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HIGH ALTITUDE GAS CHANGEOVER KIT

INSTALLATION INSTRUCTIONS FOR HIGH ALTITUDE NATURAL TO REGULATED LP/ PROPANE GAS CHANGEOVER KIT (97W04) USED WITH ML180 (50 Hz) SERIES UNITS

⚠ WARNING

This conversion kit is to be installed by a licensed professional service technician (or equivalent) or other qualified agency in accordance with the manufacturer's instructions, all codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life. The qualified agency performing this work assumes responsibility for this conversion.

Shipping & Packing List

Package 1 of 1 contains the following:

12 -Main burner LP/Propane orifices (0.94mm)
1 - Gas valve regulator spring (LP 28G6101)
1 - Gas converter sticker
1 - Nameplate conversion sticker

Application

Use high altitude natural to regulated LP/Propane gas conversion kit 97W04 to convert ML180 units from natural gas to regulated LP/Propane.

Units installed at altitudes of 1525m to 1981m may require a pressure switch change, which is ordered separately. See unit installation instructions.

Installation

⚠ DANGER

Danger of explosion.

There are circumstances in which odorant used with LP/propane gas can lose its scent. In case of a leak, LP/propane gas will settle close to the floor and may be difficult to smell. An LP/propane leak detector should be installed in all LP applications.

⚠ CAUTION

As with any mechanical equipment, personal injury can result from contact with sharp sheet metal edges. Be careful when you handle this equipment.

1 - Set the thermostat to the lowest setting. Shut off the gas supply to the furnace, then turn off the electrical power at the unit disconnect switch.

2 - Remove the access panel. Move the automatic gas valve switch to **OFF.** See figure 3.

3 - Disconnect the gas supply from the gas valve. Disconnect the wiring harness at the gas valve.

5 - Remove the four manifold securing screws. Remove the manifold/gas valve assembly. Replace the main burner orifices with the provided orifices. Torque to approximately 4.60 kgf-m. See figure 1.

⚠ IMPORTANT

DO NOT use pipe dope or any pipe sealant on gas orifice threads.

MANIFOLD/GAS VALVE/BURNER ASSEMBLY

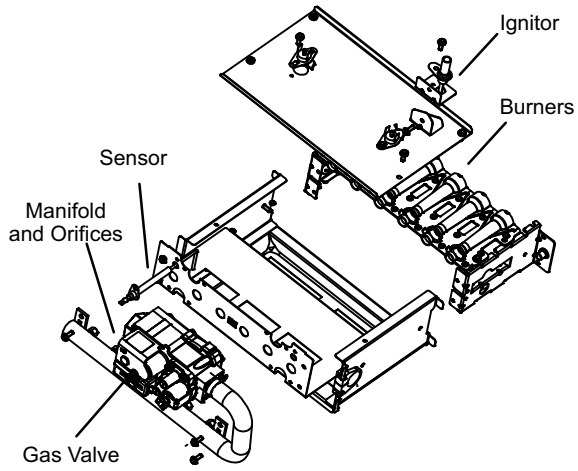

Figure 1

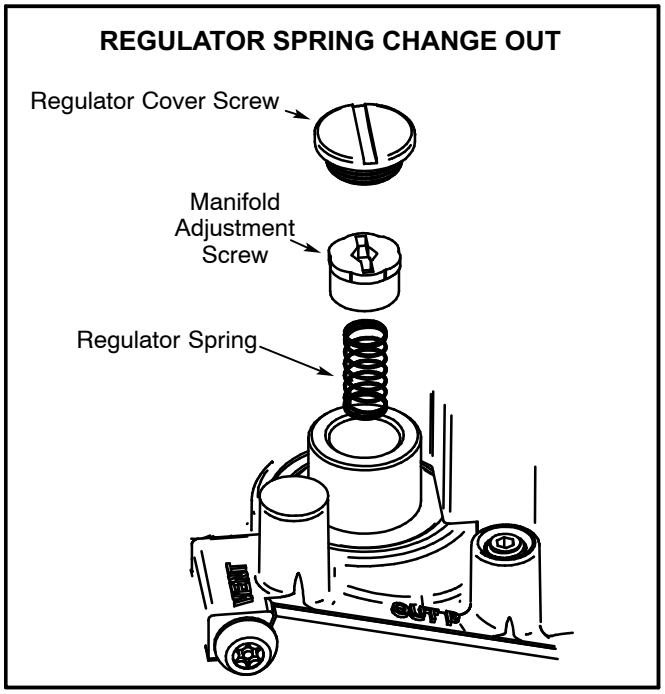

Figure 2

6 - Replace the gas valve regulator spring under the manifold pressure adjustment screw. See figure 2.

7 - Reinstall the manifold/valve assembly. Re-connect wiring harness to the gas valve.

8 - Re-connect the gas supply line to the gas valve and turn on gas supply to unit.

⚠ IMPORTANT

Carefully check all piping connections at the valve for gas leaks. DO NOT use matches, candles, open flames or other means of ignition to check for gas leaks. Use a soap solution or other preferred means.

9 - On the nameplate conversion sticker, mark the appropriate box that corresponds to the unit model number. Affix the sticker to unit nameplate.

10 - Complete the information required on the gas converter sticker: date, name and address. Affix sticker to the exterior of the unit in a visible area.

11 - Follow the steps given in the start-up and adjustment section.

