Maintenance Manual

On-The-Wall and In-The-Wall

Preface

Dear customer,

Thank you for purchasing the Vaventis Fresh-r. The Vaventis Fresh-r is a decentral ventilation unit with heat recovery. The Fresh-r takes fresh air from outside, while expelling old air. The incoming fresh air is pre-warmed by the warm outgoing stale air.

There are two types of Fresh-r: in-the-wall and on-the-wall. Beside these two types there also two variations: Fresh-r standard and Fresh-r Everywhere. This manual contains all the information needed to quickly familiarize yourself with the product. We kindly ask you to carefully read this information before using the product.

This manual is intended for the end user.

The information in this manual is important for the correct and safe use of the product.

With the table of contents, you will be able to find the right information in the manual quickly. This is the original manual. Besides this manual there is also an installation manual available.

Some illustrations might differ from the actual model you have purchased.

1. Intended use

The Vaventis Fresh-r is a decentral ventilation unit with heat recovery. The Fresh-r takes heat from the stale air it expels and uses it to warm up the fresh air it brings in from outside.

It improves air quality for a healthy indoor air quality and at the same time reduces your energy bill. No ducting is needed for this unit which makes installation easier than a conventional HRV system.

The Fresh-r is equipped with CO_2, RH and Temperature sensors and has an intelligent control system and other than conventional HRV's the Fresh-r also works efficient at sub zero temperatures.

The Fresh-r functions in four modes:

I. **Automatic mode**
   In the automatic mode the Fresh-r measures the CO_2, RH, temperature, flows and uses the measurements to calculate the efficiency and optimum airflow from each fan.
II. **Dewpoint protection mode**
   This is a sub-mode of automatic mode. The Fresh-r enters this mode when necessary, to avoid the formation of condensation on the walls and windows within your home. This mode will be activated automatically upon detection that it is necessary.
III. **De-snowing mode**
   In the defrost mode the Fresh-r de-freezes the heat exchanger by blowing warm air out, so it can work again at optimum efficiency. Defrost mode cannot be entered into manually. This mode will be activated automatically upon detection that it is necessary.
IV. **Manual mode**
   In the manual mode you can change the fan speed in six settings by pressing the buttons accordingly on the user interface.

2. Target group

The manual describes how to use and maintain the Fresh-r. The Fresh-r may only be used and maintained by people who understand the Fresh-r and understand this user manual.

3. General safety instructions

⚠ DANGER

- Do not perform any maintenance activities other than those specified in this manual.
- Do not remove the electronical protection. The electrical components are hidden safely.
- Make sure the main switch is in OFF position when replacing the Heat exchanger.
- Do not put the main switch in ON position when the Heat exchanger is taken out.
- Make sure the main switch is in OFF position when replacing the fan assembly.
- Do not put the main switch in ON position when the fan assembly is taken out.
- Make sure the main switch is in OFF position when performing the maintenance activities.

⚠ WARNING

- Do not place any object in front of the Fresh-r (min. distance 50 cm). This hinders the air flow.
- Make sure the CO_2 indicator is always green or orange. Open a door or/and window if the CO_2 indicator is red.

⚠ CAUTION

- Do not clean the Heat exchanger with hot water (max. 40 degrees). This can damage the Heat exchanger permanently
- Do not touch, brush or scrub the copper wire of the heat exchanger.

