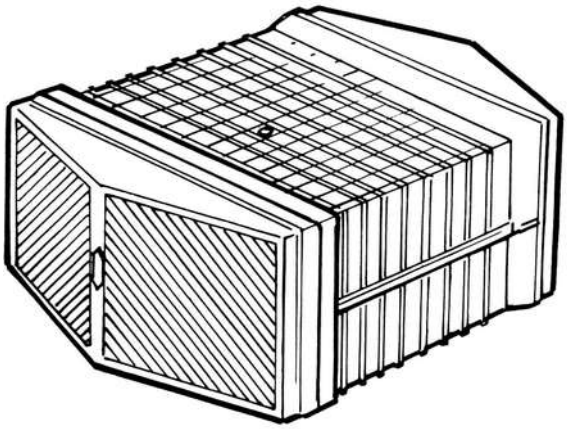
HR500 & HR500X

Wall Mounting
Heat Recovery Ventilation Units

Installation and Wiring Instructions



Stock Ref. N°
14101010B - HR500
(without shutter)
14101070 - HR500X
(with shutter)

Vent-Axia®

PLEASE RETAIN THESE INSTRUCTIONS WITH THE PRODUCT.

UK CA CE

IMPORTANT SAFETY INFORMATION

PLEASE READ THESE INSTRUCTIONS CAREFULLY BEFORE COMMENCING INSTALLATION.

1. Do not install this product in areas where the following may be present or occur:

- Excessive oil or a grease laden atmosphere.
- Corrosive or flammable gases, liquids or vapours.
- Subject to direct water spray from hoses.
- Ambient temperatures higher than 40°C.
- Possible obstructions that may hinder access to or removal of the unit.

2. All wiring must be in accordance with the current IEE wiring regulations BS7671, or appropriate standards of your country. Installation should be inspected and tested by a suitably qualified person after completion.

3. Ensure the mains supply (voltage, frequency and phase) complies with the rating label.

4. The power feed to the unit should be provided with a local double pole fused spur fitted with a 3A fuse having a contact separation of at least 3mm.

5. This unit must be earthed.

6. Precautions must be taken to avoid the back-flow of gases into the building from the open flue of gas or other fuel-burning appliances.

7. This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

8. Young children should be supervised to ensure that they do not play with the appliance.

INSTALLATION GUIDANCE

1. The installer is responsible for the installation and electrical connection of the system on site. It is the responsibility of the installer to ensure that the equipment is safely and securely installed and left only when mechanically and electrically safe.

2. All regulations and requirements must be strictly followed to prevent hazards to life and property, both during and after installation, and during any subsequent servicing and maintenance.



