

Installation Instructions

for use by heating contractor

VIESSMANN®

for Vitodens 100-W WB1B Series
and Vitodens 200-W WB2B Series



Flexible Pipe Venting System



Vitodens 100-W, WB1B and
Vitodens 200-W WB2B Series
(with preinstalled coaxial vent
pipe adaptor)

IMPORTANT

Read and save these instructions
for future reference.

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 substantial product/property damage, serious injury or loss of life.

► *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.*

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.

Note: Not all products shown or stated in the vent manufacturers instructions are offered or approved or use with the Vitodens boilers. Use Viessmann Flexible Pipe Venting System Installation Instructions.

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...

- Direct Vent Installations (Two-pipe System) is found in the Direct Vent Section starting on page 13.
- Single Pipe Vent Installations (Room Air Dependent) is found in the Single Pipe Venting Section starting on page 22.

Safety

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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).

■ **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 Safety Requirements".*



■ **Licensed professional heating contractor**

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

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



■ **Equipment venting**

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

■ **Carbon monoxide**

Improper installation, adjustment, 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, adjustment, service and maintenance of this equipment to avoid formation of carbon monoxide, please see sections entitled "Mechanical Room" and "Venting Connection" in the Installation Instructions.*



■ **Warranty**

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



■ **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, shutdown procedure, and the need for professional service annually before the heating season begins.

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

Important Regulatory and Installation Requirements

For installations on the Commonwealth of Massachusetts, the following modifications to NFPA-54 chapter 10 apply:

Excerpt from 248 CMR 5-08:

- 2(a) For all side-wall horizontally vented gas fueled equipment installed in every dwelling, building or structure used in whole or in part for residential purposes, including those owned or operated by the Commonwealth and where the side-wall exhaust vent termination is less than (7) feet above finished grade in the area of the venting, including but not limited to decks and porches, the following requirements shall be satisfied:
1. **INSTALLATION OF CARBON MONOXIDE DETECTORS.** At the time of installation of the side-wall horizontal vented gas fueled equipment, the installing plumber or gas fitter shall observe that a hard wired carbon monoxide detector with an alarm and battery back-up is installed on the floor level where the gas equipment is to be installed. In addition, the installing plumber or gas fitter shall observe that a battery operated or hard wired carbon monoxide detector with an alarm is installed on each additional level of the dwelling, building or structure served by the side-wall horizontal vented gas fueled equipment. It shall be the responsibility of the property owner to secure the services of qualified licensed professional for the installation of hard-wired carbon monoxide detectors.
 - a. In the event that the side-wall horizontally vented gas fueled equipment is installed in a crawl space or an attic, the hard-wired carbon monoxide detector with alarm and battery back-up may be installed on the next adjacent floor level.
 - b. In the event that the requirements of this subdivision can not be met at the time of completion of installation, the owner shall have a period of thirty (30) days to comply with the above requirements; provided, however, that during said thirty (30) day period, a battery operated carbon monoxide detector with an alarm shall be installed.
 2. **APPROVED CARBON MONOXIDE DETECTORS.** Each carbon monoxide detector as required in accordance with the above provisions shall comply with NFPA 720 and be ANSI/UL 2034 listed and IAS certified.
 3. **SIGNAGE.** A metal or plastic identification plate shall be permanently mounted to the exterior of the building at a minimum height of eight (8) feet above grade directly in line with the exhaust vent terminal for the horizontally vented gas fueled heating appliance or equipment. The sign shall read, in print size no less than one-half (1/2) inch in size, "GAS VENT DIRECTLY BELOW. KEEP CLEAR OF ALL OBSTRUCTIONS".
 4. **INSPECTION.** The state or local gas inspector of the side-wall horizontally vented gas fueled equipment shall not approve the installation unless, upon inspection, the inspector observes carbon monoxide detectors and signage installed in accordance with the provisions of 248 CMR 5.08(2)(a) 1 through 4.
- (b) **EXEMPTIONS:** The following equipment is exempt from 248 CMR 5.08(2)(a) 1 through 4:
1. The equipment listed in Chapter 10 entitled "Equipment Not Required To Be Vented" in the most current edition of NFPA 54 as adopted by the Board; and
 2. Product Approved side-wall horizontally vented gas fueled equipment installed in a room or structure separate from the dwelling, building or structure used in whole or in part for residential purposes.

Important Regulatory and Installation Requirements *(continued)*

IMPORTANT

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

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 air intake termination for side wall air intake installations should be located on a wall that is least affected by prevailing winds. High winds may affect boiler operation.

Because of its sealed combustion chamber, the Vitodens gas-fired condensing boiler is suitable for operation with balanced flue.

The Vitodens boiler, flue gas adaptor and parallel adaptor (if used) are approved together under CSA 4.9. ANSI Z21.13 - 2010 Standard.

The venting system components are tested and listed to ULC S636 or UL 1738 by Intertek and are marked and labelled on each component.



IMPORTANT

DO NOT mix pipe, fittings, or joining methods from different vent system manufacturers.
DO NOT use adhesives of any kind with this venting system.

The vent length requirements stated in this manual (starting on page 13 for direct vent installations and page 22 for single pipe vent installations) must be observed.

Flue gases are discharged via rigid PP(s) vent components into the flexible vent pipes to the outdoors. This vent system is constructed from flame-retardant plastic [polypropylene rated for a maximum temperature of 230° F (110° C)].

Important Regulatory and Installation Requirements *(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.

The flexible vent pipe can only be used in vertical installations.

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).
 - 3 ft. (0.9 m) for input exceeding 100,000 Btu/h (30 kW).
- 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.

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.

The flexible vent pipe can only be used in vertical installations.

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.

Important Regulatory and Installation Requirements *(continued)*

Table 1. Clearance to combustibles

Top	Front	Rear	Left	Right	Vent pipe
0 in. (mm)					

Table 2. Recommended minimum service clearance

Top	Front	Rear	Left	Right
12 in. (305 mm)	28 in. (711 mm)	0 in. (mm)	6 in. (152 mm)	0 in. (mm)

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

The venting system may be concealed in a chase. Flexible vent pipe may be installed as a liner within a masonry, metal or factory-built chimney.

