

For 24 VAC tests, common probe (black) can be left on yellow wire of transformer or any chassis ground.

STEP 1 - Check Transformer

24 VAC at red wire on Transformer? **NO** → Check incoming power. (115 / 230 VAC) Make certain correct conversion block is installed. Replace transformer.

24 VAC at red wire on Transformer? **YES** → 12 VAC at white/yellow wire of Transformer? **NO** → Check incoming power. (115 / 230 VAC) Make certain correct conversion block is installed. Replace transformer.

12 VAC at white/yellow wire of Transformer? **YES** → Proceed to Step 2.

STEP 2 - Check Fuse

24 VAC at red wire of transformer terminal bar? **NO** → Check for short circuits in safety loop. Replace fuse.

24 VAC at red wire of transformer terminal bar? **YES** → Proceed to Step 3.

STEP 3 - Check Safety Loop

Note: If fan is on skip to Step 4 at top of page 2.

24 VAC at first wire (black) of safety loop terminal bar? **NO** → Recheck transformer and fuse. Replace thermostat.

24 VAC at first wire (black) of safety loop terminal bar? **YES** → 24 VAC at second wire (white) of safety loop terminal bar? **NO** → 24 VAC at white wire on Pressure Switch? **NO** → Water pressure related problem. Clean filter, baskets, etc.. Do back pressure test. Replace Pressure Switch.

24 VAC at second wire (white) of safety loop terminal bar? **YES** → 24 VAC at white wire on Pressure Switch? **YES** → Fireman's Switch Block open. Make certain external control system is calling for heat.

24 VAC at second wire (white) of safety loop terminal bar? **NO** → 24 VAC at white wire on Pressure Switch? **NO** → Thermostat is not calling for heat. Check thermistor, temperature setting. Replace thermostat.

24 VAC at second wire (white) of safety loop terminal bar? **YES** → 24 VAC at third wire (white) of safety loop terminal bar? **NO** → Thermostat is not calling for heat. Check thermistor, temperature setting. Replace thermostat.

24 VAC at third wire (white) of safety loop terminal bar? **YES** → Proceed to Step 4.

24 VAC at fourth wire (white) of safety loop terminal bar? **NO** → High Limit Switch(es) open. Replace both limits. Perform Temperature Rise Test.

24 VAC at fourth wire (white) of safety loop terminal bar? **YES** → 24 VAC at fifth wire (white) of safety loop terminal bar? **NO** → Check wire connections. Replace thermostat.

24 VAC at fifth wire (white) of safety loop terminal bar? **YES** → 24 VAC at sixth wire (white) of safety loop terminal bar? **NO** → Fusible Link or Exhaust Temp Limit open. 24 VAC on both sides of Fusible Link? **NO** → Replace Fusible Link. Check for down draft, soot, and/or low gas pressure. **YES** → Reset Exhaust Temp Limit. Check for block in flue and/or vent.

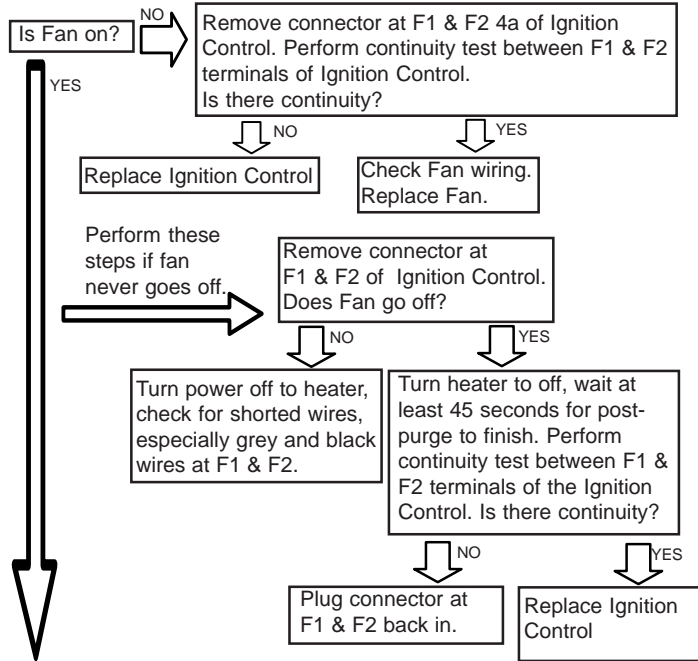
24 VAC at sixth wire (white) of safety loop terminal bar? **YES** → 24 VAC at seventh wire (purple) of safety loop terminal bar? **NO** → Check wire connections. Replace thermostat.

24 VAC at seventh wire (purple) of safety loop terminal bar? **YES** → 24 VAC at eighth wire (yellow/black) of safety loop terminal bar? **NO** → Air Pressure Switch open. Is fan on? **NO** → 24 VAC at yellow/black wire of ignition control terminal bar? **NO** → Replace Thermostat. **YES** → 24 VAC on yellow/black at TH of Ignition Control? **NO** → Check wire connections. **YES** → Check vacuum tube for kinks and or holes. Replace Air Pressure Switch.

