

Installer's Guide



18-CH34D1-8B-EN

Model: **BAYAIR30AVENTA**

Concentric Vent Kit for Condensing Furnaces

For use with *UH, *DH, M95, *UY, *DY, *UX, *DX, *UC, *DC, S9, A9, and L9 furnaces
* may be A or T

ALL phases of this installation must comply with NATIONAL, STATE and LOCAL CODES.

IMPORTANT — This Document is customer property and is to remain with this unit. Please return to service information pack upon completion of work.

NOTE: Canada requires that all Category IV heating appliances use venting material that meets ULC S636. This kit does not meet these requirements and cannot be used.

⚠ WARNING

INSTALLATION OR REPAIRS MADE BY UNQUALIFIED PERSONS CAN RESULT IN HAZARDS TO YOU AND OTHERS. INSTALLATION MUST CONFORM WITH LOCAL CODES OR, IN THE ABSENCE OF LOCAL CODES, WITH CODES OF THE COUNTRY HAVING JURISDICTION. THE INFORMATION CONTAINED IN THESE INSTRUCTIONS IS INTENDED FOR USE BY A QUALIFIED SERVICE TECHNICIAN FAMILIAR WITH SAFETY PROCEDURES AND EQUIPPED WITH THE PROPER TOOLS AND TEST INSTRUMENTS. FAILURE TO CAREFULLY READ AND FOLLOW ALL INSTRUCTIONS IN THESE INSTRUCTIONS CAN RESULT IN FURNACE MALFUNCTION, PROPERTY DAMAGE, PERSONAL INJURY AND/ OR DEATH.

NOTE: Codes and local utility requirements governing the installation of gas fired equipment, wiring, plumbing, and flue connections must be adhered to. In the absence of local codes, the installation must conform with the National Fuel Gas Code NFPA 54/ANSI Z223.1 "latest edition". The latest code may be obtained from the American Gas Association 400 N. Capitol St., NW, Suite 450, Washington D.C. 20001, 1-855-999-9870 or www.aga.org.

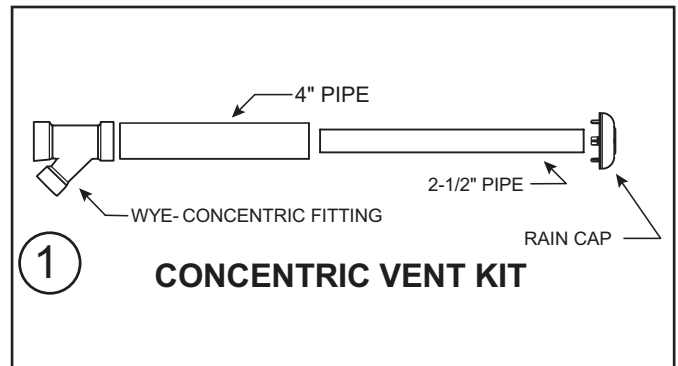
NOTE: Read the Installer's Guide before starting the installation. Refer to the Furnace Installer's Guide for equivalent vent lengths. The BAYAIR30AVENTA is 5 equivalent feet.

INTRODUCTION

This Installer's Guide covers installation of the concentric vent kit on all gas fired direct vent condensing furnaces.

⚠ WARNING

INSTALLING AND SERVICING HEATING EQUIPMENT CAN BE HAZARDOUS DUE TO GAS AND ELECTRICAL COMPONENTS. ONLY TRAINED PERSONNEL SHOULD INSTALL OR SERVICE HEATING EQUIPMENT. FAILURE TO FOLLOW THIS WARNING CAN RESULT IN PRODUCT DAMAGE, PERSONAL INJURY AND/OR DEATH.



DO NOT APPLY TO A NON-CONDENSING FURNACE.

NOTE: If these instructions differ from those packaged with the furnace, follow these instructions.

DESCRIPTION AND USAGE

Kit Contents:

Qty.	Description
1	Rain cap
1	4" Diameter Pipe, 23.75" Long
1	2-1/2" Diameter Pipe, 33.12"
1	Wye concentric Fitting
4	#8 SS Pan head screws

Only one vent kit per each furnace is allowed.

Vent kit is for 2, 2-1/2 or 3 in. diameter pipe systems, (See Figures 3, 4, 5, and 6 for the different applications). Both the combustion air and vent pipes must attach to the vent kit. The vent kit must terminate outside of the structure and should be installed vertically as shown in Figures 3 and 4, or horizontal as shown in Figures 5 and 6.

