



Balanced Flue Kit Range

FOR EUROSTAR PREMIER & CONTRACTOR HE
CONDENSING OIL-FIRED CENTRAL HEATING BOILERS

INSTALLATION INSTRUCTIONS

Please read these instructions carefully before installation
and use of the appliance.

To be retained by the householder

HEALTH AND SAFETY INFORMATION

INFORMATION FOR THE INSTALLER AND SERVICE ENGINEERS

Under the Consumer Protection Act 1987 and the Health and Safety at Work Act 1974, it is a requirement to provide information on substances hazardous to health (COSHH Regulations 1998).

Trianco takes every reasonable care to ensure that these products are designed and constructed to meet these general safety requirements, provided they are properly installed and used.

To fulfil this requirement, products are comprehensively tested and examined before despatch.

When working on the appliance, it is the responsibility of the user/engineer to ensure that any necessary personal protective clothing or equipment is worn appropriate to parts which could be considered hazardous or harmful.

This appliance may contain some of the items below:

Insulation and Seals

Glass rope, mineral wool, insulation pads, ceramic fibre, glass insulation.

May be harmful if inhaled. May be irritating to the skin, eyes, nose and throat. When handling, avoid inhalation and contact with the eyes. Use disposable gloves, face masks and eye protection.

After handling, wash hands and other exposed parts. When disposing, reduce dust with water spray and ensure all parts are securely wrapped.

Glues, Sealants and Paints

hammer

Glues, sealants and paints are used in this appliance and present no known hazards when used in the manner for which they are intended.

Kerosene & Gas Oil Fuels (Mineral Oils)

Avoid as far as is possible any skin contact with mineral oils or with materials contaminated with mineral oils. The effects of mineral oils on the skin may vary according to exposure:

- 1) May remove the protective grease normally present on the surface of the skin, rendering it dry, liable to crack and more prone to damage caused by cuts and abrasions.
- 2) May result in skin rashes. Seek immediate medical attention for any rash, wart or sore developing on any part of the body, especially the scrotum.

Never breathe any mineral oil vapours. Do not fire the burner in the open (i.e. not properly situated in the boiler) as misfiring may result in unburned oil vapours.

When handling mineral oils, a suitable barrier cream containing lanolin is highly recommended, along with a strict routine of personal cleaning.

Under no circumstances should mineral oils be taken internally.

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BALANCED FLUE SYSTEMS

The Trianco balanced flue system offers much greater flexibility for siting the boiler compared with a conventional chimney. The only requirement is for a suitable outside surface, through which to fit the terminal.

In addition to the siting benefit, the performance of balanced flue boilers is virtually unaffected by high wind conditions as the wind pressures are applied equally to both the air intake and discharge points, thus creating a balanced condition.

Whereas some balanced flue boilers rely on case sealing to achieve a room seal, Trianco boilers have a sealed air duct system which maintains room sealed performance even when the casing is removed for burner commissioning and service.

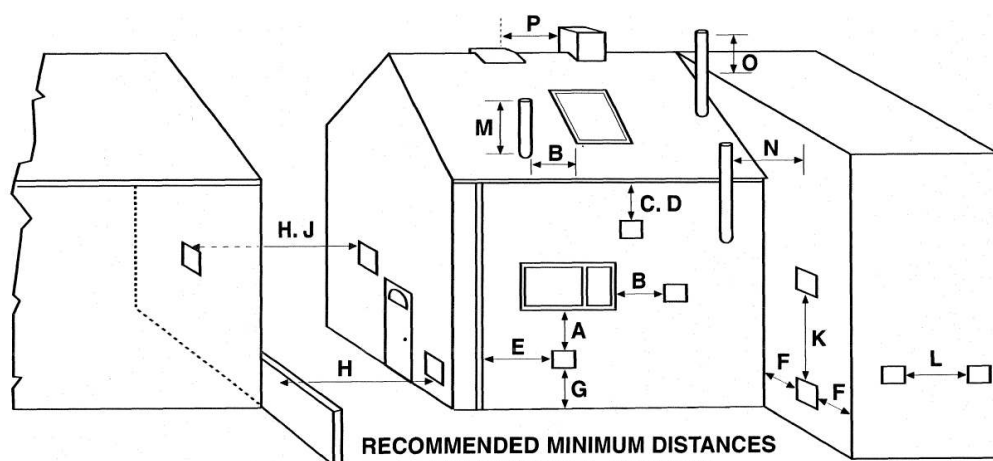
The use of the balanced flue principle also enhances the overall thermal efficiency of the boiler, as the incoming air extracts waste heat from the flue and returns it as pre-heated air to the burner to aid combustion.

Balanced-flue condensing boilers are designed to operate at low noise levels.

INSTALLATION NOTES

1. At certain times during operation, a plume of condensation will be produced from the terminal. When positioning, this should be taken into consideration to ensure a nuisance is not caused to neighbouring properties.
2. The flue terminal should not be positioned where the products of combustion could enter the building (refer to **fig 1** for guidance).
3. Keep the terminal clear of infra-red sensing devices such as those used to control security lighting.
4. Positioning of the terminal below a balcony or carport should be avoided.
5. As the system operates under positive pressure, it is essential that all flue joints are sealed correctly.
6. Only 28. second kerosene class C2 to BS 2869 has been tested for use with this appliance.

Note: Trianco balanced flue kits have been designed and tested exclusively for use with Trianco boilers. As such, compatibility with other makes of boiler cannot be guaranteed.



**RECOMMENDED MINIMUM DISTANCES
FOR TERMINAL POSITION**

Appliance burner type - Pressure Jet		
Minimum distances to terminals in millimetres as measured from top of chimney or the rim of a low level discharge opening		
A	Directly below an opening, air brick, window etc	600
B	Horizontally to an opening, air brick, window etc	600
C	Below a gutter, eaves or balcony with protection	75
D	Below a gutter or balcony without protection	600
E	From vertical sanitary pipework	(*600) 300
F	From an internal or external corner	(*600) 300
G	Above ground or balcony level	(*600) 300
H	From a surface or boundary facing the terminal	600
J	From a terminal facing the terminal	1200
K	Vertically from a terminal on the same wall	1500
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 on the side of the terminal	750
O	Above a vertical structure less than 750mm from the side of the terminal	600
P	From a ridge terminal to a vertical structure on the roof	1500

Note (1) The terminal should be positioned so as to avoid products of combustion entering the building.