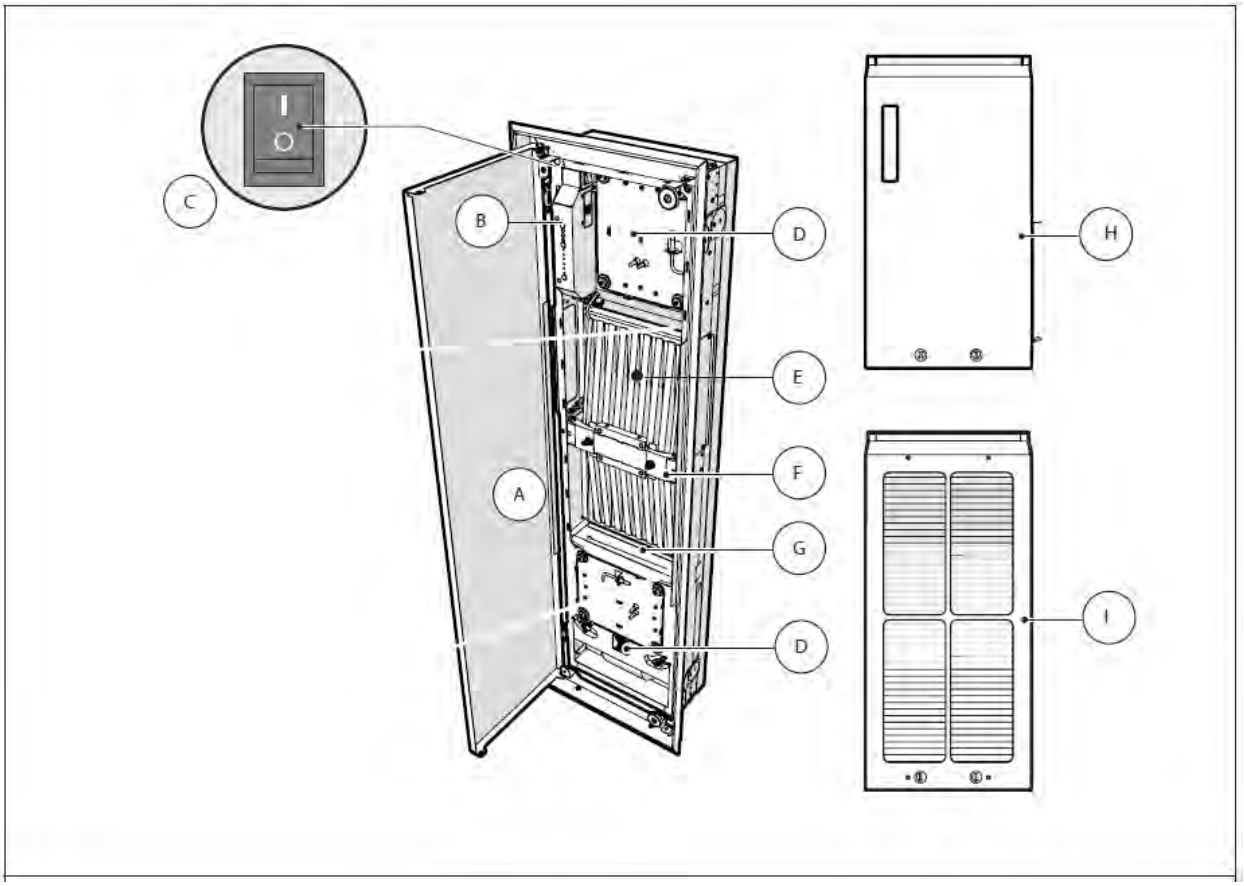


Figure 1 Fresh-r main components

A. Door

B. Control panel

C. ON/OFF switch (I is ON, 0 is OFF)

D. Fan assembly

E. Heat Exchanger

F. Heat exchanger clamp

G. Condensate shelf

H. Extract cover (Everywhere versions)

I. Filter (optional)

4. Operating the product

How can I use the Fresh-r in automatic mode?

The Fresh-r will always enter automatic mode upon start-up. It will remain in automatic unless the user switches it into manual mode.

In the automatic mode the Fresh-r measures the CO_2, RH, temperature, flows and uses the measurements to calculate the efficiency and optimum airflow from each fan.

To ensure good air quality, make sure that:

- No objects are placed in front of the Fresh-r (min. distance 50 cm)
- The Fresh-r grilles are installed
- The door of the Fresh-r is closed

How can I change the fan speed manually?

The Fresh-r starts in automatic mode. You can change the fan speed manually by selecting one of the six fan speed settings.

To change the fan speed, do the following:

- Open the door.
- To increase the fan speed, press one or more times on the large fan speed button.
- To decrease the fan speed, press one or more times on the small fan speed button.
- The automatic indicator does not light up. After approximately 2 hours the Fresh-r will return to automatic mode.
- When the Fresh-r is operating in manual mode the fan speeds will remain at the setting that has been selected.
- Automatic mode can be reselected at any time by pressing the top button on the control panel.

