

Installation instructions

for contractors

VIESSMANN

Flue system

for condensing boilers

Flue system



Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained



Danger

This symbol warns against the risk of injury.

Note

Details identified by the word "Note" contain additional information.



Please note

This symbol warns against the risk of material losses and environmental pollution.

Target group

These instructions are exclusively intended for qualified contractors.

- Work on gas installations may only be carried out by a registered gas fitter.
- Work on electrical equipment may only be carried out by qualified electricians.

Safety instructions (cont.)

Regulations to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for environmental protection
- Codes of practice of the relevant trade associations
- Relevant country-specific safety regulations

Working on the system

- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it against unintentional reopening.
- Isolate the system from the power supply, e.g. by removing the separate fuse or by means of a main switch, and check that it is no longer live.
- Safeguard the system against reconnection.
- Wear suitable personal protective equipment when carrying out any work.



Danger

Hot surfaces and fluids can result in burns or scalding.

- Before maintenance and service work, switch off the appliance and let it cool down.
- Never touch hot surfaces on the boiler, burner, flue system or pipework.

Safety instructions (cont.)

- ! **Please note**
Electronic assemblies can be damaged by electrostatic discharge.
Before beginning work, touch earthed objects, such as heating or water pipes, to discharge any static.

Repair work

- ! **Please note**
Repairing components that fulfil a safety function can compromise the safe operation of the system.
Replace faulty components only with genuine Viessmann spare parts.

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General installation information

Design

Prior to installation, check that the maximum possible pipe length will not be exceeded.

Max. possible pipe lengths in relation to the boiler used:



Flue systems technical guide

Flue gas temperature protection

The flue pipes are approved for flue gas temperatures up to 120 °C.

With Viessmann condensing boilers, internal safeguards ensure that the maximum permissible flue gas temperature is not exceeded.

Installation information

- The component overviews for the different types of routing also apply to floorstanding condensing boilers.
 - Keep flue gas routes short and with the fewest number of bends possible.
 - Route horizontal connection pipes with a fall of $\geq 3^\circ$ (approx. 50 mm/m) towards the boiler.
 - Support horizontal connection pipes at intervals of approx. 1 m.
 - Inspection ports in the connection pipe must always be positioned in such a way that condensate cannot escape from them. An inspection port should not be positioned on the underside of the connection pipe.
 - To avoid damage and leaks, isolate the flue system from sources of vibration (e.g. ventilation systems).
 - Check whether the gaskets in all female connections are correctly seated.
 - Prior to installation, lubricate all gaskets with the lubricating paste provided.
 - Use only the special gaskets supplied with the boiler.
 - Female plug-in connections in the flue gas path must always point in the direction of flow.
 - Use only the components supplied with the Viessmann flue system.
 - Push the pipes into each other with a slight twisting motion.
 - Balanced flue pipes can be trimmed in their assembled state.
- Do not carry out **commissioning** until the following conditions are met:
- Free passage through the flue gas pipes.
 - Flue system with positive pressure is gas-tight.
 - Inspection port covers checked for secure and tight seating.

General installation information (cont.)

- Apertures for ensuring sufficient combustion air supply are open and cannot be closed off.

Note

In open flue operation, install a rodent guard grille on the supply air aperture.

- Applicable regulations on installing and commissioning flue systems have been followed.
- Visual inspection of the flue gas connection.

Note

The use of lubricant prevents the gasket from shifting when the flue pipe is installed.

When using a straight flue pipe, check that the inner ventilation air pipe is correctly fitted.



Danger

Leaking or blocked flue systems or an insufficient supply of combustion air cause life threatening poisoning due to carbon monoxide in the flue gas.

Ensure the flue system is in good working order. Vents for interconnected combustion air supply must be non-closable in open flue operation. Prevent condensate drainage via a wind protector.

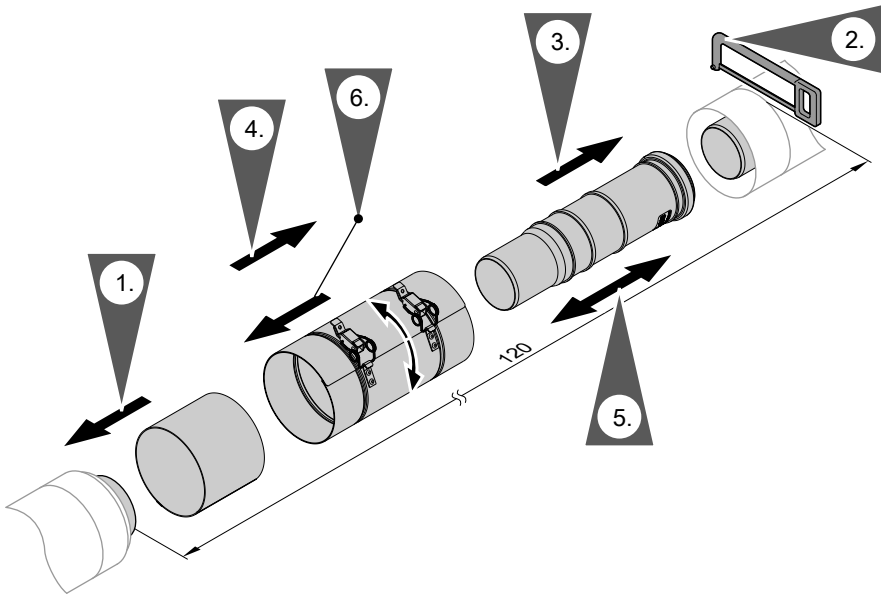
Required tools/equipment

- Rope for lowering the flue system into a shaft (length: Chimney height plus 3 m)
- Saw and file for trimming and chamfering the pipe sections
- Power drill for securing the shaft cover and support rail

Fitting the balanced flue slide coupling

Note

The slide coupling can compensate for a gap of approx. 45 mm. Prior to installation, compensate for surplus or insufficient length on the incoming pipe.



1. Push the pipe section into the female connection of the incoming balanced flue component.
2. Shorten the ongoing balanced flue pipe to create a gap of 120 mm between the pipe section and the balanced flue pipe.
3. Push the slide coupling onto the ongoing flue pipe.
4. Open the collar and push it over the ongoing balanced flue pipe.
5. Pull the slide coupling out and push it into the incoming flue pipe.
6. Align the collar and close the toggle fasteners.

Tightness test

After installation, flue systems routed through a shaft must be tested for tightness by the flue gas inspector [check local regulations].

- Pressurised flues which are routed inside buildings and which are not surrounded by combustion air (**open flue**) must be pressure-tested.

For the pressure test, a leak detector is used to pump air into the flue, which has been sealed at the top and bottom, until a pressure of **200 Pa** has built up. This pressure is maintained while the volume of air leaking out is established.

A leakage rate of up to 0.006 l/(s x m²), relative to the internal surface area, is permitted for classifying a flue as sufficiently gas-tight.

- In pressurised flues that are surrounded by combustion air (room sealed), the tightness can be checked by testing the O₂ content in the combustion air (annular gap test).

The flue is considered sufficiently gas-tight if the O₂ content in the combustion air does not deviate from the reference value by more than the following values. The reference value is established following the self-adjustment of the test meter:

- For flues with general building regulations approval 0.4 % by vol.
- For other flues 0.2 % by vol.

Note

Observe country-specific regulations.

Certification of the balanced flue system

The balanced flue system is CE designated and approved in accordance with EN 14471. See the flue systems technical guide and enclosed "System certification" labels.

System certification

System certification to Gas Appliances Regulation 2016/426/EU in conjunction with PPs flues from Skoberne.

The labels are supplied with the technical documentation.

Note

Affix the "System certification" and "Flue system ..." labels clearly visible near the flue system or on the boiler.

Installations requirements

Statutory requirements

The appliance is suitable only for installation in GB and IE and should be installed in accordance with the rules in force. In GB a Gas Safe Registered Installer must carry out the installation. It must be carried out in accordance with the relevant requirements of the:

Gas safety (installation and use) regulations (current issue)

It is in your own interest and safety to ensure that the law is complied with. In addition to the above regulations, this appliance must be installed in accordance with the current IEE Wiring Regulations for electrical installation (BS 7671), local Building Regulations, the Building Standards (Scotland) (Consolidation) Regulations, bye laws of the local water undertaking and Health and Safety Document NO. 635, The Electricity at Work regulations 1989, In Ireland (IE), the installation must be carried out by a Competent Person and installed in accordance with the current edition of I.S.813 "Domestic Gas Installations", The current Building Regulations and references should be made to the current ETCI rules for electrical installation.

It should also be in accordance with the relevant recommendations in the current editions of the following British Standards and Codes of Practice: BS 5449, BS 5546, BS 5440:1, BS 5440:2, BS 6798, BS 7593, BS 6891, IGE/UP/7 and IS 813 for IE.

All Registered installers are required to notify building control when they have installed or exchanged a gas appliance in a residential dwelling, this can be done via Gas Safe.

Gas Safe will then issue either a Building Compliance Certificate (for England and Wales) or a Declaration of Safety (Scotland, Northern Island, Isle of Man or appliances out of the scope of Building Regulations) to the homeowner, which will confirm that the work has been carried out by a competent Gas Safe Registered Installer. This document will be used to form part of the Home Information Pack (HIP).