Note (2) If the terminal is less than 2 metres above the ground level, balcony or place to which any person has access, the terminal must be protected by a guard.

Note (3) The flue must be positioned so that it does not cause nuisance and permits the dispersal of combustion products.

*Scotland 1990

FIG 1 – TERMINAL POSITIONS

Horizontal Balanced Flue Kits (2334 & 2335)

Before commencing assembly, please make sure that you have correctly identified the placement of each pipe section and that all 'O' ring seals are in position and well-lubricated.

Assembly Method (figs 2 to 3)

1. Having decided the position of the boiler, accurately mark out the position of the terminal and cut a circular hole 130mm in diameter through the wall.
2. Remove the four nuts on top of the boiler and remove the flue socket, leaving the gasket (**item 5, fig 2**) in position.
3. Fit the sealing plate (**4**) over the four studs, and place the terminal gasket (**3**) onto the sealing plate. Position the boiler.
4. Assemble the flue by sliding the terminal section (**2**) into the elbow section (**1**), making sure all 'O'-ring seals (**6**) are in position. Slide the completed assembly through the wall from the inside.
5. Slide the flue mounting plate on the elbow section over the four studs on top of the boiler and secure in position using the nuts previously removed.
6. Adjust the terminal length as required, making sure a minimum distance of 140mm is kept from the end of the terminal from the external face of the wall.
7. Connect the hose from the burner to the socket on the end of the terminal using the jubilee clip provided.
8. Seal around terminal on the inside and outside wall with an appropriate material.

Important Notes:

- (a) To aid assembly, it may be necessary to apply a thin bead of lubricant to all flue joints which incorporate 'O'-ring seals.
- (b) As the flue system operates under positive pressure, all flue joints must be well sealed. All joints which do not incorporate 'O'-ring seals should be sealed with silicone sealant.
- (c) As the boiler produces condensate during normal running, it is important that all seals are made and the correct gaskets used.
- (d) To ensure that any condensate produced in the flue drains away correctly, incline the flue slightly upwards from the boiler.

TERMINAL GUARD

Where the terminal is positioned in a place where there is the possibility of contact being made by persons, of damage to the terminal, or if it is lower than 2 metres from ground level, an approved terminal guard is necessary.

Generally, exhaust 2 metres above ground level will alleviate the requirement for a terminal guard.

A suitable stainless steel terminal guard is available from Trianco (part code **223920**).

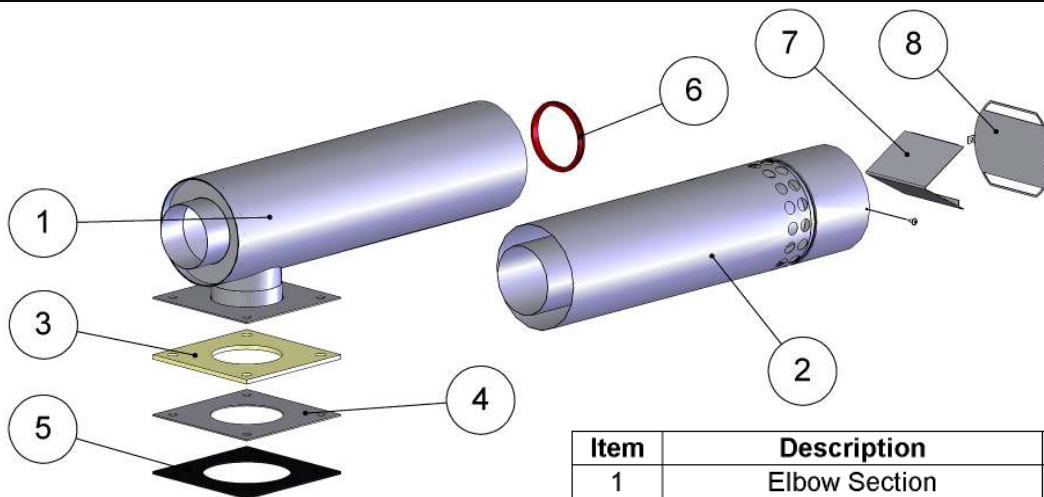


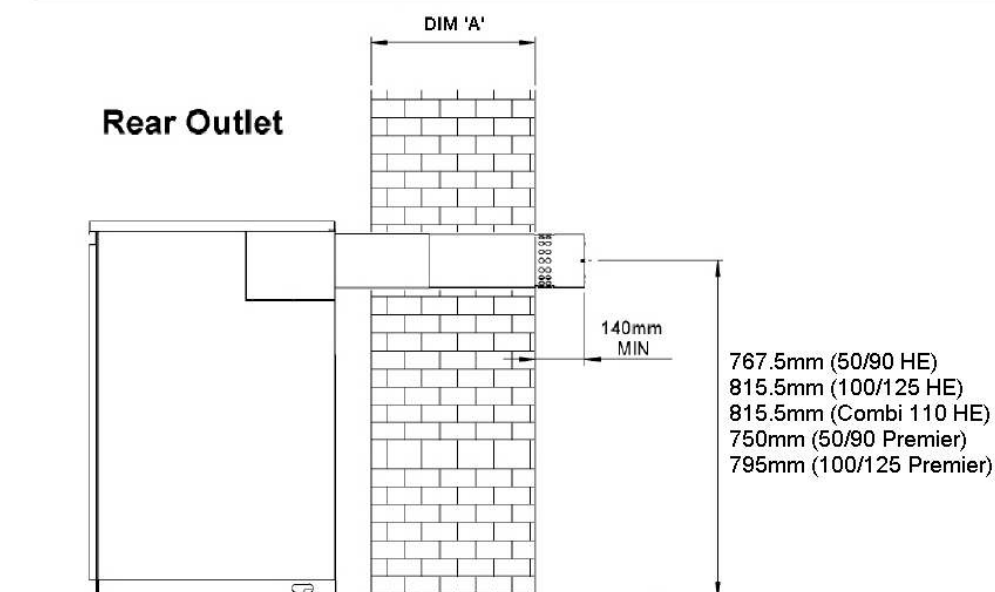
FIG 2
2334 & 2335 HORIZONTAL BALANCED
FLUE KITS

