HWG Wiring Diagram

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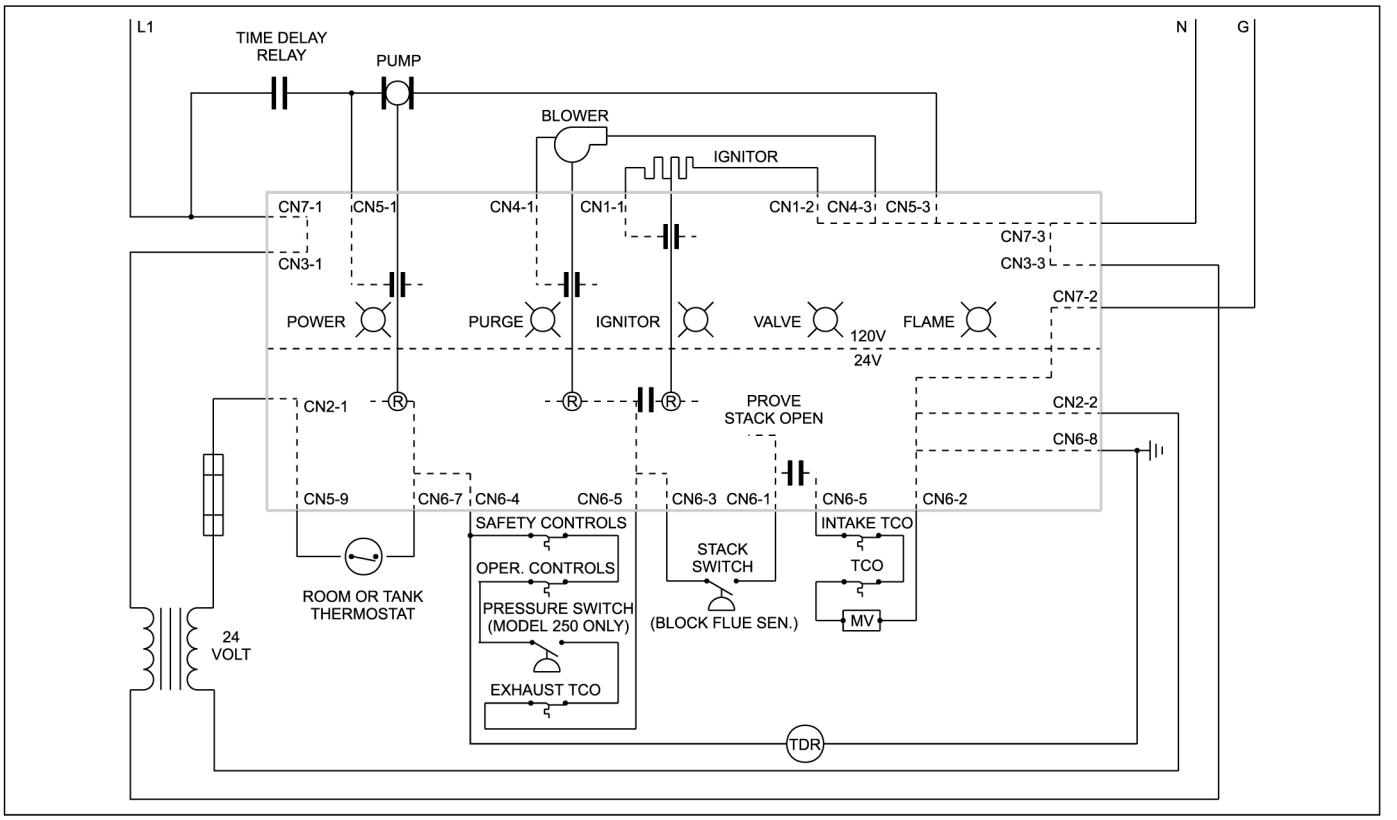
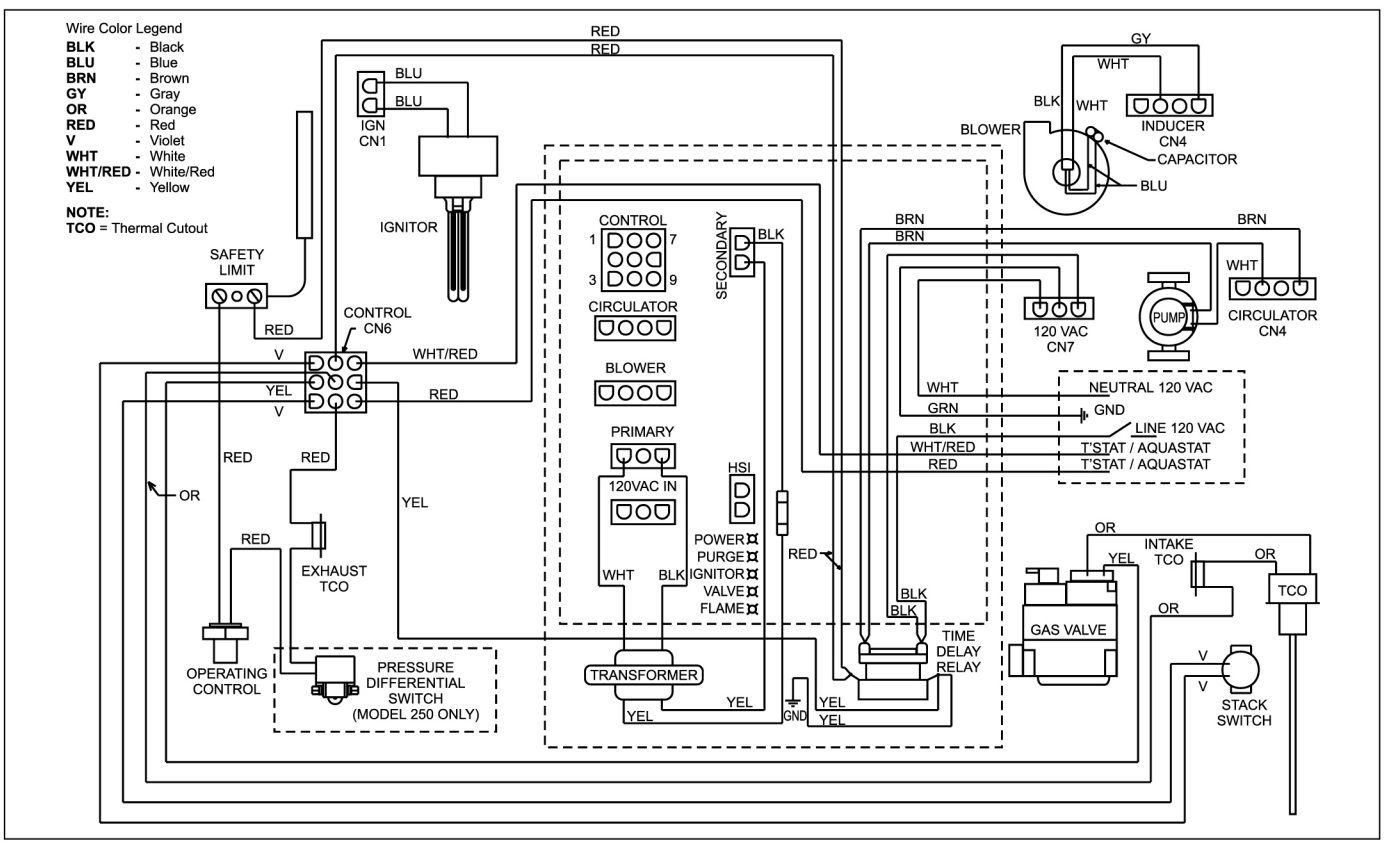