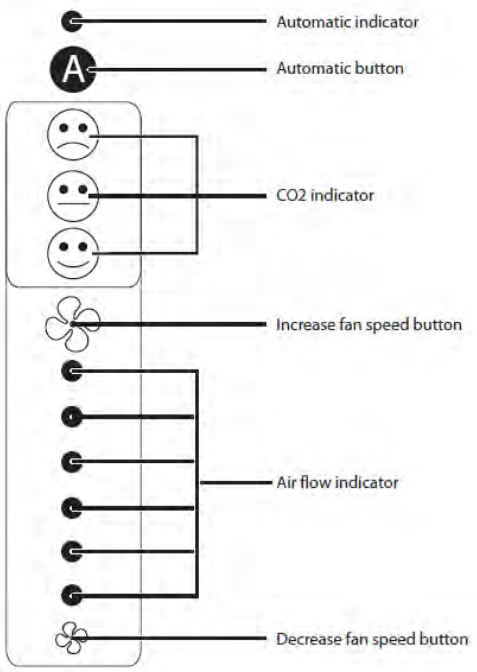


Figure 2 Control panel user interface

How can I set the Fresh-r in de-snowing mode?

You cannot manually set the Fresh-r in de-snowing mode. The Fresh-r will only start the de-snowing mode when necessary.

How can I set the Fresh-r in Dewpoint protection mode?

You cannot manually set the Fresh-r in dewpoint protection mode. The Fresh-r will only start the dewpoint protection mode when necessary.

5. What do the symbols and buttons on the control panel mean?

The automatic indicator indicates the type of mode that the Fresh-r is operating in

There are two modes:

- Automatic mode
- Manual mode

The different modes are explained in the table below.

Type of mode	Automatic indicator	Explanation
Automatic mode	Light is on	In the automatic mode the Fresh-r measures the CO2, RH, temperature, flows and uses the measurements to calculate the efficiency and optimum airflow from each fan.
Sub mode - Dewpoint protection mode	Light is on	In the dewpoint protection mode, the Fresh-r will ventilate harder to remove excess humidity to avoid the formation of condensation. You cannot set the Fresh-r manually into dewpoint protection mode
Sub mode Defrost mode	Light is on	In the defrost mode the Fresh-r de-freezes the heat exchanger by blowing warm air out, so it can work again at optimum efficiency. The Fresh-r can only start automatically in a defrost mode. You cannot set the Fresh-r manually into defrost mode
Manual mode	Light is off	In the manual mode, you can change the fan speed manually by pressing the raise or lower fan speed button – see fig. 2 on page 5

What does the automatic button do?

Pressing the automatic button activates the automatic mode.

What do the fan buttons do?

You can change the fan speed manually. When you set a manual fan speed the Fresh-r will enter manual mode. It will remain in manual mode for 2* hours unless it is put back into automatic mode by the user.

What do the air flow indicators mean?

The six lights indicate the speed of the air flow. You can set the air flows in the following speeds:

Air Flow	Indicator Lamp
100% flow	6th upper air flow indicator lamp
85% flow	5th air flow indicator lamp
70% flow	4th air flow indicator lamp
55% flow	3rd air flow indicator lamp
40% flow	2nd air flow indicator lamp
25% flow	1st lower air flow indicator lamp

What do the smileys mean?

The smileys indicate the amount of CO_2 in the air

Type of Smiley	Colour of smiley	Meaning
	Upper smiley **RED**	Poor air quality **>2400 PPM CO2**
	Middle smiley **ORANGE**	Medium air quality **>1200 PPM CO2**
	Lower smiley **GREEN**	Excellent air quality **<1200 PPM CO2**

6. What to do when a smiley lights up?

What to do when a smiley is continuously red?

If the smiley is red, the level of CO_2 in the air is a lot higher than intended. Do the following:

- Open a window and/or door for fresh air.
- Close the window and/or door when the smiley is orange or green.

What to do when a smiley is orange?

If the smiley is orange, the level of CO_2 in the air is higher than 1200 ppm. You do not need to perform any actions. The Fresh-r will automatically increase its ventilation capacity to reduce the CO2 concentration.

