



Part No. DOC32 REV04 October 2008

## SUPPLEMENTARY INSTALLATION INSTRUCTIONS

# High Level Balanced Flue Kit All Internal Grant Boilers

**THIS SUPPLEMENT SHOULD BE READ IN  
CONJUNCTION WITH THE INSTALLATION MANUAL  
SUPPLIED WITH THE BOILER**

### GENERAL

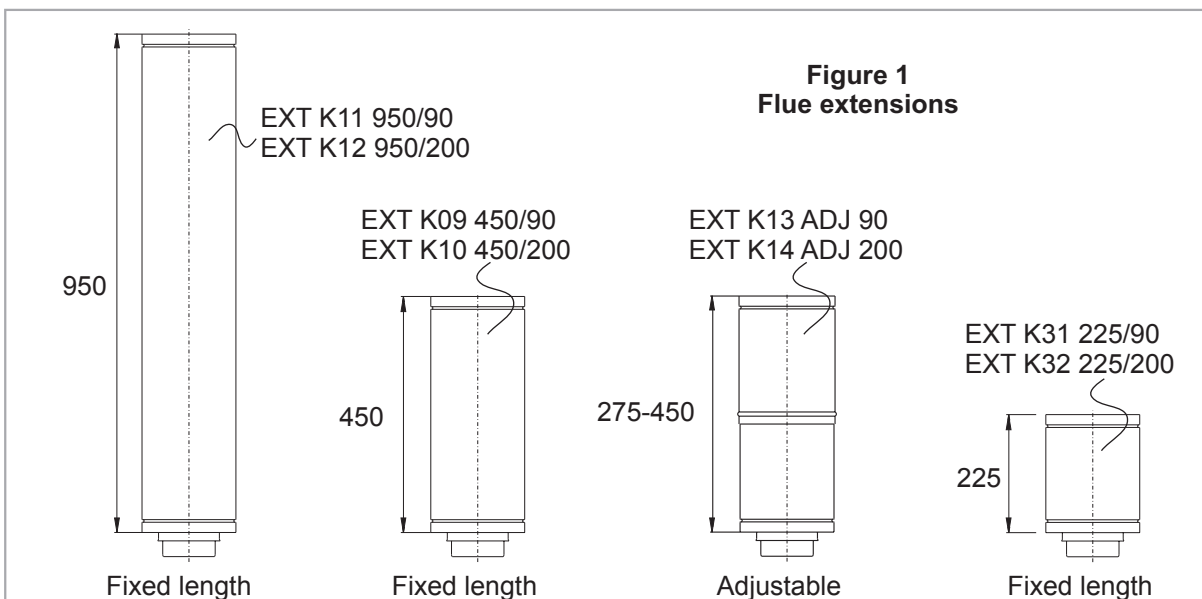
The High level Balanced flue kit is supplied in 5 sections. For the purpose of clarity in these instructions the sections have been designated (A),(B),(C),(D),(E) and (F). The flue pipe seals are factory fitted and must be lubricated with the lubricant supplied.

The standard flue kit adjusts vertically from the top of the boiler and horizontally from the 90° bend to the end of the terminal.

The length of the kit may be increased using extensions on the vertical and/or horizontal up to a total maximum length of 10 metres\*. Four extensions are available from Grant UK (see Figure 1 below).

**NOTE: The overall flue length assembled should not exceed 10 metres\* from the top of the boiler to the end of the terminal. Outer diameter of flue: HLK01 - 150mm, HLK02 - 180mm. FLUE SECTIONS CANNOT BE CUT.**

\*Applies to condensing boilers only.



# FITTING INSTRUCTIONS

**Two types of locking band are supplied with the kit. One for sections that butt together and one for adjustable sections. The locking bands for the adjustable sections are labelled for easy identification.**

For short flue heights section (C) and (D) may be omitted and the 90° bend fitted directly to section (B). The height of the flue kit may be increased using extensions. The charts (see page 3) may be used as a guide when ordering extra extensions.

Terminal section (F) slides telescopically over 90° bend section (E), see Figures 3 and 4.