Disposal

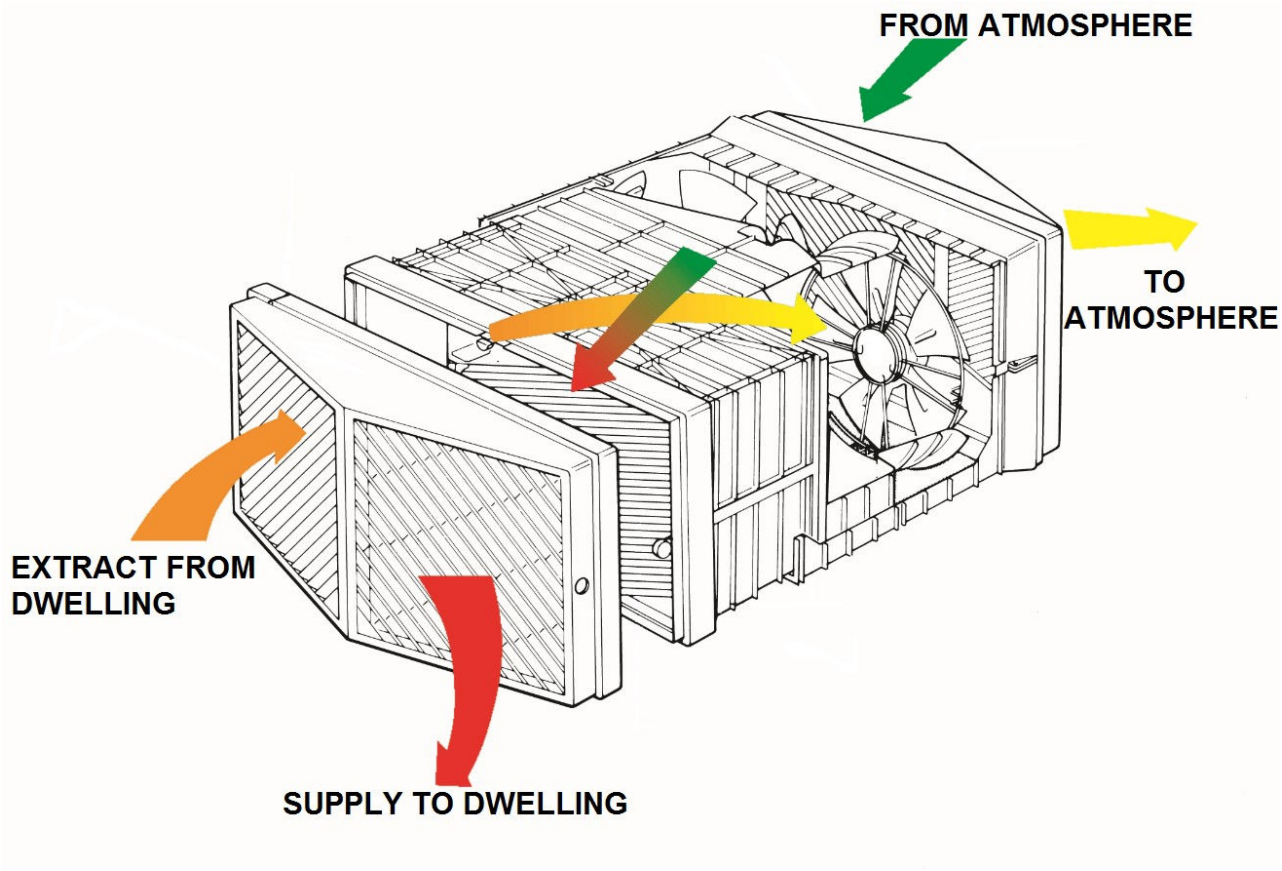
This product should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority for recycling advice.

Product Description

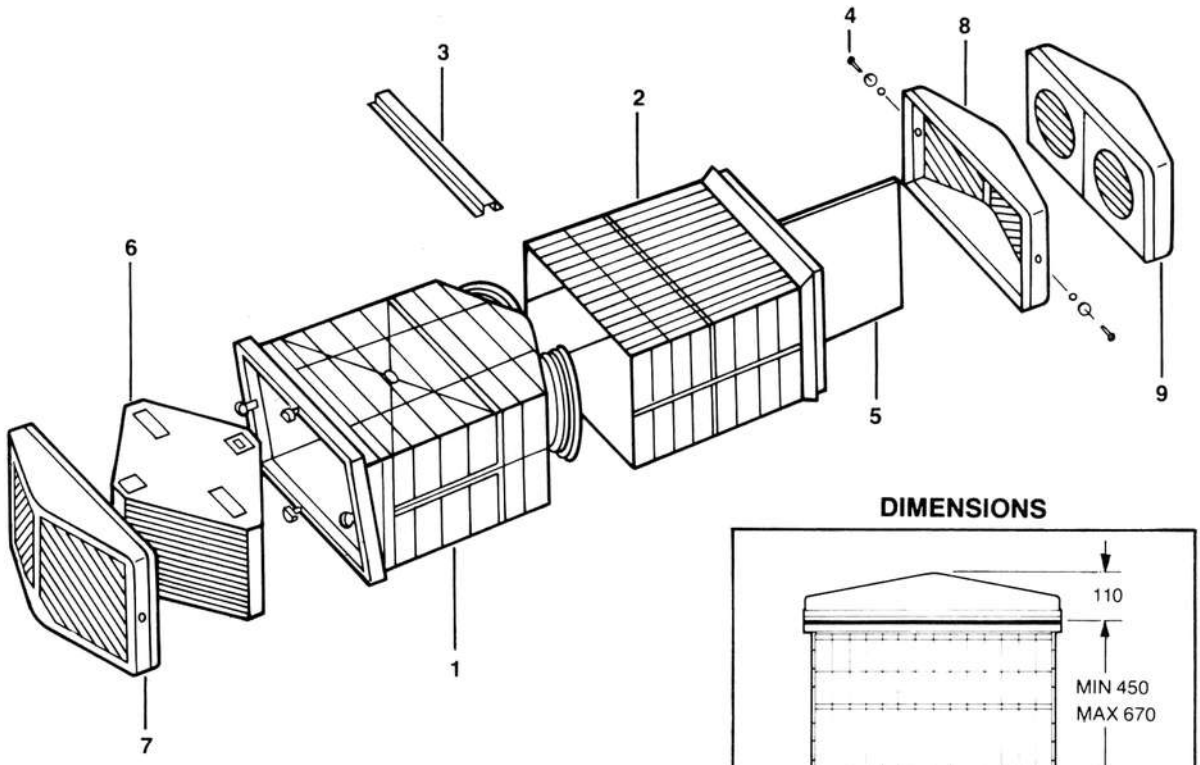
The Vent-Axia **HR500 and HR500X** are heat recovery units for through the wall installation, which extract stale air and as it does so, a heat exchanger within the unit transfers up to 70% of the heat to the freshing incoming air.

