Cool Breeze
Cool Breeze Plus

Cooling Module

Installation, Operating and Maintenance Instructions

R290 natural refrigerant

UK CE CA

COOL BREEZE & COOL BREEZE PLUS COOLING MODULE INSTALLATION AND OPERATING & MAINTENANCE INSTRUCTIONS

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.

General Information

The Vectaire Cool Breeze mitigates the problem of overheating in the summer months. The Cool Breeze Unit operates in conjunction with a Vectaire Maxi or Maxi Plus MVHR to provide an easy, eco friendly and economic solution to reducing overheating in modern buildings. It meets the standards used in CIBSE TM59 assessments and complies with the Approved Document O on Overheating.

The self contained, sealed for life Cool Breeze Unit works seamlessly through direct integration with the MVHR and can provide up to 4.1 kW/4.3 kW (Maxi/Maxi Plus) of total cooling, using R290 (an eco friendly and natural refrigerant) without the need for an external heat pump condenser.

The Cool Breeze Unit automatically senses the room temperature and that of the incoming fresh air to determine when cooling is required. It removes heat from the supply air allowing the MVHR to distribute the cooled air to living areas, bedrooms, kitchen and bathrooms. Stale, contaminated air is extracted from kitchens, utility rooms and bathrooms, and replaced by a flow of fresh, filtered air throughout the dwelling. The extract and intake air streams are separated to avoid contamination.

If the temperature is not sufficiently high for the Cool Breeze Unit to kick in, the MVHR will operate independently and continuously to create a stable, comfortable, healthy environment avoiding the use of excessive energy and saving heat already generated.

The Cool Breeze must be installed vertically, and will generally be sited in a cupboard. It will be connected by hidden ductwork to vents sited in the ceilings of the rooms which are to be ventilated. Each unit is commissioned individually so that the amount of air moved is tailored to suit the performance required. There will be a facility to boost the extraction rate when desired (e.g when cooking or bathing, or when pollutant levels rise). This may be done automatically or manually.

The system 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 install and maintain the system to ensure a healthy and comfortable indoor environment.

Cool Breeze Unit Features

- Up to 4.1 kW/4.3 kW of total cooling provided
- Fresh air supply is lowered by up to 13.6ºC
- Uses R290 - eco friendly, natural refrigerant -over 225 times more environmentally friendly than R32
- COP up to 4.3
- GWP Rating 3
- EER up to 3.2
- Automatic control of supply temperature via automatic sensors - no false activation from poorly sited external sensors
- Optional manual override for user preference
- Universal handing via intelligent software
- Very quiet Integral condenser - no external unit required
- Front access for servicing
- Wall or floor installation

Maxi/Maxi Plus MVHR Features

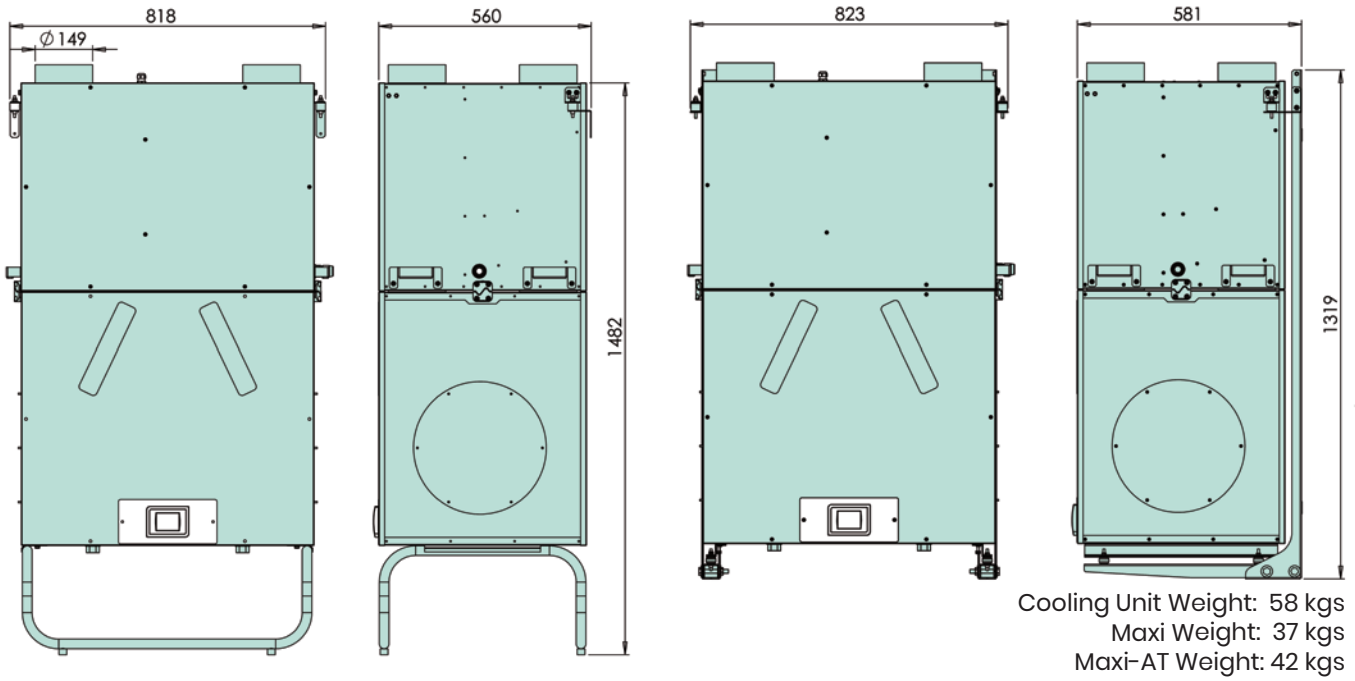
- High quality, energy efficient EC motors with low specific fan power
- 92%/89% efficient counter-flow heat exchanger
- Very low noise levels
- Enhanced acoustic option available
- Fully automatic summer bypass
- Intelligent software for independent motor control, a variety of airflow boosting methods, BMS and home automation compatability
- Tool free front filter access
- External pre-heater option
- Passive House Certified option

- Manufactured in the UK
- Cool Breeze Registered Design

COOL BREEZE UNIT TECHNICAL SPECIFICATIONS

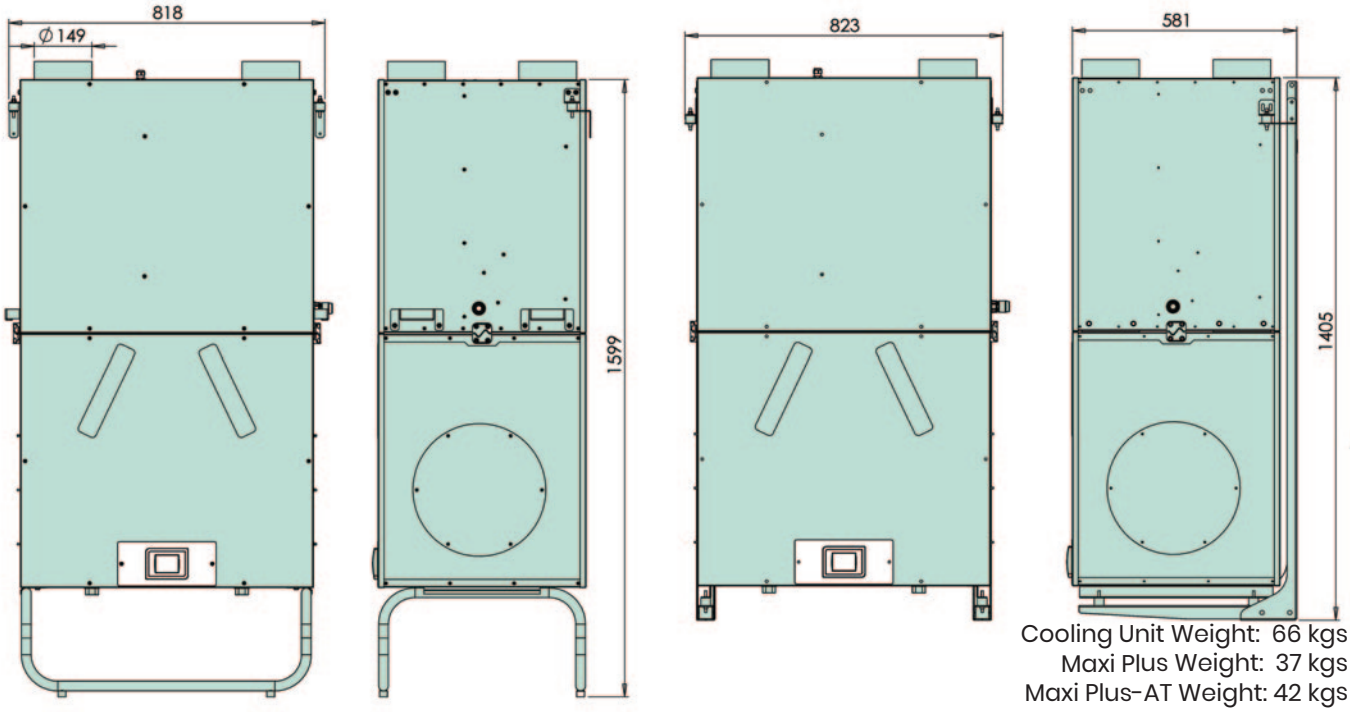
Unit	Operation		Electrical				Module Dimensions				Operating Conditions	
	Minimum Airflow	Maximum Cooling Capacity	Input Voltage	Input Frequency	Full Load Current	Power (Watts)	Width mm	Depth mm	Height mm	Weight kg	Operating Temps	Operating Humidity
Cool Breeze	60 l/s	2.63kW	220-240V AC Single Phase	50 Hz	4.8 A	700	818	538	587	59	0ºC-40ºC	0%-95%
Cool Breeze Plus	80 l/s	3.43kW	220-240V AC Single Phase	50 Hz	5.5 A	815	818	538	657	66	0ºC-40ºC	0%-95%

