

Installation manual

# Concentric Vent / Air Intake Kit PVC

For Bosch ProTankless Models: GWH C 800 ES, GWH C 920 ES, GWH C 920 ESC, Integra 500  
C 950 ES, C 1050 ES, C 1210 ES, C1210ESC

Part Number: 196016



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## Table of Contents

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1	Introduction	4
1.1	Items included with Concentric vent kit	4
1.2	Vent kit dimensions	4
1.3	Venting material compatibility	4
1.4	Condensate drain	5
1.5	Mechanically fastened rain cap	5

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2	Installation	5
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# 1 Introduction



**CAUTION:**  
The following is not a substitute for the tankless water heater installation manual. The entire installation must conform with the specifications listed in the tankless water heater installation manual.

The following PVC concentric vent kit is designed to provide one penetration point through the exterior wall or roof for both combustion air and exhaust vent piping. The PVC concentric vent kit is compatible with the following Bosch tankless water heaters:

- GWH C 800 ES
- GWH C 920 ES
- GWH C 920 ESC
- Integra 500
- C 950 ES
- C 1050 ES
- C 1210 ES
- C 1210 ESC

## 1.1 Items included with Concentric Vent Kit:

See Figure 1

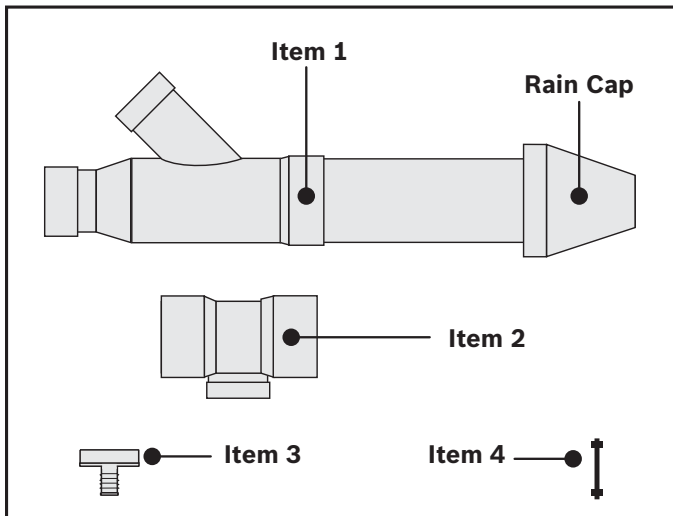


Fig. 1 Concentric vent kit components

- Item 1 - Concentric vent
- Item 2 - Condensate drain tee
- Item 3 - Condensate drain hose barb fitting
- Item 4 - Stainless Steel screw & nut

This kit can be ordered from your local wholesaler (part# 196016).

## 1.2 Concentric Vent Kit dimensions

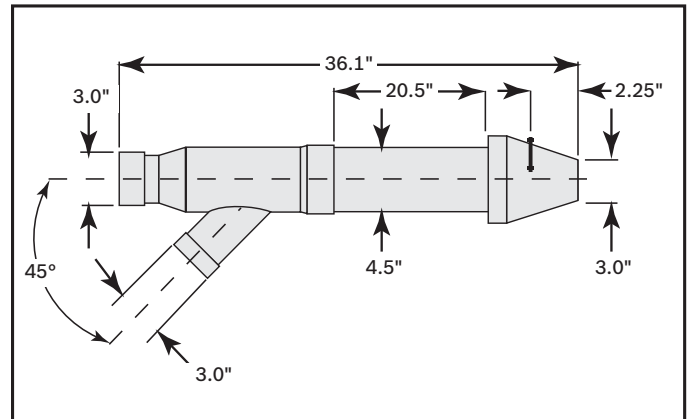


Fig. 2 Kit dimensions

## 1.3 Venting material compatibility

The PVC concentric vent kit is System 636 approved for Canadian installations. The exhaust vent and combustion air piping materials and fittings must comply with the following:

Item	Material	United States	Canada
Vent or air pipe and fitting	PVC schedule 40	ANSI/ASTM D1785	CSA or ULC certified only (ULC-S636)
	PVC-DWV	ANSI/ASTM D2665	
	CPVC schedule 40	ANSI/ASTM F441	
	ABS-DWV schedule 40	ANSI/ASTM D2661	
P i p e cement /primer	PVC	ANSI/ASTM D2564	
	CPVC	ANSI/ASTM F493	
	ABS	ANSI/ASTM D2235	

