

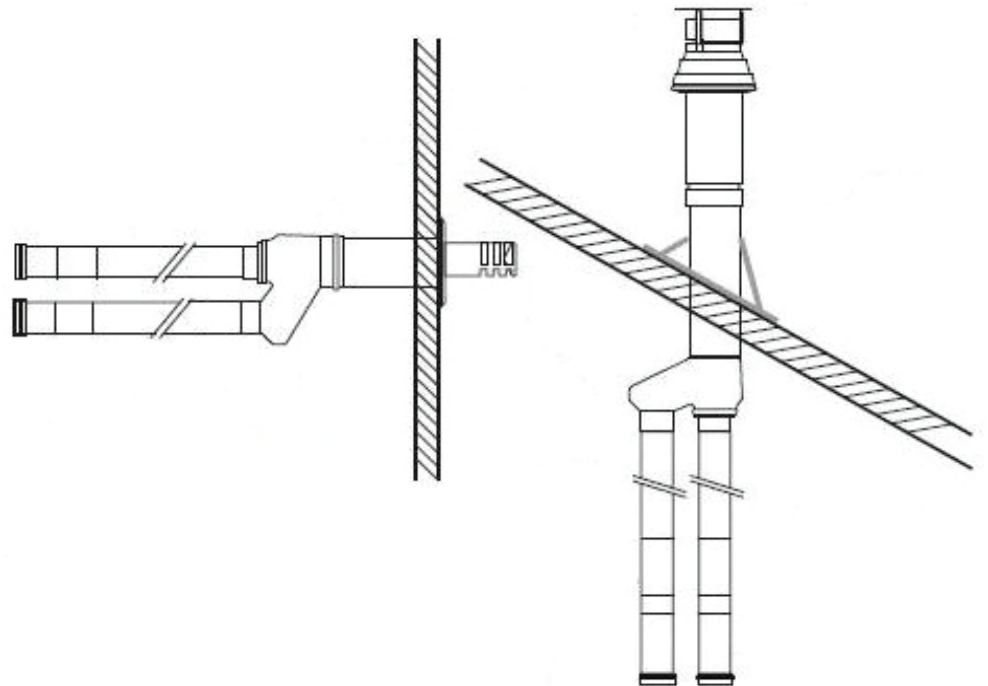
Balanced Flue Kit for NVx and VPC

Industrial & Commercial Heating Systems.



www.powrmatic.co.uk

Installation Instructions





Dear Customer - thank you for choosing Powrmatic.

We appreciate you buying one of our high quality products and know that you have made the best choice. By choosing Powrmatic, you are investing in UK manufacturing & its workforce. We pride ourselves by manufacturing products that provide clean, comfortable and safe working environments worldwide together with the personal & professional service and back-up you deserve. If you have any questions or concerns regarding this product, please contact our Technical Support Team by calling 01460 53535.

Users, Installation and Servicing Instructions

CONTENTS

General

1.1	Introduction and Safety	4
1.2	Receipt and unpacking	5
1.3	Storage	5
1.4	Planning your flue run	5
1.5	Supplied components	5

Installation

2.1	General arrangement	7
2.2	Assembling the Kit	8
2.3	Dimensions	13
2.4	Flue components	15

1.1 Introduction and Safety

A) Choosing which flue to use.

There are two types of flue available:-

- a) Single flue (exhaust gas only), Combustion air is drawn from inside the premises, and exhaust gases are expelled from the premises through the single flue.
- b) Balanced flue (both exhaust gas and combustion air). Combustion air is drawn from outside the premises, and the exhaust gas is expelled out of the property.

The system is then available in two options Vertical or Horizontal.

B) Safety issues to take into consideration

1. Our flue system is made of stainless steel. Care should be taken when handling to avoid cuts (it is recommended that gloves should be worn.)
2. Once the appliance is running, the flue can get very hot and care should be taken to avoid burns, also ensure that no flammable material comes into contact with the flue.
3. The flue system is designed to expel exhaust gases out of the property, Care should be taken to ensure that the flue system does not leak, so the exhaust gases do not enter the property. Particular care should be taken to ensure that each section of flue is joined correctly.



