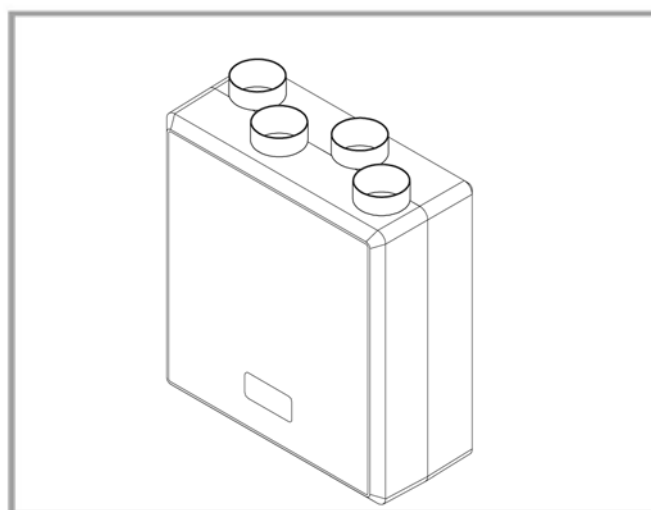


DC Heat Recovery Unit MVHR

Wholehouse heat recovery unit



Stock Ref. N°

DC Heat Recovery
Unit MVHR 443423

Installation, Maintenance & Users Instructions

PLEASE READ INSTRUCTIONS IN CONJUNCTION WITH ILLUSTRATIONS.
PLEASE SAVE THESE INSTRUCTIONS.



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DC HEAT RECOVERY UNIT MVHR

INSTALLATION AND MAINTENANCE INSTRUCTIONS

Read the following instructions in conjunction with the illustrations before commencing installation.

1.GENERAL

IMPORTANT POINTS TO NOTE

1. THIS APPLIANCE IS INTENDED FOR PERMANENT CONNECTION TO THE MAINS ELECTRICAL SUPPLY FIXED WIRING AND MUST BE INSTALLED BY A SUITABLY QUALIFIED PERSON.
2. THIS APPLIANCE MUST BE SITED AND CONNECTED IN ACCORDANCE WITH CURRENT UK BUILDING, FACTORY AND IEE WIRING REGULATIONS (BS7671) OR THE APPROPRIATE NATIONAL REGULATIONS IN YOUR COUNTRY.
3. WIRING TO THE APPLIANCE IN THE UK MUST BE VIA A FUSED AND SWITCHED CONNECTION UNIT INCORPORATING A DOUBLE POLE SWITCH WITH 3mm CONTACT SEPARATION AND CONFORMING TO BS5733 OR BS1363 PART 4. A 3 AMP BS1362 FUSE SHOULD BE FITTED TO THE CONNECTION UNIT, WHICH MUST BE LOCATED OUTSIDE OF A ROOM CONTAINING A FIXED BATH OR SHOWER.
4. WARNING: THIS APPLIANCE IS CLASS I AND IT MUST THEREFORE BE EARTHED.
5. CHECK THE RATING LABEL ON THE APPLIANCE TO ENSURE THAT THE ELECTRICAL SUPPLY IS COMPATIBLE WITH THE APPLIANCE WHICH IS RATED AT 220-240V 50 Hz AC.
6. THIS APPLIANCE MUST BE SITED OUT OF REACH OF ANY PERSON USING A FIXED BATH OR SHOWER.
7. THE UNIT'S CONDENSATE DRAIN MUST BE CONNECTED TO THE BUILDING WASTE WATER DRAINAGE SYSTEM.
8. THIS APPLIANCE MUST BE SITED AWAY FROM DIRECT SOURCES OF HEAT IN EXCESS OF 40 DEGREES C.
9. UNIT MUST BE SITED IN A FROST FREE LOCATION.
10. SITE THE APPLIANCE AND ARRANGE THE ASSOCIATED DUCTING AND GRILLES TO PROVIDE A BALANCED CIRCULATION OF AIR.
11. THE EXTERNAL INTAKE TERMINALS ASSOCIATED WITH THIS APPLIANCE MUST BE SITED AT LEAST 600mm AWAY FROM THE FLUE OF A FUEL BURNING APPLIANCE/ OTHER EXTERNAL GRILLE.
12. ALL SAFETY REGULATIONS AND REQUIREMENTS MUST BE STRICTLY FOLLOWED TO PREVENT HAZARDS TO LIFE AND PROPERTY BOTH DURING AND AFTER INSTALLATION AND DURING ANY SUBSEQUENT MAINTENANCE AND SERVICING.
13. SWITCH OFF THE MAINS ELECTRICAL SUPPLY BEFORE COMMENCING INSTALLATION, MAINTENANCE OR SERVICING.
14. IF THE DUCTWORK PASSES THROUGH AN UNHEATED LOFT VOID OR SIMILAR LOCATION, IT MUST BE INSULATED.
15. CERTAIN APPLICATIONS MAY REQUIRE THE INSTALLATION OF SOUND ATTENUATION TO ACHIEVE THE SOUND LEVELS REQUIRED.
16. THIS APPLIANCE IS NOT INTENDED FOR USE BY YOUNG CHILDREN OR INFIRM PERSONS WITHOUT SUPERVISION.
17. YOUNG CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE APPLIANCE.

DO NOT switch off the unit except for servicing & maintenance - it is designed to run continuously. If the unit is switched off, indoor pollutants and moisture levels may increase and become a danger to your health and damage your home.

It is important to follow the advice in this user manual and correctly maintain the system to ensure a healthy indoor environment.



Disposal

This product should not be disposed of with household waste.

Please recycle where facilities exist. Check with your local authority for recycling advice.

2. PRODUCT DESCRIPTION

The DC Heat Recovery MVHR unit is a mechanical ventilation/heat recovery (MVHR) unit for domestic and commercial applications. It is designed for connection to 125mm-diameter ducting.

The unit's two fans and heat exchanger arrangement simultaneously supply and extract air while transferring heat from the stale exhaust airflow to the fresh intake airflow. This provides up to 91% heat recovery from the stale extracted air.

Separation of the exhaust airflow and intake airflow is maintained throughout the unit.