Please note

Manufacturers instructions must not be taken in any way as overriding statutory obligations.

Boiler position

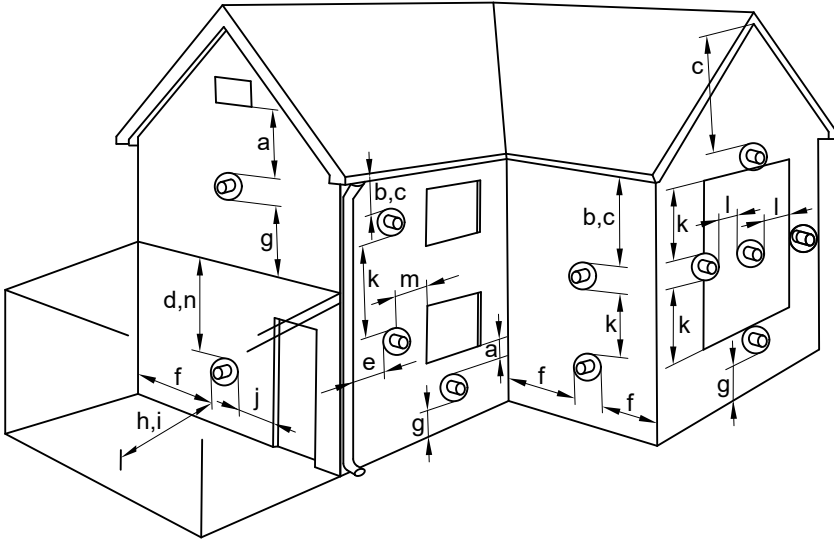
The following limitations must be observed when siting the boiler:

- The boiler is not suitable for external installation. The position selected for the installation should be within the building, unless otherwise protected by a suitable enclosure and must allow adequate space for installation, servicing and operation of the appliance and for air circulation around it.
- The position must allow for a suitable flue system and terminal position. The boiler must be installed on a flat vertical wall capable of supporting the weight of the appliance and any ancillary equipment when full.
- Due consideration should be given to the routing of the condensate drain from the chosen position.
- If the boiler is to be fitted in a timber framed building it should be fitted in accordance with ige/up/7. If in doubt advice must be sought from the Institute of Gas Engineers.
- If the appliance is to be installed in a room containing a bath or shower, any electrical switch or control utilising mains electricity must be so situated that it cannot be touched by a person using the bath or shower. Attention is drawn to the requirements of BS 7671 (the current I.E.E Wiring Regulations) and in Scotland the electrical provisions of the Building Regulations applicable in Scotland.
- A compartment used to enclose the appliance must be designed and constructed specifically for this purpose. An existing cupboard or compartment may be used provided it is modified accordingly. BS 7698:2000 gives details of the essential features of cupboard / compartment design, including airing cupboards. The Vito-dens range does not require compartment ventilation.
- Where installation will be in an unusual location, special procedures may be necessary. BS 6798 gives detailed guidance on this aspect.

Installations requirements (cont.)

Flue terminal position

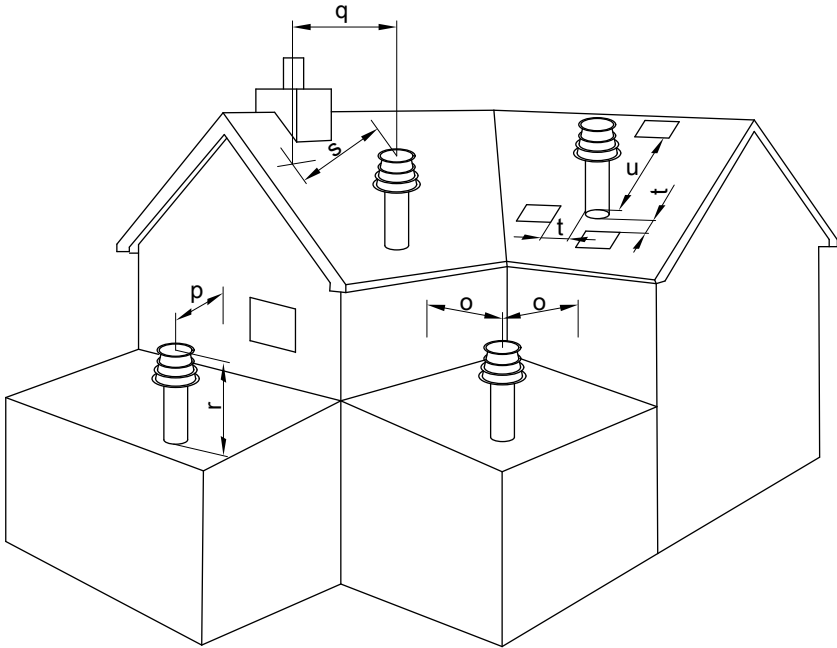
Horizontal flue system



Position		Minimum spacing
		mm
a	Directly below an opening window, air vent or any other ventilation opening	300
b	Below a gutter drain or soil pipe	75
c	Below eaves	200
d	Below a balcony	200
e	From vertical drain or soil pipes	150
f	From internal and external corners	300
g	Above adjacent ground or balcony level/roof	300
h	From a surface facing the terminal	600
i	Facing terminals	1200
j	From opening door/window	1200
k	Vertically from a terminal on same wall	1500
l	Horizontally from a terminal on same wall	300
m	Adjacent to opening	300
n	Below carport/roof	200

Installations requirements (cont.)

Vertical flue systems



Position		Minimum spacing mm
o	From adjacent wall	300
p	From adjacent opening window	1000
q	From another terminal	600
r	Minimum height	300
s	Minimum distance measured perpendicular to roof covering	400
t	Beside or above an opening rooflight	600
u	Below an opening rooflight	2000

Outlets from flues should be so situated externally as to allow dispersal of combustion products and, if concentric, the intake of air. A way of meeting these requirements would be to locate the flue terminals as shown in the table and diagram.

Installations requirements (cont.)

Note: The plume of wet flue products from condensing boilers, positioned in accordance with the safety distances set out below can sometimes be considered a nuisance for neighbouring properties. Whilst this nuisance is not considered to be within the scope of building regulations, such an installation could be considered a "Statutory Nuisance" as set out in the Environmental Protection Act. As such the installer may wish to adapt the guidance in Chapter 6 of the Guide to Condensing Boiler Installation Assessment Procedure for Dwellings.

Routing through a shaft

Installation information

Prior to installation, the local flue gas inspector should check that the shaft to be used is suitable and permissible [where applicable].

Ventilation air ducts with which oil or solid fuel boilers were previously used must not contain any sulphur or soot deposits on the inner surfaces of the chimney. Sulphur and soot deposits cause faults. If thorough cleaning is not possible, a balanced flue pipe must be laid through the shaft. Alternatively, a separate balanced flue can be routed. In the installation room, at least one inspection port must be provided in the flue system for inspection, cleaning and (if required) pressure testing.

Note

An inspection port should never be positioned on the underside of the connection pipe, in order to prevent condensate escaping from it.

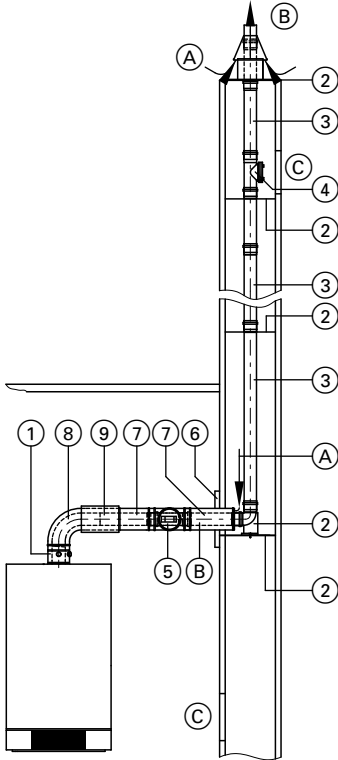
If the flue is not accessible from the roof, a second inspection port must be provided behind the chimney cleaning hatch in the attic.

Provide an inspection port at the base of the shaft for inspecting the secondary ventilation. Safeguard condensate drainage from the flue to the boiler with a fall of at least 3° (approx. 50 mm/m). The flue system must protrude above the roof line. Observe 400 mm protrusion from the roof parallel to the roof slope according to FeuVo [or local regulations].

Routing through a shaft (cont.)

Rigid flue

Room sealed operation



- (A) Ventilation air
- (B) Flue gas
- (C) Inspection port

(1)	Boiler flue connection
(2)	Standard shaft pack Comprising: ■ Support bend ■ Support rail ■ Shaft cover ■ Spacers (5 pce)
(3)	Flue pipe 2 m long 1 m long 0.5 m long Flue bend (for use in corbelled chimneys) 30° or 15°
(4)	Inspection piece, straight
(5)	Balanced flue inspection piece, straight
(6)	Balanced flue wall bezel
(7)	Balanced flue pipe 1 m long 0.5 m long
(8)	Balanced flue bend 87° or 2 x 45° or Balanced flue inspection tee or Balanced flue inspection bend
(9)	Balanced flue slide coupling Fixing clamp Balanced flue adaptor ∅ 60/100 mm to ∅ 80/125 mm

Maximum flue length

Vitodens 100-W, type WB1B: 10 m

Routing through a shaft (cont.)