COOL BREEZE DIMENSIONS with MAXI - mm



Cooling Unit Weight: 58 kgs
Maxi Weight: 37 kgs
Maxi-AT Weight: 42 kgs

COOL BREEZE DIMENSIONS with MAXI PLUS - mm



Cooling Unit Weight: 66 kgs
Maxi Plus Weight: 37 kgs
Maxi Plus-AT Weight: 42 kgs

Installation

IT IS IMPORTANT THESE INSTRUCTIONS ARE READ FULLY BEFORE INSTALLATION

- This product should not be used for any purpose other than that for which it was designed and as shown in this leaflet
- All packaging should be removed and the unit checked for damage in transit. If there is any damage, please contact your supplier. Do not install if there is any damage.
- The Cool Breeze/Cool Breeze Plus must be installed vertically, and generally be fitted into a cupboard, loft or ceiling void.
- **In order to comply with Construction (Design & Management) Regulations, sufficient access for safe maintenance (recommended on an annual basis), or removal following installation, MUST be provided for this product. We recommend that a clearance of at least 200mm is available on each side of the cabinet to allow access to the motors. See dimensions diagram.**
- Regulations and current Building Regulations: In order to comply with these, it may be necessary to fit fire dampers or other similar devices within the associated ductwork.
- **Flue gases from fuel-burning equipment must not be drawn into a living area. If any room from which air is extracted contains a fuel burning appliance, such as a central heating boiler, then its flue must be of the sealed or balanced flue type, or allowance must be made for an adequate supply of air into the room.**
- The unit must **NOT** be installed:
  - where there is excessive oil or grease
  - in a location without an adequate airflow in case of a refrigerant leak
  - in a location where there are ignition sources or open flames
  - where there are hazardous gasses, liquids or vapours that are flammable or corrosive
  - in ambient temperatures above 40ºC or lower than 0ºC
  - in areas of excessive humidity or in a wet environment
- Where possible the unit should **NO**T be installed directly above a bedroom or living room.
- The condensation drains **MUST** be fitted
- Care should be taken to ensure that ducting is free from blockages
- External grilles should be located a minimum of 600mm from any flue outlet in accordance with all Regulations
- The unit must be connected to a 230-240v, 50Hz single phase electrical supply.
- A triple pole isolation switch with contact separation of at least 3mm must be used to connect the appliance to the fixed wiring when using the Switched Live.
- The product should only be connected to the mains electricity supply or electrical outlet if:
  - your electrical voltage and frequency correspond to those shown on the rating label.
  - the capacity of your electricity supply is sufficiently powerful to operate the product at its maximum power.
- If one of the spigots is not connected to ducting a safety grille **MUST** be fitted to that spigot, so that it is impossible for any moving part to be touched.

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. We recommend that the ducting is installed by qualified BPEC personnel. The unit is not suitable for installation to the exterior of the dwelling.

During and after installation ensure that any hot works carried out near the unit is carried out by an appropriately certified person. It is advised that a suitable refrigerant leakage detector is used prior to using ignition sources near the unit.

Ensure that the location of the unit has appropriate signage where applicate - eg - a "no smoking" sign if near an exit point.

Transportation, packaging and storage prior to installation

- Care should be taken when transporting the unit. Please be aware that the total weight of the Cool Breeze is over 100kgs. We recommend the use of appropriate handling and lifting equipment. Dropping or knocking will damage the inner workings of the unit and Vectaire will not be liable for any such damage.
- The unit should always be stored in a clean, dry environment.
- Remove all packaging before installation.

Pre-inspection

- Do not install if the outer casework is damaged or you suspect internal damage.
- Inspect the unit and electrical supply cord for any damage (damage must be repaired by a suitably qualified and competent person.)
- Check all parts are supplied as indicated.

Parts list

1 x Vectaire Cool Breeze /Cool Breeze Plus unit together with Cool Breeze Installation, Operation and Maintenance Instructions
1 x MVHR (Maxi or Maxi Plus) together with MVHR Installation, Operation and Maintenance Instructions
1 x Cool Breeze Fixing Kit
1 x Anti-Vibration Attenuation Sheet

And

Depending on whether the unit is to be installed on the Wall or Floor, **either** a:

Wall Fixing Kit, or

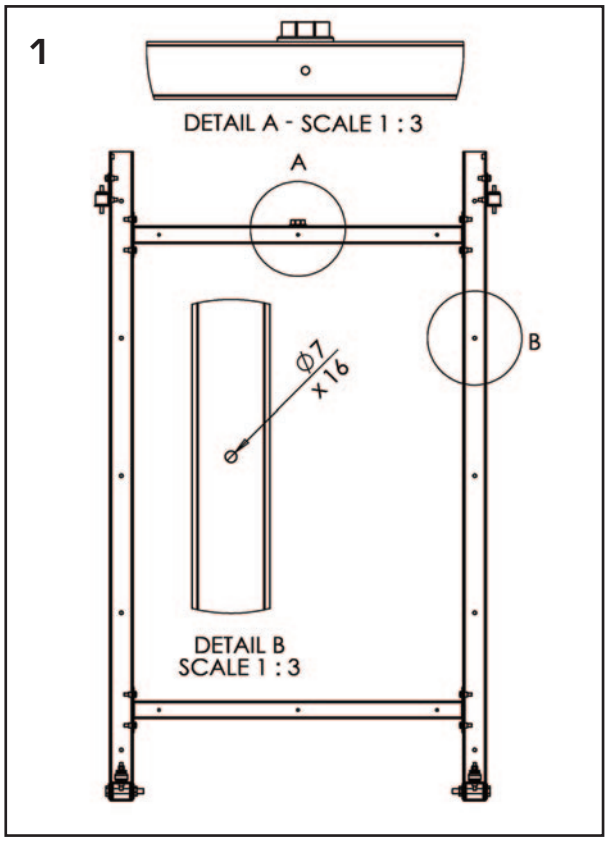
Floor Fixing Kit

should be ordered separately. The Cool Breeze should be installed using only Vectaire fixing kits.

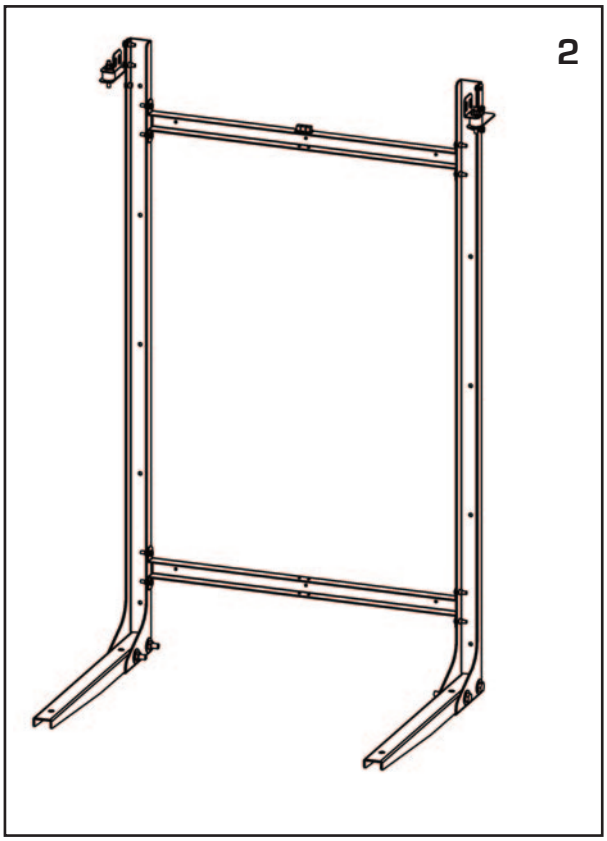
The Wall Fixing Kit contains additional instructions for it's assembly.

