

# ACCESSORY KIT INSTALLATION INSTRUCTIONS

**Natural Gas High Altitude Conversion Accessory Model 1HA0420  
for Single Package Gas/Electric Air Conditioners 3 Ton through 6 Ton**



## ▲WARNING

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 may result causing property damage, personal injury or loss of life. The qualified service agency is responsible for the proper installation of 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.

For U.S. units, installation must be made in accordance with American National Standard National Fuel Gas Code, ANSI Z223.1 – latest edition, unless superseded by local codes. For Canadian installations, the conversion shall be carried out in accordance with the requirements of the provisional authorities having jurisdiction and in accordance with the CAN1-B149.1 and .2 installation codes.

## GENERAL

This accessory provides the parts to operate a natural gas furnace at elevations between 2,000 and 6,000 feet (610 and 1,829 meters).

This instruction covers the conversion only. Use the Installation Instruction supplied with the unit for all other aspects of the installation.

This instruction provides the necessary information to select and install the proper orifice for your specific application. Data is provided for both natural gas and propane (LP).

## ▲WARNING

Improper installation, adjustment service, or maintenance can cause injury or property damage; therefore, only a qualified installer or qualified service personnel should perform this conversion.

## FURNACE CONVERSION

Before the gas and electrical power supplies are connected to the unit, remove the manifold/burner/gas valve assembly as follows:

1. Remove the access panel to the gas heat compartment.
2. Disconnect the wiring from the gas valve and disconnect the red high tension wire with the spark ignitor and sensor located in the burner bracket.
3. Using a screw driver or ratchet, remove the screws holding either end of the manifold/burner/gas valve assembly to the supports.
4. Carefully remove the assembly by grasping the manifold with two hands, lifting up and pulling it out of the unit.
5. Remove the main burner orifices from the manifold and discard them.
6. Refer to Table 1 to verify that the proper size burner and pilot orifices from this accessory are installed with the respective heating section.
7. Install the orifices in the manifold, and tighten them. All leftover orifices may be discarded.
8. Make sure the manifold is mounted tightly with the support for burners, manifold and orifices.

TABLE 1: ORIFICE DATA


	Recommended Orifice					
	Altitude (Ft. Above Sea Level)					
	0	2,000	3,000	4,000	5,000	6,000
	Burner/Pilot	Burner/Pilot	Burner/Pilot	Burner/Pilot	Burner/Pilot	Burner/Pilot
2 cell	43/63	43/63	43/63	43/63	45/63	45/63
3 cell	43/63	43/63	43/63	43/63	45/63	45/63
4 cell	43/56	44/56	44/56	44/56	45/56	45/56
5 cell	43/56	44/56	44/56	44/56	45/56	45/56

NOTE: In Canada, all conversions of units between 2,000 and 4,500 ft. of elevation should use the #44 orifice.

9. Verify that all screws are secured and replace the assembly into the unit. Make sure that the burners are seated at the front of the heat exchanger.
10. Re-connect wiring which was disconnected in Step 2.
11. Remove label 10561 from the shipping box. Check the box that states the unit has been converted from normal to high altitude and fill the name of the organization making the conversion.
12. Under "Rating After Conversion", write in the following:
  - a. Orifice size, as stamped on the orifice.
  - b. Maximum inlet pressure - 10.5 IWC.
  - c. Minimum Inlet pressure - 5.0 IWC.
  - d. Manifold pressure - 3.5 IWC.
  - e. Input, this will be a 4% derate for each 1,000 feet above sea level from the input on the data plate.
  - f. Output rating, this will be a 4% derate for each 1,000 feet above sea level from the output on the data plate.
13. Under "Changes After Conversion", write in the following:
  - a. Kit number, located on the outside of the box.
  - b. Unit model number.
  - c. Name and address of the organization making the conversion and date.
14. Remove the label backing and affix label adjacent to the unit data plate along with the laminate overlay.
15. Refer to the gas heat section of the unit installation instructions for proper installation and start-up procedures.

## TESTS AND ADJUSTMENTS

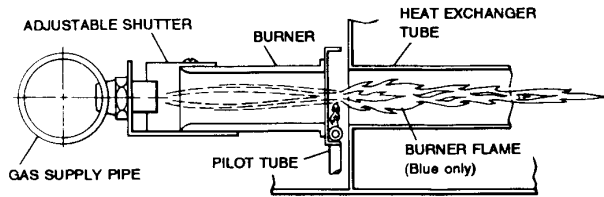
The following tests must be performed at the time of conversion:

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**WARNING**

If the furnace is connected to gas and power supplies, make sure both are shut off before proceeding.
1. Connect a manometer to the pressure tap in the manifold. Connect a power supply and a natural gas supply to the unit, if not already connected.
  2. Turn on the natural gas supply, and bleed air from the gas supply lines at a point as close to the inlet of the gas valve as is practical. Turn gas valve knob to the ON position.
  3. Connect a jumper between terminals "R" and "W" on the circuit board to simulate a call for heat.
  4. Make sure unit electrical disconnect switch is in the OFF position, then energize the power supply to the disconnect switch.
  5. Turn unit electrical disconnect switch ON. The combustion blower should start and the pilot electrode should start sparking.
  6. After air has been purged from the pilot supply line, pilot ignition should occur. Shortly after pilot ignition, the main gas valve will open as indicated by the manometer. Main burner ignition may be delayed on the first ignition cycle due to air in the gas manifold.
  7. Observe several ignition cycles. The pilot burner and all main burners must ignite without delayed ignition or burning at the orifices. If delayed ignition is observed, verify that pilot flame is adjusted correctly (refer to Pilot Flame Adjustment section of the unit Installation Instruction), and that the pilot is properly mounted (not loose or crooked on bracket, bracket not bent or loose on main burner).
  8. Adjust the manifold pressure to 3.5 IWG with gas supplied to the unit at a pressure of 5.0 to 10.5 inches WC.

 <b style="font-size: 1.2em; margin-left: 10px;">CAUTION</b>
Manifold pressure for the respective BTU/HR input or output must be adjusted to 3.5 IWG

9. If burning at the orifices, excessive yellow tipping, or excessive noise is observed during any phase of main burner operation, adjust the main burner air shutters (See Figure 1) to eliminate the problem(s).



**FIGURE - 1: MAIN BURNERS, PILOT TUBE, GAS MANIFOLD AND ADJUSTABLE SHUTTERS**

10. With main burners ignited, check for gas leaks, especially in the following locations: pilot tubing connection at the pilot, pilot tubing connection at the gas valve, gas valve inlet and outlet connections, manifold union in the burner compartment, and main burner orifices where they thread into the manifold. Repair any leaks found, and recheck. **DO NOT CHECK WITH OPEN FLAME.**
11. With main burners off, disconnect the manometer and replace the manifold plug. Check for gas leaks at this plug.
12. Remove jumpers and replace all access panels.

**TABLE 2: PARTS IN KIT 1HA0420**

ITEM	QTY.	PART NO.	DESCRIPTION
1	5	9591	Burner Orifice, #43
2	5	9592	Burner Orifice, #44
3	5	166915	Burner Orifice, #45
4	1	10561	Conversion Label
5	1	11031	Accessory Instruction

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