If the venting system passes through an unheated space, such as an attic, it must be insulated. The insulation must have an R value sufficient to prevent freezing of the condensate. Armaflex insulation with 1/2 in. thickness and higher can be used.

 **WARNING**

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

Important Regulatory and Installation Requirements *(continued)***Table 3. Approved materials for two-pipe system**

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

**CAUTION**

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

**CAUTION**

Do not use PVC material in exhaust system.

**CAUTION**

On the job site, ensure that non-listed combustion air pipe materials are not inadvertently used instead of listed vent pipe material.

Exhaust Vent Requirements

The Vitodens 100-W and 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.

See pages 19 and 20 for maximum 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.

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 in a way 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 proper location of gaskets in rigid PP(s) pipe collars. (Only use supplied parts with the polypropylene venting system).

Apply water to lubricate the joint ends of the vent pipe collar and if used, the air intake pipe collar.

Slide pipes into each other with a gentle twisting motion.

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 in. per 3.3 ft. (50 mm per 1 m)].

No condensate trap is required in the vent pipe system.

If exhaust vent pipe system passes through an unheated space, such as an attic, it must be insulated. The insulation must have an R value sufficient to prevent freezing of the condensate. Armaflex insulation with ½ in. thickness and higher can be used.

The connection between the boiler and the base of the flexible pipe is made with rigid vent components (flexible pipe cannot be run directly to the boiler).

The flexible pipe can only be used in vertical installations.

Direct venting (two-pipe system) or single pipe (room air independent) is acceptable (refer to page 22 for combustion air requirements for room air dependent installations).

For direct venting applications the air intake pipe can be installed through the sidewall or vertical through the roof.

Any increaser used in the exhaust vent/air intake pipe must be installed in the vertical position.

The remaining space surrounding a chimney liner, gas vent, or special gas vent or plastic piping installed within a masonry, metal or factory-built flue shall not be used to supply combustion air (a separate combustion air pipe routed back to the boiler can be used in the remaining space if required).

Vent System Suppliers

Use special venting system (UL/ULC listed for Category IV) for exhaust vent material of the Vitodens boilers. Contact on of the following suppliers to order parts.

Both manufacturers deliver PP(s) rigid and flexible vents in three sizes.

M&G / Duravent	Centrotherm InnoFlue
2 in. (60 mm)	2 in. (60 mm)
3 in. (80 mm)	3 in. (80 mm)
4 in. (100 mm)	4.3 in. (110 mm)
M&G / Duravent Tel. 800-835-4429 Fax. 518-649-9700 Fax: 518-463-5271 sales@duravent.com www.duravent.com	Centrotherm InnoFlue Eco Systems. LLC 418 South Pearl St. Albany, New York 12202 Tel. (518) 434-3400 Fax. (518) 618-3166 info@centrotherm.us.com www.centrotherm.us.com

General Installation Information

Exhaust vent installation steps

! 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.

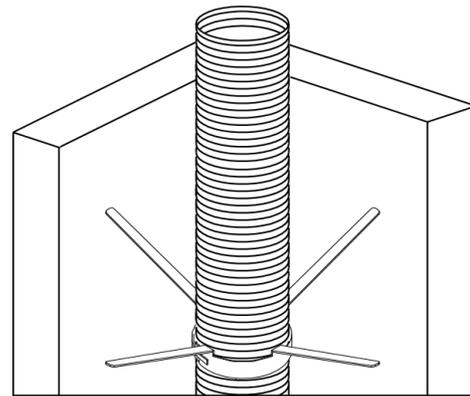
The flexible pipes, rigid pipes and components are made from polypropylene material with excellent resistance to flue gas condensate formed in the exhaust vent of a gas-fired condensing heating boiler.

Every venting system must be properly planned and installed for optimum performance and safety. A flexible pipe installation always begins with an inspection of the existing masonry chimney (if being installed in a chimney as a liner). Inspect the masonry chimney for proper construction and compliance with applicable building codes.

A thorough cleaning of the chimney should be done prior to the installation of the chimney liner to ensure that it is free and clear of obstructions. Should an inspection reveal that an existing chimney is not safe for the intended application, it must be repaired or rebuilt to conform to NFPA 211 or any other applicable standards.

- Make sure you have available manpower in order to handle the flexible pipe.
- Determine the proposed location of the opening in the existing chimney. The slope of the connecting rigid flue pipe should be a minimum of 3° [equivalent to 2 in. per 3.3 ft. (50 mm per 1 m)].

- The length of the flexible vent system can be determined two ways: use a plumb line to measure the existing chimney length (add an extra 16 in. (40 cm) for each bend). The flexible vent system can be shortened by cutting with a saw or scissors within a groove. The correct length can also be determined after installing it in the existing chimney by cutting the flex pipe at the top of the chimney.
- Two lengths of the flexible vent system can be connected to each other with a flex pipe coupling (if required). See manufacturer's catalogue.
- Mount the spacer cross with a maximum distance of 6½ ft. (2 m) apart or as specified by the manufacturer.

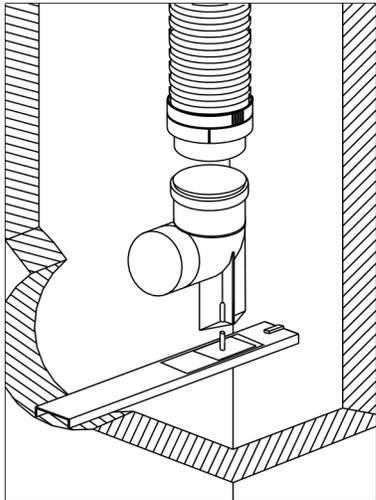


- Some installations may require the use of a rope connected to a pulling cone or directly to the bottom connector.
- With the adaptor and spacers connected, start installing the flex pipe from the top of the chimney and carefully feed the liner down through the middle. To prevent damage to the flex pipe additional manpower may be required to guide the flex pipe with a rope from the bottom of the chimney.

