

# Vent Elbow Replacement Kit For Non-Condensing Gas Furnaces

## Installation Instructions

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


Follow all safety codes. Wear safety glasses and work gloves. Have a fire extinguisher available.

### 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. Use quenching cloth for brazing operations. Have 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 (NFCG) 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 these 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.

### DESCRIPTION AND USAGE

The vent elbow replacement kit can be utilized to restore units having vent elbows that require repair. This kit contains the following items: Vent Elbow with draft safeguard assembly, Vent Elbow mounting screws.

### WARNING

#### ELECTRICAL OPERATION HAZARD

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

Improper installation, adjustment, alteration, service, maintenance, or use can cause carbon monoxide poisoning, explosion, fire, electrical shock, or 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 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 User's Manual.

### WARNING

#### ELECTRICAL SHOCK HAZARD

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

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 electrical supply to the furnace. Check accessories and cooling unit for additional electrical supplies that must be shut off during furnace servicing. Lockout and tag switch with a suitable warning label. Verify proper operation after servicing.

## INTRODUCTION

This instruction covers the vent elbow installation on non-condensing, 33.3 inch (845.8 mm) high, mid-efficiency hot surface ignitor units. The vent elbow should be replaced when corrosion has created visible surface damage to the elbow, damage to the mounting arrangement of the draft safeguard or anytime the functionality of the vent elbow has been compromised, allowing flue gasses to leak into the living space. The vent elbow is the same size for *all* furnace models.

## INSTALLATION

### Step 1-Remove the Vent Elbow

1. Turn off electric supplies to unit and thermostat. More than one disconnect may be required to disconnect power to unit.
2. Remove exterior door by loosening knurled knob on door and pulling forward.
3. Turn off gas at external supply and turn electric switch on gas control, to "OFF".
4. Disconnect and remove vent connector from vent elbow.

## ⚠ CAUTION

### PERSONAL INJURY HAZARD

Failure to follow this caution may result in personal injury.

Vent connector may be hot to the touch or have sharp edges.

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

**NOTE:** Support vent connector with temporary metal strap to prevent damage to vent connector or vent connector elbows.

5. Disconnect draft safeguard switch wires from draft safeguard switch attached to vent elbow.
6. Remove the 3 screws that attach the vent elbow to the inducer housing/collector box.

### Step 2-Installation of New Vent Elbow

1. Inspect inside vent elbow to verify that flue baffle is in place (See Fig. 2).

**NOTE:** If Flue Baffle is missing or incorrectly installed, nuisance draft safeguard switch tripping will occur.

2. Re-install vent elbow to the inducer housing/collector box with 3 screws supplied in the kit (See Fig. 1 and Fig. 3).
3. Re-attach vent connector to vent elbow using at least 2 screws.
4. Re-connect draft safeguard leads to draft safeguard switch (See Fig. 1).
5. Verify that remaining vent connections are undamaged and properly secured with at least three (3) screws evenly spaced (120°) apart.
6. Turn electrical supply "ON".
7. Turn gas supply "ON" at gas control and at external shut-off.

**NOTE:** Blower will run for 90 sec. It thermostat is calling for heat when 120-v. power is restored. A fault code 12 will flash after 90 sec. To clear the fault code, turn off power, turn thermostat off or down below room setting. Turn power back on. Set thermostat to desired temperature.

### Step 3-System Check-Out

1. Set thermostat to "OFF".
2. Remove blower access door and manually close blower door switch.
3. Initiate component test through circuit board by referring to "**Component Test**" on status code label on blower access door for complete test sequence information.
4. If any status codes are flashed, refer to status code label on unit blower door.
5. Release blower door switch and re-install blower door.
6. Set thermostat to call for heat.
7. Allow unit to initiate a complete call for heat cycle.

