

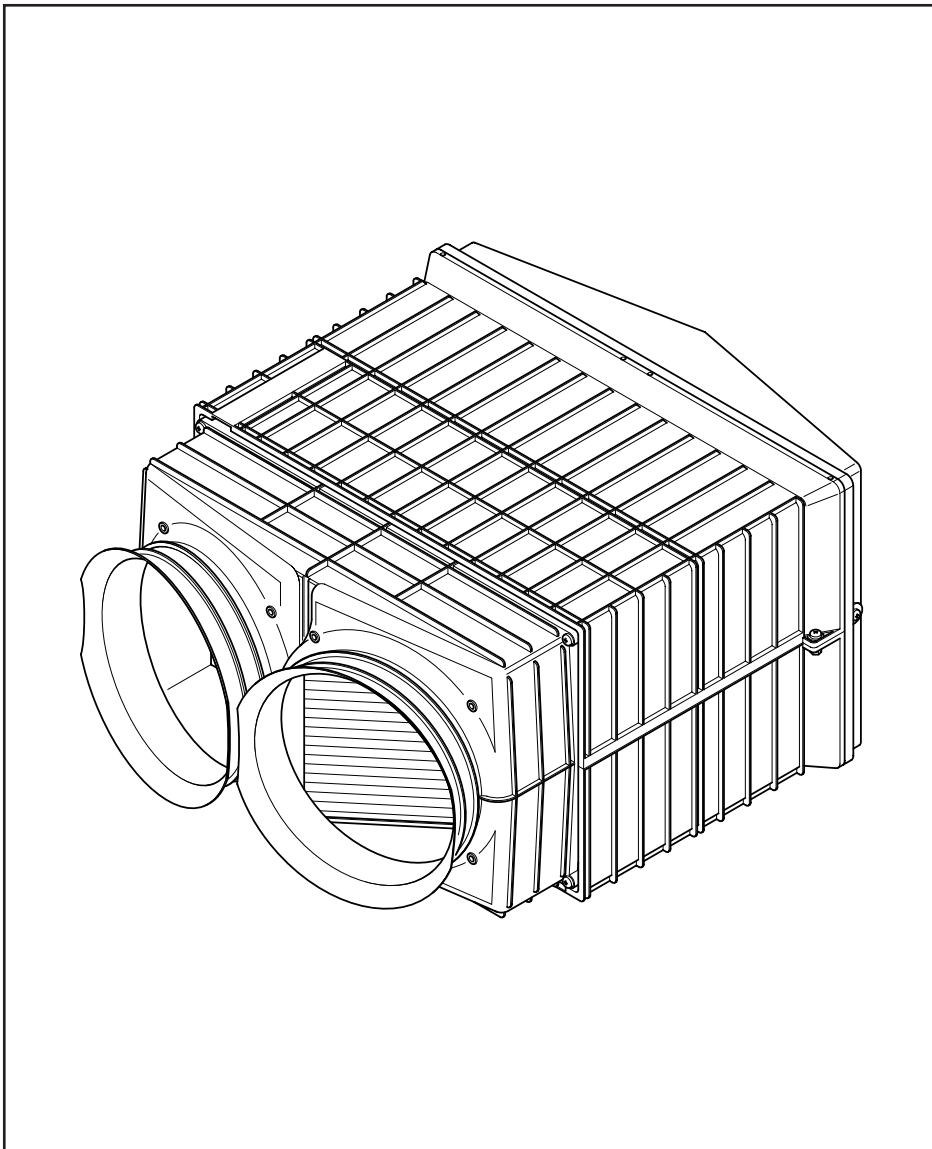
# HR4

## Semi-Remote Wall Mounted Heat Recovery Unit With Spigot Connections & Integral Fans

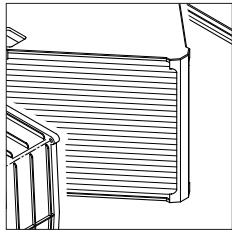
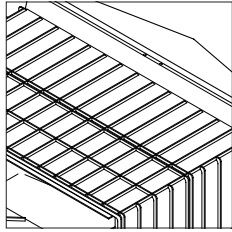
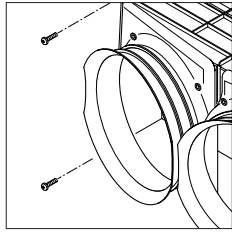
***Vent-Axia***<sup>®</sup>  
***Clean Air Systems***

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### Installation and Servicing Instructions



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# 1.0 Introduction

## 1.1 Description

1. The Vent-Axia HR4 unit is self contained, with integral extract and supply fans to provide balanced ventilation and heat recovery via supply diffusers and extraction grilles.

