GB

VEX4000

Maintenance Instructions

VEX4000
RANGE
MODULES

Original instructions

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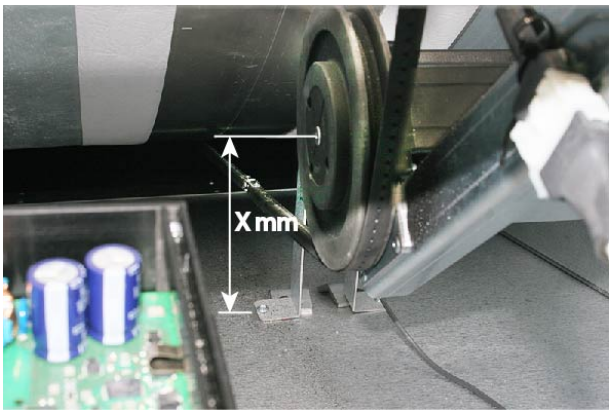
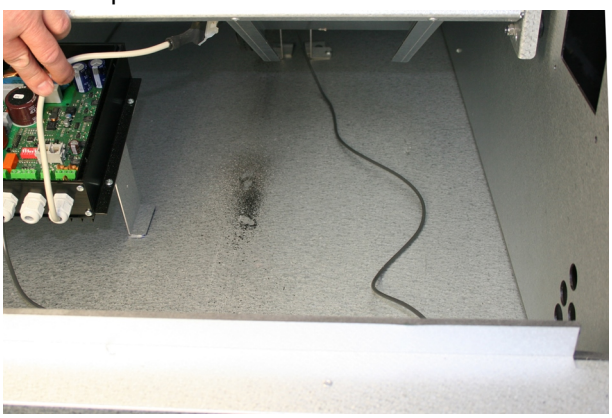
1. After commissioning

1.1 After 2-3 weeks of operation

1.1.1 Check and if required, shorten the rotor belt's length (applies only to VEX4070 - 4100)

Step	Action
1	After 2-3 weeks of operation:  ● Check the distance X from the drive shaft on the rotor belt pulley to the bottom of the section and compare with the following dimensions: VEX4070: 175 mm ±15 mm VEX4080: 195 mm ±15 mm VEX4090: 195 mm ±15 mm VEX4100: 198 mm ±15 mm
2	⚠ **If the measured distance is greater than the stated values, the rotor belt must be shortened.**
3	● Put tape on both sides of the assembly fixture before loosening the belt.
4	● Loosen the fixture using a screwdriver and shorten the belt.  ⚠ **NB: Shorten one hole at a time, and immediately measure X, because it is important that the belt does not become too short.**
5	● Refit the belt again via the fixture. Remove the tape and re-check X to ensure it is correct.

1.1.2 Rotor section - check for shavings in the bottom

Step	Action
1	After 2-3 weeks of operation:  ● Check for shavings in the bottom of the rotor section and if so, remove them by vacuum cleaning. Shavings can come from the belt or from the manufacture of the rotor.

2. Maintenance

2.1 General information about maintenance

It is important that the VEX4000 air handling unit is regularly maintained, so that its output is optimal at all times. This chapter describes how and when recommended maintenance should be carried out, which components should be checked and how to replace certain parts, etc.

Opening the air handling unit

⚠ **Do not open the service doors before the power has been disconnected at the isolation switch (OFF position) and the fans have been stopped. The isolation switch is located on the door of the heat exchanger section. When the isolation switch is in the OFF position, the light inside the VEX can still be switched on and the service socket in the panel can be used. Everything else on the VEX is de-energised.**

⚠ **There is an extra and separate built-in isolation switch on the door to the electric heating coil. Units with electric heating coils thus have two isolation switches, both of which must be in the OFF position to ensure the unit is de-energised.**

Note

⚠ **Before opening the doors, ensure that the air handling unit has stopped operating for at least five minutes, because the fans have run-on time.**

Locked doors

Doors can be opened with a square socket key.