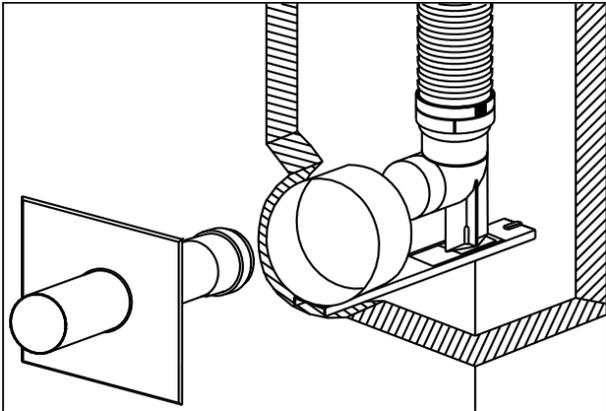
General Installation Information *(continued)*

Exhaust vent installation steps *(continued)*

- Once the bottom of the flex pipe and adaptor has reached the desired position, insert into the support elbow/support strip assembly.



- Choose the required size and install the galvanized wall sleeve (cut to the width of the wall if required) and seal the space between the sleeve and the wall with mortar.



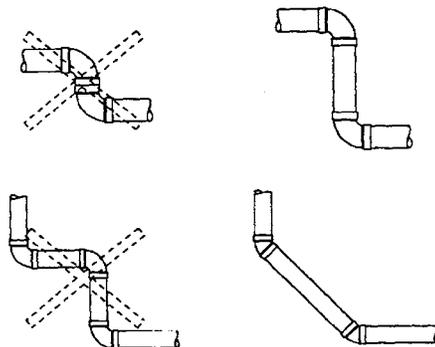
- Proceed with installing the rigid pipes and wall plate. Start from the chimney support elbow to the boiler adaptors (rigid pipes can be cut to the correct length if required).
- Seal the top wall of the chimney with a water resistant sealant.

IMPORTANT

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

- *For flexible vent systems:*
In conjunction with these instructions, follow the installation instructions supplied by the special venting manufacturer.

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.

Ceiling / roof opening

Cut an opening for the vent pipe. Size opening at least 1 in. (25 mm) larger than vent pipe diameter (for combustible as well as non-combustible material).

Combustion Air Supply

The Vitodens boiler is suitable for vertical venting using rigid pipe and flexible pipe vent system material. The Vitodens 100-W and 200-W boilers are approved for both direct vent (sealed combustion), as well as direct exhaust (non-sealed combustion) operation in vertical arrangements. For non-sealed combustion vent systems (i.e. room-air dependent), see appropriate section under "Single Pipe Venting" starting on page 22 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. Vertical air intake and exhaust vent pipes.
2. Horizontal air intake pipe and vertical exhaust vent pipe.



CAUTION

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



CAUTION

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



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.



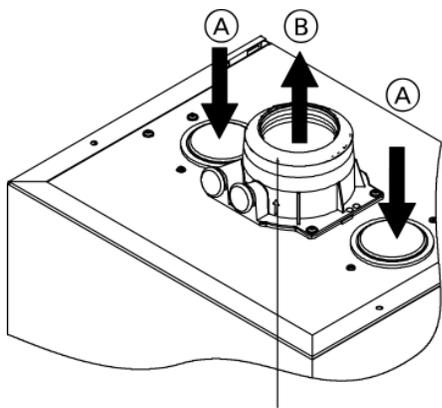
CAUTION

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.

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

Venting Options (Two-pipe System)

Boiler models Vitodens 100-W WB1B 26, 35 and Vitodens 200-W WB2B 19, 26, 35



For double-pipe installation the combustion air inlet cover must be in place.

Fig. 5 Single or double pipe installation

Legend

- Ⓐ Combustion air (requires 2 in. CPVC adaptor)
- Ⓑ Flue gas exhaust

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-pipe rigid-pipe and flexible vent system.

The two-pipe system is flexible in the selection of materials offered by different manufacturers and the location of the air intake termination.

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

Boiler	Flue Gas Exhaust Size
WB1B 26, -35 WB2B 19, 26, 35	2 in. (60 mm)
WB2B 45, -60	3 in. (80 mm)
WB2B 80, -105	4 3/8 in. (110 mm)

Boiler models Vitodens 200-W WB2B 45, 60, 80, 105

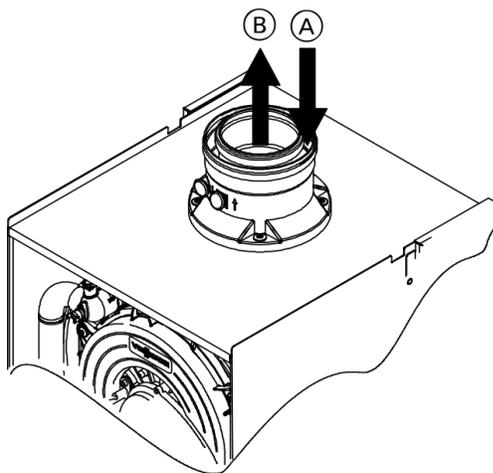


Fig. 6 Single or double vent pipe system (parallel adaptor not shown, see page 16)

Legend

- Ⓐ Combustion air
- Ⓑ Flue gas exhaust

Starter Adaptor

Vent pipe starter adaptors for WB1B 26, 35 and WB2B 19, 26, 35

Note: This adaptor (A) may not be required, contact vent manufacturer for available vent sizes.