The unit is designed for installation in external walls and should be fitted to provide a 3° slope to outside to provide condensate drainage.

2. Spigots are designed to take standard 300mm diameter flexible ducting. Foam collar adaptors are available to convert these spigots to 315mm diameter compatibility.

3. The unit is fully speed controllable with the facility to reverse the supply air fan and provide 'double extraction' for periods when heat loss is desirable.

4. ON/OFF speed selection and fan reversal can be automatically controlled by simple sensors - see controller data sheet VCON33.

5. At 40 pa external static pressure the HR4 unit will deliver approximately 500m<sup>3</sup>/hr supply and extraction, or 750m<sup>3</sup>/hr extract only.

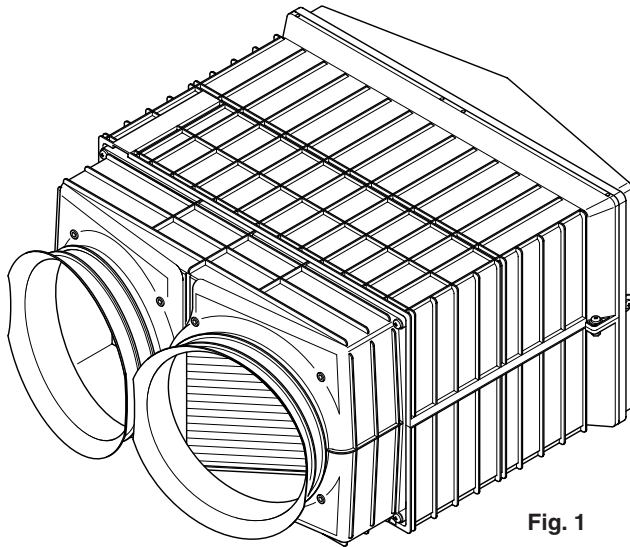


Fig. 1

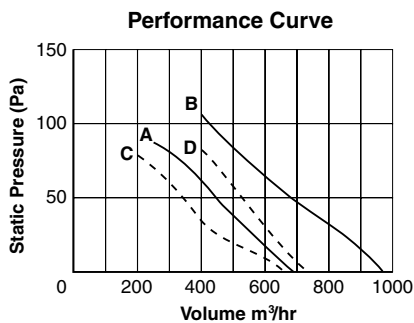


Fig. 2

A - Mean heat recovery performance

B - Double extract performance

C - Supply

D - Extract

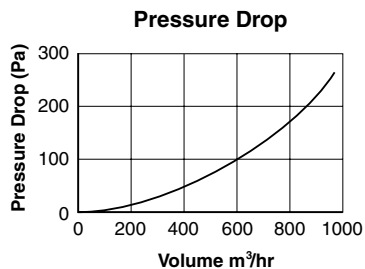


Fig. 3

## 1.2 Technical Data

### Electrical

Supply Fan - 60 Watts

Extract Fan - 150 Watts

Wiring - 0.75mm<sup>2</sup>, 4 core and earth

(N.B. Wiring must be approved to BASEC or HAR)

### Fixing

Hole Opening - 610mm x 380mm

Unit Weight - 17kg

## 2.0 Site Requirements

### 2.1 Information

1. The unit must be sited and connected in accordance with current I.E.E. Wiring Regulations (UK), and local building regulations. Outside the UK, the units must be installed in accordance with the appropriate standards applicable to your country.

2. The unit is suitable for use at a maximum ambient temperature of 45°C.

3. The HR4 unit should be placed as high as possible, in an exterior wall to a minimum distance of 125mm (5") from the ceiling.