Gas Safety (Installation & Use) Regulations 1998

It is law that all gas appliances are installed, adjusted and, if necessary, converted by qualified persons* in accordance with the current issue of the above regulations. Failure to install appliances correctly can lead to prosecution. It is in your own interests and that of safety to ensure that the law is complied with.

* An approved class of person listed on the gas safe register.

C) Related documents

The installations this manual covers is **Type C12 or C32 Installation (Balanced flue)**. **Type B22 (Single flue) is similar but not covered by this manual.**

The installation of the air heater(s) must be in accordance with the rules in force and the relevant requirements of the Gas Safety Regulations, Building Regulations. It should also be in accordance with any relevant requirements of the local gas region, local authority and fire authority and the relevant recommendations of the following documents.

IGE/UP/10 (with Amendments October 2010) Installation gas appliances in industrial and commercial premises.

British Standards Code of Practice

BS 9999:2008 Code of practice for fire safety in the design, management and use of buildings.

BS 6230 Installation of Gas Fired Forced Convection Air Heaters for Commercial and Industrial Space Heating.

Those appliances having a gross input rating not exceeding 60kW viz. NVx10 to NVx50 inclusive and installed to take their combustion air from within the building must be installed in accordance with the relevant recommendations of the following document:-

BS 5440 Flues and Air Supply for gas appliances of rated input not exceeding 60kW (1st and 2nd family gases), Part 2 – Air Supply

For NV/D units of 10 - 50 size, reference should also be made to:-

BS 5864 Code of Practice for installation of gas-fired ducted-air heaters of rated input not exceeding 60kW.

D) Health and safety

Care should be taken when installing this flue system.

Including:-

Working at height.


Working with hot material.


Working with sharp material.

It is important to wear the correct PPE depending on the task performed.

1.2 Receipt and unpacking

All units are checked and should be delivered complete and in perfect condition. However please carry out the following to check the condition of the received product:-

 Upon receipt, check if the box is undamaged. If this is not the case, accept the goods with reservations and keep photographic evidence of any damage found.

 Unpack and check the contents against the packing list.

Check that none of the parts have been damaged during shipment. In case of damage, report it to the delivery company within 3 days of receipt by registered letter with return receipt and attaching photographic documentation. A copy should also be sent by fax/email to our warranty department. No notice of damage will be accepted after 3 days from delivery.

All of the packaging can be recycled. Please make use of local recycling facilities.

1.3 Storage

Until the flue system has been installed, it is liable to damage and care should be taken when transporting and storing the parts.

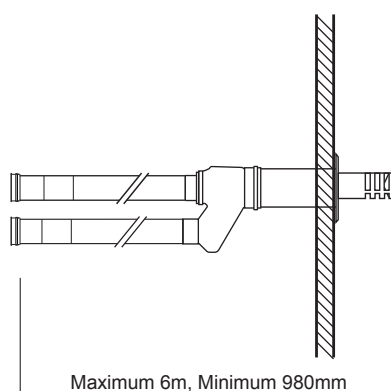
Although the flue parts are made of stainless steel, care should be taken to avoid exposure to abrasives and corrosive items, and they should be stored in a dry secure location.

1.4 Planning your flue run

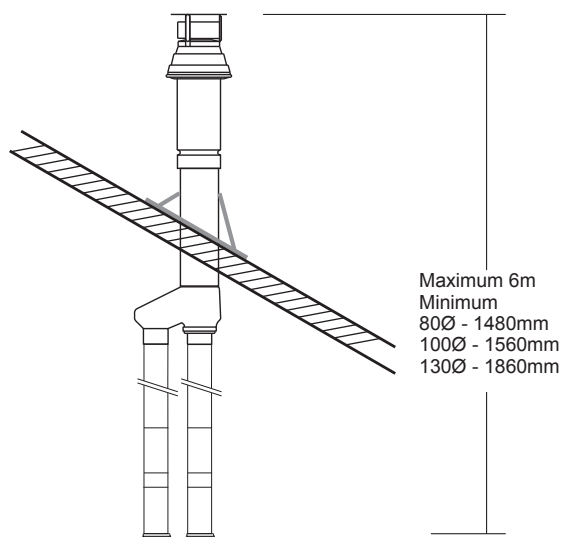
Before installation commences, the position of the heater and subsequent flue run will need to be planned.

