

# INSTALLATION INSTRUCTIONS

## PROPANE GAS to NATURAL GAS CONVERSION KIT

### Condensing Gas Furnaces

F9MES 220-V 50Hz

## NAHA01101NG



**NOTE:** Read the entire instruction manual before starting the installation.

## SAFETY CONSIDERATION

### ⚠ WARNING

#### **FIRE, EXPLOSION, ELECTRICAL SHOCK, AND CARBON MONOXIDE POISONING HAZARD**

Failure to follow this warning could result in personal injury or death.

This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, explosion, or production of carbon monoxide could result causing property damage, personal injury, or loss of life. The qualified service agency is responsible for the proper installation of this furnace with this kit. The installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit.

Installing and servicing heating equipment can be hazardous due to gas and electrical components. Only trained and qualified personnel should install, repair, or service heating equipment.

Untrained personnel can perform basic maintenance functions such as cleaning and replacing air filters. Trained service personnel must perform all other operations. When working on heating equipment, observe precautions in the literature, on tags, and on labels attached to or shipped with the unit, and other safety precautions that may apply.

Follow all safety codes. In the United States, follow all safety codes including the current edition of the National Fuel Gas Code (NFGC) NFPA No. 54/ANSI Z223.1. Wear safety glasses and work gloves. Have a fire extinguisher available during start-up, adjustment steps, and service calls.

Recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol on the furnace and in instructions or manuals, be alert to the potential for personal injury. Understand the signal words DANGER, WARNING, CAUTION and NOTE. The words DANGER, WARNING, and CAUTION are used with the safety alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies a hazard which **could** result in personal injury or death. CAUTION is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

## INTRODUCTION

### ⚠ WARNING

#### **FIRE, EXPLOSION, ELECTRICAL SHOCK AND CARBON MONOXIDE POISONING HAZARD**

Failure to follow instructions could result in personal injury, death or property damage.

Improper installation, adjustment, alteration, service, maintenance, or use can cause carbon monoxide poisoning, explosion, fire, electrical shock, or other conditions, which could result in personal injury or death. Consult your distributor or branch for information or assistance. The qualified installer or agency must use only factory-authorized kits or accessories when servicing this product.

### ⚠ WARNING

#### **FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD**

Failure to follow this warning could result in personal injury, death or property damage.

Gas supply **MUST** be shut off before disconnecting electrical power and proceeding with conversion.

### ⚠ WARNING

#### **ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD**

Failure to follow this warning could result in personal injury, death or property damage.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

This instruction covers the installation of gas conversion kit NAHA01101NG to convert the following furnaces from Propane gas usage to natural gas usage. See appropriate section for your furnace type.

Model F9MES 4-Way Multipoise, Hot Surface Ignition, Condensing Furnaces.

## DESCRIPTION AND USAGE

See **Table 1** for kit contents. This kit is designed for use in the furnaces below. To accommodate many different furnace models, more parts are shipped in kit than will be needed to complete conversion. When installation is complete, discard extra parts.

MODEL NUMBER BEGINNING WITH:

F9MES

Table 1	NAHA01101NG Contents
QTY	DESCRIPTION
1	VALVE CONV KIT W/R SPRING 92-0935
1	PLUG, PIPE
7	ORIFICE #42
7	ORIFICE #43
7	ORIFICE #44
7	ORIFICE #45
1	LABEL 339923-201 English
1	LABEL 339923-202 English
1	LABEL 339923-203 Spanish
1	LABEL 339923-204 Spanish
1	LABEL 339823-205 English/Spanish
1	INSTRUCTIONS

## INSTALLATION

1. Set room thermostat to lowest setting or "OFF"
2. Disconnect power at external disconnect, fuse or circuit breaker.
3. Turn off gas at external shut-off or gas meter.
4. Remove outer doors and set aside.
5. Turn electric switch on gas valve to OFF.

## MANIFOLD/ORIFICE/BURNER REMOVAL



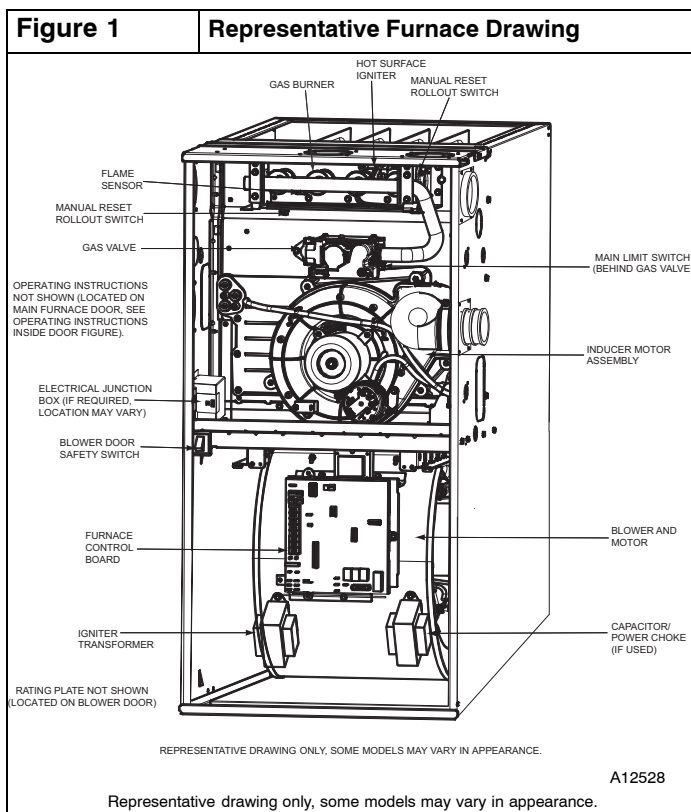
## CAUTION

### UNIT OPERATION HAZARD

Failure to follow this caution may result in unit damage or improper operation.

