

## SELECTION AND INSTALLATION INSTRUCTIONS

### conversion from propane gas to natural gas for models HD/HDB, HDS/HDC, PTP, PTS/BTS, or PTC (For direct spark ignition, control code 21 and 22)



## WARNING

1. All field gas piping must be pressure/leak tested prior to operation. Never use an open flame. Use a soap solution or equivalent for testing.
2. Gas supply shall be shut-off and the electrical power disconnected before proceeding with the conversion. Failure to do so could result in fire, explosion or electrical shock.

## IMPORTANT

1. The use of this manual is specifically intended for a qualified installation and service agency. All installation and service of these kits must be performed by a qualified installation and service agency.
2. These instructions must also be used in conjunction with the Installation and Service manual originally shipped with the appliance being converted, in addition to any other accompanying component supplier literature.

The natural gas kits appearing in this bulletin are for use with units which are going to be installed between 0 and 2,000 ft. elevation. If a unit is to be installed at higher elevations, a special "high altitude" natural orifice kit must be ordered in addition to the natural conversion kits shown here. See Modine Bulletin 75-537 for selection of "high altitude" orifice kits.

When converting units to natural at elevations over 2,000 ft., the main burner orifices in the natural conversion kit must be replaced with the orifices from the "high altitude" orifice kit. The remaining components of the natural gas kit, those other than the main burner orifices, are still required to complete the conversion to natural gas, regardless of the elevation at which the unit is installed.

### Identifying the Model, Control Code and Date of Manufacture

Figures 1.1 and 1.2 explain model number and serial number designations. Markings pertinent to verifying correct application of the conversion kit are identified and explained in detail. **The following prerequisites must be satisfied before the unit is deemed convertible:**

1. The first three characters in the model number must be HD, HDB, HDS, HDC, PTP, PTS, BTS, or PTC.
2. The control code for the unit must be 21 or 22 (control code 21 only for model PTC).
3. Finally, the serial number calls out the date the unit was built. Any unit manufactured after the 20th week of 2007, is acceptable for conversion.

Figure 1.1 - Model Number Designations

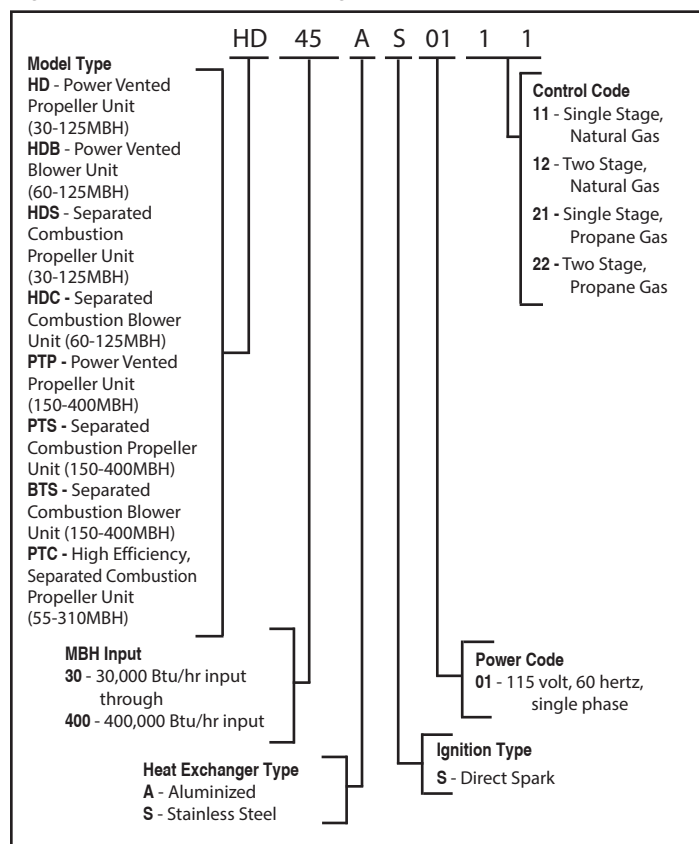
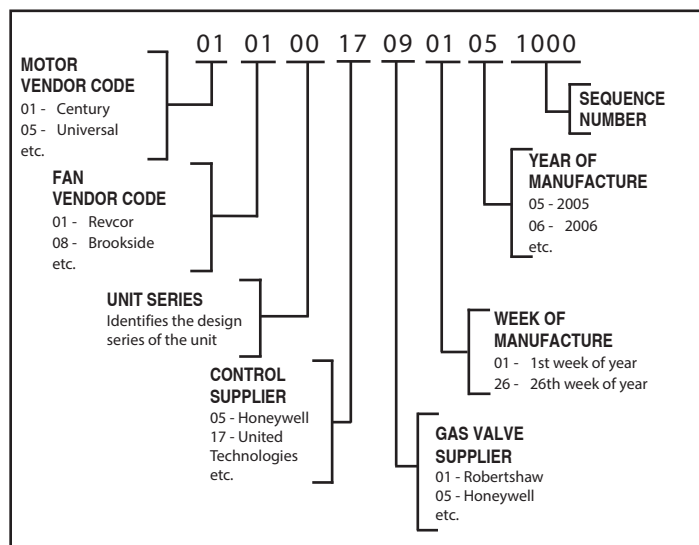