Table 1 Approved piping materials



**All exhaust vent connections must be glued, with the following exceptions:**

1. The exhaust accessory supplied with the water heater which is screwed into place on the top of the appliance.
2. For installations where removal of the rain cap may be required for service or cleaning the cap, it can be fastened mechanically (see Section 1.5)

### 1.4 Condensate drain

The supplied condensate drain tee and barb fitting (Fig. 1, Item 2 & 3) must be installed in the exhaust piping under the following conditions:

- All vertical terminating vent installations.
- Horizontal terminating vent installations where the total linear vent length is greater than 6 feet (1.8 m).
- Vent installations where any section of the exhaust vent pipe passes through an unconditioned space.

**i** The condensate drain hose barb fitting and the condensate drain tee must be glued. The end of the barbed fitting must be cut off to allow proper drainage. See Fig. 3.

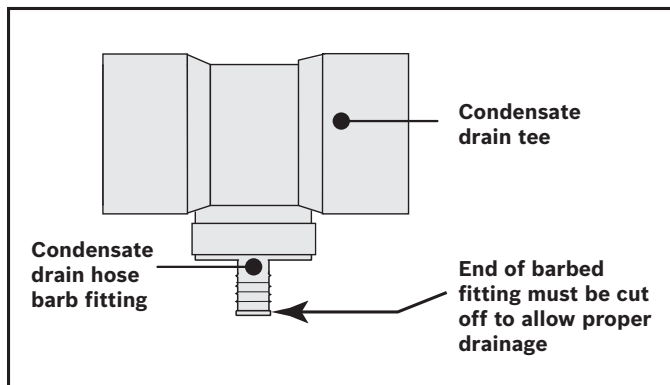


Fig. 3 Condensate drain

See Fig. 9 and Fig. 10 for examples of a condensate drain installation.

### 1.5 Mechanically fastened rain cap

For installations where removal of the rain cap may be required for service or cleaning, the cap can be fastened with the supplied Stainless Steel screw and lock nut instead of pipe cement. For a removable rain cap installation, follow the instructions and diagram below.

1. Locate the drill location dimple on the outside of the rain cap (See Fig. 4).

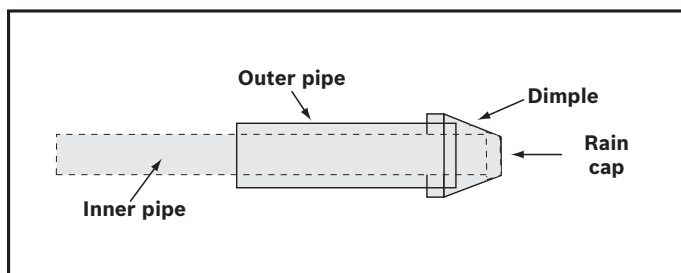


Fig. 4 Dimple location

2. At this location, drill through the cap and the inner pipe wall. Ensure that the path of the hole is perpendicular to the inner pipe NOT the outside of the cap. Use a 3/16" drill bit to make the hole. (See Fig. 5).

