

Please study these plans and specification. Please confirm that you have understood the terms and conditions. Your approval is required in order to proceed.

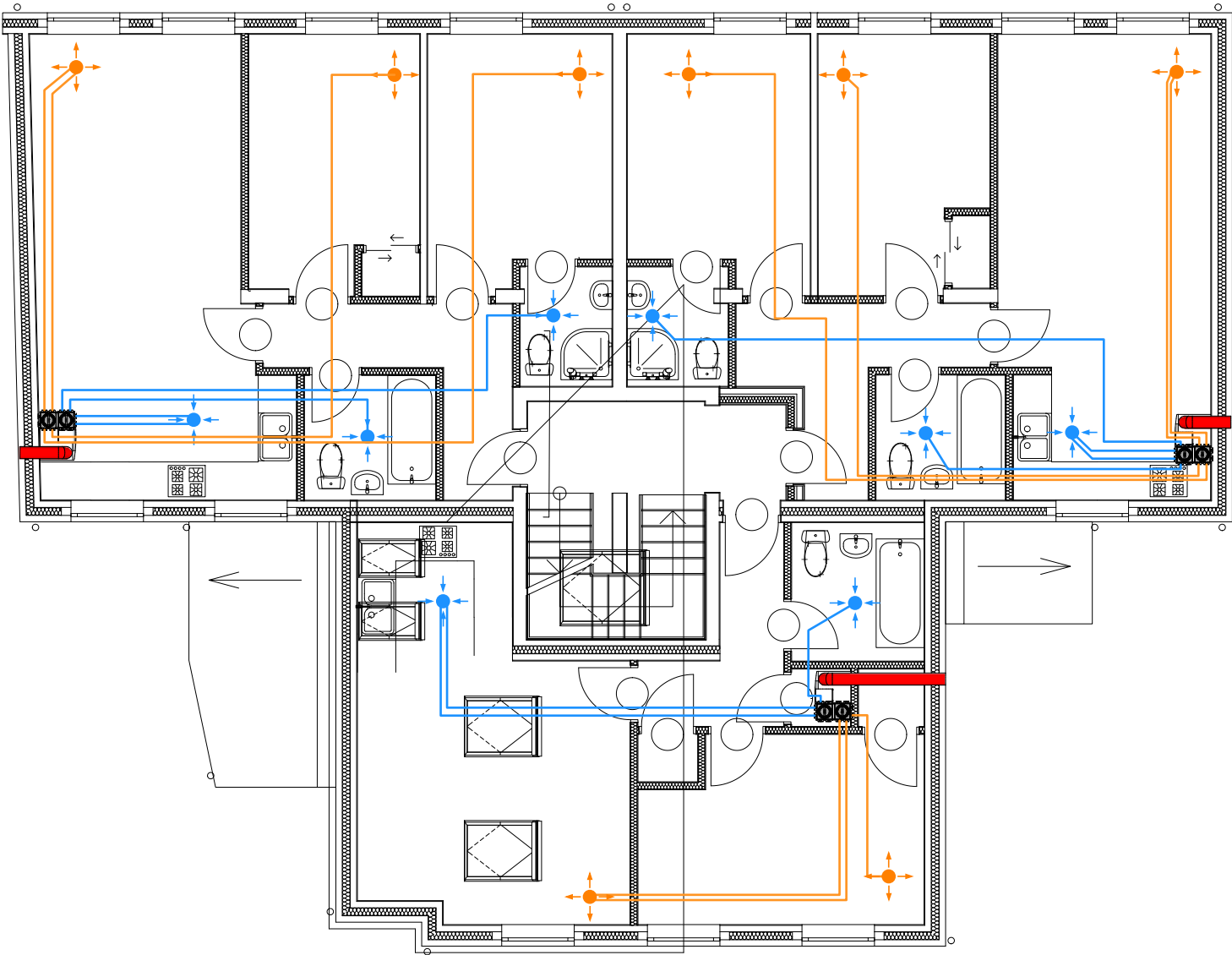
Please note this is not a final plan.
Preliminary workings are produced for an initial budget quotation only
& assuming fairly straightforward duct routes are available. Duct routes and arrangements to be discussed with client.

Key points:

KEY:

-  **Brink Flair 325 MVHR Unit**
-  **Extract air Duct 92mm semi rigid.**
-  **Supply air Duct 92mm semi rigid.**
-  **Exhaust 160mm pre insulated duct. od 190mm**
-  **Intake 160mm pre insulated duct. od 190mm**
-  **Ventilation Controls, 4 speed rotary switch.**
- This requires a 45mm deep backbox and 6 core data cable with RJ12 connectors. A 15m cable is supplied with the system - other lengths to order. A CAT 5 or 6 cable is not suitable.

- Please adhere to our recommended guidelines when using installing a radial duct system (details are listed in the accompanying installation guide) but , in particular:
- The maximum duct length should ideally be no more than 20 metres
 - It is recommended that there should be no more than 15 metres difference between the shortest and longest duct runs on any one manifold although 20 metres is allowable.
 - When installing ducts, please make note of duct lengths and adhere to the number of ducts specified



