



Part No. DOC32 REV05 March 2025

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

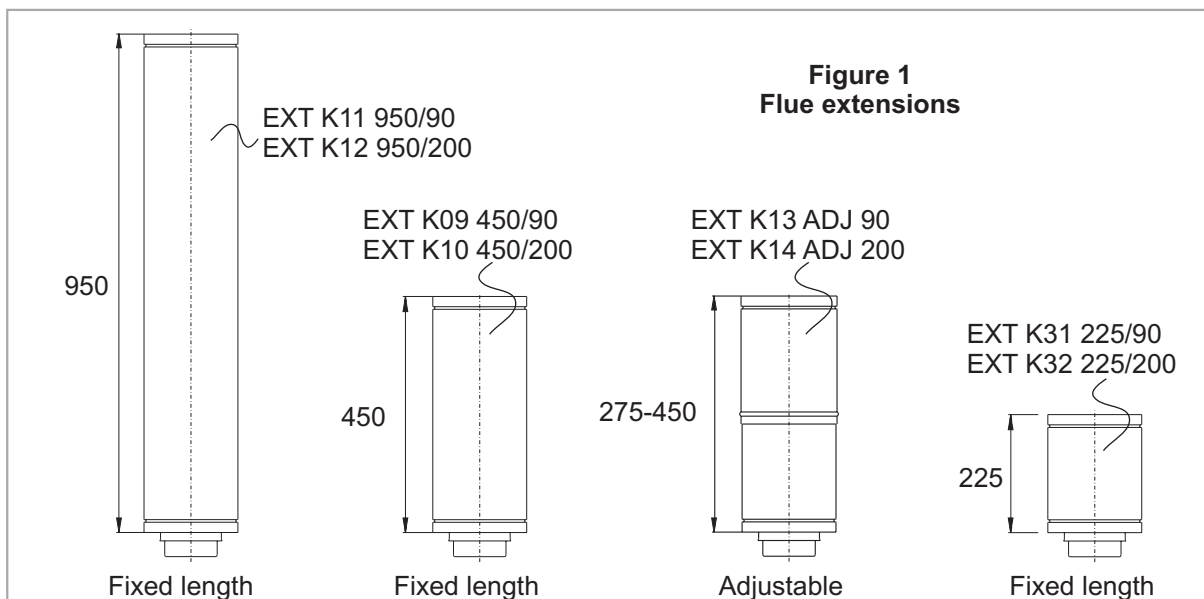
The High level Balanced flue kit is supplied in 5 sections. For the purpose of clarity in these instructions the sections have been designated (A),(B),(C),(D),(E) and (F). The flue pipe seals are factory fitted and must be lubricated with the lubricant supplied.

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.