2.2 Maintenance Schedule

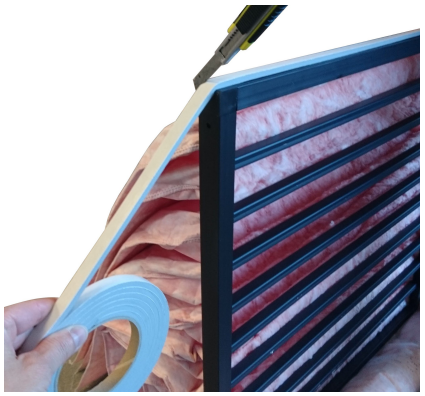
State of the unit/component	Procedure	Once a year	Twice a year
Filters*	**Change when the display shows the filter alarm.** Recommended that both filters are replaced at the same time. **NB:** The control system will give an "early warning" when a filter is becoming soiled, so that there is time to obtain a new filter or to call a service technician. The filter should be changed at least	X	
Fans/vibration dampers	Check: ● fans, vibration dampers and tightness of seals. ● for occurrence of abnormal sounds or vibrations. Vibrations may be due to dust accumulation on the fan impellers and in general, will cease after cleaning. If not, then check bearings and for imbalance on the fan impeller.		X
Air intake	Ensure the air intake is free of foreign bodies, such as paper, leaves, etc.		X
Filter monitor	Check	X	
Seals and sealing strips	Check that all the seals are tight.	X	
Heating coil (accessory)	Check Cleaning. See next sections.	X	
Rotary heat exchanger	Check Cleaning, as required, see next sections.	X	
Crossflow heat exchanger	Check Clean as required, see next sections.	X	
Safety functions check	Fire thermostats, return water sensor, smoke detector	X	
Damper	Function check	X	
Motor valve and circulation pump (accessories)	Function check	X	
Integrated cooling machine IC/ICC	Mandatory service procedure carried out by authorised cooling company	X	
Water trap (however not Siphon water trap)	Check water trap and if required, top up with water.	X	

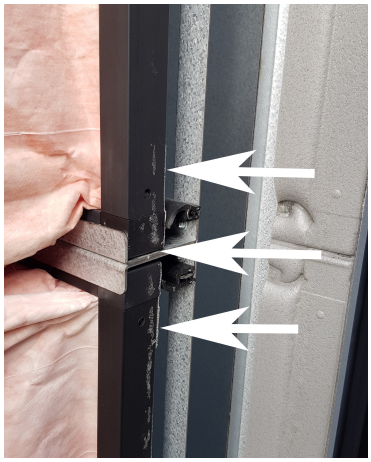
***Filters**

⚠ **Only use original filters**

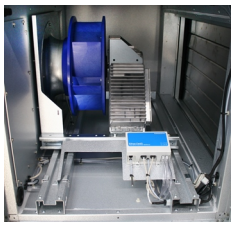
- The provided filter data and pressure drop curves (see under section "Technical data" in Fitting and Installation Instructions) are based on the use of original filters.
- Eurovent certification is only valid if original filters are used.
- Use of non-original filters may cause leakage in the VEX and impair filter function.
- EXHAUSTO recommends that you register the filter replacement date to ensure filters are replaced at the correct intervals.

2.2.1 Replacement of filters

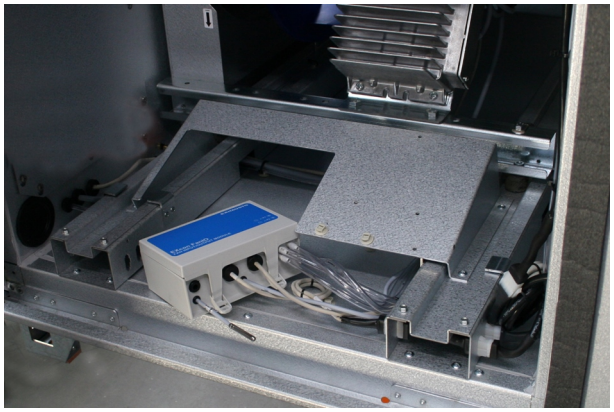
Step	Action
1	Switch off the power supply to the unit at the isolation switch. **Note** ⚠ **Before opening the doors, ensure that the air handling unit has stopped operating for at least five minutes, because the fans have run-on time.**
2	Open the vertical sealing bar in front of the filters. 
3	Check that the strips on the bar are intact both inside and out.
4	Pull out the used filters. **Note** ⚠ **Place the filters immediately in plastic bags to avoid contaminating the surroundings with dust.** 
5	Check that the upper and lower sections with rubber seals are intact.
6	Unpack the new filters and apply self-adhesive foam strip to the rear of the filters, allowing the bags to stand vertically. Cut the strip flush with the top and base of the filter. **Note** Filter kits bought from EXHAUSTO include the 6x12mm foam plastic strip. 

