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Dallas, Texas, USA

GAS UNITS KITS & ACCESSORIES

508057-02
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Supersedes 508057-01

HIGH ALTITUDE KIT

INSTALLATION INSTRUCTIONS FOR HIGH ALTITUDE LP/PROPANE GAS KIT (20A88) USED WITH SLP99UH090XV60C MODEL

⚠ 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.

⚠ WARNING

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. Do not attempt to bleed the gas lines of air. Call your local gas provider.

Shipping and Packing List

Package 1 of 1 contains the following:

- 1 - Gas valve
- 1 - Modulating Pressure switch
- 8 - Main burner orifices (0.032)
- 1 - Gas converter sticker
- 1 - Nameplate conversion sticker
- 1 - Low gas inlet pressure switch (S145)
- 1 - Gas valve inlet fitting
- 1 - Wire harness

Application

Use gas conversion kit 20A88 to convert the SLP99UH090XV60C unit from natural gas to regulated LP/propane gas, for applications from 4501 - 10,000 ft. Units may need a pressure switch change at different altitudes. See unit installation instruction for high altitude pressure switch kits to be ordered separately.

Installation

- 1 - Set the thermostat to the lowest setting. Shut off the gas supply to the furnace, then disconnect the electrical power.
- 2 - Remove the access panel. Move the automatic gas valve switch to the **OFF** position.
- 3 - Remove the screw that secures the burner box front cover to the burner box. Set the front cover and screw aside. If gasket is damaged replace.
- 4 - Disconnect the gas supply and the two-wire plug at the gas valve. Disconnect the tubing from the gas valve. Make note of the gas valve to pressure switch tubing connections.
- 5 - Remove the screws that secure the manifold to the burner box. Remove the manifold/valve assembly from the unit. **Remove the cover plate from the burner box air baffle and discard.** See "FIGURE 1".
- 6 - Replace the burner orifices with the provided gas orifices. Do not use sealant on orifices.
- 7 - Remove the existing gas valve from the gas manifold.
- 8 - Clean the gas manifold threads. Skip the outer three threads, then apply sealant (pipe dope) to a minimum five threads.
- 9 - Thread the replacement gas valve onto the gas manifold. Tightened to a minimum of 350 in.-lbs.
- 10 - Re-install the manifold/gas valve assembly and burner box cover.
- 11 - Thread provided fitting to gas valve inlet until hand tight. Using properly sized wrench, tighten fitting 2 to 3 full turns being careful to position the side port to allow clearance for the pressure switch and harness. See "FIGURE 3" and 4.

NOTE - Never use channel lock pliers or a pipe wrench on the brass fitting.

NOTE - Some installations may require the S145 pressure switch and fitting assembly to be positioned differently than shown in "FIGURE 3" and 4..

- 12 - Thread the gas supply to the fitting until hand tight. A field provided coupling may be needed. See figure 4. Using properly sized wrench to support fitting, tighten supply line into fitting 2 to 3 full turns to achieve leak free joint.

NOTE - Do not over tighten. (Maximum 3 full turns past hand tight for ½" NPT per ASME B1.20.1-2013)



- 13 - Thread pressure switch (S145) to fitting 2 to 3 turns hand tight, then wire as shown in "FIGURE 5" and gas valve.
- 14 - Remove the existing pressure switch from the cold end header box. Make note of tubing and wire connections.
- 15 - Install the provided replacement pressure switch to the cold end header box.
- 16 - Reconnect pressure switch tubing and wiring. See "FIGURE 2" and "FIGURE 5".