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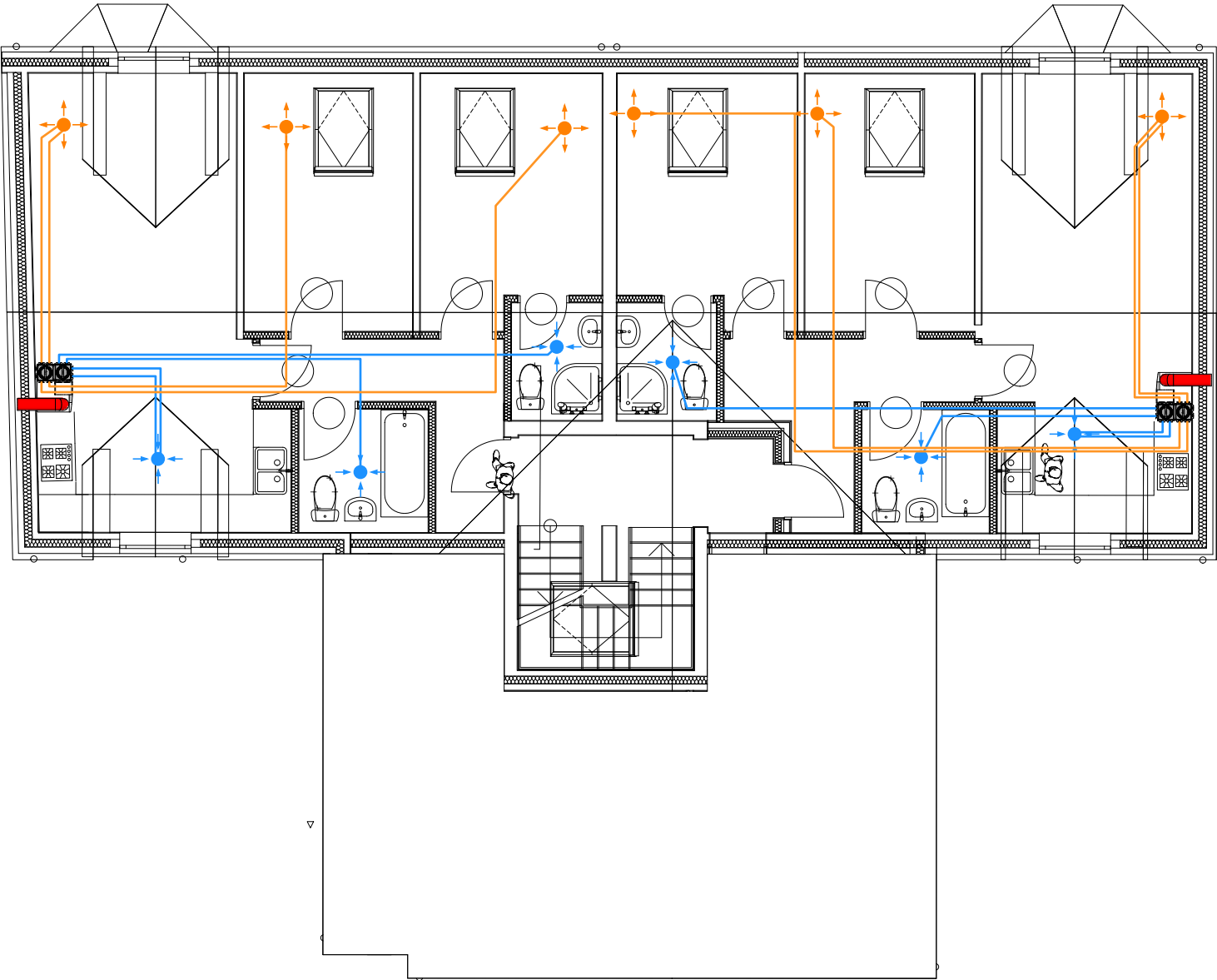
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Brink Flair 325 MVHR Unit



Extract air Duct 92mm semi rigid.



Supply air Duct 92mm semi rigid.