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

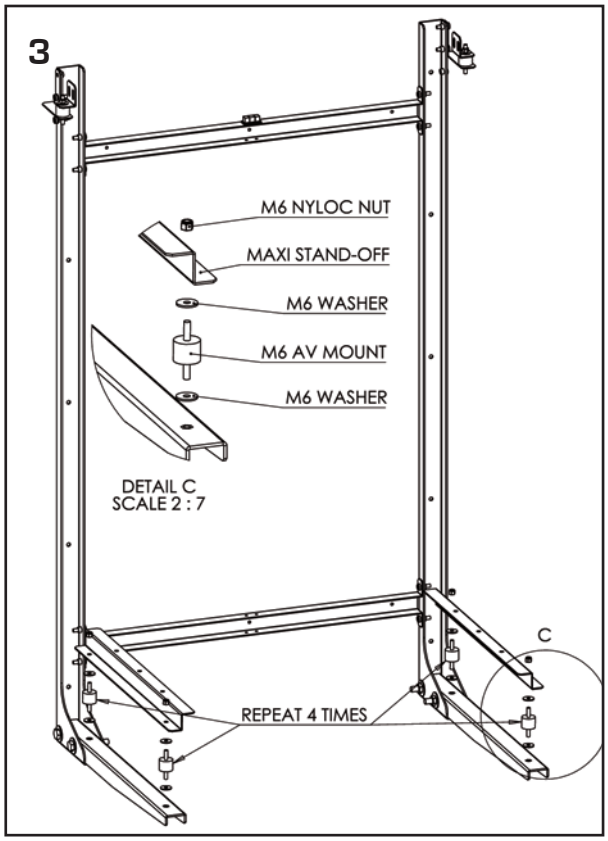
COOL BREEZE/COOL BREEZE PLUS - WALL INSTALLATION



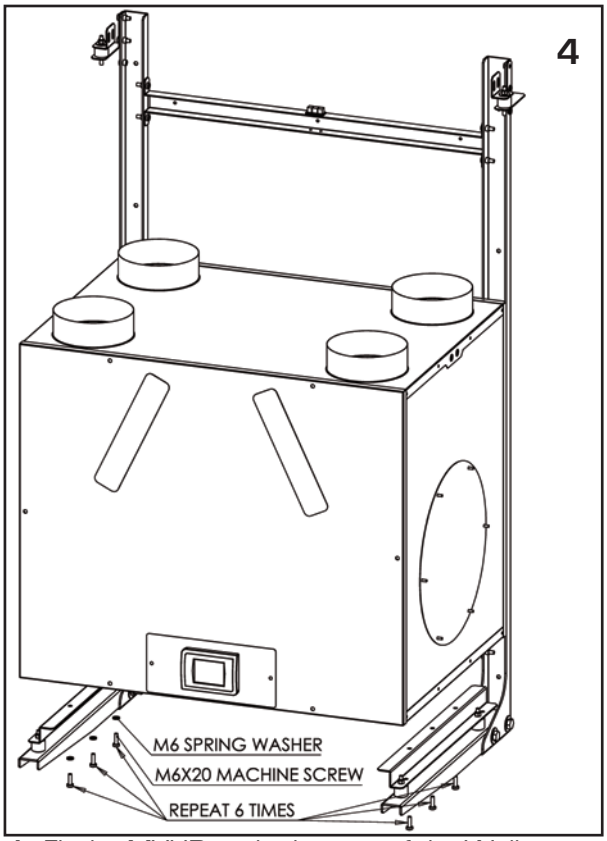
1. Mark a horizontal line on the wall using the pre-nestled spirit level (A). There must be sufficient access space above the Cool Breeze/Cool Breeze Plus for ducting and below for fixing access. Mark all the fixing hole centres (B).



2. Drill the holes and fit wall plugs. Ensure that appropriate fixings are used (**Note**: different fixings will be required if unit is not being mounted on solid wall) . Screw the bracket to the wall.