9600 Ladder Diagram.

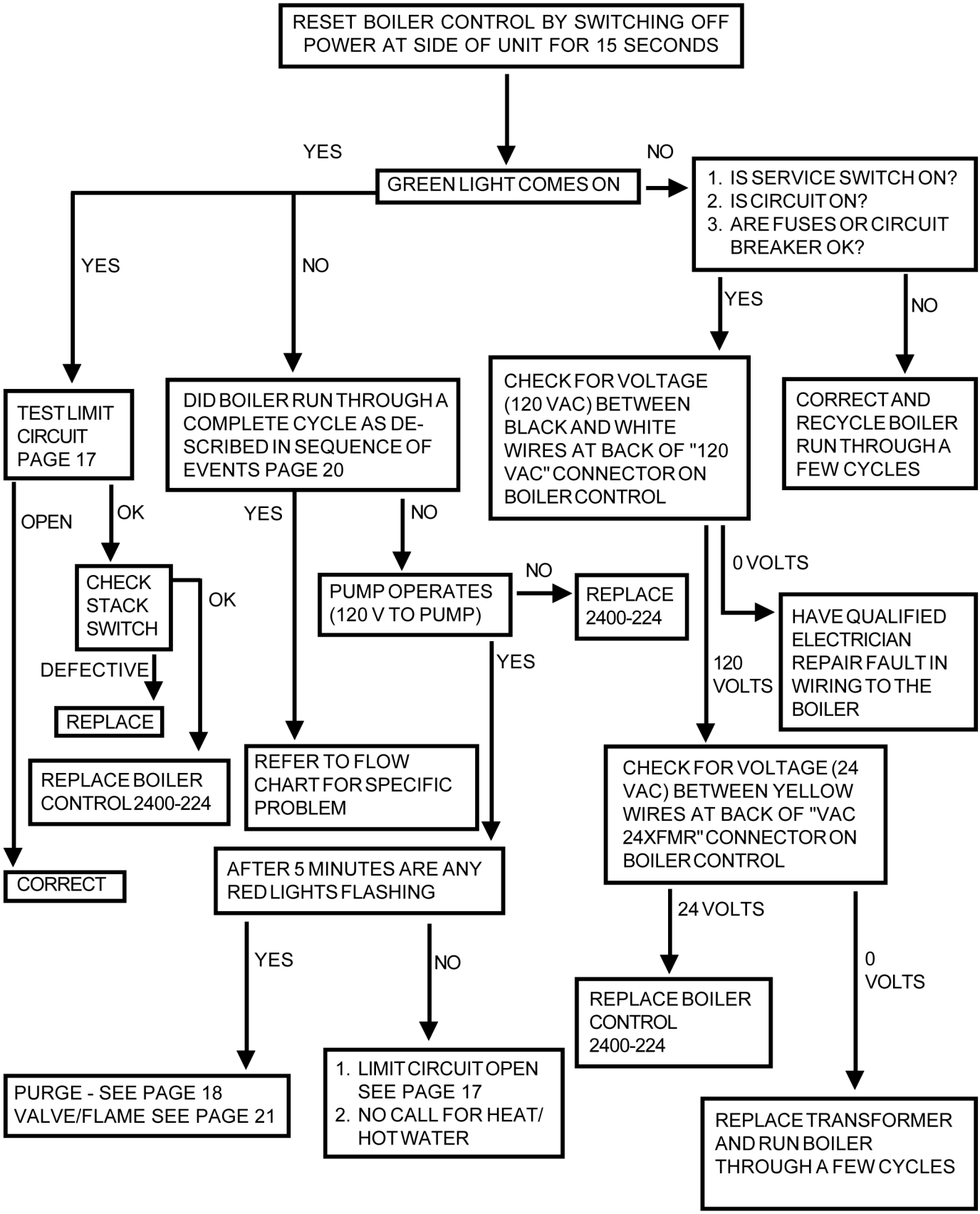


9600 Wiring Diagram.

⚠Caution

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. Verify proper operation after servicing!

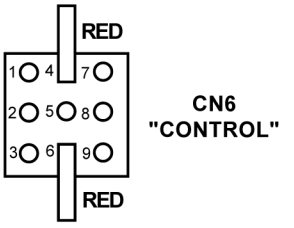
GENERAL TROUBLE SHOOTING



*POOR SWITCH CONTACT ON RELAYS, ZONE VALVES, OR THERMOSTATS CAN CAUSE A FLASHING GREEN LIGHT ON JOHNSON CONTROLS G856DBG - 5201.

TESTING LIMIT CIRCUIT
(YOU MUST COMPLETE PAGE 16 FIRST)

1. SWITCH BOILER OFF
2. UNPLUG 9 PIN "CONTROL" PLUG
3. CHECK FOR CONTINUITY AT BACK OF "CONTROL" PLUG BETWEEN RED WIRES (BOILER TEMP BELOW 170F)



CONTINUITY (0 OHMS ON LOW OHM SCALE)

NO CONTINUITY (∞ OHMS)

