

Technical guide

**FLUE SYSTEMS VITODENS AND
VITOSOLAR**

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Flue systems

1.1 Flue systems

The following requirements regarding design and installation apply to flue systems for condensing combustion equipment:

Prior to starting work on the flue system, your heating contractor should confer with the responsible flue gas inspector [where applicable].

Gas combustion equipment must be connected to the domestic chimney on the same floor where it is installed (no transition through separating ceilings).

Here, differentiation is required as to whether the condensing boiler should be installed in the **living space** (occupied rooms) or in the **non-living space** (installation room).

Structural unit

The aforementioned conditions are generally met when CE-designated flue systems (accessories) are used together with the Vitodens. The following Viessmann balanced flue systems for **balanced** flue operation are tested to DVGW and are CE-designated as a **single structural unit** with the Vitodens:

- Vertical roof outlet
- External wall connection
- Horizontal roof outlet
- External routing through a coaxial pipe

Advantages of single structural units:

- No calculated performance verification for flues to EN 13384 is required for individual cases
- Simplified visual inspection by the local flue gas inspector every two years
- No additional approval certificate by the flue pipe manufacturer is required

Siting the Vitodens in the **living space** is feasible, subject to the flue inside the living space being routed inside a protective pipe and being surrounded by ventilation air (balanced flue system, **balanced** flue operation).

As a special case, an installation inside the living space is also feasible for **open** flue operation, provided a connection piece with secondary ventilation up to the shaft (operation with interconnected room air supply) is provided (see page 35).

Outside the living space, the flue pipe in the installation room may also be routed without secondary ventilation. However, the installation room would then require an adequately sized ventilation air aperture to the outside (acc. to TRGI 2008).

Rated heating output up to 50 kW:

150 cm² or 2 × 75 cm²

Rated heating output above 50 kW (e.g. Vitodens 200-W, from 60 kW, or multi boiler systems):

150 cm² plus 2 cm² for each kW above 50 kW

Ⓐ The country-specific regulations (which may include the TR Gas and ÖVGW guidelines) apply to the installation of this appliance.

The plain flue must be type approved by the Deutsches Institut für Bautechnik (DIBt) [Germany] (**open** flue operation).

The flue available as an accessory is CE-designated and approved in accordance with EN 14471.

System certification

System certification to EC Gas Appliances Directive 2009/142/EC in conjunction with PPs flues offered by Skoberne

Vitodens 200-W	CE-0085CN0050
Vitodens 222-F	CE-0085CN0050
Vitodens 222-W	CE-0085CN0050
Vitodens 242-F	CE-0085CN0050
Vitodens 300-W	CE-0085CM0463
Vitodens 333-F	CE-0085CM0463
Vitodens 343-F	CE-0085CM0463
Vitosolar 200-F	CE-0085CM0184

1.2 Balanced flue operation

Due to the sealed combustion chamber the Vitodens gas condensing boilers are suitable for **balanced** flue operation. These boilers are categorised as equipment type C_{13x}, C_{33x}, C_{43x}, C_{53x}, C_{63x}, C_{83x} or C_{93x} according to TRGI 2008 ("x" only applies to DE).

With this type of equipment (except C_{63x}) there is a **joint approval** for the Vitodens and balanced flue system.

For this type of construction the tightness test (overpressure test) by the flue gas inspector during commissioning and the verification of "General Building Regulations approval" by the DIBt may be omitted. Any approved flue system can be used for type C_{63x}. This flue system is not tested together with the boilers.

Maintain the dimensions specified on pages 12 to 22. The combustion air is supplied and the flue gas extracted through one concentric coaxial pipe (balanced flue system). The combustion air is supplied through the annular gap between the external aluminium ventilation air pipe and the flue pipe. Flue gases are discharged through the internal plastic pipe (PPs).

For balanced flue systems tested together with the wall mounted gas boiler there is no requirement for a tightness test during commissioning by the flue gas inspector.

In such cases we recommend that your heating contractor carries out a simple tightness test during the commissioning of your system. For this, it is sufficient to check the CO₂ concentration in the combustion air at the annular gap of the balanced flue pipe. The flue pipe is deemed to be gas-tight if the CO₂ concentration in the combustion air is no higher than 0.2 % or the O₂ concentration is at least 20.6 %.

Check the flue system for tightness by pressure testing if higher CO₂ or lower O₂ values are established.

In conjunction with the concentric coaxial pipe (balanced flue system), the surface temperature of the Vitodens or that of the balanced flue system will never exceed 85 °C. Therefore, clearances to combustible components according to TRGI are **not** required.

For boiler types C_{63x} and C_{43x}, the DIBt-approved flue pipes from Viessmann or alternative DIBt-approved flue pipes by other manufacturers may be used.

Use a condensate trap above the boiler flue connection if aluminium flue pipes are used. Install the connecting pipes (routed horizontally) with a fall of at least 3° to the boiler. In addition, we recommend using clips spaced about 1 m apart to support the connection pipe.

The balanced flue system is CE-designated and approved in accordance with EN 14471 (see page 6).

Flue systems (cont.)

The boiler casing creates a system that is sealed against its surroundings. Any leaks caused by escaping flue gas are returned via the combustion air, thereby preventing flue gas from entering the living space.

When installing the Vitodens in a basement or on a lower floor, an existing chimney or shaft of adequate size may be used for the balanced flue operation (type C_{43x} and C_{93x}).

According to TRGI 2008, flues that bridge several floors must be routed inside a shaft with a fire rating of at least 90 minutes, and for buildings in categories 1 and 2, a fire rating of at least 30 minutes.

The flue gas/ventilation air is routed to the chimney or shaft in a balanced flue. The flue pipe is then routed inside the chimney or shaft to above the roof.

Where no suitable shaft is available, the flue may be routed to the roof through a retrofitted shaft. For this shaft, a Building Regulations test certificate or a CE designation corresponding to the design of the shaft is required. In addition, the shaft must have a fire rating of L30 or L90.

1.3 Open flue operation

(Type B₂₃ and B₃₃)

The flue gas is routed through single wall plastic flue pipes (PPs). The flue system is CE-designated and approved in accordance with EN 14471 (see page 6).

The combustion air supply is ensured via the annular gap between the flue pipe and the ventilation air inlet on the boiler flue connection of the Vitodens.

Install the connecting pipes (routed horizontally) with a fall of at least 3° to the boiler. In addition, we recommend using clips spaced about 1 m apart to support the connection pipe.

1.4 Flue gas high limit safety cut-out

According to CE designation to EN 14471 the plastic flue pipe (PPs) can be used for flue gas temperatures of up to 120 °C (type B). Measures inside the equipment ensure that the flue gas temperature will never exceed 90 °C.

A flue gas high limit safety cut-out is therefore not required.

1.5 Lightning protection

If a lightning protection system is installed, any metallic flue system should be included in the lightning protection scheme.

1.6 CE certification for PPs flue systems (rigid and flexible) for the Vitodens

ZERTIFIKAT ◆ CERTIFICADO ◆ CERTIFICAT ◆ СЕРТИФИКАТ ◆ 認証証書 ◆ CERTIFICATE ◆ ZERTIFIKAT



Industrie Service

ZERTIFIKAT

0036 CPD 9184 001
Revision 03

Gemäß der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 über die Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedsstaaten für Bauprodukte (Bauproduktenrichtlinie), ergänzt um die Richtlinie 93/68/EWG des Rates vom 22. Juli 1993 wird bestätigt, dass für die

**System-Abgasanlage mit einer Innenschale
aus starren und flexiblen Rohren und Formstücken aus PP**

Ausführungen

starr, ohne Außenschale	EN 14 471 T120 H1 O W 2 O20 XXX
starr, mit Kunststoffaußenschale	EN 14 471 T120 H1 O W 2 O00 XXX
starr, mit metallischer Außenschale	EN 14 471 T120 H1 O W 2 O00 XXX
flexibles Rohr mit mineralischem Schacht	EN 14 471 T120 H1 O W 2 O00 E E L0

für Details der Klassifizierung siehe Seite 2

hergestellt von

**Skoberne GmbH
Ostendstraße 1
64319 Pfungstadt**

in den Herstellwerken

**Skoberne GmbH
Ostendstraße 1
64319 Pfungstadt**

**Arkema GmbH
Am Bahnhof
25630 Ehringshausen**

- eine **erstmalige Typprüfung**, durchgeführt von TÜV SÜD Industrie Service GmbH, Bericht Nr. A 1614-00/06, A 1614-02/09, A 1614-03/09, A 1614-04/09, A 1614-05/10, A 1614-06/10, A 1614-07/10 und A 1614-09/12 sowie
- eine **werkseigene Produktionsüberwachung** vorliegt.

Die benannte Stelle TÜV SÜD Industrie Service GmbH hat die Erstprüfung des Werkes und der werkseigenen Produktionsüberwachung durchgeführt und führt weiterhin die ständige Überwachung, Beurteilung und Abnahme der werkseigenen Produktionsüberwachung durch.

Dieses Zertifikat bestätigt, dass alle Anforderungen für die Zertifizierung der werkseigenen Produktionsüberwachung entsprechend Anhang ZA der Norm

EN 14 471: 2005-08

erfüllt werden.

Das Zertifikat wurde erstmalig am 2007-02-27 ausgestellt und ist gültig, solange die genannte Norm, die Herstellbedingungen und die werkseigene Produktionsüberwachung nicht wesentlich geändert sowie die Bedingungen des Zertifizierungsvertrags eingehalten werden.

München, 2012-02-06

J. Steiglechner

TÜV SÜD INDUSTRIE SERVICE GMBH, WESTENDSTRASSE 199, D-80686 MÜNCHEN

TÜV®

Seite 2 des Zertifikates Nr.
0036 CPD 9184 001
Rev. 03



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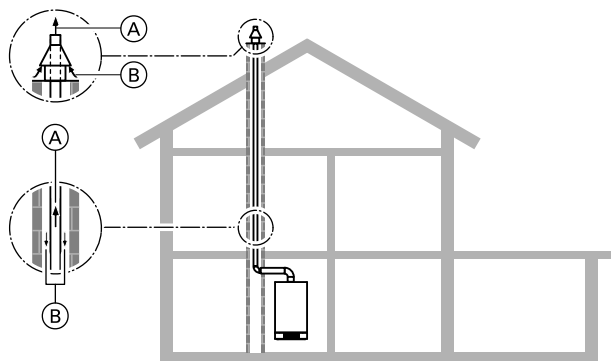
System-Abgasanlage	EN 14 471
starr, ohne Außenschale	
≤ DN 250, weiß, grau	T120 H1 O W 2 O20 I E L
≤ DN 160, schwarz	T120 H1 O W 2 O20 E E L
starr, mit Kunststoff- außenschale	
≤ DN 80, weiß	T120 H1 O W 2 O00 I E L1
starr, mit metallischer Außenschale	
≤ DN 250, weiß, grau, schwarz	T120 H1 O W 2 O00 E E L0
flexibles Rohr mit mineralischem Schacht	
DN 60, DN 80, DN 110	T120 H1 O W 2 O00 E E L0

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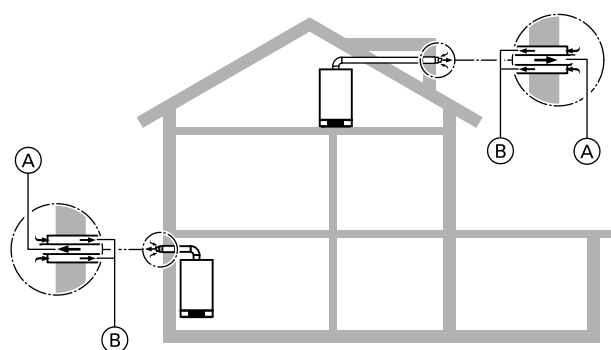
1.7 Flue installation options for balanced flue operation

No separate vents are required in the installation room.

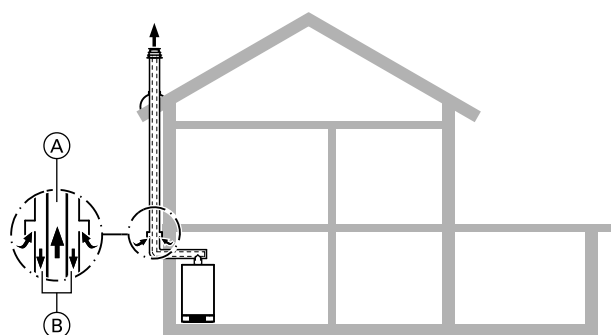
In the living space (occupied area) with one or more full storeys above



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



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



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

Routing through a shaft (Type C_{93x}, to TRGI 2008)

The boiler draws combustion air from the outside through the annular gap in the shaft (chimney) and expels the flue gas via the flue pipe to above the roof. For condensing boilers > 50 kW the installation room **must** be ventilated even with **balanced** flue operation. The shaft is not part of the standard delivery. For a detailed description, see from page 12.

Retrofitted shafts

Installation in a retrofitted shaft approved by the building inspectorate [Germany], consisting of individual shaft elements (e.g. as supplied by SIMO, Wienerberger or Skoberne) or including mineral profiles (e.g. from Promatect). For a detailed description of shafts, see page 24.

External wall connection

Only for existing flues with exemption rights (Type C_{13x}, to TRGI 2008)

(Permissible up to a rated heating output of 11 kW for central heating or 28 kW for DHW heating)

According to the LandesFeuVo, issue 1999 [Germany], an external wall connection is only permissible in individual cases, where routing the flue gas by other means is not appropriate for technical or economical reasons.

The boiler draws combustion air from outside via a concentric coaxial pipe fitted to the external wall and expels flue gas to the outside via the external wall. For a detailed description, see page 20.

Horizontal roof outlet

(Type C_{13x}, to TRGI 2008)

(No limit for rated heating output)

The boiler draws combustion air from outside via a concentric coaxial pipe at the dormer and expels flue gas to the outside at the dormer.

Routing over external walls

(Type C_{53x}, to TRGI 2008)

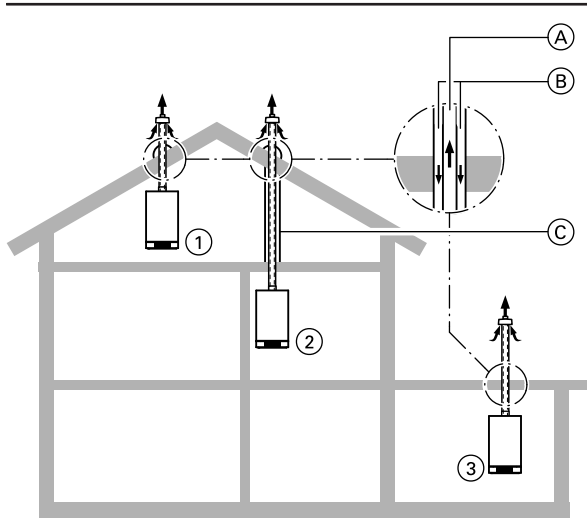
The boiler draws combustion air from the outside via a horizontal, concentric coaxial pipe on the external wall and expels flue gas to the outside via the roof.

In the vertical section the external pipe of the concentric coaxial pipe acts as thermal insulation, thanks to the static air gap. The combustion air is supplied via the balanced flue air inlet piece.

For a detailed description, see page 22.

Flue systems (cont.)

In the living space (occupied area), immediately underneath the roof or with only attics above (rated heating output ≤ 50 kW)



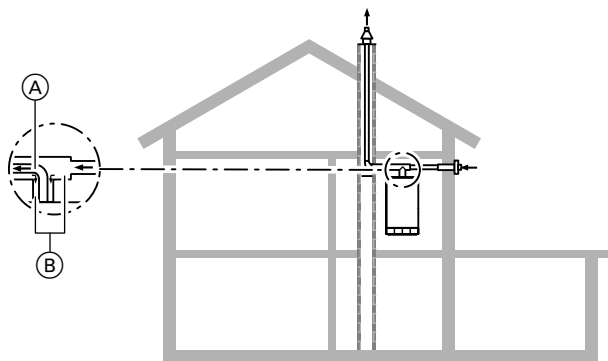
- Ⓐ Flue gas
- Ⓑ Ventilation air
- Ⓒ Protective pipe to prevent mechanical damage

Vertical outlet, if no shaft is available (Type C_{33x}, to TRGI 2008)

(Various design options)

- ① Direct, vertical roof outlet through a pitched roof
 - ② Indirect, vertical roof outlet through a pitched roof with protective pipe in the attic (not converted) or fire protection brickwork (converted attic)
 - ③ Direct, vertical roof outlet through a flat roof
- The boiler draws combustion air from the outside and expels flue gas to the outside through a concentric coaxial pipe via the roof.
For a detailed description, see page 18.

In the installation room, with ventilation air supplied through the external wall



- Ⓐ Flue gas
- Ⓑ Ventilation air

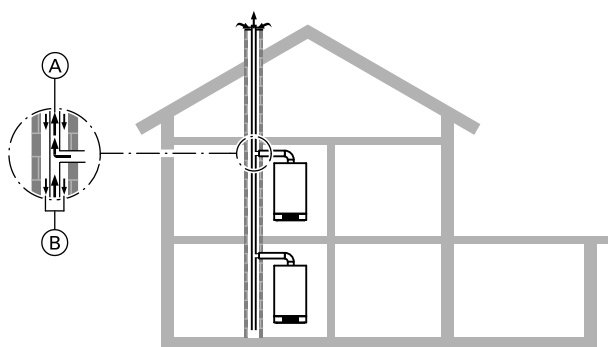
Separate ventilation air and flue gas routing (Type C_{83x}, to TRGI 2008)

The boiler draws combustion air from outside via a separate supply pipe routed through the external wall, and expels flue gas to the outside via a shaft leading through the roof.

The connection piece to the chimney is designed as a coaxial pipe. This balanced flue system is used if the existing chimney is unsuitable for routing combustion air due to its dimensions or characteristics (deposits).

For a detailed description, see page 21.

Several Vitodens in the living space or in occupied areas (living space - rated heating output ≤ 50 kW)



- Ⓐ Flue gas
- Ⓑ Ventilation air

Installation on different floors (Type C_{43x}, to TRGI 2008)

Operation with negative pressure:

Room sealed balanced flue system required.

Operation with positive pressure:

Balanced flue system for multiple connections.

Several heat sources draw combustion air from the outside through the annular gap of the room sealed balanced flue system and expel flue gas to the outside via the roof, through a moisture-resistant internal pipe.

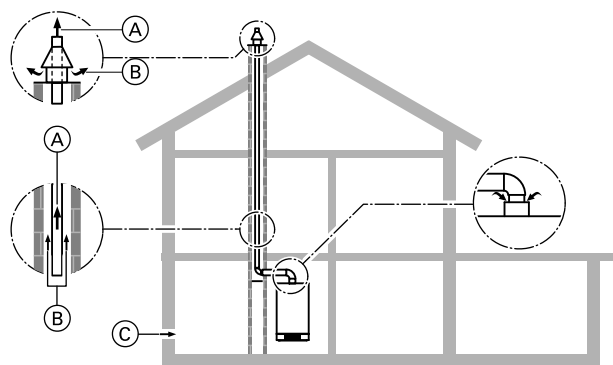
For a detailed description, see pages 27 and 28.

1.8 Flue installation options for open flue operation

(Separate ventilation air aperture, 150 cm² or 2 × 75 cm² cross-section required)

- Ⓐ For installation in Austria, observe the relevant safety regulations of the ÖVGW-TR Gas (G1) 1985, ÖVGW-TRF (G2), ÖNORM, ÖVGW, ÖVE and regional regulations.

In the installation room (non-living space) with one or more full floors above (compulsory for the Vitodens 200-W from 60 kW)



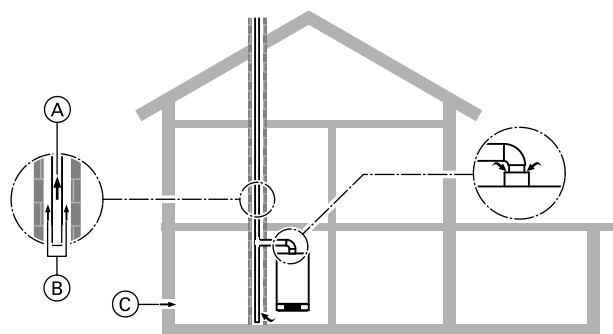
- Ⓐ Flue gas
- Ⓑ Secondary ventilation
- Ⓒ Ventilation air

Routing through a shaft

(Type B₂₃, to TRGI 2008)

The boiler draws combustion air from the installation room and expels flue gas through the flue to above the roof (balanced flow).

For a detailed description, see page 31.



- Ⓐ Flue gas
- Ⓑ Secondary ventilation
- Ⓒ Ventilation air

Connection to a moisture-resistant chimney (MR chimney)

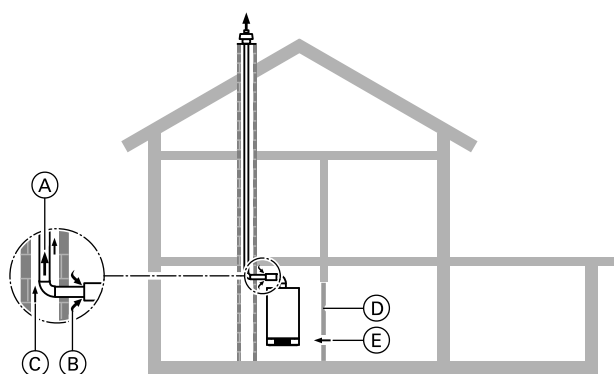
(Type B₂₃, to TRGI 2008)

The boiler draws combustion air from the installation room and routes flue gas through the moisture-resistant chimney to above the roof.

For a detailed description, see page 36.

Flue systems (cont.)

Special version: Open flue operation and installed in the living space (occupied area) with interconnected room air supply (rated heating output ≤ 35 kW)



- (A) Flue gas
- (B) Ventilation air
- (C) Secondary ventilation
- (D) Door
- (E) Interconnected air supply

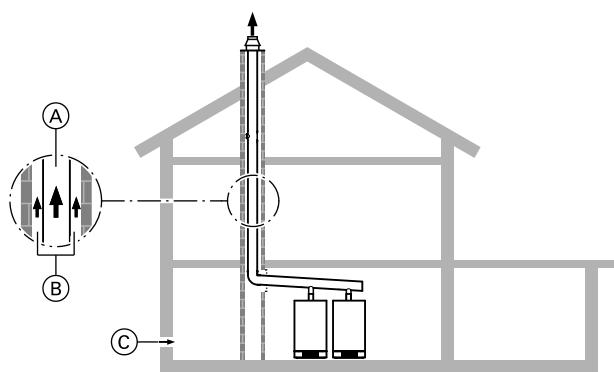
**Routing through a shaft
or**

**Connection to a moisture-resistant chimney
(Type B₃₃, to TRGI 2008)**

The boiler draws combustion air from the living space via a coaxial pipe with ventilation air apertures upstream of the shaft inlet and expels the flue gas either via a flue pipe or via a moisture-resistant chimney through the roof (combustion air supply via interconnected rooms according to TRGI).

