Installation Instructions

for use by heating contractor

Venting System

for Vitodens 100-W
WB1A Series
for Vitodens 200-W
WB2 Series

Please file in Service Binder

Venting System

Vitodens 100-W, WB1A-24/30
(with preinstalled vent pipe adaptor)

Vitodens 200-W, WB2-24C/24/32

Vitodens 200-W, WB2-44/60
(with preinstalled vent pipe adaptor)

IMPORTANT

Read and save these instructions for future reference.

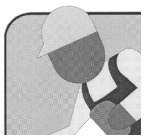
5285 268 v3.8 10/2008

Safety, Installation and Warranty Requirements

Please ensure that these instructions are read and understood before commencing installation. Failure to comply with the instructions listed below and details printed in this manual can cause **product/property damage**, **severe personal injury**, and/or **loss of life**. Ensure all requirements below are understood and fulfilled (including detailed information found in manual subsections).

■ **Licensed professional heating contractor**
The installation, service, and maintenance of this equipment *must be* performed by a licensed professional heating contractor.

► *Please see section entitled "Important Regulatory and Installation Requirements" in the Installation Instructions.*



■ **Carbon monoxide**
Improper installation, service and/or maintenance can cause flue products to flow into living space. Flue products contain *poisonous* carbon monoxide gas.

► *For information pertaining to the proper installation, service and maintenance of this equipment to avoid formation of carbon monoxide, please read these Installation Instructions carefully.*

■ **Equipment venting**
Never operate boiler without an *installed venting system*. An improper venting system can cause carbon monoxide poisoning.

■ **Warranty**
Information contained in this and related product documentation must be read and followed. *Failure to do so renders warranty null and void.*

■ **Product documentation**
Read all applicable documentation before commencing installation. Store documentation near boiler in a readily accessible location for reference in the future by service personnel.

► *For a listing of applicable literature, please see section entitled "Important Regulatory and Installation Requirements" in the Installation Instructions.*

⚠ WARNING

Installers must follow local regulations with respect to installation of carbon monoxide detectors. Follow manufacturer's maintenance schedule of boiler.

■ **Advice to owner**
Once the installation work is complete, the heating contractor must familiarize the system operator/ultimate owner with all equipment, as well as safety precautions/requirements, shut-down procedure, and the need for professional service annually before the heating season begins.

How these Installation Instructions are structured…

These Instructions cover the following venting systems for the Vitodens 100-W and 200-W boilers.
Refer to the section applicable to your application for pertinent installation information.

Before proceeding with the installation, please read sections entitled *Safety* and *General Information.*
These sections are applicable to all venting systems listed and must be read before commencing the installation.

Information specific to…

5285 268 v3.8

Index

5285 268 v3.8

Direct Venting (Two-pipe System)

Single Wall Venting (Room Air Dependent)

About these Installation Instructions

Take note of all symbols and notations intended to draw attention to potential hazards or important product information. These include "WARNING", "CAUTION", and "IMPORTANT". See below.

WARNING

Indicates an imminently hazardous situation which, if not avoided, could result in death, serious injury or substantial product/property damage.

→ *Warnings draw your attention to the presence of potential hazards or important product information.*

CAUTION

Indicates an imminently hazardous situation which, if not avoided, may result in minor injury or product/property damage.

→ *Cautions draw your attention to the presence of potential hazards or important product information.*

IMPORTANT

→ *Helpful hints for installation, operation or maintenance which pertain to the product.*

→

→ *This symbol indicates that additional, pertinent information is to be found in the right-hand column.*

→ *This symbol indicates that other instructions must be referenced.*

Important Regulatory and Installation Requirements

For installations in the Commonwealth of Massachusetts, the following local requirements apply in addition to all other applicable NFPA requirements:

1) For direct-vent appliances, mechanical-vent heating appliances or domestic hot water equipment, where the bottom of the vent terminal and the air intake is installed below four feet above grade the following requirements must be satisfied.

1. If there is not one already present, on each floor level where there are bedroom(s), a carbon monoxide detector and alarm shall be placed in the living area outside the bedroom(s). The carbon monoxide detector shall comply with NFPA 720 (2005 Edition).

2. A carbon monoxide detector shall be located in the room that houses the appliance or equipment and shall:

    a. Be powered by the same electrical circuit as the appliance or equipment such that only one service switch services both the appliance and the carbon monoxide detector;
    b. Have battery back-up power;
    c. Meet ANSI/UL 2034 Standards and comply with NFPA 720 (2005 Edition); and
    d. Have been approved and listed by a Nationally Recognized Testing Laboratory as recognized under 527 CMR.

3. A Product-approved vent terminal must be used, and if applicable, a Product-approved air intake must be used. Installation shall be in strict compliance with the manufacturer's instructions. A copy of the installation instructions shall remain with the appliance or equipment at the completion of the installation.

4. A metal or plastic identification plate shall be mounted at the exterior of the building, four feet directly above the location of the vent terminal. The plate shall be of sufficient size to be easily read from a distance of eight feet away, and read **"Gas Vent Directly Below"**.

For direct-vent appliances, mechanical-vent heating appliances or domestic hot water equipment where the bottom of the vent terminal and the air intake is installed above four feet above grade the following requirements must be satisfied:

1. If there is not one already present, on each floor level where there are bedroom(s), a carbon monoxide detector and alarm shall be placed in the living area outside the bedroom(s). The carbon monoxide detector shall comply with NFPA 720 (2005 Edition).

2. A carbon monoxide detector shall:

    a. Be located in the room that houses the appliance or equipment;
    b. Be either hard-wired or battery powered or both; and
    c. Shall comply with NFPA 720 (2005 Edition).

3. A Product-approved vent terminal must be used, and if applicable, a Product-approved air intake must be used. Installation shall be in strict compliance with the manufacturer's instructions. A copy of the installation instructions shall remain with the appliance or equipment at the completion of the installation.

Important Regulatory and Installation Requirements (continued)

IMPORTANT

When replacing parts, use original Viessmann or Viessmann approved replacement parts.

For coaxial venting systems only:
Venting material to be supplied by Viessmann only.

The venting system must be installed by a licensed professional heating contractor familiar with the operation and maintenance of heating appliances and venting. Before installing this product, ensure that the complete installation literature has been read. Failure to follow proper installation procedures as stated in these instructions, including vent pitch and proper appliance connections, may violate local, provincial/state, or national codes and cause unsafe conditions which may lead to severe property damage or personal injury.

The venting system must be installed in accordance with local building code requirements as well as national codes. For installations in Canada use CAN/CSA-B149.1 Natural Gas Installation Code or CAN/CSA-B149.2 Propane Installation Code as applicable; in the U.S. use the National Fuel Gas Code ANSI Z223.1 or NFPA Standard 54.

To ensure safe operation of the appliance, Viessmann recommends that the system be inspected once a year by a qualified service technician.

Every venting system must be planned and installed for optimum performance and safety. These Installation Instructions are designed to help you determine venting requirements and limitations with respect to installation. Please read and follow these instructions carefully.

It is the responsibility of the installer to contact local building and fire officials concerning any installation restrictions and/or inspection requirements that may apply. Permits may be required before commencement of the installation.

The vent termination for side wall vent installations should be located on a wall that is least affected by prevailing winds. High winds may affect boiler operation and/or degrade the exterior finish of the wall. They may also cause recirculation of the appliance's own flue products. Recirculation of flue products can result in poor combustion and inlet condensation problems. If wind is a problem, steps must be taken to shield the vent termination from high winds, such as building a fence or planting shrubs. Ensure that the total equivalent vent length is not exceeded.

Operation with balanced flue using Viessmann supplied coaxial vent system

IMPORTANT

Side wall vent installations must include Viessmann protective screen.

Because of its sealed combustion chamber, the Vitodens gas-fired condensing boiler is suitable for operation with **balanced flue.**
The Vitodens and the coaxial vent-air intake system are approved together under CSA 4.9. ANSI Z21.13 - 2005 Standard.
The vent length requirements stated in this manual (starting on page 21 for side wall vent installations and page 31 for vertical vent installations) must be observed.
The combustion air is supplied and the flue gas discharged via a coaxial double pipe. Combustion air is fed through the circular gap between the outer aluminum air intake pipe and the vent pipe. Flue gases are discharged via an inner pipe constructed from flame-retardant plastic (polypropylene rated for a maximum temperature of 250°F / 121°C).

Not all inspection authorities require a leak test of the vent-air intake system in conjunction with the wall-mounted gas-fired boiler during system start-up. In cases where the leak test is not required, Viessmann recommends that the heating contractor perform a simplified leak test when starting up the system. For this purpose, it is sufficient to measure the CO_2 concentration in the combustion air of the circular gap of the coaxial vent-air intake pipe. The vent pipe is considered sufficiently leak-proof if the CO_2 concentration in the combustion air is no higher than 0.2 % and the O_2 concentration no lower than 20.6 %.
If higher CO_2 or lower O_2 values are measured, the flue gas system must be checked for leaks.

The coaxial venting material can be extended (without exceeding the maximum equivalent length) beyond the outside wall of the structure, provided that the coaxial venting material is installed in an enclosed, insulated and waterproof chase that is acceptable for outdoor installation. The vent termination location must comply with the instructions and codes stated in this manual.

IMPORTANT

Potential gaps between the vent-air intake and the surrounding construction which may cause air, rain or flue gases to leak into the wall or the building, must be sealed with approved sealant/caulking to prevent leakage of any kind.

5285 268 v3.8

Important Regulatory and Installation Requirements (continued)

Table 1. Clearance to combustibles

Top	Front	Rear	Left	Right	Vent pipe
0"/mm	0"/0mm	0"/mm	0"/mm	0"/mm	0"/mm

Table 2. Recommended minimum service clearance

Top*	Front	Rear	Left	Right
12"(305 mm)	28"(711 mm)	0"/mm	6"(152 mm)	0"/mm

For details refer to Vitodens 100-W or Vitodens 200-W Installation Instructions (as may be applicable).

For coaxial venting systems only:

In the event of flue gas leakage, the boiler enclosure provides a tightly sealed system on the inside of the building. Escaping flue gas is fed back into the combustion air intake, preventing any flue gas from entering the living area.
The venting system may be concealed in a chase.

Minimum and maximum wall thickness through which the horizontal vent-air intake termination may be installed:
Minimum: 1"(25.4 mm)
Maximum: 19.6"(497.8 mm)

Vent-air intake system must be properly installed and sealed.

WARNING

**The Vitodens 100-W and 200-W boilers are NOT approved for common-venting applications.
Do not attempt to common-vent the Vitodens 200-W boiler with any other appliance.**

WARNING

Failure to ensure that all flue gases have been safely vented to the outdoors can cause property damage, severe personal injury, or loss of life. Flue gases may contain deadly carbon monoxide.

CAUTION

Under certain climatic conditions some building materials may be affected by flue products expelled in close proximity to unprotected surfaces. Sealing or shielding of the exposed surfaces with a corrosion resistant material (e.g. aluminum sheeting) may be required to prevent staining or deterioration. The protective material should be attached and sealed (if necessary) to the building before attaching the vent termination. It is strongly recommended to install the vent termination on the leeward side of the building.

General Installation Information

Installation steps (outline)

⚠ WARNING

Ensure that the entire venting system is protected from physical damages. A damaged venting system may cause unsafe conditions.

⚠ WARNING

The venting system is approved for indoor installations only.
Do not install the venting system outdoors.

IMPORTANT

Boiler operation in marine environments (damp, salty coastal areas):

The service life of the boiler's exposed metallic surfaces, such as the casing and fan housing, is directly influenced by proximity to damp and salty marine environments. In such areas, higher concentration levels of chlorides from sea spray, coupled with relative humidity, can lead to degradation of the exposed metallic surfaces mentioned above. Therefore, it is imperative that boilers installed in such environments not be installed using direct vent systems which draw outdoor air for combustion. Such boilers must be installed using room air dependent vent systems; i.e. using room air for combustion. The indoor air will have a much lower relative humidity and, hence, the corrosion will be minimized.

- Route vent pipe as directly as possible and with as few bends as possible to the boiler.
- Check proper location of gaskets in all coaxial pipe collars.
  (Only use supplied parts with the polypropylene venting system.)
  Apply moderate amount of supplied lubricant to slip joint ends of vent and air intake pipe collars.
- Slide pipes into each other with a gentle twisting motion.
- Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2" per 3.3 ft. / 50 mm per 1 m).
- Use a hacksaw and sheet metal snips to cut pipes to length (if necessary). Use a file to smooth rough edges. Pipe must be round and not bent into an oval shape.

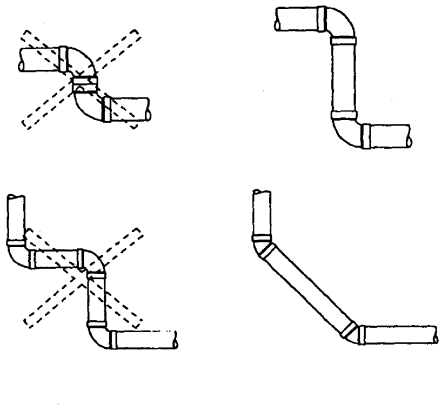
IMPORTANT

When cutting pipes to length, debur and clean pipes.

- *For stainless steel and CPVC venting systems:*
  In conjunction with these instructions, follow the installation instructions supplied by the special venting manufacturer.
  Viessmann Venting System Instructions supersede the instructions supplied by the manufacturer.

General Installation Information *(continued)*

Recommended venting practice



When installing a venting system the following recommended venting practices apply:

- Keep length and number of 90° elbows to a minimum.
- Try not to use back-to-back 90° elbows.
- Use 45° elbows where possible to minimize the number of 90° elbows in case redirection of flue gas is required.
- The special vent system shall not be routed into, through, or within any other vent such as an existing masonry or factory-built chimney.

  Exception:
  A masonry chimney flue may be used to route the venting system only if **no other** appliance is vented in the same flue.

Leak test (for coaxial venting systems only)

Viessmann recommends that the heating contractor perform a simplified leak test during boiler start-up. For this purpose it is sufficient to measure the CO_2 concentration of the combustion air in the annular gap of the air intake pipe. The vent pipe is considered sufficiently leak-proof if a CO_2 concentration in the combustion air no higher than 0.2% or an O_2 concentration no lower than 20.6% is measured relative to a starting O_2 concentration of 20.9%.

If higher CO_2 values or lower O_2 values are measured, inspect the venting system thoroughly.

Continuous short cycling of the boiler can indicate a leaking venting system.

Note that the vent pipe adaptor comes with two measurement ports, one for combustion air intake measurement and one for flue gas measurement.

Boiler vent pipe adaptor installation (for WB2 6-24C, 6-24 and WB2 8-32 only)

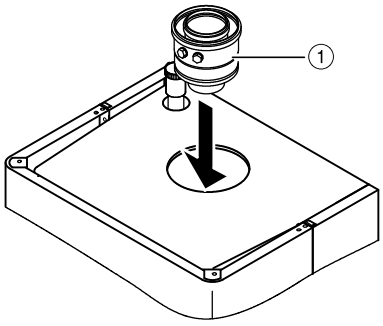


Fig. 1
Installing the boiler vent pipe adaptor

1. Apply moderate amount of supplied lubricant to inner and outer gaskets of boiler vent pipe adaptor ①.
2. Fully insert boiler vent pipe adaptor ① into opening provided.

Side Wall Venting Layouts

Layout with basic coaxial vent kit componentry

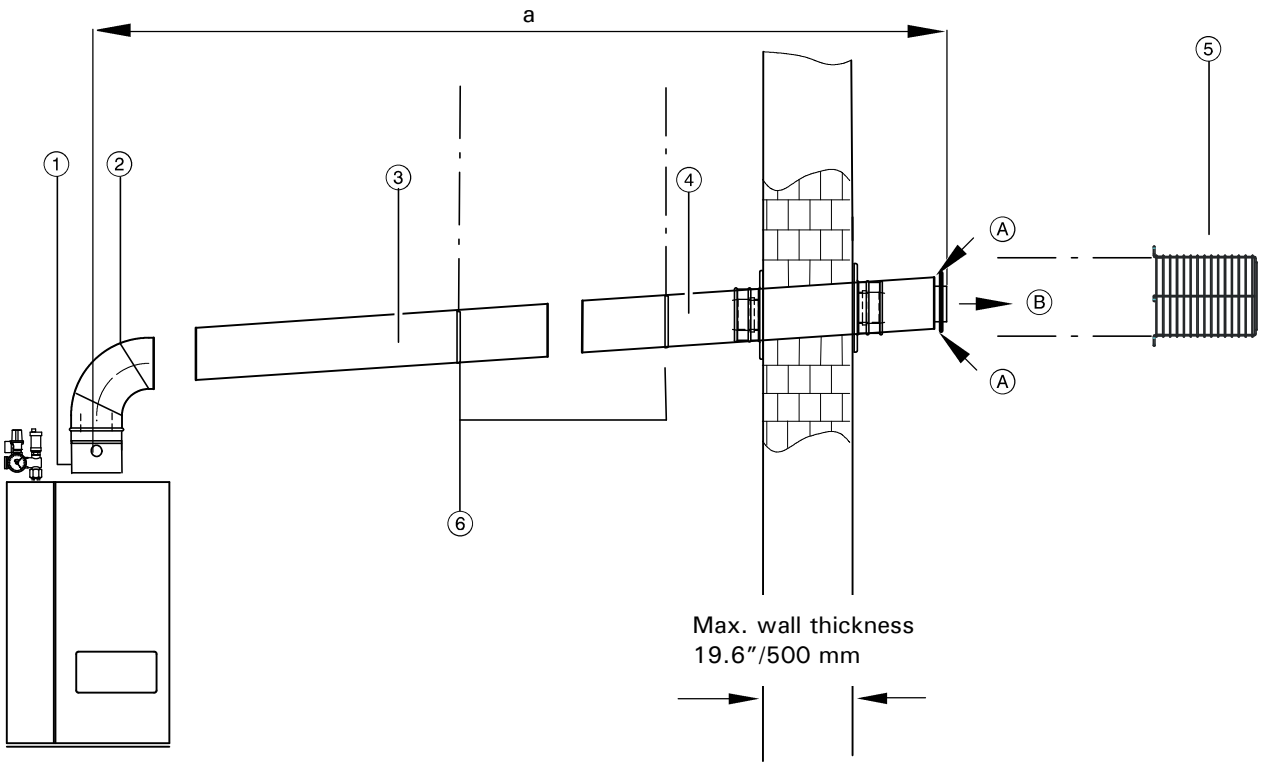


Fig. 2
Standard side wall venting layout, using basic vent kit components for vent systems 60/100, 80/125 and 100/150

(1)	**Vent pipe adaptor**
(2)	**Elbow,** 87° (1 per carton)
(3)	**Straight pipe** 3.3 ft./1 m long
(4)	**Vent termination** (incl. wall flashings) **Important!** **Total length of vent termination pipe is 31"/787 mm. If required, the vent termination pipe may be shortened by max. 12"/305 mm (min. vent termination length is 19"/483 mm**).
(5)	**Protective screen** **Warning!** **Protective screen MUST be installed.**
(6)	**Mounting clip,** white (use at least 2)
(7)	**Brass adaptor** (M8 x $^{5}/_{16}$" - 18) **and Set of screws** (#8 x $^{3}/_{8}$") (shown on following page)

(A)	**Combustion air intake**
(B)	**Flue gas outlet**
a	**Total vent length**[*1]

[*1] *See section Vent Length Requirements on page 21 in this manual.*

5285 268 v3.8

Side Wall Venting Layouts *(continued)*

Layout with basic coaxial vent kit componentry *(continued)*

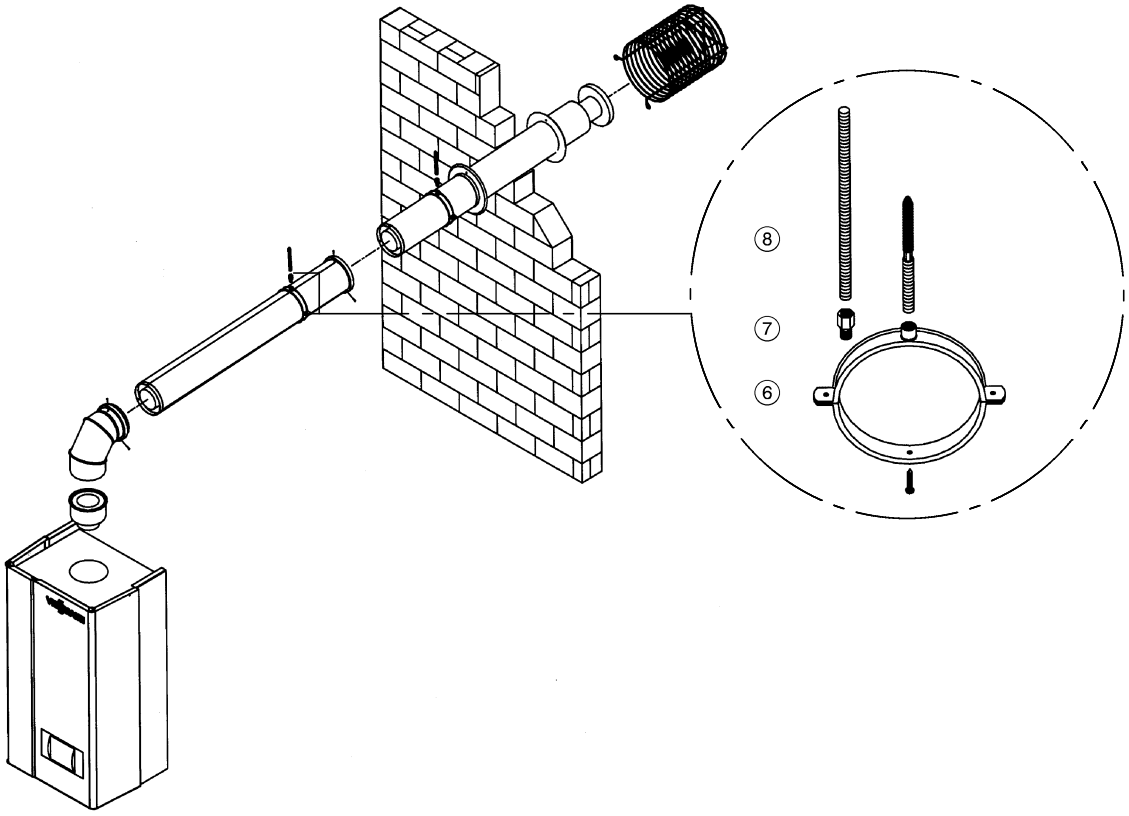


Fig. 3
Side wall venting layout, using basic vent kit components for vent systems 60/100, 80/125 and 100/150

⑥	**Mounting clip** (c/w 4" screw)
⑦	**Brass adaptor** (supplied)
⑧	**All-threaded rod** (field supplied)

See section Installation of Anchoring System on page 20 in this manual for detailed installation information of anchoring system.