What to do when a smiley is green?

If the smiley is green, the level of CO_2 in the air is below 1200 ppm. You do not need to perform any actions.

How to perform software reset?

In case of malfunction, it is recommended to reset the software. To reset the software, switch the Fresh-r off and on again using the toggle switch on the control panel – see item “C” on fig. 1 page 4.

7. Connect the Fresh-r to the internet

By connecting the Fresh-r to the internet you will benefit from automatic software updates. You will also have access to data graphs showing actual performance values of the air temperature and quality.

To connect your Fresh-r to the internet do the following:

- Switch power of the Fresh-r OFF and switch the power ON again.
- Wait for approximately 90 seconds until the unit starts to run and the CO_2 indicator is illuminated.
- Press the middle button (increase fan speed) for approximately 15 seconds and release - you will hear a beep. This indicates that the Fresh-r has entered WiFi access point mode

The following actions must be done with your smartphone, laptop or tablet.

Do the following:

- Start your device and go to settings.
- Select WiFi
- Select WiFly-EZX-XX of the list of WIFI devices.
- Your device will now connect to the Fresh-r WIFI module.
- Open an internet browser, for example Google chrome.
- Type 192.168.1.1 and confirm.

The Microchip settings page opens.

- Select the Network cfg tab.
- Press refresh List.
- A list with Available Access Points will show.
- Select your own router by its name.

NOTE

If your router name has spaces in it: for example “my router”, the connection will fail. In that case, please change the name (SSID) of your router to, for example,“myrouter”. For more information see the manual of your router. After you have selected your router, a list of technical details will show. Examine the value of RSSI: the RSSI value should be at least -70dBm (eg -80 dBm).

- Enter your WiFi passphrase (wireless key, also called password) in the Passphrase box.
- Tip: Check the "Show Passphrase" to visually check that you entered the correct passphrase.
- Press save & reboot.

What to do if the connection fails?

- Check the settings of your router. Please make sure that the
- Wireless 2.4 Ghz configuration is set to mixed mode. See for more information the manual of your router.

Please note that after connecting the Fresh-r to the internet, your mobile device will not detect the Fresh-r anymore. This is normal. The Fresh-r is now connected to your server and in the near future you will be able to read performance data graphs as well as receive automatic updates.

How can I view performance data and graphs?

Contact sales@fresh-r.eu with your unit serial number and request a fresh-r.me web access account. You will then receive a mail with login details

8. Maintenance

8.1 Half Yearly

⚠ DANGER

- Do not perform any maintenance activities other than those specified in this manual.
- Make sure the main switch is in OFF position during replacing the Heat exchanger.
- Do not put the main switch in ON position when the Heat exchanger is taken out.

⚠ CAUTION

- Do not clean the Heat exchanger with hot water (max. 40 degrees). This can damage the Heat exchanger permanently
- Do not touch, brush or scrub the copper wire of the heat exchanger.

Every half year the heat exchanger needs to be cleaned in order to keep the Fresh-r in optimum performance.

To clean the Heat exchanger, do the following:

- Open the door.
- Put the main switch in OFF position.

Fresh-r Filter model – remove the filter

- Unscrew the two thumb screws
- Tilt the filter forward as shown below – if you have a filter with sensors you can now detach the cabling – this is a small RJ45 plug that has a clip that needs depressing similar to an internet cable plug.
- Lift the filter free from the two hooks in the unibody
- Careful not to damage/penetrate the filter cartridge

Figure 3 - Filter thumb screws

Figure 4 – Filter inserted into hooks on unibody

Fresh-r Everywhere – remove the top panel

- To remove the top panel, release the two retention screws, tilt the panel away from the heat exchanger clamp and pull the panel downwards from the retention bracket at the top of the unibody. There are two retention hooks at the top of the unibody similar to those on the filter shown above.