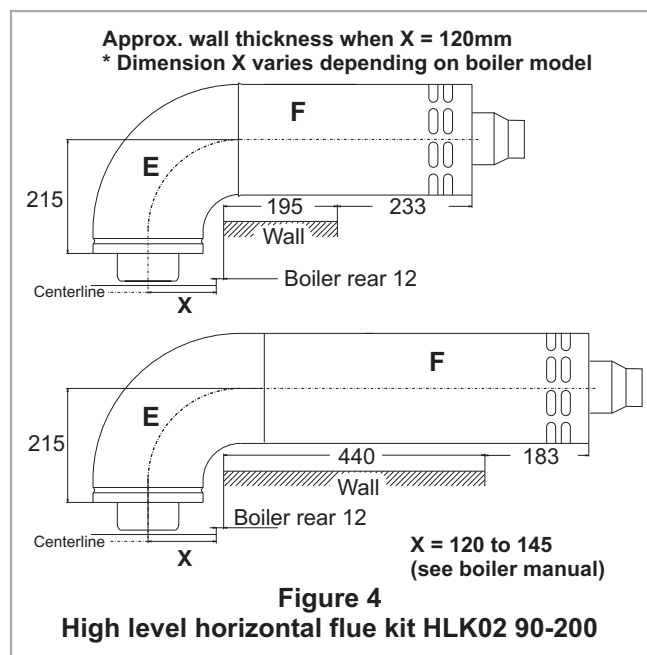
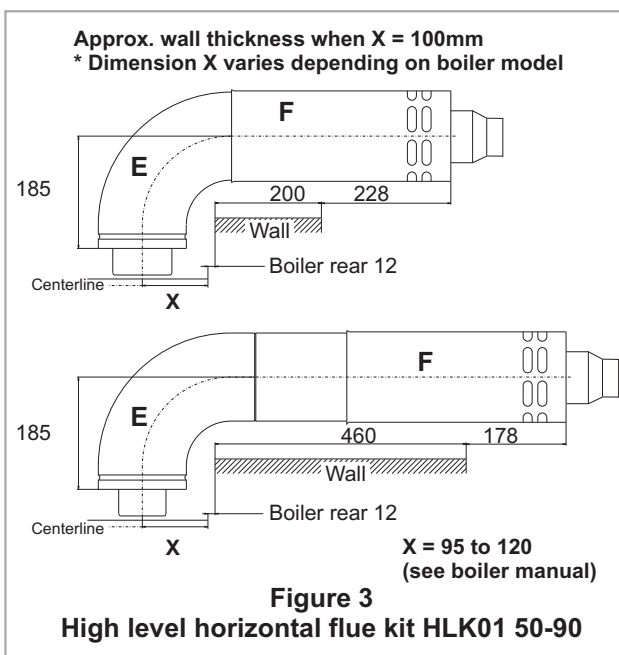
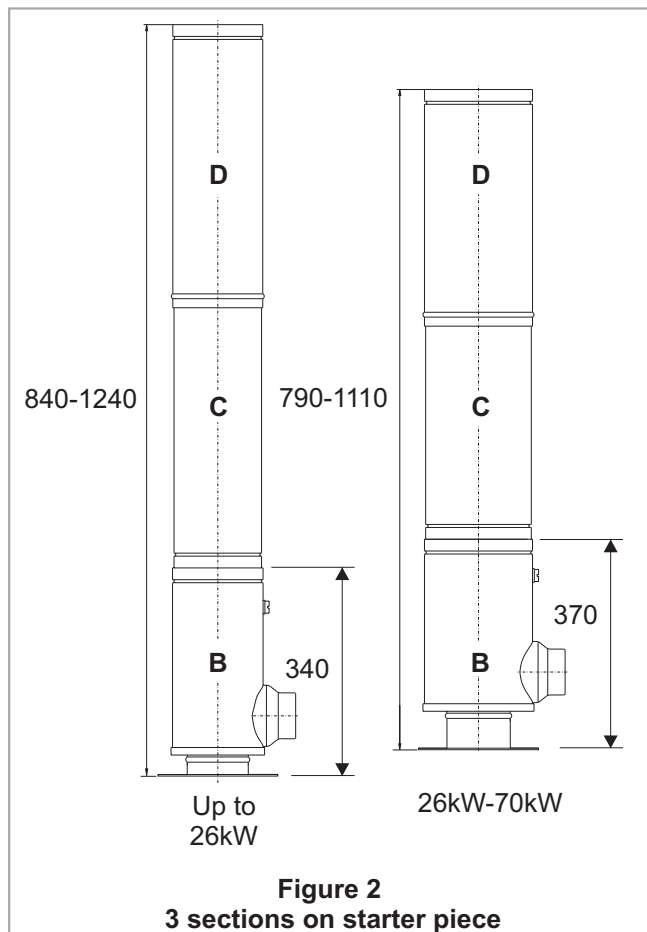
Extensions may be added between the 90° bend (E) and the terminal section (F).

