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 FP20

PARTS LIST		
DESCRIPTION	**PART NUMBER**	**FP20**
Installation Instructions	92-22999-95	1
Conversion Label	92-18153-05	1
L P Gas Valve – White-Rodgers #36E99-201	60-23490-11	1
Orifice - Burner (1.10 mm)	62-22175-90	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 BELOW 5,000 AND ABOVE 7,999 FEET: The main burner orifices in this kit are sized for nameplate input and intended for installations at elevations between 5,000 and 7,999 feet only. These orifices are included with this kit. For elevations below 5,000 feet and above 7,999 feet, the burner orifices must be sized as shown in Table 1.

TABLE 1

TOTAL FURNACE RATING PLATE INPUT BTU/HR	LP GAS @ HEATING VALUE 2,500 BTU/CU. FT		
	SPECIFIC GRAVITY 1.52/MANIFOLD PRESSURE @ 10" W.C.		
	ELEVATION (IN THOUSANDS OF FEET)		
	0' TO 4,999'	5,000' TO 7,999'	8,000' AND ABOVE
	1.15 MM	1.10 MM	#61

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 and all state and local codes.

WHEN CONVERTING NOx MODELS:

This furnace does not require the stainless steel inserts located in the burner tube in order to meet SCAQMD NOx emission levels when run on LP gas. Carefully remove these inserts and 1/8" diameter retaining rod before firing this furnace on LP gas. The NOx inserts will follow the burner tray assembly out as they are hooked over the 1/8" diameter retaining rod. Discard the NOx inserts and rod an replace the burner tray assembly.

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.

⚠ WARNING

DO NOT USE AN OPEN FLAME.

10. Follow lighting instructions to put furnace into operation.
11. Operate thermostat to check unit operation.

    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