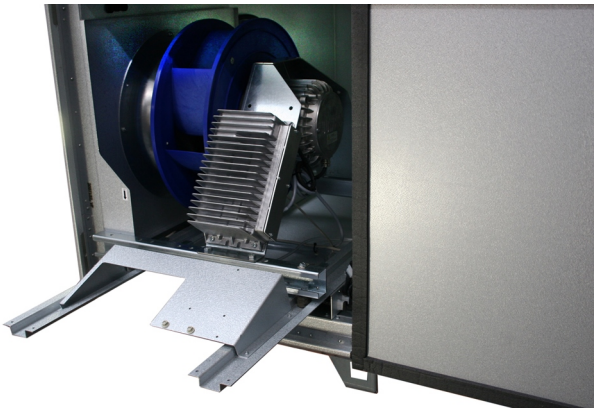
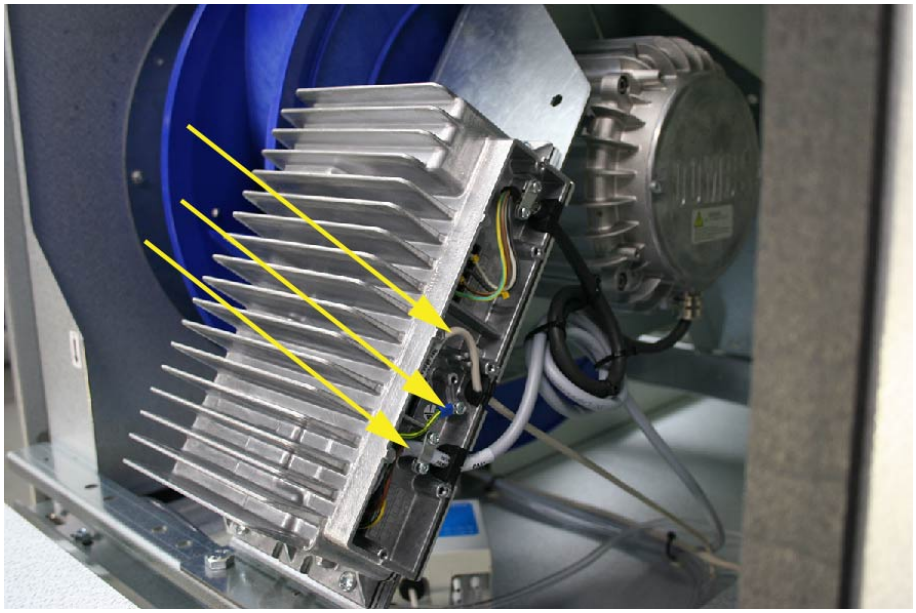
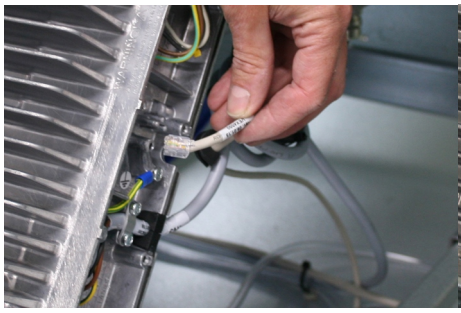
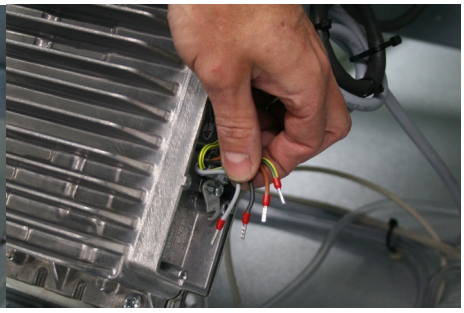
Step	Action	
7	Mount the filters with the strip facing backwards into the air handling unit. The filter frame facing the door must be flush with the front of the section mounted with the rubber seal. **Note** If the filter frame is not flush with the section, an additional strip should be fixed to the front filter frame to ensure a seal with the vertical sealing strip.	
8	Close the vertical sealing strip and shut the door.	