Vitodens 100-W, types B1HA and B1KA, Vitodens 111-W

Rated heating output	kW	26.0	26.0	30.0	35.0
System size 60/100	m	15	15	15	15
System size 80/125	m	25	20	20	20

Vitodens 200-W, 222-F and 242-F

Rated heating output	kW	13	19	26	35	45	60	80	100
System size 60/100	m	20	20	20	15	—	—	—	—
System size 80/125	m	25	25	25	25	20	15	—	—
System size 110/150	m	—	—	—	—	25	20	20	20

Note

For alternative system sizes, a balanced flue adaptor is required.

The following components are taken into consideration for the maximum flue lengths:

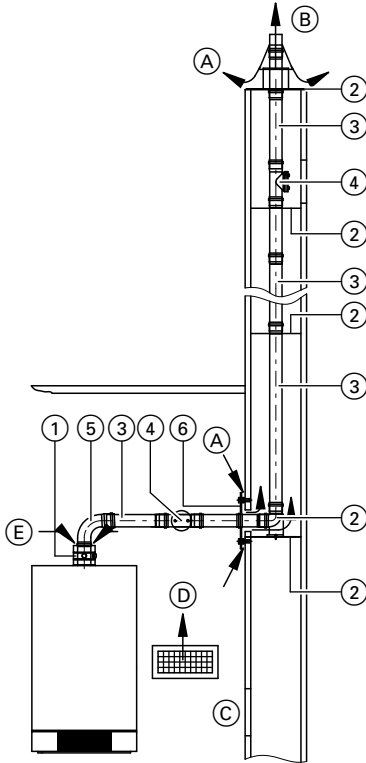
- Balanced flue connection pipe 0.5 m long
- 1 balanced flue bend 87° and 1 support bend 87°
or
- 2 balanced flue bends 45° and 1 support bend 87°

If fitting other bends, tees or straight lengths, subtract the following values from the maximum length:

- Balanced flue connection pipe 0.5 m long: 1 m
- Balanced flue connection pipe 1 m long: 2 m
- Balanced flue bends 45°: 0.5 m
- Balanced flue bends 87°: 1 m
- Balanced flue inspection tee: 1.5 m

Routing through a shaft (cont.)

Open flue operation



- (A) Secondary ventilation
(B) Flue gas

- (C) Inspection port
(D) Ventilation air aperture
(E) Ventilation air

①	Boiler flue connection
②	Standard shaft pack Comprising: ■ Support bend ■ Support rail ■ Shaft cover ■ Spacers (5 pce)
③	Flue pipe 2 m long 1 m long 0.5 m long Flue bend (for use in corbelled chimneys) 30° or 15°
④	Inspection piece, straight
⑤	Flue bend 87° or 2 x 45° or Inspection tee 87°
⑥	Ventilation bezel Adaptor \varnothing 60 mm to \varnothing 80 mm

Maximum flue length

Vitodens 100-W, types B1HA and B1KA, Vitodens 111-W

Rated heating output	kW	19	26.0	30.0	35.0
System size 60	m	15	15	20	20
System size 80	m	20	20	20	20

Note

For system size 80, an adaptor is required.

Routing through a shaft (cont.)

Vitodens 200-W, 222-F and 242-F

Rated heating output	kW	13	19	26	35	45	60	80	100
System size 60	m	20	20	20	15	—	—	—	—
System size 80	m	25	25	25	25	20	15	—	—
System size 110	m	—	—	—	—	25	20	20	20

The following components are taken into consideration for the maximum flue lengths:

- Connection pipe 0.5 m long
- 1 flue bend 87° and one support bend 87°
or
- 2 flue bends 45° and one support bend 87°

If fitting other bends, tees or straight lengths, subtract the following values from the maximum length:

- Connection pipe 0.5 m long: 0.5 m
- Connection pipe 1 m long: 1 m
- Flue bend 45°: 0.3 m
- Flue bend 87°: 0.5 m
- Inspection tee: 0.3 m

Open flue operation with combustion air supply via interconnected rooms

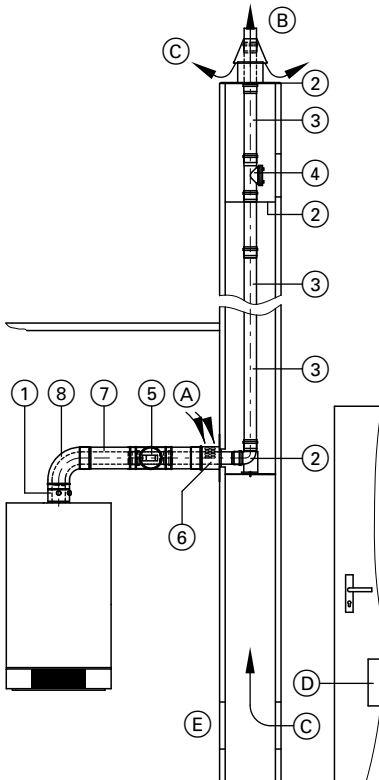
Only possible with system sizes 60 and 80.

The connection piece to the shaft is constructed as part of the balanced flue system. The combustion air is drawn from the room via an opening immediately by the chimney entry (air inlet adaptor).

An adequate combustion air supply, as specified by the TRGI 2008, must be ensured inside the room by means of an interconnected combustion air supply:

- Minimum volume of the interconnected rooms, 4 m³ per kW rated heating output
- Vents in the connecting doors min. 150 cm²

Routing through a shaft (cont.)

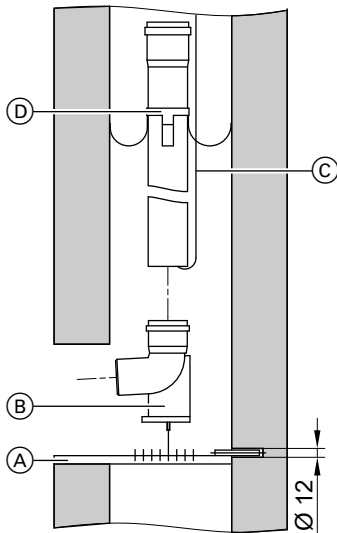


- (A) Ventilation air
- (B) Flue gas
- (C) Secondary ventilation
- (D) Aperture for interconnected rooms
- (E) Inspection port

- | | |
|-----|---|
| (1) | Boiler flue connection |
| (2) | Standard shaft pack
Comprising:
<ul style="list-style-type: none"> ■ Support bend ■ Support rail ■ Shaft cover ■ Spacers (5 pce) |
| (3) | Flue pipe
2 m long
1 m long
0.5 m long |
| | Flue bend (for use in corbelled chimneys)
30° or 15° |
| (4) | Inspection piece, straight |
| (5) | Balanced flue inspection piece, straight |
| (6) | Balanced flue air inlet adaptor |
| (7) | Balanced flue pipe
1 m long
0.5 m long |
| (8) | Balanced flue bend
87° or 2 x 45°
or
Balanced flue inspection tee
or
Balanced flue inspection bend |

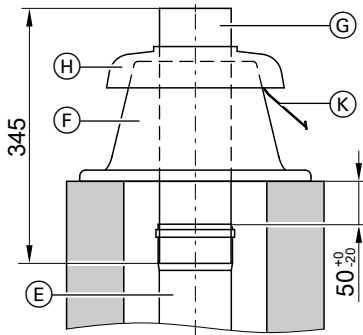
Routing through a shaft (cont.)

Installation

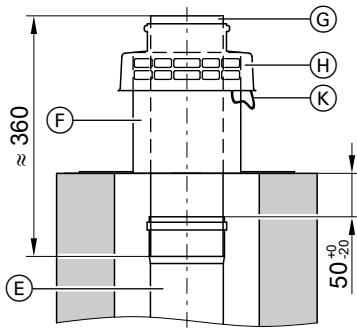


1. Drill a $\text{Ø } 12$ mm hole through the centre of the rear shaft wall to secure support rail (A).
2. Insert support rail (A) into the drilled hole and secure to the front shaft wall with screws or mortar.
3. Position support bend (B) and use the pin to secure it in a hole in the support rail.
4. Attach installation rope (C) to the outside of the lowest vertical pipe section.
5. Subject to shaft size, install a spacer (D) every 2 to 5 m and for each profiled piece (e.g. inspection piece or bend). Bent ends facing up.
6. Apply lubricating paste and push the pipes into each other with a slight twisting motion.
7. Lower the pipes into the shaft using installation rope (C).
8. Remove the rope and push the lowest pipe into support bend (B).