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. | | | | EXTENSIONS REQUIRED | | | | | | | | | | |
| 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 MODELS | 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 | | | | | | | | | | | | |
| | 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. | | | | EXTENSIONS REQUIRED | | | | | | | | | | |
| 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 MODELS | 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 | | | | | | | | | | | | |
| | 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

NOTE1: For Vortex 46/70 models subtract 50mm from overall length (for rear exit flues only)

NOTE 2: Vortex 46/70 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. | | | | EXTENSIONS REQUIRED | | | | | | | | | | |
| 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 MODELS | Up to 26kW | Min | 1025 | 1250 | 1475 | 1700 | 1975 | 2200 | 2425 | 2650 | 2925 | 3150 | 3375 | 3600 |
| | | Max | 1425 | 1650 | 1875 | 2100 | 2375 | 2600 | 2825 | 3050 | 3325 | 3550 | 3775 | - |
| | | SEE NOTE 3 | | | | | | | | | | | | |
| | 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 NOTES 1 & 2 | | | | | | | | | | | | |

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.

| | | |
|------------|----------|----------|
| Up to 26kW | L 340 | X 140 |
| 26kW-70kW | 385 | 160 |

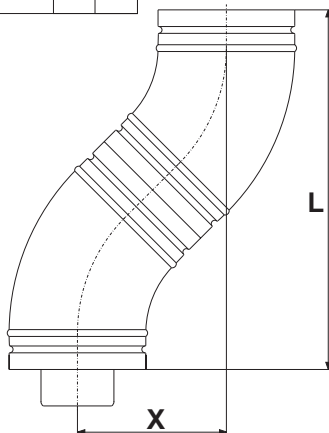


Figure 5
Elbows connected directly

| | | | |
|------------|---------|----------|----------|
| Up to 26kW | EXT-225 | L 500 | X 300 |
| | EXT-450 | 655 | 455 |
| | EXT-950 | 1010 | 810 |
| 26kW-70kW | EXT-225 | 545 | 320 |
| | EXT-450 | 700 | 475 |
| | EXT-950 | 1055 | 830 |

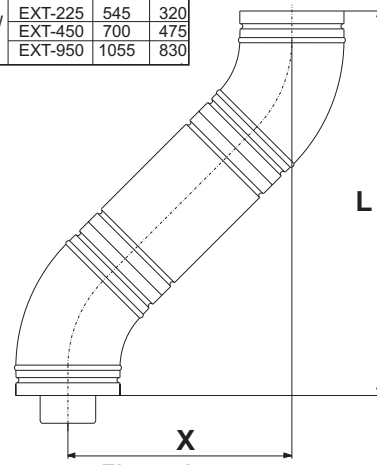


Figure 6
Elbows connected on extension pipes

| | | | |
|------------|------------|--------------|--------------|
| Up to 26kW | Adjustable | L 535-655 | X 335-455 |
| 26kW-70kW | Adjustable | 580-700 | 355-475 |

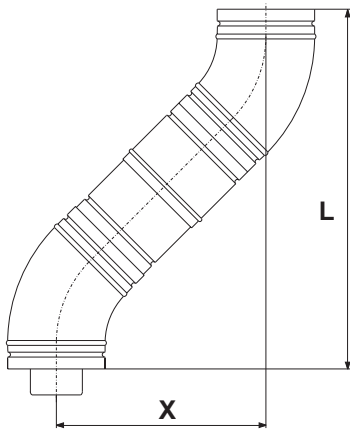


Figure 7
Elbows connected on adjustable extension

| | | | |
|------------|----------|----------|----------|
| Up to 26kW | L 300 | X 200 | E 185 |
| 26kW-70kW | 345 | 230 | 215 |

