HA02 CONVERSION KIT
HIGH ALTITUDE NAT. & L.P. GASES
INSTALLATION INSTRUCTIONS

Goodman Manufacturing Company, L.P. © 2004-2007
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Description

This high altitude conversion kit is intended to convert the gas funace for higher altitude installation.

IMPORTANT NOTICE:

⚠ WARNING

PERSONAL INJURY OR DEATH MAY RESULT FROM IMPROPER INSTALLATION OR MAINTENANCE PERFORMED BY UNTRAINED PERSONNAL. CALL YOUR INSTALLING DEALER OR OTHER QUALIFIED SERVICE COMPANIES TO PERFORM THE INSTALLATION OR MAINTENANCE INSPECTION.

These instructions are intended for the use of qualified individuals who are trained and experienced in the installation and conversion of this type of equipment. Personnel performing this task are required in some states to be licensed. Under no circumstances should this conversion, or equipment installation be performed by personnel who are not qualified. Failure to observe this warning may result in equipment damage, fire, or life threatening danger. Refer to the equipment installation manual, the National Fuel Gas Code (ANSI Z223.1), or in Canada (CAN/CSA-B149.2, latest edition), and local codes.

Kit Contents

Using the following parts list, ensure that all parts included in this list are present and in an undamaged condition.

1	B14933-63	Conversion Label
1 pack (6 per pack)	B25899-00 thru-10	Burner Orifices
1	IO-552*	Installation Instructions

⚠ WARNING

IF ANY DOUBT EXISTS ABOUT THE CONDITION OF ANY COMPONENT WITHIN THIS KIT, DO NOT USE THIS KIT AND CONTACT YOUR SUPPLIER FOR A NEW KIT.

TOOLS REQUIRED FOR INSTALLATION

- (2) Pipe Wrenches. These wrenches shall be suitably sized to handle the supply piping and its ground joint union.
- (1) 7/16 open or closed wrench. Do not use an adjustable wrench when removing or installing burner orifices.
- (1) 5/16 nut driver.
- (1) Flat blade screw driver.
- (1) 3/16 Allen wrench. The Allen wrench is required to remove gas valve inlet and outlet plugs.
- (2) Water Column manometers. Manometers are to be capable of reading a range between 0 and 20 inches with 1" increments. Pipe thread compound. Pipe thread compound used must be listed as appropriate material for LP gas. Soap solution and application brush.

⚠ RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION

ATTENTION INSTALLING PERSONNEL

As a professional installer, you have an obligation to know the product better than the customer.
This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with this Instruction Manual.
Pay special attention to all safety warnings. Often during installation or repair,
it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

Remember, it is **your** responsibility to install the product safely and to know it well enough
to be able to instruct a customer in its safe use.

Safety is a matter of common sense... a matter of thinking before acting.
Most dealers have a list of specific, good safety practices... follow them.

The precautions listed in this Installation Manual are intended as supplemental to existing practices.
However, if there is a direct conflict between existing practices and the content of this manual,
the precautions listed here take precedence.

Installation

WARNING

HIGH VOLTAGE
DISCONNECT ALL ELECTRICAL POWER AND SHUT OFF GAS SUPPLY BEFORE SERVICING OR INSTALLING. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

WARNING

TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, NEVER USE A MATCH OR OPEN FLAME TO TEST FOR LEAKS.

1. Prior to performing this conversion, refer to the Installation & Operation Manual supplied with the unit, the National Fuel Gas Code (ANSI Z223.1) or in Canada (CAN/CSA-B149.2, latest edition), and local codes to ensure that this appliance is installed correctly and in compliance with these codes/manuals.
2. Set the room thermostat to its lowest possible setting.
3. Remove the furnace control access door. See figure 1 for the location of these components.
4. Loosen the gas supply ground union, and remove the gas valve supply line. Use one pipe wrench as a back-up to prevent damage/rotation of any controls.
5. Remove the (4) sheet metal screws which fasten the gas manifold to the burner box. See figure 1 for component location. On PGB series take care not to break the Hot Surface Ignitor on the pilot assembly.
6. Using the 7/16 wrench, remove the existing natural gas orifices from the burner manifold. Discard the natural gas orifices.
7. Install the orifices supplied with this kit into the gas manifold. Look at sizes stamped on orifice face to insure that all the same are installed. Tighten these orifices adequately to prevent gas leakage. Refer to table 1 for the correct burner orifices.
8. **For 36G22 valve**: Using a 3/32" Allen wrench, loosen the inlet and outlet pressure tap screw one (1) turn only (DO NOT REMOVE). Attach a length of 5/16" hose to each of the pressure tap bosses. Connect the 5/16" hose to two (2) separate water manometers or other adequate gauges having a scale range of at least 0" to 15" of water column.