2.2.2 Removal of plenum fan



Step	Action
1	• Switch off the power to the air handling unit at the isolation switch before opening the doors.
2	⚠ **Wait for a minimum of two minutes before opening the doors, because the fan has approximately two minutes of run-on time.**
3	• Open the door to the fan section.

Step	Action
4	• Remove the EXcon FanIO module from the coil it is fitted to.  • Cut the strips for the cables/hoses, so the module incl. cables/hoses can be placed in the bottom of the section. 
5	• Remove the four bolts at the front of the rail system. 
6	• Cut the strips for the air hose which runs below the rail and up into the fan motor.
7	• Cut the strips for the cables which run up into the fan motor.

Step	Action
8	● Pull the fan unit forward on the rail system. 
9	● Open the motor control to the fan motor and remove the cables shown.   

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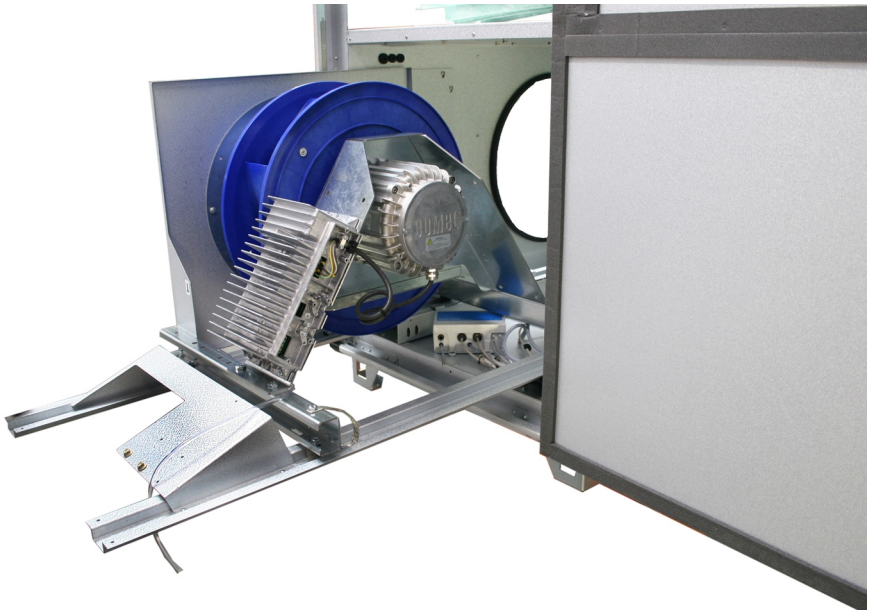
Step	Action
10	● Pull the fan out and provide it with appropriate support.



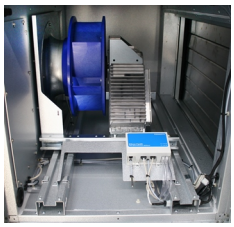
VEX size	(3 x 230 V) Weight [kg]	(3 x 400 V) Weight [kg]
VEX4010-2	27.5	27.5
VEX4020-1	28.5	28.5
VEX4020-2	31.0	31.0
VEX4030-1	43.4	43.4
VEX4030-2	48.1	46.6
VEX4040-1	48.6	48.6
VEX4040-2	50.1	48.6
VEX4050-1	50.1	48.6
VEX4050-2	52.8	52.8
VEX4060-1	66.8	65.3
VEX4060-2	75.6	75.6
VEX4070-1	83.6	83.6
VEX4070-2	97.2	97.2
VEX4080-1	2 x 50.1	2 x 48.6
	2 x 52.8	2 x 52.8
VEX4090-1	2 x 66.8	2 x 65.3
VEX4090-2	2 x 75.6	2 x 75.6
VEX4100-1	2 x 83.6	2 x 83.6
VEX4100-2	2 x 97.2	2 x 97.2