For a detailed description, see page 35.

Flue gas header for several Vitodens 200-W, 222-W and 222-F – positive pressure



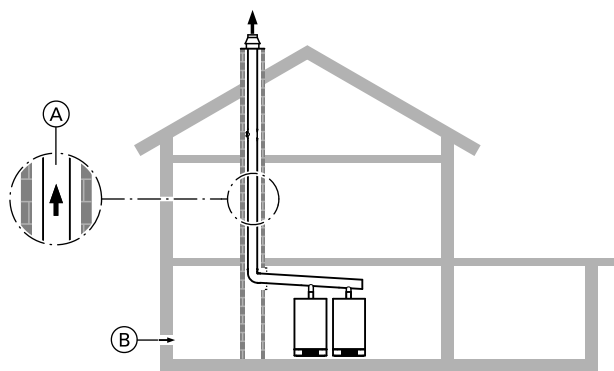
- (A) Flue gas
- (B) Secondary ventilation
- (C) Ventilation air

Type B₂₃, to TRGI 2008

Several boilers inside the same room draw combustion air from outside via ventilation apertures and expel the flue gas through a common flue pipe to the outside via the roof.

For a detailed description, see page 37.

Flue gas header for several Vitodens – negative pressure



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

Type B₂₃, to TRGI 2008

Several boilers inside the same room draw combustion air from outside via ventilation apertures and expel the flue gas through a common flue pipe to the outside via the roof.

For a detailed description, see page 45.

Design and sizing information for connection on the flue gas side

All details regarding length and cross-section in the following tables are only valid in connection with the balanced flue components offered in the Viessmann pricelist.

	Internal diameter Ø in mm	
	Flue pipe	Ventilation air pipe
Vitodens 200-W to 35 kW, Vitodens 222-F, Vitodens 222-W, Vitodens 242-F, Vitodens 300-W and 333-F, Vitodens 343-F and Vitosolar 200-F	60	100
Vitodens 200-W, 45 to 60 kW	80	125
Vitodens 200-W, 80 to 150 kW	100	150

2

2.2 Plastic (PPs) balanced flue system for routing through a shaft – balanced flue operation (type C_{93x} to TRGI 2008)

For **balanced flue** operation, a coaxial flue pipe (internal pipe for flue gas, external pipe for combustion air) is required as a connection piece between the Vitodens and the shaft.

The connection piece is fitted to the boiler flue connection and must contain an inspection port.

Note

Gas condensing boilers with a total rated heating output greater than 50 kW may only be installed in rooms that provide ventilation air apertures to the outside, see page 31.

For installation through shafts or ducts with longitudinal ventilation which meet the requirements for chimneys to DIN V 18160-1 or have a fire rating of 90 minutes (L90), or a fire rating of 30 minutes (L30) for buildings in categories 1 and 2 (max. 2 storeys).

Prior to installation, the relevant flue gas inspector should check that the shaft to be used is suitable and approved for this purpose.

Shafts that were previously connected to oil or solid fuel boilers must be thoroughly cleaned by a chimney sweep. Loose deposits of sulphur and soot must not remain on the inside of the chimney. Running a balanced flue pipe through the shaft is then not required.

If thorough cleaning is impossible, if chloride deposits are present or if the shaft is silted up, a separate balanced flue can be used inside the shaft.

Close off and seal any other connection apertures with appropriate materials.

This does not apply to any cleaning or inspection apertures that are provided with chimney cleaning covers and that are identified with an appropriate test mark.

Check prior to installation whether the shaft runs straight from top to bottom or if it is offset (check with mirrors).

If the chimney is offset, we recommend installing a flexible flue pipe (see page 17).

Inside the installation room, at least one inspection port must be provided in the flue system for checking and cleaning as well as for checking the pressure (if required). If the flue pipe is not accessible from the roof, a second inspection port must be provided in the attic, behind the chimney cleaning hatch. For further information, see FeuVo [Germany].

Provide an inspection port at the base of the shaft for checking the secondary ventilation. Safeguard the draining of the condensate from the flue into the boiler by maintaining an appropriate fall of at least 3°.

The flue system must be routed to above the roof (protrusion above the roof according to local regulations).

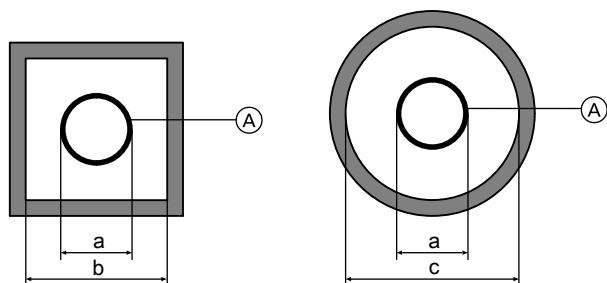
Alternative CE-designated flue pipes may be used, for example if a larger flue pipe diameter is required, i.e. for greater flue lengths. The performance verification to EN 13384 should then be provided by the respective flue manufacturer.

If flue pipes other than those offered as accessories (which are approved with the Vitodens as a single structural unit) are used, the flue system must be checked for tightness by the flue gas inspector prior to commissioning.

In accordance with the flue system approval certificate, this may be carried out by measuring the CO₂ or O₂ value inside the annular gap.

If this test results in a CO₂ content above 0.2 % or an O₂ content lower than 20.6 %, check the flue system for tightness.

Internal shaft dimensions to DIN V 18160



Note

According to the approval certificate, internal shaft dimensions smaller than those shown in the tables may also be used for balanced flue operation, if this is indicated by the performance verification to EN 13384.

Minimum internal shaft dimensions

System size (A)	External diameter, fem. connection a Ø mm	Minimum internal shaft dimension	
		b Square or rectangular (short side) mm	c Round Ø mm
60	73	113	133
60 (flexible, shaft cover PPs)	72	112	132
60 (flexible, shaft cover metal)	87	140	147

Design and sizing information for connection on the flue gas side (cont.)

System size ^(A)	External diameter, fem. connection	Minimum internal shaft dimension	
	a	b Square or rectangular (short side)	c Round
	Ø mm	mm	Ø mm
80	94	135	155
80 (flexible, shaft cover PPs)	102	142	162
80 (flexible, shaft cover metal)	116	165	176
100	128	170	190
100 (flexible, shaft cover PPs)	127	167	187
100 (flexible, shaft cover metal)	142	182	202

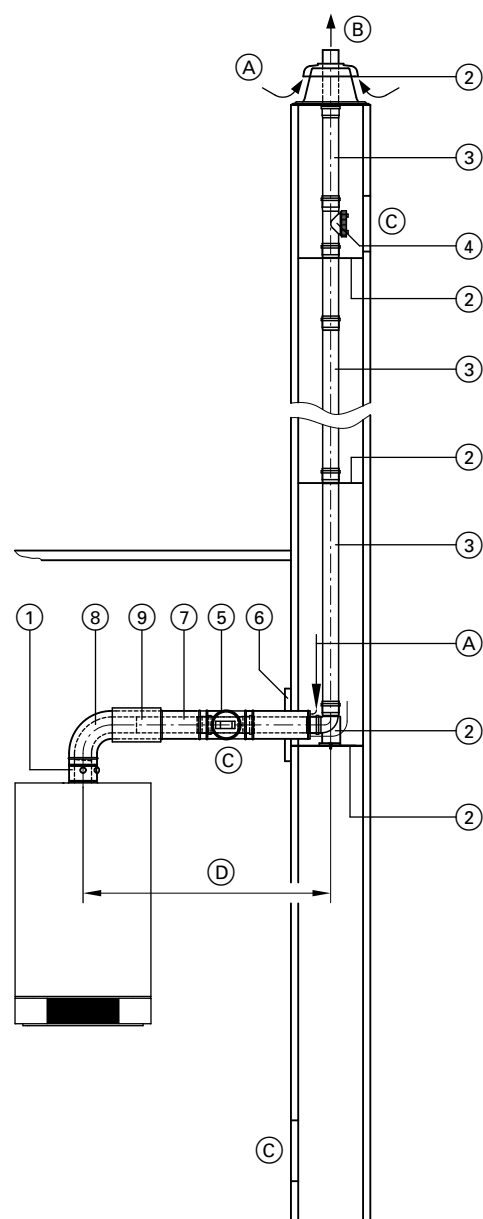
Reduced internal shaft dimensions

System size ^(A)	External diameter, fem. connection	Reduced internal shaft dimension	
	a	b Square or rectangular (short side)	c Round
	Ø mm	mm	Ø mm
60	73	112	112
80	94	120	135
100	128	150	165

Minimum dimension of shafts in which a flue may be used without separate calculation (positive pressure operation).

Design and sizing information for connection on the flue gas side (cont.)

Flue, system size 60, 80 and 100 (components) (type C_{93x} according to TRGI 2008)



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

		System size Ø mm		
①	Boiler flue connection (part of the standard boiler delivery)	60	80	100
②	Standard shaft pack (PPs, rigid) Comprising: – Support bend – Support rail – Shaft cover – Spacers (5 pce, max. clearance 5 m) or Standard shaft pack (metal/PPs, rigid) For twin flue chimneys; one flue for solid fuel boilers Comprising: – Support bend – Support rail – Shaft cover (metal) – End pipe (stainless steel) – Spacers (5 pce, max. clearance 5 m)	60	80	100
	Spacers (3 pce, max. distance 5 m)	60	80	100
③	Flue pipe 1.95 m long (2 pce @ 1.95 m = 3.9 m) 1.95 m long (1 pce) 1 m long (1 pce) 0.5 m long (1 pce)	60 60 60 60	80 80 80 80	100 100 100 100
	Flue bend (for use in corbelled shafts) 30 ° (2 pce) 15 ° (2 pce)	60	80	100
④	Inspection piece, straight (1 pce)	60	80	100
⑤	Balanced flue inspection piece, straight (1 pce)	60	80	100
⑥	Balanced flue wall bezel	60	80	100
⑦	Balanced flue pipe 1 m long 0.5 m long	60	80	100
⑧	Balanced flue bend 87° (1 pce) 45° (2 pce) or Balanced flue inspection tee 87° (1 pce) Balanced flue inspection bend 87° (1 pce)	60 60 —	80 80 —	100 — 100
⑨	Balanced flue slide coupling	60	80	100
	Fixing clamp, white (1 pce)	60	80	100
	Stainless steel extension, 380 mm long for shaft cover, standard shaft pack (metal/PPs, rigid)	60	80	100
	Balanced flue adaptor – Ø 80/125 mm to Ø 60/100 mm – Ø 60/100 mm to Ø 80/125 mm – Ø 80/125 mm to Ø 100/150 mm	60 60 —	80 80 80	— — 100

Max. total length of the flue up to the boiler flue connection

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

Rated heating output range	kW	3.2–13	3.2–19	5.2–26	5.2–35
Max. length - system size 60	m	20	20	20	15
Max. length - system size 80	m	25 ^{*1}	25 ^{*1}	25 ^{*1}	25 ^{*1}

^{*1} Alternative system size. Balanced flue adaptor must be ordered separately.

Design and sizing information for connection on the flue gas side (cont.)

Vitodens 200-W, from 45 kW

Rated heating output range	kW	17–45	17–60	30–80	30–100	32–125	32–150
Max. length - system size 80	m	20	15	—	—	—	—
Max. length - system size 100	m	25 ^{*1}	20 ^{*1}	20	20	8	5

Vitodens 300-W, 333-F and 343-F

Rated heating output range	kW	1.9–11	1.9–19	4.0–26	4.0–35
Max. length - system size 60	m	15	15	15	8
Max. length - system size 80	m	17 ^{*1}	17 ^{*1}	20 ^{*1}	15 ^{*1}

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

- Balanced flue connection pipe (D) 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°

Subtract additional bends, tees and straight lengths from the maximum length using the following values:

- 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

Note

Observe the specifications regarding internal shaft dimensions (see page 12).

For information on routing type C6, see page 4.

Vitodens in conjunction with solid fuel boilers

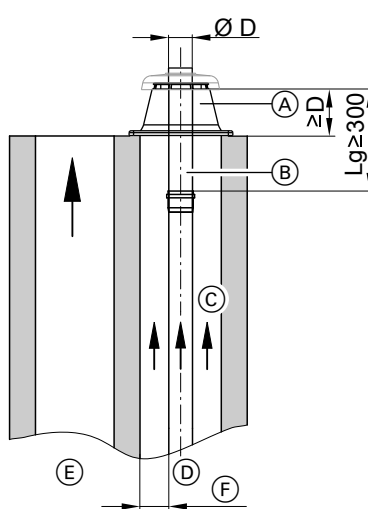
Routing a plastic flue adjacent to a shaft at risk of chimney fire from soot (e.g. two draught chimney with wood burning stove) is generally permitted. Depending on the design of the chimney top and the operation of the condensing systems (open or balanced flue) different measures are specified by the fire regulations. Design the room sealed balanced flue terminals so that flue gas will not be drawn into the air shaft in dangerous amounts. Also ensure that pressure fluctuations due to wind influence affect the room sealed balanced flue shaft as evenly as possible.

For the required steps, see the following sections:

Open flue operation and/or ventilation air not being supplied through the shaft

For fire safety reasons, the upper portion of combustible flue pipe terminals should be made from non-combustible materials. The length of flue pipe made from non-combustible materials, situated in area Lg and protected from thermal radiation, must be at least 300 mm. The length of the external end pipe of the shaft cover must be no less than external diameter D of the internal flue pipe.

The standard shaft pack (metal/PPs) contains a stainless steel pipe (380 mm long). A stainless steel extension (380 mm long) is available as an additional accessory.



- (A) Shaft cover, metal
- (B) End piece made from non-combustible material
- (C) Secondary ventilation
- (D) Vitodens flue
- (E) Chimney used for solid fuel boiler
- (F) Minimum clearance to DIN V 18160, reduced minimum clearance or maximum clearance to EN 14471 (see page 12)

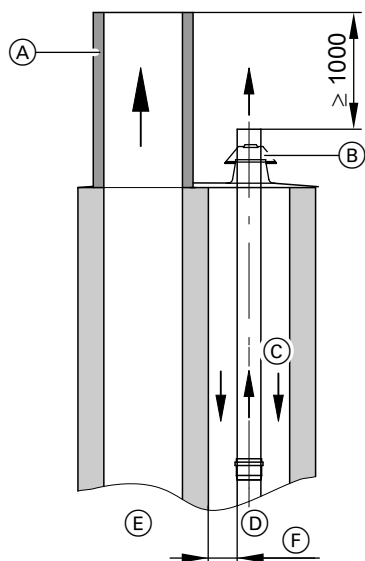
Balanced flue operation – Ventilation air is supplied through the shaft

Design the room sealed balanced flue terminals so that flue gas will not be drawn into the air shaft in dangerous amounts. Also ensure that pressure fluctuations due to wind influence affect the room sealed balanced flue system as evenly as possible.

Design and sizing information for connection on the flue gas side (cont.)

■ When using a plastic shaft cover:

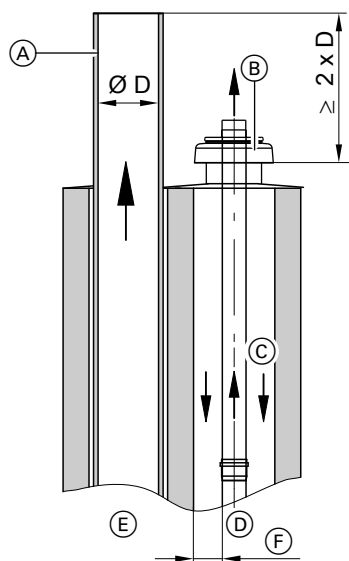
The chimney for the solid fuel boiler must stand at least 1000 mm proud of the Vitodens flue. For the chimney extension, only use components that are resistant to soot fires.



- (A) Chimney extension made from soot fire resistant material
- (B) Shaft cover, plastic
- (C) Ventilation air/secondary ventilation
- (D) Vitodens flue
- (E) Chimney used for solid fuel boiler
- (F) Minimum clearance to DIN V 18160, reduced minimum clearance or maximum clearance to EN 14471 (see page 12)

■ When using a metal shaft cover:

The chimney for the solid fuel boiler must stand at least $2 \times \varnothing D$ proud of the Vitodens flue. For the chimney extension, only use components that are resistant to soot fires.

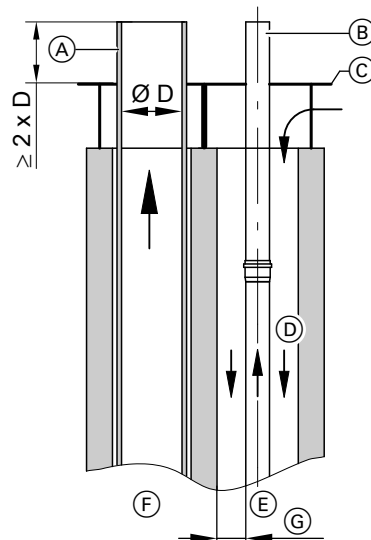


- (A) Chimney extension made from soot fire resistant material
- (B) Shaft cover, metal

- (C) Ventilation air/secondary ventilation
- (D) Vitodens flue (rigid or flexible)
- (E) Chimney used for solid fuel boiler
- (F) Minimum clearance to DIN V 18160, reduced minimum clearance or maximum clearance to EN 14471 (see page 12)

■ When using a common downdraught plate:

The flue end piece and the shaft cover must be made from non-combustible material (e.g. metal).



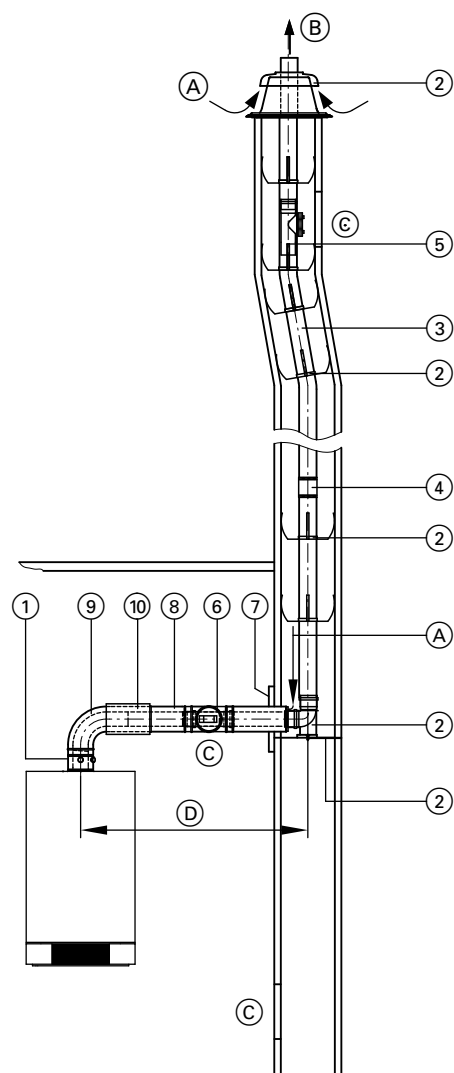
- (A) Chimney extension made from soot fire resistant material
- (B) End piece made from non-combustible material
- (C) Shaft cover (on-site)
- (D) Ventilation air/secondary ventilation
- (E) Vitodens flue
- (F) Chimney used for solid fuel boiler
- (G) Minimum clearance to DIN V 18160, reduced minimum clearance or maximum clearance to EN 14471 (see page 12)

The metal end piece and shaft cover are part of the standard shaft pack (metal/PPs).

The standard shaft pack (metal/PPs) is available as an accessory.

Design and sizing information for connection on the flue gas side (cont.)

Flue, flexible, system size 60, 80 and 100 (components) (type C_{93x} according to TRGI 2008)



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

Note

The flexible flue pipe should be routed at a max. angle of 45° from the vertical.

		System size Ø mm		
①	Boiler flue connection (part of the standard boiler delivery)	60	80	100
②	Standard shaft pack (PPs, flexible) Comprising: – Support bend – Support rail – Shaft cover – Spacers (5 pce, max. clearance 2 m) Standard shaft pack (metal/PPs, flexible) for twin flue chimneys; one flue for solid fuel boilers Comprising: – Support bend – Support rail – Shaft cover (metal) – End pipe (stainless steel) – Spacers (5 pce, max. clearance 2 m)	60	80	100
	Spacers (5 pce, max. distance 2 m)	60	80	100
③	Flue pipe, flexible , as a 12.5 or 25 m roll	60	80	100
④	Connection piece for connecting residual lengths of the flexible flue pipe	60	80	100
⑤	Inspection piece , straight, for installation into the flexible flue pipe	60	80	100
	Pipe lowering attachment with 25 m rope	60	80	100
⑥	Balanced flue inspection piece , straight (1 pce)	60	80	100
⑦	Balanced flue wall bezel	60	80	100
⑧	Balanced flue pipe 1 m long 0.5 m long	60	80	100
⑨	Balanced flue bend 87° (1 pce) 45° (2 pce) or Balanced flue inspection tee 87° (1 pce) Balanced flue inspection bend 87° (1 pce)	60	80	100
⑩	Balanced flue slide coupling	60	80	100
	Fixing clamp , white (1 pce)	60	80	100
	Stainless steel extension , 380 mm long, for shaft cover, standard shaft pack (metal/PPs, flexible)	60	80	100
	Balanced flue adaptor – Ø 80/125 mm to Ø 60/100 mm – Ø 60/100 mm to Ø 80/125 mm – Ø 80/125 mm to Ø 70/110 mm – Ø 80/125 mm to Ø 100/150 mm	60 60 — —	80 80 80 80	— — — 100

Max. total flue length up to the boiler flue connection with flexible flue pipe

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

Rated heating output range	kW	3.2–13	3.2–19	5.2–26	5.2–35
Max. length - system size 60	m	18	18	—	—
Max. length - system size 80	m	25*1	25*1	25*1	25*1

*1 Alternative system size. Balanced flue adaptor must be ordered separately.

Design and sizing information for connection on the flue gas side (cont.)

