american®
WATER HEATER COMPANY

ENERGY SMART ®
TROUBLESHOOTING GUIDE

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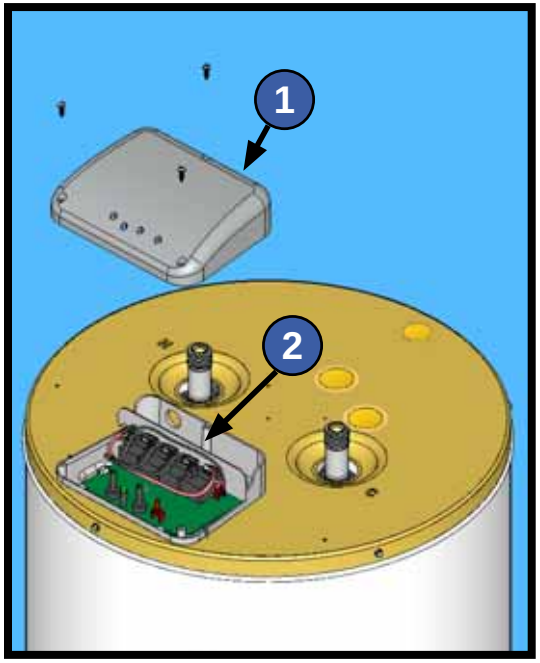
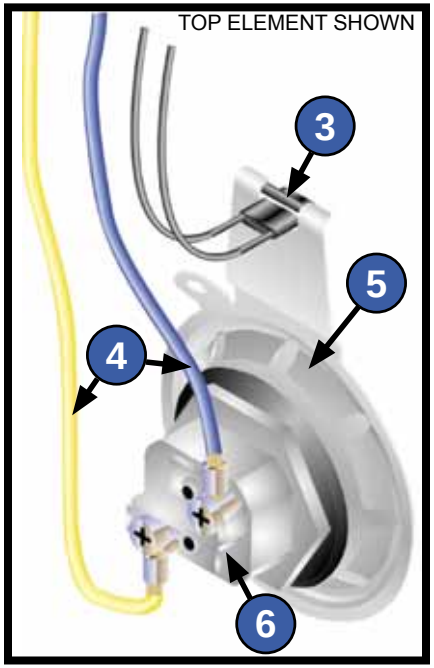
COMPONENTS/BOARD LAYOUT





