

SELECTION AND INSTALLATION INSTRUCTIONS

conversion from natural gas to propane gas for models PD/BD, PDP/BDP, PV/BV, DJE/DHE, IJE/IHE with control codes 11-14 or 30-33 and built 4/91 or after, DFG, IFG, NFG, DFS, IFS duct furnances and system units with digits 11 & 12 of N1 or S1

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 or explosion may result causing property damage, personal injury or loss of life. The qualified service agency performing this work assumes responsibility for the proper conversion of this furnace with this kit.

AVERTISSEMENT

Cet ensemble de conversion ne doit être installé que par le représentant d'un organisme qualifié et conformément aux instructions du fabricant et à tous les codes et exigences applicables de l'autorité compétente. Quiconque ne respecte pas à la lettre les instructions dans le présent manuel risque de déclencher un incendie ou une explosion entraînant des dommages matériels, des lésions corporelles ou la perte de vies humaines. L'organisme qualifié qui effectue les travaux est responsable de la conversion correcte de ce générateur d'air chaud à l'aide de cet ensemble.

The propane kits appearing in this bulletin are for use with units which are going to be installed between 0 and 2000 ft. elevation. If a unit is to be installed at higher elevations, a special "high altitude" propane orifice kit must be ordered in addition to the propane conversion kits shown here. See Bulletin 75-535 for selection of "high altitude" orifice kits.

When converting units to propane at elevations over 2000 ft., the main burner orifices in the propane conversion kit must be replaced with the orifices from the "high altitude" orifice kit. The remaining components of the propane kit, those other than the main burner orifices, are still required to complete the conversion to propane gas, regardless of the elevation at which the unit is installed.

Identifying the Model, Control Code and Date of Manufacture

Figure 2.1, shown on the next page, is an example of a typical serial plate. Markings pertinent to verifying correct application of the conversion kit are identified and explained in detail. **All prerequisites must be satisfied before the unit is deemed convertible.**

1. The first two or three characters in the model number box are letters. These letters identify the style of the heater. If any of the following model prefixes appear in this box, the unit is potentially convertible: PD/BD, PDP/BDP, PV/BV, DJE, IJE, DFG, IFG, NFG, DFS, IFS.
2. Next, the number 11, 12, 13, 14, 30, 31, 32, or 33 must be the control code or digits 11 and 12 of the model number are N1 or S1. This is item (2) in Figure 2.1. Any other number code disqualifies the unit for conversion.
3. Item (3) in Figure 2.1 in the serial number box designates the date the unit was built. In Figure 2.1, the numbers 3601 are shown. This number is interpreted as the thirty sixth week of 2001. Prior to January 1995, the digits preceding the year represent month of manufacture. After January 1995, the (2) digits proceeding the year represent the week of manufacture. Any serial number dated 4/91 or after is acceptable for conversion.

Figure 2.1
Typical Serial Plate

① Modine Manufacturing Company 1221 Magnolia Ave., Buena Vista, VA 24416; Phone: 540-261-2166		UNIT HEATER FOR INDUSTRIAL / COMMERCIAL USE AEROTHERME POUR USAGE INDUSTRIEL / COMMERCIAL				Made in U.S.A.	
MODEL NUMBER NUMERO DE MODELE ③ PD 250AA01①①	MIN. INPUT BTU/HR DEBIT CALORIFIQUE MIN. BTU/HEURE 6.0 IN. W.C. P.O.C.D'E	VOLTS 115	AMPS 5.7	PHASE 1	HERTZ 60		
SERIAL NUMBER NUMERO DE SERIE 300110①3601-0978	MIN. INLET PRESS. FOR PURPOSE OF INPUT ADJUSTMENT PRESSION D'ALIMENTATION EN GAZ MIN. ADMISE 3.5 IN. W.C. P.O.C.D'E	CATEGORY CATEGORIE I	DESIGN COMPLIES WITH UNIT HEATER STANDARD: ANS Z83.8 - 96 CGA-2.6-M96				
TYPE OF GAS TYPE DE GAZ Natural	MAXIMUM EXTERNAL STATIC PRESSURE PRESSION STATIQUE EXTERIEUR MAXIMUM 0.0 IN. W.C. P.O.C.D'E	APPROVALS ACCEPTED BY CITY OF NEW YORK: MEA 293-96-E					
0 TO 2000 FT. 0 ET 610 M.	(IN CANADA) 2000 TO 4500 FT. 610 ET 1370 M.	MINIMUM CLEARANCE TO COMBUSTIBLE MATERIAL DEGAGEMENT MINIMUM POUR MATIERES COMBUSTIBLES	PENNSYLVANIA APPROVAL NO. 3465				

Selection of the Proper Kit

Referring to the model number box on the serial plate in Figure 2.1 (above), the prefix letters and succeeding numbers which are needed for kit selection are PD250.

