

"WHHR125DC" Whole House Heat Recovery Unit with Low Energy DC Motor



Installation, Operating and Maintenance Instructions

- domestic and commercial use





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Introduction

Interior comfort, air quality and energy efficiency are vitally important considerations in buildings today.

The Vectaire WHHR125DC has been developed to meet these demands by providing clean fresh air whilst extracting stale polluted air from the building using state of the art technology to maximise energy efficiency.

For the home owner or occupant, this Instruction Manual explains:

- How your Vectaire WHHR125DC system works.
- How to operate and maintain your Vectaire WHHR125DC.

For the professional installer, this Instruction Manual explains:

- How to install the Vectaire WHHR125DC.
- How to commission the unit.
- How to maintain the unit.

Safety Notice

It is important to read this Instruction Manual carefully before installing or using the product. Following these instructions will ensure that your ventilation system is installed, commissioned and used properly and continues to operate effectively. Vectaire will not be held responsible and will not accept liability for any damage caused to persons or property through failure to follow the guidance provided in this manual. It should always be available with the product for easy reference.

How the system works

The Vectaire WHHR125DC works by extracting stale polluted air from rooms where most moisture is generated and providing fresh pre-warmed air taken from outside the house and delivering it to other rooms, creating a flow of fresh, clean air throughout the house.

Most of the heat reclaimed from the extracted air is used to pre-heat incoming fresh air by means of a "heat exchanger" built into the unit. The ventilation system operates continuously so the air remains free from harmful pollutants and excessive moisture, but without wasting heat or energy unnecessarily.

The air travels from terminals built into the ceiling which are connected by hidden ducts to the unit. The unit is usually installed in a roof space or cupboard.

Each unit is commissioned individually so the amount of air moved is set to suit the specific size and style of the house. Most systems will also have a facility to boost the extraction rate at times when more moisture is being generated, such as when bathing or cooking. This may be done automatically by electronic sensors or by a conveniently located boost switch for manual operation.

DO NOT switch off the unit; it is designed to run continuously and should not be switched off, except for maintenance or filter replacement. It is important to follow the advice in this user manual and correctly maintain the system to ensure a healthy indoor environment.

If a boost switch has been installed, it can be used to increase the extract ventilation rate at times when moisture or pollutant levels are considered excessive. The unit has an integral over-run timer and will continue at boost speed for a short period of time (set at installation) when the boost switch is moved back to the off position.

You may have electronic sensors which detect high levels of moisture and pollutants which boost the system automatically.

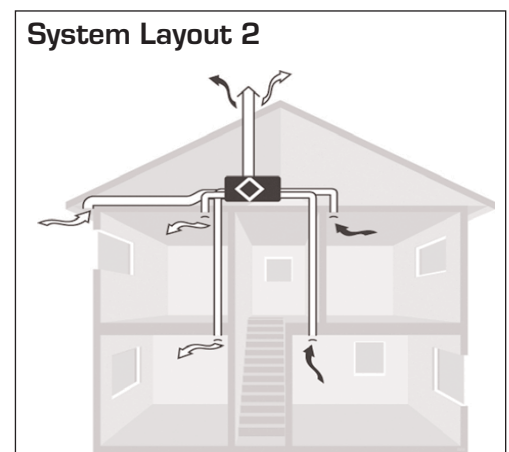
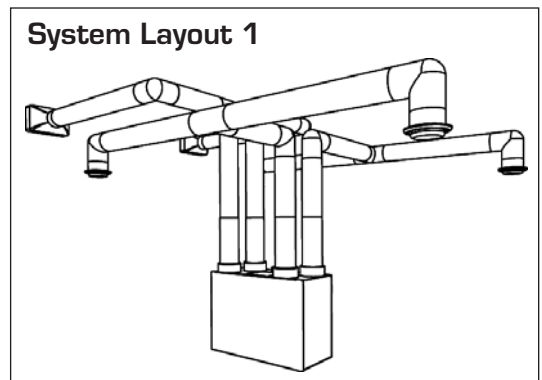
All whole house ventilation units require periodic maintenance and this must only be carried out by a suitably qualified and competent person. See the servicing and maintenance section for further details.

Features of the Vectaire WHHR125DC

- Easy installation mounting bracket.
- Standard 15mm fitting for condensate drain connection.
- Quick commission setting with 5 or 10 minute boost delay.
- Full commission setting for ultimate efficiency with 5, 10, 15 or 20 minute boost delay.
- The duct ports accept 100 and 125mm diameter ducting.
- Frost protection ensures that low temperatures do not affect the efficiency.
- The boost speed can be triggered by:
 - a remote switch/pull cord (a volt free contact switch) (not supplied)

OR by any of the following when used with an intermediate, external relay (available separately - please contact Vectaire Technical Dept for further information on the use of this):

- PIRFF (passive infra red)
- DRH240 (dynamic remote humidistat)
- THM (thermostat)
- a light switch (if more than one light switch is used, **each one must be a double pole switch**)



Installation

IMPORTANT: READ THESE INSTRUCTIONS FULLY BEFORE INSTALLATING THIS APPLIANCE!

The Vectaire WHHR125DC is designed to be fitted into the roof space or a cupboard. These diagrams show the dimensions of the unit and the additional space required around the unit to allow for future servicing and maintenance.

The unit must **NOT** be installed in an area which does not have sufficient access for future maintenance.