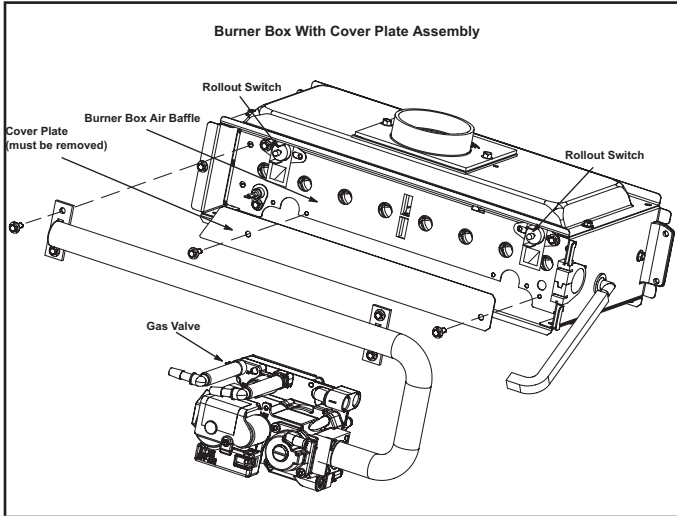


FIGURE 1

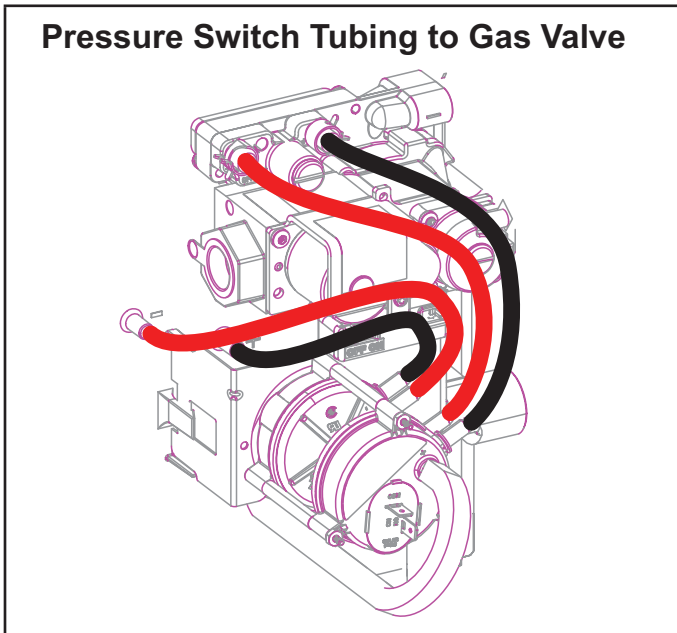


FIGURE 2

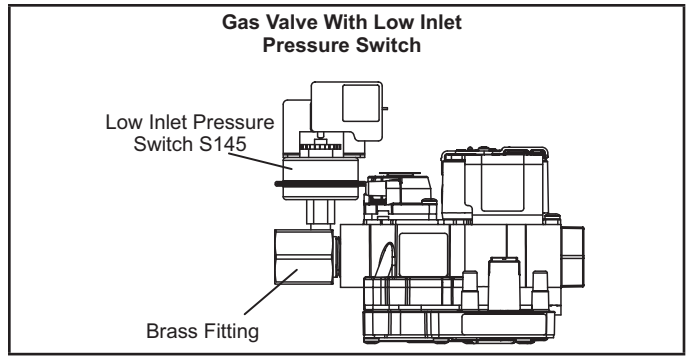


FIGURE 3

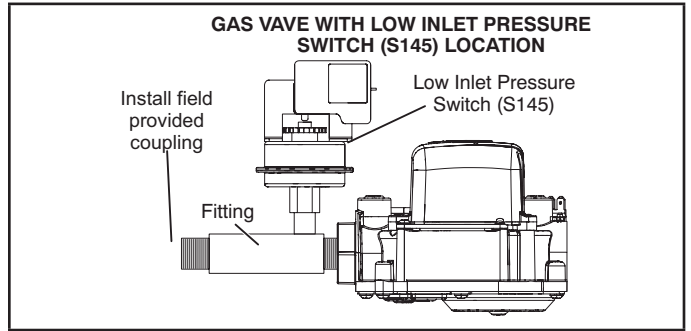


FIGURE 4

⚠ IMPORTANT
 Compounds used on threaded joints of gas piping must be resistant to the actions of liquified petroleum gases.

⚠ IMPORTANT
 Carefully check all piping connections for 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.

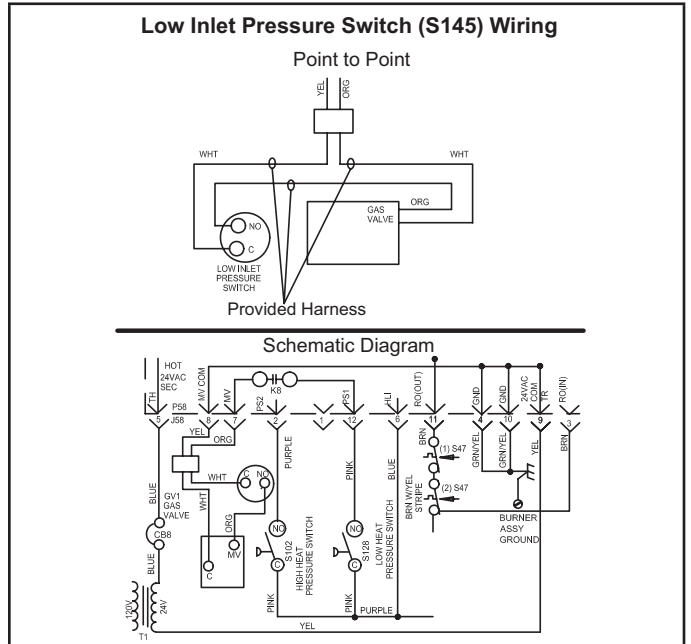


FIGURE 5

- 17 - Restore the electrical power to the unit.
- 18 - Inspect all sides of assembly. Turn on gas supply.
Immediately check the entire fitting surface and assembly joints for gas leaks.
- 19 - On the nameplate conversion sticker, mark the appropriate box that corresponds to the unit model number. Affix the sticker next to unit nameplate.

⚠ 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.

- 20 - Complete the information required on the converter sticker: date, name, and address. Affix sticker to the exterior of the unit in a visible area.
- 21 - Follow the steps given in the start-up and adjustment section.
- 22 - Energize the thermostat several times to ensure the ignition control is operating and that the ignitor glows.
- 23 - Replace the access panel.

