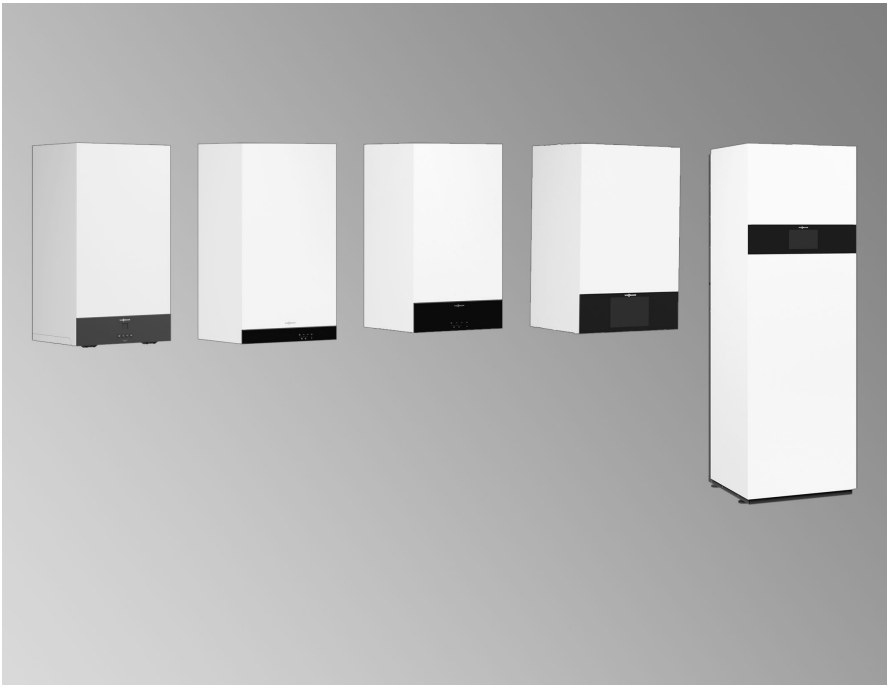
Installation instructions

for contractors

Flue system

for condensing boilers up to 60 kW:
- Vitodens 050-W
- Vitodens 100-W
- Vitodens 111-W
- Vitodens 200-W
- Vitodens 222-F

Flue system



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Dispose after installation.

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 a qualified electrician.

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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.

! **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.

Faulty components must be replaced with original 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 gas 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 ≥ 3° (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.
- Only use the original components supplied with the 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.

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- 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.

Required tools/equipment

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

Tightness test

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

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.

- 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 m^2), 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 O_2 content in the combustion air (annular gap test).
  The flue is considered sufficiently gas-tight if the O_2 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.

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

The labels are supplied with the technical documentation.

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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.

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Boiler position

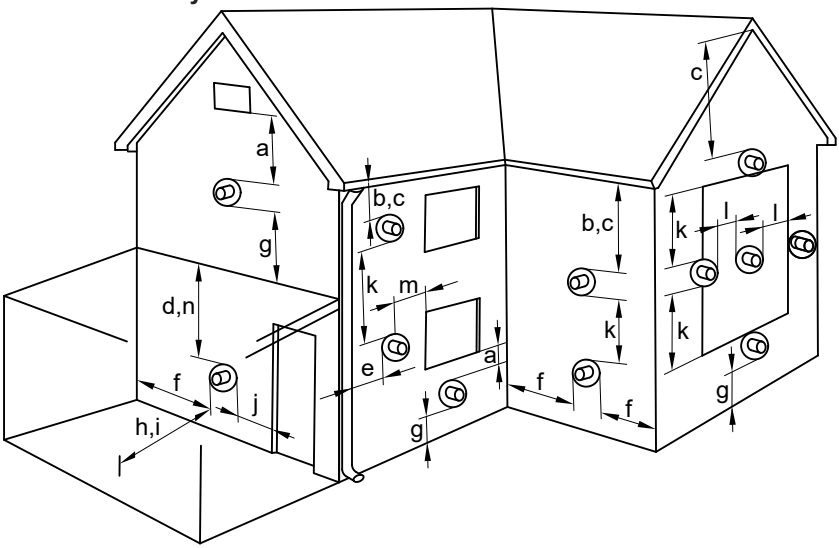
The following limitations must be observed when siting the boiler:

- 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.
- Any cupboard enclosing the appliance must be designed and constructed specifically for this purpose. An existing cupboard or closet 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 Vitodens range does not require the cupboard to be ventilated.
- 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*1	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

*1 *When using a plume diverter, the distance can be reduced from 300 mm to 50 mm. Note: Ensure no vents or opening windows are close by. If so, the standard distance applies.*