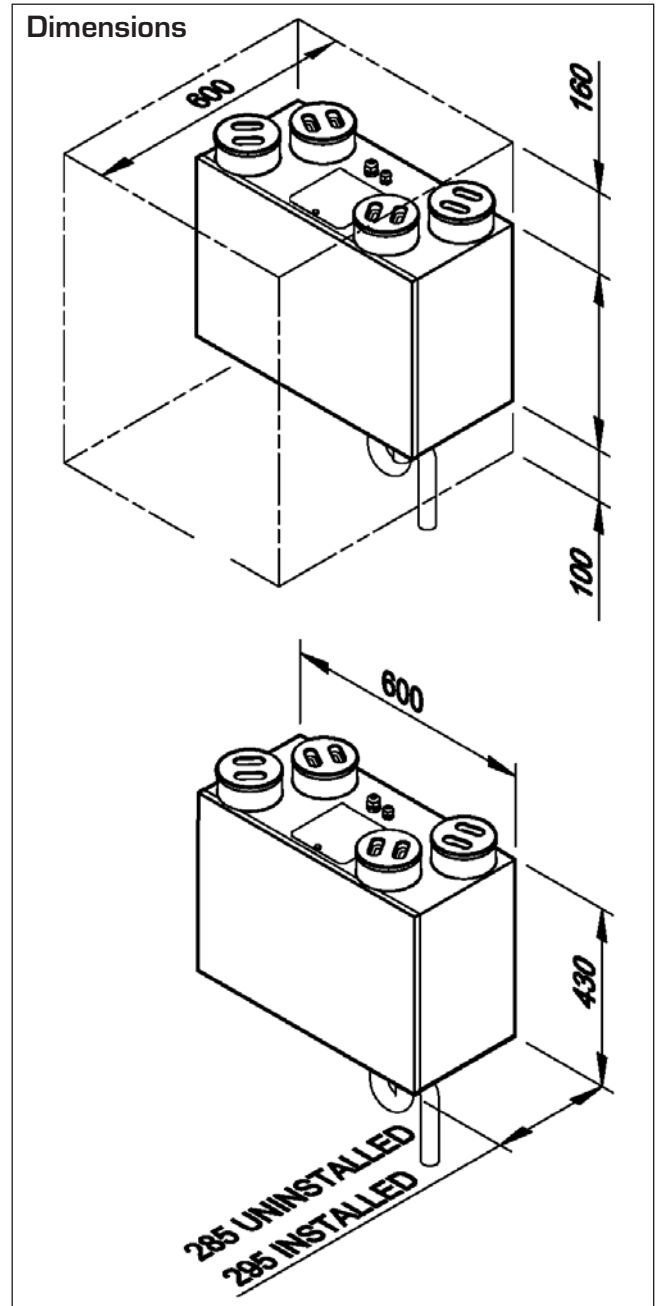
The appliance must **NOT** be installed in an environment which contains:

- Excessive oil or a grease laden environment.
- Hazardous gases, liquids or vapours that are flammable or corrosive.
- Ambient temperatures above 40°C or below -5°C.
- Humidity levels above 90% or a wet environment.

Safety and guidance

- The electrical installation of the appliance **MUST** be carried out by a suitably qualified, competent person and all wiring must be in accordance with current I.E.E. Regulations and all appropriate standards.
- The appliance must be connected to a local isolation switch with a contact separation of at least 3mm.
- The appliance is suitable for 230V - 50Hz single phase fuse rating of 3A.
- The condensation drain must be fitted.
- Ensure that external grills are located at least 600mm away from any flue outlet, in accordance with all relevant Building Regulations.
- Always ensure ducting is free from blockages before switching the unit on as this may invalidate your guarantee.
- We recommend a minimum distance of 2m between the external air supply inlet and the extract air outlet to prevent cross contamination.
- We recommend a minimum distance of 200mm between the appliance and any sharp bends in duct work.

Installation of the appliance **MUST** be carried out by a qualified and suitably competent person and should be carried out in clean, dry conditions where dust and humidity are at minimal levels. The unit is not suitable for installation to the exterior of the dwelling.



Installation

Transportation, packaging and storage prior to installation

- Great care should be taken when transporting the appliance, DO NOT drop as damage may occur within the appliance.
- The unit must always be stored in a clean, dry environment.
- Remove all packaging before installation.

Pre-inspection

- Inspect the appliance and electrical supply cord for any damage.
- Check all accessories have been supplied.
- Inspect the appliance and supply cord for any damage. Any damage must be repaired by a suitably qualified and competent person.

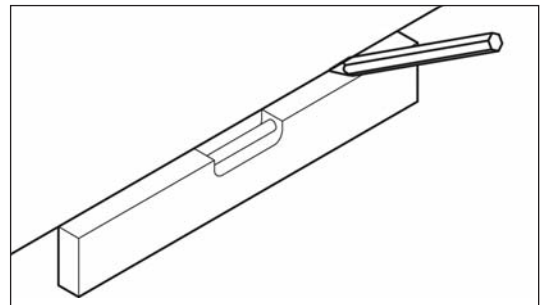
Parts list

- 1 x Vectaire WHHR125DC unit.
- 2 x Wall mounting brackets.
- 1 x Safety bracket.
- 1 x 15mm Drain connector.
- 4 x M6x10mm pan head screws.
- 4 x M6 washers.

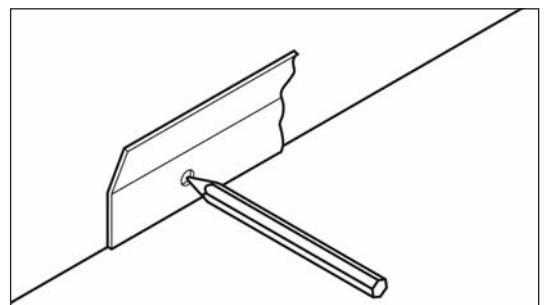
Any parts shortages or faults must be reported to the supplier immediately.

Installation - mounting

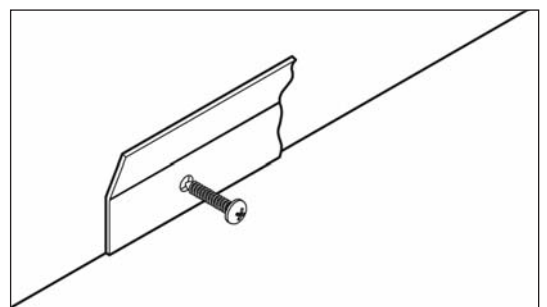
1. Mark a horizontal line on the wall using a spirit level. This line will be approximately 95mm below the location of the top face of the unit when fitted (excluding duct ports).



