

## **VII. TROUBLESHOOTING:**

**THIS SECTION IS ONLY TO BE PERFORMED BY TRAINED, QUALIFIED SERVICE PERSONNEL, AND NOT BY THE FURNACE OWNER.**

**NOTICE: Before troubleshooting, familiarize yourself with the Initial Startup, Checkout Procedure, and Troubleshooting Flowchart.**

Refer to the appendices of this manual for an electrical schematic, a connection diagram, flowcharts to assist in troubleshooting, product specifications, and a replacement parts list follow for this appliance.

1. Check for 115VAC line supply voltage to the furnace. If there is no supply voltage, check fuses and service switch.

**CAUTION:** When testing electrical equipment, always follow standard electrical procedures.

2. Make sure thermostat is calling for burner operation.
3. Check oil supply and make sure all valves are open.

### A. DIAGNOSTICS:

To assist in troubleshooting this appliance, it is equipped with an integrated safety and ignition control with diagnostics. These diagnostics include an indicator light that relays the operational status of the control and can help in diagnosing the condition of the flame sensor.

#### Diagnostic Features:

The Honeywell brand model R7184B (or alternate R7184U) safety and ignition control module used on this unit continuously monitors the operation of the heating system. If an abnormal condition occurs, the LED light on the control will rapidly flash indicating the operational status of the unit. **In event this control malfunctions, the entire control should be replaced. It is not field-repairable.**

In the event of an operational failure of the burner system, the rate of flashes, if any, of the ignition control module LED should be noted, before turning off power to the unit. Otherwise, power to the heating section will be interrupted and the control LED will not furnish the diagnostic flashing. It may be necessary to restart the furnace and have the failure occur again. **For the model R7184B, under normal operating conditions, the LED will be continuously lit while the burner is operating.**

If either control has sensed a flame failure, which was uncorrected by initiating another trial-for-ignition, the control will cease ignition trials and shutdown the burner, or “lockout”. The LED will continuously flash at a high rate (approximately 1/2-second “on”; 1/2 second “off”, for the model R7184B).

**CAUTION:** If the appliance fails to relight after resetting the primary control twice contact a qualified service company. DO NOT continue to reset primary control.

The operational condition of the flame sensor, or “cad cell”, can be checked by depressing the reset button on the control module, while the burner is operating. Count the number of flashes of the LED and compare them to the table below.

<u>Number of flashes</u>	<u>Cad Cell Resistance (in ohms)</u> <u>Model R7184B</u>
1	0 to 400
2	400 to 800
3	800 to 1600
4	1600 ≤

If it is necessary to troubleshoot the flame sensor independently of the burner primary, the following procedure may be used.

### B. CAD CELL CHECKOUT PROCEDURE:

1. Stop burner and shutoff electrical power to the appliance.
2. Open burner junction box (on top of the burner blower) and remove the plug-in portion of the cad cell by pulling it forward from and clear of the receptacle. Connect an ohmmeter across cad cell pins. With the cell exposed to direct room light, the measured resistance should be less than 2500 ohms (in fact, it may be less than 200 ohms).

3. Check the resistance across the cad cell pins with the cell covered (protected from exposure to ambient light). The resistance should be greater than 20,000 ohms.
4. If cell resistances are different from above, replace the plug-in portion of cell, (Honeywell Part No. 130367).
5. Carefully reinsert the plug-in portion of the cad cell into the receptacle. If the cad cell appears to be functioning correctly, troubleshoot the fan control module and the safety and ignition control (primary control) module, according to the Honeywell instructions covering the devices.

The troubleshooting chart beginning on the following page should help identify the type of malfunction or deviation from normal operation. To use this diagram, just follow the instructions in the boxes. If the answer is yes or the condition is true, go down to the next box. If the answer is no or the condition is false, go to the box on the right. Continue checking and answering questions and conditions in each box until a problem and/or repair is found. After any maintenance or repair, the trouble shooting sequence should be repeated until normal system operation is achieved.

