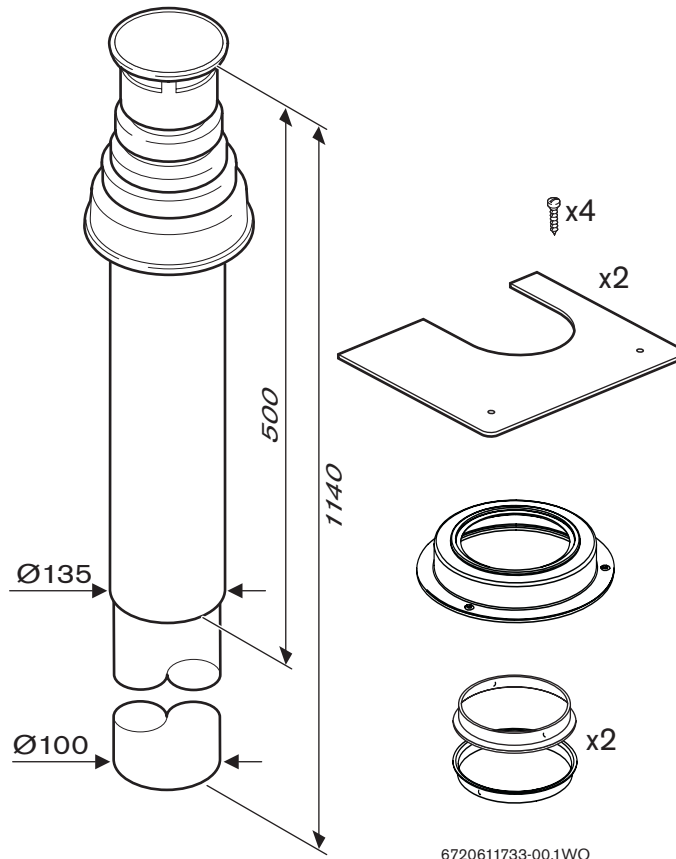




**Vertical Flue Terminal Assembly Ø 60/100 mm**

**7 719 002 435**



**for Gas Condensing Boilers:  
Greenstar Highflow 440**



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## Safety instructions

Proper functioning of this product is only guaranteed if these installation instructions are correctly followed. Subject to alteration. Installation must be carried out by an approved installer. Installation of the boiler must be carried out in accordance with the appropriate installation instructions.

### If you smell fumes from the appliance

- ▶ Switch off appliance.
- ▶ Open windows and doors.
- ▶ Inform your heating engineer.

### Fitting and modifications

- ▶ Fitting of the appliance or any controls to the appliance may only be carried out by a competent engineer in accordance with the Gas Safety (Installation and Use) Regulations 1998.
- ▶ Flue systems must not be modified in any way other than as described in the fitting instructions.

## Symbols



**Notes** are identified by the symbol shown on the left. They are bordered by horizontal lines above and below the text.

# 1 Use

## 1.1 General

The installation of a gas condensing boiler must be in accordance with the relevant British Standard, the relevant Building Regulations and any local rules.

The surface temperature of the fresh air duct is below 85°C. Therefore no minimum distances to combustible building materials are necessary. The regulations can deviate, however, and might prescribe minimum distances to combustible materials.

### Flue ducting to C<sub>33</sub>:

The flue gas accessory is part of CE approval when discharging flue gas according to C<sub>33</sub>. For this reason, only the original flue gas accessories may be used.

All illustration dimensions are shown in mm unless stated otherwise.