2. Use one of the mounting brackets as a template to mark the three fixing hole centres.
3. Drill holes for fixings, always use a fixing suited to the wall type.

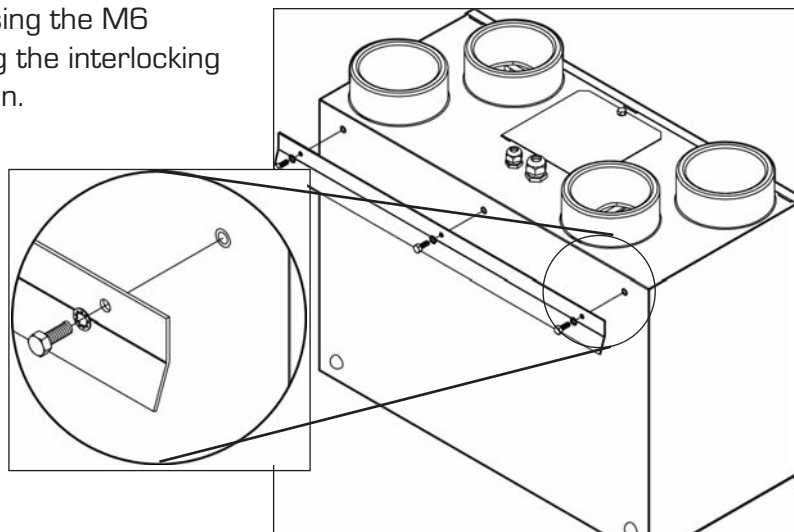


4. Mount one fixing bracket to the wall ensuring the interlocking side is at the top, as shown

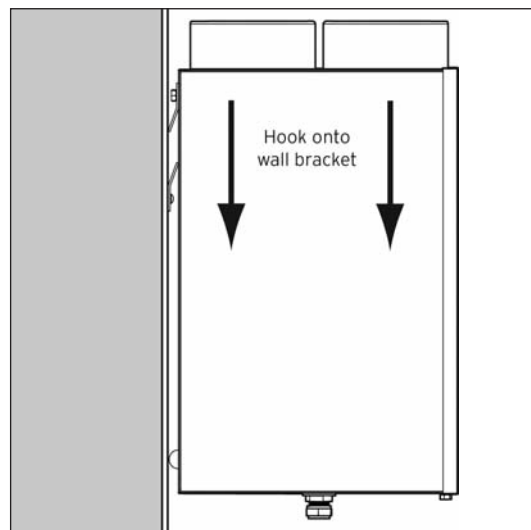


Installation

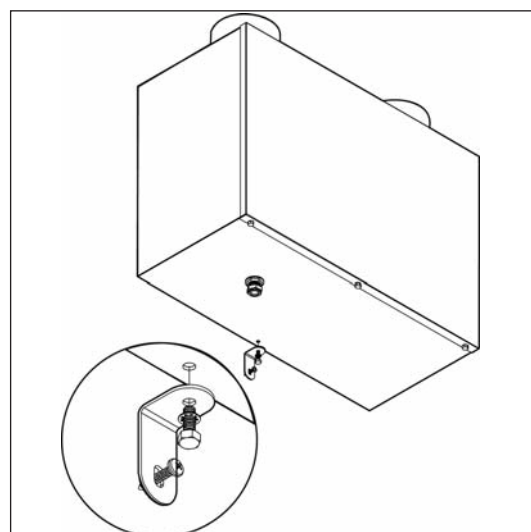
5. Fix the remaining bracket to the unit using the M6 screws and washers provided, ensuring the interlocking side is at the bottom. Do not overtighten.



6. Mount the unit by locating the two mounting brackets together. Ensure a positive location is made between the two mounting brackets.



7. Fix the lower safety bracket as shown using the remaining M6 screw, washer and suitable wall fixing. Hook onto wall bracket

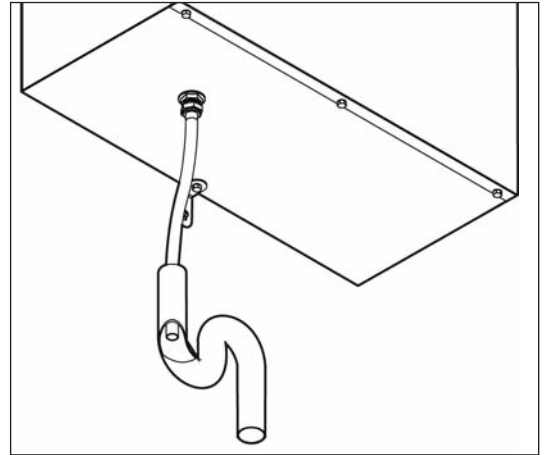


Installation - Drain Assembly

A drain must be connected to allow condensation to be removed from the unit.

The drain connection is made via the 15mm connection on the base of the unit.

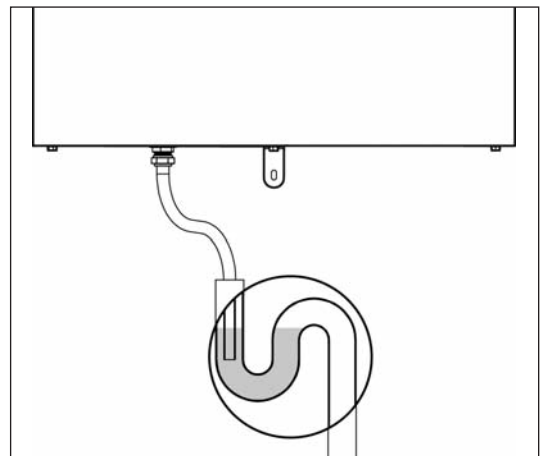
The drain must discharge into the household drainage system via a U-bend, which must act as an air lock.