It is not permitted to cut Terminal or flue pipe. All Adjustment must be made by the use of the adjustable length and additional lengths of flue, (200mm, 500mm, and 1000mm are available.)

The maximum length for a balanced flue system is 6 metres. The 6 metre maximum length of flue is subsequently shortened if bends are added to the planned flue run (90° bends need to be considered as a 1m length and 45° bends considered as a 0.5 m length).



Note: A terminal guard may be required.



1.5 Supplied components

The flue kit you have received will either be vertical or horizontal.

Firstly check that kit supplied is the kit required (vertical or

horizontal), then check the parts supplied comprises of the parts listed in the following table. Before assembly, please check that they are all included and are not damaged.



VERTICAL FLUE KIT
Comprises

- A Vertical terminal*
- B Single to twin adaptor (ski boot)*
- C Adjustable flue lengths x 2
- D In-line condense drain
- E 200mm standard flue length
- F Terminal extension length*
- G Flue support bracket
- H Fixings and glue*
- I Adjustable length locking band x 3
- J Flue locking band x 2
- K Silicon flashing*

* Supplied with terminal kit

HORIZONTAL FLUE KIT
Comprises

- A Horizontal terminal*
- B Single to twin adaptor (ski boot)*
- C Adjustable flue lengths x 2
- D Wall securing plate*
- E Fixings*
- F Terminal extension length*
- G Flue locking bands x 2
- H 200mm standard flue lengths x 2
- I Adjustable length locking bands x 3

* Supplied with terminal kit



2.1 General arrangement

The minimum distance between surfaces of the flue pipe and any surfaces made from combustible materials is 300mm. If it is necessary for the flue pipe to pass through a structure made from combustible materials a metal sleeve must be used so that the minimum clearance of 300mm is maintained. The flue and combustion air ducts supplied with the heater are capable of withstanding their own weight over the allowable flue lengths. Wall bands and bracing brackets, or equivalent, must be used to provide lateral stability and should be used at centres not exceeding 2.5 metres.

2.1.1. General Requirements

In all cases the flue outlet socket must be connected via the provided flue system to outside air. The maximum permitted length of flue system is 6m. If an offset is required two sets of 45° bends should be used each set being equivalent to 0.5m of flue length. 90° bends may be used but each set will be equivalent to 1.0m of flue length. For the minimum flue length (end of flue terminal to back or top of heater), refer to section 1.4 Planning your flue run.

All outer joints must be finished with the provided locking bands. A smear of silicon grease to the inside of sockets will assist in fitting components together. All flue and combustion air ducts must be supported independently of the air heater. The flue or flue/combustion air terminal must not be installed so as to be less than:

- 300mm below an opening e.g. window, air brick etc.
- 200mm below eaves or gutter.
- 300mm from an internal or external corner.
- 1200mm from a surface facing the terminal.
- 1500mm vertically from another terminal on the same wall.
- 300mm horizontally from another terminal on the same wall.
- 2000mm from ground level.

2.1.2. Horizontal System - Rear Outlet



Note: If the outlet is required to the side of the unit 90° bends may be fitted directly onto the inlet/outlet spigots on the heater.

1. Locate the position of the flue terminal, allowing for a slight gradient running down from the heater to the terminal of 2° - 3° and cut a hole to suit.
2. Fit the flue terminal, securing via the wall plate and weather with silicon sealant or similar.
3. Fit the twin to concentric adaptor to the terminal section

and extend the flue and combustion air ducts to the heater using straight lengths. Fit an adjustable length prior to the unit, to facilitate flue disconnection for servicing. Extend the adjustable lengths to make the final connection to the appropriate heater inlet/outlet spigots.

4. Ensure that internal silicon sealing rings are in place and that all tubes are pushed fully home. Secure concentric lengths with the locking bands provided.