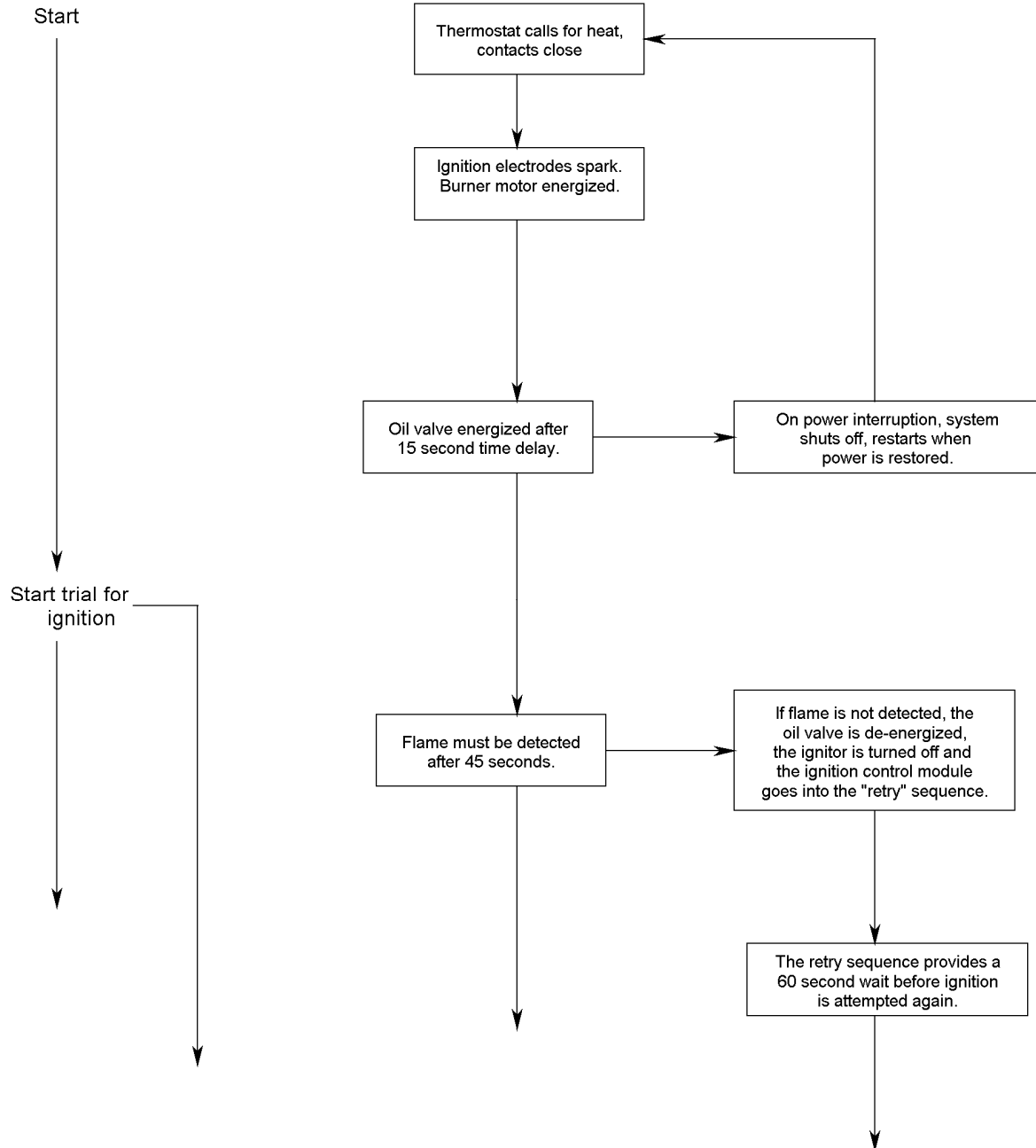
## VIII. Sequence of Operations Flow Chart:

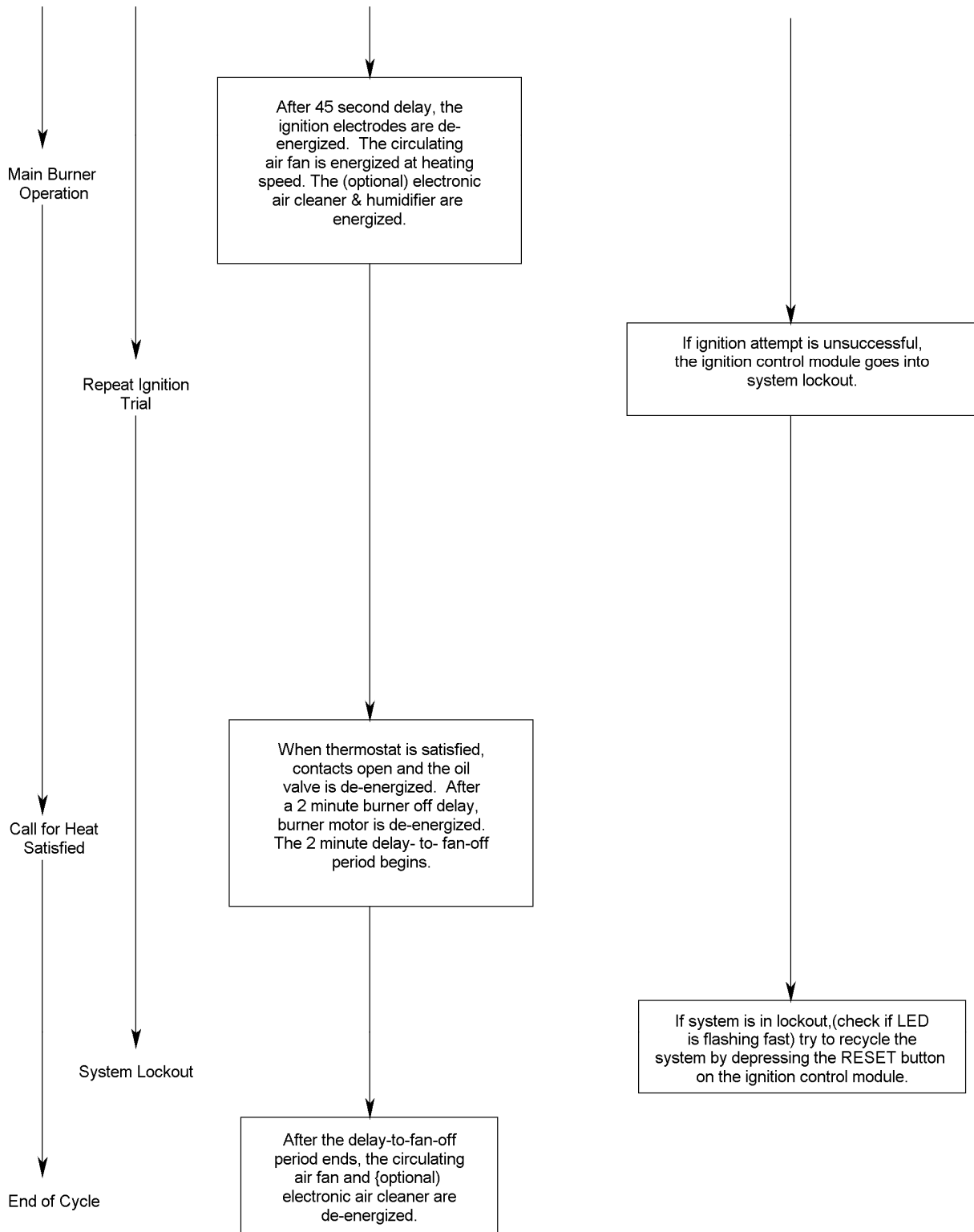
### Mode of Operation

Standby  
(At any time the oil valve is not energized)

### Control System Action

Continous safe operation check. If flame simulation condition present, system shuts off oil valve,ignitor, and burner motor; activates fast flashing LED.





