

Suitable for Grant Vortex  
Condensing boilers with  
outputs up to 26kW



# Flexible Vertical Balanced Flue 'Red' System

Incorporating smooth bore flexible flue liner

## Installation Instructions



Kit contents list on page 4

Part No. DOC 33. Rev. 01 March 2008



# General

The Grant RED flue system is a flexible vertical balanced flue system designed to be fitted inside an existing masonry chimney. It basically consists of three sections:

- Concentric white painted flue pipe connected to the boiler
- Vertical concentric flexible flue (flexible stainless steel flue liner inside a flexible plastic air inlet liner)
- Terminal assembly for chimney top mounting

The flue pipe seals are factory fitted and must be lubricated with the lubricant supplied before assembly.

The Grant RED flue system is supplied as a kit in two packs – pack 1 Flue components and pack 2 Flexible flue liners. Refer to kit contents for details of components included. Flue extensions and 45°elbows from the Grant 'White' system may be used to extend the flue system between the boiler and the flexible section of the system.

The maximum vertical straight length of flue, from the top of the boiler to the top of the terminal, is 20 metres – using no more than four 45° elbows. Deduct 1 metre of straight flue length for every elbow used.

NB. If the flexible liners have to pass around an offset inside the chimney deduct 2 metres of straight flue length to compensate for this.

The available flue extensions are shown in Figure 1.

Flue extensions cannot be cut, use adjustable extensions where required.

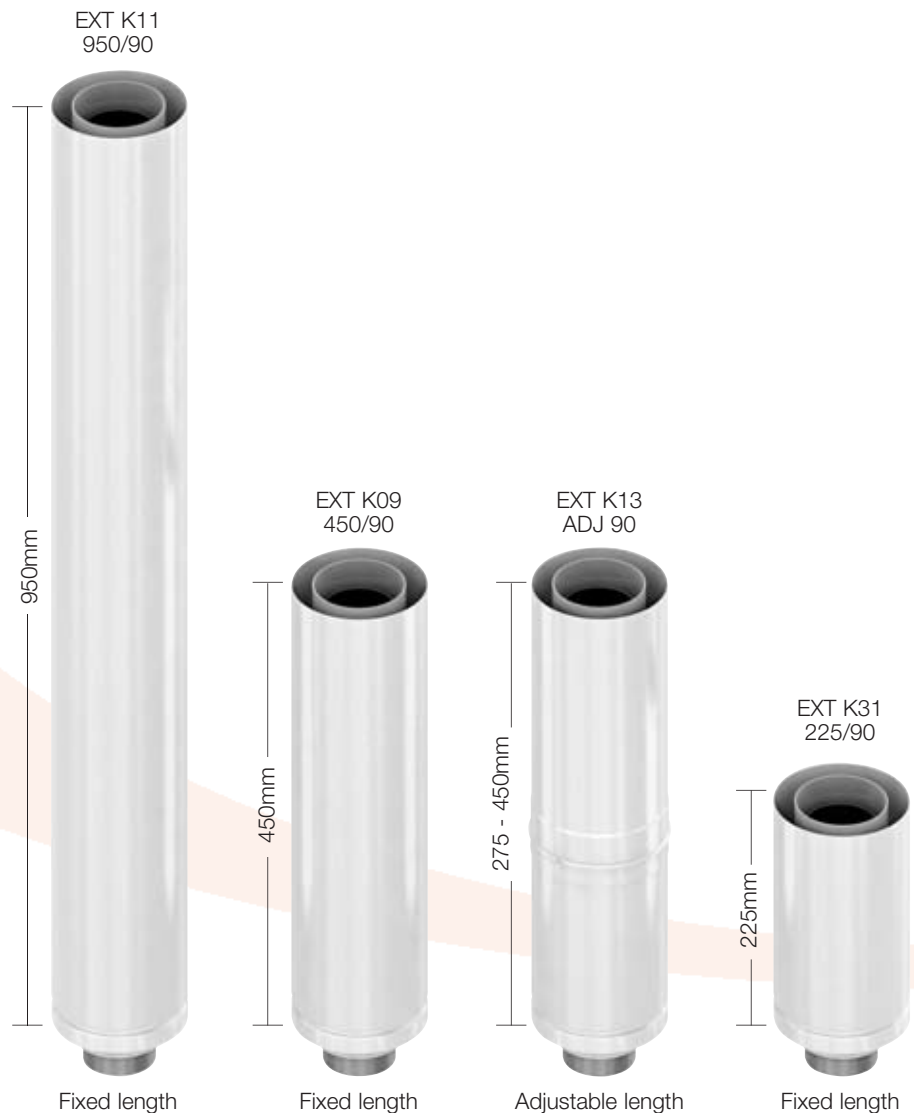
Three types of locking band are supplied with the kit. The first type is painted white and is for connecting flue sections that butt together (2 of this type of locking band are supplied). The second type, also painted white, is to cover the joint on the adjustable (telescopic) section.