1. Attach a 15mm condensate pipe using a compression fitting



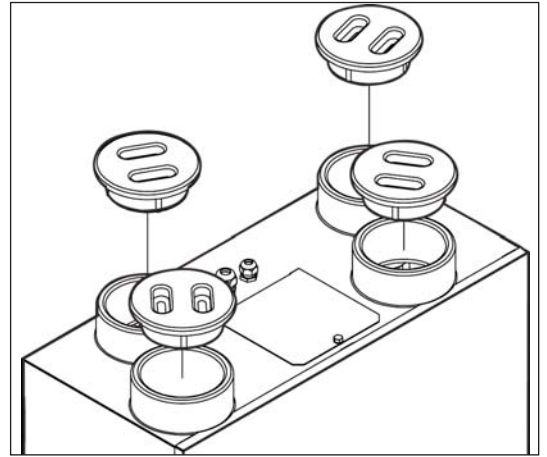
IMPORTANT NOTE: The drain must incorporate a U-bend to prevent air penetration.



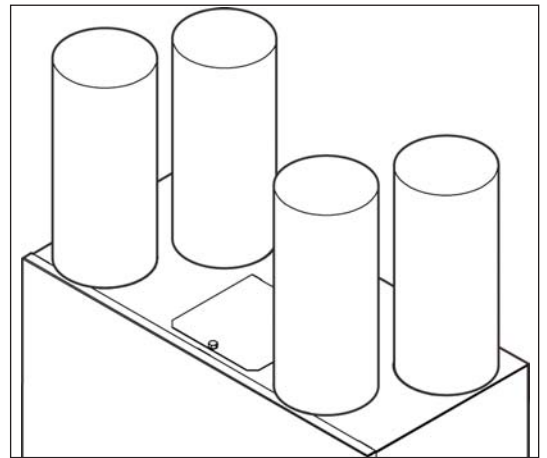
Installation - Ducting

Transport bungs are fitted to prevent debris falling into the unit and causing damage. Premature removal of the transport bungs may invalidate the guarantee.

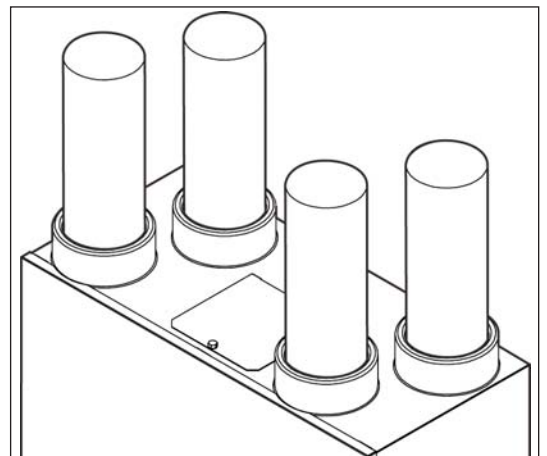
1. When the ducting has been installed and you are ready to connect the unit, remove the transport bungs from the duct ports.



2. 125mm ducting fits to the outer of the duct ports as shown.

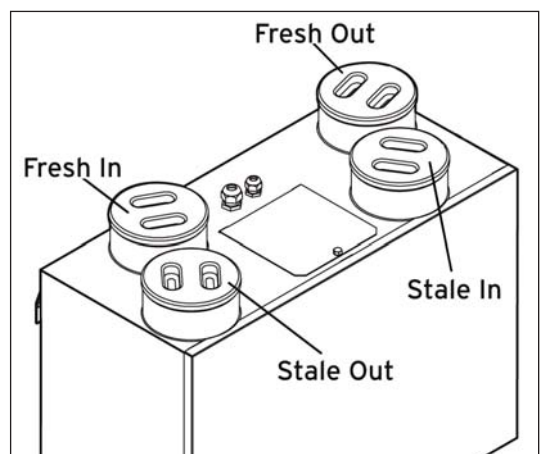


3. 100mm ducting fits to the inner of the duct ports as shown.



Ducting best practice

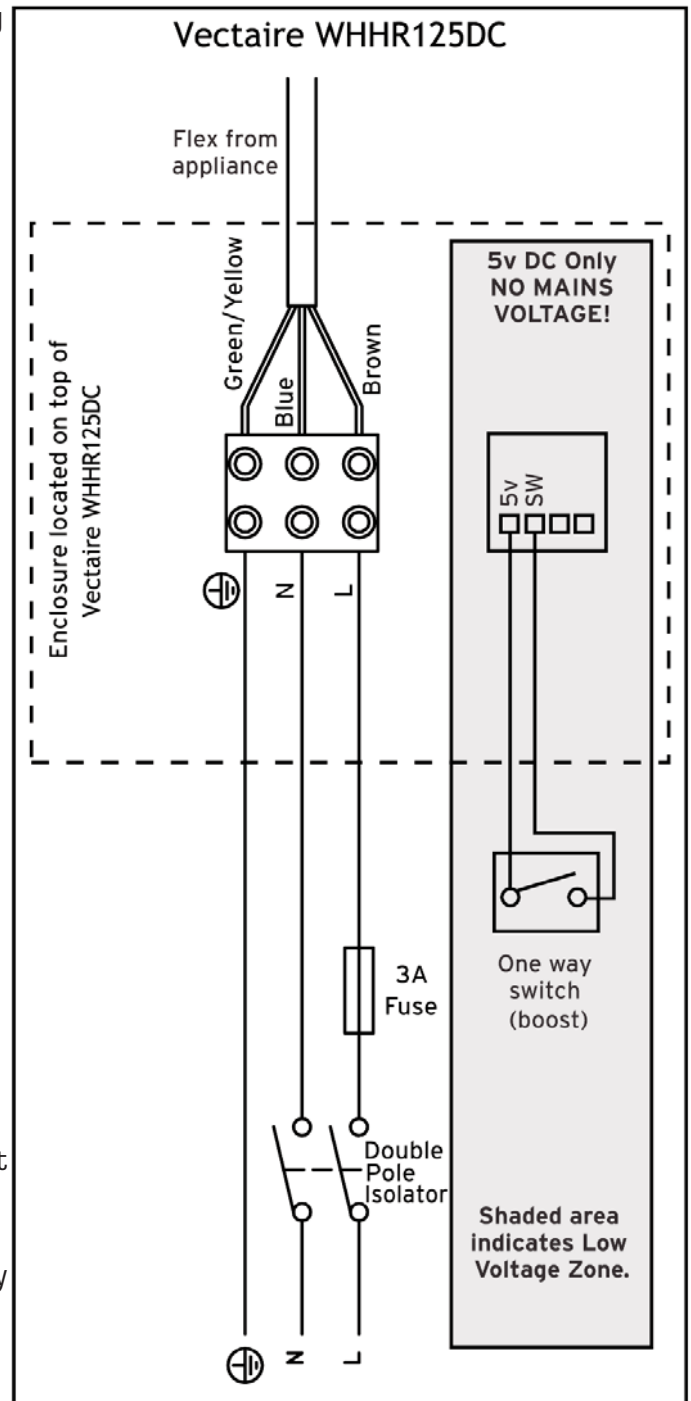
- The use of flexible ducting must be kept to a minimum and it should always be pulled taut.
- If applicable, Fire Dampers **MUST BE FITTED** to duct work at appropriate locations in accordance with Building Regulations.
- Ducting must be installed in such a way that resistance to airflow is minimised.
- Ducting terminals for Inlet and exhaust must be to the external air outside the building envelope.
- Inlet and exhaust ducts should be separated to ensure there is no cross contamination of air.
- Ducting in unheated spaces must always be insulated to prevent condensation forming within the ducting.