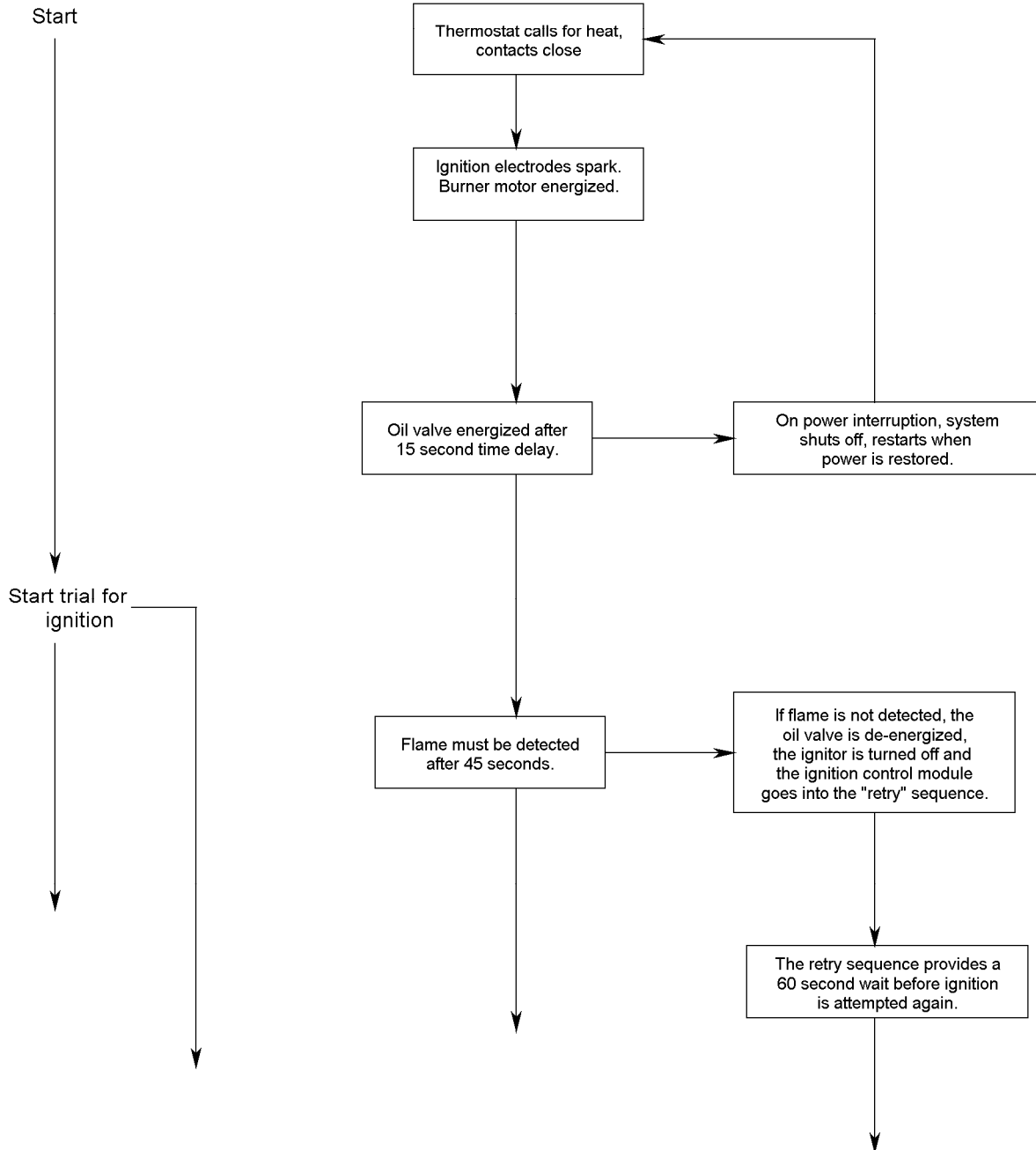
## IX. Trouble Shooting Flow Chart:

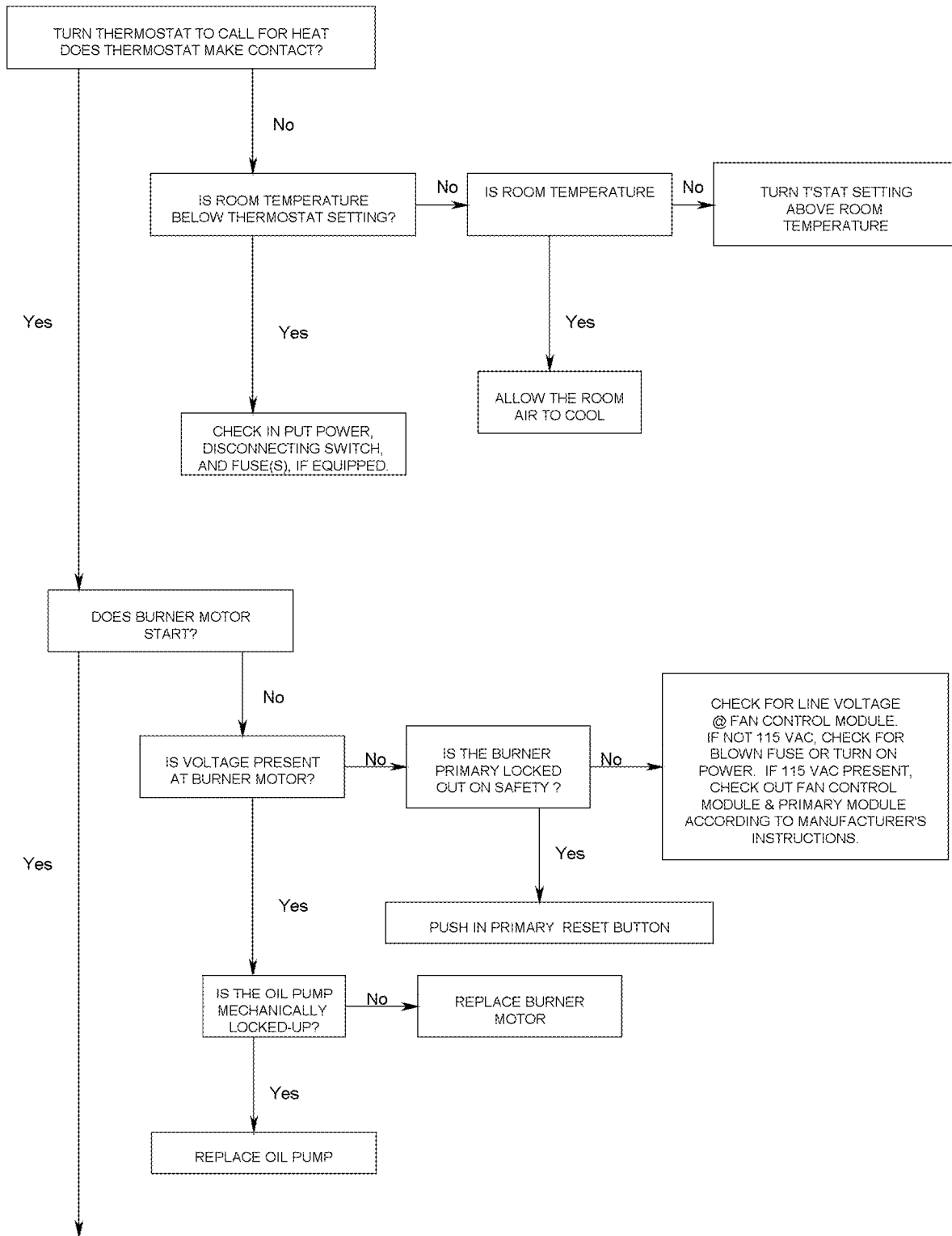
### Mode of Operation

