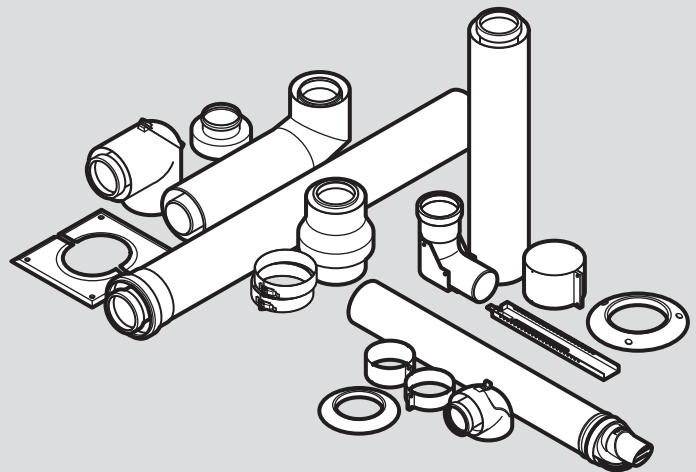




# ecoTEC pro, ecoTEC plus, ecoTEC exclusive

VU../VUW../VUI..



# Air/flue pipe installation manual

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# 1 Safety

## 1.1 Action-related warnings

### Classification of action-related warnings

The action-related warnings are classified in accordance with the severity of the possible danger using the following warning symbols and signal words:

#### Warning symbols and signal words



#### **Danger!**

Imminent danger to life or risk of severe personal injury



#### **Danger!**

Risk of death from electric shock



#### **Warning.**

Risk of minor personal injury



#### **Caution.**

Risk of material or environmental damage

## 1.2 Intended use

The air/flue pipes described here are constructed using state-of-the-art technology in accordance with the recognised safety rules and regulations. Nevertheless, there is still a risk of injury or death to the system's end user or others or of damage to the products and other property in the event of improper use or use for which the products are not intended.

The air/flue pipes mentioned in these instructions must only be used in conjunction with the product types mentioned in these instructions.

Any other use that is not specified in these instructions, or use beyond that specified in this document, shall be considered improper use.

Intended use includes the following:

- observance of accompanying operating, installation and maintenance instructions for all system components
- installing and setting up the product in accordance with the product and system approval
- compliance with all inspection and maintenance conditions listed in the instructions.

## 1.3 General safety information

### 1.3.1 Risk caused by inadequate qualifications

The following work must only be carried out by competent persons who are sufficiently qualified to do so:

- Set-up
  - Dismantling
  - Installation
  - Start-up
  - Inspection and maintenance
  - Repair
  - Decommissioning
- ▶ Proceed in accordance with current technology.

### 1.3.2 Risk of poisoning due to escaping flue gas

Improperly installed flue pipework may cause flue gas to escape.

- ▶ Before starting up the product, check that the whole air/flue pipe is securely fastened and check it for tightness.

The flue pipework may become damaged by unforeseeable external influences.

- ▶ As part of the annual maintenance, inspect the flue system in terms of:
  - external faults such as brittleness and damage
  - safe pipe connections and secure fastenings

### 1.3.3 Risk of death from escaping flue gas

- ▶ Ensure that all inspection and test openings in the air/flue pipe that are within the building and can be opened are always closed for start-up and during operation.

Flue gas may escape from leaking pipes or damaged seals. Mineral-oil-based greases can damage the seals.

- ▶ Do not install any damaged pipes.
- ▶ Deburr and chamfer the ends of the pipes before installing them, and dispose of the shavings.
- ▶ Never use mineral-oil-based grease for the installation.
- ▶ To facilitate installation, use only water or commercially available soft soap. If a

lubricant is supplied with the product, use this lubricant.

Mortar residues, shavings, etc., in the flue gas route may prevent the flue gas from flowing outdoors as intended, and this flue gas may escape into the dwelling instead.

- ▶ After installation, remove all mortar residues, shavings, etc., from the air/flue pipe.

### 1.3.4 Risk of death from leaks in the flue gas route

Extensions that are not fixed to the wall or ceiling may become disengaged due to sagging or thermal expansion.

- ▶ Ensure that every extension is fixed to the wall or ceiling by means of a pipe clamp. The distance between two pipe clamps must not be greater than the length of the extension, and must not exceed 2 m.
- ▶ For changes of direction just upstream of the elbow, install another pipe clamp.

Condensate that collects inside the flue in certain areas can damage the flue pipework seals.

- ▶ Install the horizontal flue pipe to the product with a downward gradient.
  - Downward gradient to the product: 3°



#### Note

3° corresponds to a downward gradient of approx. 50 mm per metre of pipe length.

### 1.3.5 Risk of fire and damage to electronics caused by lightning

- ▶ If the building is equipped with a lightning protection system, incorporate the air/flue pipe into the lightning protection.
- ▶ If the flue pipework (parts of the air/flue pipe situated outside the building) contains metal materials, incorporate it into the potential equalisation system.

### 1.3.6 Risk of injury from ice formation

Where air/flue pipes penetrate the roof, the water vapour contained in flue gas may precipitate as ice on the roof or the roof structures.

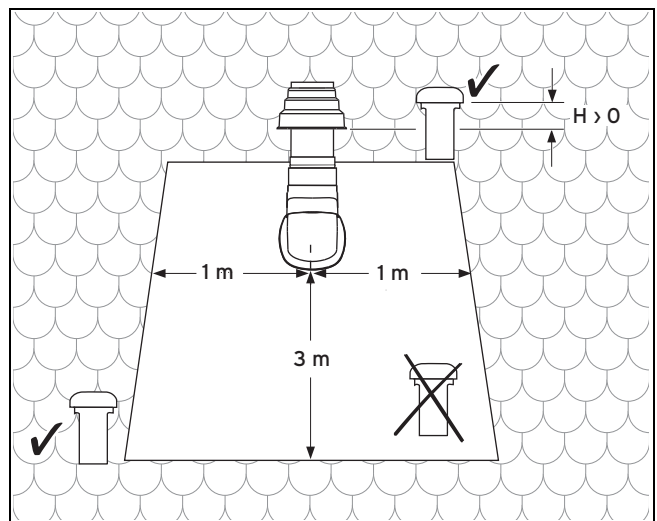
- ▶ Ensure that this ice formation does not slide from the roof.

### 1.3.7 Risk of damage to the structure of the building due to moisture

As a result of improper installation, water may penetrate the building and cause material damage.

- ▶ Observe the definitions in the directives for the planning and implementation of roofs with seals.

### 1.3.8 Product damage caused by adjacent channel vents



Extremely damp extract air escapes from the channel vents. This may condense in the air pipe and cause damage to the product.

- ▶ Observe the requirements for minimum clearances in accordance with the figure.

### 1.3.9 Requirements for the air/flue terminal

As a result of improper installation, water may penetrate the building and cause material damage.

- ▶ Observe the requirements for the air/flue terminal in the boiler's installation instructions.



## 1.4 CE certification

The heat generators are certified as gas-fired boilers with associated flue systems in accordance with the Gas Appliances Regulation (EU) 2016/426. This set-up instructions are a component of the certification and are cited in the type testing certificate. In compliance with the regulatory statutes of these set-up instructions, the proof of usability of the elements identified by Vaillant article numbers that are designed for the air/flue pipe is provided. If you do not use certified elements for the Vaillant air/flue pipe when installing the heat generators, this voids the CE conformity of the heat generator. We therefore strongly recommend that you fit Vaillant air/flue systems.

## 1.5 Regulations (directives, laws, standards)

- ▶ Observe the national regulations, standards, directives, ordinances and laws.

## **2 Notes on the documentation**

### **2.1 Observing other applicable documents**

- ▶ You must always observe the installation instructions for the installed heat generator.

### **2.2 Storing documents**

- ▶ Pass these instructions and all other applicable documents on to the end user.

### **2.3 Validity of the instructions**

These instructions apply only for the heat generators named in the other applicable documents, hereinafter referred to as the "product".

### 3 Certified air/flue systems and components

#### 3.1 System overview, 60/100 mm diameter

System group	Article number	Air/flue systems, concentric
A	0020223472	Vertical roof duct (black, RAL 9005), with collar
B	303982	Vertical ridge roof duct
C	0020219517 <sup>1</sup>	Horizontal wall duct, 0.7 m
D	0020219518 <sup>1</sup>	Horizontal telescopic wall duct (only available in black)
E	0020219519 <sup>1</sup>	Horizontal wall duct, 1.7 m
F	0010035512 <sup>2</sup>	Horizontal wall duct, 0.7 m for multi-storey buildings
G	0010024718 <sup>2</sup>	Horizontal wall duct, for balcony installation and for installing the variable terminal set (VTK) in multi-storey buildings
H	303933 <sup>1</sup>	Horizontal wall duct, 0.7 m
	1) In accordance with the construction regulation, installation in buildings higher than 18 m (11 m in Scotland) is not permitted. 2) In accordance with the construction regulation, installation in buildings higher than 18 m (11 m in Scotland) is permitted.	

#### 3.1.1 Components

The following table lists the air/flue systems that are permitted as part of the system certification, along with their certified components.

Optional connection accessories	Article number	A	B	C, E	D	F	G	H
Extension (PP), concentric, 470 mm, 60/100 mm diameter	303902	X	X	X	X	X	X	X
Extension (PP), concentric, 970 mm, 60/100 mm diameter	303903	X	X	X	X	X	X	X
Extension (stainless steel), concentric, 970 mm, 60/100 mm diameter <sup>3</sup>	0010035514			X		X		X
Extension (PP), concentric, 1970 mm, 60/100 mm diameter	303905	X	X	X	X	X	X	X
Extension (PP), concentric, 3960 mm, 60/100 mm diameter <sup>1</sup>	0020138174	X	X	X	X	X	X	X
45° elbow (2 pcs), concentric	303911	X	X	X	X	X	X	X
87° elbow, concentric	303910	X	X	X	X	X	X	X
Pipe clamp (5 pcs), 100 mm diameter	303821	X	X	X	X	X	X	X
Adjustable pipe clamps (3 pcs), 100 mm diameter	303935	X	X	X	X	X	X	X
Sliding sleeve	303915	X	X	X	X	X	X	X
Pitched roof tile	009076 (black)	X						
Universal pitched roof tile	303980	X						
Flat roof penetration collar	009056	X						
Telescopic extension, 440-690 mm, 60/100 mm diameter	303906	X	X	X	X	X	X	X
Telescopic offset piece	303919	X	X					
Black terminal set for horizontal air/flue pipe	0020219537			X	X			
	303934							X
Variable terminal set (VTK), black <sup>2</sup>	0020219529			X	X			
	303942						X	X
Variable terminal set (VTK), white <sup>2</sup>	0020219530			X				
	303946							X
Extension for variable terminal set (VTK), 60 mm diameter, 1 m, black <sup>2</sup>	0020219539			X	X			
	303943						X	X
Extension for variable terminal set (VTK), 60 mm diameter, 1 m, white <sup>2</sup>	0020219540			X				

1 To reduce the pipe connections that need to be inspected, 4 m extensions are offered on request. (Special delivery with minimum purchasing quantity. No returns accepted.) The required downward gradient is also 3°. A height of 200 mm is therefore required for the 4 m extension. Take the height into consideration when selecting the installation site.

2 Delivery with pipe clamps

3 In accordance with the construction regulation, installation on the external wall in buildings higher than 18 m (11 m in Scotland) is permitted. The sleeve end of the extension must protrude at least 60 mm from the wall to comply with fire-protection requirements.

Optional connection accessories	Article number	A	B	C, E	D	F	G	H
Extension for variable terminal set (VTK), 60 mm diameter, 1 m, white <sup>2</sup>	303947							X
87° elbow for variable terminal set (VTK), black <sup>2</sup>	0020219543			X	X			
	303944						X	X
87° elbow for variable terminal set (VTK), white <sup>2</sup>	0020219544			X				
	303949							X
45° elbow (2 pcs) for variable terminal set (VTK), black	0020219551			X	X			
	303945						X	X
45° elbow (2 pcs) for variable terminal set (VTK), white	0020219552			X				
	303948							X
Deflector set, DN 60, PP, black	0020060584							X
Deflector set, DN 60, PP, white	0020060585							X

1 To reduce the pipe connections that need to be inspected, 4 m extensions are offered on request. (Special delivery with minimum purchasing quantity. No returns accepted.) The required downward gradient is also 3°. A height of 200 mm is therefore required for the 4 m extension. Take the height into consideration when selecting the installation site.

2 Delivery with pipe clamps

3 In accordance with the construction regulation, installation on the external wall in buildings higher than 18 m (11 m in Scotland) is permitted. The sleeve end of the extension must protrude at least 60 mm from the wall to comply with fire-protection requirements.

### 3.2 System overview, 80/125 mm diameter

System group	Article number	Air/flue systems, concentric
A	303200	Vertical roof duct
B	303209 <sup>1</sup>	Horizontal wall/roof duct
C	0010035777 <sup>2</sup>	Horizontal wall duct, stainless steel
D	0010039735 <sup>2</sup>	External wall connector
E	0020042748 <sup>1</sup>	External wall connector

1) In accordance with the construction regulation, installation in buildings higher than 18 m (11 m in Scotland) is not permitted.

2) In accordance with the construction regulation, installation in buildings higher than 18 m (11 m in Scotland) is permitted.

#### 3.2.1 Components

The following table lists the air/flue systems that are permitted as part of the system certification, along with their certified components.

Optional connection accessories	Article number	A	B, C	D, E
<b>System, concentric, 80/125 mm diameter</b>				
Connector (screw holes, 4 x)	303926	X	X	X
Connector with bayonet connection	0020147469	X	X	X
Extension (PP), concentric, 470 mm, 80/125 mm diameter	303202	X	X	X
Extension (stainless steel), concentric, 960 mm, 80/125 mm diameter <sup>1</sup>	0010035778		X	
Extension (PP), concentric, 970 mm, 80/125 mm diameter	303203	X	X	X
Extension (PP), concentric, 1970 mm, 80/125 mm diameter	303205	X	X	X
45° elbow (x 2), concentric, 80/125 mm diameter	303211	X	X	X
87° elbow, concentric, 80/125 mm diameter	303210	X	X	X
Pipe clamp (5 pcs), 125 mm diameter	303616	X	X	X
Sliding sleeve, 80/125 mm diameter	303215	X	X	X
Pitched roof tile, black	009076	X		X
Universal pitched roof tile	303980	X		X
Flat roof penetration collar	009056	X		X
<b>System, concentric (stainless steel), 80/125 mm diameter</b>				
External wall console, adjustable from 50 to 300 mm, stainless steel	0020042749			X
External wall pipe bracket (stainless steel), 50–90 mm	0020042751			X

1 In accordance with the construction regulation, installation on the external wall in buildings higher than 18 m is permitted



<b>Optional connection accessories</b>	<b>Article number</b>	<b>A</b>	<b>B, C</b>	<b>D, E</b>
Extension for external wall pipe bracket (stainless steel), 90–280 mm	0020042752			X
Extension (stainless steel), concentric, 0.5 m	0020042753			X
Extension (stainless steel), concentric, 1.0 m	0020042754			X
Extension that can be shortened (stainless steel), concentric, 0.5 m	0020042755			X
Elbow (stainless steel), concentric, 87°	0020042756			X
Elbows (stainless steel), concentric (2 pcs), 45°	0020042757			X
Elbows (stainless steel), concentric (2 pcs), 30°	0020042758			X
Inspection piece (stainless steel), 0.25 m, concentric	0020042759			X
Rain penetration collar (stainless steel) for roof penetration	0020042760			X
1 In accordance with the construction regulation, installation on the external wall in buildings higher than 18 m is permitted				

## 4 System conditions

### 4.1 Technical properties of the air/flue systems from Vaillant for condensing products

Technical feature	Description
Temperature resistance	Adapted to the maximum flue gas temperature of the product.
Leak-tightness	Adapted to the product for use in buildings and outdoors. A leak-tightness test must be carried out at a test pressure of 200 Pa. At a diameter of 50 mm, a test pressure of 1500 Pa must be used for the test.
Condensate resistance	For gas and oil fuels
Corrosion resistance	Adapted to the gas and oil condensing boiler
Clearance from combustible materials	– Concentric air/flue pipe-work: No clearance required
Installation site	In accordance with the installation instructions
Resistance to fire	Normal level of flame resistance (in accordance with EN 13501-1 Class E)
Fire resistance duration	None: The external pipe of the concentric air/flue pipe are not flammable. A required fire resistance duration is provided by shafts within the building.

### 4.2 Route of the air/flue pipe in buildings

The air/flue pipe should be as short as possible and run as straight as possible.

- ▶ Do not arrange several elbows or inspection elements immediately after each other.

As a result of standards relating to the hygiene of potable water, potable water lines must be protected against impermissible heating.

- ▶ Lay the air/flue pipe separately from the potable water lines.

It must be possible to check and, if required, clean the entire length of the flue gas route.

It should be possible to remove the air/flue pipe again with a minimal amount of effort (preferably no time-consuming mortising work in the living area, but screwed-in casing instead). If they are arranged in shafts, they are usually easy to remove.

### 4.3 Location of the terminal

The location of the flue system terminal must comply with the relevant applicable international, national and/or local regulations.

- ▶ Align the terminal of the flue system in such a way that ensures a secure outward flow and distribution of the flue gases and prevents these gases from re-entering the building through openings (windows, supply air openings and balconies).
- ▶ Observe the existing regulations with regard to the clearances to windows and ventilation openings.

### 4.4 Disposing of condensate

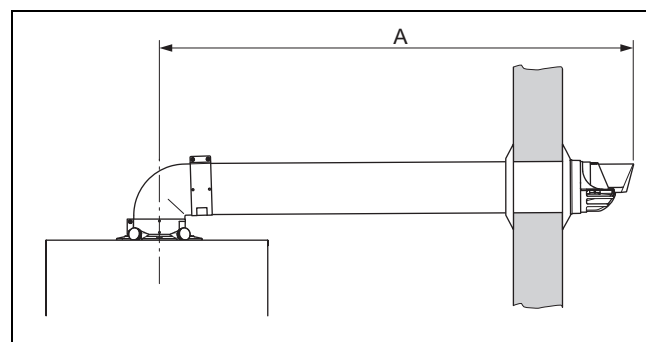
- ▶ When disposing of the condensate into the public wastewater system, observe the local regulations.
- ▶ Use only corrosion-resistant piping material for the condensate discharge pipe.

### 4.5 Clearance between combustible materials and the components

On individually connected products, it is not necessary to leave any clearance between the concentric air/flue pipe and/or the corresponding extension and components made from combustible materials.

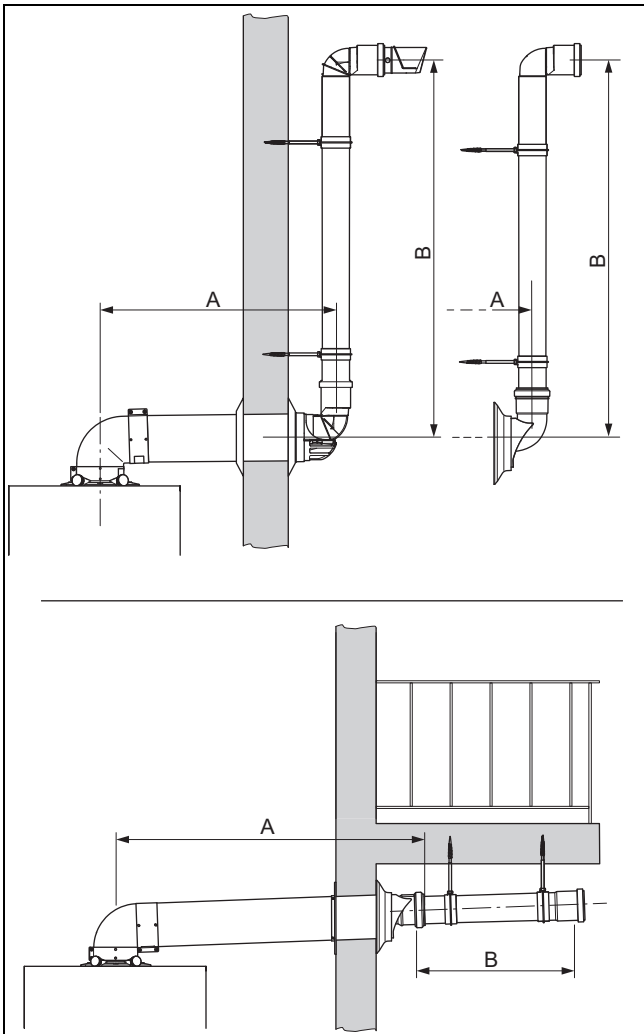
### 4.6 Maximum pipe lengths

#### 4.6.1 Maximum pipe length for horizontal wall duct



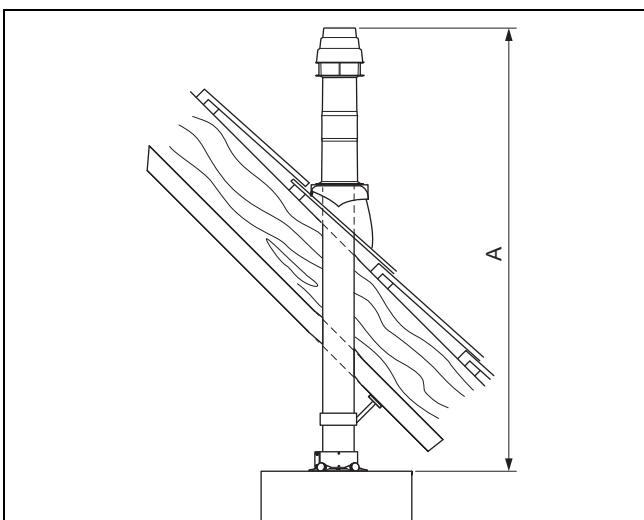
A Maximum pipe length

**4.6.2 Maximum pipe length of the horizontal wall duct with terminal set (60/100 mm diameter only)**



A Maximum concentric pipe length      B Outdoor pipe length

**4.6.3 Maximum pipe length for vertical roof duct**



A Maximum concentric pipe length

#### 4.6.4 Maximum pipe lengths, 60/100 mm diameter

Air/flue system	Article number	ecoTEC plus/ecoTEC pro/ecoTEC exclusive			
		VU 126/5-5 (H-GB) ecoTEC plus 612 VU 156/5-5 (H-GB) ecoTEC plus 615	VU 186/5-5 (H-GB) ecoTEC plus 618 VUW 196/5-5 (H-GB) ecoTEC plus 825 VUW 246/5-3 (H-GB) ecoTEC pro 24 VUW 286/5-3 (H-GB) ecoTEC pro 28 VUW 306/5-3 (H-GB) ecoTEC pro 30	ecoTEC 26 H combi A ecoTEC 22 H system A	VU 246/5-5 (H-GB) ecoTEC plus 624 VU 306/5-5 (H-GB) ecoTEC plus 630 VU 386/5-5 (H-GB) ecoTEC plus 637 VUW 286/5-5 (H-GB) ecoTEC plus 838 VUW 246/5-5 (H-GB) ecoTEC plus 832 VUW 306/5-5 (H-GB) ecoTEC plus 835 VUW 286/5-5 (H-GB) ecoTEC plus 838 VUI 286/5-5 (H-GB) ecoTEC plus 938 (No 937) VUW 356/5-7 (H-GB) ecoTEC exclusive 835 VUW 436/5-7 (H-GB) ecoTEC exclusive 843 VU 256/5-7 (H-GB) ecoTEC exclusive 627
Max. concentric pipe length <sup>1</sup>					
Horizontal wall/roof duct	0020219517 0020219518 0020219519 0010035512 <sup>2</sup> 0010024718	22 m plus 1 x 87° elbow	12 m plus 1 x 87° elbow	8 m plus 1 x 87° elbow	5.5 m plus 1 x 87° elbow
Variable terminal set	0020219529 0020219530 (with 0020219517, 0020219518, 0010024718 only) 303942 303946	The maximum concentric pipe length that is specified above is reduced as follows: <ul style="list-style-type: none"> <li>- By 0.5 m with the variable terminal</li> <li>- By 0.5 m with each metre of VTK pipe</li> <li>- By 0.5 m with each 87° elbow</li> <li>- By 0.5 m for every two 45° elbows</li> </ul>			
Vertical roof duct	0020065937 303982	26 m	16 m	12 m	8 m
<p>1 The inclusion of additional elbows in the flue system reduces the pipe length as follows:</p> <ul style="list-style-type: none"> <li>- By 0.5 m for each 45° elbow</li> <li>- By 1.0 m for each 87° elbow</li> </ul> <p>2 Cannot be used in conjunction with the variable terminal set (VTK)</p>					

#### 4.6.5 Maximum pipe lengths, 80/125 mm diameter

Air/flue system	Article number	ecoTEC plus/ecoTEC pro/ecoTEC exclusive			
		VU 126/5-5 (H-GB) ecoTEC plus 612 VU 156/5-5 (H-GB) ecoTEC plus 615	VU 186/5-5 (H-GB) ecoTEC plus 618 VUW 196/5-5 (H-GB) ecoTEC plus 825 VUW 246/5-3 (H-GB) ecoTEC pro 24 VUW 286/5-3 (H-GB) ecoTEC pro 28 VUW 306/5-3 (H-GB) ecoTEC pro 30	ecoTEC 26 H combi A ecoTEC 22 H system A	VU 246/5-5 (H-GB) ecoTEC plus 624 VU 306/5-5 (H-GB) ecoTEC plus 630 VU 386/5-5 (H-GB) ecoTEC plus 637 VUW 286/5-5 (H-GB) ecoTEC plus 838 VUW 246/5-5 (H-GB) ecoTEC plus 832 VUW 306/5-5 (H-GB) ecoTEC plus 835 VUW 286/5-5 (H-GB) ecoTEC plus 838 VUI 286/5-5 (H-GB) ecoTEC plus 938 (No 937) VUW 356/5-7 (H-GB) ecoTEC exclusive 835 VUW 436/5-7 (H-GB) ecoTEC exclusive 843 VU 256/5-7 (H-GB) ecoTEC exclusive 627
Max. concentric pipe length <sup>1</sup>					
Horizontal wall/roof duct	303209 0010035777	25 m plus 1 x 87° elbow	39 m plus 1 x 87° elbow	29 m plus 1 x 87° elbow	32 m plus 1 x 87° elbow
Vertical roof duct	303200	27 m	41 m	31 m	34 m
External wall connector	0020042748 0010039735	23 m Plus two 87° elbows	37 m Plus two 87° elbows	27 m Plus two 87° elbows	30 m Plus two 87° elbows
<p>1 The inclusion of additional elbows in the flue system reduces the pipe length as follows:</p> <ul style="list-style-type: none"> <li>- By 1.0 m for each 45° elbow</li> <li>- By 2.5 m for each 87° elbow</li> </ul>					

## 5 Set-up

### 5.1 Installing the connector for the 80/125 mm diameter air/flue pipe

- ▶ Convert the products that you want to connect to the air/flue pipe (80/125 mm diameter) and that are equipped with the product connection (60/100 mm diameter) at the factory.
  - The installation instructions for the product describe how to install the 80/125 mm diameter connector for the air/flue pipe.