Figure 1.2 - Serial-Number Designations



**Table 2.1 - Propane to Natural Conversion Kit for Models HD/HDB, HDS/HDC, PTP, PTS/BTS Control Code 21 and 22**

Model Size	30	45	60	75	100	125	150	175	200	250	300	350	400
Kit Suffix ①	-1	-1	-1	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Drill Size	49	49	49	49	45	42	42	42	38	39	36	38	36
Orifice Qty in Kit	5	5	5	5	5	5	6	7	7	9	9	12	12
Regulator Kit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pressure Switch	No	No	No	No	No	No	No	No	No	No	No	No	No
Item Code	1-Stage (CC21)	53214			53292	53296	55410	55411	55412	55413	55414	55415	55416
	2-Stage (CC22)	Not Available			53224	53225	53226	55424	55425	55426	55427	55428	55429

① Single stage kit part numbers start with 3H037276 and two stage kit part numbers start with 3H037327. Both end with the suffix shown.

**Table 2.2 - Propane to Natural Conversion Kit for Model PTC Control Code 21**

Model Size ②	-	-	55	65	85	110	135	156	180	215	260	310	-	
Kit Suffix ①	-	-	-19	-20	-17	-18	-11	-12	-13	-14	-15	-16	-	
Drill Size	-	-	50	1.75mm	47	43	43	41	41	42	38	41	-	
Orifice Qty in Kit	-	-	4	5	5	5	6	6	7	9	9	12	-	
Regulator Kit	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	
Pressure Switch	-	-	No	No	No	No	No	No	No	No	No	No	-	
Item Code	1-Stage (CC11)	-	-	66898	66900	65947	65949	57907	65951	57909	57910	57911	57912	-

① Single stage kit part numbers start with 3H037276 and two stage kit part numbers start with 3H037327. Both end with the suffix shown.

② Conversion kit not available for PTC155.

### Selection of the Proper Kit

Example: Convert a HDS125AS0122 for use with natural gas. The appropriate model size is HDS125 with a Control Code of 22. Referring to Table 2.1, in the column for the 125 model size, it can be seen that the kit suffix is -3. The full kit number is 3H037327-3 and the Item Code is 53226.

### Installation of Kit

- Read these instructions carefully. Failure to follow instructions can damage product or cause a hazardous condition.
- This conversion kit must be installed by a qualified service person. The qualified service agency performing this work assumes responsibility for the proper conversion of this appliance with this kit.
- This kit contains the following:
  - Natural gas orifices
  - A conversion rating plate
  - A combination gas control (gas valve) conversion kit containing:
    - a cap screw
    - spring
    - an adjustment screw
    - label
- Prior to servicing shut off the gas supply to the unit. Disconnect the electrical power to the unit.
- Remove the access panel to the heater.
- Disconnect the gas supply piping to the heater.
- Remove the electrical connections from the gas valve. This should not require the use of tools.
- Remove the four (4) screws holding the manifold to the burner box. This will allow for the removal of the manifold and gas valve assembly.
- Remove the orifices from the manifold assembly and place them where they can be used if the heater should need to be converted back to propane gas.
- Insert the natural orifices from the kit into the manifold assembly. If you are converting a model size below 75 there will be extra orifices, which should be discarded. Tighten the orifices using a wrench so that they are gas tight.

- Convert the combination gas valve by following the manufacturer's instructions in the regulator kit.
- Affix the Natural Rating Plate label that came with the kit on the heater, near the serial plate on the same panel as the common replacement parts label.
- Place the manifold assembly back on the burner box using the four (4) screws.
- Replace the electrical connections to the gas valve.
- Verify that the igniter and sensor are in the same location and have not been damaged.
- Connect the gas supply piping to the heater using two wrenches so as to not place strain on the unit heater gas manifold.

### Check

- See the original rating plate for the unit heater's rated input and verify by checking the correct main burner orifice size and manifold pressure. This information is presented on the conversion kit rating plate and in Tables 2.1 and 2.2.
- Remove the inlet and outlet pressure tap plugs and place pressure taps on both the inlet and outlet pressure tap of the gas valve.
- Connect a pressure-measuring device capable of reading inches of water column on both the inlet and outlet pressure tap.
- Place the unit in operation. Verify the proper ignition sequence. The inlet pressure should be 3" - 5" water column. The manifold pressure should be 3.5" water column.
- There are no adjustments that can be made to the burner flame. Some yellow in the flame is acceptable as long as no carbon (black soot) is being formed.
- Turn the heater off and replace the inlet and outlet pressure tap plugs.
- Place the heater back into service and leak test the inlet and outlet pressure tap plugs as well as the connection between the gas valve and the manifold pipe and supply piping to the valve.



**Commercial Products Group**  
 Modine Manufacturing Company  
 1500 DeKoven Avenue  
 Racine, Wisconsin 53403-2552  
 Phone: 1.800.828.4328 (HEAT)  
 www.modinevac.com