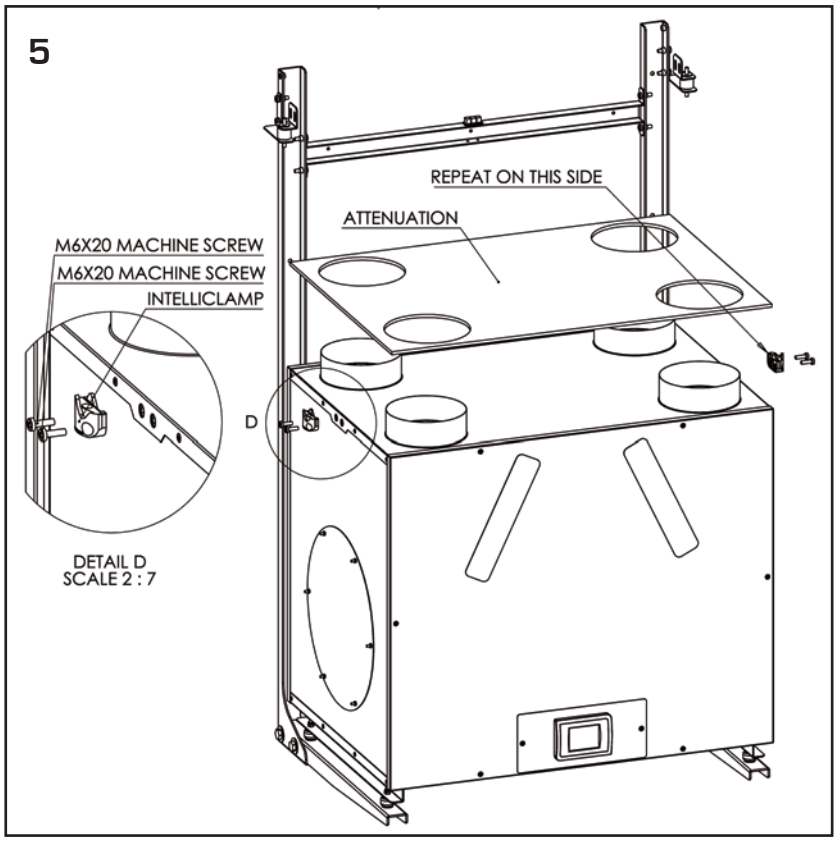


3. Fix the Standoff sections to the base of the Wall Bracket using the nuts, washer and mounts supplied as indicated.

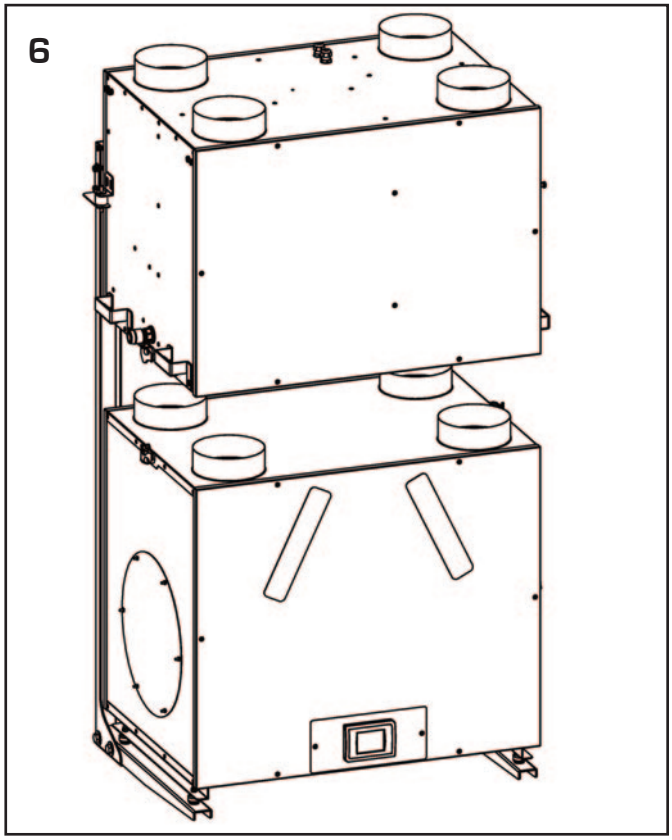


4. Fit the MVHR to the bottom of the Wall Bracket using the washers and screws supplied as indicated.

COOL BREEZE/COOL BREEZE PLUS - WALL INSTALLATION

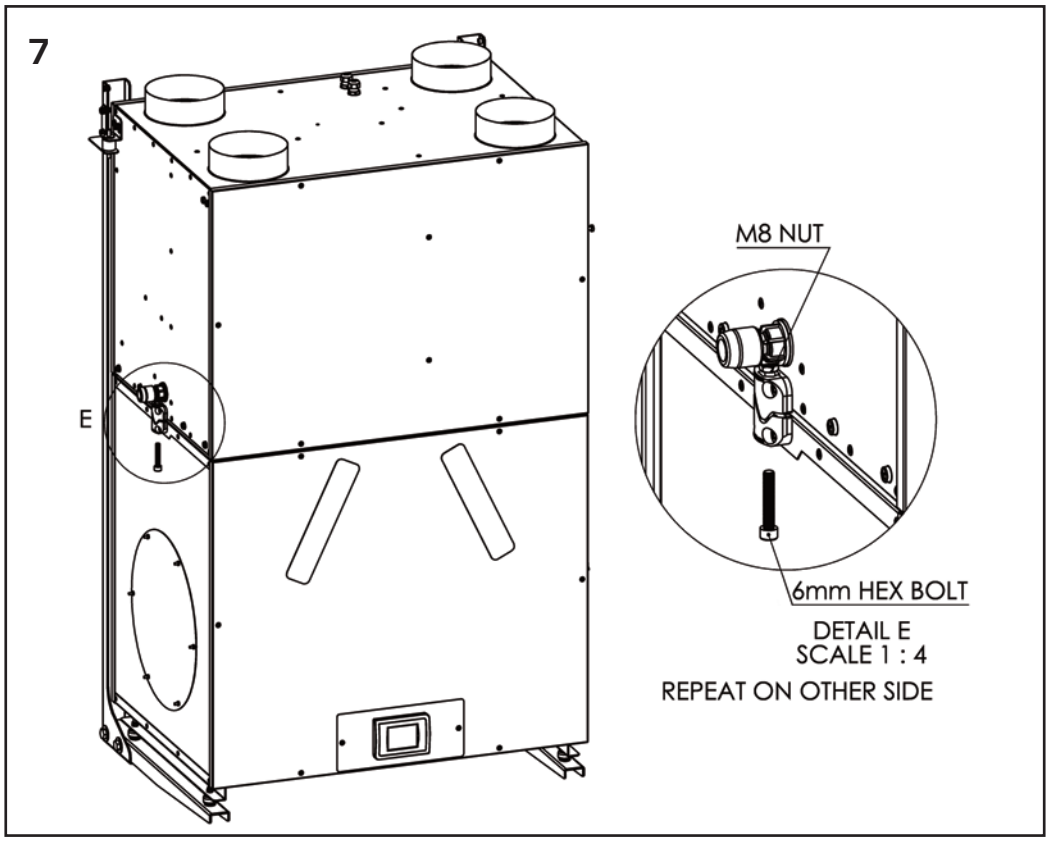


5. Fit the black Intelliclamps in position on the top sides of the MVHR using the intelliclamps and screws provided. Place the anti-vibration attenuation sheet in position over the spigots of the MVHR.

