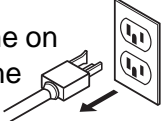


XLT-60 HEAT SYSTEM TROUBLESHOOTING PROCEDURE

(100V & 120V)

HEATER MUST BE COLD BEFORE STARTING TO TROUBLESHOOT

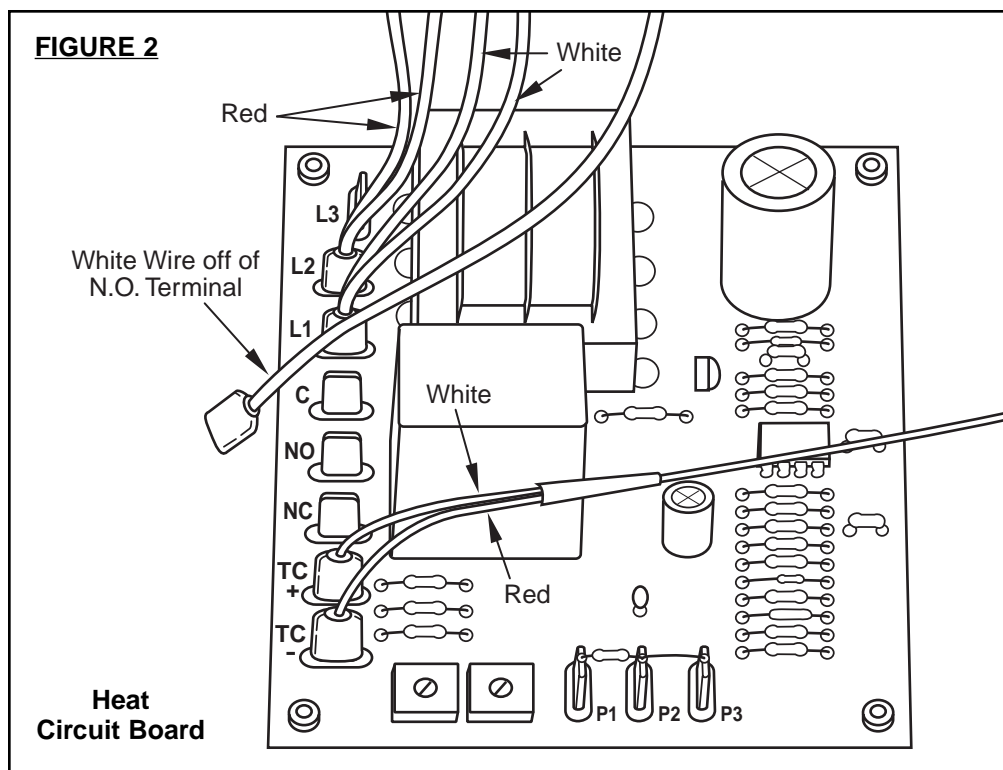
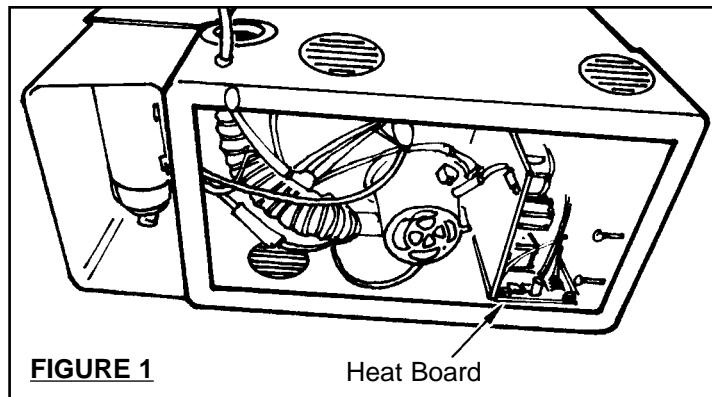
1. **UNPLUG THE MACHINE BEFORE STARTING REPAIRS.** Lay the machine on its side so the vacuum exhaust port in the side of the body is facing up. The pump will be on the left. 

2. Remove the 4 screws holding the bottom castor plate to the machine. Slowly pull the castor plate away from the body and disconnect the green ground wire (if the castor plate is metal).