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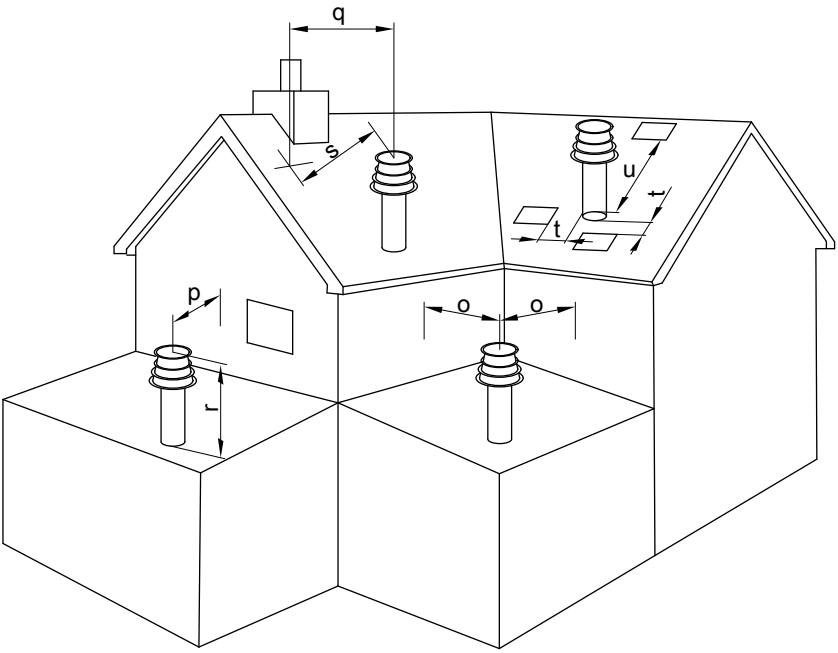
Installations requirements (cont.)

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.

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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.

Horizontal flue gas connection

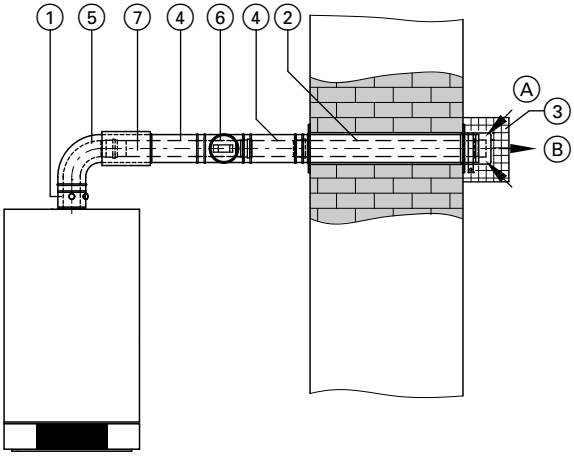
Note
Cannot be used with the Vitoladens.

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.

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.

Horizontal flue gas connection (cont.)



Ⓐ Ventilation air

Ⓑ Flue gas

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 (optional)
⑦	**Balanced flue slide coupling**
	Fixing clamp
	Balanced flue adaptor ∅ 60/100 mm to ∅ 80/125 mm

Maximum flue pipe length

Vitodens 100-W, type B1GA: 10 m

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Horizontal flue gas connection (cont.)

Vitodens 050-W

Rated heating output	kW	19	25
System size 60/100	m	10	10
System size 80/125	m	13	13

Vitodens 100-W and Vitodens 111-W

Rated heating output	kW	11	19	26	30	35
System size 60/100	m	20	20	20	20	20
System size 80/125	m	30	30	30	30	30

Vitodens 200-W and Vitodens 222-F

Rated heating output	kW	11	19	26	35	49	60
System size 60/100	m	30	30	30	30	—	—
System size 60/100 (for combi boilers and storage combi boilers)	m	30	30	30	16	—	—
System size 80/125	m	30	30	30	30	10	6
System size 110/150	m	—	—	—	—	13	9

Note

A balanced flue adaptor is required for alternative system sizes.

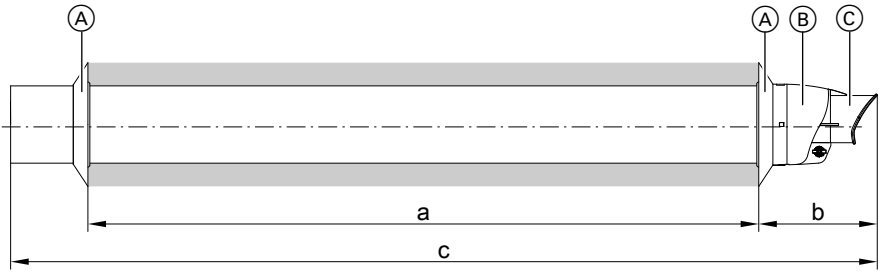
The following components are taken into consideration for the maximum flue lengths:

