

FLUE KIT INSTALLATION INSTRUCTIONS

CONVENTIONAL FLEXIBLE FLUE LINER

GREENSTAR OILFIT FLEXI CF FLUE

For use with the following Worcester oil fired appliances:

Greenstar Utility 18/25, 32/50, 50/70

Greenstar Danesmoor 18/25

Greenstar Heatslave 12/18, 18/25, 25/32

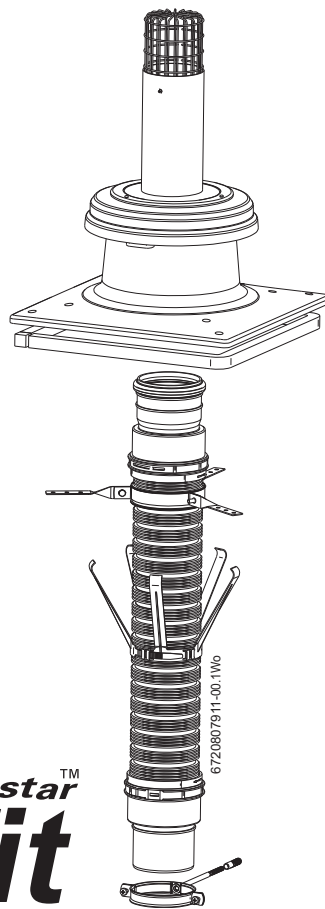
Greenstar Camray Kitchen 12/18, 18/25, 25/32

Greenstar Camray Utility 12/18, 18/25, 25/32

Greenstar Camray Utility System 12/18, 18/25, 25/32

Greenstar Heatslave II 12/18, 18/25, 25/32

Greenstar Danesmoor (2013) 12/18, 18/25, 25/32



UK

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1 KEY TO SYMBOLS AND SAFETY INSTRUCTIONS

1.1 KEY TO SYMBOLS

WARNINGS



Warnings in this document are framed and identified by a warning triangle which is printed on a grey background.

Keywords indicate the seriousness of the hazard in terms of the consequences of not following the safety instructions.

- **NOTICE** indicates that material damage may occur.
- **CAUTION** indicates that minor to medium injury may occur.
- **WARNING** indicates that serious injury may occur.
- **DANGER** indicates possible risk to life.

IMPORTANT INFORMATION



Important information in cases where there is no risk of personal injury or material losses is identified by the symbol shown on the left. It is bordered by horizontal lines above and below the text.

ADDITIONAL SYMBOLS

Symbol	Meaning
▶	a step in an action sequence
→	a reference to a related part in the document or to other related documents
•	a list entry
–	a list entry (second level)

ABBREVIATIONS

∅	Diameter
RS	Room Sealed

1.2 SAFETY PRECAUTIONS

IN THE EVENT OF ANY OIL SMELLS, LEAKS OR FUMES FROM THE APPLIANCE:

- ▶ PUT OUT NAKED FLAMES
- ▶ OPEN DOORS AND WINDOWS
- ▶ ISOLATE THE ELECTRICAL SUPPLY
- ▶ ISOLATE THE FUEL SUPPLY AT THE BOILER
- ▶ RECTIFY THE FAULT

BOILER OPERATION:

This boiler must only be operated by a responsible adult who has been instructed in, understands, and is aware of the boiler's operating conditions and effects.

HEALTH AND SAFETY

The appliance contains no asbestos and no substances have been used in the construction process that contravene the COSHH Regulations (Control of Substances Hazardous to Health Regulations 1988).

COMBUSTION AND CORROSIVE MATERIALS

Do not store or use any combustible materials (paper, thinners, paints etc.) inside or within the vicinity of the appliance.

The combustion air must be free from chemically aggressive substances which can corrode the appliance and invalidate any warranty.

FITTING AND MODIFICATIONS

Fitting the appliance and any controls to the appliance may only be carried out by a competent engineer in accordance with these instructions and the relevant Installation Regulations.

Flue systems must not be modified in any way other than as described in the fitting instructions. Any misuse or unauthorised modifications to the appliance, flue or associated components and systems could invalidate the warranty. The manufacturer accepts no liability arising from any such actions, excluding statutory rights.

IMPORTANT

The service engineer must complete the Service Record at the back of the manual after each service.

SERVICING:

Advise the user to have the system regularly serviced by a competent, qualified engineer (such as OFTEC registered personnel) using approved spares, to help maintain the economy, safety and reliability of the appliance.

INSTALLATION REGULATIONS

Failure to install appliances correctly could lead to prosecution.

COMPLYING WITH THE BUILDING REGULATIONS:

The boiler and flue form part of the controlled services for the building. It is law that all controlled services for buildings must comply with building regulations. You must be able to satisfy your Local Authority Building Control Body (LABC) that the work carried out concerning the installation and commissioning of the heating appliances has been carried out to a satisfactory standard.

OFTEC operate a competent persons scheme and registered installers are able to certify that their work complies with building regulations.

Under the scheme:

- OFTEC must be informed about every installation.
- OFTEC will issue a building regulations compliance certificate to the householder and will notify LABC.

OFTEC provide controlled document forms CD10 and CD11 for use during installation and commissioning respectively.

Other organisations operate self-certification schemes e.g. NAPIT and BESCA Ltd. and it may be possible for installers who are members of these organisations to self certify their work.

Alternatively you must submit a building control notice to the LABC before installing any boiler.

The LABC will then arrange regular inspection visits during the work to ensure that the installation complies with the regulations.

The appliance must be installed by a competent person. The person installing the appliance should be aware of the Health and Safety at Work Act and take appropriate action to ensure that the regulations are adhered to. In order to give optimum efficiency and trouble free operation the appliance must be commissioned by a qualified OFTEC engineer. The compliance with a British Standard does not, in itself, confer immunity from legal obligations. In particular the installation of this appliance must be in accordance with the relevant requirements of the following British Standards and regulations in respect of the safe installation of equipment.

BS 5410: part 1: Code of practice for Oil Fired Boilers. The Building Regulations Part J and L1 England and Wales; Part F and Part J Section III Scotland;

Part L and Part F Northern Ireland.

Local water company bye-laws. The Control of Pollution (Oil) Regulations.

OFTEC Standards.

Where no specific instruction is given, reference should be made to the relevant codes of practice.

2 PRODUCT INFORMATION

2.1 VERTICAL CF KIT COMPONENTS

100mmØ CF VERTICAL FLUE KIT

Part number: 7 716 190 036

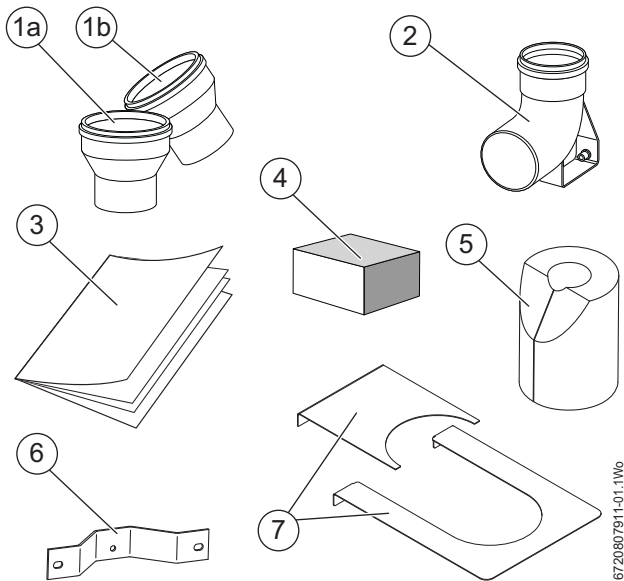


Fig. 1 CF vertical flue kit 100mm

- [1a] Adapter 80 to 100mmØ
- [1b] Adapter 80 to 103mmØ
- [2] Elbow
- [3] Instruction manual
- [4] Bolt and solvent free grease sachet
- [5] Air inlet silencer (Camray only)
- [6] Support bracket
- [7] In-fill plates