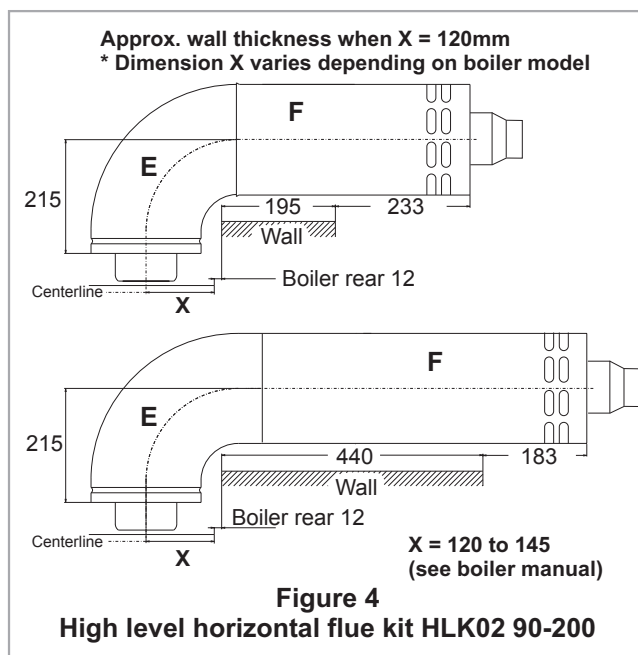
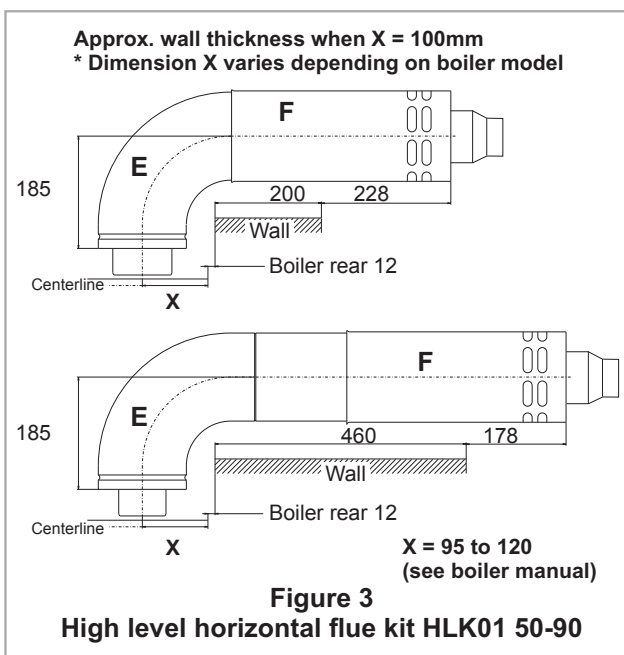
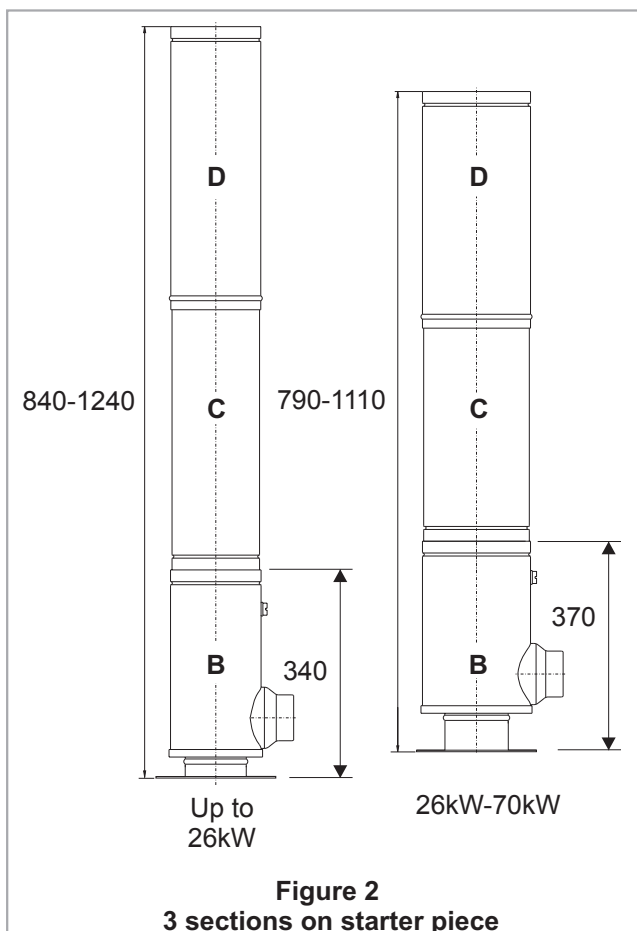
Extensions may be added between the 90° bend (E) and the terminal section (F).