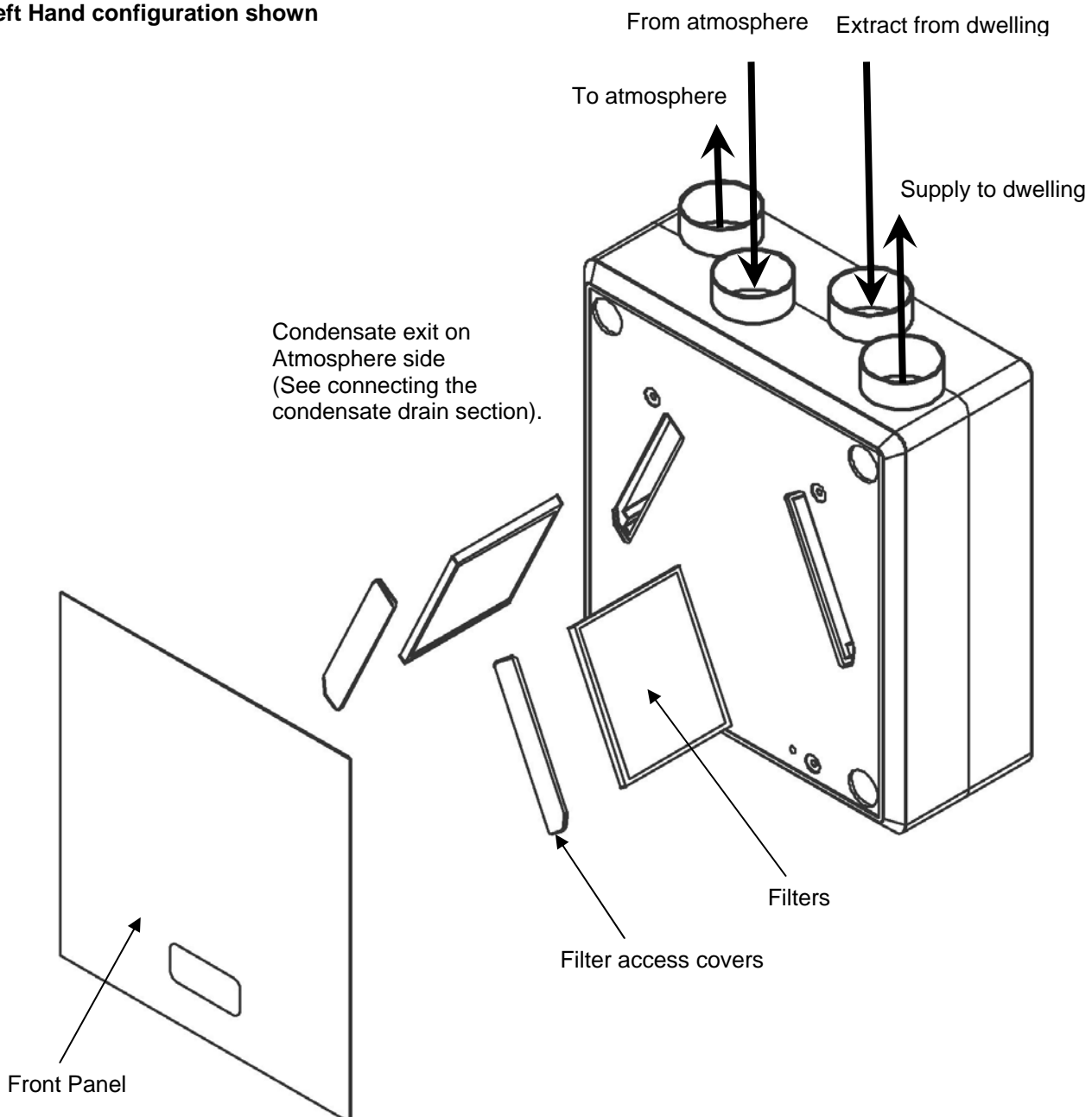
The fan motors have maintenance free, self lubricating long life bearings and are fitted with thermal overload protection, which in the event of a fault causing a motor to overheat will cut off the electrical supply to that motor. If this occurs, isolate the unit, check for any obstructions, leave the unit for a short time for the motor to cool before reconnecting the power supply. If the fault reoccurs, isolate the power supply and call a service engineer.

The fans in this unit are low energy EC motors with a constant (100% adjustable) air volume.

The EU3 filters in the unit ensure that the fresh supply air is clean as it enters the home. Also the extract air from the property is filtered to protect the heat exchanger from unwanted contamination. Check filters regularly and clean if necessary.

The unit is delivered complete with a mounting plate, fitting instructions, fixing kit and a condensation discharge fitting.

Left Hand configuration shown



3. Technical specifications

Maximum flow (Free Discharge)	280 m ³ /h (78 l/sec)
Low and Medium flow and optional sensor inputs	0-100% adjustable on each speed. Set on installation
Dimensions (w x h x d) [mm]	560 x 635 x 260
Spigot diameter [mm]	Ø125
External diameter condensate discharge [mm]	22
Filter class	EU3
Weight	14 kg
Supply voltage [V~/Hz]	230 / 50Hz / 1Ph
Power (Watts)	Maximum 150W
Protection degree	IPX2
Thermal efficiency up to %	91%