NB. The locking band for the adjustable section is labelled for easy identification.

The third locking band is plastic and supplied in two halves. This is to secure the plastic flexible liner to the adaptor.

The flue kit includes a Black coated terminal with upstand and is designed to be fixed (using the screws provided) to the top of a masonry chimney.

Figure 1: Flue Extensions



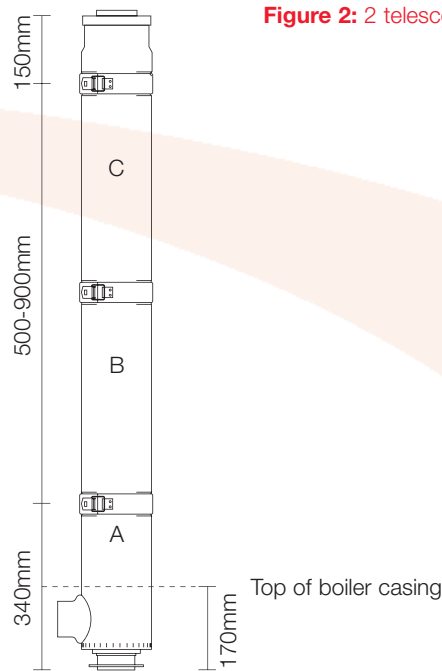
# Dimensions

## Outer diameter of flue pipe

Rigid (White) flue 150mm  
Flexible Polypropylene 128mm

## Vertical section

The dimensions shown in Figure 2 are measured from the top of the boiler flue outlet. The distance between the top of the boiler flue outlet and the top of the casing should be taken into consideration when working out flue length.

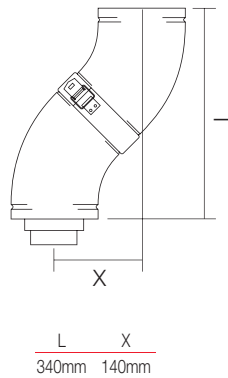


**Figure 2:** 2 telescopic sections on starter piece

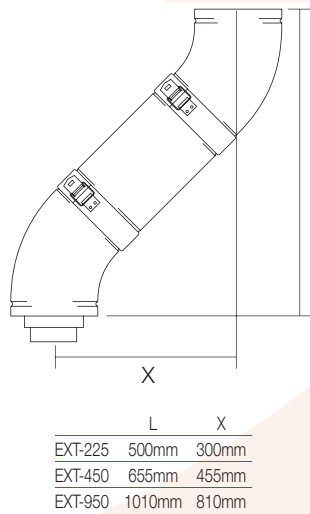
## Elbows

The flue system may be offset using 45° elbows (ref. ELBK 21/45/90). A maximum of four elbows should be used per system. The elbows may be connected together or used individually to connect to additional extensions to form offsets as shown in Figure 3, 4 and 5.

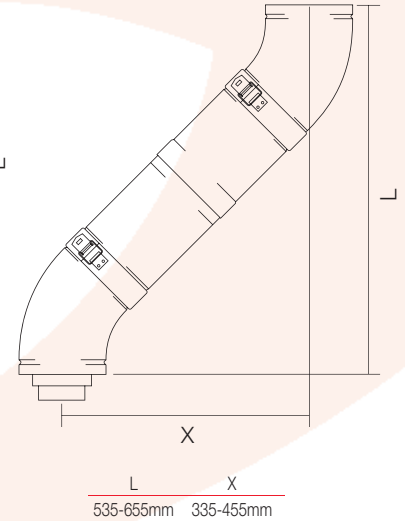
**Figure 3:** Elbow directly connected



**Figure 4:** Elbows connected on extension-pipes



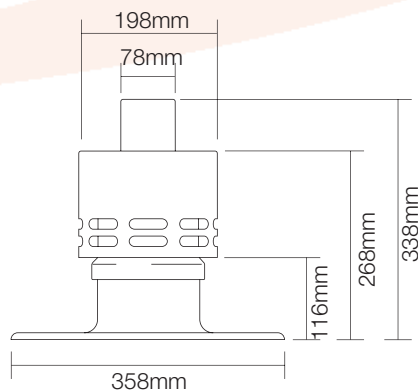
**Figure 5:** Elbows connected on adjustable extension



## Terminal

Dimensions of the terminal, mounted on the upstand, are given in Figure 6.

