1) TROUBLESHOOTING GUIDE – TWO STAGE (N7/L7)

Turn on line voltage. Does the green monitoring light come on in the junction box?

No

Is there 120V between the L1 and L2 terminals on the terminal block in the junction box?

Yes

Are the black lead wires of the green light securely on the terminals L1 and L2?

Yes

Replace the green light.

No

Check the voltage circuit. Repair fault.

Yes

Repair connection.

No

Adjust thermostat to the highest setting. Is the draft inducer on?

Yes

Are one lead wire of the draft inducer motor securely on the terminal L2?

Yes

Is the other lead wire of the draft inducer motor securely on the relay terminal 3 in the junction box?

Yes

Disconnect the power and check motor lead wires. Any wire broken?

Yes

Check the blower wheel. Does it turn freely?

No

Replace blower wheel.

No

Check the pressure at the air switch. Is it higher than the minimum required?

No

Check the air intake and vent. Are there any blockages?

Yes

See sequence continued on the next page.

2

No

Repair connection.

Continue troubleshooting continued on the next page.

No

Repair broken wires.

Continue troubleshooting continued on the next page.

Yes

Replace motor.

No

Check the voltage between air switch terminal C and ground. Is it 24 vac?

Yes

Restart troubleshooting.

No

Clean out hose and probe.

No

Check the air sensing tube and hose. Are they clear and unobstructed?

Yes

Repair connections.

No

Is the air hose securely connected to the air switch and the air sensing tubing at the draft inducer?

Yes

Repair connections.

No

Is there 24 vac between the terminals L1 and L2 in the control cabinet?

Yes

When the draft inducer is running. Is there 24 vac between the air switch terminal NO and ground?

Yes

No

Repair the red light.

Yes

Check for broken wires connecting between junction box and control cabinet. Replace the wires if necessary.
Troubleshooting continued from the previous page.

30 seconds after startup, does the low fire amber monitoring light come on in the control cabinet? No

- Is the fuse OK on ignition module? Yes
  - Is there 24 vac across 25V(GND) and 25V terminals on ignition module? No
    - Is the red wire from ignition module 25V terminal connected to terminal L1 securely? Yes
      - Is the white wire from ignition module 25V(GND) connected to terminal L2 securely? Yes
        - Restart troubleshooting.
      - Repair the connection.
    - Repair the fuse.
    - Replace the ignition module.
- Are the two lead wires of the low fire amber light securely hooked to the same terminals as blue wire from ignition module? No
  - Replace the low fire amber light.
  - Repair connection.

30 seconds after startup, does the high fire amber monitoring light come on in the control cabinet? No

- Is there 24 vac between terminals on the terminal block that are connected to HI and C of the gas valve? Yes
  - Is there 24 vac between the terminal that is connected to HI of gas valve via a yellow wire and ground? No
    - Is there 24 vac between the terminal that is connected to C of gas valve via a blue wire and ground? Yes
      - Restart troubleshooting.
      - Check the wire that connects between the round terminal block and the one in the control cabinet. Replace it necessary.
      - Swap the two terminals in VALVE of the ignition module.
    - Repair connection.
    - Replace the ignition module.
  - Is there 24 vac between the terminal that is connected to HI of gas valve via a yellow wire and ground? No
    - Check the thermostat high setting. Correct any fault.

Does the low fire amber light stay on until cell for heat ends? No

- Spark stops when burner is lit? Yes
  - Is the electrode tip directly in the flame? No
    - Is there continuity between electrode sensor and ground stud in the cabinet? Yes
      - Check the flame current at the ignition module. Is it over 1.5mA with flame? No
        - Replace the spark electrode.
      - Restart troubleshooting.
    - Is the knob on the gas valve in the ON position? No
      - Turn the knob to ON position.
      - Restart troubleshooting.
    - The knob is on the gas valve in the OFF position (it's shipped from the factory at OFF position) No
      - No

- Is the electrode tip directly in the flame? Yes
  - Restart troubleshooting.

Troubleshooting continued on the next page.

See sequence continued on the next page.
Troubleshooting continued from the previous page.

1. Is there 24V between terminals 1 and 3 on the relay?
   - Yes: Replace transformer.
   - No: Are transformer's two lead wires securely connected to L1 and L2, respectively?
     - Yes: Correct connection.
     - No: Correct connection.

2. Is there 24V between transformer terminals on the secondary side?
   - Yes: Correct connection.
   - No: Is the red wire connecting relay terminal 6 and terminal LO of round terminal block securely?
     - Yes: Correct connection.
     - No: Replace the relay.

3. Is the black wire connecting terminal L1 and relay terminal 4 securely?
   - Yes: Correct connection.
   - No: Check the wire connecting relay terminal 4 and terminal L1 for continuity. Replace if no continuity.

4. Is the white wire connecting the other transformer terminal and relay terminal 1 securely?
   - Yes: Correct connection.
   - No: Recheck the thermostat and wiring.

Troubleshooting ends.

Turn off gas & electricity immediately. Replace the gas valve.

Is the green light still on?
- No: Recheck thermostat and wiring.
- Yes: Thermostat is not working properly. Replace if necessary.

Call for heat ends and the heater shuts off?
- Yes: Troubleshooting ends.
- No: Is there 120V between relay terminal 4 and ground?
  - Yes: Replace the relay.
  - No: Replace valve lead at ignition module. Does valve close?