NOTE: The roof vent location is preferred since it is less susceptible to damage, has reduced chances to intake contaminants, and vent vapors are less visible.

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⚠ WARNING

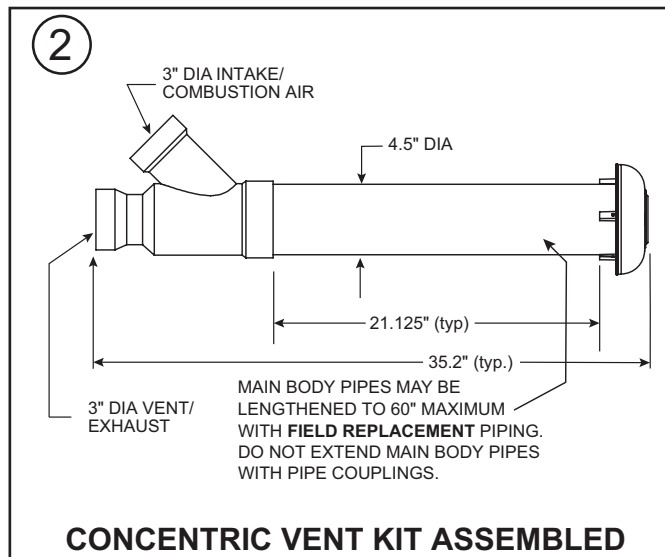
THIS VENT KIT IS ONLY TO BE USED FOR VENTING CATEGORY IV FURNACES. DO NOT USE TO VENT CATEGORY I, II OR III VENT FURNACES. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN FIRE, PERSONAL INJURY OR DEATH.

⚠ WARNING

DISCONNECT POWER SUPPLY BEFORE BEGINNING INSTALLATION TO PREVENT PERSONAL INJURY OR DEATH FROM ELECTRICAL SHOCK AND EQUIPMENT DAMAGE.

Field supplied pipe and fittings are required to complete the installation.

The combustion air and vent pipe and fittings must conform to American National Standards Institute (ANSI) and American Society for Testing and Materials (ASTM) standards D1785 (schedule-40 PVC), D2241 (SDR-21 and SDR-26 PVC), D2661 (ABS-DWV). Pipe cement must conform to ASTM standards D2564 (PVC) or D2235 (ABS). Primer must conform to ASTM F656 (PVC). Primer for ABS pipe and fittings is not recommended.



INSTALLATION - ROOF TERMINATION (SEE FIG. 3)

1. Determine best location for termination kit.
2. Cut one hole (5 in. diameter) for vent kit.

NOTE: Ensure termination height is 12 inches above the roof surface or anticipated snow level as shown in Figure 4.

NOTE: If assembly is too short to meet the height requirement, the two pipes supplied in the kit may be replaced by using same diameter, field supplied SDR-21, SDR-26, or SCH 40 PVC pipe. Do not extend the 4" pipe (24" as shipped) to more than 60 in. (See Figure 2).

⚠ CAUTION

DO NOT USE FIELD SUPPLIED COUPLINGS TO EXTEND MAIN BODY PIPES (4" AND 2-1/2" PIPES). AIRFLOW RESTRICTION WILL OCCUR AND THE FURNACE PRESSURE SWITCH MAY CAUSE INTERMITTENT OPERATION.

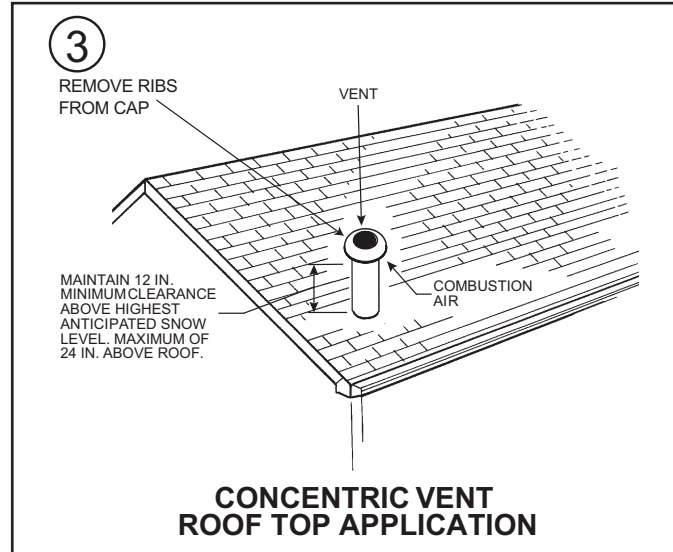
3. Partially assemble the vent kit. If needed, rotate the 4" pipe so that the lettering is not seen. Clean the pipe ends and adjoining sockets with primer and cement.
 - a. Cement the Wye concentric fitting to larger diameter kit pipe (See Figure 1).
 - b. Cement the rain cap to smaller diameter kit pipe (See Figure 1).

