

INSTALLATION INSTRUCTIONS  
**L.P. To NATURAL GAS CONVERSION KIT**  
 For 100,000-400,000 BTU/HR  
 Tubular Unit Heaters with Direct Spark Ignition



Input BTU/HR	Conversion Kit No.	Orifice Size Nat.	Orifice Quantity	Convertible Valve
100,000	261R06952	#42	4	36G22-221
125,000	261R06952	#42	5	36G22-221
150,000	261R06952	#42	6	36G22-221
175,000	261R06952	#42	7	36G22-221
200,000	261R06952	#42	8	36G22-221
250,000	261R06952	#42	10	36H22-421
300,000	261R06952	#42	12	36H22-421
350,000	261R06952	#42	14	36H22-421
400,000	261R06952	#42	16	36H22-421

### Kit Contents

Main Burner Orifices (16)\*  
 J36-04694-028

“Notice of Conversion”  
 Label  
 J17-06342

White-Rodgers Gas Valve  
 Conversion Kit  
 W-R# 92-0656  
 J29-02775-002

Conversion Plate  
 J17-06341

**▲ WARNING** This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, explosion or production of carbon monoxide may result causing property damage, personal injury or loss of life. The qualified service agency performing this work assumes responsibility for the proper conversion of this appliance with this kit.

**AVERTISSEMENT** Cette trousse de conversion ne doit être installée que par le représentant d'un organisme qualifié et conformément aux instructions du fabricant et à tous les codes et exigences pertinentes de l'autorité compétente. Quiconque ne respecte pas à la lettre les instructions du présent guide risque de provoquer un incendie, une explosion ou des fuites de monoxyde de carbone entraînant des dommages matériels, des lésions corporelles ou la perte de vies humaines. L'organisme qualifié qui effectue les travaux est responsable de la conversion correcte de cet appareil à l'aide de cette trousse.

### Natural Gas High Altitude Manifold Pressure Chart

Elevation (Ft.)	0-1,999	2,000-2,999	3,000-3,999	4,000-4,999	5,000-5,999	6,000-6,999	7,000-7,999	8,000-8,999	9,000-9,999	10,000-10,999
Manifold (In. WC)	3.5	3.5	3.2	3.2	3.1	3.0	2.9	2.8	2.7	2.6
Pressure (kPA.)	0.87	0.87	0.80	0.80	0.77	0.75	0.72	0.70	0.67	0.65

\* This conversion kit includes (16) main burner orifices: see the quantity of orifices required per input/heater size shown in the table above. Use only the quantity required.

**READ ALL INSTRUCTIONS COMPLETELY  
BEFORE BEGINNING ANY WORK!**

1. All work must be performed by a fully qualified, experienced, and trained service technician. It is the responsibility of the installer to follow all instructions. Failure to follow these instructions could result in serious injury or property damage.
2. The qualified agency performing the work assumes responsibility for the conversion.
3. **▲ CAUTION** The gas supply shall be shut off prior to disconnecting the electrical power, before proceeding with the conversion.
4. Wear safety glasses.
5. Wear gloves when handling the burners.
6. Be sure of ladder placement. Do not allow people to stand below or around the area where the work is being performed.
7. Do not lean ladders or equipment against the heater at any time during the conversion.

**REPLACING THE ORIFICES (See Figure 1)**

1. Remove the screws holding the rear and the bottom burner access panels and remove the panels.
2. Remove retaining strip from above main burners.
3. Lift burners up and pull away from manifold to remove.
4. Use the proper size wrench or socket to remove the burner orifices. Remove all the L.P. gas orifices and keep them separated from the natural gas orifices at all times.
5. Install natural gas orifices in manifold, ensuring that the number stamped on the orifice matches the size listed on page one for the appliance being converted. The orifices must be installed finger tight first to avoid cross threading and the possibility of leaking. Tighten securely with wrench or socket. Do not over tighten.

**INSTALLING THE BURNERS**

1. Insert inlet end of burner onto orifice.
2. Lower burner onto burner bracket so that tabs on bracket fit into slots on burner.
3. Repeat with remaining burners.
4. Install retaining strip above burners.
5. Replace burner access panels.

**CONVERSION OF THE GAS VALVE**

1. Follow all instructions provided with the valve conversion kit. Be sure valve conversion kit is for the valve on the appliance. If the instructions are lost or not in the kit **STOP**. Call the Customer Service Department and the instructions will be faxed to you.