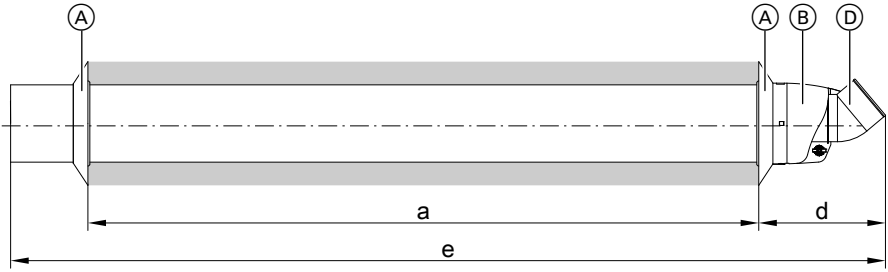
- 2 x 87° balanced flue bend

For other bends, tees and 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





Balanced flue system (∅ mm)	**60/100**
a (mm)	≤ 895
b (mm)	150
c (mm)	1120
d (mm)	164
e (mm)	1134

Telescopic balanced flue external wall connection

Balanced flue system (∅ mm)	**60/100**
a (mm)	≥373 - ≤ 533
b (mm)	154
c, e (mm)	≥617 - ≤ 777
d (mm)	168

Note

Flue gas diverter Ⓓ (accessory) can be installed in 8 different angles.

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. Slide external wall connection Ⓑ with flue gas terminal Ⓒ or flue gas diverter Ⓓ (accessory) together with external wall bezel Ⓐ into the wall opening.

3. Slide on internal wall bezel Ⓐ.

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Horizontal flue gas connection (cont.)

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

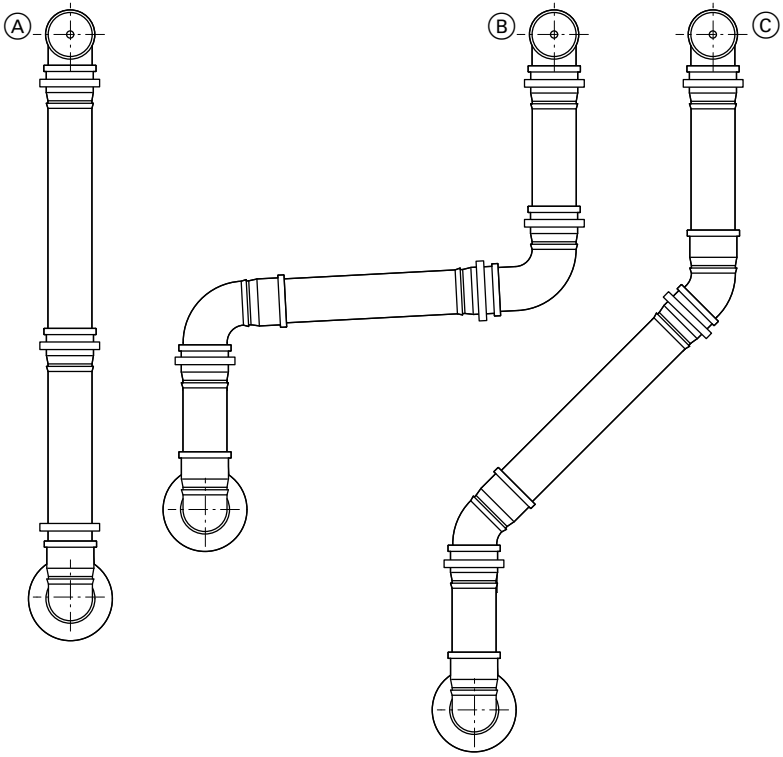
5. Connect the balanced flue connection pipe from the inside and route with a fall of min. 3° (approx. 50 mm/m) towards the boiler.

For other bends, tees and straight lengths, subtract the following values from the maximum length:

- Flue bend 45°: 0.5 m
- Flue bend 87°: 1.0 m

Plume kit

Routing options



Ⓐ Plume kit standard delivery
Ⓑ Plume kit standard delivery
Plus additional:
- 2 x 87° bends
- 1 pipe 1 m long

Ⓒ Plume kit standard delivery
Plus additional:
- 2 x 45° bends
- 1 pipe 1 m long

Observe the max. total length of the balanced flue pipe.
Deduct 3 m from the max. possible flue pipe length for the standard plume kit.

The max. length is reduced by 1 m when using a further 87° bend or 2 x 45° bends.

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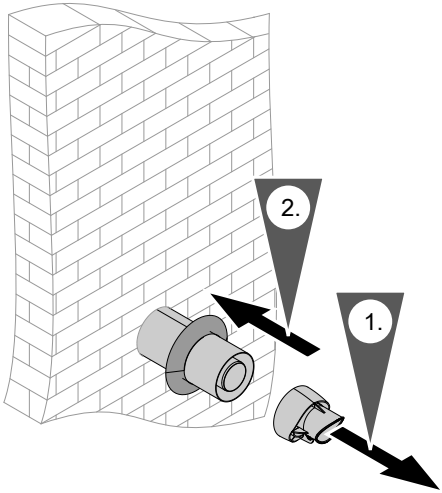
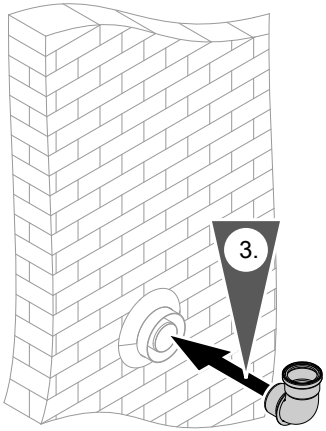
Plume kit (cont.)