4. The incoming air supply should not be directed at a wall or solid surface and areas adjacent to doors should be avoided if possible.

5. Care should be taken to avoid structural elements such as joists or beams.

6. Site away from direct sources of heat in excess of 40°C, and direct water spray.

7. Precautions must be taken to avoid the back flow of gases into the room from the open flue of Gas or other Open Flue appliances.

8. The installer must ensure that the air intake is located at a minimum distance of 500mm away from any flue outlet.

9. If the unit is installed within a room containing a fuel burning appliance, the installer must ensure that the air replacement is adequate for both the unit and the fuel burning appliance.

10. Wiring must be via a fused switched spur with a 3mm contact separation in each pole.

11. Before deciding on the final position of the unit, check that there are no buried cables, pipes or obstructions on the outside wall.

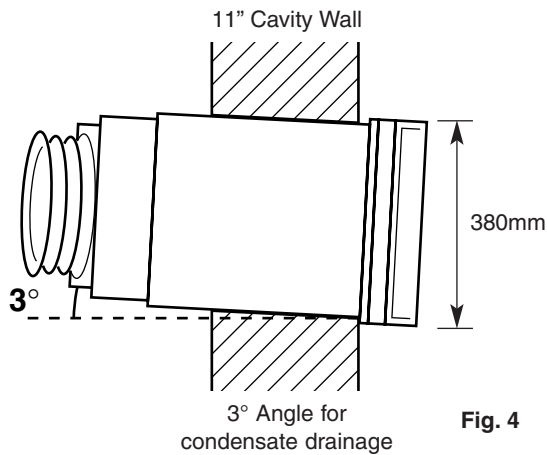


Fig. 4

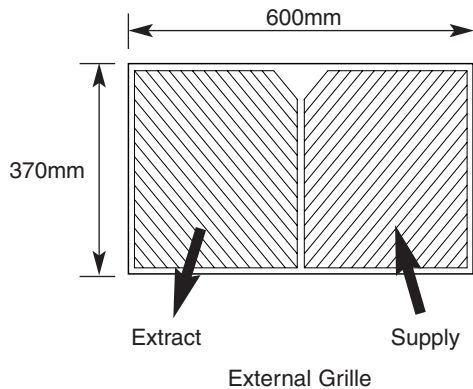


Fig. 5

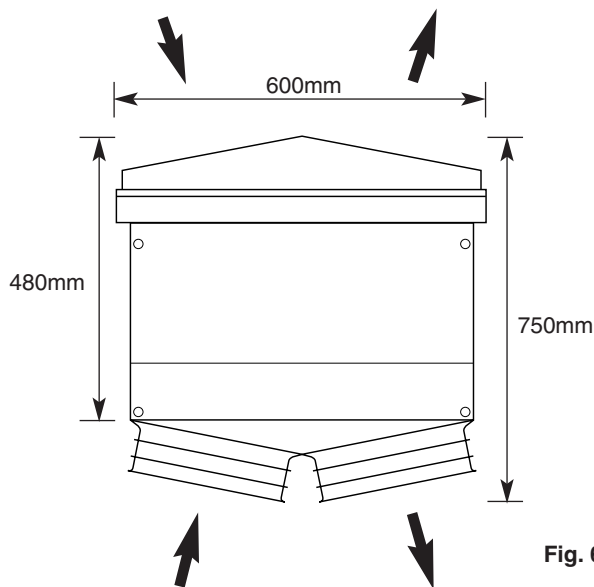


Fig. 6

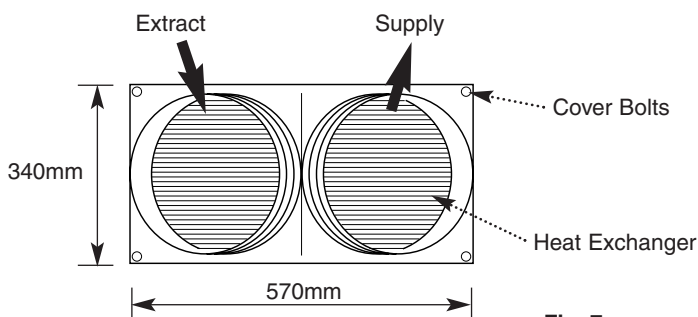


Fig. 7

## 3.0 Installation

### 3.1 Initial Preparation

1. Working from the inside, mark out the position of the hole to be cut. This should be 610mm (24") x 380mm (15") (Fig. 8).

