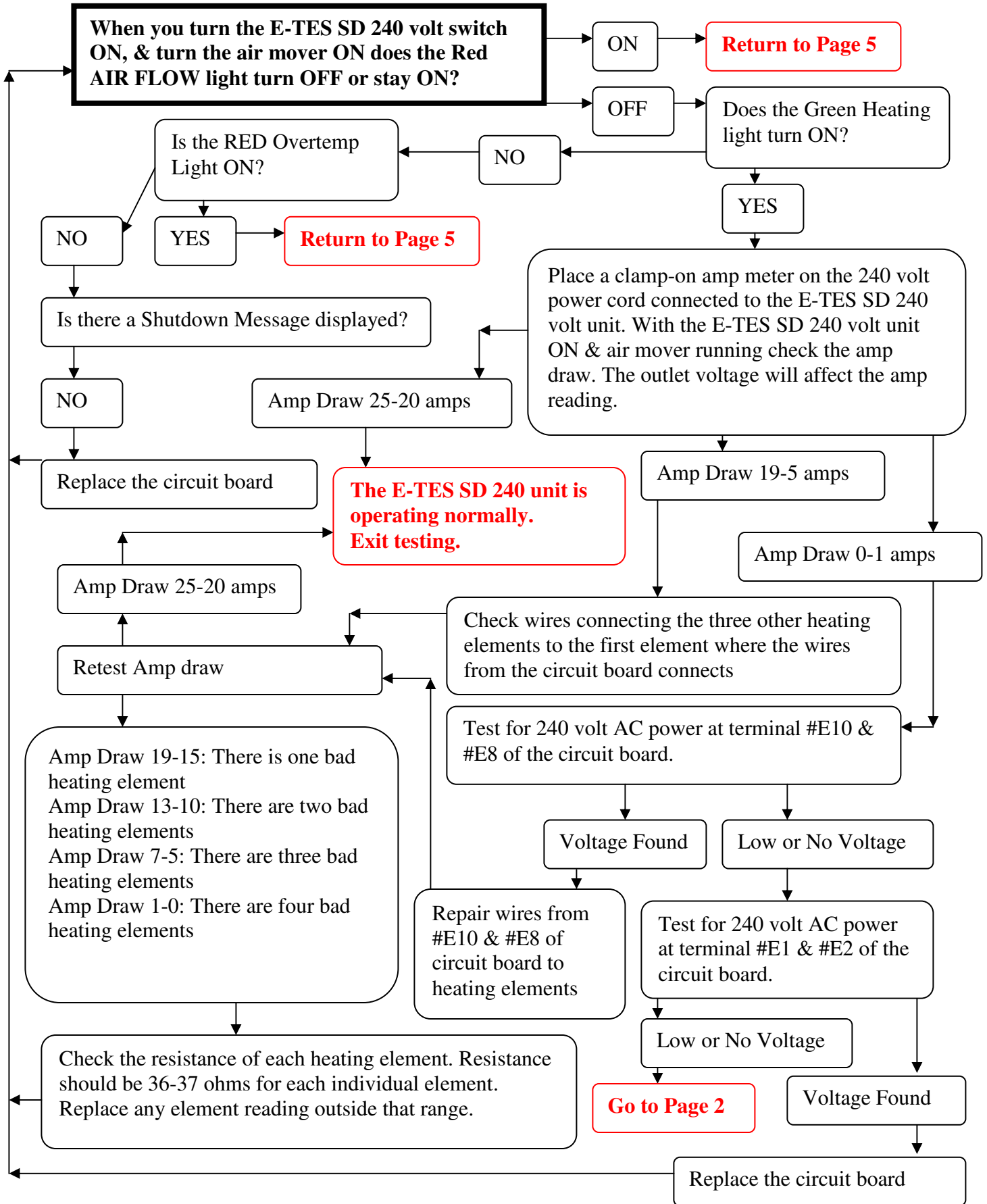
- 1. Before Running E-TES SD 240 volt unit be sure you have a circuit with the correct voltage and amperage rating for operating the E-TES SD 240 volt. (240 Volts AC – Minimum 30amp rating)**
- 2. Air Mover must be the correct size to fit into the opening on top of the E-TES. Snout must be angled properly to activate air flow sensor
(Air mover snout must be at a 45° angle toward E-TES SD snout.)**
- 3. A clamp on amp meter is required to test amp draw.**
- 4. A multimeter is required to check continuity, resistance & voltage.**
- 5. Your outlet voltage may vary. The E-TES SD 240 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 240 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)

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.



(Display ON, but blank)

E-TES SD 240 volt Trouble shooting

Not Heating: What lights are ON?

No Lights are ON (Page 2):

- Circuit Breaker – No power at Outlet
- GFCI not reset
- GFCI cord bad
- Loose wires / Bad wires
- Bad Rocker switch
- Bad Cord
- Bad Circuit Board

Display OFF (Page 2):

- Circuit Breaker – No power at Outlet
- GFCI not reset
- GFCI cord bad
- Loose wires / Bad wires
- Bad Rocker switch
- Bad Cord
- Bad Circuit Board

The most common cause would be the failure to reset the GFCI on the power cord or plugging into an outlet which is not powered. 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. (NM4402)
 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 reaches 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.

E-TES SD 240 volt Trouble shooting

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.

Heating Light ON,

Unit Not Heating (Page 6): Bad Heating Elements
Loose wires
Bad wires
Bad Circuit Board.

Even though the unit is heating the temperature output may seem too low if:
Air Flow too high
Ambient Air Temperature too low

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 25-20 amps it is heating OK. The amp reading will tell you if there is one two, three or four elements which are not heating. 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 240 outlet temperature should be 30-40 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.