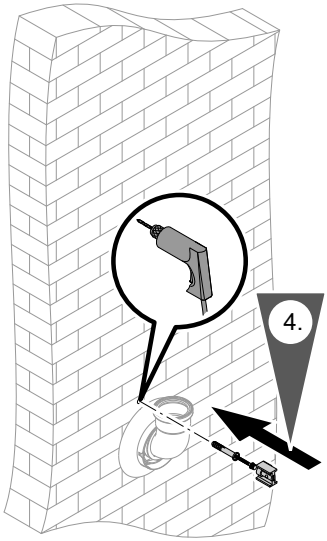
1. Unclip and remove external wall connection terminal.

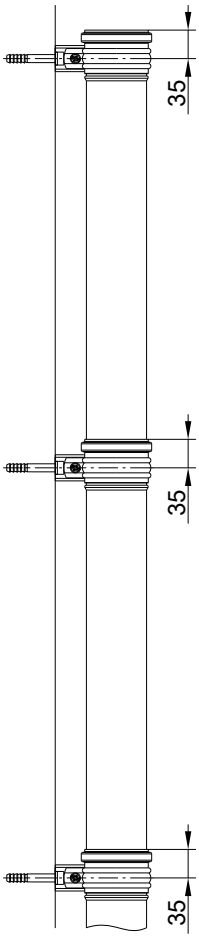
2. Insert external wall connection in the wall.



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

Plume kit (cont.)





4. Fix the fastening screws to the wall in accordance with the flue pipe length.

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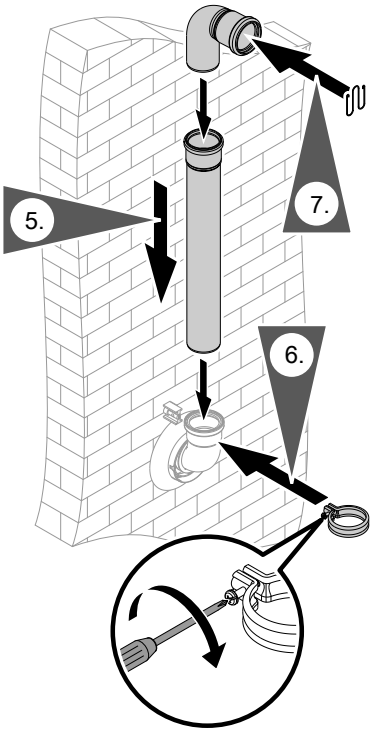
Plume kit (cont.)



5. Attach the flue pipes and bends in accordance with the selected installation method.

6. Fit the enclosed fixing clamps and fasten them in place with the screws.

7. Insert the rodent guard into the uppermost bend.

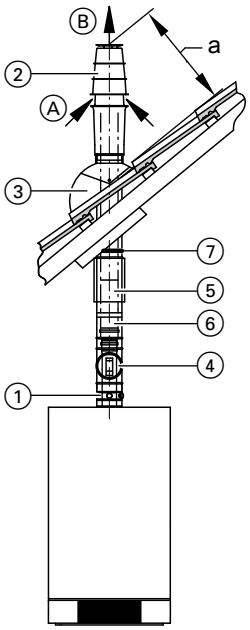
Note
The rodent guard must be inserted into the plume kit terminal.

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 26).

Vertical outlet for pitched or flat roofs (cont.)



Ⓐ Ventilation air
Ⓑ 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 ∅ 60/100 mm to ∅ 80/125 mm

Maximum flue pipe length

Vitodens 050-W

Rated heating output	kW	19	25
System size 60/100	m	10	10
System size 80/125	m	13	13

Vitodens 100-W and Vitodens 111-W

Rated heating output	kW	11	19	26	30	35
System size 60/100	m	20	20	20	20	20
System size 80/125	m	30	30	30	30	30

Vertical outlet for pitched or flat roofs (cont.)

Vitodens 200-W and Vitodens 222-F

Rated heating output	kW	11	19	26	35	49	60
System size 60/100	m	30	30	30	30	—	—
System size 60/100 (for combi boilers and storage combi boilers)	m	30	30	30	16	—	—
System size 80/125	m	30	30	30	30	10	6
System size 110/150	m	—	—	—	—	13	9

Note

A balanced flue adaptor is required for alternative system sizes.

