

INSTALLATION INSTRUCTIONS LOWER AMP KIT FOR ECM-PWM (VCT) BLOWER MOTOR 35-IN. (889 MM) TALL HIGH EFFICIENCY CONDENSING GAS FURNACE NAHA00101PC




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

SAFETY CONSIDERATIONS

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 .2 Natural Gas and Propane Installation Codes, 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.



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 Owner's Manual.



WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK AND CARBON MONOXIDE POISONING HAZARD

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

Improper installation, adjustment, alteration, service, maintenance, or use can cause carbon monoxide poisoning, explosion, fire, electrical shock, other conditions, which could result in personal injury or death. Consult your distributor or branch for information or assistance. The qualified installer or agency must use only factory-authorized kits or accessories when servicing this product.



WARNING

FIRE, EXPLOSION, ELECTRICAL SHOCK AND CARBON MONOXIDE POISONING HAZARD

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

Do not use this kit on other model furnace or other types of motors. Using this kit on other model furnaces or types of motors will not achieve a reduction in max unit amperage. If a smaller gauge wire and smaller over-current protection device is used on unapproved models or motors, the circuit to the furnace may over heat. This may result in fire, electric shock, personal injury, property damage or equipment damage.



WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one disconnect switch. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.



CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

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

INTRODUCTION

This instruction covers the installation of a 4.4 mH Lower Amp Kit on 35 in. (889 mm) tall condensing gas furnaces using a 1 hp. variable speed, constant torque (VCT) ECM (also known as ECM-PWM) blower motor.

DESCRIPTION AND USAGE

The Lower Amp Kit can be used to reduce the blower amperage on select 1 horsepower variable speed, constant torque (VCT) ECM blower motor (also known as ECM-PWM). When this kit is installed, units that required 12 AWG wire and 20 amperage over-current protection can be wired using 14 AWG wire and 15 amperage over-current protection. See Table 1 for kit usage Table 2 for kit contents.

Table 1 – Kit Usage

F9MVE0802120A4	G9MVE0802120A4
F9MVE1002120A4	G9MVE1002120A4
F9MVE1202422A4	G9MVE1202422A4
F96VTN0802120A	G96VTN0802120A
F96VTN1002120A	G96VTN1002120A

Table 2 – Kit Contents

Qty	DESCRIPTION
1	4.4mH Power Choke
1	Bag Assembly Includes
2	#8 X 1/2" Screw
1	Installation Instructions
1	Max Unit Amps Label

INSTALLATION

Unit Shut Down

⚠ WARNING

ELECTRICAL SHOCK AND FIRE HAZARD

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

Turn off the gas and electrical supplies to the furnace and install lockout tag before performing any maintenance or service. Follow the operating instructions on the label attached to the furnace.

⚠ WARNING

ELECTRICAL SHOCK, FIRE OR EXPLOSION HAZARD

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

Before installing, modifying, or servicing system, main electrical disconnect switch must be in the OFF position and install a lockout tag. There may be more than one disconnect switch. Check accessories and cooling unit for additional electrical supplies that must be shut off during furnace servicing. Lock out and tag switch with a suitable warning label. Verify proper operation after servicing.

INSTALLATION

1. Set room thermostat to lowest setting or "OFF."
2. Disconnect power at external disconnect, fuse or circuit breaker.
3. Turn off gas at external shut-off or gas meter.
4. Remove outer doors and set aside.

5. Turn electric switch on gas valve to OFF.

⚠ WARNING

CARBON MONOXIDE POISONING HAZARD

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

To route the vent pipe and combustion air pipe through the furnace, the manufacturer supplied kit must be used. Failure to properly seal the blower compartment from the furnace vestibule could result in the circulation of carbon monoxide throughout the structure. The vent pipe and combustion air pipe must be a continuous pipe while passing through the blower compartment. Seals supplied in this kit must be installed per the instructions provided. Follow all procedures outlined in these instructions.

⚠ CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury.

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

Install the Power Choke

1. Locate existing holes on the front of the blower housing that will be used to mount the power choke. See Fig 1.
2. For easier installation, pre-install the provided screws and then remove screws.
3. Align the hole in the mounting tab of power choke with the bottom hole in the blower housing.
4. Install screw, but do not fully tighten the screw at this point.
5. Rotate the power choke so the other mounting tab is aligned with the top hole in the blower housing.
6. Install and tighten the top screw.
7. Tighten the bottom screw.