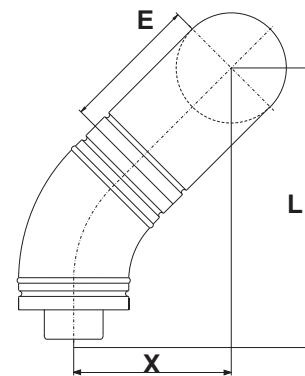
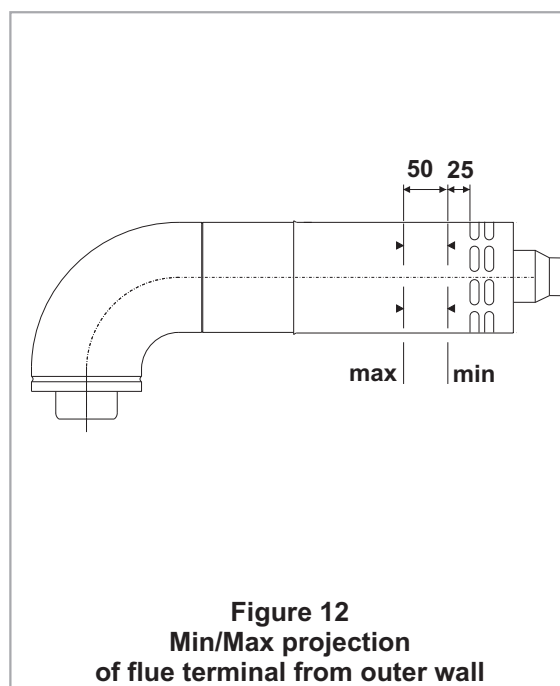
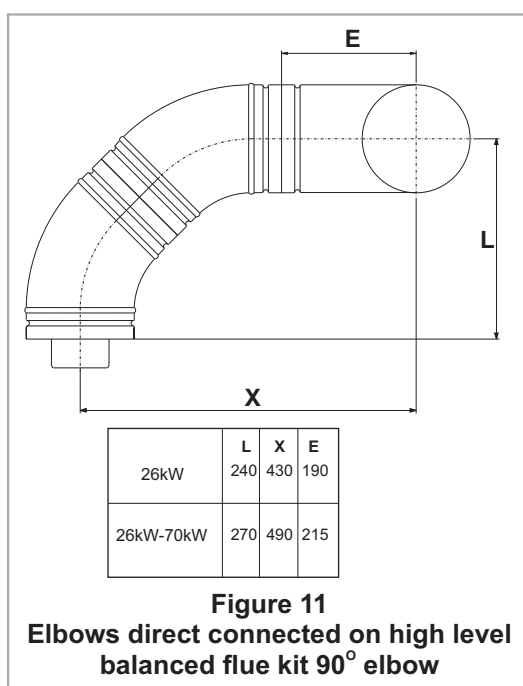
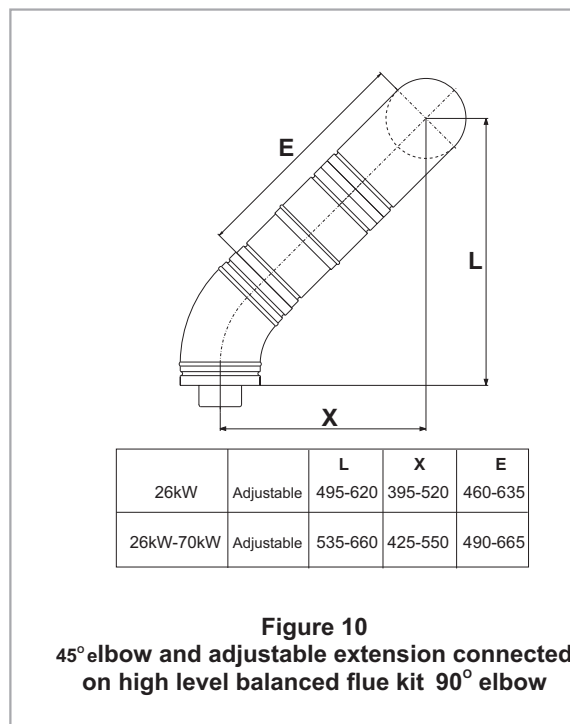
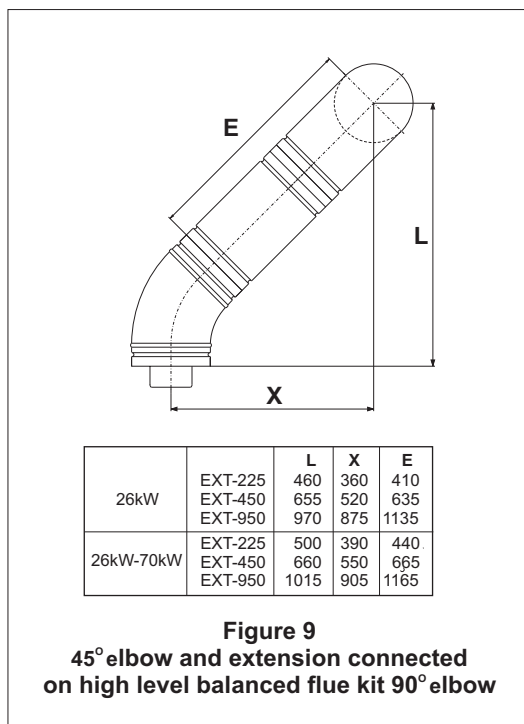