2. Mark the centre of the cut-out by drawing diagonal lines from the four corners.

3. Drill horizontally through the wall at the marked centre point, using an appropriate long reach drill.

4. Estimating the wall thickness, move to the outside and mark the position of the hole to be cut in the outer wall, using the centre hole as a guide. Again, this should be 610mm (24") x 380mm (15") (Fig. 8). However, to allow for condensate drainage, the hole must be marked between 12mm-30mm (0.5"-1.25") LOWER than the inner hole (Fig. 9). This will produce a nominal 3° slope towards the outside (assumption of installation into wall thickness dimension between 230mm - 610mm (9"-24")).

5. Using the lines as a basis, carefully cut the holes in the inner and outer walls to form a suitable aperture to receive the unit.

**NOTE: Bricks will cut more easily and accurately if a series of holes are drilled close together along the marked lines.**

6. Choose a suitable site for the controller or switch box, and run a suitable length of cable (5 core, 0.75mm<sup>2</sup>) to the unit for wiring through the left hand side.

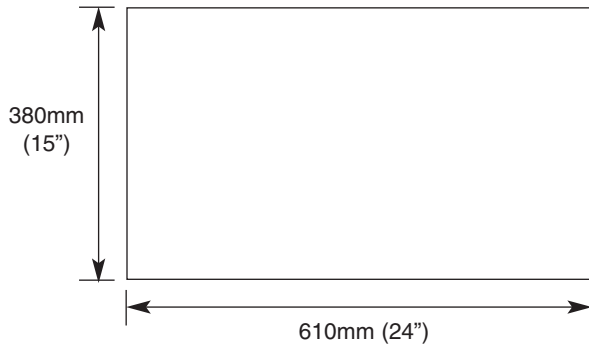


Fig. 8

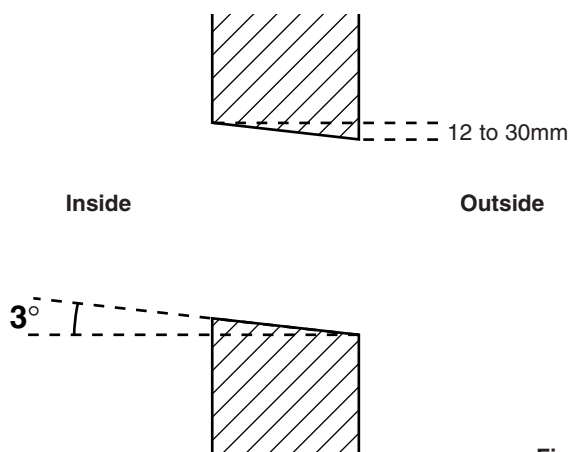


Fig. 9

## 3.0 Installation

### Typical Installation

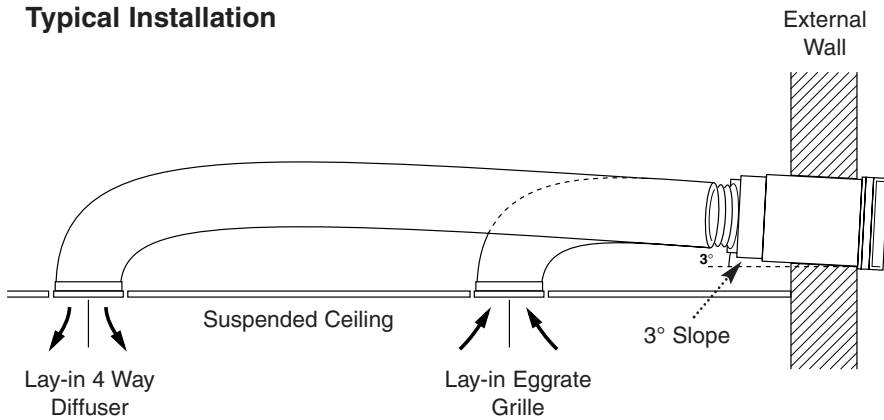


Fig. 10

### 3.2 Installing the Appliance

1. Carefully line up the unit into the wall aperture, ensuring that the wire is fed into the unit through the grommet as shown.
2. Position the unit in the wall aperture, ensuring that there is a 3° slope to the outside.