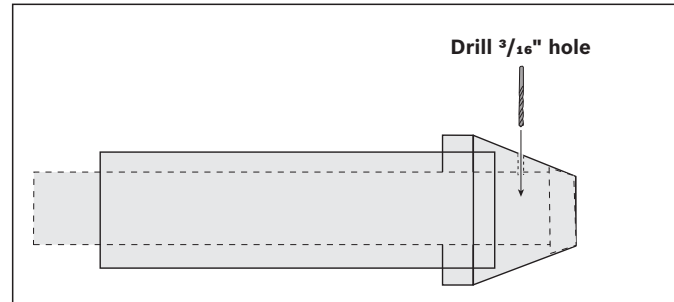


Fig. 5 Drilling rain cap

3. Insert the screw and tighten the bolt, do not over tighten (See Fig. 6).

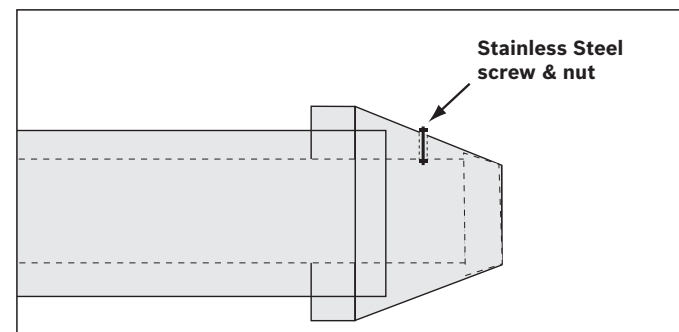


Fig. 6 Fastening rain cap with screw and nut

## 2 Installation

1. Ensure all items listed in Section 1.1 are complete.
2. Common installation practice is to determine the termination and exterior wall penetration point first. Next, design the venting/intake piping layout back to the heater. Keep in mind, centrally locating the water heater, whenever possible, is recommended to keep hot water distribution times even throughout the structure.
3. To determine the appropriate penetration point, refer to the allowable termination clearances listed in Figure 11.
4. Once penetration point is determined, cut a hole in the roof or wall large enough to accommodate the outer pipe of the concentric vent kit. The size of the hole can vary greatly depending on the roof pitch. All penetrations must be sealed according to local building codes.
5. Before installing, certain pieces of the concentric vent kit must be glued.
  - A) Glue the inner pipe to the concentric Wye fitting (Fig. 7, Step 1).

B) Next, glue outer pipe to the concentric Wye fitting (Fig. 7, Step 2).

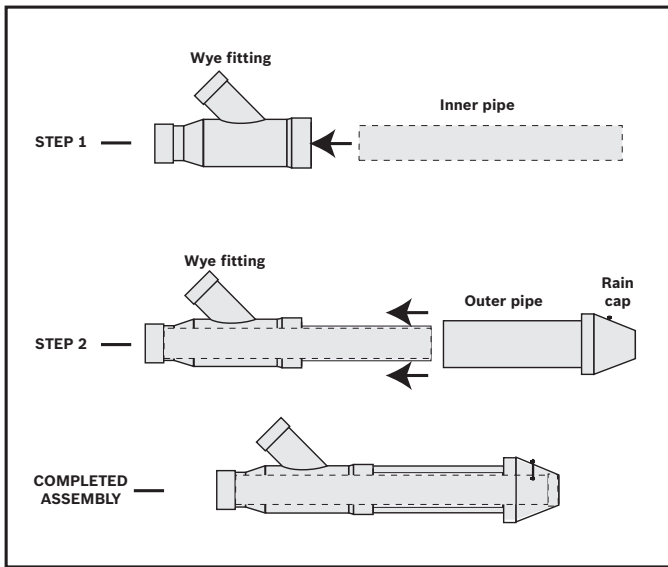


Fig. 7 Concentric vent component assembly

6. With rain cap (Fig. 8) removed, slide assembly through the roof or wall penetration. (Install flashing if needed or required by code)
7. Fit inner pipe and outer pipe to the concentric rain cap. To permanently affix the rain cap, it should be solvent cemented to the inner pipe. For installations where removal of the cap may be required for service or cleaning, it can be mechanically fastened following the instructions in Section 1.4. For either installation method, the outer pipe is only a friction fit with the rain cap.
8. Properly support the weight of the concentric vent kit with clamps/straps. Do not use the vent system it connects to for support purposes.
9. Connect combustion air piping to the combustion air connection on the kit. Connect exhaust vent piping to the exhaust connection on the kit (Fig. 8).

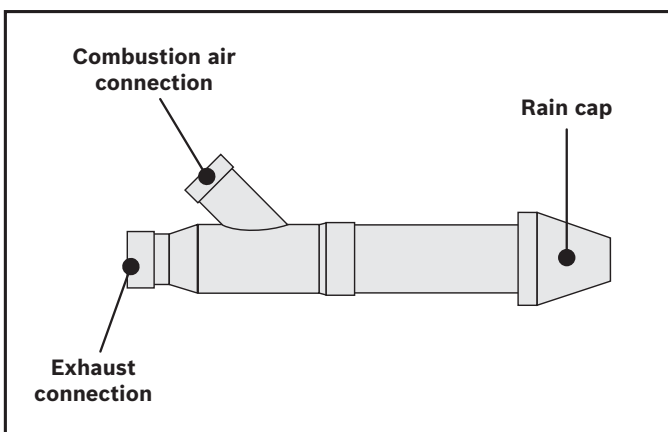


Fig. 8 Concentric vent kit connections

10. Finish exhaust vent and combustion air piping installation back to the water heater.
11. Complete tankless water heater installation per the water heater's installation manual (Fig. 9 and Fig.10).