GREENSTAR UTILITY 25/32 & 32/70

130mmØ CF VERTICAL FLUE K

Part number: 7 716 190 049

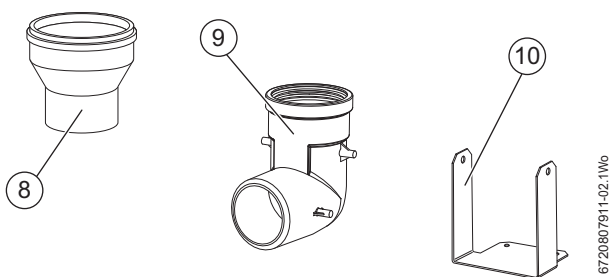
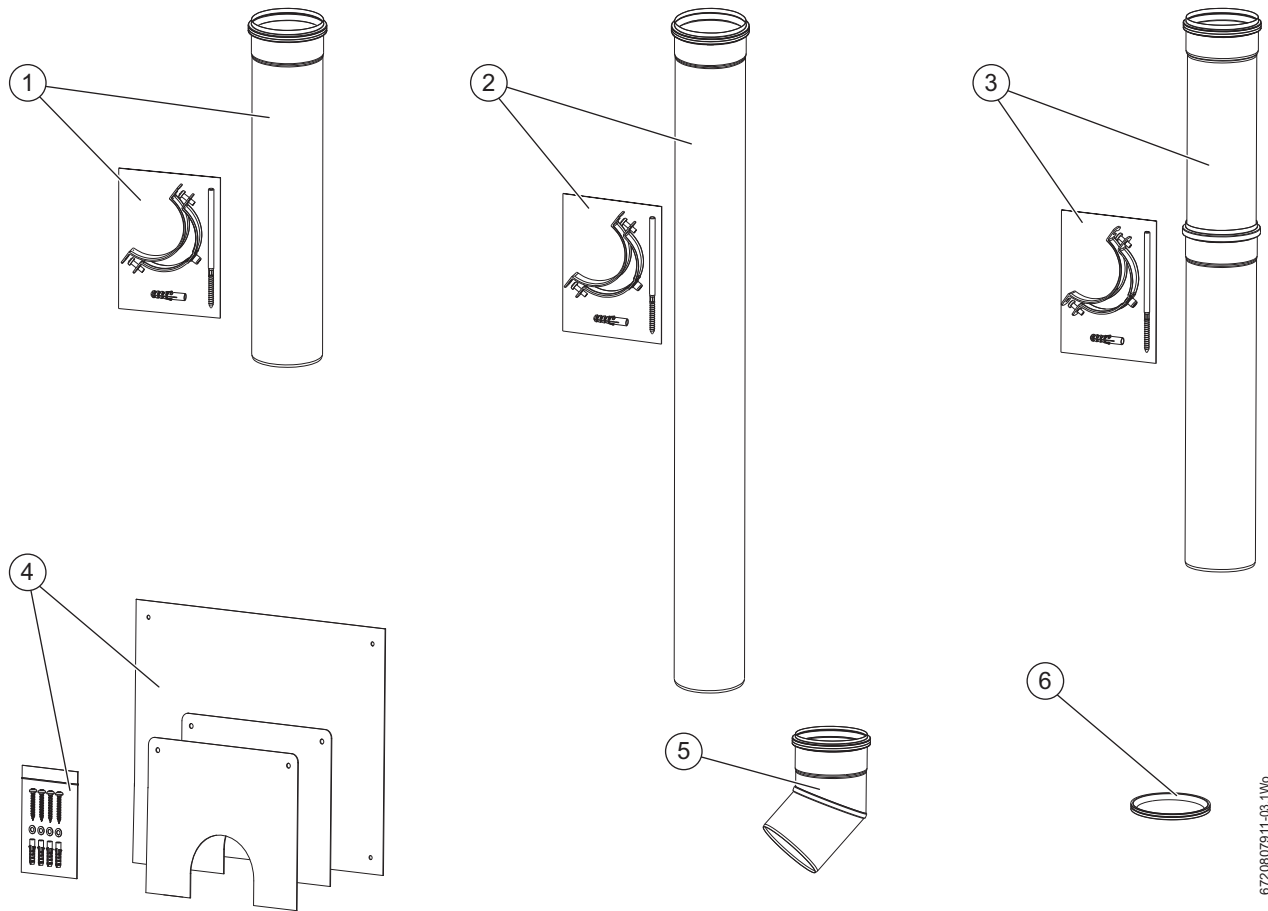


Fig. 2 CF vertical flue kit 130mm

- [8] Adapter 100mmØ to 130mmØ
- [9] Elbow
- [10] Elbow support bracket

2.2 CF STAINLESS STEEL EXTENSION COMPONENTS (100mmØ)



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Fig. 3 CFS/S extension components 100mm

- [1] 500mm x 100mmØ Stainless steel extension kit - Part number: 7 716 190 067
- [2] 1000mm x 100mmØ Stainless steel extension kit - Part number: 7 716 190 066
- [3] 500mm -1000mm x 100mmØ Stainless telescopic steel extension kit - Part number: 7 716 190 068
- [4] 100mmØ Inspection plate pack - Part number: 7 716 190 074
- [5] 45° x 100mmØ Stainless steel elbow - Part number: 7 716 190 069
- [6] 100mmØ Spare seal - Part number: 8 716 110 299 0

2.3 CF FLEXIBLE FLUE LINER KIT COMPONENTS (100mmØ)

100mmØ Flexible flue liner kits:

8 metre - part number: 7 716 190 076

12 metre - part number: 7 716 190 077

15 metre - part number: 7 716 190 078 including:

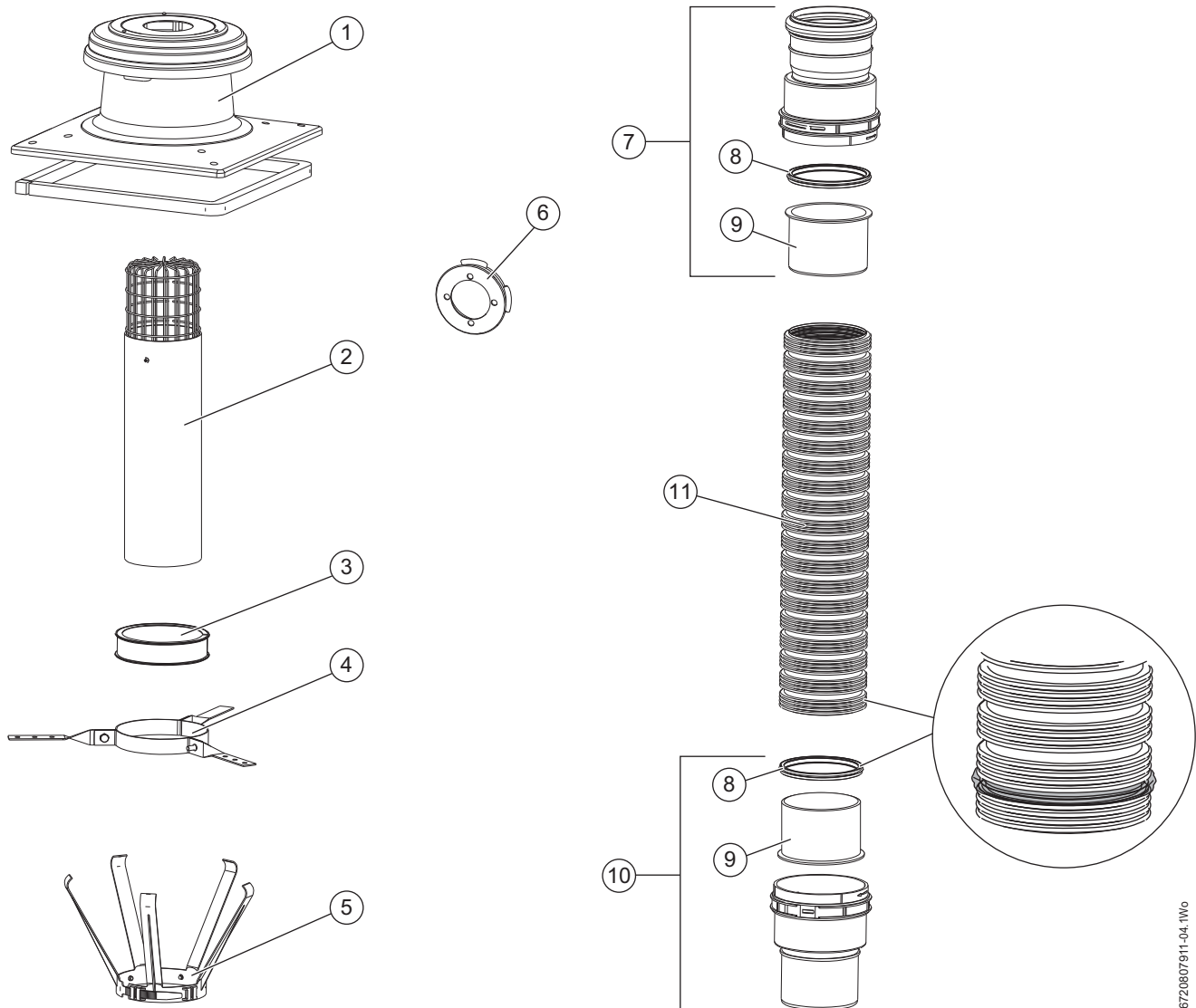


Fig. 4 CF flexible flue liner components 100mm

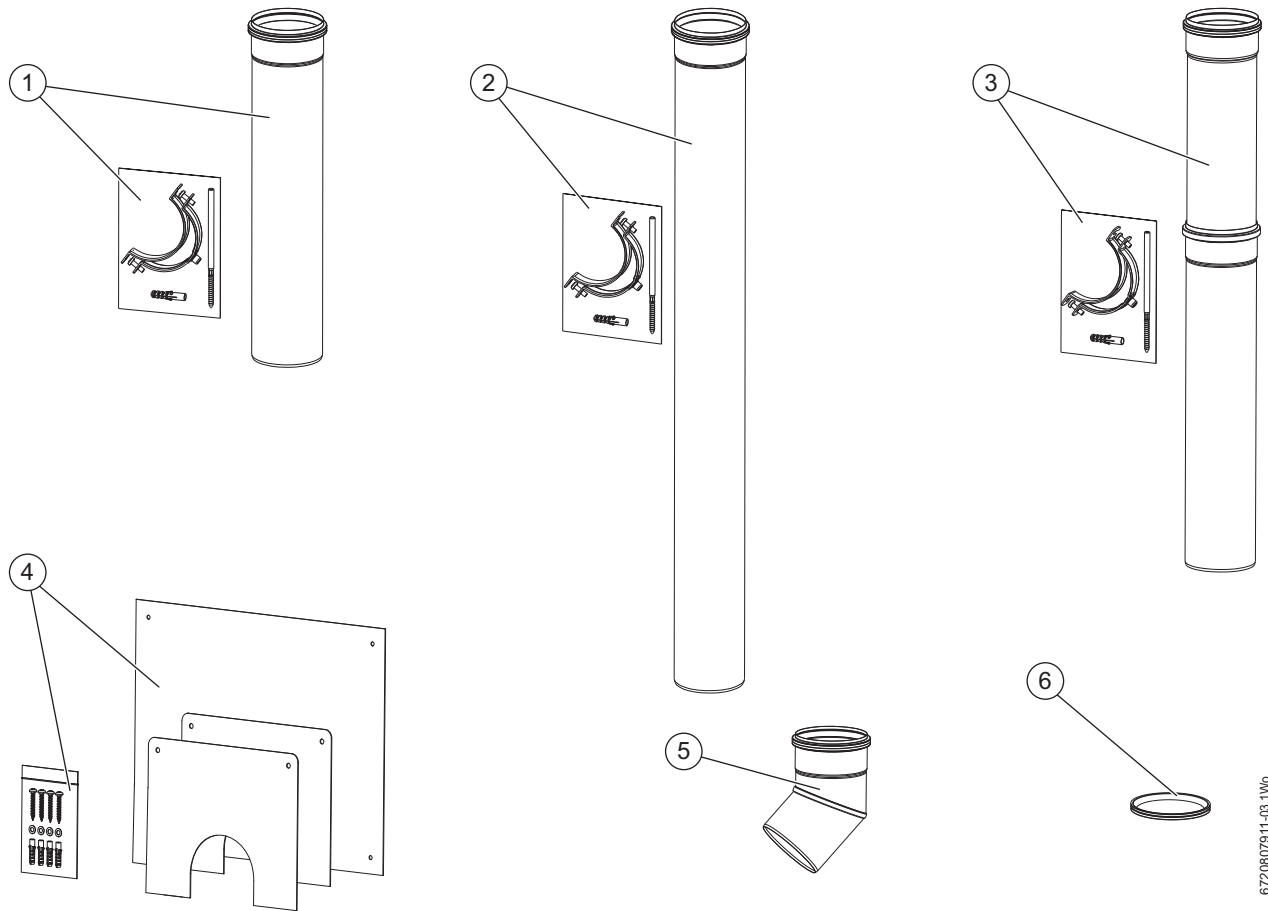
- [1] Chimney cowl
- [2] Terminal
- [3] Support collar
- [4] Support bracket assembly
- [5] Centralising spacer
- [6] Flue damper assembly
- [7] Flexible to rigid adapter kit (includes [8] and [9])
- [8] Seal 100mmØ Part number: 8 716 004 269 0
- [9] Liner
- [10] Rigid to flexible adapter kit (includes [8] and [9])
- [11] Flexible liner (8, 12 or 15metres)

NOTICE: SEALS

► Seals [8] locate in two places into recesses at the top and bottom of the flexible flue liner [11]. Refer to figures 9 and 13.