**Figure 6:** terminal on upstand



# Kit Contents

## Kit Contents

### Pack 1 - Flue Components

(Refer to Figure 7)

- A. Boiler connector (with seal)
- B. Starter section - White (with seal)
- C. Locking band - White (with seal) - 2 off
- D. Telescopic flue - lower - White
- E. Telescopic flue - upper - White (with seal)
- F. Locking band - telescopic flue - White
- G. Adaptor - rigid flue to flexible - White
- H. Plastic outer flex liner clamp (2 -piece)
- I. Rubber gasket (red) – inner stainless flex liner
- J. Connector – inner stainless flex liner
- K. Top plate (2-piece) – including 4 x 11mm washers (for top plate screws)
- L. Support clamp – inner stainless flex liner
- M. Terminal upstand (plastic)
- N. Terminal assembly c/w wire insert guard
- Sachet of seal lubricant – 2 off (included with fixing screws)

### Fixings (in poly bag)

- 4 x Screws 5mm x 50mm – Stainless steel (to fix top plate)
- 4 x Masonry plugs (to fix top plate)
- 3 x Self tapping screws (for telescopic section)
- 1 x Self tapping screw (to fix terminal)

### Pack 2 (not shown) - Flexible flue liners

- 80mm Ø smooth bore stainless steel inner flexible liner – length as per kit ordered
- 125mm Ø polypropylene outer flexible liner\* – length as per kit ordered
- \*nominal overall diameter of polypropylene liner is 128mm