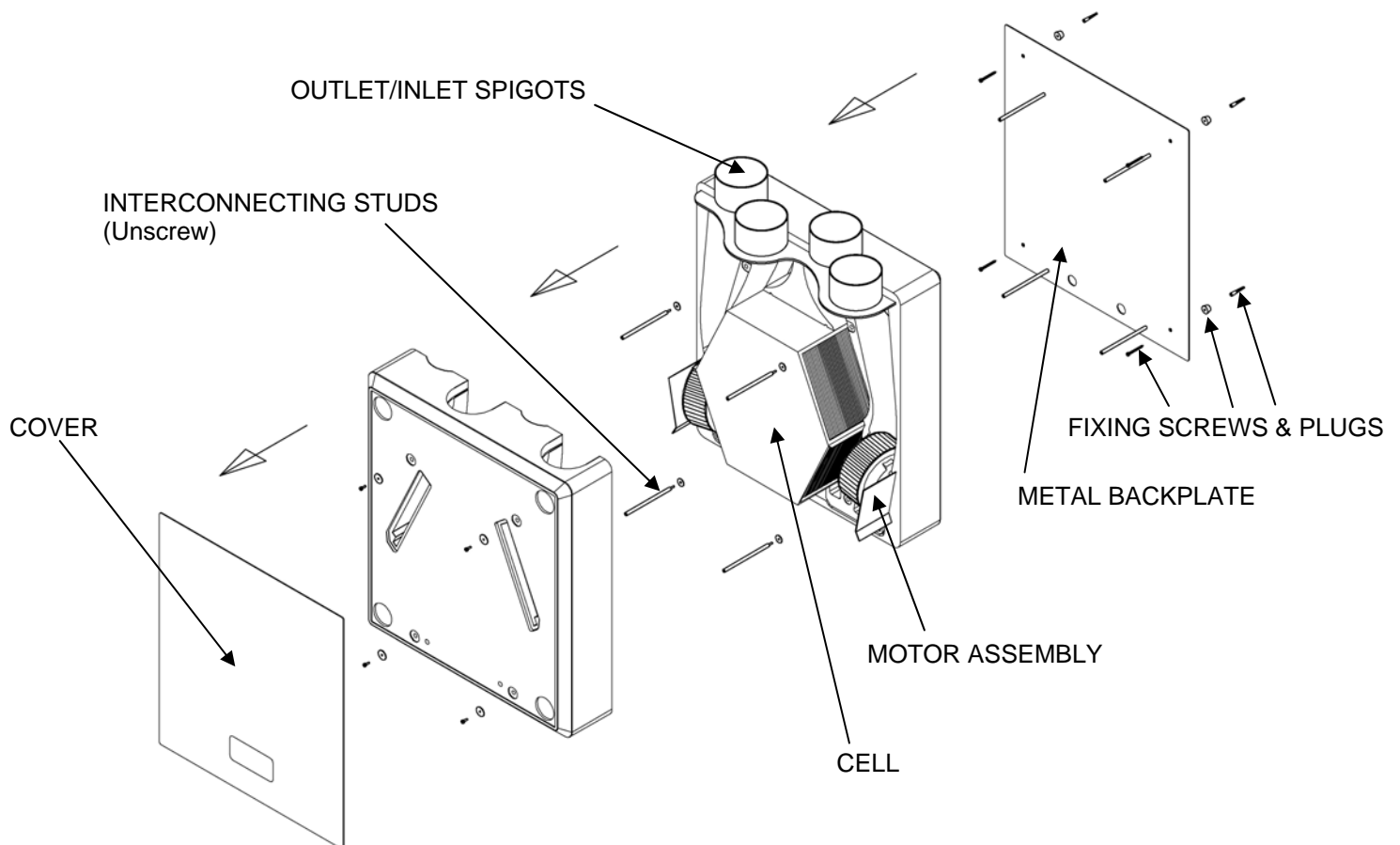
4. Fitting the DC MVHR unit in brief

Please ensure that you read each section of this leaflet carefully. This section is just a brief overview of each installation stage.

1. Dismantle the DC MVHR unit in accordance with the diagram and text on page 6.
2. Mounting plate: Mounted by means of stand off feet, screws and plugs supplied, vertically or horizontally. Use the drilling template on the side of the box to locate the hole positions, ensuring that there is enough space around the unit so that the duct work and the condensation drain can be fitted (see pages 7 & 8 for details of which side of the unit the condensate drain should be fitted).
3. Reassemble the DC MVHR unit in accordance with the diagram and text on page 6.
4. When the HR unit has been installed, the ducting can be completed. Remember that both ducts to and from the outside will be fitted to one side of the unit and the ducts to and from the home are attached to the other side of the unit refer to (page 9).
5. When the duct runs are completed, and an appropriate electrical supply is present see page 10 for wiring details, the installation can be completed.

For further information about the operation, adjustment and maintenance of the unit, read the following pages carefully.

5. Installation diagram



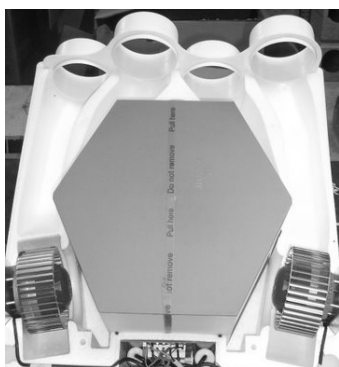
1. Pull the front cover off the four Velcro fixings.
2. Place the unit flat on the floor and unscrew and keep the four stud retaining screws.
3. Without damaging the rubber seal carefully separate the moulded top half of the unit from the bottom half by pulling the casing straight forward.
4. Unscrew the four forward protruding studs and keep in a safe place.
5. Stand unit upright to separate the metal wall mounting plate from the bottom half of the casing. Pull the casing forward leaving the rear protruding studs attached to the metal backplate.
6. Secure the metal base plate with the rear studs still attached to the wall
7. Re-assembly of the unit to the wall mounted backplate with the protruding studs is the reverse of the removal procedure

6. Connecting condensation drain

The condensation drain must be mounted at the bottom of the HR heat recovery unit with the fitting supplied. Use a 20mm hole saw to cut the hole, take care to cut on the correct side of the unit according to left or right handed configuration. Use silicon sealant to seal the condensation fitting to the HR unit. The drain must discharge into the household drainage system and must be insulated.