NOTE: Instead of cementing the smaller pipe to the rain cap, RTV silicon sealant may be used to permit future field disassembly for cleaning.

4. Install Wye fitting and pipe assembly from the inside through structure's hole. Install field supplied roof boot / flashing.

NOTE: Do not allow insulation or other materials to accumulate inside pipe assembly when installing through hole.

5. Secure assembly to roof structure as shown in Figure 4 using field supplied metal strapping or equivalent support material.



6. Remove ribs from rain cap. Install the rain cap and the small diameter pipe assembly in the Wye fitting and pipe assembly. Ensure that the small diameter pipe is cemented and bottomed into the Wye fitting.

⚠ WARNING

FAILURE TO REMOVE RIBS FROM RAIN CAP FOR VERTICAL VENT KIT INSTALLATIONS MAY CAUSE ICE OR SNOW TO FORM ON THE RAIN CAP, LEADING TO AN INOPERABLE FURNACE. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

NOTE: Kit supplied stainless steel screw will be used to secure the rain cap to the pipe.

⚠ WARNING

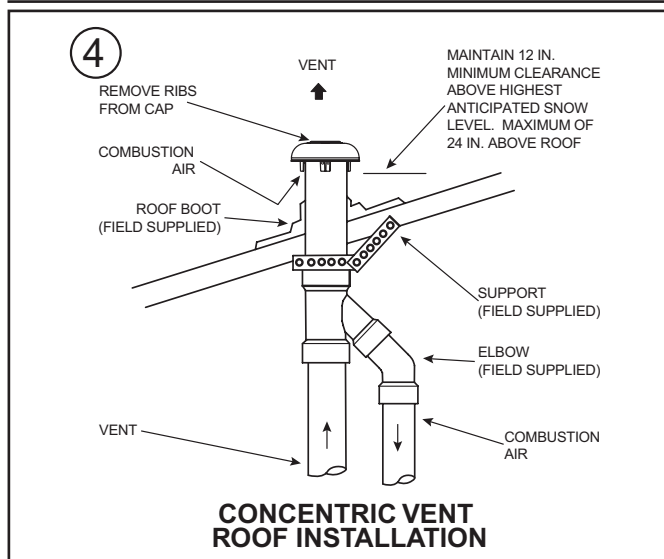
DRILL A PILOT HOLE IN THE VENT PIPE FOR THE SCREW SIZE BEING USED. FAILURE TO DRILL ADEQUATE HOLES MAY CAUSE CRACKING OF THE PVC COMPONENTS, ALLOWING FLUE GASES TO BE RECIRCULATED. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

- Cement the furnace combustion air and vent pipes to the concentric vent termination assembly. See Figure 4 for proper pipe attachment.
- CHECKOUT: Operate the furnace to make sure ALL pipe joints are fastened and sealed to prevent the escape of combustion products into the building.

NOTE: Two or more installations require a minimum separation distance of 12 inches between vent kits.

⚠ WARNING

DO NOT OPERATE THE FURNACE WITHOUT THE RAIN CAP IN PLACE AS RECIRCULATION OF COMBUSTION PRODUCTS MAY OCCUR. WATER MAY ALSO COLLECT INSIDE THE LARGER COMBUSTION AIR PIPE AND FLOW TO THE BURNER ENCLOSURE. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN PRODUCT DAMAGE OR IMPROPER OPERATION, PERSONAL INJURY OR DEATH



INSTALLATION -SIDE WALL VENT (SEE FIGURE 5)

- Determine the best location for the vent kit according to the National Fuel Gas Code NFPA 54/ ANSI Z223.1 "latest edition" or local code.