Notes for all systems.

- i) Final overall length of adjustable disconnection piece must be between 360 - 415mm.
- ii) 45° offsets may be used if required. Each set is equivalent to 0.5m of flue length.



Note: A terminal guard, as supplied by Powrmatic Ltd, must be fitted to horizontal flue terminals.

2.1.3. Vertical System - Top Outlet

1. Locate the position of the flue terminal and cut a hole in the roof to suit.

2. Fit the flashing and the flue terminal so that the lower edge of the outer case is over the top of the flashing. Weather protect with silicon sealant or similar. Fit a condensate drain length into the flue socket on the heater and an equivalent straight length onto the combustion air socket.

3. Fit the twin to concentric adaptor to the terminal section and then extend down to the heater using straight lengths. Fit adjustable lengths as the final connection pieces, to facilitate flue disconnection for servicing. Extend the adjustable lengths to make the final connection but do not exceed the maximum extended length so as to maintain joint integrity. Use a pipe to extend the drainage spigot on condensate length to a suitable gully or drain.

4. Ensure that internal silicon sealing rings are in place and that all tubes are pushed fully home. Secure concentric lengths with the locking bands provided.

2.1.4. Analyser point

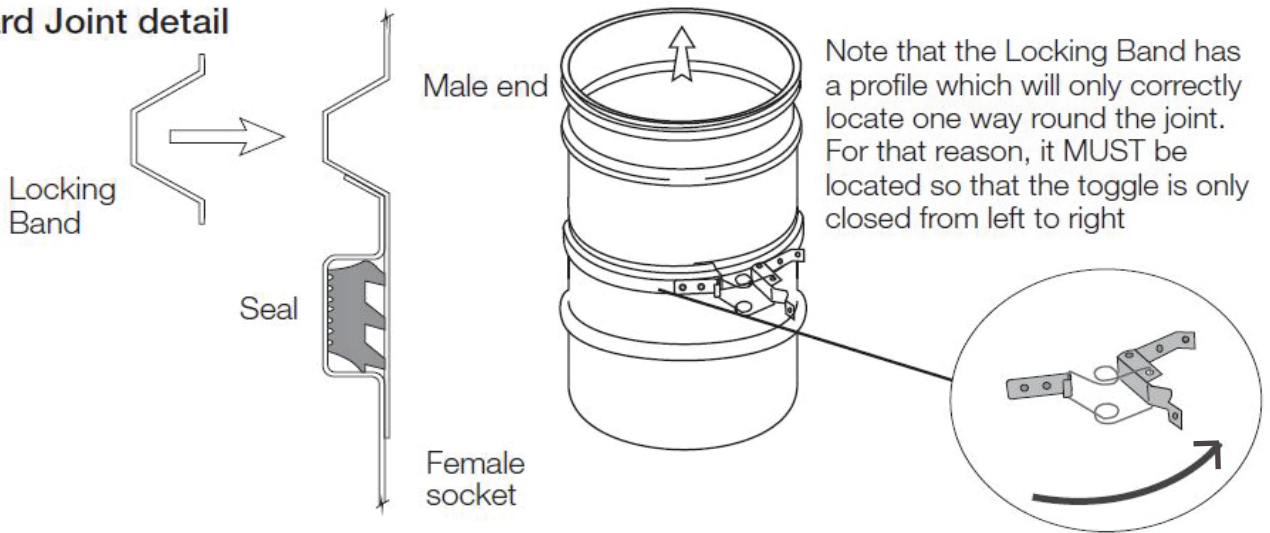
We recommend that an analyser point is drilled into the flue at 500mm along from the heater. Where this is not possible we advise as near to the 500mm as possible. (DO NOT DRILL THE TERMINAL TWIN WALL FLUE, OR SKI BOOT). This hole is to be filled after testing with a self tapping screw or similar.

2.2 Assembling the kit

Having installed the heater and drilled a hole in the wall /roof, you can now assemble the flue kit.