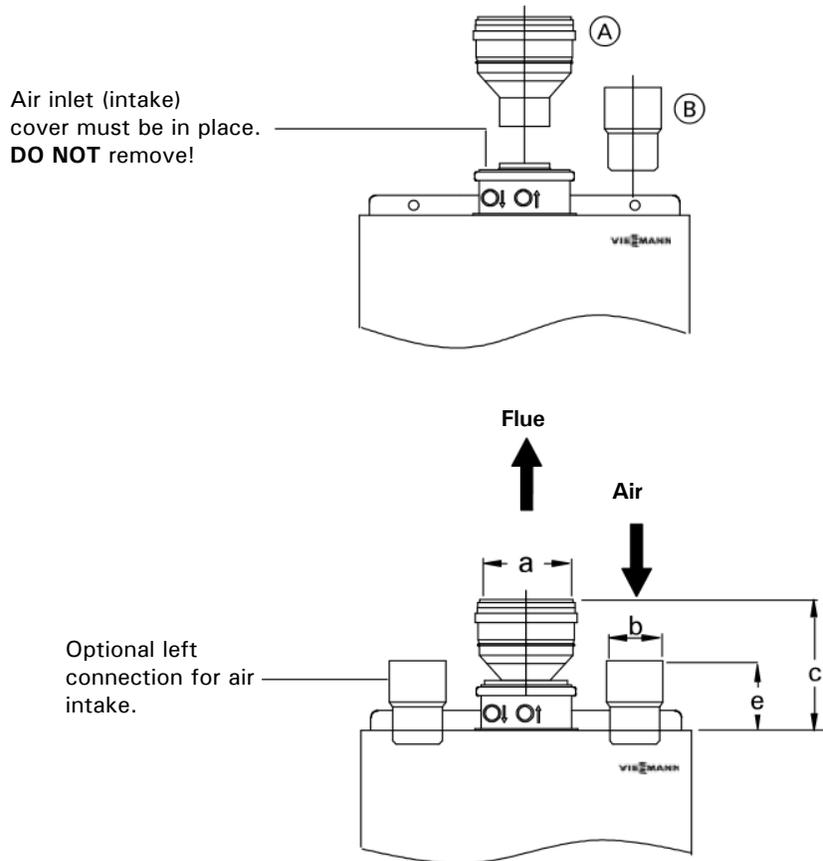


Fig. 7

! WARNING

(For this type of installation only:) Boiler comes with pre-installed combustion air cover mounted on the concentric vent pipe adaptor. Do not remove combustion air intake cover. Removing this cover may cause unintended room air dependent operation (non-direct vent). Room air dependent operation requires provision of combustion and ventilation air (as per section "Single Pipe Venting", page 22.

Legend

- (A) PP(s) slip joint vent starter adaptor (60 to 80 mm) *1
- (B) 2 in. CVPC starter adaptor, ViPN 7134 769
- a 3 in. (80 mm) nominal
- b 2 in. (50 mm)
- c 5½ in. (140 mm)
- e 3 in. (80 mm)

*1 For system Ø of 4 in. (100 mm), an increaser adaptor 3 to 4 in. (80 to 100 mm) in addition to this increaser adaptor must be used.

Parallel Adaptor

Table 4. Parallel adaptor for two-pipe system

Supplier	Boiler Model	Ø in. (mm)	Quantity
Viessmann or Centrotherm	■ WB2B 45, 60	3 (80) (see a in fig. 8)	1
Viessmann	■ WB2B 80, 105	4 (110) (see a in fig. 8)	1

Parallel vent pipe starter adaptors for WB2B 45, 60, 80, 105

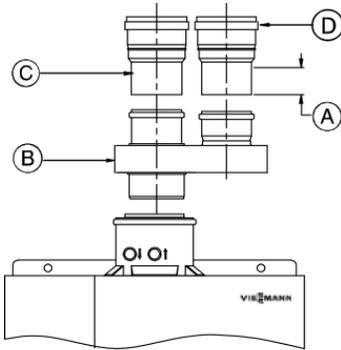
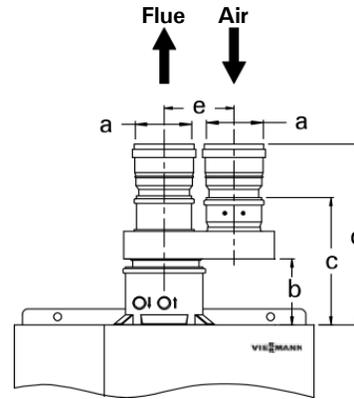


Fig. 8

Legend for 45, 60

- (A) Air intake, max. insertion 2½ in. (64 mm)
- (B) Viessmann or Centrotherm parallel adaptor
- (C) Used only on WB2B 80, 105*
- (D) Viessmann CPVC adaptor
- a 3 in. (80 mm)
- b 2¾ in. (70 mm)
- c 7 in. (178 mm)
- d Approx. 10¾ in. (271 mm)
- e 4¾ in. (120 mm)



Legend for 80, 105

- (A) Air intake, max. insertion 2½ in. (64 mm)
- (B) Viessmann parallel adaptor
- (C) Slip joint vent starter / transition adaptor 4¾ to 4 in. (110 to 100 mm) only required if M&G / Duravent system is used
- (D) Viessmann CPVC adaptor
- a 4 in. (100 mm)
- b 5½ in. (130 mm)
- c 9¾ in. (237 mm)
- d 12⅞ in. (327 mm)
- e 5½ in. (140 mm)

Vent Requirements - Flexible Vent System / Connector Pipes

Additional requirements for UL/ULC-listed flexible vent system / connector pipe vent material

Exhaust vent/air intake connection to boiler

The vent connection to the Vitodens boiler must be made according to table 5. The starter adaptors are intended for a slip fit and slide into the parallel adaptor or boiler adaptor with a gentle twisting motion.

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

Note: The Vitodens boiler has passed the zero inches vent clearance to combustibles testing requirements dictated by the Harmonized Standard ANSI Z21.13. CSA 4.9.2007 and therefore is listed for zero clearance to combustibles when vented with a single pipe special venting system.

 **WARNING**

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

Table 5. Required starter adaptors for CPVC air intake system

Part	Boiler Model	Diameter	Supplier	Quantity
Parallel Pipe Adaptor	<ul style="list-style-type: none"> ■ WB2B 45, 60 ■ WB2B 80, 105 	3 in. (80 mm) 4 in. (100 mm)	Viessmann	1
CPVC Starter Adaptor for Air Intake	<ul style="list-style-type: none"> ■ WB1B 26, 35, WB2B 19, 26, 35 ■ WB2B 45, 60 ■ WB2B 80, 105 	2 in. (50 mm) 3 in. (80 mm) 4 in. (100 mm)	Viessmann	1
Wire Mesh Screen for Air Intake Termination	<ul style="list-style-type: none"> ■ WB1B 26, 35 ■ WB2B 19, 26, 35 ■ WB2B 45, 60 ■ WB2B 80, 105 	2 in. (50 mm) 3 in. (80 mm) if used 4 in. (100 mm) if used 3 in. (80 mm) 4 in. (100 mm)	Viessmann	1
Increaser Adaptor for Exhaust Pipe	<ul style="list-style-type: none"> ■ WB1B 26, 35 ■ WB2B 19, 26, 35 	2½ to 3 in. (60 to 80 mm)	Field supplied	1
Transition Adaptor	<ul style="list-style-type: none"> ■ WB2B 80, 105 	4⅝ to 4 in. (110 to 100 mm)	Field supplied	1