Exhaust 160mm pre insulated duct. od 190mm



Intake 160mm pre insulated duct. od 190mm

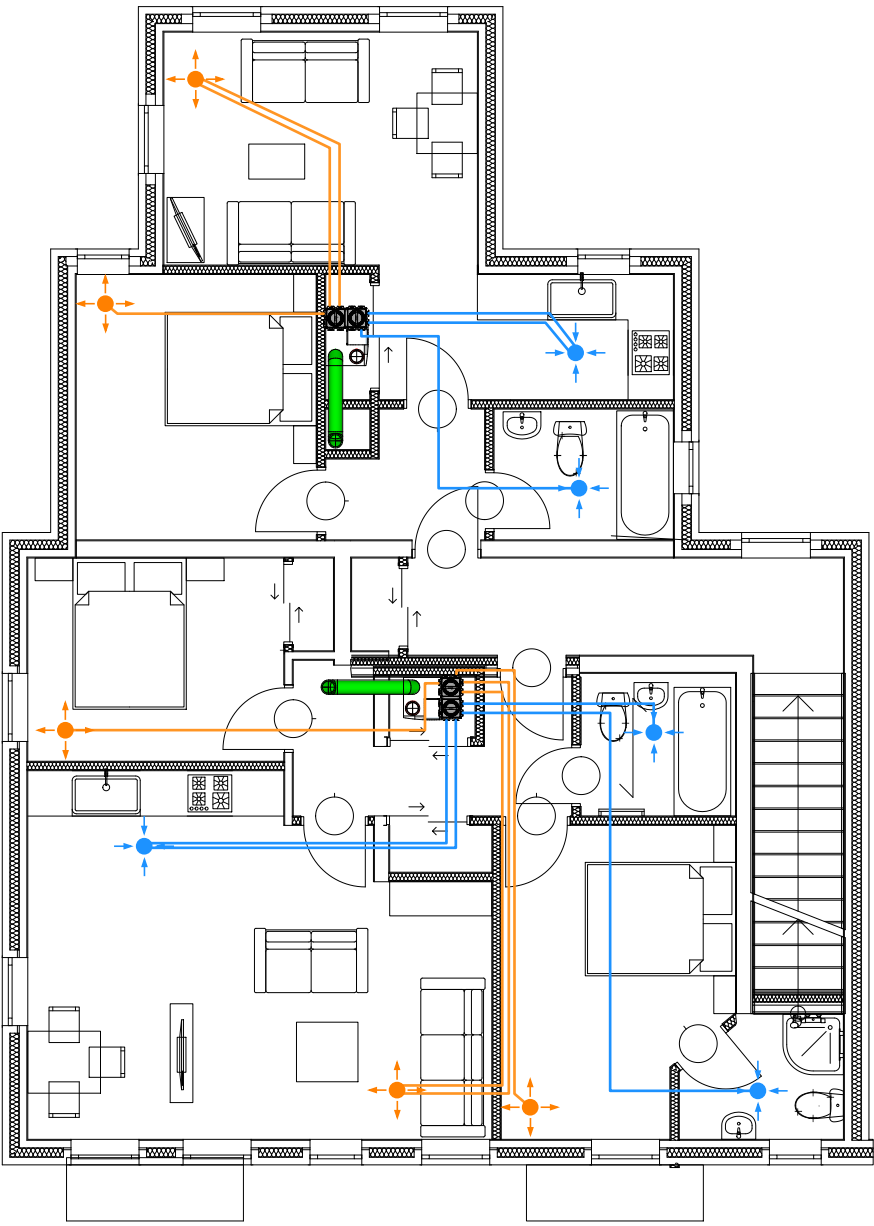
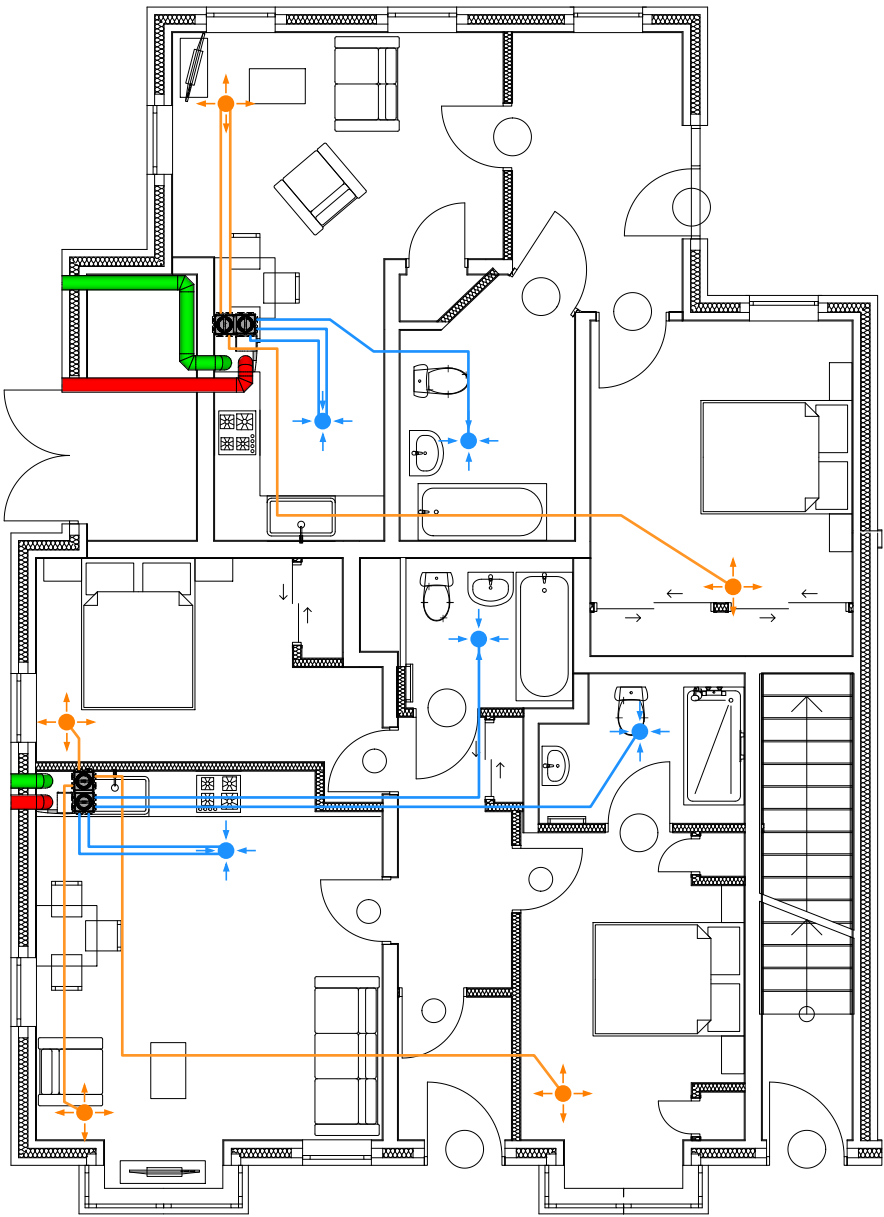


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Heat Recovery Ventilation System

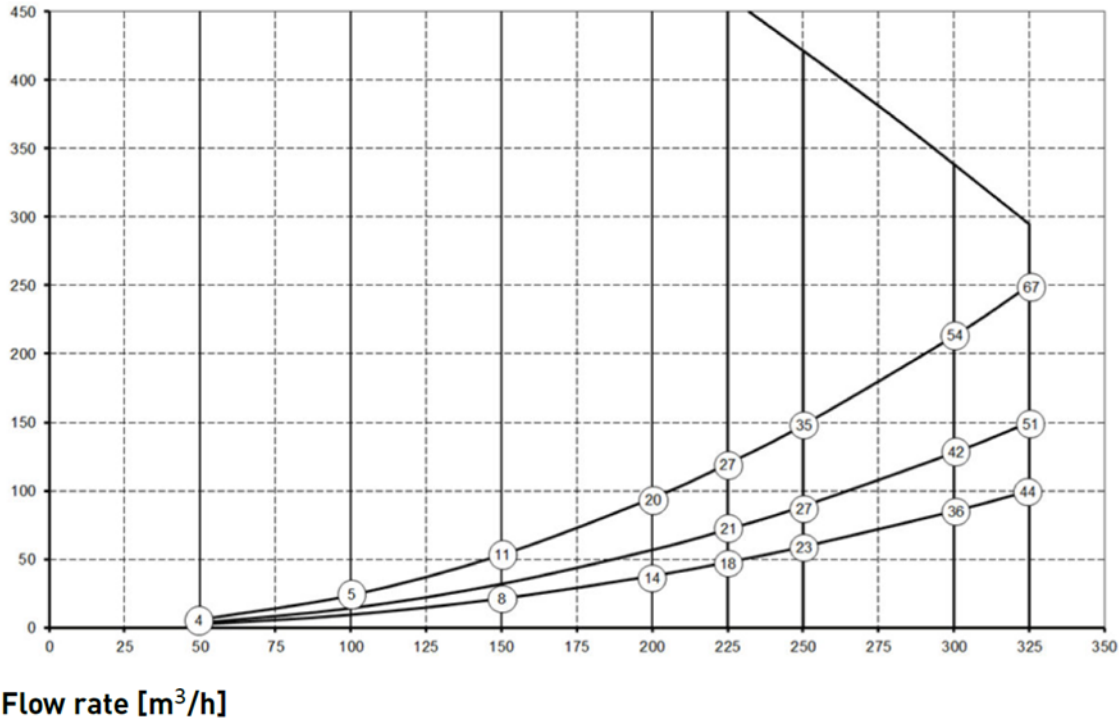
The Brink Flair is a ventilation unit with heat recovery and an efficiency of up to 90%, a maximum ventilation capacity of 325m³/h and low energy fans.