ALL LIMITS OK.
BOILER SHOULD CYCLE PROPERLY ON A CALL FOR HEAT OR HOT WATER

PUSH SAFETY LIMIT RESET BUTTON* BUTTON CLICKS

YES

NO

CONTINUITY

CHECK FOR CONTINUITY ACROSS VENT (EXHAUST) TCO

NO CONTINUITY

NO OVERHEAT CONDITION HAS OCCURRED

CHECK FOR CONTINUITY ACCROSS SAFETY LIMIT CONTACTS

REPLACE VENT (EXHAUST) TCO

CONTINUITY

NO CONTINUITY

REPLACE SAFETY LIMIT

CHECK FOR CONTINUITY ACCROSS OPERATING CONTROL CONTACTS

CONTINUITY

NO CONTINUITY

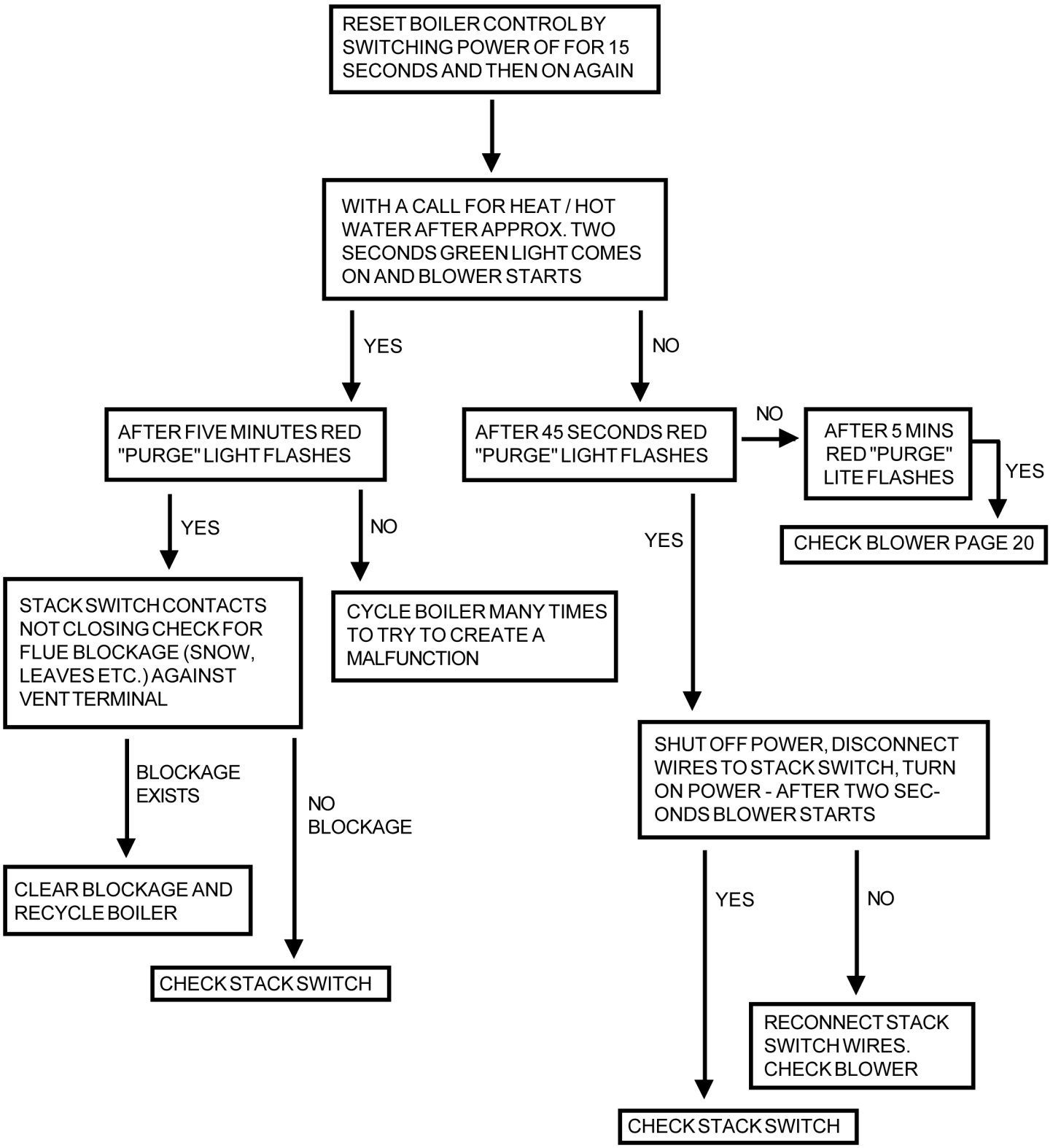
LIMIT CIRCUIT APPEARS OK - RECYCLE BOILER A FEW TIMES AFTER PLUGGING IN "CONTROL" PLUG