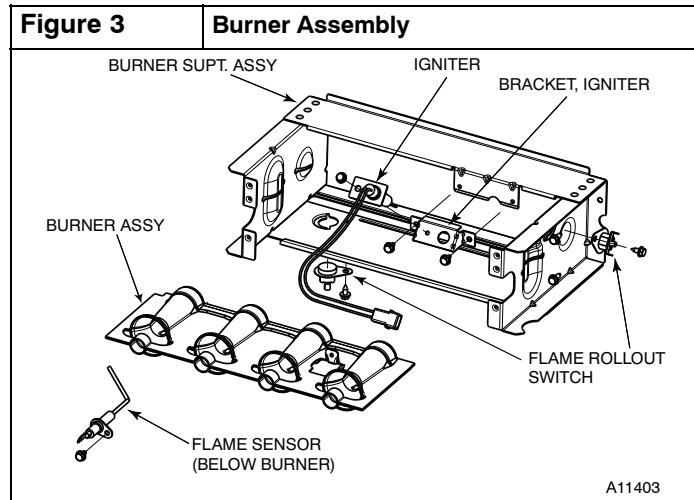
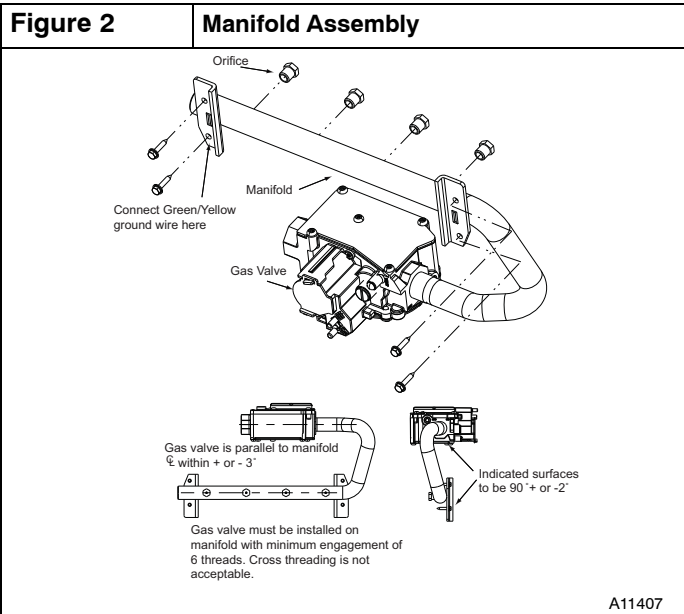
Label all wires prior to disconnection when servicing controls.

1. Disconnect the gas pipe from gas valve and remove pipe from the furnace casing. See **Figure 1**.



**NOTE:** Use a back-up wrench on the gas valve to prevent the valve from rotating on the manifold or damaging the mounting to the burner box. See **Figure 2** and **Figure 3**.

2. Disconnect the connector harness from gas valve. Disconnect wires from Hot Surface Igniter (HSI) and Flame Sensor. Disconnect the two wires from the Low Gas Pressure Switch (LGPS) located on the gas valve.
3. Support the manifold and remove the four (4) screws that secure the manifold assembly to the burner box and set aside.
4. Note the location of the green/yellow wire ground wire for re-assembly later. See **Figure 2**.
5. Slide one-piece burner assembly out of slots on sides of burner box.
6. Remove the flame sensor from the burner assembly. See **Figure 3**.
7. Remove the orifices from the manifold and discard.



## ORIFICE SELECTION/DERATE



### CAUTION

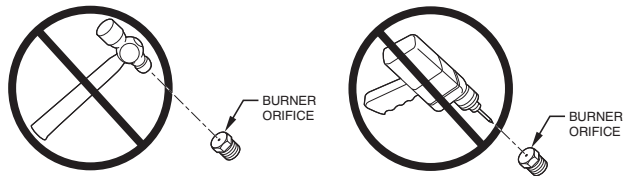
#### UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

DO NOT re-drill burner orifices. Improper drilling may result in burrs, out-of-round holes, etc. Obtain new orifices if orifice size must be changed. (See **Figure 4**)

**Figure 4**

**Burner Orifice**



Determine natural gas orifice size and manifold pressure for correct input at installed altitude by using **Table 2**.

1. Obtain yearly heat-value average (at installed altitude) for local gas supply.
2. Obtain yearly specific-gravity average for local gas supply.
3. Find installation altitude in **Table 2**.
4. Find closest natural gas heat value and specific gravity in **Table 2**.
5. Follow heat-value line and specific-gravity line to point of intersection to find orifice size and manifold pressure settings.

Furnace gas input rate on furnace rating plate is for installations at altitudes up to 2000 ft. (610 M).

**In the U.S.A.;** the input rating for altitudes above 2000 ft. (610 M) must be reduced by 2 percent for each 1000 ft. (305 M) above sea level.

The Conversion Kit Rating Plate accounts for high altitude derate.

## INSTALL ORIFICES

1. Install main burner orifices. DO NOT use Teflon tape. Finger-tighten orifices at least one full turn to prevent cross-threading, then tighten with wrench.
2. There are enough orifices in each kit for largest furnace. Discard extra orifices.

**NOTE:** DO NOT reinstall the manifold at this time.

## REMOVE MIXER SCREWS FROM THE BURNERS

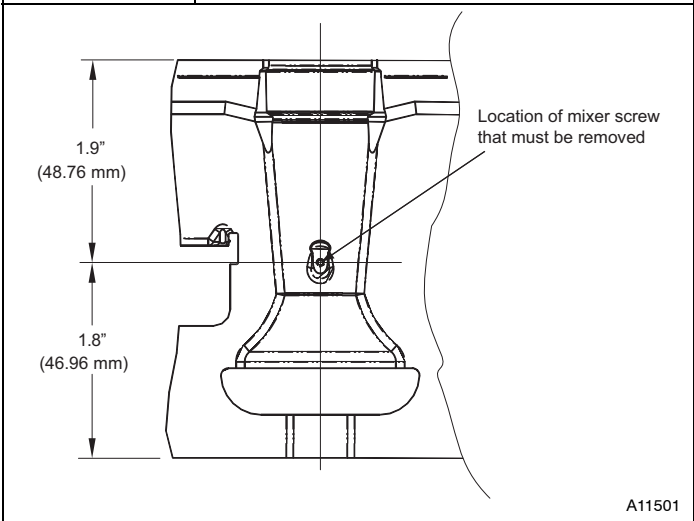
**NOTE:** Each burner contains a mixer screw that must be removed. Refer to **Figure 5** for the mixer screw location.