Figure 8
**Single 45° elbow direct on
high level balanced flue kit 90° elbow**

FITTING INSTRUCTIONS



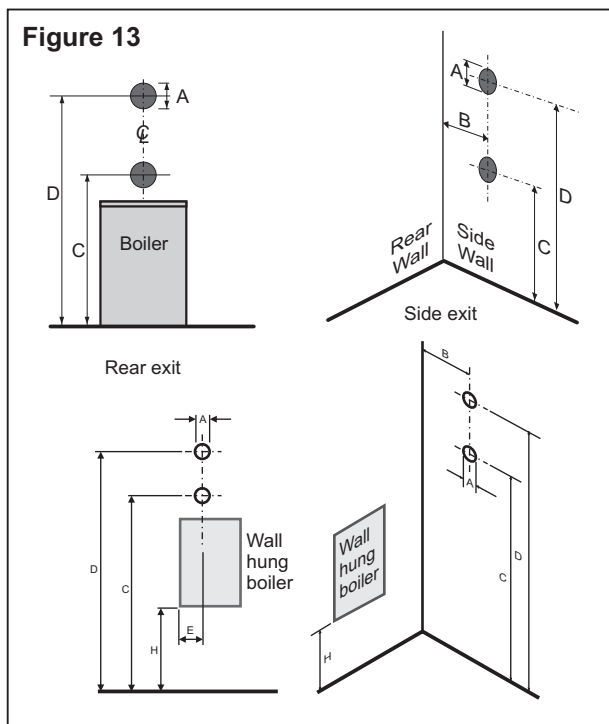
FITTING INSTRUCTIONS

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 15/26 | 175 | 115 | 1215 | 1715 | 2115 | N/A |
| Vortex Eco 15/21 & 21/26 | 175 | 115 | 1215 | 1715 | 2115 | N/A |
| Vortex Pro 26/46 | 200 | 115 | 1280 | 1700 | 2020 | N/A |
| Vortex Eco 26/35 | 200 | 115 | 1280 | 1700 | 2020 | N/A |
| Vortex Pro 46/70 | 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 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

