

Gas Conversion Kit Instructions

Applies to: Model LDAP

General and Warnings

FOR YOUR SAFETY

— WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Leave the building immediately.
- Immediately call your gas supplier from a phone remote from the building. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

All gas conversion must be done by a qualified service person in accordance with these instructions and in compliance with all codes and requirements. In Canada, gas conversion shall be carried out in accordance with the requirements of the Provincial Authorities having jurisdiction and in accordance with the requirements of CSA-B149.1 and .2 installation code.

WARNING

Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operation, and maintenance instructions thoroughly before installing or servicing this equipment.

FOR YOUR SAFETY : The use and storage of gasoline or other flammable vapors and liquids in open containers in the vicinity of this appliance is hazardous.

DANGER

The conversion kit is to be selected and installed by a qualified service person in accordance with these instructions and in compliance with all codes and requirements of authorities having jurisdiction. Failure to follow instructions could result in death, serious injury and/or property damage. The qualified agency performing this work assumes responsibility for this conversion.

HAZARD INTENSITY LEVELS used in this manual.

1. **DANGER:** Failure to comply will result in severe personal injury or death and/or property damage.
2. **WARNING:** Failure to comply could result in severe personal injury or death and/or property damage.
3. **CAUTION:** Failure to comply could result in minor personal injury and/or property damage.

DANGER

The gas burner in this gas-fired equipment is designed to provide safe, complete combustion. However, if the installation does not permit the burner to receive the proper supply of combustion air, complete combustion may not occur. The result is incomplete combustion which produces carbon monoxide, a poisonous gas that can cause death.

Safe operation of indirect-fired gas burning equipment requires a properly operating vent system which vents all flue products to the outside atmosphere. FAILURE TO PROVIDE PROPER VENTING WILL RESULT IN A HEALTH HAZARD WHICH COULD CAUSE SERIOUS PERSONAL INJURY OR DEATH.

For all heater installations, always comply with the combustion air requirements in the installation codes and instructions. Model LDAP units installed in a confined space must be supplied with air for combustion as required by Code and in the heater installation manual. Combustion air at the burner should be regulated only by manufacturer-provided equipment. NEVER RESTRICT OR OTHERWISE ALTER THE SUPPLY OF COMBUSTION AIR TO ANY HEATER. MAINTAIN THE VENT SYSTEM IN STRUCTURALLY SOUND AND PROPER OPERATING CONDITION.