Follow the steps below:-

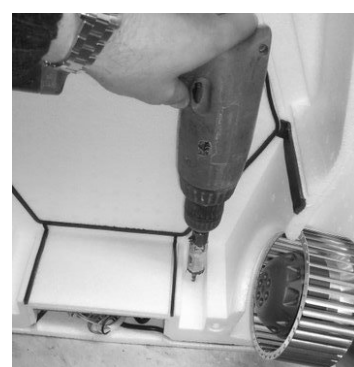
1. Lay the unit on a flat level surface [1] and carefully slide the heat recovery cell out from the housing [2] put the cell to one side.
2. Determine what side you want the condensate drain to be (see page 8 for left and right hand positioning), if mounting the unit vertically the condensate hole needs to be in position shown at its lowest point to allow the condensate to run out [3] (image shown for right hand installation).
3. If mounting the unit horizontally then position the condensate hole in position shown [4] (image shown for right hand installation).
4. Use a 20mm hole saw to cut-out the correct bung, Clean away any debris from drilling the hole.
5. Screw the condensation fitting as shown [5] and silicone seal to create a water tight seal.
6. Connect up to the household drainage system.
7. Ensure that the drain incorporates a U-bend to prevent air penetration.
8. Ensure that the distance between the unit and the U-bend is adequate for de-mounting and cleaning if required.
9. Condensate drain supplied:- 22mm standard PVC



[1]



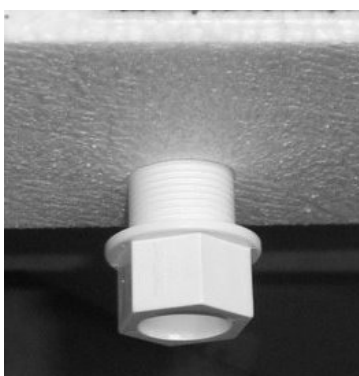
[2]



[3]

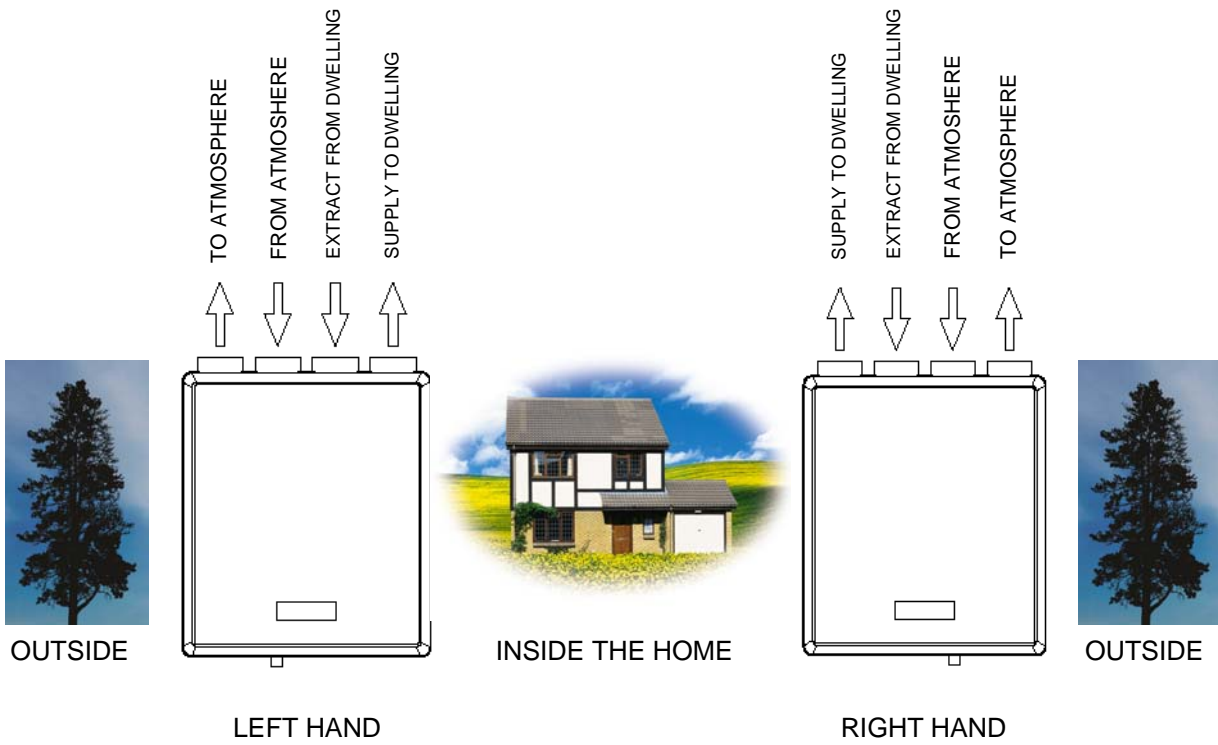


[4]

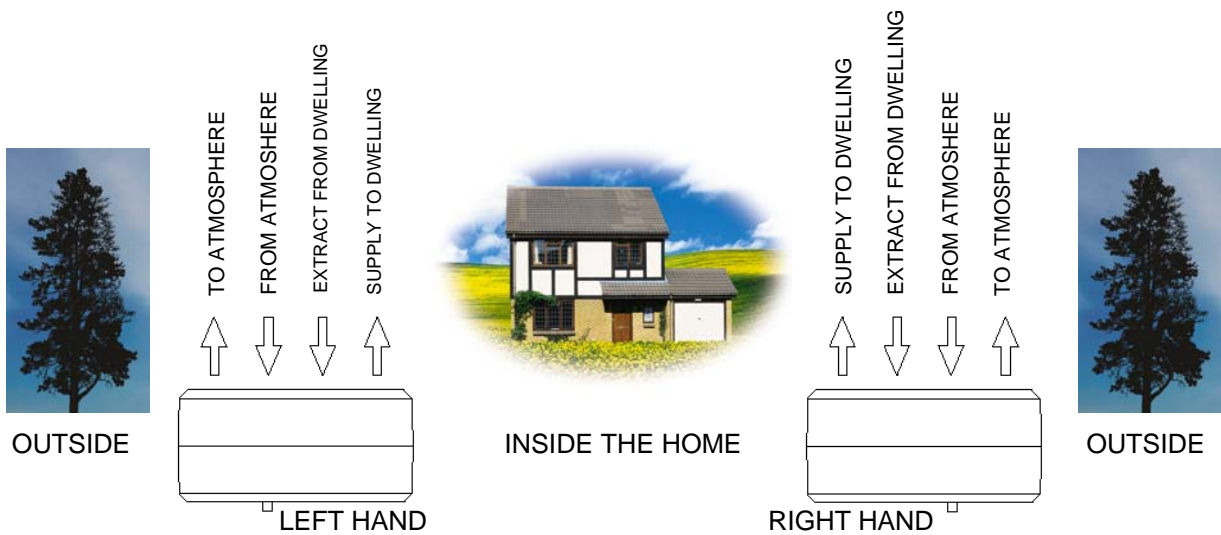


[5]

Drain position when mounting the unit vertically.