The unit is ideal for computer rooms, classrooms, offices and the health and leisure industries, the perfect solution for commercial areas that require a high performance balanced intake/extract ventilation scheme.

Air Direction



Exploded View of Fan Unit and Dimensions



Parts List

1. Inner Case with Fans
2. Outer Case
3. Galvanised Lintel
4. Two Outer Grille Screw and Washer Assemblies
5. Divider Board
6. Heat Exchanger
7. Inner Grille complete with Filters
8. Outer Grille without Shutter (discard for HR500X)
9. Outer Grille with Shutter (HR500X only)

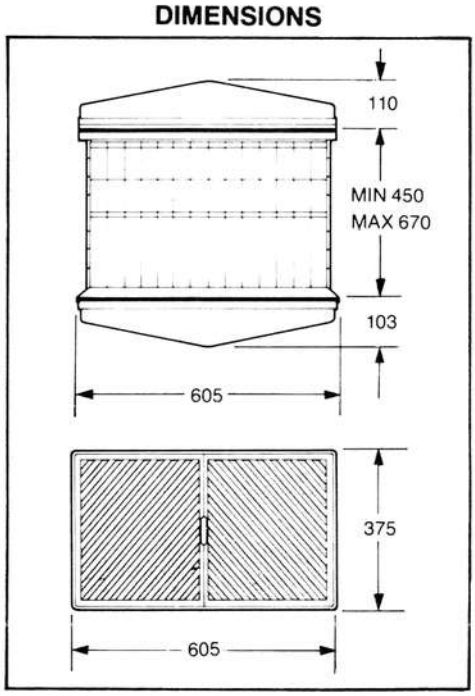


Fig. 1

Overview

Installation should only be carried out by a qualified electrician and installer.

Before Installation of the Unit

Inspect the Unit

When taking delivery of the unit, check the items delivered against the enclosed delivery note. Inspect the unit for damage in transit. If in doubt, contact Customer Services. Each box contains an HR500 unit and an accessory pack, energy rating labels and product documentation.

Unit Installation

The HR500 and HR500X units are typically installed through the wall.

The wall should have sufficient strength to support the unit.

Take into consideration the position of the electrical services.

Ensure there is an adequate access for installation, operation and maintenance.

It is recommended that a local isolation switch is installed within 1m of the unit to facilitate future maintenance.

Installation

1. Check the components supplied against the parts list (see Fig. 1).
2. Before deciding on the final position of the unit, check that there are no buried cables, pipes or obstructions on the outside wall.
3. Working from the inside, mark out the position of the hole to be cut 615mm wide x 385mm high. Mark the centre point by drawing diagonals (see Fig. 2).
4. Drill horizontally through the wall at the marked centre point using a long reach drill.
5. Estimate the wall thickness and mark the position of the hole to be cut in the outer wall using the centre hole as a guide. Hole size 615mm wide x 385mm high.

Note: Outer hole should be marked 12mm to 32mm (225mm wall to 600mm wall) lower than inner hole so as to produce a 3 degree slope toward the outside (see Fig. 3).

