

INSTALLATION INSTRUCTIONS

ECM MOTOR CONTROL MODULE KIT

NOTE: Read the entire instruction manual before starting the installation.

SAFETY CONSIDERATIONS



WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury, death and/or property damage.

The ability to properly perform maintenance on this equipment requires certain knowledge, mechanical skills, tools, and equipment. If you do not possess these, do not attempt to perform any maintenance on this equipment other than those procedures recommended in the Home Owner's Information Manual.

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may cause death, personal injury, or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Have a fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes, the current editions of the National Fuel Gas Code (NFGC) NFPA 54/ANSI Z223.1 and the National Electrical Code (NEC) NFPA 70.

In Canada, refer to the current editions of the National Standards of Canada CAN/CSA-B149.1 and Canadian Electrical Code CSA C22.1.

Recognize safety information. This is the safety-alert symbol



. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words **DANGER**, **WARNING**, and **CAUTION**. These words are used with the safety-alert symbol. **DANGER** identifies the most serious hazards which **will** result in severe personal injury or death. **WARNING** signifies hazards which **could** result in personal injury or death. **CAUTION** is used to identify unsafe practices which **may** result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

INTRODUCTION

This instruction covers the use of the ECM motor control module for the Fan Coils, Small Package Products or Gas Furnaces.

DESCRIPTION AND USAGE

The ECM motor control module kit is designed to allow replacement of only the control module of the ECM motor. This is typically the section of the motor that fails. Each replacement module is specific to a particular application. This module can be installed while the winding half of the motor remains mounted to the blower housing.



WARNING

ELECTRICAL OPERATION HAZARD

Failure to follow this warning could result in damage to this equipment, personal injury, or death.

Only trained and qualified personnel should install, repair or service this equipment.



WARNING

CUT HAZARD

Failure to follow this warning could result in personal injury.

Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing and gloves when handling parts.

CHECK EQUIPMENT

Make sure that the compatible motor part number shown on the replacement control module matches the part number on the motor.

DISCONNECT LINE VOLTAGE

Disconnect line voltage from the unit being serviced. There may be more than one disconnect switch.



WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

Before installing, modifying, or servicing, main electrical disconnect switch must be in the OFF position.

There may be more than one disconnect switch. Lockout and tag switch with a suitable warning label.

Do not work on motor with line voltage applied. There is risk of electric shock or permanent damage to the replacement control module that can occur if working on the unit with line voltage applied.

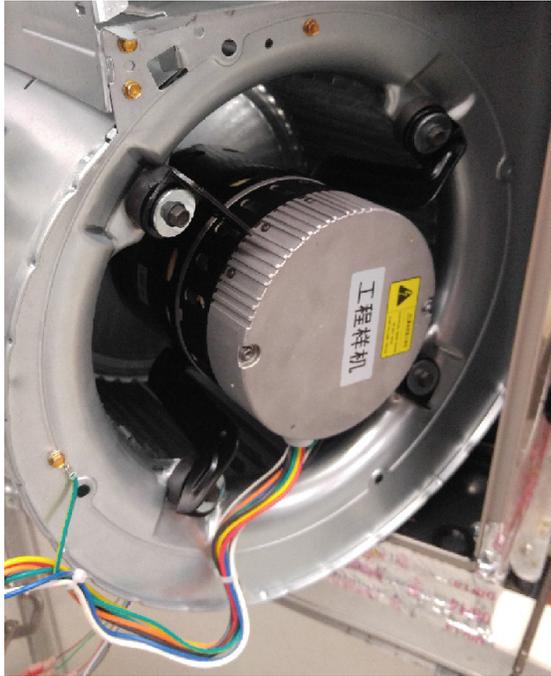


WARNING

ELECTRICAL OPERATION HAZARD FROM ENERGY STORED IN CAPACITORS

Failure to follow this warning could result in damage to this equipment, personal injury, or death.

WAIT AT LEAST 5 MINUTES AFTER DISCONNECTING LINE VOLTAGE FROM EQUIPMENT BEFORE OPENING BLOWER MOTOR AND SERVICING TO PREVENT ELECTRIC SHOCK.



Representative drawing only, some models may vary.