REPLACE OPERATING CONTROL

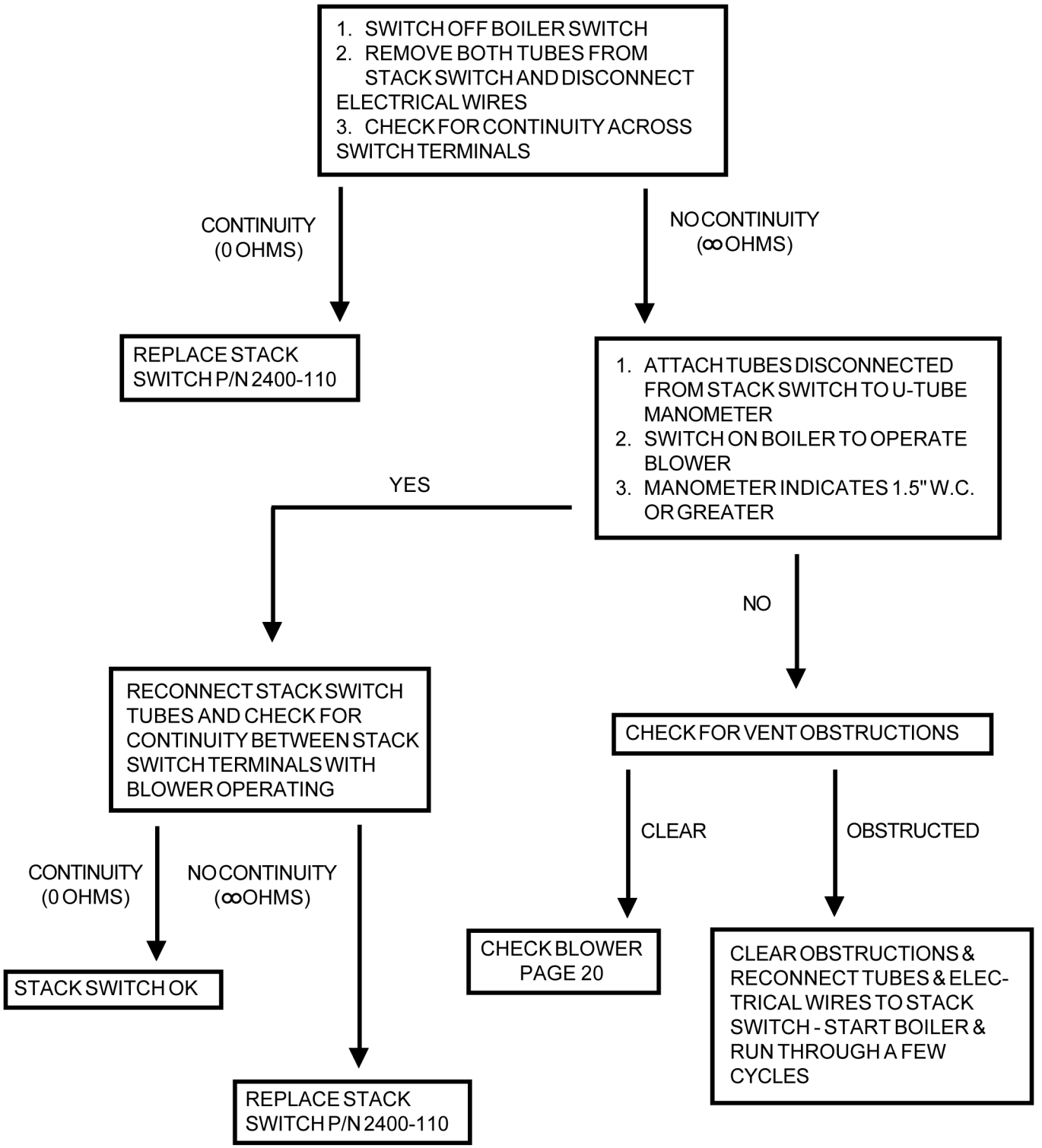
NOTE: AFTER COMPLETEING LIMIT CIRCUIT TESTING, PLUG IN CONTROL PLUG AND RECYCLE BOILER A FEW TIMES. IF BOILER A BOILER DOES NOT RECYCLE CONNECT A JUMPER TEMPORARILY BETWEEN THE RED WIRES. IF BOILER STARTS REMOVE JUMPER AND TEMPORARILY JUMP EACH SAFETY CONTROL UNTIL THE DEFECTIVE CONTROL IS LOCATED. NEVER LEAVE A SAFETY CONTROL JUMPED.

* CHECK BOILER PUMP IF SAFETY LIMIT HAS TRIPPED.

RED "PURGE" LIGHT FLASHING
(YOU MUST COMPLETE PAGE 16 FIRST)