6. Carefully cut the holes in the inner and outer leaves 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.

7. Remove the inner and outer grilles. While the inner grille is released by depressing the buttons projecting through its side walls, the outer grille is released by removing the screw and washer assemblies passing through the side walls.
8. After turning the heat exchanger retaining knobs to the unlocked position, withdraw the heat exchanger (see Fig.6).

Note: The heat exchanger should be handled by the grey top and bottom plates and frame only. Care should be taken so as not to damage the element.

9. Try the casing assembly in the wall and ensure that the shoulder on the inner case can be set flush with the internal wall surface (see Fig.4).
10. Choose the site for controller or switch box and run a suitable length of 5-core 0.75mm^2 cable and it must be round with a diameter of between 7 and 10 mm to suit the supply cable gland (i.e. the largest gland) in the terminal box.

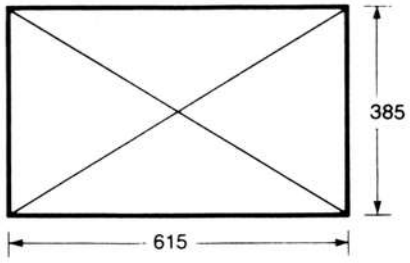


Fig. 2

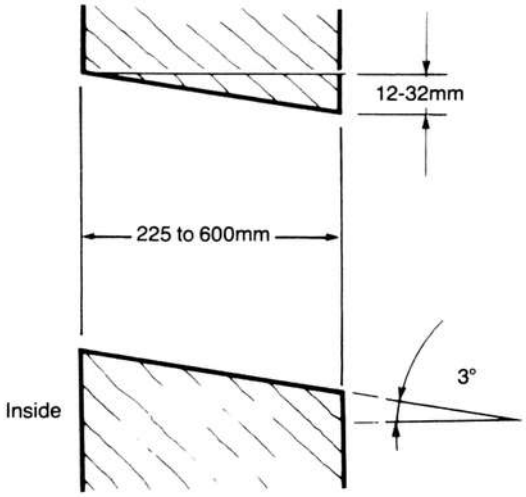


Fig. 3

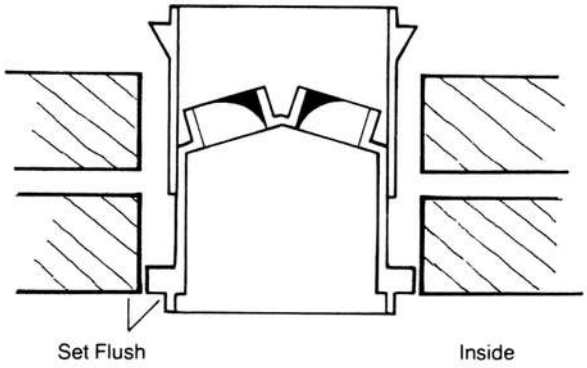


Fig. 4

11. Position the unit in the wall aperture with the galvanised lintel placed on top of the ribs on the case to provide support for the outer wall. Thread the cable from the controller between the inner and outer cases and through the hole located on the left side of the top face of the inner case.