- Flair 325:**
- High Efficient plastic Heat Exchanger >90% efficiency (Holmak TST35)
 - Constant Flow Fans (EBM) with high accurate flow measurement (vane anemometer)
 - Electrical pre-heater with high efficient heat transfer, intelligently controlled
 - Bypass with servo-motor, 100% airtight due to 2K-technology
 - Special inside 'airflow vanes' to guide the air over the whole heat exchanger
 - TFT-touch screen with wizards for maintenance and commissioning
 - 4 adjustable speeds (even activated by touch screen)
 - Filter/Error signal (24V), and message on display/4-way switch
 - Condensate connection (fool-proof) with special Ball-Syphon (included)
 - Ultra low energy consumption (SFP ~0.17 Wh/m³!)
 - Ultra low sound level
 - All components removable from front side, very quickly
 - Very airtight foam insulation, stays intact during maintenance and repair
 - Plus PCB available as post-mounted option
 - Packaging 100% cardboard, connection covers included for construction period
 - Connections: eBus – Modbus – RJ12 – USB for RF dongle – 24V power supply – 24V signal
 - Connections PLUS: (W)LAN Internet – Analogue inputs – Digital inputs

The appliance comes plug and play and operates fully automatically. The extracted indoor air heats up the fresh, clean outdoor air. That saves energy and fresh air is sent to the required rooms.

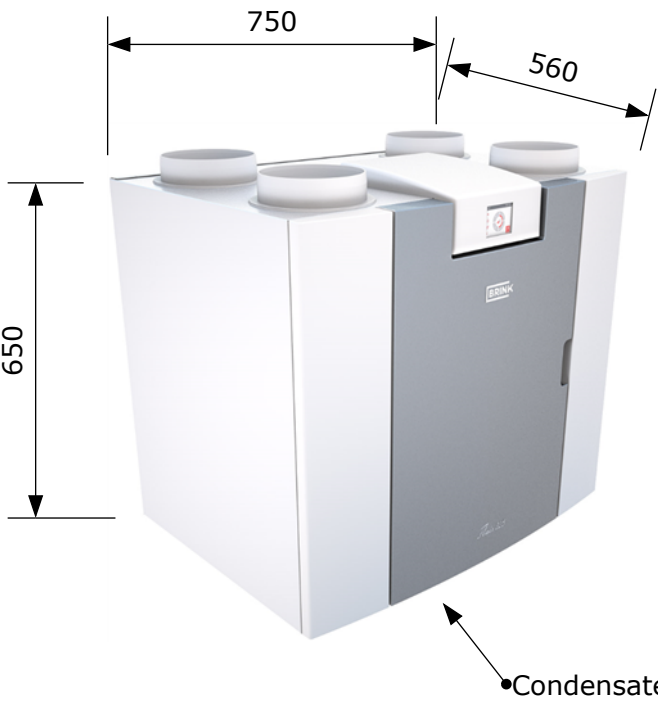
The control system has three ventilation modes. The air flow rate can be adjusted per ventilation mode. The constant volume control system ensures that the air flow rate of the supply and extract fans are realised independent of the duct pressure

Resistance of duct system [Pa]



Note:
The stated value in the circle is the capacity (in Watt) per fan

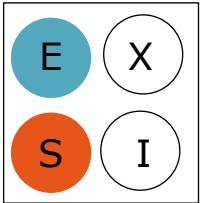
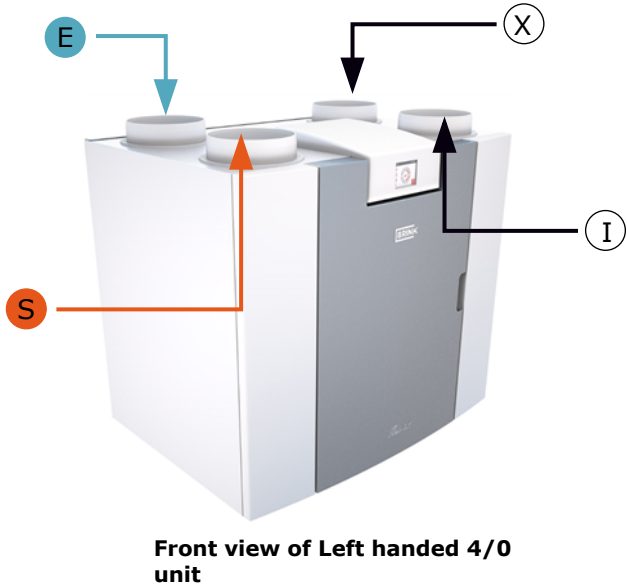
Flair 325



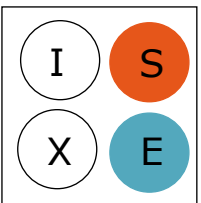
- Minimum height required for installation 1.2m.
- Requires 100mm-150mm clearance below unit for condensate drain.
- Allow 600mm at front of unit for filter access.
- Recommended distance between air intake & exhaust to exterior: 1 metre
- Air intake and exhaust can be connected to exterior wall grille or Roof vent.