Side Wall Venting Layouts *(continued)*

Layout with basic coaxial vent kit and accessory componentry

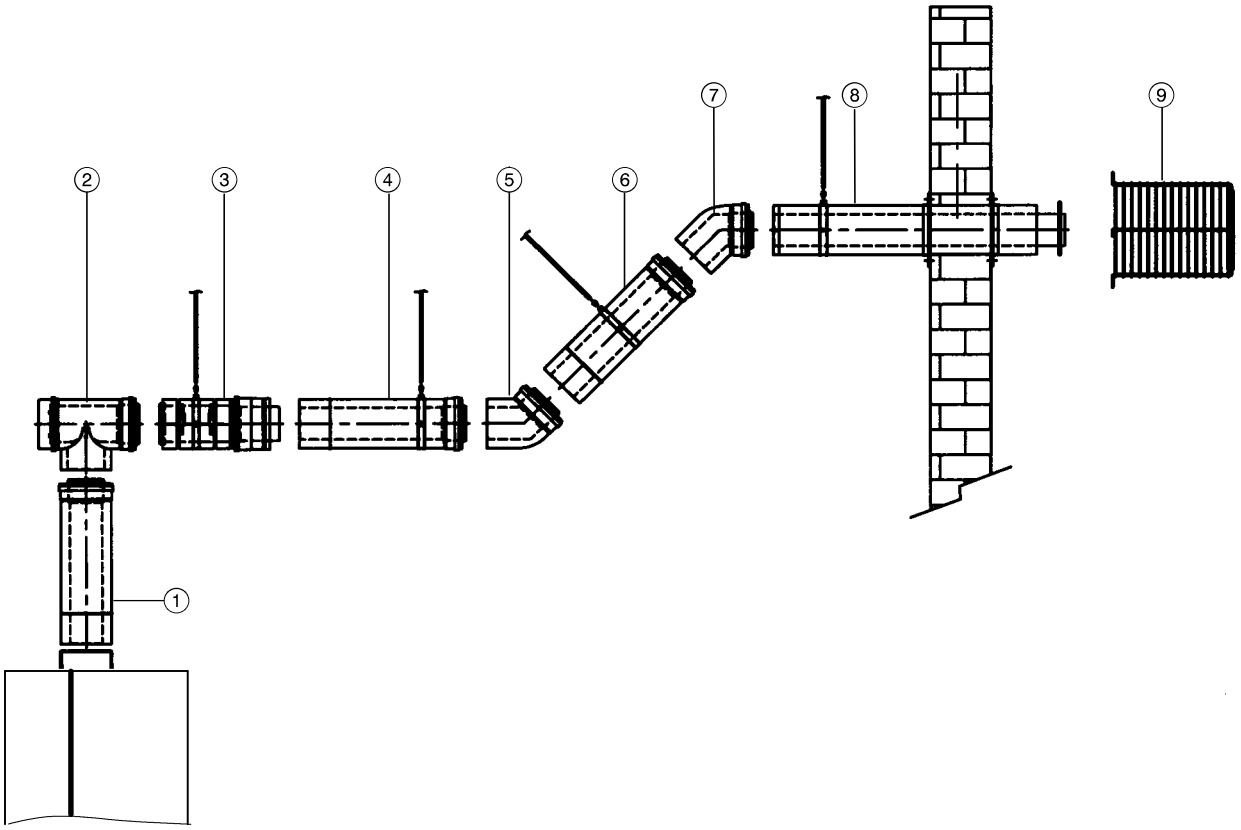


Fig. 4
Side wall venting layout, using basic vent kit components and accessory parts for vent system 60/100, 80/ 125 and 100/150

① ④ ⑥	**Straight pipe***1 3.3 ft./1 m long or 1.6 ft./0.5 m long
②	**Vent inspection tee/ Elbow,** 87° (1 per carton)
③	**Sliding coupling**
⑤ ⑦	**Elbow,** 45° (2 per carton)
⑧	**Vent termination** (incl. wall flashings) **Important! Total length of vent termination is 31"/787 mm. If required, the vent termination may be shortened by max. 12"/305 mm (min. vent termination length is 19"/483 mm**).
⑨	**Protective screen Warning! Protective screen must be installed.**
	Mounting clip, white (use at least 2)
	Brass adaptor (M8 x $^{5}/_{16}$" - 18) **and Set of screws** (#8 x $^{3}/_{8}$")

*1 *Other lengths may be used provided that the maximum equivalent vent length is not exceeded.*

5285 268 v3.8

Component Installation Guide

Offset installation

(e.g. for offset venting systems)
(2 × 45° elbow)

Minimum offset of approx. 4"/100 mm:
Slide two 45° elbows together
and connect to coaxial vent-air intake system.
(vent system 80/125)

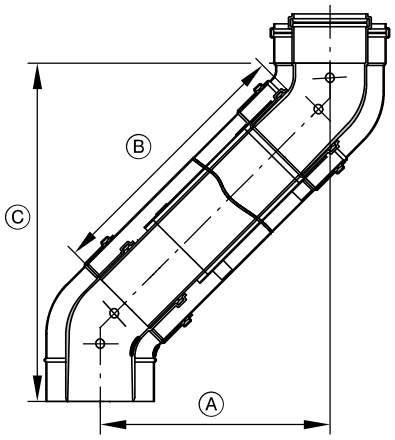
When the offset is larger than 4"/100 mm:
Depending on the offset, insert extension straight pipe (Ⓑ) between the two 45° elbows.
(vent system 80/125)

Table 3. Vent system 60/100

Offset	Ⓐ	6	8	9.8	12	13.7	15.3
in.(mm)		(150)	(200)	(250)	(300)	(350)	(390)
Extension	Ⓑ	6.3	9.1	11.9	14.7	17.5	19.7
in.(mm)		(161)	(232)	(303)	(373)	(444)	(501)
Height	Ⓒ	9.8	11.8	13.7	15.7	17.7	19.3
in.(mm)		(249)	(299)	(349)	(399)	(449)	(489)

Table 5. Vent system 80/125

Offset	Ⓐ	6	8	9.8	12	13.7	15.3
in.(mm)		(150)	(200)	(250)	(300)	(350)	(390)
Extension	Ⓑ	5	7.6	10.4	15.1	16	19.7
in.(mm)		(122)	(193)	(264)	(384)	(405)	(500)
Height	Ⓒ	10.6	13	15	17	19	21.5
in.(mm)		(270)	(330)	(380)	(430)	(480)	(547)



Minimum offset of approx. 5"/120 mm:
Slide two 45° elbows together
and connect to coaxial vent-air intake system.

When the offset is larger than 5"/120 mm:
Depending on the offset, insert extension straight pipe (Ⓑ) between the two 45° elbows.
(vent system 100/150)

Table 4.Vent system 100/150

Offset	Ⓐ	8	9.8	12	13.7	15.3
in.(mm)		(200)	(250)	(300)	(350)	(390)
Extension	Ⓑ	6.7	8.5	11.2	14	16.1
in.(mm)		(170)	(215)	(285)	(355)	(410)
Height	Ⓒ	12.6	14.2	16.1	18.1	19.7
in.(mm)		(320)	(360)	(410)	(460)	(500)

Component Installation Guide *(continued)*

Coaxial vent sliding coupling installation

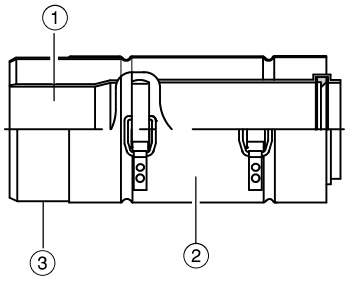


Fig. 5
Coaxial vent sliding coupling

IMPORTANT

The long sockets of the vent sliding coupling compensate for a gap of up to 1.8”/45 mm.
Adjust extra long pipe lengths prior to installation.

① Inner pipe
② Collar
③ Short sleeve

1. Push sliding coupling ① onto preceding vent pipe.
2. Open collar ② and slide onto the following vent pipe.
3. Slide short sleeve ③ into female end of preceding vent pipe.
4. Pull back inner pipe ①, closing the gap (remove spacer from inside of vent pipe, if required).
5. Align collar ② and close spring-loaded latch on collar.

Component Installation Guide *(continued)*

Coaxial vent termination installation

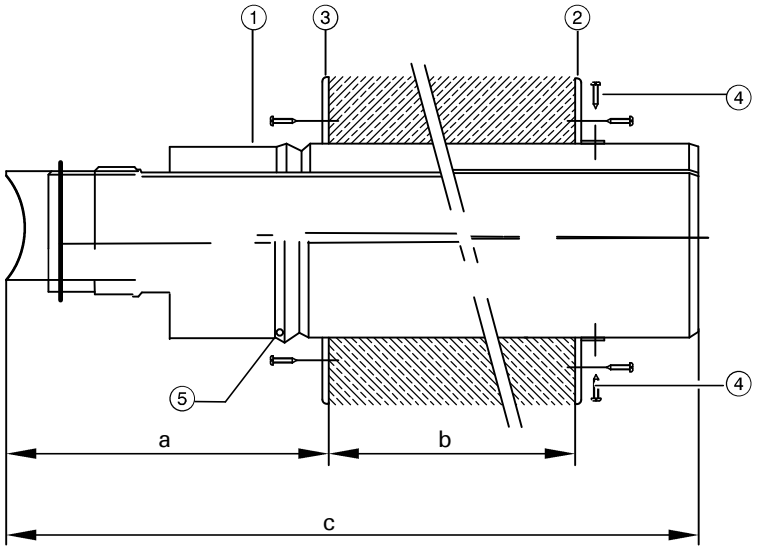


Fig. 6
Coaxial vent termination
for vent system 60/100, 80/125
and 100/150

① Vent termination
② Wall flashing (inside)
③ Wall flashing (outside)
④ Screw #8 x $^3/_8$"
⑤ Drain opening

a 8.75"/222 mm
Fixed length!
Do not extend beyond indicated point.
b max. 19.6"/500 mm
c 31"/787 mm

Table 6. Wall opening information

Vent system	Opening Ø
60/100	4¼"/108 mm
80/125	5¼"/133 mm
100/150	$6^3/_8$"/160 mm

Side wall vent termination installation

1. Provide side wall opening (see table above) to install vent termination.

2. Slide vent termination ① with wall flashing ③ into opening (drain openings ⑤ must be located on the outside of the wall, pointing downward).

3. Attach wall flashing ② to inside of wall using the screws and plugs provided.

4. Attach wall flashing ③ to outside of wall.

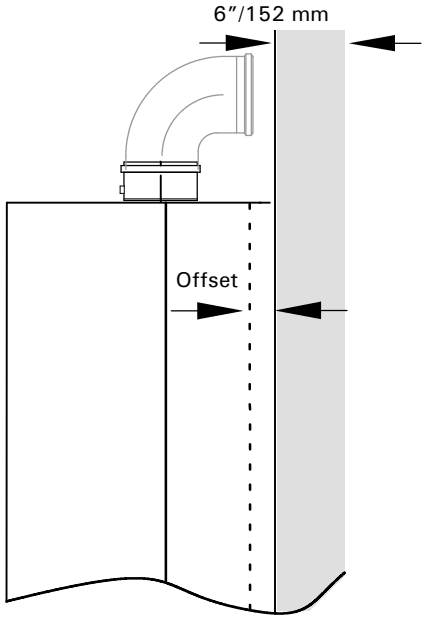
5. To prevent movement of vent termination inside the wall, fasten flashing ② to vent pipe, using two #8 x $^3/_8$" screws ④ supplied.

IMPORTANT

Total length of vent termination is 31"/787 mm. If required, the vent termination may be shortened by max. 12"/305 mm (min. vent termination length is 19"/483 mm).

IMPORTANT

Potential gaps between the vent-air intake and the surrounding construction which may cause air, rain or flue gases to leak into the wall or the building, must be sealed with approved outdoor sealant/caulking to prevent leakage of any kind.



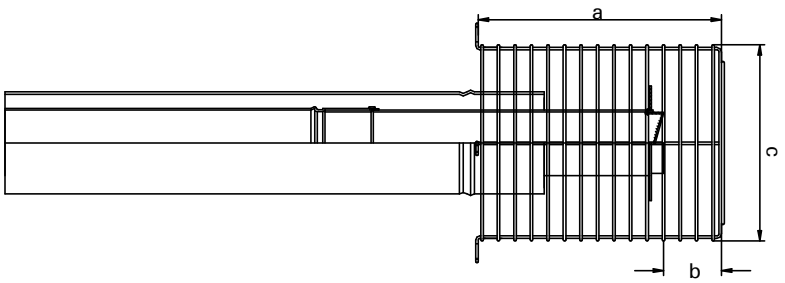
5285 268 v3.8

Fig. 7

When installing a side wall vent system with the minimum equivalent vent length (87° elbow and vent termination shortened to 19"/483 mm) from boiler back to the outside wall, a wall thickness of at least 6"/152 mm is required.
For walls with thicknesses less than 6"/152 mm, means must be provided to offset the boiler from the wall.
See Fig. 7.

Component Installation Guide *(continued)*

Coaxial vent termination installation (continued)



Dimensions

a 12″/305 mm
b approx. 3¼″/826 mm (non-adjustable)
c 9.5″/241 mm

Fig. 8
Protective screen, side view for vent systems 60/100, 80/125 and 100/150

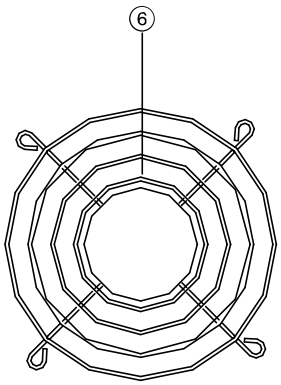


Fig. 9
Protective screen, front view

6. Secure protective screen ⑥ (Fig. 9) into place, using the four stainless steel screws and plugs provided.

IMPORTANT

The protective screen MUST be installed.

7. Connect vent termination from inside and route toward boiler with min. 3° downward slope.

Component Installation Guide *(continued)*

Vent termination location requirements (for installations in Canada)

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2.
A vent must **NOT** terminate...

1. ....directly above a paved sidewalk or paved driveway which is located between two single-family dwellings and serves both dwellings.

2. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

3. ....within 6 ft./1.83 m of a mechanical air supply inlet *1 to any building (dryer vents, non-sealed combustion furnace and hot water heater vents are considered to be mechanical air inlets).

4. ....above a meter/regulator assembly within 3 ft./0.9 m horizontally of the vertical centerline of the regulator vent outlet and to a maximum vertical distance of 15 ft./4.5 m.

5. ....within 3 ft./0.9 m of any gas service regulator vent outlet.

6. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

7. ....within the following distances of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion air inlet of any other appliance:

- 1 ft./0.3 m for inputs up to and including 100 000 Btu/h/30 kW (applicable only to boiler models WB1A 8-24 and 8-30, and WB2 6-24C and 6-24).
- 3 ft./0.9 m for input exceeding 100 000 Btu/h/30 kW (applicable to boiler models WB2-32 and up).

8. ....underneath a veranda, porch or deck, unless
- the veranda, porch, or deck is fully open on a minimum of two sides beneath the floor, and
- the distance between the top of the vent termination and the underside of the veranda, porch, or deck is greater than 1 ft./0.3 m.

9. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

10. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

11. ....at a location where ice formation on the ground can present a hazard.

12. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

13. ....where discharging hot flue gases may cause property damage or personal injury.

14. ....within 3 ft./0.9 m from an inside corner of outside walls.

*1 *Including heat recovery units.*

Component Installation Guide *(continued)*

Vent termination location requirements (for installations in the U.S.A.)

The vent must be installed observing local regulations in addition to National Codes, ANSI-Z223.1 or NFPA 54.
A vent must **NOT** terminate...

1. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

2. ....within 4 ft./1.2 m horizontally from service regulator vents, electric and gas meters as well as relief equipment.

3. ....at least 3 ft./0.9 m above any forced air inlet located within 10 ft./ 3 m.

4. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

5. ....within 1 ft./0.3 m of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion inlet of any other appliance.

6. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

7. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

8. ....at a location where ice formation on the ground can present a hazard.

9. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

10. ....where discharging hot flue gases may cause property damage or personal injury.

11. ....within 3 ft./0.9 m from an inside corner of outside walls.

Installation of Anchoring System

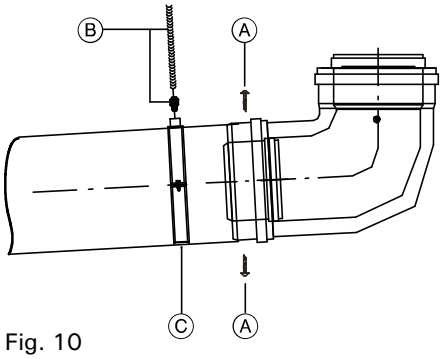


Fig. 10

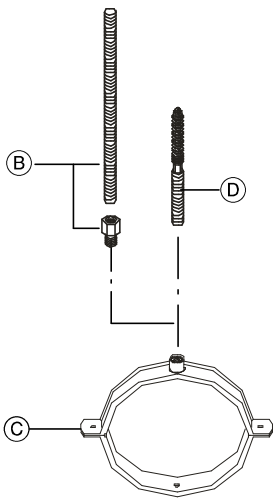


Fig. 11

The venting system must be securely supported by an anchoring system suitable for the weight and design of the materials employed. To do so, use supplied mounting clips (see Ⓒ Fig. 10, Fig. 11).

The joints in the horizontal section of the Vitodens 200-W venting system must be secured with the supplied sheet metal screws Ⓐ (see Fig. 9) to prevent the system from sagging .

The 4"/101.6 mm screws Ⓓ supplied with the mounting clip provide wall or ceiling support for a
- minimum distance of 2"/50.8 mm
- maximum distance of 3¼"/82.5 mm.

See Fig. 11.

If a longer anchoring system is required use brass adaptors M8 x $^{5}/_{16}$" (supplied) with $^{5}/_{16}$" all-threaded rods Ⓑ (field supplied). See Fig. 11.

The venting system must be supported as outlined by one anchor per straight vent pipe. Viessmann recommends the installation of the anchor(s) near the vent joint. See illustration (Fig. 3) of side wall venting layout on page 13 of this manual.

Vent Length Requirements

Maximum vent length (Vitodens 100-W and 200-W boilers)

Table 7.

	Vent system		
Boiler model	60/100	80/125	100/150
WB1A 8-24 WB1A 8-30	20 ft. / 6m (see Fig. 12)	26 ft. / 8m *1 (see Fig. 13)	33 ft. / 10m *2 (see Fig. 13)
WB2 6-24C WB2 6-24 WB2 8-32	n.a.	20 ft. / 6m (see Fig. 12)	26 ft. / 8m *3 (see Fig. 14)
WB2 11-44 WB2 15-60	n.a.	n.a.	20 ft. / 6m (see Fig. 12)

*1 *If used with increasers 60/100 to 80/125.*
*2 *If used with increasers 60/100 to 100/150.*
*3 *If used with increasers 80/125 to 100/150.*

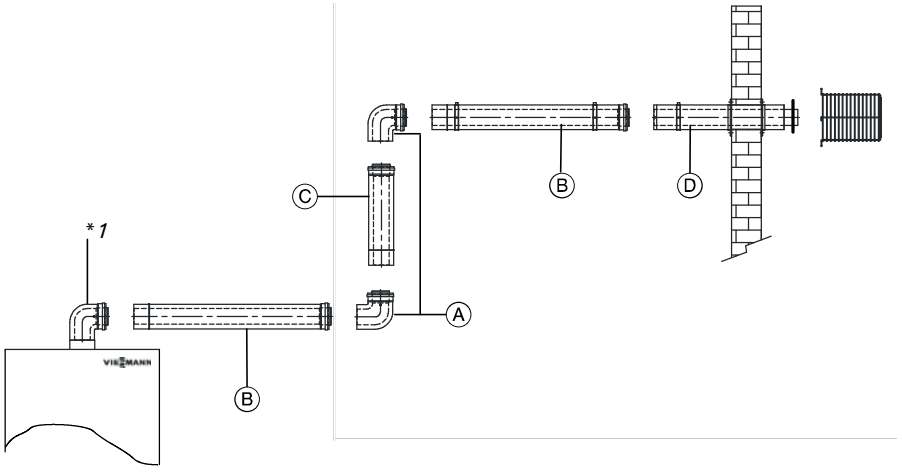


Fig. 12
Equivalent vent length calculation

Ⓐ 87° elbow
Ⓑ Vent pipe (3.3 ft./1 m)
Ⓒ Vent pipe (1.6 ft./0.5 m)
Ⓓ Vent termination
*1 *First elbow not included in equivalent vent calculation.*

- For maximum equivalent vent length on all models see tables 7. and 8., and Figs. 12 (left), 13 and 14 on the following pages.
- Do not exceed the maximum vent length.
- Do not use more than five elbows (87° or 45°) within one vent system (first elbow is included in count).
- First 87° elbow on boiler is not included in equivalent vent length calculation.

Table 8.

Type of fitting	Equivalent length
87° elbow/ 87° inspection tee	1.6 ft./0.5 m
45° elbow	1 ft./0.3 m

Equivalent vent length calculation example

2 x 87° elbow ..... 3.2 ft./1 m
2 x vent pipe (1 m) ..... 6.6 ft./2 m
1 x vent pipe (0.5 m) ..... 1.6 ft./0.5 m
1 x vent termination ..... 2.4 ft./0.73 m
Total equivalent length 13.8 ft./4.23 m

IMPORTANT

First elbow not included in equivalent vent calculation.

Always include vent termination length in calculations.

Vent Length Requirements *(continued)*

Maximum vent length with increasers (Vitodens 100-W boiler)

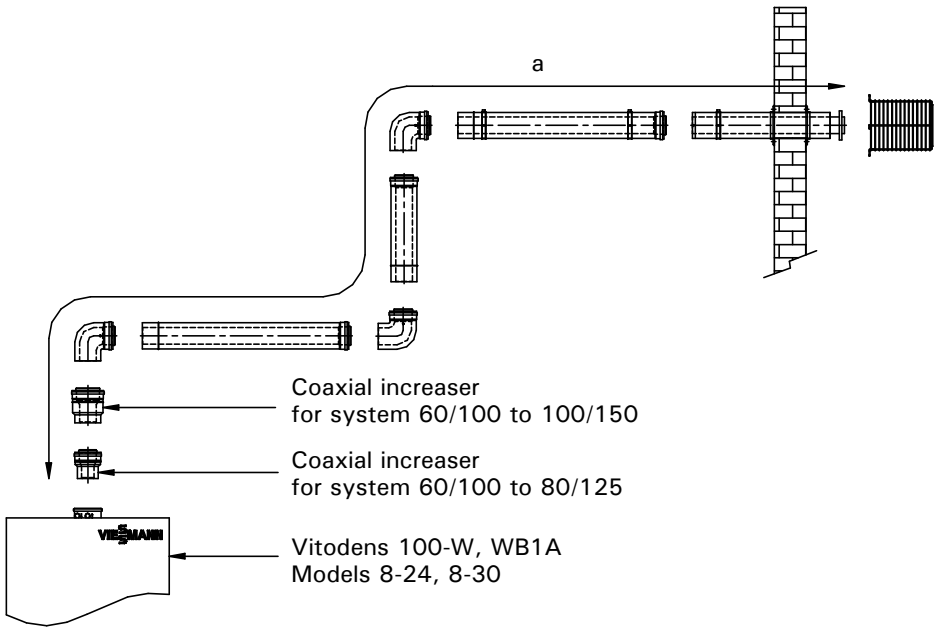


Fig. 13
Vitodens 100-W boiler with increasers

Maximum vent length with increaser (Vitodens 200-W boiler)