Side Wall Air Intake Termination

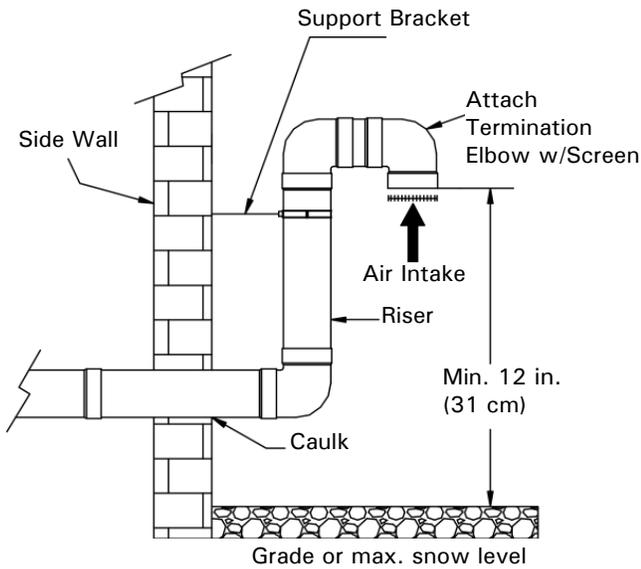


Fig. 9 Installation of field fabricated air intake riser (side view)

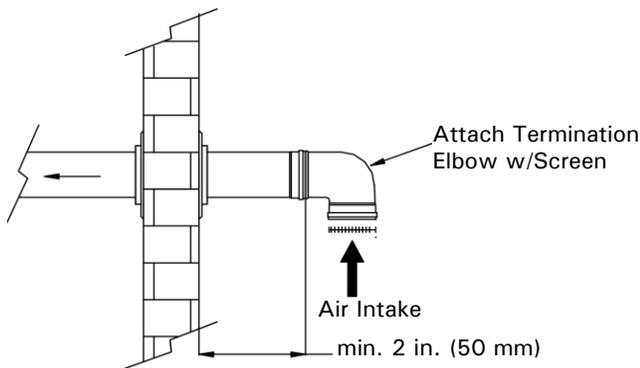


Fig. 10 Side wall air intake termination (side view)

IMPORTANT

The 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 6 and 7.

WARNING

Air intake must be at least 12 in. (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 exhaust vent pipe length vertical and air intake pipe length vertical

Vertical Vent Installation

Vitodens 100-W and 200-W WB2B 19, 26, 35

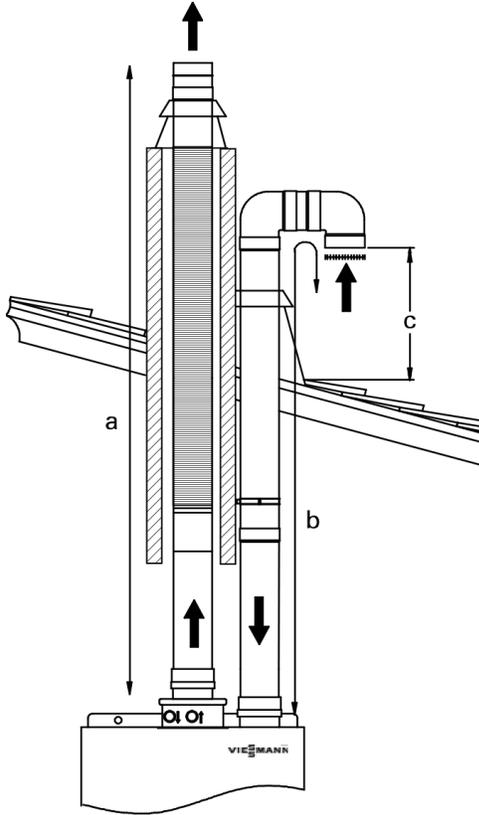


Fig. 11

Vertical Vent Installation

Vitodens 200-W WB2B 45, 60, 80, 105

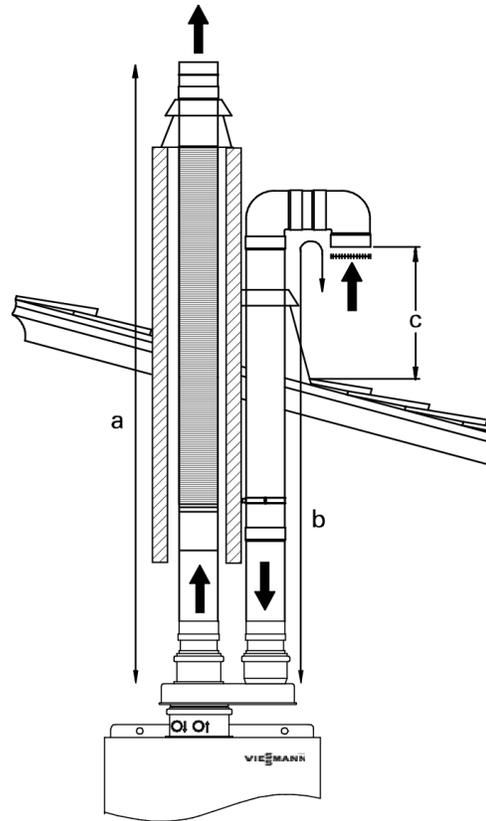


Fig. 12

Legend

- a Equivalent length (exhaust)
- b Equivalent length (air intake)
- c 6 in. (152 mm) over max. local snow level
(check with your local weather office for details)

Table 6. Maximum allowable equivalent length

Boiler Model	System Ø See note below	Max. combined equivalent vent length (a + b)
■ WB1B 26, 35	2 in. (50 mm)	65 ft. (20 m)
	3 in. (80 mm)	123 ft. (37 m)
	4 in. (100 mm)	150 ft. (46 m)
■ WB2B 19, 26, 35	2 in. (50 mm)	84 ft. (26 m)
	3 in. (80 mm)	111 ft. (34 m)
	4 in. (100 mm)	135 ft. (41 m)
■ WB2B 45, 60	3 in. (80 mm)	74 ft. (23 m)
	4 in. (100 mm)	111 ft. (34 m)
■ WB2B 80, 105	4 in. (100 mm) or 4.3 in. (110 mm)	98 ft. (30 m)

Note: For combination of different vent/air intake pipe diameters, such as Ø 3 in. (80 mm) PP(s) flexible vent with Ø 2 in. (50 mm) CVPC, PVC, ABS air intake pipe, the total equivalent length must be used for the smaller pipe diameter.