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

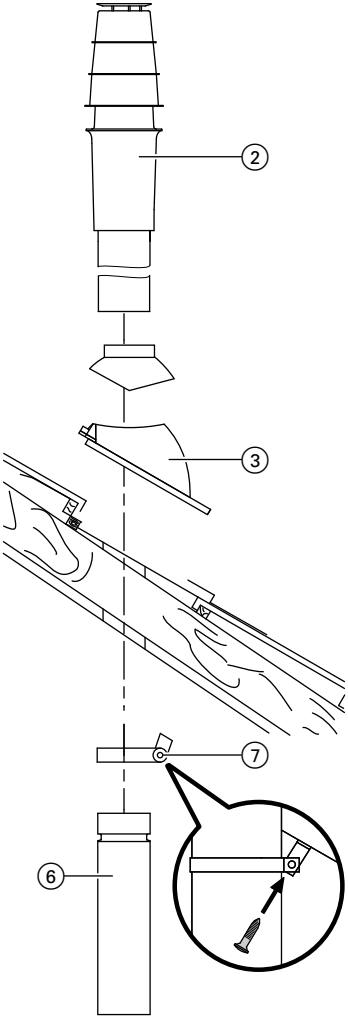
- 2 x 87° balanced flue bend

For other bends, tees and 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

Balanced flue roof outlet

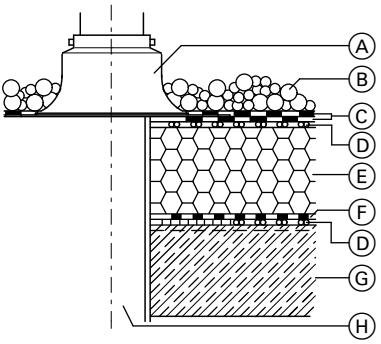


Please note
Ensure the specified minimum lengths above the roof are observed.
Never trim roof outlets above the roof.

- 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 cladding according to the flat roof guidelines.
- Ceiling/roof opening (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



Ⓐ Flat roof collar
Ⓑ Gravel ballast layer
Ⓒ Insulation layer
Ⓓ Aeration layer
Ⓔ Thermal insulation
Ⓕ Insulation
Ⓖ Ceiling
Ⓗ Flue pipe

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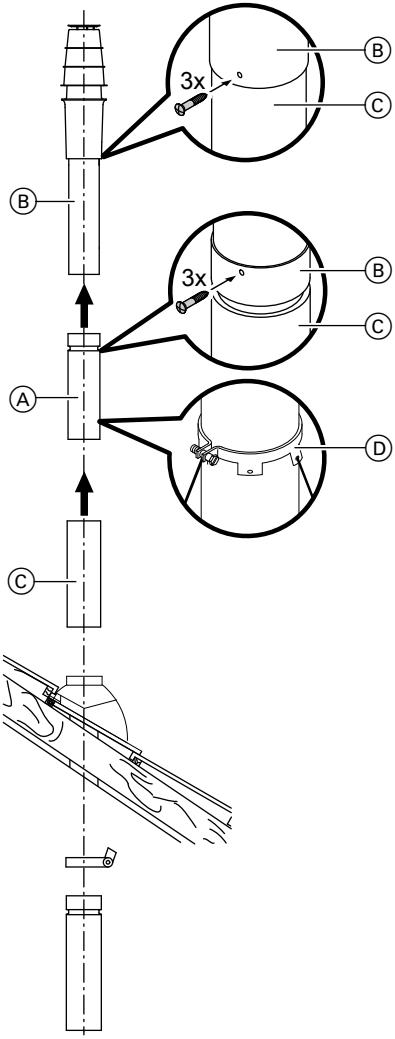
Vertical outlet for pitched or flat roofs (cont.)

Fitting an above-roof extension

System sizes 60 and 80



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

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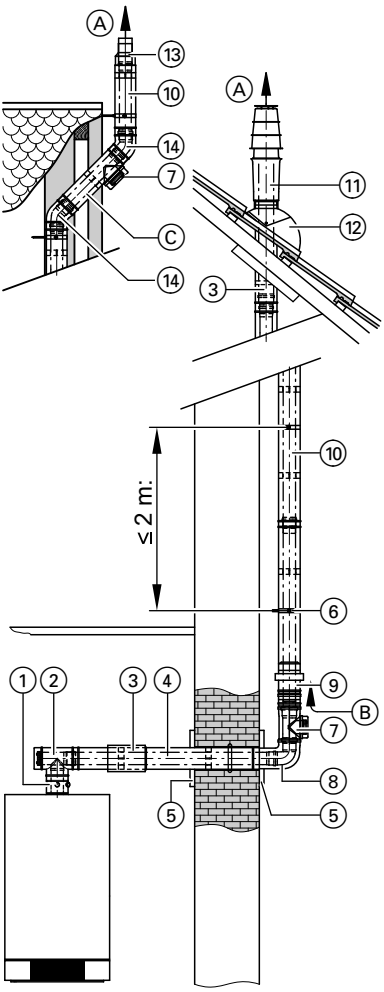
Routing over an external wall



