

GAS CONVERSION KIT INSTALLATION FOR GAS-FIRED UNIT HEATERS

MODELS UBX, UBXC, UBZ, UDX, UDXC, UDZ, UDAP, UDAS, UDBP, AND UDBS

GENERAL INFORMATION

These gas conversion kits are for gas-fired unit heaters equipped with either a single-stage or two-stage gas valve. When converting fuels, it is necessary to have the complete heater model. The identifying model number can be found on the heater rating plate. The rating plate identifies only original equipment so also compare the label on the gas valve with the description listed.

Table 1. Model Configuration

Model	Configuration	Model	Configuration
UBX, UDBP	Standard power-vent blower-type	UBZ, UDBS	Separated-combustion blower-type
UDX, UDAP	Standard power-vent fan-type	UDZ, UDAS	Separated-combustion fan-type
UBXC	Convertible power-vent blower-type*	UDXC	Convertible power-vent fan-type*

*Standard units may be field-converted to separated-combustion units.

Important Safety Information

Refer to the installation manual provided with the heater for important safety information. Pay attention to all dangers, warnings, cautions, and notes highlighted in this manual. Safety markings should not be ignored and are used frequently throughout to designate a degree or level of seriousness.

⚠ DANGER ⚠

- 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 the CAN/CGA-B149.1 and CAN/CGA-B149.2 installation code.
- 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 that vents all flue products to the outside atmosphere. Failure to provide proper venting will result in a health hazard that could cause serious personal injury or death.
- For all heater installations, always comply with the combustion air requirements in the installation codes and instructions. Standard power vent heaters installed in a confined space must be supplied with air for combustion as required by code and in the heater installation manual. On separated-combustion heaters, install either the horizontal or vertical combustion air/vent system using the concentric adapter supplied. 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 or vent/combustion air system in structurally sound and proper operating condition.
- 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.

DO NOT DESTROY. PLEASE READ CAREFULLY. KEEP IN A SAFE PLACE FOR FUTURE REFERENCE.

GENERAL INFORMATION—CONTINUED

Heater Component Locations

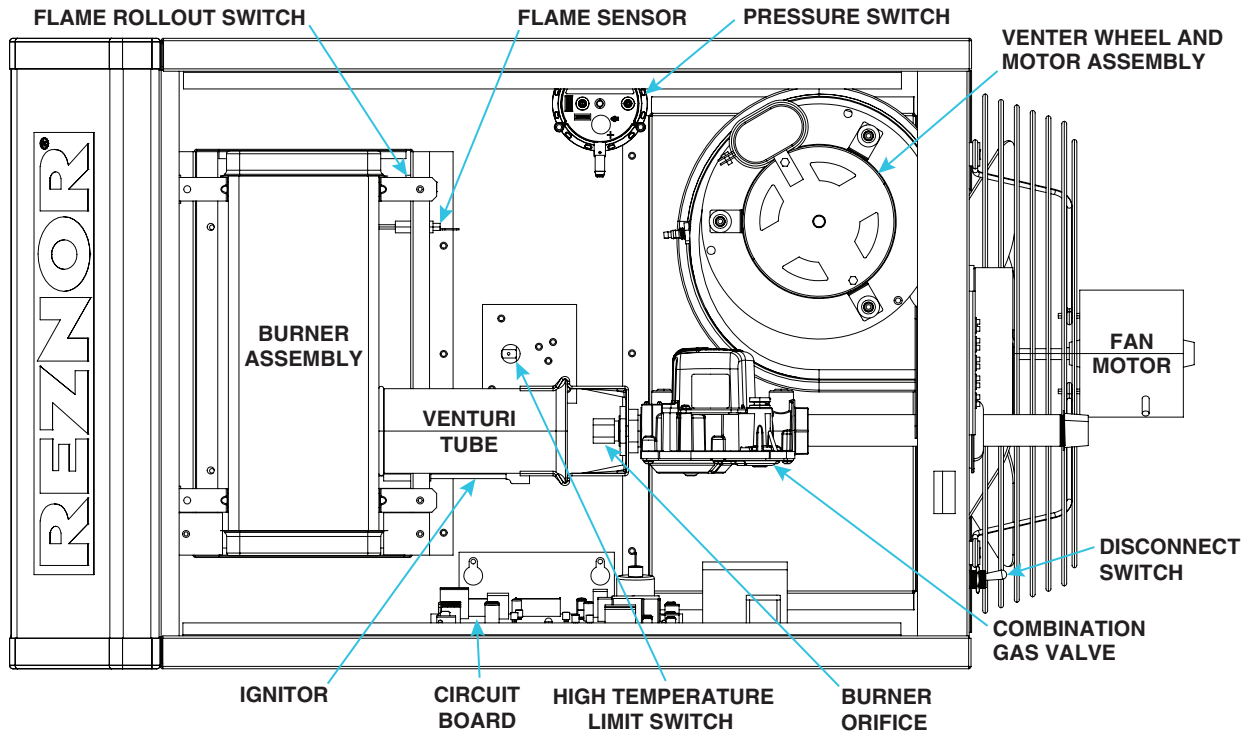


Figure 1. Heater Components

CONVERSION KIT SELECTION

⚠ 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.