Drain position when mounting the unit horizontally.



IMPORTANT:- FOR HORIZONTAL MOUNTING ENSURE 4°SLOPE DOWNWARDS TOWARDS CONDENSATE DRAIN POSITION

7. Installation

7.1 Mounting the DC MVHR unit

The mounting plate of the DC MVHR unit can be fitted directly to the wall or joists with the supplied screws, plugs and stand off feet. For wall fitting use the template on the side of the box supplied. Ensure that there is enough space for the condensation fitting and ducts to be connected. The position of the electrical power supply (a fused switched isolator) must **not** be mounted above or closer than 1m to a cooker where it could be affected by excessive heat or moisture .

The unit is designed to be mounted in a kitchen cupboard / on the wall, or horizontally in a loft/void.

Make sure there is enough free space at the front of the appliance for accessing/cleaning the filters and carrying out maintenance on the appliance.

Important Note:- When fitting on its back make sure that a minimum of 4° downwards slope towards the condensate drain is maintained to ensure proper drainage of condensation.

7.2 Connecting ducts

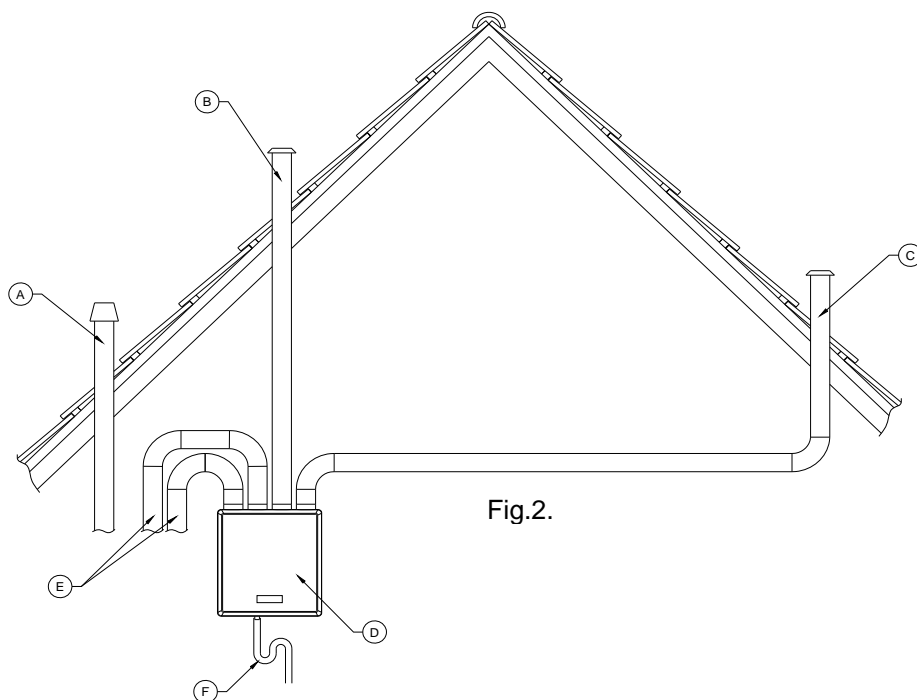
When the DC MVHR heat recovery unit has been installed the ducts can be fitted. The ducts to and from the home are on one side of the unit. The ducts to and from outside are on the opposite side.

In order to prevent condensation on the outside of the exterior air intake duct and the air exhaust duct, both ducts **must** be insulated.

We recommend that rigid ducting is used to within 150mm of the appliance. The last connection to the unit maybe made in flexible ducting. If flexible ducting is used it should be fully extended with no drooping over joists but without placing any strain on the terminal or fixings. We recommend a minimum distance of 200mm between the appliance and any sharp bends in the duct work, To ensure that the noise levels are kept to a minimum.

Connection example
DC MVHR heat recovery unit.

- A = Min 1 Metre (optimum 2 metres)
Between intake & exhaust terminals.
- B = Intake duct from roof
- C = Exhaust duct from roof
- D = DC MVHR unit
- E = Ducts from and to the house
- F = Condensation drain



8 Electrical connections



The appliance must be earthed. All wiring must conform to B.S 7671:IEE wiring regulations. And be completed by a qualified electrician.

This appliance is suitable for 230v ~ 50Hz single phase supply fused at 3 amps.

The appliance is supplied with a mains flexible cable (PVC sheathed, 6-core 0.75mm²).

A double pole switch having a minimum contact separation of 3.0mm must be used to provide isolation for the unit.

Switch Positions	Function
Trickle (Low) (R1)	100% adjustable
Medium (R2)	100% adjustable
Purge (High) (R3)	100% adjustable
Remote Switch Positions	
(R4)	100% adjustable
(R5)	100% adjustable

Upon installation the fan should be started in High speed mode to ensure optimum performance of the fans and switched to the required continuous ventilation setting.

The fan speed controller **must not** be mounted above or closer than 1m to a cooker where it could be affected by excessive heat or moisture.