Item	Description	Kit 2334	Kit 2335	Qty
1	Elbow Section	221770	221770	1
2	Terminal	222915	222920	1
3	Gasket	221776	221776	1
4	Sealing Plate	221777	221777	1
5	Gasket (supplied with boiler)	223071	223071	-
6	'O'-Ring Seal	221647	221647	1
7	Deflector	223193	223193	1
8	End Cap	223192	223192	1

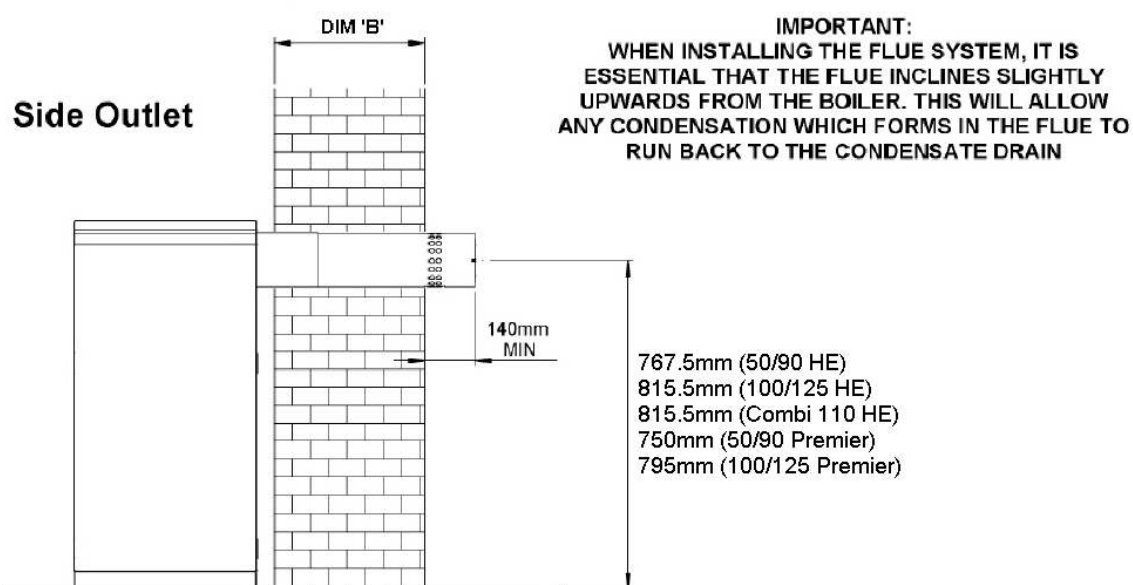
FIG 3
2334 & 2335 HORIZONTAL BALANCED FLUE KIT DETAILS

	HE Range		Premier Range	
	Dim 'A'			
	Min	Max	Min	Max
2334 – 600mm Horizontal BF Kit	310mm	600mm	325mm	600mm
2335 – 1000mm Horizontal BF Kit	710mm	1000mm	725mm	1000mm

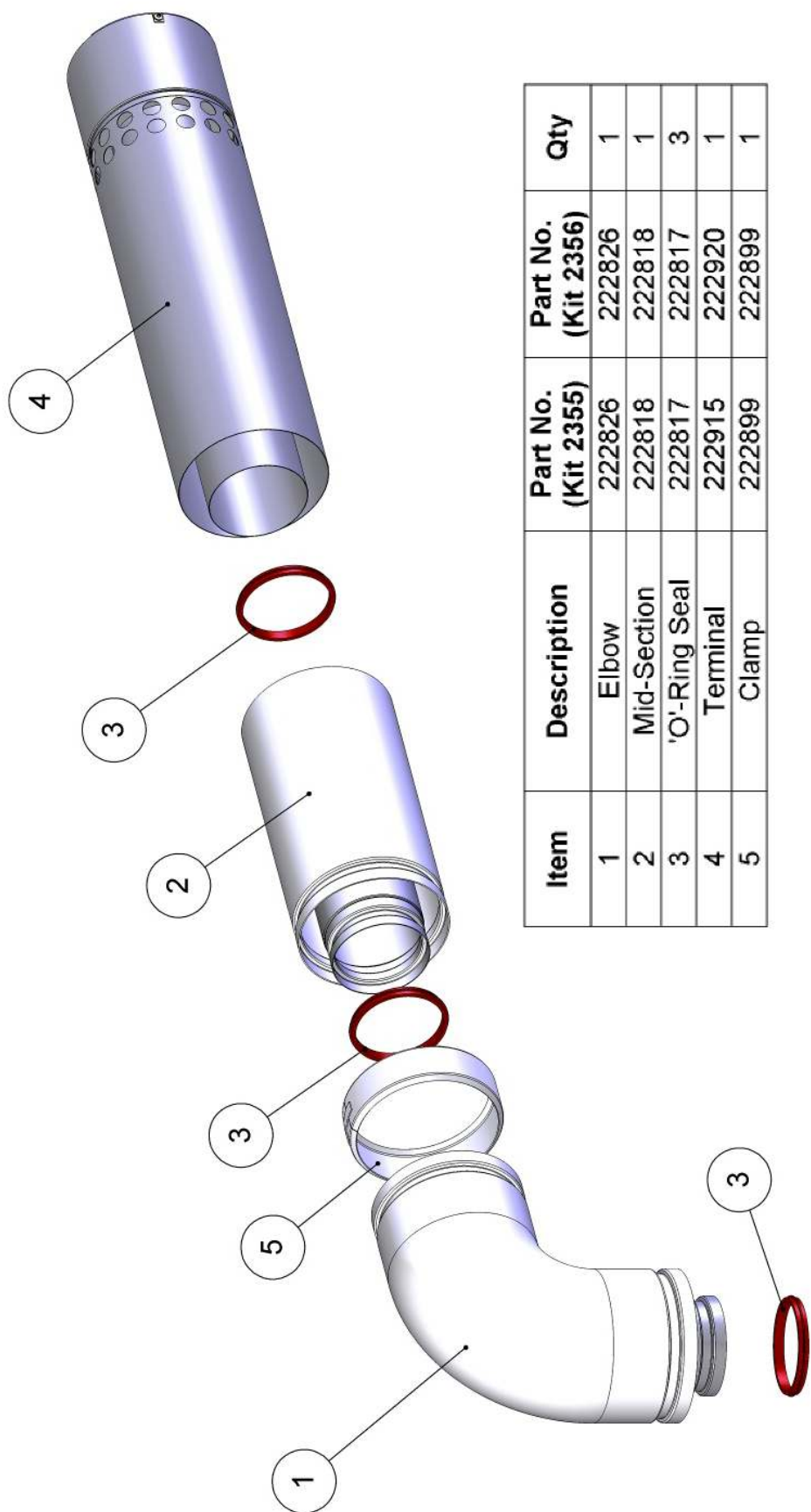
	HE Range		Premier Range	
	Dim 'B'			
	Min	Max	Min	Max
2334 – 600mm Horizontal BF Kit	175mm	410mm	180mm	480mm
2335 – 1000mm Horizontal BF Kit	600mm	810mm	575mm	880mm