Vitodens 200-W, from 45 kW

Rated heating output range	kW	17–45	17–60	30–80	30–100	32–125	32–150
Max. length - system size 80	m	20	15	—	—	—	—
Max. length - system size 100	m	22 ^{*1}	17 ^{*1}	20	20	8	5

Vitodens 300-W, 333-F and 343-F

Rated heating output range	kW	1.9–11	1.9–19	4.0–26	4.0–35
Max. length - system size 60	m	14	14	—	—
Max. length - system size 80	m	16 ^{*1}	16 ^{*1}	18 ^{*1}	13 ^{*1}

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°

Subtract additional bends, tees and straight lengths from the maximum length using the following values:

- 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

Note

Observe the specifications regarding internal shaft dimensions (see page 12).

For information on routing type C6, see page 4.

2.3 Plastic (PPs) balanced flue system for vertical routing through a pitched or flat roof (type C_{33x}, to TRGI 2008)

For vertical roof outlets when the Vitodens is installed in attics

The roof outlet may only be used where the ceiling of the living space also forms part of the roof or only the roof structure is located above the ceiling (pitched attic).

Note

Install condensing boilers with a heating output > 50 kW in a separate and ventilated installation room (according to FeuVo [Germany]) (Vitodens 200-W from 60 kW).

Flues made from combustible materials and installed in buildings must either be routed through shafts or be equipped with protective pipes made from non-combustible materials or a comparable protective cover made from non-combustible materials.

The flue may also be routed behind a jamb wall or a solid wall of a converted attic, provided the fire protection class of the jamb wall corresponds to that of the ceiling (e.g. B30).

Minimum clearances to combustible materials inside the installation room or in connection with the roof outlet are **not** required.

As part of the CE approval test it was verified that no surface temperatures on the Vitodens or its balanced flue system will exceed 85 °C. Install an inspection port for checking and cleaning the flue pipe inside the installation room.

The vertical roof outlet has been tested and CE-designated as a concentric balanced flue system as a single structural unit with the Vitodens condensing boiler.

A performance verification according to EN 13384 is **not** required.

Vertical flat roof outlet

Integrate the flat roof collar into the roof skin according to the flat roof guidelines (see page 58). Push the roof outlet into the roof from above and position it on the flat roof collar.

Note

The following minimum measurements apply to the diameter of the ceiling aperture:

- System size Ø 60 mm: 105 mm
- System size Ø 80 mm: 130 mm
- System size Ø 100 mm: 160 mm

Ensure the installation has been completed before securing the roof outlet on site with a clamp.

When installing several vertical roof outlets adjacent to each other, maintain minimum clearances of 1.5 m between outlets and towards other components, in accordance with FeuVo [Germany] [or local regulations].

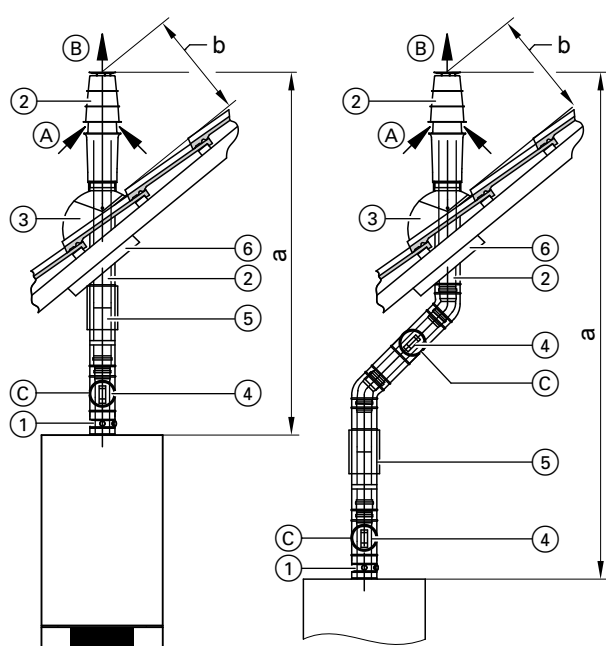
Note

Separate above-roof extensions are available if the length of 400 mm above the roof line and vertical to the roof surface is insufficient due to specific requirements (see following table).

Approval with the flue system is ensured.

^{*1} Alternative system size. Balanced flue adaptor must be ordered separately.

Design and sizing information for connection on the flue gas side (cont.)



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

		System size Ø mm		
①	Boiler flue connection (part of the standard boiler delivery)	60	80	100
②	Balanced flue roof outlet with fixing clamp Colour: black or Colour: terracotta Above roof extension with clamp (brace on site) Colour: black 0.5 m long 1 m long, with bracing clamp Colour: terracotta 0.5 m long 1 m long, with bracing clamp	60	80	100 — 100 —
③	Universal roof tile – For Roman tiles, pantiles, plain tiles, slate and other types of roof cover – Colour: black or terracotta or Flat roof collar or Pipe outlet for Klöber roof tiles Colour: black or terracotta (provide the corresponding Klöber roof tile on site to match the roof outlet selected for the particular type of roof cover)	60	80	100 100 —
④	Balanced flue inspection piece, straight (1 pce)	60	80	100
⑤	Balanced flue slide coupling	60	80	100
⑥	Universal cover plate	60	80	100
	Balanced flue bend 87° (1 pce) 45° (2 pce)	60	80	100
	Balanced flue pipe 1 m long 0.5 m long	60	80	100
	Fixing clamp, white (1 pce)	60	80	100
	Balanced flue adaptor – Ø 80/125 mm to Ø 60/100 mm – Ø 60/100 mm to Ø 80/125 mm – Ø 80/125 mm to Ø 100/150 mm	60 60 —	80 80 80	— — 100

Max. total length of the flue pipe

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

Rated heating output range		kW	3.2–13	3.2–19	5.2–26	5.2–35
a	Max. length - system size 60	m	10	10	10	10
a	Max. length - system size 80	m	13 ^{*1}	13 ^{*1}	13 ^{*1}	11 ^{*1}
b	Min.	mm	400	400	400	400

Vitodens 200-W, from 45 kW

Rated heating output range		kW	17–45	17–60	30–80	30–100	32–125	32–150
a	Max. length - system size 80	m	10	6	—	—	—	—
a	Max. length - system size 100	m	13 ^{*1}	9 ^{*1}	15	15	8	5
b	Min.	mm	400	1000	1000	1000	1000	1000

Vitodens 300-W, 333-F and 343-F

Rated heating output range		kW	1.9–11.0	1.9–19.0	4.0–26.0	4.0–35.0
a	Max. length - system size 60	m	10	10	10	10
a	Max. length - system size 80	m	13 ^{*1}	13 ^{*1}	13 ^{*1}	11 ^{*1}
b	Min.	mm	400	400	400	400

2 x 87° balanced flue bends are taken into consideration for the maximum flue lengths.

^{*1} Alternative system size. Balanced flue adaptor must be ordered separately.

Design and sizing information for connection on the flue gas side (cont.)

Subtract additional bends, tees and straight lengths from the maximum length using the following values:

- Balanced flue bends 45°: 0.5 m
- Balanced flue bends 87°: 1 m
- Balanced flue inspection tee: 1.5 m

2.4 Plastic (PPs) balanced flue system for external wall connection (type C_{13x} to TRGI 2008)

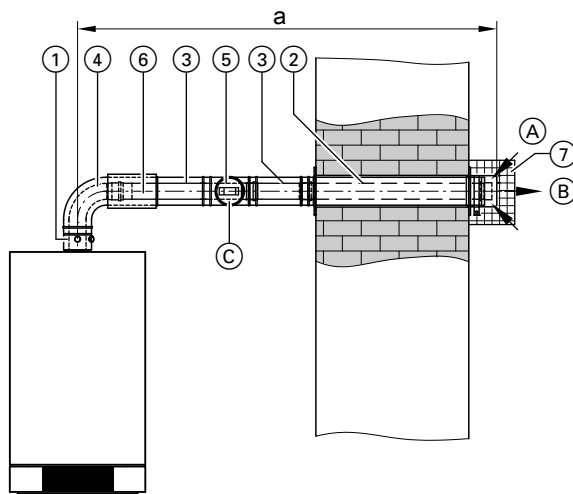
As part of the CE approval test it was verified that no surface temperatures on the Vitodens or its balanced flue system will exceed 85 °C. **Observe the implementation information to TRGI 2008, in particular the arrangement/position of the wall terminal.**

Install the connecting pipe with a minimum fall of 3° towards the boiler.

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

The external wall connection has been tested and CE-designated as a concentric balanced flue system as one structural unit with the Vitodens condensing boiler.

A performance verification according to EN 13384 is **not** required.



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

		System size Ø mm	
①	Boiler flue connection (part of the standard boiler delivery)	60	80
②	Balanced flue external wall connection (incl. wall bezels)	60	80
③	Balanced flue pipe 1 m long 0.5 m long	60	80
④	Balanced flue bend 87° (1 pce) 45° (2 pce) or Balanced flue inspection bend , 87° (1 pce)	60	80
⑤	Balanced flue inspection piece , straight (1 pce)	60	80
⑥	Balanced flue slide coupling	60	80
⑦	Grille Required if the combustion air inlet and flue outlet are positioned up to 2 m above ground level in public or private thoroughfares	60	80
	Fixing clamp , white (1 pce)	60	80
	Balanced flue adaptor – Ø 80/125 mm to Ø 60/100 mm – Ø 60/100 mm to Ø 80/125 mm	60 60	80 80

Max. total length of the flue pipe

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

Rated heating output range		kW	3.2–13	3.2–19	5.2–26	5.2–35	17–45	17–60	30–80	30–100
a	Max. length - system size 60	m	10	10	10	8	—	—	—	—
a	Max. length - system size 80	m	13 ^{*1}	13 ^{*1}	13 ^{*1}	11 ^{*1}	10	10	—	—
a	Max. length - system size 100	m	—	—	—	—	13 ^{*1}	13 ^{*1}	13	13

Vitodens 300-W, 333-F and 343-F

Rated heating output range		kW	1.9–11	1.9–19	4.0–26	4.0–35
a	Max. length - system size 60	m	10	10	10	8
a	Max. length - system size 80	m	13 ^{*1}	13 ^{*1}	13 ^{*1}	11 ^{*1}

2 x 87° balanced flue bends are taken into consideration for the maximum flue lengths.

Subtract additional bends, tees and straight lengths from the maximum length using the following values:

- Balanced flue bends 45°: 0.5 m
- Balanced flue bends 87°: 1 m
- Balanced flue inspection tee: 1.5 m

^{*1} Alternative system size. Balanced flue adaptor must be ordered separately.

2.5 Plastic (PPs) flue/ventilation air system for separate ventilation air and flue gas routing (type C_{83x} to TRGI 2008)

The Vitodens may be operated in **balanced** flue mode and with separately routed flue gas and ventilation air, subject to the flue system meeting the following conditions:

- Connection to a chimney that is unsuitable for providing the combustion air supply because of deposits.
- Connection to a moisture-resistant chimney.

The combustion air is then supplied through a separate ventilation air pipe that is routed separately from the flue pipe.

Observe the design information according to TRGI 2008.

Internal diameter, flue pipe: Ø 60 or 80 mm

Internal diameter, external pipe: Ø 100 or 125 mm

Internal diameter, ventilation air pipe: Ø 100 mm

Max. pipe length:

- Connection piece: 3 m
- Ventilation air pipe: 4 m

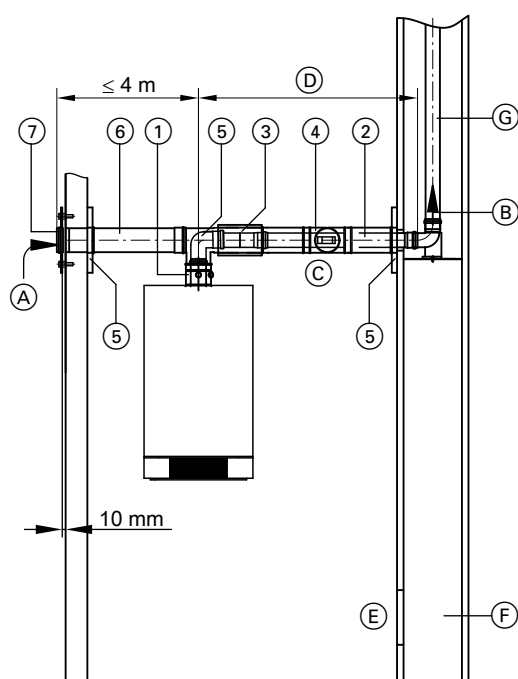
Max. number of bends (flue pipe and ventilation air pipe):

- 87°: 2 pce each
- or
- 45°: 3 pce each

Install an inspection port in the flue for checking and cleaning the flue pipe. Safeguard the draining of the condensate from the flue into the boiler by maintaining an appropriate fall of at least 3°.

As part of the CE approval test it was verified that no surface temperatures on the Vitodens or its balanced flue system will exceed 85 °C. The flue system for separate ventilation air and flue gas routing has been tested as a single structural unit with the Vitodens condensing boiler.

A performance verification according to EN 13384 for the ventilation air side and the connection pieces is **not** required.



- (A) Ventilation air
- (B) Flue gas
- (C) Inspection port
- (D) Connection piece
- (E) Ventilation aperture
- (F) Shaft F90/L90 or F30/L30
- (G) Flue

Note

Where the flue pipe is routed through an existing chimney or shaft (not moisture-resistant), use the flue pipe components according to page 14.

Max. total length of the flue up to the boiler flue connection

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

Rated heating output range		kW	3.2–13	3.2–19	5.2–26	5.2–35
a	Max. length - system size 60	m	20	20	20	15
a	Max. length - system size 80	m	25 ^{*1}	25 ^{*1}	25 ^{*1}	25 ^{*1}

^{*1} Alternative system size. Balanced flue adaptor must be ordered separately.

		System size Ø mm	
(1)	Boiler flue connection (part of the standard boiler delivery) and Balanced flue adaptor Ø 80/125 mm to Ø 60/100 mm	60/100	80/125
		60	
(2)	Balanced flue pipe 1 m long 0.5 m long	60	80
	Balanced flue bend 87° (1 pce) 45° (2 pce)	60	80
(3)	Balanced flue slide coupling	60	80
	Balanced flue inspection piece, straight (1 pce)	60	80
(4)	Balanced flue tee C8 with wall bezels	60	80
(5)	Ventilation air pipe Ø 100 mm 1 m long (may be trimmed to size) 0.5 m long (may be trimmed to size)		
	Ventilation air bend Ø 100 mm 87° (1 pce) 45° (2 pce)		
(6)	Ventilation air grille		
(7)	Fixing clamp, white (1 pce) (balanced flue pipe)	60	80

Design and sizing information for connection on the flue gas side (cont.)

Vitodens 200-W, from 45 kW

Rated heating output range		kW	17–45	17–60	30–80	30–100	30–125	30–150
a	Max. length - system size 80	m	20	15	—	—	—	—
a	Max. length - system size 100	m	25 ^{*1}	20 ^{*1}	20	20	8	5

Vitodens 300-W, 333-F and 343-F

Rated heating output range		kW	1.9–11	1.9–19	4.0–26	4.0–35
a	Max. length - system size 60	m	15	15	15	8
a	Max. length - system size 80	m	17 ^{*1}	17 ^{*1}	20 ^{*1}	15 ^{*1}

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

■ Connection pipe (D) 0.5 m long.

■ 1 bend 87° and 1 support bend 87°

or

■ 2 bends 45° and 1 support bend 87°

■ Bend 45°: 0.3 m

■ Bend 87°: 0.5 m

■ Inspection tee: 0.3 m

Subtract additional bends, tees and straight lengths from the maximum length using the following values:

■ Connection pipe 0.5 m long: 0.5 m

■ Connection pipe 1 m long: 1 m

2.6 Plastic (PPs) balanced flue system for routing over external walls (type C_{53x}, to TRGI 2008)

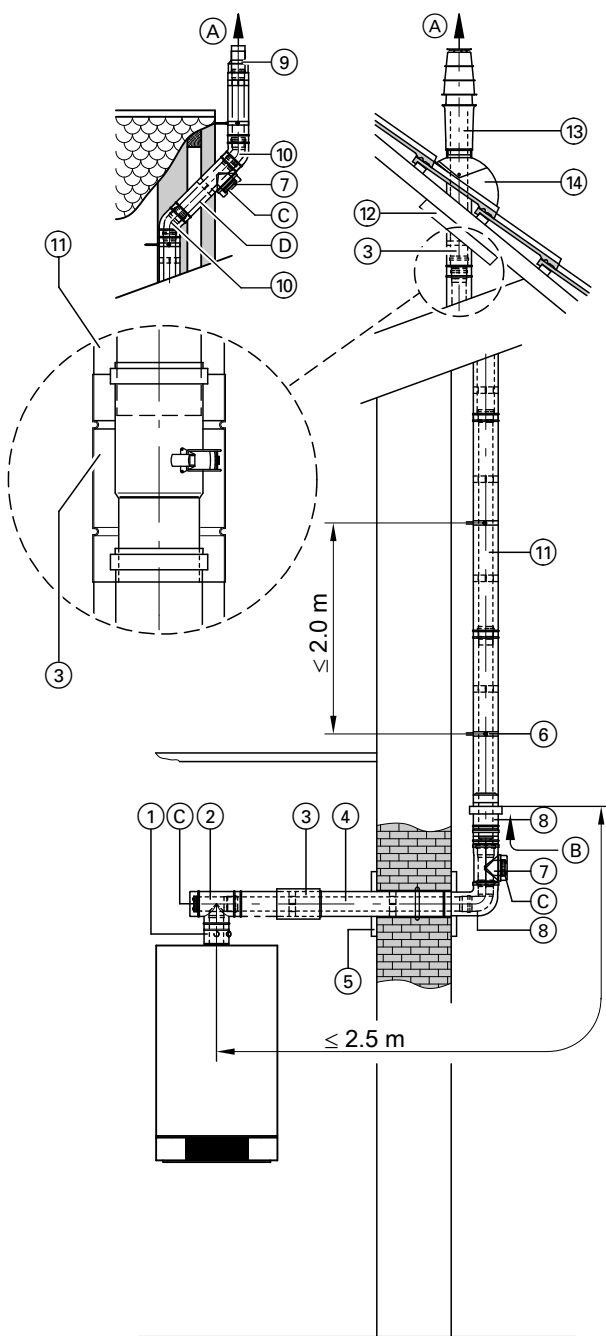
The Vitodens may also be connected to a flue that is routed over an external wall without a shaft.

The combustion air is drawn in via the air inlet piece. The vertical external pipe provides protection, and due to the static air gap inside also acts as thermal insulation. Safeguard the draining of the condensate from the flue into the boiler by maintaining an appropriate fall of at least 3°.

The external wall flue has been tested and CE-designated as a concentric balanced flue system as a single structural unit with the Vitodens condensing boiler. A performance verification according to EN 13384 is **not** required.

^{*1} Alternative system size. Balanced flue adaptor must be ordered separately.

Design and sizing information for connection on the flue gas side (cont.)



- (A) Flue gas
(B) Ventilation air
(C) Inspection port
(D) Elbow in the external wall flue, see page 48

		System size Ø mm		
①	Boiler flue connection (part of the standard boiler delivery)	60	80	100
②	Balanced flue inspection tee 87° (1 pce)	—	—	100
	Balanced flue inspection bend, 87° (1 pce) or Balanced flue inspection piece, straight (1 pce) and Balanced flue bend 87° (1 pce)	60	80	100
③	Balanced flue slide coupling	60	80	100
④	Balanced flue pipe 1.95 m long (1 pce) 1 m long (1 pce) 0.5 m long (1 pce)	60	80	100
⑤	Wall bezel	60	80	100
⑥	Fixing clamp, white (1 pce)	60	80	100
⑦	Balanced flue inspection piece, straight (1 pce) or External wall inspection piece, straight (1 pce)	60	80	— 100
⑧	External wall pack Comprising: – Balanced flue bend – Balanced flue air inlet piece – Wall bezel	60	80	100
⑨	External wall terminal For a short roof overhang	60	80	100
⑩	Balanced flue bend 87° (1 pce) 45° (2 pce) or External wall bend 87° (1 pce) 45° (2 pce)	60 60 — —	80 80 — —	— — 100 100
⑪	Balanced flue pipe 1.95 m long (1 pce) 1 m long (1 pce) 0.5 m long (1 pce) or External wall pipe 1.95 m long (1 pce) 1 m long (1 pce) 0.5 m long (1 pce)	60 60 60 — — —	80 80 80 — — —	— — — 100 100 100
⑫	Universal cover plates	60	80	100
⑬	Balanced flue roof outlet External wall with fixing clamps (for a large roof overhang) Colour: black or terracotta Above roof extension with clamp (brace on site) Colour: black 0.5 m long 1 m long Colour: terracotta 0.5 m long 1 m long	60 60 60 60 60	80 80 80 80 80	100 — 100 100 —
⑭	Universal roof tile – For Roman tiles and pantiled roofs. Colour: black or terracotta	60	80	100

Design and sizing information for connection on the flue gas side (cont.)

	System size Ø mm		
– For plain tile, slate and other roof covers. Colour: black or terracotta	60	80	100

	System size Ø mm		
Pipe outlet for Klöber roof tiles Colour: black or terracotta (provide the corresponding Klöber roof tile on site to match the roof outlet selected for the particular type of roof cover)	60	80	—
Balanced flue adaptor			
– Ø 80/125 mm to Ø 60/100 mm	60	80	—
– Ø 60/100 mm to Ø 80/125 mm	60	80	—
– Ø 80/125 mm to Ø 100/150 mm	—	80	100

Max. total length of the flue pipe

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

Rated heating output range	kW	3.2–13	3.2–19	5.2–26	5.2–35
Max. length - system size 60	m	20	20	20	15
Max. length - system size 80	m	25 ^{*1}	25 ^{*1}	25 ^{*1}	20 ^{*1}

Vitodens 200-W, from 45 kW

Rated heating output range	kW	17.0–45	17.0–60	30.0–80	30.0–100	32–125	32–150
Max. length - system size 80	m	12	12	—	—	—	—
Max. length - system size 100	m	17 ^{*1}	17 ^{*1}	20	20	18	15

Vitodens 300-W, 333-F and 343-F

Rated heating output range	kW	1.9–11	1.9–19	4.0–26	4.0–35
Max. length - system size 60	m	12	12	12	10
Max. length - system size 80	m	15 ^{*1}	15 ^{*1}	15 ^{*1}	12 ^{*1}

2 x 87° balanced flue bends are taken into consideration for the maximum flue lengths.