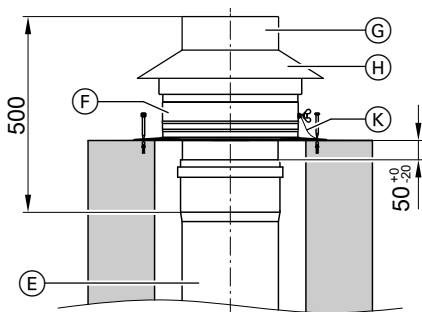
Routing through a shaft (cont.)



System size 60 to 110 mm



System size 125 to 200 mm



System size 250 mm

9. Have highest pipe section (E) ending approx. 50 mm below the top edge of the shaft.
10. Mechanically fasten the lower part of shaft cover (F) to the shaft.

11. **System size 60 to 110 mm:**
Push on terminal pipe (G).

Note

To maintain the required weight, never trim terminal pipe (G).

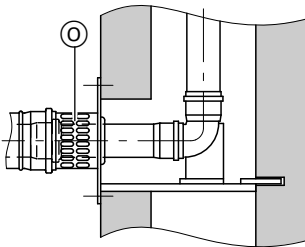
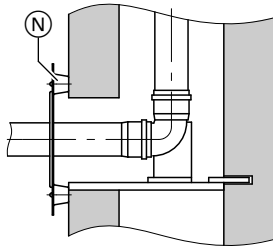
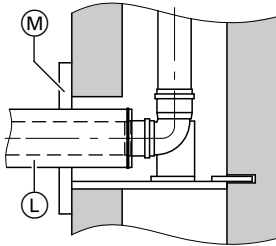
System size 125 to 200 mm:

Trim final pipe section (G) (without female connection). The pipe should be as flush as possible with fitted flue collar (H).

12. Push on flue collar (H) and fasten safety rope (K) to the lower part.

Routing through a shaft (cont.)

Fitting the connection pipe



1. Only for **room sealed** operation:
Trim final ventilation air pipe (L) of the connection pipe so that it ends level with the internal shaft wall surface.

2. **Room sealed** operation:
Slide balanced flue wall bezel (M) onto the pipe and push it against the shaft opening.
Open flue operation:
Slide vent bezel (N) onto the pipe and push it against the shaft opening.

Note

The gap created provides secondary ventilation to the shaft. No additional ventilation grille is required.

Open flue operation with combustion air supply via interconnected rooms:

Push the flue pipe onto the support bend. Push on air inlet adaptor (O) and mechanically fasten it to the shaft.

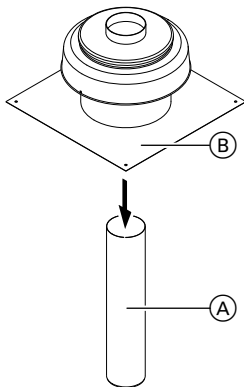
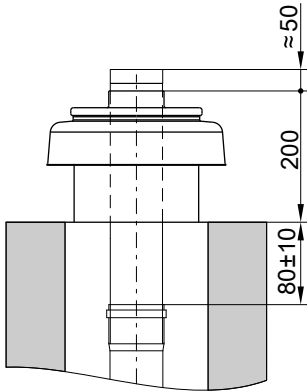
Fitting a metal shaft cover

For routing a plastic flue inside a twin flue shaft, in conjunction with a solid fuel boiler.

The metal end piece must protrude into the shaft by a length that is equal to or greater than the flue pipe diameter.

If necessary, use the stainless steel extension, which is available as an accessory.

Routing through a shaft (cont.)



1. Have the highest pipe section end approx. 80 mm below the top edge of the shaft.
2. Push on metal pipe section (A). If required, use an extension (accessories).
3. Position shaft cover (B) and mechanically fasten it to the shaft with the fixing materials provided.

Sealing:

Depending on the building characteristics, a seal may need to be fitted between the chimney and the shaft cover to prevent water from penetrating into the shaft.

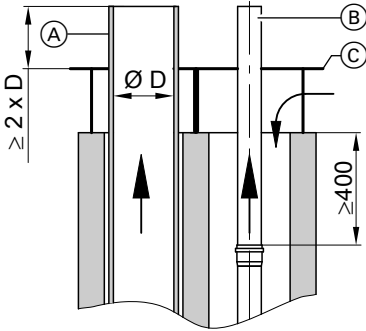
A weather-resistant material such as a suitable expanding foam tape or liquid plastic can be used and installed on site.

Note

Sealing is only permissible in combination with mechanical fastening. Compliance with DIN 18160, expansion of the pipe and corresponding lateral wind loads must be taken into account. We recommend mechanical fastening using the material included in the standard delivery.

Routing through a shaft (cont.)

Stainless steel extension in conjunction with on-site shaft cover



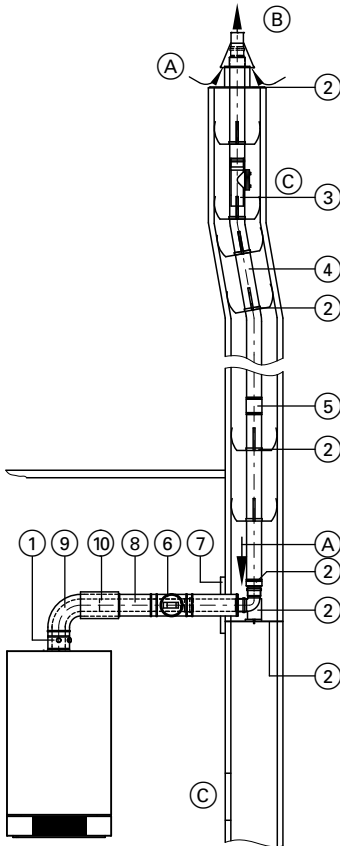
The shaft cover as a common down-draught plate (chimney cowl) must be provided on site.

- (A) Chimney extension made from soot fire resistant material
- (B) Stainless steel extension
- (C) Shaft cover (on-site)

Routing through a shaft (cont.)

Flexible flue

Room sealed operation



- (A) Ventilation air
- (B) Flue gas
- (C) Inspection port

- (1) **Boiler flue connection**
- (2) **Standard shaft pack (flexible)**
Comprising:
 - Support bend
 - Connection pieces
 - Support rail
 - Shaft cover
 - Spacers (5 pce)
- (3) **Inspection piece, straight**
(for installation in the flexible flue)
- (4) **Flexible flue**
- (5) **Connection piece**
for connecting residual lengths of the flexible flue
- Pipe lowering attachment**
with 20 m rope
- (6) **Balanced flue inspection piece, straight**
- (7) **Wall bezel**
- (8) **Balanced flue pipe**
1 m long
0.5 m long
- (9) **Balanced flue bend**
87° or 2 x 45°
or
Balanced flue inspection tee
or
Balanced flue inspection bend
- (10) **Balanced flue slide coupling**
Balanced flue adaptor
Ø 60/100 mm to Ø 80/125 mm

Routing through a shaft (cont.)

Maximum flue length

Vitodens 100-W, types B1HA and B1KA, Vitodens 111-W

Rated heating output	kW	19	26.0	30.0	35.0
System size 80	m	20	20	20	20

Note

For system size 80, an adaptor is required.

Vitodens 200-W, 222-F and 242-F

Rated heating output	kW	13	19	26	35	45	60	80	100
System size 60	m	18	18	—	—	—	—	—	—
System size 80	m	25	25	25	25	20	15	—	—
System size 110	m	—	—	—	—	22	17	20	20

The following components are taken into consideration for the maximum flue lengths:

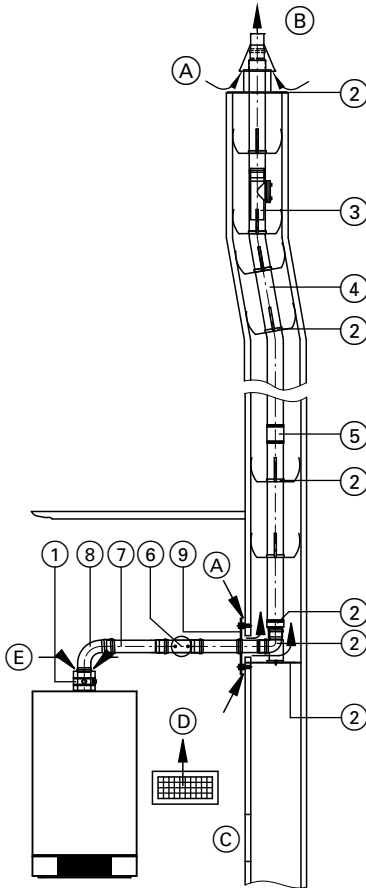
- Balanced flue connection pipe 0.5 m long
- 1 flue bend 87° and one support bend 87°
or
- 2 flue bends 45° and one support bend 87°

If fitting other bends, tees or straight lengths, subtract the following values from the maximum length:

- Connection pipe 0.5 m long: 0.5 m
- Connection pipe 1 m long: 1 m
- Flue bend 45°: 0.3 m
- Flue bend 87°: 0.5 m
- Inspection tee: 0.3 m

Routing through a shaft (cont.)