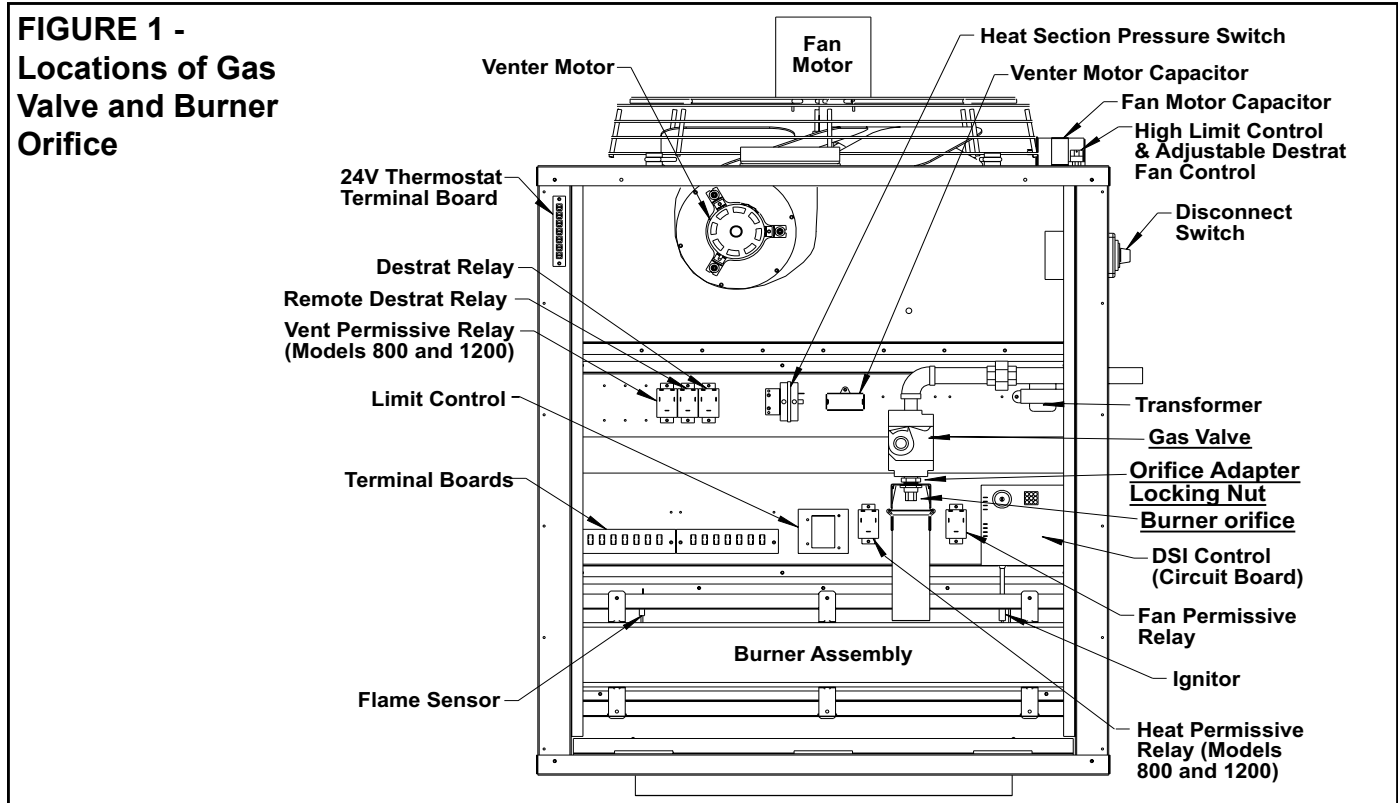
Application and Kit Selection

Gas Conversion Instructions

The gas conversion kits in these instructions are for Model LDAP Size 400, 800, and 1200 heaters equipped with a single-stage or a Size 400 heater with a two-stage gas valve. **See page 4 for a list of conversion kit components.**

1. Check kit contents for agreement with the parts list and the size of heater being serviced. (See the parts lists and application for each kit on page 4.)

Conversion of a unit using these kits will not alter the input rate. Refer to the rating plate on the heater for input rate and other appropriate information. **(NOTE: If adjusted for high altitude operation, input rate will be affected; for high altitude input ratings and capacities refer to TABLE 2, page 4.)**



2. Turn off the gas supply at a shutoff valve outside of the heater and turn off the electrical supply. Open the control access panel.

3. Install the Regulator Spring Kit (valve conversion kit)

To install the spring regulator conversion kit, follow the valve manufacturer's installation instructions that are included with the spring conversion kit. After a new regulator spring kit is installed, it is necessary to adjust the spring for the correct manifold pressure. This adjustment can only be made after the heater is in operation; instructions are included in Step No. 6.

WARNING

Regulator spring kits are not interchangeable. Each spring kit must be used only in the model and type of valve for which the kit is designated. Verify compatibility before installing the regulator spring kit.

4. Install Burner Orifice

WARNING

Do not attempt to drill orifice. Use factory-supplied orifice only.

Remove the factory-installed orifice and install the burner orifice from the kit. When removing or replacing a burner orifice, use two wrenches being careful not to damage the venturi tube and/or the bracket.

5. Turn on the electric and the gas. Relight, following the instructions on the heater. Check for gas leaks using a commercial leak detecting fluid or a rich soap and water solution. Leaks are indicated by the presence of bubbles. Check all connections. If a leak cannot be stopped by tightening, replace the part.
6. Adjust the manifold pressure. Follow these requirements and instructions to adjust manifold gas pressure.
 - 1) The correct pressure adjustment depends on the elevation at the installation. If you don't know the elevation, check with your local gas company.
 - 2) See TABLE 1 and determine the required manifold pressure.
 - 3) See FIGURE 2 and locate the 1/8" outlet pressure tap on the valve. Turn the knob on the top of the valve to "OFF". Connect a manometer to the 1/8" pipe outlet pressure tap in the valve. Use a water column manometer that is readable to the nearest tenth of

TABLE 1 - Manifold Pressures by Altitude

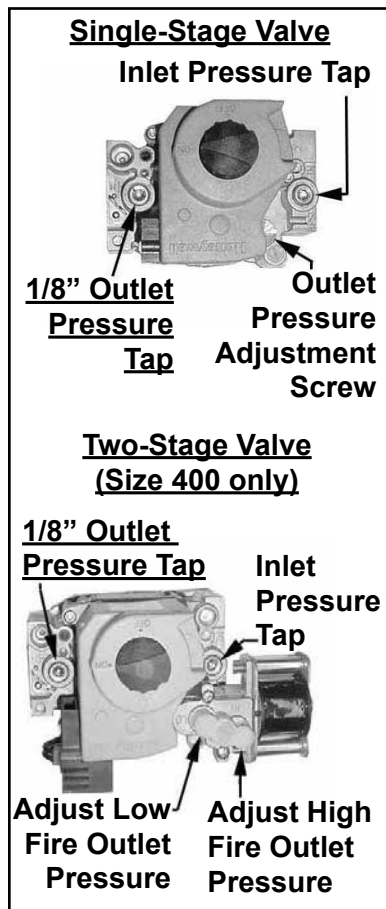
WARNING

Manifold gas pressure must never exceed 3.5" w.c. for natural gas or 10" w.c. for propane.