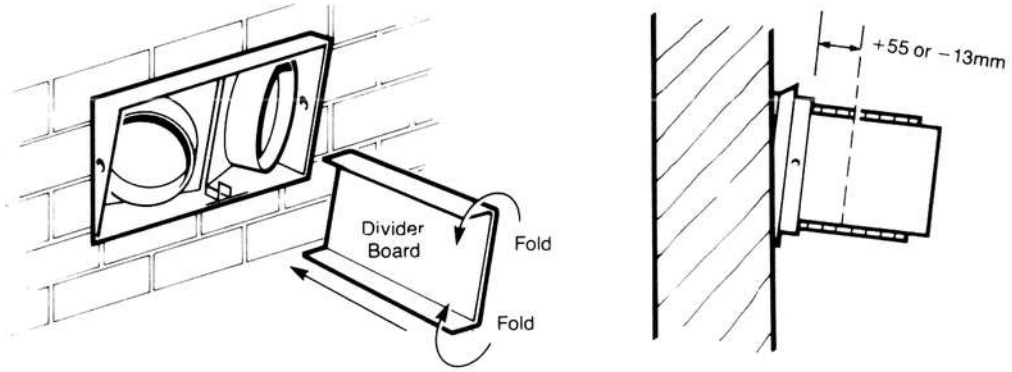


Fig. 5

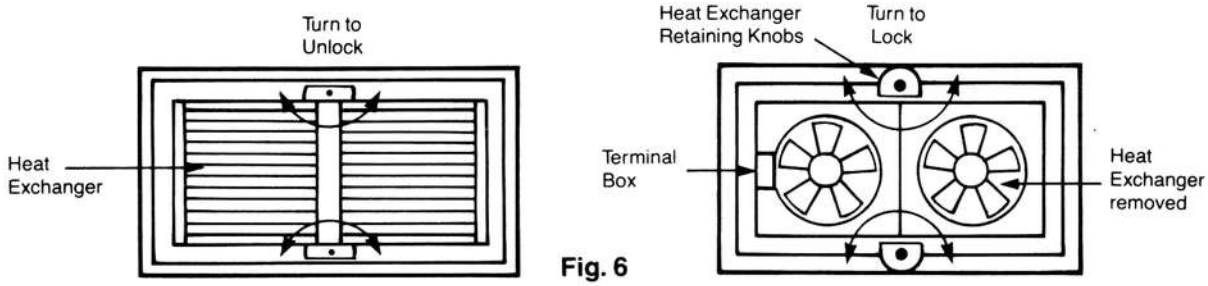


Fig. 6

12. Position the shoulder of the inner case flush with the interior wall surface (see Fig. 4). This will automatically result in the designed 3 degree slope to outside. If necessary, extend the telescopic outer case so that the lower shoulder of the outer case is flush with or proud of the outer wall surface (see Fig. 7).

13. Make good around the inner and outer cases. If firmer fixings are required, secure the inner and outer cases in place by plugging and screwing into the wall leaves.

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

14. Working from outside, position the divider board in the channel between the fan housings by folding the edges down. Cut the board such that it extends beyond the end of the outer case by 55mm for the HR500 type and falls short of the end of the outer case by 13mm for the HR500X type (see Fig.5). Replace the outer grille and retain it with the screw and washer assemblies previously removed. Before replacing and fixing the outer shuttered grille on the HR500X type pass the cable from the grille through the hole with a grommet in the right hand end face of the inner case.

15. Internal wiring connections.

WARNINGS

1. MAINS SUPPLY VOLTAGES (220-240 V AC) ARE PRESENT IN THIS EQUIPMENT, WHICH MAY CAUSE DEATH OR SERIOUS INJURY BY ELECTRIC SHOCK. ONLY A QUALIFIED ELECTRICIAN OR INSTALLER SHOULD CONNECT THE POWER SUPPLY TO THIS UNIT. MAINS SUPPLY MUST BE ISOLATED BEFORE MAKING CONNECTION.

2. THIS UNIT MUST BE CORRECTLY EARTHED.

Pass the supply cable through the largest cable gland in the side of the terminal box. For the HR500X the cable from the shuttered grille passes through the remaining free cable gland. Cut the cables to the minimum length required and make the internal wiring connections within the terminal box (see Fig.6). Connect the supply cable from Vent-Axia Controller to the appropriate terminals of the terminal block within the terminal box as shown in Fig. 9. If a Vent-Axia Controller is not used, connect the supply cable as shown in Fig. 10. Ensure all cable glands are tightened sufficiently to seal onto the cables.