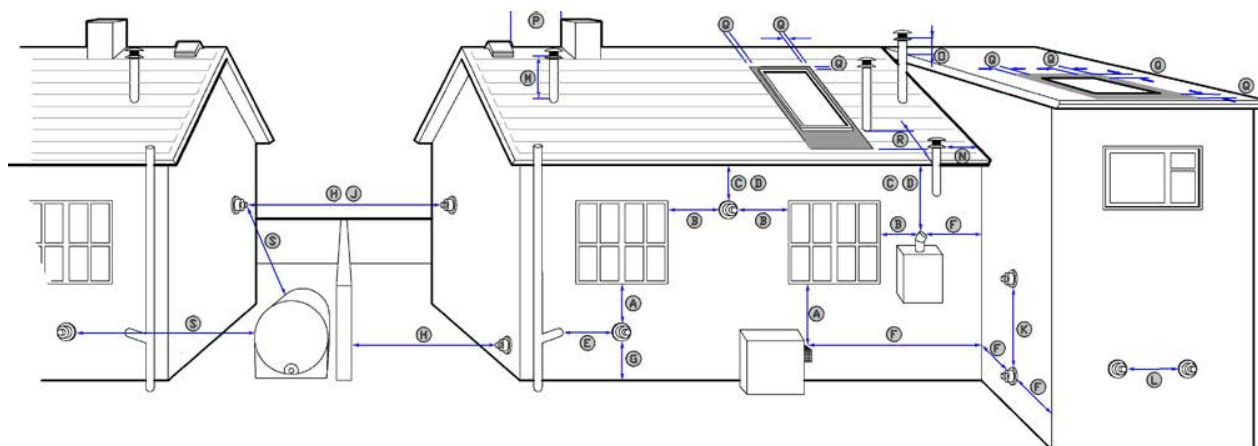


Figure 14 Clearances for balanced flues

Flue clearances

| Ref | Location of outlet | Minimum distance (mm) | |
|-----|---|-----------------------|------------|
| | | Pressure jet | Condensing |
| A | Directly below an opening, air brick opening, opening window, etc. | 600 | 1,000 ** |
| B | Horizontally to an opening, air brick opening, opening window, etc. | 600 | 1,000 ** |
| C | Below a gutter, eaves or balcony with protection | 75 * | 1,000 ** |
| D | Below a gutter, eaves or balcony without protection | 600 | 1,000 ** |
| E | From vertical sanitary pipework | 300 | |
| F | From an internal or external corner | 300 | |
| G | Above ground or balcony level | 300 | |
| H | From a surface or boundary facing the terminal | 600 | 2,500 ** |
| J | From a terminal facing the terminal | 1,200 | |
| K | Vertically from a terminal on the same wall | 1,500 | |
| L | Horizontally from a terminal on the same wall | 750 | |
| M | Above the highest point of an intersection with the roof | 600 | |
| N | From a vertical structure to the side of the terminal | 750 | |
| O | Above a vertical structure less than 750 mm from the side of the terminal | 600 | |
| P | From a ridge terminal to a vertical structure on the roof | 1,500 | |
| Q | Above or to the side of any opening on a flat or sloping roof | 300 | |
| R | Below any opening on a sloping roof | 1,000 | |
| S | From oil storage tank (Class 1) | 1,800 *** | |

* A heat shield at least 750 mm wide must be fitted to provide protection of combustible material.

** Clearances required by BS 5410-1:2019 to alleviate the effect of plume nuisance. If a risk assessment shows that there will be no impact from pluming, then the 'pressure jet' figure could apply - seek confirmation from Local Authority Building Control.

*** Seek guidance from OFTEC Book 3 (Oil Storage and Supply).

NOTES

- Appliances burning class D fuel have additional restrictions. Refer to BS 5410-1:2019.
- Vertical structure in N, O and P includes tank or lift rooms, parapets, dormers, etc.
- Terminating positions A to L are only permitted for appliances that have been approved for low level flue discharge when tested in accordance with BS EN 303-1, OFS A100 or OFS A101.
- Terminating positions should be at least 1.8 metres from an oil storage tank (Class 1) unless a wall with at least 30 minutes fire resistance and extending 300 mm higher and wider than the tank is provided between the tank and the terminating position.
- Where a flue is terminated less than 600 mm away from a projection above it and the projection consists of plastics or has a combustible or painted surface, then a heat shield of at least 750 mm wide should be fitted to protect these surfaces.
- If the lowest part of the terminal is less than 2 metres above the ground, balcony, flat roof or other place to which any person has access, the terminal should be protected by a guard.
- Notwithstanding the dimensions given above, a terminal should not be sited closer than 300 mm to combustible material. In the case of a thatched roof, double this separation distance should be provided. It is also advisable to treat the thatch with a fire retardant material and close wire in the immediate vicinity of the flue.
- A flue or chimney should not pass through the roof within the shaded area delineated by dimensions Q and R.
- Where protection is provided for plastics components, such as guttering, this should be to the standard specified by the manufacturer of the plastics components.
- Terminals must not be sited under car ports.
- Terminals at low levels (terminals under 2.1 metres) have more restrictive recommendations and should not be positioned near public footways, frequently used access routes, car parking spaces less than 2.5 metres from the terminal or patio's (hard surface area).