1 ..... CONTROL BOX COVER
2 ..... CONTROL BOARD
3 ..... THERMISTOR
4 ..... ELEMENT POWER WIRES
5 ..... ELEMENT BRACKET
6 ..... ELEMENT
7 ..... JUMPER WIRE (BLACK)
8 ..... POWER WIRES (RED & BLACK)
9 ..... BOTTOM ELEMENT WIRE (ORANGE)
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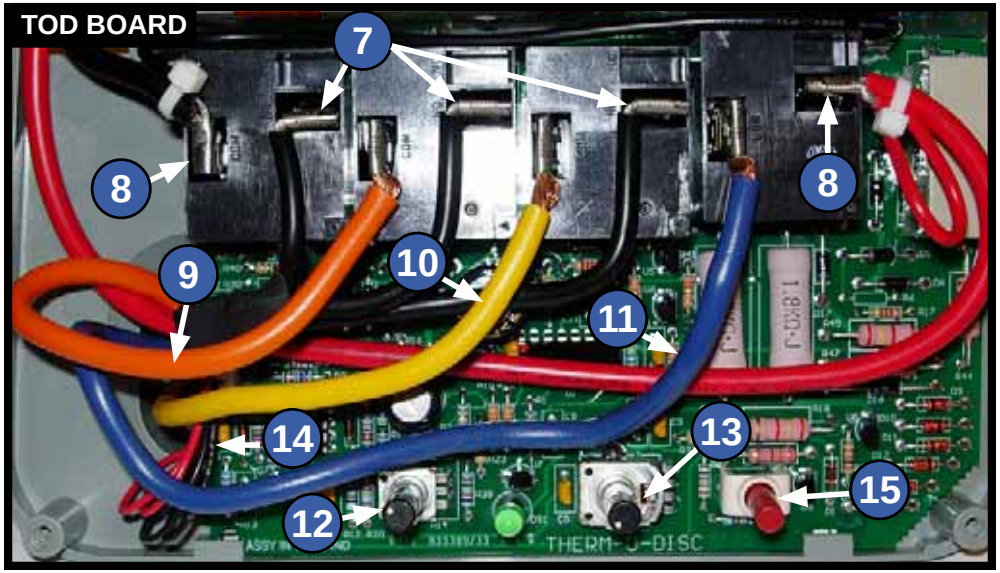
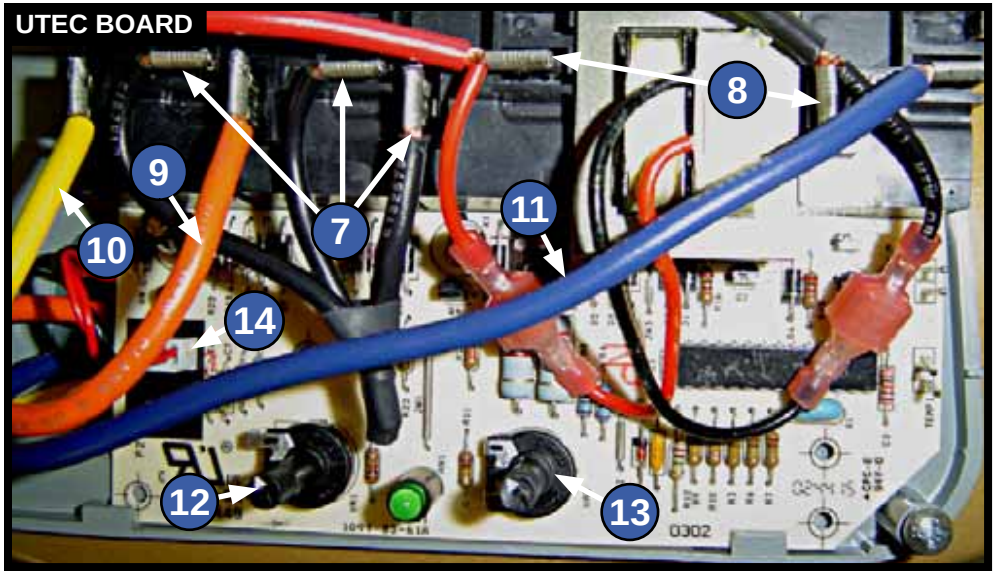
12 ..... TEMPERATURE CONTROL
13 ..... MODE CONTROL
14 ..... THERMISTOR PLUG
15 ..... RESET BUTTON (TOD BOARD ONLY)