Ⓐ Flue gas
Ⓑ Ventilation air
Ⓒ 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 piece**
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 large protrusion above the roof)
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)

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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
∅ 60/100 mm to ∅ 80/125 mm

Maximum flue pipe length

Vitodens 050-W

Rated heating output	**kW**	**19**	**25**
System size 60/100	m	20	20
System size 80/125	m	25	25

Vitodens 100-W and Vitodens 111-W

Rated heating output	**kW**	**11**	**19**	**26**	**30**	**35**
System size 60/100	m	20	20	20	20	20
System size 80/125	m	30	30	30	30	30

Vitodens 200-W and Vitodens 222-F

Rated heating output	**kW**	**11**	**19**	**26**	**35**	**49**	**60**
System size 60/100	m	30	30	30	30	—	—
System size 80/125	m	30	30	30	30	12	12
System size 110/150	m	—	—	—	—	17	17

Note
A balanced flue adaptor is required for alternative system sizes.

The following components are taken into consideration for the maximum flue lengths:
- 2 x 87° balanced flue bend

For other bends, tees and 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 from the outside into the wall outlet.

Routing over an external wall (cont.)

3. Fit air inlet piece ⑨ as near as possible to external wall bend ⑧.

4. Secure wall bezel ⑤ from the inside.

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. Fit components with external wall clamps ⑥ at a constant distance from the external wall.
   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 below 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.

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].

Routing through a shaft (cont.)

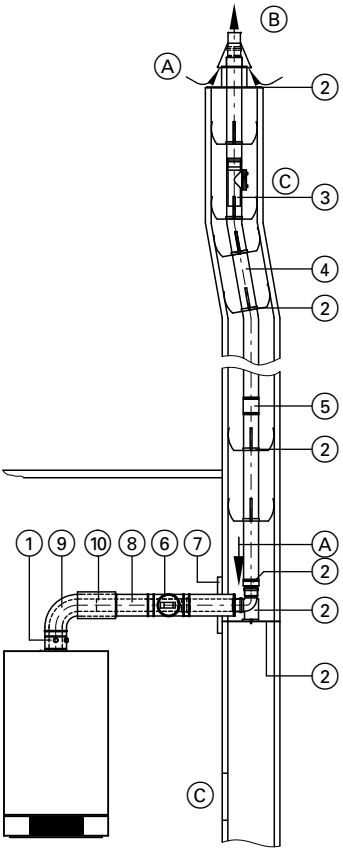
Ventilation air shafts with which oil or solid fuel boilers were previously used must not contain any sulphur or soot deposits on the inner surfaces of the flue system (chimney). Sulphur and soot deposits cause operating faults. If thorough cleaning cannot be guaranteed, a balanced flue pipe must be laid through the shaft. Alternatively, the flue gas/ventilation air pipes can be routed separately.
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 drain 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 (country-specific regulations if applicable).

Flexible flue

Room sealed operation



Ⓐ Ventilation air
Ⓑ Flue gas
Ⓒ 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 ∅ 60/100 mm to ∅ 80/125 mm

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Routing through a shaft (cont.)

Maximum flue length

Vitodens 100-W and Vitodens 111-W

Rated heating output	kW	11	19	26	30	35
System size 60	m	10	10	10	10	10
System size 80	m	15	15	15	15	15

Note
For system size 80, an adaptor is required.

Vitodens 200-W and Vitodens 222-F

Rated heating output	kW	11	19	26	35	49	60
System size 60	m	17	17	16	8	—	—
System size 80	m	30	30	30	30	20	15
System size 110	m	—	—	—	—	22	17

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

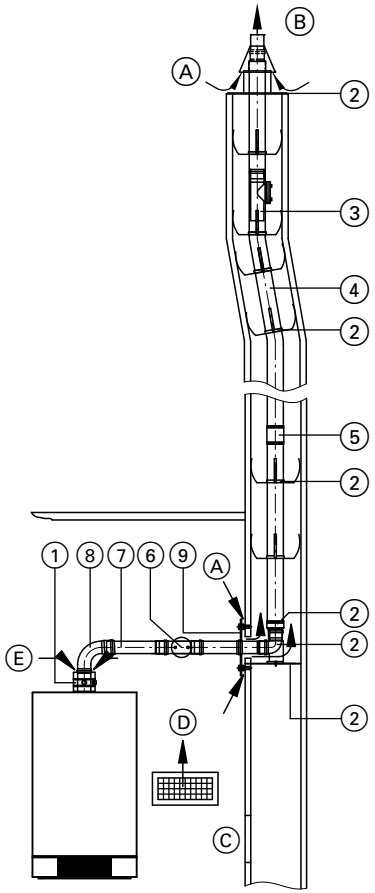
- Balanced flue connection pipe 0.5 m long
- 1 flue bend 87° and one support bend 87°
  or
- 2 flue bends 45° and one support bend 87°

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



Ⓐ Secondary ventilation
Ⓑ Flue gas
Ⓒ Inspection port
Ⓓ Ventilation air aperture
Ⓔ 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 ∅ 60 mm to ∅ 80 mm

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Routing through a shaft (cont.)