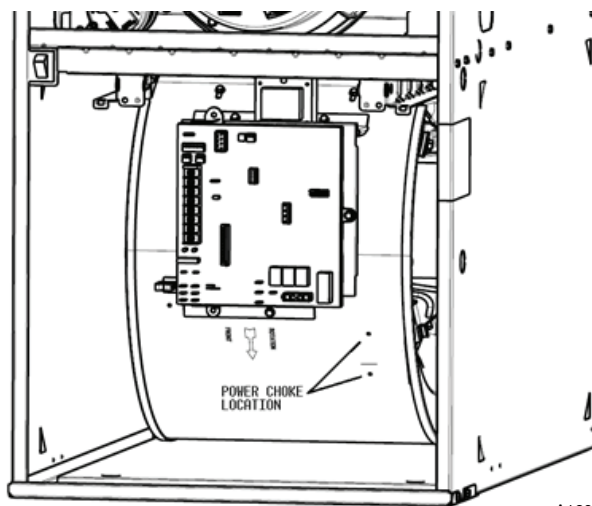


Fig. 1 - Power Choke Location

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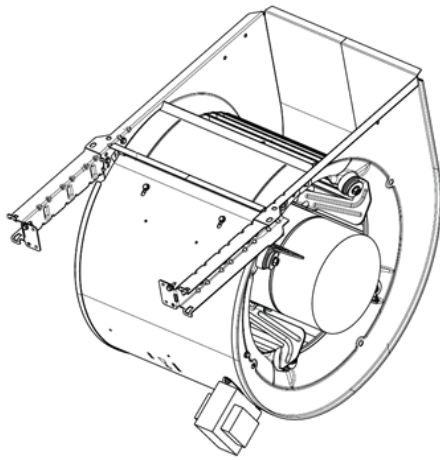


Fig. 2 - Power Choke Mounted

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Wire the Power Choke

1. Locate the 115 VAC black wire that runs from L1 on the control board to the blower motor.
2. Disconnect the wire at the connector on the middle of the wire.
3. Connect each wire of the power choke to the appropriate mating end of the black wire. See Fig. 3.
4. Route wires away from sharp edges.

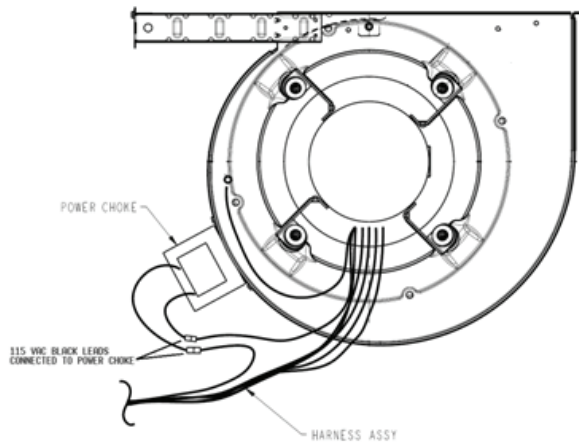


Fig. 3 - Power Choke Wiring

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Apply New Max Unit Amps Label

1. Locate Unit Rating Plate on inside of the blower door.
2. Affix new label BELOW Unit Rating Plate.
3. Sign the label in the block provided on the label.