### 5.2 Installing horizontal wall/roof ducts

#### 5.2.1 Preparing the installation



#### **Danger!**

#### **Risk of poisoning due to escaping flue gas.**

If you select an unsuitable installation site for the air/flue pipe, flue gas may be allowed to enter the building.

- ▶ Observe the existing regulations with regard to the clearances to windows and ventilation openings.



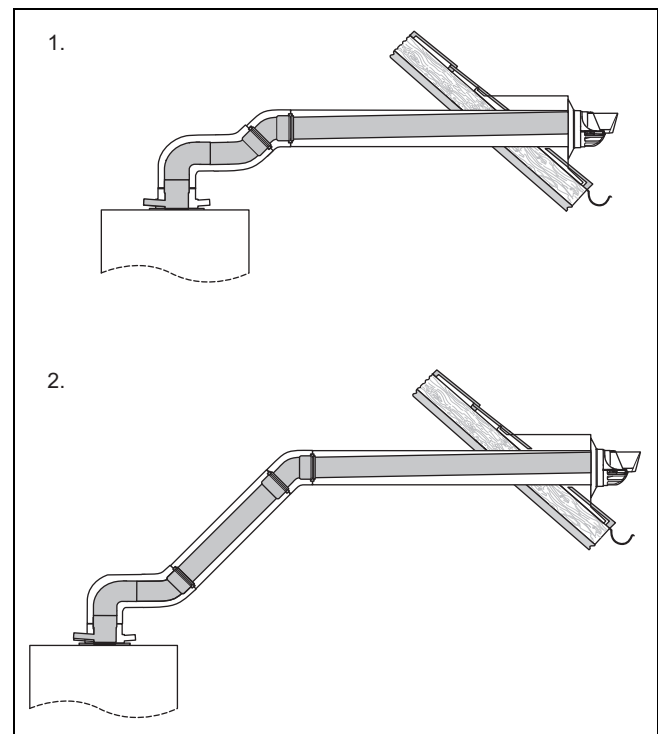
#### **Danger!**

#### **Risk of poisoning due to escaping flue gas.**

Condensate that collects inside the flue in certain areas can damage the flue pipework seals.

- ▶ Lay the horizontal flue pipe with a downward gradient of 3° to the product; 3° corresponds to a downward gradient of approx. 50 mm per metre of pipe length.
  - ▶ In doing so, note that the air/flue pipe must be centred in the wall hole.
- 
- ▶ Determine the installation site for the air/flue pipe.
  - ▶ When installing the product near a light source, point out to the end user that they must clean the terminal regularly. Otherwise, due to the insects that the light may attract, the terminal may become dirty.

### Set-up example Horizontal roof duct



1 Direct installation

2 Offset installation

- Minimum dimensions for the dormer: Height x width: 300 mm x 300 mm



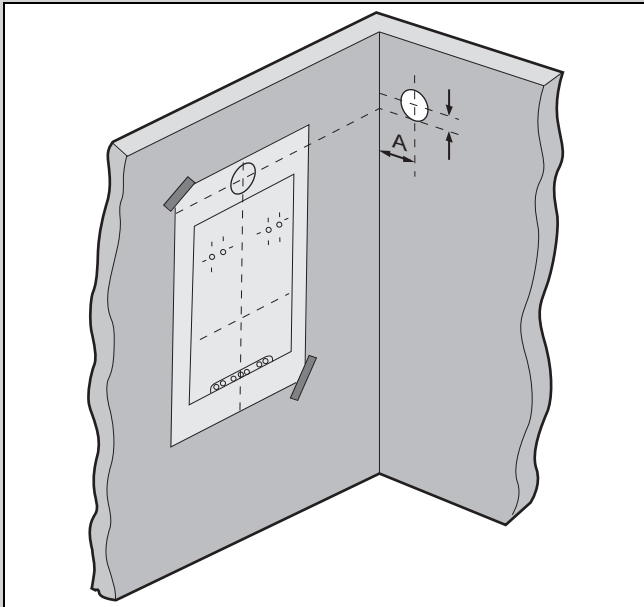
#### **Note**

The dormer is not provided by Vaillant and must be created on-site.

- ▶ Determine the installation site for the boiler (→ Installation instructions for the boiler).
- ▶ Ensure that all clearances required for installation and maintenance are available and that the air/flue system can be installed in accordance with these instructions.
- ▶ Secure the mounting template that is supplied with the boiler to the wall.
- ▶ Use a plumb-bob or spirit level to check whether the central line of the mounting template is vertical.

The mounting template indicates the position for horizontal installation of the air/flue pipe when connecting it to the upper side of the boiler.

Condition: Top connection, air/flue pipe to the side

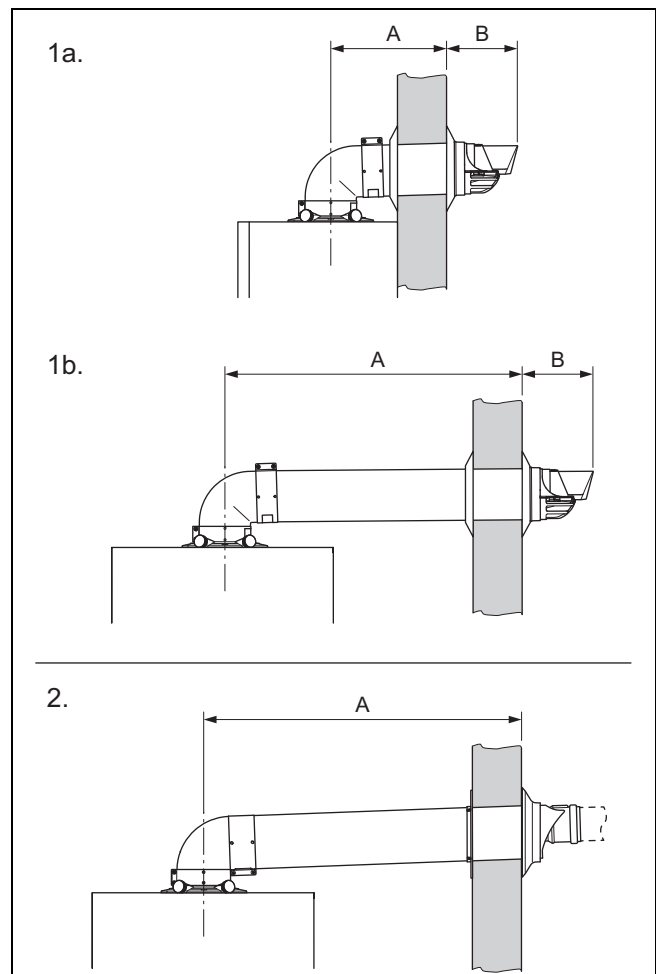


A = 125 mm

If you want to install the air/flue pipe laterally, you can determine the position of the wall duct by carefully offsetting the central line of the wall duct that is marked on the mounting template.

- Calculate the required gradient in accordance with the length of the flue pipework and then mark the position for the wall duct.

## 5.2.2 Determining the clearance to the external wall



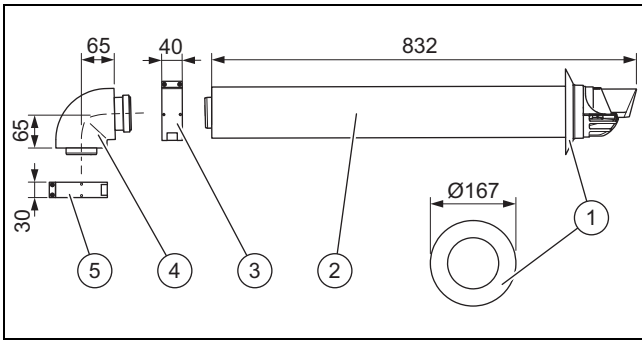
- 1a. Upper flue pipe at the rear
- 1b. Upper flue pipe to the side
- 2. Must only be used with the variable terminal set (VTK)
- A Clearance to the external wall

- Measure the clearance (**A**) from outside of the wall to the centre of the connector.

Clearance	Article number	
		0010035512 303933
B	87 mm	140 mm

### 5.3 Horizontal wall/roof duct, 60/100 mm diameter, article number 0020219517

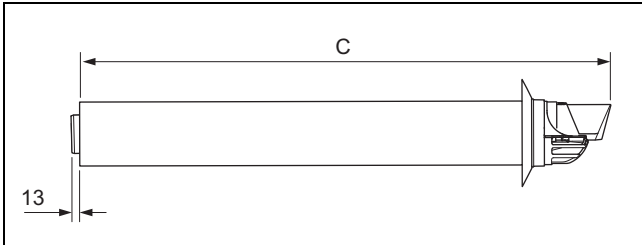
#### 5.3.1 Scope of delivery 0020219517



- |   |                                   |   |             |
|---|-----------------------------------|---|-------------|
| 1 | Wall collar, 100 diameter (2 pcs) | 3 | 40 mm clamp |
| 2 | Horizontal wall duct              | 4 | 87° elbow   |
|   |                                   | 5 | 30 mm clamp |

#### 5.3.2 Shortening the air/flue pipe

- Determine the clearance to the external wall. (→ Page 15)



- Shorten the flue pipe and the air pipe by the same amount when they are assembled.

Length	Article number
	0020219517 0020219519
C	Clearance to external wall A + 75 mm



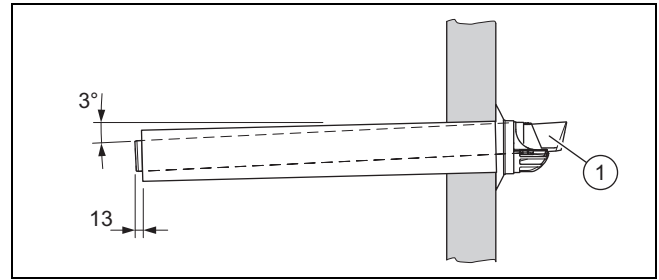
#### Note

Disassembling the flue pipe and the air pipe damages the latching lugs in the terminal.

**Condition:** Additional extensions and elbows required

- ▶ Install the extensions. (→ Page 47)
  - All of the sleeves for the flue pipe must point towards the terminal.
- ▶ Install the elbows (→ Page 50).

#### 5.3.3 Installing the wall duct



- Drill a hole.
  - Diameter: 125 mm

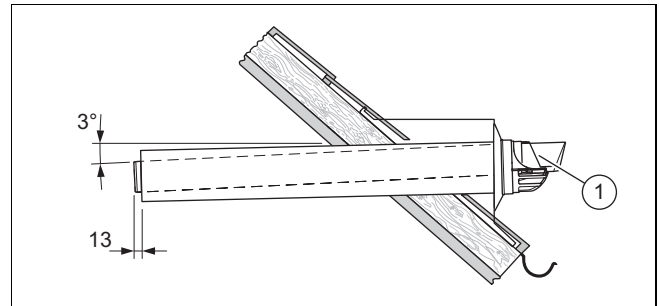


#### Note

If the wall duct can be accessed from the exterior of the building, you can drill the hole with a diameter of 110 mm and install the wall duct with the wall collar from outside.

- Slide the air/flue pipe (1) with the flexible external collar through the wall.
- Pull the air/flue pipe back until the external collar lies fully on the external wall.
- Secure the air/flue pipe with mortar and leave the mortar to harden.
- Install the wall collar on the inside of the wall.
- Connect the wall/roof duct to the product using extensions, elbows and, if required, a sliding sleeve. (→ Page 17)

#### 5.3.4 Installing the roof duct



- ▶ Insert the air/flue pipe (1) without the external collar into the dormer.

### 5.4 Horizontal telescopic wall/roof duct, 60/100 mm diameter, article number 0020219518

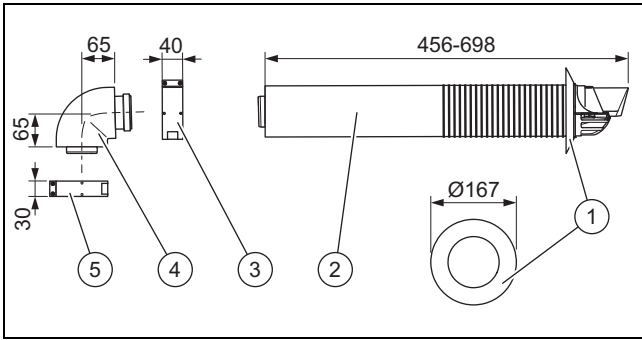


#### Note

The telescopic wall/roof duct is only available in black.

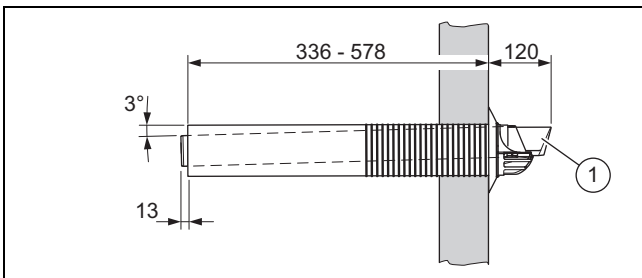


### 5.4.1 Scope of delivery



- |   |                                   |   |             |
|---|-----------------------------------|---|-------------|
| 1 | Wall collar, 100 diameter (2 pcs) | 3 | 40 mm clamp |
| 2 | Horizontal telescopic wall duct   | 4 | 87° elbow   |
|   |                                   | 5 | 30 mm clamp |

### 5.4.2 Installing the wall duct

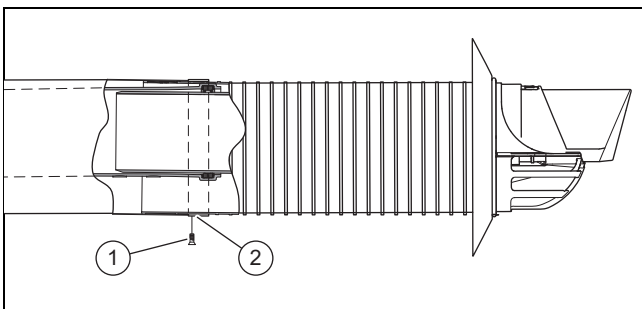


- Drill a hole.
  - Diameter: 125 mm



#### Note

If the wall duct can be accessed from the exterior of the building, you can drill the hole with a diameter of 110 mm and install the wall duct with the wall collar from outside.



- Determine the clearance to the external wall. (→ Page 15)
- Set the telescopic wall duct to the correct length.
  - Note that the **TOP** symbol must point upwards on both ends.



#### Danger!

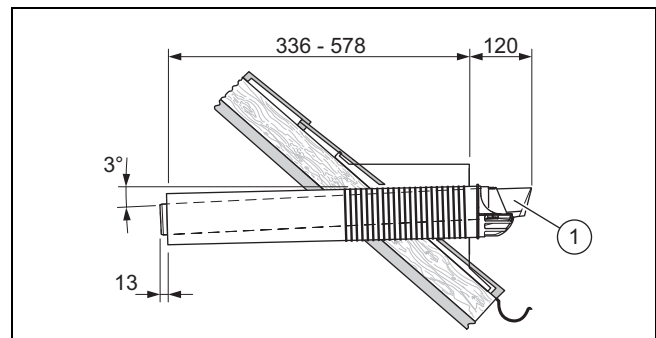
#### Risk of poisoning due to escaping flue gas.

Flue gas can escape if a flue pipe is damaged.

- Only use the self-tapping screw provided.

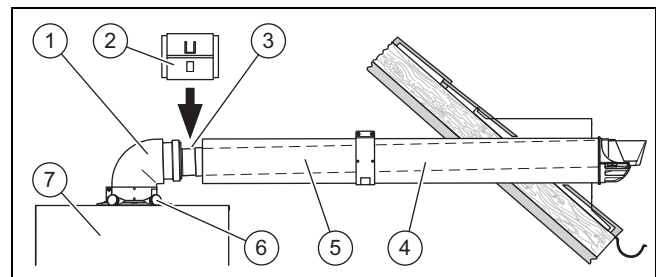
- Secure the air pipes to each other by screwing the overlapping air pipes together using the supplied self-tapping screws on the underside (1).
- Seal the gap in the telescopic air pipe using the supplied adhesive tape (2).
- Slide the air/flue pipe (1) with the flexible external collar through the wall.
- Pull the air/flue pipe back until the external collar lies fully on the external wall.
- Secure the air/flue pipe with mortar and leave the mortar to harden.
- Install the wall collar on the inside of the wall.
- Connect the wall/roof duct to the product using extensions, elbows and, if required, a sliding sleeve. (→ Page 17)

### 5.4.3 Installing the roof duct



- Insert the air/flue pipe (1) without the external collar into the dormer.

### 5.5 Connecting the product



- Install the product (7) – see the installation instructions for the product.
- Connect the 87° elbow (1) to the connector for the air/flue pipe (6).
- Fit the sliding sleeve (3) with the sleeve as far as it will go onto the wall/roof duct (4) or the extension (5).
- If required, install the extensions.
- Connect the sliding sleeve to the 87° elbow.
- Install the air pipe clamp (2) for the sliding sleeve.

#### 7. Alternatives 1:

Condition: Wall/roof duct without extension

- Install the sliding sleeve. (→ Page 47)

#### 7. Alternatives 2:

Condition: Wall/roof duct with extension

- Install the extensions. (→ Page 47)
- Install the elbows (→ Page 50).
- Install the sliding sleeve. (→ Page 47)
- Connect all of the pipe joints with air pipe clamps. (→ Page 55)

## 5.6 Installing terminal sets for 60/100 mm diameter air/flue systems

### 5.6.1 Minimum clearances for the flue gas terminal

You must comply with the minimum clearances for the flue gas terminal that are defined in BS 5440, unless the boiler's manufacturer has given approval to use shorter minimum clearances that are not considered to be safety-critical.

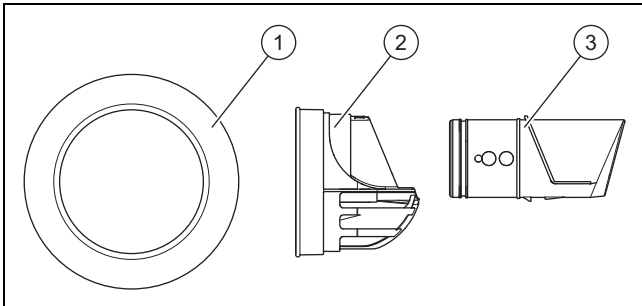
Vaillant has reduced the minimum clearances for the flue gas terminal and specifies this in the installation instructions for the boiler. These are minimum clearances that are to be used for all types of installation, except for the installation of the variable terminal set (VTK).

If a variable terminal set is connected to horizontal flue pipework, terminal clearances are reduced for the air inlet. The terminal clearances on the "new" flue outlet at the end of VTK remain unchanged.

On the VTK, the minimum clearances for the air inlet A, B and C (→ Installation instructions for the boiler) to openings (e.g. a window) are reduced to 150 mm. This means that the terminal will be at the horizontal flue pipework when a variable terminal set is connected to the air inlet and can therefore be installed at a clearance of less than 300 mm from a window opening or a ventilation tile.

### 5.6.2 Black terminal set 0020219537

#### 5.6.2.1 Scope of delivery



- 1 Wall collar                      3 End pipe  
2 Terminal piece

#### 5.6.2.2 Installing the black terminal (change of colour)

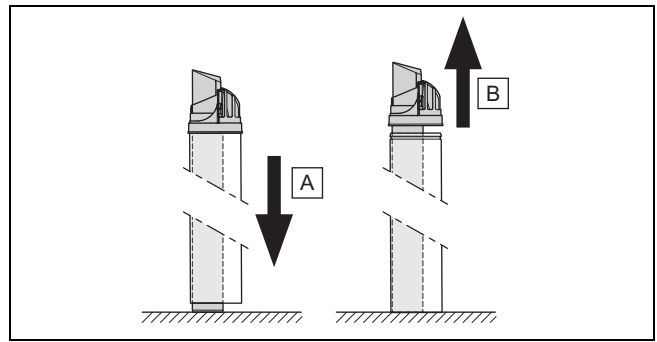


#### Note

You must install the terminal sets before installing the flue pipework.

**Condition:** Terminal secured using screws

- Undo the lateral screws.



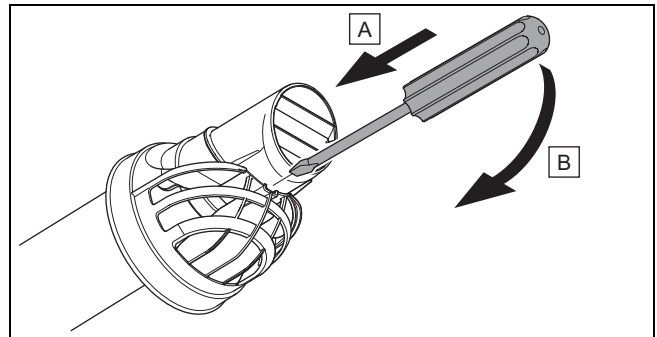
1. Detach the terminal with the flue pipe by pushing the air pipe to the floor.



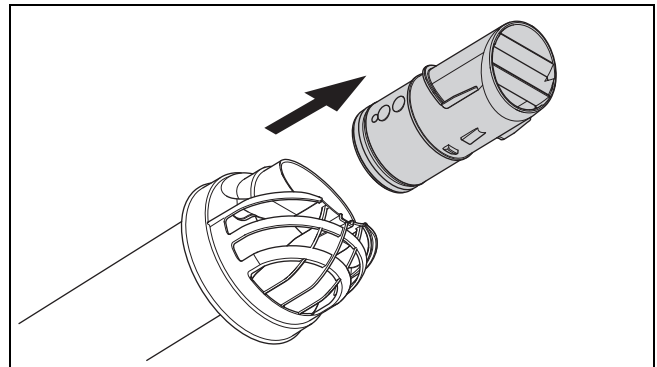
#### Note

You cannot reuse the terminal as detaching the terminal damages the latching lugs in the terminal.

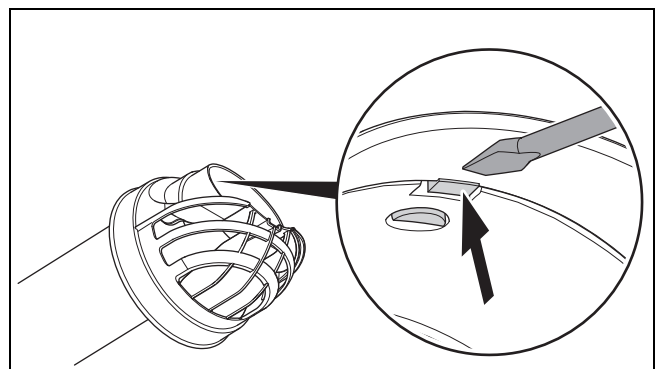
2. Pull the terminal from the air pipe together with the flue pipe.



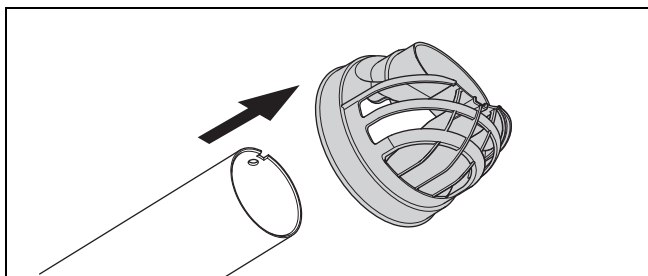
3. Release the catch between the opening piece and the end pipe.



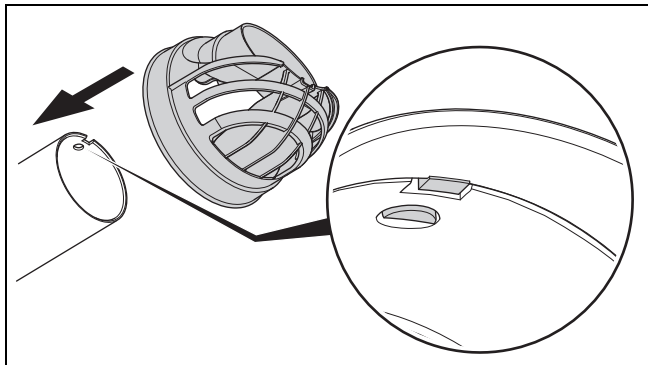
4. Pull the end pipe from the opening piece.



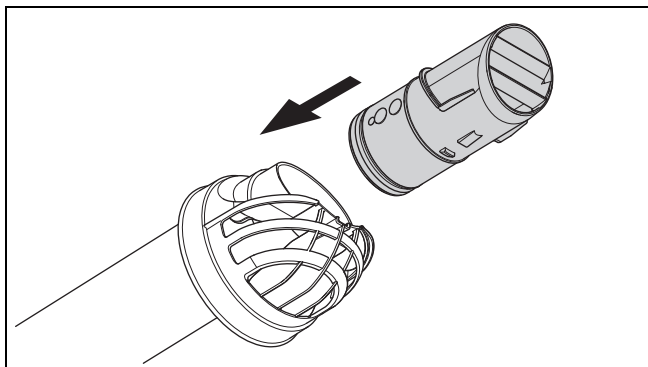
5. Release the catch between the opening piece and the flue pipe.



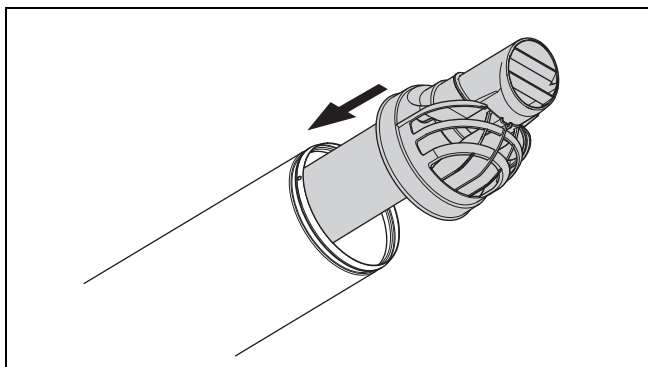
6. Pull the opening piece from the flue pipe.