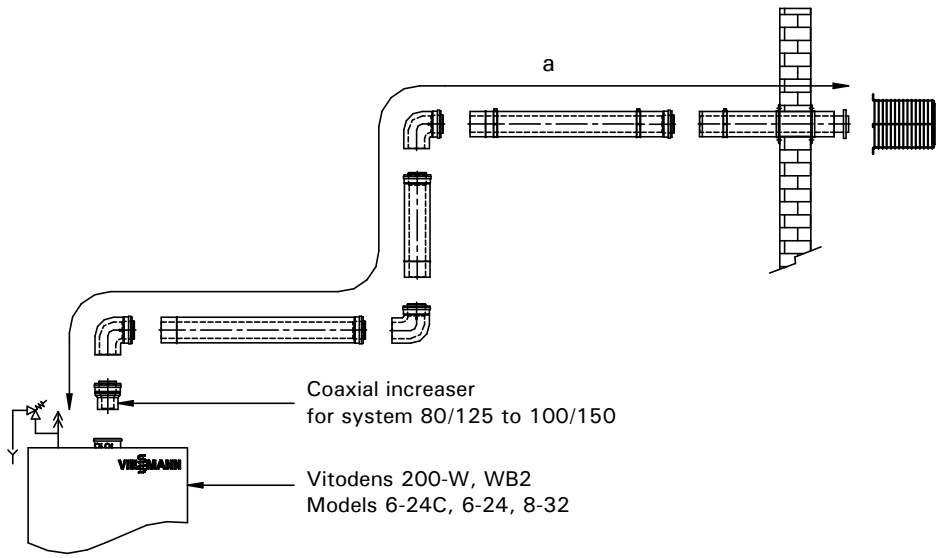


Fig. 14
Vitodens 200-W boiler with increaser

Minimum vent length

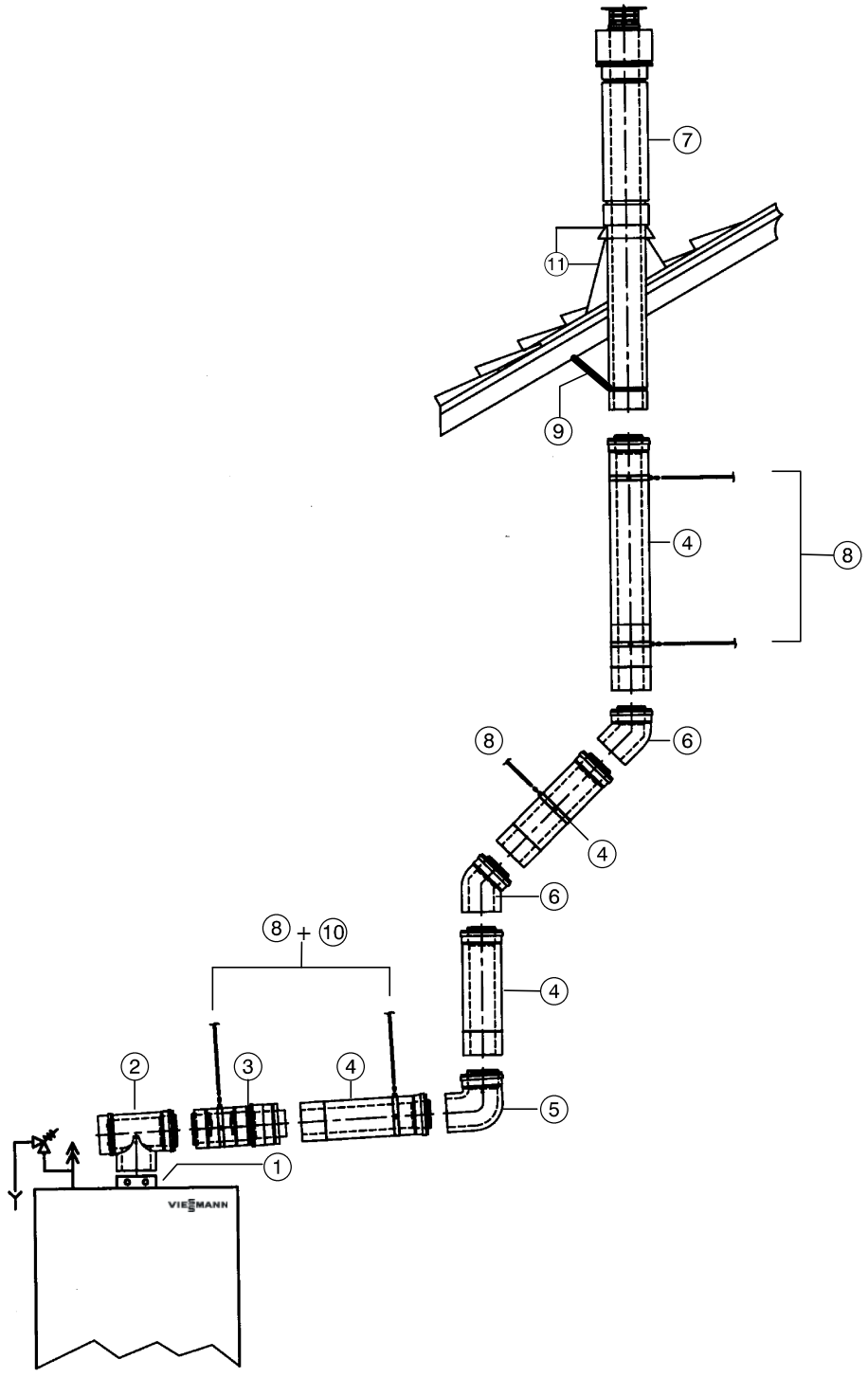
The minimum equivalent vent length for all models is 19″/483 mm (length of the vent termination when cut to the minimum permissible length).

Please note that the first 87° elbow on boiler is not included in equivalent length calculation.

Vertical Venting Layouts (Coaxial)

Layout of vertical vent system with accessories

Please note that there is no basic vent kit available for this vertical vent system. Select from the vertical vent components below as required. Do not exceed maximum equivalent vent length.



5285 268 v3.8

Fig. 15
General vertical venting layout for vent systems 60/100, 80/125 and 100/150

① **Vent pipe adaptor**

IMPORTANT

For Vitodens 200-W, WB2 models 6-24C, 6-24 and 8-32, this vent pipe adaptor must be ordered with the boiler.

② **Vent inspection tee / or straight Elbow,** 87° (1 per carton)

③ **Sliding coupling**

④ **Straight pipe**
3.3 ft./1 m or
1.6 ft./0.5 m

⑤ **Elbow,** 87° (1 per carton)

⑥ **Elbow,** 45° (2 per carton)

⑦ **Vent termination**

IMPORTANT

Never shorten vertical vent termination.

⑧ **Mounting clip** (c/w 4" screw)

⑨ **Wall band** (c/w vent termination)

⑩ **Brass adaptor** (c/w set of screws)

⑪ **Roof flashing and storm collar** (field supplied)

Use other anchoring/support system components as required.
See page 29 for details.

IMPORTANT

Ensure that the venting system is properly supported; the Vitodens 100-W and Vitodens 200-W boilers are not designed to support the weight of the venting system.

Vertical Venting Layouts (Coaxial) *(continued)*

General installation examples

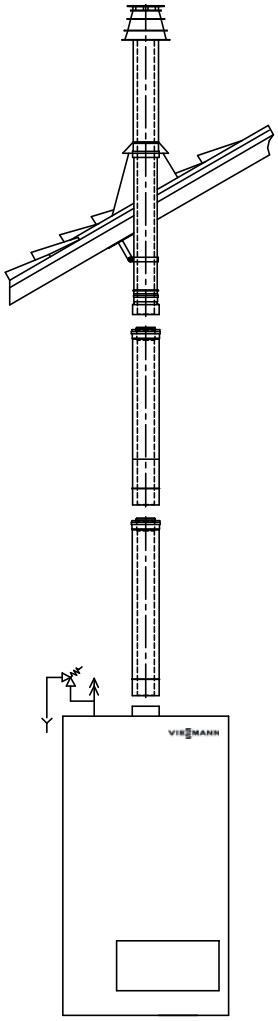


Fig. 16
Sloped roof installation

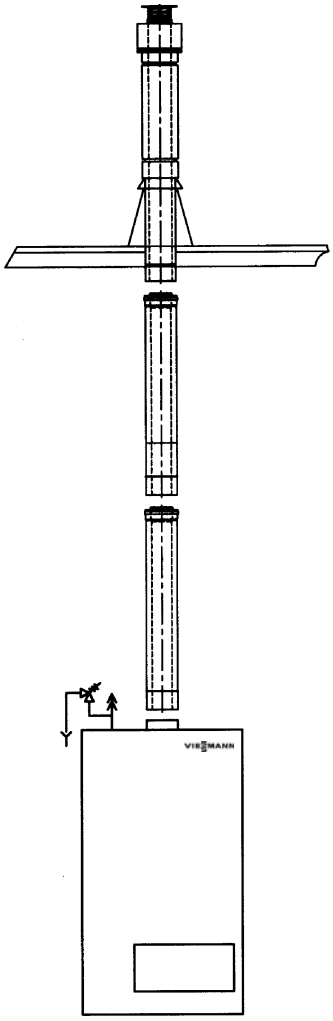


Fig. 17
Flat roof installation

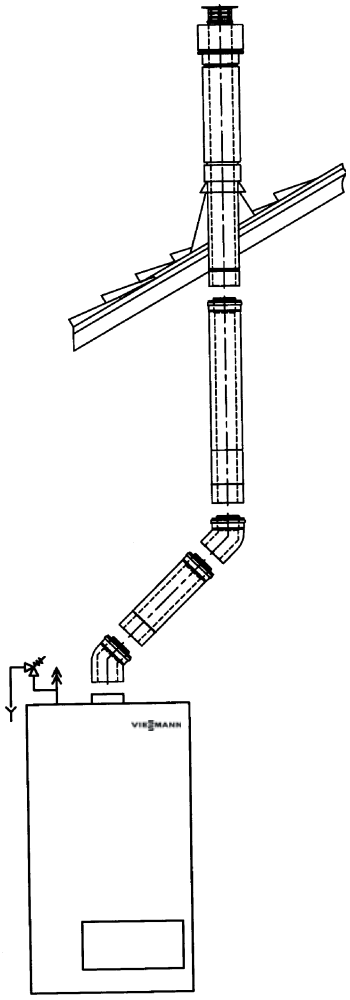


Fig. 18
Sloped roof installation with offset

IMPORTANT

Ensure that the venting system is properly supported; the Vitodens 100-W and Vitodens 200-W boilers are not designed to support the weight of the venting system.

Component Installation Guide

Offset installation

(e.g. for offset venting systems)
(2 × 45° elbow)

Minimum offset of approx. 4"/100 mm:
Slide two 45° elbows together
and connect to coaxial vent-air intake system.
(vent system 80/125)

When the offset is larger than 4"/100 mm:
Depending on the offset, insert extension straight pipe (Ⓑ) between the two 45° elbows.
(vent system 80/125)

Minimum offset of approx. 5"/120 mm:
Slide two 45° elbows together
and connect to coaxial vent-air intake system.

When the offset is larger than 5"/120 mm:
Depending on the offset, insert extension straight pipe (Ⓑ) between the two 45° elbows.
(vent system 100/150)

Table 9. Vent system 60/100

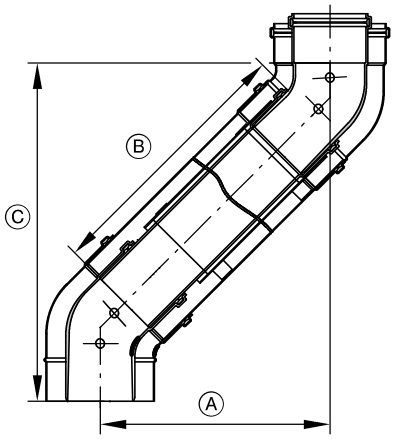
Offset	Ⓐ	6	8	9.8	12	13.7	15.3
in.(mm)		(150)	(200)	(250)	(300)	(350)	(390)
Extension	Ⓑ	6.3	9.1	11.9	14.7	17.5	19.7
in.(mm)		(161)	(232)	(303)	(373)	(444)	(501)
Height	Ⓒ	9.8	11.8	13.7	15.7	17.7	19.3
in.(mm)		(249)	(299)	(349)	(399)	(449)	(489)

Table 10. Vent system 100/150

Offset	Ⓐ	8	9.8	12	13.7	15.3
in.(mm)		(200)	(250)	(300)	(350)	(390)
Extension	Ⓑ	6.7	8.5	11.2	14	16.1
in.(mm)		(170)	(215)	(285)	(355)	(410)
Height	Ⓒ	12.6	14.2	16.1	18.1	19.7
in.(mm)		(320)	(360)	(410)	(460)	(500)

Table 11. Vent system 80/125

Offset	Ⓐ	6	8	9.8	12	13.7	15.3
in.(mm)		(150)	(200)	(250)	(300)	(350)	(390)
Extension	Ⓑ	5	7.6	10.4	15.1	16	19.7
in.(mm)		(122)	(193)	(264)	(384)	(405)	(500)
Height	Ⓒ	10.6	13	15	17	19	21.5
in.(mm)		(270)	(330)	(380)	(430)	(480)	(547)



Component Installation Guide *(continued)*

Coaxial vent sliding coupling installation

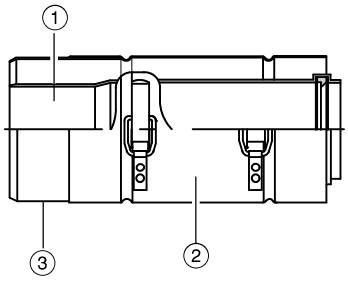


Fig. 19
Coaxial vent sliding coupling

IMPORTANT

The long sockets of the vent sliding coupling compensate for a gap of up to 1.2"/30 mm.
Adjust extra long pipe lengths prior to installation.

① Inner pipe
② Collar
③ Short sleeve

1. Push sliding coupling ① onto preceding vent pipe.
2. Open collar ② and slide onto the following vent pipe.
3. Slide short sleeve ③ into female end of preceding vent pipe.
4. Pull back inner pipe ①, closing the gap (remove spacer from inside of vent pipe, if required).
5. Align collar ② and close spring-loaded latch on collar.

Component Installation Guide *(continued)*

Coaxial vent termination installation

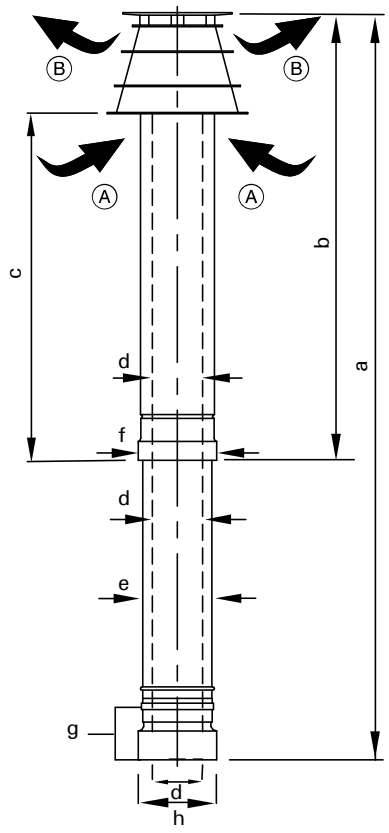


Fig. 20
Coaxial vent termination
for vent systems 60/100 and 80/125

Dimensions for vent system 60/100
a 46.8″/1190 mm
b 28″/713 mm
c 21.7″/552 mm
d 2.4″/60 mm
e 4″/100 mm
f 5″/127 mm
g n/a

Dimensions for vent system 80/125
a 46.8″/1190 mm
b 28″/713 mm
c 21.7″/552 mm
d 3″/80 mm
e 4.3″/110 mm
f 5″/125 mm
g Coaxial adaptor
4.3 to 5″ /
110 to 125 mm
h 5″ / 125mm
Ⓐ Combustion air intake
Ⓑ Flue gas outlet

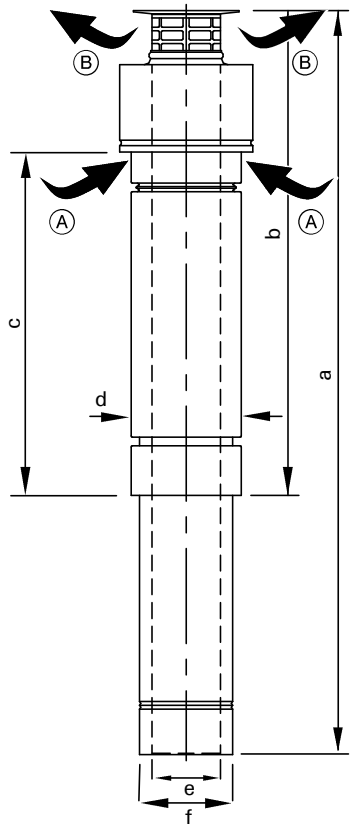


Fig. 21
Coaxial vent termination
for vent system 100/150

Dimensions for vent system 100/150
a 47″/1195 mm
b 29.5″/750 mm
c 20.7″/526 mm
d 7″/177 mm
e 4.3″/110 mm
f 6″/150 mm

Ⓐ Combustion air intake
Ⓑ Flue gas outlet

Table 12. Ceiling opening information

Vent system	Opening Ø
60/100	4¼″/108 mm
80/125	5¼″/133 mm
100/150	$6^{3}/_{8}$″/160 mm

Vertical vent termination installation

IMPORTANT

The vertical vent termination must not be shortened outside the roof, otherwise the overall length will be shorter than required.

1. Install the vent termination for sloped or flat roof collars in accordance with the manufacturer's instructions.
2. The vent termination should be placed from above on the sloped or flat roof collar. In the case of system size 80/125 (5″ system), ensure that the adaptor (g) supplied with vent termination is installed.
3. Connect vent pipe from below.

5285 268 v3.8

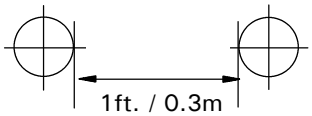
Component Installation Guide *(continued)*

Flashing and storm collar installation

Flashings and storm collars are field supplied. ***Flashings and storm collars suitable for Type B vent materials (or better) may be used.*** *To obtain flashings and storm collars, please contact your local vent material supplier. Follow the installation instructions supplied by the manufacturer.*

Vent termination location requirements

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2 (for installations in Canada) or ANSI-Z223.1 or NFPA 54 (for installations in the U.S.A.).
The distance between two adjacent vertical vent terminations for all boiler sizes is 1ft / 0.3m (center to center).



See table below for the following two conditions.
- For sloped roof applications with distance b greater than 18″/450 mm
- For flat roof applications

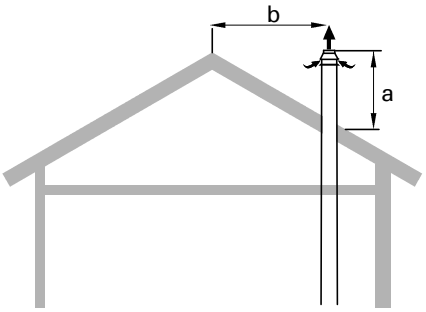


Fig. 22

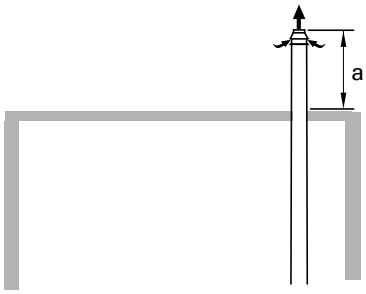


Fig. 23

Table 13.

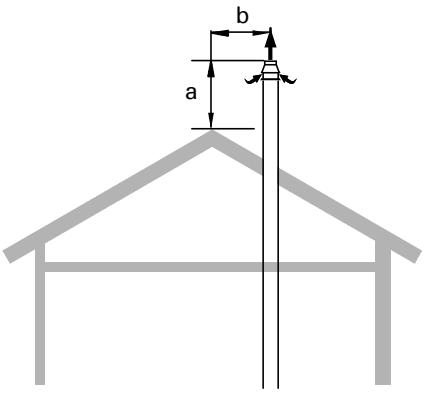
Vent system	a (min.distance)
60/100	25″/ 635 mm *1
80/125	25″/ 635 mm *1
100/150	30″/ 762 mm *1

*1 *See WARNING below.*

WARNING

Vent termination must be at least 12″/300 mm above the anticipated snow level (consult your local building authorities or local weather office). Locate vent termination in such a way that it cannot be blocked by snow.

- For sloped roof applications with distance b less than 18″/450 mm



a minimum 18″/450 mm
b <18″/450 mm

Fig. 24

A vent used in a special venting system with positive vent pressure and passing through a roof shall extend at least 18″/450 mm above the highest point where it passes through the roof and any other obstruction within a horizontal distance of 18″/450 mm.

5285 268 v3.8

Installation of Support System

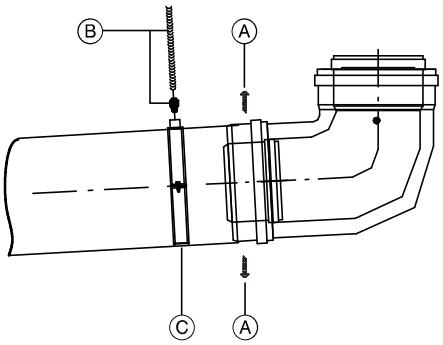


Fig. 25

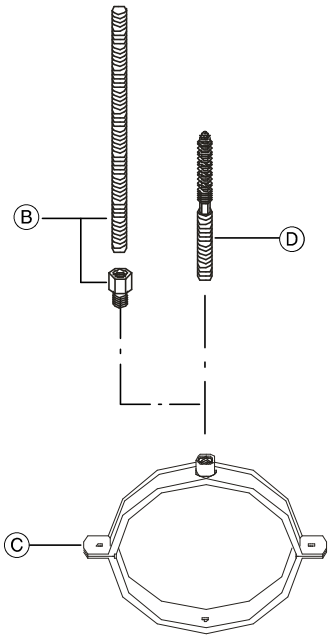


Fig. 26

The venting system must be securely supported by a support system suitable for the weight and design of the materials employed.
Contact your vent material supplier for more information specific to your installation.

Supports

Supports are used to transfer the weight of an installation to the building structure. There are different types of supports and their capacity varies with each type and diameter.
The following support types are available at your local vent material supplier...

- anchor plate
- wall support
- roof support
- floor support
- suspension band (hanger).

In addition to the support types listed above Viessmann offers mounting clips (see Ⓒ Fig. 25, Fig. 26) which can be used in conjunction with the above support types to support the weight of the venting system. Please contact Viessmann to order.

Vertical vent systems with horizontal sections must have the joints in these sections secured with supplied sheet metal screws Ⓐ (see Fig. 25) to prevent the system from sagging.

The 4"/101.6 mm screws Ⓓ supplied with the mounting clip provide wall or ceiling support for a

- minimum distance of 2"/50.8 mm
- maximum distance of 3¼"/82.5 mm.

See Fig. 26.

If a longer support system is required use brass adaptors M8 x $^{5}/_{16}$" (supplied) with $^{5}/_{16}$" all-threaded rods Ⓑ (field supplied). See Fig. 26.

Bracing

Contact your local vent material supplier for more information specific to your installation.

Braces are required to stabilize an installation. There are different types and their use and spacing vary.
The following types of braces are available at your local vent material supplier...

- wall band
- wall band extension
- guy wire band
- roof brace.

IMPORTANT

Ensure that the venting system is properly supported; the Vitodens 100-W and Vitodens 200-W boilers are not designed to support the weight of the venting system.

Vent Length Requirements

Maximum vent length

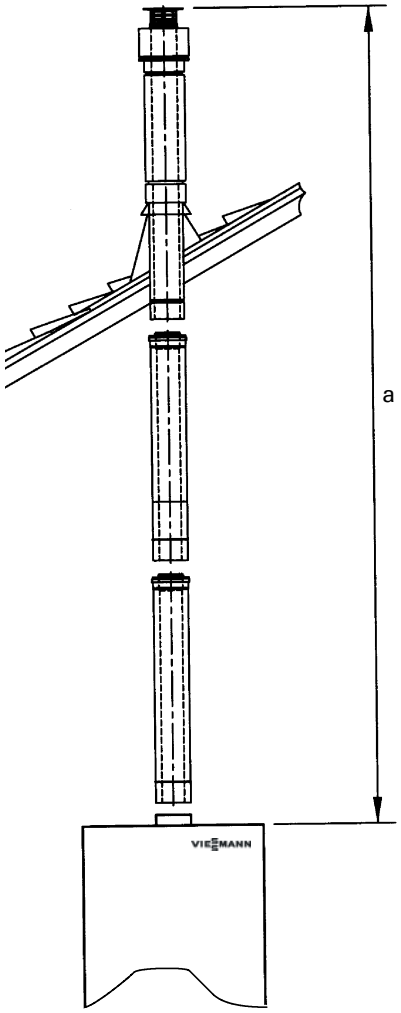


Fig. 27
Vent length “a”

Table 14. Vitodens 100-W

Boiler model	WB1A	8-24	8-30
a (max. length) 60/100 vent system	ft.(m)	33(10)	33(10)

Do not exceed the maximum vent length.