Figure 5 Top cover thumb screw

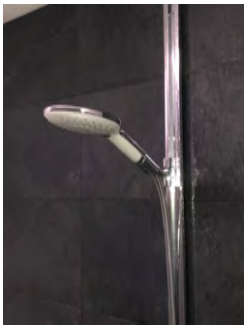
Fresh-r air separator bar/heat exchanger clamp

- Remove the air separator bar by removing the two retention bolts – use a torx 25
- Pull the separator bar straight away
- Pull the Heat exchanger out the unibody

Figure 7 – Fresh-r middle bar separator

Figure 6 – Heat exchanger ready to be removed

Use one of the methods pictured below to flush the heat exchanger



OK

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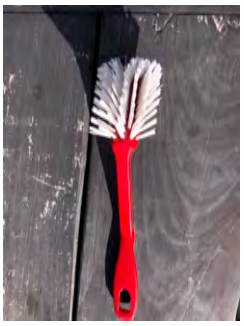
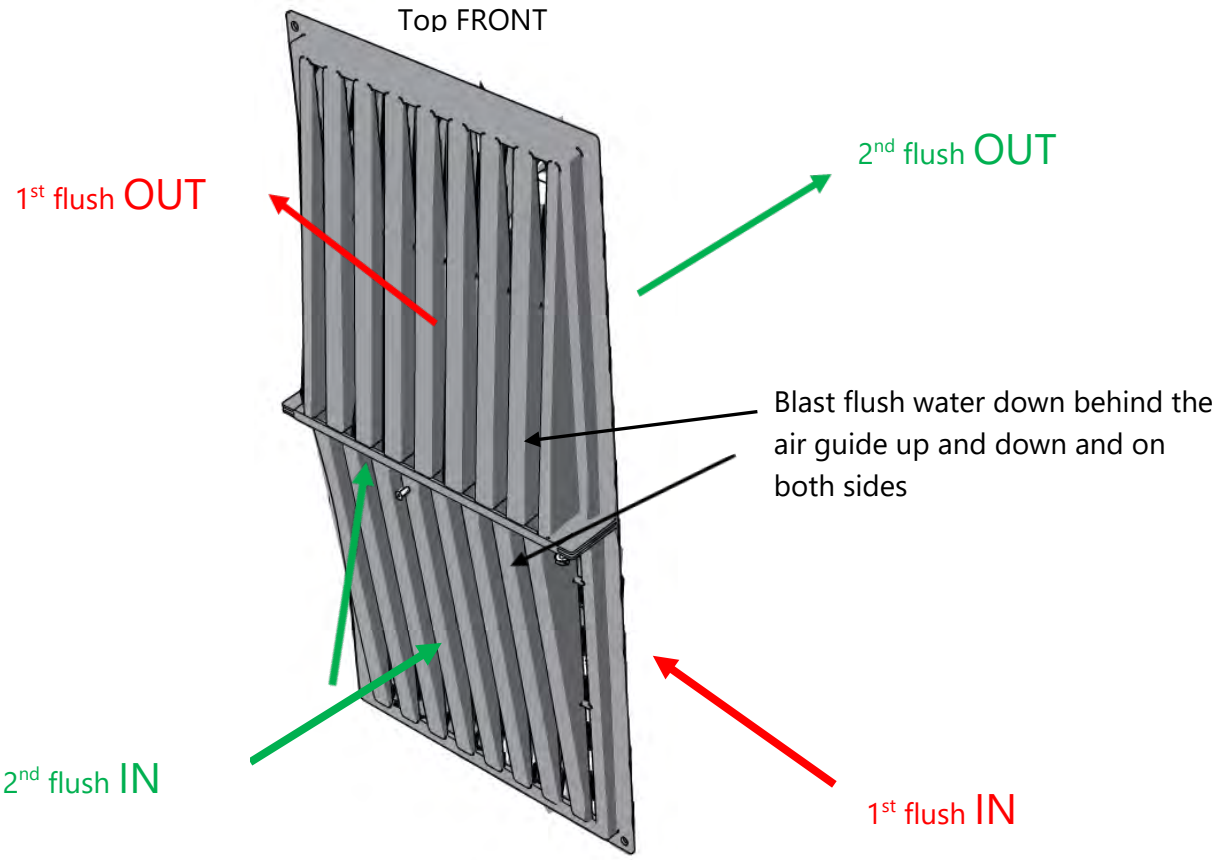