**HOLE REQUIRED 130mm DIAMETER
 THROUGH WALL TO TAKE TERMINAL**

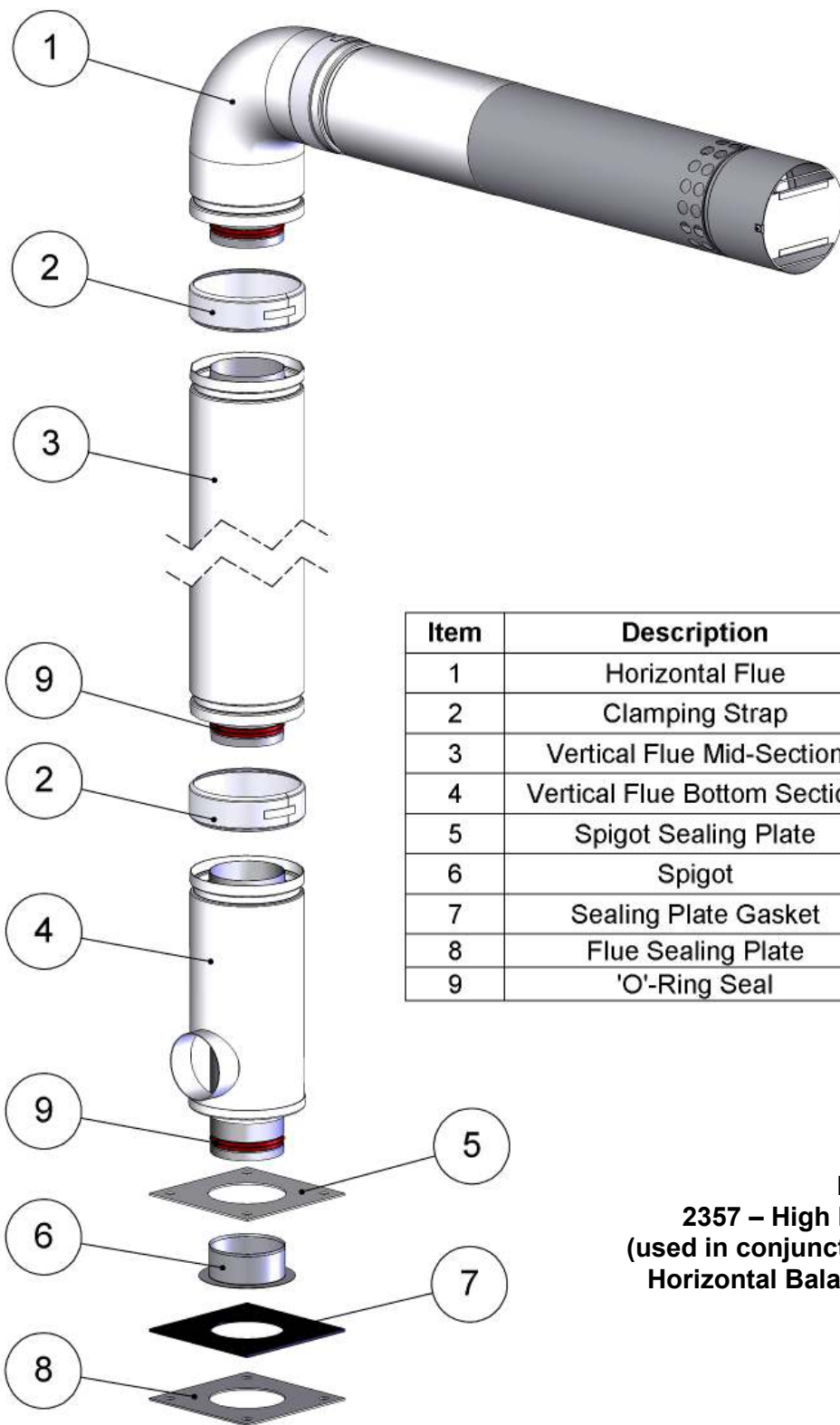


IMPORTANT:
 WHEN INSTALLING THE FLUE SYSTEM, IT IS
 ESSENTIAL THAT THE FLUE INCLINES SLIGHTLY
 UPWARDS FROM THE BOILER. THIS WILL ALLOW
 ANY CONDENSATION WHICH FORMS IN THE FLUE TO
 RUN BACK TO THE CONDENSATE DRAIN



Item	Description	Part No. (Kit 2355)	Part No. (Kit 2356)	Qty
1	Elbow	222826	222826	1
2	Mid-Section	222818	222818	1
3	'O'-Ring Seal	222817	222817	3
4	Terminal	222915	222920	1
5	Clamp	222899	222899	1

FIG 4 - 2355 & 2356 Horizontal Balanced Flue
 (to be used in conjunction with 2357 High Level Adaptor Kit only)



Item	Description	Part No.	Qty
1	Horizontal Flue	2355 or 2356	1
2	Clamping Strap	222899	2
3	Vertical Flue Mid-Section	222867	1
4	Vertical Flue Bottom Section	222820	1
5	Spigot Sealing Plate	222825	1
6	Spigot	222819	1
7	Sealing Plate Gasket	223198	1
8	Flue Sealing Plate	223191	1
9	'O'-Ring Seal	222817	2

FIG 5
2357 – High Level Adaptor Kit
(used in conjunction with 2355 or 2356
Horizontal Balanced Flue Kits only)

Dimension 'A'