Table 15. Vitodens 200-W

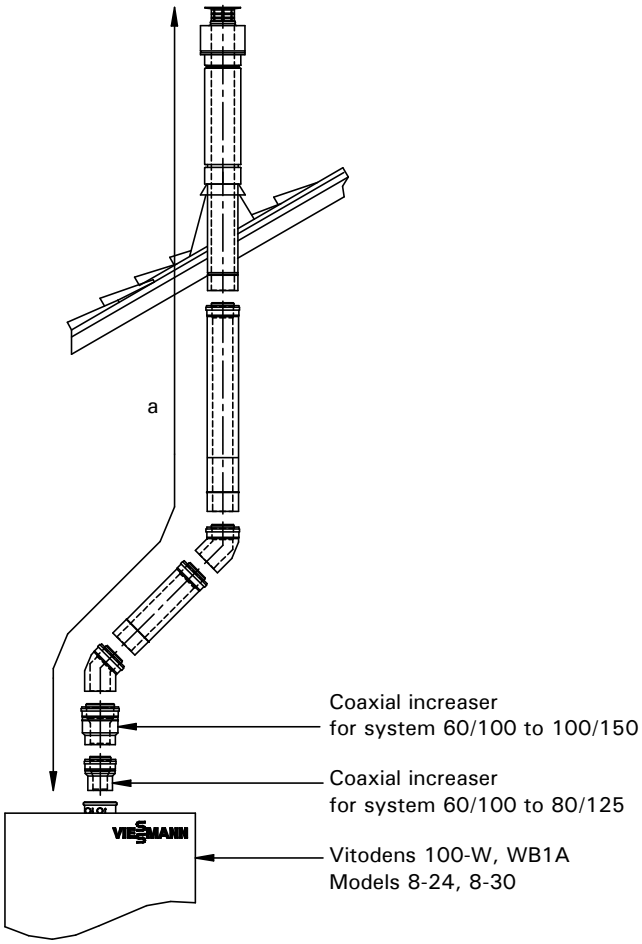
Boiler model	WB2	6-24C	6-24	8-32	11-44	15-60
a (max. length) 80/125 vent system 100/150 vent system	 ft.(m) ft.(m)	 33(10) --	 33(10) --	 27(8) --	 -- 33(10)	 -- 20(6)

Do not exceed the maximum vent length.

See page 31 for increased diameter equivalent vent pipe system (see tables 16. and 17.).

Vent Length Requirements *(continued)*

Maximum vent length with increasers



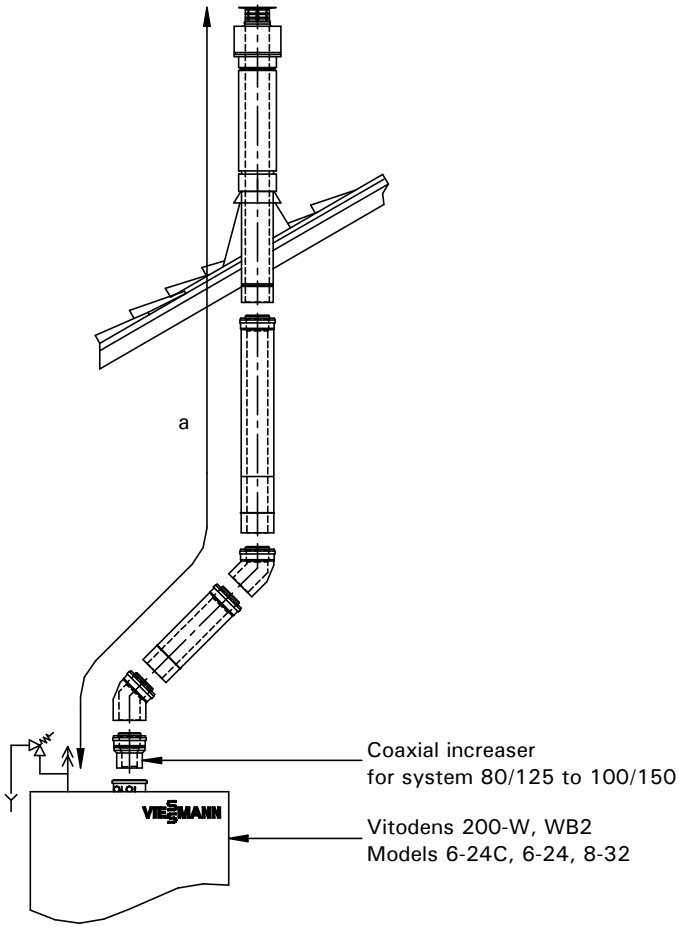


Table 16. Maximum vent length for vertical installations (Vitodens 100-W)

Model No.	WB1A 8-24, 8-30	
System vent size	80/125 *1	100/150 *2
Max. vent length	39.4 ft. 12 m	46 ft. 14 m

*1 *If used with increasers 60/100 to 80/125.*

*2 *If used with increasers 60/100 to 100/150*

Table 17. Maximum vent length for vertical installations (Vitodens 200-W)

Model No.	WB2 6-24C, 6-24	WB2 8-32
System vent size	100/150 *1	100/150 *1
Max. vent length (a)	39.4 ft. 12 m	33 ft. 10 m

*1 *If used with increasers 80/125 to 100/150.*

Minimum vent length

The minimum equivalent vertical vent length for all models is 4 ft./1.2 m (=length of vent termination).

Vent Length Requirements *(continued)*

Equivalent vent calculation examples

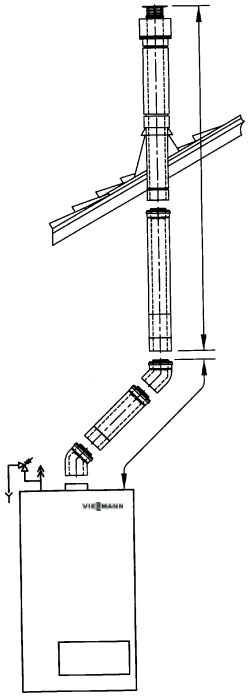


Fig. 28
Equivalent vent length calculation, example 1

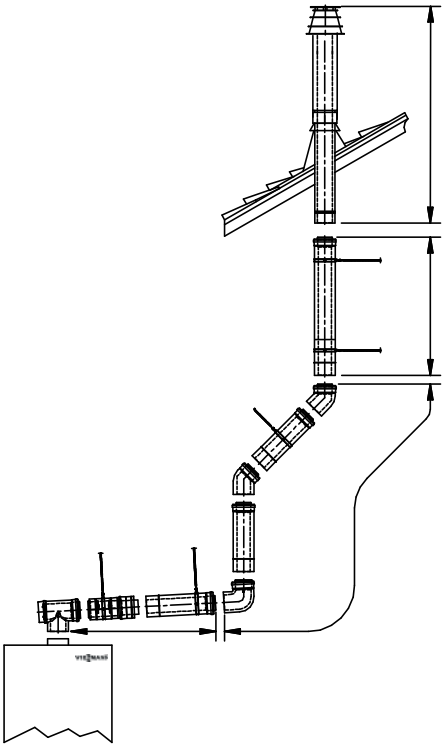


Fig. 29
Equivalent vent length calculation, example 2

Table 18.

Type of fitting	Equivalent length
87° elbow/ 87° inspection tee	1.6 ft./0.5 m
45° elbow	1 ft./0.3 m

IMPORTANT

Always include vent termination length in calculations.

Equivalent vent length calculation example 1

Vitodens 200-W, WB2 15-60 (Fig. 28)
(vent system 100/150)

2 x 45° elbow ..... 2 ft./0.6 m
1 x vent pipe (0.5 m) ..... 1.6 ft./0.5 m
1 x vent pipe (1 m) ..... 3.3 ft./1 m
1 x vent termination ..... 3.9 ft./1.2 m
Total equivalent length 10.8 ft./3.3 m

Equivalent vent length calculation example 2

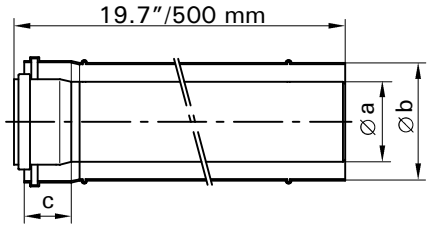
Vitodens 100-W, WB1A 8-30 (Fig. 29)
(vent system 60/100)
Vitodens 200-W, WB2 8-32
(vent system 80/125)

2 x 87° elbow ..... 3.3 ft./1 m
2 x 45° elbow ..... 2 ft./0.6 m
3 x vent pipe (0.5 m) ..... 4.8 ft./1.5 m
1 x vent pipe (1 m) ..... 3.3 ft./1 m
1 x sliding coupling ..... 0.8 ft./0.25 m
1 x vent termination ..... 3.9 ft./1.2 m
Total equivalent length 18.1 ft./5.55 m

5285 268 v3.8

Component Parts of the Venting System

Straight pipe (0.5 m)
(can be cut to length if required)



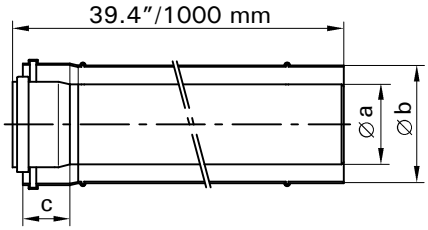
IMPORTANT

When cutting straight pipes to length, debur and clean pipes.

Table 19.

Boiler model	Dimensions in.(mm)		
	a	b	c
WB1A			
8-24	2.4(60)	4(100)	1.6(40)
8-30	2.4(60)	4(100)	1.6(40)
WB2			
24/32	3(80)	5(125)	1.6(40)
44/60	4.3(110)	6(150)	1.6(40)

Straight pipe (1 m)
(can be cut to length if required)



IMPORTANT

When cutting straight pipes to length, debur and clean pipes.

Table 20.

Boiler model	Dimensions in.(mm)		
	a	b	c
WB1A			
8-24	2.4(60)	4(100)	1.6(40)
8-30	2.4(60)	4(100)	1.6(40)
WB2			
24/32	3(80)	5(125)	1.6(40)
44/60	4.3(110)	6(150)	1.6(40)

Elbow (87°)

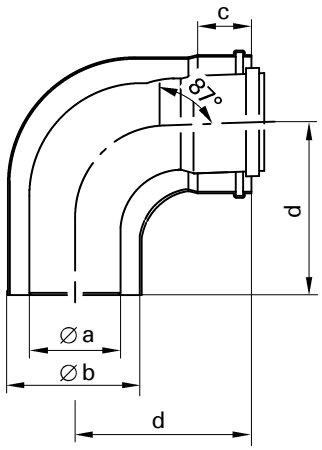


Table 21.

Boiler model	Dimensions in.(mm)			
	a	b	c	d
WB1A				
8-24	2.4(60)	4(100)	1.6(40)	4.7(120)
8-30	2.4(60)	4(100)	1.6(40)	4.7(120)
WB2				
24/32	3(80)	5(125)	1.6(40)	4.7(120)
44/60	4.3(110)	6(150)	1.6(40)	6.7(170)

Elbow (45°)
(2 per carton)

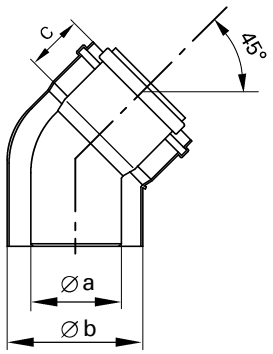


Table 22.

Boiler model	Dimensions in.(mm)		
	a	b	c
WB1A			
8-24	2.4(60)	4(100)	1.6(40)
8-30	2.4(60)	4(100)	1.6(40)
WB2			
24/32	3(80)	5(125)	1.6(40)
44/60	4.3(110)	6(150)	1.6(40)

Increaser

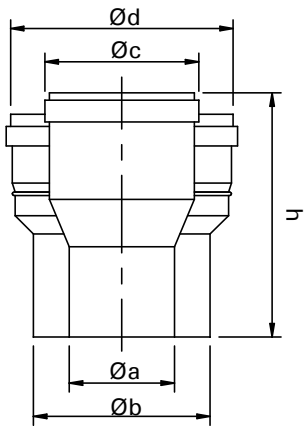
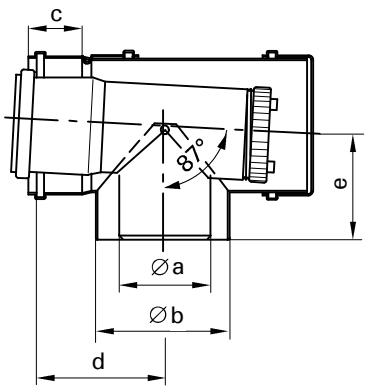


Table 23.

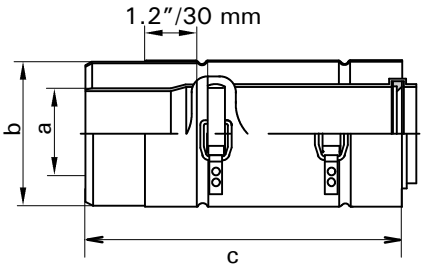
Boiler model	Dimensions in.(mm)				
	a	b	c	d	h
WB1A					
8-24	2.4(60)	4(100)	3(80)	5(125)	5.4(138)
8-30	2.4(60)	4(100)	3(80)	5(125)	5.4(138)
WB1A					
8-24	2.4(6)	4(100)	4.3(110)	6(150)	5.2(133)
8-30	2.4(60)	4(100)	4.3(110)	6(150)	5.2(133)
WB2					
24/32	3(80)	5(125)	4.3(110)	6(150)	6.5(165)

Component Parts of the Venting System *(continued)*

Vent inspection tee (87°)/ 87° elbow



Sliding coupling



Wall flashing

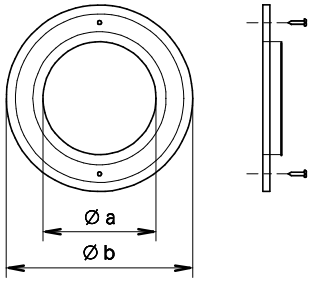


Table 24.

Boiler model	Dimensions in.(mm)				
	a	b	c	d	e
WB1A 24/30	2.4(60)	4(100)	1.6(40)	5.1(130)	4(100)
WB2 24/32	3/80	5(125)	1.6(40)	5.5(140)	4.7(120)
44/60	4.3/110	6(150)	1.6(40)	4.7(120)	5.5(140)

Table 25.

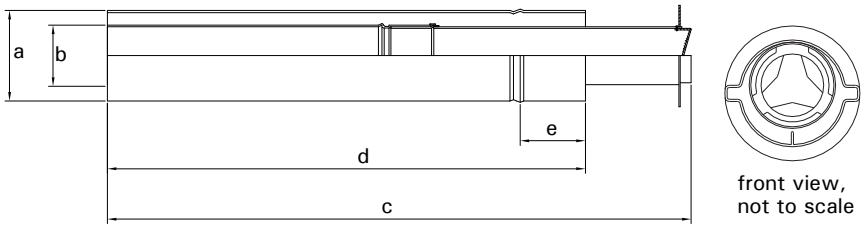
Boiler model	Dimensions in.(mm)		
	a	b	c*
WB1A 24/30	2.4(60)	4(100)	9.8(250)
WB2 24/32	3/80	5(125)	9.8(250)
44/60	4.3/110	6(150)	9.8(250)

* *Fully closed (not extended)*

Table 26.

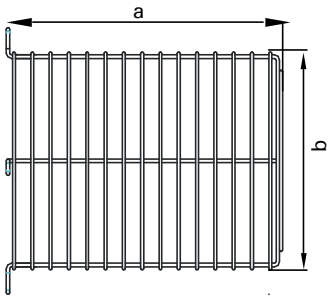
Boiler model	Dimensions in.(mm)	
	a	b
WB1A 24/30	4(102)	7.6(194)
WB2 24/32	5(125)	9(230)
44/60	6(150)	9(230)

Horizontal vent termination



front view, not to scale

Protective screen
for side wall venting installations only



Dimensions

a 12"/305 mm
b 9.5"/241 mm

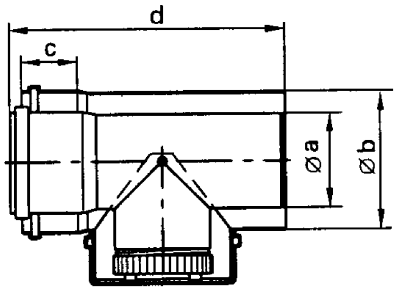
Table 27.

Boiler model	Dimensions in.(mm)				
	a	b	c	d	e
WB1A 24/30	4(100)	1.6(40)	31(790)	26(660)	3.5(90)
WB2 24/32	5(125)	3(80)	29(730)	26(660)	3.5(90)
44/60	6(150)	4.3(110)	29(730)	26(660)	3.5(90)

IMPORTANT

Total length of vent termination pipe is 31"/787 mm. If required, the vent termination pipe may be shortened by max. 12"/305 mm (min. vent termination length is 19"/483 mm).

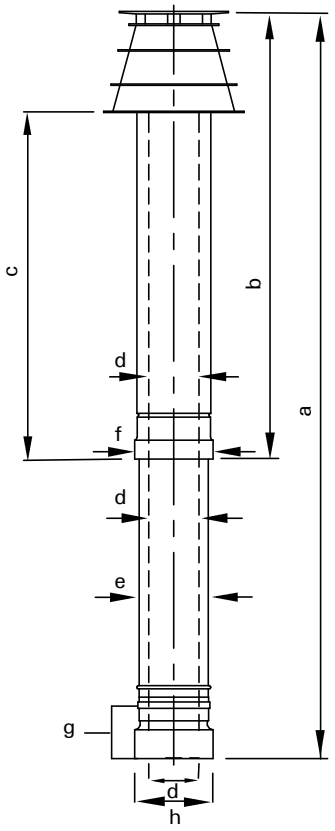
Straight tee
for Vitodens 100-W boiler only



5285 268 v3.8

Component Parts of the Venting System *(continued)*

Vertical vent termination
for boiler models WB1A 8-24, 8-30 and WB2 6-24C, 6-24, 8-32



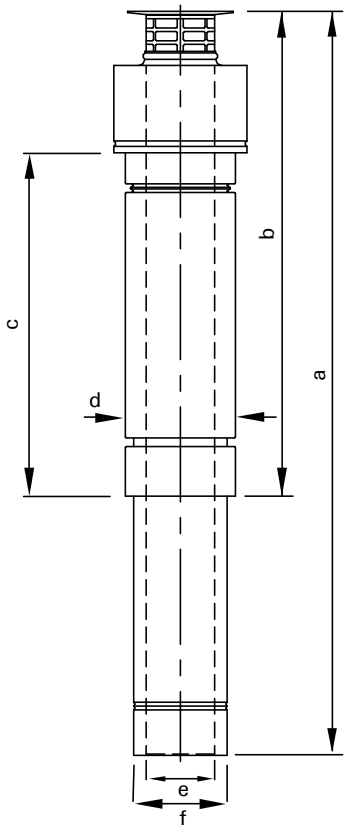
Dimensions
for vent system 60/100

a 47″/1190 mm
b 28″/713 mm
c 21.7″/552 mm
d 2.4″/60 mm
e 4″/100 mm
f 5″/127 mm
g n.a.

Dimensions
for vent system 80/125

a 47″/1190 mm
b 28″/713 mm
c 21.7″/552 mm
d 3″/80 mm
e 4.3″/110 mm
f 5″/125 mm
g Coaxial adaptor
4.3 to 5″ /
110 to 125 mm
h 5″ / 125 mm

Vertical vent termination
for boiler models WB2 11-44 and 15-60



Dimensions
for vent system 100/150

a 47″/1190 mm
b 30.6″/779 mm
c 21.7″/552 mm
d 7″/177 mm
e 4.3″/110 mm
f 6″/150 mm

Wall band
for installation on inside wall or ceiling (c/w vertical vent termination)

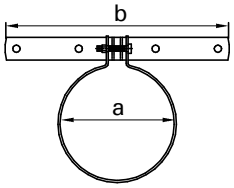


Table 28.

Boiler model	Dimensions in.(mm)	
	a	b
WB1A		
8-24	4(100)	8.5(215)
8-30	4(100)	8.5(215)
WB2		
24/32	4.3(110)	8.5(215)
44/60	6(150)	8.5(215)

Mounting clip, white
for installation on inside wall or ceiling

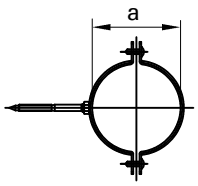
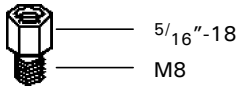


Table 29.

Boiler model	Dimensions in.(mm)
	a
WB1A	
8-24	4(100)
8-30	4(100)
WB2	
24/32	5(125)
44/60	6(150)

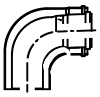
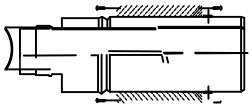
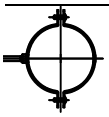
Brass adaptor
(c/w set of 20 #8 x $^{3}/_{8}$″ screws)



Component Parts of the Venting System *(continued)*

Basic vent kit components *(Side Wall Vent System only)*

For replacement purposes or project-specific requirements, individual parts can be ordered from Viessmann. Refer to the table for an outline of basic vent kit componentry that can be ordered separately.

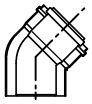
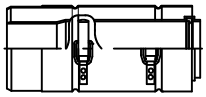
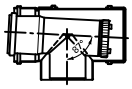
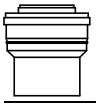
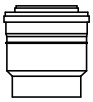
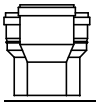
	Basic components
	**Vent pipe adaptor** (comes preinstalled on models WB1A 8-24, 8-30 and WB2 11-44, 15-60)
	**Elbow,** 87°
	**Straight pipe,** 3.3 ft./1 m *1
	**Vent termination** (c/w wall flashings)
	**Protective screen** (c/w brass adaptor and set of screws)
	**Mounting clip** *2
	**Brass adaptor** (c/w set of 20 #8 x $^{3}/_{8}$" screws)

5285 268 v3.8

Component Parts of the Venting System *(continued)*

Vent accessories

For project-specific requirements, individual accessory parts can be ordered from Viessmann. Refer to the table for an outline of accessory parts available.

	Accessory components
	**Straight pipe,** 1.6 ft./0.5 m *[*1]*
	**Elbow (45°)** (2 per carton)
	**Sliding coupling**
	**Vent inspection tee/ Elbow (87°) Straight tee (system 60/100 only)**
	**Coaxial increaser for system 60/100 to 80/125**
	**Coaxial increaser for system 80/125 to 100/150**
	**Coaxial increaser for system 60/100 to 100/150**
	Joint lubricant

*[*1] When ordering the straight pipe separately, order with mounting clip and brass adaptor.*

*[*2] When ordering mounting clip separately, order with brass adaptor.*

Direct Venting Options (Two-pipe System)

As opposed to coaxial venting systems, the two-pipe venting system draws combustion air through a separate air intake pipe from the outdoors. Flue gases are discharged to the outdoors via the single-wall pipe of the special venting system. The two-pipe system is flexible in the selection of materials offered by different manufacturers and the location of the vent/air intake termination.

Read the following exhaust vent/air intake requirements carefully before commencing with the installation.

Exhaust Vent/Air Intake Requirements

Combustion air supply

The Vitodens boiler is suitable for sidewall, as well as vertical venting using field supplied venting material. The Vitodens 100-W and Vitodens 200-W boilers are approved for both, direct vent (sealed combustion), as well as direct exhaust (non-sealed combustion) operation in both, horizontal and vertical arrangements. For non-sealed combustion vent systems (i.e. room-air dependent), see appropriate section under “Single-Pipe Venting” starting on page 57 in this manual.

The boiler must be connected to a direct vent system in which all air for combustion is taken from the outside atmosphere and all combustion products are discharged safely to the outdoors.

The boiler must be vented and supplied with combustion air and exhaust vent as described in this section. Ensure the vent and combustion air supply comply with these instructions.

Inspect all finished exhaust vent/air intake piping to ensure:

- Vent/air intake pipe and fittings are of approved material.
- Acceptable size, length and number of elbows on combined vent/air intake system.
- Installation is in accordance with prevailing provisions of local codes.
- Installation complies with the requirements of these instructions, as well as the exhaust vent/air intake supplier’s instructions.

The exhaust vent and combustion air intake system and terminations may be installed in one of the following type terminations (2-pipe system):

1. Horizontal air intake and exhaust vent pipes
2. Vertical air intake and exhaust vent pipes
3. Horizontal air intake pipe and vertical exhaust vent pipe

Exhaust Vent/Air Intake Requirements *(continued)*

Combustion air supply

⚠ CAUTION

Do not locate boiler in areas where high dust levels or high humidity levels are present.

⚠ CAUTION*

Do not install boiler during construction involving drywall or heavy dust of any kind. Dust can accumulate in the burners and cause sooting. Install boiler after all heavy dust construction is completed.

