

Direct vent installations (sealed combustion)

For direct vent applications all applicable items below must be met:

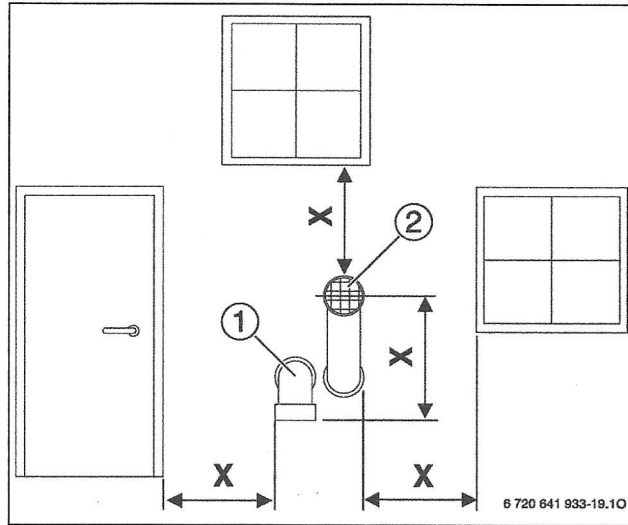


Fig. 30 Vent and combustion air pipe position of a sealed combustion system

- [1] Intake
- [2] Exhaust
- X At least 1 foot (305 mm)

The termination shall terminate at least 1 foot (305 mm) below, 1 foot (305 mm) horizontally from or 1 foot (305 mm) above any door, window or gravity air inlet into any building (→ fig. 31 [2], [X₁], [X₃], page 41).

If multiple boilers are installed in a row, allow at least 1 foot (305 mm) clearance between the vent termination of one and the combustion air intake of the other.

Vent termination must be at least 1 foot (305 mm) above grade, anticipated snow line or roof surface (Canada 1-1/2 feet (457 mm) minimum) (→ fig. 31 [Y_A], page 41).

Vent termination must be at least 7 feet (2135 mm) above a public walkway (→ fig. 31 [X₅], page 41). Ensure that condensate spilling from the termination does not create a hazard or a nuisance.

Vent termination must be 3 feet (915 mm) above any forced air intake within 10 feet (3050 mm) (→ fig. 31 [1], [Y_B], page 41).

Do not extend exposed vent pipe outside the building beyond recommended distance. Condensate could freeze and block vent pipe.

Vent should terminate at least 3 feet (915 mm) away from adjacent walls, inside corners and 5 feet (1525 mm) below roof overhang (→ fig. 31 [X₂], [X₄], page 41).

It is not recommended to terminate vent above any door or window, condensate can freeze causing ice formations.

Do not use chimney as a raceway if another boiler or fireplace is vented into or through chimney.

All PVC/CPVC vent pipes must be glued, except for the flue gas adapter-pipe connection.



The exhaust pipe must be properly supported and pitched a minimum of ¼ inch (6.35 mm) per foot back to the boiler. This allows the condensate to properly drain.



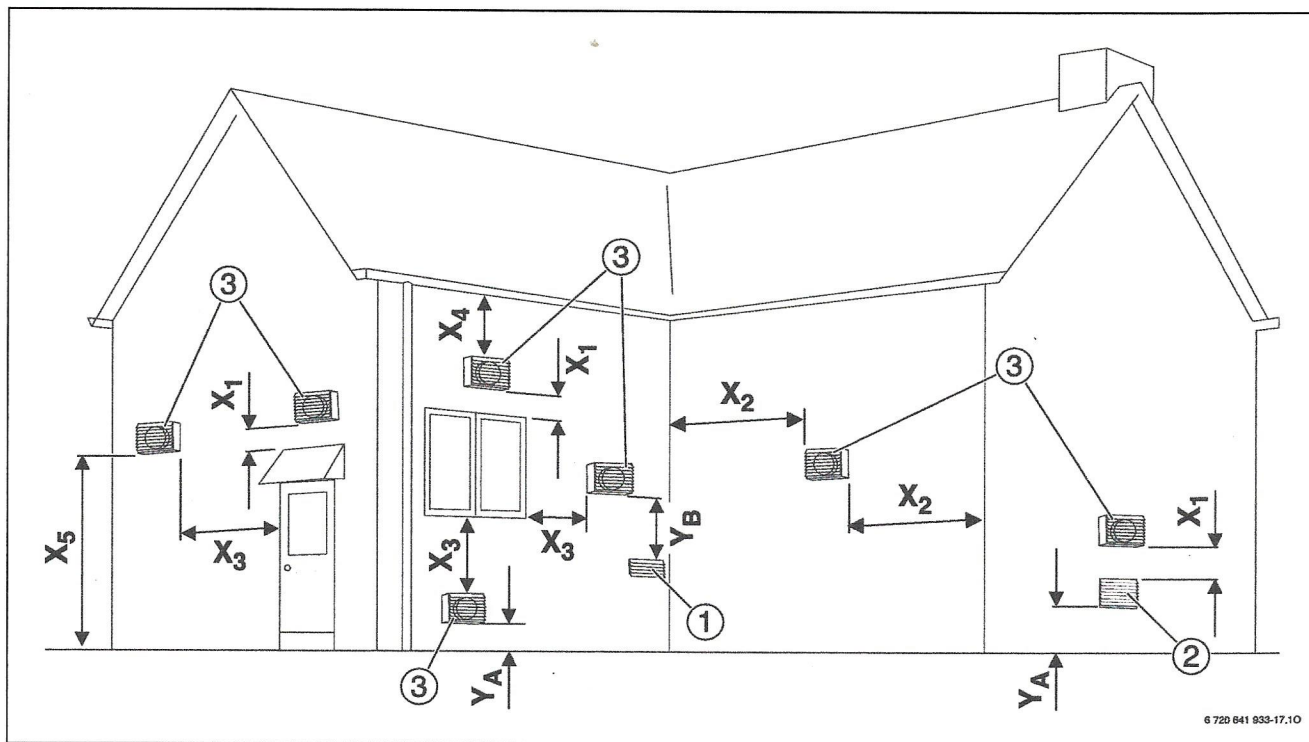
NOTICE: Damage of 2 inch PVC pipes.
 ► For ZBR42-3A and ZWB42-3A use 2 inch CPVC-pipes or 3 inch pipes.