Further guidance can be obtained from BS 5410-1:2019, OFTEC Book 4 (Installation) and Approved Document J.

Grant UK flue products are fully compliant with the CE (Communauté Européenne/European Community) standards having undergone rigorous product testing.

FITTING INSTRUCTIONS

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).

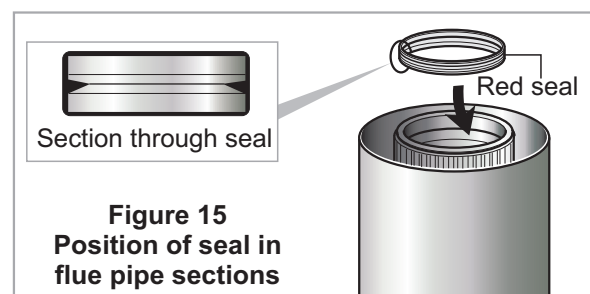
Ensure the red seal in the swage in the boiler connector is fitted. (see Figure 17).

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.



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

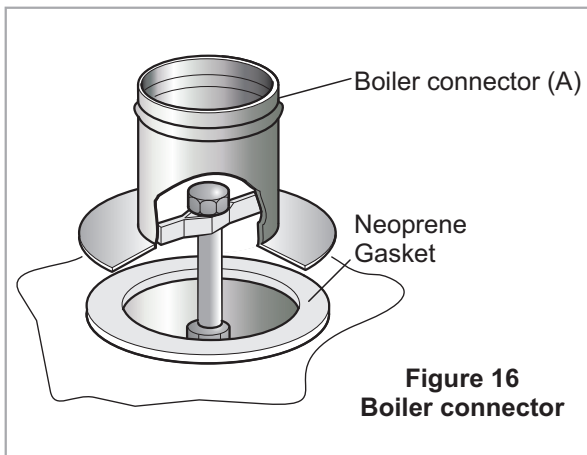


Figure 16
Boiler connector

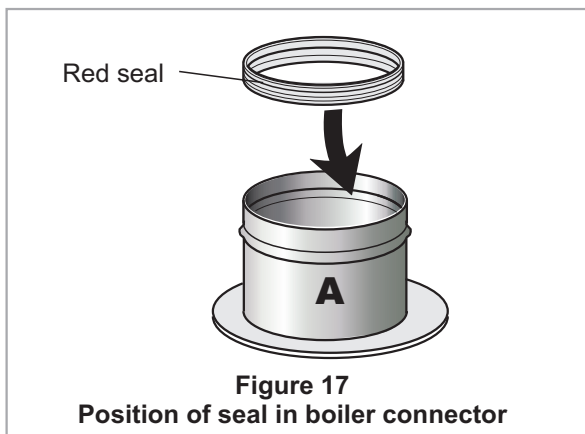


Figure 17
Position of seal in boiler connector

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.

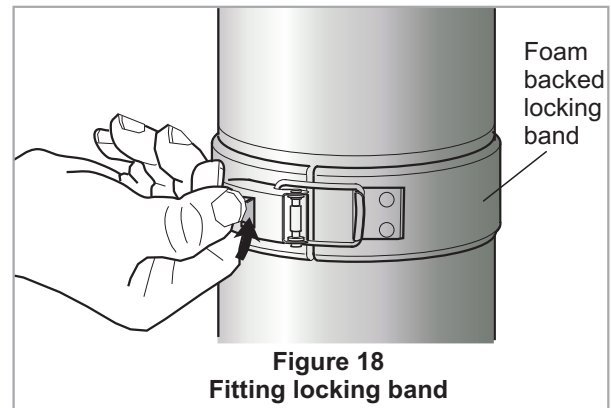


Figure 18
Fitting locking band

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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