1. Remove the mixer screws from the burners.

**NOTE:** It is not necessary to plug the hole in the burner when the mixer screws are removed.

**Figure 5**

**Mixer Screw Location**



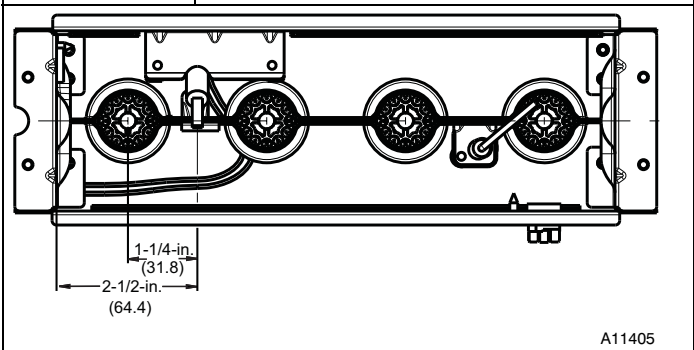
## REINSTALL BURNER ASSEMBLY

To reinstall burner assembly:

1. Attach flame sensor to burner assembly.
2. Insert one-piece burner in slot on sides of burner box and slide burner back in place.
3. Reattach HSI wires to HSI.
4. Verify igniter to burner alignment. See **Figure 6** & **Figure 7**.

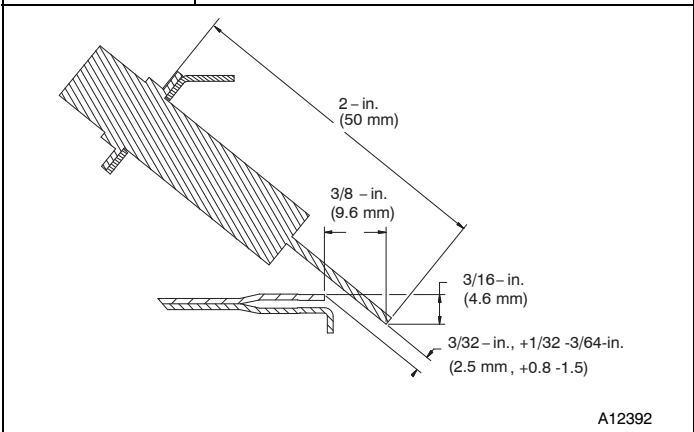
**Figure 6**

**Igniter Position – Top View**



**Figure 7**

**Igniter Position – Side View**



**Table 2** Orifice Size and Manifold Pressure (in.w.c.) for Gas Input Rate

<b>SINGLE-STAGE FURNACE</b>									
<b>(TABULATED DATA BASED ON 20,000 BTUH PER BURNER, DERATED 2%/1000 FT (305M) ABOVE SEA LEVEL)</b>									
<b>ALTITUDE RANGE</b>  ft (m)	<b>AVG. GAS HEAT VALUE AT ALTITUDE</b>  (Btu/cu ft)	<b>SPECIFIC GRAVITY OF NATURAL GAS</b>							
		<b>0.58</b>		<b>0.60</b>		<b>0.62</b>		<b>0.64</b>	
		Orifice No.	Manifold Pressure	Orifice No.	Manifold Pressure	Orifice No.	Manifold Pressure	Orifice No.	Manifold Pressure
<b>0</b> <b>(0)</b>  <b>to</b>  <b>2000</b> <b>(610)</b>	<b>900</b>	43	3.8	42	3.2	42	3.3	42	3.4
	<b>925</b>	43	3.6	43	3.7	43	3.8	42	3.2
	<b>950</b>	43	3.4	43	3.5	43	3.6	43	3.7
	<b>975</b>	44	3.7	44	3.8	43	3.4	43	3.6
	<b>1000</b>	44	3.5	44	3.6	44	3.8	43	3.4
	<b>1025</b>	44	3.3	44	3.5	44	3.6	44	3.7
	<b>1050</b>	44	3.2	44	3.3	44	3.4	44	3.5
	<b>1075</b>	45	3.7	45	3.8	44	3.3	44	3.4
<b>2001 (611)</b>  <b>to</b>  <b>3000 (914)</b>	<b>1100</b>	46	3.7	46	3.8	45	3.8	44	3.2
	<b>800</b>	42	3.4	42	3.5	42	3.6	42	3.7
	<b>825</b>	43	3.8	42	3.3	42	3.4	42	3.5
	<b>850</b>	43	3.6	43	3.7	42	3.2	42	3.3
	<b>875</b>	43	3.4	43	3.5	43	3.7	43	3.8
	<b>900</b>	44	3.7	44	3.8	43	3.5	43	3.6
	<b>925</b>	44	3.5	44	3.6	44	3.8	43	3.4
	<b>950</b>	44	3.3	44	3.4	44	3.6	44	3.7
<b>3001</b> <b>(915)</b>  <b>to</b>  <b>4000</b> <b>(1219)</b>	<b>975</b>	44	3.2	44	3.3	44	3.4	44	3.5
	<b>1000</b>	44	3.0	44	3.1	44	3.2	44	3.3
	<b>775</b>	42	3.3	42	3.4	42	3.5	42	3.6
	<b>800</b>	43	3.8	42	3.2	42	3.3	42	3.4
	<b>825</b>	43	3.6	43	3.7	43	3.8	42	3.2
	<b>850</b>	44	3.8	43	3.5	43	3.6	43	3.7
	<b>875</b>	44	3.6	44	3.7	43	3.4	43	3.5
	<b>900</b>	44	3.4	44	3.5	44	3.7	44	3.8
<b>4001</b> <b>(1220)</b>  <b>to</b>  <b>5000</b> <b>(1524)</b>	<b>925</b>	44	3.2	44	3.4	44	3.5	44	3.6
	<b>950</b>	44	3.1	44	3.2	44	3.3	44	3.4
	<b>750</b>	42	3.3	42	3.4	42	3.5	42	3.6
	<b>775</b>	43	3.7	43	3.8	42	3.3	42	3.4
	<b>800</b>	43	3.5	43	3.6	43	3.7	43	3.8
	<b>825</b>	44	3.8	43	3.4	43	3.5	43	3.6
	<b>850</b>	44	3.5	44	3.7	44	3.8	43	3.4
	<b>875</b>	44	3.3	44	3.5	44	3.6	44	3.7
<b>5001</b> <b>(1525)</b>  <b>to</b>  <b>6000</b> <b>(1829)</b>	<b>900</b>	44	3.2	44	3.3	44	3.4	44	3.5
	<b>725</b>	42	3.2	42	3.3	42	3.4	42	3.5
	<b>750</b>	43	3.7	43	3.8	42	3.2	42	3.3
	<b>775</b>	43	3.4	43	3.5	43	3.7	43	3.8
	<b>800</b>	44	3.7	44	3.8	43	3.4	43	3.5
	<b>825</b>	44	3.5	44	3.6	44	3.7	44	3.8
	<b>850</b>	44	3.3	44	3.4	44	3.5	44	3.6
	<b>875</b>	44	3.1	44	3.2	44	3.3	44	3.4
<b>6001</b> <b>(1830)</b>  <b>to</b>  <b>7000</b> <b>(2133)</b>	<b>900</b>	44	2.9	44	3.0	44	3.1	44	3.2
	<b>675</b>	42	3.4	42	3.5	42	3.6	42	3.8
	<b>700</b>	42	3.2	42	3.3	42	3.4	42	3.5
	<b>725</b>	43	3.6	43	3.7	43	3.8	42	3.3
	<b>750</b>	43	3.4	43	3.5	43	3.6	43	3.7
	<b>775</b>	44	3.6	44	3.7	43	3.4	43	3.5
	<b>800</b>	44	3.4	44	3.5	44	3.6	44	3.7
	<b>825</b>	44	3.2	44	3.3	44	3.4	44	3.5
<b>7000</b> <b>(2133)</b>	<b>850</b>	44	3.0	44	3.1	44	3.2	44	3.3