Dimensions (HxWxD):	650 x 750 x 560 mm
Versions:	4/0 and 2/2, both L/R
Duct connections:	160 mm
Ventilation capacity:	50 - 325 m³/h
Constant-Flow:	Yes, Vane-Anemometer (very high accuracy)
Frost protection:	Intelligent frost protection with build-in pre-heater
Max external resistance:	150 Pa
Filters (Standard):	G4/G4
Heat Recovery:	91% @ 251 m³/h
SPI (Wh/m³):	0.21@ 251 m³/h - 100 Pa
Sound Power (Lwa (dB(A))*):	44.5@ 251 m³/h - 100 Pa

Unit layout and configurations*



- Left Hand Unit 4/0
- S Supply to interior
 - E Extract from interior
 - I Intake from exterior
 - X Exhaust to exterior



- Right Hand Unit 4/0
- S Supply to interior
 - E Extract from interior
 - I Intake from exterior
 - X Exhaust to exterior

• Passivhaus certified

Air Excellent air distribution system....

The Air Excellent air distribution system is ductwork designed to distribute air for central mechanical ventilation systems with heat recovery used to ventilate residential and small commercial buildings.

The advantages at a glance:

- Low(er) pressure loss than traditional systems
- Installation:
 - A plastic duct on a roll is easy and quick to cut to length and bend around obstacles
 - Mechanical Connections (i.e. no duct tape) means quick, clean and consistent quality of installation
- Quick, quality and consistent commissioning using the configuration tool and airflow restrictor rings
- Insulation in air distribution boxes reduces noise transfer to and between rooms
- Easy and quick maintenance
- Mix and match duct types
- Low duct height for in-wall and/or screed floor application
- Anti-static and anti-bacterial properties
- No migration of harmful substances

Typical Component Examples

Semi Rigid Radial duct sizes

AE35sc oval = 50 x 102

AE34c round = 75mm dia.

AE55sc oval = 60 x 132

AE48c round = 92mm dia



AE35sc/AE55sc oval



AE34c/AE48c round



Duct insulation - for use in unheated spaces



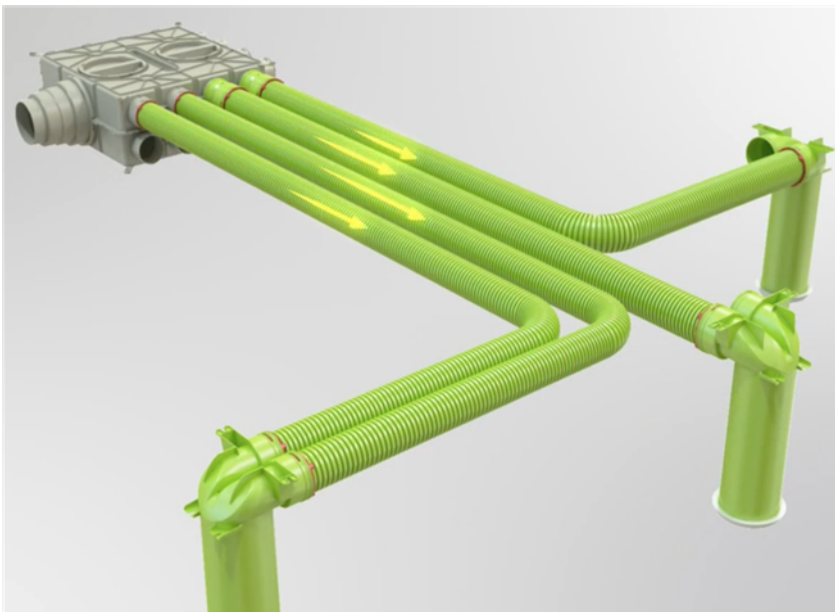
Air Valve fitting



Bend Vertical 90°



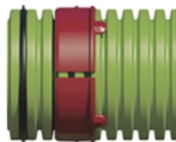
Manifold Other variants available



Flow Restrictor-Oval



Sealing Ring - oval



Sealing Ring & clip Round



Bend Horizontal 90°



Valve adaptor 90°



Valve adaptor 180°



NB The thermal efficiency of the system can be significantly improved by insulating the ducting in unheated areas even if it is within the thermal envelope.

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General Notes - Please read before starting installation

- 1) A heat recovery unit requires a condensate drain to be piped to suitable waste - not to exterior.
The use of a HepVO waterless trap is recommended.
- 2) Each unit will have a manual control switch. Where applicable, it is suggested that this is installed in the kitchen next to the light switch. Otherwise somewhere easily accessible.
- 3) Do not forget to install the RJ12 control cable between the control switch and the heat recovery unit.
- 4) Humidistat(s) are available, either for individual rooms in which case a cable will be required, or depending on the model of HR unit, as a duct mounted probe which will connect directly to the HR unit PCB. Check if either are specified.
- 5) The Inlet and Exhaust ducts should be insulated to prevent condensation forming on them - either supplied as insulated duct or insulated after installation if standard rigid duct is used Duct Wrap can be provided. This can occur when cold air is passing through them. If duct wrap is used ensure that the duct is completely covered by the duct wrap and joints sealed with duct tape.
- 6) Duct runs and valve positions are indicative only. If there is a conflict with other services or physical features, then the ducting and valves can be installed to avoid these. Air being extracted from or supplied to a room will need travel through the door so, as a general rule, fit the air valves either away from the door or near the window.
(If the valves are required in a specific position, please inform installers before installation. If necessary, make a mark on the structure to indicate what is required.)
- 7) Intumescent fire wraps or sleeves are available to be fitted on ducting wherever it passes through fire barrier. Check with building control to see if these are required.
- 8) The duct system has been designed to allow the air to flow freely and should be quiet in operation, but some air noise can occasionally be transmitted by the fans. It is advisable to fit some form of sound attenuation especially to the bedroom supply air duct. This can be a proprietary silencer or a short length of acoustic flexible duct (this must be pulled taught, so as not to restrict the airflow).