All PP/PVC/CPVC combustion air and vent pipe materials and fittings must comply with the following and must be UL approved venting material:

Material	Item	United states	Canada	ZBR16-3A	ZBR28-3A	ZBR35-3A	ZBR42-3A	ZWB28-3A	ZWB35-3A	ZWB42-3A	
PVC schedule 40, 80	2" (50 mm) Vent or air pipe and fitting	ANSI/ASTM D1785	BH Gas venting systems, ULC S636 ¹⁾	X	X	X		X	X		
PVC-DWV		ANSI/ASTM D2665		X	X	X		X	X		
CPVC schedule 40, 80		ANSI/ASTM F441		X	X	X	X	X	X	X	
PVC schedule 40, 80	3" (76 mm) Vent or air pipe and fitting	ANSI/ASTM D1785		X	X	X	X	X	X	X	
PVC-DWV		ANSI/ASTM D2665		X	X	X	X	X	X	X	
CPVC schedule 40, 80		ANSI/ASTM F441		X	X	X	X	X	X	X	
PP	3" (80 mm) vent or air pipe M&G/	ANSI Cat IV _f			X	X	X	X	X	X	X
PP	DuraVent PolyPro GreenVent	ANSI Cat IV			X	X	X	X	X	X	X
PP	3"/5" (80/125 mm) concentric M&G/	ANSI Cat IV			X	X	X	X	X	X	X
PP	DuraVent PolyPro GreenVent	ANSI Cat IV			X	X	X	X	X	X	X
PVC	Pipe cement/primer	ANSI/ASTM D2564			X	X	X	X	X	X	X
CPVC		ANSI/ASTM F493		X	X	X	X	X	X	X	

Table 17 Materials for pipe

1) Components of the certified vent systems must not be interchanged with other vent systems or unlisted pipe fittings. Plastic components, and specified primers and glues of the certified vent system must be from a single system manufacturer and not intermixed with other system manufacturer's vent system parts.



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Fig. 31 Vent and combustion air pipe position

Direct vent (sealed combustion):

- [1] Forced Air Inlet
- [2] Gravity Air Inlet
- [3] Exhaust terminal
- X_1 1 foot (305 mm)
- X_2 3 feet (915 mm)
- X_3 1 foot (305 mm)
- X_4 5 feet (1525 mm)
- X_5 7 feet (2135 mm) above public walkway
- Y_A At least 1 foot (305 mm) above grade and snow line
- Y_B Exhaust terminal must be at least 3 feet (915 mm) above forced air inlet within 10 feet (3050 mm)

Fan assisted appliance (non-sealed combustion):

- [1] Forced Air Inlet
- [2] Gravity Air Inlet
- [3] Exhaust terminal
- X_1 1 foot (305 mm)
- X_2 3 feet (915 mm)
- X_3 4 feet (1220 mm)
- X_4 5 feet (1525 mm)
- X_5 7 feet (2135 mm) above public walkway
- Y_A At least 1 foot (305 mm) above grade and snow line
- Y_B Exhaust terminal must be at least 3 feet (915 mm) above forced air inlet within 10 feet (3050 mm)

6.8.2 Approved examples of horizontal and vertical venting installation



NOTICE:

- ▶ Place pipe supports every 5 feet (1525 mm) of horizontal and vertical run, beginning with support near boiler.
- ▶ The condensate must be disposed of in accordance with applicable rules.
- ▶ Periodic cleaning of the vent terminal and air-intake screens is mandatory.
- ▶ Avoid locating vent terminals near equipment or building features which can be subject to degradation from exhaust gases.
- ▶ If multiple boilers are installed in a row, allow at least 1 foot (305 mm) clearance between the vent termination of one and the combustion air intake of the other.