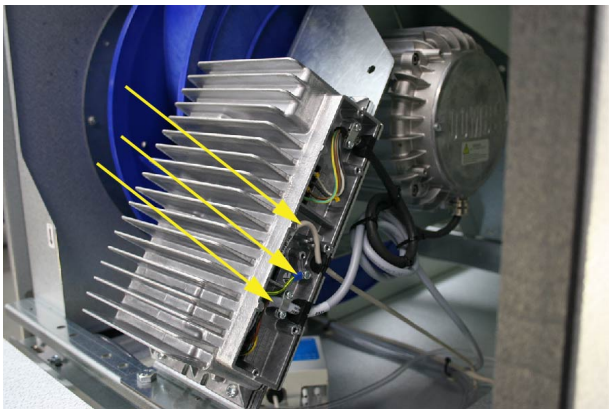
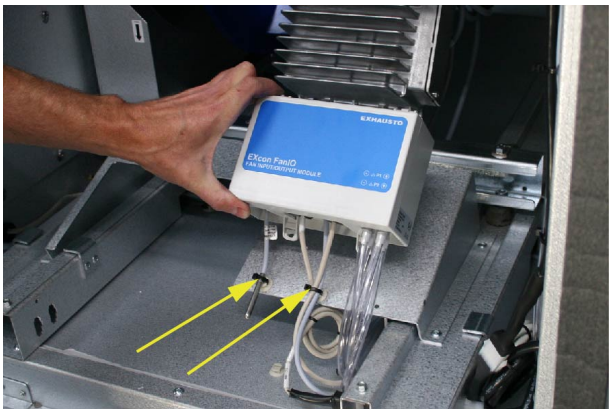
Warning

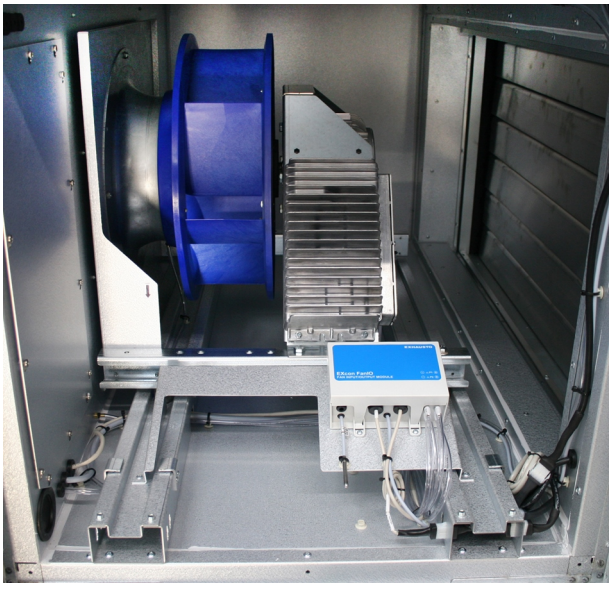
Note that there is no stop on the rails to prevent the fan from unintentionally being pulled all the way out of the VEX.

11	The motor and fan unit are now ready for servicing.

2.2.3 Fitting the plenum fan



Step	Action
1	Position the fan unit on the rail system in the bottom of the section.
2	Fit the cables in the motor control. 
3	Push and centre the fan unit into position in front of the end panel.
4	Re-connect and re-secure the cables using strips.
5	Fit the air hose below the rail and secure it using strips.
6	Fit the FanIO module on the coil and re-secure cables and hoses using strips. 

Step	Action
7	Mount the four screws at the front of the rail system. 
8	Close the door to the fan section. Close the door and lock it with the square socket key.
9	Before starting up the fan, see the assembly and installation instructions for VEX4000.

2.3 Cleaning

Regularly carry out maintenance to ensure that the air handling unit functions and performs in accordance with the specifications. Cleaning and maintenance of individual components is described below.

2.3.1 Sections in general

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors.
2	Cover plugs and sockets before cleaning.
3	Vacuum clean the interior surfaces free of dust and dirt – be thorough, especially in front of the filters.

2.3.2 Damper and damper motor

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors.
2	Clean the dampers and damper motor using a vacuum cleaner. 