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**Table 2** Orifice Size and Manifold Pressure (in.w.c.) for Gas Input Rate (cont.)

SINGLE-STAGE FURNACE (TABULATED DATA BASED ON 20,000 BTUH PER BURNER, DERATED 2%/1000 FT (305M) ABOVE SEA LEVEL)									
ALTITUDE RANGE  ft (m)	AVG. GAS HEAT VALUE AT ALTITUDE (Btu/cu ft)	SPECIFIC GRAVITY OF NATURAL GAS							
		0.58		0.60		0.62		0.64	
		Orifice No.	Manifold Pressure	Orifice No.	Manifold Pressure	Orifice No.	Manifold Pressure	Orifice No.	Manifold Pressure
<b>7001</b> (2134)  to  <b>8000</b> (2438)	<b>650</b>	<b>42</b>	<b>3.4</b>	<b>42</b>	<b>3.5</b>	<b>42</b>	<b>3.6</b>	<b>42</b>	<b>3.7</b>
	<b>675</b>	<b>43</b>	<b>3.8</b>	<b>42</b>	<b>3.2</b>	<b>42</b>	<b>3.3</b>	<b>42</b>	<b>3.4</b>
	<b>700</b>	<b>43</b>	<b>3.5</b>	<b>43</b>	<b>3.7</b>	<b>43</b>	<b>3.8</b>	<b>42</b>	<b>3.2</b>
	<b>725</b>	<b>44</b>	<b>3.8</b>	<b>43</b>	<b>3.4</b>	<b>43</b>	<b>3.5</b>	<b>43</b>	<b>3.6</b>
	<b>750</b>	<b>44</b>	<b>3.5</b>	<b>44</b>	<b>3.7</b>	<b>44</b>	<b>3.8</b>	<b>43</b>	<b>3.4</b>
	<b>775</b>	<b>44</b>	<b>3.3</b>	<b>44</b>	<b>3.4</b>	<b>44</b>	<b>3.5</b>	<b>44</b>	<b>3.7</b>
	<b>800</b>	<b>44</b>	<b>3.1</b>	<b>44</b>	<b>3.2</b>	<b>44</b>	<b>3.3</b>	<b>44</b>	<b>3.4</b>
<b>8001</b> (2439)  to  <b>9000</b> (2743)	<b>825</b>	<b>44</b>	<b>2.9</b>	<b>44</b>	<b>3.0</b>	<b>44</b>	<b>3.1</b>	<b>44</b>	<b>3.2</b>
	<b>625</b>	<b>42</b>	<b>3.4</b>	<b>42</b>	<b>3.5</b>	<b>42</b>	<b>3.6</b>	<b>42</b>	<b>3.7</b>
	<b>650</b>	<b>43</b>	<b>3.8</b>	<b>42</b>	<b>3.2</b>	<b>42</b>	<b>3.3</b>	<b>42</b>	<b>3.4</b>
	<b>675</b>	<b>43</b>	<b>3.5</b>	<b>43</b>	<b>3.6</b>	<b>43</b>	<b>3.7</b>	<b>42</b>	<b>3.2</b>
	<b>700</b>	<b>44</b>	<b>3.7</b>	<b>43</b>	<b>3.4</b>	<b>43</b>	<b>3.5</b>	<b>43</b>	<b>3.6</b>
	<b>725</b>	<b>44</b>	<b>3.5</b>	<b>44</b>	<b>3.6</b>	<b>44</b>	<b>3.7</b>	<b>44</b>	<b>3.8</b>
	<b>750</b>	<b>44</b>	<b>3.3</b>	<b>44</b>	<b>3.4</b>	<b>44</b>	<b>3.5</b>	<b>44</b>	<b>3.6</b>
<b>9001</b> (2744)  to  <b>10000</b> (3048)	<b>775</b>	<b>44</b>	<b>3.0</b>	<b>44</b>	<b>3.2</b>	<b>44</b>	<b>3.3</b>	<b>44</b>	<b>3.4</b>
	<b>600</b>	<b>42</b>	<b>3.3</b>	<b>42</b>	<b>3.4</b>	<b>42</b>	<b>3.6</b>	<b>42</b>	<b>3.7</b>
	<b>625</b>	<b>43</b>	<b>3.7</b>	<b>42</b>	<b>3.2</b>	<b>42</b>	<b>3.3</b>	<b>42</b>	<b>3.4</b>
	<b>650</b>	<b>43</b>	<b>3.5</b>	<b>43</b>	<b>3.6</b>	<b>43</b>	<b>3.7</b>	<b>43</b>	<b>3.8</b>
	<b>675</b>	<b>44</b>	<b>3.7</b>	<b>44</b>	<b>3.8</b>	<b>43</b>	<b>3.4</b>	<b>43</b>	<b>3.5</b>
	<b>700</b>	<b>44</b>	<b>3.4</b>	<b>44</b>	<b>3.5</b>	<b>44</b>	<b>3.7</b>	<b>44</b>	<b>3.8</b>
	<b>725</b>	<b>44</b>	<b>3.2</b>	<b>44</b>	<b>3.3</b>	<b>44</b>	<b>3.4</b>	<b>44</b>	<b>3.5</b>