   For all other valves: Remove both the inlet and outlet plugs on the gas valve, using the 3/16" allen wrench. Install the fittings, which accompany the manometers into the 1/8" taped holes of the gas valve. Connect the manometers to the barbed fittings.
9. Reinstall gas manifold assembly into furnace.
10. Connect both the inlet and outlet gas valve barb fittings (installed in step 9) to (2) separate manometers. See figure 2.
11. Install the gas supply piping and its ground union joint using a pipe wrench. Use a second pipe wrench as a back up.

WARNING

TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, NEVER USE A MATCH OR OPEN FLAME TO TEST THE GAS SUPPLY LINE, GAS VALVE INLET AND OUTLET PRESSURE AREAS.

12. Turn on the gas supply to the furnace. Using a soap and water solution, check the gas supply line, gas valve inlet and outlet pressure areas. Repair any gas leaks detected.
13. Turn on the electric supply to the furnace.
14. Adjust the room thermostat to obtain continuous burner operation.
15. After the burner is in operation for 15 minutes, check and adjust, if needed , the supply and manifold pressure. See figure 2.
16. Adjust the burner air shutters to obtain a burner flame consistent with the flame shown in the furnace Installation & Operating Instructions.
17. Turn off the gas and electrical supply to the furnace.
18. Apply the conversion label adjacent to the rating plate.
19. **For 36G22 valve**: Turn off gas and electrical supply to the furnace, remove the manometer hose from the pressure tap bosses, and tighten the inlet and outlet pressure tap screws using the 3/32" Allen wrench.

    For all other valves: Turn off the gas and electrical supply to the appliance, remove the pressure taps at the gas valve, reinstall the plugs using pipe joint compound or tape.
20. Turn on the gas and electrical supply. Adjust the room thermostat to ensure continuous burner operation.

WARNING

TO AVOID THE POSSIBILITY OF EXPLOSION OR FIRE, NEVER USE A MATCH OR OPEN FLAME TO TEST THE GAS SUPPLY LINE, GAS VALVE INLET AND OUTLET PRESSURE AREAS OR THE THREADED PORTIONS OF THE BURNER ORIFICES FOR LEAKS.

21. Using a soap solution check the gas supply, gas valve inlet and outlet pressure areas, and threaded portions of the burner orifices for leaks. Repair any gas leaks detected.
22. Observe at least three ignition cycles to ensure smooth and quiet ignition.
23. Install the control access panel.

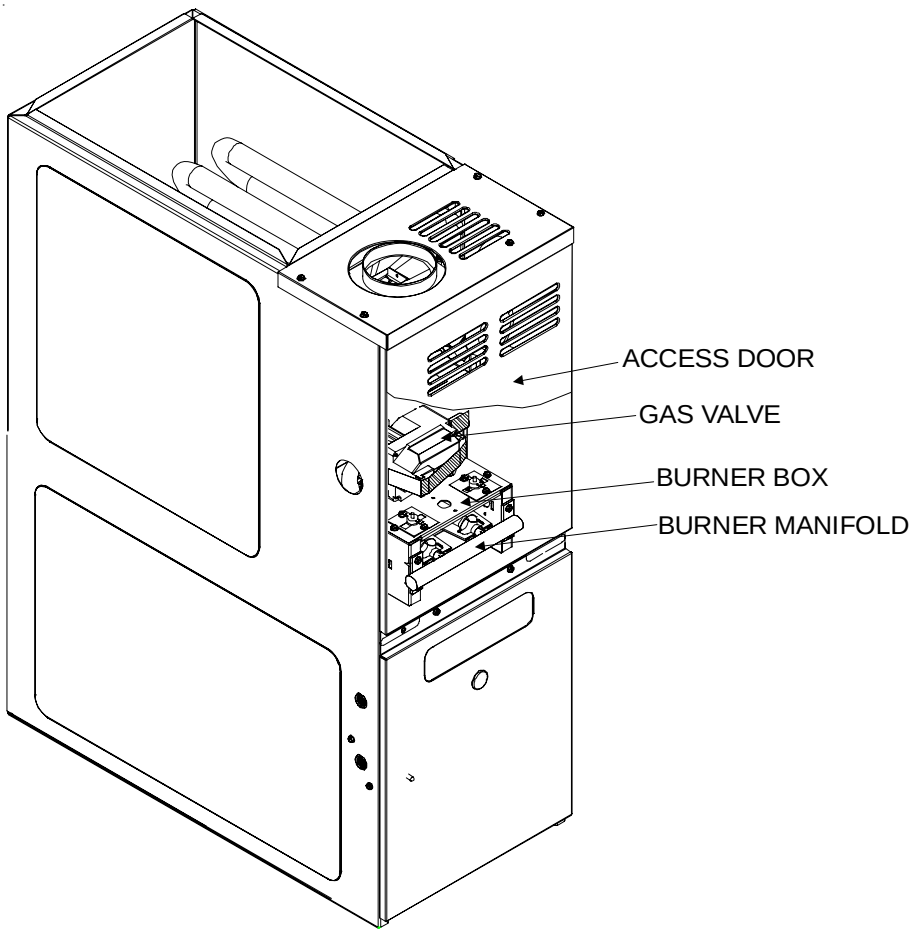

FIGURE 1

Note: Typical Up-flow Furnace. Actual Models May Differ.