Start-Up & Adjustment

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. The gas valve on the SLP99 is equipped with a gas control switch. Use only your hand to move the 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.

Safety

⚠ IMPORTANT

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

SLP99 units are equipped with a SureLight® ignition system. **Do not** attempt to manually light burners on this furnace. 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 SureLight ignition system.

A - Placing the SLP99 Furnace into Operation

STOP! Read the safety information at the beginning of this section. Set the thermostat to its lowest setting.

- 24 - Turn off all electrical power to the furnace.
- 25 - Do not try to light the burners by hand.
- 26 - Remove the unit access panel.
- 27 - Move the gas valve switch to the **OFF** position.

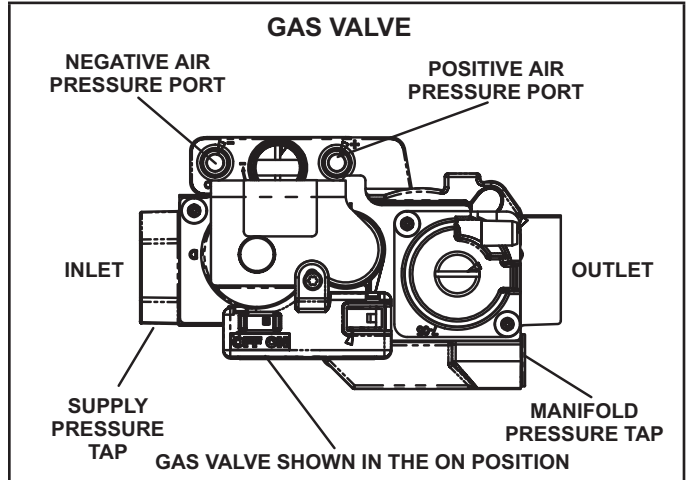


FIGURE 6

- 28 - Wait five (5) minutes for any gas to clear out. If you then smell gas, **STOP!** Immediately call the gas supplier from a neighbor's phone. Follow the gas supplier's instructions. If you do not smell gas, go to the next step.
- 29 - Move gas valve switch to **ON** position.
- 30 - Replace the unit access panel.
- 31 - Turn on all electrical power to the unit.
- 32 - Set the thermostat to desired setting.
- 33 - 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 its lowest setting.
- 2 - Turn off all the electrical power to the unit.
- 3 - Remove the access panel.
- 4 - Move the gas valve switch to the **OFF** position.

Gas Pressure Measurement

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

A - Gas Flow (Approximate)

TABLE 1

GAS METER CLOCKING CHART				
SLP99 Unit	Seconds for One Revolution			
	Natural		LP	
	1 cu ft Dial	2 cu ft Dial	1 cu ft Dial	2 cu ft Dial
-070	55	110	136	272
-090	41	82	102	204
-110	33	66	82	164
-135	27	54	68	136
Natural-1000 btu/cu ft			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". 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 - Manifold Pressure Measurement

To correctly measure manifold pressure, the differential pressure between the positive gas manifold and the negative burner box must be considered. Use pressure test adapter kit (available as Lennox part 10L34) to assist in measurement.

TABLE 2
SLP99UH090XV60C

Manifold Pressure LP/Propane (in. w.g.)	
Low Fire (35% rate)	High Fire (100% rate)
1.2"	10.0"
Supply Line LP/propane(in. w.g.)	
Minimum	Maximum
11.0"	13.0"

- 1 - Remove the threaded plug from the outlet side of the gas valve and install a field-provided barbed fitting. Connect test gauge "+" connection to barbed fitting to measure manifold pressure.
- 2 - Tee into the gas valve regulator vent hose and connect test gauge "-" connection.
- 3 - Start unit on low heat (35% rate) and allow 5 minutes or unit to reach steady state.
- 4 - While waiting for the unit to stabilize, notice the flame. Flame should be stable and should not lift from burner.
- 5 - After allowing unit to stabilize for 5 minutes, record manifold pressure and compare to value given in "TABLE 2".
- 6 - Repeat steps 3, 4 and 5 on high heat.

NOTE - Shut unit off and remove manometer as soon as an accurate reading has been obtained. Take care to remove barbed fitting and replace threaded plug.

NOTE - During this test procedure, the unit will be over-firing:

- Operate unit only long enough to obtain accurate reading to prevent overheating heat exchanger.
- Attempts to clock gas meter during this procedure will be inaccurate. Measure gas flow rate only during normal unit operation.

CAUTION

Do not attempt to make adjustments to the gas valve.

C - Supply Pressure Measurement

A threaded plug on the inlet side of the gas valve provides access to the supply pressure tap. Remove the threaded plug, install a field-provided barbed fitting and connect a manometer to measure supply pressure. See "TABLE 2". Replace the threaded plug after measurements have been taken.

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. The maximum carbon monoxide reading should not exceed 100 ppm. See furnace Unit Information manual or the Installation Instruction for proper CO2.