Figure 7

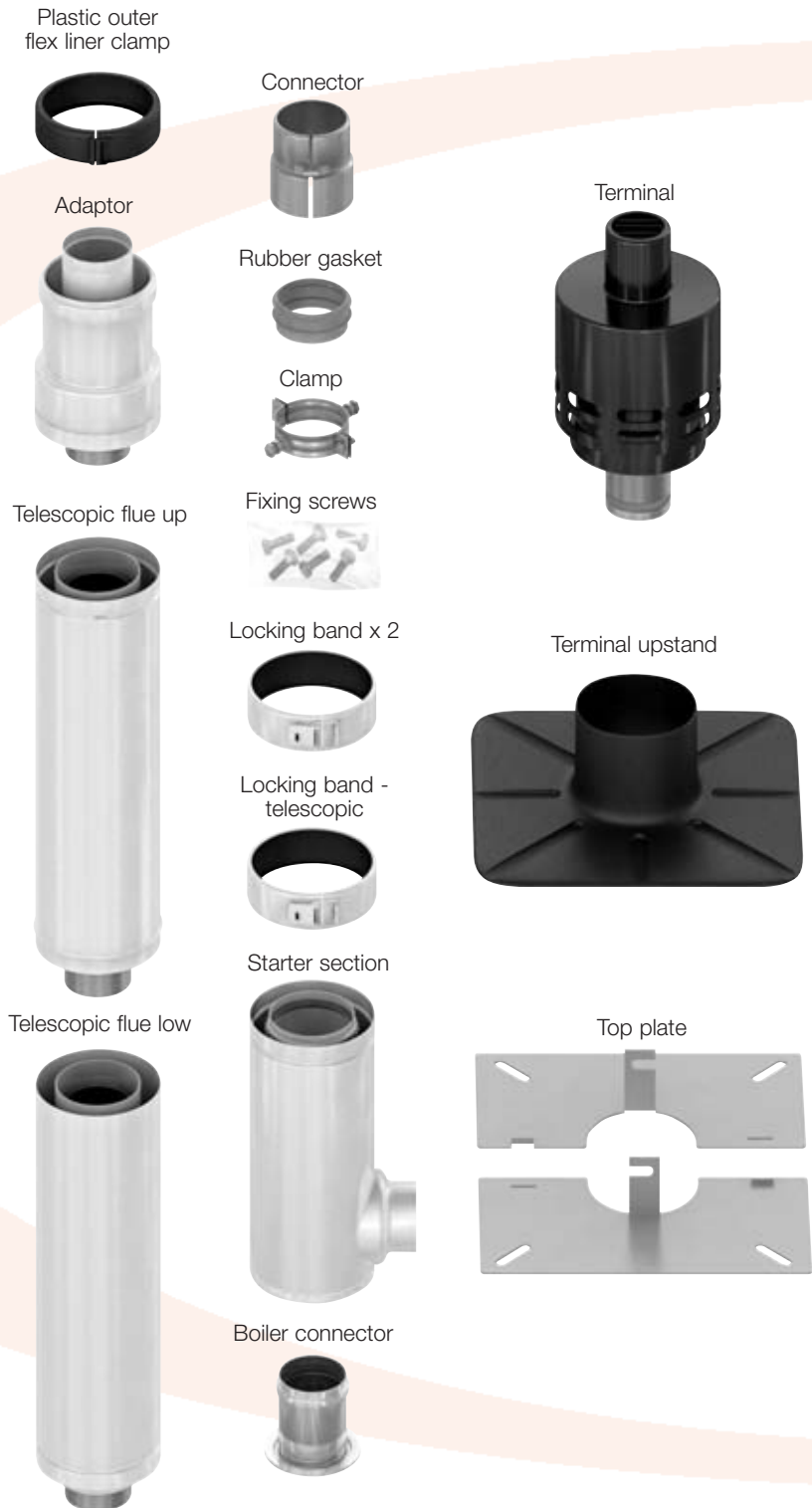
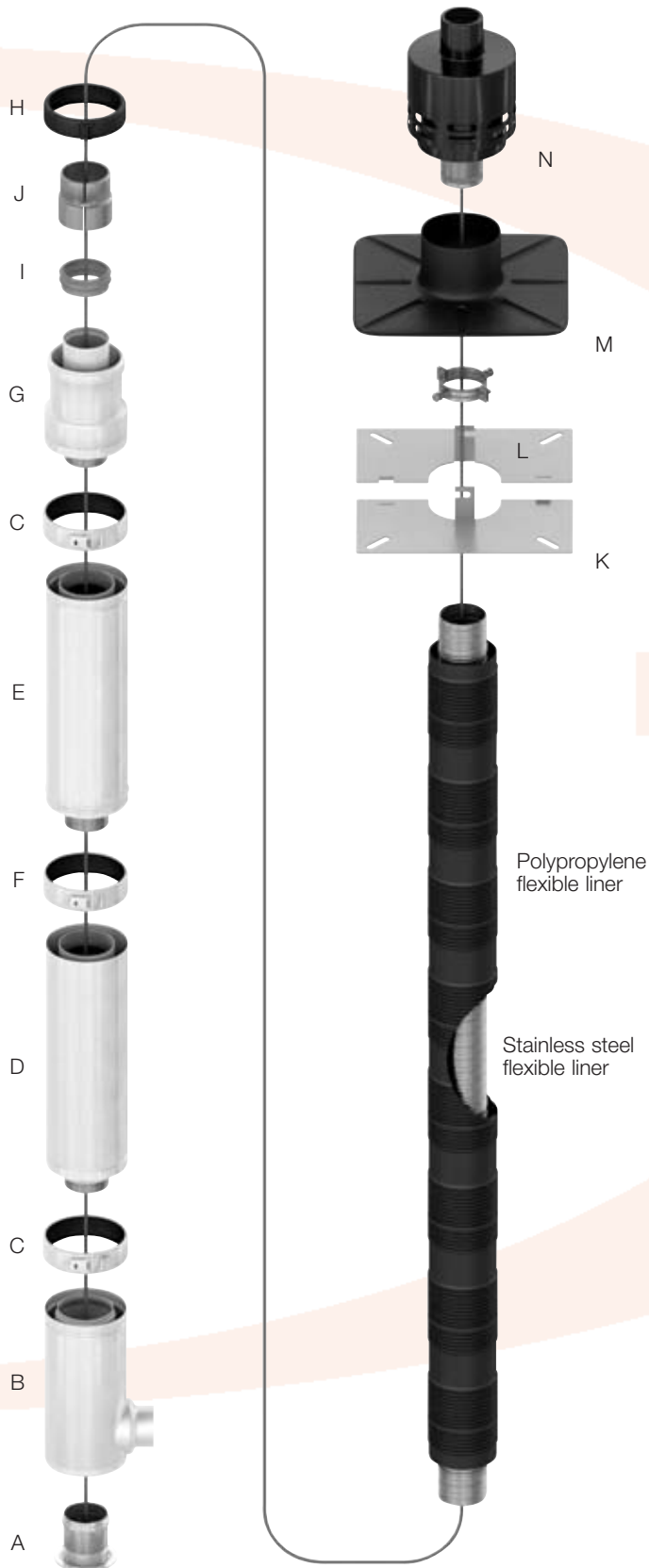


Figure 8: Exploded view of system



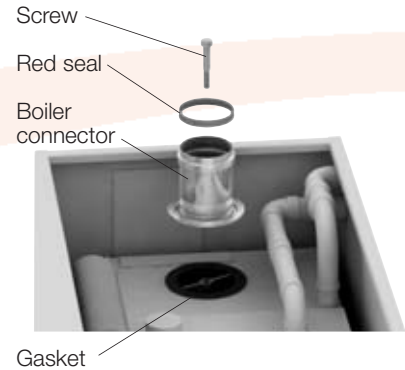
# Fitting Procedure

Before installing the flue system ensure that chimney is thoroughly swept and check that there are no obstructions in the way of the intended flue route.