Vent Length Requirements *(continued)*

Maximum exhaust vent pipe length vertical and air intake pipe length horizontal

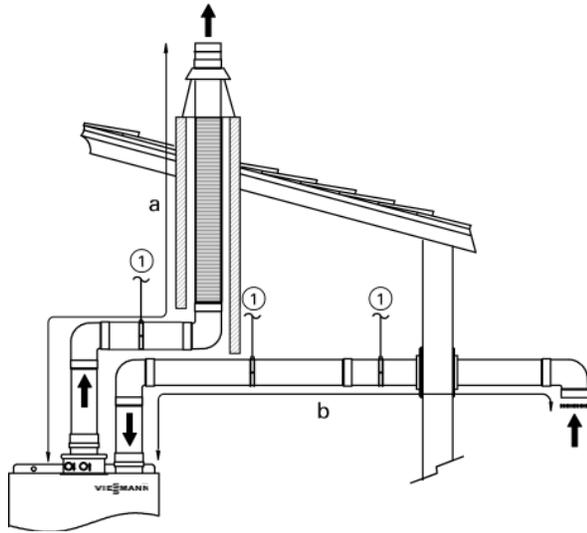


Fig. 13 Vitodens 100-W and 200-W WB2B 19, 26, 35

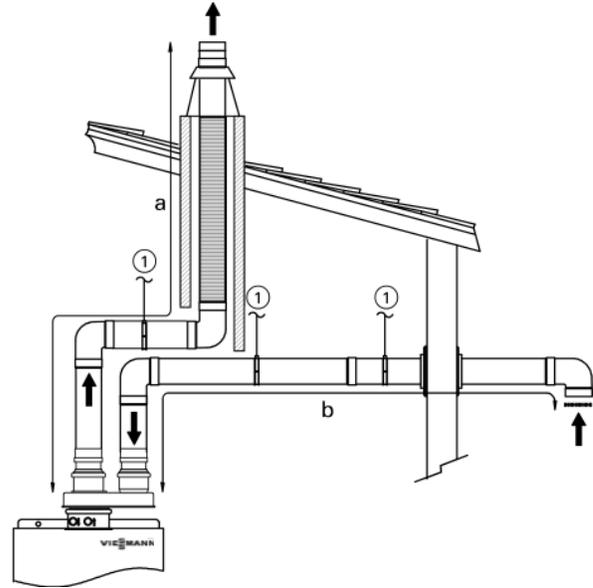


Fig. 14 Vitodens 200-W WB2B 45, 60, 80, 105

Legend

- a Equivalent length (exhaust)
- b Equivalent length (air intake)
- c 6 in. (152 mm) over max. local snow level
(check with your local weather office for details)
- ① Pipe support

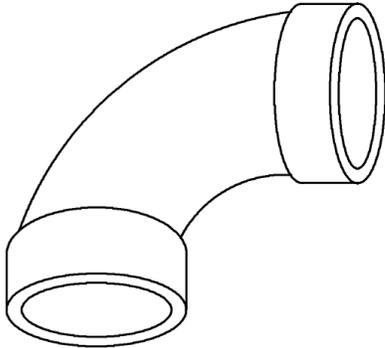
Table 7. Maximum allowable equivalent length

Boiler Model	System Ø See note below	Max. combined equivalent vent length (a + b)
■ WB1B 26, 35	2 in. (50 mm)	65 ft. (20 m)
	3 in. (80 mm)	123 ft. (37 m)
	4 in. (100 mm)	150 ft. (46 m)
■ WB2B 19, 26, 35	2 in. (50 mm)	84 ft. (26 m)
	3 in. (80 mm)	111 ft. (34 m)
	4 in. (100 mm)	135 ft. (41 m)
■ WB2B 45, 60	3 in. (80 mm)	74 ft. (23 m)
	4 in. (100 mm)	111 ft. (34 m)
■ WB2B 80, 105	4 in. (100 mm) or 4.3 in. (110 mm)	98 ft. (30 m)

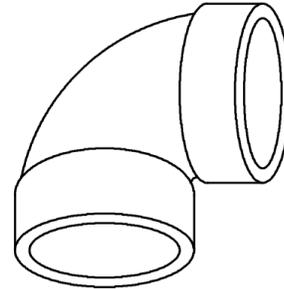
Note: For combination of different vent/air intake pipe diameters, such as Ø 3 in. (80 mm) PP(s) flexible vent with Ø 2 in. (50 mm) CVPC, PVC, ABS air intake pipe, the total equivalent length must be used for the smaller pipe diameter.

Vent Length Requirements *(continued)*

Standard long sweep elbows (for CPVC / PVC / ABS pipes air intake use only)



For Plastic pipe only
90° long sweep elbow
equivalent to 5 ft. (1.5 m)



90° short sweep elbow
equivalent to 8 ft. (2.4 m) if used

Fig. 15

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

Table 8. Standard long sweep elbows

Material	90° elbow equivalent length	45° elbow equivalent length	87° elbow / 87° inspection tee
CPVC plastic pipe	5 ft. (1.52 m)	3 ft. (0.91 m)	---
PP(s) flexible pipe system	---	1 ft. (0.3 m)	1.6 ft. (0.5 m)

Combustion Air Supply

The boiler used in this application 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 vertical venting using flexible venting system material. The Vitodens 100-W and 200-W boilers are approved for direct exhaust (non-sealed combustion) operation in vertical arrangements only.

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 the air can enter the structure for safe combustion. Corrective action must be taken to ensure enough air is available. 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 in. (152 mm) below the ceiling, the other about 6 in. (152 mm) 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 in².

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 in. x 6 in. (356 mm x 152 mm) opening becomes a 14 in. x 10 in. (356 mm x 254 mm) 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.

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 the vertical exhaust vent type of termination.

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

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.

