

# INSTALLATION INSTRUCTIONS

## Conversion Kits ALPKT841

For Converting PRPGE/X14\*, NP14G/L\*, TGRG\*, BPRPG\*,  
MPG\* Single Stage Gas Package Units from Natural Gas to  
Propane for Use at the Same Altitude Only

This manual must be left with the homeowner for future reference.



This is a safety alert symbol and should never be ignored. When you see this symbol on labels or in manuals, be alert to the potential for personal injury or death.

### 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. The installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit.

### WARNING

As with any mechanical equipment, personal injury can result from contact with sharp metal edges. Be careful when handling equipment.

### CAUTION

Gas valve conversion kit **MUST** be installed **BEFORE** the unit is fired using LP/propane gas. Unit damage **WILL OCCUR** if the unit is fired using LP/propane gas with the original natural gas orifices.

### Conversion Instructions

If any damage to the contents is found at the time of delivery, proper notation should be made on the carrier's freight bill. Damage claims should be filled with the carrier at once. Claims of shortage should be filled with the manufacturer within 5 days.

This kit contains parts and instructions for converting package units from natural gas to LPG/Propane (U.S.A. and Canada).

**IMPORTANT:** *Confirm that the correct kit is being used for the unit being converted.*

Where "LP" or "LPG" appear in the enclosed kit literature or on the enclosed kit labels, the LP and/or LPG is an acceptable abbreviation for "propane."

Manufactured By  
**Allied Air Enterprises LLC**  
A Lennox International, Inc. Company  
215 Metropolitan Drive  
West Columbia, SC 29170



\*507421-02\*

Save these instructions for future reference

| ALPKT841 Parts List |                                   |
|---------------------|-----------------------------------|
| Quantity            | Part Description                  |
| 1                   | Gas Valve Conversion Kit          |
| 7                   | 0.048 Size Orifices               |
| 1                   | Gas Valve Conversion Label        |
| 1                   | Gas Conversion Installation Label |
| 1                   | Conversion Plate                  |
| 1                   | Low Gas Inlet Pressure Switch     |
| 1                   | Gas Valve Inlet Brass Fitting     |
| 1                   | Wire Harness                      |
| 1                   | Installation Instructions         |

Although equipment is suitable for operation with propane gas, certain precautions must be observed because of the distinct characteristics of propane gas. The following problems may be encountered:

- Burning back at the orifices with a loud roar
- Loud popping upon extinction of burner
- Flame rollout at time of ignition

These problems can be caused by:

- Low gas pressure
- Misalignment of burners
- Incorrect burning rate

## Installation

**NOTE:** When converting a low Nox unit to propane, the Nox inserts must be removed.

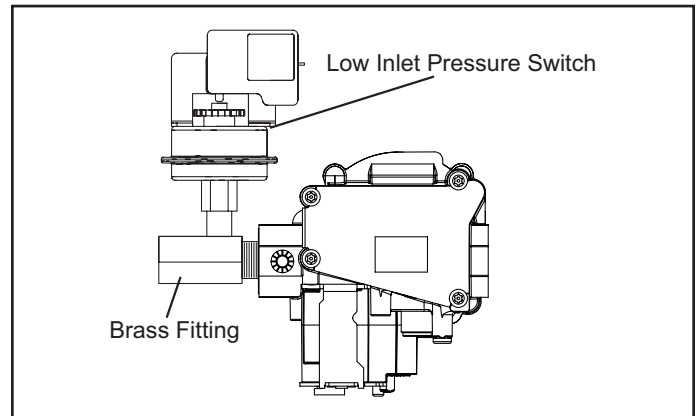
1. Set the thermostat to the lowest setting. Shut off gas supply and disconnect electrical power to unit.
2. Remove the control compartment access panel. Slide the gas valve switch to the OFF position.
3. Disconnect gas supply from gas valve. Mark the wires for identification and disconnect wiring at gas valve.
4. Remove screws securing the manifold to the front of the burner box. Remove manifold and gas valve as an assembly.
5. Using a 7/16" wrench or socket, remove the burner orifices. Install and tighten the orifices provided in kit.
6. Using Figure 3 and the valve manufacturer's instructions included in the valve conversion kit, install the gas valve conversion parts.
7. Using the screws removed in Step 4, re-install the manifold and gas valve assembly, being careful to properly insert each orifice into each burner. Reconnect

the wires to the gas valve. Refer to the wiring diagram label on the unit for correct wiring connections.