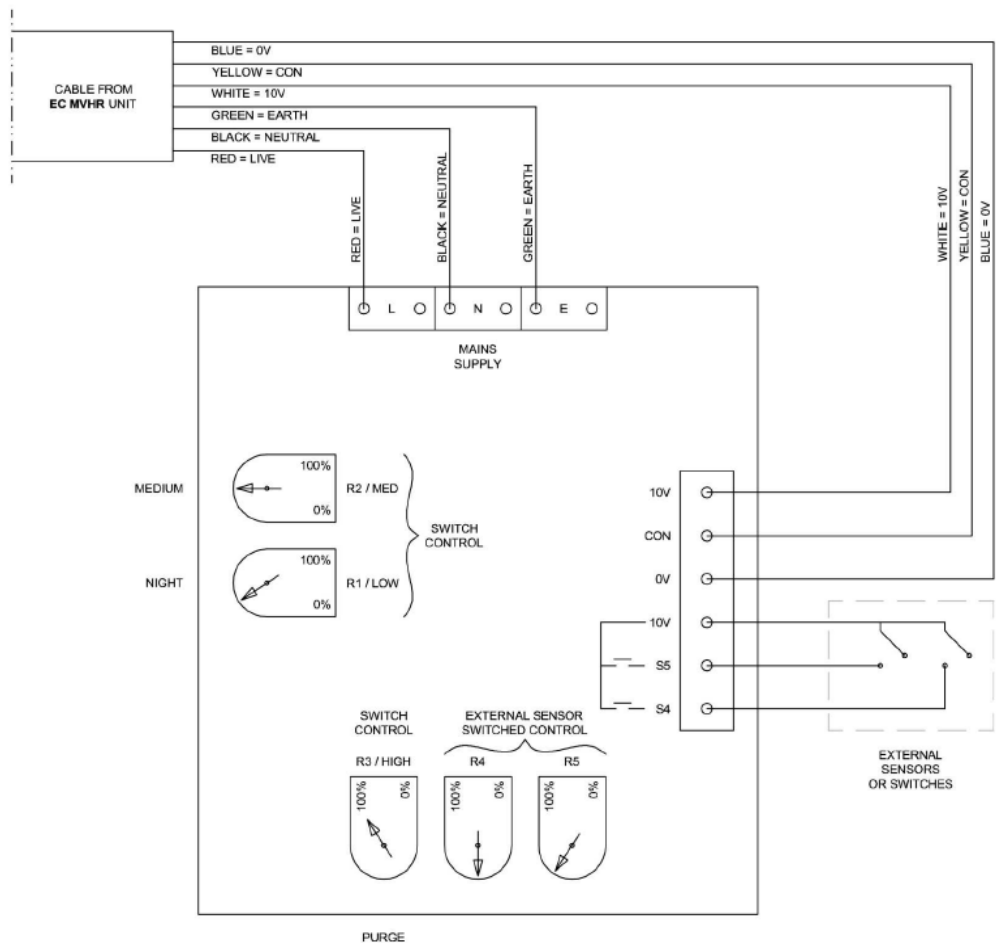
8.1 Wiring Diagram

A five speed control switch (3 x manual, 2 x external sensors) is supplied. Each fan speed must be adjusted to suit dwelling on installation (R1/R2/R3).

Any optional external sensors, i.e.: CO2, Humidity, Timer/Clock, Motion/PIR must also be adjusted when connected (R4, R5).

Important all the external sensors must have volt free contacts.

Suggested set points are shown for general purpose ventilation (trickle, medium, purge) which enable manual boost for purge (maximum) ventilation and/or override of external sensors when fitted.

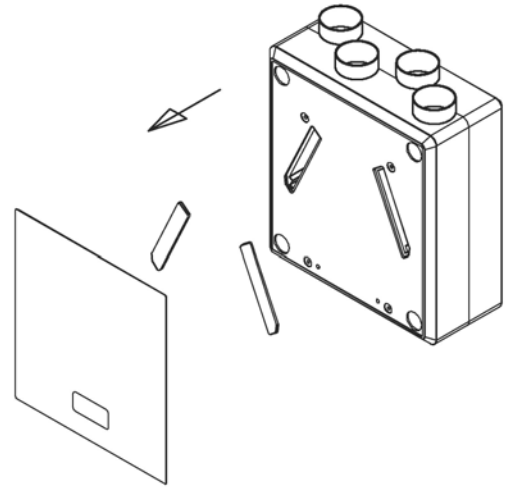


9. User Maintenance

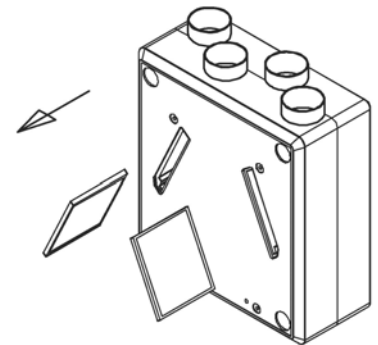
User maintenance is limited to periodically cleaning the filters and the heat recovery cube. The unit should not be used without filters. Cleaning intervals can be extended in areas of relatively low air pollution levels. The filters should be replaced annually or after a maximum of 3 cleaning cycles

9.1 Cleaning the filters by user

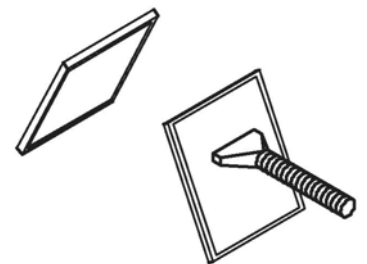
Switch off the power supply
Remove front panel
Carefully remove filter covers



Carefully remove the 2 filters

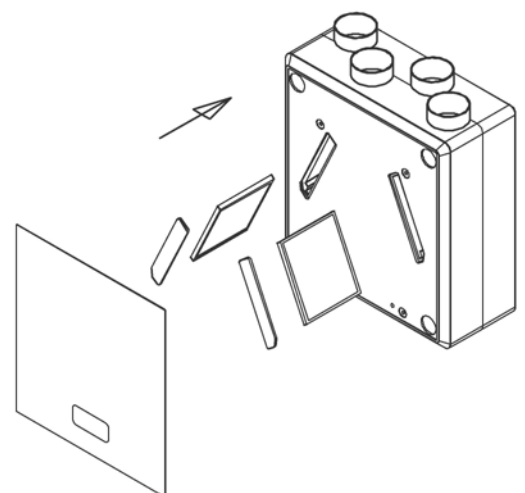


Gently vacuum the outside of the filters as shown



After cleaning replace the filters
Replace filter covers
Replace front panel

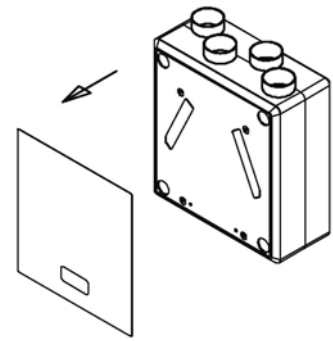
Switch power back on and check unit is operating normally