Subtract additional bends, tees and straight lengths from the maximum length using the following values:

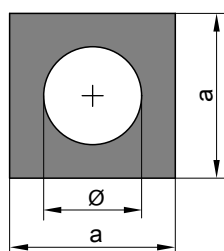
- Balanced flue bend 45°: 0.5 m
- Balanced flue bend 87°: 1 m
- Balanced flue inspection tee: 1.5 m

2.7 Plastic (PPs) balanced flue system for routing through a lightweight shaft

A space saving shaft for reduced temperature requirements may be retrofitted if no shaft is available and the Vitodens is installed in the living space with one or more full storeys above.

The shaft used must comply with the requirements for domestic chimneys to DIN V 18160-1 or must be generally approved by the building inspectorate [Germany].

"UNIFIX" shaft profiles offered by Skoberne (made from aerated concrete)



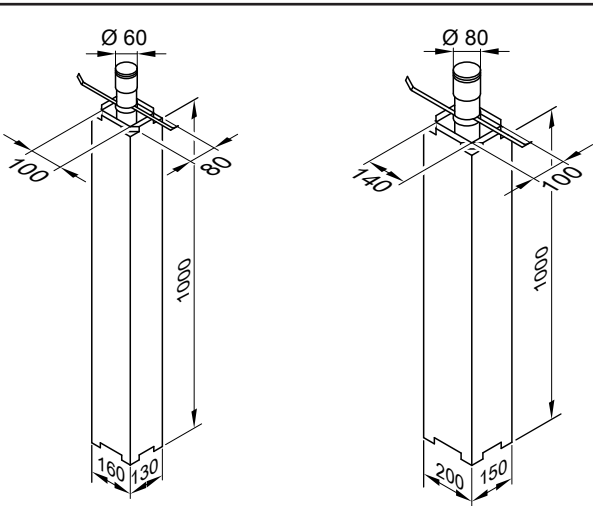
Ø mm	a mm	b mm	Fire rating
165	240	500	90 min
210	300	500	90 min
240	360	249	90 min
280	400	249	90 min

"SKOBIFIXnano" and "SKOBIFIXs 30" shaft profiles offered by Skoberne (made from foamed ceramics)

Fire rating 30 min.

^{*1} Alternative system size. Balanced flue adaptor must be ordered separately.

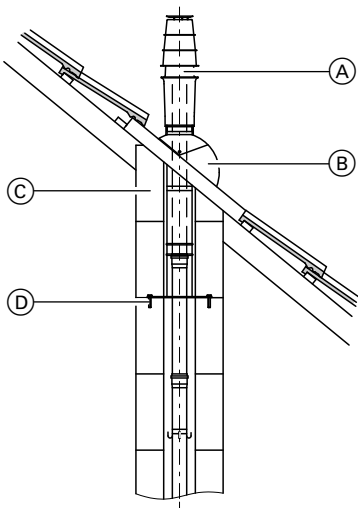
Design and sizing information for connection on the flue gas side (cont.)



A [German] building inspectorate approved shaft system made from breeze concrete or foamed ceramics is available from Skoberne.
Address for Skoberne:
Skoberne Schornsteinsysteme GmbH
Ostendstrasse 1
D-64319 Pfungstadt

Anchoring for roof outlets with shaft profiles

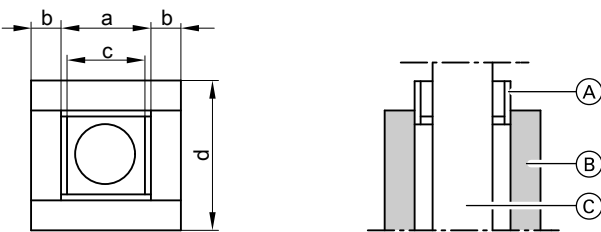
(Where the shaft is run up to the roof skin)



- Available from Skoberne:
- (A) Roof outlet
 - (B) Universal roof tile
 - (C) Terminal shaft profile
 - (D) Anchoring of the roof outlet

During installation, match the terminal shaft profile (C) to the roof slope.

Shaft profiles offered by Promat



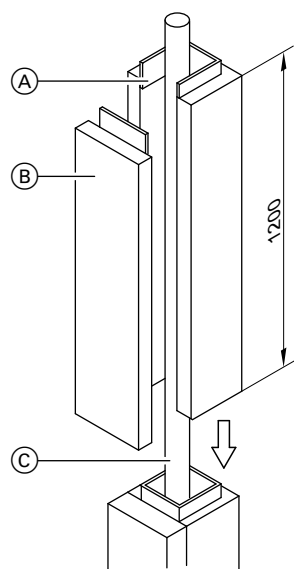
- (A) PROMATECT® female connection
- (B) PROMATECT® profile
- (C) Flue

System size Ø mm	a mm	b mm	c mm	d mm	Fire rating
100	180	25	168	230	30 min
	180	40	168	260	90 min

System size Ø mm	a mm	b mm	c mm	d mm	Fire rating
80	140	25	128	190	30 min
	140	40	128	220	90 min

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Design and sizing information for connection on the flue gas side (cont.)

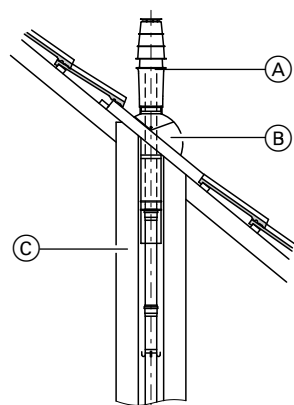


A [German] building inspectorate approved shaft system made from calcium silicate fire-resistant plates is available from Promat and other suppliers.

Address for Promat:
Promat GmbH
Postfach 109 564
D-40835 Ratingen

- Ⓐ PROMATECT® female connection
- Ⓑ PROMATECT® profile
- Ⓒ Flue

Roof outlet for shafts with Promat profiles



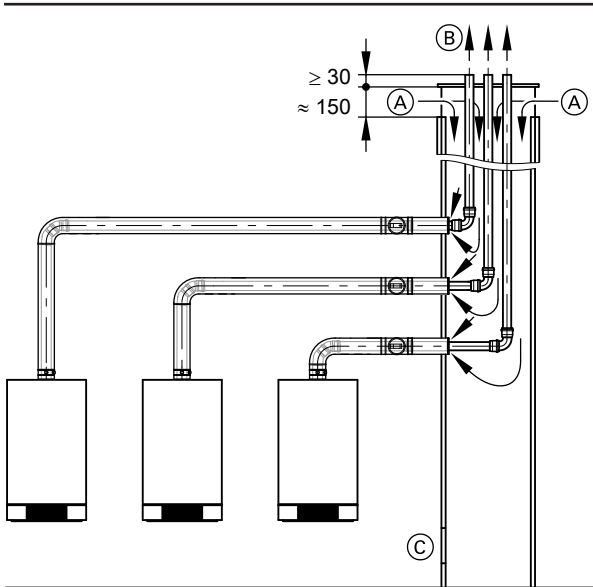
During installation, match the terminal shaft profile to the roof slope.

- Ⓐ Vertical coaxial roof outlet (balanced flue system)
- Ⓑ Universal roof tile
- Ⓒ Lightweight shaft made from PROMATECT® mineral fibre profiles

2.8 Plastic (PPs) balanced flue system for routing multiple pipes through a shaft

It is possible to route several flues for balanced flue operation through a common, sufficiently sized shaft. For this, the Vitodens condensing boilers must be installed in the same living space. For reasons of fire protection, they cannot be installed and connected on different levels or in different rooms. The flue supports inside the shaft and the shaft cover must be correctly implemented on site. For balanced flue components from the Vitodens to the common shaft, see page 14.

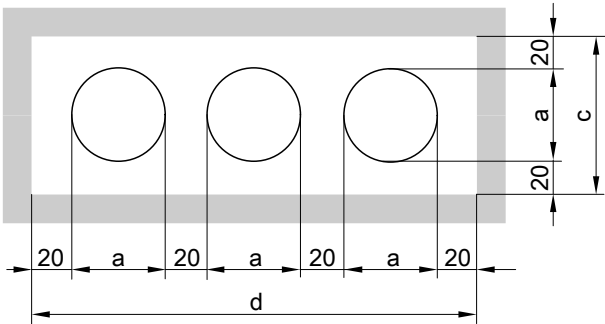
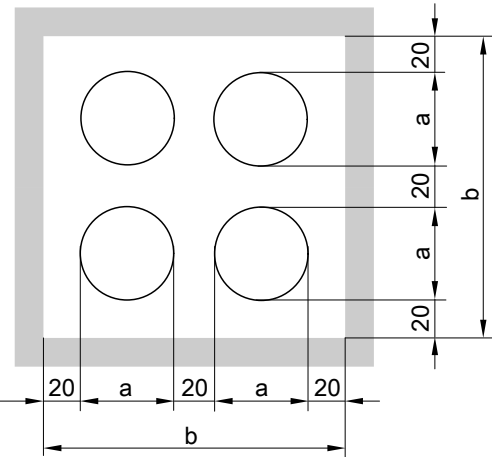
Design and sizing information for connection on the flue gas side (cont.)



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

Layout examples

Minimum clearances of the individual flues in accordance with DIN V 18160-1:
■ In square/rectangular shafts: 20 mm
■ In round shafts: 30 mm



System size Ø mm	Dimensions [mm]			
	a	b	c	d
60	73	206	113	299
80	94	248	134	362
100	128	316	168	464

Note
According to the approval certificate, internal shaft dimensions smaller than those shown in the table may also be used, provided it is indicated by the performance verification to EN 13384.

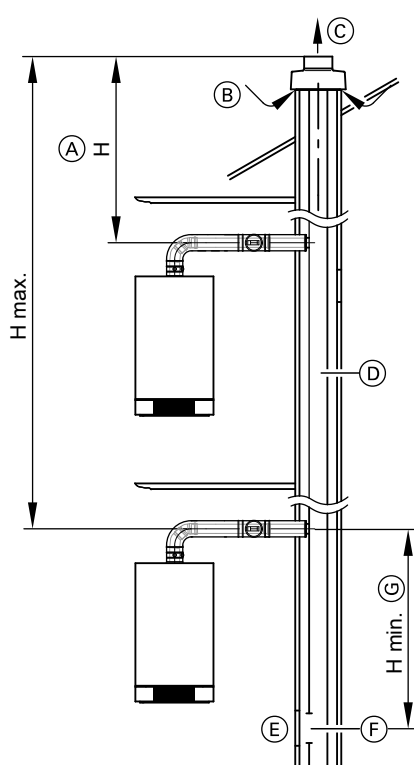
2.9 Plastic (PPs) balanced flue system (connection pipe) for connecting multiple flues to a single room sealed balanced flue system

The Vitodens condensing boilers meet the safety requirements in accordance with DIN 3368-6.
A general Building Regulations approval is therefore not required for connection to a room sealed balanced flue.

When connecting two condensing boilers to one chimney on the same floor, the connection piece inlets should be separated by at least 300 mm.
Design and calculations for room sealed balanced flue systems with multiple connections are carried out by the relevant manufacturer.

Design and sizing information for connection on the flue gas side (cont.)

Room sealed balanced flue system, negative pressure (type C_{43x}, to TRGI 2008)



Room sealed balanced flue systems for negative pressure may, for example, be obtained from the following manufacturers:

- eka Edelstahlkamin GmbH
D-95369 Untersteinach
- Jeremias
Schornstein Systeme
Opfenrieder Str. 12
D-91717 Wassertrüdingen
- Plewa-Werke GmbH
D-54662 Speicher/Eifel
- Schiedel GmbH & Co, Hauptverwaltung
Lerchenstrasse 9
D-80995 Munich
- Wienerberger GmbH
Oldenburger Allee 26
D-30659 Hannover

- (A) Effective chimney height relative to the highest positioned Vitodens
- (B) Ventilation air
- (C) Flue gas
- (D) Room sealed balanced flue system (see below for manufacturers)
- (E) Inspection port
- (F) Pressure compensation aperture
- (G) Check with the flue system manufacturer regarding minimum clearances.

Room sealed balanced flue system, positive pressure – multiple connection with the Vitodens 200-W, 222-W and 222-F up to 26 kW (type C_{43x} to TRGI 2008)

System for balanced flue operation, specifically developed for the Vitodens 200-W, 222-W and 222-F.

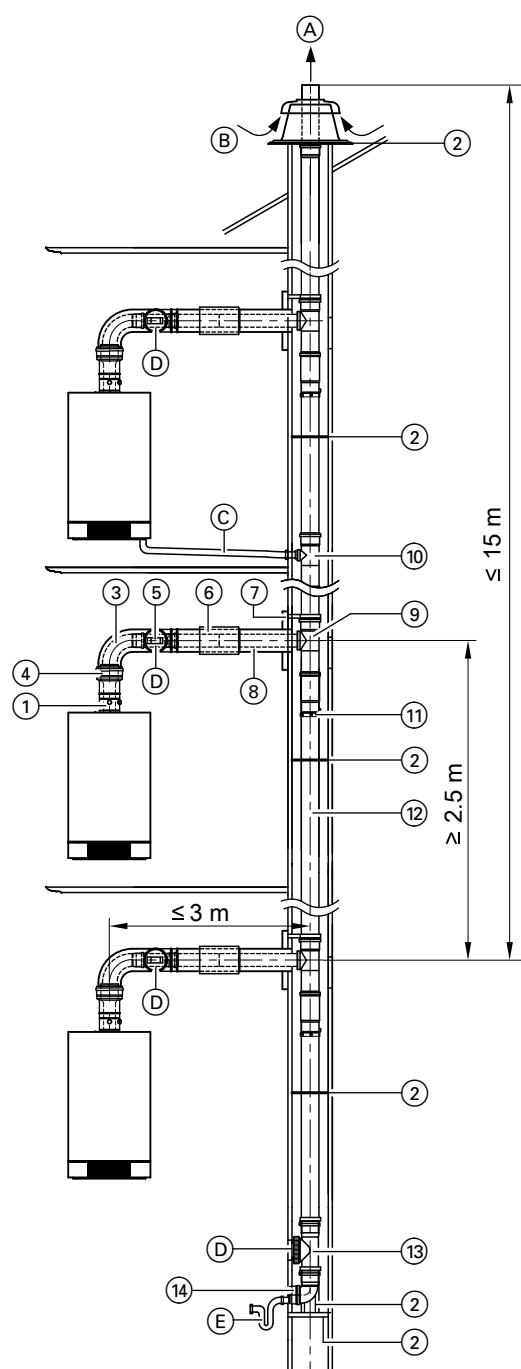
Minimum shaft cross-section:

- Square: 175 × 175 mm
- Round: Ø 195 mm.

Up to 5 Vitodens 200-W, 222-W and 222-F (or 4 Vitodens 3.2 - 19 kW) with the same rated heating output can be connected to one flue system.

Vitodens with different rated heating output levels can be connected to the system if the relevant calculations are verified. For this, please complete the enquiry form on page 30.

Design and sizing information for connection on the flue gas side (cont.)



- Ⓐ Flue gas
- Ⓑ Ventilation air
- Ⓒ Condensate drain into vertical flue
- Ⓓ Inspection port
- Ⓔ Condensate drain with siphon

		System size Ø mm	
①	Boiler flue connection (part of the standard boiler delivery)	80	—
	Flue gas non-return device For installation in the Vitodens 200-W, 222-W and 222-F (up to 26 kW) Order separately for every boiler	—	—
②	Standard shaft pack (PPs, rigid) Comprising: – Support bend – Support rail – Shaft cover (PPs) – Spacers (3 pce)	—	100
	Spacers (3 pce)	—	100
③	Balanced flue bend 87° (1 pce) 45° (2 pce) or Balanced flue inspection bend 87° (1 pce)	80 80 80	— — —
④	Balanced flue adaptor Ø 60/100 to Ø 80/125	80	—
⑤	Balanced flue inspection piece , straight (1 pce)	80	—
⑥	Balanced flue slide coupling	80	—
	Fixing clamp , white (1 pce) (balanced flue pipe)	80	—
⑦	Wall bezel	80	—
⑧	Balanced flue pipe 1 m long 0.5 m long	80 80	— —
⑨	Connecting assembly, multiple connection Comprising: – Boiler coding card – Inspection pipe Ø 100 – Flue gas connection Ø 80 – Fixing clamp – Spacer – Long fem. connection Ø 100	—	100
⑩	Connecting assembly, condensate drain Comprising: – Branch 87° Ø 40 – Fixing clamp – Long fem. connection Ø 100	—	100
⑪	Connecting clamp required for every joint in the shaft	—	100
⑫	Flue pipe 2 m long (2 pce @ 2 m = 4 m) 2 m long (1 pce) 1 m long (1 pce) 0.5 m long (1 pce)	— — — —	100 100 100 100
	Flue bend (For use in corbelled shafts) 30° (2 pce) 15° (2 pce)	— —	100 100
⑬	Inspection piece , straight (1 pce)	—	100
⑭	Condensate drain connection (eccentric) Reducer from Ø 100 mm to Ø 40 mm	—	100

Design and sizing information for connection on the flue gas side (cont.)

Enquiry form for a flue system with multiple vertical connections

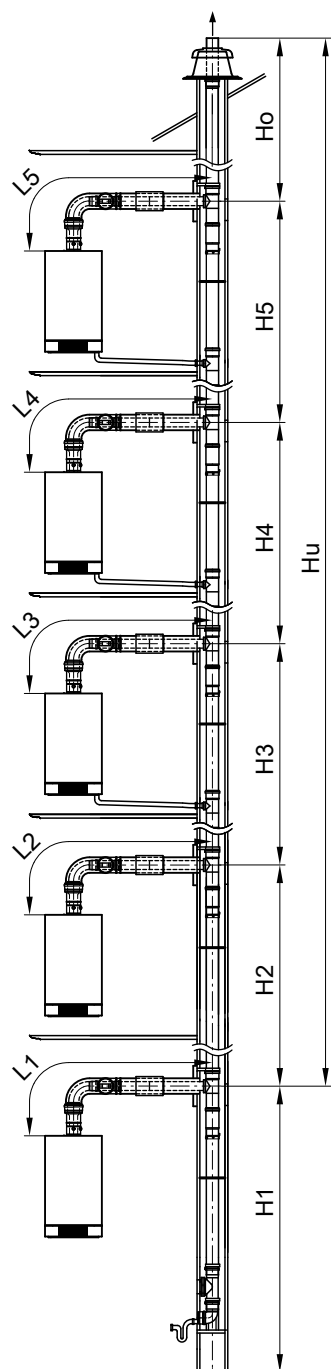
Heating contractor

Building/building project

Tel.:

Fax:

Contact:



Boiler		①	②	③	④	⑤
Rated heating output	kW					
Type						
Fuel		<input type="checkbox"/> Natural gas		<input type="checkbox"/> LPG		
Horizontal connection line						
Extended length	m	L1:	L2:	L3:	L4:	L5:
Number of bends		87°: 45°:	87°: 45°:	87°: 45°:	87°: 45°:	87°: 45°:
Vertical line in a shaft						
Clearance between combustion appliances	m	H1:	H2:	H3:	H4:	H5:
Height above the highest combustion appliance	m					
Height above the lowest combustion appliance	m					
Height in cold area	m					
Height in open air	m					
Shaft available		<input type="checkbox"/> yes		<input type="checkbox"/> no		
Shaft design		<input type="checkbox"/> vertical		<input type="checkbox"/> offset		
Shaft cross-section	mm	<input type="checkbox"/> round, Ø				
	mm	<input type="checkbox"/> oval, x				
	mm	<input type="checkbox"/> square, x				
	mm	<input type="checkbox"/> rectangular, x				
Shaft material						

Please send this enquiry form to your regional quotation centre.

The address and contact details can be found in the appendix to the Viessmann pricelist.

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2.10 Plastic (PPs) flue pipe for routing through a shaft – open flue operation (type B, to TRGI 2008)

Open flue operation requires a flue pipe as the connection piece between the Vitodens and the shaft, as well as for the routing through the shaft.

The installation room must provide a ventilation air aperture with an open cross-section of at least 150 cm² or 2 × 75 cm² (according to TRGI 2008).

Note

Install the Vitodens 200-W, from 60 kW, and multi boiler systems in accordance with FeuVo [for local regulations] in a separate installation room with a suitable ventilation aperture. The cross-section should be at least 150 cm² and should be 2 cm² larger for each kW above 50 kW total rated heating output. This cross-section may not be split over more than 2 apertures (observe FeuVo and TRGI 2008, or check local fire regulations).

The flue system is connected to the boiler flue connection.

The combustion air is drawn from the installation room via the annular gap in the boiler flue connection.

For installation through shafts or ducts with longitudinal ventilation meeting the requirements for domestic chimneys to DIN V 18160-1, or with a fire rating of 90 minutes (L90), or a fire rating of 30 minutes (L30) for buildings in categories 1 and 2.

(A) For installation in Austria, observe the relevant safety regulations of the ÖVGW-TR Gas (G1) 1985, ÖVGW-TRF (G2), ÖNORM, ÖVGW, ÖVE and regional regulations.

Prior to installation, the relevant flue gas inspector should check that the shaft to be used is suitable and approved for this purpose.

Shafts that were previously connected to oil or solid fuel boilers must be thoroughly cleaned by a chimney sweep. Loose deposits of sulphur and soot must not remain on the inside of the chimney.

Close off and seal any other connection apertures with appropriate materials.

This does not apply to any cleaning or inspection apertures that are provided with chimney cleaning covers and that are identified with an appropriate test mark.

Check prior to installation whether the shaft runs straight from top to bottom or if it is offset (check with mirrors).

If the chimney is offset, we recommend installing a flexible flue pipe (see page 34).

The relevant flue gas inspector should check the system for tightness prior to commissioning (where applicable).

In the case of **open** flue operation, this can **only** be carried out by means of a pressure test.

Inside the installation room, at least one inspection port must be provided in the flue system for checking and cleaning as well as for checking the pressure.

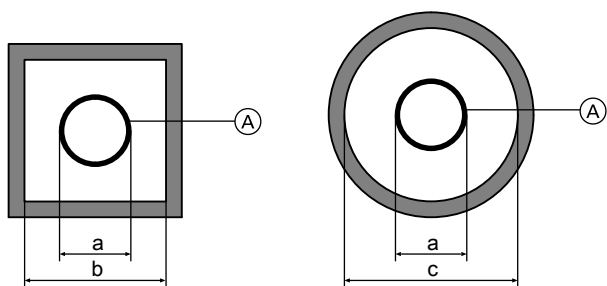
If the flue pipe is not accessible from the roof, a second inspection port must be provided in the attic, behind the chimney cleaning hatch.

Safeguard the draining of the condensate from the flue into the boiler by maintaining an appropriate fall of at least 3°.