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Figure 1 – Typical Motor Assembly

EXISTING MODULE REMOVAL

- Remove blower assembly from blower compartment to provide easy access to module connectors and mounting bolts.

NOTE: Typically the control can be removed without removing the motor from the blower assembly (see **Figure 1**).

REMOVING THE EXISTING CONTROL MODULE

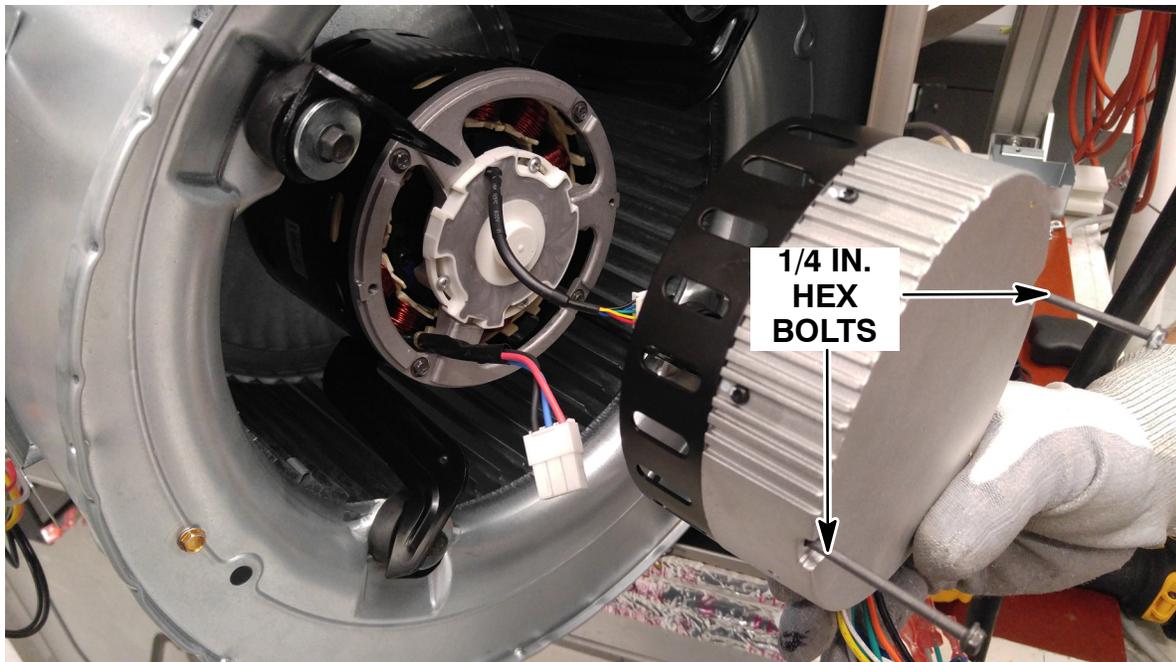
- Remove the two 1/4 in. hex head bolts to separate the existing module from the motor. (See **Figure 2**)
- Gently pull the module away from the motor exposing the wiring and connectors attached to the module.
- Disconnect both the power connector and the sensor connector from the module making sure to depress the latching tab on the connectors so not to damage the connectors or terminals in the process. (see **Figure 3**)
- The old module can now be set aside without removing the motor from the blower assembly. If there is a green wire grounding terminal attached to one of the module 1/4" bolts, slide the ring terminal off the bolt and set aside with the old module. Avoid pulling on the wires and remove the spacer ring from the module. This may require the use of a screwdriver.

RESISTANCE CHECK

Using an ohmmeter:

- Check the resistance from any one of the motor connector pins to the aluminum end plate of the motor. This resistance should be greater than 100k ohms.
- Check the resistances between each of the three motor connector pins. These should all read approximately the same resistance within an ohm.
- Check to see if the blower wheel spins freely.

NOTE: If any motor fails these tests, do not install the new control module. The motor is defective and it also must be replaced. The new control can fail if placed on a defective motor.



Representative drawing only, some models may vary.