\* Orifice numbers shown in **BOLD** are factory-installed.

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## CONVERT GAS VALVE



### CAUTION

#### UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage

The gas valve must be converted and pre-adjusted before operating on propane gas. If not converted and pre-adjusted, sooting and corrosion will occur leading to early heat exchanger failure.



### WARNING

#### FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury, death or property damage.

Gas supply **MUST** be shut off before disconnecting electrical power and proceeding with conversion.



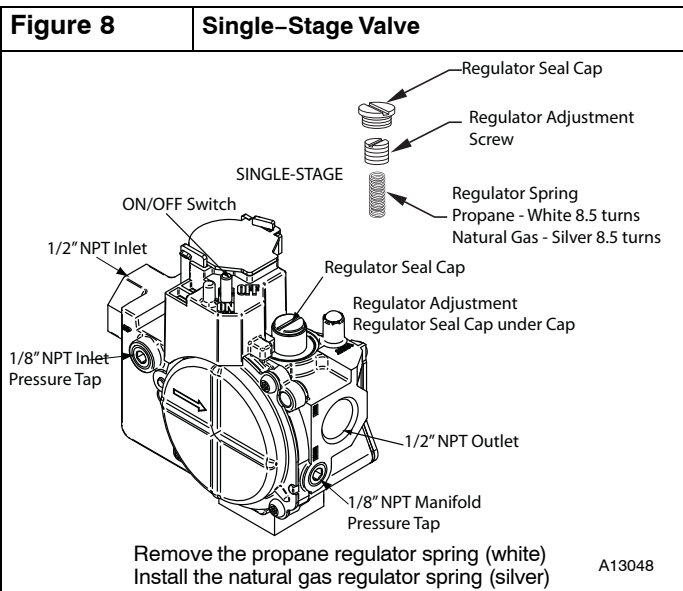
### WARNING

#### ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow this warning could result in personal injury, death or property damage.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

1. Refer to **Figure 8**.
2. Be sure gas and electrical supplies to furnace are off.
3. Remove cap that conceals the adjustment screw for the gas-valve regulator. (See **Figure 8**)
4. Remove the regulator adjustment screw.
5. Remove the Propane regulator spring (white).
6. Install the natural gas regulator spring (silver).
7. Install the regulator adjustment screw.
8. Turn the adjusting screw clockwise (in) 8.5 full turns. This will increase the manifold pressure closer to the natural gas set point. (See **Figure 8**)
9. DO NOT install regulator seal cap at this time.





## REMOVE LOW GAS PRESSURE SWITCH

**NOTE:** There are two ways that the Low Gas Pressure Switch (LGPS) could have been installed during the original natural to Propane gas conversion.

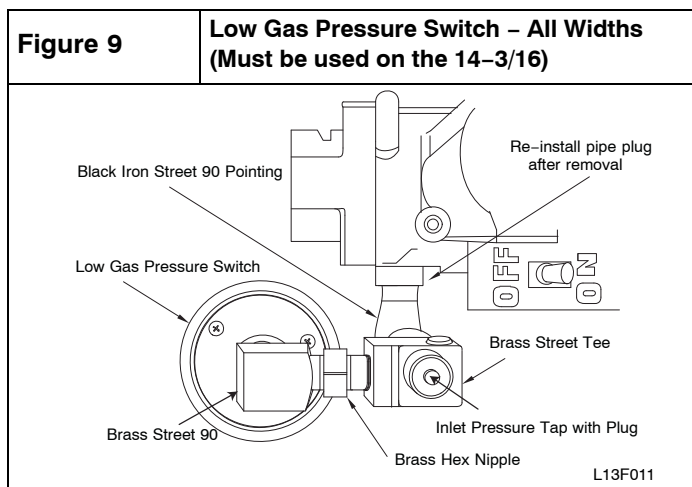
### All 14 3/16-in Casings or Vent Passed Between Inducer Assembly and Burner Assembly

If the vent pipe passes between the inducer and burner assembly, or the furnace is a 14 3/16-in. wide casing, the switch may have been installed as follows (See **Figure 9**).

1. Remove low gas pressure switch, brass street 90° elbow, brass Hex nipple, brass tee and black iron street 90° elbow from the gas valve inlet pressure tap. (See **Figure 9**)

**NOTE:** Use pipe dope approved for use with Propane gas. DO NOT use Teflon tape.

2. Apply pipe dope sparingly to the 1/8-in. NPT pipe plug (provided in kit) and install in the 1/8-in tapped inlet-pressure tap opening in the gas valve. DO NOT over-tighten. Check for gas leaks after gas supply has been turned on.



## WARNING

### FIRE OR EXPLOSION HAZARD

Failure to follow this warning could result in personal injury and/or death.

NEVER test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury or loss of life.

