

GAS UNITS KITS & ACCESSORIES

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GAS CONVERSION KIT

INSTALLATION INSTRUCTIONS FOR NATURAL GAS KIT FOR USE WITH -030 INPUT MODEL 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 in the USA, and the requirements of the CSA-B149 installation codes in Canada. 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 and Packing List

Package 1 of 1 contains:

4 - Main burner orifices .053"

Application

Use this natural gas conversion kit to update the natural gas Orifices on -030 size furnaces.

⚠ CAUTION

As with any mechanical equipment, contact with sharp sheet metal edges can result in personal injury. Take care while handling this equipment and wear gloves and protective clothing.

Installation

- 1 - Set thermostat to lowest setting. The gas supply must be shut off prior to disconnecting the electrical power and proceeding with the conversion.
- 2 - Remove the heating compartment access panel. Turn the automatic gas valve switch to the OFF position. "FIGURE 1".

- 3 - Disconnect the gas supply and the two wires at the gas valve.
- 4 - Remove the burner box cover. Remove the four manifold securing screws. Slide the manifold/gas valve assembly out of the burner box.

⚠ IMPORTANT

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

- 5 - Replace the burner orifices with the provided gas orifices. Torque to approximately 35 in-lbs. Do not use sealant on orifices. "FIGURE 2" shows manifold/gas valve assembly.
- 6 - Re-install the manifold/valve assembly.
- 7 - Restore the electrical power to the unit.
- 8 - Inspect all sides of assembly. Turn on gas supply. Immediately check the entire fitting surface and assembly joints for gas leaks.
- 9 - Follow the steps given in the start-up and adjustment section.

⚠ IMPORTANT

Carefully check all piping connection 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.

⚠ CAUTION

Some soaps used for leak detection are corrosive to certain metals. Carefully rinse piping thoroughly after leak test has been completed.