Maximum flue length

Vitodens 100-W and Vitodens 111-W

Rated heating output	kW	11	19	26	30	35
System size 60	m	10	10	10	10	10
System size 80	m	15	15	15	15	15

Note
For system size 80, an adaptor is required.

Vitodens 200-W and Vitodens 222-F

Rated heating output	kW	11	19	26	35	49	60	80	100
System size 60	m	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.

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

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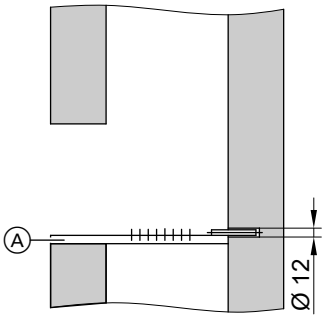
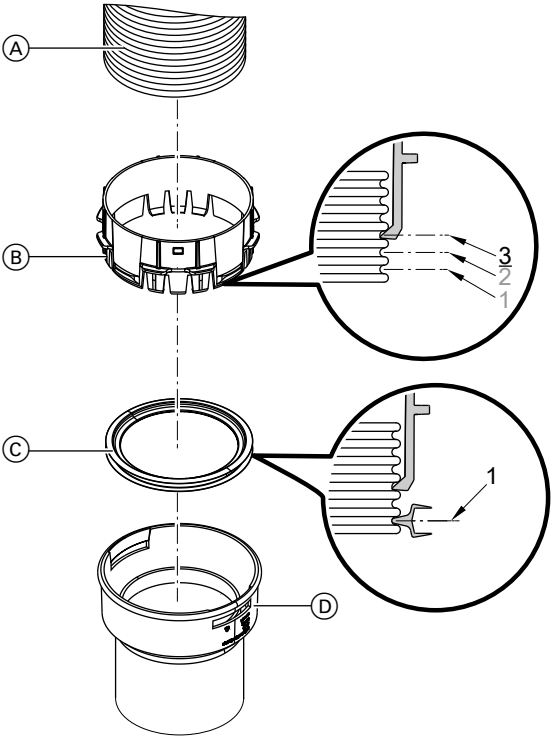
Routing through a shaft (cont.)

Fitting the support rail inside the shaft



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

Fitting an inspection piece, connection piece or connector



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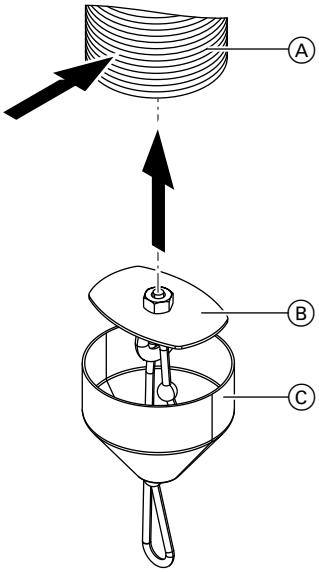
Routing through a shaft (cont.)

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

Fitting pipe lowering attachment and drawing flexible flue into shaft



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

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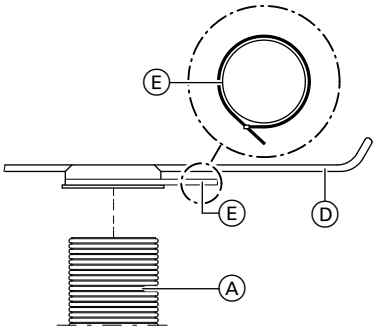
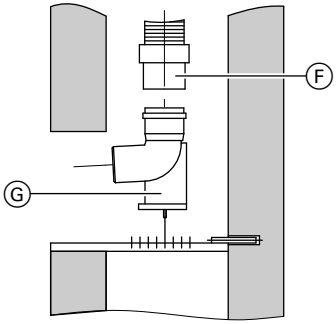
Routing through a shaft (cont.)