Open flue operation



- (A) Secondary ventilation
(B) Flue gas

- (C) Inspection port
(D) Ventilation air aperture
(E) Ventilation air

(1)	Boiler flue connection
(2)	Standard shaft pack (flexible) Comprising: ■ Support bend ■ Connection pieces ■ Support rail ■ Shaft cover ■ Spacers (5 pce)
(3)	Inspection piece, straight (for installation in the flexible flue)
(4)	Flexible flue
(5)	Connection piece for connecting residual lengths of the flexible flue
	Pipe lowering attachment with 20 m rope
(6)	Inspection piece, straight
(7)	Flue pipe 1 m long 0.5 m long
(8)	Flue bend 87° or 2 x 45° or Inspection tee 87°
(9)	Ventilation bezel Adaptor \varnothing 60 mm to \varnothing 80 mm

Routing through a shaft (cont.)

Maximum flue length

Vitodens 100-W, types B1HA and B1KA, Vitodens 111-W

Rated heating output	kW	19	26.0	30.0	35.0
System size 80	m	20	20	25	25

Note

For system size 80, an adaptor is required.

Vitodens 200-W, 222-F and 242-F

Rated heating output	kW	13	19	26	35	45	60	80	100
System size 60	m	18	18	—	—	—	—	—	—
System size 80	m	25	25	25	25	20	15	—	—
System size 110	m	—	—	—	—	22	17	20	20

The following components are taken into consideration for the maximum flue lengths:

- Connection pipe 0.5 m long
- 1 flue bend 87° and one support bend 87°
or
- 2 flue bends 45° and one support bend 87°

If fitting other bends, tees or straight lengths, subtract the following values from the maximum length:

- Connection pipe 0.5 m long: 0.5 m
- Connection pipe 1 m long: 1 m
- Flue bend 45°: 0.3 m
- Flue bend 87°: 0.5 m
- Inspection tee: 0.3 m

Installation



Danger

To ensure correct function, route the flexible flue at a maximum angle of 45° from the vertical. Never pull the flexible flue pipe over sharp edges during installation.

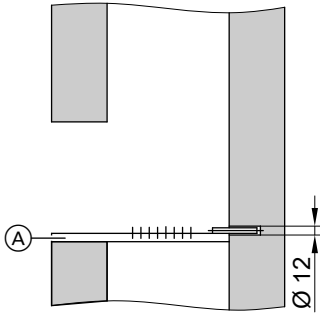
- Subject to shaft size, install spacers at intervals of max. 2 m.
- Insert a spacer before and after any change in direction and any inspection piece.
- The flue must not come into contact with the shaft wall.

Notes:

- Always draw the flue pipe in from the top downwards.
- Observe flow direction (arrow on components).

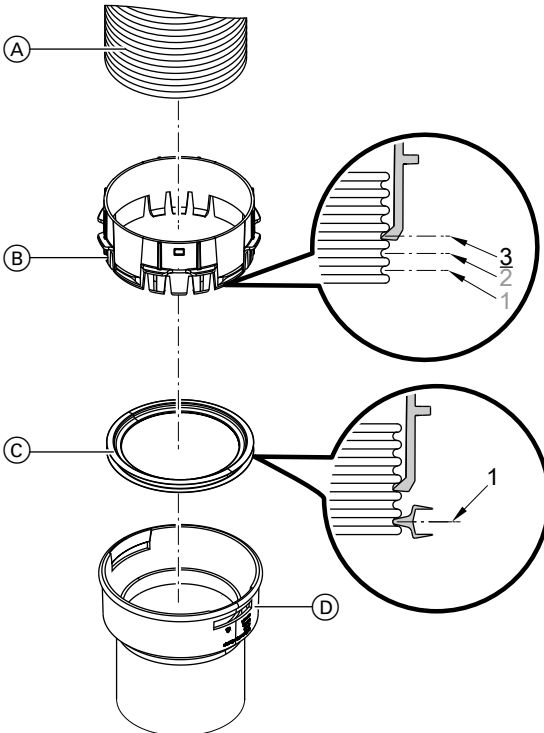
Routing through a shaft (cont.)

Fitting the support rail inside the shaft



1. Drill a $\varnothing 12$ mm hole through the centre of the rear shaft wall to secure support rail (A).
2. Insert support rail (A) into the drilled hole and secure to the front shaft wall with screws or mortar.

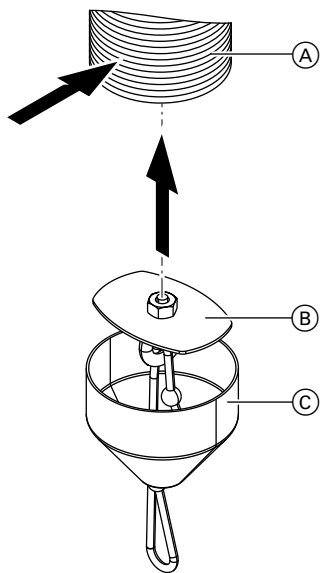
Fitting an inspection piece, connection piece or connector



Routing through a shaft (cont.)

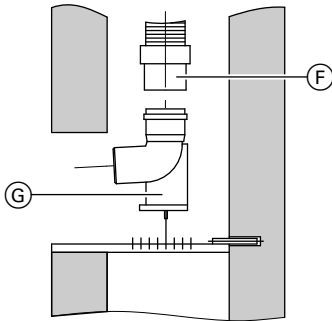
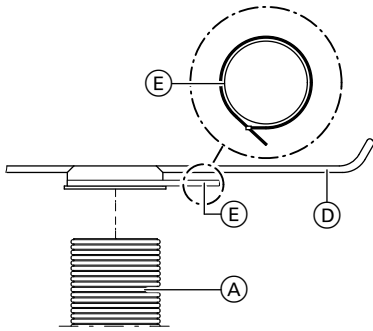
1. Trim flexible flue pipe (A) cleanly at a right angle.
2. Click spacer tooth of mounting ring (B) into the 3rd groove of flexible flue (A).
3. Insert gasket (C) into the 1st groove of flexible flue (A).
4. Push inspection piece, connection piece or connector (D) onto mounting ring (B) until it clicks into position.

Fitting pipe lowering attachment and drawing flexible flue into shaft



1. Compress the end of flexible flue (A) into a slightly oval shape. Insert plate (B) of the pipe lowering attachment into the 3rd groove of the flue pipe.
2. Push leading cone (C) onto flexible flue (A). The end of the flue pipe must be fully covered.
3. Secure the rope to the loop of the pipe lowering attachment.

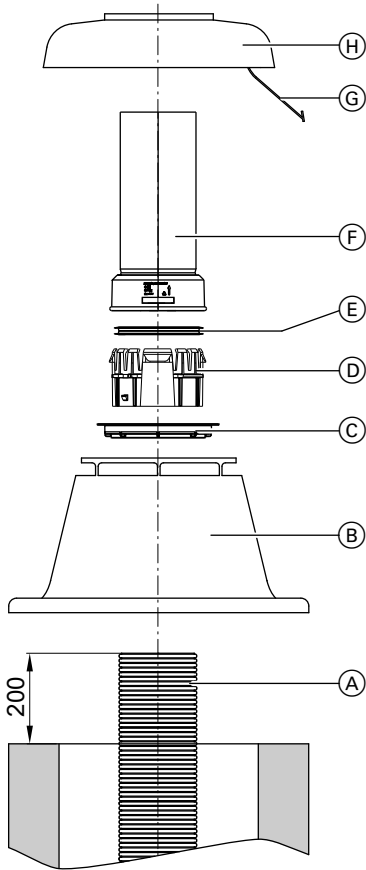
Routing through a shaft (cont.)



4. Push spacer (D) onto flue (A) (bent ends in flue gas flow direction).
5. Firmly close zip fastener (E) of spacer (D).
6. Pull flexible flue (A) into the shaft from the top downwards. Never pull the flue over sharp edges.
7. Remove the pipe lowering attachment from the flue.
8. Fit connection piece (F) to flue (A) (see page 29).
9. Position support bend (G) and secure it in a hole in the support rail with the pin.
10. Coat connector (F) with lubricating paste and push into support bend (G).

Routing through a shaft (cont.)

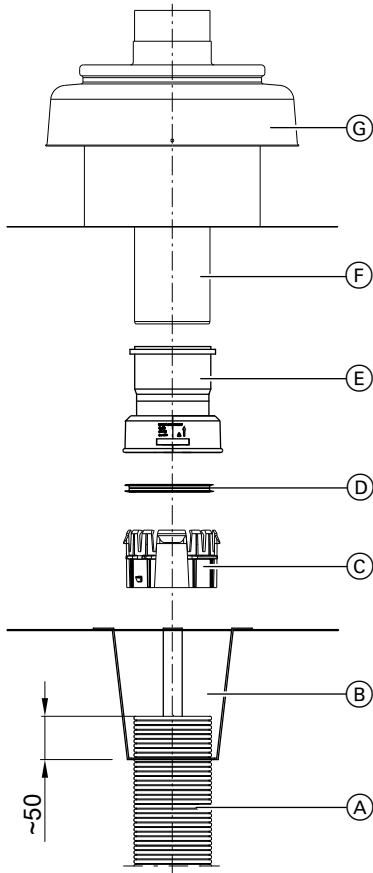
Fitting a plastic shaft cover



1. Route flexible flue (A) through shaft cover (B).
2. Trim flexible flue (A) 200 mm above the top edge of the shaft.
3. Position the base of shaft cover (B) on the shaft and secure.
4. Only for \varnothing 60 and 80 mm: Position reducer ring (C) on the base of shaft cover (B).
5. Click the spacer tooth of mounting ring (D) into the 3rd groove of flexible flue (A). See page 29.
6. Insert gasket (E) into the 1st groove of flexible flue (A).
7. Push terminal pipe (F) onto mounting ring (D) until it clicks into position.
8. Hook safety rope (G) into the drilled hole in shaft cover (B).
9. Push cowl (H) over terminal pipe (F) and click into place on shaft cover (B).