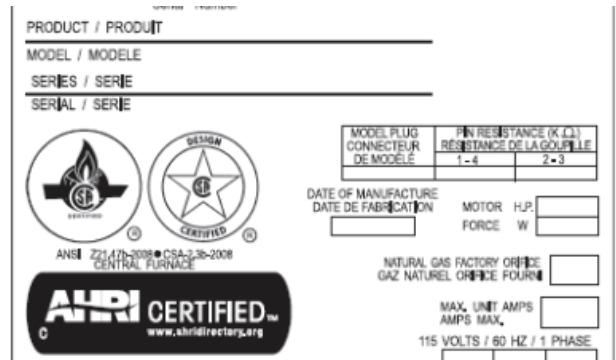


Fig. 4 - Rating Plate

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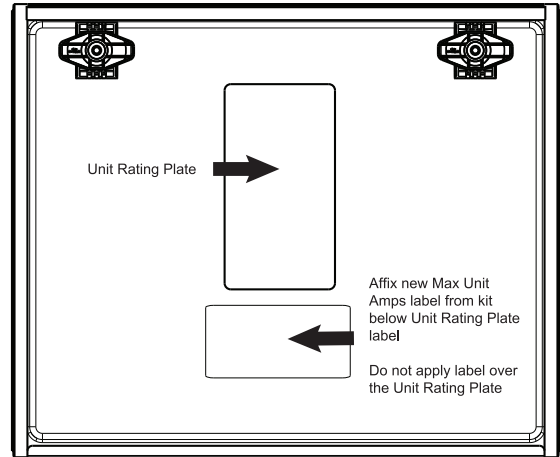


Fig. 5 - Max Unit Amps Label Location

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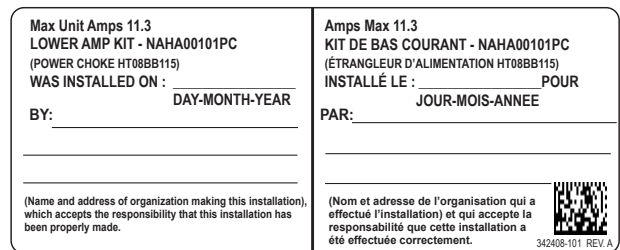


Fig. 6 - Max Unit Amps Label

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Unit Checkout



WARNING

FIRE OR EXPLOSION HAZARD

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

Never purge a gas line into a combustion chamber. Never test for gas leaks with an open flame. Use a commercially available soap solution made specifically for the detection of leaks to check all connections. A fire or explosion may result causing property damage, personal injury or loss of life.



WARNING

RISQUE D'EXPLOSION ET D'INCENDIE

Le non-respect des avertissements de sécurité pourrait entraîner des blessures graves, la mort ou des dommages matériels.

Ne jamais utiliser une flamme nue pour vérifier la présence des fuites de gaz. Pour la vérification de tous les joints, utiliser plutôt une solution savonneuse commerciale fabriquée spécifiquement pour la détection des fuites de gaz. Un incendie ou une explosion peut entraîner des dommages matériels, des blessures ou la mort.

1. Set thermostat to "OFF."
2. Turn on power at external disconnect, fuse or circuit breaker.
3. Turn on gas at external shut-off or gas meter.
4. Check for gas leaks with a commercially available soap solution made specifically for the detection of leaks to check all connections.
5. Manually close blower door switch.
6. Initiate component test through circuit board by referring to "**Component Test**" on status code label on blower access door for complete test sequence information.
7. If any status codes are flashed, refer to status code label on unit blower door.
8. Release blower door switch.
9. Install blower access door.
10. Set thermostat to call for heat.
11. Allow unit to initiate a complete call for heat cycle.

NOTE: As part of the system check-out, verify that the following conditions are not affecting the operation of the furnace:

- Short Cycling-Defective thermostat: Incorrect thermostat anticipator setting, dirty filter or over-sized furnace.
 - Under firing/low btu input: Set manifold pressure and verify firing rate as shown on rating plate by clocking the gas meter.
 - Over-firing/high btu input: Set manifold pressure and verify firing rate as shown on rating plate by clocking the gas meter.
 - Low temperature rise: Set unit for correct temperature rise range as shown on unit rating plate.
 - Contaminated combustion air: Remove contaminants or provide ample fresh air for combustion.
 - Excessive amounts of outside ventilation air: Return air temperature cannot be below 60 degrees F for extended periods of time.
 - Incorrect venting or termination: Recirculation of products of combustion into the combustion air pipe can damage the furnace. Verify proper venting and vent termination per installation instructions. For additional information, and a complete sequence of furnace operation, refer to furnace Installation, Start-Up and Operating Instructions.
12. After System Check-out is complete, set thermostat below room temperature.
 13. Verify that burner shuts down and blower completes selected off delay time.
 14. Verify furnace operates properly and set thermostat to desired room temperature.
 15. Re-install outer doors.