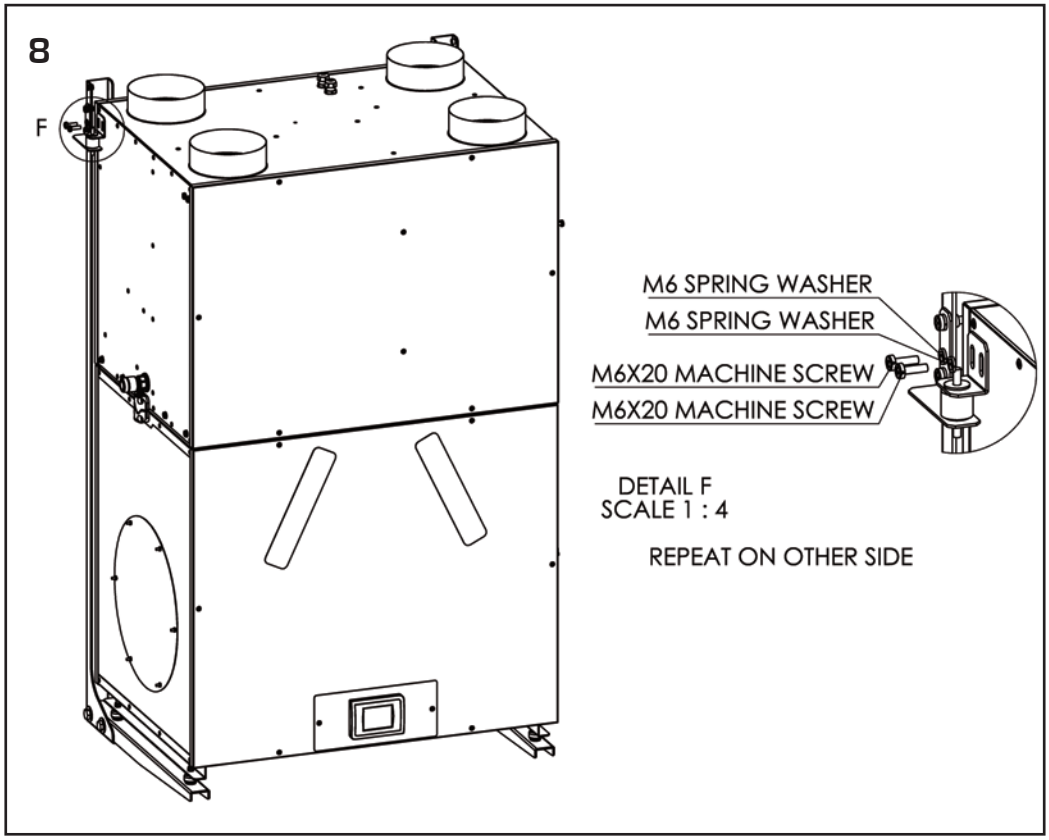


6 Position the Cool Breeze Unit on the top of the MVHR using the handles provided.

COOL BREEZE/COOL BREEZE PLUS - WALL INSTALLATION

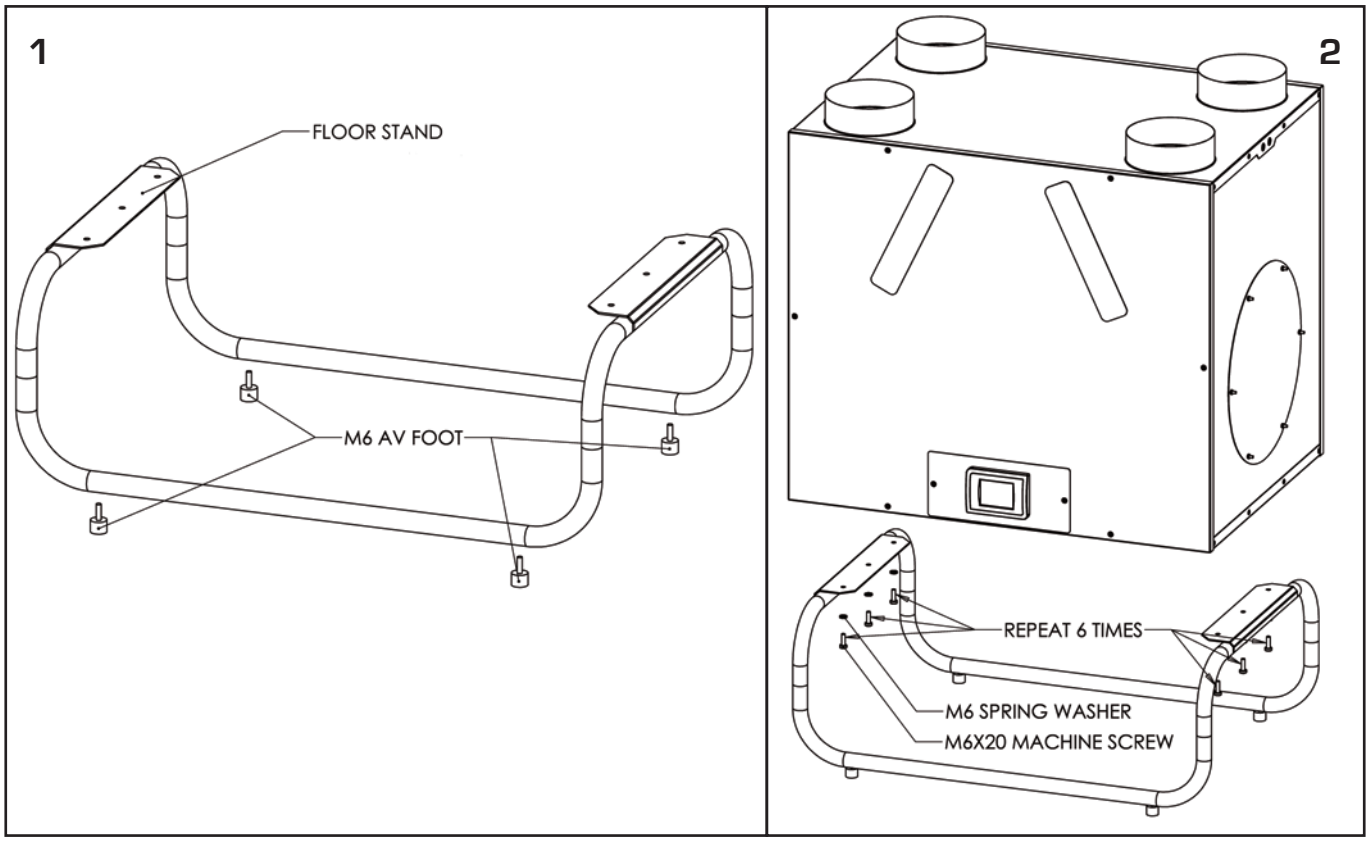


7. Clamp the Cool Breeze Unit and the MVHR securely together as shown using the nuts and bolts supplied

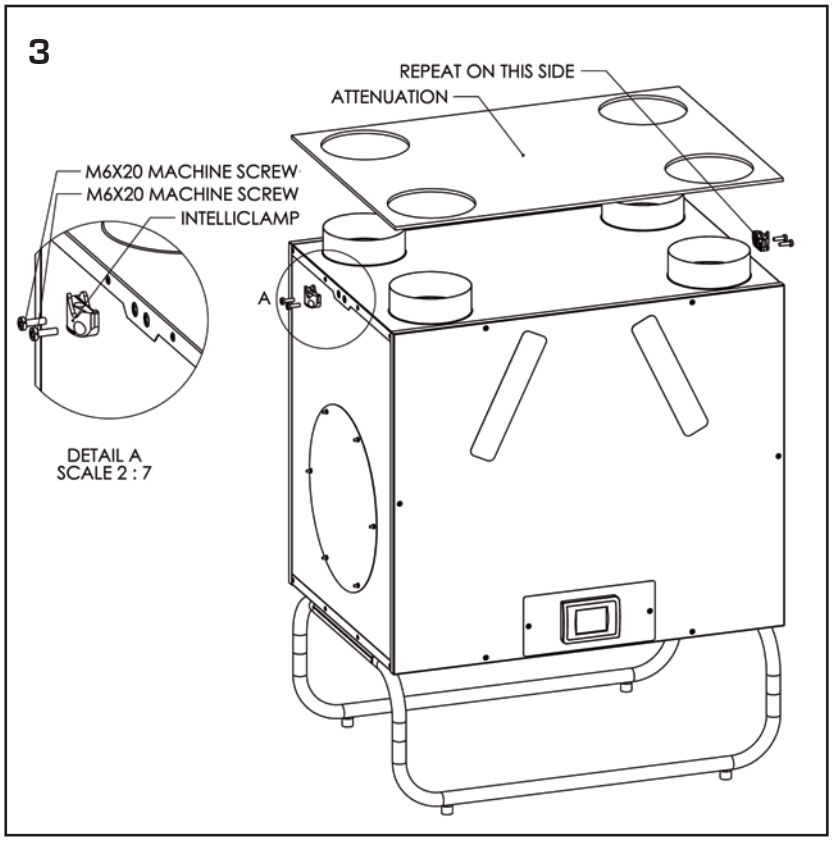


8 Secure the Cool Breeze/Cool Breeze Plus to the Wall Bracket using brackets, mounts, screws, nuts and washers supplied. (See Wall Bracket Assembly instructions for detail)

COOL BREEZE/COOL BREEZE PLUS - FLOOR INSTALLATION

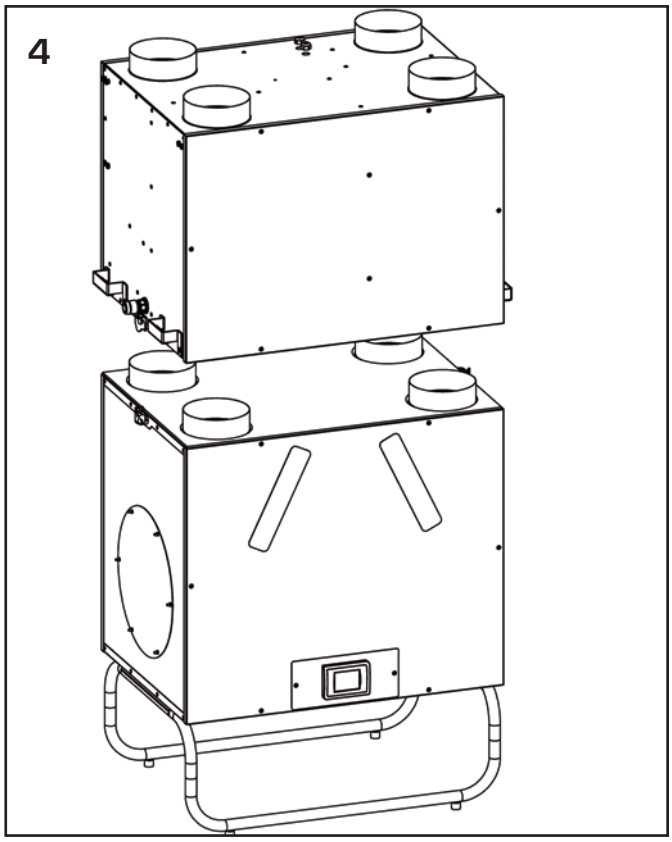


1. Fix the M6 AV feet to the bottom of the Floor Stand frame and adjust so the mount sits level.
2. Fix the Floor Stand to the MVHR using the washers and screws supplied as indicated.