**CAUTION: Care should be taken not to distort either inner or outer cases when fixing and making good.**

3. Secure into position using appropriate plugs and screws, and make good around the casing.
4. Connect the wire into the controller box within the unit, ensuring that the cable restraint prevents the cable from becoming strained, twisted or forced.
5. Ensure that the product is wired in accordance with the details attached.

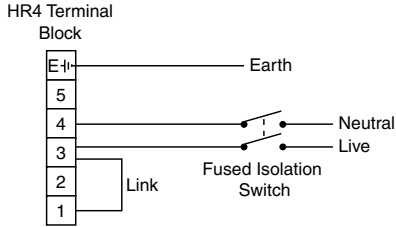
**WARNING: Ensure that the unit is properly earthed.**

6. Connect up the opposite end of the wire into respective controller, ensuring that the cable is routed between the unit and the controller box appropriately, and that the wire is not strained, twisted or forced.
7. Make good the cable routing.
8. Connect up the mains supply via an appropriate fused switched spur, ensuring that a 5A fuse is correctly fitted.

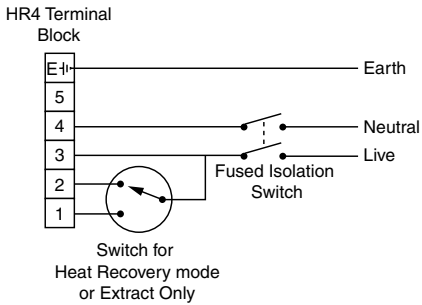
# 4.0 Electrical

## 4.1 Wiring Options

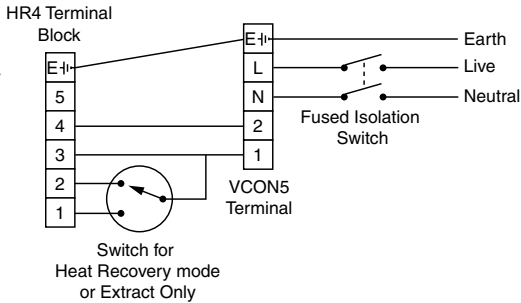
**Direct to mains - Full speed only - Heat recovery mode**



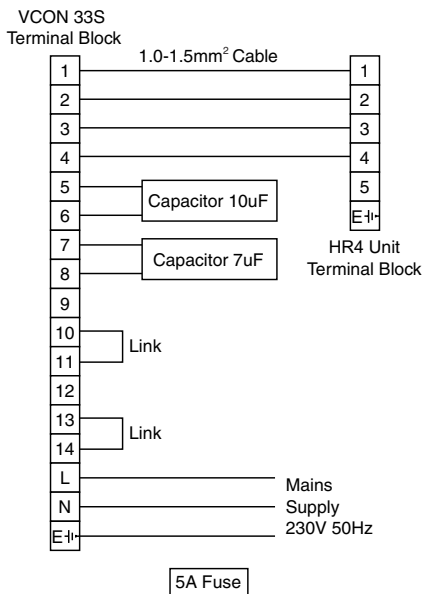
**Direct to mains - Full speed only - Heat recovery mode and switching to extract only**



**Variable speed controller VCON5 - Heat Recovery mode and switching to Extract Only**



**Single HR4 unit wiring VCON 33S speed controller**



### Optional External Sensor Wiring

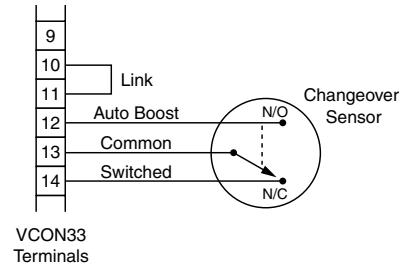
Sensors must be 'make and break' (changeover) type, mains voltage minimum 2.5A inductive load.