Routing through a shaft (cont.)

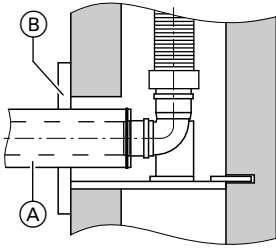
Fitting a metal shaft cover



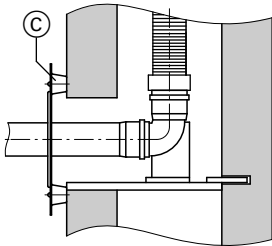
1. Route flexible flue (A) through retainer (B).
2. Position retainer (B) on the shaft.
3. Trim flue (A) approx. 50 mm above the retaining plate of retainer (B).
4. Pull flexible flue (A) up far enough to allow mounting ring (C) to be fitted.
Click mounting ring (C) into the 3rd groove of flexible flue (A). See page 29.
5. Insert gasket (D) into the 1st groove of flexible flue (A).
6. Push adaptor (E) onto mounting ring (C) until it clicks into position.
7. Push terminal pipe (F) into adaptor (E).
8. Push cowl (G) onto terminal pipe (F) and secure.

Routing through a shaft (cont.)

Fitting the connection pipe



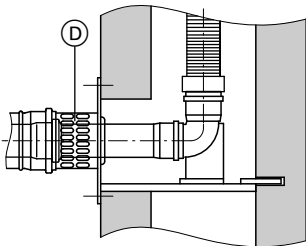
1. Only for **room sealed** operation:
Trim final ventilation air pipe (A) of the connection pipe so that it ends level with the internal shaft wall surface.



2. **Room sealed** operation:
Slide balanced flue wall bezel (B) onto the pipe and push it against the shaft opening.
Open flue operation:
Slide vent bezel (C) onto the pipe and push it against the shaft opening.

Note

*The gap created provides secondary ventilation to the shaft.
No additional ventilation grille is required.*



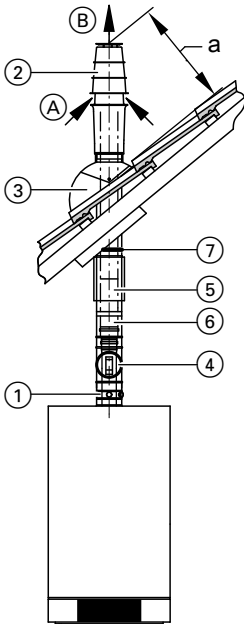
Open flue operation with combustion air supply via interconnected rooms:

Push the flue pipe onto the support bend, slide air inlet adaptor (D) onto the pipe and secure it to the shaft.

Vertical outlet for pitched or flat roofs

If the balanced flue system is routed through roof spaces that are not used as accommodation, run the flue through an additional metal pipe as protection against mechanical damage (TRGI 2008).

If several roof outlets are installed side by side: Observe a minimum clearance of 1.5 m between outlets and to other building structures (e.g. skylights) in accordance with TRGI 2008. Observe the clearance of the flue outlet above the roof (see diagram). If the rated heating output is ≥ 50 kW, an above-roof extension is required (see page 39).



- (A) Ventilation air
- (B) Flue gas

Rated heating output	kW	≤ 50	≥ 50
a (min.)	mm	400	1000

- ① **Boiler flue connection**
- ② **Balanced flue roof outlet**
- ③ **Pipe outlets for Klöber roof tiles**
Provide a suitable Klöber roof tile on site.
or
Universal roof tile
or
Flat roof collar
- ④ **Balanced flue inspection piece, straight**
- ⑤ **Balanced flue slide coupling**
- ⑥ **Balanced flue bend**
87° or 2 x 45°
Balanced flue pipe
1 m long
0.5 m long
- ⑦ **Fixing clamp**
Balanced flue adaptor
 $\varnothing 60/100$ mm to $\varnothing 80/125$ mm

Vertical outlet for pitched or flat roofs (cont.)

Maximum flue length

Vitodens 100-W, type WB1B: 10 m

Vitodens 100-W, types B1HA and B1KA, Vitodens 111-W

Rated heating output	kW	19	26.0	30.0	35.0
System size 60/100	m	10	10	8	8
System size 80/125	m	13	13	11	11

Vitodens 200-W, 222-F and 242-F

Rated heating output	kW	13	19	26	35	45	60	80	100
System size 60/100	m	10	10	10	10	—	—	—	—
System size 80/125	m	13	13	13	11	10	6	—	—
System size 110/150	m	—	—	—	—	13	9	15	15

Note

For alternative system sizes, a balanced flue adaptor is required.

The following components are taken into consideration for the maximum flue lengths:

- 2 balanced flue bends 87°

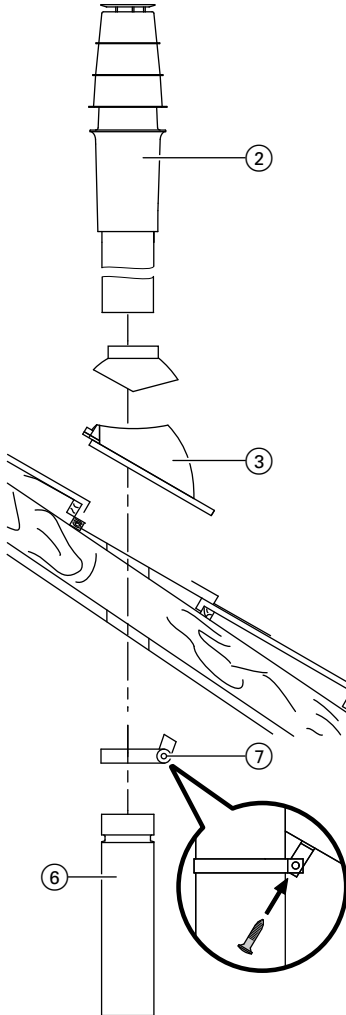
If fitting other bends, tees or straight lengths, subtract the following values from the maximum length:

- Balanced flue bend 45°: 0.5 m
- Balanced flue bend 87°: 1 m
- Balanced flue inspection tee: 0.5 m

Vertical outlet for pitched or flat roofs (cont.)

Installation

Balanced flue roof outlet



Please note

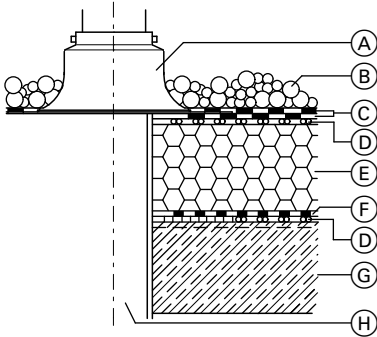
Ensure the specified minimum lengths above the roof are observed.

Never trim roof outlets above the roof.

- Install pipe outlets for Klöber roof tiles, universal roof tiles or flat roof collars in accordance with manufacturer's instructions.
- Integrate the flat roof collar into the roof skin according to the flat roof guidelines.
- Ceiling/roof penetration (min. diameter):
 - 105 mm (system size 60)
 - 130 mm (system size 80)
 - 160 mm (system size 110).
- Secure the roof outlet to the roof structure with a clamp only after installation has been completed.
- Position the roof outlet on the roof tiles or flat roof collar from above.
- Connect the balanced flue connection pipe from below.

Vertical outlet for pitched or flat roofs (cont.)

Roof construction in line with the flat roof directive



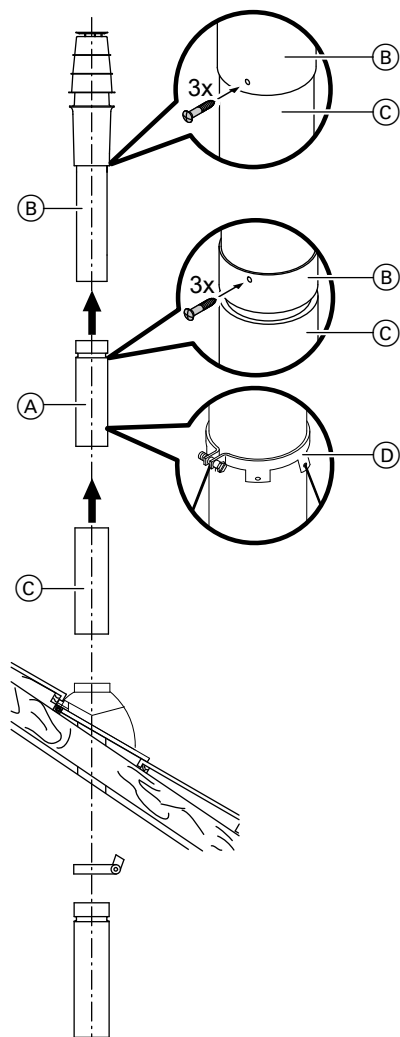
- Ⓒ Insulation layer
- Ⓓ Ventilation layer
- Ⓔ Thermal insulation
- Ⓕ Insulation
- Ⓖ Ceiling
- Ⓗ Flue pipe

- Ⓐ Flat roof collar
- Ⓑ Gravel ballast layer

Vertical outlet for pitched or flat roofs (cont.)