**Note: An adjustable extension cannot be used to connect directly to the terminal section (F).**

The distance of the boiler flue outlet centreline from the inner wall varies from model to model.

For boiler flue outlet centre line dimension see boiler installation manual.

All dimensions given are  $\pm 5\text{mm}$



# FITTING INSTRUCTIONS

The following charts can be used as a guide when ordering extensions to increase the horizontal length.

HIGH LEVEL BALANCED FLUE - HORIZONTAL LENGTH														
Dimensions show the horizontal length measured from the centre line of the boiler flue outlet to the face of the outside wall with the boiler against the internal wall.				<b>EXTENSIONS REQUIRED</b>										
BOILER MODEL	BOILER OUTPUT	LENGTH	STANDARD KIT		225		450		450+225		950		950 + 225	
			Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side
ALL	26kW	Min	300	200(N/A)	525	425(340)	750	650(565)	975	875(790)	1250	1150(1065)	1475	1375(1290)
		Max	550	450(365)	775	675(590)	1000	900(815)	1225	1125(1040)	1500	1400(1315)	1725	1625(1540)
		SEE NOTE 3												
MODELS	26-70kW	Min	315	215(150)	540	440(375)	765	665(600)	990	890(825)	1265	1165(1100)	1490	1390(1325)
		Max	550	450(385)	775	675(610)	1000	900(835)	1225	1125(1060)	1500	1375(1310)	1725	1625(1560)
		SEE NOTES 1 & 2												

HIGH LEVEL BALANCED FLUE - HORIZONTAL LENGTH														
Dimensions show the horizontal length measured from the centre line of the boiler flue outlet to the face of the outside wall with the boiler against the internal wall.				<b>EXTENSIONS REQUIRED</b>										
BOILER MODEL	BOILER OUTPUT	LENGTH	950 + 450		950 + 450 + 225		950 + 950		950 + 950 + 225		950 + 950 + 450		950 + 950 + 450 + 225	
			Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side	Rear	Side
ALL	Up to 26kW	Min	1700	1600(1515)	1925	1825(1740)	2200	2100(2015)	2425	2325(2240)	2650	2550(2465)	2875	2775(2690)
		Max	1950	1850(1765)	2175	2075(1990)	2450	2350(2265)	2675	2575(2490)	2900	2800(2715)	3125	3025(2940)
		SEE NOTE 3												
MODELS	26-70kW	Min	1715	1615(1550)	1940	1840(1775)	2215	2115(1950)	2440	2340(2275)	2665	2565(2500)	2890	2790(2725)
		Max	1950	1850(1785)	2175	2075(2010)	2450	2350(2285)	2675	2575(2510)	2900	2800(2735)	3125	3125(3060)
		SEE NOTES 1 & 2												