The letters identify the model, and the numbers indicate the size of the unit. Referring to Tables 2.1, 2.2, or 2.3 locate the model

type column (i.e. PD, BD, etc.). Working with Table 2.1 and the row labeled PD/BD, move right searching for the proper model size. Read the kit number suffix directly below the model size for a PD250. Add this suffix (-9) to the base part number for the propane conversion kit shown in the heading of Table 2.1. The correct kit for a PD250 with Control Code 11, is 3H034670-9.

Table 2.1
Natural Gas to Propane Gas Conversion Kit Selection Guide
Base Kit Number – 3H034670...(Choose correct suffix -1, -2, -3, etc...)

Model Type	Model Size											
PD/BD, PDP/BDP	30	50	75	100	125	150	175	200	250	300	350	400
Suffix	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12

Table 2.2
Natural Gas to Propane Gas Conversion Kit Selection Guide (For units manufactured after April 1, 1991)
Base Kit Number – 3H33749...(Choose correct suffix -1, -2, -3 etc., per instructions, before ordering propane conversion kits.)

Model Type	Model Size														
PAE/BAE	30	50	75	100	125	145	–	175	200	225	–	250	300	350	400
Suffix	-1	-2	*-14	-4	-5	-6	–	-7	-8	-9	–	-10	-11	-12	-13
PV/BV	30	50	75	100	125	145	–	175	200	–	–	250	300	350	400
Suffix	-1	-2	-14	-4	-5	-6	–	-7	-8	–	–	-10	-11	-12	-13
DJE/DHE	–	–	75	100	125	–	150	–	200	225	–	250	300	350	400
Suffix	–	–	-14	-15	-16	–	-6	–	-8	-17	–	-10	-11	-18	-13

* For units manufactured after September, 1993. For units manufactured prior to this date, consult the factory.

Table 2.3
Natural Gas to Propane Gas Conversion Kit Selection Guide
Base Kit Number – 3H036483...(Choose correct suffix -1, -2, -3 etc...)

Model Type	Model Size										
DFG/IFG/NFG, DFS/IFS	75	100	125	150	175	200	225	250	300	350	400
Suffix	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11

Installation of Kit

CAUTION

Gas supply shall be shut off prior to disconnecting the electrical power, before proceeding with the conversion. Failure to do so could result in fire, explosion or electrical shock.

Conversion of any unit is the responsibility of, and the risk of the person making the conversion.

General

1. Shut off gas supply to the unit. Disconnect the electrical power to the unit.
2. For codes 11, 12, 13, 14 or if digit 11 of the model number is S or T and digit 12 is 1, disconnect the pilot gas tube and thermocouple lead at the combination gas control. For codes 30, 31, 32, 33 or if digit 11 of the model number is N or P and if digit 12 is 1, disconnect the pilot gas tube at the combination gas control and the ignition cable(s) at the ignition control.
3. Remove burner assembly.

For PD/BD, PDP/BDP, and PV/BV Models

Lower bottom pan to expose burner and manifold (see Figure 3.1).

For codes 11, 12, 13, or 14, disconnect pilot gas tube and thermocouple lead at the controls. For codes 30, 31, 32, or 33, disconnect the pilot gas tube at the combination gas control and the ignition cable(s) at the ignition control.

Remove the two burner retaining pins holding the burner in place (see Figure 3.2). The burner can then be easily lowered from the unit. In replacing the burner, be certain that the slots at the front of the burner are located properly on their shoulder rivets and that the burner retaining pins are put back into their proper locations.

After removing burner assembly, proceed with step #4, page 4.

For Indoor Duct Furnace Models

On DHE/IHE models, lower the controls enclosure cover and disconnect the pilot gas supply line and thermocouple at the gas valve. On models DJE/IJE, DFG/IFG/NFG, DBG/IBG, and DCG/ICG models, the gas controls are exposed. On models DFS/IFS, remove lower access door to expose gas controls and burner.

The burner may be removed from either side of the duct furnace. To remove the burner, remove all of the sheet metal screws holding the side burner access panel in place. (**Note:** with the side access panel screws removed, the access panel is free to move, be careful not to drop the panel.)