3. Locate the Heat Control Board. It is on the bottom, right (next to the fan). See [Figure 1](#) on the right.

Visually inspect the circuit board and wires for damage.

4. Disconnect the white wire from the “N.O.” terminal on the Heat Circuit Board. Be sure the wire is pulled away from the circuit board and is not touching any metal. Refer to [Figure 2](#) below or to the Wire Location diagram on the last page of this section.



Step #11 continued:

- (A) If you did **not** see a spark, proceed to Step #12.
- (B) If you **did** see a spark on the “C” terminal, then again look for a spark on the “N.C.” terminal (as in Step #10)
- (C) If you **did** get a spark on the “N.C.” terminal while retesting, then proceed to Step #14.
- (D) If you did **not** see a spark when rechecking the “N.C.” terminal, replace the following:

<u>ITEM</u>	<u>PART #</u>
1 ea Heat Control Circuit Board.....	#413-1
1 ea Thermal Couple.....	#82

(Parts will be calibrated at the factory)

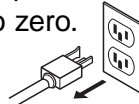
12. If you did **not** get a spark in Steps 9, 10 OR 11, replace the following parts:

<u>ITEM</u>	<u>PART #</u>
1 ea Thermal Cutout Assembly.....	#FP187
1 ea Special Heat tape.....	#FP188
1 ea Heat Control Circuit Board.....	#413-1
1 ea Thermal Couple	#82

Parts will be preset and calibrated at the factory.

13. If you **did** see a spark on “N.O.” from Step #9, measure the heater amperage and the length of time before the current drops to zero.

(A) **UNPLUG THE MACHINE.**



(B) Connect an ammeter “in series” between the white wire from the N.O. terminal and the N.O. terminal. Refer to Figure 7 below.

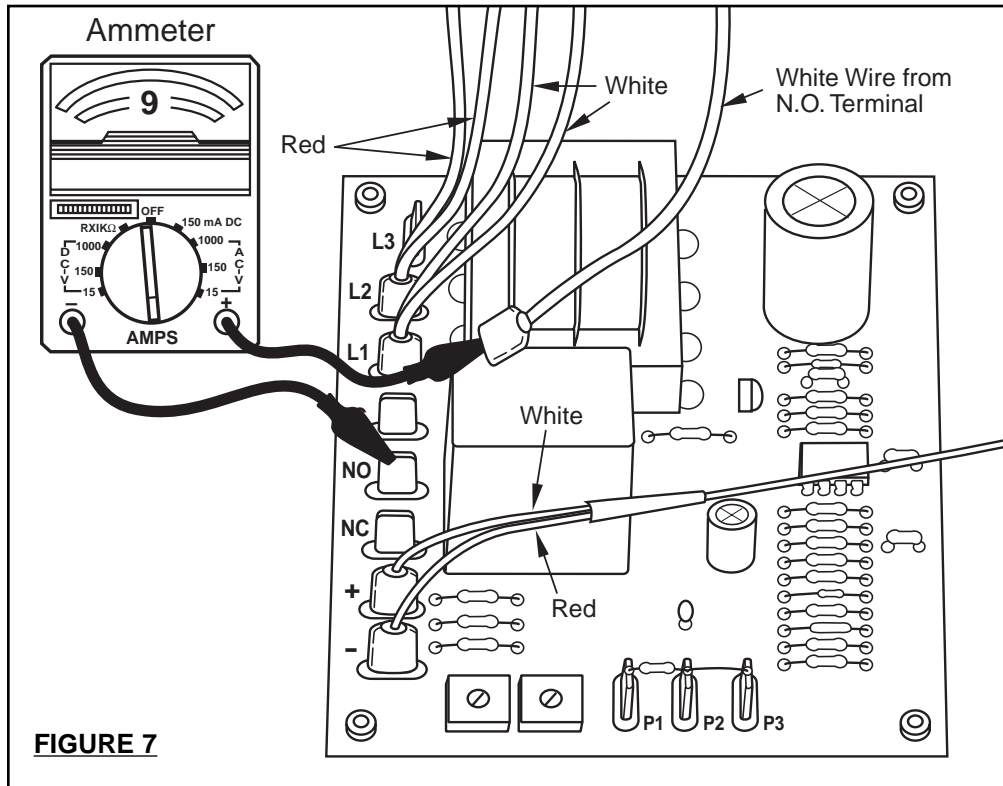


FIGURE 7

Step #13 continues on next page.