### FOR HORIZONTAL LENGTHS

**NOTE 1:** For Vortex 46/58 & 58/70 models subtract 50mm from overall length (for rear exit flues only)

**NOTE 2:** Vortex 46/58 & 58/70 dimensions in brackets.

**NOTE 3:** Combi 21, 26 and 36 dimensions in brackets.

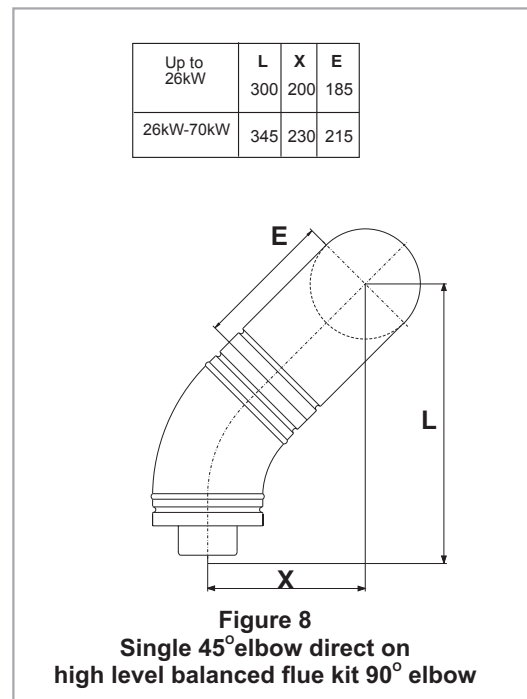
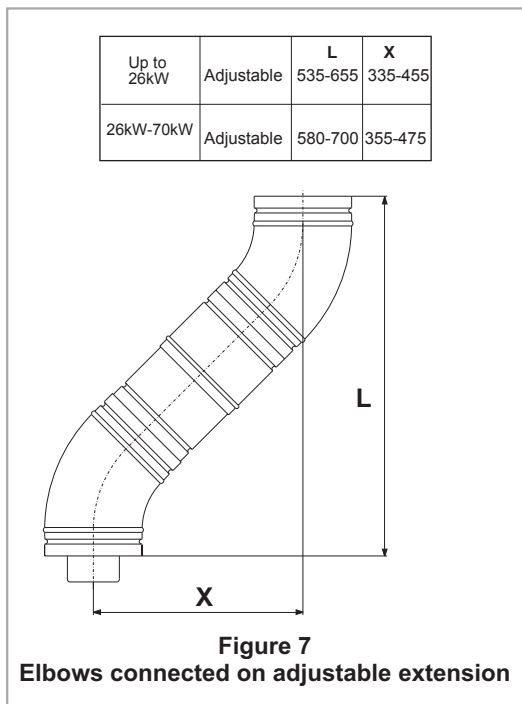
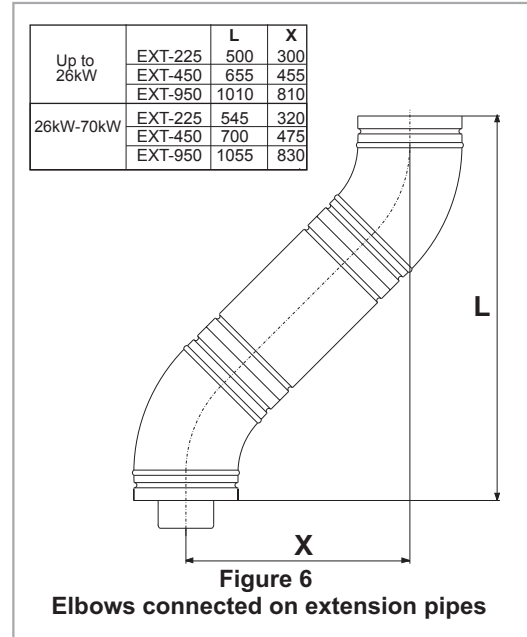
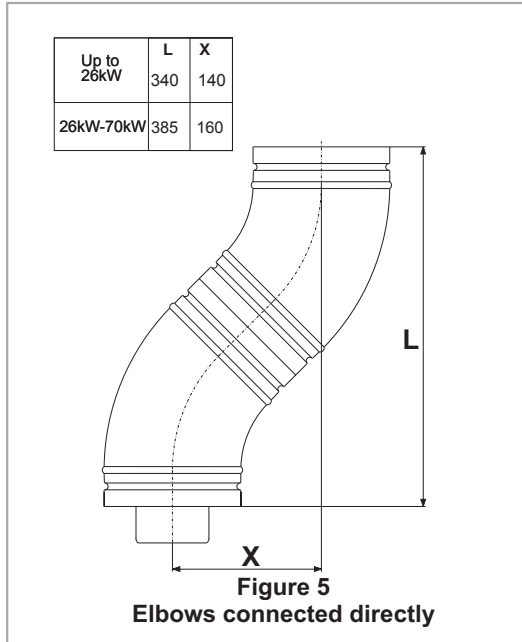
The following chart can be used as a guide when ordering extensions to increase the vertical height.

HIGH LEVEL BALANCED FLUE - VERTICAL HEIGHT														
Dimensions show the vertical height of the flue measured from the top of the boiler water jacket flue outlet to the centre line of the hole through the wall.				<b>EXTENSIONS REQUIRED</b>										
BOILER MODEL	BOILER OUTPUT	HEIGHT FROM TOP OF BOILER	STANDARD KIT	225	450	450 + 225	950	950 + 225	950 + 450	950 + 450 + 225	950 + 950	950 + 950 + 225	950 + 950 + 450	950 + 950 + 450 + 225
				ALL	Up to 26kW	Min	1025	1250	1475	1700	1975	2200	2425	2650
Max	1425	1650	1875			2100	2375	2600	2825	3050	3325	3550	3775	-
SEE NOTE 3														
MODELS	26-70kW	Min	1005	1230	1455	1680	1955	2180	2405	2630	2905	3130	3355	3580
		Max	1325	1550	1775	2000	2275	2500	2725	2950	3225	3450	3675	-
		SEE NOTE 3												

