

# HE II and HE/VHE Series 1-3

## Blower Motor/Cover Plate/ Wheel Assembly Replacement Kit Instructions

The following symbols are used in these instructions to indicate presence of hazards which can cause severe personal injury, death or substantial property damage.



These instructions and kit are for use by a qualified installer/service technician. Read all instructions before making replacement. Failure to follow all instructions in proper order can result in severe personal injury, death or substantial property damage.

### Contents of kit:

Blower motor/cover plate/wheel assembly  
Silicone sealant (GE 108 or 808; D. C. 732 or 700™)  
Screws to secure assembly

### A. Remove old parts and install new parts:



Shut off main gas valve and disconnect power to boiler. Failure to do so can result in severe personal injury, death or substantial property damage.

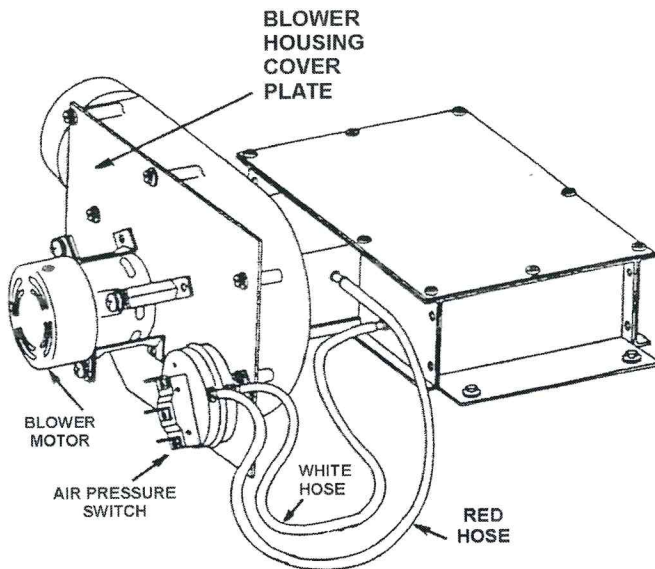
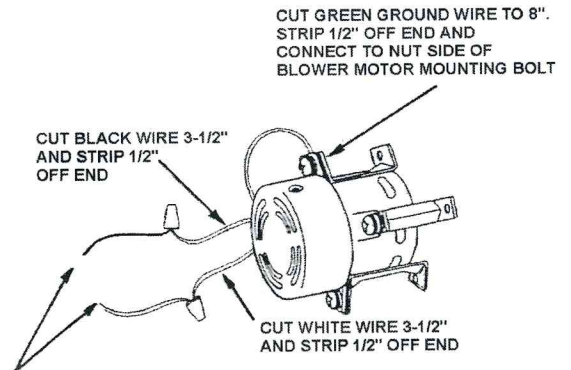


FIGURE 1

1. Remove jacket front and top panels.
2. Disconnect both air pressure switch hoses at air pressure switch. Remove and save air pressure switch for re-installation.
3. Disconnect wiring from blower motor:
  - a. **HE II** - unplug wiring harness from control module.
  - b. **HE or VHE** - cut off wires 2 inches from existing blower motor. Do not disconnect wires from boiler.
4. Carefully remove and discard old blower motor/ cover plate/ wheel assembly.
5. Scrape off old silicone sealant from blower housing, without removing protective green coating on housing.
6. Apply new silicone sealant around entire edge of blower housing.
7. Install new blower motor/cover plate/wheel assembly, using new screws in kit. Re-install air pressure switch.
8. Reconnect hoses to air pressure switch as shown in Figure 1.
9. Connect wiring:
  - a. **HE II** - plug wiring harness from motor into control module.
  - b. **HE or VHE** - See Figure 2. NOTE: Discard 4-pin connector and wires cut from new motor.



WIRES FROM BOILER - STRIP 1/2" OFF END AND USE WIRE NUTS TO PAIR BOILER AND BLOWER MOTOR WIRES:

**HE/VHE SERIES 3** - BLACK TO WHITE WITH BLACK STRIPE OR SMOOTH WHITE  
WHITE TO WHITE RIBBED

**HE/VHE SERIES 1 and 2** - BLACK TO BLACK  
WHITE TO BLACK RIBBED

FIGURE 2

CONTINUED ON OTHER SIDE

## B. Follow check-out procedure:

1. With thermostat set below call for heat, apply power to boiler.
2. Test ignition system shut-off device:

- **Boilers with electronic spark pilot burners (see Figure 3)** - connect manometer to outlet side of gas valve. Raise thermostat setting to initiate call for heat, allow for normal start-up cycle to occur and main burners to ignite. With main burners on, manually shut off gas supply at manual main shut-off gas valve. Burners should go off. Open manual main shut-off gas valve. Manometer should confirm there is no gas flow. Pilot will relight, flame sensing element will sense pilot flame and main burners will reignite.