Installation - Wiring

WARNING: The unit MUST be earthed. All wiring must conform to current I.E.E. Wiring Regulations and all applicable standards and Building Regulations.

- The unit is suitable for 230V~50Hz Single phase supply fused at 3A.
- The unit is supplied with a mains rated 3 core flexible cord (PVC sheathed, brown, blue and green/yellow 0.75mm²).
- A double pole isolation switch with contact separation of at least 3mm must be used to connect the appliance to the fixed wiring.
- Boost controls must not be located within 1 metre of a cooker or where they may be affected by excessive heat or moisture
- Boost controls should be clearly identified and conveniently located.
- **The boost switch wiring must not be connected to the mains supply.**
- The boost switch is connected to the control board (which is located under the hinged cover on the top of the unit).
- The boost switch wiring cable access is via a 12mm cable gland.
- The boost switch wiring connection should be made by the 5v+ and SW terminals on the control board.
- The boost speed can be triggered by:
 - a remote switch/pull cord (a volt free contact switch) (not supplied)
 - OR** by any of the following when used with an intermediate, external relay (available separately) - please contact Vectaire Technical Dept for further information on the use of this):
 - PIRFF (passive infra red)
 - DRH240 (dynamic remote humidistat)
 - THM (thermostat)
 - a light switch (if more than one light switch is used, **each one must be a double pole switch**)
- The boost facility features a delay timer, so we recommend a sprung-return (momentary) switch is used to prevent the boost being accidentally left on for longer than intended.



Commissioning - Quick Mode

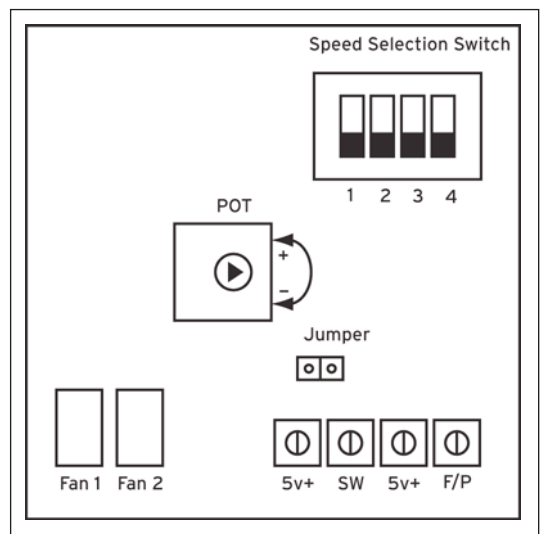
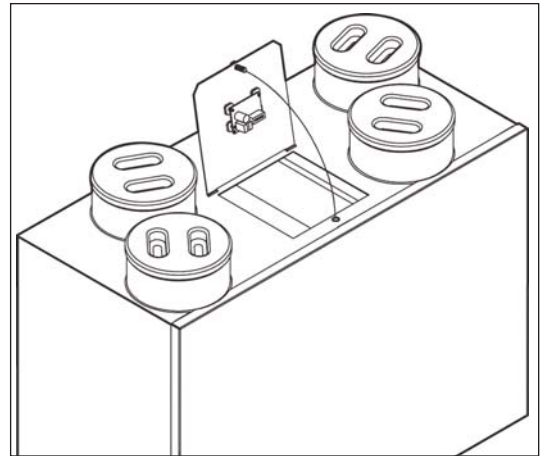
The unit has two commissioning modes:

- **Quick commission** – for easy installation and setup.
- **Full commission** – for optimum efficiency and system performance.