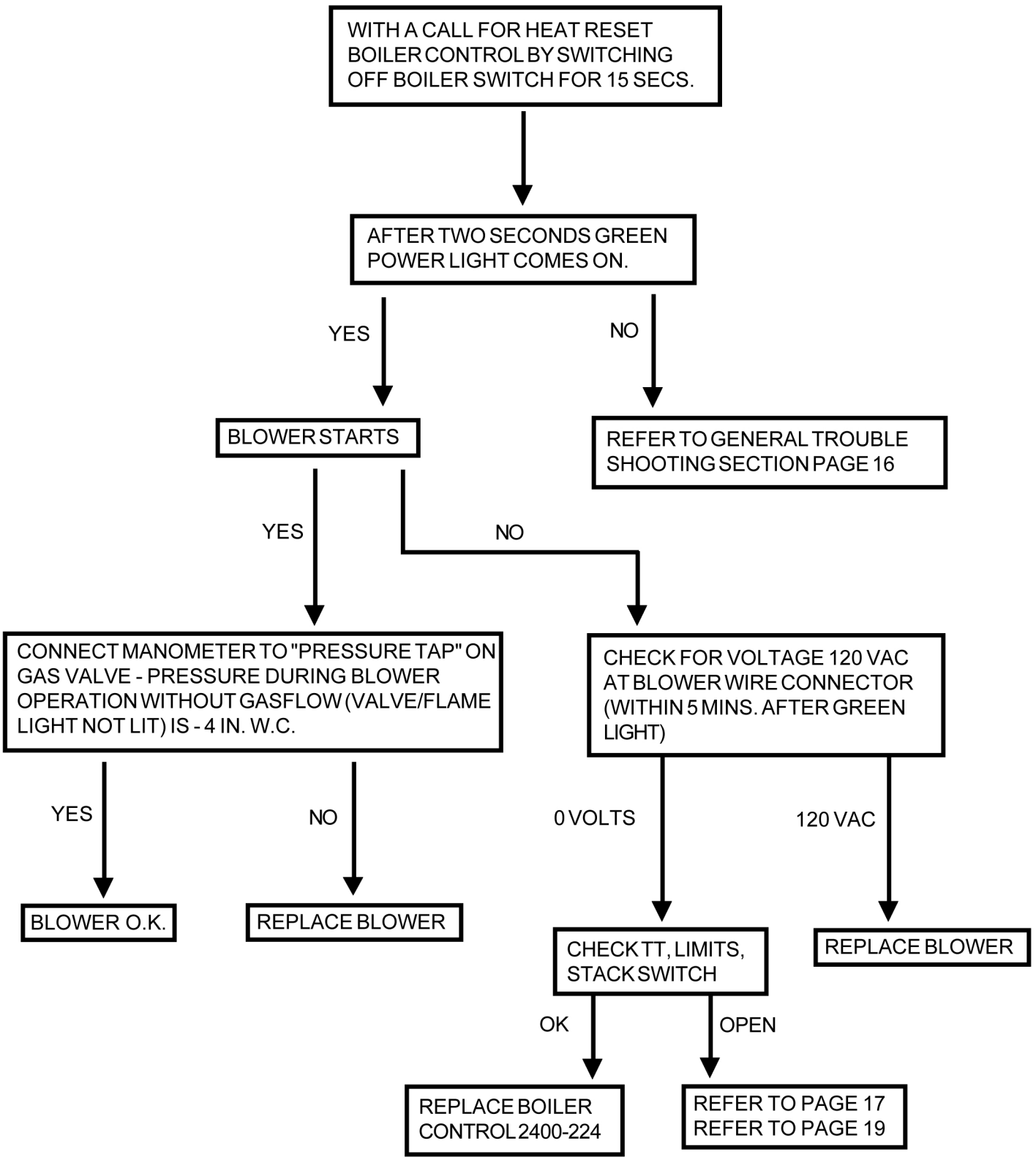


CHECKING STACK SWITCH
(YOU MUST COMPLETE PAGE 16 FIRST)