**NOTE:** Corrosion at the vent elbow may have been caused by one or more of the following conditions. As part of the system check-out, verify that the following conditions are not affecting the operation of the furnace:

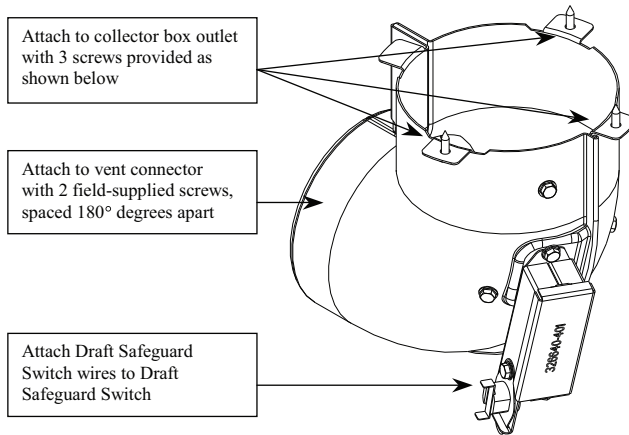
- **Short Cycling:** Defective thermostat, Incorrect thermostat anticipator setting, dirty filter or over-sized furnace
- **Under firing/low BTU input:** Set manifold pressure and verify firing rate as shown on rating plate by clocking the gas meter
- **Low temperature rise:** Set unit for correct temperature 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° F (15.6° C) for extended periods of time.
- **Incorrect venting:** Verify proper venting per local code. Type B vent connector may be required for other applications.

**NOTE:** Draft safeguard switch trips indicate that the vent system may be blocked, incorrectly installed or undersized. Refer to local codes or the current edition of the National Fuel Gas Code, NFPA54/ANSI Z 223.1 for complete vent sizing information.

Buildings under negative pressure from exhaust fans or other appliances that exhaust to the outdoors may also experience vent system problems. If you suspect the building is under negative pressure, have the building evaluated by a Professional skilled in this area.

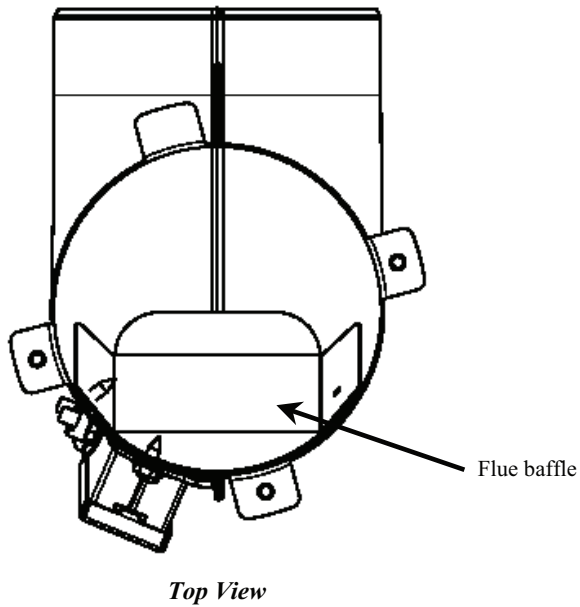
For additional information, and a complete sequence of furnace operation, refer to furnace Installation, Start-Up and Operating Instructions.

8. After System Check-out is complete, set thermostat below room temperature.
9. Verify that burner shuts down and blower completes selected off delay furnace time.
10. Verify furnace operates properly and set thermostat to desired room temperature.
11. Re-install outer door.



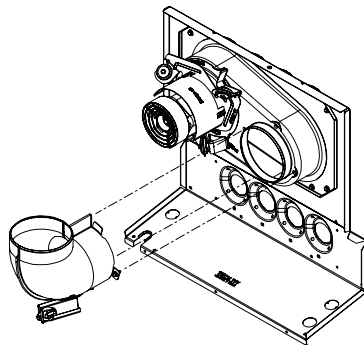
**Fig. 1 - Vent Elbow (Back View)**

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**Fig. 2 - Vent Elbow (Top View)**

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Elbow shown in upflow configuration. Elbow may be rotated 90° or 180° for other venting configurations

**Fig. 3 - Vent Elbow (Top View)**

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