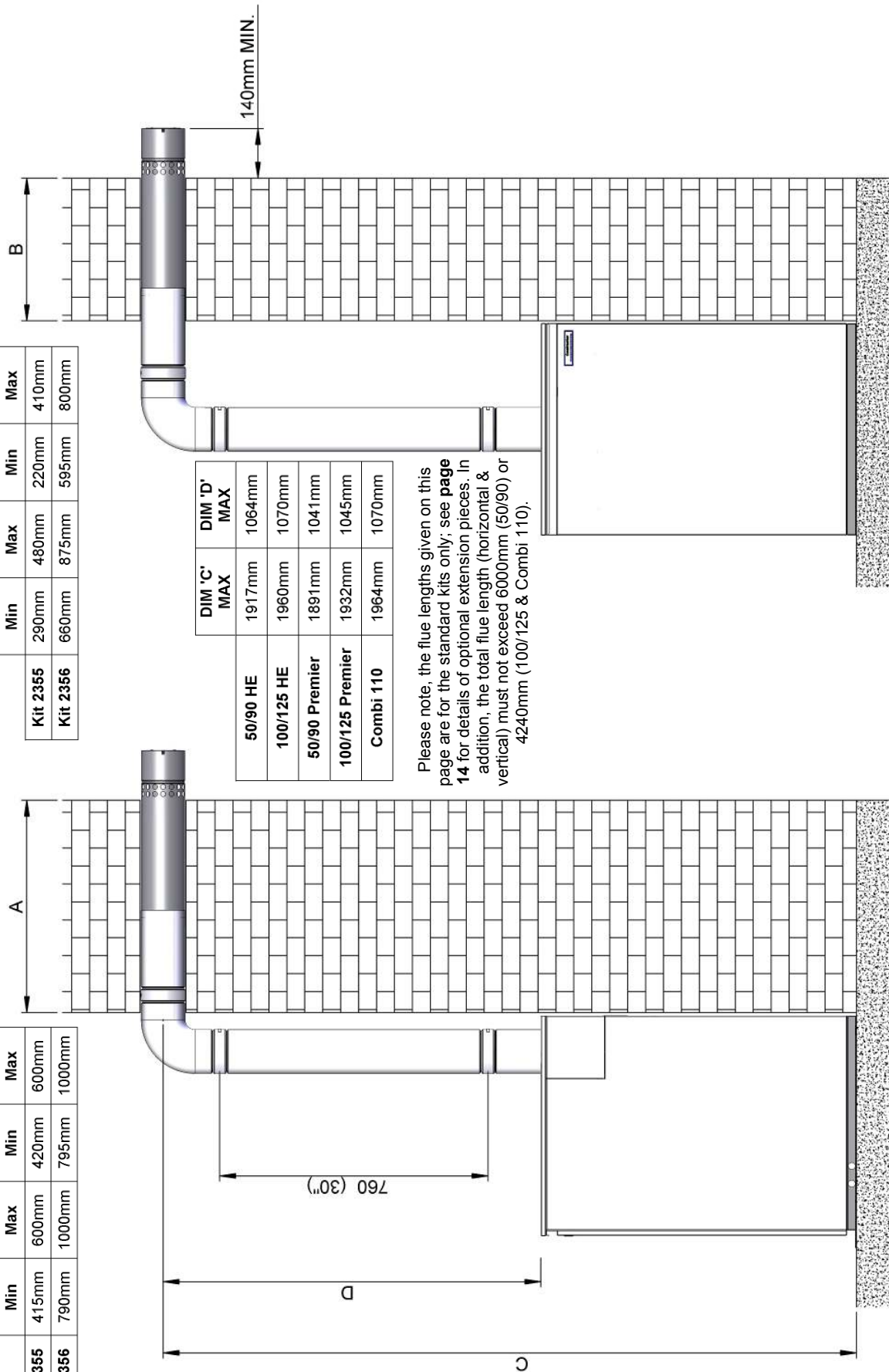
	50/90 & 100/125		Combi 110	
	Min	Max	Min	Max
Kit 2355	415mm	600mm	420mm	600mm
Kit 2356	790mm	1000mm	795mm	1000mm

Dimension 'B'

	50/90 & 100/125		Combi 110	
	Min	Max	Min	Max
Kit 2355	290mm	480mm	220mm	410mm
Kit 2356	660mm	875mm	595mm	800mm

	DIM 'C' MAX	DIM 'D' MAX
50/90 HE	1917mm	1064mm
100/125 HE	1960mm	1070mm
50/90 Premier	1891mm	1041mm
100/125 Premier	1932mm	1045mm
Combi 110	1964mm	1070mm

Please note, the flue lengths given on this page are for the standard kits only; see **page 14** for details of optional extension pieces. In addition, the total flue length (horizontal & vertical) must not exceed 6000mm (50/90) or 4240mm (100/125 & Combi 110).



REAR OUTLET

SIDE OUTLET

FIG 6
2357 – HIGH LEVEL ADAPTOR KIT
(USED IN CONJUNCTION WITH 2355 AND 2356 HORIZONTAL FLUE KITS ONLY)

High-Level Balanced Flue Kit (2357)

Before commencing assembly, please make sure that you have correctly identified the placement of each pipe section and that all 'O' ring seals are in position and well-lubricated. Any white pipe exposed to the elements should be protected with a suitable material. Place all weld seams to the rear.

ASSEMBLY METHOD

Before assembly, determine the length of flue required and if necessary discard the mid-section. See "alternative vertical lengths" (adjacent) for details of different flue lengths.

