

**INSTALLATION INSTRUCTIONS FOR ALTERNATE LP/PROPANE KIT (10M14) USED
WITH ML180, 80AF1, EL180, EL280 & SL280 SERIES UNITS**

⚠ WARNING

This conversion kit is to be installed by a licensed professional HVAC 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 & Packing List

Package 1 of 1 contains the following:

- 12 - Main burner orifices (0.034)
- 1 - Gas converter sticker
- 1 - Nameplate conversion sticker

Application

Use the alternate LP/Propne kit 10M41 in conjunction with the gas change over kits listed in the ML180, EL180, 80AF1, EL280 and SL280 unit installation instruction.

Installation

⚠ 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. If the gas supply line has been connected, shut off the gas supply to the furnace, then turn off the electrical power.
- 2 - Remove the heating compartment access panel. Move the automatic gas valve switch to the **OFF** position. See figures 2, 3 and 4.
- 3 - Disconnect the gas supply and the wiring at the gas valve.

- 4 - Remove the burner box cover (if equipped) and set aside. If necessary remove the wires from the ignitor and sensor (mark wires). Remove the four manifold securing screws. Slide the manifold/gas valve assembly out of the burner box. See figure 1.
- 5 - Replace the burner orifices with the provided gas orifices. Torque to approximately 35 in-lbs. Do **not** use sealant on orifices. Figure 1 shows manifold/gas valve assemblies.

⚠ IMPORTANT

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

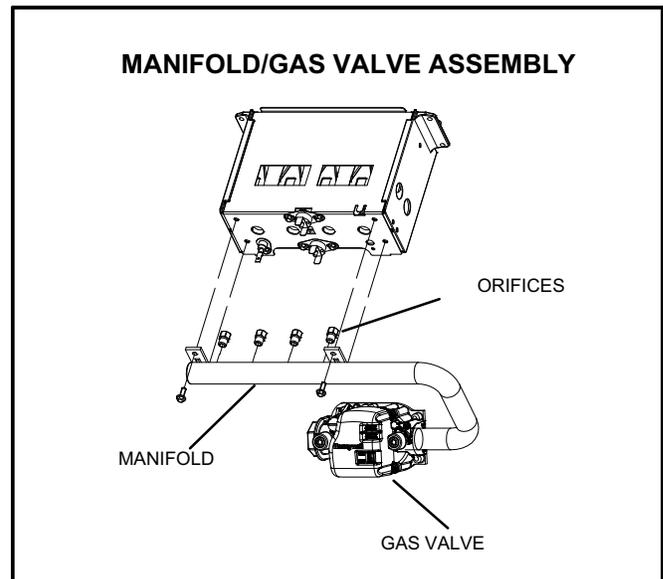


FIGURE 1

- 6 - Re-install the manifold/valve assembly. Re-install the burner box cover (if removed). Re-install the ignitor wire and sensor wire (if removed). Re-connect the wiring to the gas valve.
- 7 - Re-connect the gas supply to the gas valve and turn on gas supply to unit.

⚠ 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. Do not use matches, candles, flame or other sources of ignition to check for gas leaks.

- 8 - Restore the electrical power to the unit.
- 9 - Affix nameplate conversion sticker over the one placed previously.
- 10 - Complete the information required on the gas converter sticker: date, name, and address. Affix sticker to the exterior of the unit over the one placed previously.
- 11 - Follow the steps given in the start-up and adjustment section.
- 12 - Energize the thermostat several times to ensure the ignition control is operating and that the ignitor glows.
- 13 - Replace the heating compartment access panel.

Start-Up & Adjustment

BEFORE LIGHTING - 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.

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.