## 1.2 Gas condensing boilers

This flue can be used in conjunction with the following gas condensing boilers:

Gas condensing boilers	Prod.-ID-No.
Greenstar Highflow 440	CE

Table 1

## 1.3 Combination with flue duct kits

This flue can be combined with the following flue duct kits:

Flue duct kits
7 719 002 348, elbow 90°
7 719 002 349, extension 990 mm
7 719 002 347, elbow 45°

Table 2

## 1.4 Standard specifications

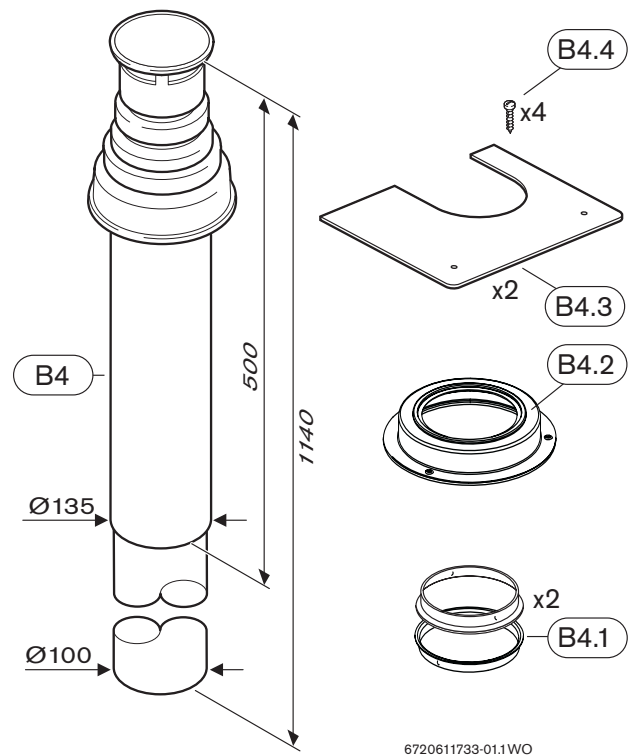


Fig. 1

- B4** Vertical Flue Terminal Assembly (7 719 002 435)
- B4.1** Lockring
- B4.2** Retaining ring
- B4.3** Fire stop plate
- B4.4** Screws