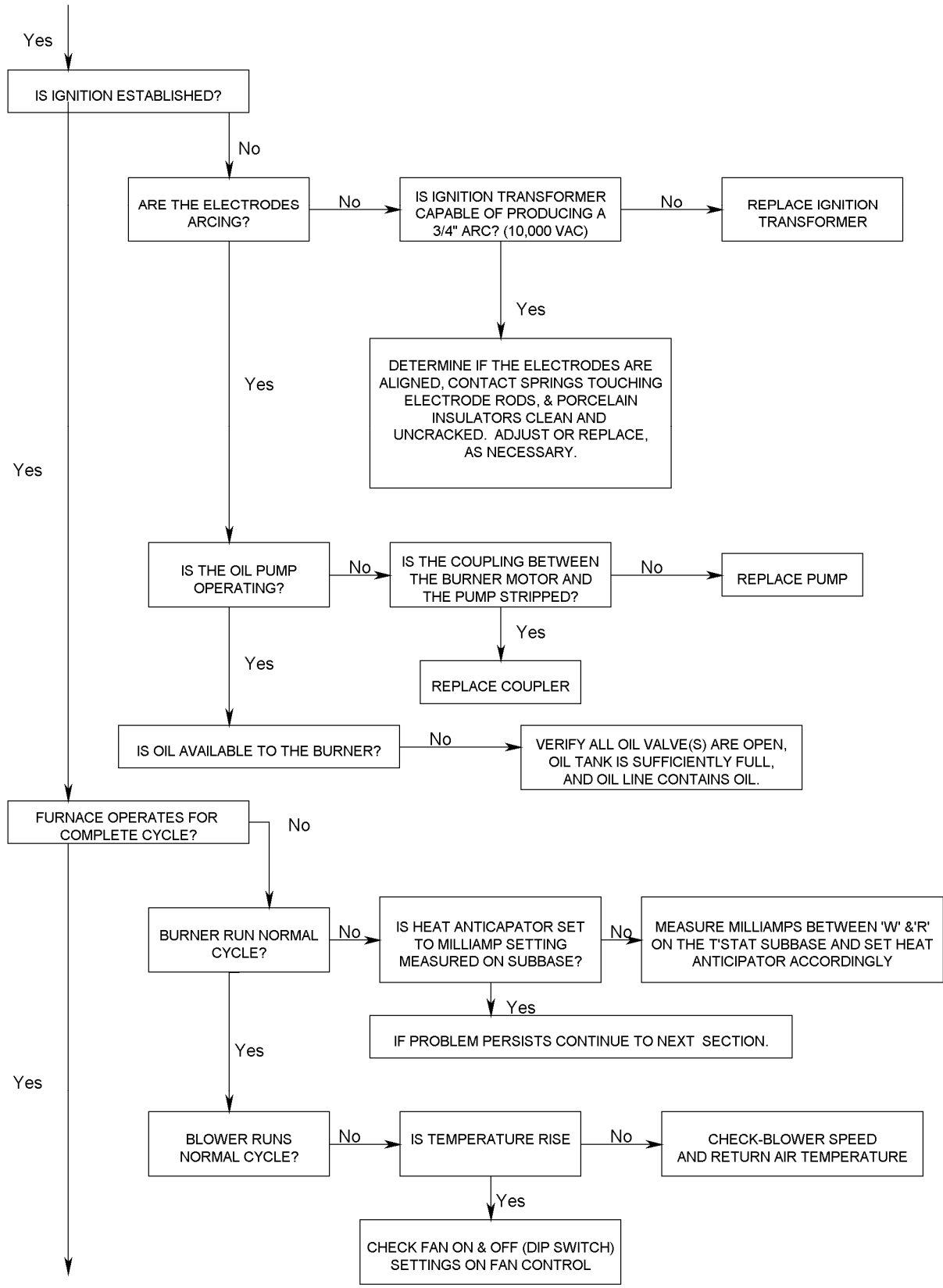
Standby  
(At any time the oil valve is not energized)