1. Having decided the position of the boiler, cut a hole 130mm diameter in the wall. Refer to **fig 6** and "alternative flue heights" for high level flue positions.
2. Remove the boiler top casing and the conventional-flue socket. Ensure the flue gasket remains in position.
3. Refer to **fig 5**; place **items 8, 7, 6 & 5** in order onto the top of the boiler. Secure with the nuts provided. Ensure all 'O'-ring seals (**item 9**) are in position on all sections of pipe. Apply a bead of lubricant around each 'O'-ring.
4. Fit the lower flue section (**item 4**) to the spigot (**item 6**), now situated on top of the boiler, ensuring the 'O'-ring creates a good seal. Ensure the hose connection on the white outer pipe is directed to the front of the boiler.
5. Fit the flue mid-section (**item 3**) to the lower flue section in the same manner, pushing firmly down until the outer sections meet. Use the clamping strap (**item 2**) to fasten these items securely together.
6. Ensuring that all 'O'-ring seals are in position and well-lubricated, fit the elbow (**item 1, fig 4**) from the horizontal balanced flue kit to the top of the flue mid-section, pushing firmly together until the outer sections meet. Use the clamping strap to fasten these items securely together.
7. Decide the length of horizontal run required and slide the terminal (**item 4, fig 4**) into the horizontal mid-section (**item 2, fig 4**). Once in the required position (and ensuring that at least 140mm will project from the outside wall), seal these items together using a suitable material.
8. Ensuring that all 'O'-rings are in position, slide the completed terminal assembly through the wall and fit to the flue elbow, pushing firmly together until the outer sections meet. Use the remaining clamping strap to fasten these items securely together.
9. Use the clip provided to secure the air hose from the burner to the connection on the lower flue section.
10. Cut the tabs from the hole in the boiler top casing and fit the casing into position. Perform a final check of the flue. Ensure all clamping straps are located over all relevant flue joints.
11. Seal any remaining gaps in the wall around the horizontal flue section with a suitable material.

ALTERNATIVE FLUE HEIGHTS

Should the height of the flue (see **fig 6**) not meet your requirements, alternative arrangements can be made. The vertical mid-section (**item 3, fig 5**) can be discarded to subtract **760mm** from the total height. The horizontal section should instead be fitted to the short vertical section, using the clamping strap provided.

Alternatively, purchase additional sections of flue pipe to extend the vertical distance. See **page 14** for details.

ALTERNATIVE HORIZONTAL LENGTHS

Should the horizontal length of the standard flues not meet your requirements, an additional section of flue pipe can be purchased to extend the maximum wall thickness limit. See **page 14** for details.

ADDITIONAL ELBOWS

When used in conjunction with additional horizontal lengths of flue, 45° and 90° elbows can be purchased in order to offset the flue on the horizontal plane. See **page 14** for details.

Additional 45° elbows can be purchased to offset the vertical sections of flue. 90° elbows cannot be used on the vertical sections. See **page 14** for details.

IMPORTANT: When used on boilers of outputs 90,000 Btu/h or less, the total flue distance, vertical and horizontal, **must not** exceed 6000mm. Flues used on boilers of outputs above 90,000 Btu/h **must not** exceed 4240mm. Any 45° elbows used in the assembly contribute 500mm to the calculation. 90° elbows contribute 1000mm to the calculation.

To ensure that any condensate produced in the flue drains away correctly, incline the flue slightly upwards from the boiler.

TERMINAL GUARD

Where the terminal is positioned in a place where there is the possibility of contact being made by persons, of damage to the terminal, or if it is lower than 2 metres from ground level, an approved terminal guard is necessary.

Generally, exhaust 2 metres above ground level will alleviate the requirement for a terminal guard.

A suitable stainless steel terminal guard is available from Trianco (part code **223920**).

Vertical Balanced Flue Kit (2360)

Before commencing assembly, please make sure that you have correctly identified the placement of each pipe section and that all 'O' ring seals are in position and well-lubricated. Any white pipe exposed to the elements should be protected with a suitable material. Place all weld seams to the rear.

ASSEMBLY METHOD

The flue can either be assembled on the ground before attaching to the boiler, or piece-by-piece in situ. If the former, ensure that all clamping straps (**items 11 & 12, fig 7**) are loosely in position over the flue joints. If the latter, ensure that none of the flue joints are situated within the joist space.

The total flue length required should be determined before assembly. If necessary, discard the mid-sections (**item 7**), as their use is not essential. See **fig 8** for details of different flue lengths.

1. Secure the boiler in position and cut a hole 175mm diameter in the ceiling and roof. Ensure the flue will have a minimum clearance of 25mm from any combustible material.
2. Remove the boiler top casing and the conventional-flue socket. Ensure the flue gasket remains in position.
3. Refer to **fig 7**; place **items 1, 2, 3 & 4** in order onto the top of the boiler. Secure with the nuts provided. Ensure all 'O'-ring seals (**item 5**) are in position on all sections of pipe. Apply a thin bead of lubricant around each 'O'-ring.
4. Fit the lower flue section (**item 6**) to the spigot (**item 3**) which should now be situated on top of the boiler, ensuring the 'O'-ring creates a good seal. Ensure the hose connection on the lower flue section is directed to the front of the boiler.
5. Fit the first flue mid-section (**item 7**) to the lower flue section, pushing firmly down until the outer sections meet. Use the clamping strap (**item 11**) to fasten these items securely together. Fit the second flue mid-section (also **item 7**), and the third flue section (**item 8**) to the previous sections in the same manner.

Note: both instances of **item 7** can be discarded if they are not required. Of the main flue sections, only the use of **items 6 & 8** is mandatory. Fit these together in the manner described above.