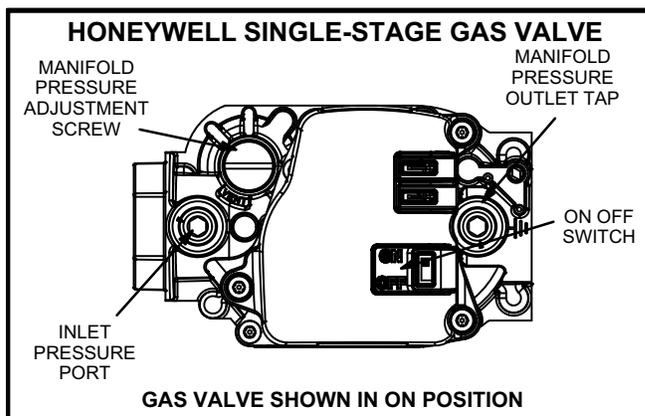


FIGURE 2

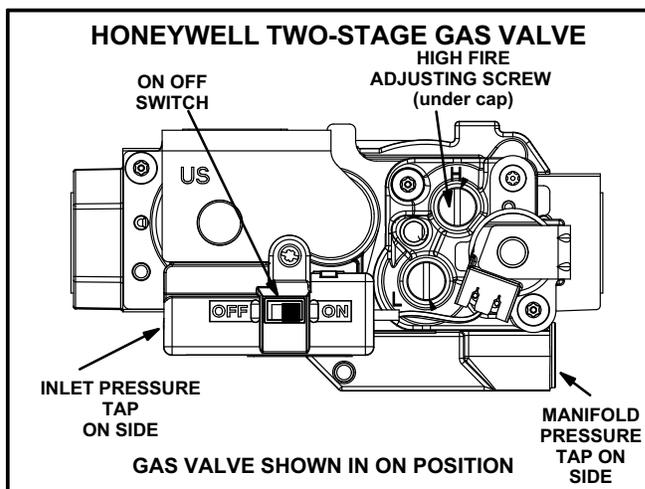


FIGURE 3

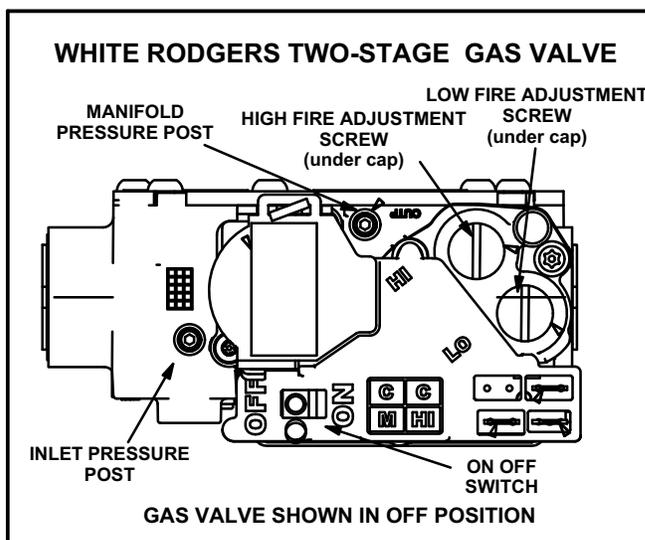


FIGURE 4

- 6 - Move gas valve switch to **OFF**. See figure 2, 3 and 4.
- 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 figures 2, 3 and 4.
- 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 the section "Turning Gas Off to the Unit" and call the gas supplier.

B - Turning Off Gas To the Unit

- 1 - Set the thermostat to the lowest setting.
- 2 - Turn off all electrical power to the unit if service is to be performed.
- 3 - Remove the unit access panel.
- 4 - Move gas valve switch to **OFF**.
- 5 - Replace the heating compartment access panel.

Gas Pressure Measurement

A - Gas Flow (Approximate)

TABLE 1

GAS METER CLOCKING CHART		
Unit	Seconds for One Revolution	
	LP/Propane	
	1 cu ft Dial	2 cu ft DIAL
-045	200	400
-070	136	272
-090	102	204
-110	82	164
-135	68	136
LP-2500 btu/cu ft		

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 below. If manifold pressure matches table 2 and rate is incorrect, check gas orifices for proper size and restriction. Remove temporary gas meter if installed.

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

B - Supply Pressure Measurement

ML180, EL180, 80AF1, And SL280 Units With Honeywell Gas Valve

When testing supply gas pressure, use the 1/8" N.P.T. plugged tap or pressure post located on the gas valve to facilitate test gauge connection. See figure 2 or 3. 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 or 3.