Fitting an above-roof extension

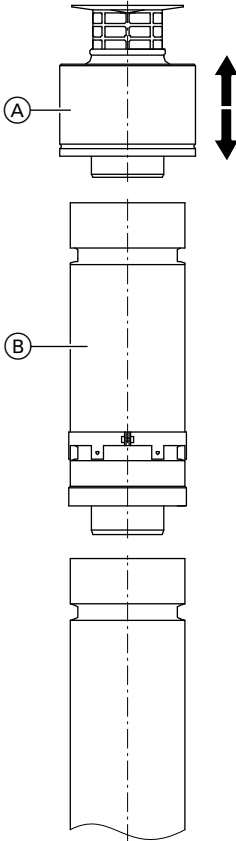
System sizes 60 and 80



1. Push the internal pipe of above-roof extension (A) onto roof outlet (B) and secure with 3 screws provided.
2. Push black pipe section (C) onto roof outlet (B) and secure with 3 screws provided.
3. Push roof outlet (B) with above-roof extension (A) onto the balanced flue pipe.
4. Secure the 1 m above-roof extension with clamp (D) provided and the ropes.

Vertical outlet for pitched or flat roofs (cont.)

System size 110



1. Remove top section (A) of the roof outlet.
2. Push above-roof extension (B) onto the roof outlet.
3. Push top section (A) onto above-roof extension (B).

Note

For extensions ≥ 1 m, secure the roof outlet with ropes. The ropes can be fastened to the above-roof extension.

External wall connection

Note

Cannot be used with the Vitocrossal or Vitoladens.

Install an inspection port in the balanced flue pipe for inspection and cleaning.

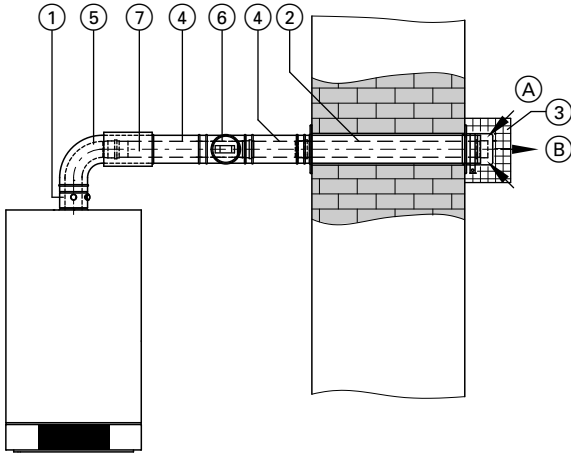
Note

An inspection port should never be positioned on the underside of the connection pipe, in order to prevent condensate escaping from it.

External wall connection (cont.)

Recommendation: To facilitate installation of the balanced flue pipe, use the balanced flue slide coupling.

Route the connection piece with a fall of at least 3° (approx. 50 mm/m). Prevent continuous condensate drainage via a wind protector.



Ⓐ Ventilation air

Ⓑ Flue gas

External wall connection (cont.)

①	Boiler flue connection
②	Balanced flue external wall connection (incl. wall bezels)
③	Grille
④	Balanced flue pipe 1 m long 0.5 m long
⑤	Balanced flue bend 87° or 2 x 45° or Balanced flue inspection tee or Balanced flue inspection bend
⑥	Balanced flue inspection piece, straight
⑦	Balanced flue slide coupling Fixing clamp Balanced flue adaptor Ø 60/100 mm to Ø 80/125 mm

Maximum flue length

Vitodens 100-W, type WB1B: 10 m

Vitodens 100-W, types B1HA and B1KA, Vitodens 111-W

Rated heating output	kW	19	26.0	30.0	35.0
System size 60/100	m	10	10	8	8
System size 80/125	m	13	13	11	11

Vitodens 200-W, 222-F and 242-F

Rated heating output	kW	13	19	26	35	45	60	80	100
System size 60	m	10	10	10	8	—	—	—	—
System size 80	m	13	13	13	11	10	6	—	—
System size 110	m	—	—	—	—	13	9	15	15

Note

For alternative system sizes, a balanced flue adaptor is required.

The following components are taken into consideration for the maximum flue lengths:

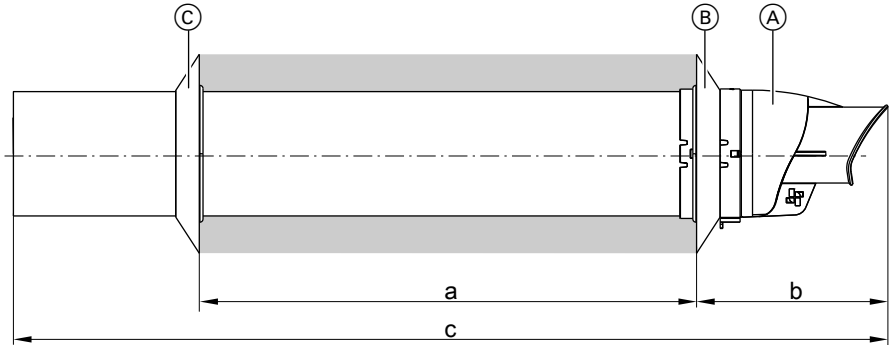
- 2 balanced flue bends 87°

If fitting other bends, tees or straight lengths, subtract the following values from the maximum length:

- Balanced flue bend 45°: 0.5 m
- Balanced flue bend 87°: 1 m
- Balanced flue inspection tee: 0.5 m

External wall connection (cont.)

Installation



Balanced flue system (\varnothing mm)	60/100
a (mm)	≤ 895
b (mm)	150
c (mm)	1120

Telescopic balanced flue external wall connection

Balanced flue system (\varnothing mm)	60/100
a (mm)	$\geq 373 - \leq 533$
b (mm)	154
c (mm)	$\geq 617 - \leq 777$

1. Create an opening in the wall (min. diameter):

- 105 mm (system size 60)
- 130 mm (system size 80)
- 160 mm (system size 110)

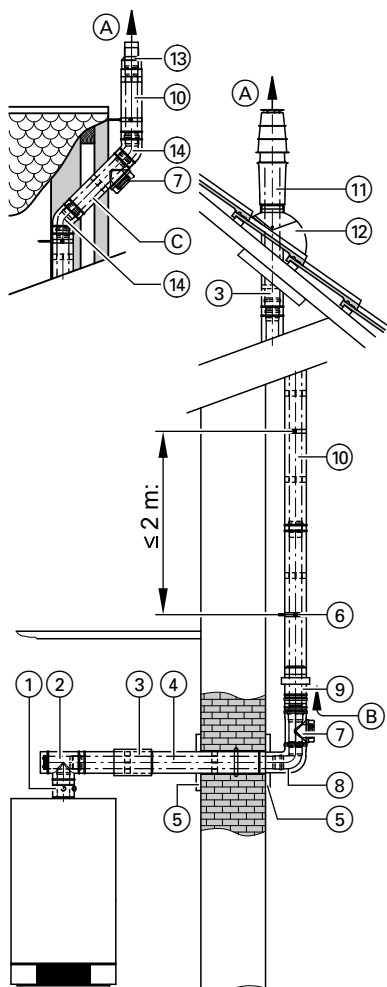
2. Push external wall connection (A) with wall bezel (B) into the wall opening.

3. Slide on internal wall bezel (C).

4. If the external wall connection terminates ≤ 2 m above ground level near public roads, fit a protective grille (on-site fixing materials).

5. Connect the balanced flue connection pipe from the inside and route with a fall of min. 3° (approx. 50 mm/m) towards the boiler.

Routing over an external wall



- (A) Flue gas
 (B) Ventilation air
 (C) Elbow in the external wall routing for a short roof overhang

- | | |
|------|--|
| (1) | Boiler flue connection |
| (2) | Balanced flue inspection tee, 87°
or
Balanced flue inspection bend, 87° |
| (3) | Balanced flue slide coupling |
| (4) | Balanced flue pipe
1.95 m long
1 m long
0.5 m long |
| (5) | Wall bezel |
| (6) | Fixing clamp |
| (7) | Balanced flue inspection piece, straight |
| | External wall pack with |
| (8) | Balanced flue bend, 87° or external wall bend, 87° |
| (9) | External wall air inlet section |
| (10) | Balanced flue pipe or external wall pipe
1.95 m long
1 m long
0.5 m long |
| (11) | Balanced flue roof outlet
(for a large roof overhang) |
| (12) | Universal roof tile
or
Pipe outlet for Klöber roof tiles
Provide a suitable Klöber roof tile on site. |
| (13) | External wall terminal
(for short protrusion above the roof) |

Routing over an external wall (cont.)