Route the flue system to above the roof (observe the roof protrusion parallel to the roof slope according to local regulations).

Alternative CE-designated flue pipes may be used, for example if a larger flue pipe diameter is required, i.e. for greater flue lengths. In such cases the performance verification to EN 13384 should be provided by the relevant flue pipe manufacturer.

Internal shaft dimensions



Minimum internal shaft dimensions

System size (A)	External diameter, fem. connection a Ø mm	Minimum internal shaft dimension	
		b Square or rectangular (short side) mm	c Round Ø mm
60	73	113	133
60 (flexible, shaft cover PPs)	72	112	132
60 (flexible, shaft cover metal)	87	140	147
80	94	135	155
80 (flexible, shaft cover PPs)	102	142	162
80 (flexible, shaft cover metal)	116	165	176
100	128	170	190
100 (flexible, shaft cover PPs)	127	167	187
100 (flexible, shaft cover metal)	142	182	202
125	145	185	205
150	184	224	244

Design and sizing information for connection on the flue gas side (cont.)

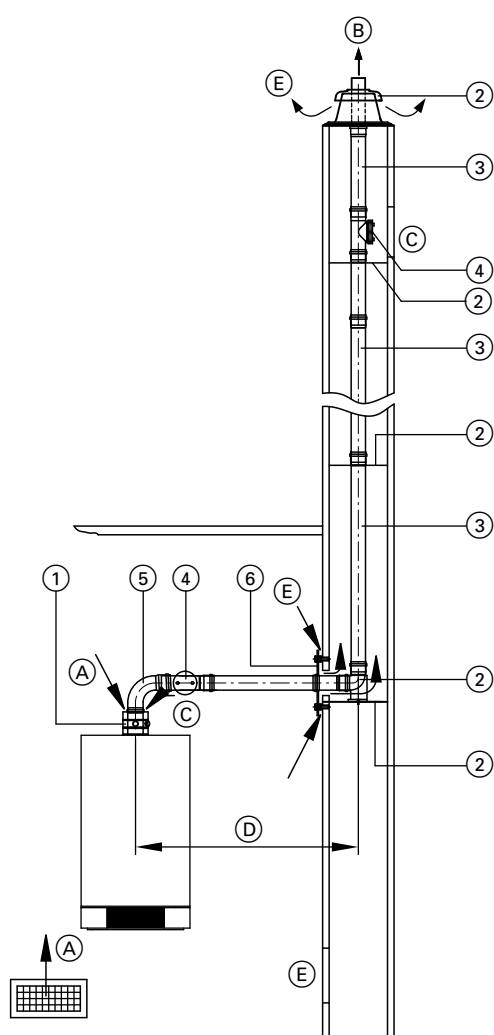
System size [Ⓐ]	External diameter, fem. connection a Ø mm	Minimum internal shaft dimension	
		b Square or rectangular (short side) mm	c Round Ø mm
200	227	267	287
250	273	313	333

Max. number of bends:

- 87°: 3 pce
or
- 45°: 3 pce
or

- 30°: 4 pce
or
- 15°: 4 pce

Flue, system size 60, 80 and 100 (components) (type B₂₃ /B₃₃ according to TRGI 2008)



- (A) Ventilation air
For sizing the ventilation air aperture, see page 31
- (B) Flue gas
- (C) Inspection port
- (D) Connection piece
- (E) Secondary ventilation

		System size Ø mm		
①	Boiler flue connection (part of the standard boiler delivery)	60	80	100
②	Standard shaft pack (PPs, rigid) Comprising: – Support bend – Support rail – Shaft cover – Spacers (5 pce, max. clearance 5 m)	60	80	100
	or Standard shaft pack (metal/PPs, rigid) For twin flue chimneys; one flue for solid fuel boilers Comprising: – Support bend – Support rail – Shaft cover (metal) – End pipe (stainless steel) – Spacers (5 pce, max. clearance 5 m)	60	80	100
Spacers (3 pce, max. distance 5 m)		60	80	100
③	Flue pipe 1.95 m long (2 pce @ 1.95 m = 3.9 m) 1.95 m long (1 pce) 1 m long (1 pce) 0.5 m long (1 pce)	60	80	100
		60	80	100
		60	80	100
		60	80	100
		60	80	100
④	Inspection piece , straight (1 pce)	60	80	100
⑤	Flue bend 87° (1 pce) 45° (2 pce)	60	80	100
		60	80	100
	or Inspection tee 87° (1 pce)	60	80	—
	or Inspection bend 87° (1 pce)	—	—	100
	87° (1 pce)	—	—	100
⑥	Ventilation bezel (1 pce)	60	80	100
	Flue bend (for use in corbelled shafts) 30° (2 pce) 15° (2 pce)	60	80	100
Stainless steel extension , 380 mm long for shaft cover, standard shaft pack (metal/PPs, rigid)		60	80	100
	Extension – Ø 60 mm to Ø 80 mm – Ø 80 mm to Ø 100 mm	60	80	—
		—	80	100

Design and sizing information for connection on the flue gas side (cont.)

Max. total length of the flue pipe

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

Rated heating output range	kW	3.2–13	3.2–19	5.2–26	5.2–35
Max. length - system size 60	m	20	20	20	15
Max. length - system size 80	m	25 ^{*1}	25 ^{*1}	25 ^{*1}	25 ^{*1}

Vitodens 200-W, from 45 kW

Rated heating output range	kW	17.0–45	17.0–60	30.0–80	30.0–100.0	32.0–125	32.0–150
Max. length - system size 80	m	20	15	—	—	—	—
Max. length - system size 100	m	25 ^{*1}	20 ^{*1}	20	20	20	20

Vitodens 300-W, 333-F and 343-F

Rated heating output range	kW	1.9–11	1.9–19	4.0–26	4.0–35
Max. length - system size 60	m	15	15	15	11
Max. length - system size 80	m	17 ^{*1}	17 ^{*1}	20 ^{*1}	15 ^{*1}

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

- Connection pipe (D) 0.5 m long.
- 1 bend 87° and 1 support bend 87°
or
- 2 bends 45° and 1 support bend 87°

Subtract additional bends, tees and straight lengths from the maximum length using the following values:

- Connection pipe 0.5 m long: 0.5 m
- Connection pipe 1 m long: 1 m

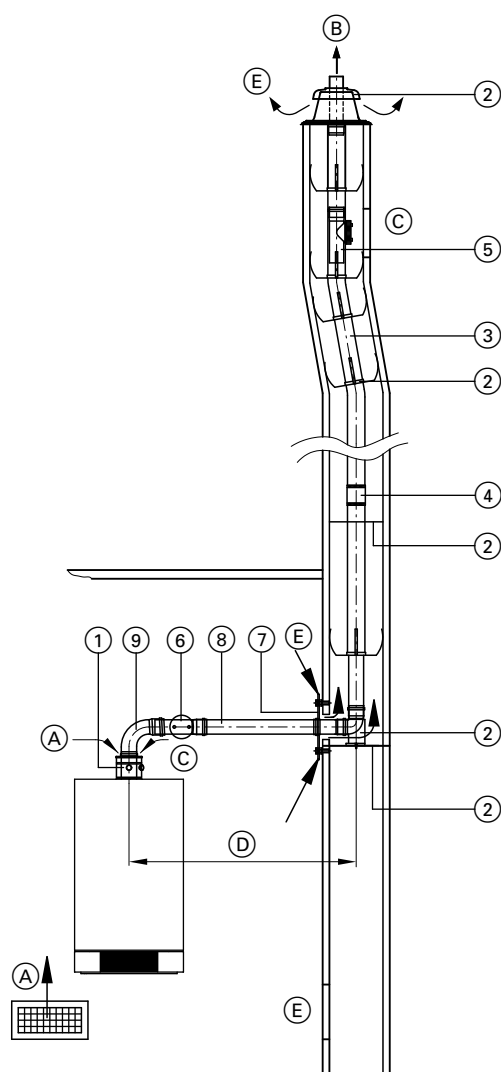
- Bend 45°: 0.3 m
- Bend 87°: 0.5 m
- Inspection tee: 0.3 m

Note

Observe the specifications regarding internal shaft dimensions (see page 31).

Design and sizing information for connection on the flue gas side (cont.)

Flue, flexible, system size 60, 80 and 100 (components) (type B₂₃ to TRGI 2008)



- (A) Ventilation air
Ventilation air aperture, min. 150 cm² or 2 × 75 cm²
- (B) Flue gas
- (C) Inspection port
- (D) Connection piece
- (E) Secondary ventilation

Note

The flexible flue pipe should be routed at a max. angle of 45° from the vertical.

		System size Ø mm		
①	Boiler flue connection (part of the standard boiler delivery)	60	80	100
②	Standard shaft pack (PPs, flexible) Comprising: – Support bend – Support rail – Shaft cover – Spacers (5 pce, max. clearance 2 m)	60	80	100
	Standard shaft pack (metal/PPs, flexible) For twin flue chimneys; one flue for solid fuel boilers Comprising: – Support bend – Support rail – Shaft cover (metal) – End pipe (stainless steel) – Spacers (5 pce, max. clearance 2 m)	60	80	100
	Spacers (5 pce, max. distance 2 m)	60	80	100
③	Flue pipe, flexible , as a 12.5 or 25 m roll	60	80	100
④	Connection piece for connecting residual lengths of the flexible flue pipe	60	80	100
⑤	Inspection piece , straight, for installation into the flexible flue pipe	60	80	100
	Pipe lowering attachment with 25 m rope	60	80	100
⑥	Inspection piece , straight (1 pce)	60	80	100
⑦	Ventilation bezel (1 pce)	60	80	100
⑧	Flue pipe 1 m long (1 pce) 0.5 m long (1 pce)	60	80	100
⑨	Flue bend 87° (1 pce) 45° (2 pce) or Inspection tee 87° (1 pce) or Inspection bend 87° (1 pce)	60	80	80 — 100
	Stainless steel extension , 380 mm long, for shaft cover, standard shaft pack (metal/PPs, flexible)	60	80	100
	Extension – Ø 60 mm to Ø 80 mm – Ø 80 mm to Ø 100 mm	60 —	80 80	— 100

Max. total length of the flue pipe

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

Rated heating output range	kW	3.2–13	3.2–19	5.2–26	5.2–35
Max. length - system size 60	m	18	18	—	—
Max. length - system size 80	m	25 ^{*1}	25 ^{*1}	25 ^{*1}	25 ^{*1}

Vitodens 200-W, from 45 kW

Rated heating output range	kW	17.0–45	17.0–60	30.0–80	30.0–100	32.0–125	32.0–150
Max. length - system size 80	m	20	15	—	—	—	—
Max. length - system size 100	m	22 ^{*1}	17 ^{*1}	20	20	20	20

^{*1} Alternative system size. Balanced flue adaptor must be ordered separately.

Design and sizing information for connection on the flue gas side (cont.)

Vitodens 300-W, 333-F and 343-F

Rated heating output range	kW	1.9–11	1.9–19	4.0–26	4.0–35
Max. length - system size 60	m	14	14	—	—
Max. length - system size 80	m	16 ^{*1}	16 ^{*1}	18 ^{*1}	13 ^{*1}

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

- Connection pipe (D) 0.5 m long.
- 1 bend 87° and 1 support bend 87°
or
- 2 bends 45° and 1 support bend 87°

Subtract additional bends, tees and straight lengths from the maximum length using the following values:

- Connection pipe 0.5 m long: 0.5 m
- Connection pipe 1 m long: 1 m

- Bend 45°: 0.3 m
- Bend 87°: 0.5 m
- Inspection tee: 0.3 m

Note

Observe the specifications regarding internal shaft dimensions (see page 31).

Special version: open flue operation with combustion air interconnection for the Vitodens up to 35 kW (type B₃₃ to TRGI 2008)

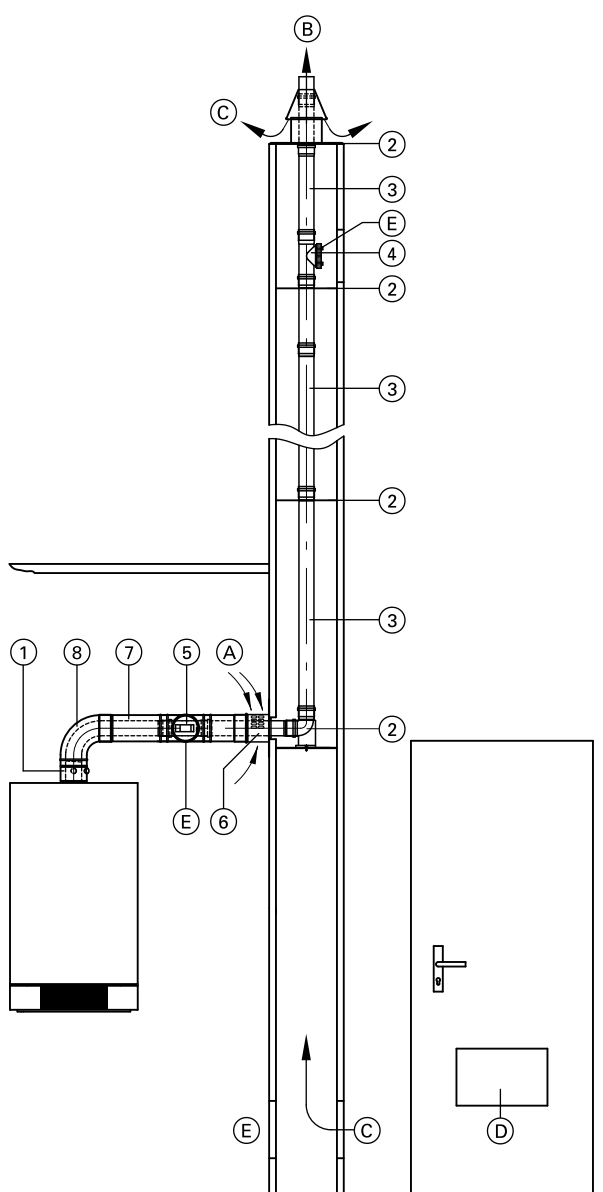
The Vitodens may also be installed in occupied rooms and be operated in open flue mode, subject to the following conditions being met:

- The shaft connection piece is constructed as balanced flue pipe and the combustion air is drawn directly from the room via an aperture at the chimney inlet (interconnected room air supply wall bezel, see page 48).
- As specified by the TRGI 2008, an adequate combustion air supply must be ensured inside the room by means of interconnected combustion air supply:
 - Minimum volume of the interconnected rooms, 4 m³ per kW rated heating output
 - Vents in connecting doors min. 150 cm²

When routing through shafts, the same conditions apply as for the routing of flue systems through a shaft, see page 31.

For calculation of the max. total flue length, see page 32.

Design and sizing information for connection on the flue gas side (cont.)



- (A) Ventilation air
- (B) Flue gas
- (C) Secondary ventilation
- (D) Aperture for interconnected room air supply (min. 150 cm²)
- (E) Inspection port

		System size Ø mm	
①	Boiler flue connection (part of the standard boiler delivery)	60	80
②	Standard shaft pack (PPs, rigid) Comprising: – Support bend – Support rail – Shaft cover – Spacers (5 pce, max. clearance 5 m) or Standard shaft pack (metal/PPs, rigid) For twin flue chimneys; one flue for solid fuel boilers Comprising: – Support bend – Support rail – Shaft cover (metal) – End pipe (stainless steel) – Spacers (5 pce, max. clearance 5 m)	60	80
	Spacers (3 pce, max. clearance 5 m)	60	80
③	Flue pipe 1.95 m long (2 pce @ 1.95 m = 3.9 m) 1.95 m long (1 pce) 1 m long (1 pce) 0.5 m long (1 pce)	60	80
	Flue bend (for use in corbelled shafts) 30° (2 pce) 15° (2 pce)	60	80
④	Inspection piece , straight (1 pce)	60	80
⑤	Balanced flue inspection piece , straight (1 pce)	60	80
⑥	Balanced flue air inlet adaptor Ø 80/125 mm (type B ₃₃ to TRGI 2008)	60	80
⑦	Balanced flue pipe 1 m long 0.5 m long	60	80
⑧	Flue bend 87° (1 pce) 45° (2 pce) or Balanced flue inspection bend , 87° (1 pce)	60	80
	Stainless steel extension , 380 mm long for shaft cover, standard shaft pack (metal/PPs, rigid)	60	80

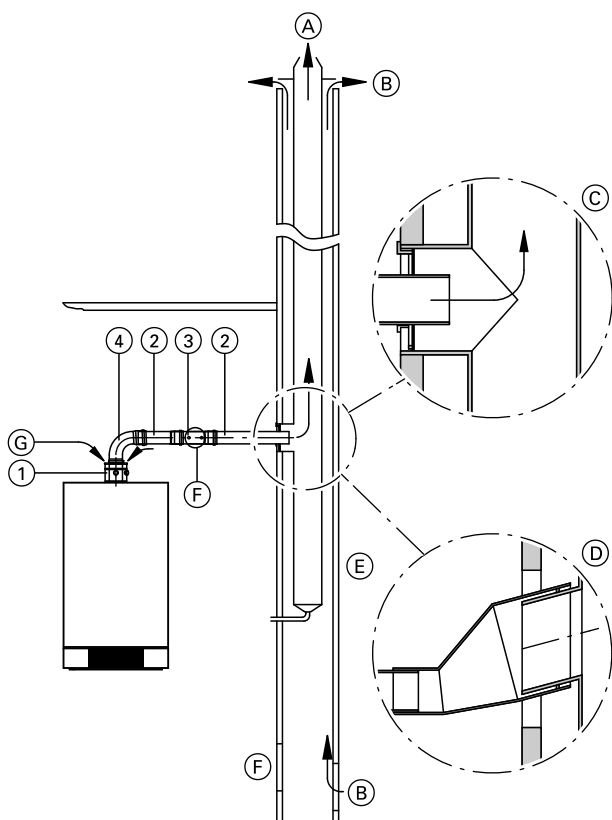
Connection to a moisture-resistant chimney (MR chimney negative pressure) with a plastic (PPs) flue pipe (type B_{23x}, according to TRGI 2008)

Vitodens condensing boilers may be connected to moisture-resistant chimneys to EN 13384, provided the chimney manufacturer can verify its suitability based on the stated flue gas values under consideration of local conditions (e.g. heating water return temperature, design of the pipe connection piece, etc.).

A moisture-resistant and Building Regulations compliant flue pipe must be used for the connection piece. The plastic flue system (PPs) offered as an accessory to the Vitodens may be used for this. Safeguard the draining of the condensate from the flue into the boiler by maintaining an appropriate fall of at least 3°.

The adaptor from the flue pipe to the MR chimney must be purchased from the chimney manufacturer.

Design and sizing information for connection on the flue gas side (cont.)



- (A) Flue gas
- (B) Secondary ventilation
- (C) For example: Flue outlet adaptor from Schiedel or Wienerberger
- (D) For example: Flue outlet adaptor by Plewa
- (E) MR chimney
- (F) Inspection port
- (G) Ventilation air

		System size Ø mm		
①	Boiler flue connection (part of the standard boiler delivery)	60	80	100
②	Flue pipe			
	1.95 m long (2 pce @ 1.95 m = 3.9 m)	60	80	100
	1.95 m long (1 pce)	60	80	100
	1 m long (1 pce)	60	80	100
	0.5 m long (1 pce)	60	80	100
③	Inspection piece, straight (1 pce)	60	80	100
④	Flue bend 87° (1 pce)	60	80	100
	or			
	Inspection tee 87° (1 pce)	60	80	—
	or			
	Inspection bend 87° (1 pce)	—	—	100

Multi boiler systems with flue systems under positive pressure (open flue operation) – Vitodens 200-W, Vitodens 222-W and 222-F

Up to 4 gas condensing boilers, 13 to 35 kW, a maximum of 8 gas condensing boilers, 45 to 100 kW or 6 gas condensing boilers, 125 to 150 kW with the same rated heating output may be connected to a common flue operating under positive pressure. The max. output is 900 kW. The Vitodens 200-W, 222-W and 222-F multi boiler systems with common pressurised flue systems are designed for open flue operation (type B).

Vitodens with different rated heating output levels can be connected to the system if the relevant calculations are verified. For this, please complete the enquiry form on page 38.

Installation requirements

Combustion air vents

Gas equipment with a total rated heating output in excess of 50 kW must be provided with combustion air vents leading to the outside. The cross-section should be at least 150 cm² and should be 2 cm² larger for each kW above 50 kW rated heating output. This cross-section may not be split over more than 2 apertures (observe your local regulations and TRGI 2008).

Example:

Vitodens 200-W, 3 × 80 kW
Total rated heating output 240 kW
 $150 \text{ cm}^2 + ((240 \text{ kW} - 50 \text{ kW}) \times 2 \text{ cm}^2/\text{kW}) = 530 \text{ cm}^2$
or $2 \times 265 \text{ cm}^2$.

The combustion air apertures should measure at least 530 cm² or $2 \times 265 \text{ cm}^2$.

Installation clearances

For a simple installation we recommend a clearance of approx. 100 to 150 mm between the gas condensing boilers. For Vitodens 200-W multi boiler systems, 45 to 150 kW, in conjunction with a hydraulic cascade, this clearance must be 100 mm.

Flue gas non-return device

The flue gas non-return device is installed into the boiler (mixing shaft) (Vitodens up to 35 kW). In the delivered condition of the Vitodens 200-W from 45 kW, the flue gas non-return device is already installed. When the boiler is operational, the diaphragm of the flue gas non-return device is lifted by the positive pressure of the variable speed fan, which opens the path into the boiler mixing shaft. When the boiler is not in use, the flue gas non-return device closes the mixing shaft, which prevents the flue gas passing back into the boiler.

Approval

The gas condensing boilers Vitodens 200-W, Vitodens 222-W and 222-F are tested and certified together with the flue system. The flue system is CE-designated.

Design and sizing information for connection on the flue gas side (cont.)

Inspection port

The FeuVo [Germany] requires the installation of an inspection port inside the installation room.

Use an inspection port appropriate for the selected flue pipe diameter.