Each conversion kit includes two or three spring kits and burner orifices for multiple unit sizes. Some parts will not be used—carefully select the parts to be used.

Table 2. Conversion Kit Common Components—All Models

Component	Description	PN
Tape	Conversion	64391
Disk	Propane (included in all NG to LP kits)	37752
	Natural gas (included in all LP to NG kits)	1401
Label	High-elevation adjustment (used only at installation elevations >2000 feet (>610 meters))	197062
Burner orifice	Refer to Table 3	

Table 3. Burner Orifices—All Models

Unit Size (MBTUh)	Model	Natural Gas		Propane	
		Orifice Size/Marking	PN	Orifice Size/Marking	PN
30	UDAP, UDAS, UDBP, UDBS	#37	196853	1.60 mm	196844
	UBX, UBZ, UDX, UDZ	#39	196852		
	UBXC, UDXC	#37	196853	1.65 mm	1043044
45	UDAP, UDAS, UDBP, UDBS	#30	196838	#48	196845
	UBX, UBZ, UDX, UDZ	3.10 mm	120144		
	UBXC, UDXC	3.20 mm	196847	#47	1043047
60	UDAP, UDAS, UDBP, UDBS	3.70 mm	196839	2.30 mm	196846
	UBX, UBZ, UDX, UDZ	#28	124969	2.25 mm	1034350
	UBXC, UDXC			3/32 inch	1043046
75	UDAP, UDAS, UDBP, UDBS	#19	196855	#39	196852
	UBX, UBZ, UDX, UDZ	#22	196361	#40	120137
	UBXC, UDXC	#20	120153	#39	196852
100	UDAP, UDAS, UDBP, UDBS	#10	120158	3.00 mm	196854
	UBX, UBZ, UDX, UDZ	#14	208247		
	UBXC, UDXC	#12	120157	#32	120141
125	UDAP, UDAS, UDBP, UDBS	#4	196840	3.20 mm	196847
	UBX, UBZ, UDX, UDZ	#10	120158	3.10 mm	120144
	UBXC, UDXC	#6	1043045	#30	196838
150	UDAP, UDAS, UDBP, UDBS	5.90 mm	131581	9/64-inch	196898
	UBX, UBZ, UDX, UDZ	5.60 mm	208243	3.50 mm	120148
	UBXC, UDXC				
175	UDAP, UDAS, UDBP, UDBS	E	196891	#24	196899
	UBX, UBZ, UDX, UDZ	6.00 mm	208245	#27	120149
	UBXC, UDXC	C	120164	#24	196899
200	UDAP, UDAS, UDBP, UDBS	6.80 mm	196892	4.10 mm	196900
	UBX, UBZ, UDX, UDZ	F	120167		
	UBXC, UDXC			#19	196855
225	UDAP, UDAS, UDBP, UDBS	6.95 mm	221121	11/64 inch	196901
	UBX, UBZ, UDX, UDZ				
	UBXC, UDXC				
250	UDAP, UDAS, UDBP, UDBS	L	208255	#14	196902
	UBX, UBZ, UDX, UDZ			4.60 mm	1034352
	UBXC, UDXC				
300	UDAP, UDAS, UDBP, UDBS	8.00 mm	221122	#8	196903
	UBX, UBZ, UDX, UDZ	7.80 mm	208253		
	UBXC, UDXC				
350	UDAP, UDAS, UDBP, UDBS	8.70 mm	221123	#3	196904
	UBX, UBZ, UDX, UDZ	8.50 mm	1034354	5.40 mm	1034353
	UBXC, UDXC				
400	UDAP, UDAS, UDBP, UDBS	9.60 mm	196897	5.80 mm	196905
	UBX, UBZ, UDX, UDZ	9.20 mm	1034355		
	UBXC, UDXC	9.60 mm	196897		

CONVERSION KIT SELECTION—CONTINUED

Table 4. NG to LP Kit-Specific Components for UBX, UBXC, UBZ, UDX, UDXC, and UDX Models