* Typically when the boiler is used as a temporary heat source during the building construction phase.

⚠ CAUTION

If the boiler has been exposed to high dust levels, all burners and the heat exchanger must be cleaned prior to use.

⚠ CAUTION

If above criteria are not properly observed and boiler damage results, any warranty on the complete boiler and related components will be null and void.

General requirements

The Vitodens 100-W and Vitodens 200-W boilers must be located in such a way that the vent length is as short as possible and that the vent can be routed as directly (and with as few bends) as possible.
The minimum equivalent vent length is 4 ft. / 1.2 m.
See tables 35., 36. and 37. for maximum and minimum vent lengths.

All products of combustion must be safely vented to the outdoors.
The Vitodens boiler is not approved for common-venting applications. Do not common-vent with any other appliance.
The Vitodens boiler vents under positive pressure and is a Category IV boiler.

⚠ WARNING

Failure to ensure that all flue gases have been safely vented to the outdoors can cause property damage, severe personal injury, or loss of life. Flue gases may contain deadly carbon monoxide.

Viessmann recommends that the entire vent system be checked by a licensed professional heating contractor at least once each year following initial installation.

The stainless steel special venting system is completely sealed when fully assembled. Locking bands are used to reinforce the joints between pipe and fittings.

⚠ WARNING

Different manufacturers offer a number of different joint systems and adhesives. Do not mix pipes, fittings and/or joining methods from different manufacturers. Failure to comply could result in leakage, potentially causing personal injury or death.

Do not install vent pipe such that flue gases flow downwards. The direction of flue gas flow must be vertically upwards or horizontal with an upward slope.

Ensure there is no flue gas leakage into the area in which the boiler is installed.

Check joints for leaks with the gas supply turned off and the fan running. Use a soapy solution to check for vent leaks.

Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2" per 3.3 ft. / 50 mm per 1 m).
No condensate trap is required in the vent pipe system.

General Installation Information

Installation steps (outline)

Exhaust and combustion air piping material

Use only the materials listed in table 30. entitled “Approved materials for two-pipe system” on page 41 for exhaust, combustion air intake pipe and fittings.

- Cut the pipe end square and remove all burrs and debris from joints and fittings.
- If using CPVC special vent material for exhaust vent pipe and ABS/PVC/CPVC for combustion air intake pipe, all joints must be properly cleaned, primed and cemented. Use only cement and primer approved for the use with the pipe material. See table 30. entitled “Approved materials for two-pipe system” on page 41 for approved solvent cement material.

⚠ CAUTION

For solvent cement and primer:
- **Use only in well ventilated areas**
- **Do not use near flame or open fire**
- **Use only the solvent cement and primer appropriate for the venting material being used**
- **Solvent cements for plastic pipe are flammable liquids and must be kept away from all sources of ignition**

- No low point is allowed in the exhaust vent pipe system, unless a proper drain pipe is used to allow condensate to drain.

⚠ WARNING

Ensure that the entire venting system is protected from physical damage. A damaged venting system may cause unsafe conditions.

⚠ WARNING

The venting system is approved for indoor installations only.
Do not install the venting system outdoors.

- Route vent pipe as directly as possible and with as few bends as possible to the boiler.
- Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2” per 3.3 ft. / 50 mm per 1 m).
- Use a hacksaw and sheet metal snips to cut pipes to length (if necessary). Use a file to smooth rough edges. Pipe must be round and not bent into an oval shape.

IMPORTANT

When cutting pipes to length, debur and clean pipes.

In conjunction with these instructions, follow the installation instructions supplied by the special venting manufacturer.
Viessmann Venting System Instructions supersede the instructions supplied by the manufacturer.

- All piping must be fully supported. Use pipe hangers at a minimum of 48” / 1219mm intervals to prevent sagging of the pipe.
- The exhaust vent/air intake pipe and fittings must be securely supported by a support system suitable for the weight and design of the material employed. Contact your local vent material supplier for more information specific to your installation(s).

IMPORTANT

Ensure that the exhaust vent/air intake pipes are properly supported. The Vitodens boiler is not designed to support the weight of the exhaust vent/air intake pipe system.

- Field supplied increaser fittings (transition) should always be inserted in vertical sections of pipe to prevent accumulation of condensate in the vent pipe.
- The total equivalent length specified for a two-pipe system is the total of the **combined** length of the exhaust vent/air intake pipe system. Do not exceed these maximum lenghts.
- A maximum of five 90° elbows may be installed in **combined** length of the exhaust vent/air intake pipe system (excluding termination elbows, tees, hoods and couplings).

5285 268 v3.8

General Installation Information

Installation steps (outline)

Table 30. Approved materials for two-pipe system

Part	Material	Certified to Standards	Applicability
Exhaust pipe and fitting	Stainless steel	UL1738 "Venting systems for gas-burning appliances, Categories II, III, IV"	U.S.A.
		ULC S636 "Standard for Type BH gas venting systems"	Canada
	CPVC	UL1738 "Venting systems for gas-burning appliances, Categories II, III, IV"	U.S.A.
		ULC S636 "Standard for Type BH gas venting systems"	Canada
Combustion air pipe and fitting	Stainless steel	n.a.	n.a.
	PVC-DWV Schedule 40	ANSI/ASTM D2661 CSA B181.1 ULC S102.2 ANSI/ASTM D2665, D1785 CSA B137.3, B181.2 ANSI/ASTM F441	U.S.A./Canada
	CPVC Schedule 40	ANSI/ASTM D2661 CSA B181.1 ULC S102.2 ANSI/ASTM D2665, D1785 CSA B137.3, B181.2 ANSI/ASTM F441	U.S.A./Canada
	ABS-DWV Schedule 40	ANSI/ASTM D2661 CSA B181.1 ULC S102.2 ANSI/ASTM D2665, D1785 CSA B137.3, B181.2 ANSI/ASTM F441	U.S.A./Canada
Pipe cement, primer (for combustion air intake pipe)	PVC	ANSI/ASTM D2564 CSA B137.3	U.S.A./Canada
	CPVC	ANSI/ASTM F493 CSA B137.6	
	ABS	ANSI/ASTM D2235 CSA B181.1/B182.1	
Pipe cement, primer (for exhaust pipe and fitting)	CPVC	ULC S636 "Standard for Type BH gas venting systems" Class IIB 90°C	U.S.A./Canada

⚠ CAUTION

Do not use cellular (foam) core pipe material to vent this Vitodens boiler.

5285 268 v3.8

General Installation Info *(continued)*

Vent termination location requirements (for installations in Canada)

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2.
A vent must **NOT** terminate...

1. ....directly above a paved sidewalk or paved driveway which is located between two single-family dwellings and serves both dwellings.

2. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

3. ....within 6 ft./1.83 m of a mechanical air supply inlet *1 to any building (dryer vents, non-sealed combustion furnace and hot water heater vents are considered to be mechanical air inlets).

4. ....above a meter/regulator assembly within 3 ft./0.9 m horizontally of the vertical centerline of the regulator vent outlet and to a maximum vertical distance of 15 ft./4.5 m.

5. ....within 3 ft./0.9 m of any gas service regulator vent outlet.

*1 *Including heat recovery units.*

6. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

7. ....within the following distances of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion air inlet of any other appliance:

- 1 ft./0.3 m for inputs up to and including 100 000 Btu/h/30 kW (applicable only to boiler models WB2-24C/24).
- 3 ft./0.9 m for input exceeding 100 000 Btu/h/30 kW (applicable to boiler models WB2-32 and up).

8. ....underneath a veranda, porch or deck, unless
- the veranda, porch, or deck is fully open on a minimum of two sides beneath the floor, and
- the distance between the top of the vent termination and the underside of the veranda, porch, or deck is greater than 1 ft./0.3 m.

9. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

10. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

11. ....at a location where ice formation on the ground can present a hazard.

12. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

13. ....where discharging hot flue gases may cause property damage or personal injury.

14. ....within 3 ft./0.9 m from an inside corner of outside walls.

General Installation Info *(continued)*

Vent termination location requirements (for installations in the U.S.A.)

The vent must be installed observing local regulations in addition to National Codes, ANSI-Z223.1 or NFPA 54.
A vent must **NOT** terminate...

1. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

2. ....within 4 ft./1.2 m horizontally from service regulator vents, electric and gas meters as well as relief equipment.

3. ....at least 3 ft./0.9 m above any forced air inlet located within 10 ft./ 3 m.

4. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

5. ....within 1 ft./0.3 m of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion inlet of any other appliance.

6. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

7. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

8. ....at a location where ice formation on the ground can present a hazard.

9. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

10. ....where discharging hot flue gases may cause property damage or personal injury.

11. ....within 3 ft./0.9 m from an inside corner of outside walls.

Flashing and storm collar installation

Flashings and storm collars are field supplied. **Flashings and storm collars suitable for Type B vent materials (or better) may be used.**

To obtain flashings and storm collars, please contact your local vent material supplier. Follow the installation instructions supplied by the special venting manufacturer.

Follow local codes to properly isolate the exhaust vent pipe when passing through floors, ceiling and roof.

Always check the marking on the pipe to make sure you are using the correct material.

Vent Requirements - Stainless Steel

Additional requirements for stainless steel vent pipe material

Use an AL29-4C® special stainless steel venting system (UL/ULC listed for category IV) for horizontal or vertical venting of the Vitodens boilers.
See tables 32. and 33., and contact one of the suppliers (see listing on right) to order.

Prior to installation, check that the correct single-wall vent parts were ordered and supplied.

See tables 31., 32. and 33. for special parallel/starter adaptor and bird screen models required for your installation. In case of discrepancies, contact original parts supplier.

Exhaust vent/air intake connection to boiler

The vent connection to the Vitodens boiler must be made with a parallel adaptor (available through Viessmann, see table 31.) and the starter stainless steel adaptor (supplied by others, see tables 32. and 33.). The starter adaptors are intended for a slip fit and slide into the parallel adaptor with a gentle twisting motion.

Combustion air intake pipe:

If the venting system will use CPVC/ABS, PVC plastic pipe for combustion air intake, a CPVC starter adaptor for use on air intake connection to parallel adaptor must be ordered from Viessmann (see table 34.).
The bird screen for the air intake termination elbow must also be ordered from Viessmann (see table 34.).

Note:
The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.2005 and therefore is listed for zero clearance to combustibles when vented with a single wall special venting system (AL-29-4C material). The zero inches vent clearance to combustibles for the Vitodens boiler supercedes the clearance to combustibles listing that appears on the special venting system marking.

Flexmaster Canada Ltd.
452 Attwell Drive
Etobicoke, ON
M9W 5C3
Tel. (416) 679-0045

Z-FLEX (US) INC.
20 Commerce Park North
Bedford, NH
03110-691
Tel. (800) 654-5600

Heat-Fab, Inc.
130 Industrial Blvd.
Turners Falls, MA
01376
Tel. (800) 772-0739

ProTech Systems, Inc.
400 South Pearl Street
Albany, NY
12202
Tel. (800) 766-3473

Security Chimneys International Ltd.
2125 Rue Monterey
Laval, QC
H7L 3T6
Tel. (800) 363-0821

IMPORTANT

For exhaust vent pipe material:
Do not use any other vent material.
Do not use galvanized pipe, plastic pipe and/or chimney liners (rigid or flexible) of any kind.

WARNING

The use of vent material other than listed AL29-4C stainless steel, positive pressure vent pipe and fittings can cause property damage, severe personal injury and/or loss of life.

Vent Requirements *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Table 31. Parallel adaptor for two-pipe system

Supplier	Boiler Model	Parallel pipe adaptor, Part Number	Ø inches/mm	Qty.
Viessmann	■WB1A 8-24, 8-30	7186032 (see Fig. 30)	3 / 76	1
	■WB2 6-24C, 6-24, 8-32	7189822 (see Fig. 31)	3 / 76	1
	■WB2 11-44, 15-60	7189823 (see Fig. 32)	4 / 102	1

Parallel vent pipe starter adaptors for WB1A 8-24, 8-30

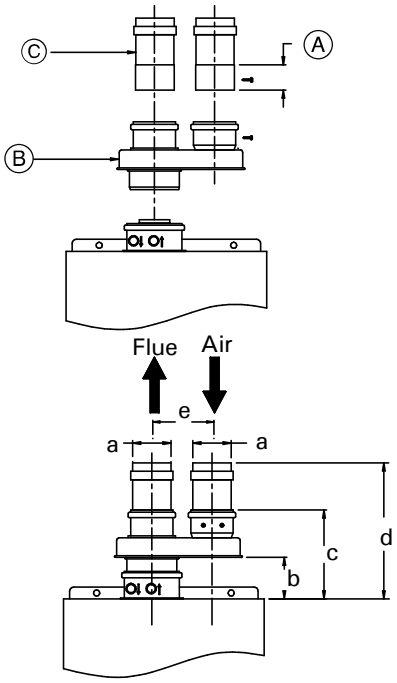


Fig. 30

Legend

Ⓐ Air intake, max. insertion 2½″ / 64mm (use sheet metal screws to hold in place)
Ⓑ Viessmann parallel adaptor
Ⓒ Stainless steel slip joint vent starter adaptor
a 3″ / 76mm
b 3¼″ / 83mm
c 7″ / 178mm
d approx. 10¾″ / 271mm
e 4¾″ / 120mm

Parallel vent pipe starter adaptors for WB2 6-24C, 6-24, 8-32

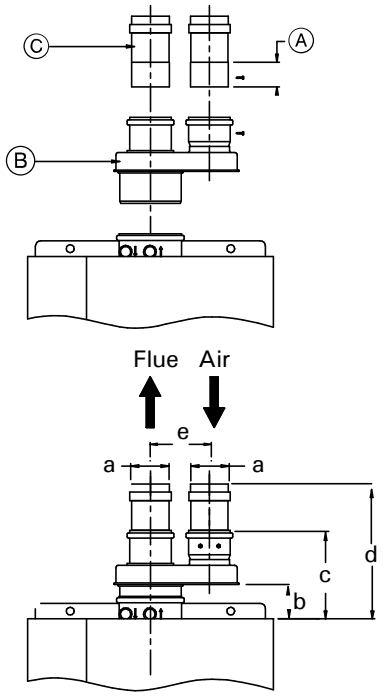


Fig. 31

Legend

Ⓐ Air intake, max. insertion 2½″ / 64mm (use sheet metal screws to hold in place)
Ⓑ Viessmann parallel adaptor
Ⓒ Stainless steel slip joint vent starter adaptor
a 3″ / 76mm
b 2¾″ / 70mm
c 7″ / 178mm
d approx. 10¾″ / 271mm
e 4¾″ / 120mm

Parallel vent pipe starter adaptors for WB2 11-44, 15-60

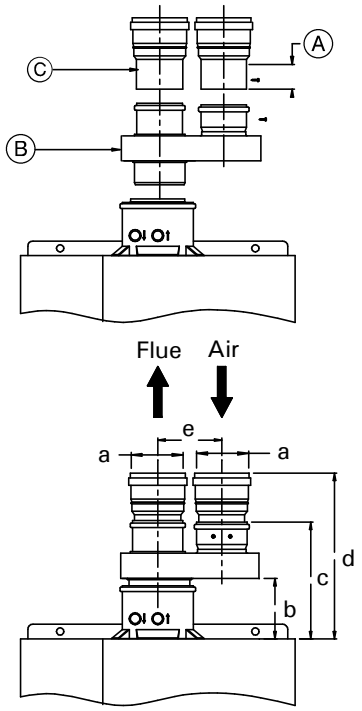


Fig. 32

Legend

Ⓐ Air intake, max. insertion 2½″ / 64mm (use sheet metal screws to hold in place)
Ⓑ Viessmann parallel adaptor
Ⓒ Stainless steel slip joint vent starter adaptor
a 4″ / 100mm
b $5^{1}/_{8}$″ / 130mm
c $9^{3}/_{8}$″ / 237mm
d $12^{7}/_{8}$″ / 327mm
e 5½″ / 140mm

Vent Requirements *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Table 32. Exhaust vent termination options

Supplier	Boiler Model	Stainless Steel Slip Joint Starter Adaptor		Vertical Termination Coupling with Screen (see Fig. 33)	
Flexmaster	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	2SVSVB03 2SVSVB03 2SVSVB04	3″ 3″ 4″	2SVST03 2SVST03 2SVST04
Flex-L	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	SRAVMA3-2 SRAVMA3-2 SRAVMA4-2	3″ 3″ 4″	SRTP-03 SRTP-03 SRTP-04
Heat-Fab	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	9301VSMN 9301VSMN 9401VSMN	3″ 3″ 4″	9392 9392 9492
ProTech	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	300568 300568 300569	3″ 3″ 4″	300186 300186 300187
Security Chimneys	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	CTX-V3 CTX-V3 CTX-V4		Contact the supplier.

Table 33. Other exhaust vent termination options (horizontal installation)

Supplier	Boiler Model	Termination Elbow with Screen 90° or 45° (see Fig. 34)	Termination Tee with Screen (see Fig. 35)	Termination Hood with Screen (see Fig. 36)	Combination Vent/ Air Intake Terminal (see Figs. NO TAG and NO TAG)
Flexmaster	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	Contact supplier	Contact supplier	Contact supplier	n.a.
Flex-L	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	Contact supplier	Contact supplier	Contact supplier	n.a.
Heat-Fab	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	Contact supplier	Contact supplier	Contact supplier	n.a.
ProTech	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	Contact supplier	Contact supplier	Contact supplier	n.a.

These tables reflect the parts required if using special venting system for both exhaust vent and air intake pipe system.
If using ABS/PVC/CPVC material for combustion air intake pipe, refer to table 34. for proper starter adaptor for the system.

Component Parts of the Venting System

Termination
Coupling with Screen

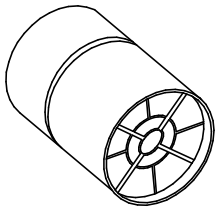


Fig. 33

Termination
Elbow with Screen
90° or 45°

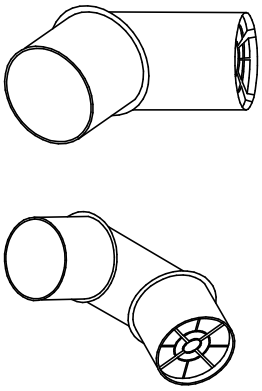


Fig. 34

Termination Tee with Screen

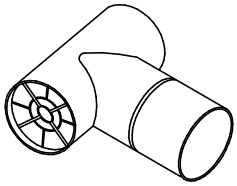


Fig. 35

Termination Hood with Screen

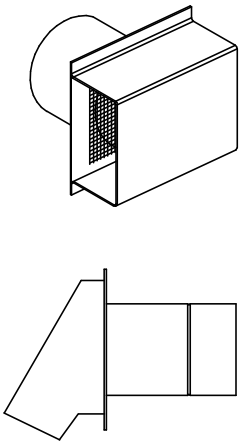


Fig. 36

Vent Requirements - CPVC

Additional requirements for UL/ULC-listed CPVC vent pipe material

Use UL/ULC-listed special plastic pipe (CPVC) for horizontal (side wall) or vertical (roof) venting of the Vitodens boilers.
See table 34. below and contact Viessmann to order.

Prior to installation, check that the correct single-wall vent parts were ordered and supplied.

See table 34. for special parallel/starter adaptor and bird screen models required for your installation. In case of discrepancies, contact Viessmann.

Exhaust vent/air intake connection to boiler

The vent connection to the Vitodens boiler must be made with a parallel adaptor (available from Viessmann - see table 34.) and the CPVC starter adaptors (see table 34.). The starter adaptors are intended for a slip fit and slide into the parallel adaptor with a gentle twisting motion.

For vent/air intake pipe system, two wire mesh screens (bird screen) must be ordered from Viessmann. These parts are available in pre-cut diameters of 2", 3" and 4" (see table 34.).

Note:
The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.2005 and therefore is listed for zero clearance to combustibles when vented with a single wall special venting system (CPVC material). The zero inches vent clearance to combustibles for the Vitodens boiler supercedes the clearance to combustibles listing that appears on the special venting system marking label.

Approved vent pipe material

Marking

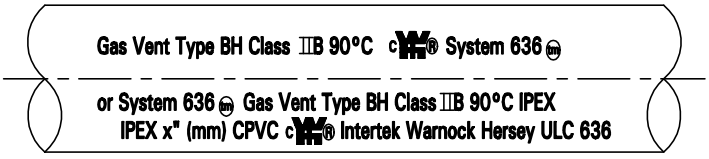


Fig. 37

IMPORTANT

For exhaust vent pipe material:
Do not use any other vent material.
Do not use galvanized pipe, plastic pipe and/or chimney liners (rigid or flexible) of any kind.

WARNING

The use of vent material other than listed CPVC, positive pressure vent pipe and fittings can cause property damage, severe personal injury and/or loss of life.

Table 34. Required parallel and starter adaptors for CPVC system

Part	Boiler Model		Part Number	Supplier	Qty.
Parallel Pipe Adaptor	■WB1A 8-24, 8-30	3"	7186032 *1		1
	■WB2 6-24C, 6-24, 8-32	3"	7189822 *2	Viessmann	1
	■WB2 11-44, 15-60	4"	7189823 *3		1
CPVC Starter Adaptor	■WB1A 8-24, 8-30	3"	7134770 *1		2
	■WB2 6-24C, 6-24, 8-32	3"	7134770 *2	Viessmann	2
	■WB2 11-44, 15-60	4"	7134771 *3		2
Wire Mesh Screen for Termination Elbows/Coupling	■WB1A 8-24, 8-30	3"	7134781		2
	■WB2 6-24C, 6-24, 8-32	3"	7134781	Viessmann	2
	■WB2 11-44, 15-60	4"	7134782		2

*1 See Fig. 38 on page 49.
*2 See Fig. 39 on page 49.
*3 See Fig. 40 on page 49.