Enquiry form for a flue gas cascade

Heating contractor

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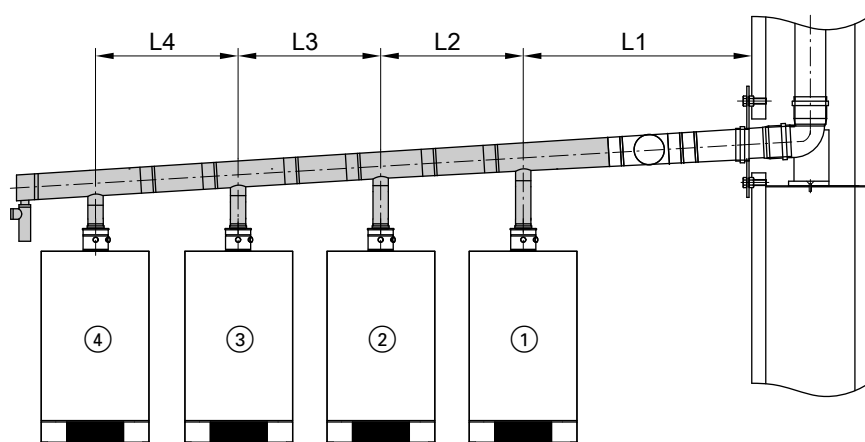
Tel.:

Fax:

Contact:

Building/building project

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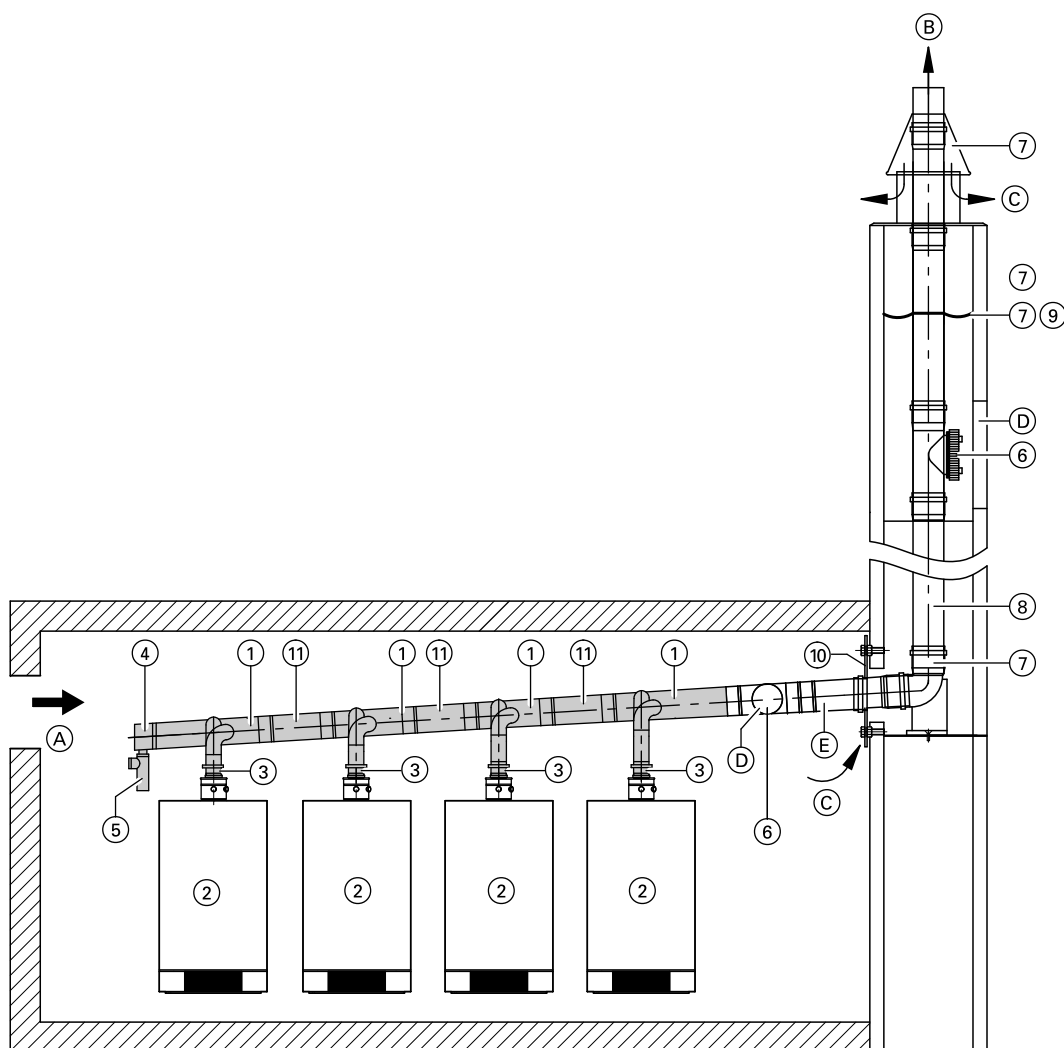
Boiler		①	②	③	④
Rated heating output	kW				
Type					
Fuel		<input type="checkbox"/> Natural gas		<input type="checkbox"/> LPG	
Horizontal connection line					
Length	m	L1:	L2:	L3:	L4:
Number of bends		87°:	87°:	87°:	87°:
		45°:	45°:	45°:	45°:
		30°:	30°:	30°:	30°:
		15°:	15°:	15°:	15°:
Vertical line in a shaft					
Extended length	m				
Effective height	m				
Height in cold area	m				
Height in open air	m				
Shaft available		<input type="checkbox"/> yes		<input type="checkbox"/> no	
Shaft design		<input type="checkbox"/> vertical		<input type="checkbox"/> offset	
Shaft cross-section	mm	<input type="checkbox"/> round, Ø			
	mm	<input type="checkbox"/> oval,x....			
	mm	<input type="checkbox"/> square,x....			
	mm	<input type="checkbox"/> rectangular,x....			
Shaft material					

Please send this enquiry form to your regional quotation centre.

The address and contact details can be found in the appendix to the Viessmann pricelist.

Design and sizing information for connection on the flue gas side (cont.)

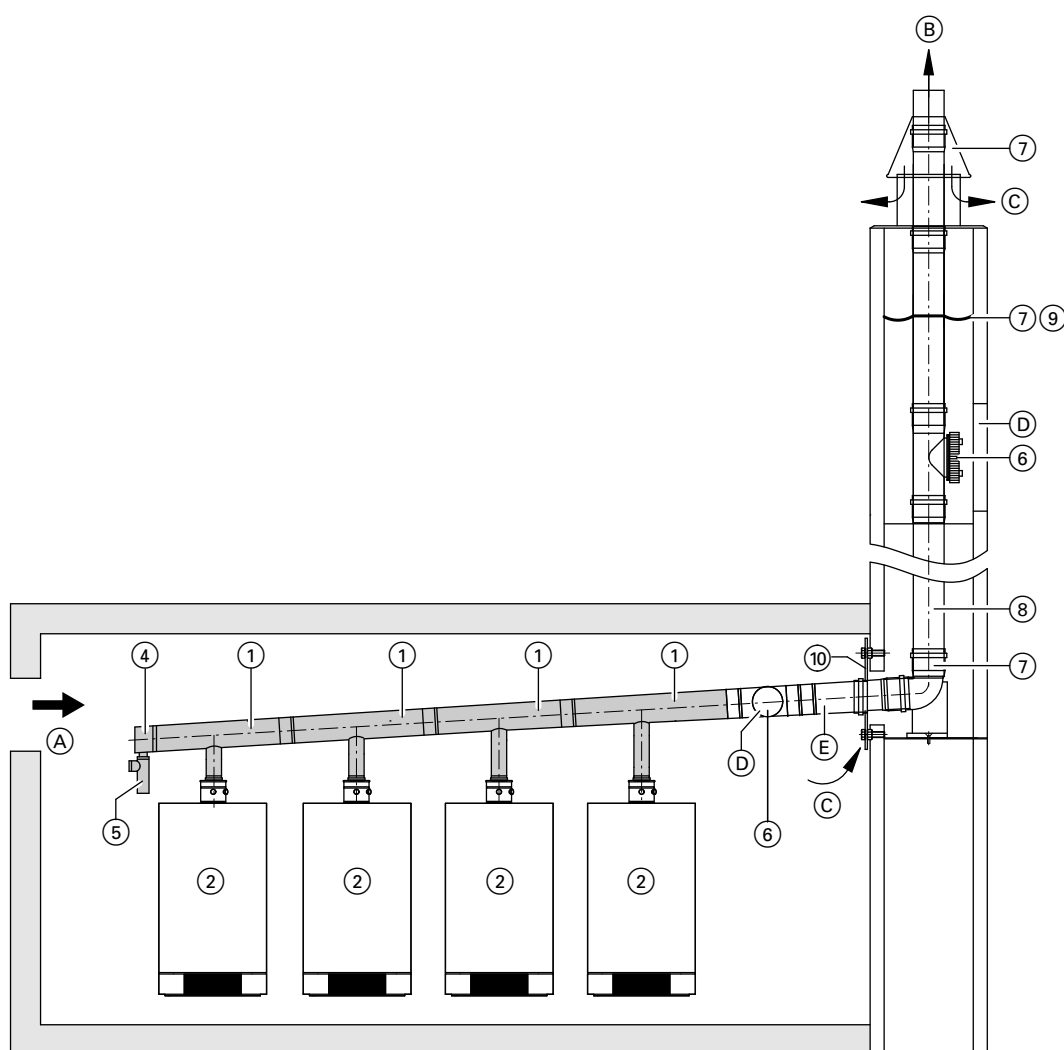
Components and pipe lengths



Vitodens 200-W, 222-W and 222-F, up to 35 kW

- Ⓐ Ventilation air
- Ⓑ Flue gas
- Ⓒ Secondary ventilation

- Ⓓ Inspection port
- Ⓔ Connecting pipe



Vitodens 200-W, 45 to 150 kW

- (A) Ventilation air
- (B) Flue gas
- (C) Secondary ventilation

- (D) Inspection port
- (E) Connecting pipe

Standard delivery, flue gas cascade:

(1)	Flue gas header Ø 150, 200 or 250 mm
(2)	Flue gas non-return device – For Vitodens 200-W, 222-W and 222-F up to 35 kW to be ordered separately as an accessory (check valve to be installed in burner ventilation air line) – For Vitodens 200-W from 45 kW (check valve, installed in burner ventilation air line in delivered condition)
(3)	Extension Ø 60 to Ø 80 mm (for Vitodens 200-W, 222-W and 222-F, 13 to 35 kW)
(4)	End piece with condensate drain
(5)	Siphon with hose

Further accessories (from Ø 200 mm see Vitocrossal 300 pricelist):

(6)	Inspection piece Ø 150, 200 or 250 mm
(7)	Standard shaft set Ø 150, 200 or 250 mm Comprising: – Support bend – Support rail – Shaft cover – Spacers (3 pce, max. clearance 5 m)

(8)	Flue pipe Ø 150, 200 or 250 mm 2 m long (2 pce = 4 m long) 2 m long (1 pce) 1 m long (1 pce) 0.5 m long (1 pce)
(9)	Spacers (3 pce, max. distance 5 m)
(10)	Ventilation bezel Ø 150, 200 or 250 mm
(11)	Flue gas header extension Ø 150 mm (for Vitodens 222-W and 222-F) Total length incl. female connection: 190 mm

Positions 1 to 5 are part of the standard delivery of the flue gas cascade. The inspection piece and other flue gas accessories should be ordered specifically for the system (Ø 200 and 250 mm see pricelist for flue system for Vitocrossal).

Design and sizing information for connection on the flue gas side (cont.)

Max. total length of the flue pipe

Vitodens 200-W, 222-W and 222-F, 13 to 35 kW installed in series

Rated heating output	kW	2 x 13/19	3 x 13/19	4 x 13/19	2 x 26	3 x 26	4 x 26	2 x 35	3 x 35	4 x 35
Rated heating output (total)	kW	26/37	39/57	52/76	52	78	104	70	105	140
Max. total length of the flue pipe										
- System size 150 mm	m	25	25	22	25	25	20	25	25	15

Vitodens 200-W from 45 kW, installed in series – 2 to 4 boilers

Rated heating output	kW	2 x 45/60	2 x 80/100	2 x 125/150	3 x 45/60	3 x 80/100	3 x 125/150	4 x 45/60	4 x 80/100	4 x 125/150
Rated heating output (total)	kW	90/120	160/210	250/300	135/180	240/300	375/450	180/240	320/400	500/600
Max. length of horizontal connecting pipe (between flue gas header and shaft)										
- System size 150 mm	m	4	—	—	4	—	—	—	—	—
- System size 200 mm	m	—	4	—	—	4	—	4	4	—
- System size 250 mm	m	—	—	4	—	—	4	—	—	4
Max. pipe length inside the shaft										
- System size 150 mm	m	26	—	—	26	—	—	—	—	—
- System size 200 mm	m	—	26	—	—	26	—	26	26	—
- System size 250 mm	m	—	—	26	—	—	26	—	—	12
Max. total length of the flue pipe										
- System size 150 mm	m	30	—	—	30	—	—	—	—	—
- System size 200 mm	m	—	30	—	—	30	—	30	30	—
- System size 250 mm	m	—	—	30	—	—	30	—	—	16

Vitodens 200-W from 45 kW, installed in series – 6 and 8 boilers

Rated heating output	kW	6 x 45/60	6 x 80/100	6 x 125	8 x 45/60	8 x 80/100
Rated heating output (total)	kW	270/360	480/600	750/900	360/480	640/800
Max. length of horizontal connecting pipe (between flue gas header and shaft)						
- System size 250 mm	m	4	4	4	4	4
Max. pipe length inside the shaft						
- System size 250 mm	m	26	26	5	26	26
Max. total length of the flue pipe						
- System size 250 mm	m	30	30	9	30	30

Vitodens 200-W, 45 to 100 kW, installed in block formation – 4 boilers

Rated heating output	kW	4 x 45	4 x 60	4 x 80	4 x 100
Rated heating output (total)	kW	180	240	320	400
Max. length of horizontal connecting pipe (between flue gas header and shaft)					
- System size 200 mm	m	4	4	—	—
- System size 250 mm	m	—	—	4	4
Max. pipe length inside the shaft					
- System size 200 mm	m	26	26	—	—
- System size 250 mm	m	—	—	26	26
Max. total length of the flue pipe					
- System size 200 mm	m	30	30	—	—
- System size 250 mm	m	—	—	30	30

Vitodens 200-W, 45 to 100 kW, installed in block formation – 6 and 8 boilers

Rated heating output	kW	6 x 45/60	6 x 80/100	8 x 45/60	8 x 80/100
Rated heating output (total)	kW	270/360	480/600	360/480	640/800
Max. length of horizontal connecting pipe (between flue gas header and shaft)					
- System size 250 mm	m	4	4	4	4
Max. pipe length inside the shaft					
- System size 250 mm	m	26	26	26	26
Max. total length of the flue pipe					
- System size 250 mm	m	30	30	30	30

Design and sizing information for connection on the flue gas side (cont.)

Note

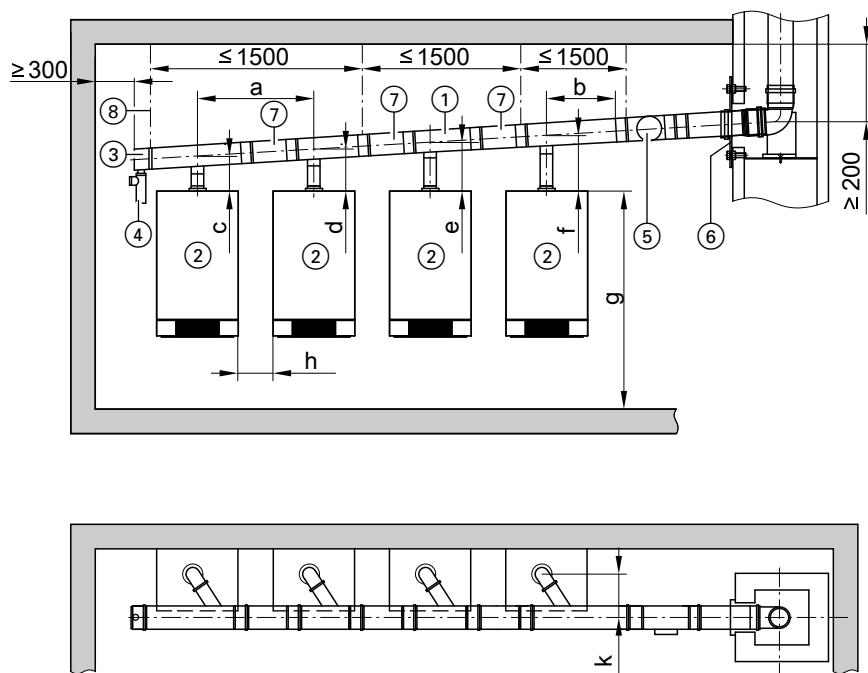
The flue gas parameters for the individual boilers can be used for the flue system calculation (see technical guide Vitodens).

The pressure drop of the flue gas non-return device has already been taken into account, and does not have to be drawn upon in the calculation.

The maximum operating pressure according to DVGW G 635 is not taken into account.

Siting and dimensions

Installation in series — 2 to 4 boilers up to 35 kW



- ① Flue gas header Ø 150 mm
- ② Non-return device (accessories)
- ③ End piece with condensate drain
- ④ Siphon with hose
- ⑤ Inspection piece Ø 150 mm

- ⑥ Ventilation bezel
- ⑦ Flue gas header extension Ø 150 mm (only for Vitodens 222-F and 222-W), total length incl. female connection: 190 mm
- ⑧ Brackets with suitable fixing materials

Note

■ For Vitodens 200-W, 222-F and 222-W up to 35 kW the flue gas non-return device (2) (accessories) is installed in the boiler.

■ For Vitodens 222-W with the shaft positioned on the left, insert an additional flue gas header extension (7) upstream of the end piece with condensate drain (3).

Header Ø mm	a mm	b mm	c mm	d mm	e mm	f mm	g*2 mm	h mm	k mm
150									
– Vitodens 200-W, 13 - 35 kW	580	215	255	285	315	345	1700	130	219
– Vitodens 222-W	700	215	234	271	308	345	1700	100	219
– Vitodens 222-F	700	215	221	258	295	332	—	100	219

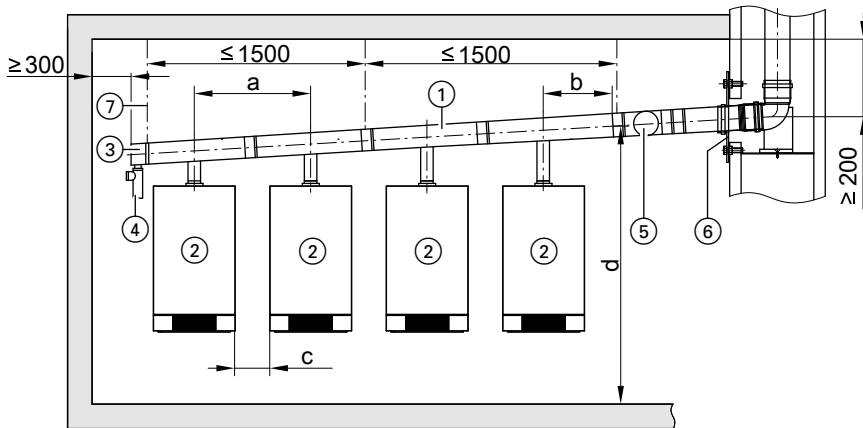
Route the flue gas header with a fall of at least 3°.

The deflector bends must be trimmed accordingly.

*2 Recommendation for installation height.

Design and sizing information for connection on the flue gas side (cont.)

Installation in series — 2 to 4 boilers from 45 kW



- ① Flue gas header Ø 150, 200 or 250 mm
- ② Non-return device (installed)
- ③ End piece with condensate drain
- ④ Siphon with hose
- ⑤ Inspection piece Ø 150, 200 or 250 mm
- ⑥ Ventilation bezel
- ⑦ Brackets with suitable fixing materials

Note

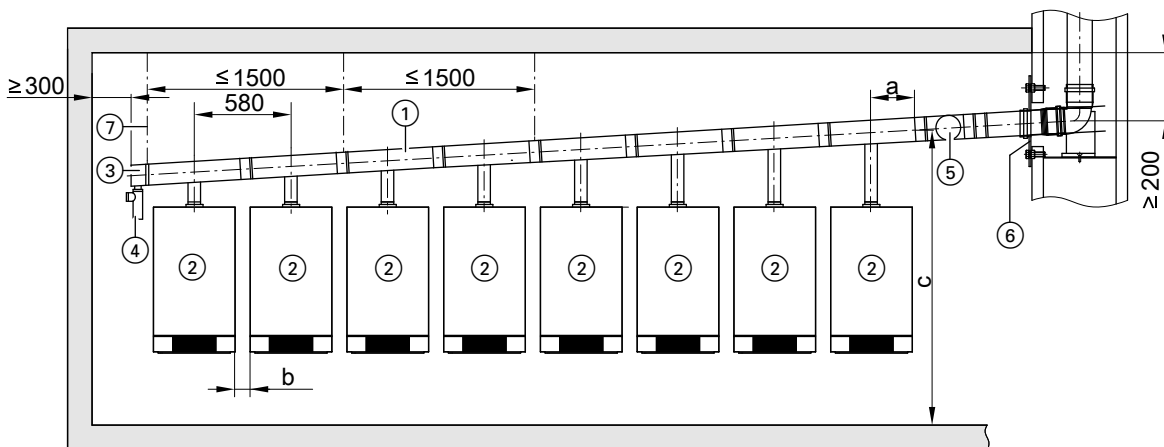
In the delivered condition of the Vitodens 200-W from 45 kW, the flue gas non-return device ② is installed in the boiler.

Header Ø mm	a mm	b mm	c mm	d mm	d mm	d mm
Number of boilers				2	3	4
150						
– Vitodens 200-W, 45 - 60 kW	580	215	100	1956	1986	–
200						
– Vitodens 200-W, 45 - 60 kW	580	404	100	–	–	2038
– Vitodens 200-W, 80 - 100 kW	580	404	100	2052	2082	2113
250						
– Vitodens 200-W, 125 - 150 kW	580	404	100	2257	2294	2331

Route the flue gas header with a fall of at least 3°.

The boiler flue connections must be trimmed accordingly.

Installation in series — 6 and 8 boilers from 45 kW



Vitodens 200-W

- ① Flue gas header Ø 250 mm
- ② Non-return device (installed)
- ③ End piece with condensate drain
- ④ Siphon with hose
- ⑤ Inspection piece Ø 250 mm
- ⑥ Ventilation bezel
- ⑦ Brackets with suitable fixing materials

Design and sizing information for connection on the flue gas side (cont.)