- **Boilers with HSI igniters (not shown)** - make sure gas supply is shut off at manual main shutoff valve. Connect voltmeter to gas valve terminals. Set thermostat to call for heat. Igniter will heat up for about 20 seconds on HE II boilers (45 seconds on HE/VHE boilers). Near end of heat-up time, 24VAC will show at gas valve for about 6 seconds on HE II boilers (7 seconds on HE/VHE boilers), then return to 0 VAC.

3. Follow operating instructions to restart system.

### 4. Boilers with electronic spark pilot burners - See

Figure 3.

Proper pilot burner flame will exhibit:

- a. Blue flame.
- b. Inner cone engulfing thermocouple.

**Improper** pilot burner flame will be caused by any of the following conditions:

- a. Overfired - large flame, lifting or blowing past thermocouple.
- b. Underfired - small flame, thermocouple not engulfed by inner cone.
- c. Lack of primary air - yellow flame tip.
- d. Thermocouple not heating properly.

### 5. Check for proper main burner flame. See Figure 4.

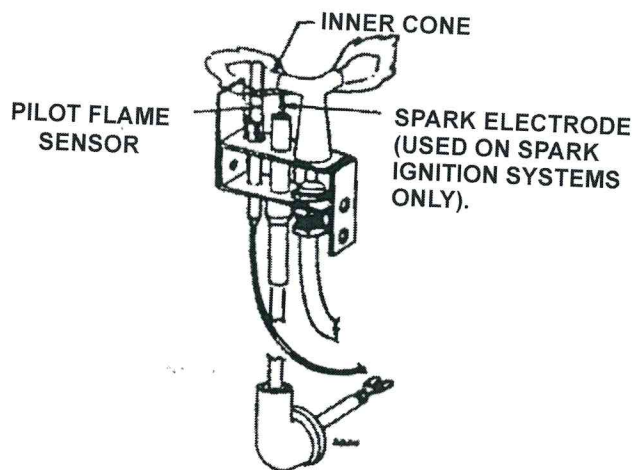
Yellow-orange streaks may appear - caused by dust.

**Improper** main burner flame will exhibit any of the following conditions:

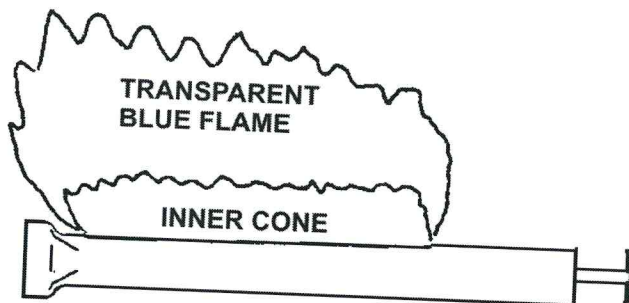
- a. Over fired - large flame.
- b. Underfired - small flame.
- c. Lack of primary air - yellow tipping on flame; sooting will occur.

6. Test limit control: while burners are operating, move dial on limit control below actual water temperature. Burners should go off. Circulator should continue to operate. Raise dial above boiler water temperature and burners should reignite.

7. Test additional field-installed controls: If boiler has a low water cut-off, additional high limit or other controls, test for operation as outlined by the control manufacturer.



TYPICAL PILOT BURNER FLAME  
FIGURE 3



TYPICAL MAIN BURNER FLAME  
FIGURE 4

Burners should be operating and should go off when controls are tested. Circulator should continue to operate. When controls are restored, burners should re-ignite.

8. Set limit control to system temperature requirements.
9. Check that boiler cycles with thermostat. Raise to highest setting and verify boiler goes through normal start-up. Lower to lowest setting and verify boiler turns off.
10. Observe several operating cycles for proper operation.
11. Set room thermostat(s) to desired room temperature.

## C. Re-install front and top jacket panels.



# VHE

## Inducer Service Part Information

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### Hazard definitions

The following defined terms are used throughout these instructions to bring attention to the presence of hazards of various risk levels or to important information concerning the life of the product.

**NOTICE**

Indicates special instructions on installation, operation or maintenance that are important but not related to personal injury, death or substantial property damage.

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**NOTICE**

**To the Installer/Homeowner:**

This draft inducer can be used on the boiler models HE, VHE, or HE II. This "Notice" pertains to the boiler model VHE only.

The original draft inducer used on the VHE boiler was supplied with a stainless steel wheel which is no longer available.

The draft inducer supplied in the kit is supplied with a galvanized steel wheel and may have a reduced life due to flue gas condensate corrosion.