NO HOT WATER

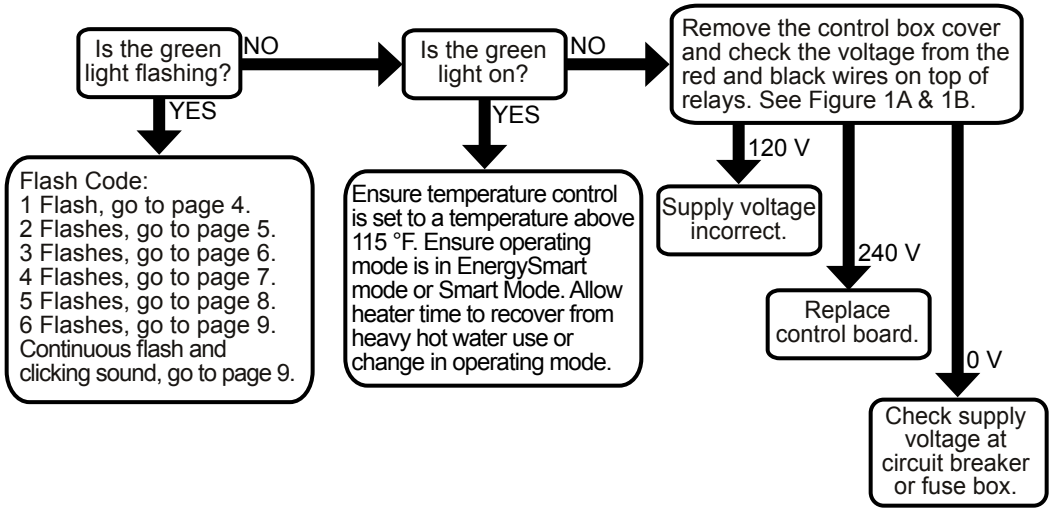


FIGURE 1A - TOD BOARD

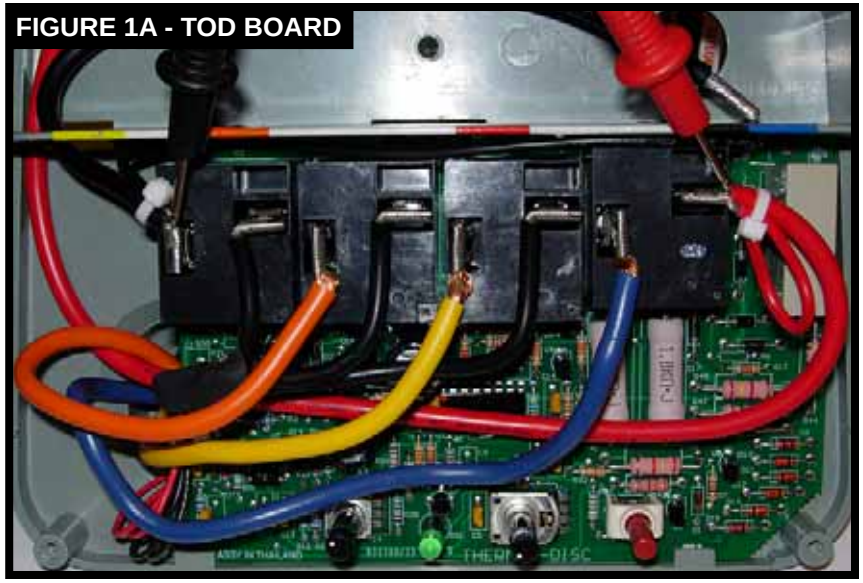