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2.4 CF STAINLESS STEEL EXTENSION COMPONENTS (130mmØ)



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Fig. 5 CFS/S extension components 130mm

- [1] 500mm x 130mmØ Stainless steel extension kit: Part number: 7 716 190 071
- [2] 1000mm x 130mmØ Stainless steel extension kit: Part number: 7 716 190 070
- [3] 500mm - 1000mm x 130mmØ Stainless telescopic steel extension kit: Part number: 7 716 190 072
- [4] 130mmØ Inspection plate pack Part number 7 716 190 075
- [5] 45° x 130mmØ Stainless steel elbow Part number: 7 716 190 073
- [6] 130mmØ Spare seal - Part number: 8 716 110 155 0

2.5 CF FLEXIBLE FLUE LINER KIT COMPONENTS (130mmØ)

130mmØ Flexible flue liner kits:

8 metre - part number: 7 716 190 079

12 metre - part number: 7 716 190 080

15 metre - part number: 7 716 190 081 including:

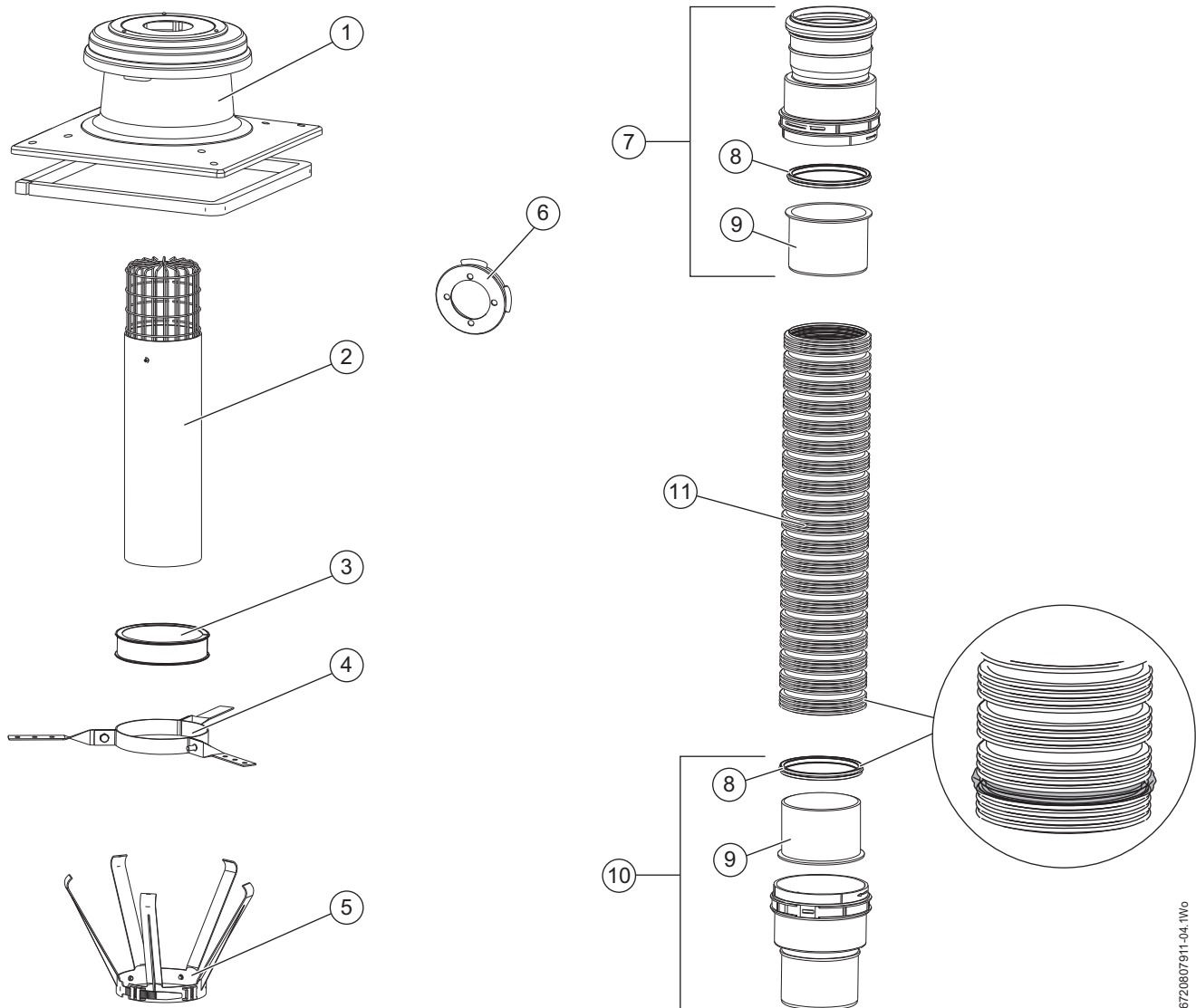



Fig. 6 CF flexible flue liner components 130mm

- [1] Chimney cowl
- [2] Terminal
- [3] Support collar
- [4] Support bracket assembly
- [5] Centralising spacer
- [6] Flue damper assembly
- [7] Flexible to rigid adapter kit (includes [8] and [9])
- [8] Seal 130mmØ Part number: 8 716 114 299 0
- [9] Liner
- [10] Rigid to flexible adapter kit (includes [8] and [9])
- [11] Flexible liner (8, 12 or 15metres)

	NOTICE: SEALS
	<p>► Seals [8] locate in two places into recesses at the top and bottom of the flexible flue liner [11]. Refer to figures 9 and 13.</p>

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3 PRE-INSTALLATION

3.1 TYPICAL INSTALLATIONS

WARNING: Open flue

- ▶ Open (conventional) flued appliances must not be installed in bedrooms, bathrooms or bedsitting rooms
- ▶ Inspection points must be provided for access to check the flue system joints.

Before starting installation, check that:

- the chimney is structurally sound and free from obstructions
- the chimney has been swept to remove deposits since the last use

This flexible flue pipe is only suitable for lining chimneys that conform to the Building Regulations and it should not be used as a chimney on its own or outside a masonry or flue block chimney.

All the flexible liner and adaptors must be within the chimney, with rigid stainless steel flue pipe connecting to the boiler.

The first 600mm of the stainless steel flue pipe from the boiler must be vertical with no bends or restrictions.

There must be a least a 25mm clearance between the S/S flue pipe and any combustible material.

The data label must be secured onto the chimney or chimney hearth using the plate provided.

If it is not possible to attach the plate to the chimney, the plate can be attached, in a visible position, next to the electricity consumer unit.

Do not attach the data plate or label to the flue system.

The terminal should not be modified and an extra cowl or cover must not be fitted, the boiler is designed so that any rain that enters the flue will be directed down to the condensate drain.

CALCULATE THE FLUE LENGTH

Refer to figure 7 and table 1

$L_{max} = \text{boiler max} - 1 \text{ metre}^*$

(Each 45° bend has a 0.5 metre equivalent flue length).

* If the chimney has an additional offset, then L will be reduced by an extra metre.

** The top 45° bend may not be required if there is sufficient room in the chimney to turn the flexible liner through 45° within the chimney. The stainless steel section must be adequately supported.