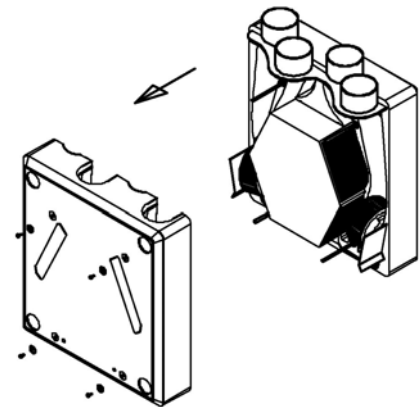
9. User Maintenance

9.2 Cleaning the heat exchanger by user

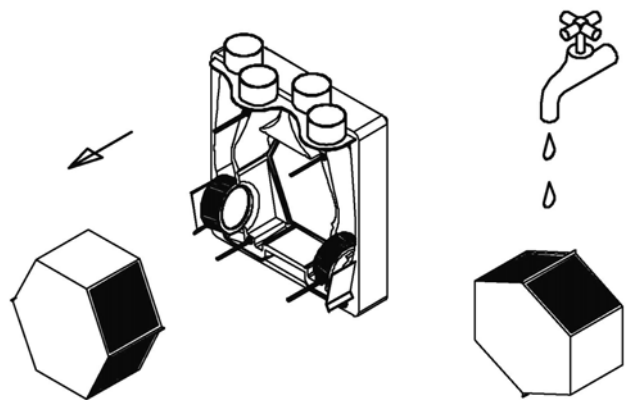
1. Switch off the power supply & remove the front panel



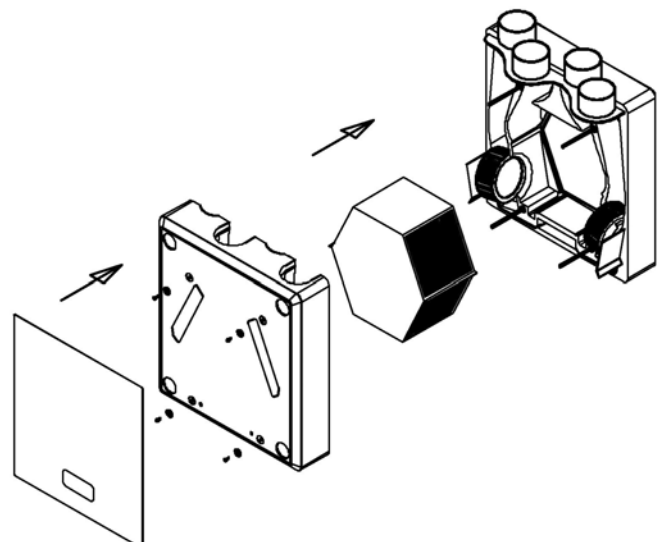
2. Unscrew the 4 screws on the front of the unit. Carefully remove the front half of the unit and put to one side.



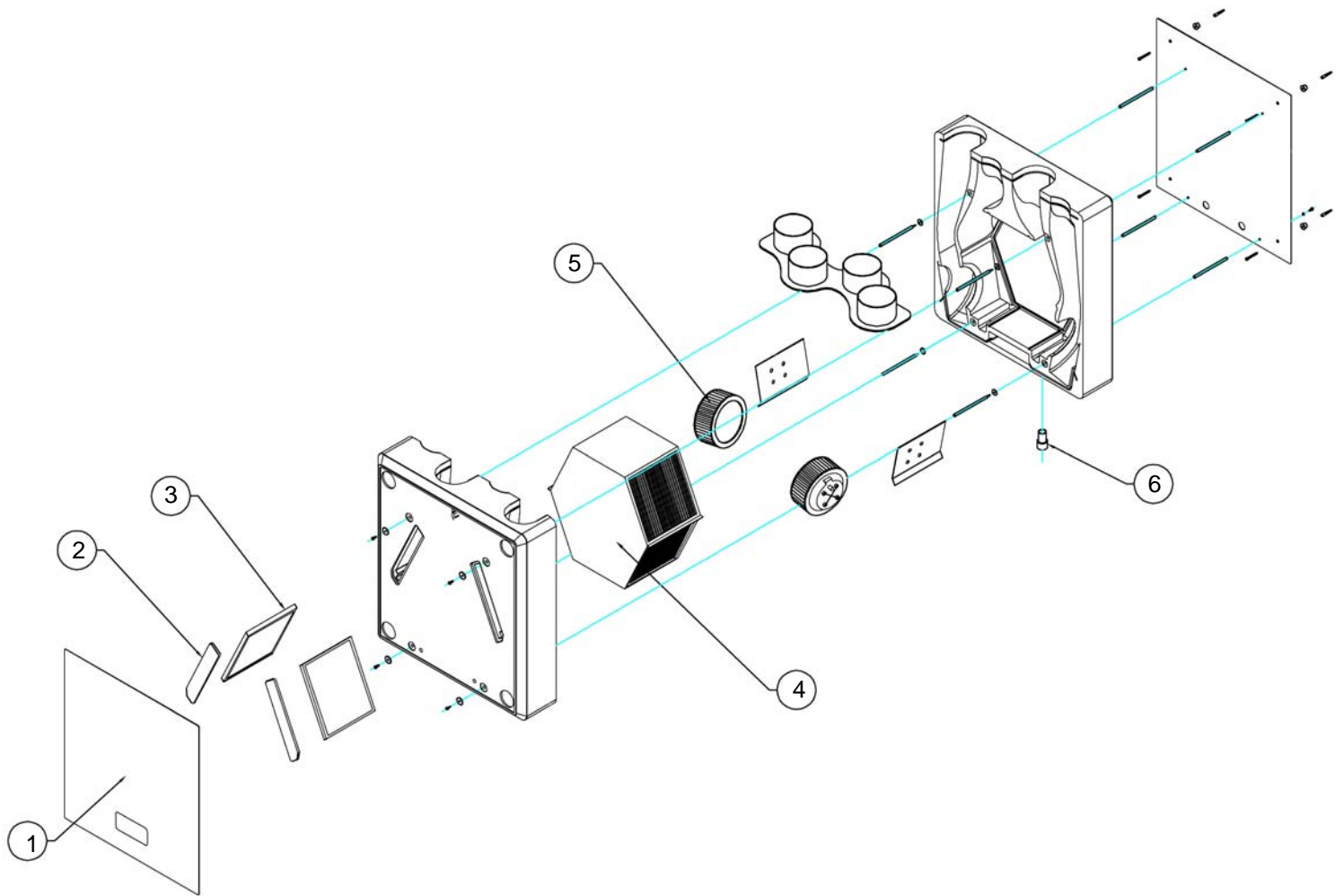
3. Carefully remove the heat exchanger. Clean the heat exchanger with warm soapy water, use a suitable sterilising agent to sterilise. Allow to dry fully before proceeding.



