## 12. TROUBLESHOOTING (PILOT MODELS 2A, 2B, 3 AND 9 ONLY)

<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTIONS</th>
</tr>
</thead>
</table>
| __Pilot will not stay lit when lighting the pilot...__ | • There is air in the gas line.  
• The pilot orifice is clogged.  
• The thermocouple is defective.  
• The pilot safety valve is defective. | • Bleed the air out or continue to ignite the brooder until all the air is purged.  
• Remove and clean the orifice as necessary.  
• Replace the thermocouple.  
• Replace the gas valve. |
| __Brooder shuts off on pilot safety (i.e. pilot goes out)...__ | • The pilot orifice is clogged.  
• The supply pressure is insufficient.  
• The thermocouple is defective.  
• The pilot safety valve is defective. | • Remove and clean the orifice as necessary.  
• Check the manifold gas pressure and adjust as necessary.  
• Replace the thermocouple.  
• Replace the gas valve. |
| __Brooder is not glowing red...__ | • The supply gas pressure is too low.  
• The gas piping size is incorrect.  
• The orifice is clogged.  
• The orifice size is incorrect. | • Check the manifold gas pressure and adjust as necessary.  
• If you are not sure of the performance, use the NFPA 54 gas pipe sizing table in this manual.  
• Remove and clean the orifice as necessary.  
• See the instructions for correct orifice size and replace if necessary. |
| __Brooder will not attain the desired temperature...__ | • There is insufficient heat in the building for heat loss (i.e., not enough brooders).  
• The thermostat sensing bulb is incorrectly placed.  
• The thermostat is out of calibration. | • Conduct a heat loss and add brooders or other source of heat as necessary.  
• Reposition the sensing bulb as necessary for proper operation.  
• Recalibrate (if possible) or replace. |

### 12A BURNER OPERATION TROUBLESHOOTING (DSI MODELS 5B AND 5D ONLY)

#### A) IGNITION MODULE DIAGNOSTICS (DSI MODELS 5B AND 5C ONLY)

The LED located on the ignition module (see Figure 13) will flash ON for ¼ second, then OFF for ¼ second during a fault condition. The pause between fault codes is 3 seconds.

<table>
<thead>
<tr>
<th>LED Indication</th>
<th>Error Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steady On</td>
<td>Internal Control Failure</td>
</tr>
<tr>
<td>2 Flashes</td>
<td>Flame Sense Fault</td>
</tr>
<tr>
<td>3 Flashes</td>
<td>Ignition Lockout</td>
</tr>
</tbody>
</table>

#### B) FLAME SENSOR TESTING (DSI MODELS 5B AND 5D ONLY)

The flame current is the current that passes through the flame from the sensor to the ground. The minimum flame current necessary to keep the system from lockout is 0.7 microamps. To measure the flame current, connect an analog DC microammeter to the FC- and FC+ terminals per diagram. The meter should read 0.7 µA or higher when the burner is running full on. If the meter reads below zero, the meter leads are reversed. Disconnect power and reconnect the meter leads for proper polarity.
<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>POSSIBLE CAUSE</th>
<th>SOLUTIONS</th>
</tr>
</thead>
</table>
| **Brooder is not glowing red...** | ✷ The supply gas pressure is too low.  
✦ Improper size of gas piping.  
✦ The orifice is clogged.  
✦ Incorrect orifice size. | ✷ Check the manifold gas pressure and adjust if necessary.  
✦ If you are not sure of the performance, use the NFPA 54 gas pipe sizing table in these instructions.  
✦ Clean the orifice.  
✦ See the instructions for correct orifice size and replace if necessary. |
| **Brooder will not attain the desired temperature...** | ✷ There is insufficient heat in the building for heat loss (i.e., not enough brooders).  
✦ The thermostat sensing bulb is incorrectly placed.  
✦ The thermostat is out of calibration. | ✷ Conduct heat loss and add brooders or other source of heat as necessary.  
✦ Reposition as necessary for proper operation.  
**NOTE:** The sensing bulb should be shielded from direct radiation to prevent short cycling of the brooder.  
✦ Recalibrate (if possible) or replace. |
| **Flames flaring up, outside of emitter surface...** | ✷ The gas pressure is too high.  
✦ Incorrect orifice size.  
✦ Incorrect type of gas supplied to the brooder.  
✦ Not enough combustion air. | ✷ Check the manifold gas pressure and adjust if necessary.  
✦ See instructions for correct orifice size and replace if necessary.  
✦ Check the nameplate to identify the correct type of gas the brooder is equipped to operate using.  
✦ Clean the inside of the burner with a wire brush and blow out with compressed air. |
ADDITIONAL TROUBLESHOOTING  (DSI MODELS 5B AND 5D ONLY)

Turn up thermostat to call for heat. Does the electrode spark?

- NO
  - Is there 24V at the terminal block on the brooder? See figure 11a, Page 16.
    - NO
      - Replace ignition module, PN 30632030
    - YES
      - Replace ignition module, PN 30632030
      - Yes
        - Replace electrode assembly, PN 30216040
      - NO
        - Adjust spark gap and retry ignition.

- YES
  - Does the module have a steady red LED?
    - NO
      - Replace ignition module, PN 30632030
    - YES
      - Check the spark gap is 3/16"?
        - NO
          - Replace electrode assembly, PN 30216040
        - YES
          - Refer to brooder zone control instructions for troubleshooting.

  - Is there 115V into the transformer? (Zone control)
    - NO
      - Check building wiring and repair as necessary.
    - YES
      - Check building wiring and circuit breakers. Repair as necessary.

  - Is there 24V out from the transformer? (Zone control)
    - NO
      - Turn on the shut off's and purge the pipework of air.
    - YES
      - Turn on the gas valve.

  - Does the burner light? (Note: there are 3 tries for ignition before lockout)
    - NO
      - Check the gas line, are all the shut off's in the on position and have the lines been purged of air?
        - NO
          - Replace ignition module, PN 30632030
        - YES
          - Replace gas valve PN 30333110 LP.
      - YES
        - Check the orifice is it blocked?
          - NO
            - Replace gas valve PN 30333120 NG, 30333110 LP.
          - YES
            - Check the gas valve cold/heat pressure, see section 7a, is the gas pressure correct?
              - NO
                - Check the orifice is it blocked?
                  - NO
                    - Contact Dealer for further assistance.
                  - YES
                    - Clean out orifice
              - YES
                - Contact Dealer for further assistance.

Does the burner stay lit?

- NO
  - Check the flame current to the module, see section 12a, is the current less than 0.7mA?
    - NO
      - Does the module have a steady red LED?
        - NO
          - Contact Dealer for further assistance.
        - YES
          - Replace ignition module, PN 30632030
      - YES
        - Replace electrode assembly, PN 30216040
  - YES
    - Check ignition cable for continuity.
      - NO
        - Check the orifice is it blocked?
          - NO
            - Contact Dealer for further assistance.
          - YES
            - Clean out orifice
      - YES
        - Check the gas valve cold/heat pressure is higher than the minimum required and adjust the outlet gas pressure per section 7a.