⚠ CAUTION

Some soaps used for leak detection are corrosive to certain metals. Carefully rinse piping thoroughly after leak test has been completed. Do not use matches, candles, flame or other sources of ignition to check for gas leaks.

Start-Up & Adjustment

⚠ 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.

BEFORE PLACING THE UNIT INTO OPERATION - Smell all around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

Use only your hand to move the gas control switch. Never use tools. If the switch will not move by hand, do not try to repair it. Force or attempted repair may result in a fire or explosion.

A - Placing the Unit into Operation

⚠ IMPORTANT

Follow the lighting instructions provided on the unit. If lighting instructions are not available, refer to the following section.

ML180 units are equipped with an automatic ignition system. Do not attempt to manually light burners on these furnaces. Each time the thermostat calls for heat, the burners will automatically light. The ignitor does not get hot when there is no call for heat on units with an automatic ignition system.

1 - **STOP**! Read the safety information at the beginning of this section.

2 - Set the thermostat to its lowest setting.

3 - Turn off all electrical power to the furnace.

4 - Do **not** try to light the burners by hand.

5 - Remove the unit access panel.

6 - Move the switch on the gas valve to **OFF**. Do not force the switch. See figure 3.

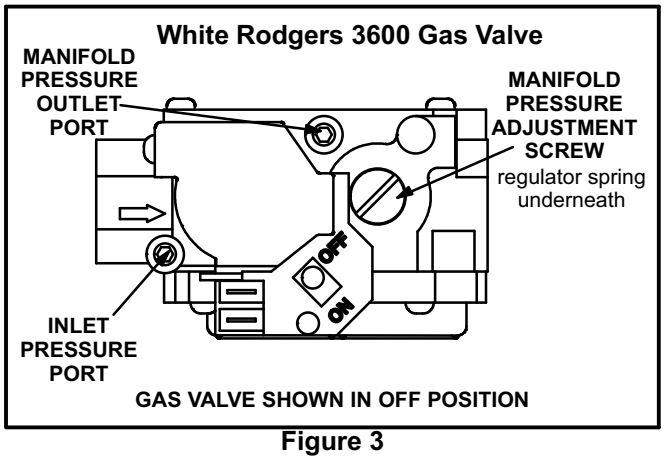

Figure 3

7 - Wait five (5) minutes for any gas to clear out. If you then smell gas, **STOP!** Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. If you do not smell gas, go to the next step.

8 - Move the switch on the gas valve to **ON**.

9 - Replace the unit access panel.

10 - Turn on all electrical power to the unit.

11 - Set the thermostat to desired setting.

12 - If the furnace will not operate, see section E- "Turning Gas Off to the Unit" and call the gas supplier.

Gas Pressure Measurement

NOTE *- To obtain accurate reading, shut off all other gas appliances connected to meter.*

A - Gas Flow (Approximate)

To check for proper flow to combustion chamber, determine Btu input from appliance rating plate. Divide this input rating by the Btu per cubic foot of available gas. Result is the required number of cubic ft. per hour. Determine the flow of gas through the gas meter for two minutes and multiply by 30 to get the hourly flow of gas.

⚠IMPORTANT

The White Rodgers 36G24 gas valve (figure 3) is equipped with pressure posts for measuring supply and manifold pressures. The posts provide built-in 7.9mm (51/6") hose connections and have an integral 2.4mm (3/32") Allen-head screw. Rotate the screw counterclockwise one full turn to permit pressure measurement. Reseat the screw (rotate one full turn clockwise) after measurements have been taken to prevent gas leakage.

Use pressure measurement kit 69M1701 to connect 7.9mm (5/16") pressure post on gas valve to 6.4mm (1/4") hose off the manometer.

B - Line Pressure Measurement

1 - Check the gas line pressure with the unit firing at maximum rate. See table 1 for maximum and minimum line pressures.

After the line pressure has been checked and adjusted, check the manifold pressure per table 2. See figure 3 for the location of the manifold pressure adjustment screw.

C - Manifold Pressure Measurement

1 - Connect the outlet side of the gas to a manometer to measure manifold pressure.

2 - Start unit and allow 5 minutes for unit to reach steady state.

3 - While waiting for the unit to stabilize, observe the flame. Flame should be stable and should not lift from burner. Natural gas should burn blue.

4 - After allowing unit to stabilize for 5 minutes, record manifold pressure and compare to value given in table 1.

5 - If necessary, make adjustments. Figure 3 shows location of manifold adjustment screw.

TABLE 1
Line and Manifold Pressure

Fuel	Manifold Pressure kPa	Line Pressure kPa
L.P. Gas	2.49	2.74 - 3.20

D - Proper Combustion

Furnace should operate minimum 15 minutes with correct manifold pressure and gas flow rate before checking combustion. Take combustion sample beyond the flue outlet and compare to the table 2 below.

TABLE 2

Unit	CO_2% For L.P.
-045	7.0 - 9.0
-070	
-090	
-110	
-135	

NOTE *- Shut unit off and remove manometer as soon as the line pressure, manifold pressure and combustion sample have been obtained.*

E - Turning Off Gas To the Unit

1 - Set the thermostat to its lowest setting.

2 - Turn off all the electrical power to the unit.

3 - Remove the access panel.

4 - Move the switch on the gas valve to **OFF**. Do not force the switch.