Figure 3.1
Hinged Bottom for Burner Service

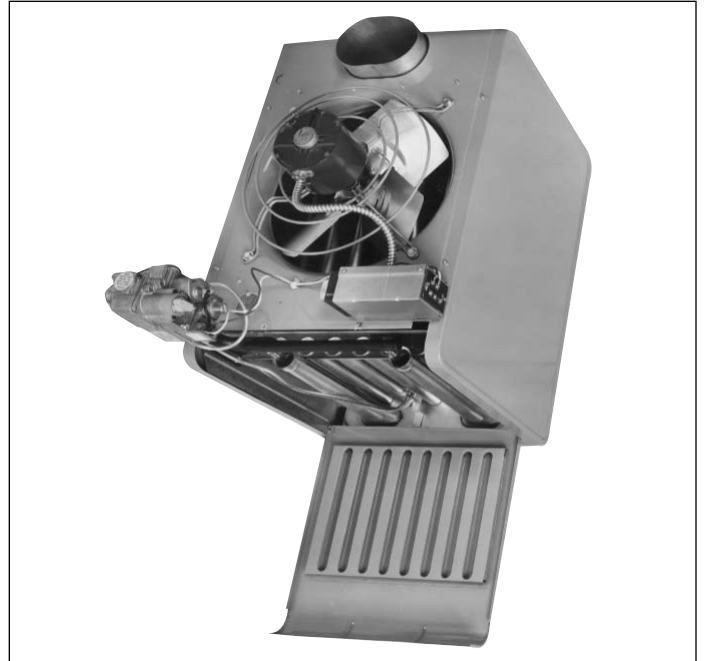
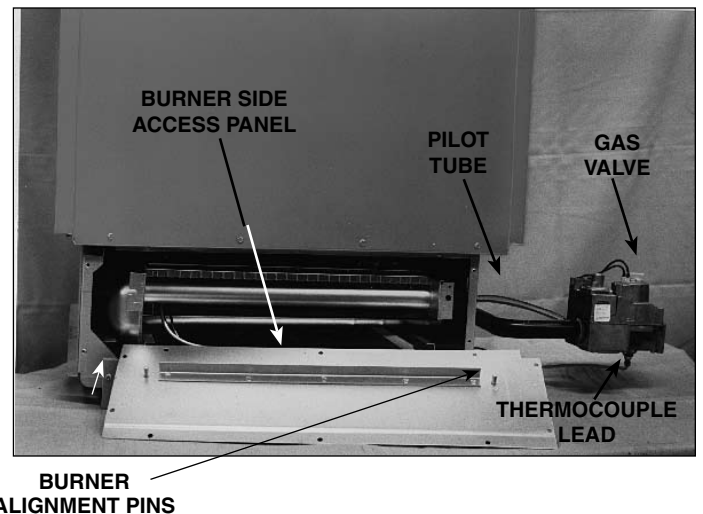


Figure 3.2
Manifold Adjustment



Figure 3.3



Remove the side access panel to expose the furnace burner assembly.

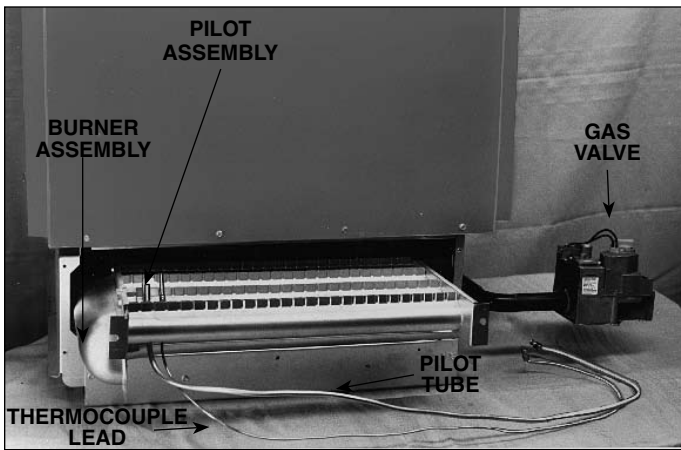
For DJE, IJE, DHE, and IHE carefully thread the pilot tube and the thermocouple leads through the combustion air slot (at the rear of the unit) into the burner box so they may be drawn out with the burner.

Slide the complete burner assembly out of the burner box. The complete burner and pilot assembly are now free for service (see Fig. 4.1).