7. Slide the new opening piece onto the flue pipe until you hear the opening piece click into place.



8. Slide the end pipe onto the opening piece until you hear the end pipe click into place.



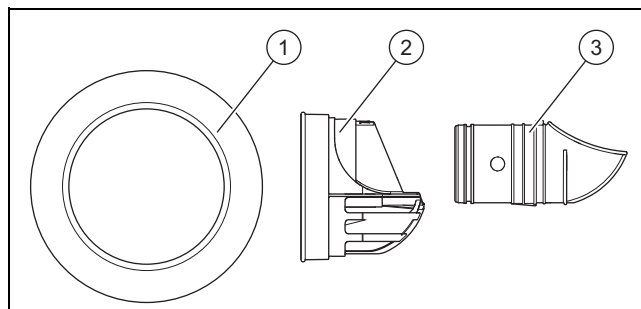
9. Slide the flue pipe with the new terminal into the air pipe until you hear the terminal click into place.

**Condition:** Terminal secured using screws

- ▶ Attach the terminal using the side screws.

## 5.6.3 Deflector set (not for 0010035512)

### 5.6.3.1 Scope of delivery



- |   |               |   |           |
|---|---------------|---|-----------|
| 1 | Wall collar   | 3 | Deflector |
| 2 | Opening piece |   |           |

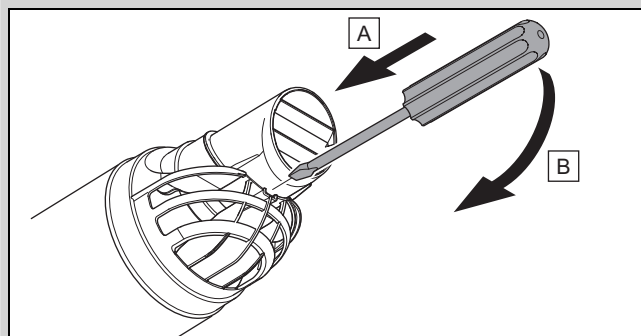
- Deflector set, DN 60, PP, black (article number 0020219533)
- Deflector set, DN 60, PP, white (article number 0020219534)

### 5.6.3.2 Installing the deflector set

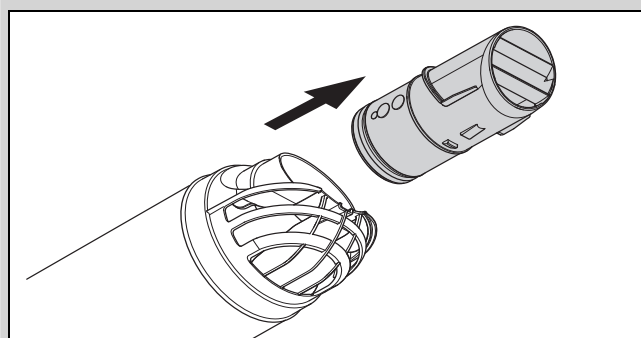
**Condition:** Replacing the deflector set (change of colour)

- ▶ In the event of a change of colour, replace the deflector set, including the wall collar (→ Page 18).
- ▶ Install the deflector, instead of the end pipe, on the opening piece.

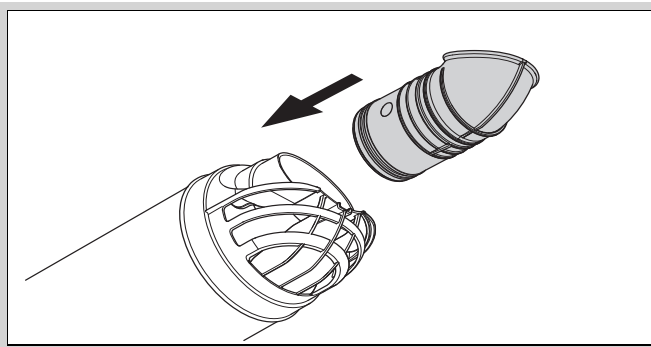
**Condition:** Replacing the end pipe only



- ▶ Release the catch between the opening piece and the end pipe.

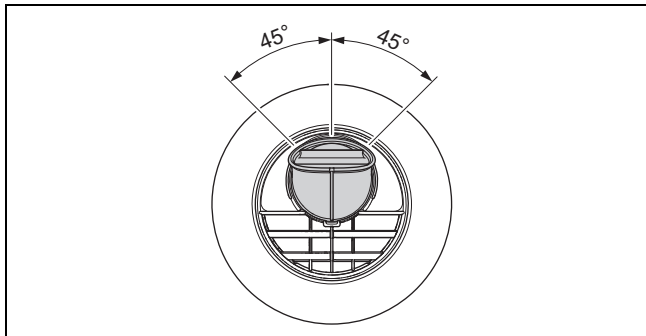


- ▶ Pull the end pipe from the opening piece.



► Slide the deflector onto the opening piece until you hear the deflector click into place.

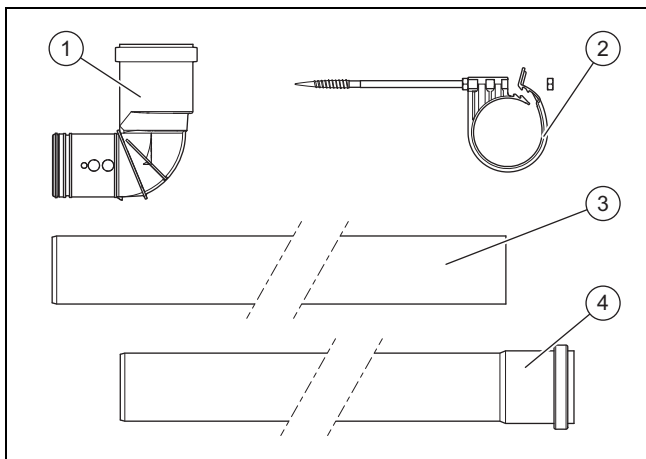
### 5.6.3.3 Adjusting the deflector



- Set the terminal to the required position.
  - The flue gas stream is directed upwards at an angle of approx. 45° when the deflector is set in the centre position.
  - If necessary, the deflector terminal can be rotated 45° anti-clockwise or clockwise. These setting options mean that the flue system can be further optimised.

## 5.6.4 Installing the variable terminal set (VTK)

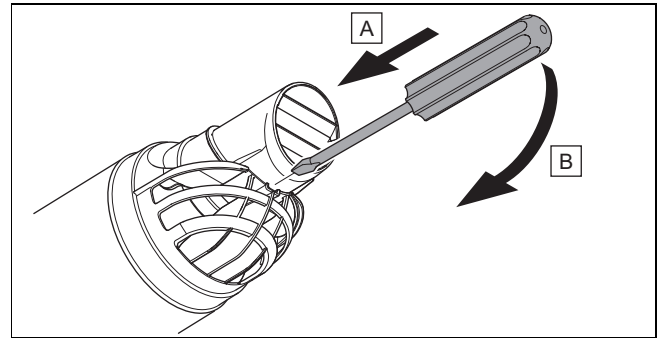
### 5.6.4.1 Scope of delivery



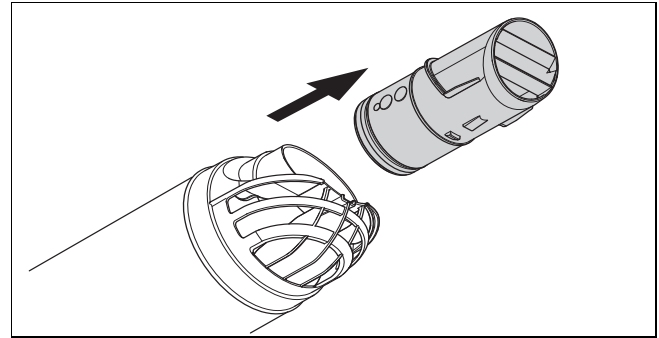
- |   |                   |   |                                |
|---|-------------------|---|--------------------------------|
| 1 | 87° elbow (2 x)   | 3 | Extension (1 m) without sleeve |
| 2 | Pipe clamps (3 x) | 4 | Extension (1 m) with sleeve    |

- Variable terminal set, black, article number 0020219529
- Variable terminal set, white, article number 0020219530

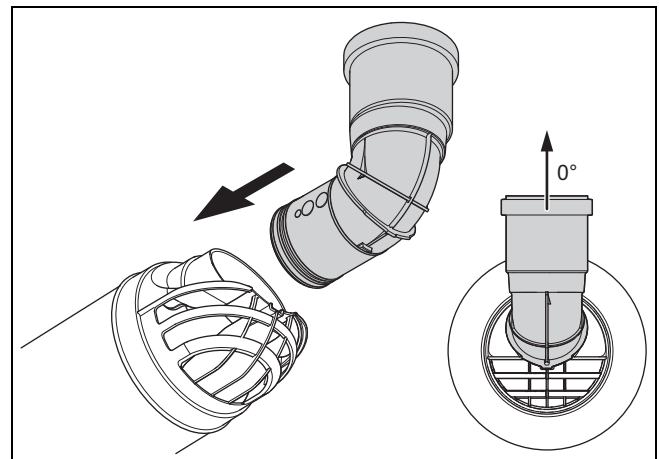
### 5.6.4.2 Installing the variable terminal set (VTK)



1. Release the catch between the opening piece and the end pipe.



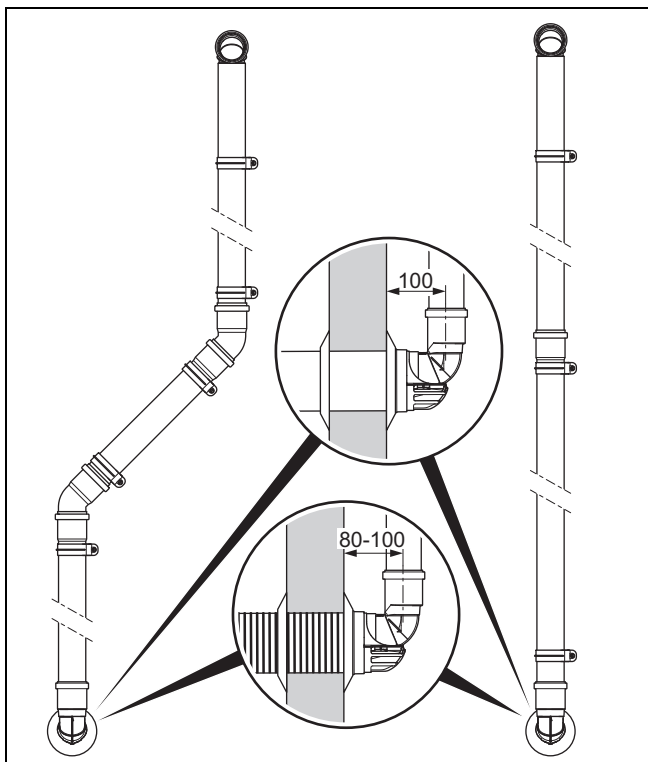
2. Pull the end pipe from the opening piece.



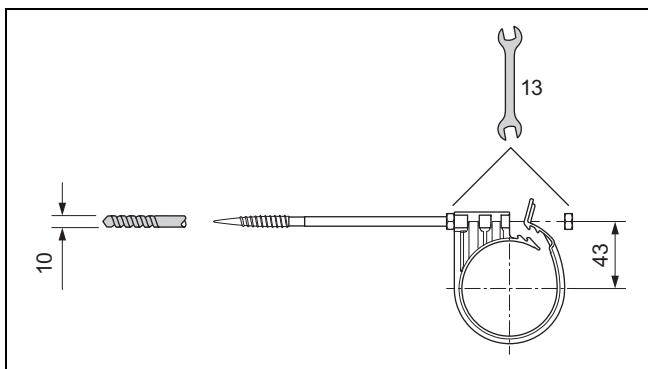
3. Slide the first 87° elbow onto the opening piece until you hear the 87° elbow click into place.

### 5.6.4.3 Installing extensions

1. Install the flue system from the 87° elbow to the flue outlet.
  - Begin with the extension with the sleeve. To be able to install the second 87° elbow with the end pipe, you must install the extension without a sleeve last.
  - Allow expansion space of 1 cm in each sleeve.
  - Ensure that all pipe joints are absolutely leak-tight.

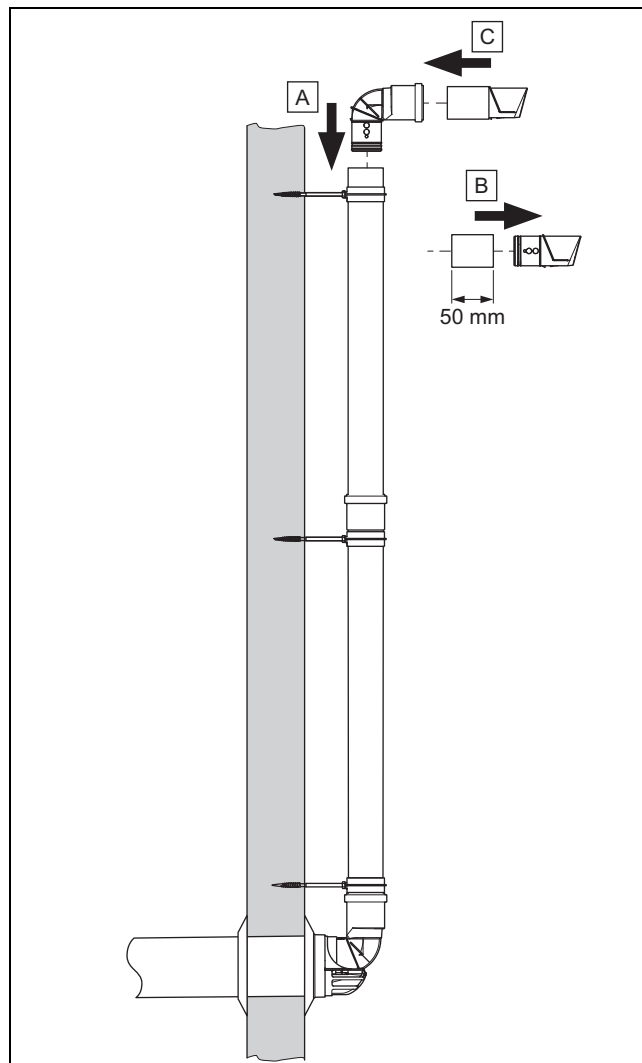


2. Secure the extensions to the wall using the pipe clamps.
  - Use one pipe clamp for each extension directly beside the sleeve.
  - Upstream of each elbow, install another pipe clamp on the extension.



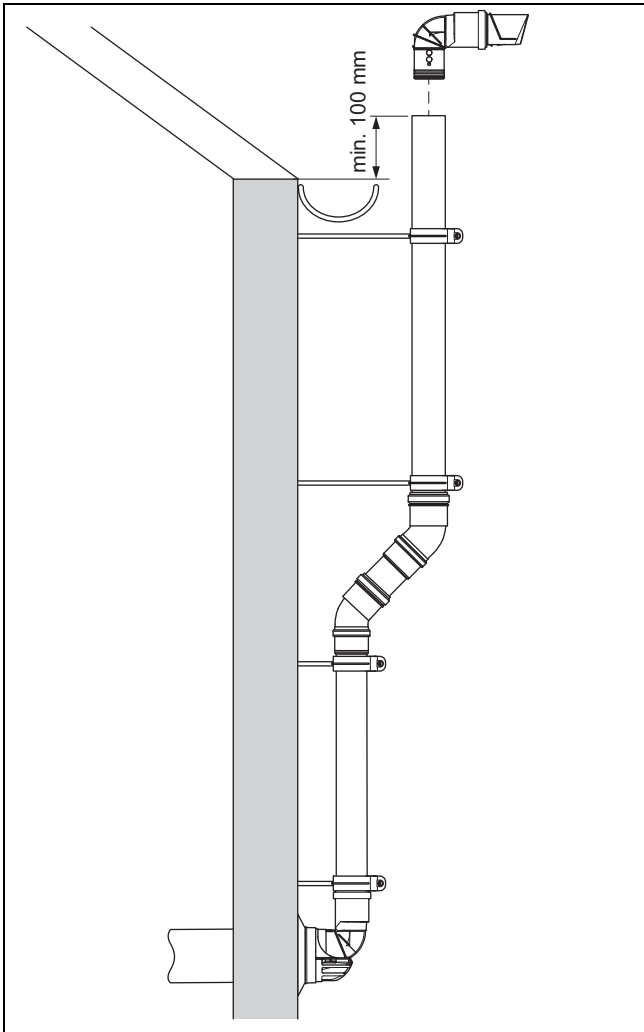
3. Drill the fastening holes away from the centre.

#### 5.6.4.4 Installing the end pipe



1. Install the second 87° elbow into the last extension (step A).
2. To secure the end pipe, place a 50 mm extension piece over the end pipe (step B).
3. Insert the end pipe securely into the 87° elbow (step C).

### 5.6.4.5 Routing extensions for the variable terminal set around eaves

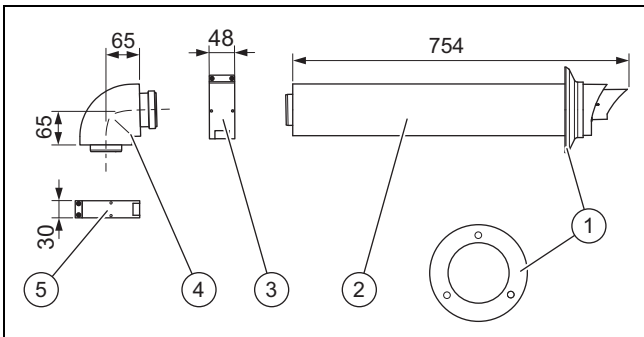


When installing the variable terminal set around eaves, additional M8 threaded rods are required for the pipe clamps. The threaded rods are commercially available.

- ▶ If required, install additional 45° elbows.

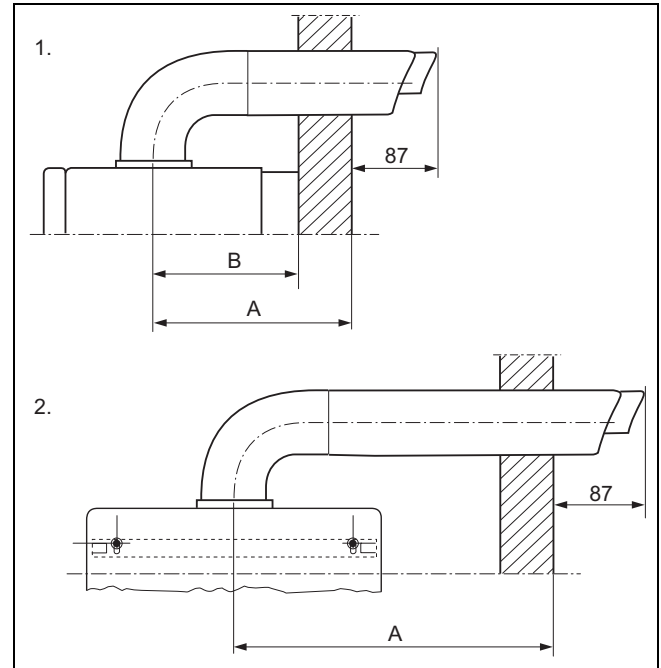
### 5.7 Horizontal wall/roof duct, 60/100 mm diameter (article number 303933, 0010035512)

#### 5.7.1 Scope of delivery



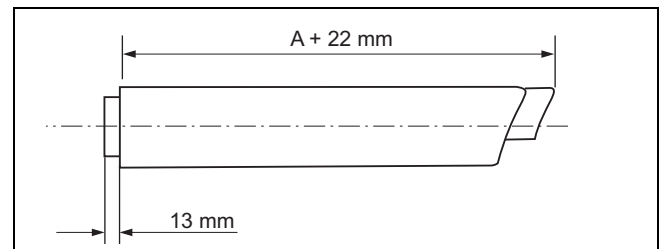
- |   |                                   |   |             |
|---|-----------------------------------|---|-------------|
| 1 | Wall collar, 100 diameter (2 pcs) | 3 | 48 mm clamp |
| 2 | Horizontal wall/roof duct         | 4 | 87° elbow   |
| 5 | 30 mm clamp                       |   |             |

### 5.7.2 Shortening the air/flue pipe



- |    |                         |   |  |
|----|-------------------------|---|--|
| 1. | Flue system to the rear | A | Clearance to the external wall         |
| 2. | Flue system to the side | B | Clearance to the internal wall: 125 mm |

1. Measure the clearance (**A**) from outside of the wall to the centre of the connector.

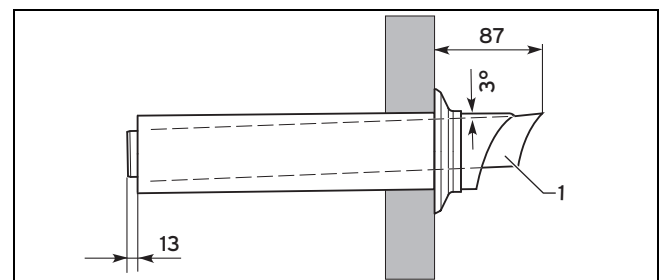


2. Remove the flue pipe from the air pipe.
3. Shorten the flue pipe and the air pipe by the same amount.

**Condition:** Additional extensions and elbows required

- ▶ Install the extensions. (→ Page 47)
  - All of the sleeves for the flue pipe must point towards the terminal.
- ▶ Install the elbows (→ Page 50).

#### 5.7.3 Installing the wall duct



1. Drill a hole.

- Diameter: 125 mm

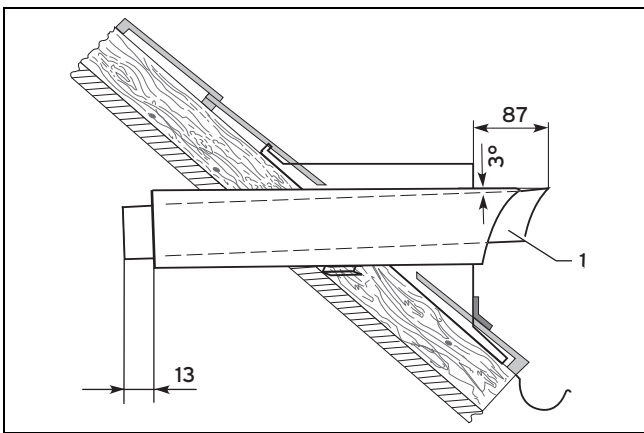


**Note**

If the wall duct can be accessed from the exterior of the building, you can drill the hole with a diameter of 110 mm and install the wall collar from outside.

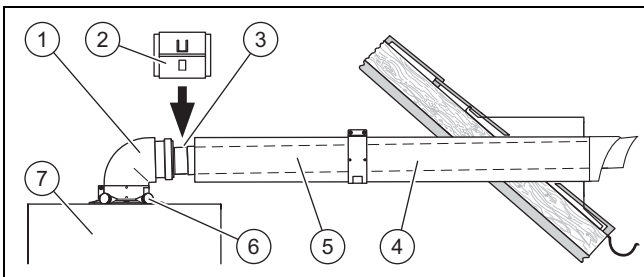
- Slide the air/flue pipe (1) with the flexible external collar through the wall.
- Pull the air/flue pipe back until the external collar forms a tight seal on the external wall.
- Secure the air/flue pipe with mortar and leave the mortar to harden.
- Install the wall collar on the inside of the wall.
- Connect the wall/roof duct to the product using extensions, elbows and, if required, a sliding sleeve, see "Connecting the product".

**5.7.4 Installing the roof duct**



- ▶ Insert the air/flue pipe (1) without the external collar into the dormer.

**5.7.5 Connecting the product**



- Install the product (7) – see the installation instructions for the product.
- Connect the 87° elbow (1) to the connector for the air/flue pipe (6).
- Fit the sliding sleeve (3) with the sleeve as far as it will go onto the wall/roof duct (4) or the extension (5).
- If required, install the extensions .
- Connect the sliding sleeve to the 87° elbow.
- Install the air pipe clamp (2) for the sliding sleeve.

**7. Alternatives 1:**

**Condition:** Wall/roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 47)

**7. Alternatives 2:**

**Condition:** Wall/roof duct with extension

- ▶ Install the extensions. (→ Page 47)
- ▶ Install the elbows (→ Page 50).
- ▶ Install the sliding sleeve. (→ Page 47)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

**5.8 Installing terminal sets for 60/100 mm diameter air/flue systems**

**5.8.1 Minimum clearances for the flue gas terminal**

You must comply with the minimum clearances for the flue gas terminal that are defined in BS 5440, unless the boiler's manufacturer has given approval to use shorter minimum clearances that are not considered to be safety-critical.

Vaillant has reduced the minimum clearances for the flue gas terminal and specifies this in the installation instructions for the boiler. These are minimum clearances that are to be used for all types of installation, except for the installation of the variable terminal set (VTK).

If a variable terminal set is connected to horizontal flue pipework, terminal clearances are reduced for the air inlet. The terminal clearances on the "new" flue outlet at the end of VTK remain unchanged.

On the VTK, the minimum clearances for the air inlet A, B and C (→ Installation instructions for the boiler) to openings (e.g. a window) are reduced to 150 mm. This means that the terminal will be at the horizontal flue pipework when a variable terminal set is connected to the air inlet and can therefore be installed at a clearance of less than 300 mm from a window opening or a ventilation tile.

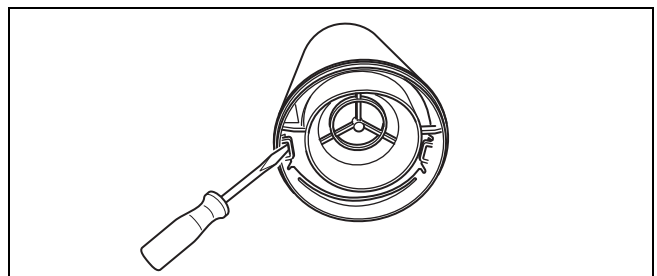
**5.8.2 Removing the terminal**



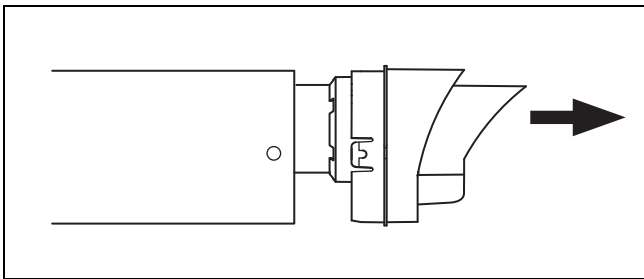
**Note**

You can install the terminal set before or after you install the flue pipework.