NOT OK

Flushing the heat exchanger

- Flush water through the heat exchanger as directed below using warm water from i) a shower head ii) garden hose iii) pressure washer
- After the 1st and second flush, flush water in the reverse direction in the same manner, i.e Front -top and bottom & back side top and bottom

Some visible dirt and stains will remain – **DO NOT BRUSH OR SCRUB the copper wire**



NOTE

In an extreme case where the heat exchanger cleaning has been neglected

Flush as directed in the diagram using a pressure washer **without chemical additives and for maximum 10 minutes to avoid complete saturation of the gaskets.**

- After flushing shake excess water from the heat exchanger and replace directly
- Assemble in reverse order of removal
- Do not use tools to tighten the thumb screws, if available lubricate threads with grease (even olive oil can be used) This will make the thumb screws easier to turn by hand.
- Once assembled switch the Fresh-r on and close the door

8.2 Annual Maintenance

Every year the filter needs to be replaced in order to keep the Fresh-r in optimum performance.

To replace the filter, do the following:

- Open the door.
- Switch off
- Remove the filter as described above
- Remove the two wing nuts at the bottom and remove the filter brace
- Release tension from the m8 countersunk nuts
- Remove and replace the filter cartridge
- Re- assemble - pinch top clamp tightly to the frame and tighten nuts, fit lower clamp.
- Re-mount filter carrier to Fresh-r. Switch on and close the door