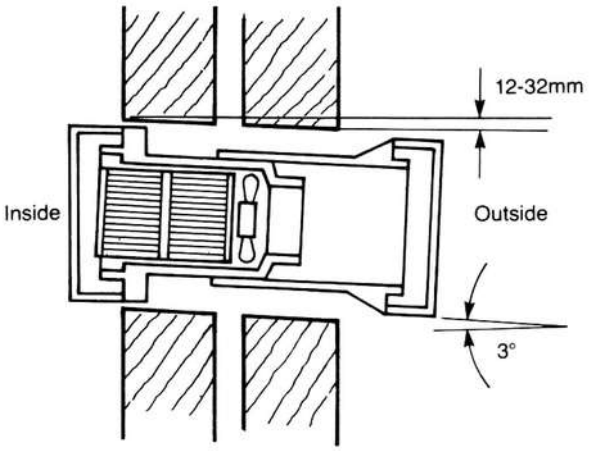


Fig. 7

16. Fit the heat exchanger into the casing of the unit. Pressing lightly on alternative side legs, ‘‘walk’’ the heat exchanger firmly into place (see Fig. 8).
17. Fix the inner grille to the casing by depressing the button on each side and sliding the grille over them so that they locate in the corresponding holes in the grille sides. Ensure that the buttons are positioned on their fixing screws so that the seal on the inner edge of the grille is pressed against the mating face on the inner case to give an airtight seal.
18. Connect to the mains and turn the power on.
19. Switch on at the controller and select the speed and function required – see operating instructions supplied with the controller.

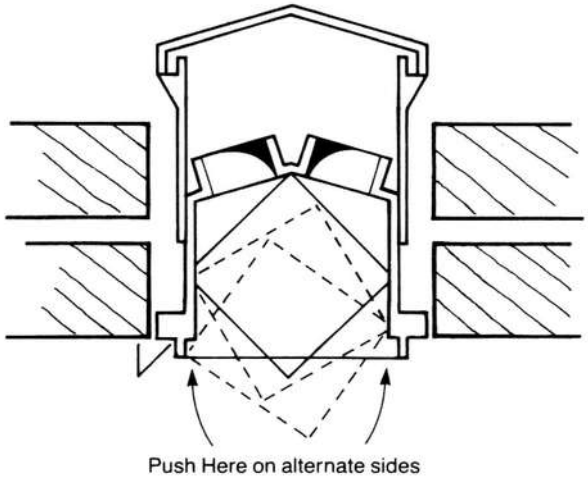


Fig. 8

Fig. 9 Wiring Diagram with Vent-Axia Controller (up to two units per controller)

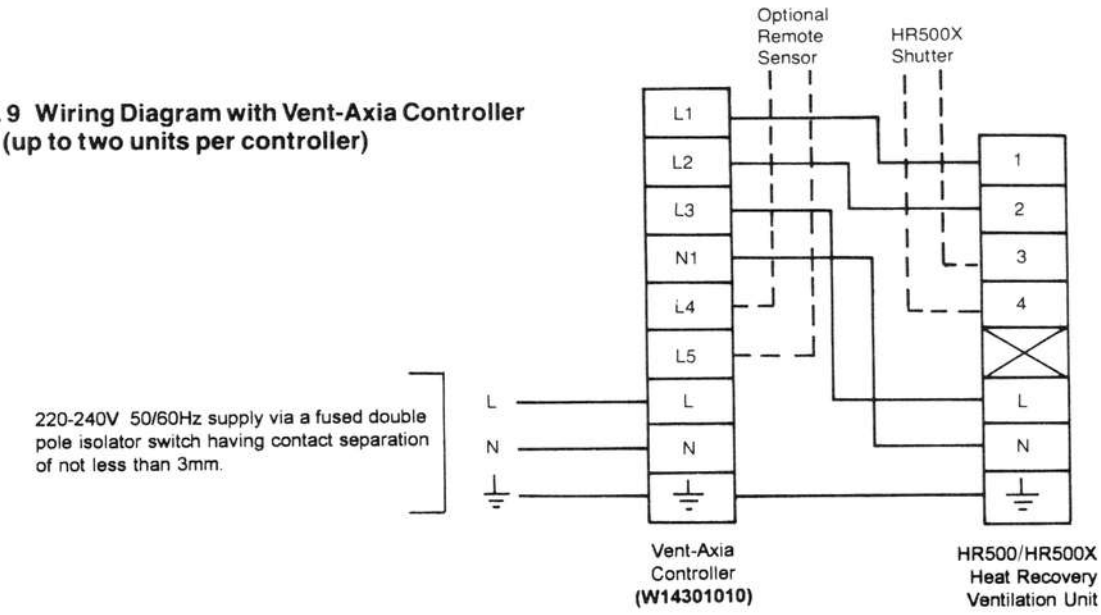
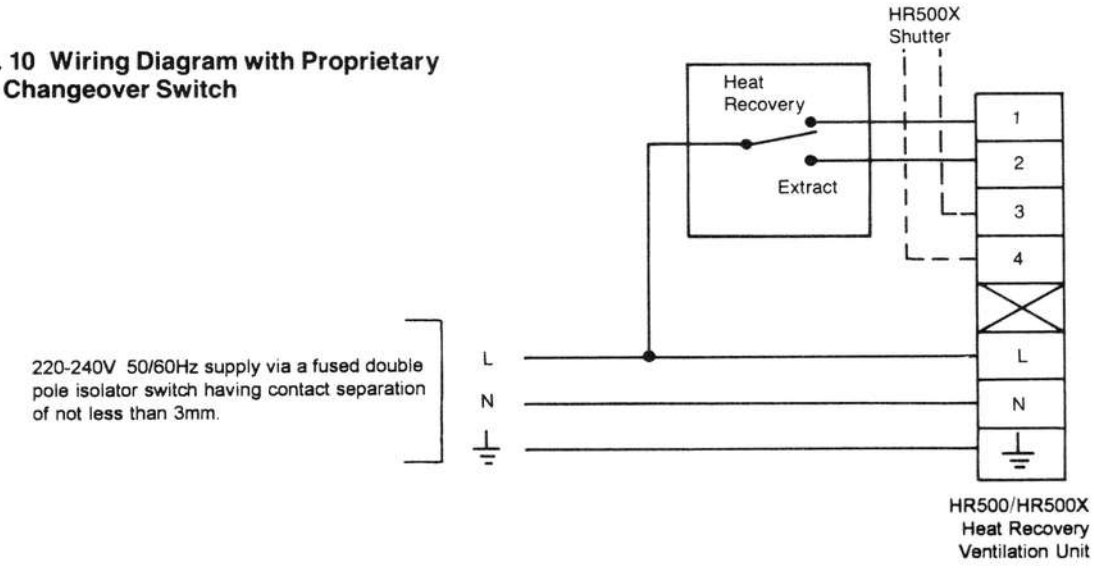