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Figure 2 – Removing the Existing Control Module

INSTALLING THE NEW CONTROL MODULE

- Remove the new control module from the box.
- Check that the part number on the new module corresponds to the motor part number on the existing motor.
- Orient and press to attach the spacer ring to the new module.
- Connect the motor connector as well as the sensor connector appropriately to the new module and align the module with the mounting holes on the motor.
- Position the module to receive the 2 new 1/4" mounting bolts (included in the kit). If there was a grounding wire attached to one of the original bolts, reattach the ring connector under the head of one of the new bolts and hand tighten the mounting bolts making sure the module seats evenly on the motor.
- Finish fitting the module and tighten the mounting bolts till snug but not over-tightened. These bolts should be tightened to 17 +/- 2 in-lbs.

NOTE: Over-tightening the mounting bolts may result in motor bearing noise and reduced motor life.

- Check to see that the blower wheel and motor spins free without binding. If not, the new module may be defective.

RECONNECTING THE CABLES

- Make sure all external electrical connections on or around the blower assembly are securely connected.
- Move the blower assembly back into the blower cavity and re-install the sheet metal screws that secure the blower assembly into the blower cavity.

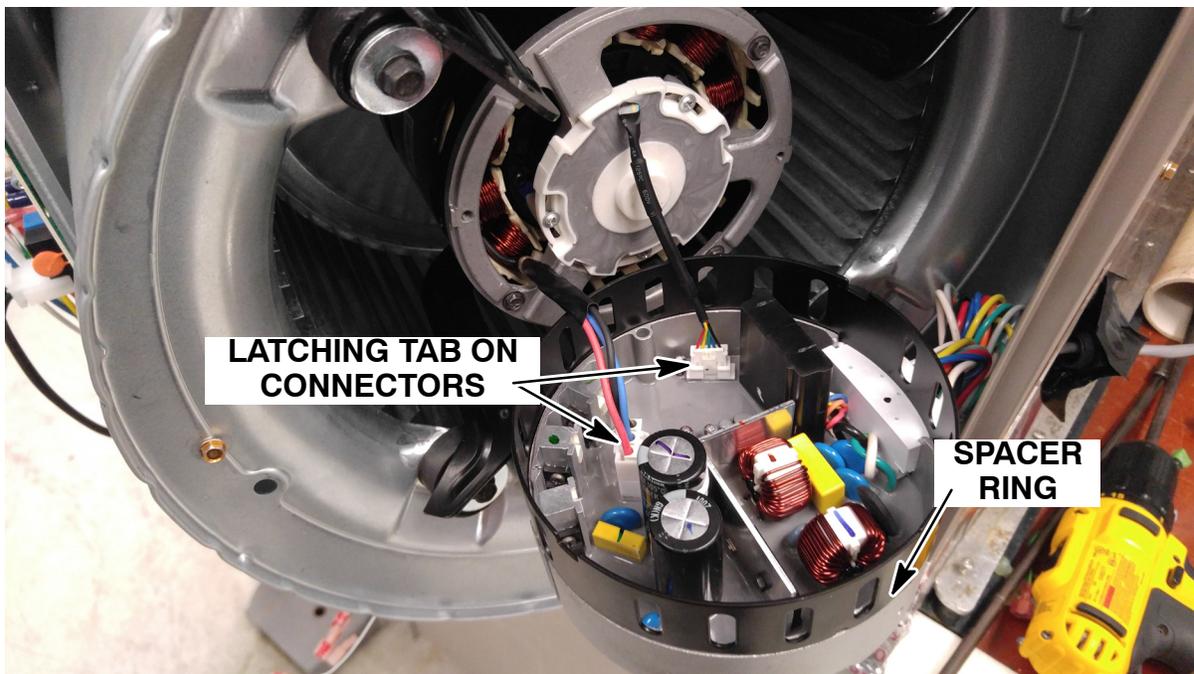
CHECKING THE INSTALLATION

Take a moment to step back from the installation and assess the overall installation.

- Make sure that the controller connector is facing horizontally or downward to prevent moisture from getting into the connector housing; otherwise the motor may have to be rotated 180 degrees.
- Check that tie wraps (if used) are properly holding the motor connector cables so that a proper drip loop is maintained.
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RECONNECTING POWER

- Replace access panel.
- Reconnect line voltage to unit and verify that the blower is operating properly.



Representative drawing only, some models may vary.

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Figure 3 – Latching Tabs on Connectors