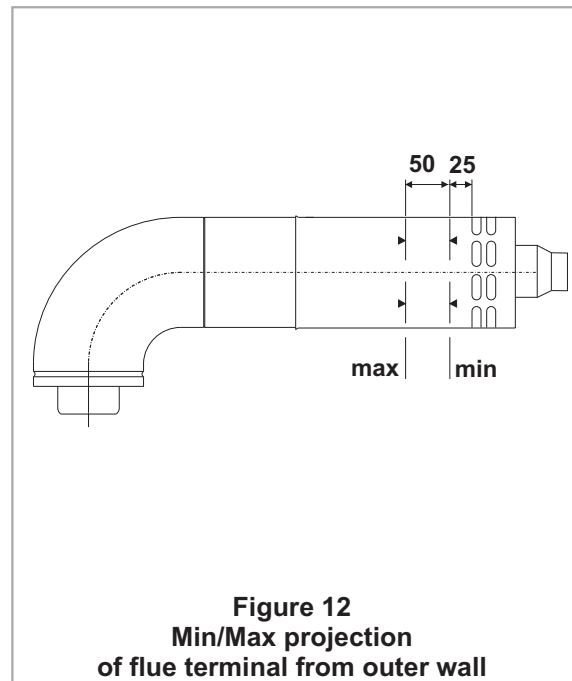
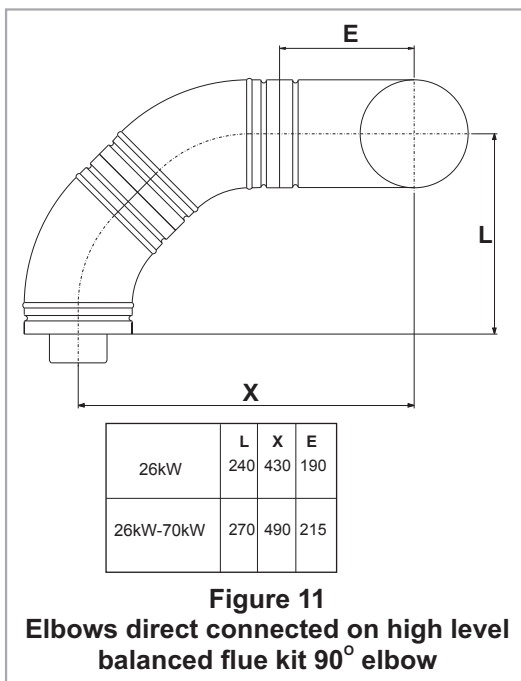
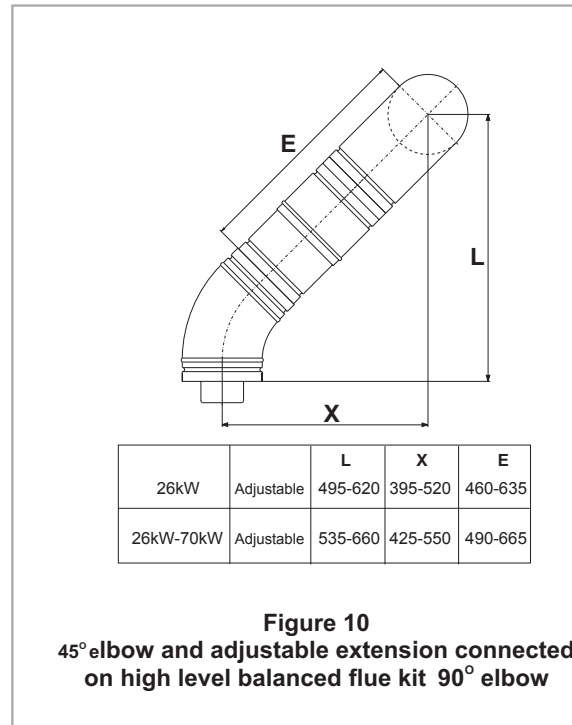
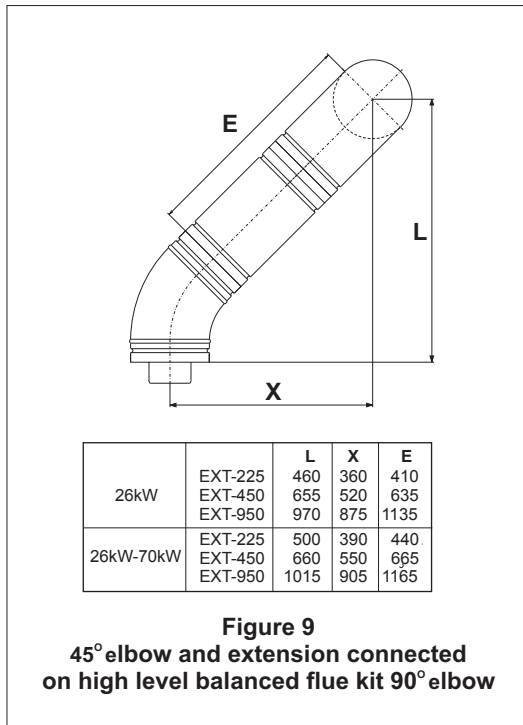
# FITTING INSTRUCTIONS