## 1. Connect to boiler

- Prepare boiler – Lift of upper rear casing panel. Remove insulation from the underside of the panel (do not discard it) and remove the flue outlet blanking panel. Discard the blanking panel but retain the nuts and washers.
- Re-fit the insulation to the panel with the foil surface facing outwards. With a sharp knife cut around the edge of the round opening to leave a round hole through the insulation for the flue.
- Fit boiler connector – remove the screw fitted in the nut located in the centre of the boiler flue outlet. Position the flange of the boiler connector onto the neoprene gasket around the boiler flue outlet, ensuring that small spigot on the base of the connector is located in the hole in the centre of the neoprene gasket. Refer to Figure 9.

**Figure 9:** Boiler connector



- Re-fit the screw provided through the hole in the spacer bracket in the connector and into the nut in the flue outlet. Tighten to secure the connector. Refer to Figure 10.

**Figure 10:** Boiler connector in-situ



- Ensure that red seal is fitted in the internal swage in the top of the boiler connector. LUBRICATE the seal using the silicone grease provided. Refer to Figure 11.

**Figure 11:** Position of seal in boiler connector



- Fit starter section of flue system – locate the spigot in the bottom of the starter section into the boiler connector and push fully home. Rotate the starter section such that the combustion test point is located for easy access and remove test point screw.
- Connect the flexible air inlet tube to the inlet spigot and secure with the wire hose clamp supplied with the boiler. Refer to Figure 12.

**Figure 12:** Fitting air tube



- Ensure that red seal is fitted in the internal swage in the top of the starter section. LUBRICATE the seal using the silicone grease provided. Refer to Figure 13.

**Figure 13:** Position of seal in sections



**IMPORTANT.** Re-fit the upper rear casing panel before fitting any further flue components.

## 2. Fit White flue

- Take the lower part of the telescopic flue section and locate the spigot at the bottom into the top of the starter section and push fully home using a twisting motion. Refer to Figure 14.

**Figure 14:** Fitting pipe



- Fit one of the locking bands provided to secure the two flue sections together. NB. Do not use the adjustable locking band provided. Refer to Figure 15.
- Ensure that red seal is fitted in the internal swage in the top of the lower telescopic section. LUBRICATE the seal using the silicone grease provided.
- Locate the upper part of the telescopic flue section onto the lower section and fit together using a twisting motion. Push upper section halfway onto lower section. Do not fix the two sections together at this stage.

**Figure 15:** Fitting locking band



## 3. Fit flexible flue liners

- Fit outer plastic liner into chimney. Do NOT cut off any excess plastic liner at the top of the chimney at this time. NB. The plastic liner is non-directional and is supplied with at least a 35mm long plain section at both ends. DO NOT cut this plain section off either end at this time.
- Fit inner stainless steel liner inside plastic liner.

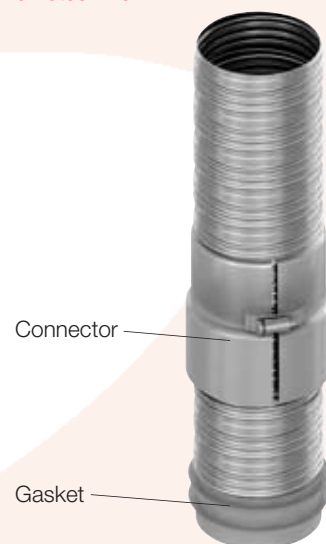
**IMPORTANT.** The stainless steel liner is directional and **MUST** be installed the correct way up. Refer to the red arrow marked on one end of the liner. This arrow indicates the direction of flue gases i.e. it should point upwards.

Do NOT cut off any excess stainless steel liner at the top of the chimney at this time.

- Fully slacken the clamping screw on the flex connector. Slide connector onto bottom end of stainless steel liner – smaller diameter end first – and push along liner to leave approx 100mm of liner below connector. Refer to Figure 16.
- Fit red rubber gasket sleeve onto bottom end of stainless steel liner. Refer to Fig.16.

This gasket is directional and must be fitted the correct way up – i.e. with the arrow on gasket pointing upwards (in the direction of gas flow).