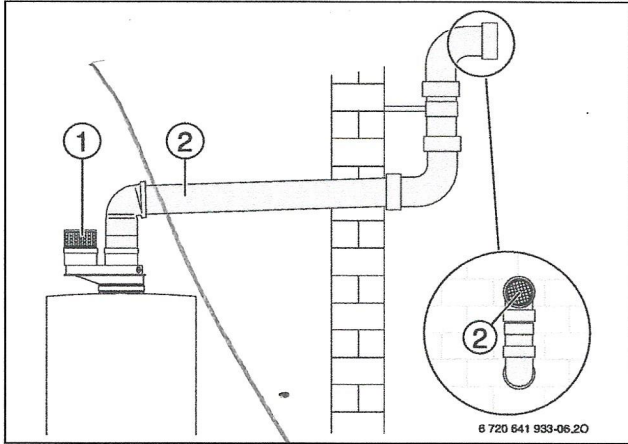


Fig. 32 Horizontal venting system (room air only)

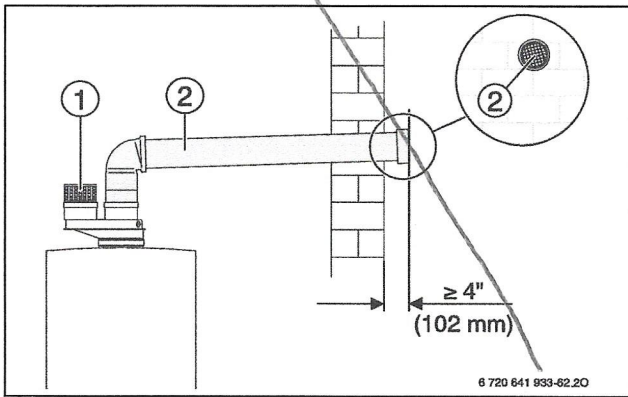


Fig. 33 Horizontal venting system (room air only)

Key to Fig. 32 and Fig. 33:

- [1] Intake
- [2] Exhaust

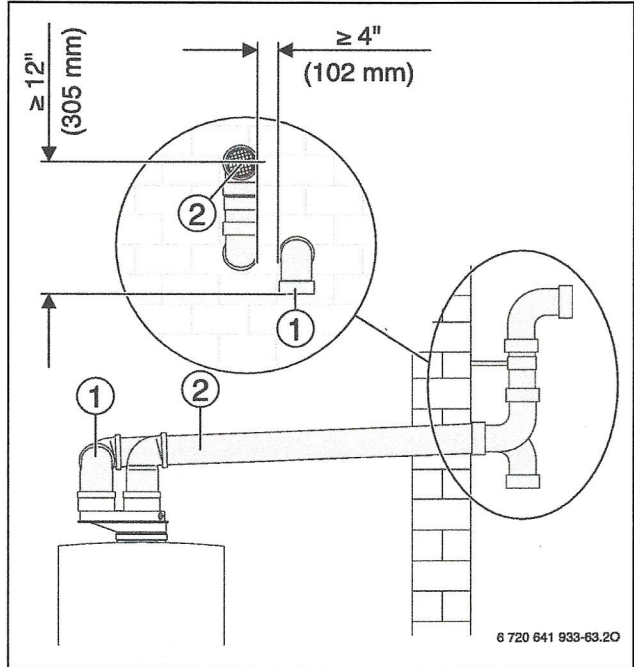


Fig. 34 Horizontal venting system (sealed combustion)

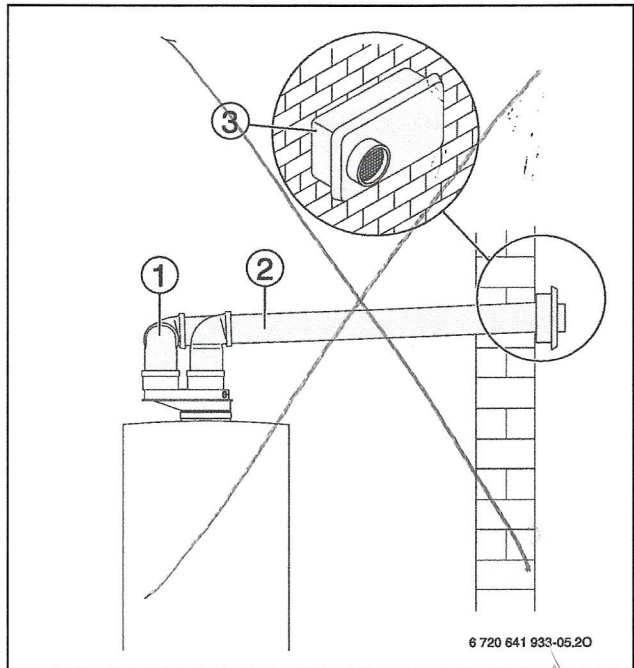


Fig. 35 Horizontal venting system (sealed combustion)

Key to Fig. 34 and Fig. 35:

- [1] Intake, behind exhaust
- [2] Exhaust
- [3] Wall termination