Fig. 10 Wiring Diagram with Proprietary Changeover Switch



WARNING

THE FAN AND ANCILLARY CONTROL EQUIPMENT MUST BE ISOLATED FROM THE POWER SUPPLY DURING MAINTENANCE.

Maintenance

Heat recovery units require regular maintenance. The HR500 and HR500X has been designed to facilitate access to enable maintenance to be carried out easily. The actions below should be carried out at least every 6-months as conditions dictate.

Item	Action
Unit & Heat Exchanger Cell	Inspect and clean the unit 1. Isolate the mains power supply. 2. Remove front cover from the unit. 3. Slide out the heat exchanger. 4. Wash the outer cover and heat exchanger in warm water using a mild detergent (such as Milton Fluid) and dry thoroughly. **NOTE: Keep water away from all electrical components and wiring within the unit.**
Motors	Inspect the motors for build-up of dust and dirt on the impeller blades, which could cause imbalance and increased noise levels. Vacuum or clean if necessary.
Fastenings	Check that all unit and wall-mount fastenings are sufficiently tight and have not become loose. Re-tighten if necessary.

The unit is supplied with four, 6-month Timestrip indicators. A Timestrip is a single use self-adhesive label that once activated will turn red over 6 months. It should be used to keep track of when the filter and cell need cleaning/replacement. Using the self-adhesive backing the strip can stuck near the units controls, or in a easily visible place.

A normal cleaning schedule for a unit would be as follows:

After installation	Activate the 1st Timestrip
After 6 months	Clean cell, clean filter, activate 2nd Timestrip
After 12 months	Clean cell, clean filter, activate 3rd Timestrip
After 18 months	Clean cell, clean filter, activate 4th Timestrip
After 24 months	Clean cell, **replace filters**, the new filters will be supplied with 4 additional Timestrip indicators

Note: The above is the minimum requirement; more frequent cleaning intervals may be needed depending on the environment the unit is installed in.

Activating the Timestrip.



1. Activation: Fully squeeze the activation button between thumb and finger. A red line will appear within 1-2 minutes to show that the Timestrip has been activated.

2. Peel off the backing liner and stick the Timestrip to the Unit or near the controls of the unit. The location should make it obvious to the person responsible for maintenance that the unit needs attention.