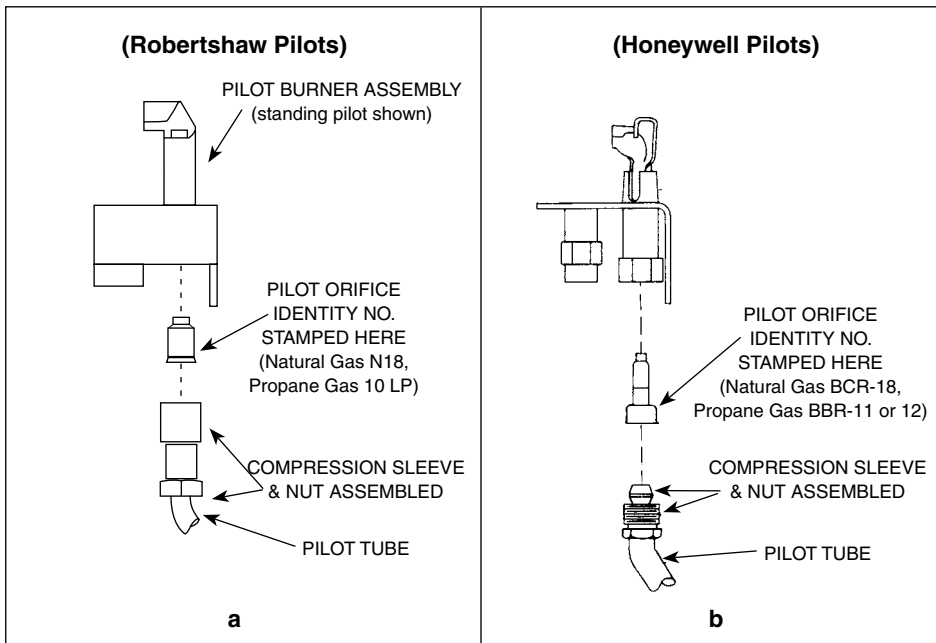
To replace the burner, follow the above steps in reverse order, being careful to align the burner assembly properly on the alignment pins on the access panels on both sides of the duct furnace (see Fig. 3.3).

- Remove pilot gas tube at the pilot, and exchange pilot orifice (see Figure 4.3). For Robertshaw pilots, replace the pilot orifice stamped N18 with the pilot orifice supplied in the conversion kit stamped LP10 (see Figure 4.2 section a). For Honeywell pilots, replace the pilot orifice stamped BCR-18 with the pilot orifice supplied in the conversion kit stamped BBR - 11 or 12 (see Figure 4.2 section b).

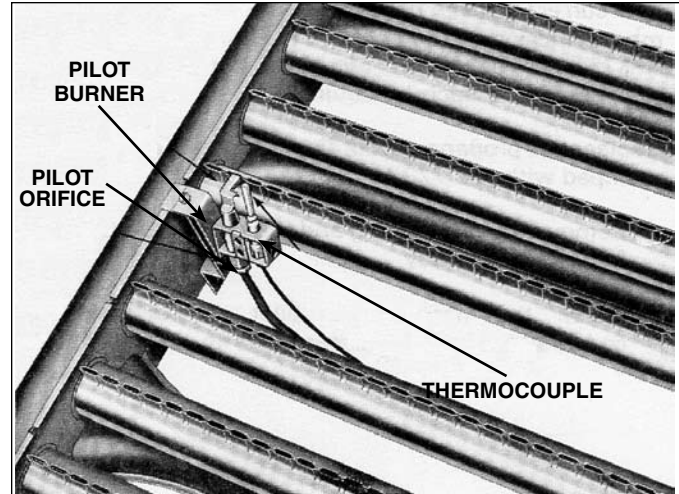
Figure 4.1



**Figure 4.2
Pilot Orifices**



**Figure 4.3
Pilot**



- Verify that pilot is oriented to main burner as shown in Fig. 4.3.
- Exchange main burner orifice(s) and install air shutters (see Figure 4.4). Check the orifice number stamped on each orifice. Be sure that this number is the same number indicated on the kit parts list for the kit being installed. (See Table 5.1 or 5.2).

