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## GAS FURNACE KITS AND ACCESSORIES

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# MOTOR CONTROL MODULE REPLACEMENT KITS

## INSTALLATION INSTRUCTIONS FOR MOTOR CONTROL MODULE REPLACEMENT KITS FOR G60UHV, G60DFV & G61MPV UNITS EQUIPPED WITH A 2.3 OR EON VARIABLE SPEED MOTOR

### ⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer (or equivalent), service agency or the gas supplier.

### Shipping & Packing List

#### Package 1 of 1 contains the following:

- 1 - Replacement control module
- 2 - 2.45" (62 mm) Mounting screws
- 2 - 2.76" (70 mm) Mounting screws
- 1 - Adapter ring

### Application

These module replacement kits are used to replace the control module on a 2.3 or EON variable speed blower motor.

All replacement control modules look alike; however, each module is factory-programmed to be used with a specific motor. It is very important to make sure that you use the correct replacement module. **USE OF THE WRONG CONTROL MODULE MAY RESULT IN UNEXPECTED UNIT OPERATION.** Refer to table 1 to ensure that you are matching the correct replacement module kit with your unit. In addition, a sticker affixed to the blower motor identifies the correct replacement kit that is to be used with that particular unit. Check the module replacement kit number against the number identified on that sticker before continuing with the replacement.

### Installation

### ⚠ CAUTION

As with any mechanical equipment, personal injury can result from contact with sharp sheet metal edges. Be careful when you handle this equipment.

#### Control Module Replacement

- 1 - Disconnect electrical power to unit. Wait five minutes before continuing service procedures to avoid electrical shock. This will allow internal capacitors time to fully discharge.
- 2 - Remove blower access panel.
- 3 - Slide blower assembly forward to access blower motor wiring. It is not necessary to remove blower motor from blower assembly.
- 4 - Unplug the 16-pin and 5-pin connectors from the motor control. See Figure 1 for location.
- 5 - Remove the two hex head screws and carefully rotate the control module to gain access to the 3-pin plug. Squeeze the plug release latch and gently pull the plug out of the control module. **Do not pull on the wires.**

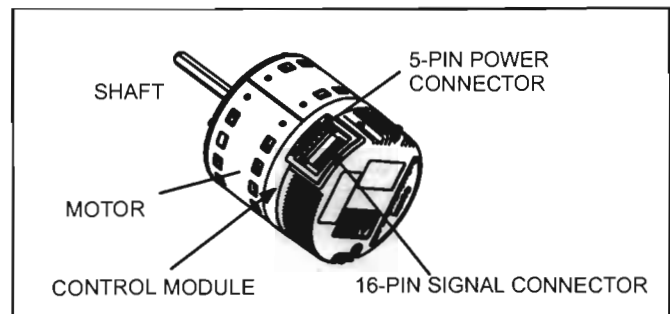
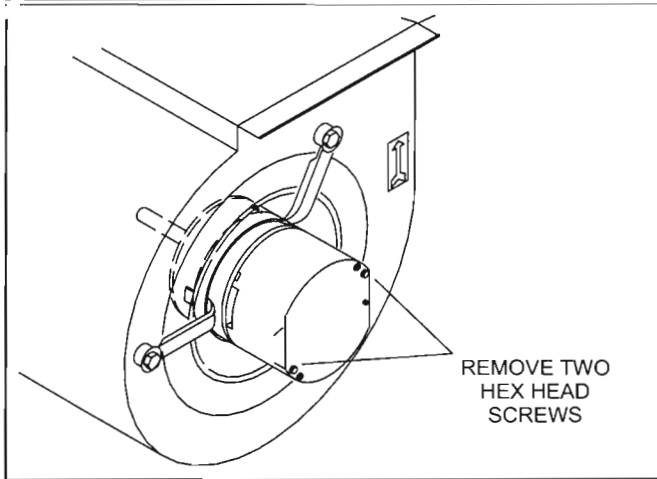