### Control System Action

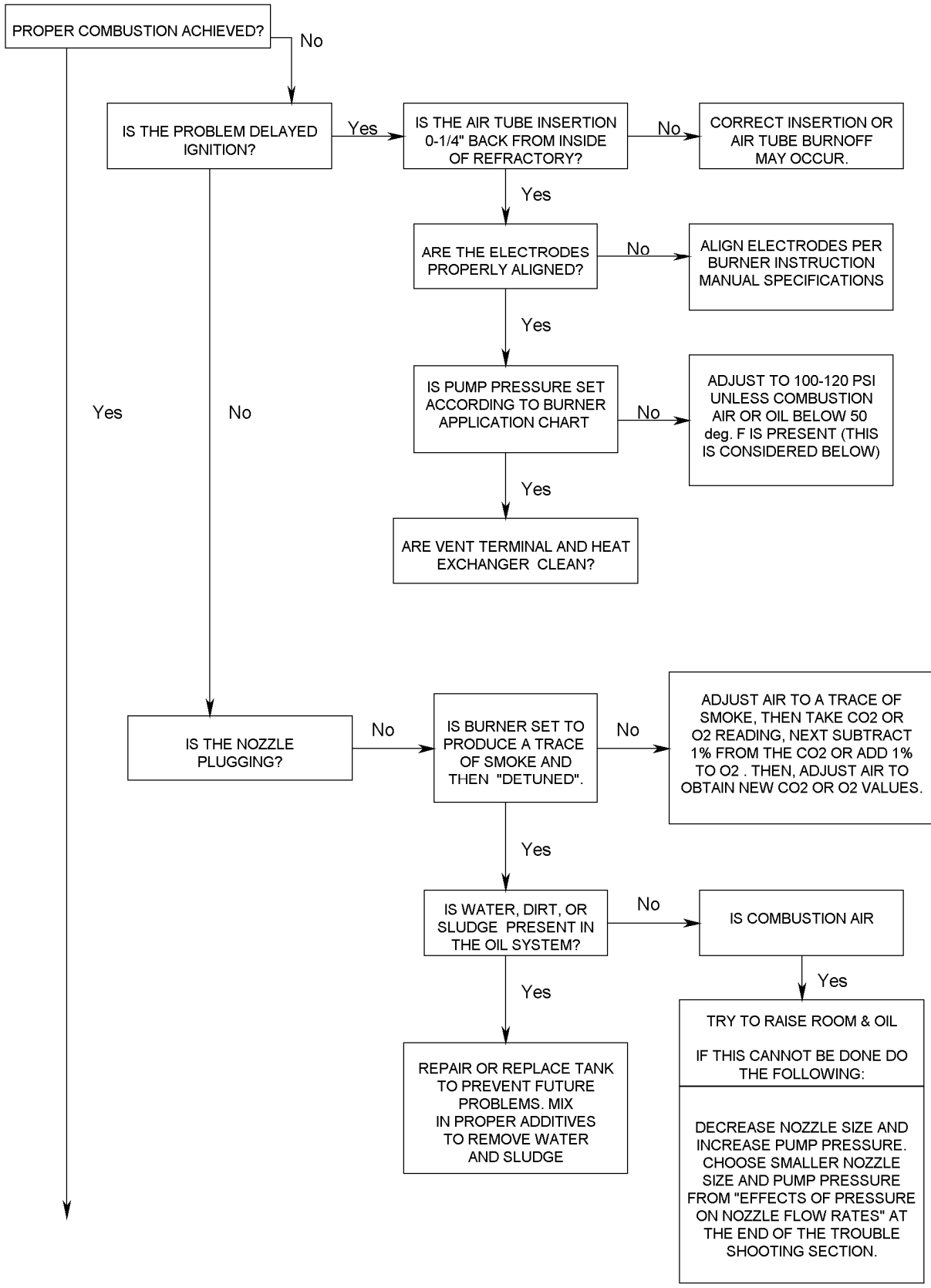
Continous safe operation check. If flame simulation condition present, system shuts off oil valve,ignitor, and burner motor; activates fast flashing LED.