### Casings Wider Than 14 3/16-in/Vent Does Not Pass Between Inducer and Burner Assembly

If the vent pipe does not pass between the inducer and burner assembly, or the furnace is wider than a 14 3/16-in. wide casing, install the switch as follows (See **Figure 10**):

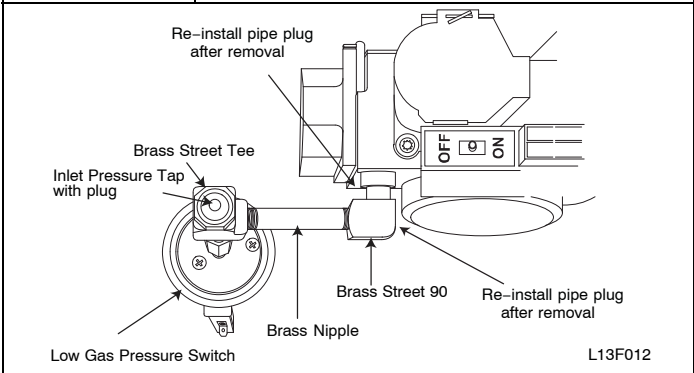
1. Remove Low Gas Pressure Switch, brass street tee, brass nipple and brass street 90° elbow from the gas valve inlet pressure tap. See **Figure 10**.

**NOTE:** Use pipe dope approved for use with Propane gas. DO NOT use Teflon tape.

2. Apply pipe dope sparingly to the 1/8-in. NPT pipe plug (provided in kit) and install in the 1/8-in tapped inlet-pressure tap opening in the gas valve. DO NOT over-tighten. Check for gas leaks after gas supply has been turned on.

**Figure 10**

**LGPS for casing wider than 14-3/16 and vent does not pass between inducer and burner assembly**



## INSTALL MANIFOLD

1. Align the orifices in the manifold assembly with the support rings on the end of the burner.
2. Insert the orifices in the support rings of the burners. Manifold mounting tabs should fit flush against the burner box.

**NOTE:** If manifold does not fit flush against the burner box, the burners are not fully seated forward. Remove the manifold and check burner positioning in the burner box assembly.

3. Attach the green/yellow wire and ground terminal to one of the manifold mounting screws. See **Figure 2**.
4. Install the remaining manifold mounting screws.
5. Connect the wires to the flame sensor and hot surface igniter.
6. Connect the connector harness to gas valve.
7. Rewire unit low pressure switch (LPS) as follows:
  - a. Trace one of the orange wires previously disconnected from the LGPS back to the NO terminals of the LPS.
  - b. Trace the other orange wire previously disconnected from the LGPS back to its splice connection with the yellow wire of the furnace wire harness. Disconnect and discard this orange wire and the splice connection.
  - c. Connect the yellow wire of the furnace wire harness (see "b" above) to the NO terminal of the LPS.
  - d. Refer to the furnace wiring diagram to ensure proper location of wires.

**NOTE:** Use only Propane-resistant pipe dope. DO NOT use Teflon tape.

8. Insert the gas pipe through the grommet in the casing. Apply a thin layer of pipe dope to the threads of the pipe and thread the pipe by into the gas valve.

**NOTE:** Use a back-up wrench on the gas valve to prevent the valve from rotating on the manifold or damaging the mounting to the burner box.

9. With a back-up wrench on the inlet boss of the gas valve, finish tightening the gas pipe to the gas valve.

10. Turn gas on at electric switch on gas valve.

## CHECK INLET GAS PRESSURE



## CAUTION

### UNIT DAMAGE HAZARD

Failure to follow this caution may result in unit damage.

DO NOT operate furnace more than one minute to check inlet gas pressure, as conversion is not complete at this time.

**NOTE:** This kit is to be used only when inlet gas pressure is between 4.5-in. w.c. and 13.6-in. w.c..

1. Verify manometer is connected to inlet pressure tap on gas valve. (See **Figure 8**)
2. Turn on furnace power supply.
3. Turn gas supply manual shutoff valve to ON position.



## WARNING

### FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury, death or property damage.

Gas supply **MUST** be shut off before disconnecting electrical power and proceeding with conversion.



## WARNING

### ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

Failure to follow this warning could result in personal injury, death or property damage.

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

4. Turn furnace gas valve switch to ON position.
5. Jumper R-W thermostat connections on control.
6. When main burners ignite, confirm inlet gas pressure is between 4.5-in. w.c. and 13.6-in. w.c.
7. Remove jumper across R-W thermostat connections to terminate call for heat.
8. Turn furnace gas valve switch to OFF position.
9. Turn gas supply manual shutoff valve to OFF position.
10. Turn off furnace power supply.
11. Remove manometer.
12. Apply pipe dope sparingly to the 1/8-in. NPT pipe plug and install in the 1/8-in. tapped inlet-pressure tap opening in the gas valve. **DO NOT** over-tighten. Check for gas leaks after gas supply has been turned on.

## CHECK FURNACE AND MAKE ADJUSTMENTS



## WARNING

### FIRE OR EXPLOSION HAZARD

Failure to follow this warning could result in personal injury and/or death.

**NEVER** test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury or loss of life.

1. Be sure main gas and electric supplies to furnace are off.
2. Remove 1/8-in. NPT pipe plug from manifold pressure tap on downstream side of gas valve.
3. Attach manometer to manifold pressure tap on gas valve. (See **Figure 8**)
4. Turn gas supply manual shutoff valve to ON position.
5. Turn furnace gas valve switch to ON position.
6. Check all threaded pipe connections for gas leaks.
7. Turn on furnace power supply.

## GAS INPUT RATE INFORMATION

See furnace rating plate on blower door for input rate. The input rate for natural gas is determined by manifold pressure and orifice size.

Determine natural gas orifice size and manifold pressure for correct input at installed altitude by using **Table 2**.

1. Obtain yearly heat-value average (at installed altitude) for local gas supply.
2. Obtain yearly specific-gravity average for local gas supply.
3. Find installation altitude in **Table 2**.
4. Find closest natural gas heat value and specific gravity in **Table 2**.
5. Follow heat-value line and specific-gravity line to point of intersection to find orifice size and manifold pressure setting.