Manifold Pressure Settings by Altitude for the UNITED STATES					
Altitude		Natural Gas (inches w.c.)		Propane (inches w.c.)	
Feet	Meters	Single Stage and Two Stage High Fire	Two Stage Low Fire	Single Stage and Two Stage High Fire	Two Stage Low Fire
0-2000	0-610	3.5	2.0	10.0	5.6
2001-3000	611-915	3.1	1.7	8.8	5.0
3001-4000	916-1220	3.0	1.7	8.5	4.8
4001-5000	1221-1525	2.8	1.6	8.1	4.6
5001-6000	1526-1830	2.7	1.5	7.7	4.4
6001-7000	1831-2135	2.6	1.5	7.4	4.2
7001-8000	2136-2440	2.5	1.4	7.1	4.0
8001-9000	2441-2745	2.4	1.3	6.7	3.8
9001-10000	2746-3045	2.4	1.3	6.7	3.6

Manifold Pressure Settings by Altitude for CANADA					
Altitude		Natural Gas (inches w.c.)		Propane (inches w.c.)	
Feet	Meters	Single Stage and Two Stage High Fire	Two Stage Low Fire	Single Stage and Two Stage High Fire	Two Stage Low Fire
0-2000	0-610	3.5	2.0	10.0	5.6
2001-4500	611-1373	2.8	1.6	8.1	4.6

FIGURE 2 - Top View of Valves identifying Pressure Taps and Adjustment Screws



an inch. (NOTE: A manometer (fluid-filled gauge) is recommended rather than a spring type gauge due to the difficulty of maintaining calibration of a spring type gauge.)

- 4) **Single Stage and Two Stage High Fire** - Turn the knob on the top of the valve to "ON". Remove the cap from the pressure adjusting screw and adjust the manifold pressure to the pressure selected from **TABLE 1**. Adjust pressure by turning the regulator screw IN (clockwise) to increase pressure or OUT (counterclockwise) to decrease pressure.

Two Stage Low Fire - Disconnect the wire from the "HI" terminal on the gas valve and check the low fire pressure. Turn the regulator screw to adjust the low fire outlet pressure to the "Low Fire" pressure selected from **TABLE 1**. Re-connect the wire to the gas valve.

CAUTION: DO NOT bottom out the gas valve regulator adjusting screw. This can result in unregulated manifold pressure causing excess overfire and heat exchanger failure.

- 5) Turn up the thermostat. Cycle the burner once or twice to properly seat the adjustment spring in the valve. Re-check the pressure(s). When the outlet pressure is right for the installation, remove the manometer and replace the cap. Check for leakage at the pressure tap fitting.
- 6) With the heater operating, determine that the inlet pressure to the heater is between 5 and 13.5 inches w.c. for natural gas or between 10 and 13.5 inches w.c. for propane. Take this reading as close as possible to the heater. (The gas valves have an inlet pressure tap; see **FIGURE 4**.) If the inlet pressure is not within the specified range, the inlet pressure must be corrected and the manifold (outlet) pressure re-checked.
- 7) If the gas valve has been adjusted for operation above 2000 ft, find the High Altitude Adjustment label in the kit. Using a permanent marker, fill-in the appropriate information from **TABLE 2, page 4**. Select a location for the label on the outside of the heater access panel so that it will be conspicuous to anyone operating or servicing the unit. Be sure the surface is clean and dry and adhere the label. (NOTE: At altitudes from 0-2000ft/0-610M, this label is not used.)

WARNING

If the heater will be operated above 6000 ft (1830M), a high altitude pressure switch (Option DJ20) must be installed.

- 7. Check for safe and proper operation of the heater by observing operation for at least one complete cycle.

Instructions (cont'd)

- Fill in the information required on the gas conversion tape. Select a location near the rating plate. Be sure the surface is clean and dry and affix the tape to the heater. Close the access door.