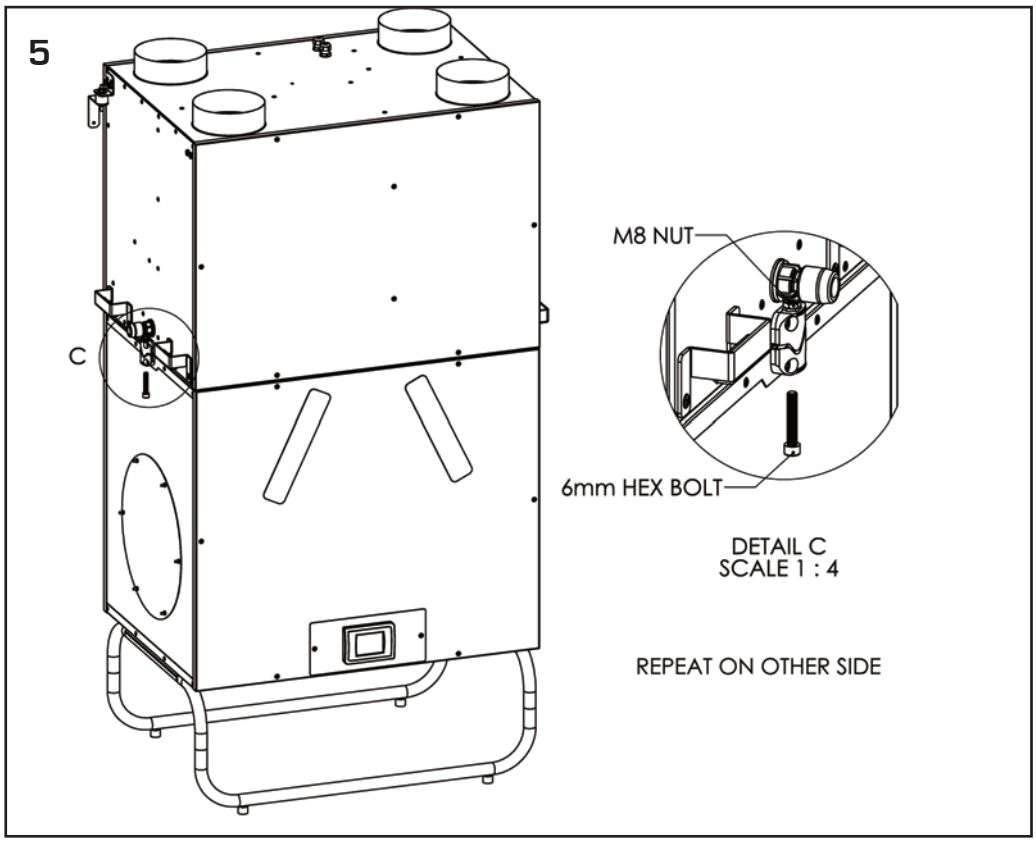


3. Fit the black Intelliclamps in position on the top sides of the MVHR using the intelliclamps and screws provided. Place the anti-vibration attenuation sheet in position over the spigots of the MVHR.

COOL BREEZE/COOL BREEZE PLUS - FLOOR INSTALLATION

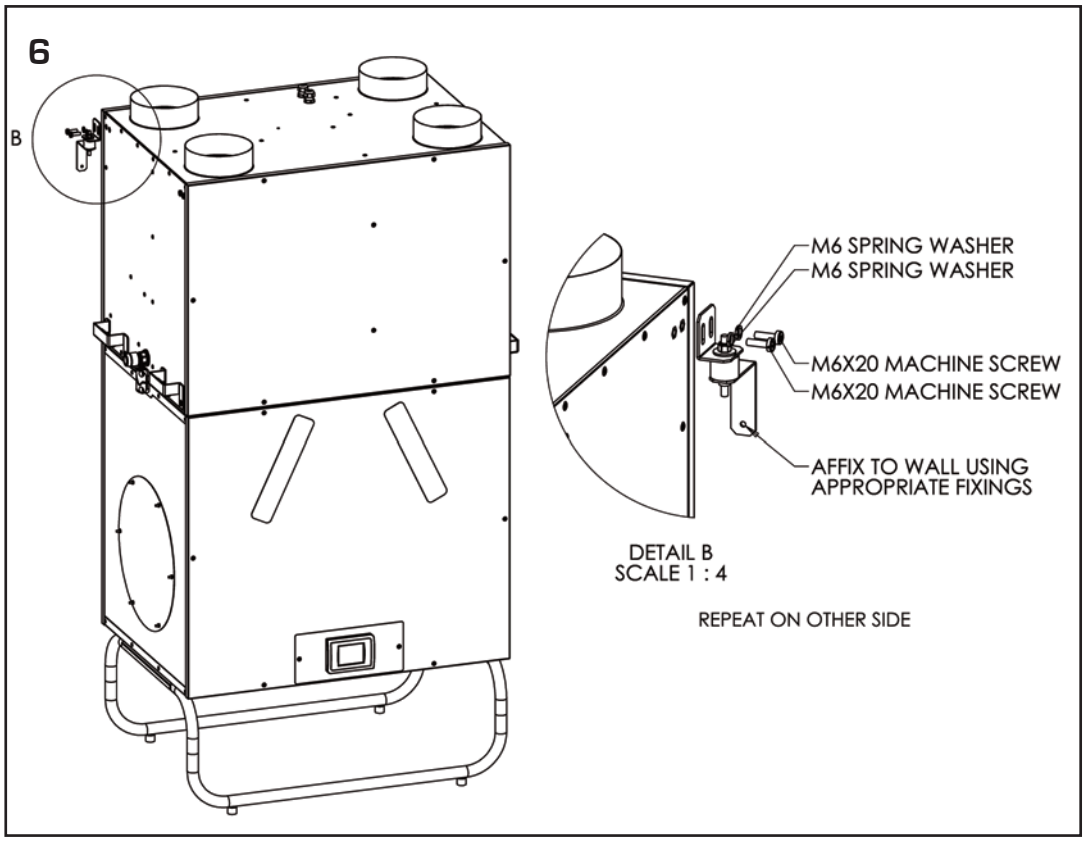


4 Position the Cool Breeze Unit on the top of the MVHR using the handles provided.

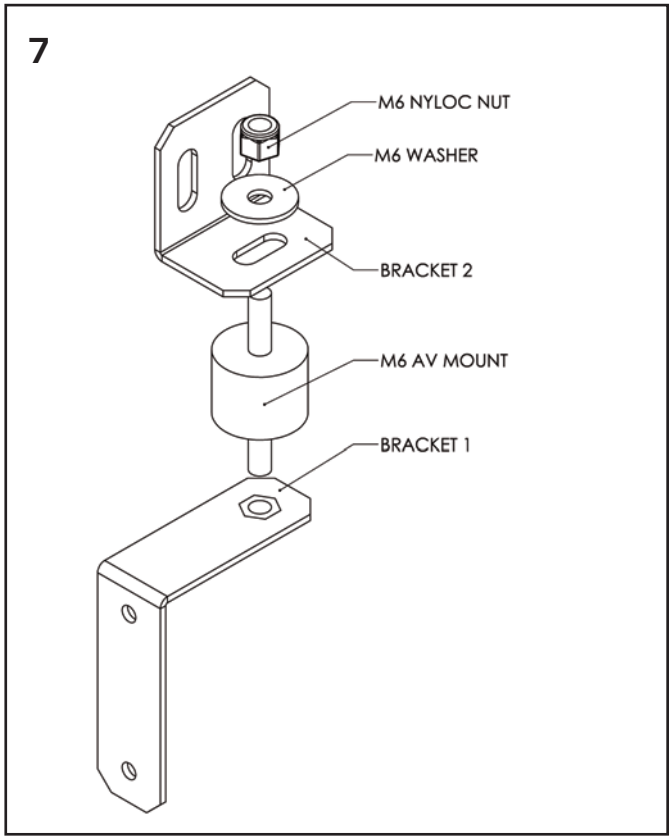


5 Secure the Cool Breeze Unit to the MVHR using the nuts and bolts supplied.

COOL BREEZE/COOL BREEZE PLUS - FLOOR INSTALLATION



6 Using the washers, machine screws and brackets supplied, fix the wall fixing kits to the Cool Breeze Unit. Then, using appropriate fixings, secure the Cool Breeze/Cool Breeze Plus to the wall.