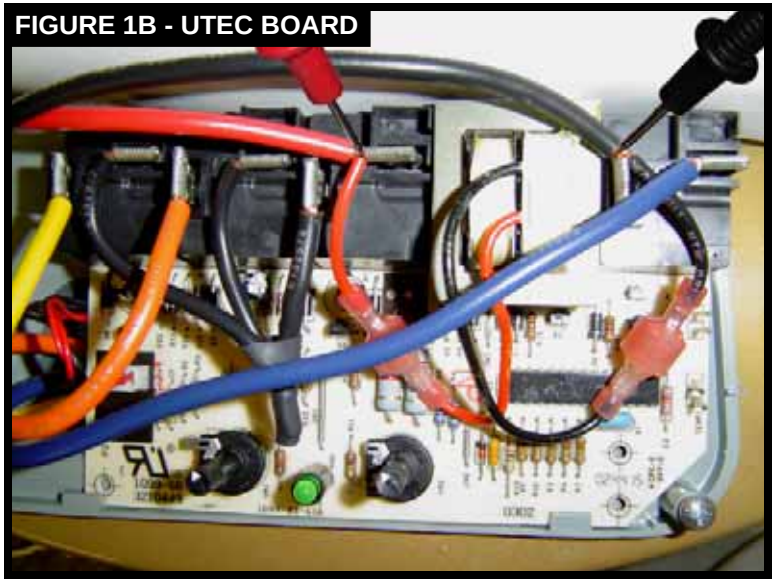
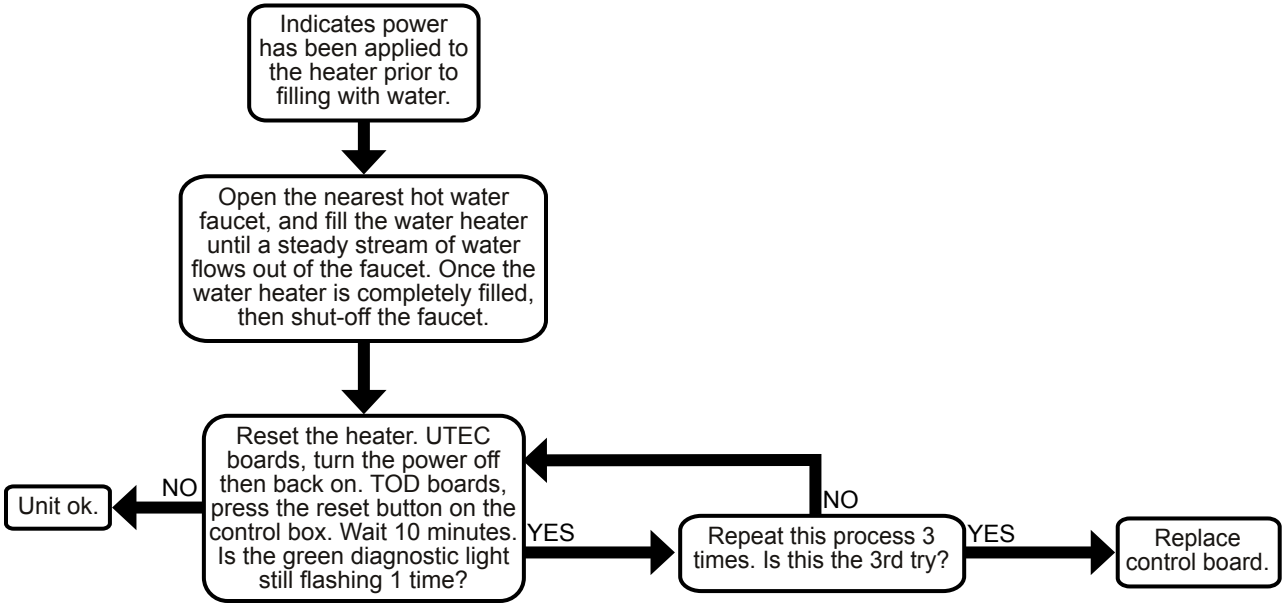