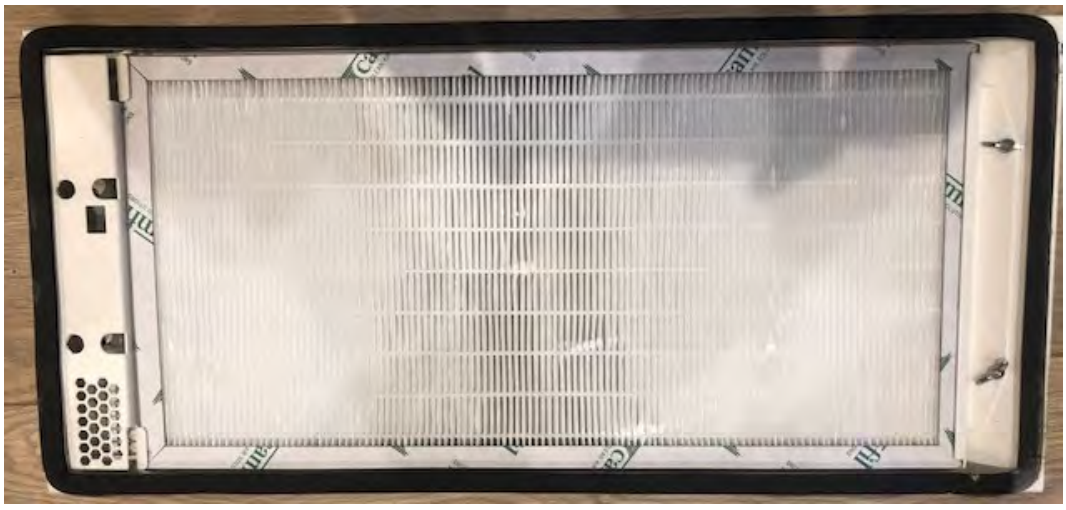


Figure 8 Rear side of filter after removal from the Fresh-r

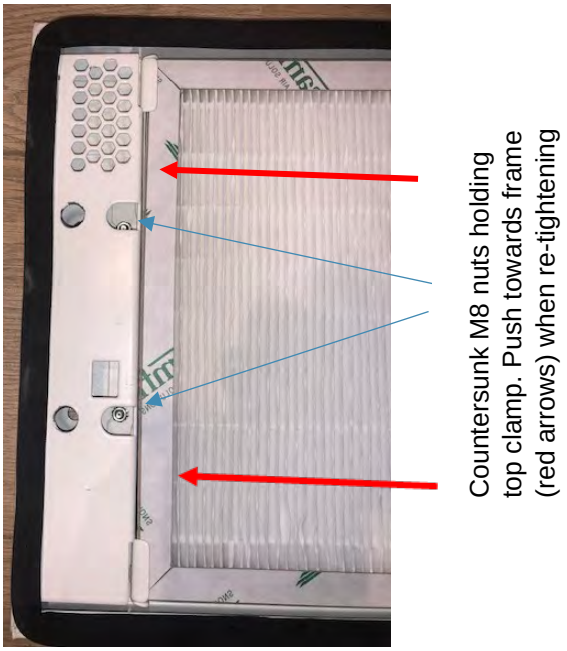


Figure 9 Top clamp

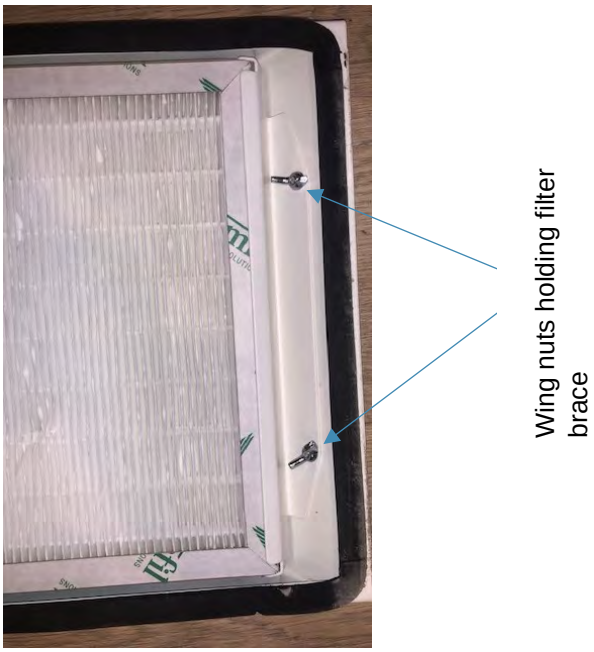


Figure 10 Lower clamp

Every three years the area behind the fan needs to be cleaned in order to keep the Fresh-r in optimum performance.

To clean the area behind the fan, do the following:

- Open the door.
- Put the main switch in OFF position.
- Remove internal door (Everywhere version) and filter if fitted
- Un-clip the two electrical connections of the fan – they are dedicated connectors and cannot be reconnected wrongly
- Gently remove the rubber mounted temperature sensor being careful not to damage the little wire protruding from the end – let it hang down in front of the heat exchanger
- The two operations above may require several cable ties to be cut away – replace with new afterwards
- Unscrew the 4 screws of the fan using a Torx T20.
- Make sure the rubber grommets don't drop away and become lost.
- Move the fan assembly gently out the unibody.

Figure 11 Fan assembly as installed

Figure 14 Fan assembly wires unclipped

- Use a vacuum cleaner to clean the area behind the fan. Make sure you clean the area carefully. You may damage the sensors.
- Scrub the fan impeller clean with a brush – use wipes or a cloth if necessary.
- Put the fan assembly back into the unibody.
- Mount the 4 screws of the fan, re-connect the electrical connection and replace the temperature sensor into its mounting.
- Replace cable ties that have been cut away.
- Repeat above in order to clean the area behind the other fan.
- Re-instate everywhere panel and filter if previously removed.
- Switch on and close the door

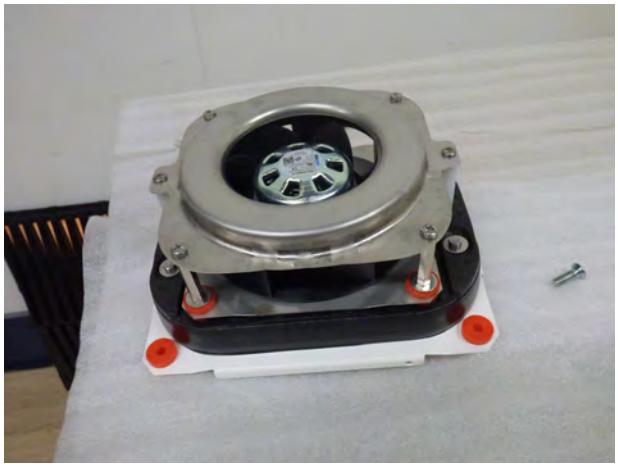


Figure 15 Fan assembly as removed

Figure 163 Brush dirt from impeller

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