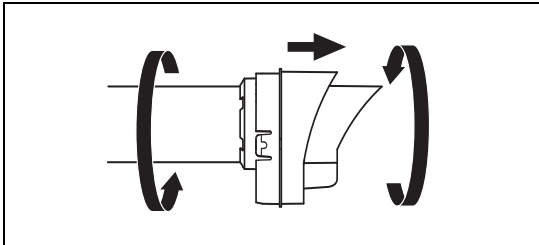
- If required, before starting the installation work, decommission the boiler and secure it against being inadvertently started up again.
- If required, remove the wall duct from the terminal.



- Use an 8 mm screwdriver to press the latching lugs inwards.



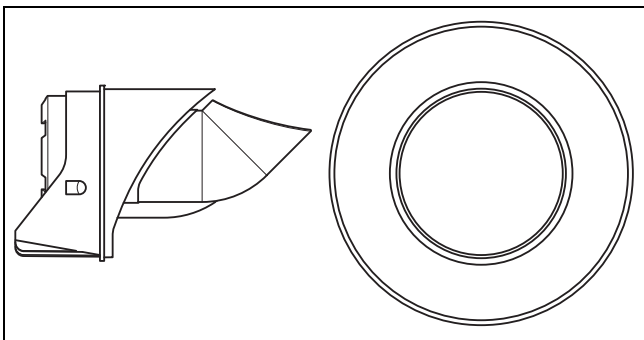
4. Pull the terminal out of the air pipe together with the flue pipe.



5. Release the catch between the terminal and the flue pipe by twisting the two components in opposite directions.
6. Remove the terminal from the flue pipe.

### 5.8.3 Deflector set (article number 0020060584 / ...85)

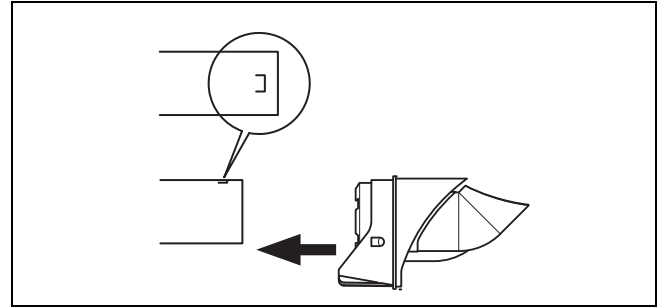
#### 5.8.3.1 Scope of delivery



- Deflector set, DN 60, PP, black (article number 0020060584)
    - Black terminal
    - External wall seal
  - Deflector set, DN 60, PP, white (article number 0020060585)
    - White terminal
- ▶ Check the scope of delivery.

#### 5.8.3.2 Installing the deflector set before installing the flue pipework

1. Remove the terminal. (→ Page 23)



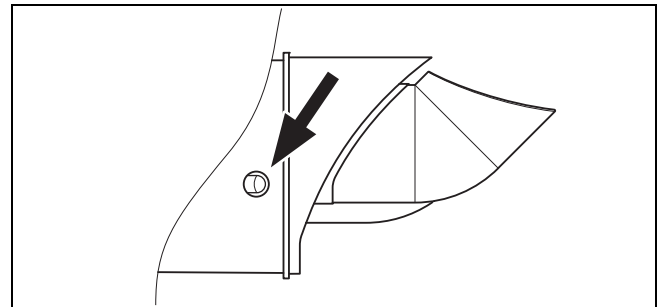
#### **Danger!**

#### **Risk of poisoning due to escaping flue gas.**

When disconnecting the pipes, flue gases may escape.

- ▶ Ensure that the latching lug on the upper side of the terminal securely snaps into place in the flue pipe's recess.
- ▶ Ensure that the seal is positioned correctly.

2. Push the terminal into the flue pipe so that it snaps into place.

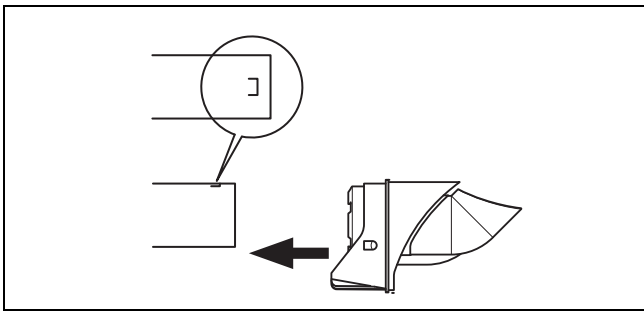


3. Slide the flue pipe, together with the deflector, back into the air pipe so that both latching lugs snap into place.
  - The air pipe's seam must lie at the top.
4. Install the horizontal air/flue pipe.

#### 5.8.3.3 Installing the deflector set after installing the flue pipework

1. Remove the terminal. (→ Page 23)



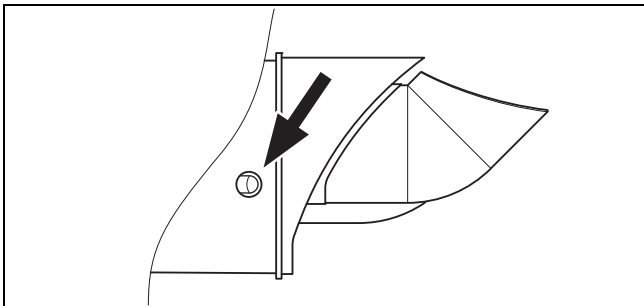


**Danger!**  
**Risk of poisoning due to escaping flue gas.**

When disconnecting the pipes, flue gases may escape.

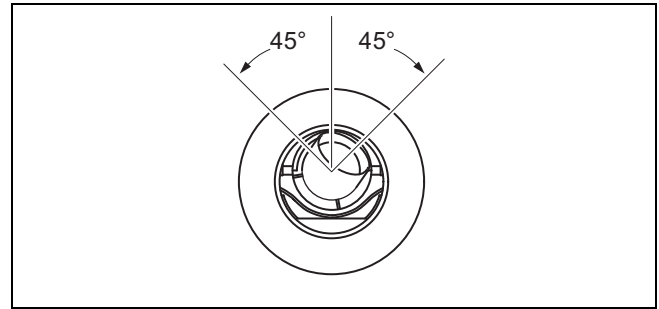
- ▶ Ensure that the latching lug on the upper side of the terminal securely snaps into place in the flue pipe's recess.
- ▶ Ensure that the seal is positioned correctly.

2. Install the deflector on the flue pipe.



3. Slide the flue pipe, together with the deflector, back into the air pipe so that both latching lugs snap into place.
  - The air pipe's seam must lie at the top.
4. Carefully slide the flue pipe back into the sleeve of the pipe or elbow that are located behind it.
5. Make sure that the two latching lugs snap into place.
6. Install the wall seal on the deflector.

### 5.8.3.4 Adjusting the deflector

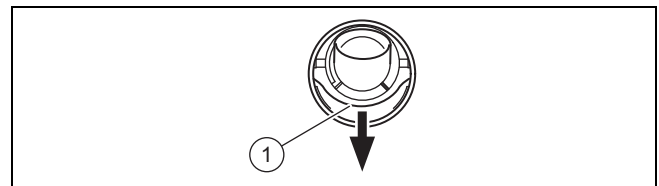


**Danger!**  
**Risk of poisoning due to escaping flue gas.**

The deflector may twist on its own if it is not snapped into place. Flue gases may then penetrate the building through windows and ventilation openings.

- ▶ Turn the deflector to one of the three positions until you feel it snap into place.

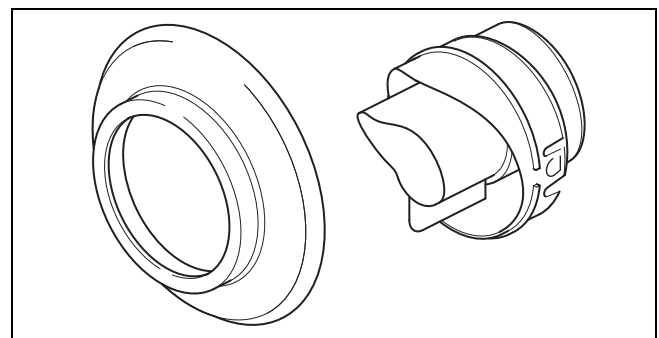
1. Set the terminal to the required position.
  - The flue gas stream is directed upwards at an angle of approx. 45° when the deflector is set in the centre position.
  - If necessary, the deflector terminal can be rotated 45° anti-clockwise or clockwise. This setting option means that the flue system can be further optimised.



2. To remove the deflector from the air pipe, pull the safety lug (1) downwards. This loosens both catches.

### 5.8.4 Black terminal set (article number 303934)

#### 5.8.4.1 Scope of delivery



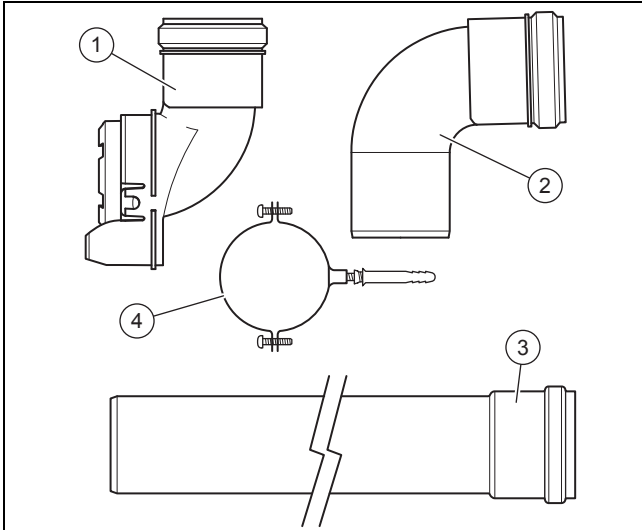
- ▶ Check the scope of delivery.

### 5.8.4.2 Installing the black terminal kit

- ▶ Install the black terminal kit in the same way as the deflector set (→ Page 19). In contrast to the variable terminal kit, the black terminal kit does not have an adjustable deflector.

### 5.8.5 Variable terminal set (VTK), (article number 303942 / ...46)

#### 5.8.5.1 Scope of delivery



- |   |                                  |   |                     |
|---|----------------------------------|---|---------------------|
| 1 | Variable terminal                | 3 | Extension (2 x 1 m) |
| 2 | 87° elbow with bird-guard grille | 4 | Pipe clamps (3 x)   |

- Variable terminal set, black (article number 303942)
- Variable terminal set, white (article number 303946)
  - Variable terminal
  - Extension 1 m (2 pcs)
  - Pipe clamps (3 pcs)
  - 87° elbow with bird-guard grille

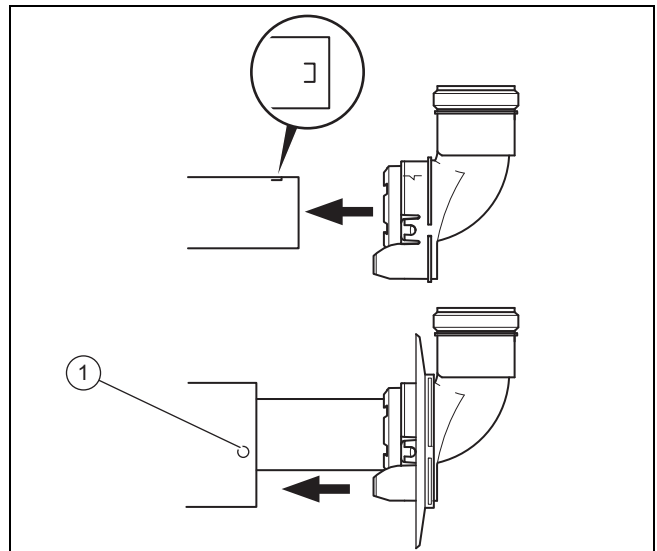


#### Note

Component 1 is not required for the installation.

#### 5.8.5.2 Installing the variable terminal set (VTK) before installing the flue pipework

1. Remove the terminal. (→ Page 23)



#### Danger!

#### Risk of poisoning due to escaping flue gas.

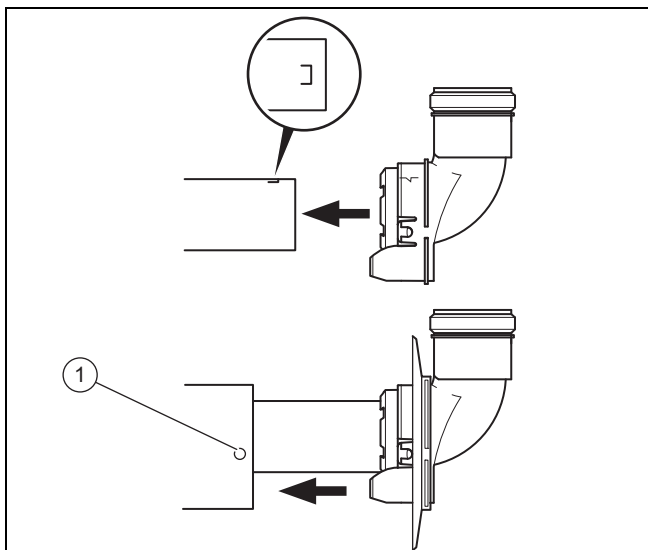
When disconnecting the pipes, flue gases may escape.

- ▶ Ensure that the latching lug on the upper side of the terminal securely snaps into place in the flue pipe's recess.
- ▶ Ensure that the seal is positioned correctly.

2. Push the variable terminal onto the flue pipe so that it snaps into place.
3. Slide the flue pipe together with the variable terminal back into the air pipe so that both latching lugs (1) snap into place.
  - The air pipe's seam must lie at the top.
4. Install the horizontal air/flue pipe.
  - It is not possible to install the pipe from inside.
5. Install the extensions on the variable terminal.

#### 5.8.5.3 Installing the variable terminal set (VTK) after installing the flue pipework

1. Remove the terminal. (→ Page 23)



**Danger!**  
**Risk of poisoning due to escaping flue gas.**

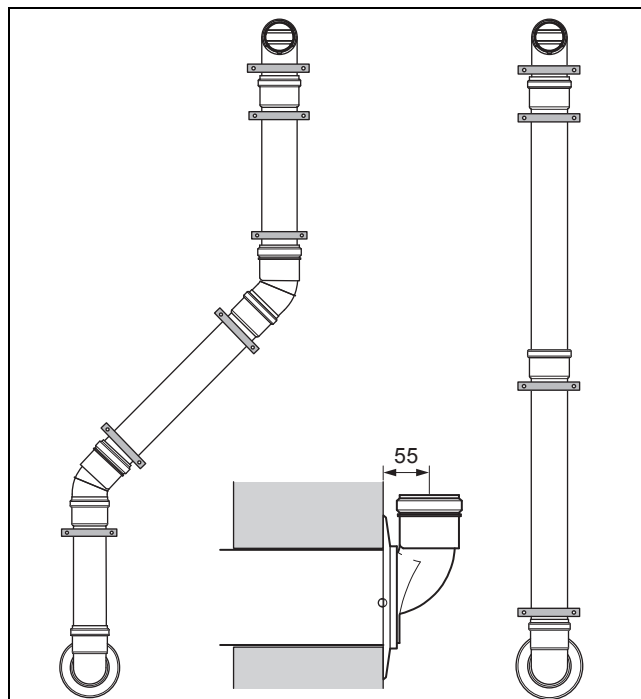
When disconnecting the pipes, flue gases may escape.

- ▶ Ensure that the latching lug on the upper side of the terminal securely snaps into place in the flue pipe's recess.
- ▶ Ensure that the seal is positioned correctly.

2. Push the new variable terminal onto the flue pipe so that it snaps into place.
3. Slide the flue pipe, together with the terminal, back into the air pipe.
  - The air pipe's seam must lie at the top.
4. Carefully slide the flue pipe back into the sleeve of the pipe or elbow located behind it.
5. Make sure that the two latching lugs **(1)** snap into place.
6. Install the wall seal on the variable terminal.
7. Install the extensions on the variable terminal.

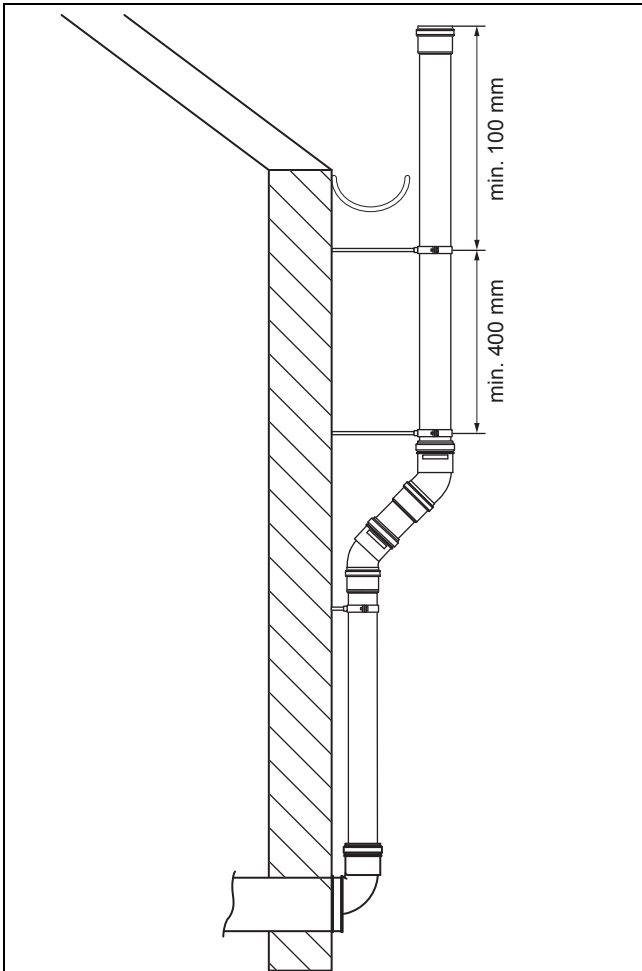
#### 5.8.5.4 Installing extensions

1. Install the flue system from the wall connector to the flue outlet.
  - Allow expansion space of 1 cm in each sleeve.
  - Ensure that all pipe joints are absolutely leak-tight.



2. Secure the extensions to the wall using the pipe clamps.
  - Use one pipe clamp for each extension directly beside the sleeve.
  - Upstream of each elbow, install another pipe clamp on the extension.
  - Secure the 87° elbow with bird-guard grille using a separate pipe clamp.

### 5.8.5.5 Routing extensions for the variable terminal set around eaves

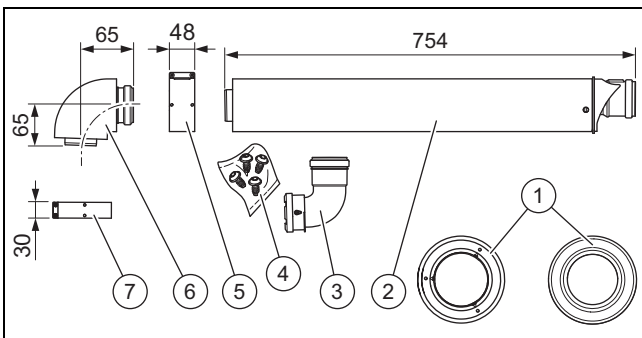


When installing the variable terminal set around eaves, additional M8 threaded rods are required for the pipe clamps. The threaded rods are commercially available.

- ▶ If required, install additional 45° elbows.
- ▶ Install the bird-guard grille from the 87° elbow in the last extension.
  - If you are using the 87° elbow, insert the seal for the extension.

### 5.9 Horizontal wall duct, 60/100 mm diameter (article number 0010024718)

#### 5.9.1 Scope of delivery 0010024718

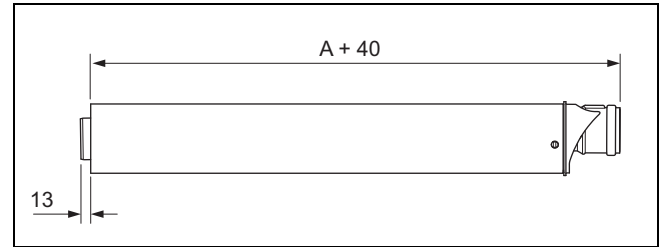


- |   |                                   |   |  |
|---|-----------------------------------|---|--|
| 1 | Wall collar, 100 diameter (2 pcs) | 3 | 87° adapter for connecting the variable terminal set (VTK) |
| 2 | Horizontal wall/roof duct         | 4 | Screws (4 pcs)   |

- |   |             |   |             |
|---|-------------|---|-------------|
| 5 | 48 mm clamp | 7 | 30 mm clamp |
| 6 | 87° elbow   |   |             |

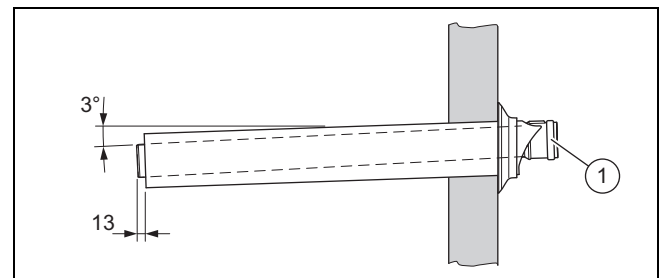
### 5.9.2 Shortening the air/flue pipe

1. Determine the clearance to the external wall. (→ Page 15)



2. Shorten the air/flue pipe to the required length.
  - If you install the wall collar, add 12 mm to the total pipe length.
  - Shorten the air pipe at the opposite end to the terminal.
  - Shorten the flue pipe at the opposite end to the lock.
3. Deburr the sawn-off pipe end in order to prevent damage the seal when installing the flue pipe.
4. Slide the flue pipe into the air pipe.
  - Ensure that the flue pipe's recess snaps into place in the air pipe's latching lug.

### 5.9.3 Installing the wall duct



1. Drill a hole.
  - Diameter: 125 mm

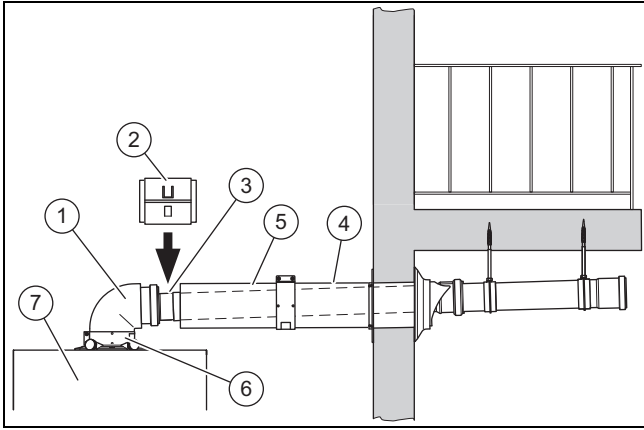


#### Note

If the wall duct can be accessed from the exterior of the building, you can drill the hole with a diameter of 110 mm and install the wall duct with the wall collar from outside.

2. Slide the air/flue pipe (1) with the flexible external collar through the wall.
3. Pull the air/flue pipe back until the external collar lies fully on the external wall.
4. Secure the air/flue pipe with mortar and leave the mortar to harden.
5. Install the wall collar on the inside of the wall.
6. Connect the wall/roof duct to the product using extensions, elbows and, if required, a sliding sleeve. (→ Page 47)

## 5.9.4 Connecting the product



1. Install the product (7) – see the installation instructions for the product.
2. Connect the 87° elbow (1) to the connector for the air/flue pipe (6).
3. Fit the sliding sleeve (3) with the sleeve as far as it will go onto the wall duct (4) or the extension (5).
4. If required, install the extensions .
5. Connect the sliding sleeve to the 87° elbow.
6. Install the air pipe clamp (2) for the sliding sleeve.
7. **Alternatives :**

**Condition:** Wall duct with extension

- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

## 5.9.5 Variable terminal set (VTK), (article number 303942 / ...46)

### 5.9.5.1 Minimum clearances for the flue gas terminal

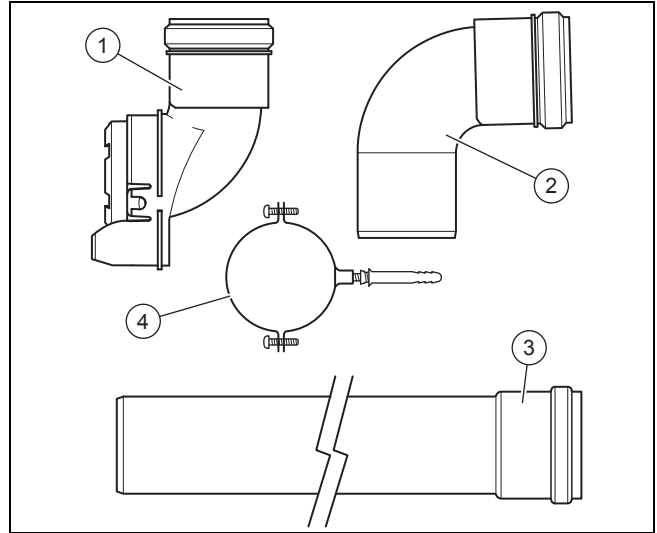
You must comply with the minimum clearances for the flue gas terminal that are defined in BS 5440, unless the boiler's manufacturer has given approval to use shorter minimum clearances that are not considered to be safety-critical.

Vaillant has reduced the minimum clearances for the flue gas terminal and specifies this in the installation instructions for the boiler. These are minimum clearances that are to be used for all types of installation, except for the installation of the variable terminal set (VTK).

If a variable terminal set is connected to horizontal flue pipework, terminal clearances are reduced for the air inlet. The terminal clearances on the "new" flue outlet at the end of VTK remain unchanged.

On the VTK, the minimum clearances for the air inlet A, B and C (→ Installation instructions for the boiler) to openings (e.g. a window) are reduced to 150 mm. This means that the terminal will be at the horizontal flue pipework when a variable terminal set is connected to the air inlet and can therefore be installed at a clearance of less than 300 mm from a window opening or a ventilation tile.