45° elbows are also available. Each elbow has an equivalent length of 1 metre, which must be deducted from the maximum length of 10 metres. Only six elbows should be used per system. The elbows may be connected together or used individually to connect to extra extensions to form offsets as shown.

The 90° elbow may also be connected to a 45° elbow (and extension) as shown.



# FITTING INSTRUCTIONS



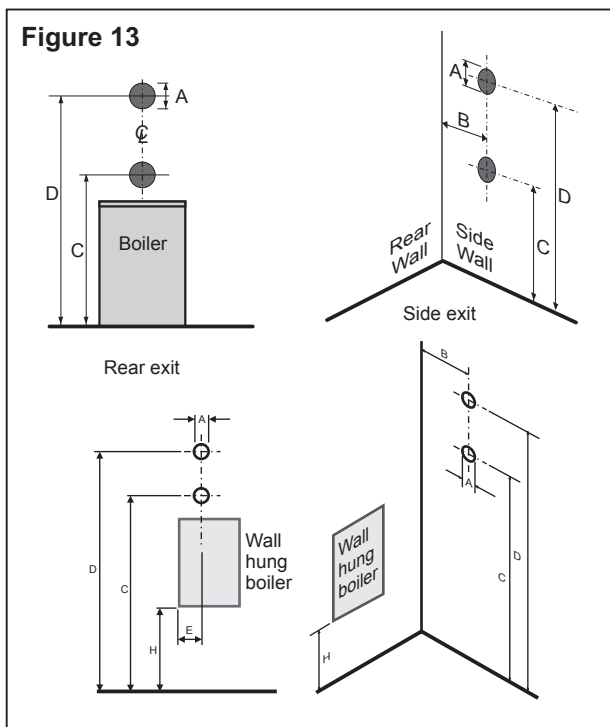
# FITTING INSTRUCTIONS

## FITTING THE FLUE (Standard kit)

Unpack the flue kit.

Remove the boiler top panel or panels, depending on model being installed.

Decide upon the position of the boiler and determine exactly where the flue will pass through the wall.



Model	Dimensions (mm)					
	A Dia	B	C min	D min	D max	E
Vortex Pro 15/21 & 15/26	175	115	1215	1715	2115	N/A
Vortex Eco 15/21 & 21/26	175	115	1215	1715	2115	N/A
Vortex Pro 26/36 & 36/46	200	115	1280	1700	2020	N/A
Vortex Eco 26/35	200	115	1280	1700	2020	N/A
Vortex Pro 46/48 & 58/70	200	112	1595	2015	2335	N/A
Vortex Pro Combi 21e & 26e	175	115	1215	1715	2115	N/A
Vortex Pro Combi 36e	200	105	1280	1700	2020	N/A
Vortex Eco Wall Hung 12/16 & 16/21	175	112	H+1207	H+1707	H+2107	220

H = height (mm) from the floor to underside of boiler casing

Check that there are no obstructions in the way and that the terminal position complies with the dimensions given in figure 14.

**HLK01 50/90**, cut clearance holes of 175mm diameter through the wall.

**HLK02 90/200**, cut clearance holes of 200mm diameter through the wall.

**Note:** When the boiler is installed with the back panel against the wall, the throat of the bend could enter the inner wall opening. Cut away the underside of the hole in the inner wall to accept the throat of the bend.

Take the 90° bend (E) and fit the black seal to the swage in the outer flue pipe. Ensure the factory fitted inner seal is in position. Lubricate the inner and outer seal using the lubricant supplied.

**Note:** Two black seals are supplied with the kit. The thicker black seal should be used on a standard kit. If an extension is fitted between the elbow and the terminal the thinner black seal should be used between the extension and the terminal. Discard the thicker black seal.

Measure the distance from the boiler flue outlet centre line and the outer surface of the outer wall.