Figure 1. Module Connectors



**Table 1**  
**Module Replacement Kits**

Unit Model No.	Kit Catalog No.	Module Part No.
G60UHV-36A-070(X) G60UHV-36B-090 G60DFV-36A-070(X) G60DFV-36B-090	10M07	103839-01
G60UHV-60C-090(X) G60DFV-60C-090(X) G60UHV-60C-110(X) G60DFV-60C-110(X) G60UHV-60D-135 G60DFV-60D-135	10M08	103839-03
G61MPV-36B-045 G61MPV-36B-070 G61MPV-36C-090	10M07	103839-01
G61MPV-60C-090 G61MPV-60C-110 G61MPV-60D-135 G61MPV-60C-091 G61MPV-60C-111	10M08	103839-03
G61MPVT-36B-070	10M07	103839-01
GG1MPV-T060 G61MPVT-090 G61MPVT-110 G61MPVT-135	10M08	103839-03



**Figure 2. Fasteners**

**Motor Testing**

Ensure that motor windings are not damaged by performing the following tests:

**NOTE** - If your ohm meter is not an auto-ranging type, set it to the highest ohm scale (100k ohms or greater) before performing tests.

**TEST A**

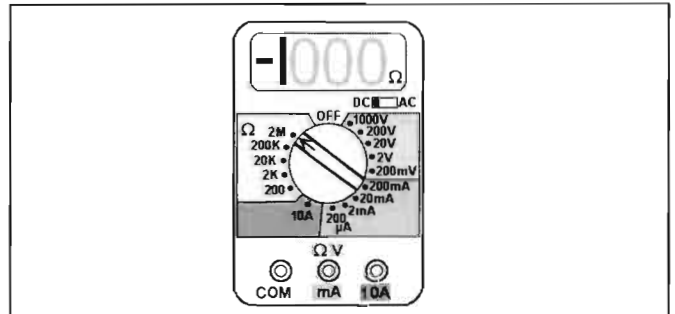
Measure the resistance between each of the three motor leads (3-pin plug) and the unpainted part of the end shield.

**If the winding resistance to ground is <100k ohms, replace the motor and control module.**  
**If the resistance to ground is >100k, the motor windings are fine. Proceed to Test B.**

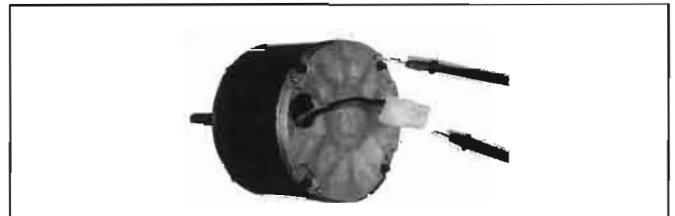
**Ohm Meter Range**

Scale	Measurement Range	
	in words	ohms
2M	two megohm -- two million ohms	0-2,000,000
200k	two hundred kilohm -- two hundred thousand ohms	0-200,000
20k	twenty kilohm -- twenty thousand ohms	0-20,000
2k	two kilohm -- two thousand ohms	0-2,000
200	two hundred ohm	0-200

**Table 2**



**Figure 3. Typical Digital Multimeter**



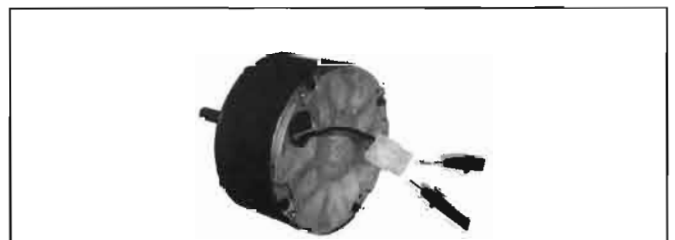
**Figure 4. Test A**

**TEST B**

Use an ohmmeter to measure the motor phase-to-phase resistance by checking these combinations of the the 3-pin motor plug. For the purpose of this test, start at either end of the connector as lead 1.

- 1 - The lead-to-lead resistance across any two leads should be less than 20 ohms.
- 2 - Each lead-to-lead resistance should be the same.