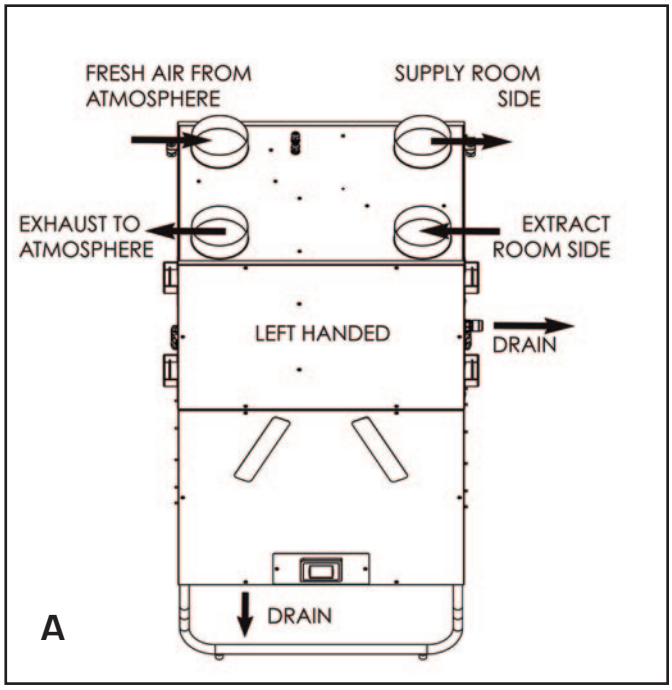


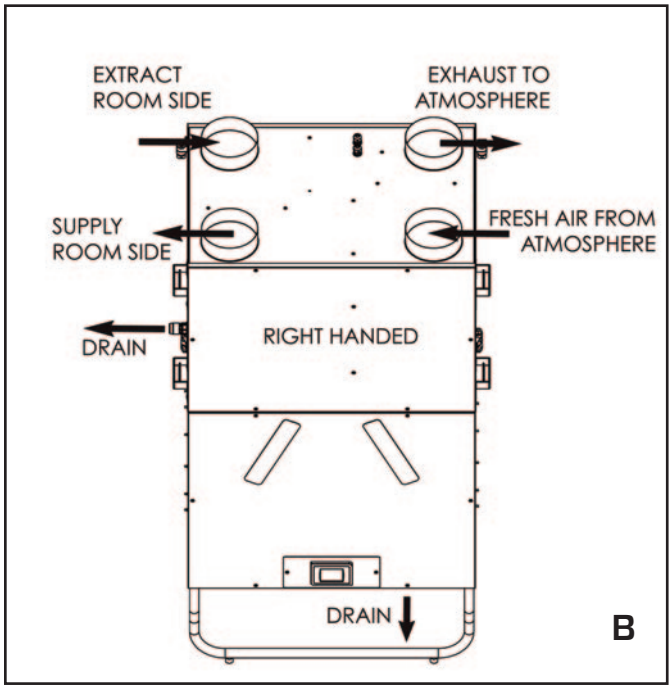
7 Details of Wall Fixing (above).

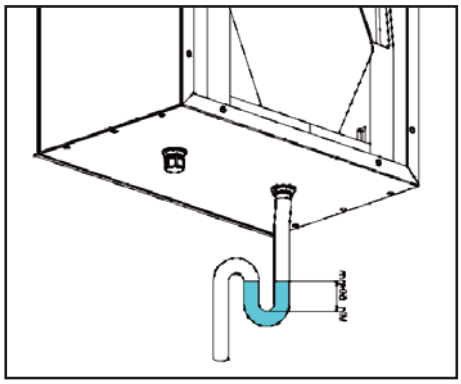
COOL BREEZE/COOL BREEZE PLUS INSTALLATION INSTRUCTIONS

Handing

The ducts should be fixed to the Cool Breeze/Cool Breeze Plus as shown in diagrams A and B. To ensure the Cool Breeze is oriented correctly, when looking at the unit in situ, if the drain is coming out of the right hand side, then it is in the MVHR left handed configuration, and if it is rotated and placed with the drain coming out of the left hand side then it is in the MVHR right handed configuration.







Condensation - MVHR

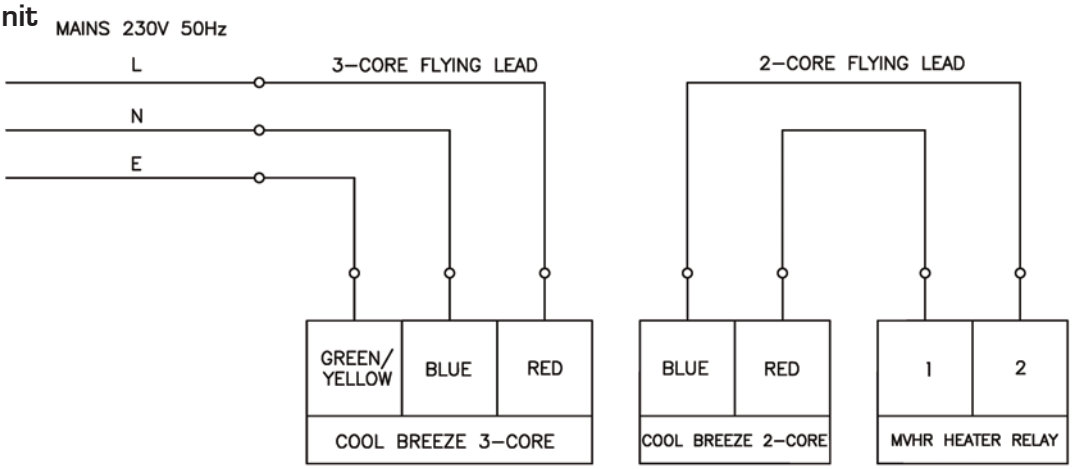
- The MVHR may sometimes produce condensation which must be drained away. A 21.5/22mm dia pipe outlet is provided on this unit.

Note: optional left or right hand drain connectors (21.5/22mm) are fitted. A drainage pipe must be connected to the appropriate side, dependent on the positions of the supply and extract ducting. Refer to figs A and B above.

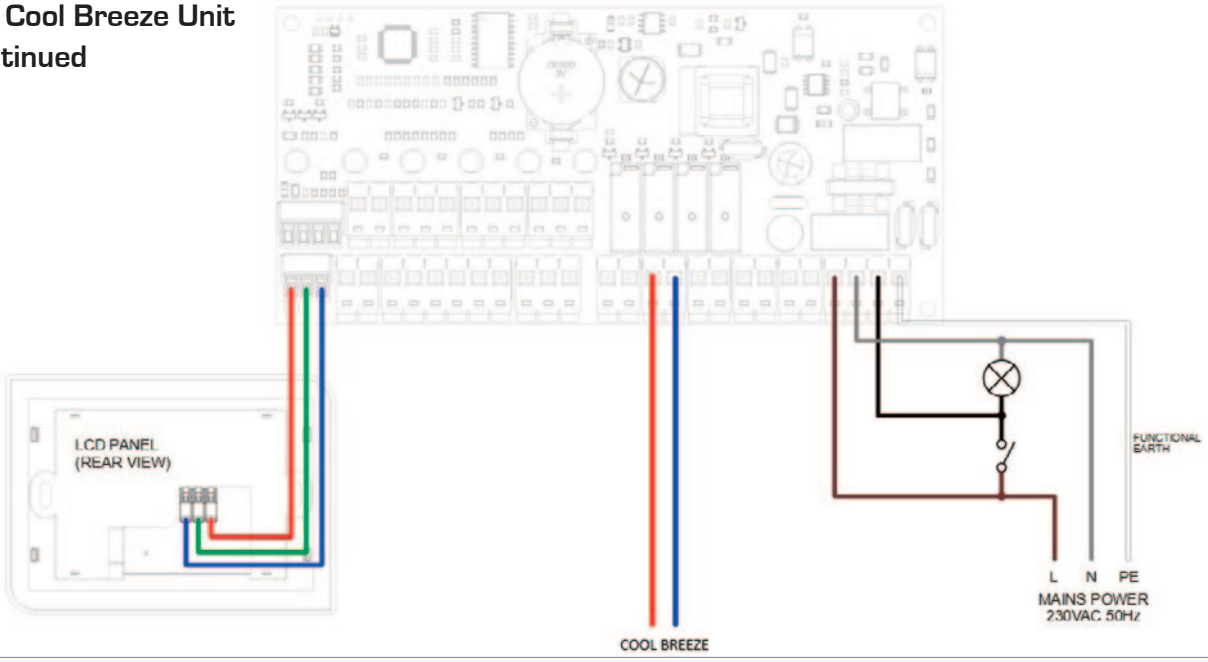
- If the ducting is installed as shown in Fig A, the drain must be connected to the left-hand outlet. If the ducting is installed as shown in Fig. B, the drain must be connected to the right-hand outlet. The unused drain outlet must be capped off.
- The drainage pipe must be installed with a continuous fall from the cabinet to the external household drainage point and a wet or dry trap must be fitted to prevent return air penetration.
- If any part of the condensate drain pipe passes through an unheated space, it must be insulated with the equivalent of at least 25mm of insulating material with a thermal conductivity of 0.04 W/mK.
- The condensate drain must always be connected to the ATMOSPHERE side of the MVHR unit.
- Where ducting is installed in an **unheated** space, all of the ducts should be insulated. Where ducting is installed in a **heated** space, only the cold ducts should be insulated. i.e. the supply duct from outside and the extract duct from the unit to the outside.
- The duct layout must be designed to suit the requirements of the ventilation/heat recovery system and building layout.
- Where rigid duct is used, it should be installed using the least number of fittings to minimise air flow resistance. Where possible, final connection to the grilles and unit should be made with a flexible connection.
- Where flexible ducts are used, ensure that:
  - lengths of ducting are no longer than 300mm in any one place
  - the duct is stretched so that it is smooth and straight
  - where bends are necessary, they have large radii (ie avoid sharp bends)
  - the duct is not crushed if in a restricted area
- Where ducting passes through a fire partition, suitable fire dampers **must** be installed to prevent the transmission of fire through the duct.