4. Reassemble the unit taking care not to damage the rubber seals



10. Spares





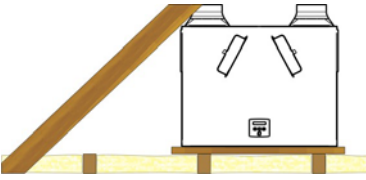
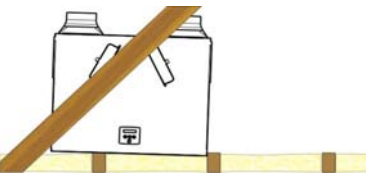
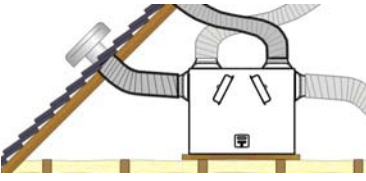
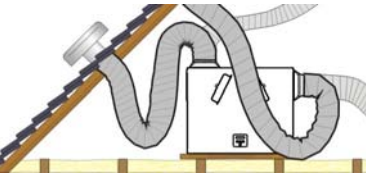
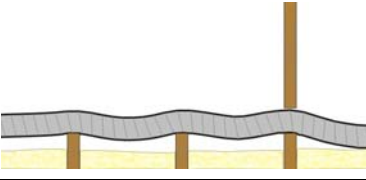
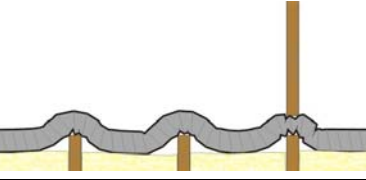
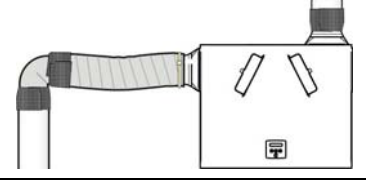
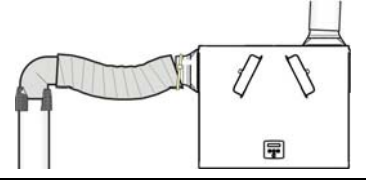
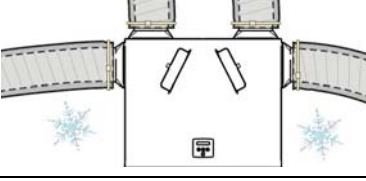
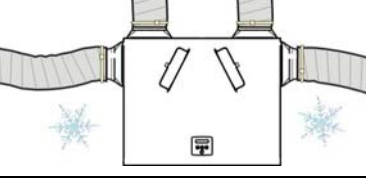
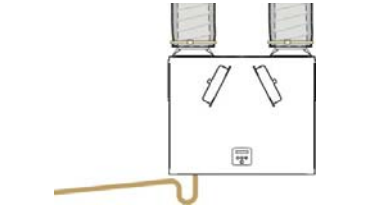
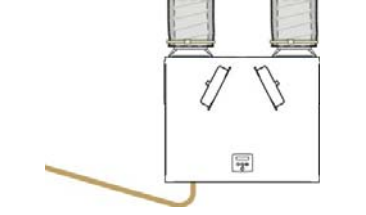
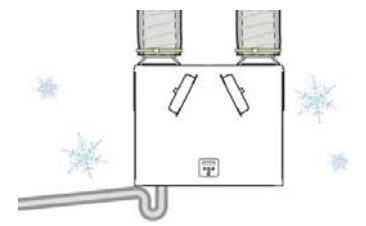
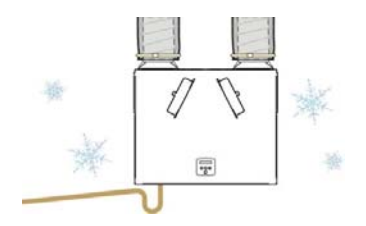
ITEM	PART NUMBER	DESCRIPTION
1	444364	FRONT COVER (WHITE)
2	444363	FILTER COVER (SET OF 2)
3	443889	FILTERS (PACK OF 2)
4	444362	HEAT RECOVERY CELL
5	444374	E.C FANS
6	444360	CONDENSATION DRAIN

MVHR Installation Checklist

REQUIRED TO BE COMPLETE TO COMPLY WITH CONDITIONS OF WARRANTY,
but does not affect statutory rights.

This is a short check list of good practice do's and don'ts that may affect the safety or functionality of the installation. It is not a complete list of what is required. They must be complied with in order to ensure that the installation performs as expected.

Unit Serial number: _____ Installer's name: _____

Check			Date and initials
1. Is the unit stable and horizontal with room around it to allow maintenance?			
2. Is any flexible ducting pulled taut to prevent moisture collection and avoids airflow issues?			
3. Is any flexible ducting crushed which will cause airflow issues?			
4. Are all joints in the ductwork sealed to prevent air leakage?			
5. Is the ducting insulated to prevent condensation and cooling or heating of the air?			
6. Does the condensate drain a) have the correct slope to ensure water runs away and b) is fitted with a trap to prevent smells coming back into unit?			
7. If the condensate drain passes through a cold space is it insulated to prevent freezing?			

See the Installation Guide and Checklist at: http://www.sap-appendixq.org.uk/documents/MVHR_Installation_Guide_Final.pdf