Step #13 continued:

- (C) Plug in the cord. (The heater switch must be on and the heater must be cold).
- (D) Measure the current draw of the heat exchanger and count how many seconds it takes for the heat exchanger to shut off (current reading = zero).

If the current draw was approximately 9 amps and lasted at least 50 seconds, the heat exchanger is working correctly. Check or modify your method of operation and make sure the solution hoses and tool tip are the original size.

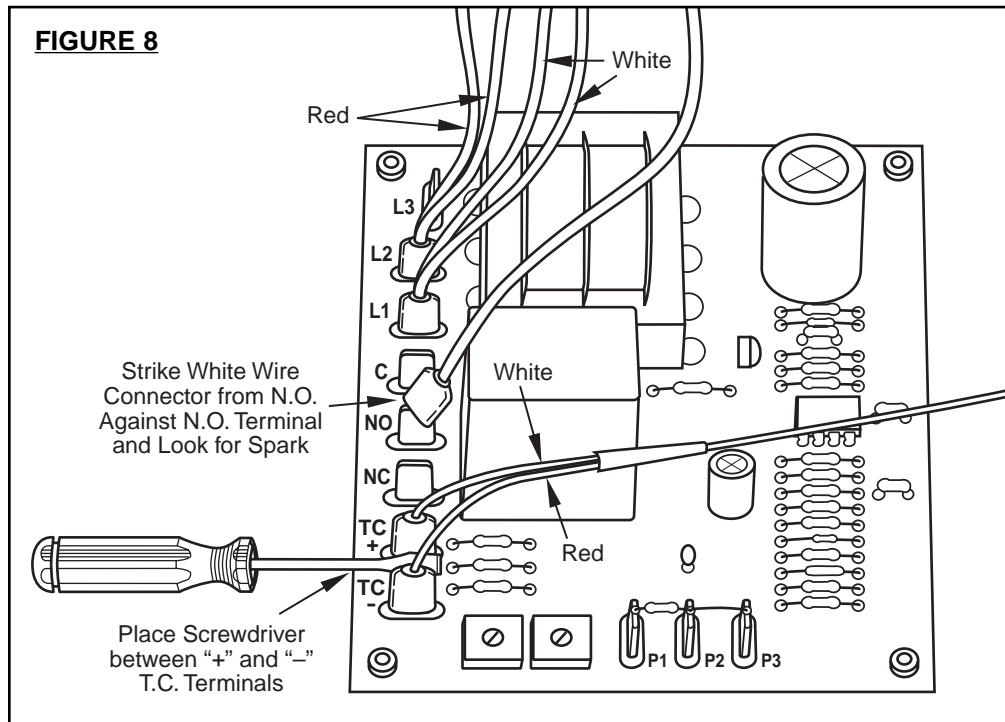
If the current draw was low (5 amps or less) replace the heat exchanger (FP138A).

If the current draw only lasted a few seconds, make sure the heat exchanger is cold and retest. If a cold heater only turns on for a few seconds, replace the following:

<u>ITEM</u>	<u>PART #</u>
1 ea Heat Control Circuit Board.....	#413-1
1 ea Thermal Couple.....	#82
(Parts will be calibrated at the factory)	

14. If you **did see a spark** on the “N.C.” terminal in Step 10 or 11 then place a jumper wire, or small screwdriver, between the two “T.C.” terminals on the Heat Board. Make good metal-to-metal connections. See diagram below (Figure 8) or the Wiring Connections diagram on the last page of this section.