Electrical Connection - Cool Breeze Unit

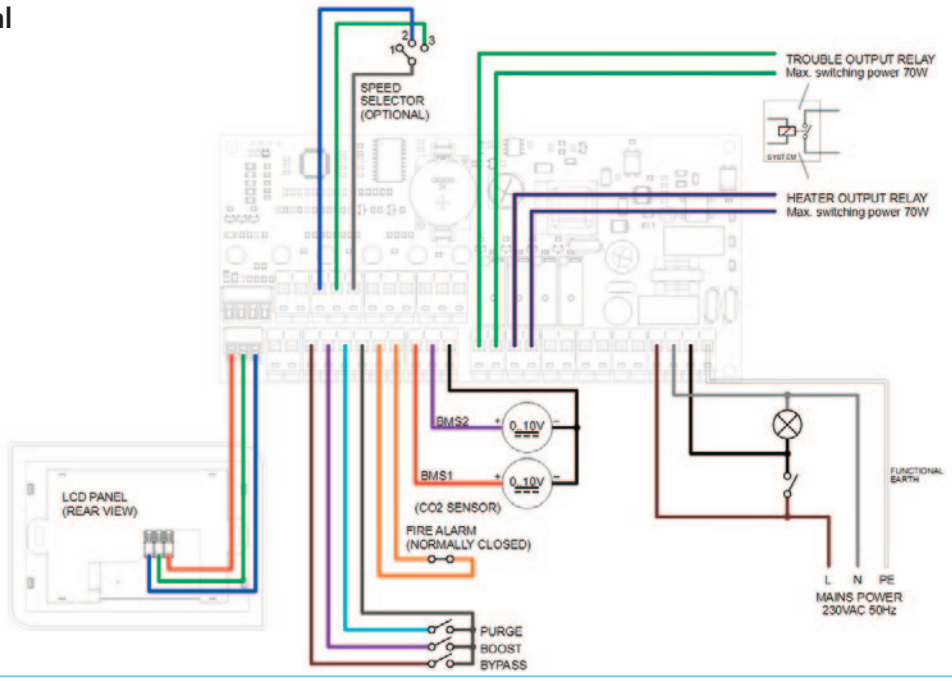
Cool Breeze Unit



LCD + Cool Breeze Unit continued



MVHR General



Electrical Connection

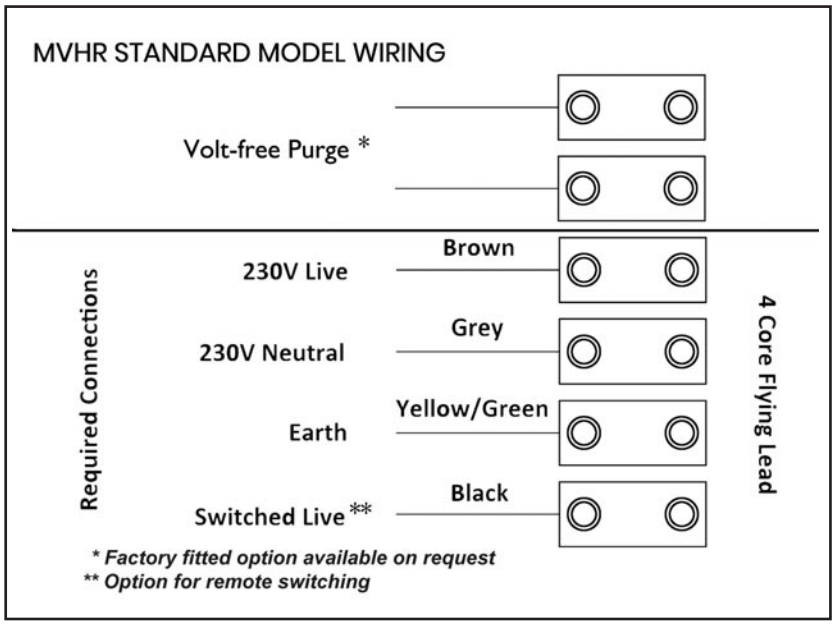
WARNING: these appliances must be earthed and all wiring must conform to current IEE Regulations and all applicable standards and Building Regulations.

- The units are suitable for 230V, 50Hz Single phase supply.
- The MVHR unit is supplied with:
  - A mains rated 4 core flexible cord (black, brown, grey, green/yellow)
  - An optional factory-fitted 2 cord volt-free flexible cord for purge switching provided on request

  Cables for any other external device will be **provided and labelled on request**
- A triple pole isolation switch with contact separation of at least 3mm must be used to connect the appliance to the fixed wiring when using the Switched Live.
- Boost controls must not be located within 1 metre of a cooker or where they may be affected by excessive heat or moisture.
- Boost and other external controls should be clearly identified and conveniently located.
- The boost facility can be activated by a switched live connection (in addition to the permanent supply live). The switched live can be operated by a variety of external devices, including:
  - 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)**
  - a remote switch/pull cord

  or via LCD control

  (*PIRFF, DRH240 and THM may have an integral over-run timer which controls the length of time that the fan will continue to operate at its boost speed after the boost has been switched off.)



Commissioning

1. The commissioning must only be carried out by a suitably qualified person.
2. Prior to starting the commissioning procedure, ensure that the ductwork connections and airflow directions match one of the options A or B, shown on page 12. Check that the drain connections are on the correct side.
3. Before making any adjustments, ensure that the air valves or grilles are fully open.
4. When commissioning the Cool Breeze and MVHR, the minimum speed at which the MVHR can be set is 60l/s airflow through the Cool Breeze. Boost and Purge speeds must be above this value. If 60l/s is not achieved the unit could overheat and shut down.
5. **Please see separate "LCD Control Panel Commissioning Instructions" for details on commissioning and user operations**.

WARNING : With the control board panel removed, 230 volt live connections are accessible.

Cleaning and Maintenance

WARNING: The Cool Breeze and Cool Breeze Plus use a 230V supply and contain rotating mechanical parts.

Before carrying out any maintenance or cleaning operations the mains electrical supply MUST be disconnected. In the event of any failure of the unit, contact your supplier immediately.

Cool Breeze Unit

The Cool Breeze Unit should be inspected every 6 months. The Unit should be inspected for:-

- Exterior damage.
- Inspect the coils by removing the front cover and the subsequent smaller cover on the right hand side inside the Unit.
- Inspect the electrical cabling inside the Unit together with cabling to and from the Unit. If any need replacing, the work should be done by a properly qualified person.
- If required, the coils can be cleaned using a cloth dampened with water, but do not allow it to drop off the coils. Do not use any chemicals.
- Do not attempt to alter the hermetically sealed refrigerant circuit. This should be done only in case of failure and by a certified F-Gas engineer after contacting Vectaire.
- It is advisable to have an appropriate fire extinguisher close by the unit in case of any ignition.

MVHR

The heat exchanger within the MVHR should be cleaned annually.

To clean the filters and heat exchanger:

The air filters and heat exchanger of the Vectaire WHHR Maxi/Maxi Plus should be cleaned regularly by a suitably qualified person (the frequency of cleaning will vary depending on the installation environment). This will assist in the proper functioning of the Cool Breeze.

Filters:

- Slide out the filters by pulling out the tabs.
- Clean the filters carefully using a vacuum cleaner, replace in the slots and refit the filter covers

Heat Exchanger:

- Firstly remove filters as described above
- Remove the screws securing the front panel and carefully lift off. **N.B** When removing the main front cover, the wires connecting the circuit board to the main front cover must be first disconnected to avoid causing damage to the LCD screen (does not apply to "AT" models). Using the plastic strap fitted, carefully pull out the heat exchanger.
- Caution: if this is done during cold weather, the heat exchanger may contain water. It is advisable to have a plastic bowl available to avoid spillage.
- Lightly clean the faces of the heat exchanger with a vacuum cleaner. Replace the heat exchanger carefully, by sliding the assembly back into the cabinet.
- Replace the front cover by hooking the top edge into the slots in the cabinet and secure in place using the screws.
- Finally, replace the filters as above.

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

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 email to sales@vectaire.co.uk

Cool Breeze
Cool Breeze Plus
Cooling Module
Installation, Operating and Maintenance Instructions

R290 natural refrigerant

UK CE CA

Vectaire Ltd, Lincoln Road, Cressex Business Park, High Wycombe, Buckinghamshire, HP12 3RH
Tel: +44 (0)1494 522333. Fax: +44 (0)1494 522337. Email: sales@vectaire.co.uk

E & O.E