Note

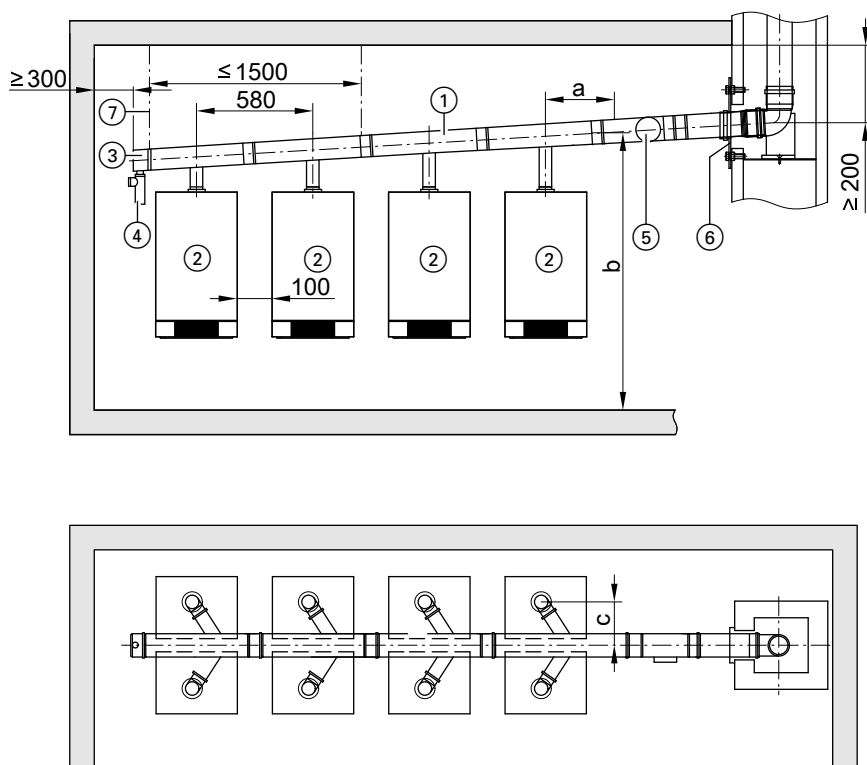
In the delivered condition of the Vitodens 200-W from 45 kW, the flue gas non-return device ② is installed in the boiler.

Header Ø mm	a mm	b mm	c mm	c mm
Number of boilers			6	8
250				
– Vitodens 200-W, 45 - 60 kW	404	100	2208	2268
– Vitodens 200-W, 80 - 100 kW	404	100	2203	2264
– Vitodens 200-W, 125 kW	404	100	2404	–

Route the flue gas header with a fall of at least 3°.

The boiler flue connections must be trimmed accordingly.

Vitodens installed as a block 45 - 100 kW



- ① Flue gas header Ø 200 or 250 mm
- ② Non-return device (installed)
- ③ End piece with condensate drain
- ④ Siphon with hose
- ⑤ Inspection piece Ø 200 or 250 mm
- ⑥ Ventilation bezel
- ⑦ Brackets with suitable fixing materials

Note

In the delivered condition, the non-return device ② is installed in the boiler.

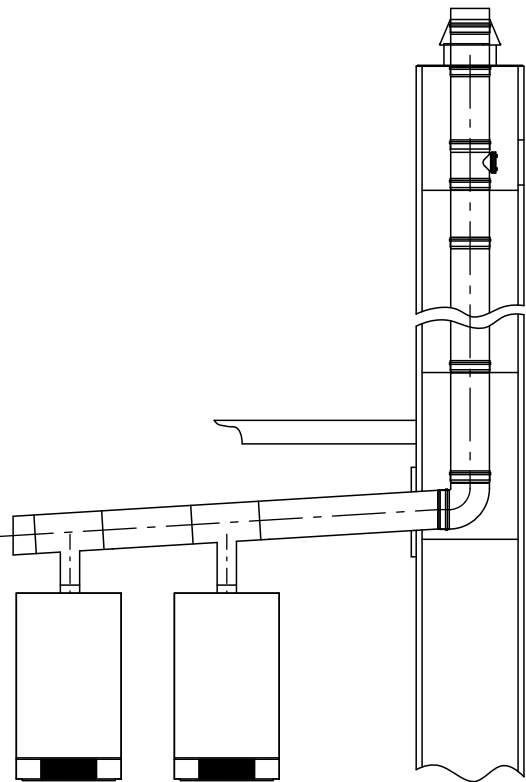
Header Ø mm	a mm	b mm	b mm	b mm	c mm
Number of boilers	4/6/8	4	6	8	4/6/8
200					
– Vitodens 200-W, 45 - 60 kW	502	1980	—	—	352
250					
– Vitodens 200-W, 45 - 60 kW	532	—	2068	2108	422
– Vitodens 200-W, 80 - 100 kW	532	2069	2100	2131	422

Route the flue gas header with a fall of at least 3°.

The deflector bends must be trimmed accordingly.

Design and sizing information for connection on the flue gas side (cont.)

Multi boiler systems with flue systems under negative pressure

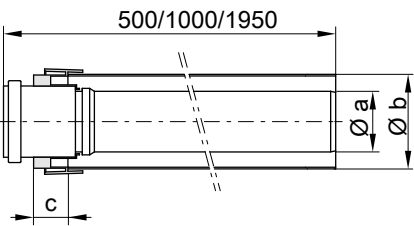


Size to EN 13384.
For flue gas headers in the negative pressure range, see the Viessmann Vitoset pricelist.
For pressurised flue systems for multi boiler systems, see page 37.

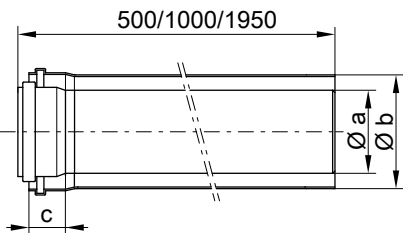
Flue system components

3.1 Balanced flue system components

Balanced flue pipe
These pipes may be trimmed as required.



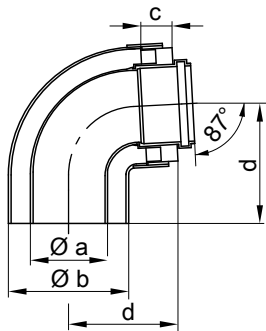
System size Ø 60 and 80 mm



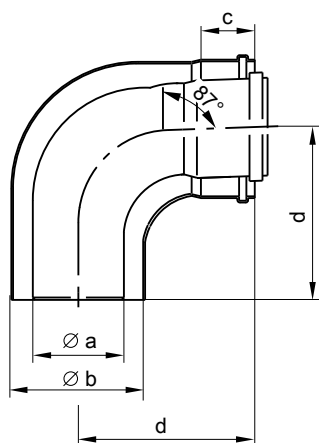
System size Ø 100 mm

System size Ø mm	Dimensions [mm]		
	a	b	c
60	60	100	40
80	80	125	40
100	110	150	40

Balanced flue bend 87°



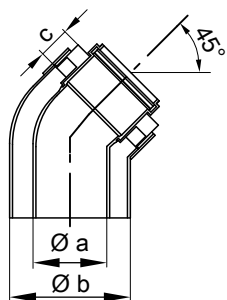
System size Ø 60 and 80 mm



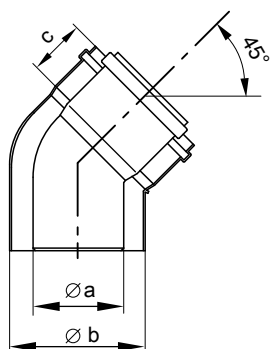
System size Ø 100 mm

System size Ø mm	Dimensions [mm]			
	a	b	c	d
60	60	100	40	110
80	80	125	40	120
100	110	150	40	170

Balanced flue bend 45°
Standard pack 2 pce



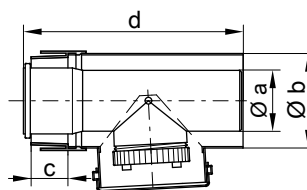
System size Ø 60 and 80 mm



System size Ø 100 mm

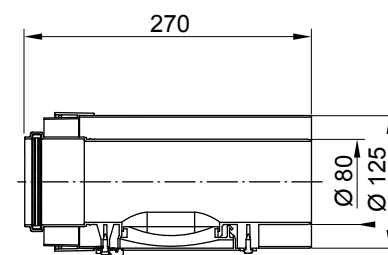
System size Ø mm	Dimensions [mm]		
	a	b	c
60	60	100	40
80	80	125	40
100	110	150	40

Balanced flue inspection piece, straight

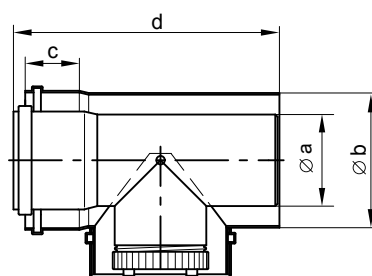


System size Ø 60 mm

System size Ø mm	Dimensions [mm]			
	a	b	c	d
60	60	100	40	250



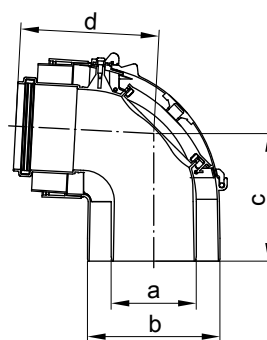
System size Ø 80 mm



System size Ø 100 mm

System size Ø mm	Dimensions [mm]			
	a	b	c	d
100	110	150	40	273

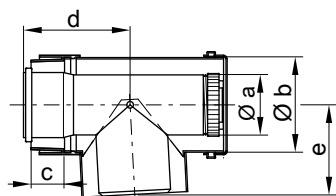
Balanced flue inspection bend 87°; system size Ø 60 and 80 mm



Flue system components (cont.)

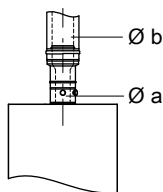
System size Ø mm	Dimensions [mm]			
	a	b	c	d
60	60	100	100	130
80	80	125	120	130

Balanced flue inspection tee 87°; system size Ø 100 mm



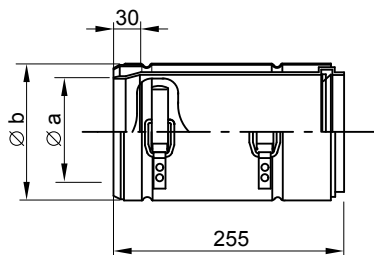
System size Ø mm	Dimensions [mm]				
	a	b	c	d	e
100	110	150	40	120	140

Balanced flue adaptor



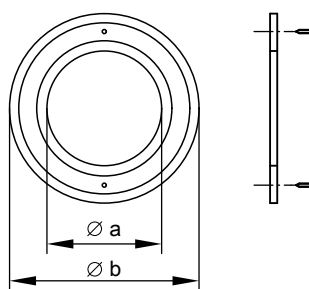
From system size Dimension a [mm]	To system size Dimension b [mm]
60/100	80/125
80/125	60/100
80/125	100/150

Balanced flue slide coupling



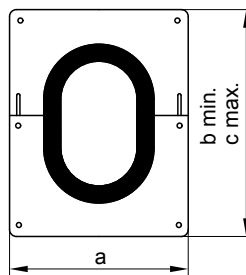
System size Ø mm	Dimensions [mm]	
	a	b
60	60	100
80	80	125
100	110	150

Balanced flue wall bezel



System size Ø mm	Dimensions [mm]	
	a	b
60	102	194
80	130	230
100	155	230

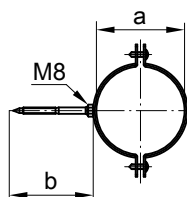
Universal cover plate



System size Ø mm	Dimensions [mm]		
	a	b	c
60	250	246	310
80	250	246	310
100	280	286	350

Fixing clamp

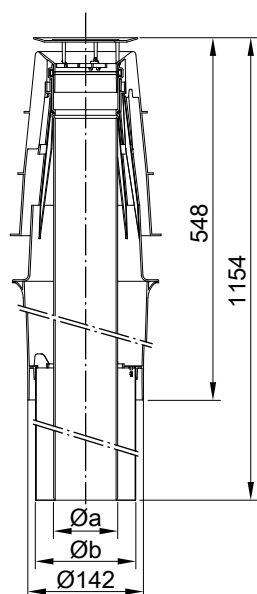
For routing pipes over internal or external walls, white.



System size Ø mm	Dimensions [mm]	
	a	b
60	100	100
80	125	100
100	150	100

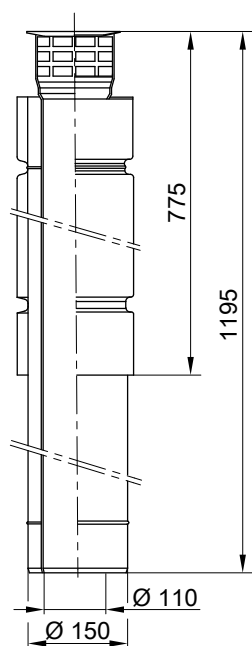
Balanced flue roof outlet

With fixing clamp.



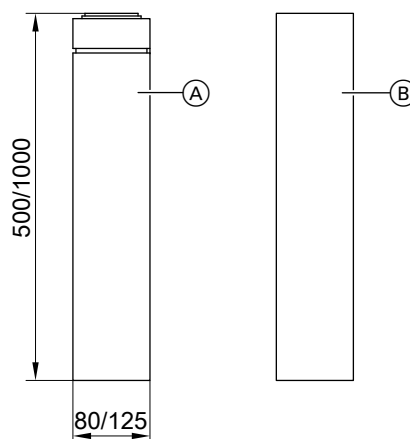
System size Ø 60 and 80 mm

System size Ø mm	Dimensions [mm]	
	a	b
60	60	100
80	80	125



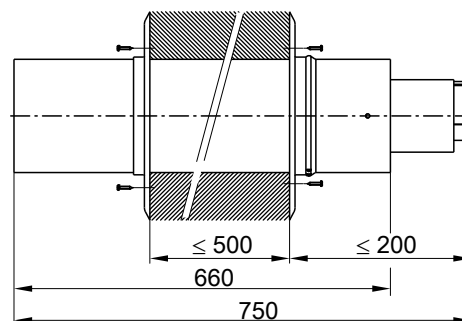
System size Ø 100 mm

Above roof extension



- (A) Above roof extension
- (B) Casing pipe
- (C) Bracing clamp

Balanced flue external wall connection (incl. wall bezels) For system size Ø 60 mm and 80 mm.



Elbow in the balanced flue pipe

Smallest offset A (2 x 45° balanced flue bend):

- 74 mm for system size Ø 60 mm (C = 174 mm)
- 93 mm for system size Ø 80 mm (C = 223 mm)
- 140 mm for system size Ø 100 mm (C = 328 mm):

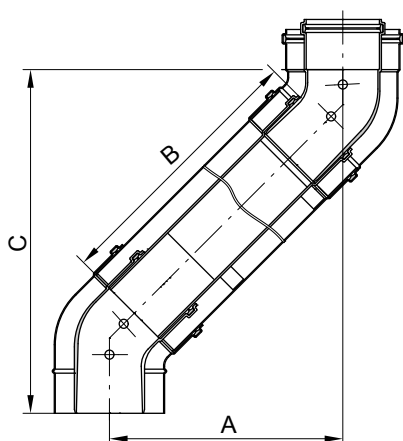
Push two 45° balanced flue bends into each other and into the balanced flue.

Offset:

- In excess of 74 mm for system size Ø 60 mm
- In excess of 93 mm for system size Ø 80 mm
- In excess of 140 mm for system size Ø 100 mm:

Depending on the offset (dimension A), insert a balanced flue extension (dimension B) between the two 45° balanced flue bends.

Flue system components (cont.)



System size Ø 60 mm

Offset	A (mm)	150	200	250	300	350	390
Extension	B (mm)	153	224	295	372	436	487
Installed height	C (mm)	250	300	350	400	450	490

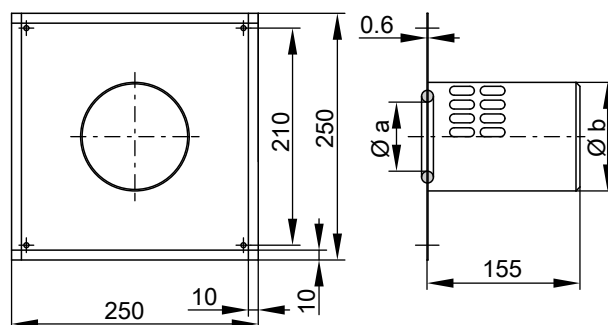
System size Ø 80 mm

Offset	A (mm)	150	200	250	300	350	390
Extension	B (mm)	123	194	265	335	406	463
Installed height	C (mm)	280	330	380	430	480	520

System size Ø 100 mm

Offset	A (mm)	200	250	300	350	390
Extension	B (mm)	134	205	275	346	403
Installed height	C (mm)	390	438	488	538	578

Balanced flue air inlet adaptor

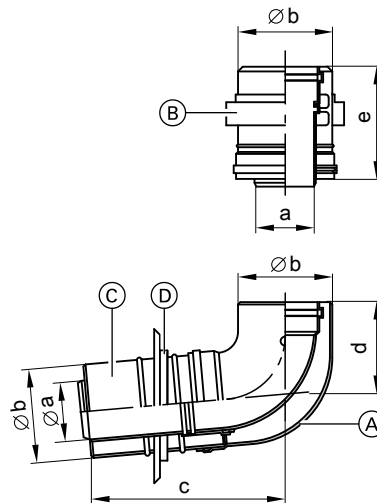
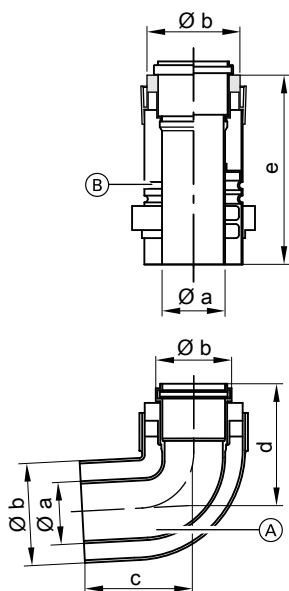


System size Ø mm	Dimensions [mm]	
	a	b
60	60	100
80	80	125

3.2 Components for routing a flue over an external wall

External wall pack

External wall bend (A) with air inlet piece (B), twin female connection (C) and wall bezel (D).



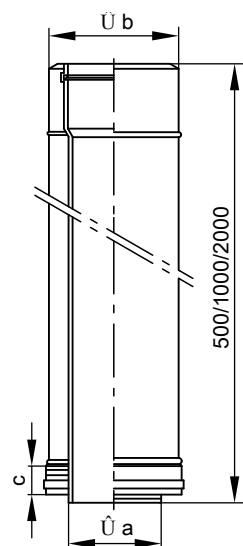
System size Ø 100 mm

System size Ø mm	Dimensions [mm]				
	a	b	c	d	e
100	110	150	295	170	165

System size Ø mm	Dimensions [mm]				
	a	b	c	d	e
60	60	100	110	110	250
80	80	125	120	120	250

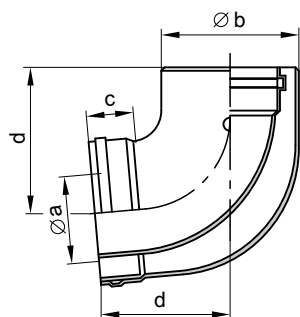
Flue system components (cont.)

External wall pipe



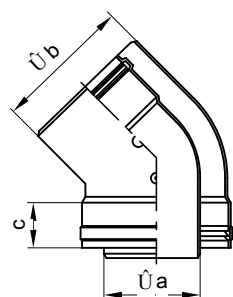
System size Ø mm	Dimensions [mm]		
	a	b	c
60 ^{*3}	—	—	—
80 ^{*3}	—	—	—
100	110	150	40

External wall bend, 87°



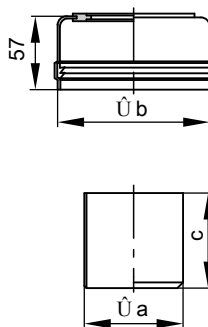
System size Ø mm	Dimensions [mm]			
	a	b	c	d
60 ^{*3}	—	—	—	—
80 ^{*3}	—	—	—	—
100	110	150	40	170

External wall bend, 45°



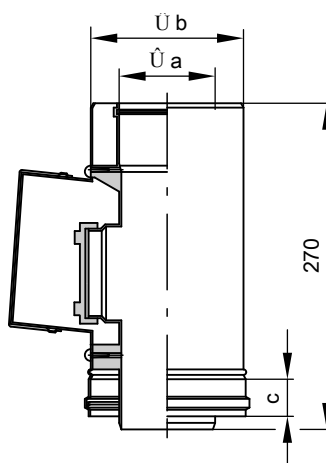
System size Ø mm	Dimensions [mm]		
	a	b	c
60 ^{*3}	—	—	—
80 ^{*3}	—	—	—
100	110	150	40

External wall end piece



System size Ø mm	Dimensions [mm]		
	a	b	c
60	60	100	110
80	80	125	110
100	110	152	85

Inspection piece for flues routed over external walls



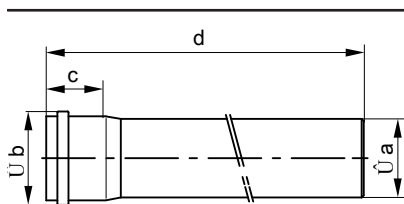
System size Ø mm	Dimensions [mm]		
	a	b	c
60 ^{*3}	—	—	—
80 ^{*3}	—	—	—
100	110	150	40

^{*3} Use balanced flue components (see page 45).

3.3 Single pipe system components

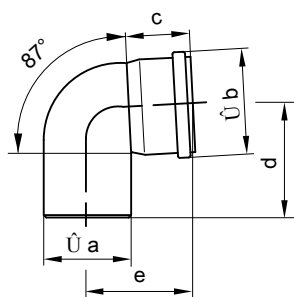
Flue pipe

These pipes may be trimmed as required.



System size Ø mm	Dimensions [mm]			
	a	b	c	d
60	60	73	58	500/1000/1950
80	80	94	57	500/1000/1950
100	110	128	72	500/1000/2000
125	125	145	75	500/1000/2000
150	160	184	83	500/1000/2000
200	184	227	122	500/1000/2000
250	250	273	103	500/1000/2000

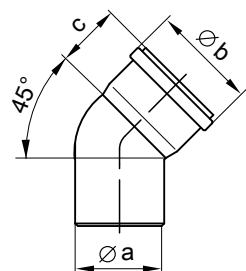
Flue bend 87°



System size Ø mm	Dimensions [mm]				
	a	b	c	d	e
60	60	73	55	110	120
80	80	94	60	120	130
100	110	128	72	130	130
125	125	145	75	150	150
150	160	184	83	170	170
200	200	227	122	350	310
250	250	273	103	402	390

Flue bend (45°)

Standard pack 2 pce.