Maximum flue length without damper is 6 metres

Greenstar boiler models	Model	FlueØ	Max flue length (m)	Damper required >6m
Camray Kitchen	12/18	100	15	N
	18/25	100	15#	Y
	25/32	100	15#	Y
Camray Utility & Utility System	12/18	100	15	N
	18/25	100	15#	Y
	25/32	100	15#	Y
Danesmoor (pre 2011)	18/25	100	15	N
Heatslave	12/18	100	15	N
	18/25	100	15	N
	25/32	100	15	N
Utility	18/25	100	15	N
	32/50	130	15	N
	50/70	130	15	N
Heatslave II	12/18	100	12	N
	18/25	100	12	N
	25/32	100	12	N
Danesmoor (cross-firing post 2013)	12/18	100	12	N
	18/25	100	12	N
	25/32	100	12	N

Table 1 Max flue lengths

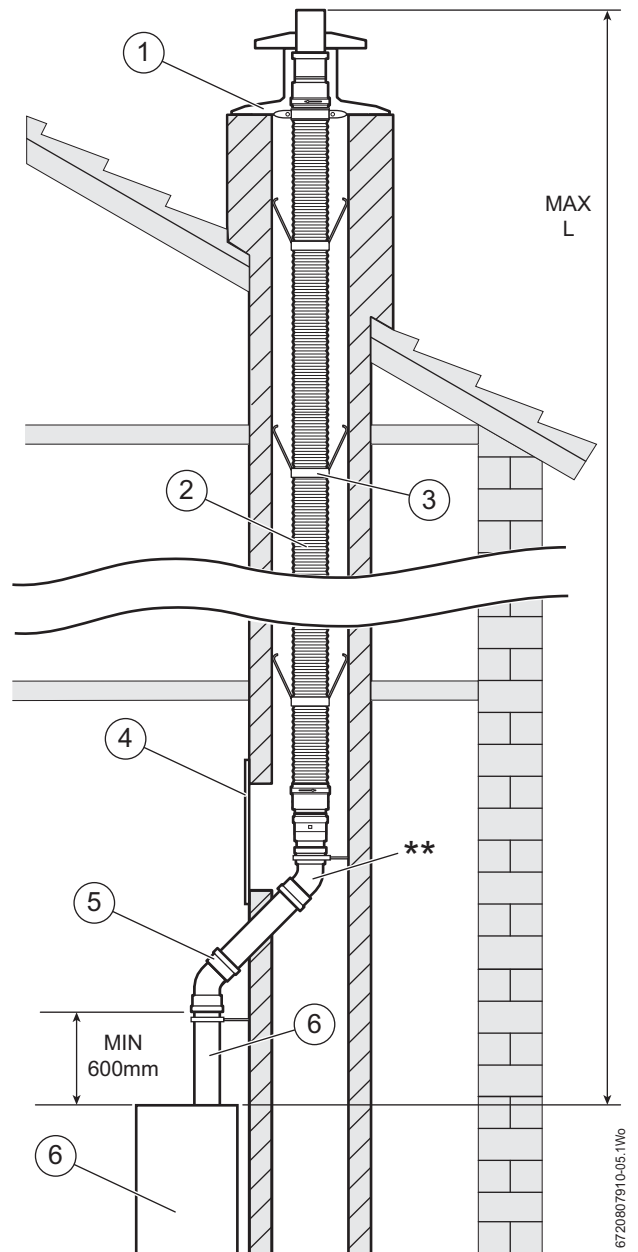


Fig. 7 Typical installation - offset flue

- [1] Chimney cowl
- [2] Flexible liner
- [3] Centralising spacer
- [4] Fire stop/Inspection plate
- [5] Maximum two bends at 135°
- [6] Stainless steel vertical section (minimum 600mm)
- [7] Boiler

CALCULATING THE FLUE LENGTH

Refer to figure 8 and table 1.

$L_{max} = \text{boiler}_{max}^*$

*If the chimney has an offset, then L will be reduced by 1m.

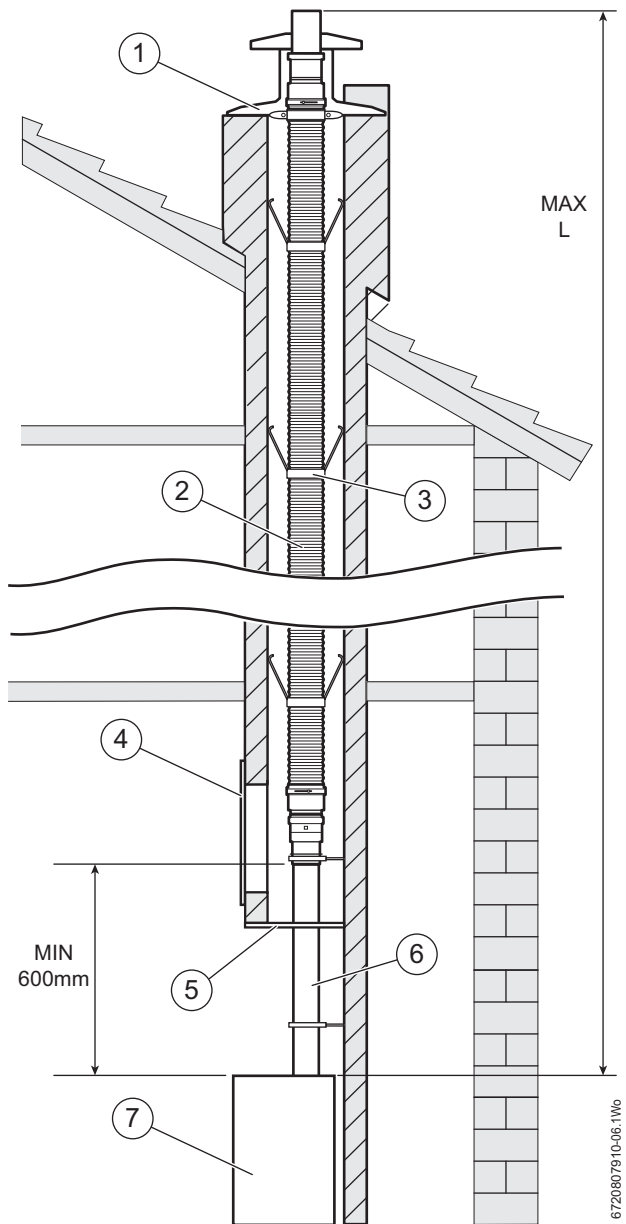



Fig. 8 Typical installation - straight flue

- [1] Chimney cowl
- [2] Flexible liner
- [3] Centralising spacer
- [4] Fire stop/Inspection plate
- [5] Fire stop plate
- [6] Stainless steel vertical section (minimum 600mm)
- [7] Boiler



NOTICE: Fire stop plates

- ▶ Depending upon the opening situation, a fire stop plate, as shown, can be used.

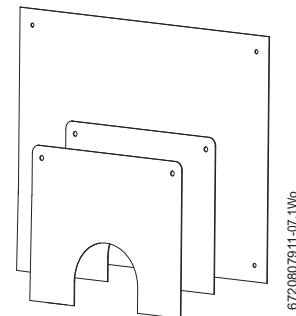


Fig. 9 Fire stop/Inspection plates

TO FIT THE DAMPER

- ▶ Remove the flue manifold access cover,
- ▶ Put the damper in, behind the flue stat pocket
- ▶ Push the damper firmly onto the protruding stainless steel elbow

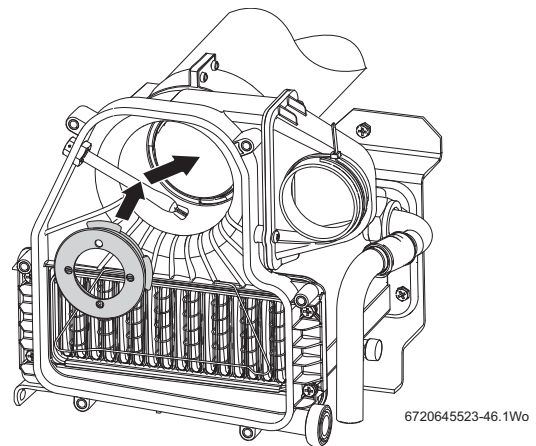


Fig. 10 Damper fitting detail

4 INSTALLATION



NOTICE: Flue components

- ▶ All seals must be greased with the silicone grease provided before assembly.
- ▶ Any damaged flue components must be replaced, repairs are not allowed.