8. Thread provided brass fitting to gas valve inlet until hand tight. Using properly sized wrench, tighten fitting 2 to 3 full turns being careful to position the side port to allow clearance for the pressure switch and harness. See Figure 1.

**NOTE:** Never use channel lock pliers or a pipe wrench on the brass fitting.

**NOTE:** Some installations may require the pressure switch and fitting assembly to be positioned differently than shown in Figure 1.

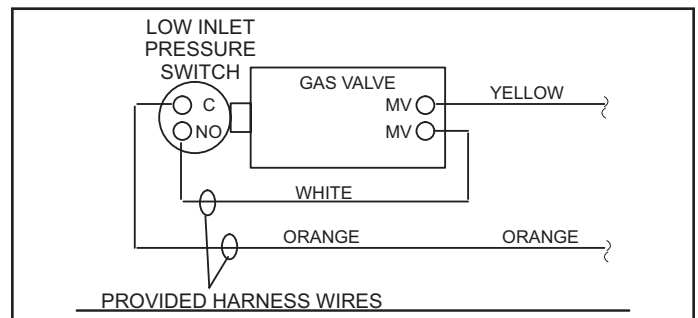


**Figure 1. Gas Valve with Low Inlet Pressure Switch Location**

9. Thread the gas supply to the brass fitting until hand tight. Using properly sized wrench to support brass fitting, tighten supply line into fitting 2 to 3 full turns to achieve leak free joint.

**NOTE:** Do not over tighten. (Maximum 3 full turns past hand tight for 1/2" NPT per ASME B1.20.1-2013).

10. Thread pressure switch to brass fitting 2 to 3 turns past hand tight, then wire as shown in Figure 2.



**Figure 2. Low Inlet Pressure Switch Point-to-Point Wiring Diagram**

11. Connect and turn on the gas supply. Check for gas leaks at all piping joints upstream of the gas valve. Use a leak detecting solution or other preferred means (see WARNING box on Page 3). Some soaps used for leak detection are corrosive to certain metals.

Carefully rinse piping thoroughly after leak detection has been completed. Correct any leaks, then turn off the gas supply.

## Converting Gas Valve from Natural Gas to Propane

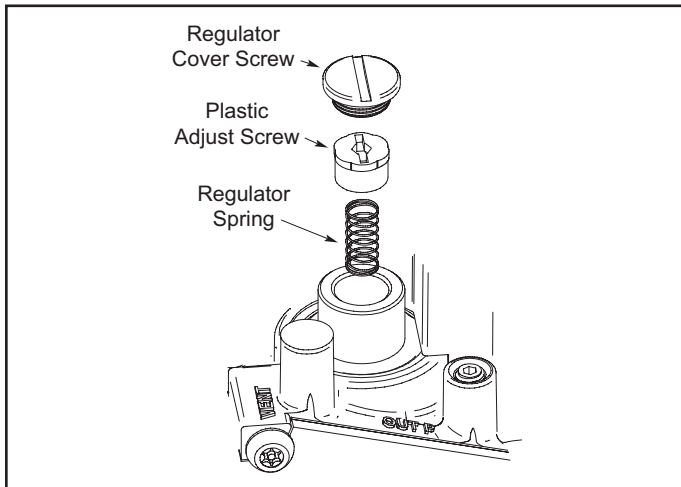


Figure 3.

1. Remove the regulator cap screw and pressure regulator adjusting screw.
2. Remove the existing spring.
3. Insert the replacement spring.
4. Install the new plastic pressure regulator adjustment screw so that the top of the screw is flush (level) with the top of the regulator. Turn the pressure regulator adjusting screw clockwise six complete turns. This adjustment provides a preliminary pressure setting of about 10" W.C. for the propane regulator.
5. Check the regulator setting with a manometer.
6. Re-install the cap screw.
7. Apply conversion label (included in valve manufacturer's conversion kit) to the gas valve in a conspicuous location. Do not cover any warnings or other markings on the valve.