For Rigid Duct systems only

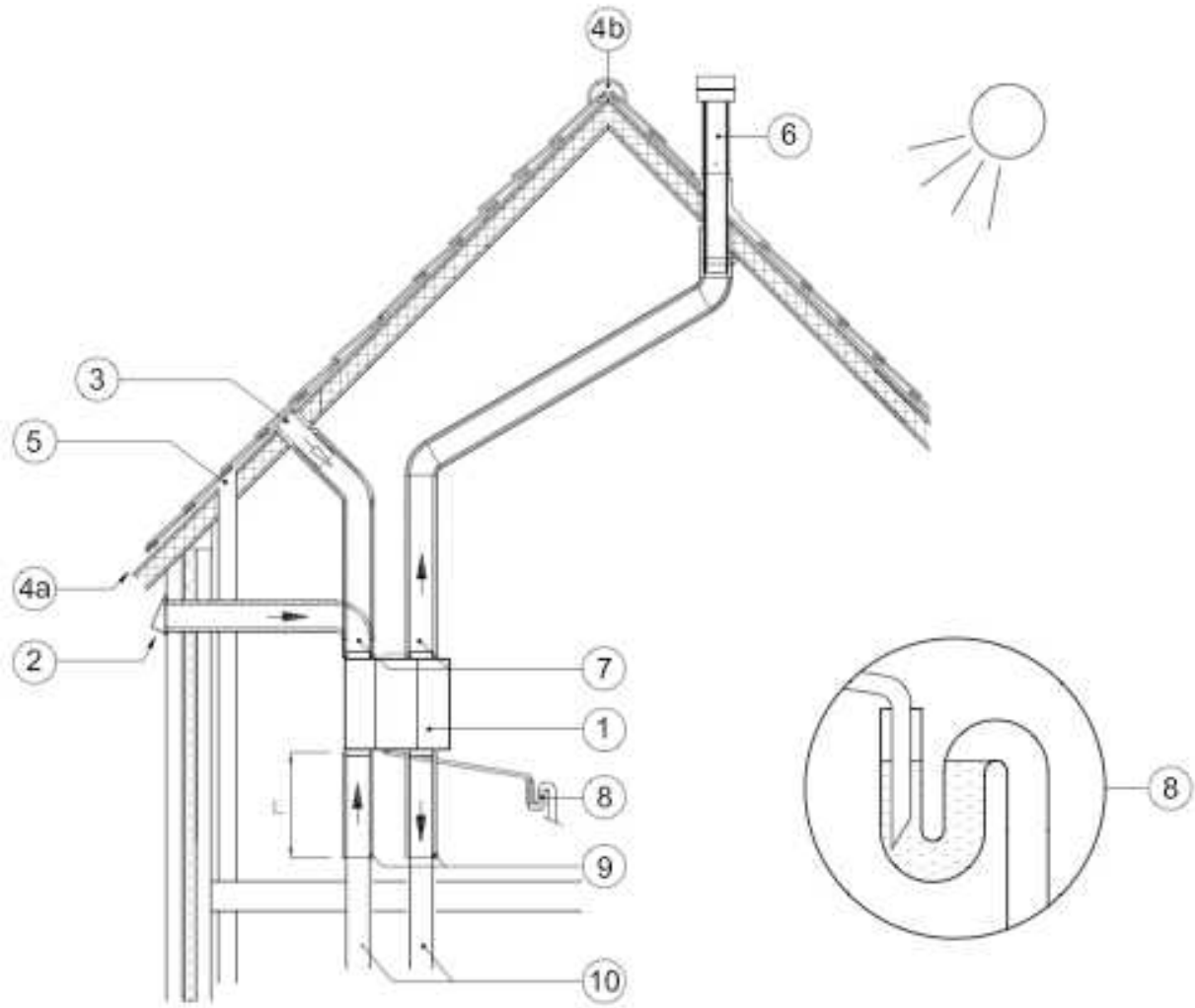
- 9) Each joint in the ducting needs to be airtight to ensure the correct performance from the system.
Seal with the tape supplied and/or with a proprietary flexible sealant (mastic or similar).
- 10) Each joint should be secured with at least a couple of the TEK screws to prevent ducting being disturbed by others. This is particularly important with the rectangular ducting - put one screw in both of the longer sides.
- 11) Ensure all components are assembled in the orientation shown; they have been done this way intentionally to encourage airflow to travel in a certain direction.

Radial ducting systems

- 12) The airflow for each duct will normally be controlled by a restrictor ring placed in the manifold connection when the ducts have been installed. It is necessary to note the length of each duct (to nearest metre) in order to calculate the size of restrictor ring required.

Send a list of duct lengths to CVC Direct for the calculation.

Note on the Positioning of Exterior Vents



- 1 - Heat Recovery unit
- 2 - Preferred fresh air inlet through wall grill, preferably on North side of house or facing prevailing wind.-
- 3 - Fresh air can be taken from under tiles provided there is enough free air space. Suitable for shaded roof only.
- 4a - Free suction from bottom of roof area
- 4 b - Free suction from of top roof area
- 5 - Soil pipe vent
- 6- Exhaust air through insulated roof vent (Alternative option to wall grill)
- 7 - Insulated ducting
- 8 - Condensate drain - must have 60mm of water in U bend. Alternatively use HepVo waterless trap.
- 9 - Acoustic ducting
- 10- Ducts to and from dwelling

N.B. A roof with slate tiles will get hot in strong sunlight and will heat air that is passed over it. If fitting the inlet vent to a slate (or other dark) roof, fit to an area that is shaded to avoid drawing in hot air in summer.

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CVC Direct - Heat Recovery Ventilation

Terms and Conditions for the Supply, Planning & Installation PLEASE Note. Quotations and Duct Designs will based on plans supplied. If the configuration of the building subsequently changes, it is clients responsibility to inform CVC Direct, provide current plans and pay any extra costs incurred.

1) Supply

A standard quotation for a HRV system includes :-

A heat recovery unit. Some HR units are supplied with a unit-specific switch and control cable whilst others may use conventional wiring and switch. Please check.

The ducting, which will be based on the shortest and most obvious routes. If the construction of the building necessitates long or convoluted routes for the ducting, the cost is likely to increase.

The system will normally be rigid PVC or steel round ducting or a Radial Ducting System using semi-rigid smooth bore ducting. In some instances, rectangular ducting is the preferred solution (or a combination of round and rectangular).

The assumption is that the HR unit is fitted within the warm envelope of the building, in which case both the fresh air inlet duct and exhaust duct from the exterior to the HR unit will be insulated duct.