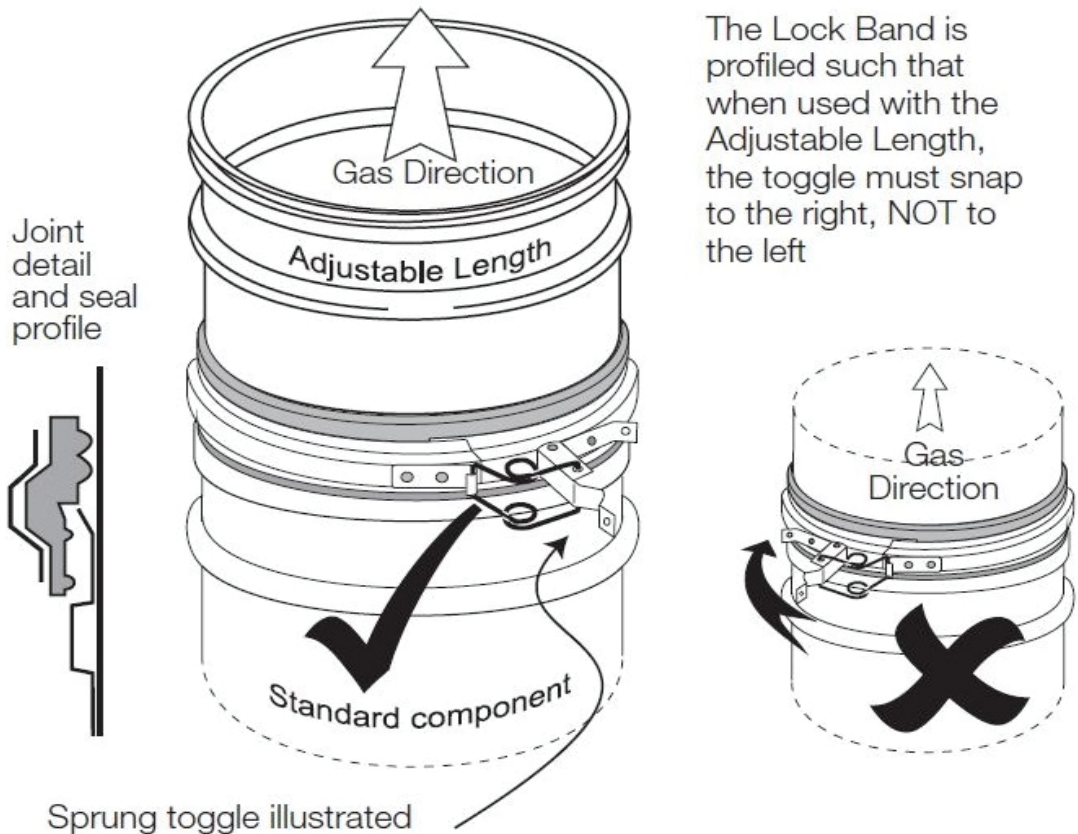
2.2.1. Using the regular locking bands.

Standard Joint detail



2.2.2. Using the Adjustable locking bands.

Lock Band detail for the Adjustable Length



2.2.3. Vertical flue assembly

Using the glue provided, adhere the silicon flashing into place over the hole in the roof, then cut the flashing to match the size of flue. Insert the vertical terminal through the roof, and secure using the terminal securing bracket.



Fig. 1



Fig. 2

Attach the terminal extension length (Fig. 1), and the Single to twin adaptor (ski boot) (Fig. 2).



Check that the spigots on the heater contain their seals and place the flue locking bands around the spigots (Fig. 4), but do not tighten. Push in the condense length into the exhaust air spigot and 200mm standard length into the combustion air spigot (silicon grease will help ease fitting). Using the flue locking bands to clamp these into place (these locking bands may be very tight (Fig. 5), but see section 2.2.1 to see correct installation).



Fig. 6



Fig. 7

Now put the adjustable length locking band on the end of the new spigots (Fig. 6) and slide in the adjustable lengths, making sure the rubber gasket is the correct way round (Fig. 7). Extra lengths of flue can now be added between the adjustable length and the Single to twin adaptor (ski boot) if required, using locking bands as required.