Vent Pipe Starter Adaptors

Parallel vent pipe starter adaptors for WB1A 8-24, 8-30

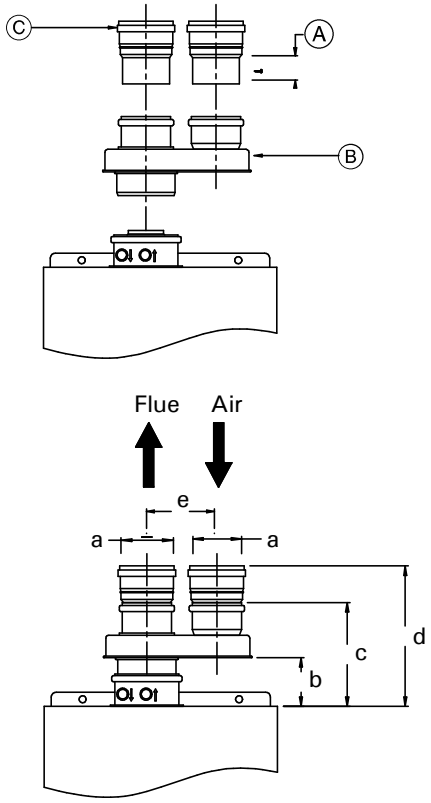


Fig. 38

Legend

- Ⓐ Air intake, max. insertion 2½″ / 64mm (use sheet metal screws to hold in place)
- Ⓑ Viessmann parallel adaptor
- Ⓒ CPVC slip joint starter adaptor
- a 3″ / 76mm
- b 3¼″ / 83mm
- c 7″ / 178mm
- d approx. 10¾″ / 271mm
- e 4¾″ / 120mm

Parallel vent pipe starter adaptors for WB2 6-24C, 6-24, 8-32

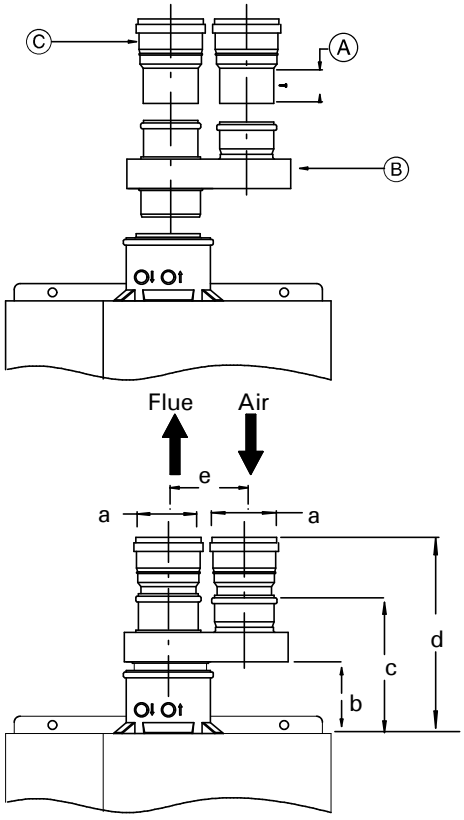


Fig. 39

Legend

- Ⓐ Air intake, max. insertion 2½″ / 64mm (use sheet metal screws to hold in place)
- Ⓑ Viessmann parallel adaptor
- Ⓒ CPVC slip joint starter adaptor
- a 3″ / 76mm
- b 2¾″ / 70mm
- c 7″ / 178mm
- d approx. $9^3/_8$″ / 237mm
- e 4¾″ / 120mm

Parallel vent pipe starter adaptors for WB2 11-44, 15-60

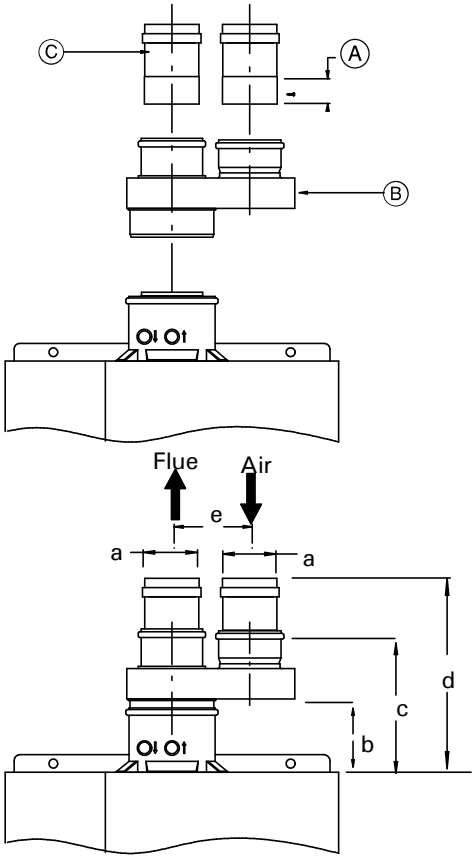


Fig. 40

Legend

- Ⓐ Air intake, max. insertion 2½″ / 64mm (use sheet metal screws to hold in place)
- Ⓑ Viessmann parallel adaptor
- Ⓒ CPVC slip joint starter adaptor
- a 4″ / 100mm
- b $5^1/_8$″ / 130mm
- c $9^3/_8$″ / 237mm
- d approx.12″ / 305mm
- e 5½″ / 140mm

Side Wall Vent Termination (stainless steel or CPVC)

Side wall vent termination (front view)

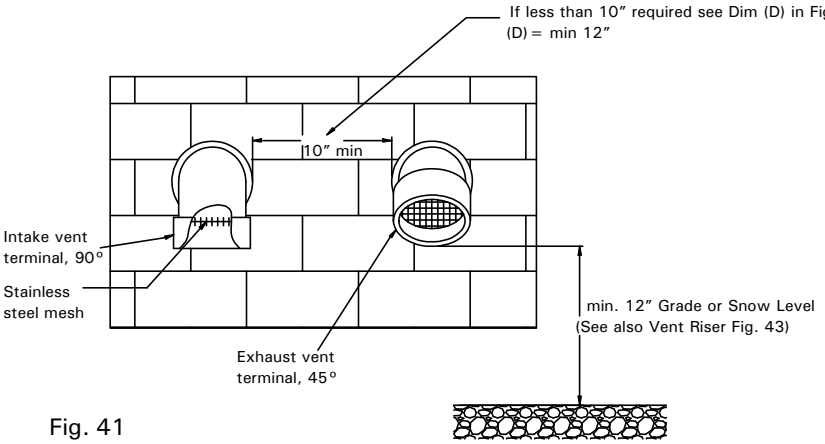
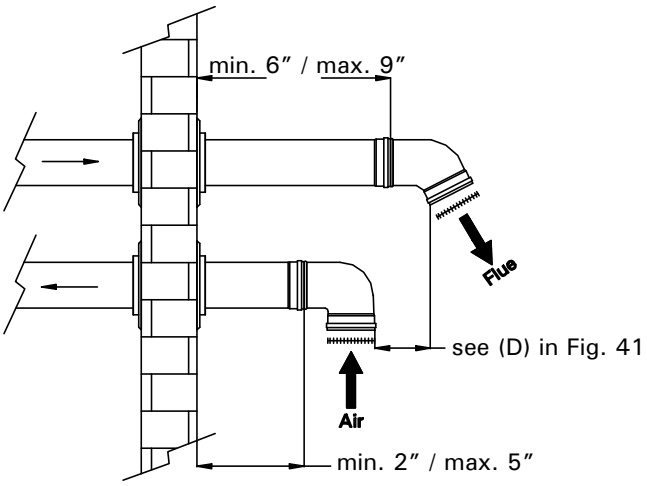


Fig. 41

Side wall vent termination (side view)



Sidewall Vent Termination

Fig. 42

Installation of field fabricated vent riser

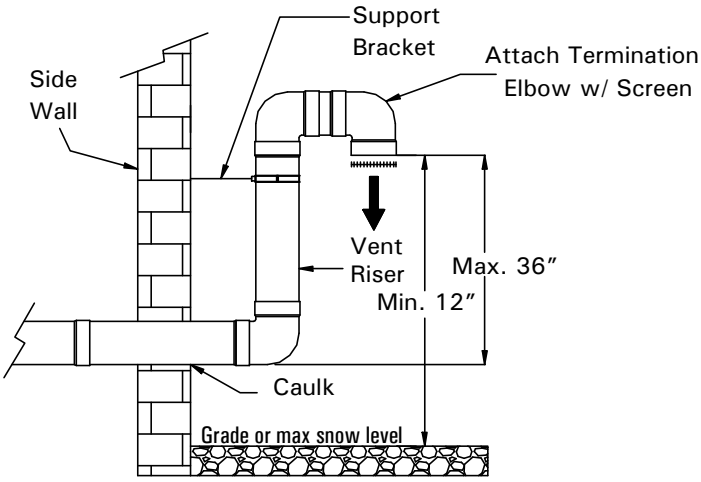


Fig. 43

IMPORTANT

The exhaust vent/air intake system must terminate so that proper clearances are maintained as cited in local codes or the latest edition of the "Natural Gas and Propane Installation Code" CAN/CSA-B149.1 (Canada), or the "National Fuel Gas Code" ANSI Z223.1 (NFPA 54) (U.S.A.). See pages 19 and 20.

WARNING

Vent termination must be at least 12″/300 mm above the anticipated snow level (consult your local building authorities or local weather office). Locate vent termination in such a way that it cannot be blocked by snow.

Vent Length Requirements

Maximum vent/air intake pipe length - horizontal

The total equivalent length specified for a two pipe system is the total combined length of the exhaust vent and air intake pipe system. Do not exceed these maximum lenghts. See table 35., as well as Figs. 44, 45, and 46 for reference.

Table 35. Maximum allowable equivalent length - horizontal

Boiler Model	System Ø	Max. combined equivalent vent length (a + b)
■WB1A 8-24, 8-30	3″ / 76mm 4″ / 102mm*	52ft. / 16m 66ft. / 20m
■WB2 6-24C, 6-24	3″ / 76mm 4″ / 102mm	52ft. / 16m 63ft. / 19.2m
■WB2 8-32	3″ / 76mm 4″ / 102mm	40ft. / 12m 50ft. / 15.2m
■WB2 11-44	4″ / 102mm	52ft. / 16m
■WB2 15-60	4″ / 102mm	40ft. / 12m

* 4″ (3″ to 4″ increaser field supplied. Do not order Viessmann 4″ parallel adaptor).

IMPORTANT

First elbow not included in equivalent vent calculation.

Always include vent termination length in calculations.

Maximum of five 90° elbows allowed in the **entire** vent and air intake systems (first 90° elbows are not included). See Fig. 47
Minimum vent length is 3.3 ft. / 1m.

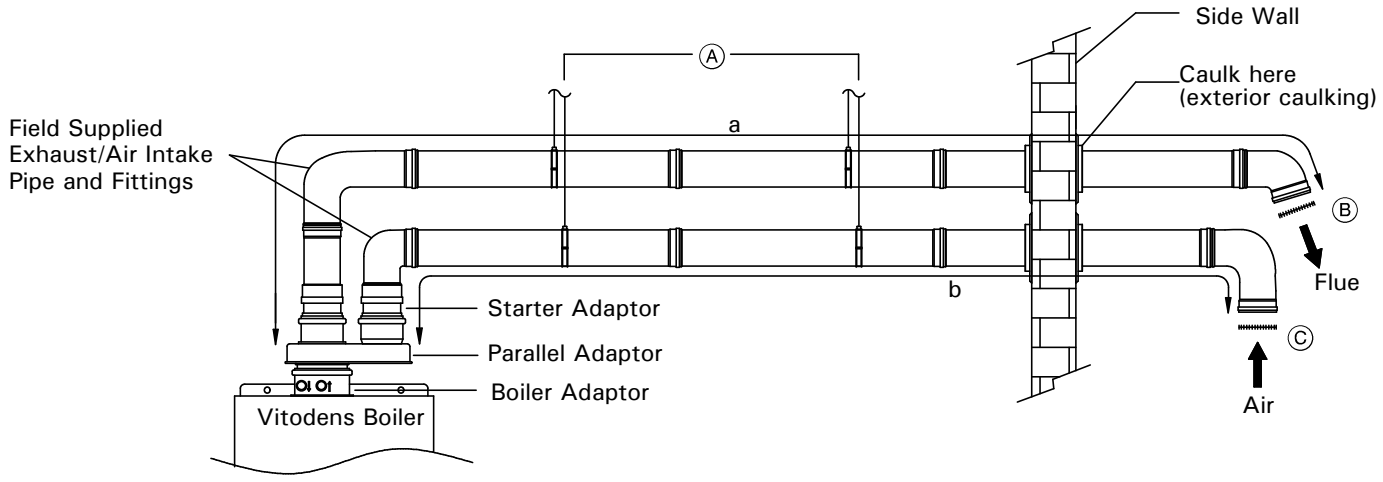


Fig. 44

Legend

Ⓐ Support system
Ⓑ Exhaust pipe termination with screen
Ⓒ Combustion air intake with screen
a Equivalent vent length (exhaust)
b Equivalent vent length (air intake)

5285 268 v3.8

Vent Length Requirements *(continued)*

Maximum vent/air intake pipe length - vertical

The total equivalent length specified for a two pipe system is the total **combined** length of the exhaust vent and air intake pipe system. Do not exceed these maximum lenghts. See table 36., as well as Figs. 44, 45, and 46 for reference.

Table 36. Maximum allowable equivalent length - vertical

Boiler Model	System Ø	Max. combined equivalent vent length (a + b)
■WB1A 8-24, 8-30	3″ / 76mm 4″ / 102mm*	66ft. / 20m 79ft. / 24m
■WB2 6-24C, 6-24	3″ / 76mm 4″ / 102mm	66ft. / 20m 79ft. / 24m
■WB2 8-32	3″ / 76mm 4″ / 102mm	49ft. / 15m 62ft. / 19m
■WB2 11-44	4″ / 102mm (for larger Ø system consult Viessmann)	66ft. / 20m
■WB2 15-60	4″ / 102mm (for larger Ø system consult Viessmann)	49ft. / 15m

* 4″ (3″ to 4″ increaser field supplied. Do not order Viessmann 4″ parallel adaptor).

Maximum of five 90° elbows allowed in the **entire** vent and air intake system. See Fig. 47.
Minimum vent length is 3.3 ft. / 1m.

Legend

- Ⓐ Support system
- Ⓑ Flashings
- Ⓒ Exhaust (straight coupling) with screen
- Ⓓ Combustion air intake with screen
- a Equivalent length (exhaust)
- b Equivalent length (air intake)
- c min. 18″ / max. 48″
- d min. 12″
- e min. 12″
- f 6″ over max. local snow level (check with your local weather office for details)

Vertical Vent Installation

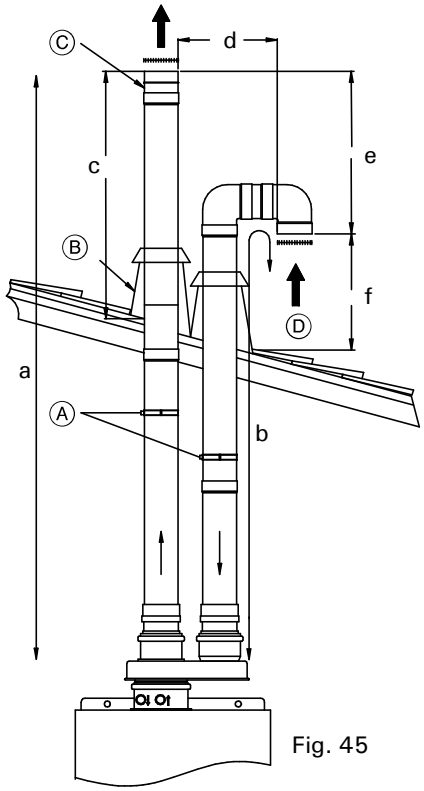


Fig. 45

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Vent Length Requirements *(continued)*

Maximum vent/air intake pipe length - horizontal/vertical (hybrid system)

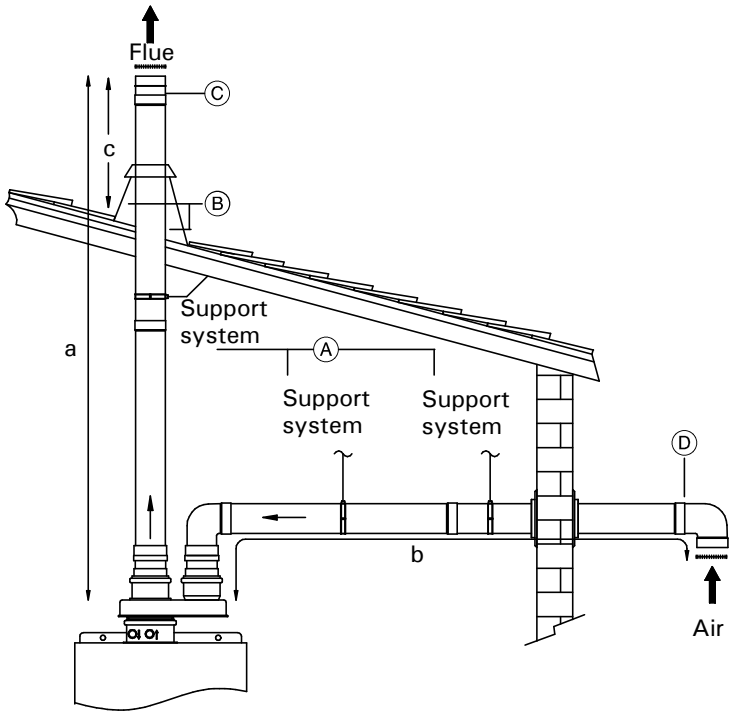
The total equivalent length specified for a two pipe system is the total **combined** length of the exhaust vent and air intake pipe system. Do not exceed these maximum lenghts. See table 37., as well as Figs. 44, 45, and 46 for reference.

Table 37. Maximum allowable equivalent length - vertical exhaust / horizontal air intake (hybrid)

Boiler Model	System Ø	Max. combined equivalent vent length (a + b)
■WB1A 8-24, 8-30	3″ / 76mm 4″ / 102mm*	59ft. / 18m 72ft. / 22m
■WB2 6-24C, 6-24	3″ / 76mm 4″ / 102mm	59ft. / 18m 71ft. / 21.6m
■WB2 8-32	3″ / 76mm 4″ / 102mm	44ft. / 13.5m 57ft. / 17.1m
■WB2 11-44	4″ / 102mm (for larger Ø system consult Viessmann)	59ft. / 18m
■WB2 15-60	4″ / 102mm (for larger Ø system consult Viessmann)	44ft. / 13.5m

* 4″ (3″ to 4″ increaser field supplied. Do not order Viessmann 4″ parallel adaptor)

Maximum of five 90° elbows allowed in the **entire** vent and air intake system. See Fig. 47.
Minimum vent length is 3.3 ft. / 1m.



5285 268 v3.8

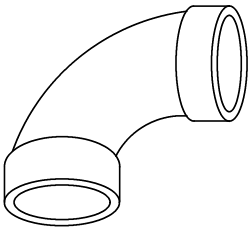
Fig. 46

Legend

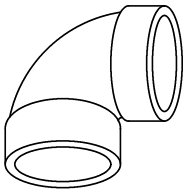
- Ⓐ Support system
- Ⓑ Flashings
- Ⓒ Exhaust (straight coupling) with screen
- Ⓓ Combustion air intake with screen
- a Equivalent length (exhaust)
- b Equivalent length (air intake)
- c min. 18″ / max. 48″

Vent Length Requirements

Standard long sweep elbows



90° long sweep elbow
equivalent to 5 ft. / 1.5m



For plastic pipe only
90° short sweep elbow
equivalent to 8 ft. / 2.4m
(if using)

Fig. 47

Note:
If standard sweep elbows are used the allowable vent lengths are reduced.
One standard 90° elbow is equivalent to 8ft. / 2.4m of straight pipe.

Table 38. Standard long sweep elbows

Material	90° equivalent length elbow ft. / m	45° equivalent length elbow ft. / m
Stainless steel	3 / 0.91	2 / 0.61
CPVC plastic pipe	5 / 1.52	3 / 0.91

Vent Length Requirements

Maximum equivalent vent length - stainless steel system with plastic air intake pipe

Note:
For system venting layout see fig. 48.

Table 39. (see also fig. 47)

Vent type	Type of fitting	Equivalent length ft. / m
Exhaust vent pipe	90° elbow (stainless steel)	3 / 0.91
	45° elbow (stainless steel)	2 / 0.61
Air intake pipe	90° elbow (ABS/PVC)	5 / 1.52
	45° elbow (ABS/PVC)	3 / 0.91

IMPORTANT

First elbow not included in equivalent vent calculation.

Always include vent termination length in calculations.

Equivalent vent length calculation example (Vitodens 200-W, WB2 11-44, system diameter 4")

Maximum allowable equivalent length is 52 ft. / 16 m (see table 35. on page 51)

2 x 90° stainless steel elbow ..... 6 ft./1.83 m
2 x 45° stainless steel elbow ..... 4 ft./1.22 m

Air intake pipe
1 x 90° plastic (ABS/CPVC/PVC) elbow ..... 5 ft./1.52 m
1 x 45° plastic (ABS/CPVC/PVC) elbow ..... 3 ft./0.91 m

Exhaust vent pipe ..... 10 ft./3.05 m
Air intake pipe ..... 10 ft./3.05 m
Combined total equivalent vent length (a + b) 38 ft./11.58 m

Vent Length Requirements

Maximum equivalent vent length - CPVC system

Table 40. (see also fig. 47)

Type of fitting	Equivalent length ft. / m
90° long sweep elbow (CPVC)	5 / 1.52
45° long sweep elbow (CPVC)	3 / 0.91

Equivalent vent length calculation example
(Vitodens 100-W, WB1A 8-24, 8-30, system diameter 3")

Maximum allowable equivalent length is 52 ft. / 16 m
(see table 35. on page 51)

2 x 90° elbow	10 ft./3.05 m
4 x 45° elbow	12 ft./3.66 m
Exhaust vent pipe	10 ft./3.05 m
Air intake pipe	10 ft./3.05 m
Combined total equivalent vent length (a + b)	42 ft./12.81 m

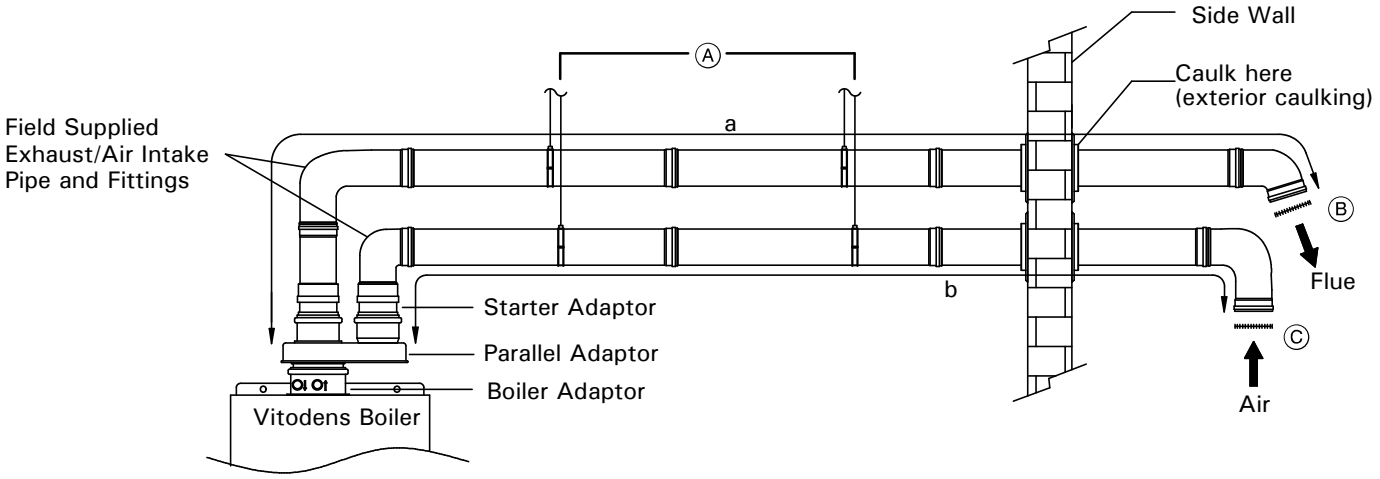
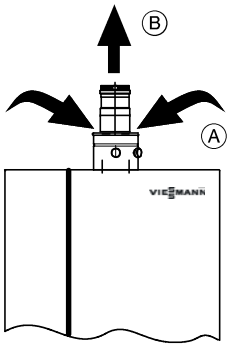


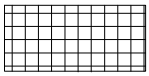
Fig. 48

Legend
Ⓐ Support system
Ⓑ Exhaust pipe termination with screen
Ⓒ Combustion air intake with screen
a Equivalent vent length (exhaust)
b Equivalent vent length (air intake)

Venting - Single Wall (Room Air Dependent)



Combustion air opening



The single-wall venting system draws combustion air from the boiler room. Room/Combustion air (A) enters the boiler at the boiler vent pipe adaptor through an annular air gap. Flue gases (B) are discharged to the outdoors via the single-wall pipe of the special venting system.

Vent Requirements

Combustion air supply

This boiler requires fresh air for safe operation and must be installed in a mechanical room where there are provisions for adequate combustion and ventilation air.
There are no provisions available on the Vitodens boiler to interlock it with an external combustion air blower.

The Vitodens boiler is suitable for sidewall, as well as vertical venting using field supplied venting material. The Vitodens 100-W and Vitodens 200-W boilers are approved for direct exhaust (non-sealed combustion) operation in both, horizontal and vertical arrangements.

Provisions for combustion and ventilation air must be made in accordance with CAN/CSA-B149.1 or .2 Natural Gas Installation Codes (latest edition) (for installations in Canada) or in accordance with sections for Combustion and Ventilation Air, of the National Fuel Gas Code, ANSI Z223.1 (latest edition) or applicable provisions of local codes (for installations in the U.S.A.)

Follow local codes to properly isolate the vent pipe when passing through floors, ceilings and roof.

Whenever possible, install boiler near an outside wall so that it is easy to duct fresh air directly to the boiler area. Refer to national codes for duct sizing. Round ducts may be used.

The boiler must be vented and supplied with combustion air and exhaust vents as described in this section. Ensure the vent and combustion air supply comply with these instructions.

⚠ WARNING

Failure to provide an adequate supply of fresh combustion air can cause poisonous flue gases to enter living space, which can cause severe personal injury or loss of life.