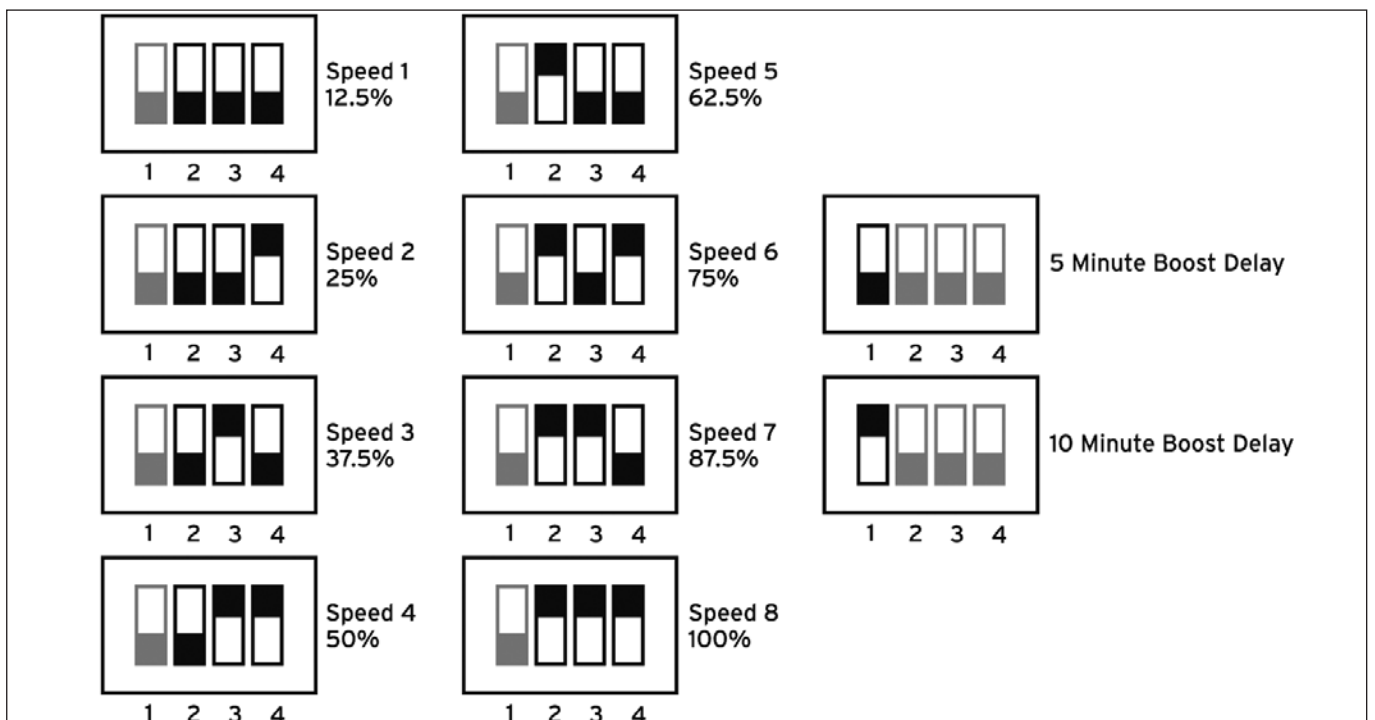
Quick commissioning mode

1. Switch the unit on.
2. Gain access to the control board located under the door on the top of the unit (see diagram).
3. Select required speed setting using switches 2 to 4 on the Speed Selection Switch (see below)
4. Select required boost delay using switch 1 on the Speed Selection Switch.
5. Check boost activation by triggering the remote boost switch device.

Note: the boost speed setting is a fixed increase over the continuous running mode.



See below for Speed Selection Switch settings in Quick Commission mode:



Speed setting percentages relate to the total capacity of the unit at low or normal running speed. The speed of the Vectaire WHHR125DC will require adjustment to ensure the flow rates achieved provide adequate ventilation in accordance with all relevant Building Regulations and applicable Standards.

Commissioning - Full Mode

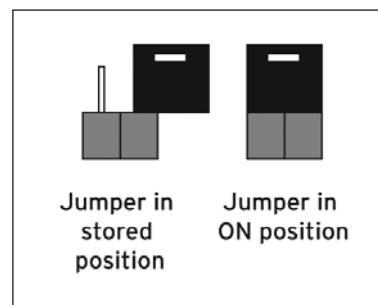
Full Commissioning Mode

To commission the unit fully for optimum efficiency, each step below **MUST** be followed in sequence:

1. Switch the unit on.
2. Gain access to the control board located under the door on the top of the unit.

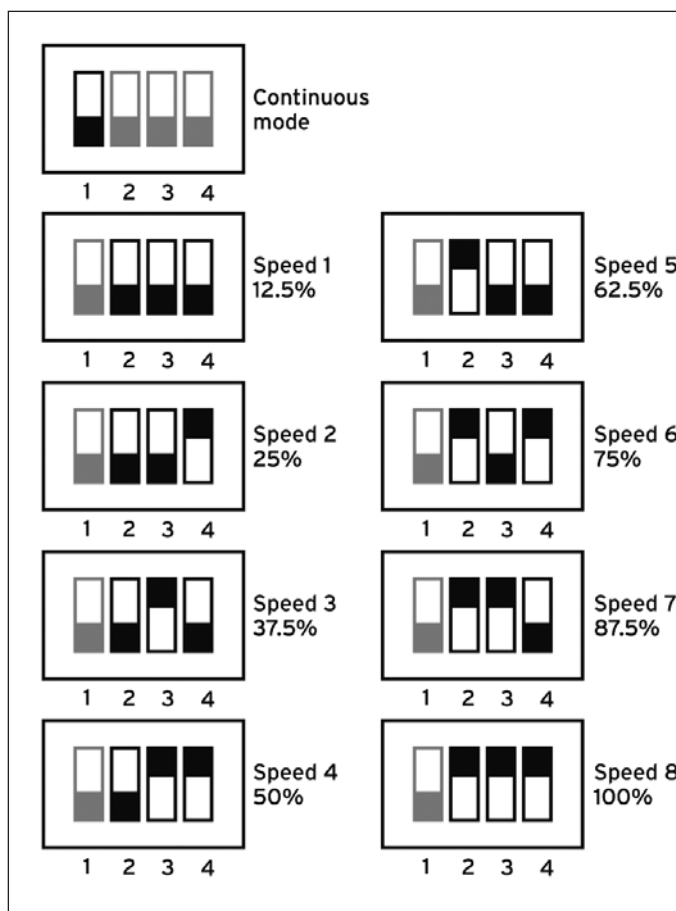
Continuous speed setting

3. Move the jumper from the stored position to the ON position.



4. Ensure the controller is in Continuous mode (switch 1 on the Speed Selection Switch).
5. Select required setting for continuous speed using switches 2 to 4 on the Speed Selection Switch (see diagram)

Speed setting percentages relate to the total capacity of the unit at low or normal running speed. The speed of the Vectaire WHHR125DC will require adjustment to ensure the flow rates achieved provide adequate ventilation in accordance with all relevant Building Regulations and applicable Standards.