NOTE: Consider the following when determining the vent kit location:

- Vent kit positioned where the vent vapors will not damage planting/ shrubs or air conditioning equipment or building structure.
- Vent kit positioned so it will not be affected by wind eddy that may allow recirculation of combustion products, or airborne leaves, or light snow.
- Vent kit positioned where it will not get damaged or be subjected to foreign objects, such as stones, balls, etc.
- Vent kit positioned where the vent vapors will not be objectionable.

- Cut one hole (5 in. diameter) for Vent kit.
- Partially assemble the vent kit. If needed, rotate the 4" pipe so that the ASTM lettering is not seen. Clean the pipe ends and adjoining sockets with primer and cement.
 - Cement the Wye concentric fitting to larger diameter kit pipe. (See Figure 1).
 - Cement the rain cap to smaller diameter kit pipe. (See Figure 1).
- Install Wye concentric fitting and pipe assembly through structure's hole.

NOTE: Do not allow insulation or other materials to accumulate inside pipe assembly when installing through hole.

⚠ CAUTION

DO NOT USE FIELD SUPPLIED COUPLINGS TO EXTEND MAIN BODY PIPES (4" AND 2-1/2" PIPES). AIRFLOW RESTRICTION WILL OCCUR AND THE FURNACE PRESSURE SWITCH MAY CAUSE INTERMITTENT OPERATION.

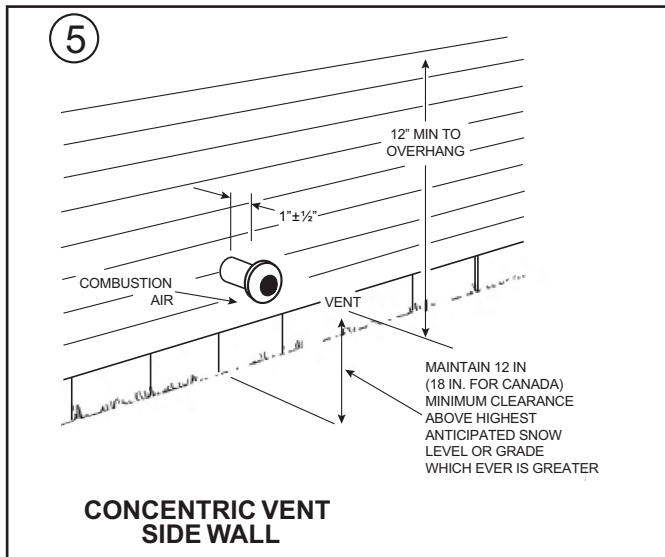
- Secure assembly to structure as shown in Figure 6 using field supplied metal strapping or equivalent support material.
- Install rain cap and small diameter pipe assembly in Wye concentric fitting and large pipe assembly. Ensure small diameter pipe is bottomed and cemented in Wye concentric fitting.

NOTE: Kit supplied stainless steel screw will be used to secure the rain cap to the pipe.

⚠ WARNING

DRILL A PILOT HOLE IN THE VENT PIPE FOR THE SCREW SIZE BEING USED. FAILURE TO DRILL ADEQUATE HOLES MAY CAUSE CRACKING OF THE PVC COMPONENTS, ALLOWING FLUE GASES TO BE RECIRCULATED. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

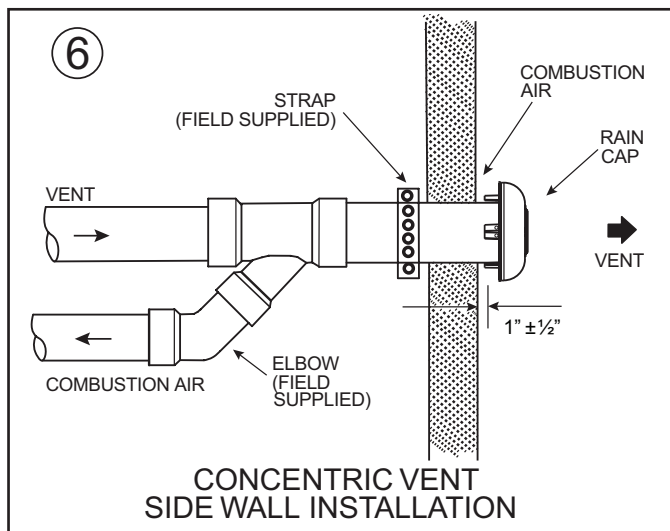
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NOTE: To prevent the possibility of condensate freeze-up, do not install vent kits one above the other.