Take the terminal section (F) and 90° bend assembly (E) and push fit until the required length is achieved.

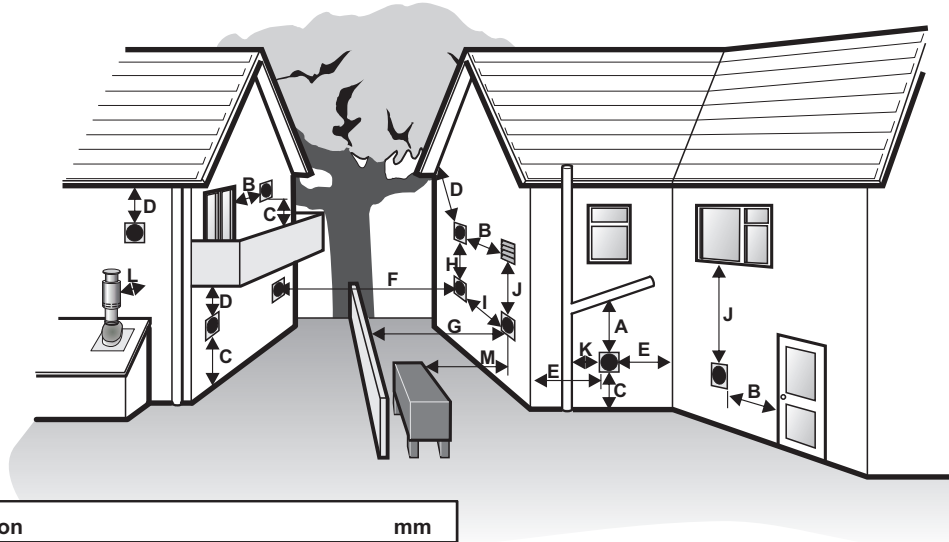
**Note:** The min/max marks on the terminal. It is easier to push these sections together using a twisting motion. Ensure that lubricant is applied to both sides of the black lipped seal. Do not dry fit flue parts with seals fitted as removal will prove very difficult. When using additional extensions on the horizontal section use the locking band supplied with the extension to connect to the horizontal part of the flue elbow assembly.

Place the inner wall dress plate over the end of the terminal assembly and slide it down to the throat of the bend.

From inside the building, place the terminal assembly (E and F) through the wall. Ensure that the flue terminal protrudes the correct distance from the surface of the outer wall. The air inlet slots in the terminal must not be obstructed. The terminal is marked to show the minimum and maximum projection allowable (see figure 12).

**Grant Vortex Condensing Models only:** Clamp the boiler connector (A) to the neoprene gasket fitted to the boiler flue outlet using the stainless steel bolt supplied with the boiler.

## FITTING INSTRUCTIONS



Ref	Position	mm
A	Below a gutter or sanitary pipework	**600
B	Horizontal from opening, airbrick or window	600
C	Above ground or balcony level	600
D	Below eaves or balcony	**600
E	From internal or external corner	600
F	From a terminal facing a terminal	1200
G	From a surface facing a terminal	600
H	Vertical from terminals on the same wall	1500
I	Horizontal from terminals on the same wall	750
J	Below an opening, airbrick, window etc.	600
K	From vertical sanitary pipework	*300
L	Vertical flue from wall	600
M	From oil tank	1800

*Note* \* When terminal is within 1 metre of any plastic material this should be protected from the effects of combustion products of the flue

*Note* \*\* 75mm with protection

**Figure 14**  
**Clearances for balanced flues**

Locate the boiler connector (A) centrally into the gasket on the top of the boiler. Tighten the bolt to fix in place to the flue outlet. (see figure 16).

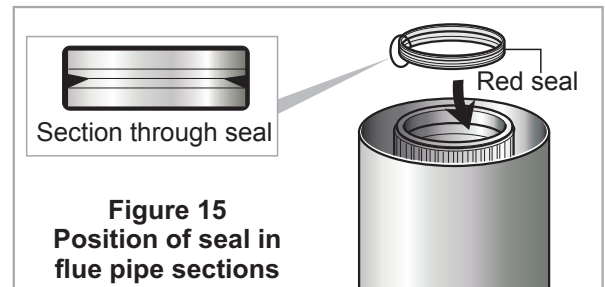
Ensure the red seal in the swage in the boiler connector is fitted. (see Figure 17).

Take the starter section (B) of the vertical flue pipe and check the factory fitted seal is in position as shown. (see Figure 15) in the swaged recess in the inner flue pipe. Lubricate lip of the red seal in boiler connector.