Commissioning - Full Mode

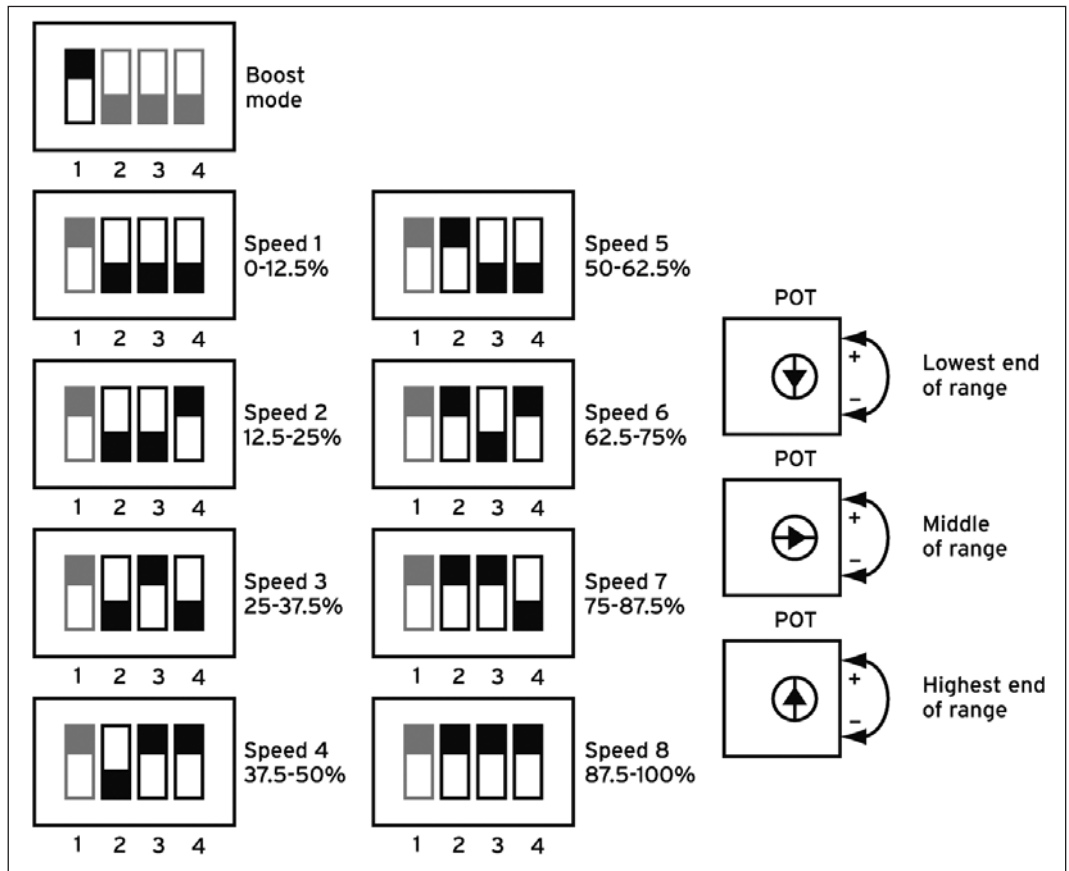
Boost speed setting

6. Select Boost mode on switch 1 of the speed selection switch.

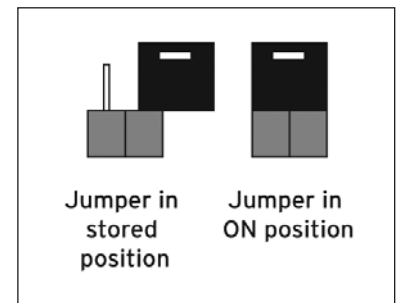
7. Select required range for boost speed using switches 2 to 4 on the speed selection switch.

8. Fine adjustment within each speed range can be carried out using the potentiometer (POT) on the control board (see diagram).

Do not return switch to continuous mode as this will change the boost speed setting.

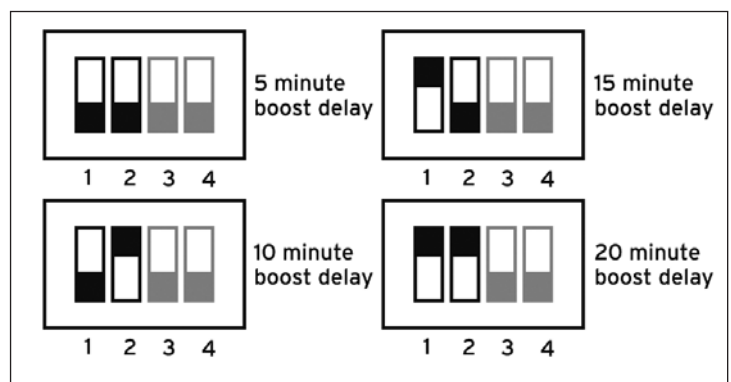


9. Once the Continuous and Boost speeds have been set, remove the jumper and return to the stored position.



10. Select required boost delay using switch 1 and 2 on the speed selection switch.

11. Check boost activation by triggering the remote boost switch device.



Resetting the Controller

If necessary the controller can be reset into the Quick commissioning mode.

1. Place the jumper in to the ON position.
2. Switch the power to the unit OFF for at least 1 minute.
3. Switch the power to the unit back ON. The unit will now run at 50% capacity by default.
4. Remove the jumper and place it back into its stored position. The controller will now be in the Quick Commissioning mode.