## 2 Fitting space requirements

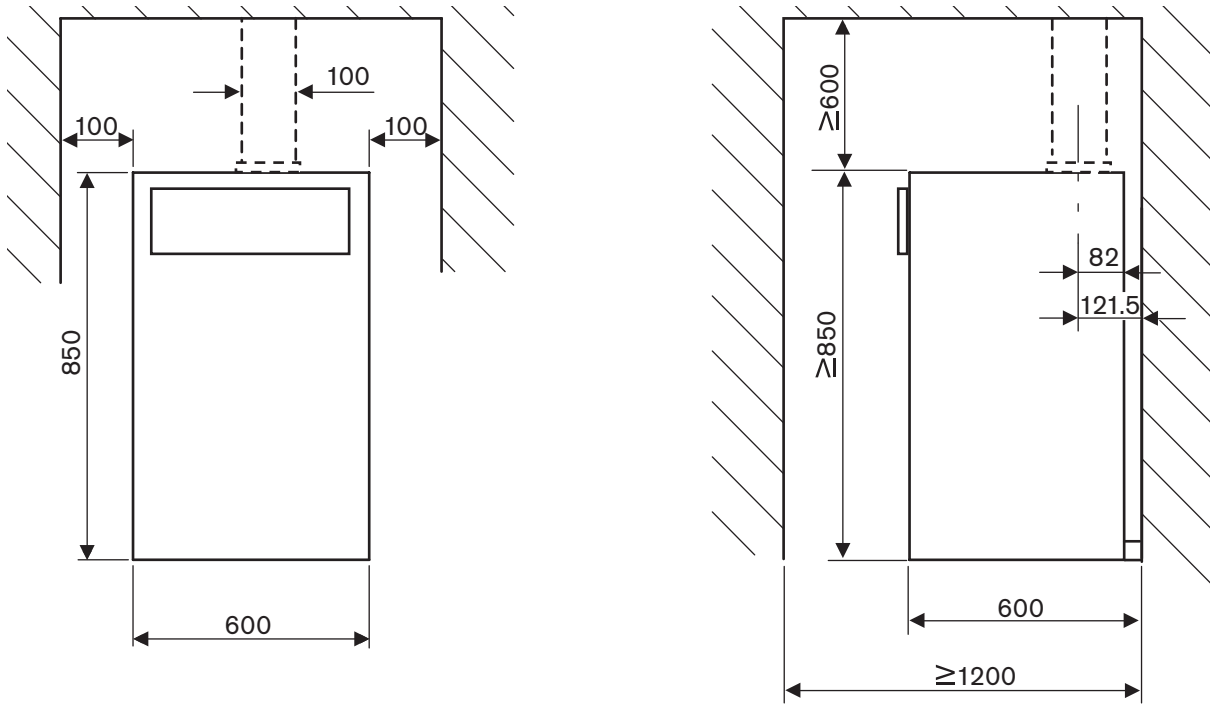


Fig. 2 Flat roof

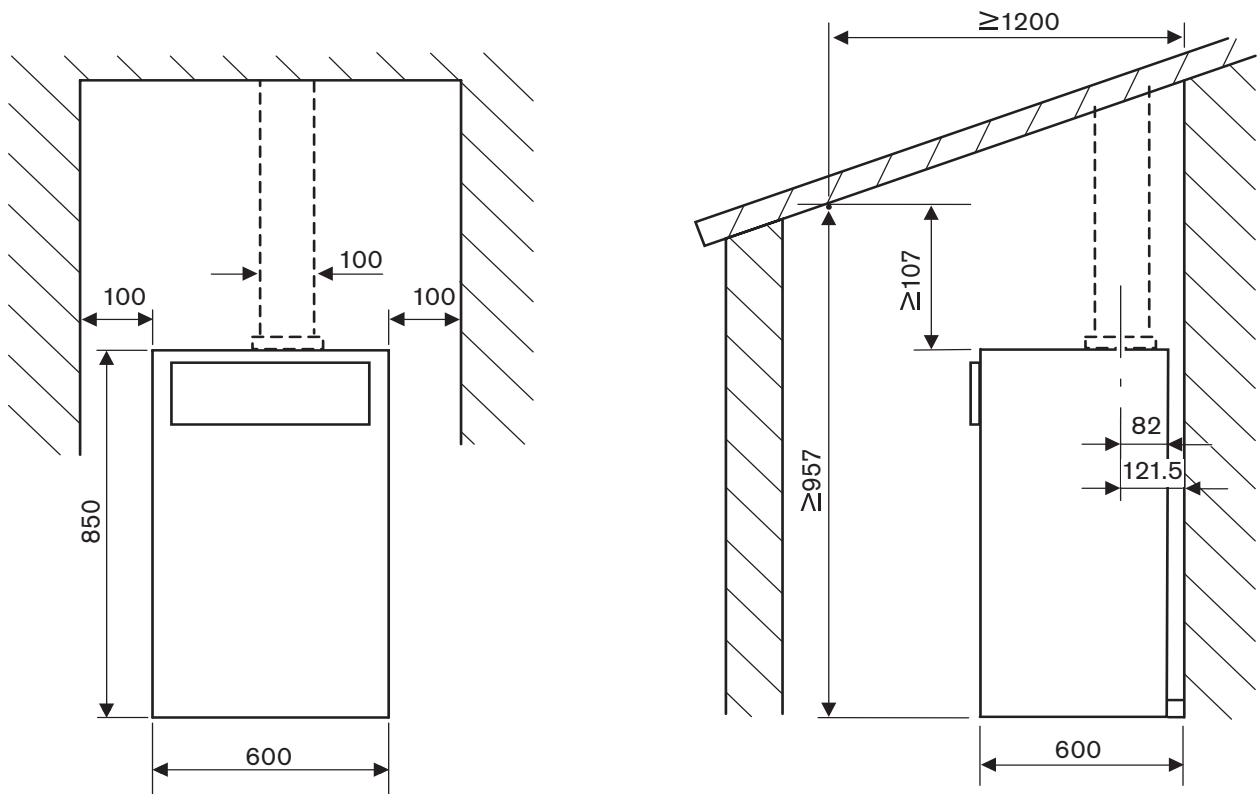


Fig. 3 Inclined roof

Refer to 'Boiler location and clearances' under the Pre-Installation section of the Instruction Manual (Installation commissioning & servicing, part number: 6 720 611 730) before commencing flue installation.

### 3 Examples of installation of vertical flue duct with roof exit

#### 3.1 Straight flue ducting without elbows

	$L_{max}$
<b>Greenstar Highflow 440</b>	6.4 m

Table 3

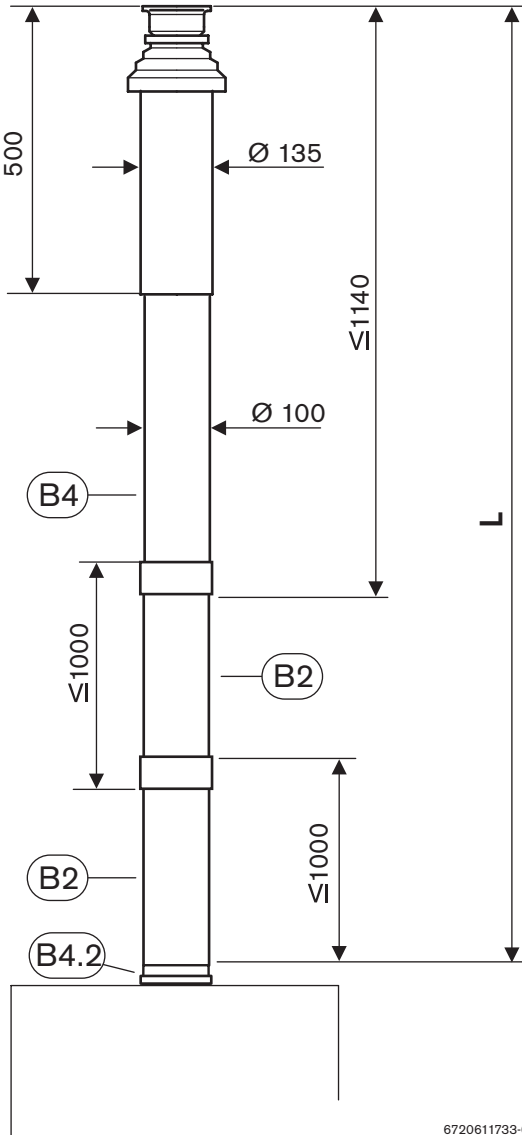


Fig. 4

**Key to Fig. 4 and Fig. 5:**

- B2** 7 719 002 349
- B4** 7 719 002 435

#### 3.2 Straight flue ducting with two 45° elbows

	$L_{max}$
<b>Greenstar Highflow 440</b>	4.4 m

Table 4

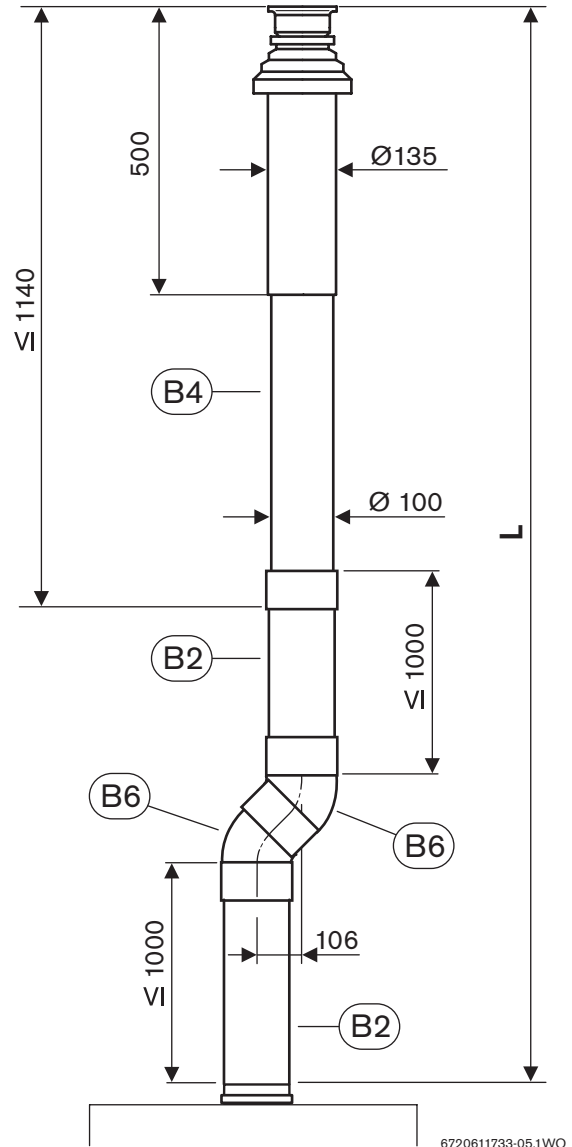


Fig. 5

- B6** 7 719 002 347

### 3.3 Straight flue ducting with two 90° elbows

	$L_{max}$
<b>Greenstar Highflow 440</b>	2.4 m

Table 5

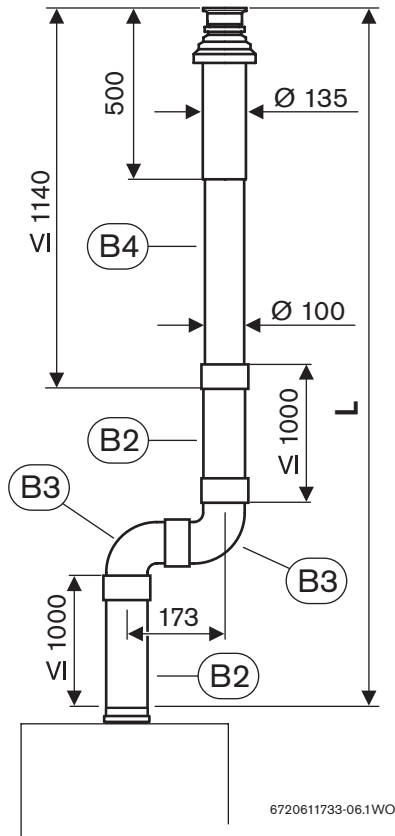


Fig. 6

**Key to Fig. 6, 7 and 8:**

- B2** 7 719 002 349
- B3** 7 719 002 348
- B4** 7 719 002 435

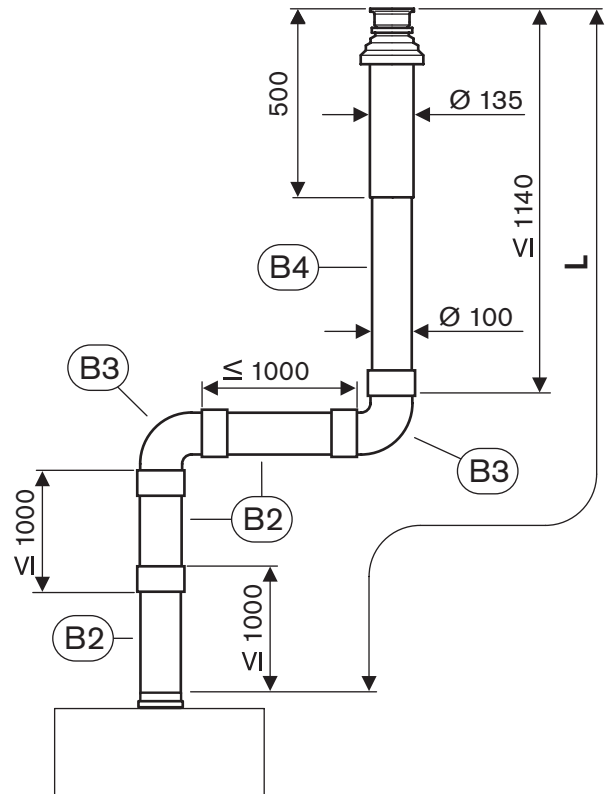


Fig. 7

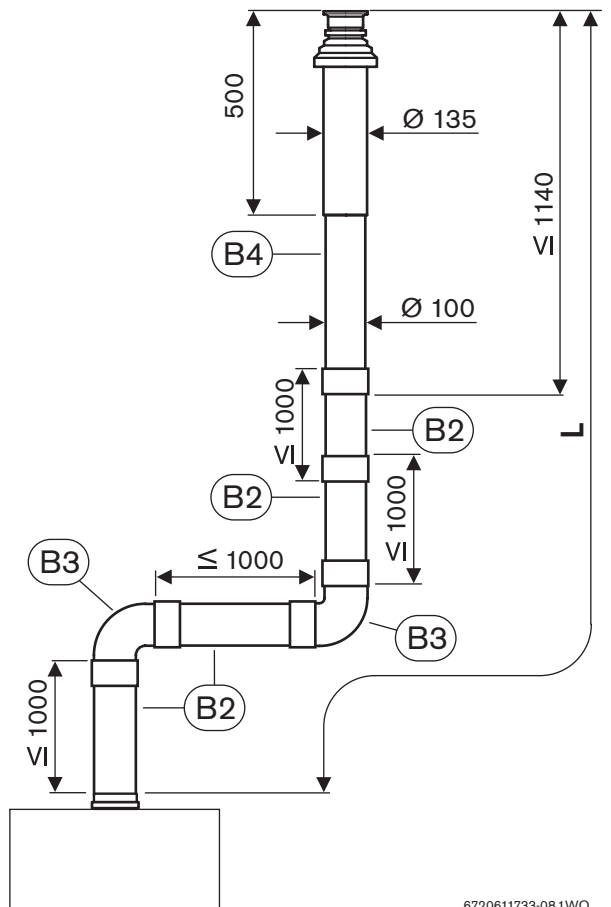


Fig. 8

### 3.4 Flue ducting with more than two elbows

The equivalent pipe length,  $L_{equiv}$ , is calculated from the sum of the straight lengths of the horizontal and vertical flue ducting ( $L_{horiz}$ ,  $L_{vert}$ ) and the equivalent lengths of the elbows. The equivalent length of every elbow fitted must be included.

The overall equivalent pipe length must be less than the maximum equivalent pipe length:  $L_{equiv} \leq L_{equiv,max}$

For vertical flue ducting to  $C_{33}$  the following equivalent lengths apply:

Vertical flue ducting to $C_{33}$	$L_{equiv,max}$ [m]	Equivalent length of additional elbows	
		90° [m]	45° [m]
Boiler			
Greenstar Highflow 440	6.4	2	1

Table 6 Pipe lengths for  $C_{33}$

$L_{equiv,max}$  maximum equivalent overall pipe length

#### Example:

For a vertical flue system with a vertical length of 2 m, a horizontal length of 0.4 m, two 90° elbows the equivalent pipe length is calculated as follows:

	Length/Number	x	Sectional equivalent length	=	Total
Straight length $L_{vert}$	2 m	x	1	=	2 m
Straight length $L_{horiz}$	0.4 m	x	1	=	0,4 m
Elbow 90°	2	x	2 m	=	4 m
Elbow 45°	0	x	1 m	=	0 m
Equivalent pipe length $L_{equiv}$					6.4 m
Maximum equivalent overall pipe length $L_{equiv,max}$					6.4 m
$L_{equiv} \leq L_{equiv,max}$					o.k.

Table 7

At 6.4 m, the equivalent pipe length is equal to the maximum equivalent overall length of 6.4 m. This flue system is therefore acceptable.



## 4 Mounting

### 4.1 Notes on fitting

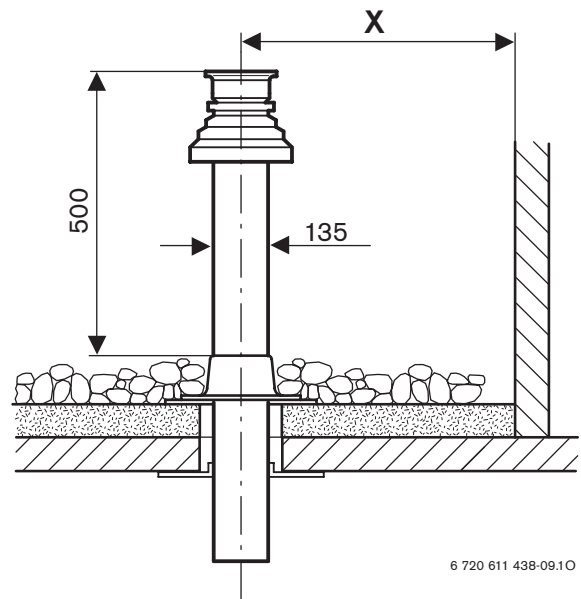
- The vertical flue duct (7 719 002 435) can be extended at any point between the lockring (B4.2) and the flue terminal assembly (B4) using the flue duct kits 7 719 002 349, 7 719 002 348 or 7 719 002 347.
- For details of the maximum permissible flue pipe length, refer to the installation examples starting on page 6.
- Any horizontal air/flue ducting should be fitted with an incline of 3° (52 mm per metre) in the direction of flow of the flue gases (rising away from the boiler).
- In damp rooms, the air pipe should be insulated.

### 4.2 Roof-exit clearances

#### 4.2.1 Flat roof

	Combustible building material	Non-combustible building material
<b>X</b>	≥ 1500 mm	≥ 500 mm

Table 8



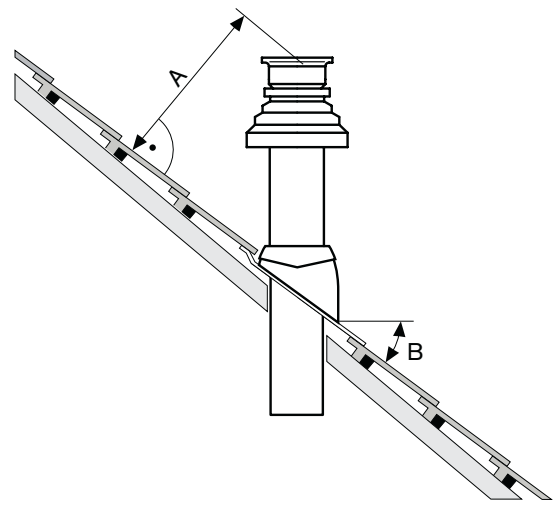
6 720 611 438-09.10

Fig. 9

#### 4.2.2 Inclined roof

<b>A</b>	≥ 400 mm, in areas with frequent heavy snow falls ≥ 500 mm
<b>B</b>	≤ 60°, in areas with frequent heavy snow falls ≤ 50°

Table 9



6 720 611 488-10.10

Fig. 10

### 4.3 Fitting the flue ducting

#### 4.3.1 Adaptor

- ▶ Remove the boiler casing 'knock-out' panel
- ▶ Loosen the flue blanking plate screws from inside the inner boiler case and rotate the blanking plate to disengage and remove from the outside
- ▶ Refit the blanking plate over the rear flue outlet and tighten screws
- ▶ Slide one locking (B4.1) onto flue
- ▶ Slide the retaining ring (B4.2) onto flue
- ▶ Partially engage 3 screws into the retaining ring. See Fig. 11
- ▶ Slide the locking (B4.1) onto the flue and secure with the 3 screws at the end of the flue pipe
- ▶ Slide the other locking (B4.1) up to the retaining ring (B4.2) and secure with 3 screws

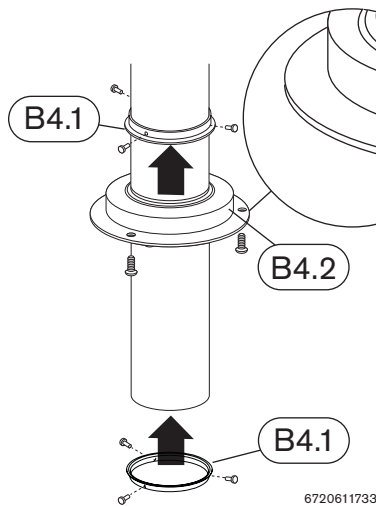


Fig. 11

- ▶ Grease the flue-pipe seals of the adaptor (B4.5) with solvent-free grease (supplied).
- ▶ Partly slide the inner flue adaptor (B4.5) into the flue. See Fig. 12

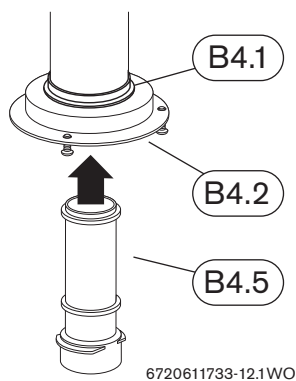


Fig. 12

- ▶ Locate the retaining ring (B4.2) screw heads into the keyhole slots, rotate and secure by tightening the screws from the inside of the boiler. See Fig. 13
- ▶ Push fit the inner flue adaptor (B4.5) into the boiler flue tube
- ▶ Connect the rest of flue ducting (7 719 002 435, 7 719 002 349, 7 719 002 348, 7 719 002 347) as required.

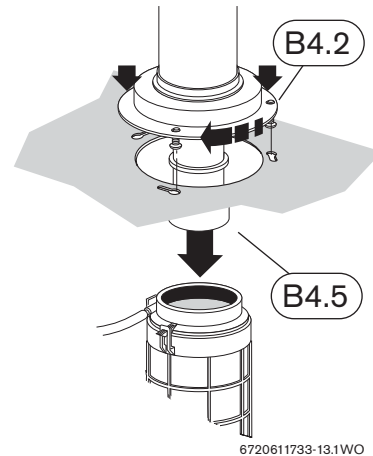


Fig. 13

#### 4.3.2 Vertical Flue Terminal Assembly

- ▶ Determine the length  $L_V$  of the terminal.

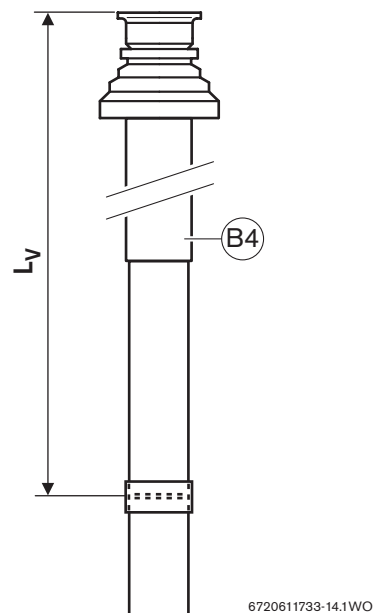
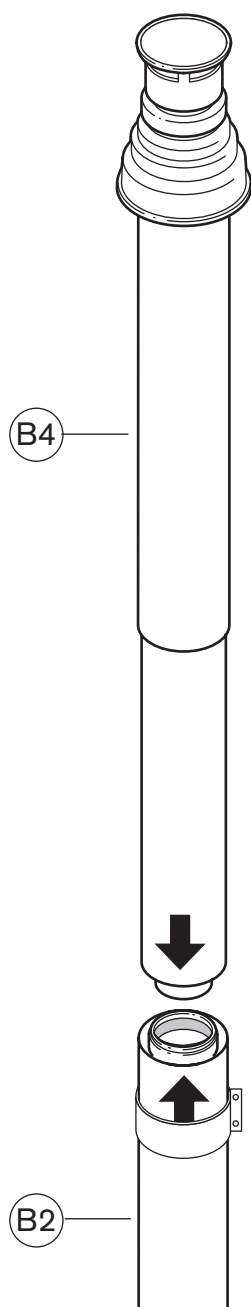


Fig. 14

**B4** 7 719 002 435

- ▶ Cut off the double pipe at a right angle, deburr the cut edges and clean.
- ▶ Lightly grease the flue seals with a solvent-free grease (e. g. Vaseline).

- ▶ Push and lightly twist fit the flue accessories into each other to the stop in the flue tube.
- ▶ Slide the clamp over the join and tighten screws to secure.



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Fig. 15

- B2** 7 719 002 349
- B4** 7 719 002 435



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