The boiler location should never be under negative pressure. Exhaust fans, attic fans, or dryer fans may cause air to be exhausted at a rate higher than air can enter the structure for safe combustion. Corrective action must be taken to ensure enough air is availabe. Never cover the boiler or store debris or other materials near the boiler, or in any way block the flow of adequate fresh combustion air to the boiler.

If boiler is installed in a confined space (a space with a volume of less than 50 cubic feet per 1000 Btu/h of gas input for all fuel burning equipment) or building layout is unusually tight, adequate air for combustion must be provided by two openings: one located about 6" below the ceiling, the other about 6" above the floor. When communicating directly with the outside, each opening must have a minimum free area of one square inch per 2000 Btu/h of gas input. When all combustion air is provided by openings in doors, etc. to adjoining spaces having adequate infiltration, each opening must have a minimum free area of one square inch per 1000 Btu/h of gas input, but not less than 100 in^2.

You must know the free area of louvers used to cover up the combustion and ventilation openings in closet installations. If you do not know the free area, assume 20% for wood louvers and 60-75% free area for metal louvers. When using louvers, the openings have to be made larger. For example, a free 14" x 6" opening becomes a 14" x 10" opening for a grill containing metal louvers.

⚠ Caution

Do not store chemicals containing chlorine or other corrosive materials near the boiler, such as bleach, cleaning solvents, detergents, acids, hair spray, spray cans, paint thinners, paint, water softener salt, perchloroethylene, or carbon tetra chloride.

⚠ CAUTION

Exposure to corrosive materials can cause heat exchanger corrosion and failure.

Continued on following page.

Vent Requirements *(continued)*

Combustion air supply *(continued)*

Inspect all finished exhaust vent/air intake piping to ensure:
- Vent pipe and fittings are of approved material.
- Acceptable size, length and number of elbows on combined vent pipe system.
- Installation is in accordance with prevailing provisions of local codes.
- Installation complies with the requirements of these instructions, as well as the exhaust vent supplier's instructions.

The exhaust vent system and terminations may be installed in one of the following types of terminations:

1. Horizontal exhaust vent
2. Vertical exhaust vent

⚠ CAUTION

Do not locate boiler in areas where high dust levels or high humidity levels are present.

⚠ CAUTION*

Do not install boiler during construction involving drywall or heavy dust of any kind. Dust can accumulate in the burners and cause sooting. Install boiler after all heavy dust construction is completed.

** Typically when the boiler is used as a temporary heat source during the building construction phase.*

⚠ CAUTION

If the boiler has been exposed to high dust levels, all burners and the heat exchanger must be cleaned prior to use.

Note:
If above criteria are not properly observed and boiler damage results, any warranty on the complete boiler and related components will be null and void.

General Installation Information

The Vitodens boiler must be located in such a way that the vent length is as short as possible and that the vent can be routed as directly (and with as few bends) as possible.
The minimum equivalent vent length is 4 ft. / 1.2 m.
See tables 46. and 47. for maximum and minimum vent lengths.

All products of combustion must be safely vented to the outdoors.
The Vitodens boiler is not approved for common-venting applications. Do not common-vent with any other appliance.
The Vitodens boiler vents under positive pressure and is a Category IV boiler.

⚠ WARNING

Failure to ensure that all flue gases have been safely vented to the outdoors can cause property damage, severe personal injury, or loss of life. Flue gases may contain deadly carbon monoxide.

Viessmann recommends that the entire vent system be checked by a licensed professional heating contractor at least once each year following initial installation.

The stainless steel special venting system is completely sealed when fully assembled. Locking bands are used to reinforce the joints between pipe and fittings.

⚠ WARNING

Different manufacturers offer a number of different joint systems and adhesives. Do not mix pipes, fittings and/or joining methods from different manufacturers. Failure to comply could result in leakage, potentially causing personal injury or death.

Do not install vent pipe such that flue gases flow downwards. The direction of flue gas flow must be vertically upwards or horizontal with an upward slope.

Ensure there is no flue gas leakage into the area in which the boiler is installed.

Check joints for leaks with the gas supply turned off and the fan running. Use a soapy solution to check for vent leaks.

Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2" per 3.3 ft. / 50 mm per 1 m).
No condensate trap is required in the vent pipe system.

General Installation Information *(continued)*

Installation steps (outline)

Exhaust vent pipe material

Use only the materials listed in table 41. for exhaust vent pipe fittings.

- Cut the pipe end square and remove all burrs and debris from joints and fittings.
- If using CPVC special vent material for exhaust vent pipe, all joints must be properly cleaned, primed and cemented. Use only cement and primer approved for the use with the pipe material. See table 41. for approved solvent cement material.

⚠ CAUTION

For solvent cement and primer:
- **Use only in well ventilated areas**
- **Do not use near flame or open fire**
- **Use only the solvent cement and primer appropriate for the venting material being used**
- **Solvent cements for plastic pipe are flammable liquids and must be kept away from all sources of ignition**

- No low point is allowed in the exhaust vent pipe system, unless a proper drain pipe is used to allow condensate to drain.

⚠ WARNING

Ensure that the entire venting system is protected from physical damage. A damaged venting system may cause unsafe conditions.

⚠ WARNING

The venting system is approved for indoor installations only.
Do not install the venting system outdoors.

- Route vent pipe as directly as possible and with as few bends as possible to the boiler.
- Condensate must drain from the flue pipe to the boiler. Ensure a suitable gradient of at least 3° (approx. 2″ per 3.3 ft. / 50 mm per 1 m).
- Use a hacksaw and sheet metal snips to cut pipes to length (if necessary). Use a file to smooth rough edges. Pipe must be round and not bent into an oval shape.

IMPORTANT

When cutting pipes to length, debur and clean pipes.

In conjunction with these instructions, follow the installation instructions supplied by the special venting manufacturer.
Viessmann Venting System Instructions supersede the instructions supplied by the manufacturer.

- All piping must be fully supported. Use pipe hangers at a minimum of 48″ / 1219mm intervals to prevent sagging of the pipe.
- The exhaust vent pipe and fittings must be securely supported by a support system suitable for the weight and design of the material employed. Contact your local vent material supplier for more information specific to your installations.

IMPORTANT

Ensure that the exhaust vent pipes are properly supported. The Vitodens boiler is not designed to support the weight of the exhaust vent pipe system.

- Field supplied increaser fittings (transitions) should always be made in vertical sections of pipe to prevent accumulation of condensate in the vent pipe.
- A maximum of five 90° elbows may be installed in **combined** length of the exhaust vent/air intake pipe system (excluding termination elbows, tees, hoods and couplings).

General Installation Information *(continued)*

Approved materials for single-wall vent system

Table 41. Approved materials for single-wall vent system

Part	Material	Certified to Standards	Applicability
Exhaust pipe and fitting	Stainless steel	UL1738 "Venting systems for gas-burning appliances, Categories II, III, IV"	U.S.A.
		ULC S636 "standard for Type BH gas venting systems"	Canada
	CPVC	UL1738 "Venting systems for gas-burning appliances, Categories II, III, IV"	U.S.A.
		ULC S636 "standard for Type BH gas venting systems"	Canada
Pipe cement, primer (for combustion air intake pipe only)	PVC	ANSI/ASTM D2564 CSA B137.3	U.S.A./Canada
	CPVC	ANSI/ASTM F493 CSA B137.6	
	ABS	ANSI/ASTM D2235 CSA B181.1/B182.1	
Pipe cement, primer (for exhaust pipe and fitting)	CPVC	ULC S636 "Standard for Type BH gas venting systems" Class IIB 90°C	U.S.A./Canada

⚠ CAUTION

Do not use cellular (foam) core pipe material to vent the Vitodens boiler.

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General Installation Information *(continued)*

Vent termination location requirements (for installations in Canada)

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2.
A vent must **NOT** terminate...

1. ....directly above a paved sidewalk or paved driveway which is located between two single-family dwellings and serves both dwellings.

2. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

3. ....within 6 ft./1.83 m of a mechanical air supply inlet *1 to any building (dryer vents, non-sealed combustion furnace and hot water heater vents are considered to be mechanical air inlets).

4. ....above a meter/regulator assembly within 3 ft./0.9 m horizontally of the vertical centerline of the regulator vent outlet and to a maximum vertical distance of 15 ft./4.5 m.

5. ....within 3 ft./0.9 m of any gas service regulator vent outlet.

*1 *Including heat recovery units.*

6. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

7. ....within the following distances of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion air inlet of any other appliance:

- 1 ft./0.3 m for inputs up to and including 100 000 Btu/h/30 kW (applicable only to boiler models WB2-24C/24).
- 3 ft./0.9 m for input exceeding 100 000 Btu/h/30 kW (applicable to boiler models WB2-32 and up).

8. ....underneath a veranda, porch or deck, unless
- the veranda, porch, or deck is fully open on a minimum of two sides beneath the floor, and
- the distance between the top of the vent termination and the underside of the veranda, porch, or deck is greater than 1 ft./0.3 m.

9. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

10. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

11. ....at a location where ice formation on the ground can present a hazard.

12. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

13. ....where discharging hot flue gases may cause property damage or personal injury.

14. ....within 3 ft./0.9 m from an inside corner of outside walls.

General Installation Information *(continued)*

Vent termination location requirements (for installations in the U.S.A.)

The vent must be installed observing local regulations in addition to National Codes, ANSI-Z223.1 or NFPA 54.
A vent must **NOT** terminate...

1. ....less than 7 ft./2.13 m above a paved sidewalk or a paved driveway located on public property.

2. ....within 4 ft./1.2 m horizontally from service regulator vents, electric and gas meters as well as relief equipment.

3. ....at least 3 ft./0.9 m above any forced air inlet located within 10 ft./ 3 m.

4. ....less than 1 ft./0.3 m above grade level or anticipated snow level (consult local building authorities or local weather office). Locate the vent termination in such a way that it cannot be blocked by snow.

5. ....within 1 ft./0.3 m of a window or door which can be opened in any building, any non-mechanical air supply inlet to any building or the combustion inlet of any other appliance.

6. ....in areas where condensation may cause problems, such as above planters, patios, or adjacent to windows where flue gases may cause fogging.

7. ....within 3 ft./0.9 m to the property line (advisable, not mandatory; please check with local building authorities and municipal bylaws).

8. ....at a location where ice formation on the ground can present a hazard.

9. ....so that the flue gases are directed toward brickwork, siding, or other construction, in such a manner that may cause damage from heat or condensate from the flue gases.

10. ....where discharging hot flue gases may cause property damage or personal injury.

11. ....within 3 ft./0.9 m from an inside corner of outside walls.

Flashing and storm collar installation

Flashings and storm collars are field supplied. **Flashings and storm collars suitable for Type B vent materials (or better) may be used.**

To obtain flashings and storm collars, please contact your local vent material supplier. Follow the installation instructions supplied by the special venting manufacturer.

Follow local codes to properly isolate the exhaust vent pipe when passing through floors, ceiling and roof.

Always check the marking on the pipe to make sure you are using the correct material.

General Installation Information *(continued)*

Support system

The venting system must be securely supported by a support system suitable for the weight and design of the materials employed.
The Vitodens boiler is not designed to support the weight of the venting system.

Use supports to transfer the weight of an installation to the building structure. There are different types of supports available and their capacity varies with each type and diameter.
The following support types are available at your local vent material supplier...

- anchor plate
- wall support
- roof support
- floor support
- suspension band (hanger).

In addition to the support types listed, mounting clips can be used to support the weight of the venting system.

Contact your vent material supplier for more information specific to your installation.

Follow the installation instructions supplied by the special venting manufacturer.

General Installation Information *(continued)*

Additional requirements for stainless steel vent pipe material

Use an AL29-4C® special stainless steel venting system (UL/ULC listed for category IV) for horizontal or vertical venting of the Vitodens boilers. See tables 42. and 43. and contact one of the suppliers (see listing on right) to order.

Prior to installation, check that the correct single-wall vent parts were ordered and supplied.

See tables 42. and 43. for special stainless steel single-wall vent pipe starter adaptor, coaxial increasers and bird screen models required for your installation. In case of discrepancies, contact original parts supplier.

Exhaust vent pipe connection to boiler

The vent connection to the Vitodens boiler must be made with a coaxial increaser (Vitodens 100-W only) and starter stainless steel adaptors (supplied by others, see tables 42. and 43.). The starter adaptors are intended for a slip fit and slide into the boiler adaptor with a gentle twisting motion.

Note:
For stainless steel exhaust vent system, the minimum pipe diameter is 3" / 76mm.

Note:
The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.2000 and therefore is listed for zero clearance to combustibles when vented with a single wall special venting system. The zero inches vent clearance to combustibles for the Vitodens boiler supercedes the clearance to combustibles listing that appears on the special venting system label.

Flexmaster Canada Ltd.
452 Attwell Drive
Etobicoke, ON
M9W 5C3
Tel. (416) 679-0045

Z-FLEX (US) INC.
20 Commerce Park North
Bedford, NH
03110-691
Tel. (800) 654-5600

Flex-L International Inc.
6385 Kennedy Road
Mississauga, ON
L5T 2W4
Tel. (800) 561-1980

Flex-L International Inc.
P.O. Box 29140
Columbus, OH
43229-0140
Tel. (800) 561-1980

Heat-Fab, Inc.
130 Industrial Blvd.
Turners Falls, MA
01376
Tel. (800) 772-0739

ProTech Systems, Inc.
400 South Pearl Street
Albany, NY
12202
Tel. (800) 766-3473

Security Chimneys International Ltd.
2125 Rue Monterey
Laval, QC
H7L 3T6
Tel. (800) 363-0821

IMPORTANT

For exhaust vent pipe material:
Do not use any other vent material.
Do not use galvanized pipe, plastic pipe and/or chimney liners of any kind.

⚠ WARNING

The use of vent material other than AL29-4C stainless steel, positive pressure vent pipe and fittings can cause property damage, severe personal injury and/or loss of life.

General Installation Information *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Table 42. Exhaust vent termination options

Supplier	Boiler Model	Stainless Steel Slip Joint Starter Adaptor		Vertical Termination Coupling with Screen (see Fig. 33)	
Flexmaster	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	2SVSVB03 2SVSVB03 2SVSVB04	3″ 3″ 4″	2SVST03 2SVST03 2SVST04
Flex-L	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	SRAVMA3-2 SRAVMA3-2 SRAVMA4-2	3″ 3″ 4″	SRTP-03 SRTP-03 SRTP-04
Heat-Fab	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	9301VSMN 9301VSMN 9401VSMN	3″ 3″ 4″	9392 9392 9492
ProTech	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	300568 300568 300569	3″ 3″ 4″	300186 300186 300187
Security Chimneys	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	3″ 3″ 4″	CTX-V3 CTX-V3 CTX-V4		Contact the supplier.

Note:
Minimum vent pipe diameter with stainless steel vent system is 3″ / 76mm.

Table 43. Other exhaust vent termination options (horizontal installation)

Supplier	Boiler Model	Termination Elbow with Screen 90° or 45° (see Fig. 34)	Termination Tee with Screen (see Fig. 35)	Termination Hood with Screen (see Fig. 36)	Combination Vent/ Air Intake Terminal (see Figs. NO TAG and NO TAG)
Flexmaster	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	Contact supplier	Contact supplier	Contact supplier	n.a.
Flex-L	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	Contact supplier	Contact supplier	Contact supplier	n.a.
Heat-Fab	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	Contact supplier	Contact supplier	Contact supplier	n.a.
ProTech	■WB1A 8-24, 8-30 ■WB2 6-24C, 6-24, 8-32 ■WB2 11-44, 15-60	Contact supplier	Contact supplier	Contact supplier	n.a.

General Installation Information *(continued)*

Additional requirements for stainless steel vent pipe material *(continued)*

Table 44. Coaxial increaser (min. stainless steel pipe diameter is 3″ / 76mm)

Supplier	Boiler Model	Coaxial increaser, Part Number	Ø inches mm	Qty.
Viessmann	■WB1A 8-24, 8-30	7176765 (see Fig. 49)	2 to 3 60 to 80	1

Coaxial increaser
for WB1A 8-24, 8-30
Part No. 7176765

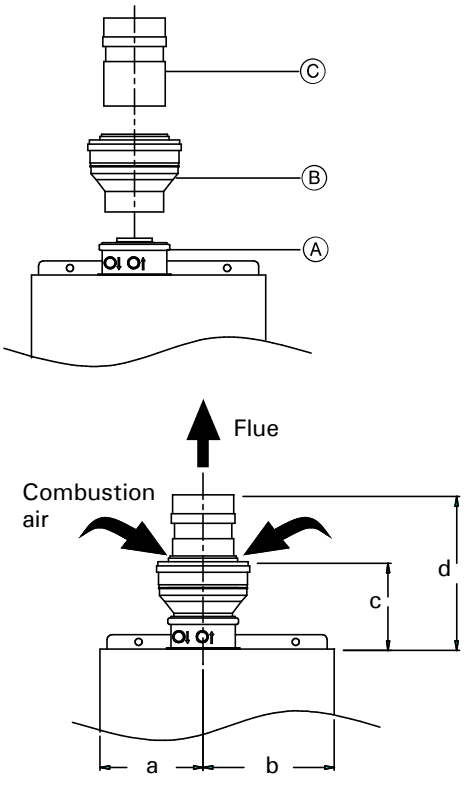


Fig. 49

Legend

Ⓐ Boiler adaptor
Ⓑ Coaxial increaser, 60/100, 80/125 (2″ to 3″)
Ⓒ 3″ diameter stainless steel starter adapter (max. insertion 2½″ / 64mm)
a 6.93″ / 176mm
b 8.82″ / 224mm
c 6.25″ / 159mm
d 10.34″ / 263mm

Starter adaptor
for WB2 6-24C, 6-24, 8-32, 11-44, and 15-60

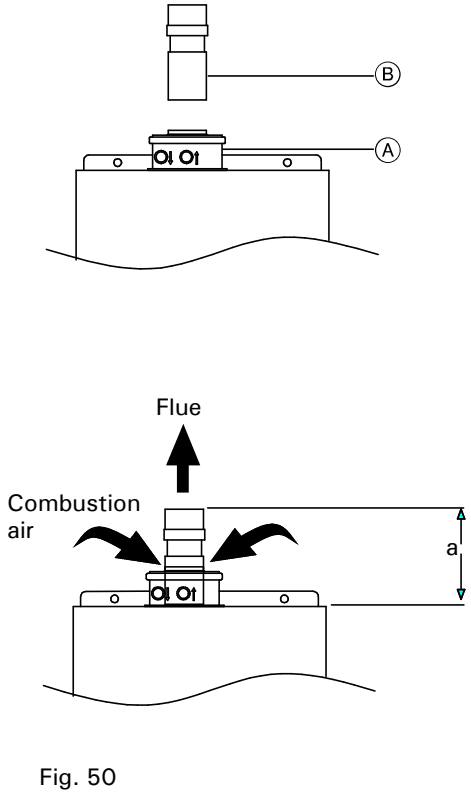


Fig. 50

Legend

Ⓐ Boiler adaptor
Ⓑ Stainless steel starter adaptor (max. insertion 2½″ / 64mm)
a 6½″ / 165mm

General Installation Information *(continued)*

Component parts of the venting system - stainless steel

Termination
Coupling with Screen

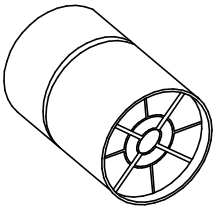
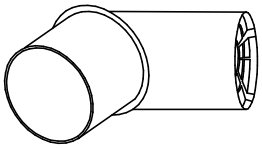


Fig. 51

Termination
Elbow with Screen
90° or 45°



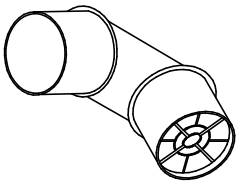


Fig. 52

Termination Tee with Screen

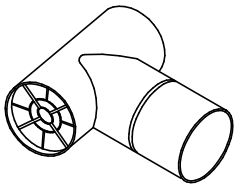
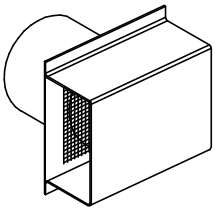


Fig. 53

Termination Hood with Screen



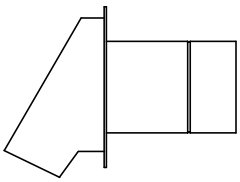


Fig. 54

General Installation Information *(continued)*

Additional requirements for CPVC vent pipe material

Use UL/ULC-listed special plastic pipe (CPVC) for horizontal (side wall) or vertical (roof) venting of the Vitodens boilers.
See table 45. below and contact Viessmann to order.

Prior to installation, check that the correct single-wall vent parts have been ordered and supplied.

See table 45. for special starter adaptor and bird screen models required for your installation.

Exhaust vent connection to boiler

The vent connection to the Vitodens boiler must be made with CPVC starter adaptors (see table 45.). The starter adaptors are intended for a slip fit and slide into the boiler adaptor with a gentle twisting motion.

For a vent pipe system, one wire mesh screen (bird screen) must be ordered from Viessmann. These parts are available in pre-cut diameters of 2", 3" and 4" (see table 45.).

Note:
The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.2005 and therefore is listed for zero clearance to combustibles when vented with a single wall special venting system (CPVC material). The zero inches vent clearance to combustibles for the Vitodens boiler supercedes the clearance to combustibles listing that appears on the special venting system marking label.

Approved vent pipe material

Marking

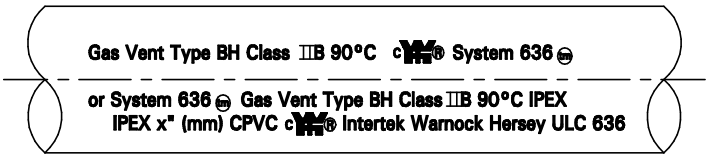


Fig. 55

IMPORTANT

For exhaust vent pipe material:
Do not use any other vent material.
Do not use galvanized pipe, plastic pipe and/or chimney liners of any kind.

WARNING

The use of vent material other than listed CPVC, positive pressure vent pipe and fittings can cause property damage, severe personal injury and/or loss of life.

Table 45. Required starter adaptors and mesh screen for CPVC system

Part	Boiler Model		Part Number	Supplier	Qty.
CPVC Starter Adaptor	■WB1A 8-24, 8-30	2"	7134769 *1		1
	■WB2 6-24C, 6-24, 8-32	3"	7134770 *1	Viessmann	1
	■WB2 11-44, 15-60	4"	7134771 *1		1
Wire Mesh Screen for Termination Elbows/Coupling	■WB1A 8-24, 8-30	2"	7134780		1
	■WB2 6-24C, 6-24, 8-32	3"	7134781	Viessmann	1
	■WB2 11-44, 15-60	4"	7134782		1

*1 See Fig. 56.