Component	Description	Gas Valve (Honeywell Model No.)															
		1/2-Inch, Single-Stage (VR8105K2942, VR8205K2957, or VR8215T1239)		1/2-Inch, Single-Stage (VR8105K2942, VR8205K2957, or VR8215T1239) or 1/2-Inch, Two-Stage (VR8105N2949 or VR8205N2921)		1/2-Inch, Single-Stage (VR8205K2957 or VR8215T1239) or 1/2-Inch, Two-Stage (VR8205N2921)		1/2-Inch, Single-Stage (VR8205K2957 or VR8215T1239), 3/4-Inch Single-Stage (VR8305K4241), or 1/2-Inch, Two-Stage (VR8205N2921 or VR8305N4297)		3/4-Inch Single-Stage (VR8305K4241) or 3/4-Inch, Two-Stage (VR8305N4297)							
		Unit Size (MBTUh)															
		30, 45		60, 75		100, 125		150, 175		200, 225, 250		300, 350, 400					
		Model															
		UBX, UBZ		UDX, UDZ		UBX, UBZ		UDX, UDZ		UBX, UBZ, UDX, UDZ							
		Kit PN															
		1036541R		1036536R		1036542R		1036537R		1036538R		1036539R		1036540R		1036543R	
		Model															
		UBXC, UDXC															
		Kit PN															
		1043184		1043185		1043186		1043187		1043188		1043189					
		Component PN															
		Spring kit	#393691 for single-stage valve VR8105, VR8205, or VR8305	98720		98720		98720		98720							
#396221 for single-stage valve VR8215	260605		260605		260605		260605		—								
#396021 for two-stage valve VR8105, VR8205, or VR8305	—		197207		197207		197207										
Air restrictor plate	1-3/16-inch (30 mm) opening	203078		—		—		—									
	1-3/8-inch (35 mm) opening	—		196687		—											
	1-9/16-inch (40 mm) opening	—		202051		—											
	1-3/4-inch (44 mm) opening	—		196688		196688											

Table 5. LP to NG Kit-Specific Components for UBX, UBZ, UDX, and UDX Models

Component	Description	Gas Valve (Honeywell Model No.)						
		1/2-Inch, Single-Stage (VR8105K2959, VR8205K2965, or VR8215T5214)	1/2-Inch, Single-Stage (VR85K2959, VR8205K2965, or VR8215T5214) or 1/2-Inch, Two-Stage (VR8105N2931 or VR8205N2913)		1/2-Inch, Single-Stage (VR85K2959, VR8205K2965, or VR8215T5214), 3/4-Inch Single-Stage (VR8305N4258), 1/2-Inch, Two-Stage (VR8105N2931 or VR8205N2913), or 3/4-Inch, Two-Stage (VR8305N4289)		3/4-Inch Single-Stage (VR8305N4258) or 3/4-Inch, Two-Stage (VR8305N4289)	
			Unit Size (MBTUh)					
		30, 45	60, 75	100, 125	150, 175	200, 225, 250	300, 350, 400	
		Kit PN						
		1036544R	1036545R	1036546R	1036547R	1036548R	1036549R	
		Component PN						
Spring kit	#394588 for single-stage valve VR8105, VR8205, or VR8305	98721		98721		98721		
	#396222 for single-stage valve VR8215	261651		261651		261651	—	
	#396205 for two-stage valve VR8105, VR8205, or VR8305	—	197208	197208		197208		

Table 6. NG to LP Kit-Specific Components for UDAP, UDAS, UDBP, and UDDBS Models

Component	Description	Gas Valve (Honeywell Model No.)							
		1/2-Inch, Single-Stage (VR8105K2942, VR8205K2957, or VR8215T1239)	1/2-Inch, Single-Stage (VR8105K2942, VR8205K2957, or VR8215T1239) or 1/2-Inch, Two-Stage (VR8105N2949 or VR8205N2921)		1/2-Inch, Single-Stage (VR8205K2957 or VR8215T1239) or 1/2-Inch, Two-Stage (VR8205N2921)		1/2-Inch, Single-Stage (VR8205K2957 or VR8215T1239), 3/4-Inch Single-Stage (VR8305K4241), or 1/2-Inch, Two-Stage (VR8205N2921 or VR8305N4297)		3/4-Inch Single-Stage (VR8305K4241) or 3/4-Inch, Two-Stage (VR8305N4297)
			Unit Size (MBTUh)						
		30, 45	60, 75	100, 125	150, 175	200, 225, 250	300, 350, 400		
		Model							
		UDAP, UDAS	UDBP, UDDBS	UDAP, UDAS	UDBP, UDDBS	All			
		Kit PN							
1036536R	1036541R	1036537R	1036542R	1036538R	1036539R	1036540R	1036543R		
Component PN									
Spring kit	#393691 for single-stage valve VR8105, VR8205, or VR8305	98720		98720		98720			
	#396221 for single-stage valve VR8215	260605		260605		260605		—	
	#396021 for two-stage valve VR8105, VR8205, or VR8305	—	197207	197207		197207			
Air restrictor plate	1-3/8-inch (35 mm) opening	196687	—	—	—	—			
	1-3/16-inch (30 mm) opening	—	203078	—	—	—			
	1-3/4-inch (44 mm) opening	—	196688	—	196688*	—			
	1-9/16-inch (40 mm) opening	—	—	202051	—	—			