Allow room for the adjustable length to slide back to release the flue, in the event that the flue needs to be separated in future. (see Fig. 8 'A')



Fig. 8

You can now offer up the flue lengths to the single to twin adaptor (ski boot) making sure that the exhaust air flue connects to the terminal extension length, but only one adjustable length locking bands is required to connect the exhaust air lengths to the single to twin adaptor (ski boot). Once you are happy that all items are connected fully, you can tighten the adjustable length locking band (Fig. 8).

2.2.4. Horizontal flue assembly

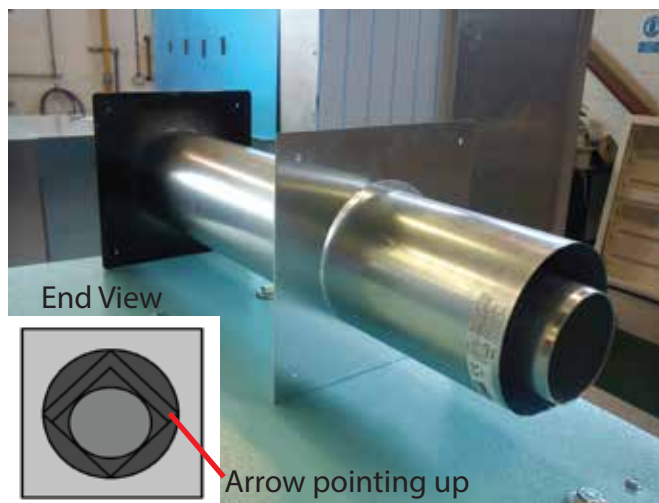


Fig. 1



Fig. 2



Fig. 3

Insert the horizontal terminal through the wall, and secure using the wall securing plate (Fig. 1). Then attach the terminal extension length (Fig. 2), and the Single to twin adaptor (ski boot) (Fig. 3).



Fig. 5



Fig. 6

Check that the spigots on the heater contain their seals and place the flue locking bands around the spigots (Fig. 5), but do not tighten. Push in the condense length into the exhaust air spigot and 200mm standard length into the combustion air spigot (silicon grease will help ease fitting). Using the flue locking bands to clamp these into place (these locking bands may be very tight (Fig. 6), but see section 2.2.1 to see correct installation).



Fig. 7



Fig. 8

Now put the adjustable length locking band on the end of the new spigots (Fig. 7) and slide in the adjustable lengths, making sure the rubber gasket is the correct way round (Fig. 8). Extra lengths of flue can now be added between the adjustable length and the Single to twin adaptor (ski boot) if required, using locking bands as required.

Allow room for the adjustable length to slide back to release the flue, in the event that the flue needs to be separated in future. (see Fig. 9 'A')