Venting Options (Room Air Dependent)

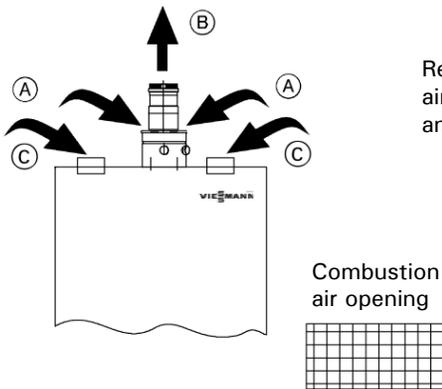


Fig. 16
This system draws combustion air from the boiler room. Room/Combustion air (A) enters the boiler at the boiler vent pipe adaptor through an annular air gap (WB2B 45, 60, 80, 105 models) or additional opening (C) (WB1B 26, 35 and WB2B 19, 26, 35).

Remove and discard air inlet cover if using annular air gap.

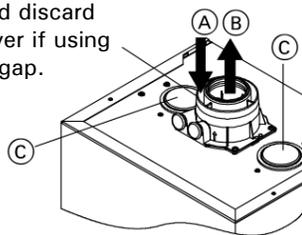


Fig. 17
If using annular air gap, remove and discard air inlet cover or optional opening to the left or right (C) (WB1B 26, 35 and WB2B 19, 26, 35).

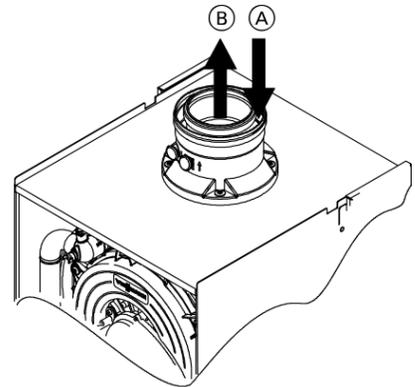


Fig. 18
Flue gases (B) are discharged to the outdoors via the single pipe of the special venting system.

Legend

- (A) Room/Combustion air
- (B) Exhaust
- (C) Room/Combustion air inlets

Adaptors

Increaser / transition adaptors

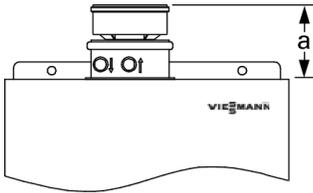


Fig. 19

This boiler adaptor is shown installed with an increaser adaptor (if required for 80 mm system) for models WB1B 26, 35 and WB2B 19, 26 25.

Legend

a 5½ in. (140 mm)

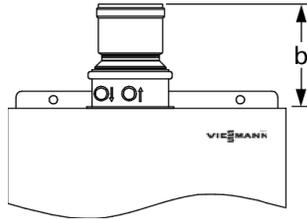


Fig. 20

This boiler adaptor is shown installed with a required transition adaptor for models WB2B 80, 105. Required only with M&G / Duravent system.

Legend

b 7½ in. (191 mm)

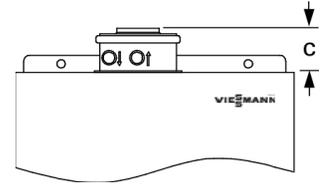


Fig. 21

This boiler adaptor is shown (pre-installed) for models WB2B 45, 60. The connecting rigid pipe (PPs) fits directly into the boiler adaptor.

Legend

c 2½ in. (64 mm)

Vent Length Requirements

Maximum vent pipe length - vertical

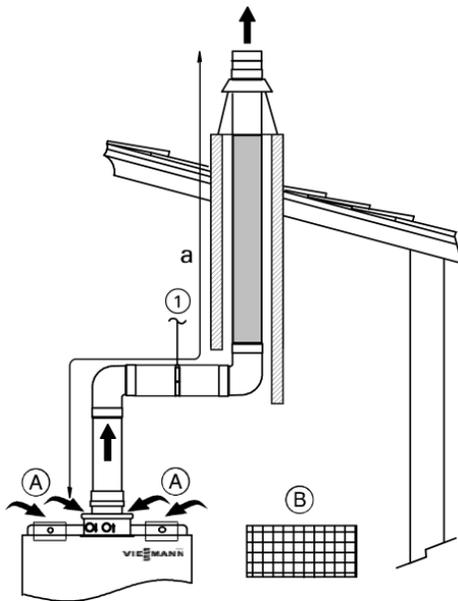


Fig. 22

Legend

- (A) Combustion air intake (left, right or through co-axial opening), remove and discard air intake cover for (WB1B 26, 35 and WB2B 19, 26, 35)
- (B) Combustion air opening
- a Equivalent vent length (exhaust)
- (1) Pipe support

Note: For combination of different vent/air intake pipe diameters, such as Ø 3 in. (80 mm) PP(s) flexible vent with Ø 2 in. (50 mm) CVPC, PVC, ABS air intake pipe, the total equivalent length must be used for the smaller pipe diameter.

Table 9. Maximum allowable equivalent length - vertical

Boiler Model	System Ø See note above	Max. combined equivalent vent length "a"
■ WB1B 26, 35	2 in. (50 mm)	65 ft. (20 m)
	3 in. (80 mm)	123 ft. (37 m)
	4 in. (100 mm)	150 ft. (46 m)
■ WB2B 19, 26, 35	2 in. (50 mm)	84 ft. (26 m)
	3 in. (80 mm)	111 ft. (34 m)
	4 in. (100 mm)	135 ft. (41 m)
■ WB2B 45, 60	3 in. (80 mm)	74 ft. (23 m)
	4 in. (100 mm)	111 ft. (34 m)
■ WB2B 80, 105	4 in. (100 mm) or 4.3 in. (110 mm)	98 ft. (30 m)

Component Installation Guide

Single pipe vent pipe starter adaptor installation (if required)

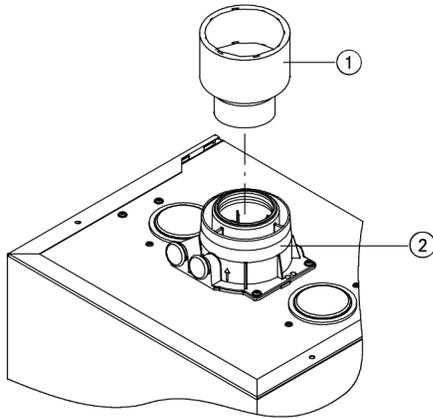


Fig. 23

Installing single pipe vent increaser adaptor Vitodens (if required) 100-W WB1B 26,35 and 200-W WB2B 19, 26, 35