PRODUCT FICHE

For Residential Ventilation Units (Complying Commission Delegated Regulation (EU) No 1254/2014)

Name:	Vent-Axia	Vent-Axia
Model ID (Stock Ref.) :	HR500 – 14101010B	HR500 X - 14101070
SEC Class	D	E
SEC Value ('Average')	-20.17	-18.39
SEC Value ('Warm')	0.46	2.25
SEC Value ('Cold')	-56.98	-55.20
Label Required? (Yes/No=Out of scope)	Yes	Yes
Declared as: RVU or NRVU/UVU or BVU	RVU/BVU	RVU/BVU
Speed Drive	Variable Speed	Variable Speed
Type HRS (Recuperative, Regenerative, None)	Recuperative	Recuperative
Thermal Eff: [(%), NA(if none)]	70.00	70.00
Max. Flow Rate (m3/h)	550.80	550.80
Max. Power Input (W): (@Max.Flow Rate)	210.00	220.00
LWA: Sound Power Level (dB)	70.52	70.52
Ref. Flow Rate (m3/s)	0.10710	0.10710
Ref. Pressure Diff. (Pa)	70.00	70.00
SPI [W/(m3/h)]	0.52	0.57
Control Factor & Control Typology: (CTRL/ Typology)		
Control Factor; CTRL	1.00	1.00
Control Typology	Manual Control	Manual Control
Declared: -Max Internal & External Leakage Rates(%) for BVUs or carry over (for regenerative heat exchangers only), -&Ext. Leakage Rates (%) for Ducted UVUs;	<5% Internal, <5% External	<5% Internal, <5% External
Mixing Rate of Non-Ducted BVUs not intended to be equipped with one duct connection on either supply or extract air side;	TBC	TBC
Position and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit	N/A	N/A
For UVUs (Instructions Install Regulated Supply/Extract Grilles Façade)	N/A	N/A
Internet Address (for Disassembly Instructions)	www.vent-axia.com	www.vent-axia.com
Sensitivity p. Variation@+20/-20 Pa: (for Non-Ducted VUs)	TBC	TBC
Air Tightness-ID/OD-(m3/h) (for Non-Ducted VUs)	TBC	TBC
Annual Electricity Consumption: AEC (kWh/a)	7.60	8.31
Annual Heating Saved: AHS (kWh/a)		
AHS: Average	38.49	38.49
AHS: Warm	17.41	17.41
AHS: Cold	75.30	75.30

The Vent-Axia Guarantee

Applicable only to products installed and used in the United Kingdom.

For details of guarantee outside the United Kingdom contact your local supplier.

Vent-Axia guarantees its products for two years from date of purchase against faulty material or workmanship. In the event of any part being found to be defective, the product will be repaired, or at the Company's option replaced, without charge, provided that the product:

- Has been installed and used in accordance with the instructions given with each unit.
- Has not been connected to an unsuitable electricity supply. (The correct electricity supply voltage is shown on the product rating label attached to the unit).
- Has not been subjected to misuse, neglect or damage.
- Has not been modified or repaired by any person not authorised by the company.

IF CLAIMING UNDER TERMS OF GUARANTEE

Please return the complete product, carriage paid to your original supplier or nearest Vent-Axia Centre, by post or personal visit.

Please ensure that it is adequately packed and accompanied by a letter clearly marked "Guarantee Claim" stating the nature of the fault and providing evidence of date and source of purchase.

The guarantee is offered to you as an extra benefit, and does not affect your legal rights

Vent-Axia

Head Office: Fleming Way, Crawley, West Sussex, RH10 9YX.
EU Authorised Representative: Vent-Axia Bedrijvenweg 17 7442 CX Nijverdal Nederland
authorisedrep@vent-axia.nl

UK NATIONAL CALL CENTRE, Newton Road, Crawley, West Sussex, RH10 9JA

SALES ENQUIRIES:	Tel: 0344 8560590	Fax: 01293 565169
TECHNICAL SUPPORT	Tel: 0344 8560594	Fax: 01293 532814

For details of the warranty and returns procedure please refer to www.vent-axia or write to Vent-Axia Ltd, Fleming Way, Crawley, RH10 9YX

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