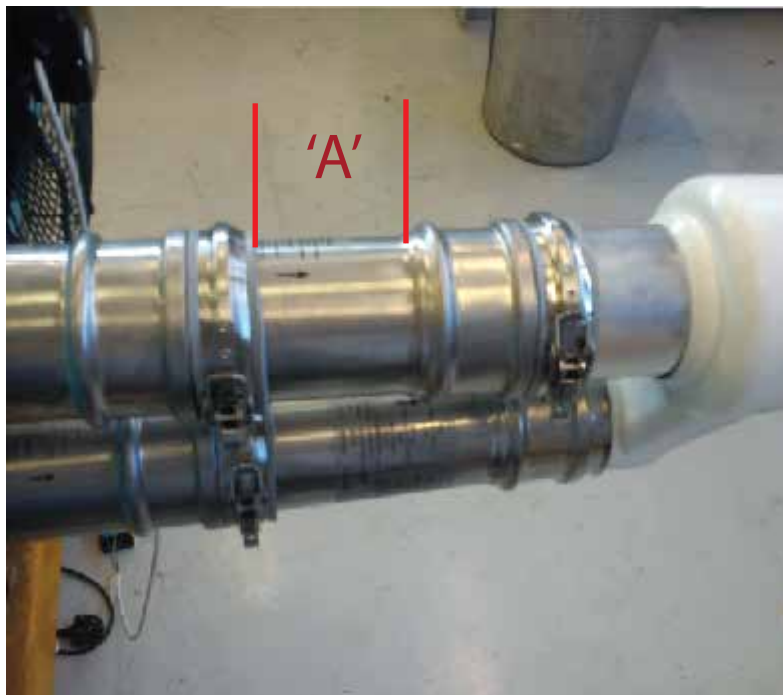


Fig. 9

You can now offer up the flue lengths to the single to twin adaptor (ski boot) making sure that the exhaust air flue connects to the terminal extension length, but only one adjustable length locking bands is required to connect the exhaust air lengths to the single to twin adaptor (ski boot). Once you are happy that all items are connected fully, you can tighten the adjustable length locking band (Fig. 9).

2.3 Dimensions

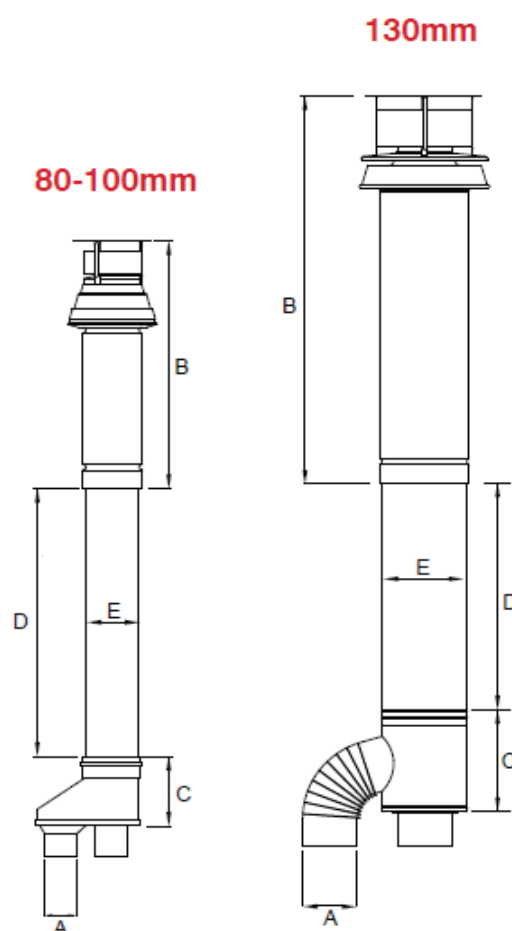
Flue Components

Concentric Vertical Terminal Kit

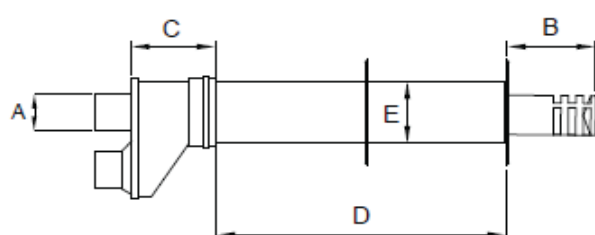
A mm	B mm	C mm	D mm	E mm
80	605	105	630	130
100	550	145	770	150
130	960	250	560	200

Concentric Horizontal Terminal Kit

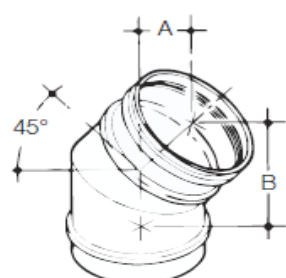
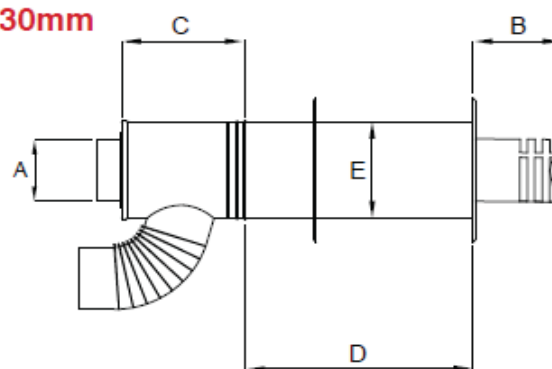
A mm	B mm	C mm	D mm	E mm
80	175	105	560	130
100	170	145	560	150
130	185	250	420	200



80-100mm



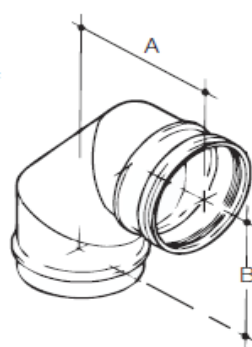
130mm



45° Elbow

Used to provide a 45° change of direction from the vertical.