- ⑭ **Balanced flue bend, 45° or external wall bend, 45°**
or
Balanced flue bend, 30° or external wall bend, 30°
Balanced flue adaptor
Ø 60/100 mm to Ø 80/125 mm

Maximum flue length

Vitodens 100-W

Rated heating output	kW	19.0	26.0	30.0	35.0
System size 60/100	m	20	20	15	15
System size 80/125	m	25	25	20	20

Vitodens 200-W, 222-F and 242-F

Rated heating output	kW	13	19	26	35	45	60	80	100
System size 60/100	m	20	20	20	15	—	—	—	—
System size 80/125	m	25	25	25	20	12	12	—	—
System size 110/150	m	—	—	—	—	17	17	20	20

Note

For alternative system sizes, a balanced flue adaptor is required.

The following components are taken into consideration for the maximum flue lengths:

- 2 balanced flue bends 87°

If fitting other bends, tees or straight lengths, subtract the following values from the maximum length:

- Balanced flue bend 45°: 0.5 m
- Balanced flue bend 87°: 1 m
- Balanced flue inspection tee: 0.5 m

Installation

1. Create an opening in the wall (min. diameter):
 - 105 mm (system size 60)
 - 130 mm (system size 80)
 - 160 mm (system size 110).
2. Push external wall bend ⑧ with wall bezel ⑤ into the wall opening from the outside.
3. Fit air inlet section ⑨ as near as possible to external wall bend ⑧.

Routing over an external wall (cont.)

4. Secure interior wall bezel ⑤.
5. Connect the balanced flue connection pipe from the inside and route with a fall of min. 3° (approx. 50 mm/m) towards the boiler.
6. Use external wall clamps ⑥ to fit the flue components to the external wall at a consistent distance. Position external wall clamps ⑥ in intervals of max. 2 m.
7. **!** **Please note**
Ensure the specified minimum lengths above the roof are observed.
Never trim roof outlets above the roof.

Roof outlet

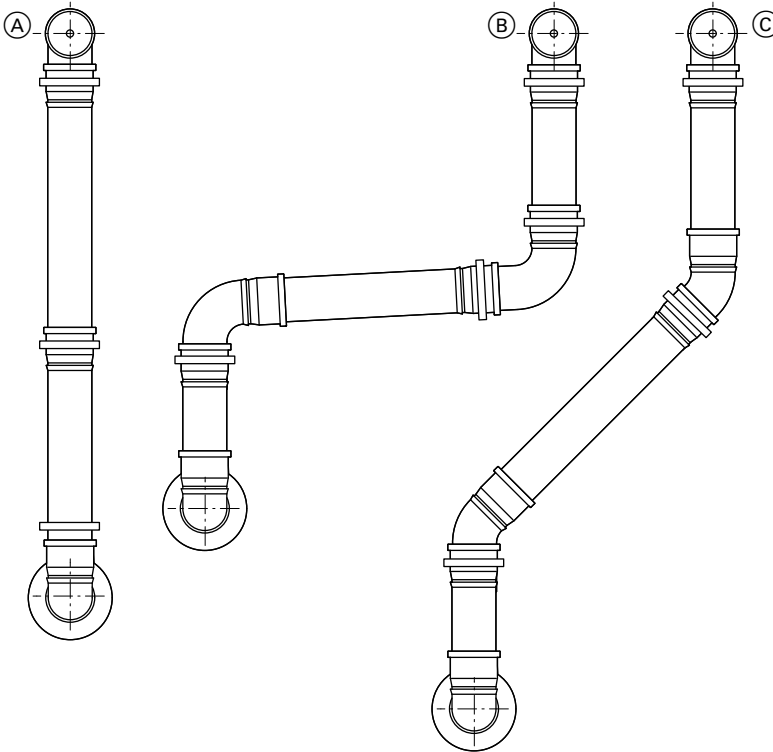
- Use universal tiles or air vent tiles with pipe outlets.
- Position balanced flue slide coupling ③ underneath the roof outlet.
- Install pipe outlets for Klöber or universal roof tiles in accordance with manufacturer's instructions.
- Position the roof outlet onto the roof tiles from above.
- Connect the external wall pipe from below.

Elbow in the external routing for a short roof overhang

- Elbow with 45° bend ⑭: Fit balanced flue inspection piece ⑦.
- Elbow with 30° bend ⑭: Balanced flue inspection piece ⑦ not required.
- Fit external wall terminal ⑬

Plume kit

Routing options



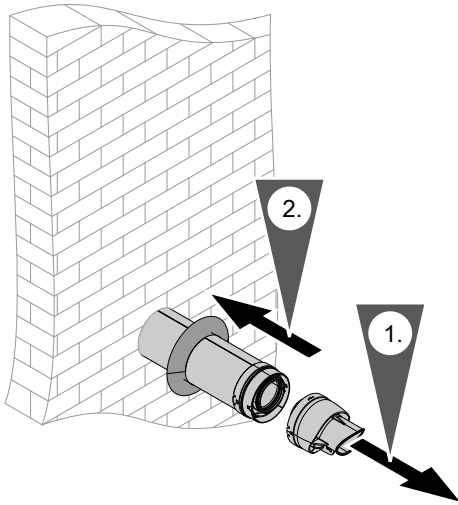
- (A) Plume kit standard delivery
- (B) Plume kit standard delivery plus:
 - 2 bends 87°
 - 1 pipe, 1 m long
- (C) Plume kit standard delivery plus:
 - 2 bends 45°
 - 1 pipe, 1 m long

Observe the max. length of the entire balanced flue.

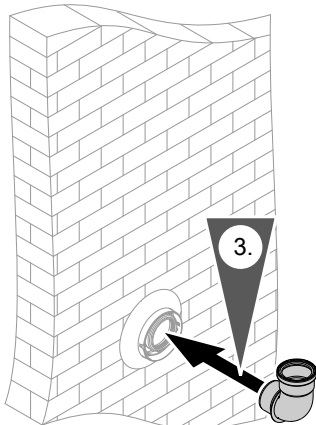
For the standard plume kit, deduct 3 m from the max. possible pipe length.

When using an additional 87° bend or two 45° bends, reduce the max. length by 1 m.

Plume kit (cont.)

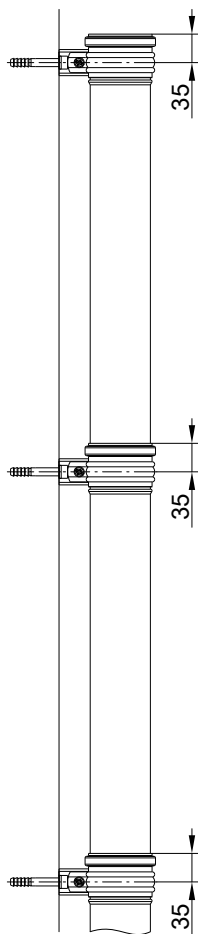
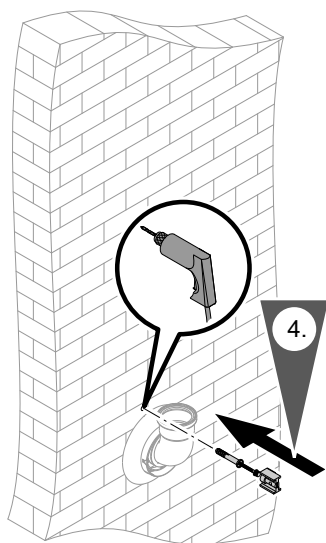


1. Disengage and remove the end piece of the external wall connection.
2. Insert the external wall connection into the wall.



3. Push the flue bend into the external wall connection.

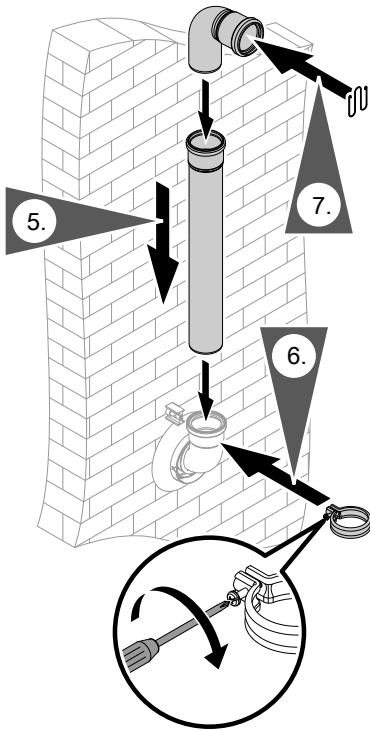
Plume kit (cont.)



4. Insert screws into the wall in accordance with the pipe length.



Plume kit (cont.)



5. Mount flue pipes and bends in line with the chosen method of routing.
6. Position the supplied fixing clamps and secure with the screws.
7. Insert the rodent protection into the uppermost bend.

Note

The rodent protection should be inserted into the end piece of the plume kit.





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5780223 Subject to technical modifications.