(If the HR unit is located in a cold part of the building, the ducting from the HR unit to the point at which it enters the warm part of the building should also be insulated. This can be insulated on site or insulated ducting can be supplied at extra cost. The fresh air inlet will always be insulated regardless of cold or warm installation).

Duct connections to the exterior will normally consist of wall grills or roof vents or one of each.

In many instances, the installation of a ventilation system is an afterthought which often means that the optimum duct routes are not available owing to the construction of the building. It is advisable to make provisions for the HR unit and duct routes at an early stage of the project.

Ask for Our Guide to Planning and Installing a Ventilation System

Supply Options

Galvanised steel ducting is available as an alternative to PVC.

Insulated ducting If the HR unit is located in a cold part of the building, the ducting from the HR unit to the point at which it enters the warm part of the building should also be insulated. This can be achieved by covering the ducting with mineral wool where possible but it is often easier to use pre-insulated ducting. The exhaust duct to the exterior need not be insulated. CVC Direct can supply Ductwrap insulation if required.

Humidistats. These are a useful method of automatically switching the ventilation system to the 'boost' function when there is high humidity in a room (e.g. in a bathroom when taking a shower). A humidistat will allow the ventilation system to revert to previous mode when humidity in the bathroom is reduced.

Demand Control Ventilation - CO²/Temperature/Humidity Sensor

This enables a modulated output from the ventilation unit in response to variations in the above parameters. More suited to buildings with highly variable use/occupation - e.g. offices, schools, etc.

2) The Provision of Duct Plans and Drawings

The Client will be the person or company with whom the Contract has been agreed. The Contract will be deemed to have been entered into once a contract has been signed or a deposit payment made.

If these proposals are acceptable to you (or your client), CVC Direct will produce a duct design. For a rigid duct system, this comprises a detailed 3-D layout and is a very time-consuming process. There is a charge of approximately 10% of the budget cost of the system to produce the duct design. This is deducted from the final cost of the system.

If a Radial Ducting System (such as HB+) is to be used, then a simplified duct plan is produced showing suggested routes but not detailed planning of routes because of it's versatility.

The first plan will be a draft proposal for your comments and amendments. The plans can be amended to suit the building for which the plan is produced. The drawing will remain the property of CVC Direct until such times as the deposit/design fee has been paid in full and no copies may be made without the express permission of CVC Direct.

CVC Direct can amend the plans to the clients requirements, but will only undertake to make 2 significant changes to the plans. If further changes are required, CVC Direct reserve the right to charge for the additional design time to make these changes at an hourly rate of £45.00 an hour. If extra materials are required, these are chargeable.

The materials supplied will be based on the duct routes shown on the plans and approved by the client or the client's representative.

The Client is requested to approve the final plans and accept these terms and conditions in writing in order to proceed with the order.

Whilst every effort is made to make the plans as accurate as possible, it is almost inevitable that there will be some aspect of either the building or the installed services that conflicts with the ducting, in which case CVC Direct will try to resolve these conflicts but reserves the right to charge for this.

N.B.
CVC Direct quote for and supply complete ventilation systems (even if supplied in parts). It is often the case that there are some components surplus to requirements. The items supplied will be those specified on the quotation and/or the duct plan. We do not collect any items surplus to requirements as items will have been supplied as specified. Surplus items can be returned to CVC Direct for credit but **the credit (if any) will be purely nominal and will be issued entirely at our discretion.**

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3) Installation

Installation - if required.

Unless specifically stated in writing, no structural work has been included in the price quoted. CVC Direct will fit ducting to previously prepared & agreed duct routes. The Client is responsible for all structural work associated with the installation of the ventilation system. If access is required to parts of the building which cannot normally be reached with a ladder or steps, it is the clients responsibility to provide the appropriate access equipment.

The Client is responsible for the safekeeping of all materials delivered to site, and including installed items.

The Client is responsible for an electricity supply to the HR unit and for installing the control cable to the heat recovery unit and any remote controllers.

The Client is responsible for the positioning of the exterior vents (either roof tiles or wall grills). As it will normally be much easier to install these while the building is being constructed, it is advisable to obtain these in advance of the HRV system. CVC Direct can supply suitable fittings but always ask for advice about their suitability and positioning. Soil pipe vents are NOT suitable.

If goods are damaged on site by third parties, or unauthorised alterations are made, then rectification is chargeable.

The client is responsible for arranging the condensate drain from the HR unit to a suitable waste pipe, but not directly to the exterior as there is a risk that it may freeze.

The goods to be supplied and the installation quotation are based on the duct design shown approved on the attached drawings.

The Client is requested to approve the final plans and accept these terms and conditions in writing (or by email) in order to proceed with the installation.

CVC Direct installers will attempt to be as flexible as possible with other artisans, the clients requirements and the site conditions, but significant changes to plans may incur extra costs.

Installation costs are based on:
Free access to the site during normal working hours & that parking is available on or near the site.
Unrestricted access to the parts to the building which require ducting to be installed.
The building being in a state of readiness for the ducting to be installed & that a full day’s work can be achieved. It is the client’s responsibility to inform CVC Direct if this is not possible at the times arranged.

IF INSTALLERS ARRIVE ON SITE ON THE PREARRANGED DATE BUT ARE PREVENTED FROM WORKING FOR ANY OF THE ABOVE REASONS, OR BECAUSE PREVIOUSLY AGREED DUCT ROUTES ARE NOT AVAILABLE, THE VISIT WILL BE CHARGED AT THE PREVAILING DAY RATE (OR PART THEREOF) IF IT IS NOT POSSIBLE TO UNDERTAKE ALTERNATIVE WORK.

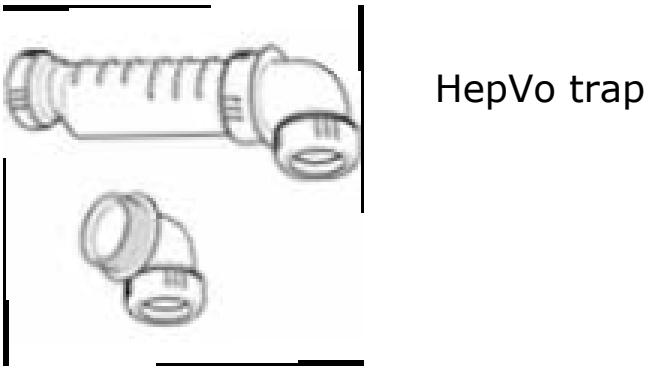
If the site is within the London Congestion Charge area, the cost of this is chargeable to the client.
If there is no parking on site & parking is restricted in the area around the site, it is the client’s responsibility to provide the appropriate parking permits. If no permits are available, then the cost of parking is chargeable.