2.3.3 Rotary heat exchanger section (ER)

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors.
2	The avoid a reduction in the unit's output, the rotor must be cleaned at suitable intervals. To access the rotor, open the doors in front of the filters and pull the filters out – or if the air handling unit is equipped with empty sections – open the doors in these. • Vacuum clean the exchanger with care, ideally using a soft brush vacuum nozzle. ⚠ **Avoid touching the fins in the exchanger with sharp or hard objects – the fins are very soft and can easily be deformed, which will diminish the output of the VEX.**
3	NB! It is completely normal to find shaving from the rotor belt in the bottom of the rotor section, especially if the belt is completely new. 
4	Vacuum clean the rotor section's interior surfaces and wipe off to finish.
5	Check that the fins on the rotor are not deformed. ⚠ **The fins are sharp.**
6	The control and drive motor sit together with the rotor. The drive motor is maintenance-free.

2.3.4 Crossflow heat exchanger (EX)

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors.
2	Cover the plug and socket connections in the section.
3	Check that the condensation tray's drain functions.
4	Clean the heat exchanger by flushing with hot water or by pressure hosing. Water temperature max. 90°C.
5	After cleaning, any water lying outside the condensation tray must be dried up.

2.3.5 Electric heating coil (HE, HCE)

Step	Action
1	Switch off the power to the air handling unit at the isolation switch both on the fan section and on the electric heating coil, before opening the doors.
2	Vacuum clean the surface, ideally using a soft brush vacuum nozzle.

2.3.6 Water heating coil (HW, HWR)

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors.
2	Vacuum clean the heating coil.
3	Check that the fins on the coil are not deformed. ⚠ **The fins are sharp.**
4	Check that the condensation tray's drain functions.

2.3.7 Cooling coil (CW, CWC)

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors.
2	Cover the plug and socket connections in the section.
3	Check that the condensation tray's drain functions.
4	Clean the cooling coil by flushing with hot water or by pressure hosing. Max. water temperature 90°C.

2.3.8 Condenser (DX, DXC)

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors in the section.
2	Cover the plug and socket connections in the section.
3	Check that the condensate tray's drain is functioning.
4	Clean the coil by flushing with hot water or by pressure hosing. Max. water temperature 90°C.

2.3.9 Integrated cooling (IC, ICC)

Checks

⚠ **The cooling equipment must be regularly inspected by authorised personnel in accordance with applicable national regulations.**

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors in the section.
	⚠ **Exercise caution with very cold and very hot pipes and components.**
2	Check that the condensate tray's drain is functioning.
3	Condenser and evaporator: Vacuum clean, use a soft brush or compressed air (max 7 bar). Compressed air must be blown against the flow (opposite to the normal air direction). Exercise caution with compressed air above 7 bar, because this may bend the fins. Bent fins must be straightened again, using a fin comb if necessary.
4	Check that the inspection glass on the compressor is half-full with oil (the compressor must be switched off during this check).

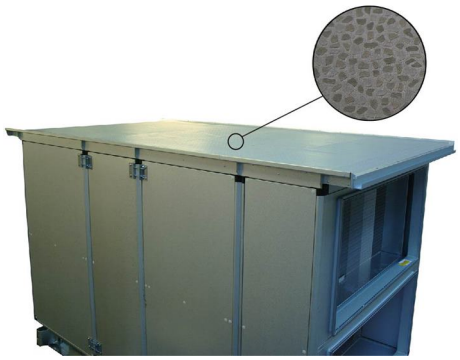
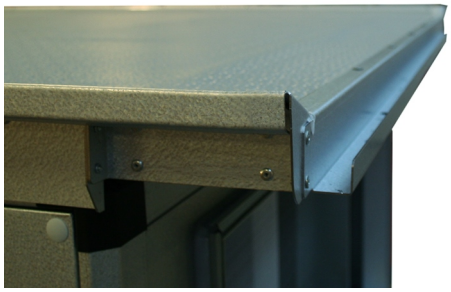
2.3.10 Fans (FANE, FANS)

Step	Action
1	Switch off the power to the air handling unit at the isolation switch before opening the doors.
2	Clean the fan impellers using a vacuum cleaner and wipe down with a damp cloth if necessary
3	Clean the impeller blades carefully, so as not to disturb the balance.

Step	Action
4	Once re-fitted, check that the unit operates without vibrating.

For axial fans (ZerAx®): Cleaning must be executed from the inlet side.

2.3.11 Especially for outdoor units.

Step	Action
1	Check the roof is complete. Repair any damage. 
2	Check that the gutters are not blocked. 

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