

CONVENTIONAL BURNER LOCKOUT TROUBLESHOOTING

The Manager CANNOT cause a burner lockout.

System 2000 uses industry standard burners that can be serviced by qualified technicians. Installation and service must be performed by a qualified installer or service agency. Others must not attempt to service or repair this product. Always refer to owner and installation manuals for complete details.

PRIMARY CONTROL LOCKOUT- Diagnostic Procedure

Disconnect the nozzle line and reposition it to pump oil into a container. Tighten the flare connection at the pump or delayed oil valve discharge fitting. Verify that there is a call for heat.

RESET THE PRIMARY CONTROL and be ready to observe the following items:



1) PRIMARY CONTROL

Did the primary control pull in promptly?

YES. Proceed to step (2) below.

NO. If relay chatters or operates erratically, jumper B1-B2 at the manager. If relay problem still exists, check for loose connections at T-T terminals and B1-B2 manager output terminals. With digital managers, check the B1/T and B2/T connections on the plug-in relay board located inside the junction box. If erratic operation continues, suspect faulty primary control.



Clear, steady stream

2) QUALITY OF OIL DELIVERY

You must have a clear, steady stream of oil from the nozzle line. (If motor does not start go to 3).

If flow is weak or foamy, check the following:

- ✓ Check vacuum gauge on oil filter, if vacuum exceeds 10" Hg there is a fuel flow problem.
- ✓ Bleed fuel pump, look for suction leaks, restrictions, dirty filter, single pipe overhead line, etc.
- ✓ No flow could indicate: loss of prime, broken pump coupling, blocked filter, blocked oil supply line, oil level in tank too low, defective fuel unit, defective delayed oil valve, poor electrical connections or no voltage at delayed oil valve leads.



3) BURNER MOTOR

Does the motor get up to speed quickly and smoothly?

YES. Proceed to next step (4).

NO. Motor does not start. Check voltage at motor leads.

YES, there is voltage present.

The centrifugal switch OR thermal overload might be open. Locate the thermal overload reset button on motor. If popped out, reset and find what caused overload condition. Check for locked rotor, tight fuel pump, tight motor bearings, low voltage, coupling slipping, etc.

NO voltage: Suspect primary control contacts.



4) TRANSFORMER/IGNITOR

You should be able to hear the ignition arc buzzing. If not, raise the transformer/ignitor slightly until the arc is visible between the electrodes and the springs/busbars. A more thorough test can be made later if necessary.



- ✓ If no spark is present, check input voltage at transformer leads. YES, line voltage is present, replace transformer/ignitor. NO voltage? Suspect primary control ignition output bad.

THE EMPHASIS HERE IS STAYING ALERT. USUALLY YOU WILL BE ABLE TO DETERMINE THE PROBLEM BY FOLLOWING THE ABOVE GUIDELINES.

IF THE BURNER PRIMARY CONTROL IS NOT IN A SAFETY LOCK-OUT CONDITION:



- ✓ Verify that Circulator light is ON and that the Main Circulator is running. This proves that the Burner/Main Circ relay is energized.
- ✓ Verify that the burner light on System Manager is on. The burner will not run unless the light is on indicating T-T circuit is closed.
- ✓ Check for open High Limit Aquastat. An open Aquastat that is set correctly at 205°-215°F indicates a circulation problem.
- ✓ Verify that Burner switch is ON.
- ✓ If Digital Manager monitor (alarm) light is ON then the Burner light should be off and T-T will be open. Exception: If the 100°F light is flashing, the burner light will be ON.
- ✓ Check for power at the control, jumper across B1-B2.
If the primary control starts then the control has power, possible intermittent primary control problem.
If the control does not start then jumper at T-T, if the control starts, then check the wiring connections between B1-B2 and T-T and on the plug in relay board.
If the control does not start when T-T is jumpered, there is no power to the primary control or the cad cell may be shorted.
- ✓ To check for possible shorted cad cell or cad cell wiring, remove one lead from F (with T-T jumpered). If the burner starts then the cad cell circuit is shorted.
- ✓ RESET MANAGER- Note all lights on manager, then turn off service switch and turn back on again.
- ✓ Possible Circulation problem with cold returns, see pages D-5 and D-6.