FIGURE 1B - UTEC BOARD



1 FLASH (GREEN DIAGNOSTIC LIGHT)



2 FLASH (GREEN DIAGNOSTIC LIGHT)

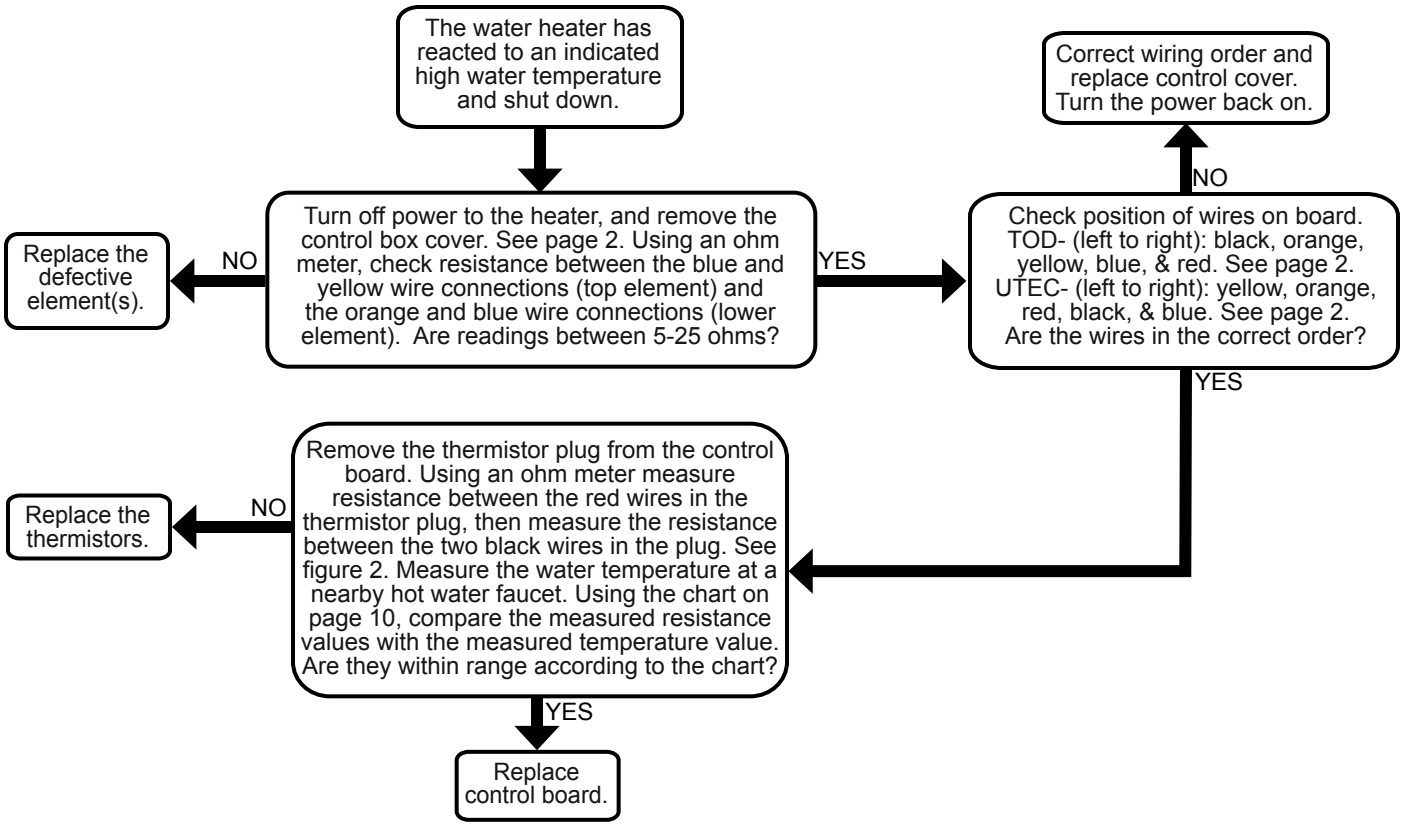
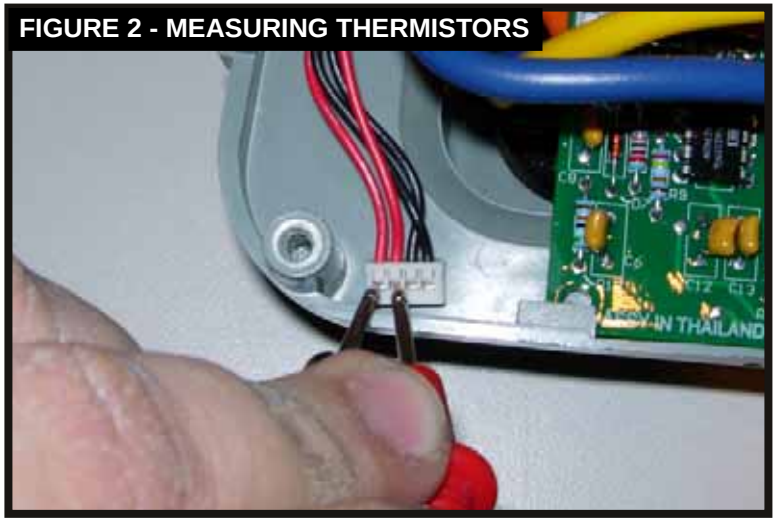


