Tools Required

- Combustion Analyzer
- Size 50-200: 2.5mm Allen Wrench
- Size 300-400: Flat Head Screw Driver
- Phillips Screw Driver
- Wire Jumper

WARNING
MUST BE FOLLOWED STEP BY STEP OR PROBLEMS WILL OCCUR
**STEP 1**
Remove control box cover, power venter access panel and burner access panel.

**STEP 2**
Turn power and gas on.
Note: Remember to turn gas valve on/off switch to the “On” position
**STEP 3**
Set gas control mode dip switches #1-5 to zero.
Note: Dip switches #6-8 should not need to be changed since they are set by the factory for the unit size. See Table 10B in unit installation manual for additional information. If applicable remove the 2-10 VDC wires from control board.

**STEP 4**
Jumper R to W1 to call for heat.

**STEP 5**
Set Run % Potentiometer to 100%.
Note: Allow the unit to run for 2 minutes to ensure the unit reaches 100% fire.

**STEP 6**
Place combustion analyzer in flue pipe.
**STEP 7**
Adjust high fire on gas valve based on Table 1.

**Table 1**
High Fire Gas Valve Adjustment:

<table>
<thead>
<tr>
<th>Unit Size (MBH)</th>
<th>CO₂ Meter Reading</th>
<th>O₂ Meter Reading</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural Gas</td>
<td>Propane Gas</td>
<td>Natural Gas</td>
</tr>
<tr>
<td>50 &amp; 150</td>
<td>&lt;7.4%</td>
<td>&lt;7%</td>
<td>&lt;7%</td>
</tr>
<tr>
<td>50 &amp; 150</td>
<td>&gt;7.9%</td>
<td>&gt;7.9%</td>
<td>&gt;7.9%</td>
</tr>
<tr>
<td>100 &amp; 200</td>
<td>&lt;7.5%</td>
<td>&lt;6.9%</td>
<td>&lt;6.9%</td>
</tr>
<tr>
<td>100 &amp; 200</td>
<td>&gt;8.0%</td>
<td>&gt;7.7%</td>
<td>&gt;7.7%</td>
</tr>
<tr>
<td>300 &amp; 400</td>
<td>No Adjustment Required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**STEP 8**
Set Run % Potentiometer to 33%. 
Note: Allow the unit to run for 2 minutes to ensure the unit to reaches 33% fire.
**STEP 9**

Adjust low fire on gas valve based on Table 2.

**Table 2**

Low Fire Gas Valve Adjustment:

<table>
<thead>
<tr>
<th>Unit Size (MBH)</th>
<th>CO₂ Meter Reading</th>
<th>O₂ Meter Reading</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Natural Gas</td>
<td>Propane Gas</td>
<td>Natural Gas</td>
</tr>
<tr>
<td>50-200</td>
<td>&lt;4.2%</td>
<td>&lt;5.3%</td>
<td>&lt;12%</td>
</tr>
<tr>
<td>50-200</td>
<td>&gt;5.0%</td>
<td>&gt;5.8%</td>
<td>&gt;13.3%</td>
</tr>
<tr>
<td>300</td>
<td>&lt;4.0%</td>
<td>&lt;5.0%</td>
<td>&lt;12.3%</td>
</tr>
<tr>
<td>300</td>
<td>&gt;4.7%</td>
<td>&gt;5.4%</td>
<td>&gt;13.6%</td>
</tr>
<tr>
<td>400</td>
<td>&lt;4.2%</td>
<td>&lt;5.3%</td>
<td>&lt;12%</td>
</tr>
<tr>
<td>400</td>
<td>&gt;5.0%</td>
<td>&gt;5.8%</td>
<td>&gt;13.3%</td>
</tr>
</tbody>
</table>

**STEP 10**

Remove R to W1 jumper. Turn thermostat to lowest setting and confirm unit turns off.
Select desired gas control and set thermostat to desired temperature.

**Modulating with Outdoor Air Reset (Master)** – This gas control should be used in regions with large temperature swings. The unit will automatically vary the discharge air temperature based on the outside air temperature. Set the “Design T/Space SP” potentiometer to outdoor air temperature where the unit should be at 100% fire (usually design outdoor air temperature used in sizing the unit).

Note: If ordered with Outdoor Air Reset, unit will come with an Outdoor Air Sensor for field installation. The unit can be field converted to Outdoor Air Reset by ordering the Outdoor Air Sensor, part number 11J1R09966-001.

*Dip Switch Settings: #1 & 3 – ON; #2, 4 & 5 – OFF*

**Modulating with Outdoor Air Reset (Network)** – This gas control modulates the unit the same as Outdoor Air Reset (Master). However, it does not require a separate outdoor air sensor. It allows the master unit to share the outdoor air temperature with all networked units. Set the “Design T/Space SP” potentiometer to outdoor air temperature where the unit should be at 100% fire (usually design outdoor air temperature used in sizing the unit).

Note: One master unit is required per networked group.

*Dip Switch Settings: #1 & 4 – ON; #2, 3 & 5 – OFF*
**Indoor Air Reset** – This gas control attempts to learn your building’s heating needs and run at the bare minimum to keep the space temperature within the allowed range. The unit will vary the discharge air temperature so the unit is running at lowest output possible without short cycling. Note: A W2 call will act as a room override and force the unit to high fire.

*Dip Switch Settings: #2 – ON; #1, 3, & 5 – OFF*

**Room Sensing** – This gas control allows the unit to vary the discharge air temperature to more closely match the needs of the space for precise temperature control. Set “Design T/Space SP” potentiometer to desired room temperature. Note: If ordered with Room Sensing, unit will come with a Room Sensor for field installation. The unit can be field converted to Room Sensing by ordering the Room Sensor, part number 11J1R09974-001.

*Dip Switch Settings: #1 & 2 – ON; #3, 4, & 5 – OFF*

**2-10 VDC/4-20 mA Input** – This gas control allows the unit to vary the discharge air temperature based on a signal from the building automation system. Note: Units can also be controlled via a Modbus signal. See Operation Section of unit installation manual for additional details.

*Dip Switch Settings: 2-10 VDC Input: #1-5 – OFF; 4-20 mA Input: #5 – ON; #1-4 – OFF*

**Two Stage** – While designed for modulating gas control, the Nexus unit can be used with two stage gas control. A W1 signal will cause the unit to run at the firing rate set by the Run % Potentiometer. A W2 signal will cause the unit to run at 100% fire.

*Dip Switch Settings: #1-5 – OFF*
Single Stage – While designed for modulating gas control, the Nexus unit can be used with single stage gas control. By connecting the single stage thermostat to the W1 terminal, the unit will run at the firing rate set by the Run % Potentiometer. If the single stage thermostat is connected to the W2 terminal the unit will run at 100% fire.

Dip Switch Settings: #1-5 – OFF