4.1 FLUE INSTALLATION

PREPARING THE CHIMNEY OPENING

1. Refer to the CF vertical flue kit instructions to assemble the suitable adapters onto the boiler flue outlet.
2. Make a suitable entry into the chimney above the boiler, large enough to install the flue and allow access to the joints for servicing.
3. Assemble the first stainless steel flue section [2] to the flue adapter [1].
4. Mark the position of the support brackets [3] for the first flue section [2] on the chimney wall.
Drill the chimney wall and fit the support bracket [3] using the wall plug and screw provided.



On some installations it will be necessary to shorten the bracket mounting screw [5]

5. Grease the seals of the second stainless steel flue section [2] and two 135° flue bends and assemble onto the first flue section as shown in figure 11.
6. Mark the position of the support bracket [3] for the 135° flue bend [4] inside the chimney.
Drill the chimney and fit the support bracket [3] using the wall plug and screw provided.
7. Fit the stainless steel flue sections and clamp with the support brackets.

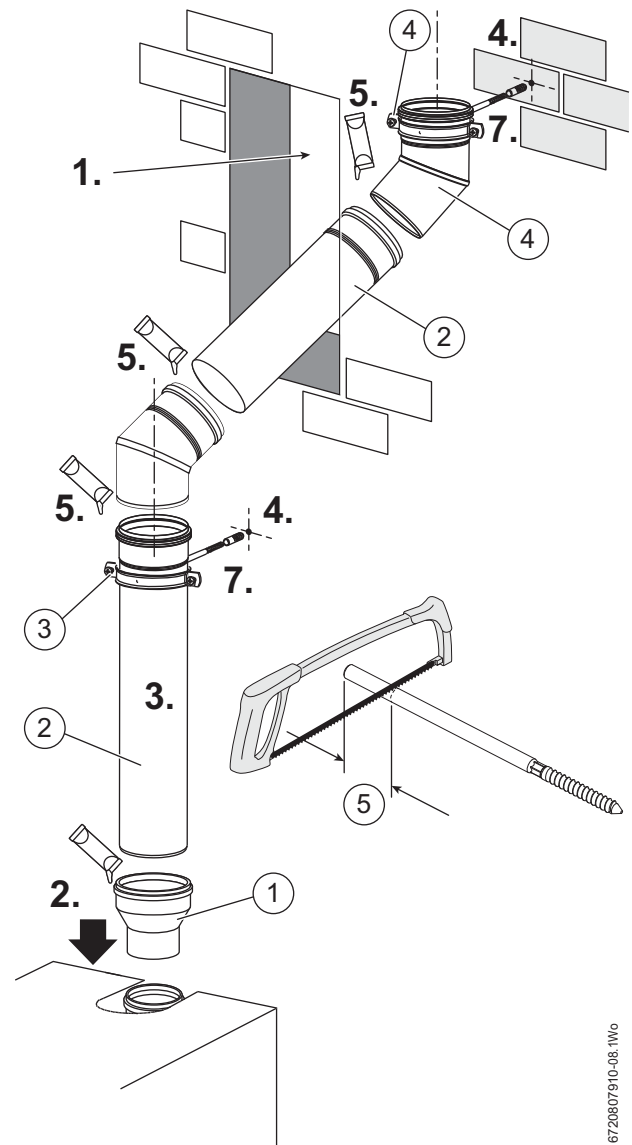


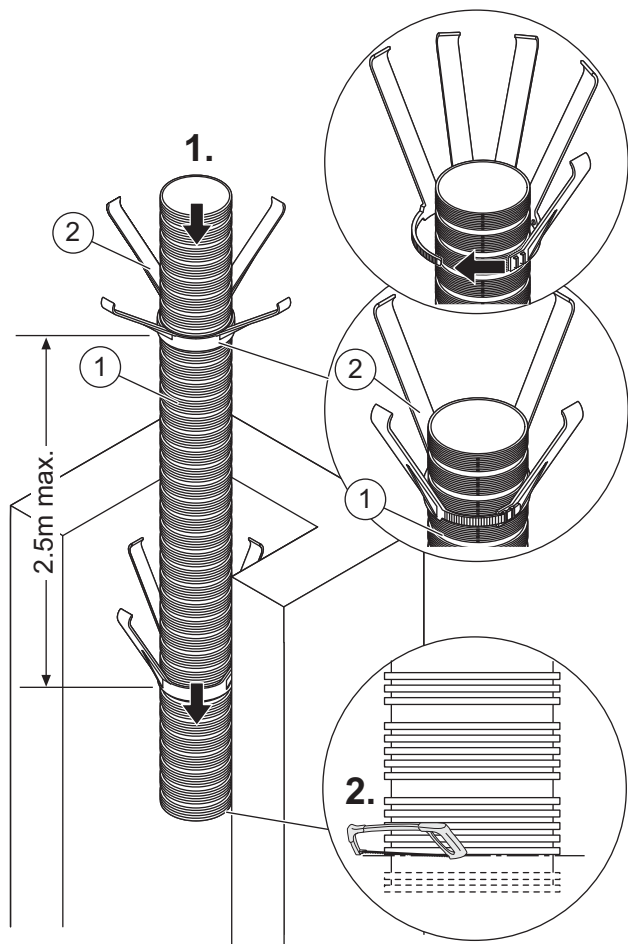
Fig. 11 Prepare chimney opening

- [1] Flue adapter
- [2] Flue section
- [3] Support bracket
- [4] 135° Flue bend
- [5] Shorten this end only

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PREPARING THE FLUE LINER

1. The flexible flue liner [1] should be fed down the chimney from the top, fitting centralising spacers [2] at a maximum of every 2.5metres, less preferably.
2. When the flexible liner is in place, the bottom of the liner should be cut off tidily at the start of a corrugated section.



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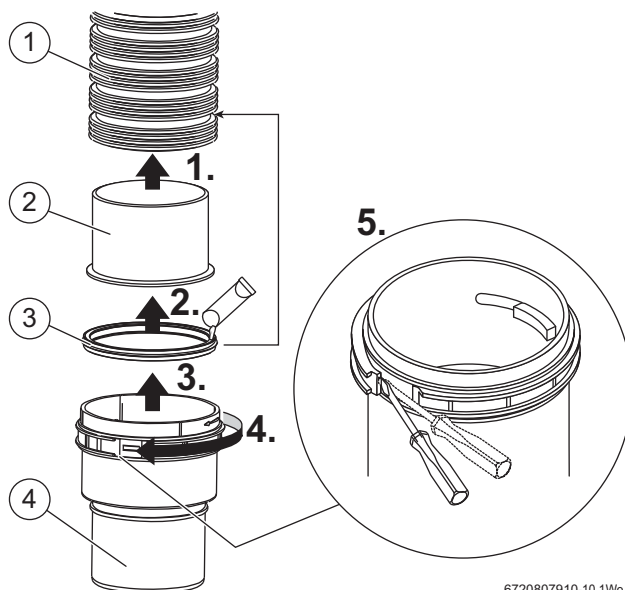
Fig. 12 Preparing flue liner

- [1] Centralising spacer
- [2] Flexible flue liner

FITTING THE LOWER SEAL

1. Remove the liner (2) and seal (3) from the adaptor assembly (rigid spigot to flexible), then fit the liner (2) into the flexible liner (1).
2. Grease the seal (3) and fit the seal into the first wide recess on the flexible liner (1), make sure that the seal is not twisted and is seated properly.
3. Check that the band on the adaptor assembly (4) is fully undone (rotated against the direction of the moulded arrow. If the band is locked, push the internal locking lugs outward to release the locking tab and then rotate the band. Push the adaptor (4) onto the flexible liner (1), it may be necessary to pull the locking band lugs out to allow the adaptor to push into the flexible liner, until the adaptor “bottoms out” and the moveable band “clicks” into place. If the band does not click into place, check:
 - the adaptor is pushed fully down
 - the adaptor is square to the flexible liner
 - the lugs are aligned with their slots in the adaptor.
 If the band still will not locate, check that the flexible liner is cut correctly.
4. Rotate the band in the direction of the moulded arrow until it locks in place.