## 5.9.5.2 Scope of delivery



- |   |                                  |   |                     |
|---|----------------------------------|---|---------------------|
| 1 | Variable terminal                | 3 | Extension (2 x 1 m) |
| 2 | 87° elbow with bird-guard grille | 4 | Pipe clamps (3 x)   |

- Variable terminal set, black (article number 303942)
- Variable terminal set, white (article number 303946)

- Variable terminal
- Extension 1 m (2 pcs)
- Pipe clamps (3 pcs)
- 87° elbow with bird-guard grille

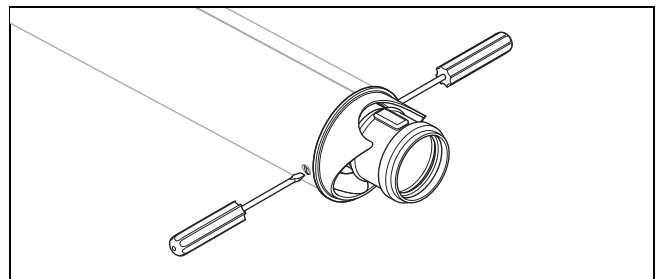


### Note

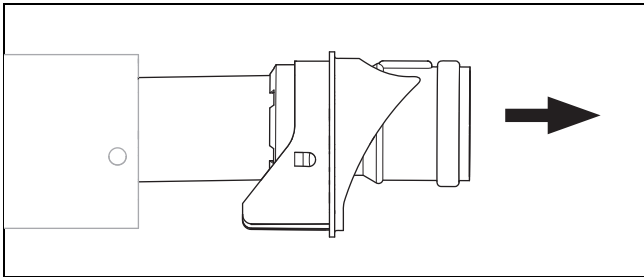
Component 1 is not required for the installation.

### 5.9.5.3 Installing the variable terminal

1. If required, before starting the installation work, decommission the boiler and secure it against being inadvertently started up again.
2. Remove the wall duct from the terminal.



3. Use an 8 mm screwdriver to press the latching lugs inwards.



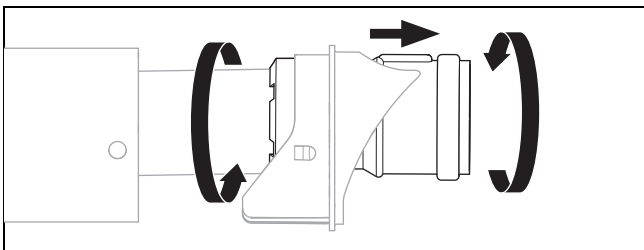
**Danger!**

**Risk of poisoning due to escaping flue gas.**

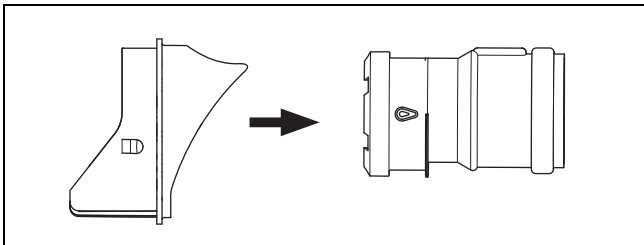
If you turn the flue pipe when removing the terminal from the air pipe, the subsequent flue pipe may come loose from the spacer.

- ▶ Ensure that the flue pipe does not twist when you remove it.

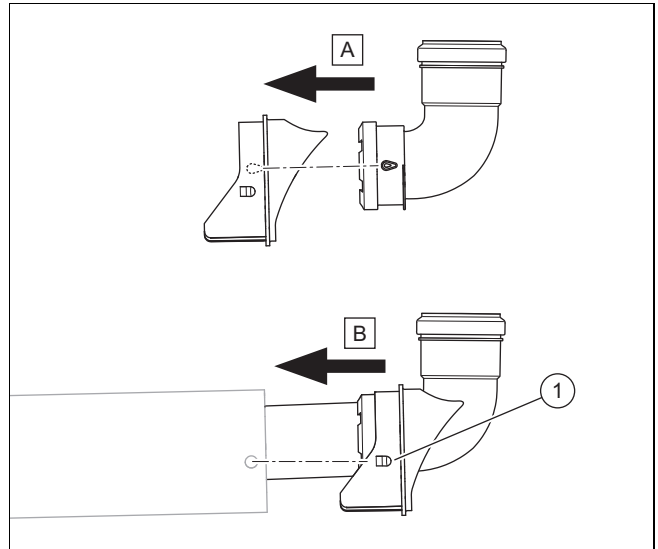
4. Pull the terminal out of the air pipe together with the flue pipe.



5. Release the catch between the terminal and the flue pipe by twisting the two components in opposite directions.
6. Remove the terminal from the flue pipe.



7. Pull the terminal piece out of the pipe adapter.



**Danger!**

**Risk of poisoning due to escaping flue gas.**

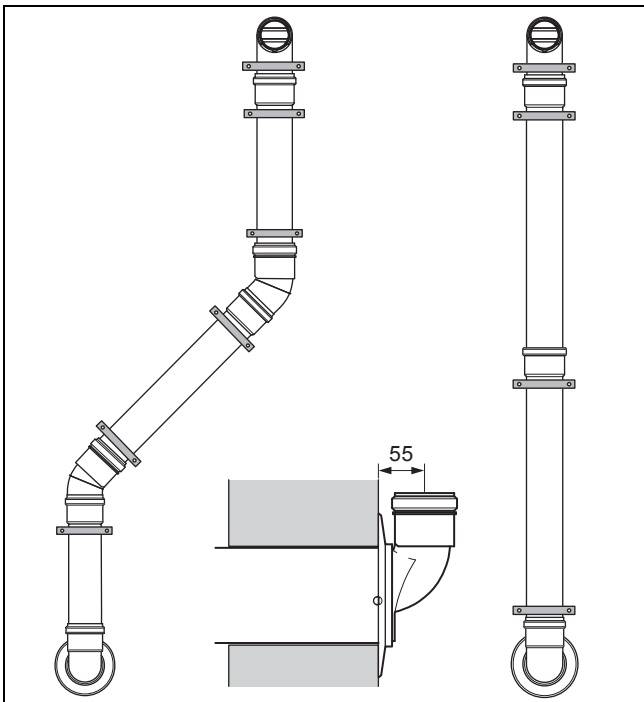
When disconnecting the pipes, flue gases may escape.

- ▶ Ensure that the latching lug on the upper side of the terminal securely snaps into place in the flue pipe's recess.
- ▶ Ensure that the seal is positioned correctly.

8. Push the 87° elbow into the pipe adapter and allow it to lock into place.
9. Push the variable terminal onto the flue pipe so that it snaps into place.
10. Slide the flue pipe, together with the terminal, back into the air pipe.
11. Carefully slide the flue pipe back into the sleeve of the pipe or elbow located behind it.
12. Make sure that the two latching lugs (1) snap into place.
13. Install the wall seal on the variable terminal.

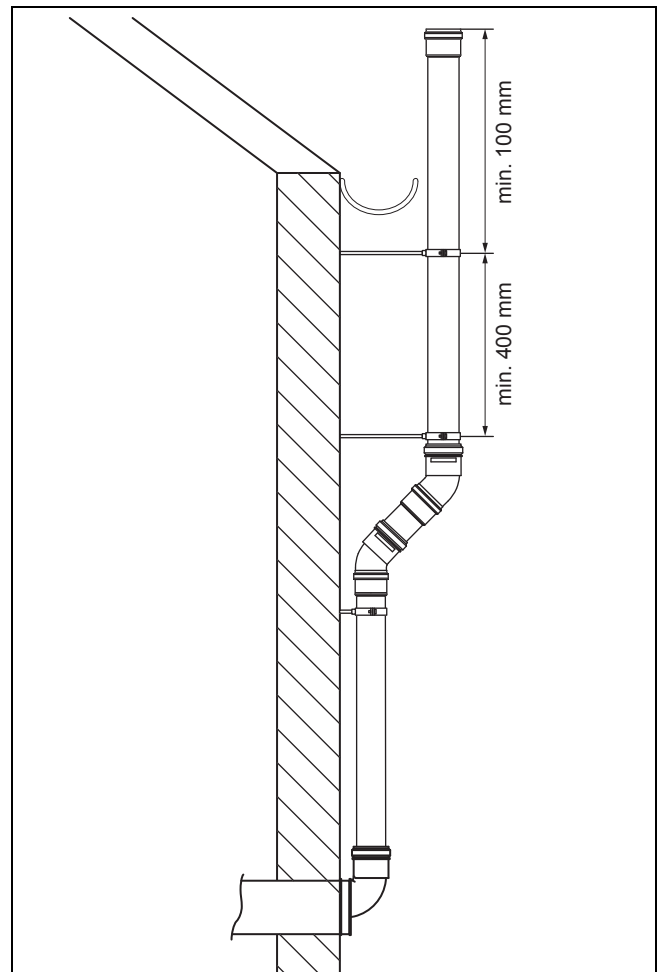
**5.9.5.4 Installing extensions**

1. Install the flue system from the wall connector to the flue outlet.
  - Allow expansion space of 1 cm in each sleeve.
  - Ensure that all pipe joints are absolutely leak-tight.



2. Secure the extensions to the wall using the pipe clamps.
  - Use one pipe clamp for each extension directly beside the sleeve.
  - Upstream of each elbow, install another pipe clamp on the extension.
  - Secure the 87° elbow with bird-guard grille using a separate pipe clamp.

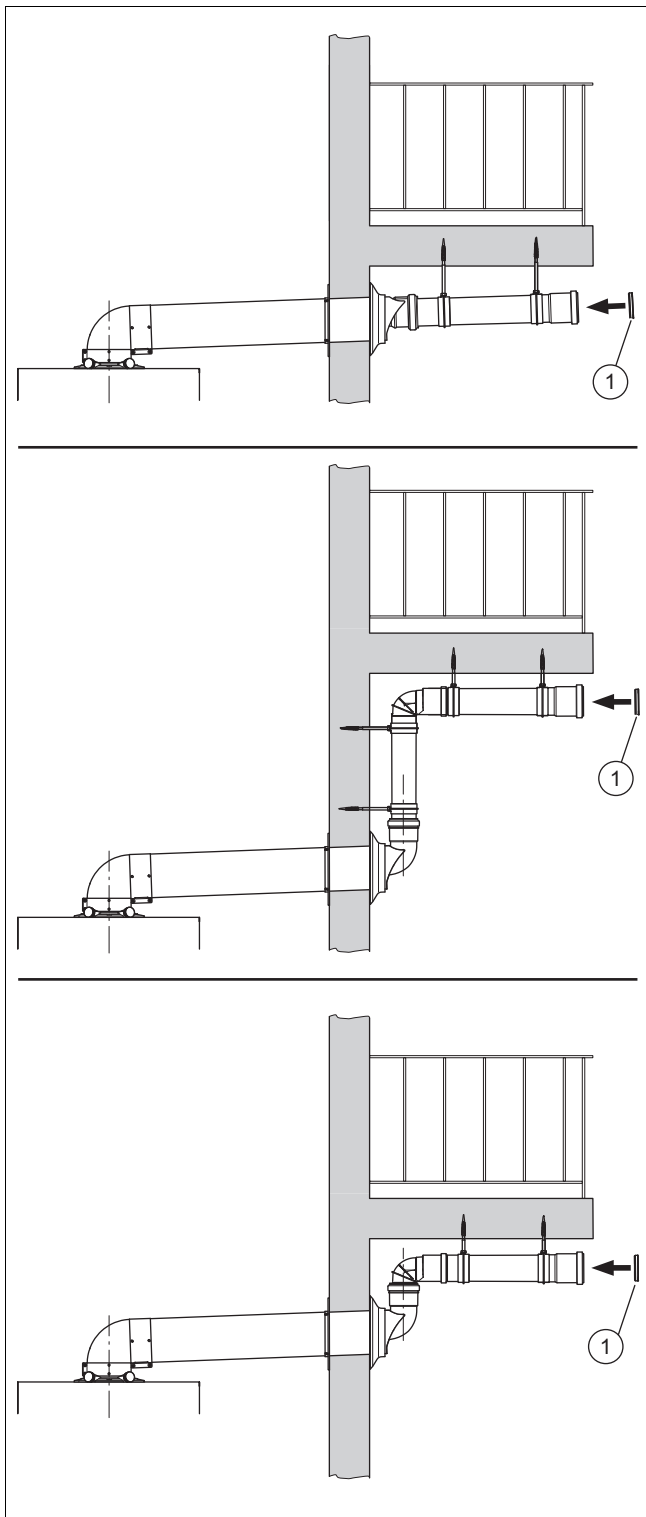
### 5.9.5.5 Routing extensions for the variable terminal set around eaves



When installing the variable terminal set around eaves, additional M8 threaded rods are required for the pipe clamps. The threaded rods are commercially available.

- ▶ If required, install additional 45° elbows.
- ▶ Install the bird-guard grille from the 87° elbow in the last extension.
  - If you are using the 87° elbow, insert the seal for the extension.

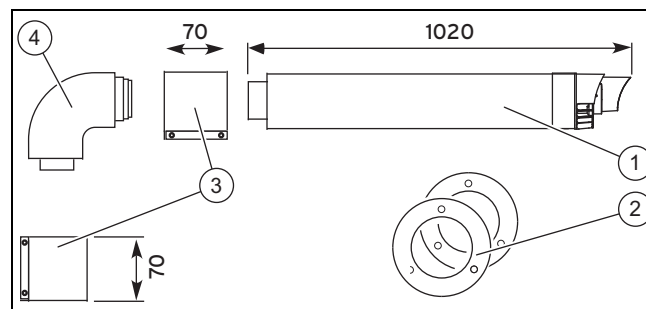
### 5.9.6 Installing the variable terminal set below the balcony



1. When installing with an offset: Install the variable terminal (→ Page 29).
2. Secure the extensions with the pipe clamps below the balcony or on the wall (→ Page 30).
3. Install the bird-guard grille (1) from the elbow of the VTK set in the sleeve for the last extension.

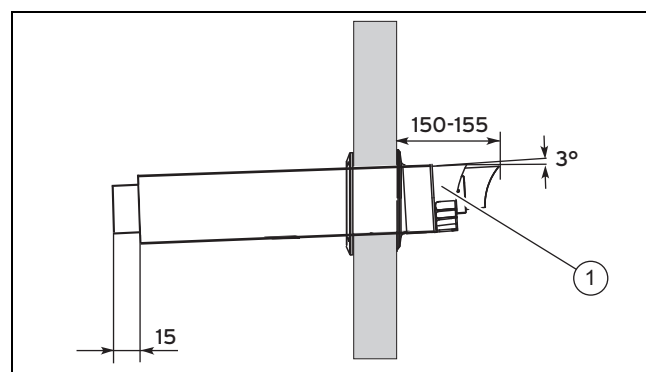
### 5.10 Installing the 80/125 mm diameter horizontal wall/roof duct, article number 303209 or 0010035777

#### 5.10.1 Scope of delivery



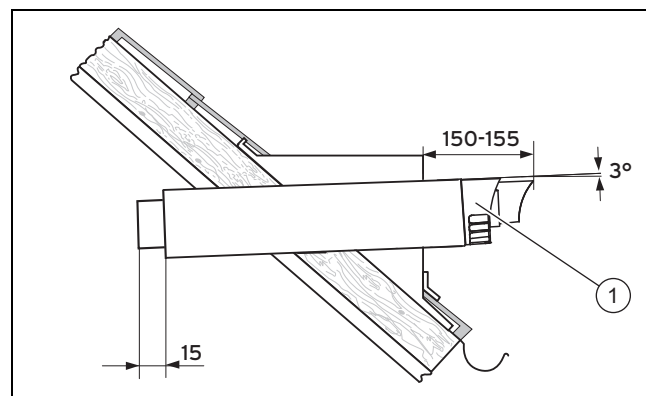
- |   |                                   |   |                     |
|---|-----------------------------------|---|---------------------|
| 1 | Horizontal wall/roof duct         | 3 | 70 mm clamp (2 pcs) |
| 2 | Wall collar, 125 diameter (2 pcs) | 4 | 87° elbow           |

#### 5.10.2 Installing the wall duct



1. Drill a hole.
  - Diameter: 130 mm
2. Insert the air/flue pipe (1) into the wall opening.
3. Secure the air/flue pipe with mortar and leave the mortar to harden.
4. Install the wall collar on the inside and outside of the wall.

#### 5.10.3 Installing the roof duct



- ▶ Insert the air/flue pipe (1) without the external collar into the dormer.

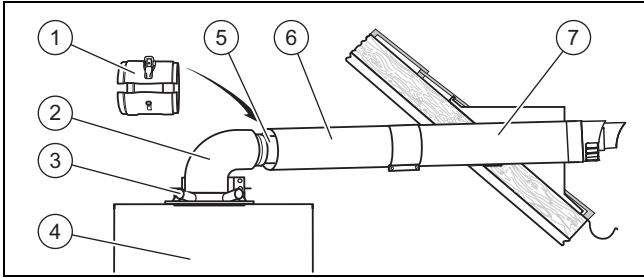


#### Note

The dormer is not provided by Vaillant and must be created on-site.



## 5.10.4 Connecting the product



1. Install the product (4) – see the installation instructions for the product.
2. If required, replace the connector for the air/flue pipe (3), see the installation instructions for the product.
3. Connect the connection elbow (2) to the connector for the air/flue pipe (3).
4. Insert the sliding sleeve (5) with the sleeve as far as it will go in the wall/roof duct (7) or the extension (6).
5. If required, install the extensions .
6. Connect the sliding sleeve to the connection elbow.
7. Install the air pipe clamp (1) for the sliding sleeve.
8. **Alternatives 1:**

**Condition:** Wall/roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 47)

8. **Alternatives 2:**

**Condition:** Wall/roof duct with extension

- ▶ Install the extensions. (→ Page 47)
- ▶ Install the elbows (→ Page 50).
- ▶ Install the sliding sleeve. (→ Page 47)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

## 5.11 Installing the vertical roof duct

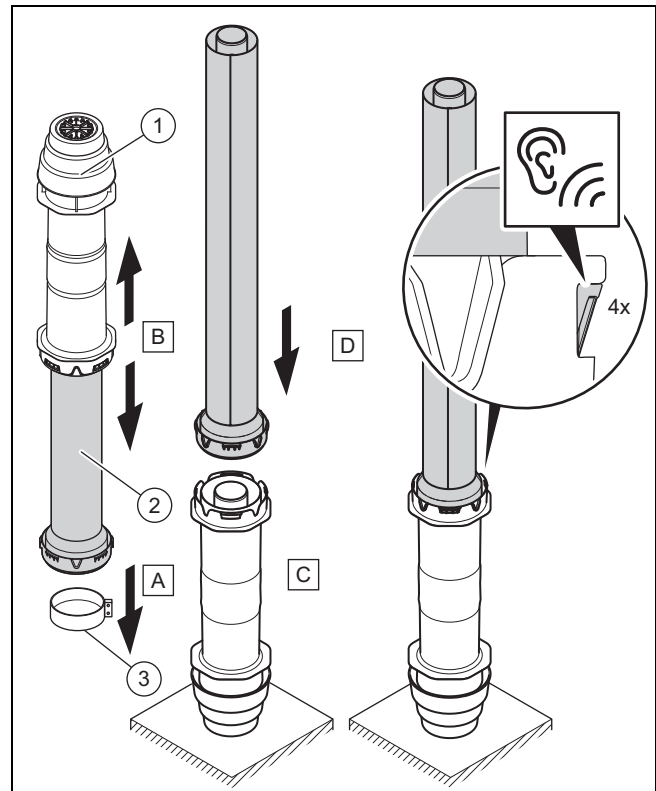
### 5.11.1 Installing the vertical roof duct, 60/100 mm diameter

#### 5.11.1.1 Assembling the vertical roof duct



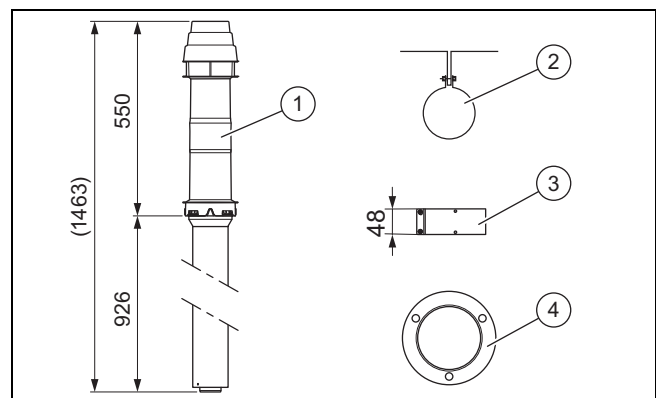
#### Note

In its as-delivered condition, the lower pipe of the vertical roof duct is pushed into the upper pipe.



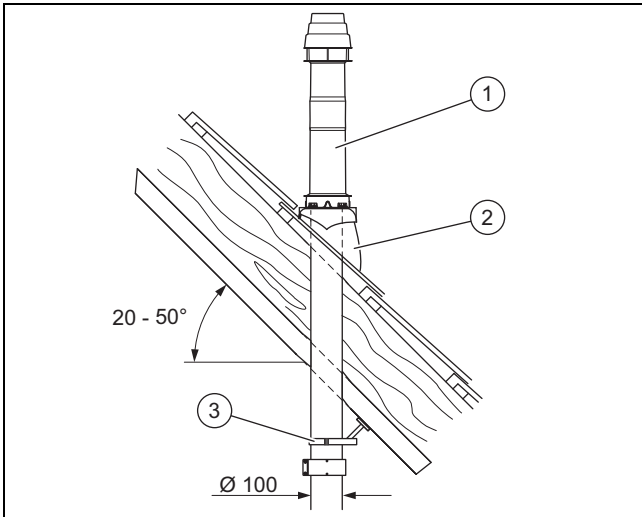
1. Remove the clamp fitting (3) from the inside of the flue pipe (2) (step A).
2. Separate the flue pipe (2) from the terminal piece (1) by pulling them apart (step B).
3. Turn the terminal piece over and set it on the floor (step C).
4. Slide the flue pipe (2) downwards onto the terminal piece (1) until all four fastenings click into place (step D).

#### 5.11.1.2 Scope of delivery article number 0020223472 (black, with collar)



- |   |                    |   |                      |
|---|--------------------|---|----------------------|
| 1 | Vertical roof duct | 3 | 48 mm air pipe clamp |
| 2 | Fixing bracket     | 4 | Cover plate          |

### 5.11.1.3 Installing the pitched-roof duct



1. Determine the installation site of the roof duct so that there is sufficient distance behind the product in order to connect the product to the heating installation.
2. Insert the pantile (2).
3. Insert the roof duct (1) through the pantile from above and push it down until the cover plate is seated firmly.
4. Align the roof duct vertically.
5. Secure the roof duct to the roof construction using the fixing bracket (3).
6. Connect the roof duct to the product using extensions, elbows and, if required, a sliding sleeve. If you do not insert a sliding sleeve, you must always install the 40 mm clamp directly on the product.

#### 7. Alternatives 1:

**Condition:** Roof duct with extension

- ▶ Install the extensions. (→ Page 47)
- ▶ Install the elbows (→ Page 50).
- ▶ Install the sliding sleeve. (→ Page 47)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

#### 7. Alternatives 2:

**Condition:** Roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 47)

### 5.11.1.4 Installing the flat-roof duct

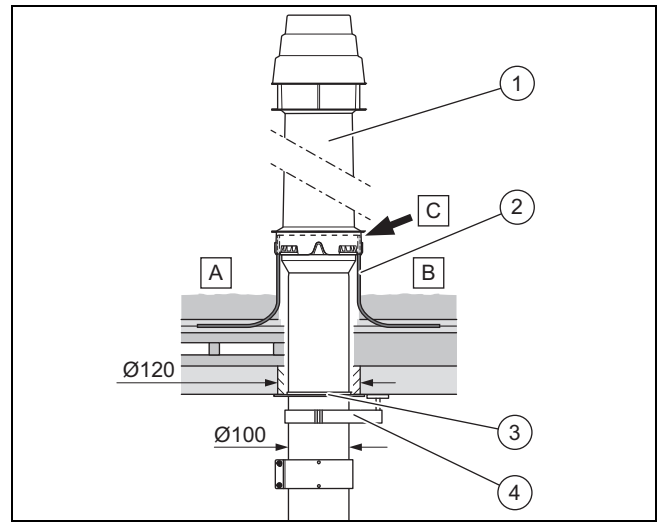


#### Caution.

#### Risk of damage to the structure of the building.

As a result of improper installation, water may penetrate the building and cause material damage.

- ▶ Observe the definitions in the directives for the planning and implementation of roofs with seals.



A Cold roof

B Warm roof

C Position of the internal flue pipe seal

1. Determine the installation site for the roof duct.
2. Insert the flat roof penetration collar (2).
3. Glue the flat roof penetration collar firmly in place.
4. Insert the roof duct (1) through the flat roof penetration collar from above and push it down until seated firmly.
5. Align the roof duct vertically.
6. Put the cover plate (3) on.
7. Secure the roof duct to the roof construction using the fixing bracket (4).
8. Connect the roof duct to the product using extensions, elbows and, if required, a partition. If you do not insert a partition, you must always install the 48 mm clamp directly on the product.

#### 9. Alternatives 1:

**Condition:** Roof duct with extension

- ▶ Install the extensions. (→ Page 47)
- ▶ Install the elbows (→ Page 50).
- ▶ Install the sliding sleeve. (→ Page 47)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

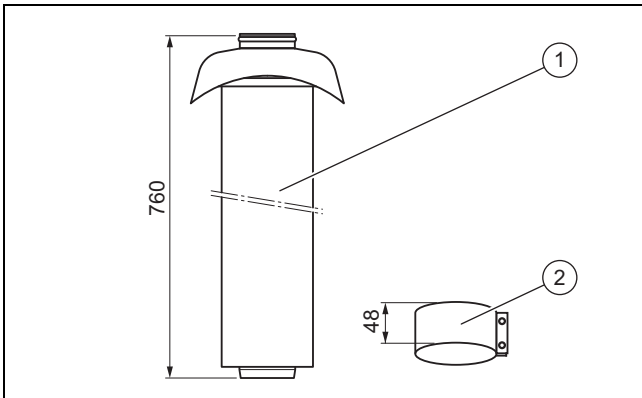
#### 9. Alternatives 2:

**Condition:** Roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 47)

## 5.11.2 Installing the ridge tiles for the 60/100 mm diameter roof duct

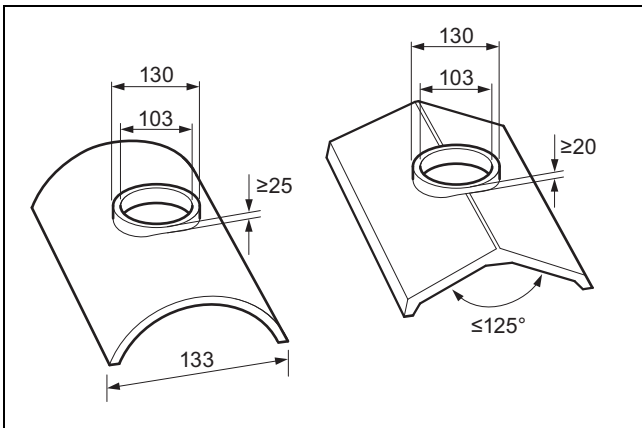
### 5.11.2.1 Scope of delivery, article number 303982 (black)



- 1 Ridge tile terminal, black      2 48 mm air pipe clamp

### 5.11.2.2 Ridge roof duct

According to the specifications from the tile manufacturer, a suitable ridge tile must be installed.