### **▲ WARNING**

#### **FIRE OR EXPLOSION HAZARD**

Failure to follow the safety warnings exactly could result in serious injury, death, or property damage.

Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury, or loss of life.

## Checking Gas Inlet Pressure

1. Remove the plug from the inlet pressure tap in the gas valve, connect a manometer, then turn on the gas supply. Turn on the electrical supply, slide the gas valve switch to the ON position, and initiate a call for heat. The gas inlet pressure should be between 11" W.C and 13" W.C. with the burners operating.
2. Terminate the call for heat and turn off the gas supply. Disconnect the manometer, and replace the plug in the inlet pressure tap in the gas valve. Remove the plug from the outlet pressure tap in the gas valve, connect a manometer to this tap, and turn on the gas supply.

## Checking and Adjusting Manifold Pressure

The gas valve (see Figure 4) has an adjusting screw under the regulator adjustment cap. Turn the adjusting screw clockwise to increase manifold pressure and input, and counterclockwise to decrease manifold pressure and input.

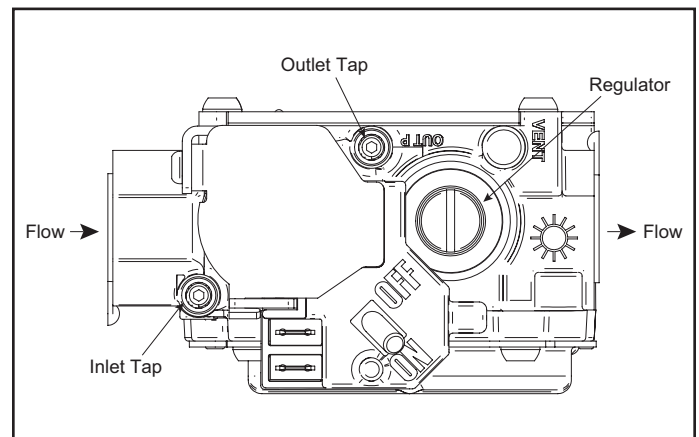


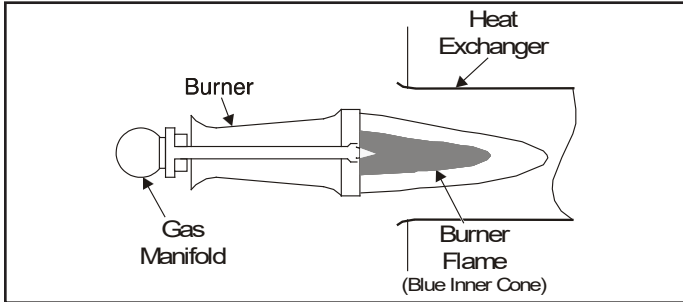
Figure 4. Checking and Adjusting Gas Input

Since propane supply systems usually do not have a gas meter, checking and adjusting the manifold pressure as specified below verifies the input rate. Manifold pressures and input ratings are for elevations up to 4500'. Above the altitude, input ratings should be adjusted in accordance with the latest edition of the National Fuel Gas Code.

1. Initiate a call for heat. Allow burners to operate for 5 minutes.
2. Manifold pressure should be 10.0"  $\pm$  0.3" W.C. Adjust adjusting screw as necessary to achieve this pressure.
3. Terminate the call for heat and turn off the gas supply. Disconnect the manometer, and replace the plug in the outlet pressure tap in the gas valve.

## Operational Check

1. Initiate a call for heat. With burners operating check for gas leaks at the inlet and outlet pressure tap plugs in the gas valve, and at all threaded joints downstream of the gas valve, including the burner orifices. Read and follow previous instructions about proper use of leak detecting solutions and warnings about fire and explosion hazards.
2. Cycle the burners on and off to make sure the ignition system operates correctly. Ignition and extinction should be smooth. The inner cone of the burner flames should be blue, and flame appearance should be as shown in Figure 5.



**Figure 5. Typical Flame Appearance**

3. Apply the gas valve conversion label to the manifold as close as possible to the gas valve. Mark the appropriate information on the gas conversion installation label and apply it to the left side panel inside the vestibule. Attach the conversion plate adjacent to the unit rating plate.
4. Re-install the control access panel.