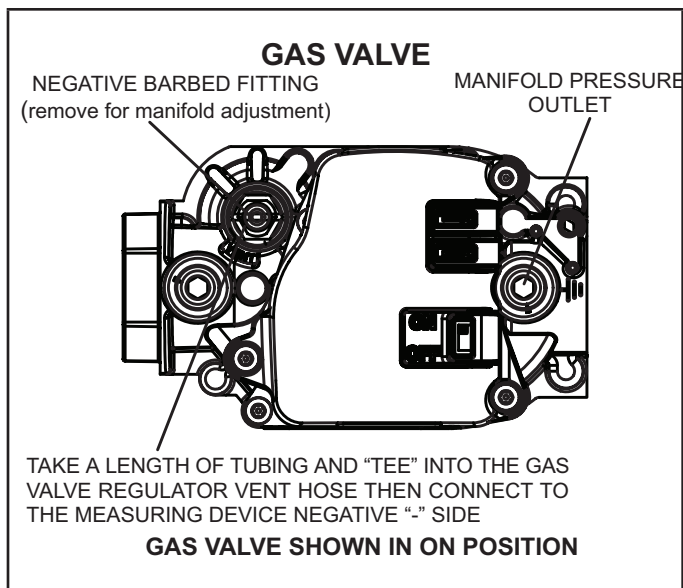


FIGURE 1

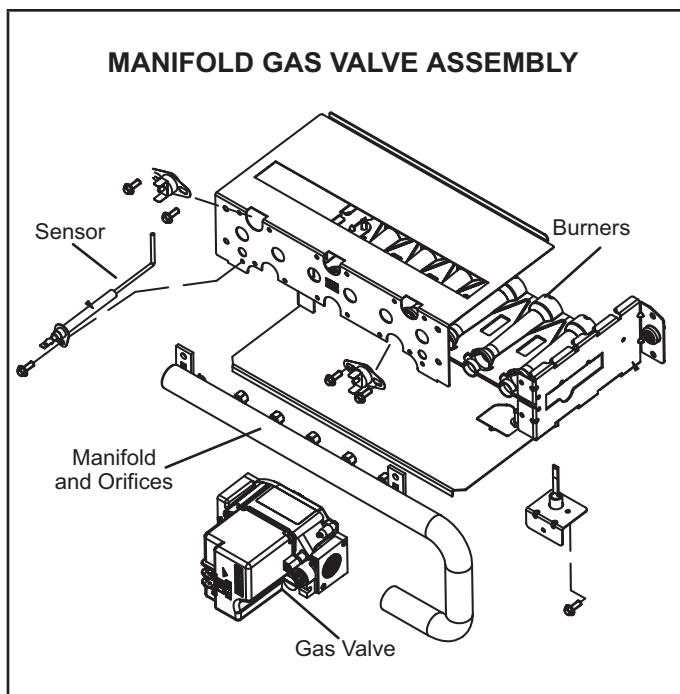


FIGURE 2

Start-Up & Adjustment

BEFORE LIGHTING - Smell all around the appliance area for gas. Be sure to smell next to the floor because LP/ Propane 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.

Units are equipped with a hot surface ignition system. The ignition system automatically lights the burners each time the thermostat calls for heat.

- 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 gas valve switch to **OFF**. See "FIGURE 1".
- 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 gas valve switch to **ON**. See "FIGURE 1".
- 9 - Replace the unit access panel.
- 10 - Turn on all electrical power to the unit. Set the thermostat to desired setting.
- 11 - If the furnace will not operate, see the section "Turning Gas Off to the Unit" and call your the gas supplier.

Furnace should operate at least 5 minutes before checking gas flow. Determine time in seconds for two revolutions of gas through the meter. (Two revolutions assures a more accurate time.) **Divide by two** and compare to time in "TABLE 1". If manifold pressure matches "TABLE 2" and rate is incorrect, check gas orifices for proper size and restriction. Remove temporary gas meter if installed

Gas Pressure Measurement

A - Gas Flow (Approximate)

TABLE 1

GAS METER CLOCKING CHART				
Unit	Seconds for One Revolution			
	Natural		LP Propane	
	1 cu ft Dial	2 cu ft Dial	1 cu ft Dial	2 cu ft Dial
-030	120	240	300	600
Natural-1000 btu/cu ft			LP-2500 btu/cu ft	

B - Supply Pressure Measurement

When testing supply gas pressure, use the 1/8" N.P.T. supply line tap located on the gas valve to facilitate test gauge connection. See "FIGURE 1". Check gas line pressure with unit firing at maximum rate. Low pressure may result in erratic operation or underfire. High pressure can result in permanent damage to gas valve or overfire.

On multiple unit installations, each unit should be checked separately, with and without units operating. Supply pressure must fall within range listed in "TABLE 2".

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

C - Manifold Pressure Measurement

When testing manifold gas pressure, use the 1/8" N.P.T. plugged tap (manifold pressure outlet) located on the gas valve to facilitate test measuring device. See figure 1.

- 1 - Remove the threaded manifold pressure outlet plug from the gas valve and install the barbed fitting.
- 2 - Take a length of square tubing and connect one end to the barbed fitting and the other to the positive "+" side of the measuring device.
- 3 - Take another length of tubing and "tee" into the gas valve regulator vent hose. Connect to the measuring device negative "-" side.

- 4 - Start unit and allow 5 minutes for unit to reach steady state.
- 5 - After allowing unit to stabilize for 5 minutes, record manifold pressure and compare to value given in "TABLE 2".
- 6 - If necessary make adjustment. Turn off unit and remove the tubing from the negative (-) barbed fitting on the gas valve.
- 7 - Remove the negative barbed fitting as shown in figure 1 and using a screw driver make adjustment to increase or decrease manifold pressure.
- 8 - Repeat steps 1 through 7 until manifold pressure is correct.
- 9 - Shut unit off and remove manometer as soon as an accurate reading has been obtained. Take care to replace pressure tap plug.
- 10 - Start unit and perform leak check. Seal leaks if found.

TABLE 2

Model	Manifold Pressure in wg 0 - 7500 ft	Supply Line in wg	
		Min	Max
030	3.5	4.5	10.5

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 "TABLE 3".

TABLE 3

Model	CO2%
030	6.5 - 7.5
The carbon monoxide reading should not exceed 100 ppm.	

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.