**Figure 4.4
Burner Orifices and Air Shutters**

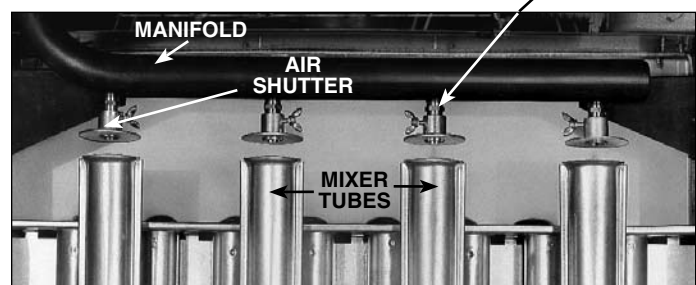


Table 5.1 – Conversion Kit Parts List, Natural to Propane

Kit 3H034670 (-)	Qty	Part Number	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Regulator Kit for Honeywell VR8200, VR8300, VR8204, VR8304	1	393691		x	x	x	x	x	x	x	x	x	x	x
Regulator Kit for Honeywell V800, VR800, VR8440	1	391937											x	x
Regulator Kit for Robertshaw 7200ER, 7200IPER	1	78776	x	x	x	x	x	x	x	x				
Regulator Kit for Robertshaw 7000BER/BDER/ERHC/DERHC	1	85478									x	x	x	x
Regulator Kit for Robertshaw 7222IPER	1	54302	x	x	x	x	x							
Regulator Kit for White-Rogers 36E, 36C	1	92-0659	x	x	x	x	x	x	x	x	x	x	x	x
Main Burner Orifice Drill Size	()	5H54751 Qty	52 (1)	45 (1)	39 (1)	45 (2)	43 (2)	39 (2)	43 (3)	42 (3)	36 (3)	39 (4)	41 (5)	42 (6)

Table 5.2 – Conversion Kit Parts List, Natural to Propane (For units manufactured after April 1, 1991)

Kit No. 3H33749 (-)	Qty	Part Number	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14	-15	-16	-17	-18			
Regulator Kit for Honeywell VR8200 VR8300, VR8204, VR8304	1	393691						X		X		X		X	X	X	X	X	X				
Regulator Kit for Honeywell V800, VR800, VR8440	1	391937	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Regulator Kit for Robertshaw 7200ER, 7200IPER	1	78776								X	X	X	X	X									
Regulator Kit for Robertshaw 7000BER/BDER/ERHC/DERHC	1	85478	X	X	X	X	X	X	X	X													
Regulator Kit for Robertshaw 7222IPER	1	54302	X	X		X	X	X	X	X	X	X	X	X	X					X			
Main Burner Orifice Drill Size	()	5H54751B... Qty.	52 (1)	45 (1)	49 (2)	45 (2)	42 (2)	45 (3)	43 (3)	40 (3)	43 (4)	42 (4)	43 (5)	39 (5)	40 (6)	37 (1)	45 (2)	48 (3)	37 (3)	43 (6)			
Carton Label	1	5H73133C...	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
Parts Common To Kits: (Table 5.1 and Table 5.2)		Description											Qty.									Part Number	
		Honeywell Pilot Orifice											1									Orifice Stamp BBR-11	
		Robertshaw Pilot Orifice											1									Orifice Stamp 10 LP	
		Air Shutter											Same As Main Burner Orifice Qty.										3H20634A2
		Gas Designation Disc											1									5H604841A	
		Conversion Kit Rating Plate											1									5H73734A	
		Instruction Sheet											1									5H72298A	

Table 5.3 – Conversion Kit Parts List, Natural to Propane

Kit No. 3H36483 (-)	Qty	Part Number	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11										
Regulator Kit for Honeywell VR8204, VR8200A, VR8300A	1	5H71926A2	X	X	X	X	X	X	X	X	X	X	X										
Regulator Kit for Honeywell V800A	1	5H7057A2											X										
Regulator Kit for Robertshaw 7200IPER, 7200ER	1	5H73135A2	X	X	X	X	X	X															
Regulator Kit for Robertshaw 700BDER, 700DERHC, 7000BER, 7000ERHC	1	5H73134A2								X	X	X	X										
Regulator Kit for White Rodgers 36E36, 36C38, 36C03	1	5H73134A2	X	X	X	X	X	X	X	X	X	X	X										
Main Burner Orifice Drill Size	()	5H54751B Qty	37 (1)	45 (2)	42 (2)	45 (3)	43 (3)	40 (3)	37 (3)	42 (4)	37 (4)	43 (6)	40 (6)										
Carton Label	1	5H78020B	1	2	3	4	5	6	7	8	9	10	11										
Parts Common To Kit: (Table 5.3)		Description											Qty.			Part Number							
		Robertshaw Pilot Orifice											1			5H71962A2							
		Air Shutter											Same As Main Burner Orifice Qty.										3H20634A2
		Gas Designation Disc											1			5H604841A							
		Conversion Kit Rating Plate											1			5H73734A							
		Instruction Sheet											1			5H72298A							

Figure 7.1
Gas Designation Disc



- 22. See the original rating plate for the unit heater's rated input. The input can be verified at any time simply by checking for the correct main burner orifice size and manifold pressure. This information is presented on the conversion kit rating plate.