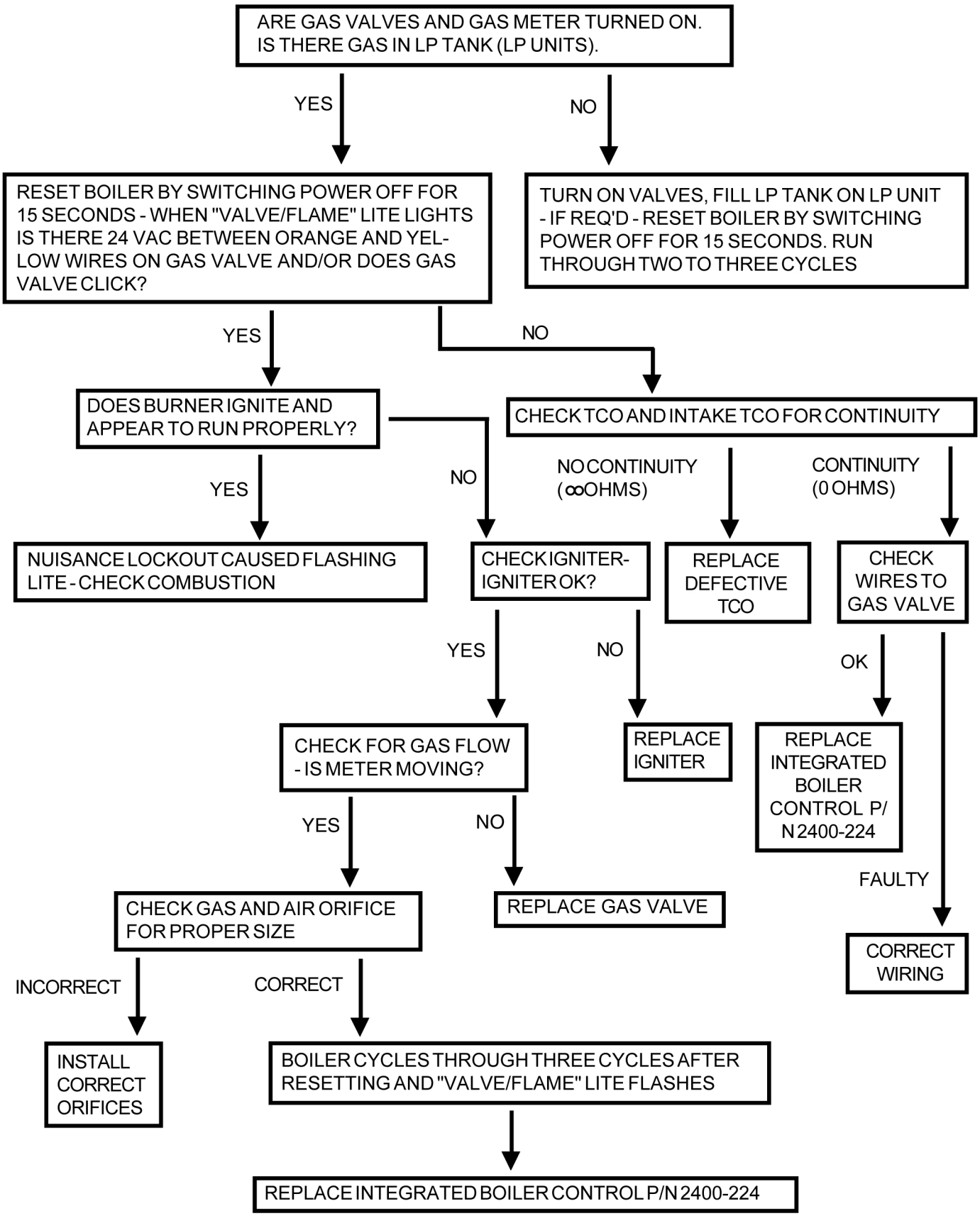


NOTE: CHECK TUBES ON STACK SWITCH FOR PROPER CONNECTIONS
TUBE CONNECTION CLOSEST TO YOU SHOULD CONNECT TO BARBED TEE FITTING ABOVE AIR ORIFICE.