5. If an adaptor assembly (4) needs to be removed after assembly then a small flat-bladed screwdriver should be used to lift the locking end of the band before the band is rotated to allow removal.

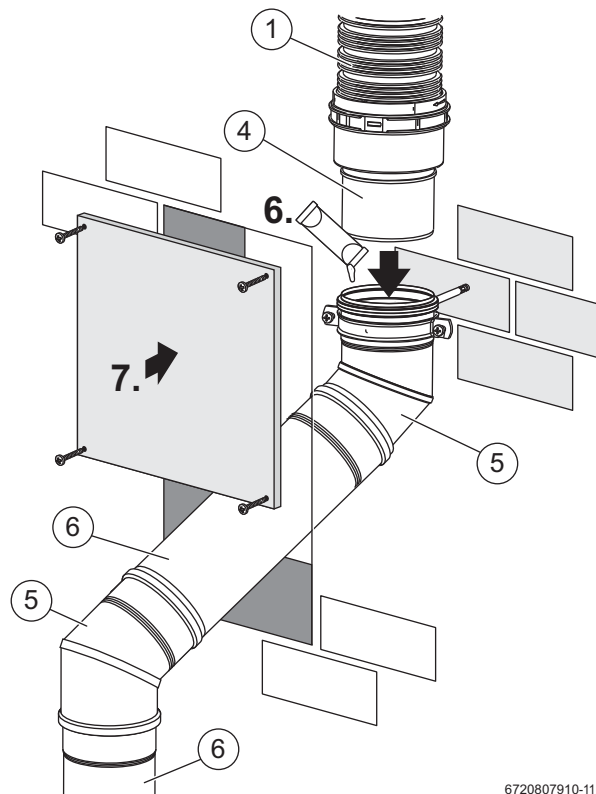


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Fig. 13 Adapter assembly

- [1] Flexible flue liner
- [2] Liner
- [3] Seal
- [4] Flue adaptor

6. Grease the stainless steel elbow (5) then push adaptor (4) into the elbow.
7. Fit a removable inspection panel to allow inspection of the joints within the chimney. Make good the opening around the stainless steel flue pipe.



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Fig. 14 Chimney detail

- [5] Stainless steel elbow
- [6] Flue section

FITTING THE SUPPORT COLLAR

1. 100mmØ systems - refer to figure 15:

Fit the support collar (1) with the retaining ring at the top, onto the flexible liner (3), with the top of the collar in the middle ring of the corrugated section. Then assemble the support bracket assembly (2) onto the support collar (1).

130mmØ systems - refer to figure 16:

Assemble the support bracket assembly (2) onto the flexible liner (A) locating into the second groove of a corrugated section, with the top of the support bracket top band level with the wide recess.

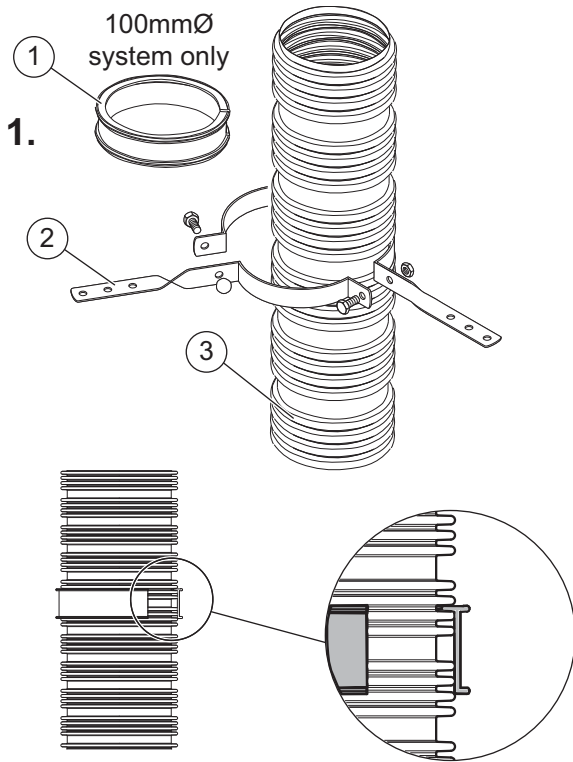


Fig. 15 Support collar detail for 100mm

- [1] Support collar
- [2] Support bracket assembly
- [3] Flexible flue liner

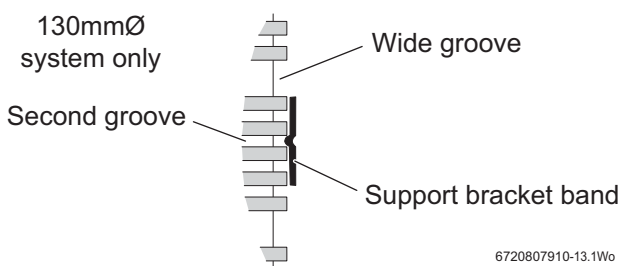


Fig. 16 Support band detail for 130mm

- 2. Ensure that the flexible flue is in the centre of the chimney. Mark the bracket assembly (2) fixing points, drill the fixing points and secure the support bracket assembly (2) to the chimney.
- 3. Mark the flexible liner three complete corrugated sections above the support collar and cut off at the bottom of the wide recess above the third corrugated section.

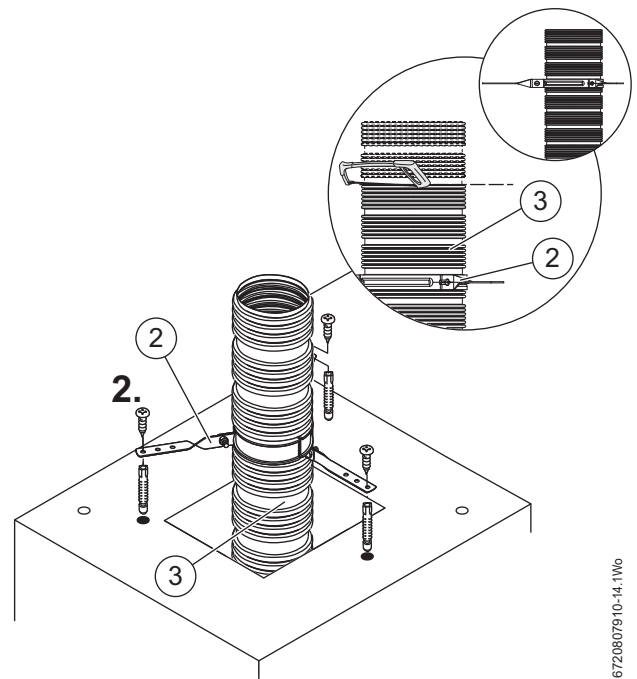


Fig. 17 Chimney mounting detail

FITTING THE TOP SEAL AND ADAPTER

- 1. Remove the liner (4) and seal (5) from the adaptor assembly (6) (flexible to rigid socket), then fit the liner (4) into the flexible liner (3).
- 2. Grease the seal (5) with the silicon grease provided and fit the seal into the first wide recess, from the top, on the flexible liner (A), ensure that the seal is not twisted and is seated properly.
- 3. Check that the band on the adaptor assembly (6) is fully undone (rotated against the direction of the moulded arrow, if the band is locked push the internal locking lug outward to release the locking tab and then rotate the band). Push the adaptor (6) onto the flexible liner (3) until it bottoms out and the moveable band clicks into place. Rotate the band in the direction of the moulded arrow until it locks in place.