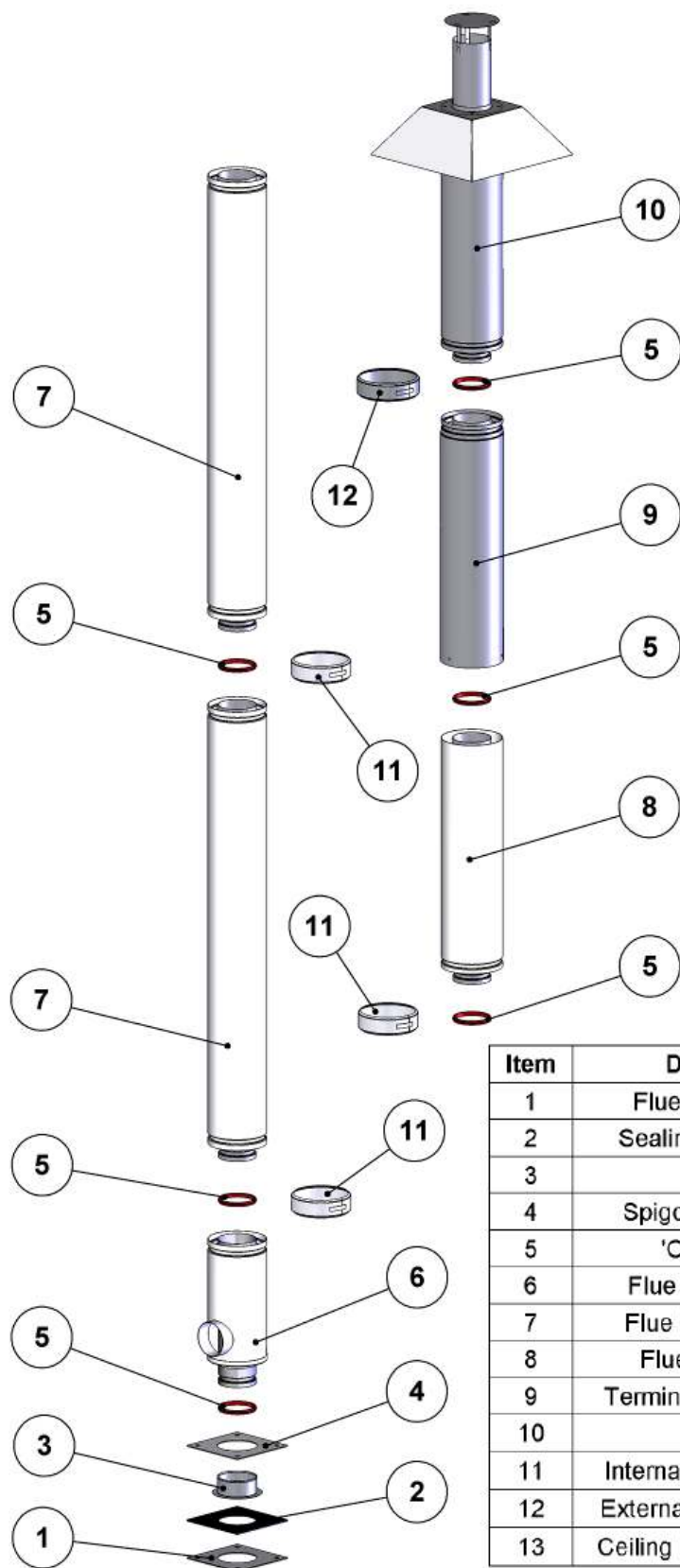
6. Ensuring that all 'O'-ring seals are in position and well-lubricated, fit the remaining flue mid-section to the assembly in the same manner, pushing firmly down until the outer sections meet. Use the clamping strap to fasten these securely together.
7. The first terminal section (**item 9**) fits over the preceding section of flue without the use of the clamping strap, and in order to achieve a more accurate fit distance is telescopic in nature. Once the length has been set, drill through the outer pipe and secure with self-tapping screws.
8. If necessary, fit the terminal (**item 10**) to the terminal lower section before it is attached to the last main flue section. Push firmly down until the outer sections meet and use the stainless steel clamping strap (**item 12**) to fasten these securely together.
9. Fit the ceiling plates (**item 13**) centrally over the inner hole, ensuring the outer flue pipe has a minimum clearance of 25mm from any combustible material. Pack the space with glass fibre insulation.
10. Secure the flue to the roof space and fit waterproof flashing (not supplied) around the flue at the roof line.
11. Use the clip provided to secure the air hose on the burner to the connection on the lower flue section.
12. Replace the top casing.

ADDITIONAL FLUE HEIGHTS & ELBOWS

Should the maximum height of the flue not meet your requirements, additional sections of flue pipe can be purchased to extend the vertical distance. See **page 14** for details.

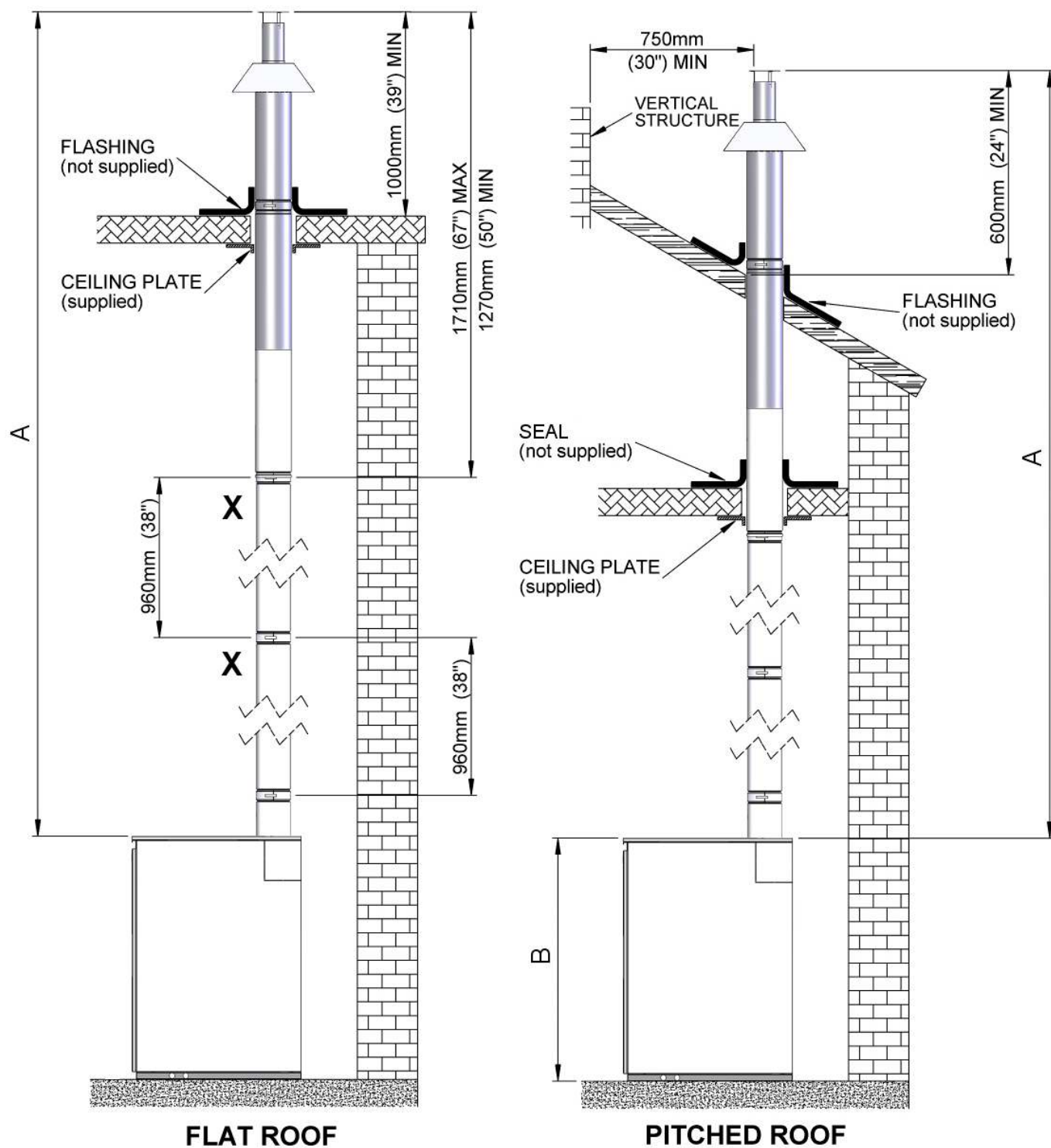
45° elbows can be purchased to offset the flue to keep clear of any permanent obstructions. See **page 14** for details. 90° elbows **cannot** be used with this flue.