Legend

- ① Increaser/transition adaptor
- ② Vent pipe adaptor

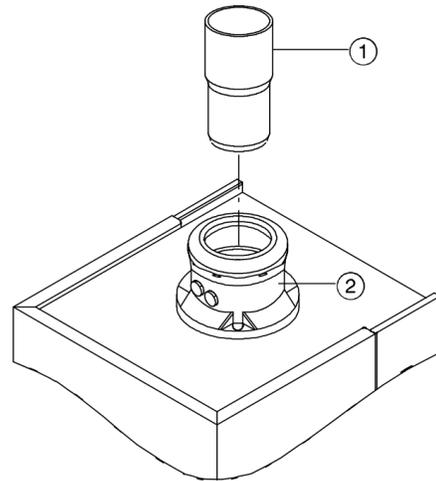


Fig. 24

Installing single pipe vent transition adaptor 4 3/8 to 4 in. (110 to 100 mm) M&G / Duravent only Vitodens 200-W WB2B 80,105

Legend

- ① Increaser/transition adaptor
- ② Vent pipe adaptor

! WARNING

Prior to installation, ensure the specially designed single pipe vent 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.

Slide single pipe increaser or transition adaptor ① fully onto boiler vent pipe adaptor ②.

IMPORTANT

The boiler vent pipe adaptor comes pre-installed for all Vitodens 100-W and 200-W boilers.

Table 10. Required Starter Adaptors

Part	Boiler Model	Diameter	Supplier	Quantity
Increaser Adaptor for Exhaust Vent Pipe (if required)	<ul style="list-style-type: none"> ■ WB1B 26, 35 ■ WB2B 19, 26, 35 	2½ to 3 in. (60 to 80 mm)	M&G / Duravent or Centrotherm InnoFlue	1
Transition Adaptor for Exhaust Vent Pipe	<ul style="list-style-type: none"> ■ WB2B 80, 105 	4 3/8 to 4 in. (110 to 100 mm)	M&G / Duravent	1

General Component Parts of the Venting System

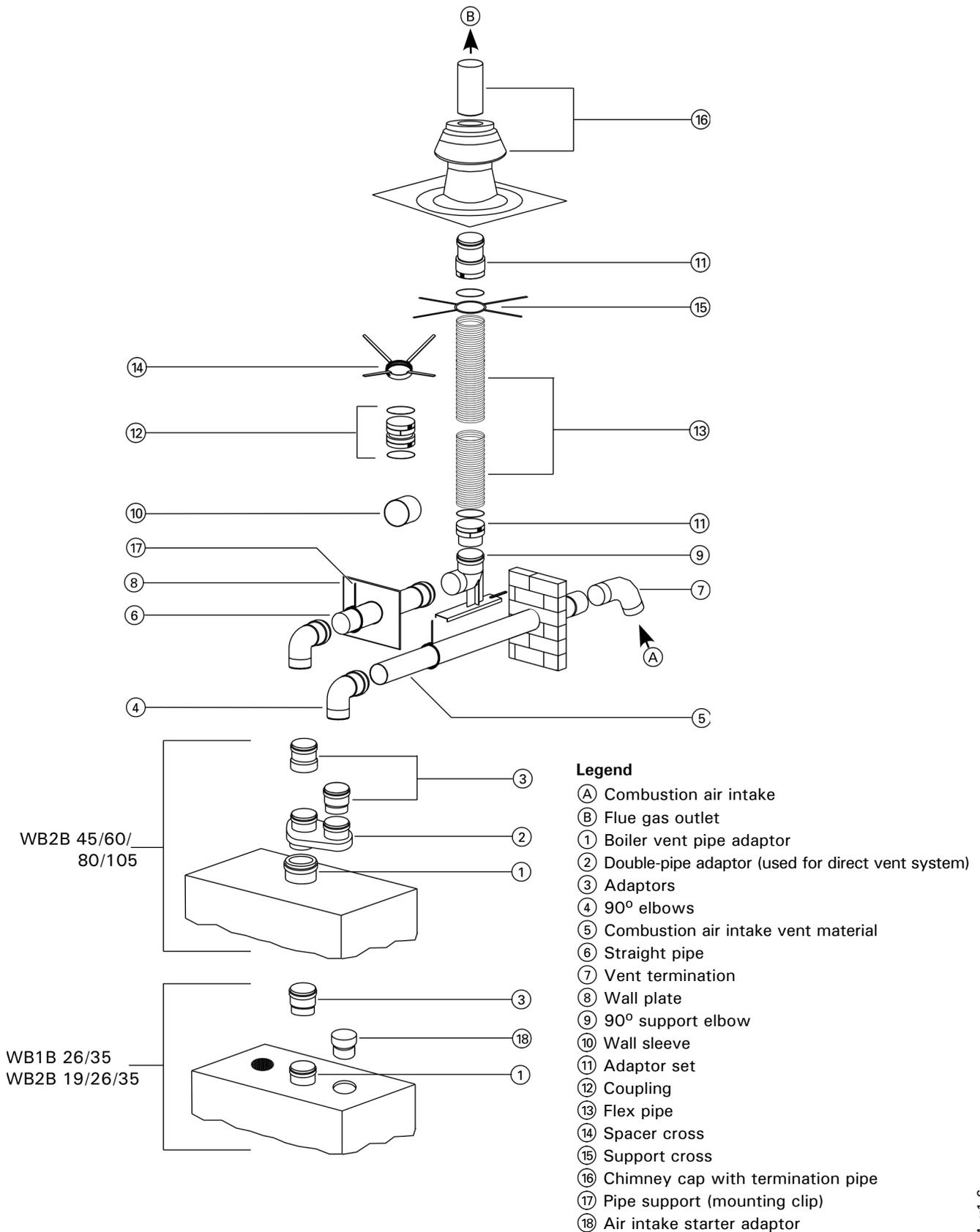


Fig. 25



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