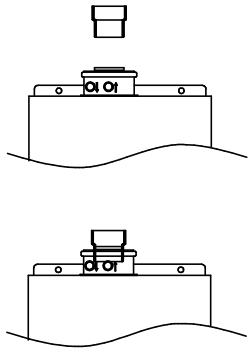


Fig. 56

Side Wall Vent Termination

Side wall vent termination (side view)

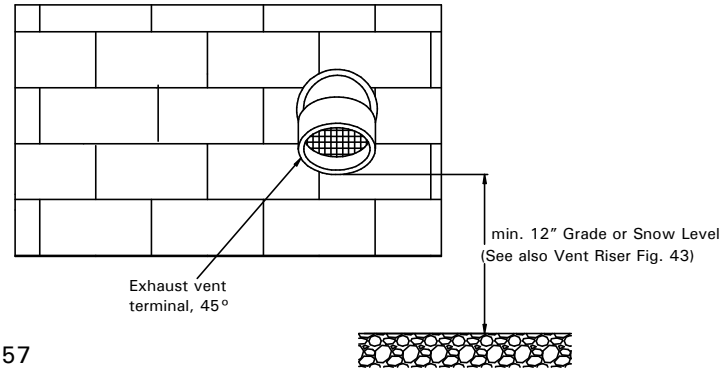
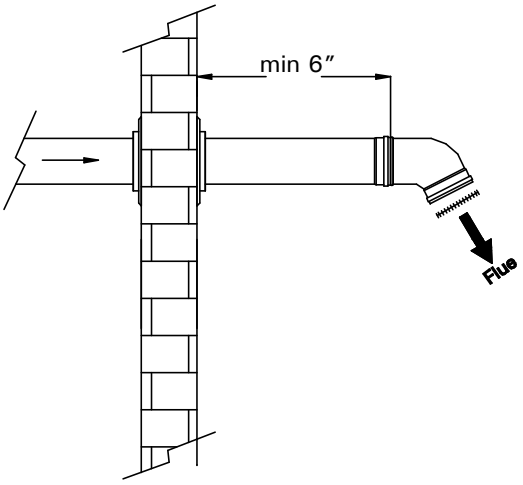


Fig. 57

Side wall vent termination (frontal view)



Sidewall Vent Termination

Fig. 58

Installation of field supplied vent riser

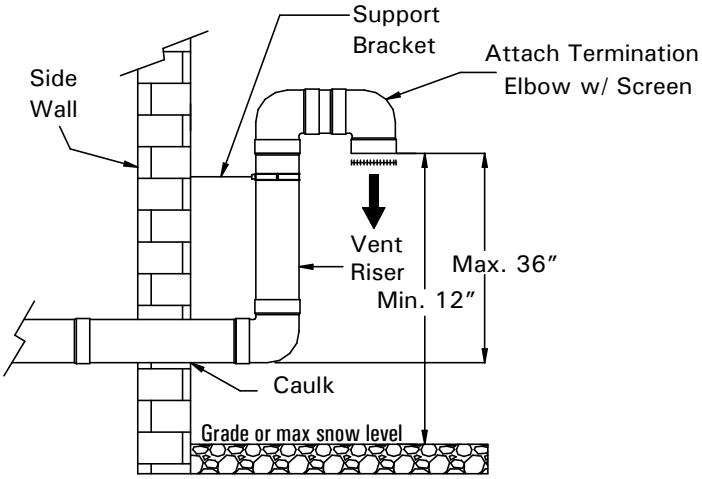


Fig. 59

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Vent Length Requirements

Maximum vent pipe length - horizontal

Size the exhaust vent pipe as specified in the table on the left. This table lists the maximum allowable vent length in ft. and meters of the exhaust piping. Vent diameter must not be reduced at any point in the installation.

Table 46. Maximum allowable equivalent length - horizontal

Boiler Model	System Ø	Max. equivalent vent length (a)
■WB1A 8-24, 8-30	2″ / 51mm *1 3″ / 76mm 4″ / 102mm *2	33ft. / 1m 52ft. / 16m 66ft. / 20m
■WB2 6-24C, 6-24	3″ / 76mm 4″ / 102mm	52ft. / 16m 63ft. / 19.2m
■WB2 8-32	3″ / 76mm 4″ / 102mm	40ft. / 12m 50ft. / 15.2m
■WB2 11-44	4″ / 102mm	52ft. / 16m
■WB2 15-60	4″ / 102mm	40ft. / 12m

IMPORTANT

First elbow not included in equivalent vent calculation.

Always include vent termination length in calculations.

*1 2″ diameter system only available with CPVC system

*2 4″ (3″ to 4″ increaser field supplied. Do not order Viessmann 4″ parallel adaptor).

Maximum of five 90° elbows allowed in the entire vent system. See Fig. 47
Minimum vent length is 3.3 ft. / 1m.

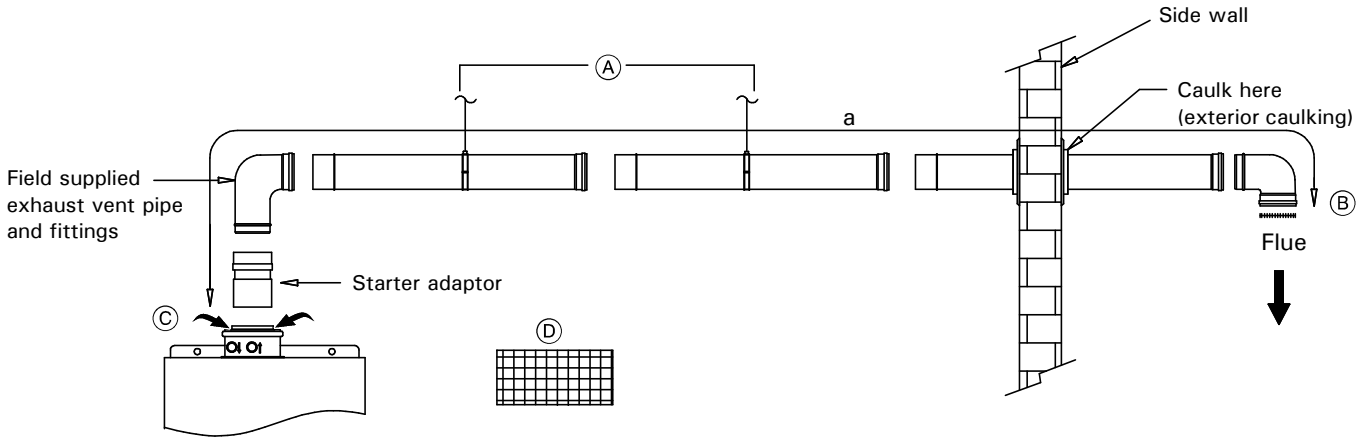


Fig. 60

Legend

Ⓐ Support system
Ⓑ Exhaust vent termination
Ⓒ Combustion air intake
Ⓓ Combustion air opening
a Equivalent vent length (exhaust)

Vent Length Requirements *(continued)*

Maximum vent pipe length - vertical

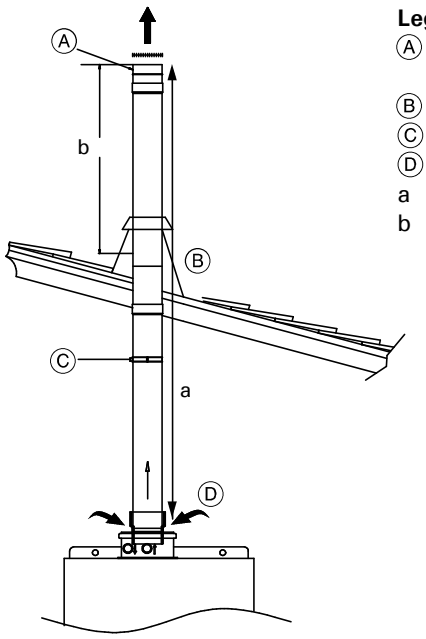
Size the exhaust vent pipe as specified in the table on the left. This table lists the maximum allowable vent length in ft. and meters of the exhaust piping. Vent diameter must not be reduced at any point in the installation.

Table 47. Maximum allowable equivalent length - vertical

Boiler Model	System Ø	Max. equivalent vent length (a)
■WB1A 8-24, 8-30	2″ / 51mm 3″ / 76mm 4″ / 102mm*	40ft. / 12m 66ft. / 20m 79ft. / 24m
■WB2 6-24C, 6-24	3″ / 76mm 4″ / 102mm	66ft. / 20m 79ft. / 24m
■WB2 8-32	3″ / 76mm 4″ / 102mm	49ft. / 15m 62ft. / 19m
■WB2 11-44	4″ / 102mm (for larger Ø system consult Viessmann)	66ft. / 20m
■WB2 15-60	4″ / 102mm (for larger Ø system consult Viessmann)	49ft. / 15m

* 4″ (3″ to 4″ increaser field supplied. Do not order Viessmann 4″ parallel adaptor)

Maximum of five 90° elbows allowed in the vent system (first 90° elbow is not included).
See Fig. 47.
Minimum vent length is 3.3 ft. / 1m.



Legend
- Ⓐ Exhaust (straight coupling) with screen
- Ⓑ Flashings
- Ⓒ Support system
- Ⓓ Combustion air intake
- a Equivalent length (exhaust)
- b min. 18″ / 457mm
  max. 48″ / 1219mm

Fig. 61

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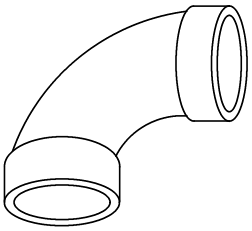
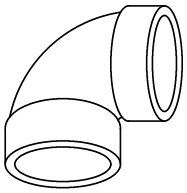
Vent Length Requirements

Standard long sweep elbows



90° long sweep elbow
equivalent to 5 ft. / 1.5m



For plastic pipe only
90° short sweep elbow
equivalent to 8 ft. / 2.4m
(if using)

Fig. 62

Note:
If standard sweep elbows are used the allowable vent lengths are reduced.
One standard 90° elbow is equivalent to 8ft. / 2.4m of straight pipe.

Table 48. Standard long sweep elbows

Material	90° equivalent length elbow ft. / m	45° equivalent length elbow ft. / m
Stainless steel	3 / 0.91	2 / 0.61
CPVC plastic pipe	5 / 1.52	3 / 0.91

Component Installation Guide

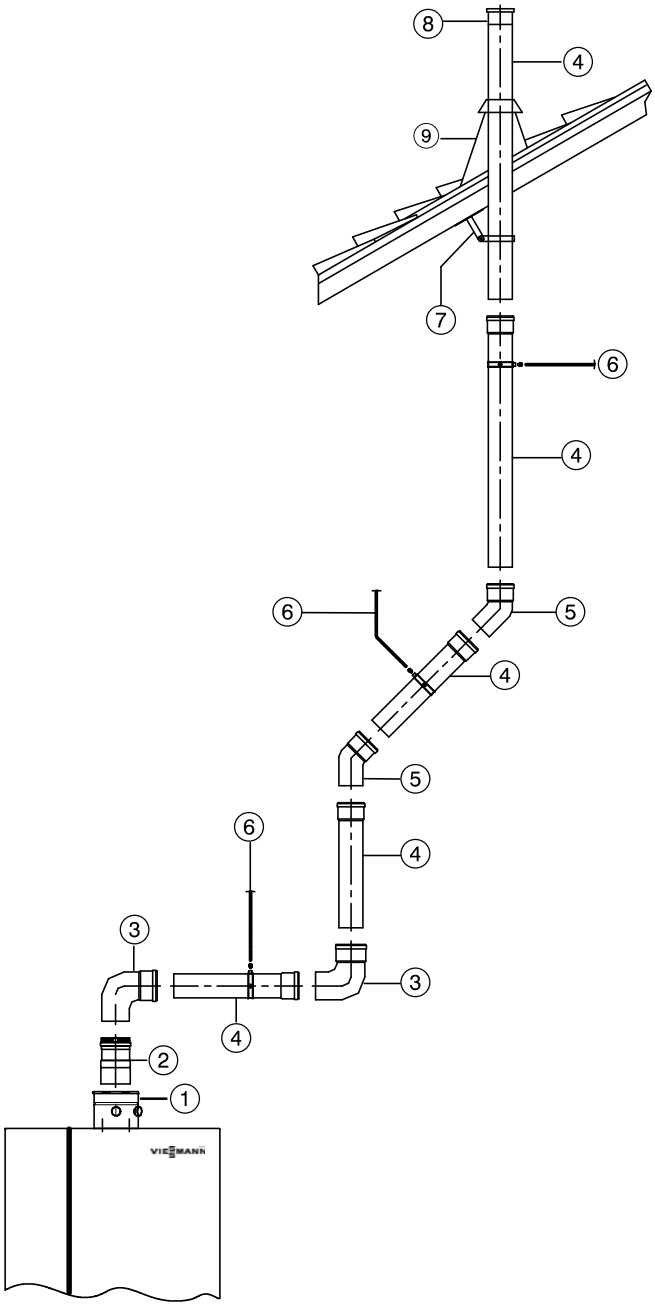


Fig. 63
General single-wall vertical venting layout

① **Coaxial vent pipe adaptor** (comes pre-installed on Vitodens 100, WB1A models 8-24, 8-30, and Vitodens 200, WB2 models 11-44, 15-60)

IMPORTANT

For Vitodens 200-W, WB2 models 6-24C, 6-24 and 8-32, the vent pipe adaptor must be ordered with the boiler.

② **Vent pipe starter adaptor** (coaxial > single-wall)

③ **Elbow,** 90°

④ **Straight pipe** *1

⑤ **Elbow,** 45°

⑥ **Suspension band / hanger**

⑦ **Wall band**

⑧ **Vent termination coupling** (w bird screen)

⑨ **Flashing and storm collar**

*1 *Available in different lengths.*

For more detailed information on component parts see product literature supplied by special venting manufacturer.

IMPORTANT

Ensure that the venting system is properly supported.
See page 63 for details.

Component Installation Guide *(continued)*

Single-wall vent pipe starter adaptor installation

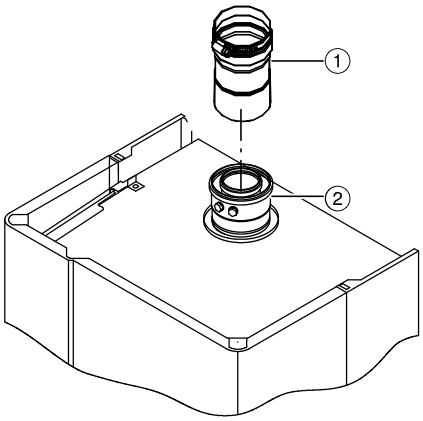


Fig. 64
Installing single-wall vent pipe adaptor

⚠ WARNING

Prior to installation, ensure the specially designed single-wall vent pipe adaptor end is smooth and chamfered to prevent possible damage to the sealing gasket of the boiler vent pipe adaptor (coaxial). Failure to comply could result in leakage, potentially causing personal injury or death.

1. Apply small amount of joint lubricant (supplied) to end of single-wall vent pipe adaptor to ease insertion.

2. Slide special single-wall vent pipe adaptor ① fully onto boiler vent pipe adaptor ②. Do not apply excessive force and/or bend single-wall vent pipe adaptor ① when inserting. Force could damage gasket.

IMPORTANT

The boiler vent pipe adaptor comes preinstalled for Vitodens 100-W models WB1A 8-24, 8-30, and Vitodens 200-W models WB2 11-44, 15-60.
For models WB2 24-32 the boiler vent pipe adaptor must be installed.
See page 11 for installation instructions.

Ceiling/Roof opening

Cut an opening for the vent pipe.

Size opening at least 1″ / 25 mm larger than vent pipe diameter (for combustible as well as non-combustible material).

Flashing and storm collar installation

Flashings and storm collars are field supplied. **Flashings and storm collars suitable for Type B vent materials (or better) may be used.**

To obtain flashings and storm collars, please contact your local vent material supplier. Follow the installation instructions supplied by the special venting manufacturer.

5285 268 v3.8

Component Installation Guide *(continued)*

Vent termination location requirements - vertical

The vent must be installed observing local regulations in addition to National Codes, CAN/CSA-B149.1 or 2 (for installations in Canada) or ANSI-Z223.1 or NFPA 54 (for installations in the U.S.A.).

See table below for the following two conditions.
- For sloped roof applications with distance b greater than 18″/450 mm
- For flat roof applications

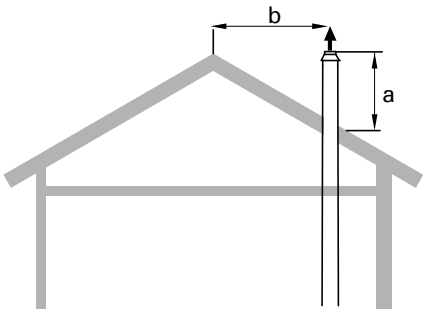


Fig. 65

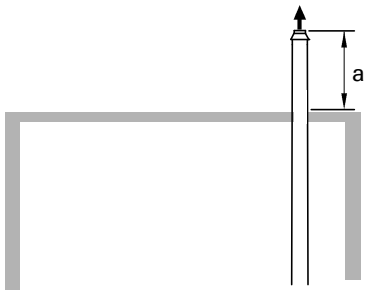


Fig. 66

Table 49.

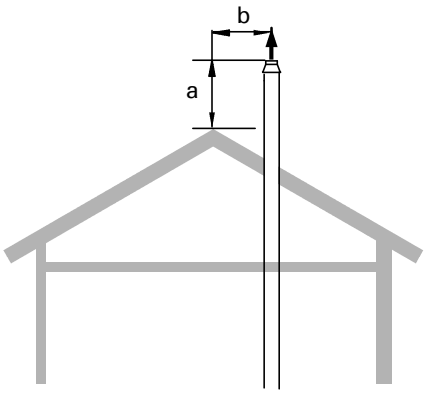
Boiler Model	a (min.distance)
WB1A 8-24, 8-30	18″/ 450 mm *1
WB2 6-24C, 6-24, 8-32	18″/ 450 mm *1
WB2 11-44, 15-60	18″/ 450 mm *1

*1 *See WARNING below.*

⚠ WARNING

Vent termination must be at least 12″/300 mm above the anticipated snow level (consult your local building authorities or local weather office). Locate vent termination in such a way that it cannot be blocked by snow.

- For sloped roof applications with distance b less than 18″/450 mm



a minimum 18″/450 mm
b <18″/450 mm

Fig. 67

A vent used in a special venting system with positive vent pressure and passing through a roof shall extend at least 18″/450 mm above the highest point where it passes through the roof and any other obstruction within a horizontal distance of 18″/450 mm.

The special vent system shall not be routed into, through, or within any other vent such as an existing masonry or factory-built chimney.

IMPORTANT

A masonry chimney flue may be used to route the venting system only if no other appliance is vented in the same flue.

Single-wall vent termination installation

Install the vent termination coupling, along with the bird screen, for sloped or flat roof collars in accordance with the manufacturer's instructions.

Component Installation Guide *(continued)*

General installation examples - vertical

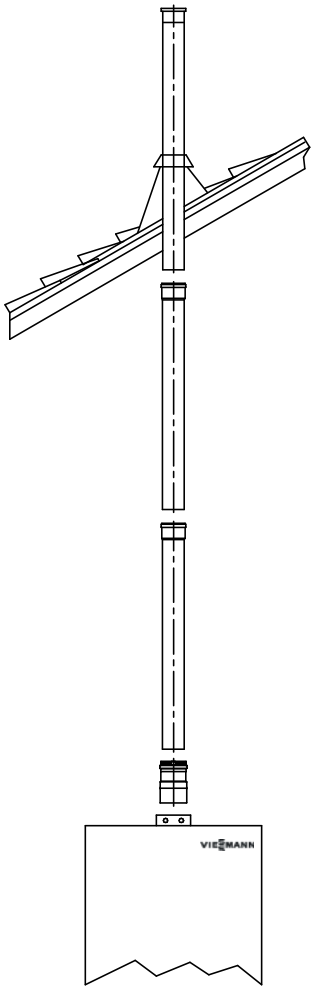


Fig. 68
Sloped roof installation

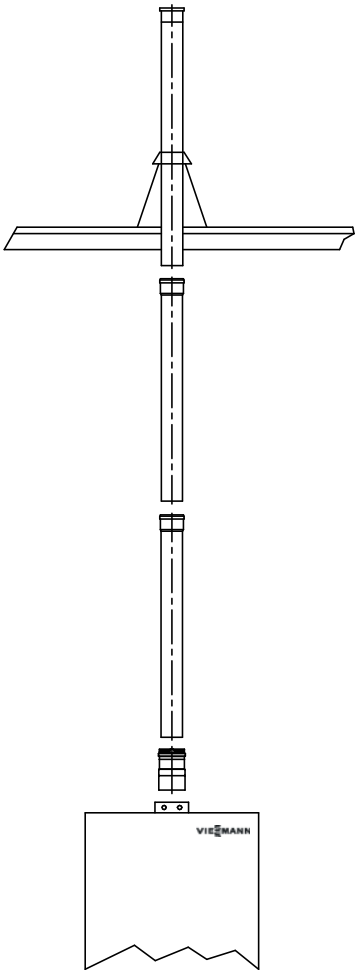


Fig. 69
Flat roof installation

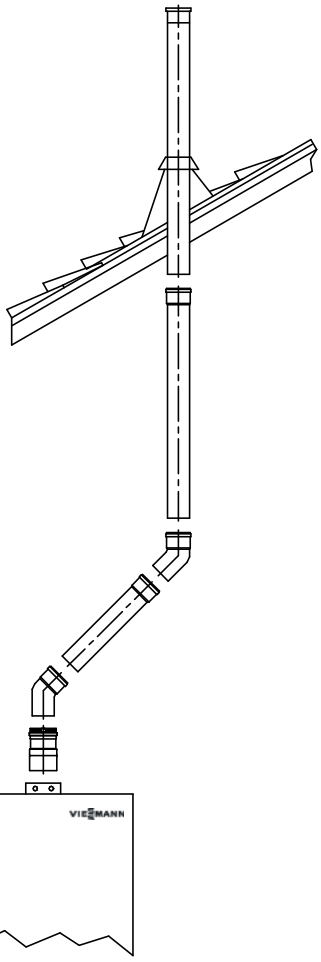


Fig. 70
Sloped roof installation with offset

IMPORTANT

Ensure that the venting system is properly supported; the Vitodens boiler is not designed to support the weight of the venting system.

Component Installation Guide *(continued)*

Equivalent vent length calculation example - vertical

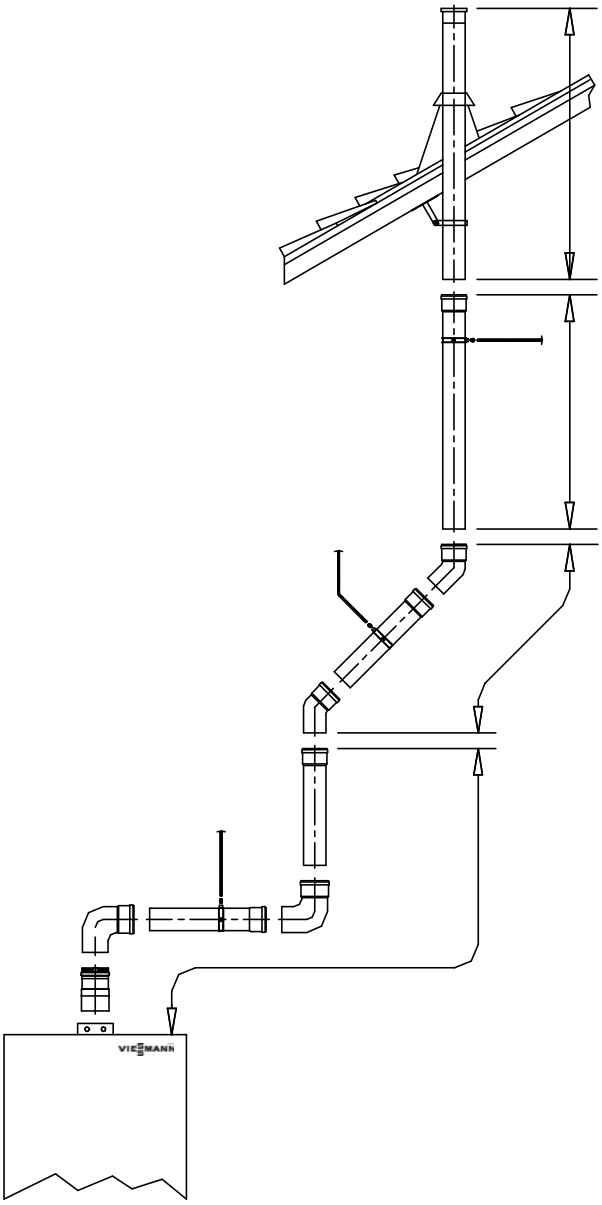


Fig. 71
Equivalent vent length calculation example

Equivalent vent length calculation example (stainless steel system)

Vitodens 200-W, WB2 15-60

2 x 90° elbow	6 ft./1.8 m
2 x 45° elbow	4 ft./1.2 m
3 x vent pipe (0.5 m)	4.9 ft./1.5 m
2 x vent pipe (1 m)	6.6 ft./2 m
Total equivalent length	21.5 ft./6.5 m

Above example will change as follows if using CPVC venting system (see fig. 62):

2 x 90° elbow	10 ft./3.1 m
2 x 45° elbow	6 ft./1.8 m
3 x vent pipe (0.5 m)	4.9 ft./1.5 m
2 x vent pipe (1 m)	6.6 ft./2 m
Total equivalent length	27.5 ft./8.4 m

Note:
See also table 47.

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