**Figure 16:** Connector and gasket on steel liner



- Fit end of stainless steel liner, with rubber gasket, into socket in the rigid to flex adaptor – ensuring that the gasket is fully located into the socket. Refer to Figure 17.

**Figure 17:** Fitting of steel liner/gasket into adaptor



# Fitting Procedure

- Pull down flex connector to fit over outside of adaptor socket. Ensure internal lip on bottom edge of connector is located in the groove around adaptor socket. Fully tighten clamp screw on connector to firmly secure stainless flex liner to adaptor. Refer to Figure 18.

**Figure 18:** Tighten flex connector



- Pull down plastic flex liner and fit plain end into outer socket of adaptor. Ensure that it passes through internal seal in adaptor. Secure plastic flex to adaptor using the two-piece plastic clamp provided. Refer to Figure 19.

**IMPORTANT.** Adaptor must be fitted vertically as shown.

**Figure 19:** Two-piece plastic clamp



- Position the adaptor such that it is **INSIDE** the chimney – to leave a neat appearance at the bottom of the chimney when the hole is made good. To do this, the telescopic section can be adjusted to give the required length and then fixed. Spot drill through the pre-drilled holes in the outer pipe of the upper section and fix using the small self tapping screws provided. Always use a twisting motion to adjust the telescopic flue to the required length. Fit the 'adjustable' section locking band over the joint between the two parts.

**IMPORTANT.** The two sections of the telescopic flue **MUST** overlap by at least 35mm.

- Straight flue extensions, adjustable flue extensions and 45° elbows (selected from Grant 'White' system components) can be fitted either between the starter and telescopic sections OR between the telescopic section and the rigid flue to flexible adaptor, as required,
- Ensure that all flue components have the red seals fitted and lubricated before assembly and secured using the locking bands provided.

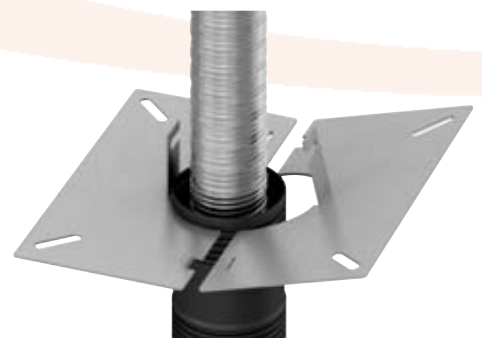
## 4. Fit flue terminal

- Ensure that top of chimney is flat to take the top plate and terminal assembly. It may be necessary to level the top with mortar prior to installation of the flue system.
- Using fingers (or pliers), break out the two 11mm diameter washers from the mounting bracket on each half of the top plate (four washers in total) and retain for later use.
- Fit the two halves of the top plate on top of chimney to support the plastic flex liner. Slide each half into the corrugations level with the top of the chimney masonry.

Locate the tab on each half through the corresponding slot in the other half to secure the plastic flex liner. Refer to Figure 20.

NB. If a plain section of the plastic flex liner happens to be level with the top plate, then either push the plastic liner down (or pull it upwards) as required to ensure that the top plate fits onto a corrugated section of the liner.

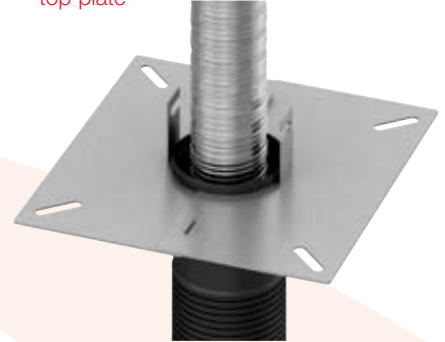
**Figure 20:** Fitting two halves of top plate





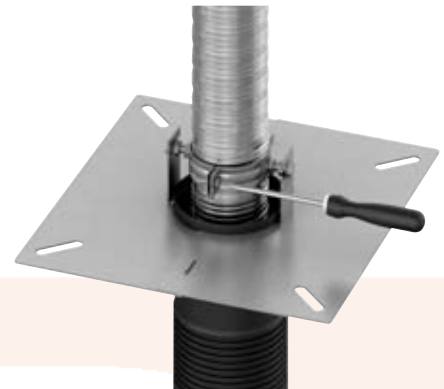
- Position top plate on top of chimney and bed it onto a bead of mastic (not supplied) around the full perimeter of the plate.
- Cut off plastic flex leaving 20mm approx (at least two corrugations) above top plate. Refer to Figure 21.