EL280, SL280 & EL296 With White Rodgers Two-Stage Gas Valve

An inlet pressure post located on the gas valve provides access to the supply pressure. See figure 4. Back out the 3/32 hex screw one turn, connect a piece of 5/16 tubing and connect to a manometer to measure supply pressure. See table 3 for supply line pressure.

C - Manifold Pressure Measurement

ML180, EL180 & 80AF1 Units With Honeywell Gas Valve

- 1 - Connect test gauge to manifold pressure tap (figure 2) on gas valve.
- 2 - Start unit and allow 5 minutes for unit to reach steady state operation.
- 3 - After allowing unit to stabilize for 5 minutes, record manifold pressure and compare to value given in table 2.
- 4 - If necessary, make adjustments. Figure 2 shows location of adjustment screw.
- 5 - Shut unit off and remove manometer as soon as an accurate reading has been obtained. Take care to replace pressure tap plug.
- 6 - Start unit and perform leak check. Seal leaks if found.

SL280 Units With Honeywell Two-Stage Gas Valve

NOTE - Pressure test adapter kit (10L34) is available from Lennox to facilitate manifold pressure measurement.

- 1 - Connect test gauge to manifold pressure tap (figure 3) on gas valve.
- 2 - Start unit on high fire and let run for 5 minutes to allow for steady state operation.
- 3 - After allowing unit to stabilize for 5 minutes, record manifold pressure and compare to value given in table 3.
- 4 - If necessary, make adjustments. Figure 3 shows location of high fire adjustment screw.
- 5 - If an adjustment is made on high fire, re-check manifold pressure on low fire. *Do not adjust low fire manifold pressure.* If low fire manifold pressure is more than 1/2" above or below value specified in table 3, replace valve.
- 6 - Shut unit off and remove manometer as soon as an accurate reading has been obtained. Take care to replace pressure tap plug.
- 7 - Start unit and perform leak check. Seal leaks if found.

EL280 & SL280 With White Rodgers Two-Stage Gas Valve

A manifold pressure post located on the gas valve provides access to the manifold pressure. See figure 4. Back out the 3/32 hex screw one turn, connect a piece of 5/16 tubing and connect to a manometer to measure manifold pressure.

- 1 - Connect the test gauge positive side "+" to manifold pressure tap on gas valve as noted above.
- 2 - Ignite unit on low fire and let run for 5 minutes to allow for steady state conditions.
- 3 - After allowing unit to stabilize for 5 minutes, record low fire manifold pressure and compare to value given in table 3. If necessary, make adjustment. Figure 4 shows location of low fire adjustment screw.
- 4 - Repeat on high fire and compare to value given in table 3. If necessary, make adjustment. Figure 4 shows location of high fire adjustment screw.

- 5 - Shut unit off and remove manometer as soon as an accurate reading has been obtained. Take care to replace pressure tap plug.
- 6 - Start unit and perform leak check. Seal leaks if found.

**TABLE 2
Supply Line and Manifold Pressure (inches w.c.)**

Unit	Manifold Pressure	Min Line Pressure	Max Line Pressure
ML180, 80AF1, EL180	10.0	11.0	13.0

**TABLE 3
Supply Line and Manifold Pressure (inches w.c.)**

Unit	Manifold Pressure		Line Pressure	
	Low Fire	High Fire	Min	Max
EL280, SL280	4.9	10.0	11.0	13.0

D - Proper Combustion

Furnace should operate a minimum of 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 4.

TABLE 4

Unit	CO ₂ %	
ML180UH, 80AF1UH, EL180UH	6.5 - 8.0	
ML180DF, 80AF1DF, EL180DF	6.0 - 7.5	
EL280UH, SL280UH	High Fire	6.5 - 8.0
	Low Fire	4.5 - 5.5
SL280DF	High Fire	6.0 - 7.5
	Low Fire	5.0 - 6.5
The carbon monoxide reading should not exceed 50 ppm.		

NOTE - Shut unit off and remove manometer as soon as supply line, manifold pressure and combustion sample has been obtained. Take care to remove barbed fitting, replace threaded plug and tighten port fittings.