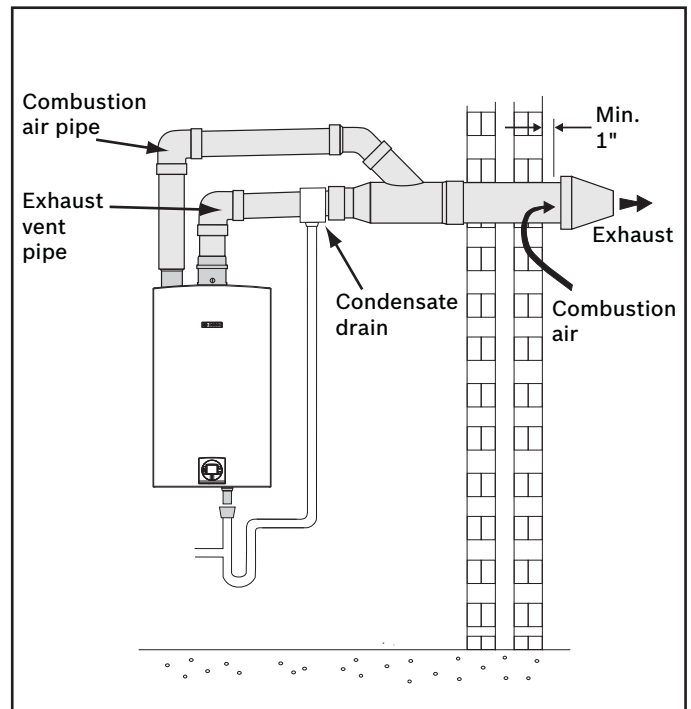


Fig. 9 Concentric vent installed - horizontal penetration

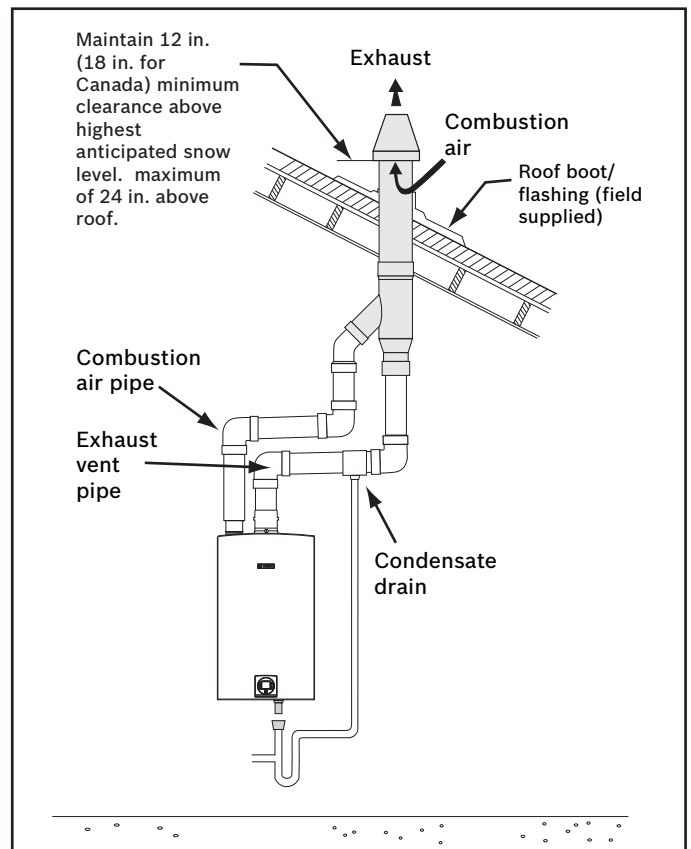
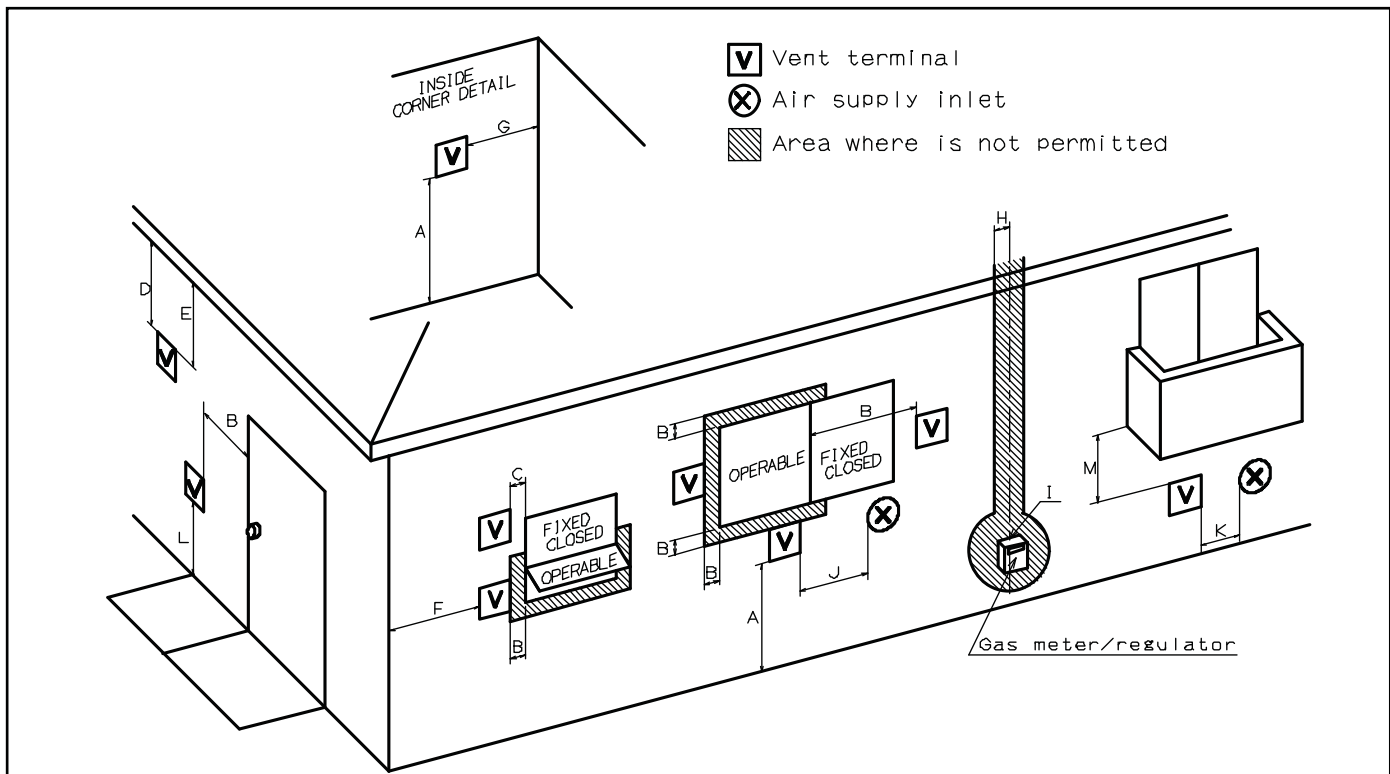