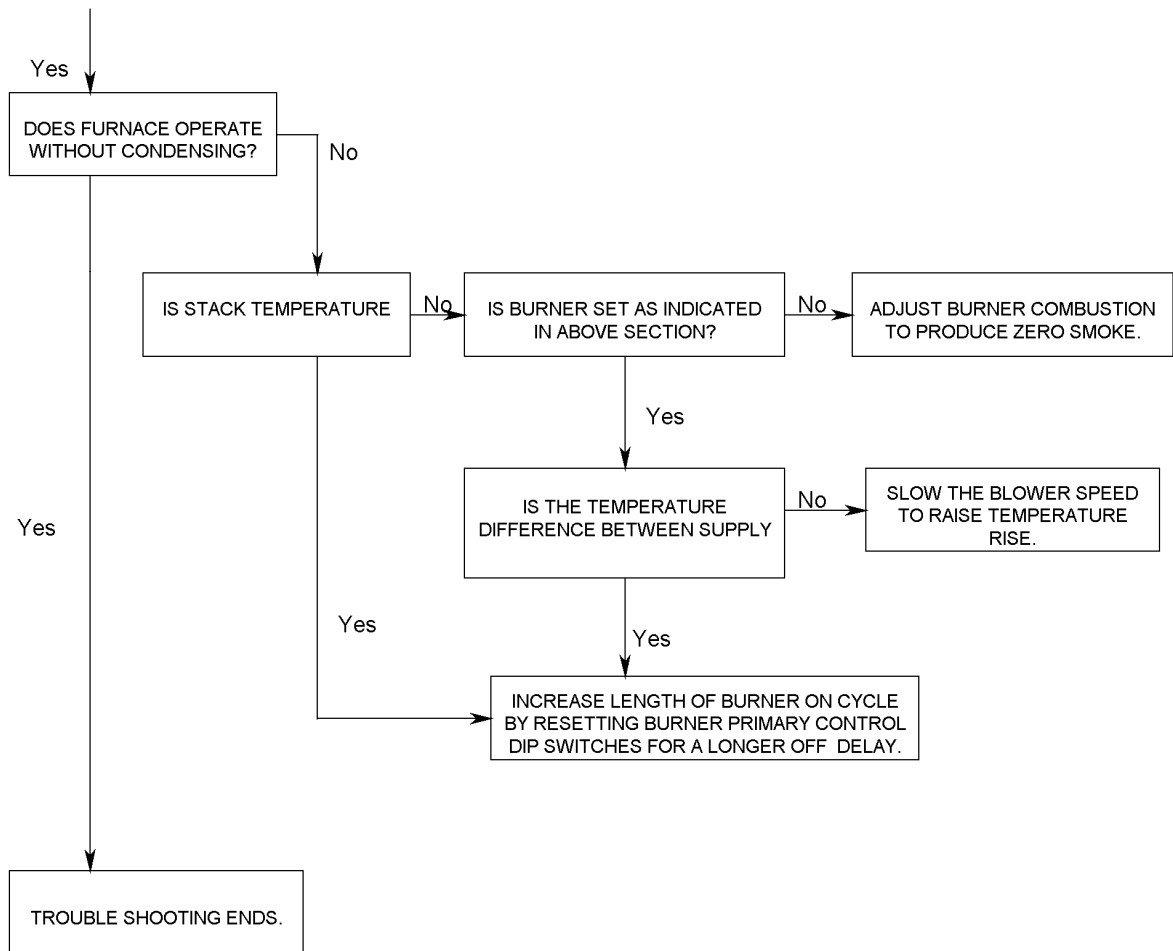












REPEAT PROCEDURE UNTIL TROUBLE FREE OPERATION IS OBTAINED.