FIGURE 2 - MEASURING THERMISTORS



3 FLASH (GREEN DIAGNOSTIC LIGHT)

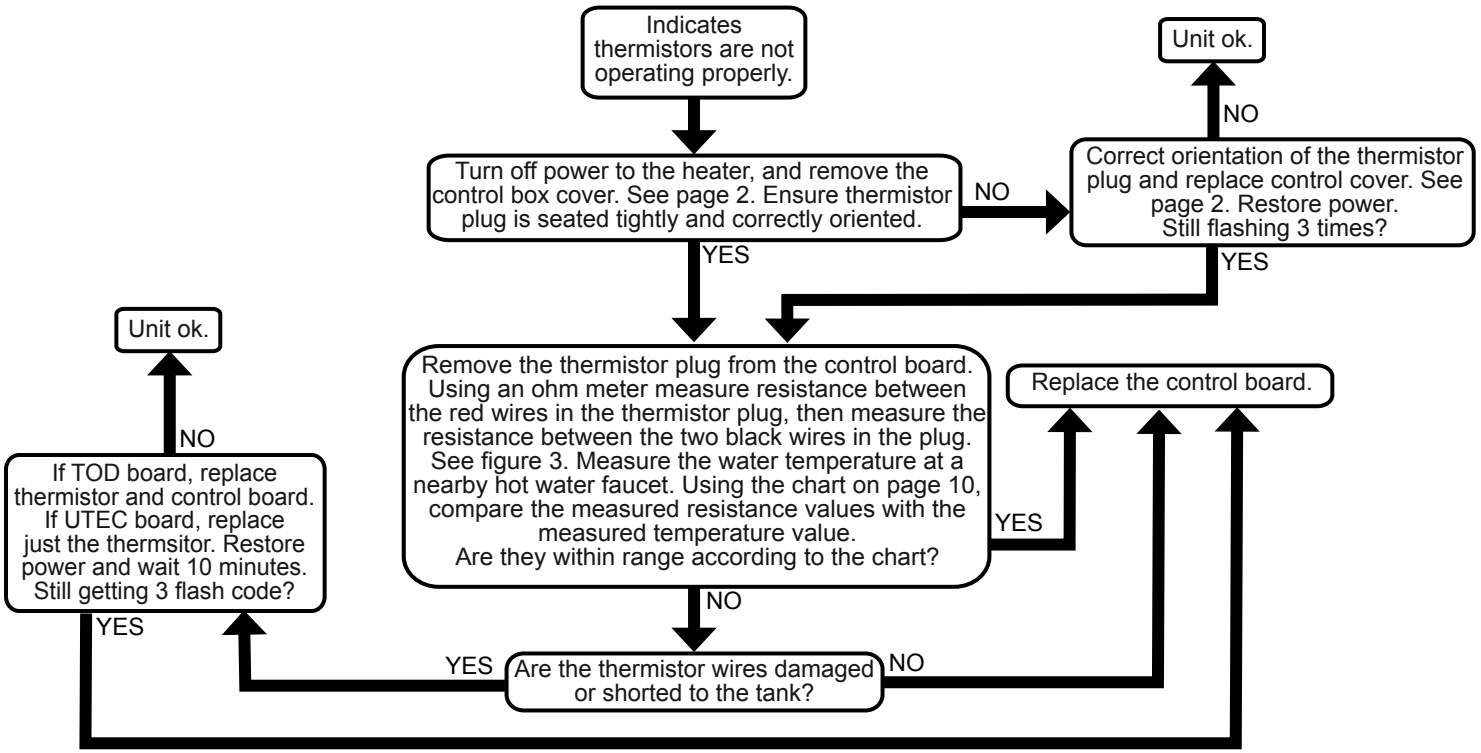
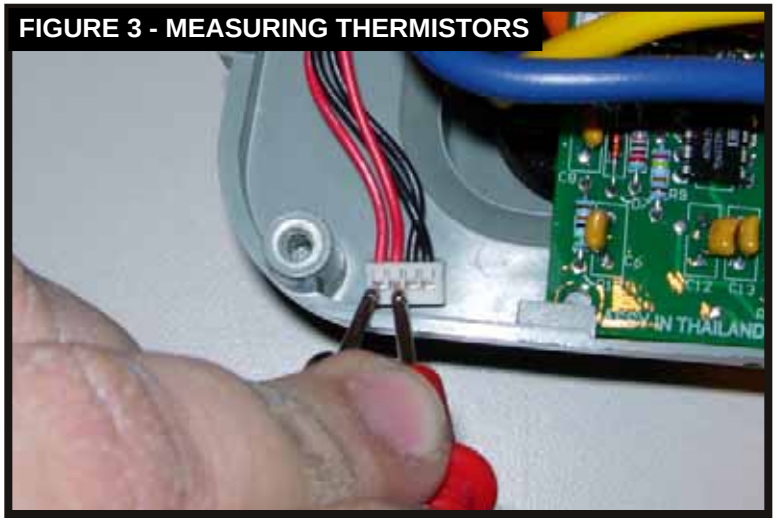