Suitable ridge tiles are manufactured by:

Repcor Roof Tiles Limited

49 Maurice Gaymer Road

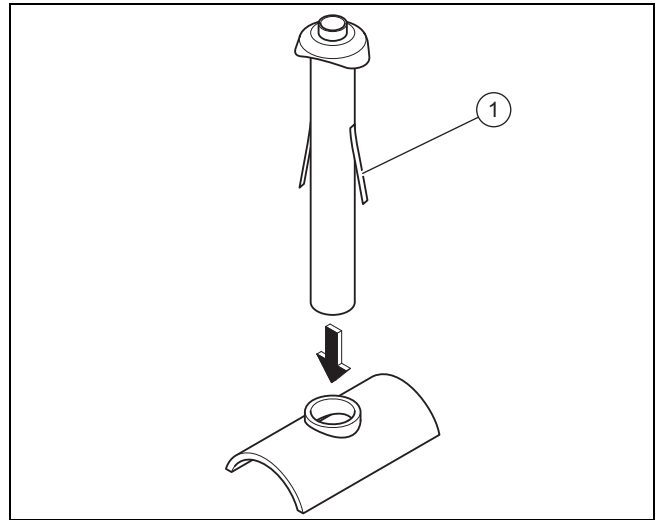
Attleborough

Norfolk, NR17 2QZ

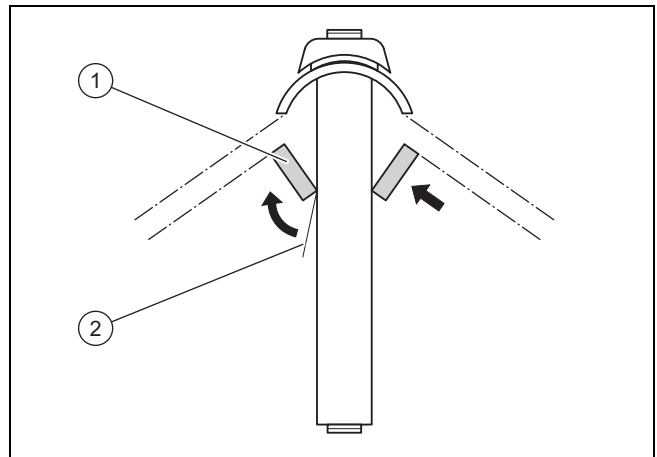
enquiries@repcoroftiles.co.uk

Tel: +44 (0) 808 1333001

## 5.11.2.3 Installing the ridge tile terminal



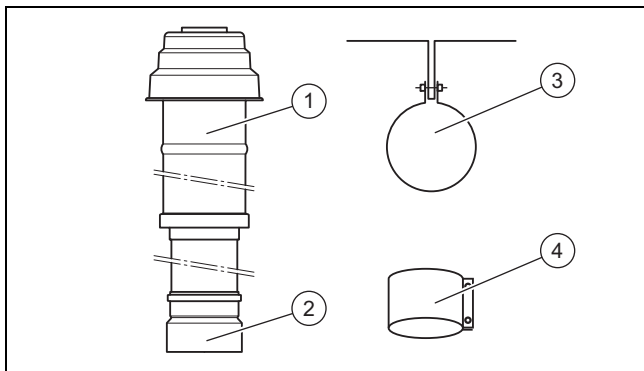
1. Install the ridge tile in accordance with the specifications from the tile manufacturer.
2. Insert the ridge tile terminal into the ridge tile.
3. Align the ridge tile terminal in such a way that the two fixing tabs (1) are at a right angle to the course of the ridding. This ensures that the combustion air can be extracted from between the ridge tile and the air hood above the ridge tile.



4. Bend the two fixing tabs (2) on one bar (1).
5. Use nails or screws to secure the fixing tabs.
6. Install the boiler (→ Installation instructions for the boiler).
7. Install the extensions. (→ Page 47)
8. Install the elbows (→ Page 50).
9. Connect all of the pipe joints with air pipe clamps. (→ Page 55)
10. Connect the ridge tile terminal and the boiler to extensions and elbows.

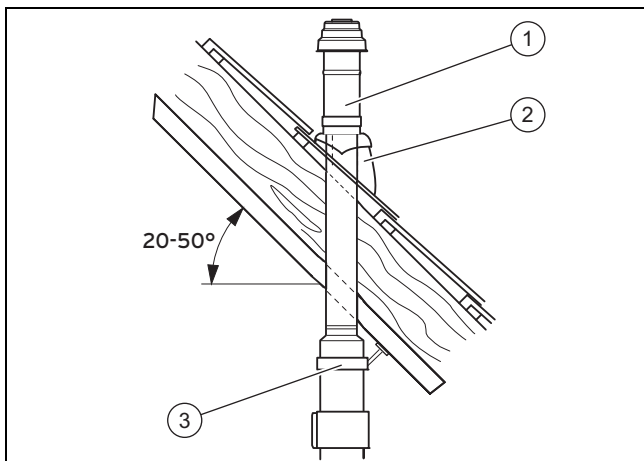
### 5.11.3 Installing the vertical roof duct, 80/125 mm diameter

#### 5.11.3.1 Scope of delivery article number 303200 (black)



- |   |                                    |   |                      |
|---|------------------------------------|---|----------------------|
| 1 | Vertical roof duct                 | 3 | Fixing bracket       |
| 2 | Adapter (air) for 110/125 diameter | 4 | 70 mm air pipe clamp |

#### 5.11.3.2 Installing the pitched-roof duct



- Determine the installation site of the roof duct in such a way that there is sufficient distance behind the product in order to connect the product to the heating installation.
- Insert the pantile (2).
- Insert the roof duct (1) through the pantile from above and push it down until it is seated firmly.
- Align the roof duct vertically.
- Secure the roof duct to the roof construction using the fixing bracket (3).
- Connect the roof duct to the product using extensions, elbows and, if required, a sliding sleeve.
  - If you do not insert a sliding sleeve, you must always install the 70 mm clamp directly on the product

#### 7. Alternatives 1:

**Condition:** Roof duct with extension

- ▶ Install the extensions. (→ Page 47)
- ▶ Install the elbows (→ Page 52).
- ▶ Install the sliding sleeve. (→ Page 47)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

#### 7. Alternatives 2:

**Condition:** Roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 47)

#### 5.11.3.3 Installing the flat-roof duct

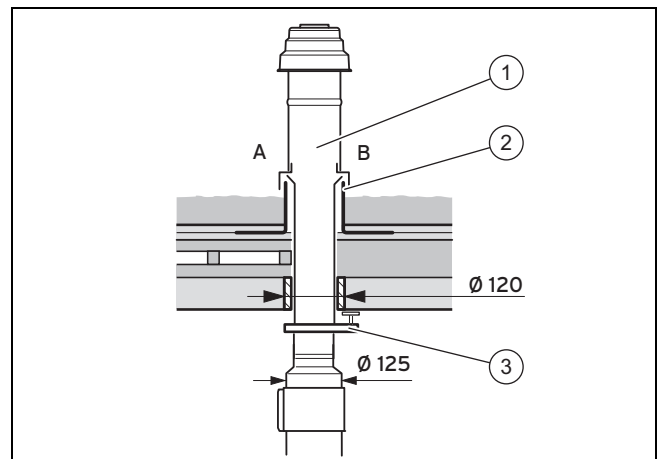


#### Caution.

**Risk of damage to the structure of the building.**

As a result of improper installation, water may penetrate the building and cause material damage.

- ▶ Observe the definitions in the directives for the planning and implementation of roofs with seals.



- A Cold roof                      B Warm roof

- Determine the installation site for the roof duct.
- Insert the flat roof penetration collar (2).
- Glue the flat roof penetration collar firmly in place.
- Insert the roof duct (1) through the flat roof penetration collar from above and push it down until seated firmly.
- Align the roof duct vertically.
- Secure the roof duct to the roof construction using the fixing bracket (3).
- Connect the roof duct to the product using extensions, elbows and, if required, a sliding sleeve.
  - If you do not insert a sliding sleeve, you must always install the 70 mm clamp directly on the product.

#### 8. Alternatives 1:

**Condition:** Roof duct with extension

- ▶ Install the extensions. (→ Page 47)
- ▶ Install the elbows (→ Page 52).
- ▶ Install the sliding sleeve. (→ Page 47)
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

#### 8. Alternatives 2:

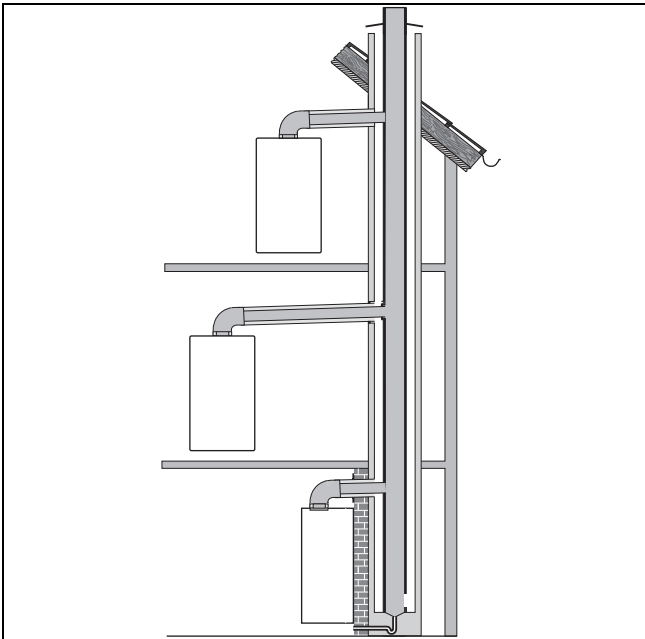
**Condition:** Roof duct without extension

- ▶ Install the sliding sleeve. (→ Page 47)

## 5.12 Installing the concentric connection, 60/100 mm diameter, to the air/flue system for negative pressure

### 5.12.1 Installation instructions

Set-up example:



Markings have been assigned to the air/flue system in accordance with EN 1443 and these indicate that the system complies with the fundamental requirements of the construction products directive. The air/flue system is not approved as part of the boiler.

The air/flue gas chimney must be designed and approved for negative pressure mode by the manufacturer.

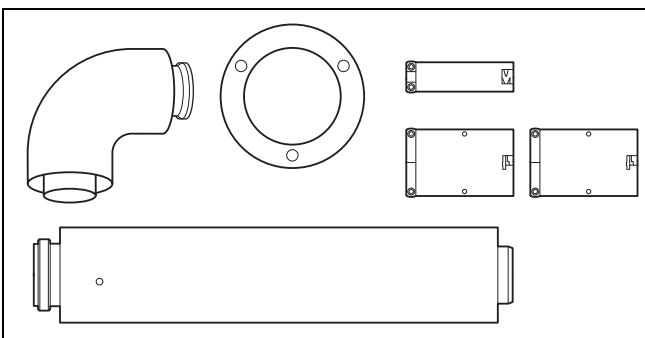
The air/flue gas chimney's data plate is marked for operation with condensing boilers and a flue gas temperature of at least 120 °C.

- ▶ Take into consideration the regulations with regard to fire resistance.

The Vaillant ecoTEC gas-fired wall-hung boilers that are mentioned in these installation instructions are approved for the use of common flue systems for C43 units.

The length of the air/flue pipe must not exceed 1.4 m and three elbows. This corresponds to a maximum length of 3.4 m for the C43 connection.

### 5.12.2 Components that are suitable for connection



- 87° elbow (article number 303910)
- Extensions

- 470 mm (article number 303902)
- 970 mm (article number 303903)
- 970 mm (article number 303905)
- Air pipe clamps (article number 303821)

### 5.12.3 Installing a connection to the air/flue system



#### Caution.

#### Risk of damage to the product.

There must not be any excess pressure in the vertical part of the flue system, because, in this case, the burner may pulse and the product may become damaged. The product is not suitable for this mode of operation and has not been checked.

- ▶ Provide evidence of the functional reliability of the vertical flue pipework in accordance with EN-13384 using the specifications for flue gas temperature and flue gas mass flow rate from the installation instructions for the product.

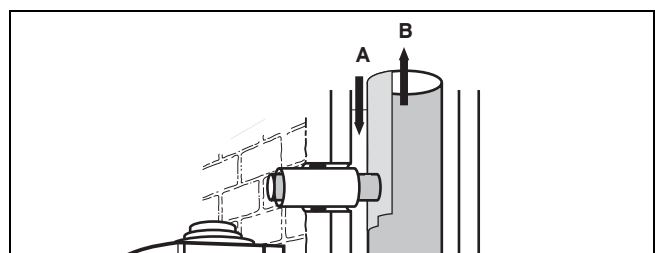


#### Caution.

#### Risk of damage to the structure of the building.

The static function and fire-protective function of the shaft wall may be impaired by fastenings.

- ▶ Do not attach any fastenings using screws, wall plugs, etc. directly to the shaft wall of the air/flue system.
- ▶ Do not attach fastenings to primary walling or sideways to the wall.
- ▶ Observe the specifications provided by the manufacturer of the air/flue system.

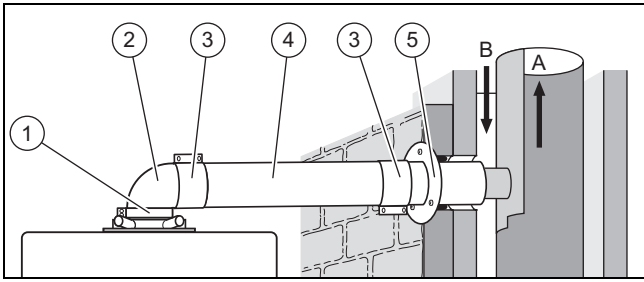


A Air

B Flue gas

- ▶ On the air/flue system, establish a connection for open-flued operation.
  - For the connection height for the product (including the connector for the air/flue pipe and inspection elbow), see the installation instructions for the product.

### 5.12.4 Connecting the product to the air/flue system



1. Install the product (→ Installation instructions for the product).
2. Slide the wall collar (5) onto the air pipe.
3. Install the extension (4) and the elbow (2) between the connector for the flue pipework.
4. Install the 40 mm air pipe clamp (1). When doing so, ensure that it is aligned centrally.
5. Install the 70 mm air pipe clamps (3). When doing so, ensure that they are aligned centrally.
6. Connect all of the pipe joints with air pipe clamps (1).

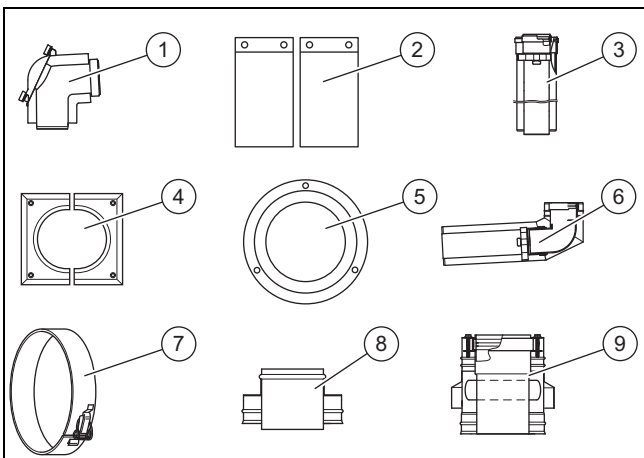
**Condition:** Additional extensions and elbows required

- ▶ Install the extensions. (→ Page 47)
- ▶ Install the elbows (→ Page 50).
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

### 5.13 Installing the flue gas pipe on the external wall

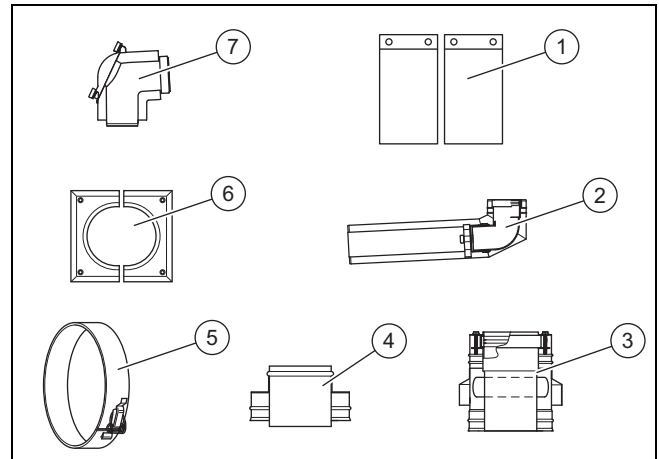
To install the flue gas pipe on the external wall, you must first drill the hole in the external wall and install the external wall console. Then install the line on the external wall and the horizontal section with the unit connection.

#### 5.13.1 Scope of delivery of basic elements for external wall installation, article number 0020042748



- |   |  |   |  |
|---|--|---|--|
| 1 | Inspection elbow, 80/125 mm diameter     | 6 | Wall duct elbow 87°, 80/125 mm diameter, stainless steel |
| 2 | 70 mm air pipe clamp (2 pcs)             | 7 | Stainless steel air pipe clamp (2 pcs)                   |
| 3 | Extension 0.5 m, 80/125 mm diameter      | 8 | Terminal piece, stainless steel                          |
| 4 | Divided external collar, stainless steel | 9 | Air intake piece, stainless steel                        |
| 5 | Internal collar                          |   |  |

#### 5.13.2 Scope of delivery of basic elements for external wall installation, article number 0010039735



- |   |  |   |   |
|---|--|---|---|
| 1 | 70 mm air pipe clamp (2 pcs)                             | 4 | Terminal piece, stainless steel         |
| 2 | Wall duct elbow 87°, 80/125 mm diameter, stainless steel | 5 | Stainless steel air pipe clamp (2 pcs)  |
| 3 | Air intake piece, stainless steel                        | 6 | Divided collar, stainless steel (2 pcs) |
|   |  | 7 | Inspection elbow, 80/125 mm diameter    |

#### 5.13.3 Observing the static dimensions

Before starting the installation, determine the route of the flue system and the number and position of the wall consoles and external wall pipe brackets.

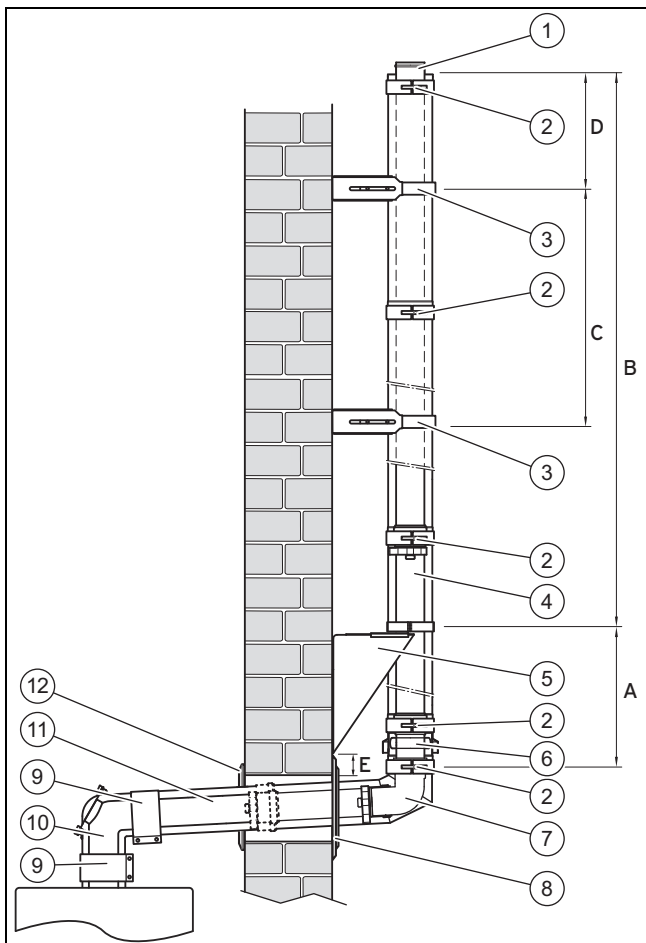


#### **Danger!**

#### **Risk of injury due to falling parts.**

Exceeding the static dimensions may lead to mechanical damage to the flue system. In extreme cases, parts may become loose from the wall and fall, thus endangering persons.

- ▶ During installation, observe the static dimensions.
- ▶ Secure at least every second extension to the external wall using a pipe clamp.
- ▶ On façades with thermal insulation composite systems, use fixing elements that are permitted for this, if required, in order to securely connect the flue pipework to the structure.



- |    |  |   |  |
|----|--|---|--|
| 1  | Terminal piece                           | A | Max. 2 m (distance between the wall duct elbow and the external wall console)    |
| 2  | Air pipe clamp                           | B | Max. 22 m (height above the external wall console)                               |
| 3  | External wall pipe bracket               | C | Max. 2 m (distance between the pipe brackets)                                    |
| 4  | Extension                                | D | Max. 1.5 m (height above the uppermost pipe bracket)                             |
| 5  | External wall console                    | E | Min. 50 mm (distance between the hole in the wall and the external wall console) |
| 6  | Air intake piece                         |   |  |
| 7  | Wall duct elbow                          |   |  |
| 8  | External collar, divided                 |   |  |
| 9  | Internal air pipe clamp                  |   |  |
| 10 | Inspection elbow                         |   |  |
| 11 | Internal extension (for 0020042748 only) |   |  |
| 12 | Internal collar                          |   |  |

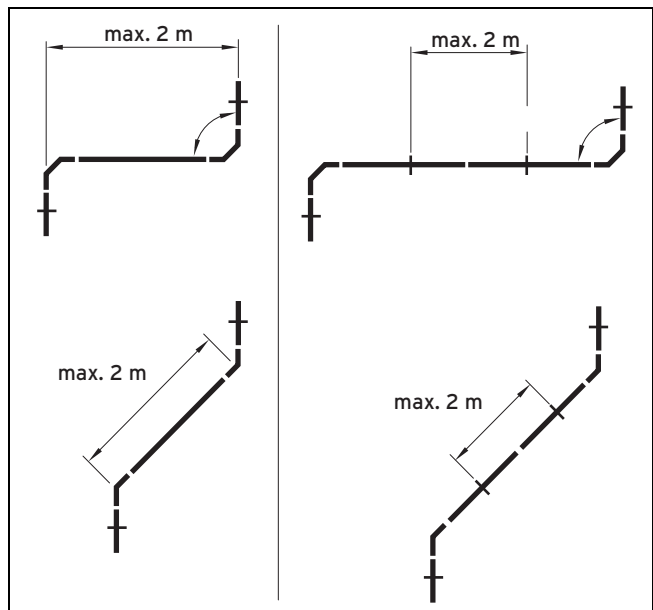


**Danger!**

**Risk of injury due to falling parts.**

The part of the flue pipework that protrudes above the roof must be sufficiently rigid. You must not install any offset between the two uppermost pipe brackets on the external wall. An offset reduces the tensile strength of the flue system in strong winds and can lead to rotation or loosening of the flue system.

- ▶ Do not install an offset between the two upper external wall pipe brackets.



**5.13.4 Installing the flue pipework on the external wall**



**Note**

If required, observe the existing roof overhang. If required, use the pantiles for a pitched roof. The flue pipework must maintain a distance of 20 cm from windows and other wall openings.

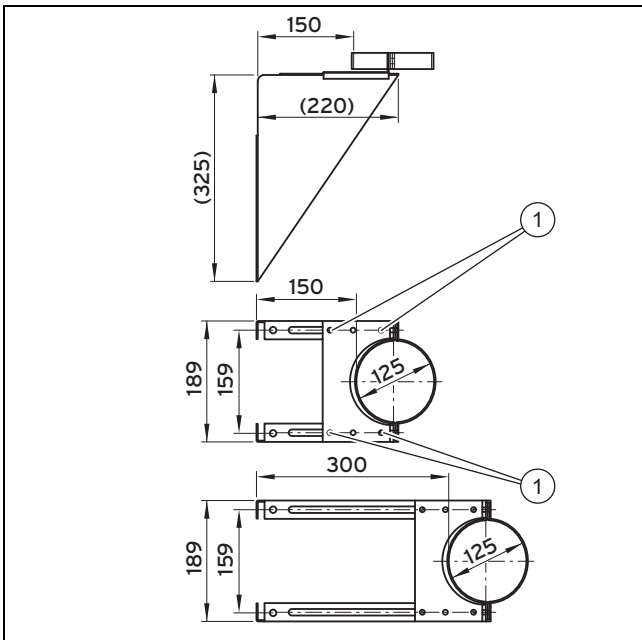


**Danger!**

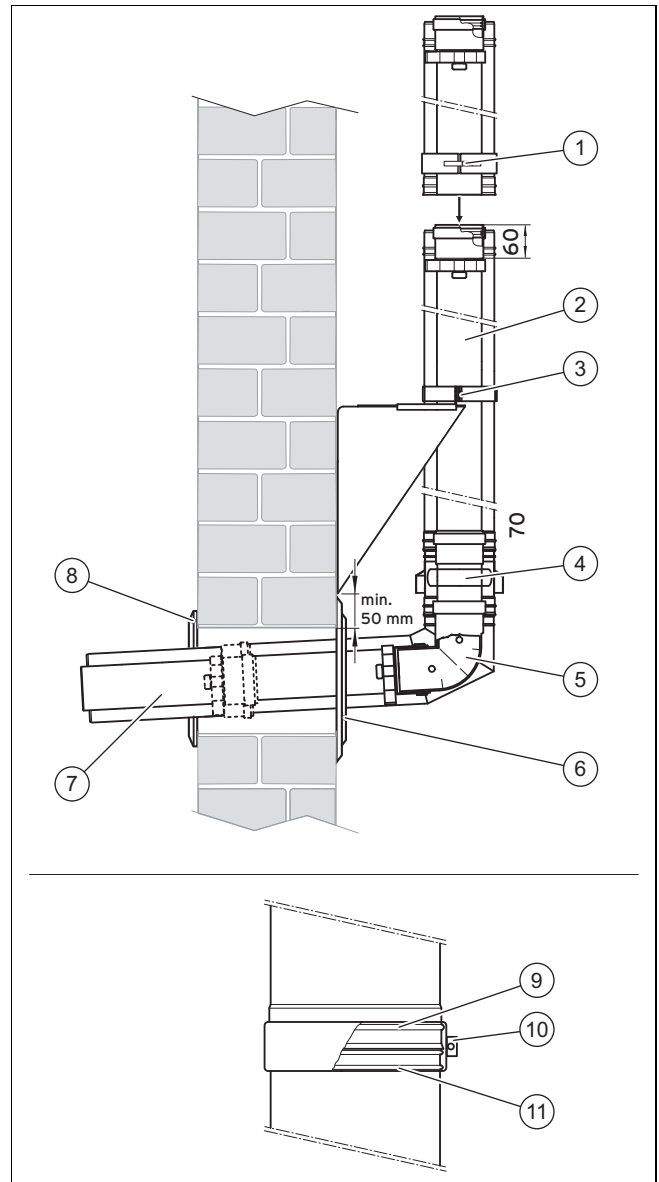
**Risk of injury due to falling parts.**

As of a vertical height of 2 m, an external wall console is required to support the vertical supporting forces so that the flue pipework is not damaged by excessive loads.