IMPORTANT: When used on boilers of outputs 90,000 Btu/h or less, the total flue distance, vertical and horizontal, **must not** exceed 6000mm. Flues used on boilers of outputs above 90,000 Btu/h **must not** exceed 4240mm. Any 45° elbows used in the assembly contribute 500mm to the calculation.



Item	Description	Part No.	Qty
1	Flue Sealing Plate	223191	1
2	Sealing Plate Gasket	223198	1
3	Spigot	222819	1
4	Spigot Sealing Plate	222825	1
5	'O'-Ring Seal	222817	6
6	Flue Lower Section	222820	1
7	Flue Middle Section	222829	2
8	Flue Top Section	222877	1
9	Terminal Lower Section	222880	1
10	Terminal	222850	1
11	Internal Clamping Strap	222899	3
12	External Clamping Strap	222894	1
13	Ceiling Plate (not shown)	208583	2

FIG 7
VERTICAL BALANCED FLUE KIT (2360)



Note 'X' – Shorter flue distances can be achieved by discarding these sections. Longer flue distances can be achieved by purchasing additional sections of pipe (see page 14).

Permanent obstructions may be avoided by the use of 45° elbows (see page 14).

	DIM 'A'		DIM 'B'
	MIN	MAX	
50/90 HE	1415mm	3770mm	855mm
100/125 HE	1415mm	3770mm	894mm
Combi 110 HE	1570mm	3770mm	894mm
50/90 Premier	1390mm	3750mm	851mm
100/125 Premier	1395mm	3755mm	892mm

FIG 8
VERTICAL BALANCED FLUE KIT (2360)

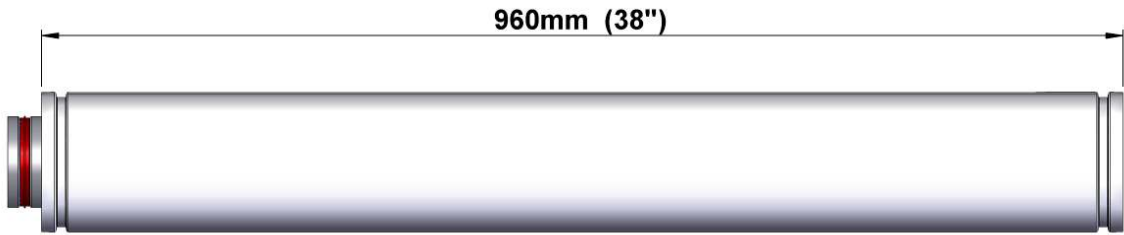
Optional Extras

Combinations of the following items can be purchased in order to provide alternative flue configurations:

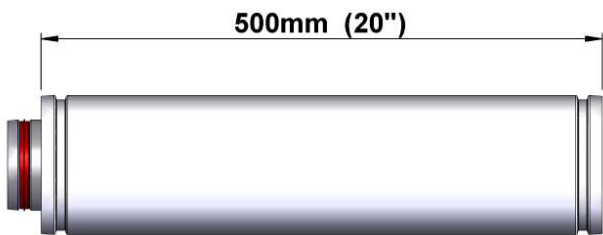
- 2361 – Long Flue Extension
- 2363 – 45° Elbow
- 2362 – Short Flue Extension
- 2364 – 90° Elbow

These items are only to be used in conjunction with high level adaptor kit (2357), or with vertical flue kit (2360).

2362 – Long Flue Extension



2361 – Short Flue Extension

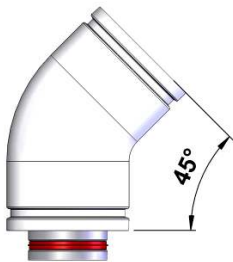


These flue extensions can be used to extend the vertical length of the flue, or the horizontal length (high level adaptor kit only), in almost any combination of configurations.

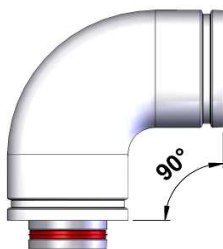
When used on boilers of outputs 90,000 Btu/h or less, the total flue distance, vertical and horizontal, **must not** exceed 6000mm. Flues used on boilers of outputs above 90,000 Btu/h **must not** exceed 4240mm.

Any 45° elbows used in the assembly contribute 500mm to the above calculation. 45° elbows can be used to offset the vertical sections of flue on both the high level and vertical flue kits. Ensuring all 'O'-ring seals are in position and well-lubricated, push the elbow and flue pipe firmly together, fixing together with the clamping strap provided.

2363 – 45° Elbow



2364 – 90° Elbow



Example:
2 x 45° elbows used to offset vertical flue extensions.

Note: only 45° elbows can be used on vertical sections of flue. 90° elbows must only be used to offset the flue on the horizontal plane.

A diagram showing a vertical flue pipe (2361) with two 45-degree elbows (2363) installed to create a zig-zag offset. The elbows are labeled 2363 and the pipe sections are labeled 2361.

Any 90° elbows used in the assembly contribute 1000mm to the above calculation. **90° elbows can only be used on the high level adaptor kits to offset the flue on the horizontal plane.** Ensuring all 'O'-ring seals are in position and well-lubricated, push the elbow and flue pipe firmly together, fixing together with the clamping strap provided.



By appointment to H.M. Queen Elizabeth
The Queen Mother
Manufacturers of Domestic Boilers



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