- 4. Grease the adaptor seal and fit the terminal (7) into the adaptor (6).

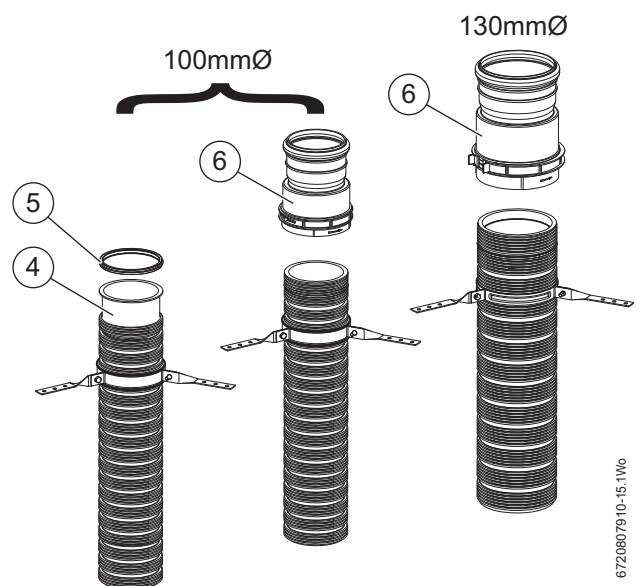


Fig. 18 Fitting top seal and adapter

- [4] Liner
- [5] Seal
- [6] Adapter assembly

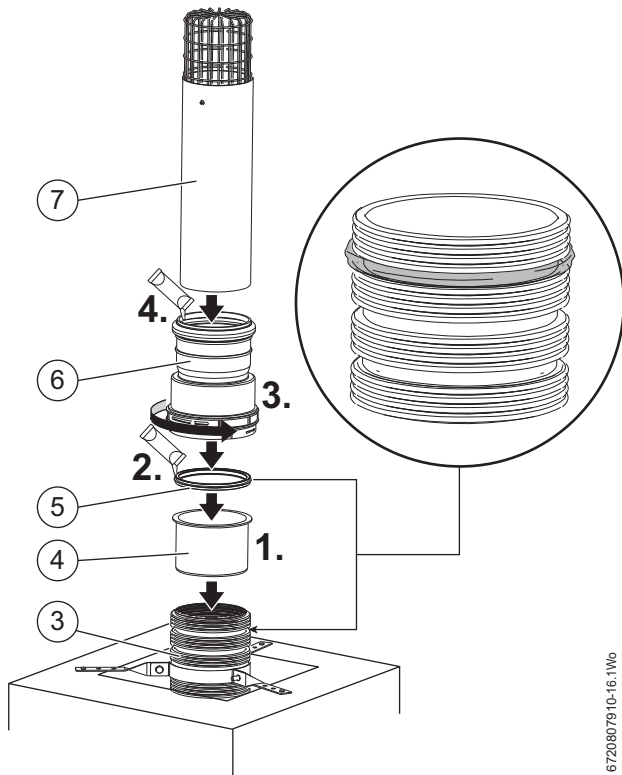


Fig. 19 Terminal assembly

- [3] Flexible flue liner
- [4] Liner
- [5] Seal
- [6] Adapter assembly
- [7] Terminal

FITTING THE CHIMNEY COWL

5. Fit the self-adhesive weather seal (9) to the base of the chimney cowl (8).

6. Fit the cowl (8) over the terminal (7).

Mark the cowl securing points, turn the cowl and drill the marked securing points, then secure the cowl (8) with the wall plugs and screws provided.

Fill in the details on the chimney plate and fit the chimney plate, either next to the boiler/chimney or next to the electricity consumer unit.

The plate can either be stuck to a flat sound surface or fitted to the mounting plate and screwed in place.

Because the flue operates at a lower temperature on a condensing boiler, compared to that of a conventional boiler, the flue draft will be lower.

Typically the draft will be between 0.5mmwg and 4.4mmwg, measured with a warm flue, but the burner not firing. The actual figure will vary depending upon weather conditions, flue height and position.

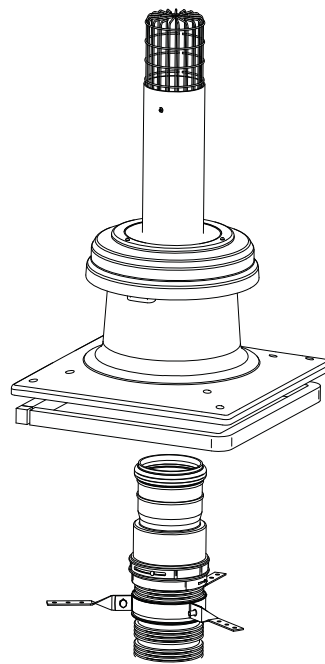


Fig. 20 Chimney cowl

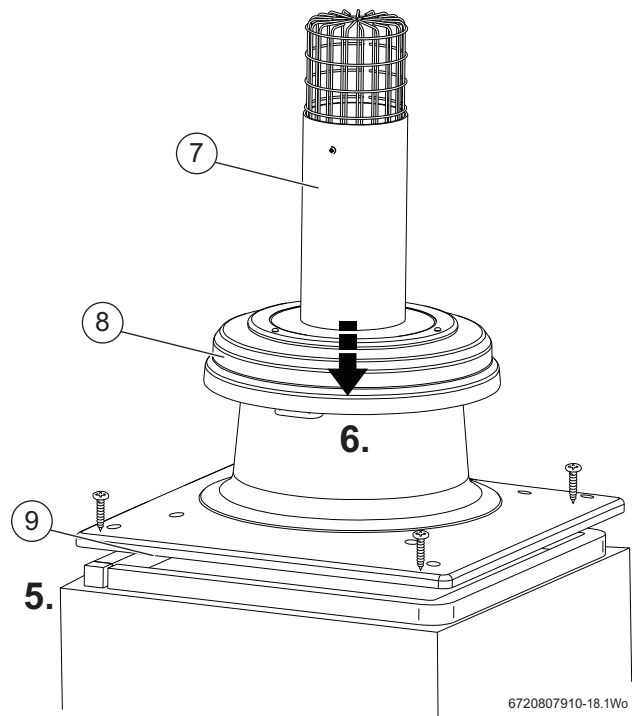


Fig. 21 Chimney cowl and seal

- [8] Cowl
- [9] Seal adhesive weather seal

NOTES

Worcester, Bosch Group
Cotswold Way, Warndon, Worcester WR4 9SW.
Tel. 0844 892 9900

Worcester, Bosch Group is a brand name of Bosch Thermotechnology Ltd.
worcester-bosch.co.uk

6 720 807 911 (2013/05)

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SALES:	01905 752640



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