*The plate from kit PN 1036538R is not used on unit size 125 models. The plate from kit PN 1036539R is not used on unit size 175 models for residential or commercial applications.

CONVERSION KIT SELECTION—CONTINUED

Table 7. LP to NG Kit-Specific Components for UDAP, UDAS, UDBP, and UDBS Models							
Component	Description	Gas Valve (Honeywell Model No.)					
		1/2-Inch, Single-Stage (VR8105K2959, VR8205K2965, or VR8215T5214)	1/2-Inch, Single-Stage (VR85K2959, VR8205K2965, or VR8215T5214) or 1/2-Inch, Two-Stage (VR8105N2931 or VR8205N2913)		1/2-Inch, Single-Stage (VR85K2959, VR8205K2965, or VR8215T5214), 3/4-Inch Single-Stage (VR8305N4258), 1/2-Inch, Two-Stage (VR8105N2931 or VR8205N2913), or 3/4-Inch, Two-Stage (VR8305N4289)	3/4-Inch Single-Stage (VR8305N4258) or 3/4-Inch, Two-Stage (VR8305N4289)	
		Unit Size (MBTUh)					
		30, 45	60, 75	100, 125	150, 175	200, 225, 250	300, 350, 400
		Kit PN					
		1036544R	1036545R	1036546R	1036547R	1036548R	1036549R
Component PN							
Spring kit	#394588 for single-stage valve VR8105, VR8205, or VR8305	98721	98721		98721		
	#396222 for single-stage valve VR8215	261651	261651		261651	—	
	#396205 for two-stage valve VR8105, VR8205, or VR8305	—	197208	197208		197208	

INSTALLATION

Install the conversion kit in accordance with the following steps. Ensure that the kit is correct for the size of the heater being serviced.

1. Remove gas supply and electrical power:
 - a. Turn OFF gas supply at shutoff valve outside of heater.
 - b. Turn OFF electrical power.
 - c. Open control access panel.
2. Install regulator spring kit:

⚠ WARNING ⚠

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

- a. Select regulator spring kit that corresponds with gas valve on heater. All gas conversion kits include one or two regulator spring kits for single-stage valve and one regulator spring for two-stage valve. Other included regulator spring kits will not be used.
- b. Install regulator spring kit in accordance with gas valve manufacturer's instructions (included with regulator spring kit).

⚠ CAUTION ⚠

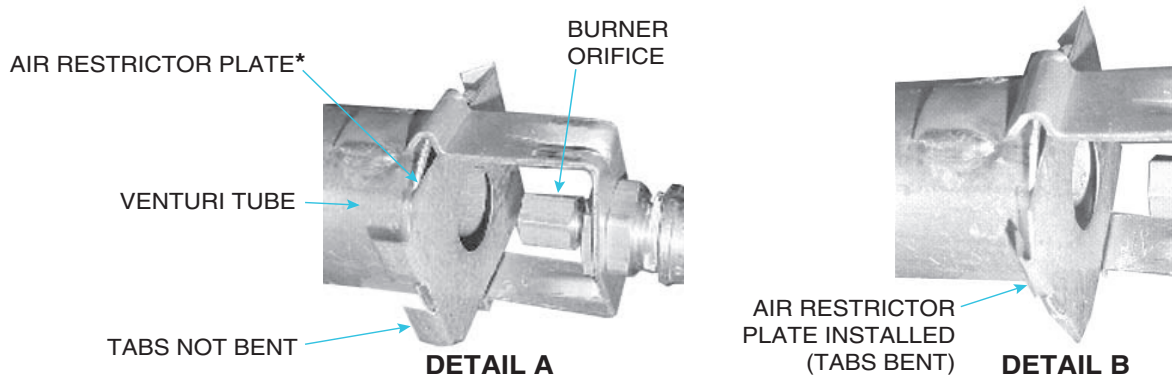
After a new regulator spring kit is installed, it is necessary to adjust the spring by adjusting the manifold pressure. This adjustment can be made only after the heater is in operation (refer to step 7).