Size	0.5mm	
	A	B
80mm	92	164
100mm	100	183
130mm	78	124

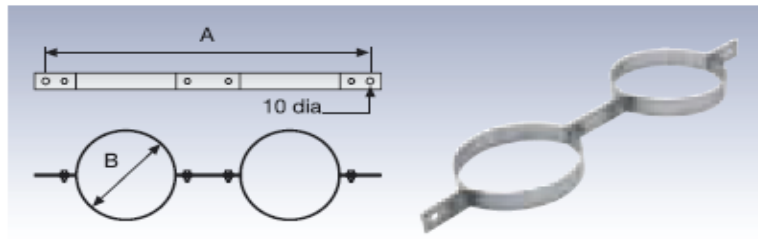


90° Elbow

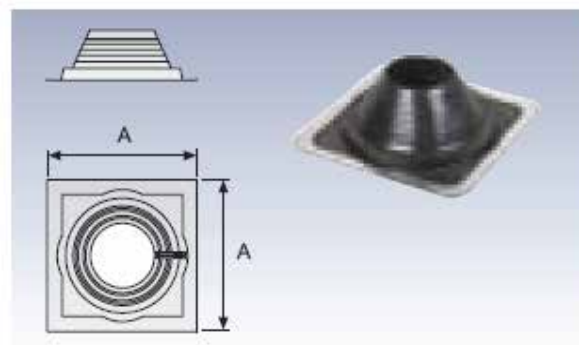
Used to provide a 90° change of direction.

Size	0.5mm	
	A	B
80mm	150	90
100mm	160	100
130mm	171	107

Part no	A mm	B mm
NVSW/DWB1	285	80
NVSW/DWB2	327	100
NVSW/DWB3	435	130



A mm	
80	254
100	305
130	356



2.4 Flue components

Flue Components

Description	80mm	100mm	130mm
	Part No.	Part No.	Part No.
single wall 200mm length	NV4010308	NV4010310	NV4010313
single wall 500mm length	NV4010208	NV4010210	NV4010213
single wall 1000mm length	NV4010108	NV4010110	NV4010113
single wall 75mm-230mm adj	NV4014408	NV4014410	NV4014413
single wall adjustable locking band	NV4007208	NV4007210	NV4007213
condensed length (200mm)	PW00014A	PW00015A	PW00016A
single wall 45° elbow	NV4012308	NV4012310	NV4012313
single wall 90° elbow	NV4012808	NV4012810	NV4012813
single wall vertical gas terminal	NV4006108	NV4006110	NV4006113
single wall horizontal gas terminal	NV2500101	NV2510101	NV2520101
single wall locking band	NV4017008	NV4017010	NV4017013
single wall individual wall band	NVSW/IWB1	NVSW/IWB2	NVSW/IWB3
single wall double wall band	NVSW/DWB1	NVSW/DWB2	NVSW/DWB3
single wall high temperature flashing	800014026	800014026	800014028
concentric horizontal terminal	NVC/HTK1	NVC/HTK2	NVC/HTK3
concentric vertical terminal	NVC/TK1	NVC/TK2	NVC/TK3
concentric high temperature flashing	800014026	800014028	800014030
concentric - vertical flue kit (1)	NVC/VFK1	NVC/VFK2	NVC/VFK3
concentric - horizontal flue kit (2)	NVC/HFK1	NVC/HFK2	NVC/HFK3

An adjustable locking band must be used with each adjustable length of flue



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Every effort is made to ensure accuracy at time of going to press. However as part of our continued product improvement, we reserve the right to alter specification without notice.