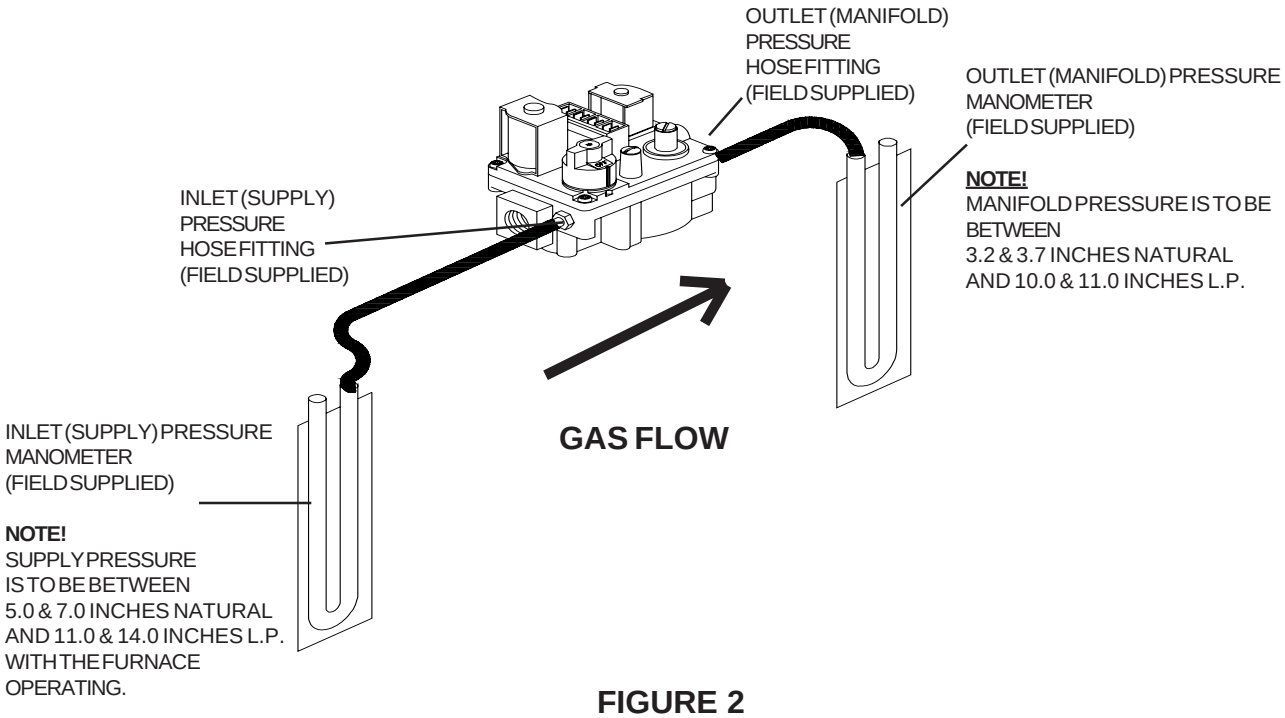

FIGURE 2

Tables 1, 2 and 3 are based upon the furnace input being reduced for altitudes above sea level. U.S. 4% per 1000 feet. Canada 10% derate for 2000-4500 feet. To determine input/burner, locate input rate on plate and divide by number of burners.

If specific input/burner is not listed, use the values of the next lower table (i.e. If input/burner is 24,500, use the values in Table1, if input/burner is 21, 800, use Table 3, etc.).

TABLE 1

INPUT/BURNER	22,500 BTUH NAT/20,OOO BTUH/L.P.							
	ELEVATION ABOVE SEA-LEVEL (FEET)							
	2000	**3000**	**4000**	**4500**	**5000**	**6000**	**7000**	**8000**
U.S. BURNER ORIFICE	44/55	44/55	45/56		45/56	46/57	47/58	47/58
CANADA BURNER ORIFICE	44/55			47/57				

TABLE 2

INPUT/BURNER	25,000 BTUH NAT/20,OOO BTUH/L.P.							
	ELEVATION ABOVE SEA-LEVEL (FEET)							
	2000	**3000**	**4000**	**4500**	**5000**	**6000**	**7000**	**8000**
U.S. BURNER ORIFICE	43/55	43/55	44/56		44/56	44/56	45/57	45/57
CANADA BURNER ORIFICE	43/55			46/57				

TABLE 3

INPUT/BURNER	20,000 BTUH NAT/20,OOO BTUH/L.P.							
	ELEVATION ABOVE SEA-LEVEL (FEET)							
	2000	**3000**	**4000**	**4500**	**5000**	**6000**	**7000**	**8000**
U.S. BURNER ORIFICE	45/55	47/55	47/56		47/56	48/57	48/58	49/58
CANADA BURNER ORIFICE	45/55			48/57				

NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE