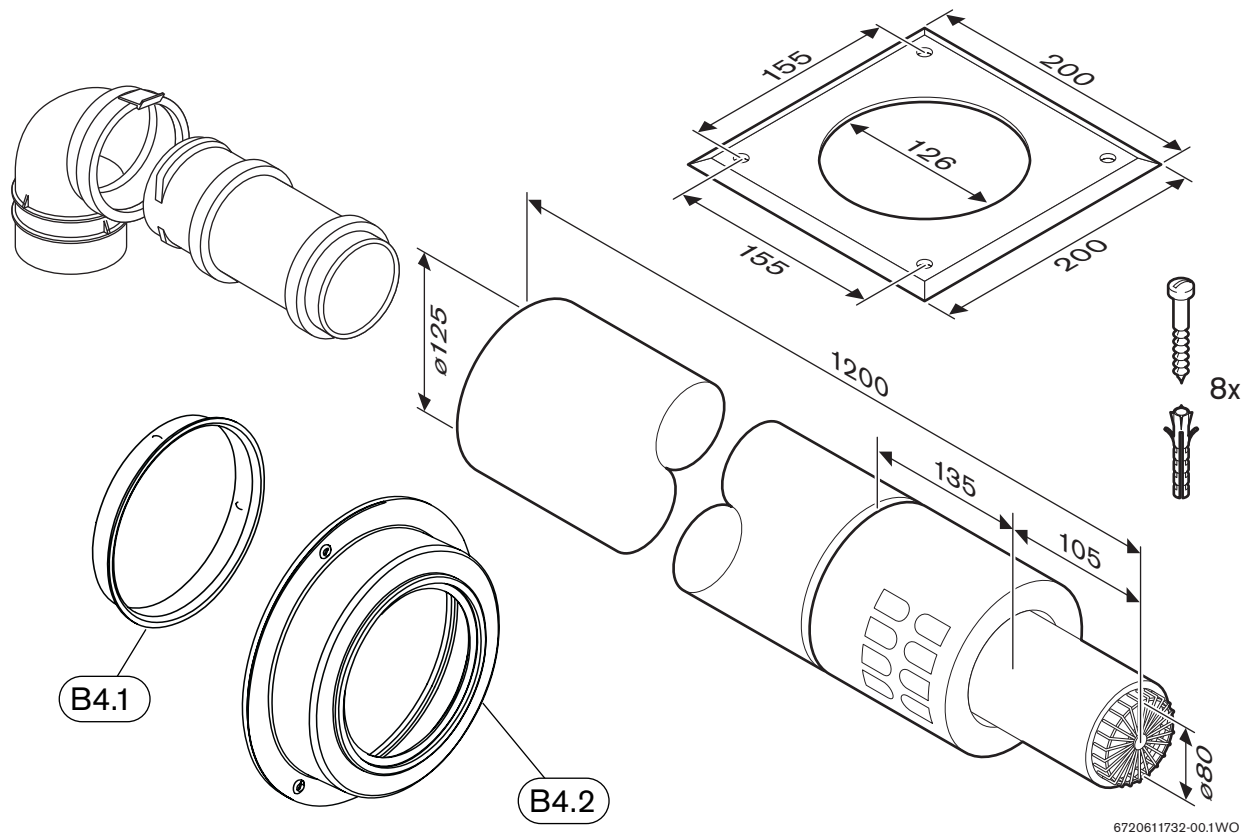




Horizontal Flue Terminal Assembly Ø 80/125 mm

7 719 002 436



**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 ways 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 C₁₃:

The flue gas accessory is part of CE approval when discharging flue gas according to C₁₃. For this reason, only the original flue gas accessories may be used.

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

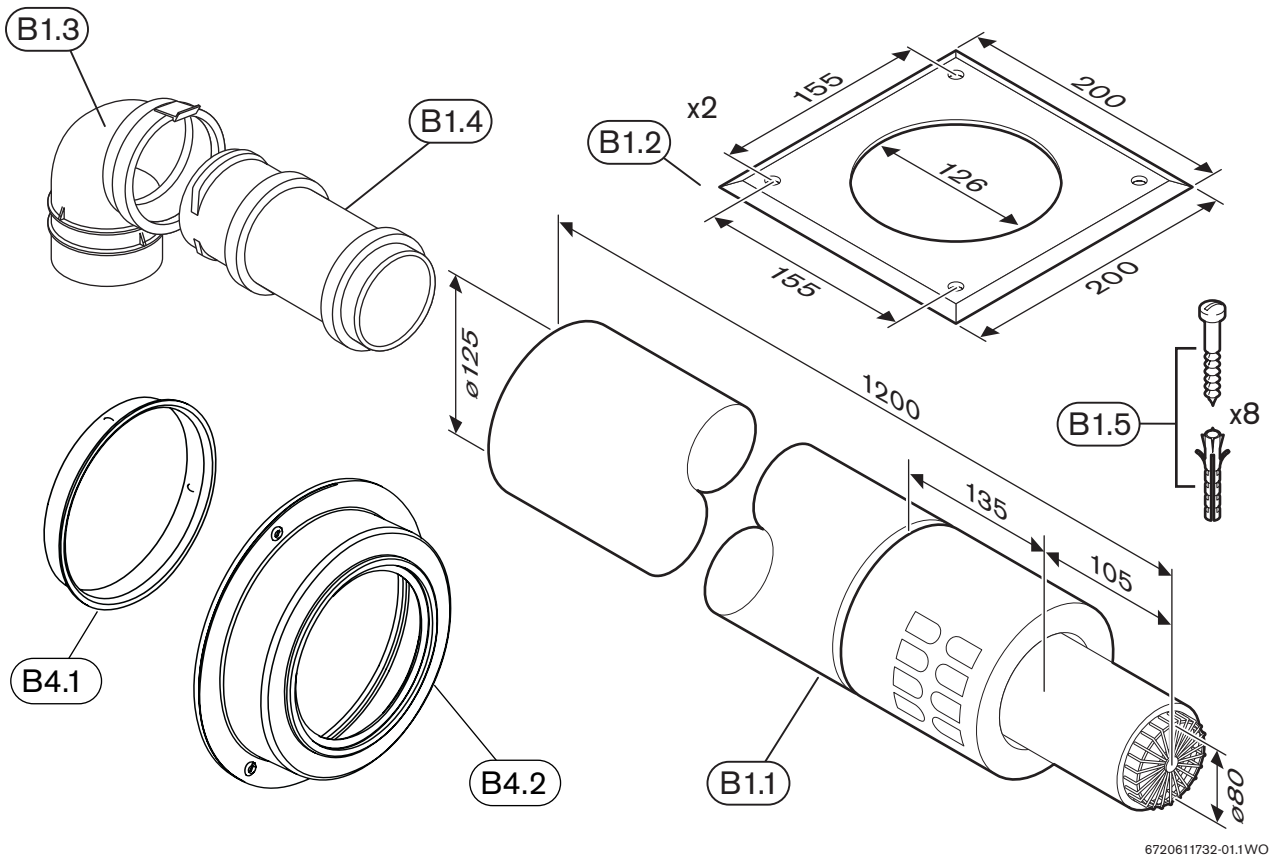
1.3 Combination with flue duct kits

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

Flue duct kits
7 719 001 891, elbow 90°
7 719 001 892, extension 990 mm
7 719 001 899, elbow 45°

Table 2

1.4 Standard specifications



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Fig. 1

- B1.1** Flue terminal assembly
- B1.2** Cover plates
- B1.3** Connecting elbow
- B1.4** Inner flue adaptor
- B1.5** Screws and wall plugs
- B4.1** Lockring
- B4.2** Retaining ring

2 Flue pipe lengths

2.1 General

The sum of the straight vertical and horizontal pipe lengths (L_{vert} , L_{horiz}) and the equivalent lengths of the elbows makes the equivalent length of the flue ducting, L_{equiv} . This equivalent pipe length must be less than the maximum equivalent pipe length $L_{\text{equiv,max}}$.

2.2 Equivalent pipe length

The equivalent pipe length, L_{equiv} , is calculated from the sum of the straight lengths of the flue ducting (L_{horiz}) and the equivalent lengths of the elbows. The flue turret (on gas condensing boiler) is included in the maximum lengths. The equivalent length of every additional elbow must be included.

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

For horizontal flue ducting to C₁₃ the following equivalent lengths apply:



Horizontal flue ducting to C ₁₃	$L_{\text{equiv,max}}$ [m]	Equivalent length of additional elbows	
		 [m]	 [m]
Boiler			
Greenstar Highflow 440	13	2	1

Table 3 Pipe lengths for C₃₃

$L_{\text{equiv,max}}$ maximum equivalent pipe length

Example:

For a horizontal flue system with a length of 5 m and two 45° elbows, the equivalent pipe length is calculated as follows:

	Length/ Number	x	Sectional equivalent length	=	Total
Straight length L_w	5 m	x	1	=	5 m
Elbow 90°	0	x	2 m	=	0 m
Elbow 45°	2	x	1 m	=	2 m
Equivalent pipe length L_{equiv}					7 m
Maximum equivalent length $L_{\text{equiv,max}}$					13 m
$L_{\text{equiv}} \leq L_{\text{equiv,max}}$					o.k.

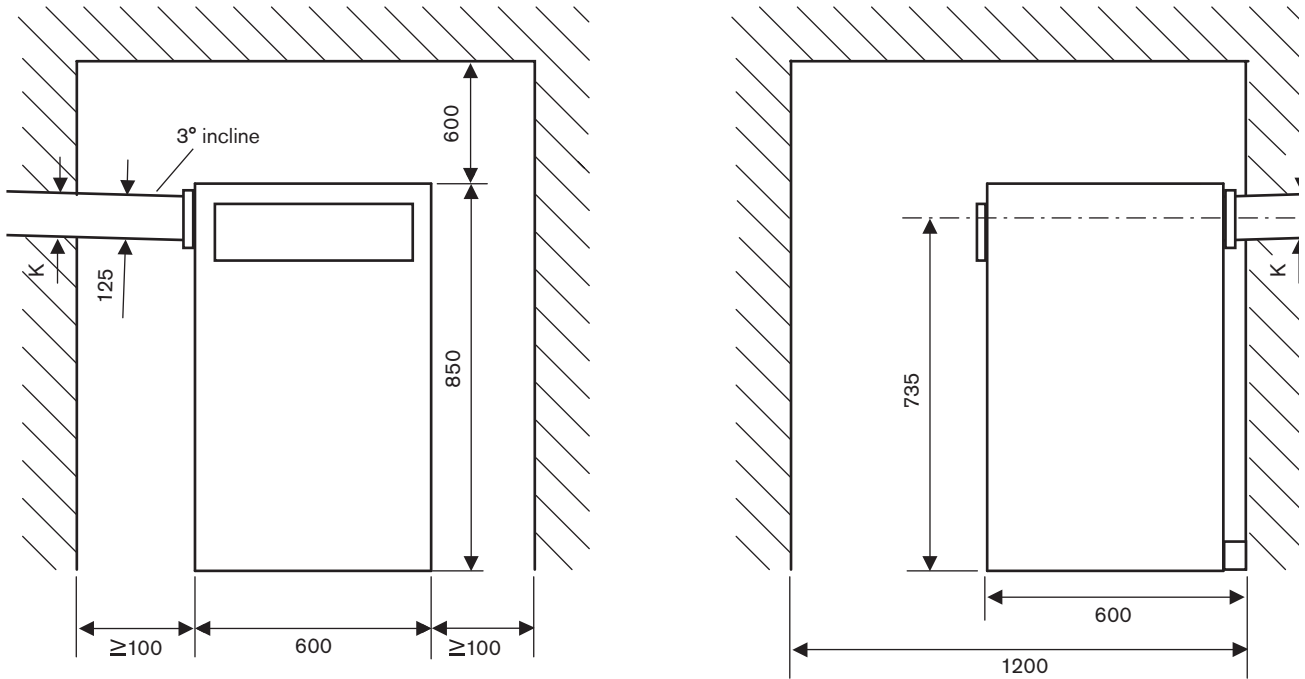
Table 4

At 7 m, the equivalent pipe length is shorter than the maximum equivalent overall length of 13 m. This flue system is therefore acceptable.

3 Minimum Fitting space requirements

Wall thickness	K
15 - 24 cm	155 mm
24 - 33 cm	160 mm
33 - 42 cm	165 mm
42 - 50 cm	170 mm

Table 5



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Fig. 2

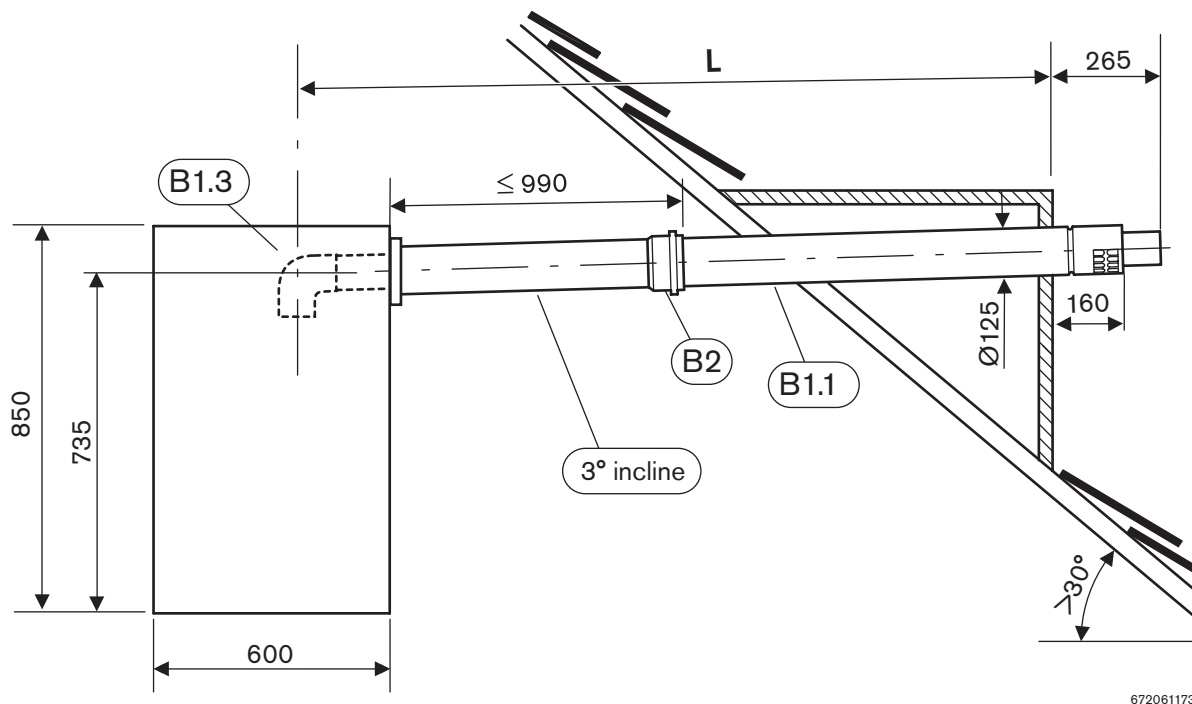
Refer to 'Boiler location and clearances' under the Pre-Installation section of the Instruction Manual (Installation commissioning & servicing, part number: 6 720 611 730) before commencing flue installation.

4 Examples of installation for outside wall (C₁₃)

4.1 Straight flue duct (Fig. 3, Fig. 4, Fig. 5)

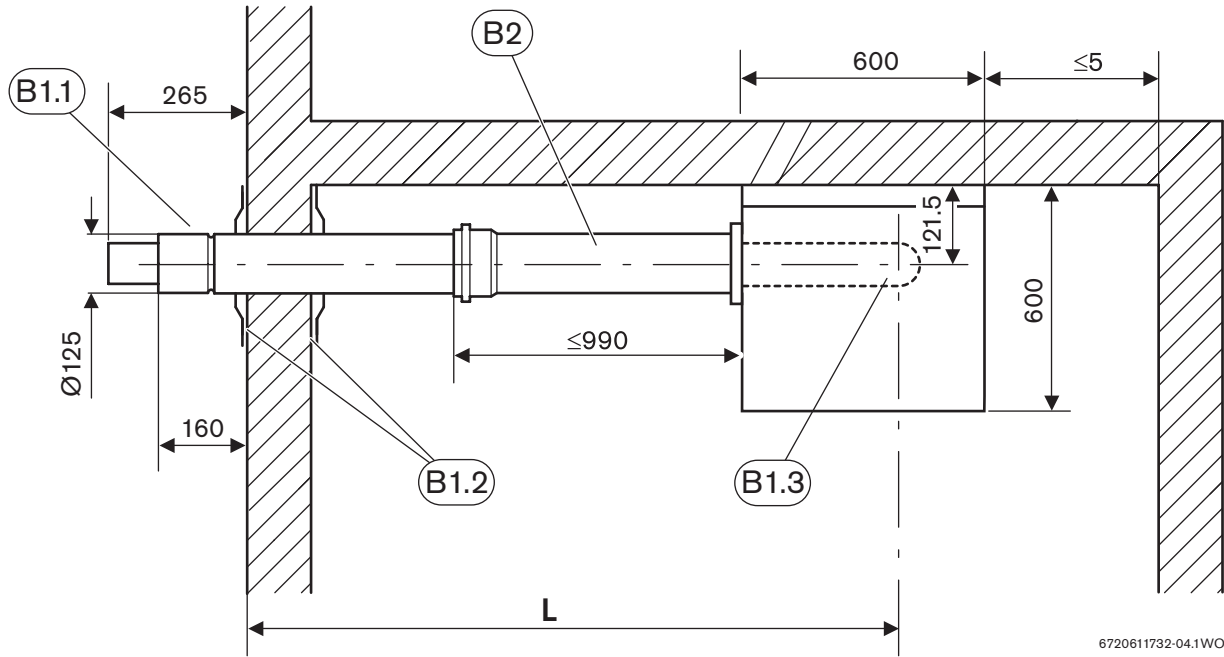
Greenstar Highflow 440	L	
	without extension	with extension
	≤ 995 mm	≤ 13 m

Table 6



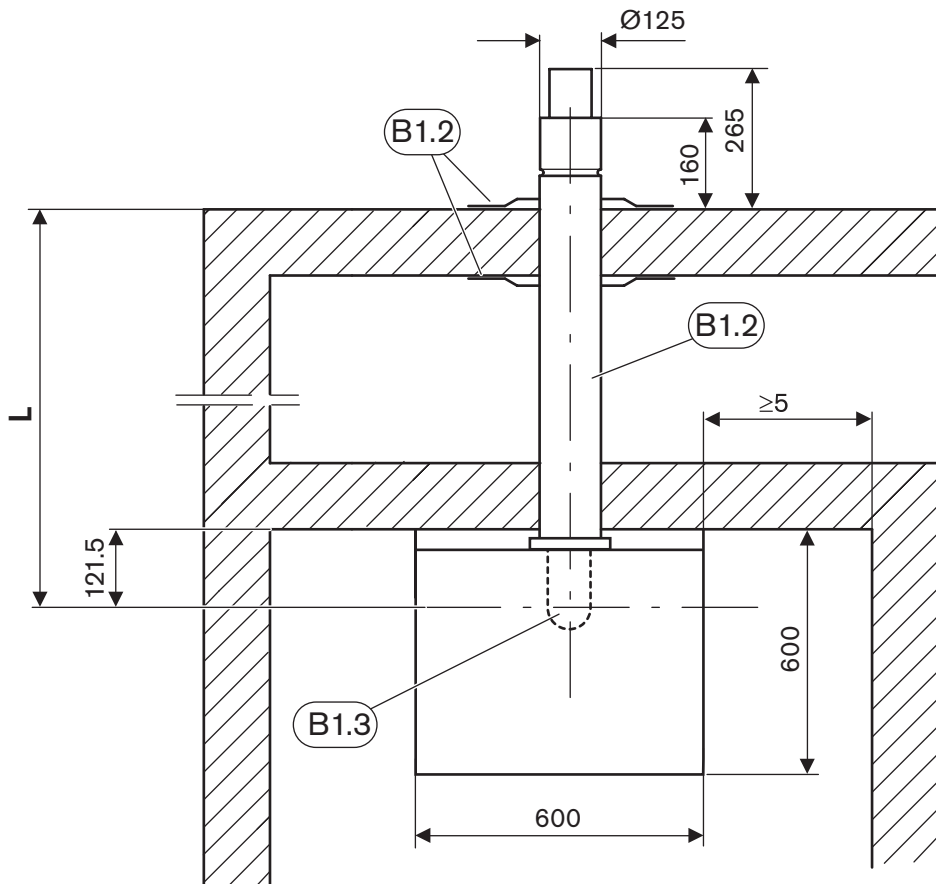
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Fig. 3



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Fig. 4



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Fig. 5

Key to Fig. 3, Fig. 4 and Fig. 5:

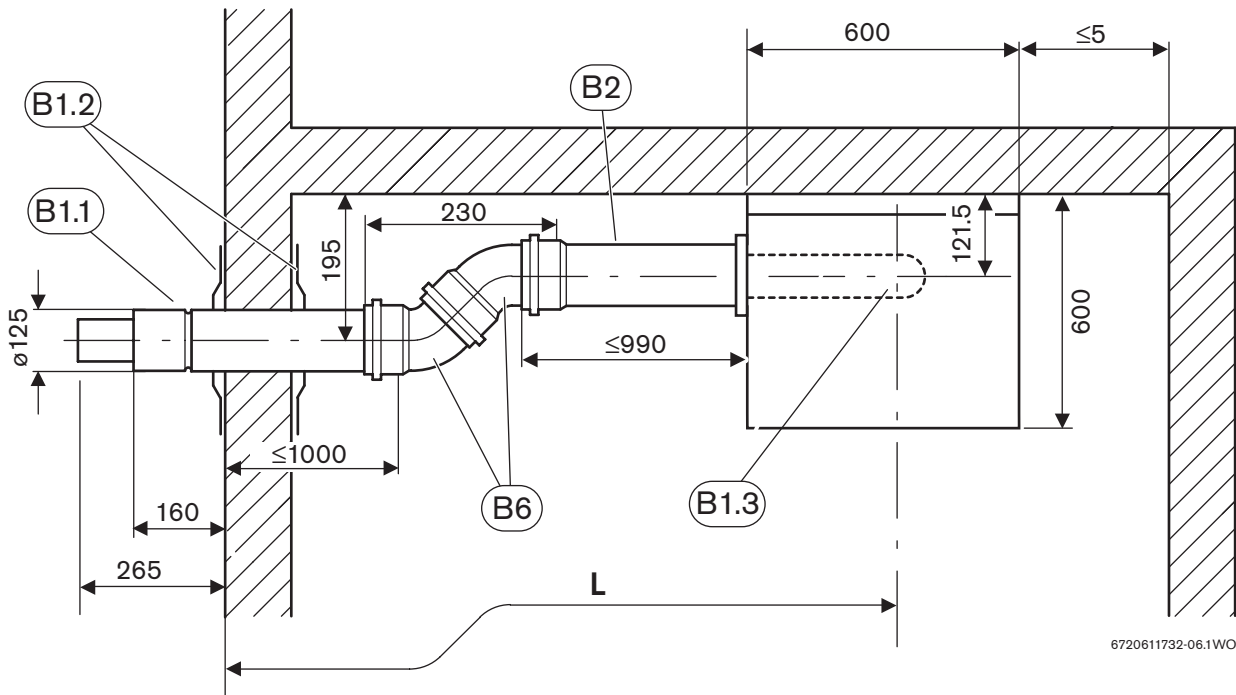
B2 7 719 001 892

4.2 Flue ducting with two 45° elbows

	L	
	without extension	with extension
Greenstar Highflow 440	≤ 1150	≤ 11 m ¹⁾

Table 7

1) = L_{equiv,max} - 2 m



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Fig. 6

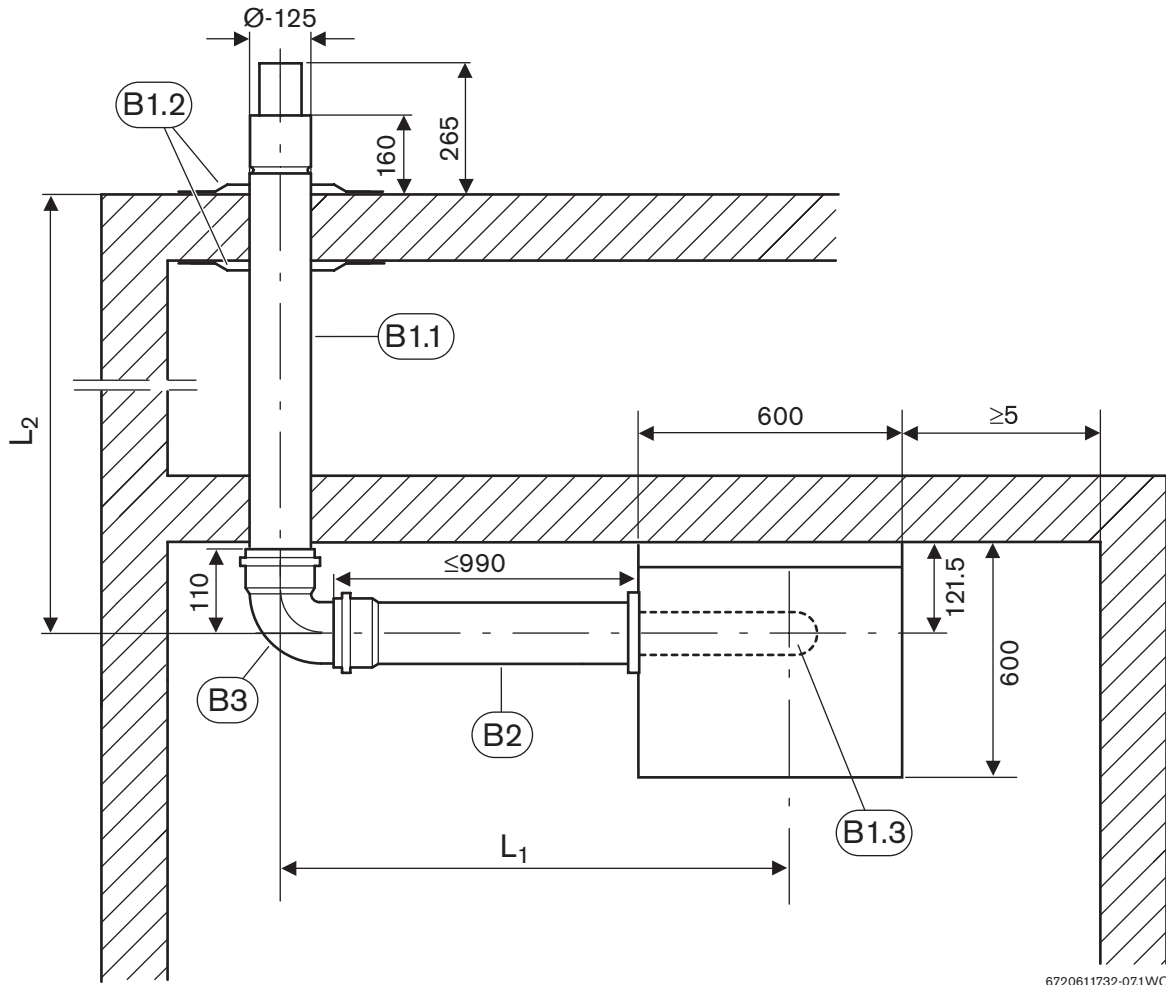
- B2** 7 719 001 892
- B6** 7 719 001 899

4.3 Flue ducting with one 90° elbow

	L ₁		L = L ₁ + L ₂
	without extension	with extension	
Greenstar Highflow 440	170	≥ 290	≤ 11 m ¹⁾

Table 8

1) = L_{equiv,max} - 2 m



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Fig. 7

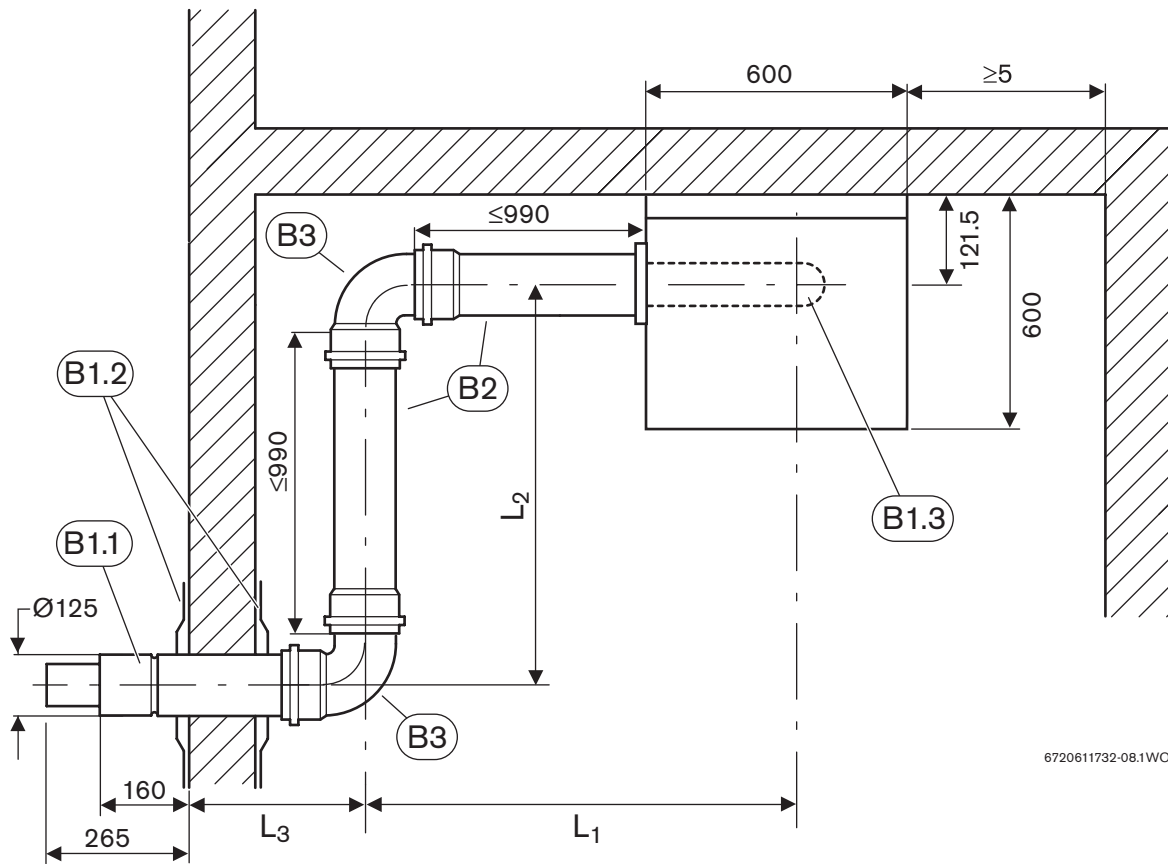
B2 7 719 001 892
B3 7 719 001 891

4.4 Straight flue ducting with two 90° elbows

	L ₁ , L ₂		L = L ₁ +L ₂ +L ₃
	without extension	with extension	
Greenstar Highflow 440	170	≥ 290	≤ 9 m ¹⁾

Table 9

1) = L_{equiv,max} - 4 m



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Fig. 8

B2 7 719 001 892
B3 7 719 001 891

4.5 Flue ducting with more than two elbows

The calculations for checking the flue duct situation are performed according to the rules explained in section 2.

Example:

For a horizontal flue system with a length of 4 m, two 90° elbows and four 45° elbows, the equivalent pipe length is calculated as follows:

	Length/ Number		Sectional equivalent length		Total
Straight length L_{horiz}	4 m	x	1	=	4 m
Elbow 90°	2	x	2 m	=	4 m
Elbow 45°	4	x	1 m	=	4 m
Equivalent pipe length L_{equiv}					12 m
Maximum equivalent length $L_{\text{equiv,max}}$					13 m
$L_{\text{equiv}} \leq L_{\text{equiv,max}}$					o.k.

Table 10

At 12 m, the equivalent pipe length is shorter than the maximum equivalent overall length of 13 m. This flue system is therefore acceptable.

5 Mounting

5.1 Notes on fitting

- The horizontal flue duct (7 719 002 436) can be extended at any point between the connecting elbow (B1.3) and the flue terminal assembly (B1.1) using the flue duct kits 7 719 001 891, 7 719 001 892 and 7 719 001 899.
- The maximum permissible flue/air duct length depends on the type of gas condensing boiler and the number of elbows in the air/flue pipe. For details of how to calculate it, refer to section 2, page 6 onwards.
- Every additional horizontal extension (7 719 001 892) must be supported by a bracket with rubber band.
- The horizontal air/flue duct should be fitted with an upward incline of 3° (52mm per metre) in the direction of flow of the flue gases.
- In damp rooms, the air pipe should be insulated.

5.2 Room-sealed air/flue ducting with exit through outside wall

- ▶ 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 the retaining ring (B4.2) and the lockring (B4.1) onto the flue
- ▶ Secure the lockring (B4.1) with 3 screws at the end of the flue pipe
- ▶ Ensure the screws are only partially screwed into the retaining ring. See Fig. 9

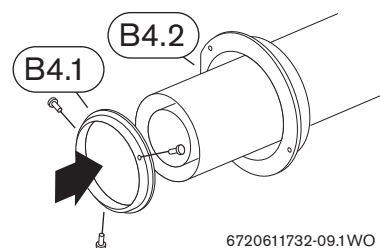


Fig. 9

- ▶ Grease the flue-pipe seals of the adaptor (B1.4) with solvent-free grease (supplied).
- ▶ Partly slide the inner flue adaptor (B1.4) into the flue. See Fig. 10

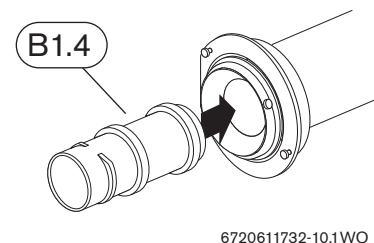


Fig. 10

- ▶ For rear and right hand flues, remove seal and cut the inner flue adaptor (B1.4) as shown in Fig. 11

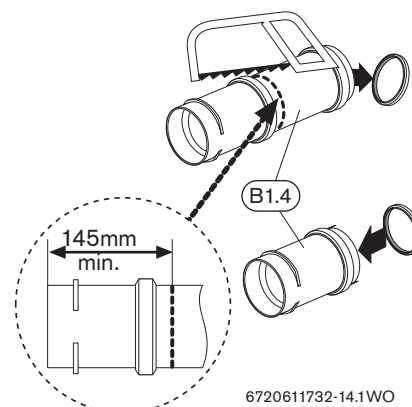


Fig. 11

- ▶ 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. 12

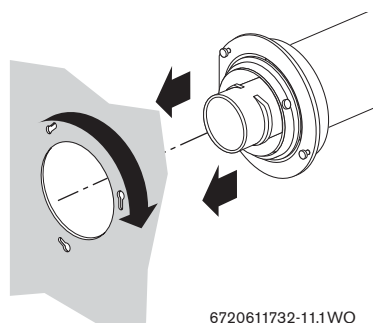


Fig. 12

- ▶ Push and rotate the inner flue adaptor (B4.5) into the elbow (B1.3) so that the clip locks the tube into place, see Fig. 13
- ▶ Push fit elbow (B1.3) into the flue tube

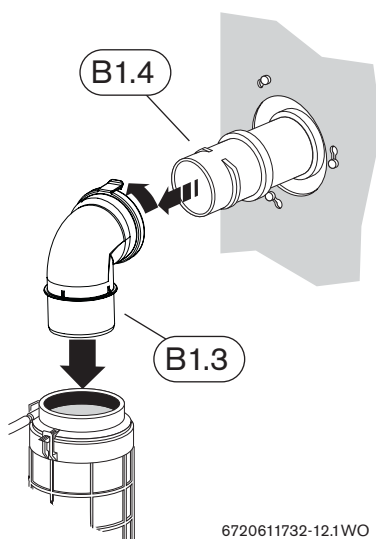


Fig. 13

- ▶ Connect the rest of flue ducting.
- ▶ Calculate length of the flue terminal assembly (B1.1) taking account of the distance from the outside wall to the end of the flue pipe.

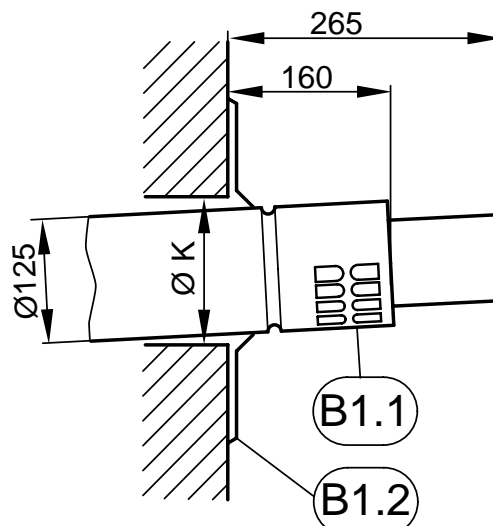


Fig. 14

- ▶ Cut off the flue terminal assembly (B1.1) at a right angle according to the calculated length.
- ▶ Smooth off rough edges of cut end.
- ▶ Calculate the required diameter of the hole in the wall according to the wall thickness (see minimum fitting space requirements, page 7 onwards).
- ▶ Make the hole in the wall remembering to allow for the required 3° incline of the air/flue pipe.
- ▶ Fit interior cover plate (B1.2) to the connecting elbow (B1.3).
- ▶ Pass flue terminal assembly (B1.1) through the hole in the wall and push into the end of the flue turret, twisting the pipe slightly as you do so. **The air-intake slots on the flue terminal must face downwards.** Fit the external cover plate (B1.2) onto the flue terminal assembly (B1.1).
- ▶ Mark and drill fixing holes for the two cover plates (B1.2).
- ▶ Fix cover plates using screws and wall plugs (B1.5).
- ▶ Fit protective grille into end of flue terminal (B1.1), compressing it slightly.

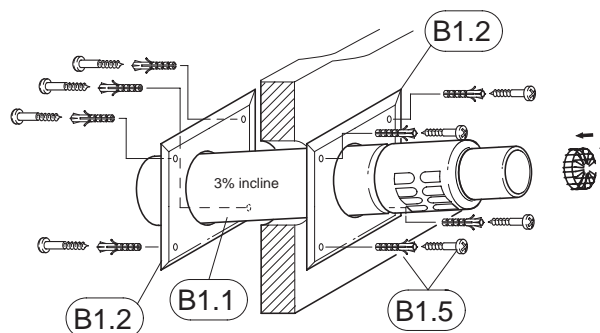


Fig. 15



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