FIGURE 3 - MEASURING THERMISTORS



4 FLASH (GREEN DIAGNOSTIC LIGHT)

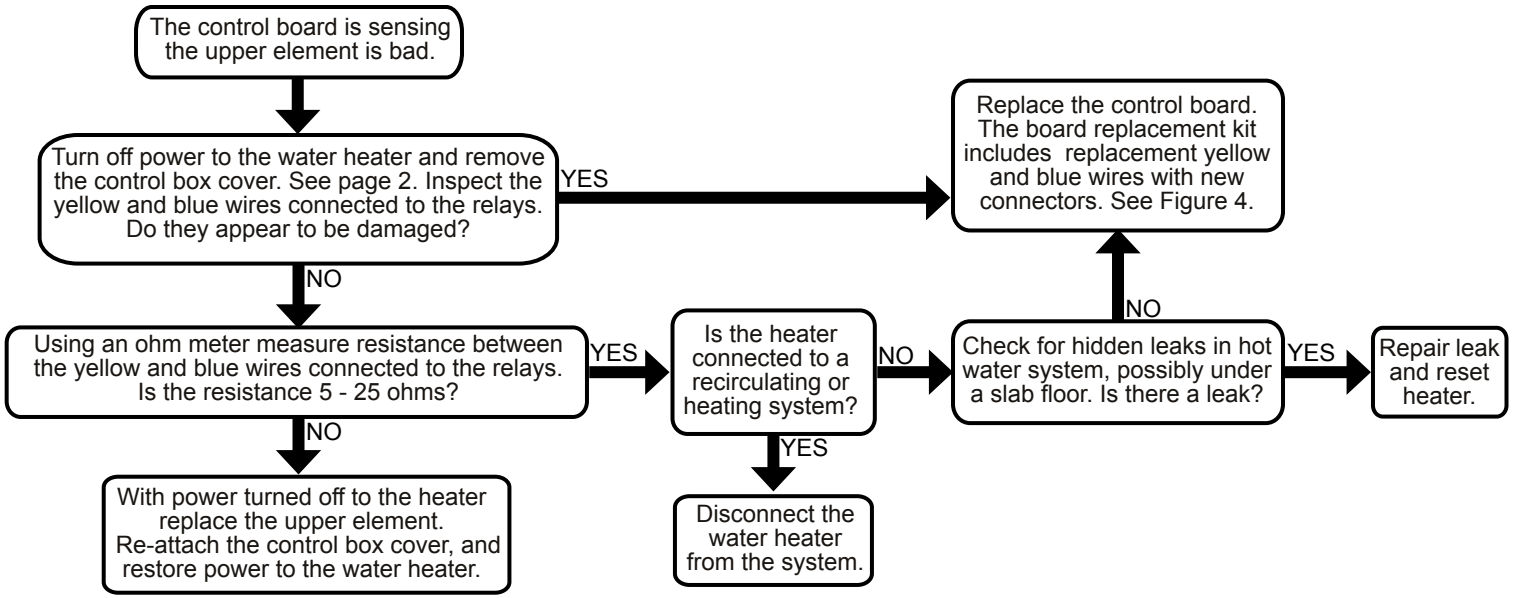
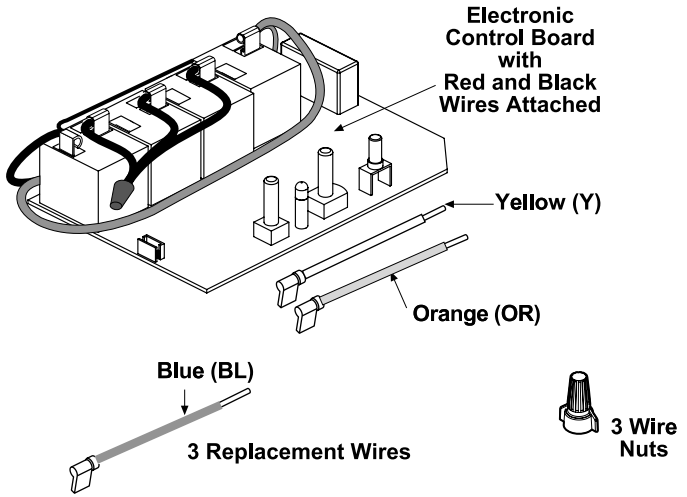