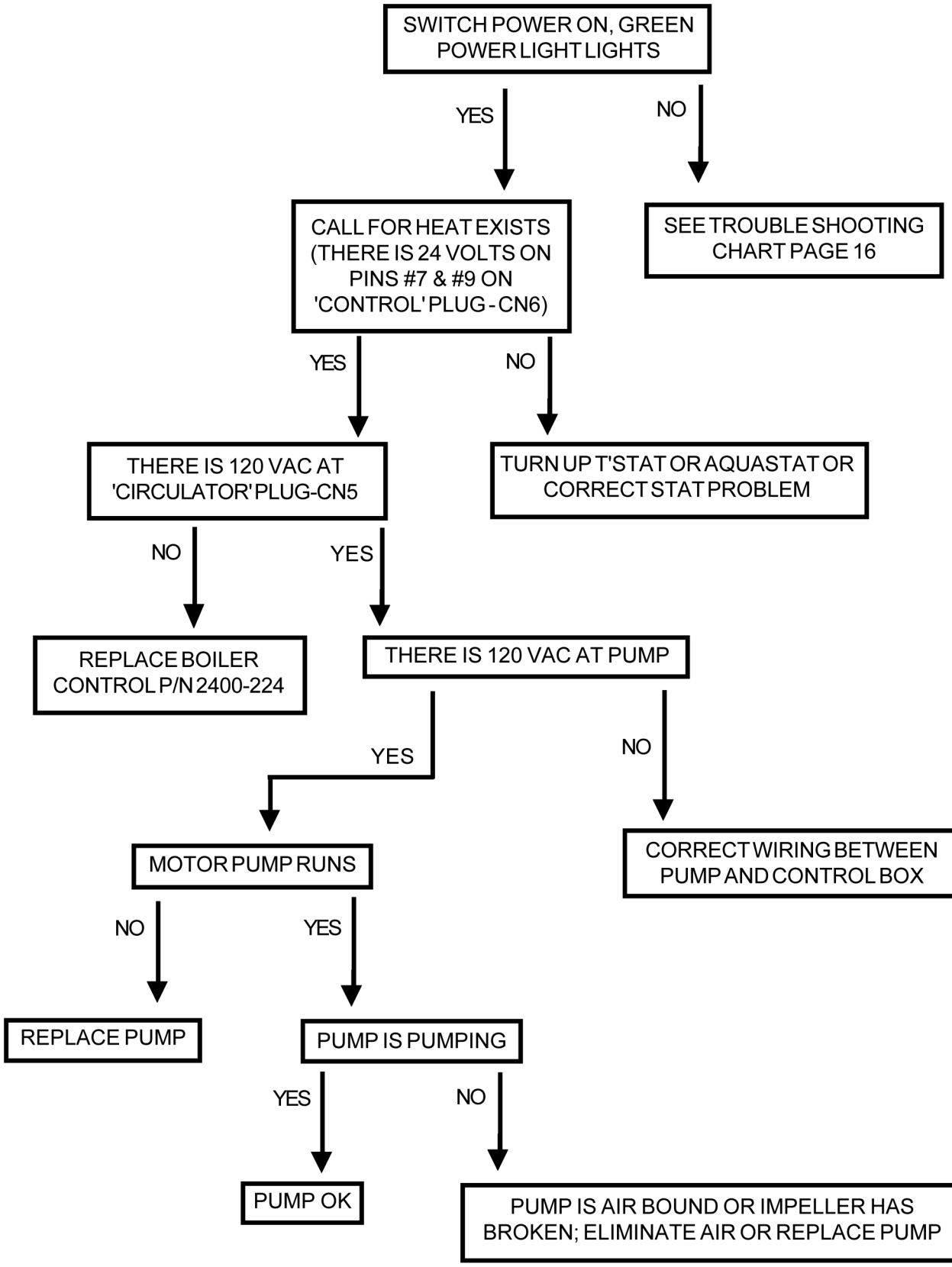
CHECKING BLOWER
(YOU MUST COMPLETE PAGE 16 FIRST)



RED "VALVE/FLAME" LIGHT FLASHING
(YOU MUST COMPLETE PAGE 16 FIRST)



CHECKING INTERNAL PUMP
(YOU MUST COMPLETE PAGE 16 FIRST)



HWG Troubleshooting Guide

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Quick Reference Trouble Shooter

A. SHORT CYCLING:

1. 9600 HWG - tank aquastat set too high
2. 9600 CB and 9600 HWG - Units shuts down before reaching limit. Continuously restarts without resetting
   a. Limit out of calibration
   b. Wrong air/gas orifices for input or fuel (refer to HeatMaker 9600 gas orifice chart ONLY)
   c. Thermostat heat anticipator set below 0.9 amps. (9600 CB only).
3. 9600 CB - boiler oversized for total load or small zone.

B. HEATMAKER 9600 OVERHEATS QUICKLY OR KNOCKS DURING OPERATION:

Boiling noise in combustion chamber.

1. Air in combustion coil or in pump: Purge system
2. Pump failure or control failure.
3. 9600 HWG lime buildup in primary heat exchanger.
4. 9600 HWG restriction in storage tank piping.
5. Defective diverting valve element.
6. 9600 CB restriction in supply/return piping.

C. DELAYED IGNITION: Unit starts or stops with a “pop”.

1. Wrong gas orifice for fuel or air orifice size.
2. LP - Gas regulator lock up 3” or greater above run pressure: correct regulator and check gas pipe sizing against piping chart in installation manual. Set regulator for maximum run pressure of 9”.
3. Remove blower and inspect flameholder (burner) for hole.
4. Check that the blower flanges and gas piping are sealed.

D. OCCASIONAL LOCKOUTS: Requires interruption of power to re-start or reset of safety limit.

1. Air in system causes safety limit to open. Vent air form system and eliminate source of air (9600 CB mostly).
2. Condensing in primary heat exchanger or moisture in combustion chamber
   a. defective element in diverting valve
   b. improper installation of intake terminal
   c. blocked condensate and condensate overflow system
3. Poor Combustion - check CO2 or O2.
4. Intermittent igniter failure: defective igniter gasket allows igniter base to overheat.
5. Occasional failure of blower: red “PURGE” light will be flashing.
6. 9600 CB zone control short cycling or voltage problem: Operate thermostats in various sequences to create suspect problem. **Note:** Three wire zone valves such as Taco or Watts must have isolating relay between end switch and HeatMaker 9600 CB.