PLEASE NOTE!! These following items are often forgotten - ensure that these items are installed at first fix, if required. They are not included any CVC Direct installation work.

Most HR units need a condensate drain .
The condensate must drain into in a U bend which must discharge under water.

The U bend must be capable of holding water to the depth of 60mm in order to ensure that air is not sucked back into the ventilation unit. Ensure that the trap is filled with water in order to create an air trap.

Alternatively, a Hep20 waterless trap can be used which avoids this situation. (Recommended)



Don’t forget HR units need a control cable (varies with unit - ask for details).

This needs to be installed at first fix.

The control cable is required to connect the HR unit to the speed control switch. The switch is best located in the kitchen area next to the light switch so that it is obvious and is easily accessible, especially when cooking.

It is also suggested that the switch be situated near the door to the kitchen in a fairly prominent place. This means that it is easily noticed when leaving the kitchen so that one is reminded to switch the ventilation rate back to normal after having used the boost function.

Humidistats (if required).

Some MVHR units can have humidistat capability built in to the unit, usually as an optional extra. Alternatively, humidistats can be fitted in individual rooms with a cable running to the HR unit. Cable requirements may vary with the type of HR unit and/or humidistat used. (please check with CVC Direct what cable is required. Normally, a lightweight 2 core cable should be run from the position of the HR unit to the appropriate bathroom(s). Depending on HR unit used, this cable will either carry a low voltage sensing current (milliamps) or it may be used to switch a mains supply to the unit. PLEASE CHECK. Humidistats should be sited at about head height, and away from doors or windows is possible.

The air flow to each air valve is controlled by a restrictor ring fitted in the manifold connection of each duct.

The size of the restrictor ring will be calculated by CVC Direct

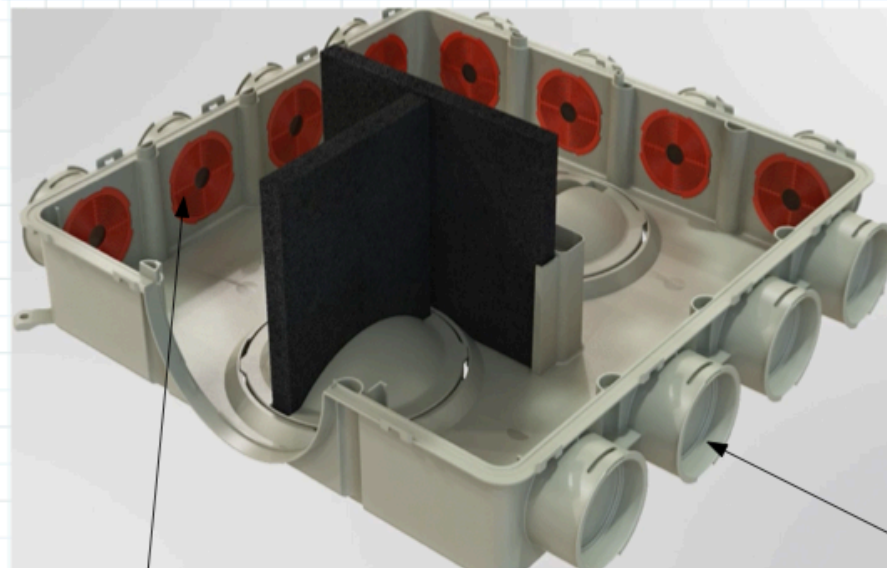
In order to do this, the length of each duct is needed. Ensure each duct is identified.

Record the duct length to each air valve. This form can be used on site to note these lengths.

A copy of this form can be obtained from CVC Direct by email and returned to CVC Direct when completed.

NB PLEASE use only this form when submitting duct lengths. Please request an editable version by email

A list of restrictor ring sizes will be returned to you.



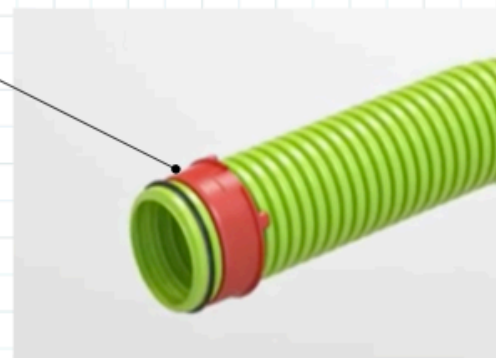
Manifold connection to duct

Restrictor ring fitted from inside manifold



The restrictor ring has several numbered segments.

The size of the restrictor ring can be changed by removing the inner segments until the number on the remaining segment corresponds to the one shown on the list



Sealing Ring and click ring pushes into manifold connection

Record of installed duct lengths for Radial Ducting (Green)

Name Site Address

Identify MVHR system if more than one installed

Supply manifold		Duct lengths		Size of ducting used?	
Duct no.	Room name	Duct length	90° elbows fitted		
1				Round	AE34 AE48
2					75mm 92mm
3					
4					
5				Oval	AE35 AE55
6					50x102 60x132
7					
8					
9					
10					
11					
12					
Extract manifold		Duct lengths			
Duct no.	Room name				
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
Inlet	Total Inlet ducting from exterior to MVHR and from MVHR to manifold				
	Duct dia.	Length in m.	90° bends	45° bends	
	Vented via	Roof vent?	Wall vent?		
Exhaust	Total exhaust ducting from exterior to MVHR and from MVHR to manifold				
	Duct dia.	Length in m.	90° bends	45° bends	
	Vented via	Roof vent?	Wall vent?		

Email completed list to CVC Direct Ltd - info@cvcdirect.co.uk