3. Remove or install air restrictor plate as necessary and replace burner orifice:
 - a. Carefully remove existing burner orifice (see [Figure 2](#), DETAIL A).

⚠ DANGER ⚠

- The air restrictor plate **MUST BE INSTALLED** when converting unit sizes 30, 45, 60, 75, 100, and 150 (all models) and unit size 125 (models UDBP, UDBS, UBX, UBXC, and UBZ) to propane.
- The air restrictor plate **MUST BE REMOVED** when converting unit sizes 30, 45, 60, 75, 100, and 150 (all models) and unit size 125 (models UDBP, UDBS, UBX, UBXC, and UBZ) to natural gas.
- For these models/unit sizes, the failure to install or remove the air restrictor plate in accordance with the following directions can cause death or injury and/or property damage.

- b. For unit sizes 30, 45, 60, 75, 100, and 150 (all models) and unit size 125 (models UDBP, UDBS, UBX, UBXC, and UBZ), proceed to step c. For all other models/unit sizes, proceed to step e.
- c. If converting from propane to natural gas, remove air restrictor plate as follows. If converting from natural gas to propane, install air restrictor plate in accordance with step d.
 - (1) See [Figure 2](#), DETAIL B to locate air restrictor plate held in place on venturi tube by its bent tabs.
 - (2) Use pliers to carefully unbend tabs as shown in [Figure 2](#), DETAIL A and remove air restrictor plate.
- d. For natural gas to propane conversion, install air restrictor plate as follows:
 - (1) Refer to [Table 4](#) or [Table 6](#) to select correct air restrictor plate. Slide plate in place over venturi tube opening so that its 45-degree angle is hooked over rear of venturi tube (see [Figure 2](#)).
 - (2) While holding plate in position, use pliers to carefully bend tabs to lock plate in place (see [Figure 2](#), DETAIL B). Ensure that air restrictor is aligned and secure.



*USED ONLY ON UNIT SIZES 30, 45, 60, 75, 100, AND 150 (ALL PROPANE MODELS) AND UNIT SIZE 125 (PROPANE MODELS UDBP, UDBS, UBX, UBXC, AND UBZ).

Figure 2. Burner Orifice and Air Restrictor Plate

- e. For all conversions, select replacement burner orifices in accordance with [Table 3](#). All conversion kits include two or three burner orifices. Other included orifice(s) will not be used.

⚠ WARNING ⚠

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

- f. Install replacement burner orifice (see [Figure 2](#), DETAIL A).

INSTALLATION—CONTINUED

⚠ CAUTION ⚠

If the heater will be operated at an elevation >6,000 feet (>1,830 meters), a high-elevation pressure switch must be installed.

NOTES:

- If the installation elevation is >6,000 feet (>1,830 meters), verify that the elevation on the rating plate or high-elevation label is >6,000 feet (>1,830 meters). If the rating plate or label does not indicate an elevation of >6,000 feet (>1,830 meters), order and install the appropriate high pressure switch kit.
 - If the heater is equipped for installation at an elevation of >6,000 feet (>1,830 meters) and is being installed at a lower elevation, order and install the appropriate switch.
 - Contact your distributor (refer to replacement parts manual) to select the factory-authorized replacement part.
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4. For installations at elevations >6,000 feet (>1,830 meters), replace pressure switch in accordance with **Pressure Switch Replacement** section in installation/operation/maintenance manual provided with unit.
 5. Restore electrical power and gas supply:
 - a. Turn ON electrical power.
 - b. Turn ON gas supply and relight heater, following instructions on heater.
 6. Perform leak test:
 - a. Check all connections for gas leaks using commercial leak-detecting fluid or rich soap and water solution. Leaks are indicated by presence of bubbles.
 - b. If leak is detected, tighten connection. If leak cannot be stopped by tightening connection, replace part(s).
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NOTES:

- Conversion of a unit using these kits does not alter the input rate. Refer to the rating plate on the heater for the input rate and other appropriate information.
 - If adjusted for high-elevation operation, the input rate will be affected.
 - The high-elevation adjustment label is not used on units operated at elevations of $\leq 2,000$ feet (≤ 610 meters).
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7. Adjust manifold (outlet) gas pressure in accordance with **Measure and Adjust Manifold (Outlet) Gas Pressure** section in installation/operation/maintenance manual provided with unit.
 8. Close control access panel.