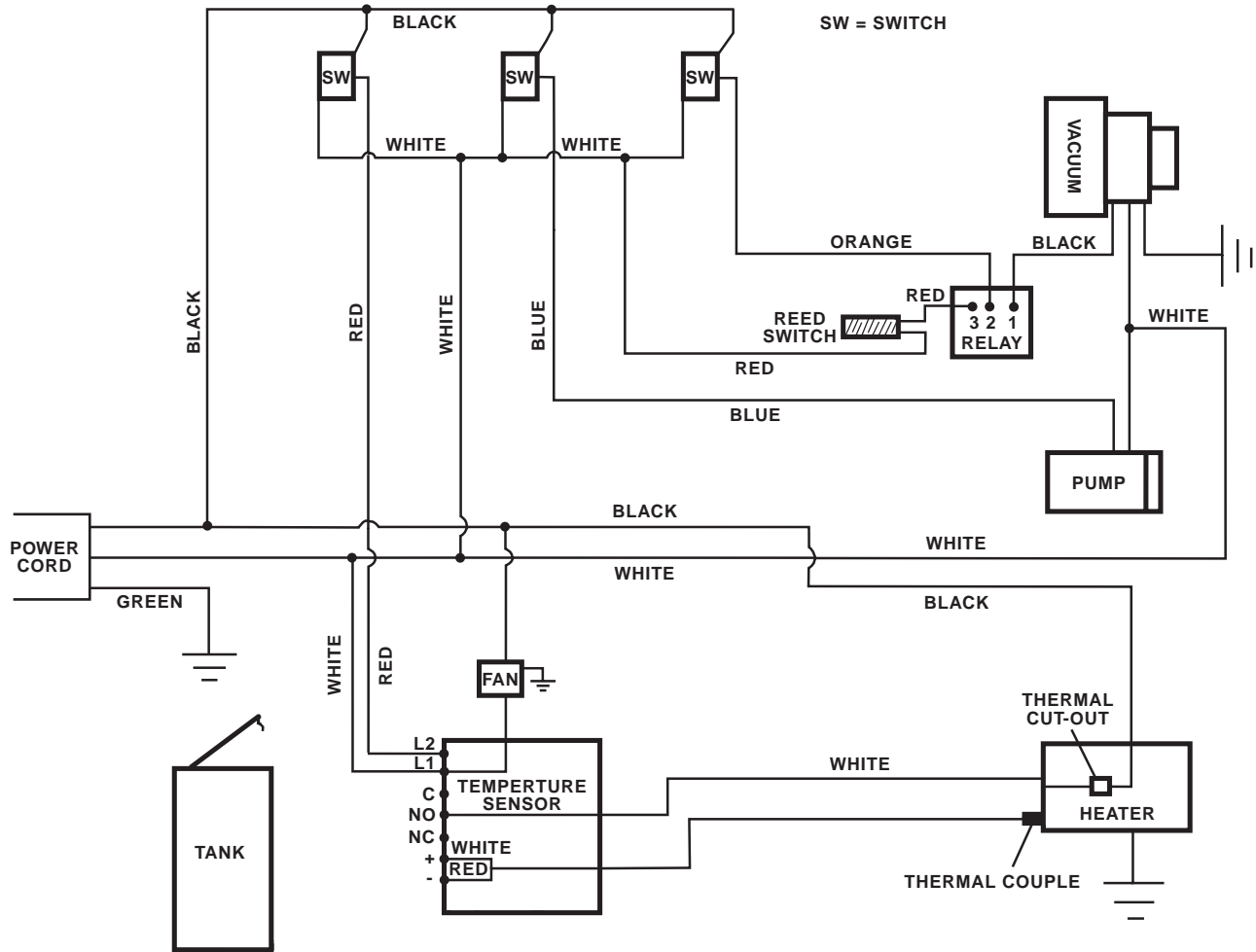
Listen to the relay on the board for a click when shorting the “T.C.” terminals. Click the relay **ON**, and then retest by striking the white wire to the “N.O.” terminal while looking for a spark (as in Step 9).



If you **did not see a spark**, or could not get a click from the relay, replace the Heat Control Circuit Board, part #413-1, and the thermal couple, part #82.

If you **did see a spark** on the “N.C.” terminal while the “T.C.” terminals are shorted and the relay is clicked ON then replace the thermal couple, part #82.

XLT-60 WIRING DIAGRAM 100 & 120V



1/29/97