- ▶ Install a second external wall console after an offset.



1. Drill a hole into the external wall.
  - Core diameter: 150 mm
2. Preinstall the external wall console, which consists of two brackets and a mounting plate.
  - Install the external wall console at least 50 mm above the hole in the wall so that the wall collar can be installed on the flue pipe.
3. If there is a wall clearance of 50 mm to 150 mm, install the support plate on the short side; if there is a wall clearance of 150 mm to 300 mm, install the retaining plate on the long side of the external wall console.
4. Set the required wall clearance and tighten the four bolts (1) in a position where they can be installed.
5. Install the wall console at least 50 mm above the hole in the wall so that the wall collar can be installed on the flue pipe.

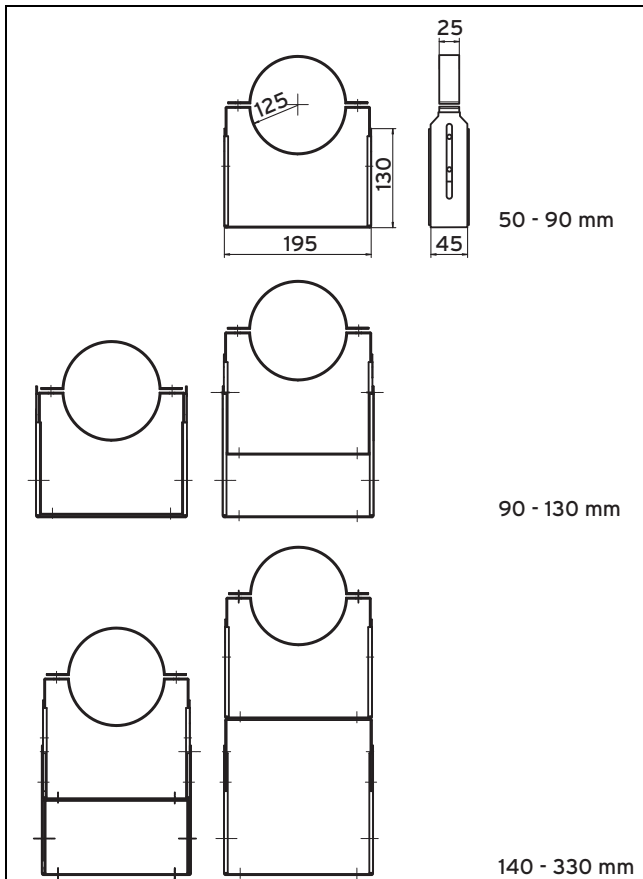


- |   |                            |    |  |
|---|----------------------------|----|--|
| 1 | Air pipe clamp             | 7  | Internal extension (for 0020042748 only) |
| 2 | External wall extension    | 8  | Internal collar                          |
| 3 | External wall console clip | 9  | Outer bead                               |
| 4 | Air intake piece           | 10 | Clamping device                          |
| 5 | Wall duct elbow            | 11 | Outer bead                               |
| 6 | External collar, divided   |    |  |

6. Preinstall the wall duct elbow, the air intake piece and an external wall extension.
  - The air intake port must lie at least 1.0 m above the surface of the terrain so that the air intake port cannot be blocked by snow.
  - The air intake piece can be located at any height. You can find restrictions in the "Pipe lengths" table.
  - However, the air intake piece must always be arranged vertically so that no rainwater can get into the air intake ports.
  - The sleeve of the flue pipework must always point in the direction of the flue gas terminal.
7. In each case, hang an air pipe clamp (1) on an external wall extension (2) and the air intake piece (4).
8. Slide the air intake piece and the wall duct elbow (5) together until they reach the stop, along with the external wall extension and the air intake piece.



9. Place the air pipe clamp over the two external beads(9, 11) and tighten the clamping device (10).
10. Insert the wall duct elbow (5) with air intake piece and external wall extension into the wall opening.
11. Place the clip of the external wall console (3) around the external wall extension and tighten the two clamping screws.
12. Fill the gap between the air pipe and the breakthrough from inside and outside with mortar. Leave the mortar to harden.
13. Screw the internal collar (8) from inside.
14. Screw the external collar (6) from outside.
15. Secure the pipe brackets to the external wall at a max. distance of 2 m.



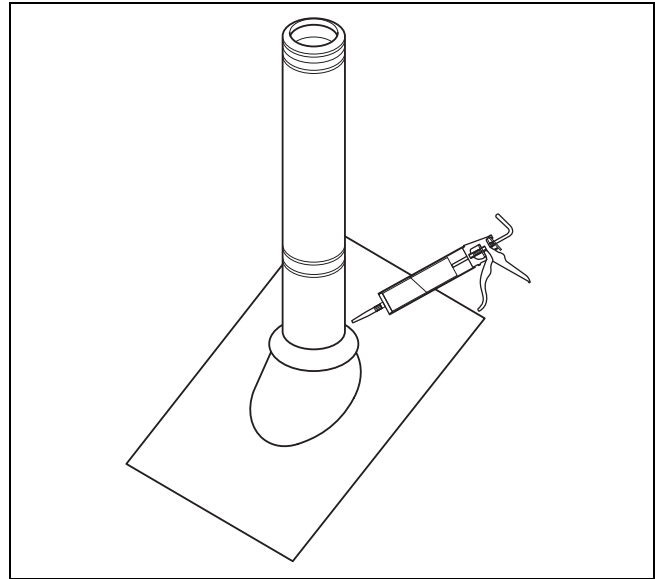
16. For the adjustment range of 90 mm to 160 mm, remove the external bracket.
  - The adjustment range of the external wall pipe brackets ranges from 50 mm to 90 mm. For larger wall clearances, extensions are required for the external wall pipe brackets. This allows you to reach a wall clearance of 300 mm.
17. Screw the external wall pipe brackets directly to the lower section of the extension for the external wall pipe brackets.
18. Install the sections of flue pipework and, if required, the inspection opening and the elbows and the terminal.
  - The terminal is made from stainless steel on the flue gas side. This means that the flue gas terminal is also resistant to UV radiation.
  - The distance from the terminal to the roof area must be at least 40 cm, and for product outputs above 50 kW, it must be at least 100 cm.
19. Tighten all wall fastenings and air pipe clamps.

### 5.13.5 Installing the rain penetration collar



#### Note

If the flue system is routed through a roof overhang, the rain penetration collar must be installed on the flue system.



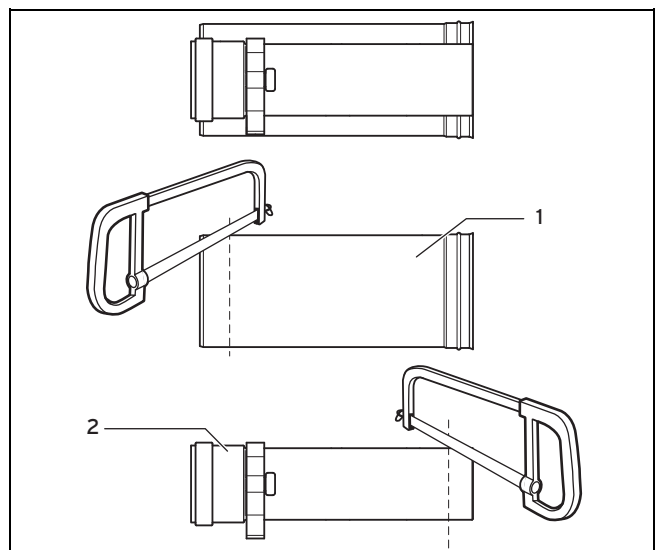
1. Position the rain penetration collar.
2. Tighten the clamping screw.
3. Seal the gap between the rain penetration collar and the flue system using a UV-resistant material so that it is permanently elastic.

### 5.13.6 Installing an extension that can be shortened



#### Note

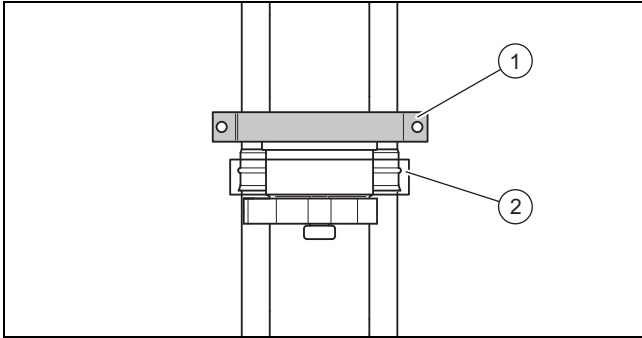
In the case of an extension that can be shortened (article number 0020042755), the spacer for centring the flue pipe in the external pipe is not connected to the external pipe. The external pipe does not have a bead on the insert side because this side is shortened.



1. To shorten the extension, pull the flue pipe (1) out from the external pipe (2).
2. Shorten the flue pipe and external pipe by an equal amount.

- Shorten the flue pipe and external pipe at the side facing away from the sleeve. The spacer must remain locked on the flue pipe.

3. Slide the flue pipe back into the external pipe.



1 External wall pipe bracket  
2 Clamp



**Warning.**

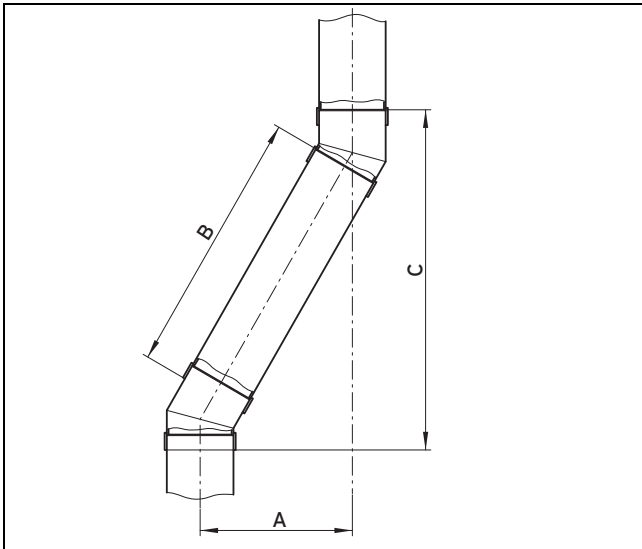
**Risk of injury due to falling parts.**

The external pipe of the extension that can be shortened does not have a bead on the underside. The clamp cannot stabilise the pipework system.

- ▶ Install an additional external wall pipe bracket so that the system cannot be disconnected and become loose as a result of the wind load.

4. Install an additional external wall pipe bracket directly above the extension that can be shortened.

### 5.13.7 Installing the 30° elbow (external wall) with offset



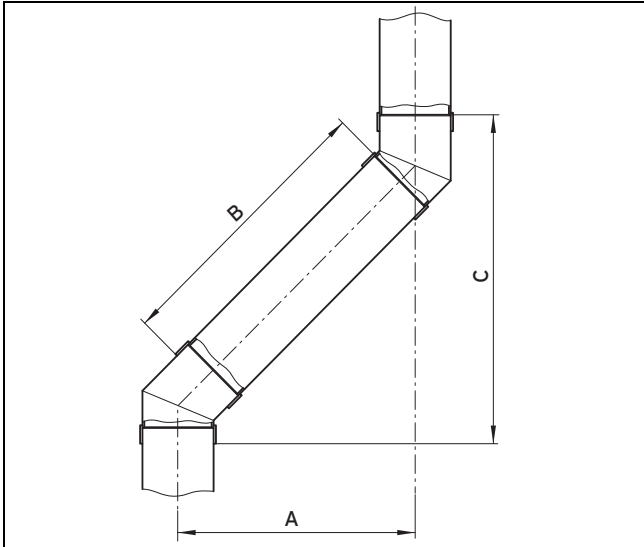
A Offset  
 B Length of the air pipe  
 C Height

- ▶ Example (using an extension that can be shortened, article number 0020042755): Measure the offset (**A**), e.g. with 300 mm.
- ▶ Use this value from the table to determine the length of the air pipe on the extension that can be shortened (**B**) = 494 mm and the height (**C**) = 656 mm.

With extension that can be shortened Article number 0020042755			With 0.5 m extension, article number 0020042753, and extension that can be shortened Article number 0020042755				With 1.0 m extension, article number 0020042754, and extension that can be shortened Article number 0020042755			
Offset	Length of the air pipe on the exten- sion that can be shortened	Height	Offset	Total length of the air pipes	Length of the air pipe on the exten- sion that can be shortened	Height	Offset	Total length of the air pipes	Length of the air pipe on the exten- sion that can be shortened	Height
A	B	C	A	B	–	C	A	B	–	C
53	0	228	298	490	0	652	548	990	0	1085
54 - 109	not possible		299 - 339	not possible			549 - 589	not possible		
110	114	327	340	574	114	725	590	1074	114	1158
120	134	344	350	594	134	742	600	1094	134	1175
130	154	361	360	614	154	759	610	1114	154	1192
140	174	378	370	634	174	777	620	1314	174	1210
150	194	396	380	654	194	794	630	1514	194	1227
160	214	413	390	674	214	811	640	1714	214	1244
170	234	430	400	694	234	829	650	1914	234	1262
180	254	448	410	714	254	846	660	1214	254	1279
190	274	465	420	734	274	863	670	1234	274	1296
200	294	482	430	754	294	881	680	1254	294	1314
210	314	500	440	774	314	898	690	1274	314	1331
220	334	517	450	794	334	915	700	1294	334	1348
230	354	534	460	814	354	933	710	1314	354	1366
240	374	552	470	834	374	950	720	1334	374	1383
250	394	569	480	854	394	967	730	1354	394	1400
260	414	586	490	874	414	985	740	1374	414	1418
270	434	604	500	894	434	1002	750	1394	434	1435
280	454	621	510	914	454	1019	760	1414	454	1452
290	474	638	520	934	474	1037	770	1434	474	1470

With extension that can be shortened Article number 0020042755			With 0.5 m extension, article number 0020042753, and extension that can be shortened Article number 0020042755				With 1.0 m extension, article number 0020042754, and extension that can be shortened Article number 0020042755			
Offset	Length of the air pipe on the extension that can be shortened	Height	Offset	Total length of the air pipes	Length of the air pipe on the extension that can be shortened	Height	Offset	Total length of the air pipes	Length of the air pipe on the extension that can be shortened	Height
A	B	C	A	B	–	C	A	B	–	C
300	494	656	530	954	494	1054	780	1454	494	1487

### 5.13.8 Installing the 45° elbow (external wall) with offset



- A Offset
- B Length of the air pipe
- C Height

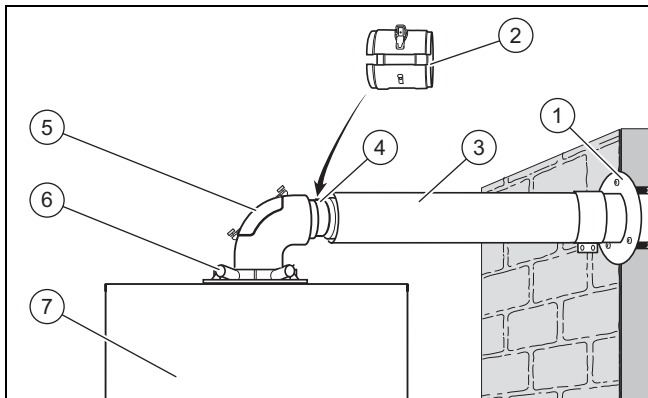
- ▶ Example (using an extension that can be shortened, article number 0020042755): Measure the offset (**A**), e.g. with 430 mm.
- ▶ Use this value from the table to determine the length of the air pipe on the extension that can be shortened (**B**) = 488 mm and the height (**C**) = 580 mm.

With extension that can be shortened Article number 0020042755			With 0.5 m extension, article number 0020042753, and extension that can be shortened Article number 0020042755				With 1.0 m extension, article number 0020042754, and extension that can be shortened Article number 0020042755			
Offset	Length of the air pipe on the extension that can be shortened	Height	Offset	Total length of the air pipes	Length of the air pipe on the extension that can be shortened	Height	Offset	Total length of the air pipes	Length of the air pipe on the extension that can be shortened	Height
A	B	C	A	B	–	C	A	B	–	C
106	0	256	431	490	0	581	785	990	0	935
106 - 169	not possible		432 - 499	not possible			786 - 849	not possible		
170	120	320	500	587	127	650	850	1082	122	1000
180	135	330	510	601	141	660	860	1096	136	1010
190	149	340	520	615	155	670	870	1110	150	1020
200	163	350	530	630	170	680	880	1124	164	1030
210	177	360	540	644	184	690	890	1139	179	1040
220	191	370	550	658	198	700	900	1153	193	1050
230	205	380	560	672	212	710	910	1167	207	1060
240	219	390	570	686	226	720	920	1181	221	1070
250	234	400	580	700	240	730	930	1195	235	1080



With extension that can be shortened Article number 0020042755			With 0.5 m extension, article number 0020042753, and extension that can be shortened Article number 0020042755				With 1.0 m extension, article number 0020042754, and extension that can be shortened Article number 0020042755			
Offset	Length of the air pipe on the extension that can be shortened	Height	Offset	Total length of the air pipes	Length of the air pipe on the extension that can be shortened	Height	Offset	Total length of the air pipes	Length of the air pipe on the extension that can be shortened	Height
A	B	C	A	B	–	C	A	B	–	C
275	0	319	764	490	0	345	1263	990	0	371
276 - 399	not possible		765 - 859	not possible			1264 - 1359	not possible		
400	126	326	860	586	126	350	1360	1087	127	376
410	136	326	870	596	136	351	1370	1097	137	377
420	146	327	880	606	146	351	1380	1107	147	377
430	156	328	890	616	156	352	1390	1117	157	378
440	166	328	900	626	166	352	1400	1127	167	378
450	176	329	910	636	176	353	1410	1137	177	379
460	186	329	920	646	186	353	1420	1147	187	379
470	196	330	930	656	196	354	1430	1157	197	380
480	206	330	940	666	206	354	1440	1167	207	380
490	216	331	950	676	216	355	1450	1177	217	381
500	226	331	960	686	226	355	1460	1187	227	382
510	236	332	970	696	236	356	1470	1197	237	382
520	246	332	980	706	246	356	1480	1207	247	383
530	256	333	990	716	256	357	1490	1217	257	383
540	266	333	1000	726	266	357	1500	1227	267	384
550	276	334	1010	736	276	358	1510	1237	277	384
560	286	334	1020	746	286	358	1520	1247	287	385
570	296	335	1030	756	296	359	1530	1257	297	385
580	306	335	1040	766	306	360	1540	1267	307	386
590	316	336	1050	776	316	360	1550	1277	317	386
600	326	336	1060	786	326	361	1560	1287	327	387
610	336	337	1070	796	336	361	1570	1297	337	387
620	346	337	1080	806	346	362	1580	1307	347	388
630	356	338	1090	816	356	362	1590	1317	357	388
640	366	339	1100	827	367	363	1600	1327	367	389
650	376	339	1110	837	377	363	1610	1337	377	389
660	386	340	1120	847	387	364	1620	1347	387	390
670	396	340	1130	857	397	364	1630	1357	397	390
680	406	341	1140	867	407	365	1640	1367	407	391
690	416	341	1150	877	417	365	1650	1377	417	391
700	426	342	1160	887	427	366	1660	1387	427	392
710	436	342	1170	897	437	366	1670	1397	437	393
720	446	343	1180	907	447	367	1680	1407	447	393
730	456	343	1190	917	457	367	1690	1417	457	394
740	466	344	1200	927	467	368	1700	1427	467	395
750	476	344	1210	937	477	368	1710	1437	477	395
760	486	345	1220	947	487	369	1720	1447	487	395

### 5.13.10 Connecting the product



1. Install the wall collar (1).
2. Install the product (7) – see the installation instructions for the product.
  - Downward gradient of the horizontal flue pipe to the product: 3° (3° corresponds to a downward gradient of approx. 50 mm per metre of pipe length)
3. Connect the inspection elbow (5) to the connector for the air/flue pipe (6).
4. If the product is installed **directly on the primary walling**: Connect the inspection elbow to the flue pipework. It is therefore not possible to use a sliding sleeve.
5. If the product is installed **away from the primary walling**: Place the sliding sleeve (4) with the sleeve as far as it will go onto the extension (3); see section entitled "Installing the sliding sleeve" (→ Page 47).
6. If required, shorten the extension according to the distance from the product.
7. Connect the extension to the flue pipework.
8. Install the extensions. (→ Page 47)
9. Connect the sliding sleeve to the inspection elbow.
10. Install the air pipe clamp (2) for the sliding sleeve.
11. Connect all of the pipe joints with air pipe clamps. (→ Page 55)

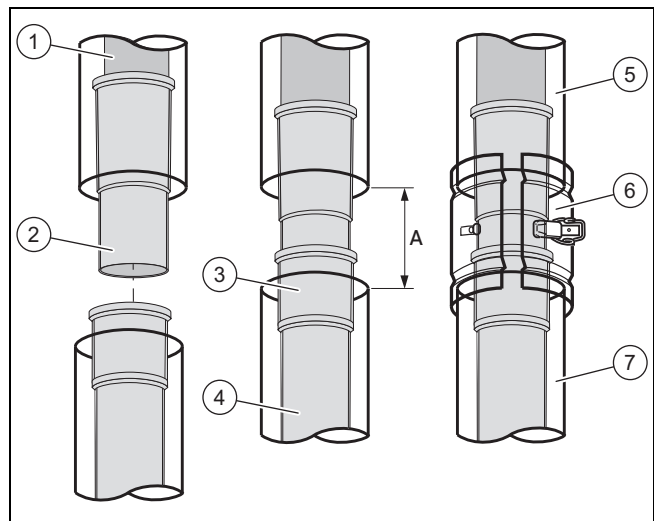
## 5.14 Installing the sliding sleeve, elbows and extensions

### 5.14.1 Installing the sliding sleeve



#### Note

The sliding sleeve provides for straightforward installation and disconnection of the air/flue pipe to/from the product.



1. Slide the sliding sleeve (2) onto the flue pipe (1) as far as it goes.
2. Pull the sliding sleeve (2) back far enough from the flue pipe (1) so that the inserting end of the sliding sleeve sits in the sleeve (3) of the flue pipe (4).

	60/100 mm diameter	80/125 mm diameter
A	100–110 mm	82–90 mm

3. Connect the air pipes (5, 7) with the air pipe clamp (6).
4. Use a locking screw to secure both sides. (→ Page 55)

### 5.14.2 Installing extensions



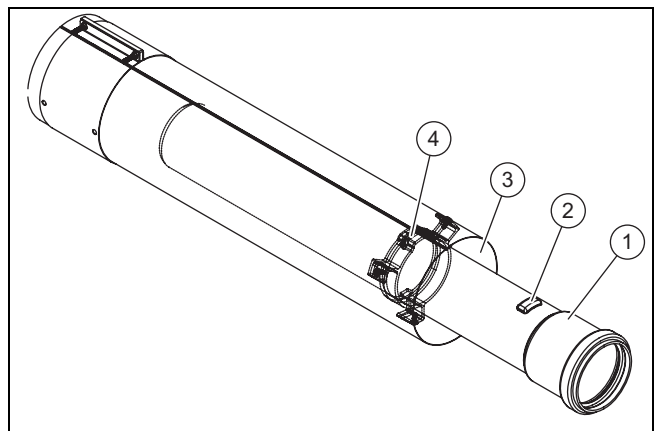
#### Danger!

#### Risk of poisoning due to escaping flue gas.

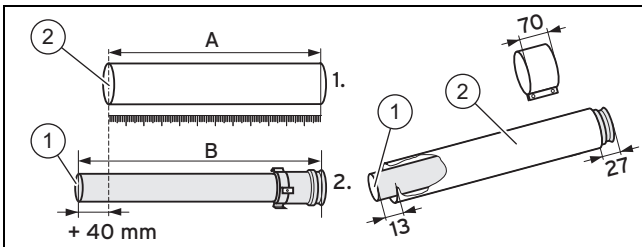
The flue pipes of the air/flue pipe may move as a result of thermal expansion and may then become disconnected.

- ▶ Lock the flue pipe in the spacer of the air pipe.

#### 5.14.2.1 Installing 60/100 mm diameter extensions

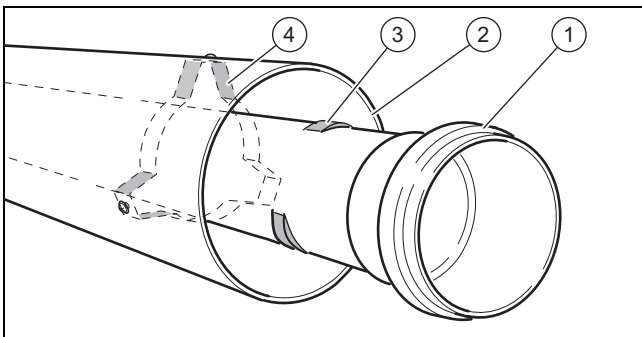


1. Turn the flue pipe (1) to a position that enables the ridge (2) on the plastic pipe to be pushed through the spacer (4).
2. Pull the pipe quickly and firmly over the detent.