**Figure 21:** Outer flex cut off above top plate



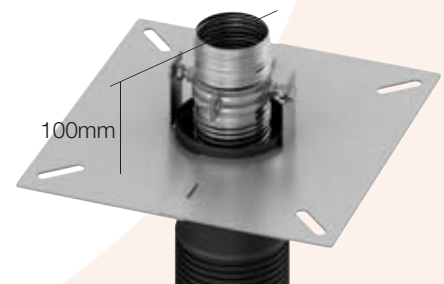
- Fit clamp collar on stainless inner flex – rotate to locate mounting bolts in the slots in the vertical brackets. Tighten locking nuts to secure clamp collar to top plate. Tighten clamp screws to secure clamp collar to stainless steel liner. Refer to Figure 22.

**Figure 22:** Tighten clamp collar



- Cut off stainless steel liner 100mm above top plate. Refer to Figure 23.

**Figure 23:** Cut off stainless liner



**IMPORTANT.** Remove all burrs and sharp edges from cut end of the stainless inner liner to prevent damaging the seal on the terminal spigot when fitting the terminal.

- Position upstand onto top plate. Drill through the upstand at all four corners (to line up with the fixing slots in the top plate below). Remove the upstand to fit the four masonry plugs provided. Re-position the upstand and fix top plate and upstand to chimney using the four screws and washers provided.
- Fit terminal – Ensure that red seal is fitted in the external swage on the terminal spigot. LUBRICATE the seal using the silicone grease provided. Locate spigot into open end of stainless liner and push fully home using a twisting motion. Refer to Figure 24.

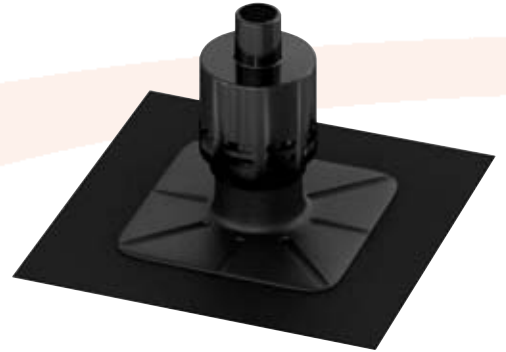
**Figure 24:** Fitting of terminal



# Fitting Procedure

- Ensure flange around base of terminal is correctly located on the upstand. Spot drill through hole in terminal base and secure in place using the self tapping screw provided. Refer to Figure 25.