### Automatic Extract Only Control

By removing the link between terminals 13 and 14, a changeover sensor can be connected to terminals 12, 13 and 14 to provide automatic supply fan reversal for extraction only mode of the HRV unit. Example; a thermostat can be used to provide extract only and therefore heat loss at a preset temperature level.

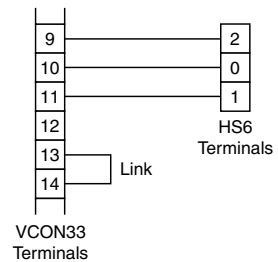
### Automatic 'Extract Only' Wiring

**NOTE: Remove link between terminals 13 & 14**



### Humidity Sensor HS6 Wiring Control of Boost Speed Switching

**NOTE: The sensor arrangement can be used with single or dual unit control**



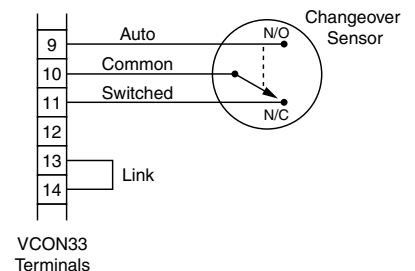
### Automatic Boost Speed Switching

By removing the link between terminals 10 and 11, a changeover sensor can be connected to terminals 9, 10 and 11 to provide automatic switching to boost speeds as required.

Example; A humidistat can be used to switch the unit to boost when high humidity levels are reached, as would be experienced from activity in a swimming pool. The unit would automatically return to normal speed 1 or 2 once the humidity levels have been reduced.

### Automatic 'Boost Speed' Wiring

**NOTE: Remove link between terminals 10 & 11**



For dual unit control using VCON 33S see Controller Data Sheet



## 5.0 Maintenance & Accessories

### 5.1 Cleaning the Unit

1. The heat exchanger will require occasional cleaning to remove build up of deposits.
2. The cassette is easily extracted by unscrewing the 4 x M6 cover bolts (Fig. 11).
3. Debris can be removed and cleaned by using a vacuum cleaner, or by washing in luke warm soapy water.
4. In heavily polluted and smoky environments, it is recommended that the heat exchanger unit is examined for cleaning purposes every 3 months.
5. Spare cassettes are available to enable immediate changeover of soiled units, which can be cleaned for later use.

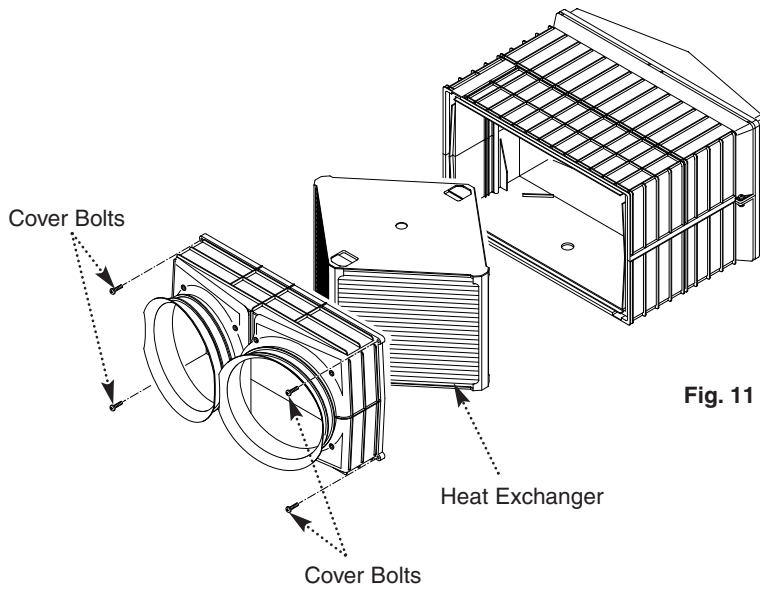


Fig. 11

### 5.2 Accessories

1. **Speed Controller VCON 33S**  
Speed controller for surface mounting, 3 speed and fan reversal.
2. **Speed Controller VCON 5**  
ON/OFF variable speed controller mounted on a standard one gang switch plate and supplied with a plastic surface mounting back box.





***Vent-Axia***<sup>®</sup>  

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