Servicing & Maintenance

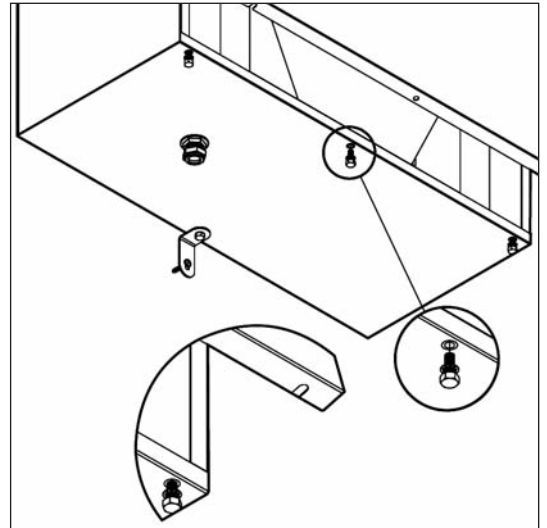
WARNING: The unit uses a 230V ~ supply and contains rotating mechanical parts.

ISOLATE the unit from mains power supply and allow sufficient time for all moving parts to stop before undergoing any Servicing or Maintenance.

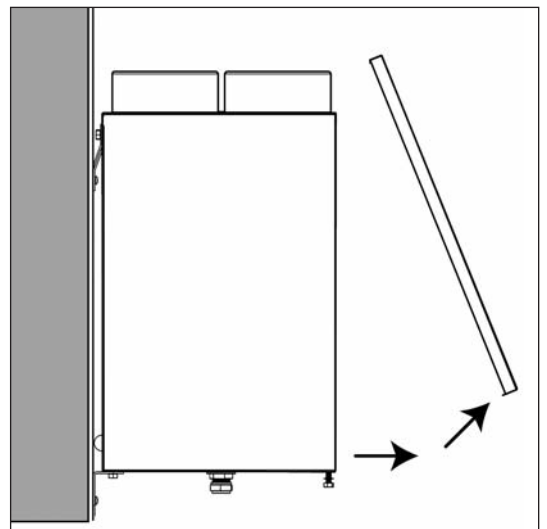
The air filters and heat exchanger of the Vectaire WHHR125DC should be cleaned regularly by a suitably qualified person (the frequency of cleaning will vary depending on the installation environment). Filters should be replaced after a maximum of 3 cleaning cycles.

Filter and Heat Exchanger access:

1. Loosen the two corner screws located on the bottom front of the unit.
2. Remove the centre screw.



3. Completely remove the front cover by pulling it away from the unit at the bottom and lifting.



Servicing & Maintenance

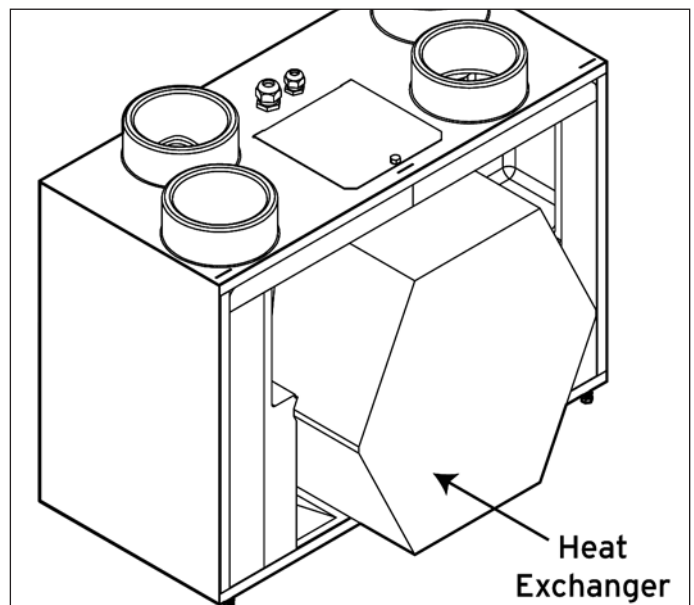
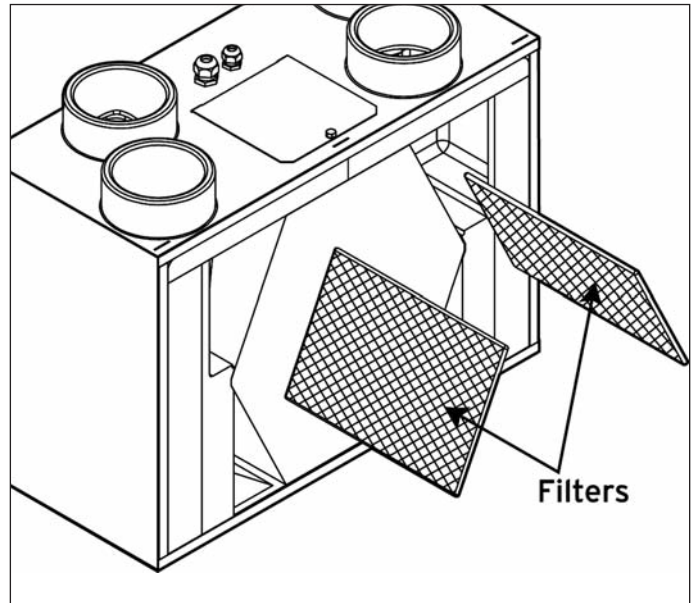
Cleaning

To clean the filters and heat exchanger:

1. Remove the front cover (see page 14).
2. Slide out the filters that are fitted either side of the heat exchanger as shown.
3. Remove the heat exchanger by gently pulling the plastic band around it.
4. Clean the filters carefully using a vacuum cleaner.
5. Carefully remove any dust from the face of the heat exchanger using a vacuum cleaner.

Never use water or any other fluids to clean the heat exchanger.

6. Return the heat exchanger and filters to their original position.
7. Replace the front cover and ensure it is securely located at the top before tightening all screws.
8. Power to the unit can now be restored.



Filter Replacement

Filters should be replaced annually or after a maximum of 3 cleaning cycles.

Replacement filters are available from Vectaire - call us on +44 (0) 1494 522333 or via sales@vectaire.co.uk

After servicing, always complete the service record on page 16.