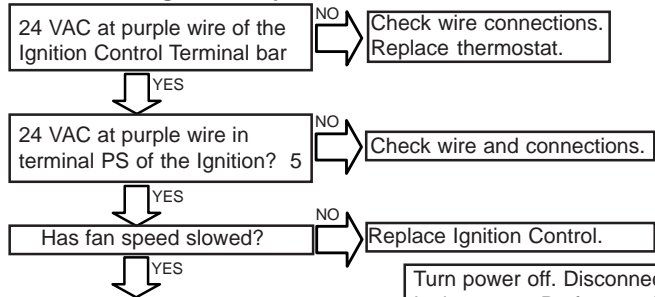
24 VAC at eighth wire (yellow/black) of safety loop terminal bar? **YES** → 24 VAC at yellow/black wire of ignition control terminal bar? **YES** → 24 VAC at yellow/black wire of Air Pressure Switch? **NO** → Check wire connections. **YES** → Check wire connections.

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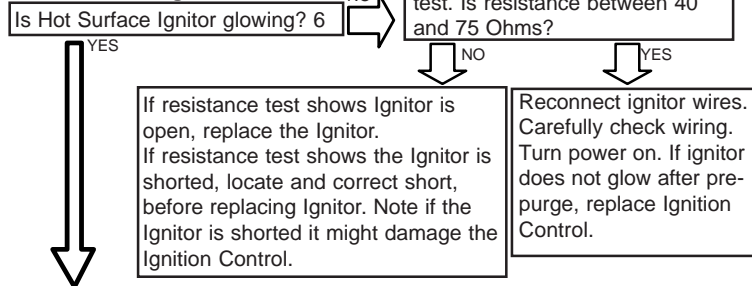
STEP 4 - Check Fan



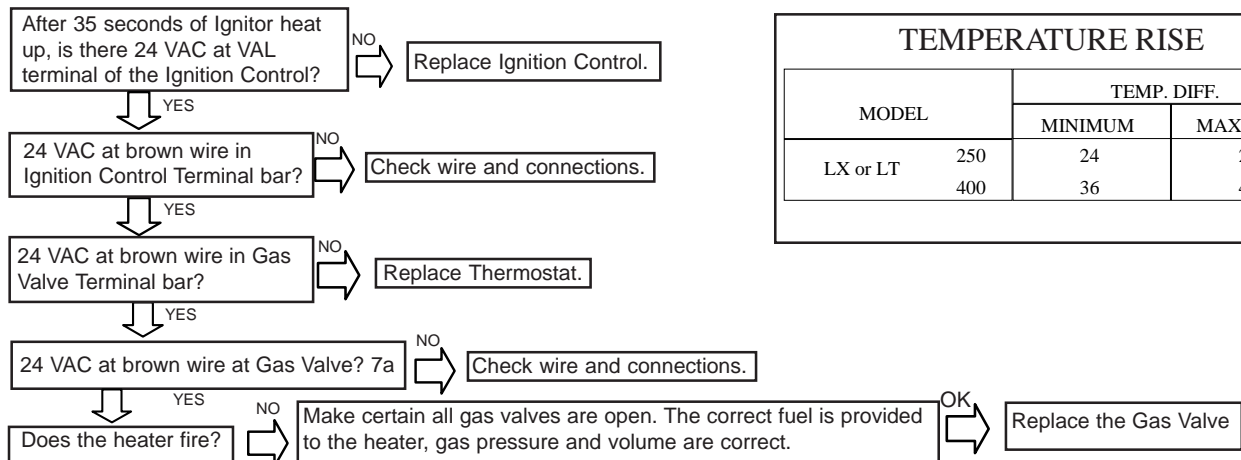
STEP 5 - Start Ignition Sequence



STEP 6 - Check Ignitor



STEP 7 - Check Gas Valve



SERVICE CODES

LOW PRESSURE - Water pressure related problem or blown fuse. Clean filter and all baskets. *Do a back pressure test.*

Check Fuse. If the fuse is blown, check for short circuits in the control wiring.

HI LIM SW. Low water flow problem. High limit(s) open.

Replace limit(s), do a *Temperature Rise Test.*

EXT. SW. 1 - Fusible Link or Exhaust Temp. Limit Switch open. Too much heat in the cabinet (Fusible Link) or flue (Exhaust Temp. Limit Switch).

Fusible Link open; check for sooted heat exchanger, low gas pressure, down draft condition and or water flow problem. *Do a Gas Pressure Test and Temperature Rise Test.*

Exhaust Temp Limit Switch check for blockage of vent.

AIR FLOW SW - Insufficient vacuum to close the air pressure switch. Make certain the fan is running. Check the air hose from the fan to the Air Pressure Switch for holes and kinks. If the fan never switches to high speed replace the Ignition Control.

AGS - Automatic Gas Shutdown simply means the Ignition Control did not sense flame rectification. Make certain all gas cocks are open, and there is sufficient gas pressure and volume (gas line sized properly). If the heater fires and then the flame goes out quickly, it indicates the rectification signal is not returning to the Ignition Control. Check for poor or missing ground wire.

Temp Sensor - Water temperature sensor open or shorted. The sensor is a 10 K Ohms thermistor. A sensor failure may indicate poor water chemistry. Carefully test the water, concentrating on Total Alkalinity and pH.

TEMPERATURE RISE

MODEL	TEMP. DIFF.	
	MINIMUM	MAXIMUM
LX or LT	250	28
	400	40