TABLE 2 - Inputs and Capacities by Altitude

BTUH Inputs & Capacities by Altitude in the UNITED STATES for Model LDAP										
Altitude		Normal Input	Thermal Output Capacity	Minimum Input	Normal Input	Thermal Output Capacity	Minimum Input	Normal Input	Thermal Output Capacity	Minimum Input
Feet	Meters	Size 400			Size 800			Size 1200		
0 - 2000	0 - 610	400000	332000	300000	800000	664000	400000	1200000	996000	400000
2001 - 3000	611 - 915	376000	312080	282000	752000	624160	376000	1128000	936240	376000
3001 - 4000	916 - 1220	368000	305440	276000	736000	610880	368000	1104000	916320	368000
4001 - 5000	1221 - 1525	360000	298800	270000	720000	597600	360000	1080000	896400	360000
5001 - 6000	1526 - 1830	352000	292160	264000	704000	584320	352000	1056000	876480	352000
6001 - 7000	1831 - 2135	344000	285520	258000	688000	571040	344000	1032000	856560	344000
7001 - 8000	2136 - 2440	336000	278880	252000	672000	557760	336000	1008000	836640	336000
8001 - 9000	2441 - 2745	328000	272240	246000	656000	544480	328000	984000	816720	328000
9001 - 10000	2746 - 3045	320000	265600	240000	640000	531200	320000	960000	796800	320000

BTUH Inputs & Capacities by Altitude in the CANADA for Model LDAP										
Altitude		Normal Input	Thermal Output Capacity	Minimum Input	Normal Input	Thermal Output Capacity	Minimum Input	Normal Input	Thermal Output Capacity	Minimum Input
Feet	Meters	Size 400			Size 800			Size 1200		
0 - 2000	0 - 610	400000	332000	300000	800000	664000	400000	1200000	996000	400000
2001 - 4500	611 - 1373	360000	298800	270000	720000	597600	360000	1080000	896400	360000

The identifying model number can be found on the heater rating plate. When converting fuels, it is necessary that you have the complete heater model. **The rating plate identifies original equipment only so also compare the label on the gas valve with the description listed. If the description differs, before proceeding, contact your distributor.**

Natural TO Propane Kits

Natural TO Propane Conversion Kits				
Applies to:		Model LDAP 400, 800, and 1200 with Single-Stage Gas Valve(s)		
Kit P/N by Size			Applies to: Honeywell #VR8305K4241	
400	800	1200		
208877	208894	208895	Components	
Qty	Qty	Qty	P/N	Description
1	2	3	98720	Spring Kit, M/H 393691, for a VR105, VR205, & VR305 SINGLE-STAGE Valve
1	2	3	196905	Burner Orifice, 5.88mm
1	1	1	64391	Conversion Tape
1	1	1	37752	Propane Conversion Disk
1	1	1	197062	High Altitude Adjustment Label (used above 2000ft/610M only)
Applies to:		Model LDAP 400 with a Two-Stage Gas Valve		
Size 400			Applies to: Honeywell #VR8305N4297	
Kit P/N 208879				
Qty	P/N	Description of Components		
1	197207	Spring Kit, M/H 396021, for a TWO-STAGE Valve		
1	196905	Burner Orifice, 5.88mm		
1	64391	Conversion Tape		
1	37752	Propane Conversion Disk		
1	197062	High Altitude Adjustment Label (used above 2000ft/610M only)		

Propane TO Natural Kits

Propane TO Natural Conversion Kits				
Applies to:		Model LDAP 400, 800, and 1200 with Single-Stage Gas Valve(s)		
Kit P/N by Size			Applies to: Honeywell #VR8305K4258	
400	800	1200		
208878	208896	208897	Components	
Qty	Qty	Qty	P/N	Description
1	2	3	98721	Spring Kit, M/H 394588, for a VR105, VR205, & VR305 SINGLE-STAGE Valve
1	2	3	196897	Burner Orifice, 9.6mm
1	1	1	64391	Conversion Tape
1	1	1	1401	Natural Gas Disk
1	1	1	197062	High Altitude Adjustment Label (used above 2000ft/610M only)
Applies to:		Model LDAP 400 with a Two-Stage Gas Valve		
Size 400			Applies to: Honeywell #VR8305N4289	
Kit P/N 208880				
Qty	P/N	Description of Components		
1	197208	Spring Kit, M/H 396025, for a TWO-STAGE Valve		
1	196897	Burner Orifice, 9.6mm		
1	64391	Conversion Tape		
1	1401	Natural Gas Disk		
1	197062	High Altitude Adjustment Label (used above 2000ft/610M only)		

Specifications & illustrations subject to change without notice and without incurring obligations.

© Nortek Global HVAC, LLC 2017. All rights reserved.

All marks are the property of their respective organizations.

O'Fallon, MO | Printed in U.S.A. (11/17)

Form CP-LDAP-GC (11/17), PN 208881R6