**OPERATION**

1. A water-filled U-tube manometer must be used to measure gas pressures. The gauge type is not reliable and may give false readings.
2. Gas inlet pressure must be between 5.0 and 14.0 inches water column (1.2-3.5 kPa). Turn off the gas supply to the heater, connect the manometer to the pressure tap on the inlet side of the gas valve, turn on the gas and observe the pressure with the heater not firing and then firing. If the pressure is not within the specified range under both conditions, contact the gas supplier.
3. The manifold pressure must be adjusted to 3.5 inches water column (0.9 kPa). This manifold pressure applied to #42 main burner orifices assures that the input rating is correct for altitudes up to 2000 feet (610 m). For altitudes above 2000 feet (610 m), see (4) below. This is very critical as overfiring or underfiring can cause problems. Move the manual control on the gas valve to the "Off" position, connect the manometer to the pressure tap on the outlet side of the gas valve, turn the control on, fire the unit and adjust the pressure if necessary. To adjust the pressure, remove the cap from the pressure regulator on the gas valve, turn the regulator screw clockwise to increase pressure or counter clockwise to decrease pressure, then replace the cap.

4. For altitudes above 2000 feet (610 m), heater must be derated 4% for each 1000 feet (305 m) above sea level. Adjust manifold pressure according to the Natural Gas High Altitude Manifold Pressure Chart on page one.
5. After manometers have been removed and pressure tap plugs have been reinstalled, fire the heater and check all joints for leaks using a soap solution. **Never use an open flame to check for gas leaks.**
6. Allow the heater to operate for at least 5 minutes, then observe main burner flames. A hard blue flame extending 18 to 24 inches (457 to 610 mm) into the tube is normal. Slight yellow tipping is acceptable (see Figure 2). There is no air adjustment on inshot burners.
7. After the heater is operating properly, cycle the system using the thermostat to check out the normal operating sequence of the ignition system. The normal sequence is as follows:
  - Thermostat calls for heat, draft inducer fan starts.
  - After a purge period, main gas valve and ignitor are energized.
  - Main flame ignites.
  - Flame travels along burner carryover slots to ignite remaining burners.
  - Sensing circuit senses flame; turns ignitor off.

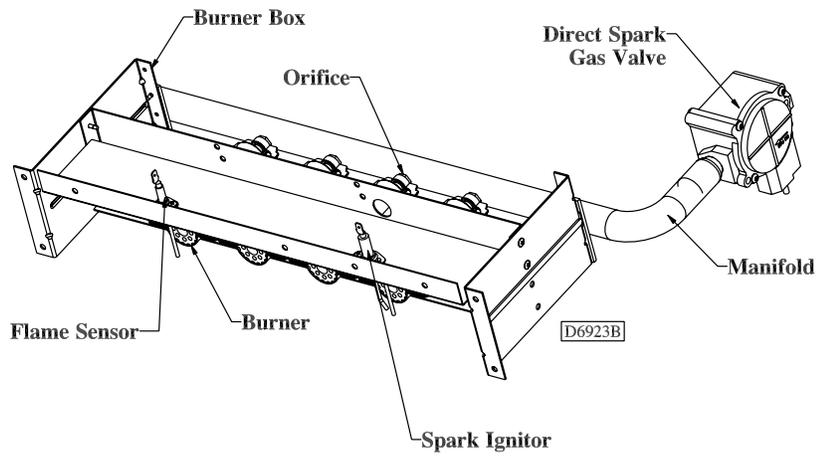
When thermostat is satisfied, the gas valve is de-energized, extinguishing all main burner flames.

Apply conversion plate and label to heater jacket panel. The conversion plate must be installed as closely as possible to the existing heater rating plate.

**▲ WARNING** Gas Tightness Of The Safety Shut-Off Valves Must Be Checked On At Least An Annual Basis!

To check gas tightness of the safety shut-off valves, turn off the manual valve upstream of the appliance combination control. Remove the 1/8 inch pipe plug on the inlet side of the combination control and connect a manometer to that tapping. Turn the manual valve on to apply pressure to the combination control. Note the pressure reading on the manometer, then turn the valve off. A loss of pressure indicates a leak. If a leak is detected, use a soap solution to check all threaded connections. If no leak is found, the combination control is faulty and must be replaced before putting appliance back in service.

**Figure 1**  
**Standard Tubular**  
**100/400 MBH Unit Heaters**



---

**Figure 2**  
**Heat Exchanger Details**