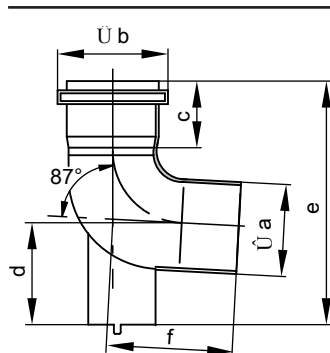
System size Ø mm	Dimensions [mm]		
	a	b	c
60	60	73	55
80	80	94	60
100	110	128	72

System size Ø mm	Dimensions [mm]		
	a	b	c
125	125	145	75
150	160	184	83
200	200	227	122
250	250	273	103

Standard shaft pack

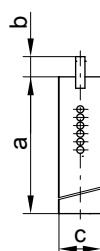
Comprising support bend, support rail, shaft cover and spacers

Support bend

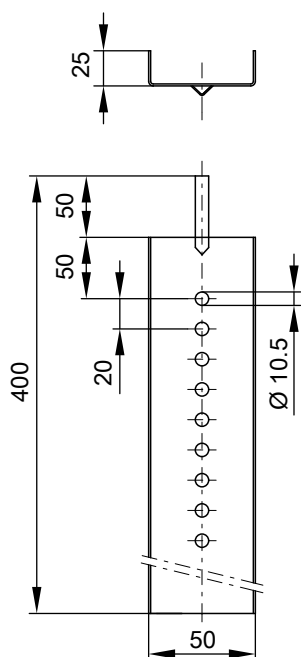


System size Ø mm	Dimensions [mm]					
	a	b	c	d	e	f
60	60	73	55	60	180	110
80	80	94	60	80	210	120
100	110	128	72	112	245	120
125	125	145	75	120	264	147
150	160	184	83	137	296	163
200	200	227	122	153	490	310
250	250	273	103	326	670	385

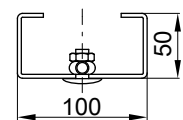
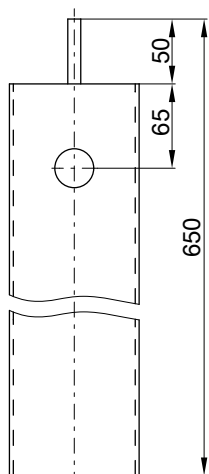
Support rail



System size Ø mm	Dimensions [mm]		
	a	b	c
60	350	50	50
80	350	50	50
100	350	50	50
125	400	50	50
150	400	50	50



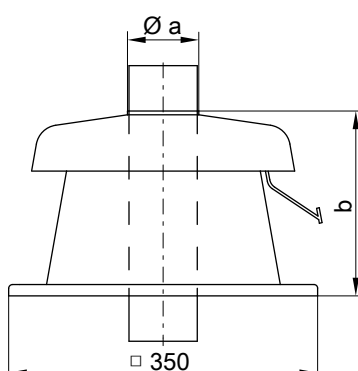
System size 200



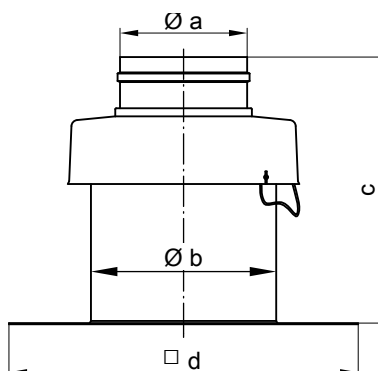
System size 250

Shaft cover, PPs

Fixing materials are part of the standard delivery.

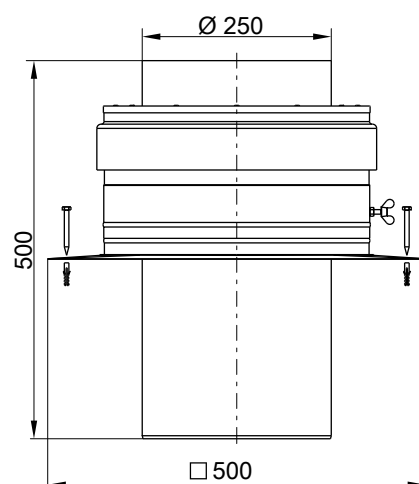


System size Ø mm	Dimensions [mm]	
	a	b
60	60	198
80	80	229
100	111	201



System size 125, 150 and 200

System size Ø mm	Dimensions [mm]			
	a	b	c	d
125	126	185	257	350
150	161	228	258	350
200	202	260	261	280

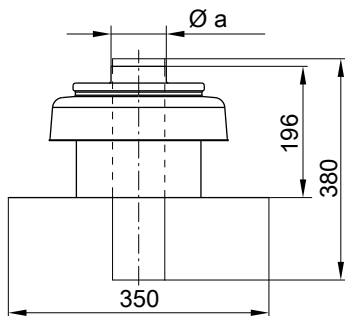


System size 250

Flue system components (cont.)

Shaft cover, metal

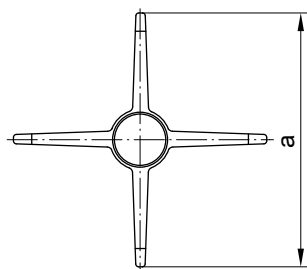
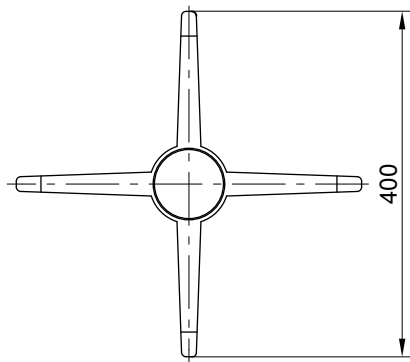
Fixing materials are part of the standard delivery.



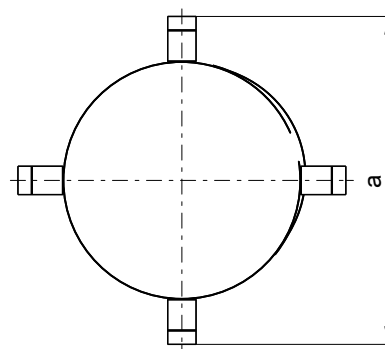
System size Ø mm	Dimensions [mm]
60	60
80	80
100	110

Spacer

Standard pack 3 pce (suitable for internal shaft dimensions 130 × 130 mm to 250 × 250 mm or Ø 150 mm to Ø 300 mm).



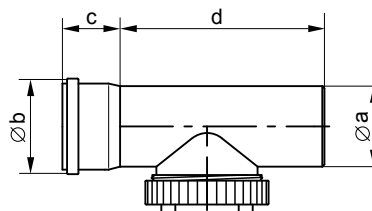
System size 200



System size 250

System size Ø mm	Dimensions [mm]
200	734
250	751

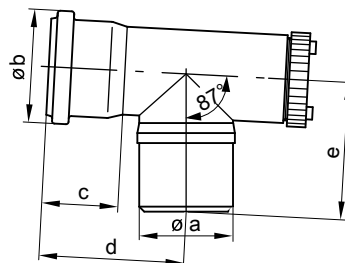
Inspection piece (straight)



System size Ø mm	Dimensions [mm]			
	a	b	c	d
60	60	73	55	195
80	80	94	60	210
100	110	128	72	201
125	125	145	75	205
150	160	184	83	225
200	200	227	122	300
250	250	273	103	600

Inspection tee

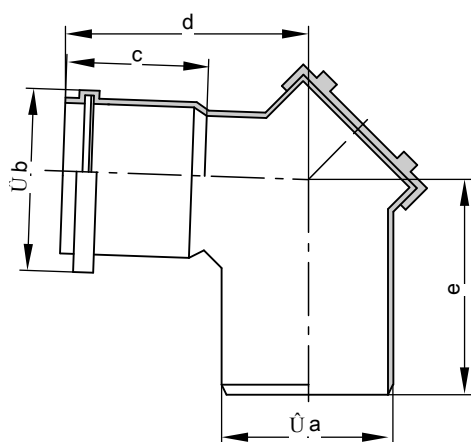
System size Ø 60 and 80 mm.



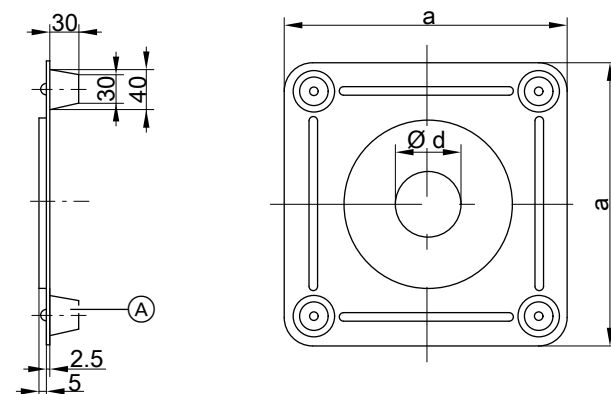
System size Ø mm	Dimensions [mm]				
	a	b	c	d	e
60	60	73	55	130	100
80	80	94	60	142	130

Flue system components (cont.)

Inspection bend



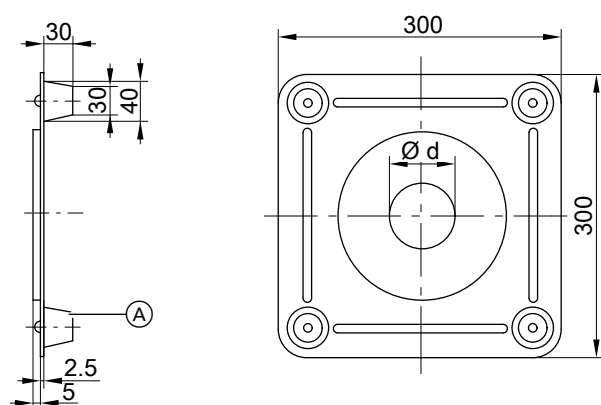
System size \varnothing mm	Dimensions [mm]	$\varnothing d$
60		60
80		80
100		110
125		125
150		160



(A) Spacer

System size \varnothing mm	Dimensions [mm]	$\varnothing d$
200	a 400	200
250	400	250

Ventilation bezel

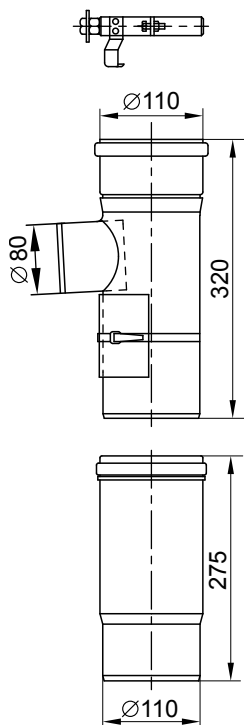


(A) Spacer

3.4 Components for multiple connections to a room sealed balanced flue system – positive pressure for the Vitodens 200-W, 222-W and 222-F, 19 to 26 kW

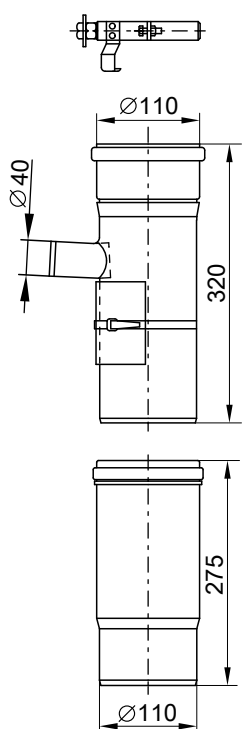
Connection assembly for multiple connections

Connection tee with long female connection and fixing clamp.



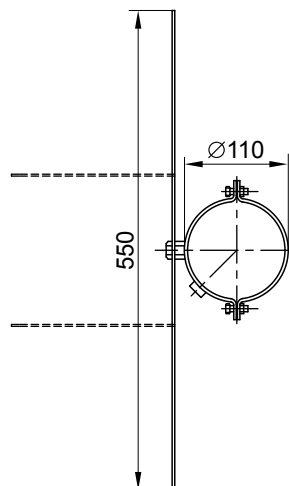
Connection assembly for condensate drain

Connection tee with long female connection and fixing clamp.



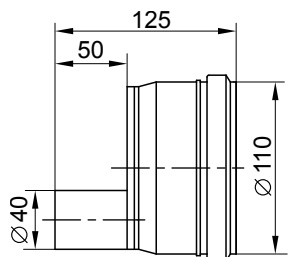
Fixing clamp

For securing the flue pipe horizontally inside the shaft.



Connection for condensate drain

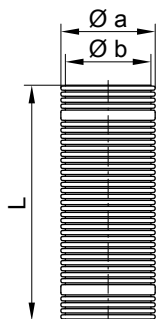
Reduction from Ø 100 mm to Ø 40 mm.



3.5 Components of the flexible single pipe system for flexible flues

Flue pipe, flexible

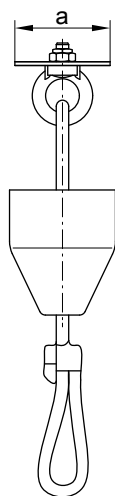
Standard pack (length L) 12.5 or 25 m on a roll.



System size Ø mm	Dimensions [mm]	
	a	b
60	58	50
80	88	77
100	113	101

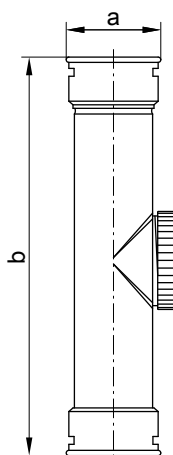
Pipe lowering attachment

With 25 m rope.



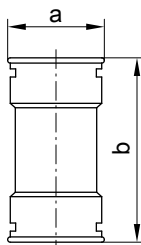
System size Ø mm	Dimensions [mm]	
	a	b
60	56	
80	88	
100	111	

Inspection piece (straight)



System size Ø mm	Dimensions [mm]	
	a	b
60	72	310
80	102	325
100	127	326

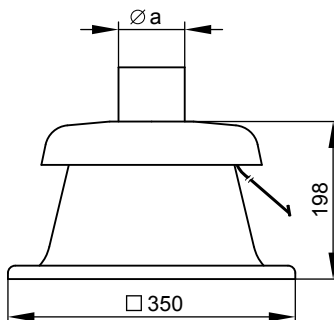
Connection piece



System size Ø mm	Dimensions [mm]	
	a	b
60	72	140
80	102	140
100	127	140

Shaft cover

With end piece.



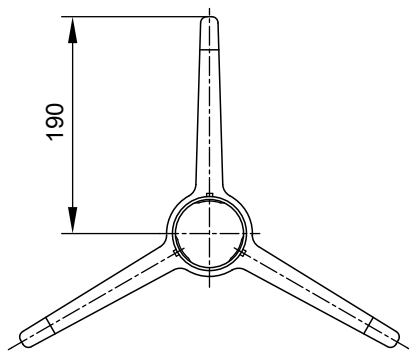
Flue system components (cont.)

System size Ø mm	Dimensions [mm]	a
60		60
80		80
100		110

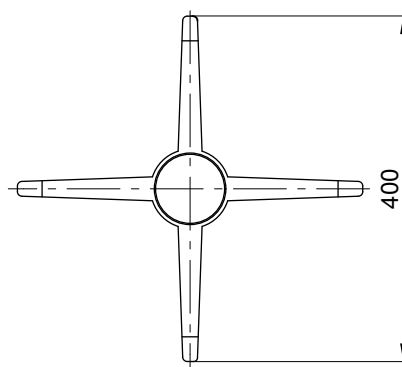
Spacer

Standard pack 5 pce

Suitable for internal shaft dimensions 130 × 130 mm to 250 × 250 mm or Ø 150 mm to Ø 300 mm.



System size Ø 60 mm

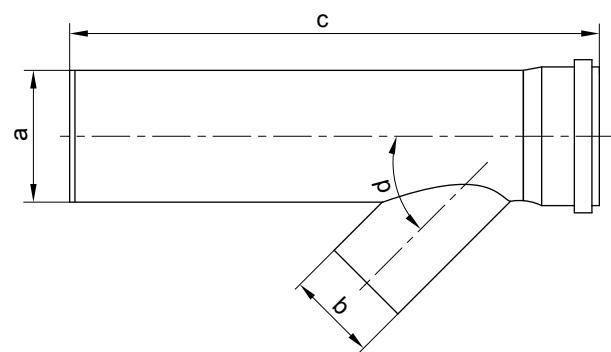


System size Ø 80 and 100 mm

3.6 Components for multi boiler systems

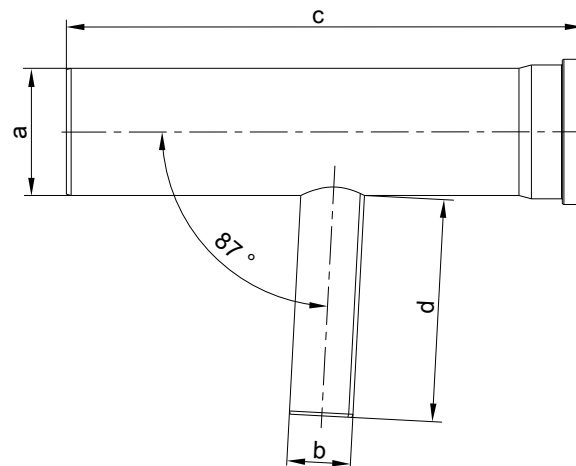
Flue gas header

Installation in series



Installation in series up to 35 kW

System size Ø mm	Dimensions [mm]			d
150	a	b	c	45 °
	160	110	650	

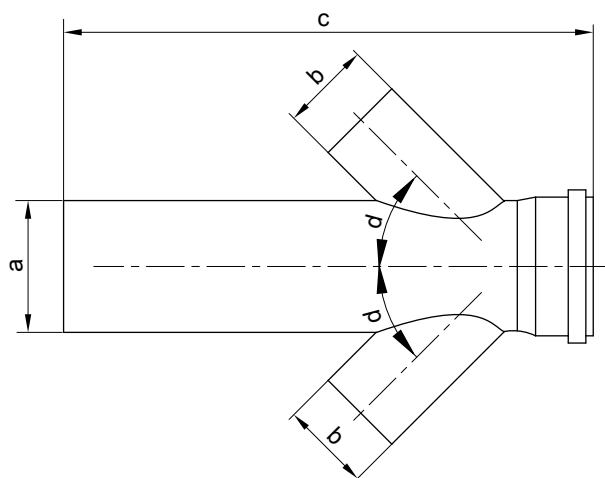


Installation in series from 45 kW

System size Ø mm	Dimensions [mm]			d
	a	b	c	
150	160	80	650	280
200	200	80	680	280
250	250	110	790	280

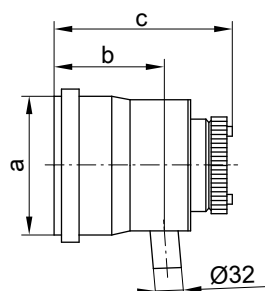
Flue system components (cont.)

Installation as a block



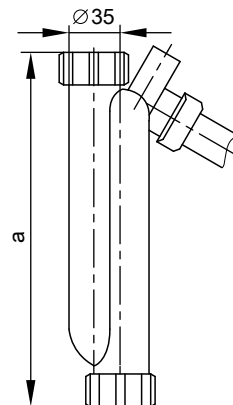
System size Ø mm	Dimensions [mm]			
	a	b	c	d
150	160	80	650	45°
200	200	110	680	45°
250	250	110	675	42°

End piece with condensate drain



System size Ø mm	Dimensions [mm]		
	a	b	c
150	160	115	195
200	200	115	195
250	250	339	431

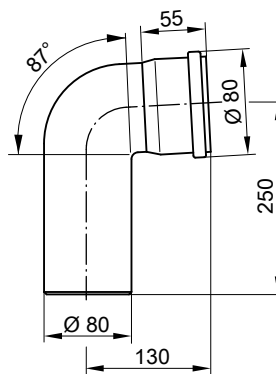
Siphon with drain hose



Rated heating output kW	Dimensions [mm] a
15 – 60	248
80 – 150	300

Flue bend (87°)

Only for Vitodens 200-W, 222-W and 222-F, up to 35 kW.

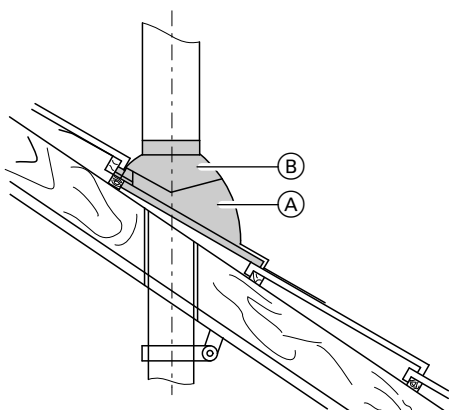


3.7 Roof elements

Universal roof tile

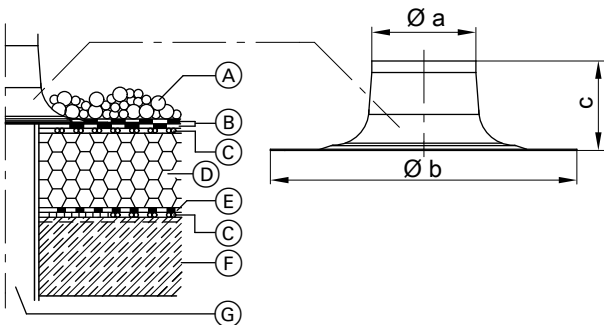
Suitable for roof slopes of 25 to 45°.

Flue system components (cont.)



- (A) Universal roof tile
- (B) Pipe outlet for universal roof tile

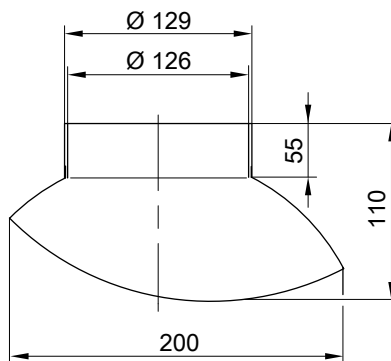
Flat roof collar



- (A) Gravel ballast layer
- (B) Insulation layer

Pipe outlet for Klöber roof tiles

Suitable for roof slopes of 20 to 50 °.



- (C) Aeration layer
- (D) Thermal insulation
- (E) Insulation
- (F) Ceiling
- (G) Vertical coaxial roof outlet

System size Ø mm	Dimensions [mm]		
	a	b	c
60	135	390	250
80	135	390	250
100	170	470	250
150	170	450	254
200	220	500	254

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Subject to technical modifications.

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