HIGH ALTITUDE MANIFOLD PRESSURE ADJUSTMENT

1. Turn off manual gas valve.
2. Remove manifold pressure tap plug marked “Outlet Pressure Tap” from gas valve using 3/16” Allen wrench. Install ½” NPT x ¼” barbed fitting. See Figure #1
3. Connect manometer or gauge to gas valve pressure tap barbed fitting just installed in step 1. Manometer should be capable of reading 1 to 15 inches of water column. See Figure #2.
4. Turn electrical power and gas supply on. Set thermostat high enough to start boiler.
5. Start boiler.
6. Note gas manifold pressure on manometer or gauge. Manometer or gauge reading should be 2½ inches water column at start up.
7. To adjust manifold pressure, remove “Pressure Regulator Adjustment Cap” located on gas valve to gain access to regulator adjustment screw. Turn adjustment screw clockwise to increase pressure and counterclockwise to decrease pressure. See Figure #1.
8. Adjust manifold pressure to indicated value using known gas Btu value and known altitude of installation. See Tables #1 and #2 on following pages.
9. Once correct pressure reading is obtained and remains steady, shut off boiler at thermostat, shut off manual gas valve, and electrical supply. Remove manometer or gauge, ½” barbed fitting and replace pressure tap plug.
10. Restore electrical and gas supply, restart boiler and check for gas leaks using soapy water or a commercial leak detector.
11. Fill out data on adjustment/conversion label and attach to inside left panel of boiler. Operate boiler through at least 6 ignition cycles to check for proper operation of boiler before leaving job site.

Please read these instructions carefully before starting the adjustment or conversion process. These changes must be performed by a qualified service agency.

DANGER

Before servicing, turn off electrical power to boiler at service switch. Close manual gas valve to turn gas supply OFF to boiler. Failure to comply will result in death or serious injury.

NOTICE

When doing this procedure, place pressure regulator cap back in place to obtain correct reading. Not putting cap in place gives false reading of manifold pressure.

Figure 1 - Gas Valve Detail

High Altitude Series 2 Gas Conversion Instructions and High Altitude Manifold Pressure Adjustment

SUPPLEMENTAL INSTRUCTIONS

90-50/75/100 SERIES 2 GAS CONVERSION INSTRUCTIONS AND HIGH ALTITUDE MANIFOLD PRESSURE ADJUSTMENT

Please read these instructions carefully before starting the adjustment or conversion process. These changes must be performed by a qualified service agency.

DANGER

Before servicing, turn off electrical power to boiler at service switch. Close manual gas valve to turn gas supply OFF to boiler. Failure to comply will result in death or serious injury.

HIGH ALTITUDE MANIFOLD PRESSURE ADJUSTMENT

1. Turn off manual gas valve.
2. Remove manifold pressure tap plug marked “Outlet Pressure Tap” from gas valve using 3/16” Allen wrench. Install ½” NPT x ¼” barbed fitting. See Figure #1
3. Connect manometer or gauge to gas valve pressure tap barbed fitting just installed in step 1. Manometer should be capable of reading 1 to 15 inches of water column. See Figure #2.
4. Turn electrical power and gas supply on. Set thermostat high enough to start boiler.
5. Start boiler.
6. Note gas manifold pressure on manometer or gauge. Manometer or gauge reading should be 2½ inches water column at start up.
7. To adjust manifold pressure, remove “Pressure Regulator Adjustment Cap” located on gas valve to gain access to regulator adjustment screw. Turn adjustment screw clockwise to increase pressure and counterclockwise to decrease pressure. See Figure #1.
8. Adjust manifold pressure to indicated value using known gas Btu value and known altitude of installation. See Tables #1 and #2 on following pages.
9. Once correct pressure reading is obtained and remains steady, shut off boiler at thermostat, shut off manual gas valve, and electrical supply. Remove manometer or gauge, ½” barbed fitting and replace pressure tap plug.
10. Restore electrical and gas supply, restart boiler and check for gas leaks using soapy water or a commercial leak detector.
11. Fill out data on adjustment/conversion label and attach to inside left panel of boiler. Operate boiler through at least 6 ignition cycles to check for proper operation of boiler before leaving job site.

Figure 1 - Gas Valve Detail
When changing from Natural to Propane or vice versa, use correct conversion orifice for boiler model. See Tables #1 and #2 for specific high altitude orifice information.

**HIGH ALTITUDE RATINGS FOR NATURAL GAS**

**TABLE #1: 90 - 50/75/100 SERIES 2 NATURAL GAS**

<table>
<thead>
<tr>
<th>MODELS 90-50</th>
<th>Stock Factory</th>
<th>Btu Value of Natural Gas++</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Settings</td>
<td>750</td>
</tr>
<tr>
<td>Altitude in Ft.</td>
<td>0-5,000</td>
<td>5,000-10,000</td>
</tr>
<tr>
<td>Normal Input (MBH)</td>
<td>50</td>
<td>–</td>
</tr>
<tr>
<td>Manifold Pressure In W.C.</td>
<td>2.5</td>
<td>4</td>
</tr>
<tr>
<td>Orifice</td>
<td>43331094</td>
<td>43331094</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MODELS 90-75</th>
<th>Stock Factory</th>
<th>Btu Value of Natural Gas++</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Settings</td>
<td>750</td>
</tr>
<tr>
<td>Altitude in Ft.</td>
<td>0-5,000</td>
<td>5,000-10,000</td>
</tr>
<tr>
<td>Normal Input (MBH)</td>
<td>75</td>
<td>–</td>
</tr>
<tr>
<td>Manifold Pressure In W.C.</td>
<td>2.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Orifice</td>
<td>43331092</td>
<td>43331092</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MODELS 90-100</th>
<th>Stock Factory</th>
<th>Btu Value of Natural Gas++</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Settings</td>
<td>750</td>
</tr>
<tr>
<td>Altitude in Ft.</td>
<td>0-5,000</td>
<td>5,000-10,000</td>
</tr>
<tr>
<td>Normal Input (MBH)</td>
<td>100</td>
<td>–</td>
</tr>
<tr>
<td>Manifold Pressure In W.C.</td>
<td>2.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Orifice</td>
<td>43331090</td>
<td>43331090</td>
</tr>
</tbody>
</table>

++Contact local gas utility or distributor for Btu value of gas.

1. Turn off manual gas valve.
2. Use 5/16” nut driver to remove front door and top panel.
3. Use 9/64” Allen wrench to remove adapter block from gas valve. Take care not to lose o-ring under the block. See Figure #3.
4. Remove wiring harness and ground wire from gas valve.
5. Use adjustable or 1¾” wrench on bushing to remove gas assembly from mixer turn counter clockwise. Do not use channel locks, pipe wrench, etc, as damage to bushing may occur. See Figure #2.
6. Use small pipe wrench to remove orifice from bushing by turning counter clockwise. Install correct orifice for boiler being converted. Apply small amount of pipe dope to threads of orifice leaving last two threads clean. Turn clockwise into bushing.

Figure 2 - Gas Assembly and Inlet Air Assembly
3. Apply pipe dope to bushing threads. Install gas assembly turning clockwise into mixer. DO NOT USE TEFOLON TAPE.

4. Attach wiring harness, ground wire, and adapter block to gas assembly. Wire harness will only go on one way. Do not force.

5. Install top panel. Restore electrical and gas supply. Set thermostat high enough to start boiler. Restart boiler. Check for gas leaks using soapy water or commercial leak detector.

6. Fill out data on adjustment/conversion label. Attach to inside left panel of boiler.

Operate boiler through at least 6 ignition cycles to check for proper operation of the boiler before leaving job site.