Furnace gas input rate on rating plate is for installations at altitudes up to 2000 ft. (610 M).

**In the U.S.A.;** the input rating for altitudes above 2000 ft. (610M) must be reduced by 2 percent for each 1000 ft. (305 M) above sea level.

The Conversion Kit Rating Plate accounts for high altitude derate.

## SET GAS INPUT RATE



## WARNING

### FIRE OR EXPLOSION HAZARD

Failure to follow this warning could result in personal injury and/or death.

**NEVER** test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury or loss of life.

1. Make sure the gas supply is turned off to the furnace and at the electric switch on the gas valve.
2. Remove the 1/8 inch NPT plug from the outlet pressure tap on the gas valve.
3. Connect a manometer to the outlet pressure tap on gas valve.
4. Turn on furnace power supply.
5. Turn gas supply manual shutoff valve to ON position.
6. Turn furnace gas valve switch to ON position.
7. Jumper R and W thermostat connections to call for heat. (See **Figure 11**)
8. Check manifold orifices for gas leaks when main burners ignite.
9. Adjust gas manifold pressure. Refer to **Table 2**.
10. Remove cap that conceals the gas valve regulator adjustment screw.
11. Turn adjusting screw counterclockwise (out) to decrease manifold pressure or clockwise (in) to increase manifold pressure.
12. Replace gas valve regulator seal cap.
13. Verify manifold pressure is correct. Refer to **Table 2**.

**NOTE:** Gas valve regulator seal cap **MUST** be in place when checking input rate. When correct input is obtained, main burner flame should be clear blue, almost transparent (See **Figure 12**). Be sure regulator seal cap is in place when finished.

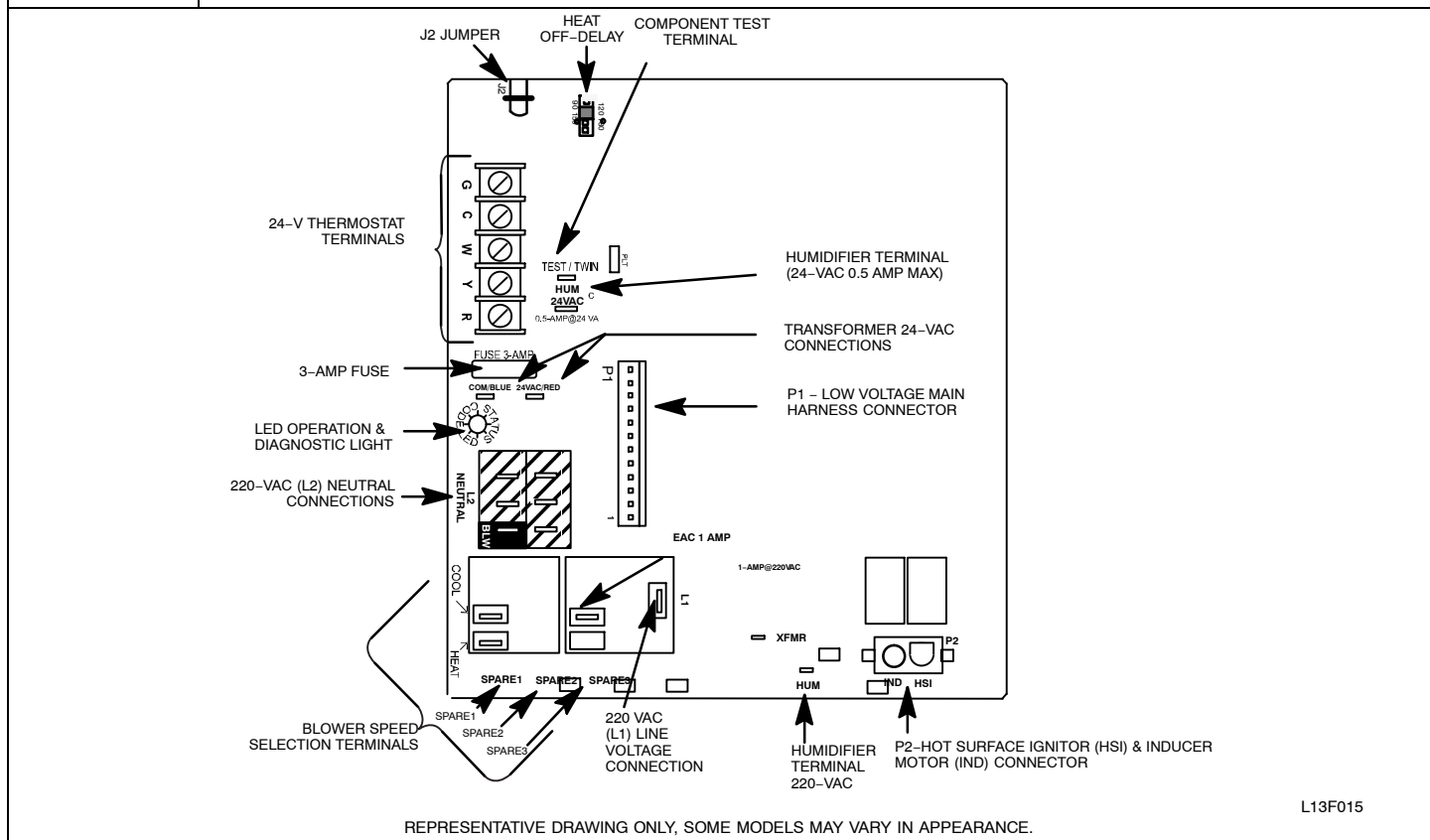
14. Remove jumper across R and W thermostat connections to terminate call for heat.
15. Turn furnace gas valve control switch or control knob to OFF position.
16. Turn off furnace power supply.

17. Remove manometer and reinstall manifold pressure tap plug.
18. Turn furnace gas-valve switch to ON position.
19. Turn on furnace power supply.
20. Set room thermostat to call for heat.
21. Check pressure tap plug for gas leaks when main burners ignite.
22. Check for correct burner flame.
23. After making the required manifold pressure adjustments, check and adjust the furnace temperature rise per the furnace installation instructions.