If the measured resistance is greater than 20 ohms, replace the motor and control module.



**Figure 5. Test B**

## CONTROL MODULE INSTALLATION ON ECM 2.3 MOTOR

Again, check the replacement module kit number to make sure it matches the number given on the sticker on the blower motor. If the kit numbers match, continue. Use the provided 2.76" (70 mm) mounting screws to replace the ECM 2.3 control.

- 1 - Examine the equipment to see if there is an obvious reason for the failure. Is there any sign of corrosion on the inside or outside of the casting? If so, this is evidence of possible water damage. Make sure the unit is properly leveled and that drains are unplugged.
- 2 - Place the adapter ring on top of the replacement control module. Align the adapter notch with the tab on the control connector. See figure 6. DO NOT use notch close to weld seam as this may cause interference with control connector flange.
- 3 - Carefully insert the motor 3-pin plug into the receptacle on the replacement module until it latches. The 3-pin plug will click when it latches properly. Verify that the wires will not back out of the plug.
- 4 - Place the control with the adapter ring onto existing ECM 2.3 motor. Make sure the notch in the adapter ring lines up with the tab on the motor enshield. See figure 7.



Figure 6. Adapter ring on control

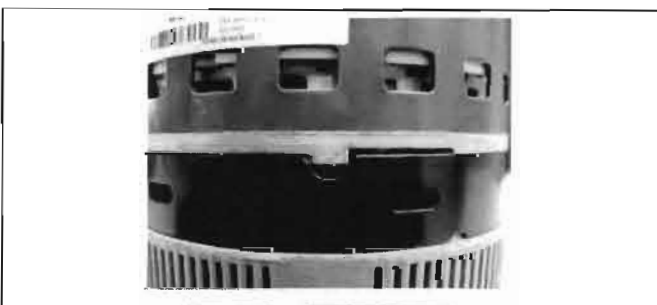


Figure 7. Adapter notch lined up with motor tab

- 5 - Use the provided 2.76" (70 mm) screws to secure the replacement module to the motor housing. Tighten to 15-19 inch pounds.
- 6 - Make sure that the blower motor assembly is properly oriented and that there is a suitable drain loop in all cables.
- 7 - Slide the blower assembly back into the cabinet. Plug the 16-wire harness into the replacement module. Make sure the plug is properly positioned and that it latches securely.
- 8 - Connect the 5-pin power plug into the control module. Make sure it is properly oriented. It should plug in easily and snap latched. **Reversal of this plug will cause immediate failure of the control module.**
- 9 - After the replacement control module has been installed, restore electrical power to the unit and verify that the new control module is operating properly in all modes.

## CONTROL MODULE INSTALLATION ON EON

Again, check the replacement module kit number to make sure it matches the number given on the sticker on the blower motor. If the kit numbers match, continue. Use the provided 2.45" mounting screws to replace the EON control.

- 1 - Examine the equipment to see if there is an obvious reason for the failure. Is there any sign of corrosion on the inside or outside of the casting? If so, this is evidence of possible water damage. Make sure the unit is properly leveled and that drains are unplugged.
- 2 - Carefully insert the motor 3-pin plug into the receptacle on the replacement module until it latches. The 3-pin plug will click when it latches properly. Verify that the wires will not back out of the plug.
- 3 - Use the provided 2.45" (62 mm) screws to secure the replacement module to the motor housing. Tighten to 15-19 inch pounds (1.7 - 2.2 kg-fm).
- 4 - Make sure that the blower motor assembly is properly oriented and that there is a suitable drain loop in all cables.
- 5 - Slide the blower assembly back into the cabinet. Plug the 16-wire harness into the replacement module. Make sure the plug is properly positioned and that it latches securely.
- 6 - Connect the 5-pin power plug into the control module. Make sure it is properly oriented. It should plug in easily and snap latched. **Reversal of this plug will cause immediate failure of the control module.**
- 7 - After the replacement control module has been installed, restore electrical power to the unit and verify that the new control module is operating properly in all modes.

