INSTALLATION INSTRUCTIONS
90 PLUS TWO-STAGE GAS VALVE WITH DIRECT SPARK IGNITION

BEFORE INSTALLING THIS KIT, CHECK THE "CONVERSION KIT INDEX" (92-21519-59) TO BE SURE YOU HAVE THE RIGHT KIT FOR THE FURNACE MODEL YOU ARE CONVERTING.

TO CONVERT FROM NATURAL TO LP GAS USE KIT NUMBER FP21 (US/CANADIAN)

PARTS LIST		
DESCRIPTION	**PART NUMBER**	**FP19**
Installation Instructions	92-22999-96	1
Conversion Label	92-18153-05	1
L P Gas Valve – White-Rodgers #36G55-522	60-101921-02	1
Orifice - Burner (1.10 mm)	62-22175-90	8
Orifice - Burner (1.15 mm)	62-22175-91	8

⚠ Recognize this symbol as an indication of Important Safety Information!

⚠ WARNING

THIS CONVERSION KIT IS TO BE INSTALLED BY A QUALIFIED SERVICE PROFESSIONAL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND ALL CODES AND REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. FAILURE TO FOLLOW INSTRUCTIONS COULD RESULT IN SERIOUS INJURY OR PROPERTY DAMAGE. THE QUALIFIED PERSONNEL PERFORMING THIS WORK ASSUMES RESPONSIBILITY FOR THIS CONVERSION.

⚠ WARNING

TURN OFF ELECTRICAL POWER AND MAIN GAS SUPPLY BEFORE BEGINNING MODIFICATION. FAILURE TO DO SO CAN RESULT IN ELECTRICAL SHOCK OR EXPLOSION CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

IMPORTANT: DAMAGE TO THE PRODUCT RESULTING FROM FAILURE TO FOLLOW INSTRUCTIONS OR USE OF UNAUTHORIZED PARTS MAY BE EXCLUDED FROM THE MANUFACTURER'S PRODUCT WARRANTY COVERAGE.

IMPORTANT NOTE FOR ALTITUDES ABOVE 2,000 FEET: The main burner orifices in this kit are sized for nameplate input and intended for installations at elevations up to 2,000 feet only. These orifices are included with this kit. For elevations above 4,999 feet, the burner orifices must be sized as shown in Table 1.

An additional high altitude conversion kit is required at elevations of 5000 ft. and above. These kits contain the required high altitude pressure switch assemblies. See product specification sheet for the applicable kit.

Orifice selection. Orifices are included in this kit for 0-3000 ft. elevation (1.15mm) and 3000 to 4000 ft. elevations (1.10 mm). The 1.10mm orifice meets Canadian high altitude requirements.

LP Gas is a manufactured gas that has consistent heating value across most regions.

The NFGC orifice selection for other altitudes' guidelines are used with the following exception:

The recommended LP Gas high altitude orifice selections differ slightly in that the NFGC LP orifice chart, as they are not accurate for Rheem products. The National Fuel Gas Code LP orifices are based on an 11" of water column pressure at the orifice, which differs from Rheem products that use 10" of water column at the orifice. This difference requires a deviation from the NFGC orifice size recommendations. The Sea Level input should still be reduced by 4% per thousand ft. and the orifice size recommendations. The Sea Level input should still be reduced by 4% per thousand ft. and the orifice size must be selected based on the reduced input selection chart below.

TABLE 1

Altitude	Input (per burner) 15000	Orifice size
0 to 2000 ft.	15000	1.15 mm (factory)
2001 to 3000	13200	1.15 mm
3001 to 4000	12600	1.10 mm
4001 to 5000	12000	#58
5001 to 6000	11400	#59
6001 to 7000	10800	#60
7001 to 8000	10200	#62
8001 to 9000	9600	#63
9001 to 10000	9000	#64

ORIFICE ORDERING INFORMATION

Orifice sizes are selected by adding the 2-digit drill size required in the orifice part number. Drill sizes available are 39 through 64; metric sizes available 1.10mm (-90) and 1.15mm (-91):

Orifice Part Number 62-22175-(drill size)

Example 1:
60 drill size orifice required
Part # 62-22175-60

Example 2:
1.15mm drill size orifice required
Part # 62-22175-91

All gas piping must comply with the latest NFPA 54 National Fuel Gas Code and all state and local codes. All electrical wiring must comply with the latest NFPA 70, National Electrical Code, CAN/CSA-C22.2 - No. 3 *Electrical Features of Fuel Burning Equipment*, and all state and local codes.

KIT INSTALLATION

1. **⚠ WARNING**

   TURN OFF ELECTRICAL POWER AND MAIN GAS SUPPLY BEFORE BEGINNING MODIFICATION. FAILURE TO DO SO CAN RESULT IN ELECTRICAL SHOCK OR EXPLOSION CAUSING PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

2. Disconnect union ahead of combination gas valve.
3. Disconnect leads from gas valve.
4. Remove the 4 screws holding the manifold assembly to the main burner assembly.
5. Replace gas valve with valve from kit.
6. Remove each existing orifice from the manifold assembly using a ratchet with a 7/16 socket. Replace with orifices from the kit. Screw the orifices in hand tight and secure in place with a quarter turn with the ratchet.
7. Reinstall the manifold assembly on the burner assembly with the 4 screws removed in step 4.
8. Reconnect the leads to the gas valve, union, and electrical power to furnace.
9. Turn on the gas supply and check unit thoroughly for gas leaks using soap solution.
10. Follow lighting instructions to put furnace into operation.
11. Operate thermostat to check unit operation.

⚠ WARNING

DO NOT USE AN OPEN FLAME.

NOTE: If you have a single thermostat, the furnace will start on high fire then switches to low fire and will continue on low fire for 12 minutes and then if thermostat is not satisfied, shifts to high fire. With a 2-stage thermostat, when there is a call for low heat (1st stage), the furnace will start on high fire then switch to low fire until the call for heat is satisfied or 2nd stage contacts close.

CHECKING AND ADJUSTING GAS PRESSURE

1. The LP gas supply pressure must be set between 11 and 13" W.C. by means of the tank or branch supply regulators.
2. The furnace manifold pressure should be 10" W.C. for high fire and 4.8" W.C. for low fire. The valve comes from the factory preset at these pressures. These pressures can be checked by connecting a properly calibrated manometer or gauge to the manifold pressure tap on the outlet end of the valve. Check and adjust pressures as follows:
   a. For full input pressure remove adjustment screw cover on outlet end of valve and turn adjustment screw clockwise to increase pressure and counterclockwise to reduce pressure. Replace the adjustment cover screw securely.
   b. For low fire pressure, remove the regulator cover on top of valve and adjust as noted above.

   NOTE: Use 3/32" allen wrench for making pressure adjustments. See Figures 1 & 2.

COMPLETING CONVERSION

1. Using a ball point indelible pen, record the following information on the conversion label.
   a. Conversion kit number.
   b. Date of conversion.
   c. Installer's name, address and telephone number.
   d. Burner orifice size.
2. Place completed conversion label adjacent to the rating plate.
3. Install the burner compartment access door.
4. Run furnace through complete cycle to check operation.

FIGURE 1
GAS VALVE 60-23490-11