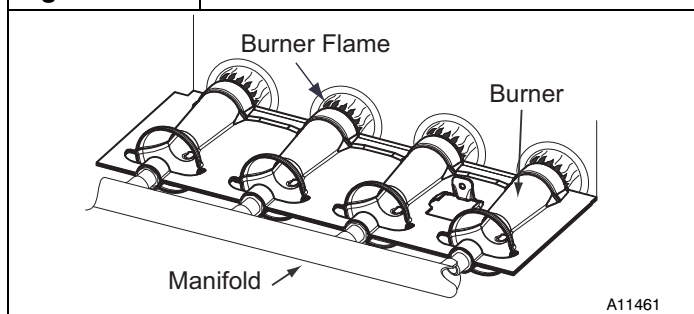
## CHECKOUT

1. Observe unit operation through two complete heating cycles.
2. See Sequence of Operation in furnace Installation, Start-Up, and Operating Instructions.
3. Set room thermostat to desired temperature.

**Figure 11** Example of Single Stage Furnace Control for PSC Blower Motor



**Figure 12** Burner Flame



## LABEL APPLICATION

1. Fill in Conversion Responsibility Label 339923-205 and apply over Propane Conversion Responsibility Label Date, name, and address of organization making this conversion are required. See **Figure 13**.
2. Apply Conversion Rating Plate Label 339923-201 or 339923-204 over Propane Conversion Rating Plate Label. See **Figure 14**.
3. Apply Gas Control Conversion Label over Propane label on gas valve: For single-stage gas valve apply label 339923-202 or 339923-203 to gas valve Check for correct normal operating sequence of the ignition system as described in furnace Service and Technical Support Manual.
4. Replace control access door, blower motor door and outer door of furnace.



Figure 13

## Conversion Responsibility Label

THIS FURNACE WAS CONVERTED  
ON \_\_\_\_\_ TO NATURAL GAS  
(DAY-MONTH-YEAR)  
KIT NO.: NAHA01101NG

BY:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Name and address of organization making this conversion),  
which accepts the responsibility that this conversion has  
been properly made.

ESTE CALEFACTOR SE CONVIRTIÓ  
EL \_\_\_\_\_ A GAS NATURAL  
(DÍA-MES-AÑO)  
NÚM. JUEGO: NAHA01101NG

POR:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Nombre y dirección de la organización que hace la  
conversión), acepta la responsabilidad de que esta  
conversión se hiciera correctamente.

339923-205 REV. A



339923-205 Rev. A

Figure 14

## Conversion Rating Plate Label

## CONVERSION KIT RATING PLATE - International Comfort Products, U.S.A.

FUEL USED	% DERATE PER 1000 FT.	ALTITUDE OF INSTALLATION (ABOVE SEA LEVEL)
NATURAL GAS	2%	0 - 2000 FT (0 - 610 m)
APPLIANCE MODELS		Manifold Pressure
*9MES	in W.C.	(min - max) 3.2 - 3.8
	mm W.C.	(min - max) 81 - 97
	kPA	(min - max) 0.797 - 0.946
KIT NUMBER		Inlet Pressure
NAHA01101NG	in W.C.	(min - max) 4.5 - 13.6
SUPERSEDES	mm W.C.	(min - max) 114 - 345
	kPA	(min - max) 1.12 - 3.38
NONE		
2000 - 10000 FT (610 - 3050 m) SEE INSTALLATION MANUAL		

THIS APPLIANCE HAS BEEN CONVERTED TO USE  
NATURAL GAS FOR FUEL. REFER TO KIT  
INSTRUCTIONS FOR CONVERSION PROCEDURES.  
USE PARTS SUPPLIED BY MANUFACTURER AND  
INSTALLED BY QUALIFIED PERSONNEL. SEE  
EXISTING RATING PLATE FOR APPLIANCE MODEL  
NO. AND INPUT RATING.

NOTE: Furnace gas input rate on rating plate is  
for installations up to 2000 ft. (610m) above sea  
level. The input rating for altitudes above 2000 ft.  
(610m) must be derated by 2% for each 1000 ft.  
(305m) above sea level.



339923-201 REV. A

339923-201 Rev. A

## PLACA ESPECIFICACIONES JUEGO DE CONVERSIÓN - International Comfort Products, U.S.A.

COMBUSTIBLE	% REDUCCIÓN POR 1000 PIES	ALTITUD DE INSTALACIÓN (ENCIMA NIVEL MAR)
GAS NATURAL	2%	0 - 2000 PIES (0 - 610 m)
MODELO DE UNIDAD		Presión del distribuidor
*9MES	plg. W.C.	(mín. - máx.) 3,2 - 3,8
	mm W.C.	(mín. - máx.) 81 - 97
	kPA	(mín. - máx.) 0,797 - 0,946
NÚMERO DE JUEGO		Presión de entrada
NAHA01101NG	plg. W.C.	(mín. - máx.) 4,5 - 13,6
REEMPLAZA	mm W.C.	(mín. - máx.) 114 - 345
	kPA	(mín. - máx.) 1,12 - 3,38
NINGUNO		
2000 - 10000 PIES (610 - 3050 m) VER MANUAL DE INSTALACIÓN		

ESTA UNIDAD HA SIDO CONVERTIDA PARA USAR  
GAS NATURAL COMO COMBUSTIBLE. EN LAS  
INSTRUCCIONES DEL JUEGO ESTÁN LOS PROCE-  
DIMIENTOS DE CONVERSIÓN. USAR PIEZAS DEL  
FABRICANTE INSTALADAS POR PERSONAL  
CALIFICADO. VER PLACA DE ESPECIFICACIONES  
PARA NÚM. MODELO Y TASA DE ENTRADA.

NOTA: La tasa de entrada de gas del calefactor  
en la placa de especificaciones es para  
instalaciones hasta 610 m (2000 pies) por encima  
del nivel del mar. La tasa de entrada a altitudes  
de más de 610 m (2000 pies) debe  
reducirse un 2% por cada 305 m  
(1000 pies) sobre el nivel del mar.



339923-204 REV. A

339923-204 Rev. A