NOTE: FLUE GAS DEGRADATION

The moisture content of the flue gas may have a detrimental effect on some building materials. This can be avoided by using the roof or chimney venting option. When wall venting is used on any surface that can be affected by this moisture, it is recommended that a corrosion resistance shield (24 inches square) be used behind the Vent Terminal. This shield an be made of wood, plastic, sheet metal, etc. Also, silicone caulk all cracks, seams, and joints within 3 feet of the Vent Terminal.



7. Cement furnace combustion air and vent pipes to concentric vent assembly. See Figure 6 for proper pipe attachment.
8. CHECKOUT: Operate the furnace to make sure ALL pipe joints have fastened and sealed to prevent the escape of combustion products into the building.

NOTE: Two or more installations require a minimum separation distance of 12 inches between vent kits.

NOTE: Ensure termination location clearance dimensions as shown in Figure 5. Do not locate the vent cap directly to the wall surface. A distance of $1" \pm 1/2"$ is required to prevent water accumulating between the vent fins.

NOTE: If assembly needs to be extended to allow side wall thickness requirement, the two pipes supplied in the kit may be replaced by using same diameter, field supplied SDR-21, SDR-26, or SCH 40 PVC pipe. Do not extend the 4" pipe (24" as shipped) to more than 60 in. (See Figure 2). The 4" pipe may be shortened to 14" minimum.

IMPORTANT:

The Commonwealth of Massachusetts requires compliance with regulation 248 CMR 4.00 and 5.00 for installation of through – the – wall vented gas appliances as follows:

For all side wall horizontally vented gas fueled equipment installed in every dwelling, building or structure used in whole or in part for residential purposes, including those owned or operated by the Commonwealth and where the side wall exhaust vent termination is less than seven (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied:

1. INSTALLATION OF CARBON MONOXIDE DETECTOR(S). At the time of installation of the side wall horizontal vented gas fueled equipment, the installing plumber or gasfitter shall observe that a hard wired carbon monoxide detector with an alarm and battery back-up is installed on the floor level where the gas equipment is to be installed. In addition, the installing plumber or gasfitter shall observe that a battery operated or hard wired carbon monoxide detector with an alarm is installed on each additional level of the dwelling, building or structure served by the side wall horizontal vented gas fueled equipment. It shall be the responsibility of the property owner to secure the services of qualified licensed professionals for the installation of hard wired carbon monoxide detector(s).
 - a. In the event that the side wall horizontally vented gas fueled equipment is installed in a crawl space or an attic, the hard wired carbon monoxide detector with alarm and battery back-up may be installed on the next adjacent floor level.
 - b. In the event that the requirements of this subdivision can not be met at the time of completion of installation, the owner shall have a period of thirty (30) days to comply with the above requirements; provided, however, that during said thirty (30) day period, a battery operated carbon monoxide detector with an alarm shall be installed.

2. **APPROVED CARBON MONOXIDE DETECTOR(S).** Each carbon monoxide detector as required in accordance with the above provisions shall comply with NFPA 72, "Standard for the Installation of Carbon Monoxide (CO) Detection and Warning Equipment" and be ANSI/UL 2034 listed, IAS 6-96 certified, or CSA 6.19 certified.
3. **SIGNAGE.** A metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal for the horizontally vented gas fueled heating appliance or equipment. The sign shall read, in print size no less than one-half (1/2) inch in size, "GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS".
4. **INSPECTION.** The state or local gas inspector of the side wall horizontally vented gas fueled equipment shall not approve the installation unless, upon inspection, the inspector observes carbon monoxide detector(s) and signage installed in accordance with the provisions of 248 CMR 9.1.23 and 12.9.7 respectively.

This appliance requires a special venting system. If BAYAIR30AVENTA or BAYVENT200B are used, a copy of the installation instructions for the kit shall remain with the appliance or equipment at the completion of installation. The venting system installation instructions can be obtained from the manufacturer by writing to the following address:

Trane and American Standard
6200 Troup Highway
Tyler, TX 75707

Attention: Manager of Field Operations Excellence

About Trane and American Standard Heating and Air Conditioning
Trane and American Standard create comfortable, energy efficient indoor environments for residential applications.
For more information, please visit www.trane.com or www.americanstandardair.com

The manufacturer has a policy of continuous data improvement and it reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

Representative-only illustrations included in this document.

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