Fig. 10 Concentric vent installed - vertical penetration



		Canadian installations <sup>1)</sup>	U.S. installations <sup>2)</sup>
A	Clearance above grade, veranda, porch, deck or balcony	12 in.	12 in.
B	Clearance to window or door that may be opened	36 in.	12 in.
C	Clearance to permanently closed window	*	*
D	Vertical clearance to ventilated soffit located above the vent terminator within a horizontal distance of 2 feet (61cm) from the center line of the terminator	*	*
E	Clearance to unventilated soffit	*	*
F	Clearance to outside corner	*	*
G	Clearance to inside corner	*	*
H	Clearance to each side of center line extended above meter/regulator assembly	36 in. within a height 15 feet above meter/ regulator assembly	*
I	Clearance to service regulator vent outlet	36 in.	*
J	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other application	36 in.	12 in.
K	Clearance to mechanical air supply inlet	72 in.	36 in. above if within 10 feet horizontally
L	Clearance above paved sidewalk or paved driveway located on public property	84 in. <sup>3)</sup>	*
M	Clearance under veranda, porch deck or balcony	12 in. <sup>4)</sup>	*

- 1) In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code
  - 2) In accordance with the current ANSI Z223.1 / NFPA 54 National Fuel Gas Code
  - 3) A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.
  - 4) Permitted only if veranda, porch, deck or balcony is fully open on a minimum of two sides beneath the floor.
- \* For clearances not specified in ANSI Z223.1 / NFPA54 or CSA-B149.1, one of the following shall be indicated:
- a) A minimum clearance value determined by testing in accordance with section 2.20, or;
  - b) A reference to the following footnote:  
"Clearance in accordance with local installation codes and the requirements of the gas supplier."

Fig. 11 Required direct vent terminal clearances (twin pipe / concentric penetration)

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