FIGURE 4

CONTROL BOARD REPLACEMENT KIT CONTENTS



5 FLASH (GREEN DIAGNOSTIC LIGHT)

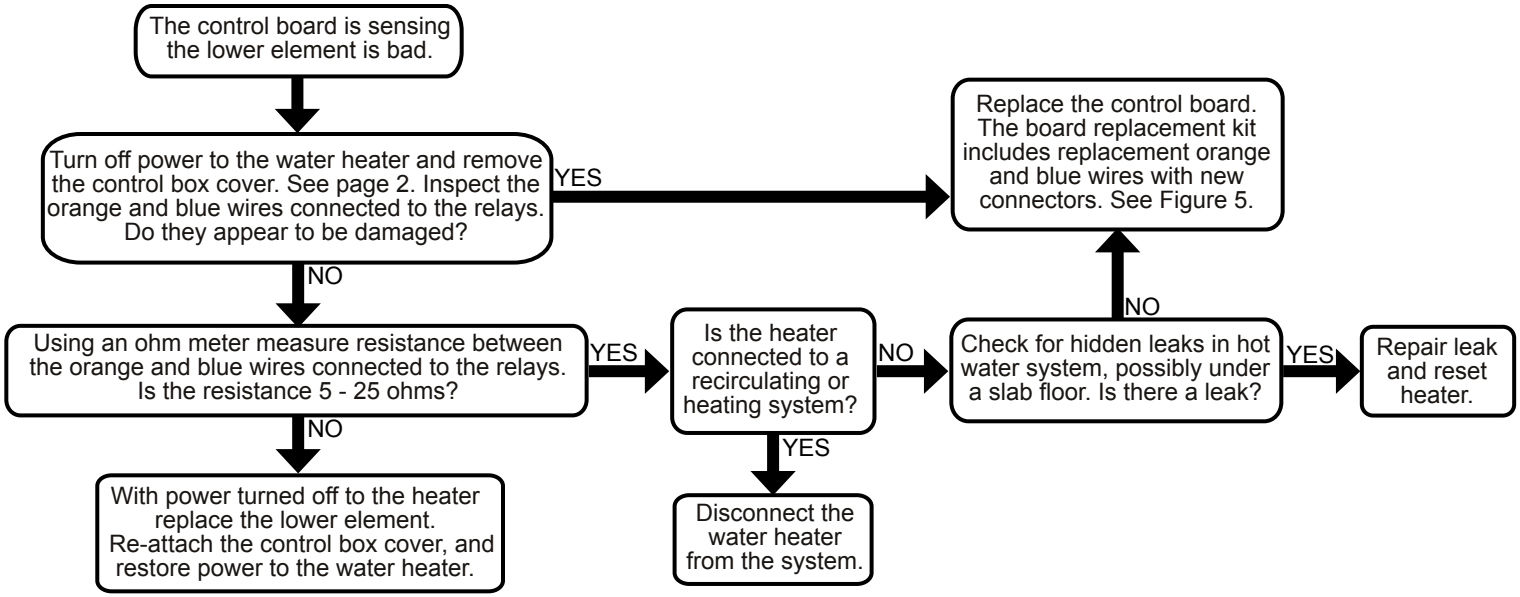
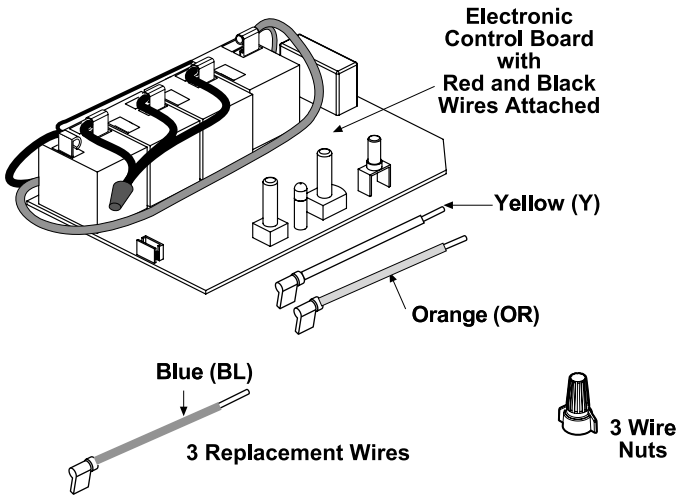


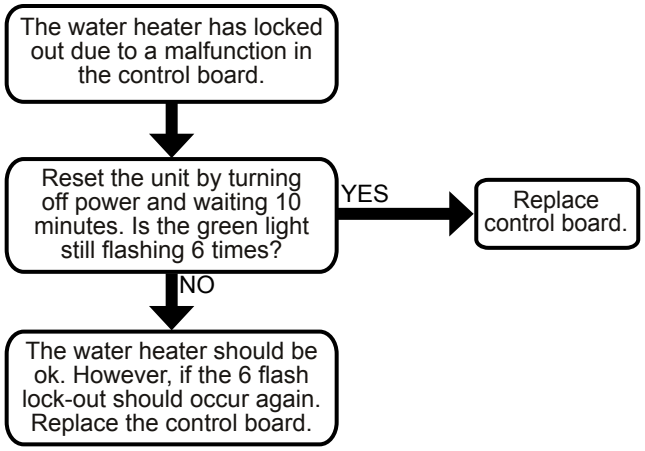
FIGURE 5

CONTROL BOARD REPLACEMENT KIT CONTENTS

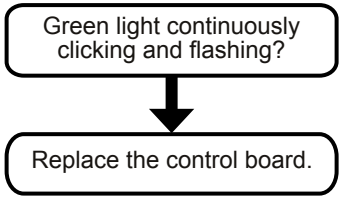


6 FLASH (GREEN DIAGNOSTIC LIGHT)

UTEC BOARDS



TOD BOARDS



THERMISTOR RESISTANCE CHART

WATER TEMPERATURE	OHMS
80° F - 100° F	50KΩ - 20KΩ
100° F - 120° F	40KΩ - 15KΩ
120° F - 150° F	30KΩ - 5KΩ

USING THE CHART:
Make sure power to the heater has been turned off before performing the following steps. Remove the control box cover and unplug the thermistor plug from the control board. See page 2. Using an ohm meter measure the resistance value between the two red wires in the thermistor plug, then measure the resistance value between the two black wires in the plug See Fig 6. Record the water temperature at a nearby hot water faucet. Using the recorded resistance values check to see if the heater is in the correct range. For example: In Fig. 6 the measured temperature is 129° F. Using the chart above a temperature reading of 129° F should have a resistance reading between 15KΩ - 10KΩ.

Figure 6