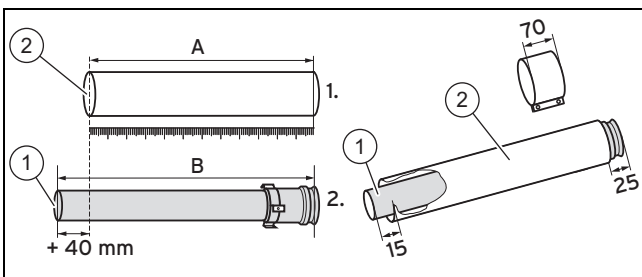


3. First, measure the required air pipe length\* (**A**) and then calculate from that the corresponding flue gas pipe length (**B**) in each case:
  - Length of the flue pipe: Length of the air pipe + 40 mm
  - Minimum length of air-pipe extension: 80 mm.
4. Shorten the pipes, e.g. with a saw.
5. After shortening it, lock the flue pipe (**1**) inside the air pipe (**2**) again: Push the flue pipe back into the air pipe. Turn the flue pipe as far as it will go.

### 5.14.2.2 Installing 80/125 mm diameter extensions (PP)

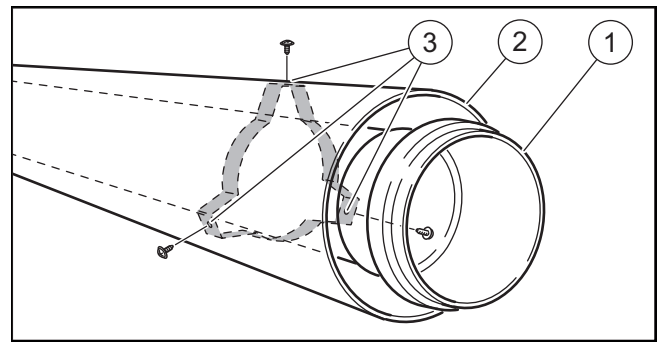


1. Turn the flue pipe (**1**) to a position that enables the ledges (**3**) on the plastic pipe to be pushed through the spacer (**4**).
2. Pull the flue pipe out of the air pipe (**2**).

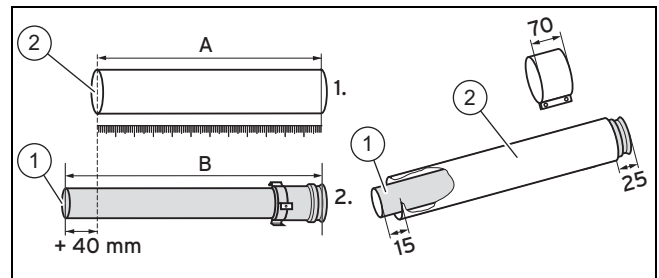


3. First, measure the required air pipe length\* (**A**) and then calculate from that the corresponding flue pipe length (**B**) in each case:
  - Length of the flue pipe: Length of the air pipe + 40 mm
  - \* Minimum length of air-pipe extension: 100 mm.
4. Cut the pipes with a saw, tin snips, etc.
5. After shortening, lock the flue pipe (**1**) inside the air pipe (**2**) again.

### 5.14.2.3 Installing 80/125 mm diameter (stainless steel) extensions



1. Unscrew the screws (**3**).
2. Pull the flue pipe (**1**) out of the air pipe (**2**).



3. First, measure the required air pipe length\* (**A**) and then calculate from that the corresponding flue pipe length (**B**) in each case:
  - Length of the flue pipe: Length of the air pipe + 40 mm
  - \* Minimum length of air-pipe extension: 100 mm.
4. Cut the pipes using tin snips, a saw, etc., suitable for stainless steel.
5. After shortening, lock the flue pipe (**1**) inside the air pipe (**2**) again.

### 5.14.3 Installing elbows (white)

#### 5.14.3.1 Correctly aligning the elbows



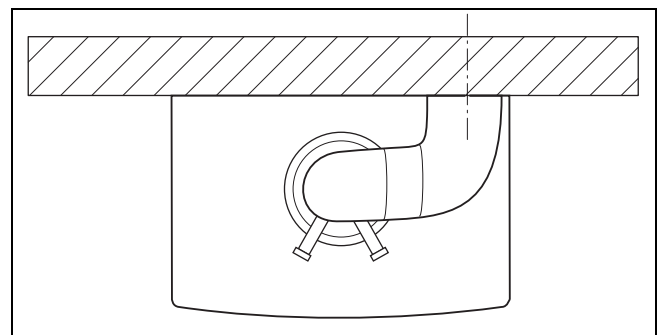
#### Danger!

**Risk of poisoning due to escaping flue gas.**

Unnecessary loads on the connections may cause leaks.

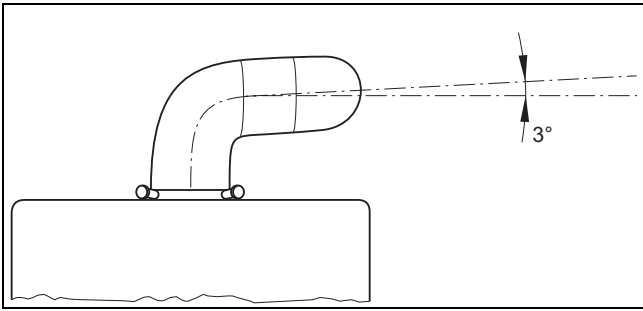
► Align the elbows correctly.

► Observe the following illustrations when using two 87° elbows.

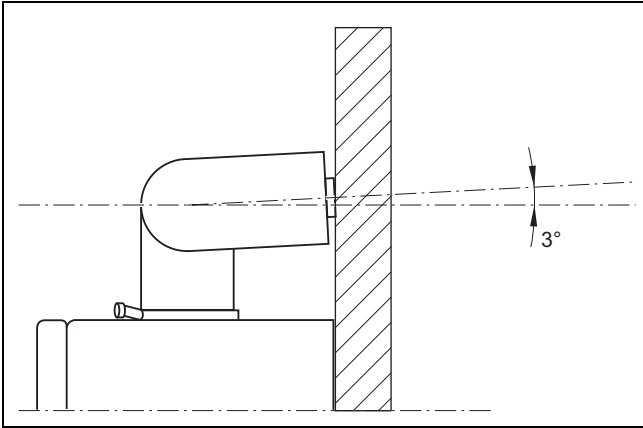


Arrangement of the 2 x 87° elbows – View from above





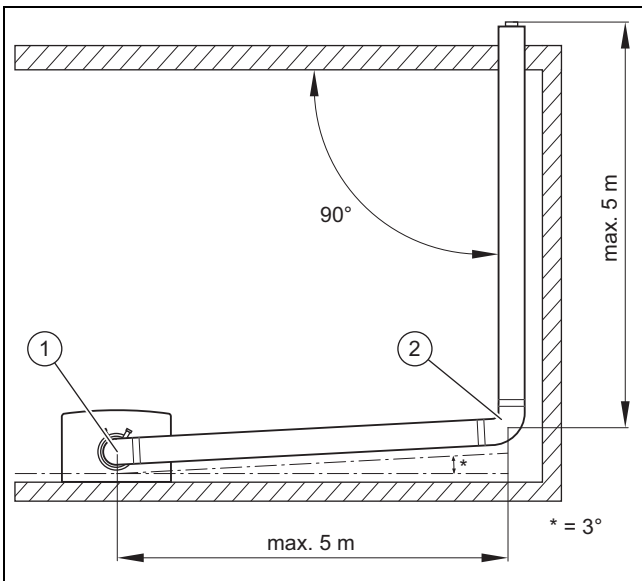
Arrangement of the 2 x 87° elbows – View from the front



Arrangement of the 2 x 87° elbows – View from the side

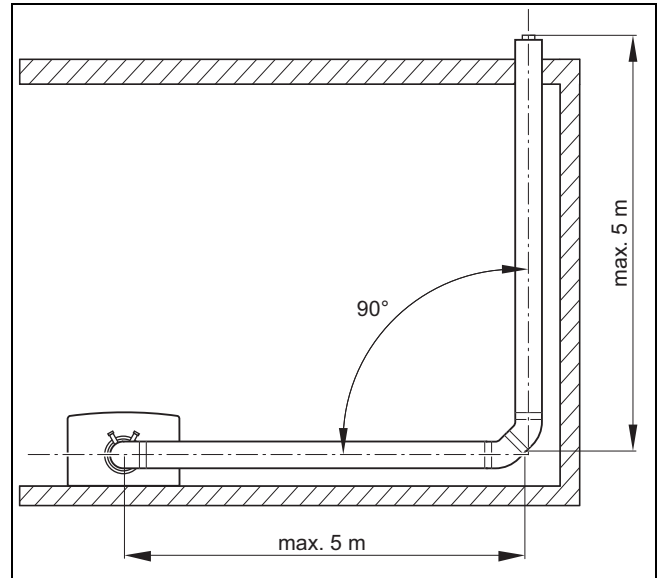
- ▶ When using elbows to route long flue pipework in a corner, observe the following figures.

### Connecting extensions with 87° elbows



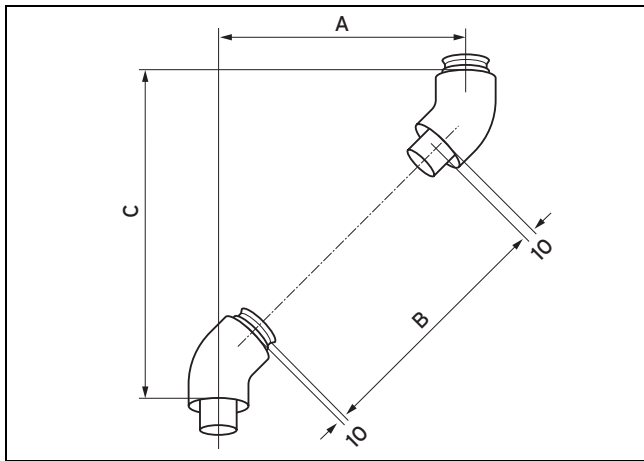
- ▶ To ensure that you can guide a second 87° elbow (2) at a right angle through the wall, install the elbow (1) on the top of the boiler, at a 3° rotation.

### Connecting extensions with 45° elbows



- ▶ Install an 87° elbow at an angle of 3° between the wall and the air/flue pipework or use two 45° elbows.
- ▶ Connect all of the pipe joints with air pipe clamps. (→ Page 55)

### 5.14.3.2 Installing the 45° elbow, 60/100 mm diameter



A Offset

C Height

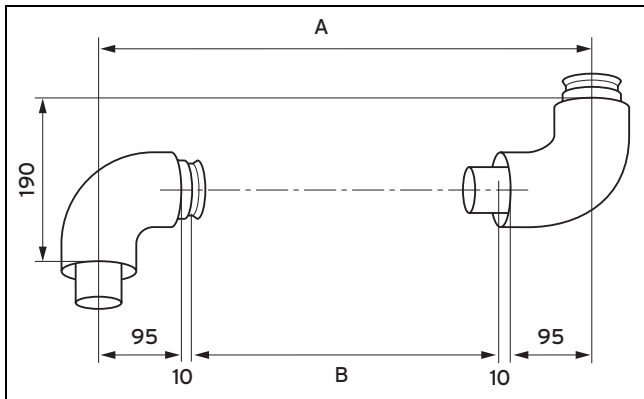
B Length of the air pipe

- ▶ Measure the offset (**A**), e.g. with 300 mm.
- ▶ Use this value from the table to determine the length of the air pipe (**B**) = 284 mm and the height (**C**) = 420 mm.
  - ◁ From that, the corresponding flue pipe length is calculated as  $284 + 40 = 324$  mm.

Offset	Length of the air pipe	Height	Offset	Length of the air pipe	Height in	Offset	Length of the air pipe	Height in
90	0	210	325	320	445	525	602	645
95	0	215	330	327	450	530	610	650
100	0	220	335	334	455	535	617	655
> 105 to < 155	not possible	not possible	340	341	460	540	624	660
			345	348	465	545	631	665
			350	355	470	550	638	670
			355	362	475	555	645	675
160	86	280	360	369	480	560	652	680
165	93	285	365	376	485	565	659	685
170	100	290	370	383	490	570	666	690
175	107	295	375	390	495	575	673	695
180	115	300	380	397	500	580	680	700
185	122	305	385	404	505	585	687	705
190	129	310	390	412	510	590	694	710
195	136	315	395	419	515	595	701	715
200	143	320	400	426	520	600	709	720
205	150	325	405	433	525	605	716	725
210	157	330	410	440	530	610	723	730
215	164	335	415	447	535	615	730	735
220	171	340	420	454	540	620	737	740
225	178	345	425	461	545	625	744	745
230	185	350	430	468	550	630	751	750
235	192	355	435	475	555	635	758	755
240	199	360	440	482	560	640	765	760
245	206	365	445	489	565	645	772	765
250	214	370	450	496	570	650	779	770
255	221	375	455	503	575	655	786	775
260	228	380	460	511	580	660	793	780
265	235	385	465	519	585	665	800	785
270	242	390	470	525	590	670	808	790
275	249	395	475	532	595	675	815	795

Offset	Length of the air pipe	Height	Offset	Length of the air pipe	Height in	Offset	Length of the air pipe	Height in
280	256	400	480	539	600	680	822	800
285	263	405	485	546	605			
290	270	410	490	553	610			
295	277	415	495	560	615			
300	284	420	500	567	620			
305	291	425	505	574	625			
310	298	430	510	581	630			
315	306	435	515	588	635			
320	313	440	520	595	640			

### 5.14.3.3 Installing the 87° elbow, 60/100 mm diameter



A Offset

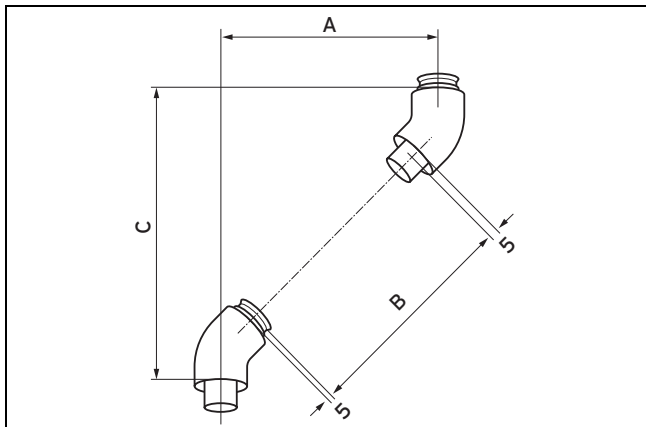
B Length of the air pipe

- ▶ Measure the offset (**A**), e.g. with 400 mm.
- ▶ Use this value from the table to determine the length of the air pipe (**B**) = 190 mm.
  - ◀ From that, the corresponding flue pipe length is calculated as  $190 + 40 = 230$  mm

Offset	Length of the air pipe	Offset	Length of the air pipe	Offset	Length of the air pipe
> 190 to < 210	0	470	260	690	480
		475	265	695	485
		480	270	700	490
> 215 to < 265	not possible	485	275	705	495
		490	280	710	500
		495	285	715	505
> 270 to < 290	80	500	290	720	510
		505	295	725	515
		510	300	730	520
295	85	515	305	735	525
300	90	520	310	740	530
305	95	525	315	745	535
310	100	530	320	750	540
315	105	535	325	755	545
320	110	540	330	760	550
325	115	545	335	765	555
330	120	550	340	770	560
335	125	555	345	775	565
340	130	560	350	780	570
345	135	565	355	785	575
350	140	570	360	790	580

Offset	Length of the air pipe	Offset	Length of the air pipe	Offset	Length of the air pipe
355	145	575	365	795	585
360	150	580	370	800	590
365	155	585	375		
370	160	590	380		
375	165	595	385		
380	170	600	390		
385	175	605	395		
390	180	610	400		
395	185	615	405		
400	190	620	410		
405	195	625	415		
410	200	630	420		
415	205	635	425		
420	210	640	430		
425	215	645	435		
430	220	650	440		
435	225	655	445		
440	230	660	450		
445	235	665	455		
450	240	670	460		
455	245	675	465		
460	250	680	470		
465	255	685	475		

#### 5.14.3.4 Installing the 45° elbow, 80/125 mm diameter



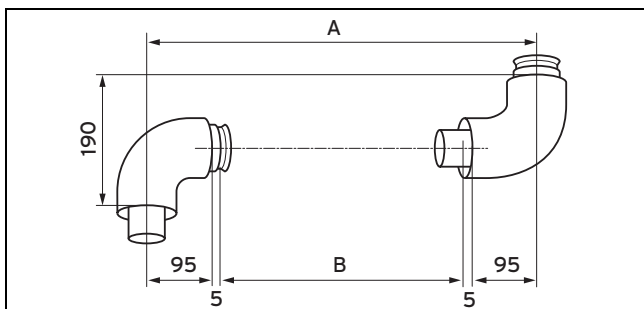
A Offset  
 B Length of the air pipe  
 C Height

- ▶ Measure the offset (**A**), e.g. with 300 mm.
- ▶ Use this value from the table to determine the length of the air pipe (**B**) = 294 mm and the height (**C**) = 420 mm.
  - ◁ From that, the corresponding flue pipe length is calculated as  $294 + 40 = 334$  mm.

Offset	Length of the air pipe	Height	Offset	Length of the air pipe	Height in	Offset	Length of the air pipe	Height in
85	-10	205	330	337	450	535	627	655
90	-3	210	335	344	455	540	634	660
95	4	215	340	351	460	545	641	665
100	11	220	345	358	465	550	648	670
> 100 to < 170	not possible	not possible	350	365	470	555	655	675
			355	372	475	560	662	680

Offset	Length of the air pipe	Height	Offset	Length of the air pipe	Height in	Offset	Length of the air pipe	Height in
> 100 to < 170	not possible	not possible	360	379	480	565	669	685
			365	386	485	570	676	690
165	103	285	370	393	490	575	683	695
170	110	290	375	400	495	580	690	700
175	117	295	380	407	500	585	697	705
180	125	300	385	414	505	590	704	710
185	132	305	390	422	510	595	711	715
190	139	310	395	429	515	600	719	720
195	146	315	400	436	520	605	726	725
200	153	320	405	443	525	610	733	730
205	160	325	410	450	530	615	740	735
210	167	330	415	457	535	620	747	740
215	174	335	420	464	540	625	754	745
220	181	340	425	471	545	630	761	750
225	188	345	430	478	550	635	768	755
230	195	350	435	485	555	640	775	760
235	202	355	440	492	560	645	782	765
240	209	360	445	499	565	650	789	770
245	216	365	450	506	570	655	796	775
250	224	370	455	513	575	660	803	780
255	231	375	460	520	580	665	810	785
260	238	380	465	528	585	670	818	790
265	245	385	470	535	590	675	825	795
270	252	390	475	542	595	680	832	800
275	259	395	480	549	600	685	839	805
280	266	400	485	556	605	690	846	810
285	273	405	490	563	610	695	853	815
290	280	410	495	570	615	700	860	820
295	287	415	500	577	620	705	867	825
300	294	420	505	584	625	710	874	830
305	301	425	510	591	630	715	881	835
310	308	430	515	598	635	720	888	840
315	315	435	520	605	640	725	895	845
320	323	440	525	612	645	730	902	850
325	330	445	530	620	650	-	-	-

### 5.14.3.5 Installing the 87° elbow, 80/125 mm diameter



A Offset

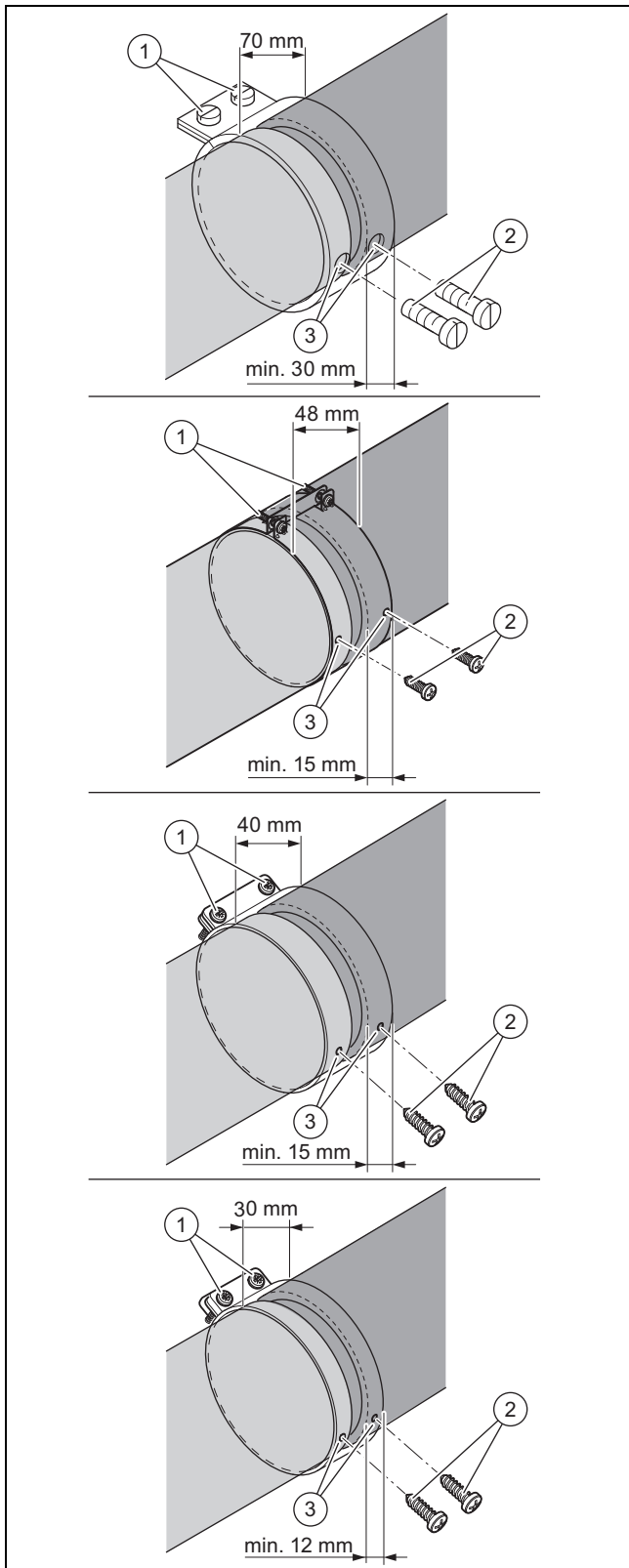
B Length of the air pipe

- ▶ Measure the offset (**A**), e.g. with 400 mm.
- ▶ Use this value from the table to determine the length of the air pipe (**B**) = 200 mm.
  - ◀ From that, the corresponding flue pipe length is calculated as  $200 + 40 = 240$  mm

Offset	Length of the air pipe	Offset	Length of the air pipe	Offset	Length of the air pipe
190	0	500	300	735	535
195	0	505	305	740	540
200	0	510	310	745	545
> 200 to < 300	not possible	515	315	750	550
		520	320	755	555
		525	325	760	560
		530	330	765	565
300	100	535	335	770	570
305	105	540	340	775	575
310	110	545	345	780	580
315	115	550	350	785	585
320	120	555	355	790	590
325	125	560	360	795	595
330	130	565	365	800	600
335	135	570	370	805	605
340	140	575	375	810	610
345	145	580	380	815	605
350	150	585	385	820	620
355	155	590	390	825	625
360	160	595	395	830	630
365	165	600	400	835	635
370	170	605	405	840	640
375	175	610	410	845	645
380	180	615	415	850	650
385	185	620	420	855	655
390	190	625	425	860	660
395	195	630	430	865	665
400	200	635	435	870	670
405	205	640	440	875	675
410	210	645	445	880	680
415	215	650	450	885	685
420	220	655	455	890	690
425	225	660	460	895	695
430	230	665	465	900	700
435	235	670	470	905	705
440	240	675	475	910	710
445	245	680	480	915	715
450	250	685	485	920	720
455	255	690	490	925	725
460	260	695	495	930	730
465	265	700	500	935	735
470	270	705	505	940	740
475	275	710	510	945	745
480	280	715	515	950	750
485	285	720	520	955	755
490	290	725	525	960	760
495	295	730	530	-	-

### 5.14.4 Installing the air pipe clamps

1. Connect all of the pipe joints with air pipe clamps:



2. Slide the air pipe clamps centrally over the pipe joint for the air pipes and tighten the screws (1).
  - Air pipes distance:  $\leq 5$  mm



#### Danger!

**Risk of poisoning due to escaping flue gas.**

Flue gas can escape if the flue pipe is damaged.

- Take care that the flue pipe is not damaged when drilling.

3. Drill holes into the air pipe through the holes in the air pipe clamp (3).



#### Danger!

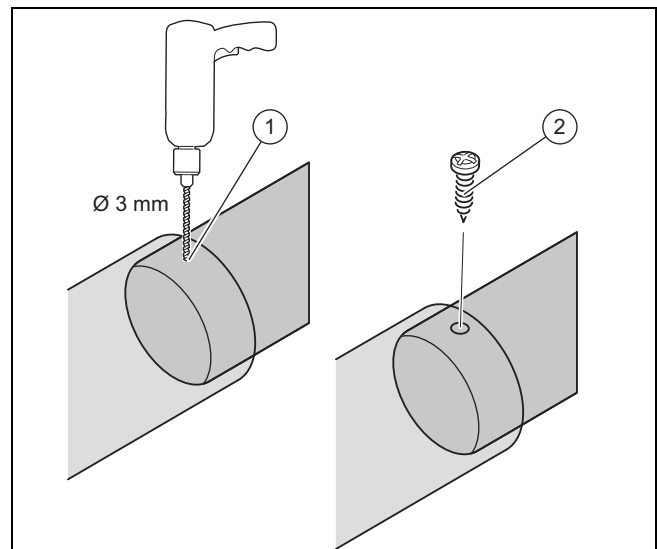
**Risk of poisoning due to escaping flue gas.**

Flue gases may escape as a result of pipes that are not securely connected to each other.

- Secure the clamps and air pipes using the supplied bolts.

4. Insert the locking screws (2).

### 5.14.5 Securing the telescopic extension



#### Danger!

**Risk of poisoning due to escaping flue gas.**

Flue gas can escape if the flue pipe is damaged.

- Take care that the flue pipe is not damaged when drilling.

1. Drill a hole (1) into the overlapping air pipes.
  - Diameter: 3 mm
2. Use the screw (2) to screw in the air pipes.

## **6 Customer service**

For contact details for our customer service department, you can write to the address that is provided on the back page, or you can visit [www.vaillant.co.uk](http://www.vaillant.co.uk).



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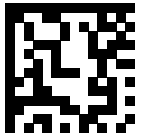
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