Push fit the starter section (B) of flue pipe into the boiler connector. Ensure that the test point screw is orientated for easy access for flue gas analysis and combustion testing.

Remove the test point screw.

Connect the flexible air inlet tube to the air inlet spigot on the first section and secure with the hose clamp supplied.



**Figure 15**  
**Position of seal in flue pipe sections**

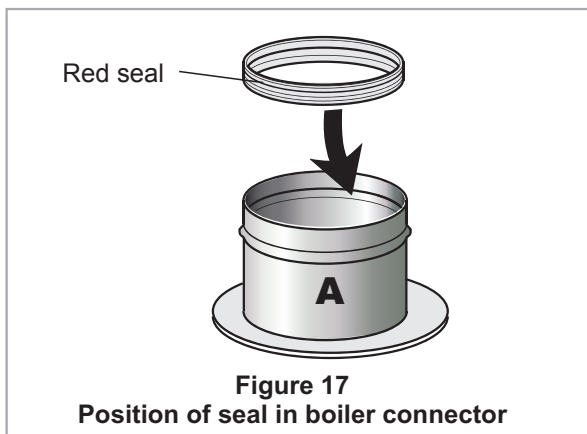
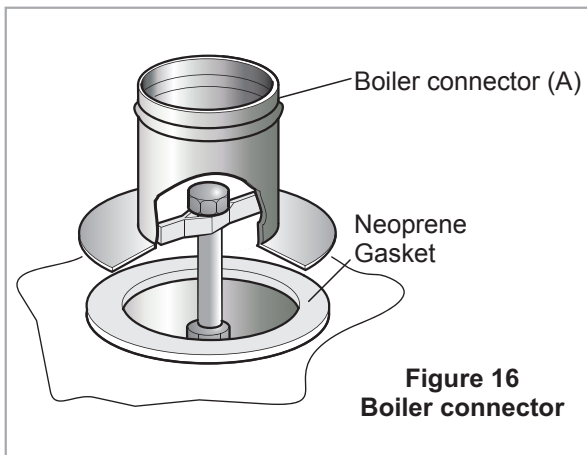
Refit the boiler casing top panel or panels.

Ensure the red seal is fitted into the swage in the inner pipe of the starter section (B). Lubricate the seal. Take the lower section of the vertical flue pipe (C) and push fit into starter section (B) using a twisting motion.

Fit a fixed section locking band to join the outer pipes.

Ensure the red seal is fitted into the swage in the inner pipe of the lower section (C). Lubricate the seal. Take the upper section (D) of the vertical flue pipe and push fit into lower section (C), using a twisting motion, ensuring the outer pipes overlap by a minimum of 35mm.

## FITTING INSTRUCTIONS



Place both an adjustable and fixed locking bands over the fitted sections of the flue and rest on the top of the boiler.

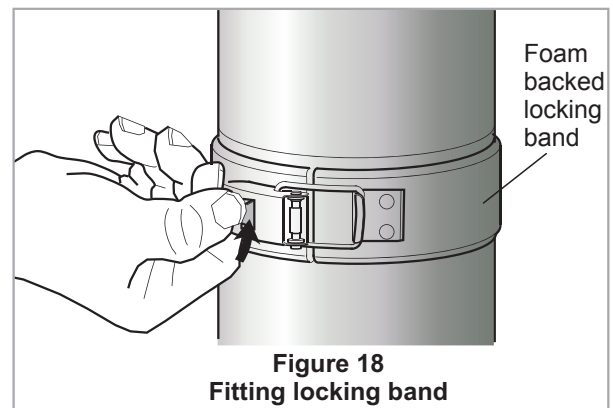
Holding section(C) of flue in position, extend the vertical flue pipe (D) to the required length using a twisting motion. Locate the top end of the pipe into the 90° elbow ensuring that the inner pipe engages the red seal in the top of the vertical section(C).

Take a fixed section flue pipe locking band and clamp the flue assembly together.

**Note the flue elbow locking band locates into the recess on the outer pipe and elbow assembly.**

Drill 3 x 2.5mm dia. holes through the outer flue pipes of the adjustable length and fix into position using the 3 self tapping screws supplied.

Fit the clamping band marked with a label for telescopic sections to the telescopic joint on the outer pipe (see figure18). Ensure that an airtight seal is made.



Ensure that the terminal projects through the wall as shown (see figure 12). Fit the inner and outer wall dress plate using a suitable mastic sealant.



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