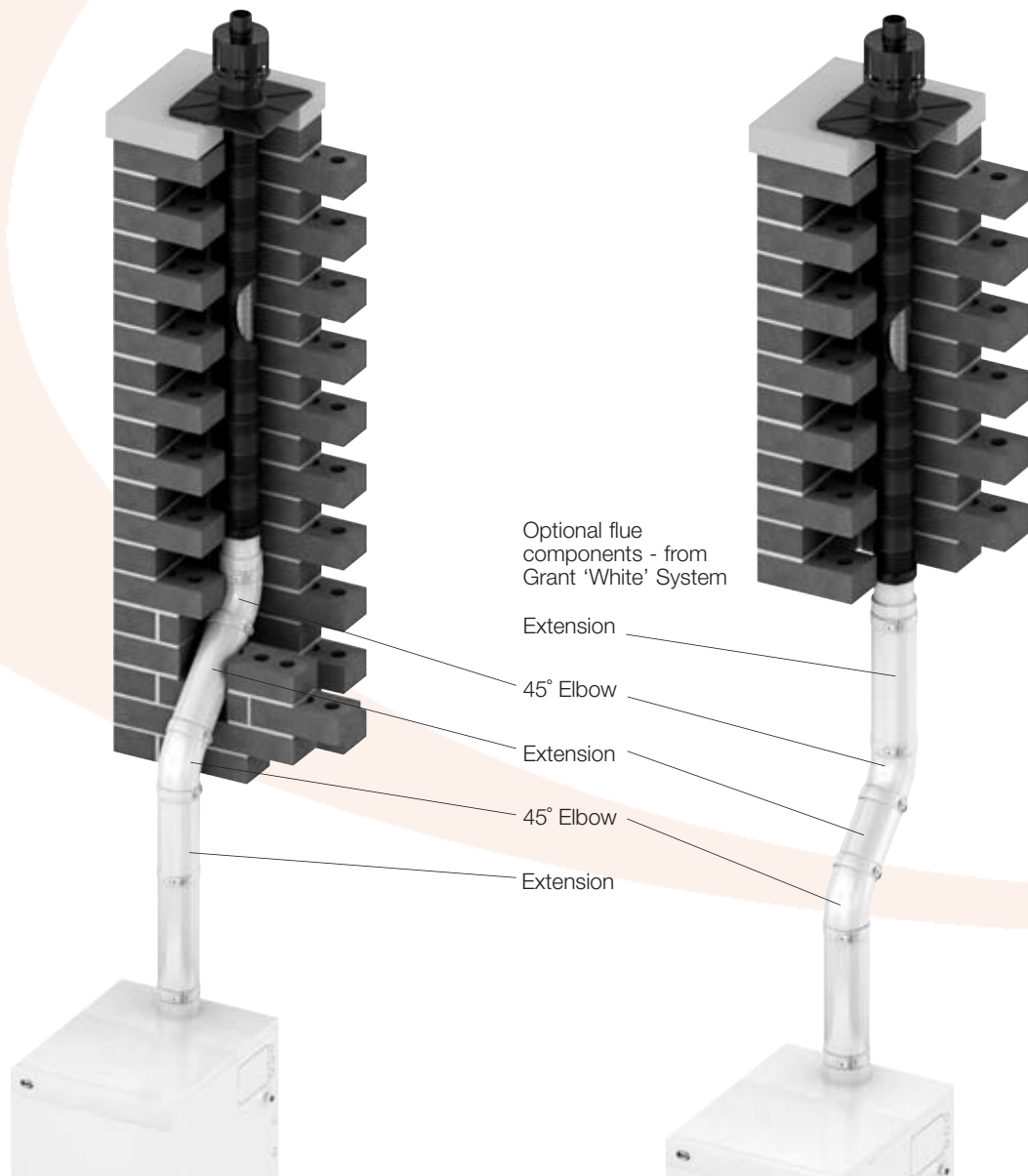
**Figure 25:** Terminal on upstand



The terminal upstand is designed to be used without mortar flashing.

**IMPORTANT.** Adaptor must be fitted vertically as shown.

**Figure 26:** Installed system and extension/elbow



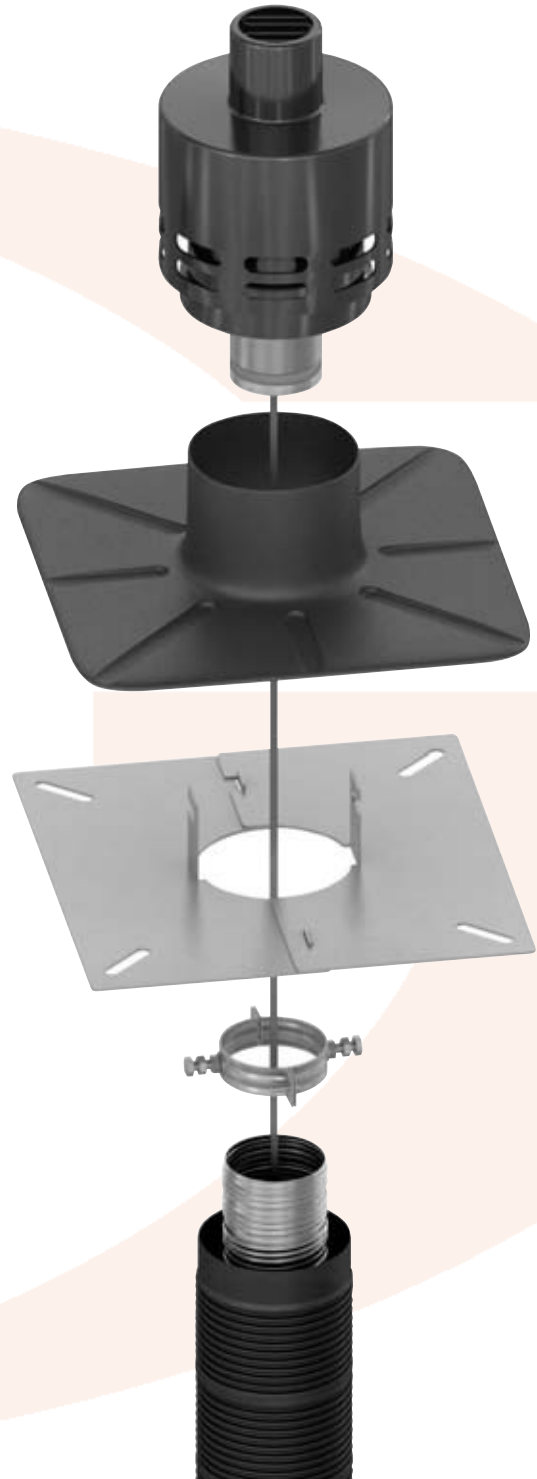
**Figure 27:** Flue component connections



a) Boiler to rigid flue connection



b) Rigid to flex flue connection



c) Flex flue to terminal connection



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