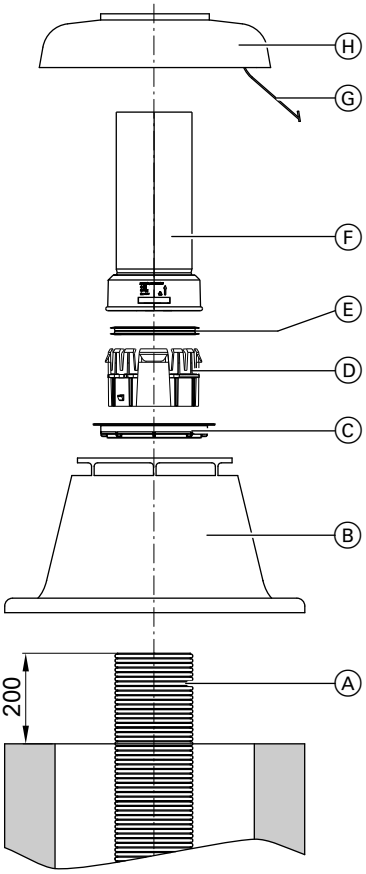




4. Push spacer Ⓓ onto flue Ⓐ (bent ends in flue gas flow direction).
5. Firmly close zip fastener Ⓔ of spacer Ⓓ.
6. Pull flexible flue Ⓐ into the shaft from the top downwards. Never pull the flue over sharp edges.
7. Remove the pipe lowering attachment from the flue.
8. Fit connection piece Ⓕ to flue Ⓐ (see page 35).
9. Position support bend Ⓖ and secure it in a hole in the support rail with the pin.
10. Coat connector Ⓕ with lubricating paste and push into support bend Ⓖ.

Routing through a shaft (cont.)

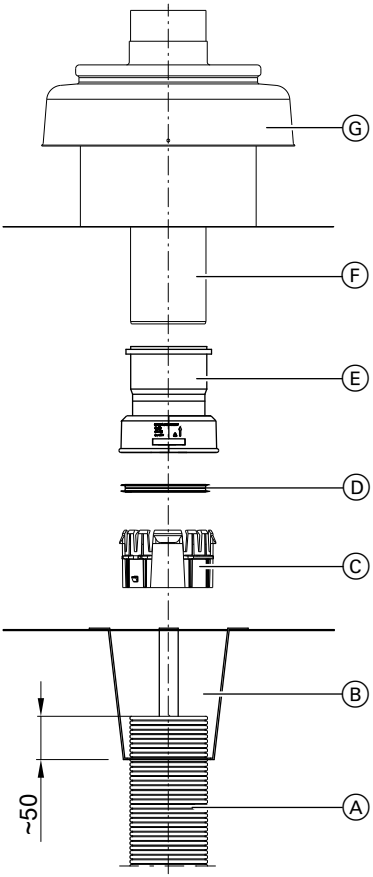
Fitting a plastic shaft cover



1. Route flexible flue Ⓐ through shaft cover Ⓑ.
2. Trim flexible flue Ⓐ 200 mm above the top edge of the shaft.
3. Position the base of shaft cover Ⓑ on the shaft and secure.
4. Only for ∅ 60 and 80 mm: Position reducer ring Ⓒ on the base of shaft cover Ⓑ.
5. Click the spacer tooth of mounting ring Ⓓ into the 3rd groove of flexible flue Ⓐ. See page 35.
6. Insert gasket Ⓔ into the 1st groove of flexible flue Ⓐ.
7. Push terminal pipe Ⓕ onto mounting ring Ⓓ until it clicks into position.
8. Hook safety rope Ⓖ into the drilled hole in shaft cover Ⓑ.
9. Push cowl Ⓗ over terminal pipe Ⓕ and click into place on shaft cover Ⓑ.

Routing through a shaft (cont.)

Fitting a metal shaft cover



1. Route flexible flue Ⓐ through retainer Ⓑ.
2. Position retainer Ⓑ on the shaft.
3. Trim flue Ⓐ approx. 50 mm above the retaining plate of retainer Ⓑ.
4. Pull flexible flue Ⓐ up far enough to allow mounting ring Ⓒ to be fitted.
   Click mounting ring Ⓒ into the 3rd groove of flexible flue Ⓐ. See page 35.
5. Insert gasket Ⓓ into the 1st groove of flexible flue Ⓐ.
6. Push adaptor Ⓔ onto mounting ring Ⓒ until it clicks into position.
7. Push terminal pipe Ⓕ into adaptor Ⓔ.
8. Push cowl Ⓖ onto terminal pipe Ⓕ and secure.

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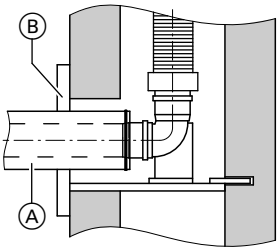
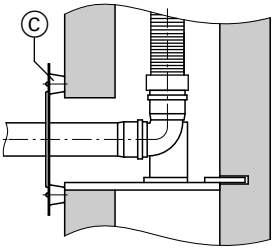
Routing through a shaft (cont.)

Fitting the connection pipe

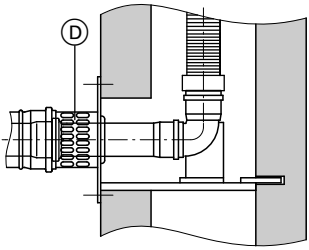


1. Only for **room sealed** operation:
Trim final ventilation air pipe Ⓐ of the connection pipe so that it ends level with the internal shaft wall surface.



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

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5780223 Subject to technical modifications.