

Wall Mounted Vertical Heat Recovery Ventilator Technical Manual

Models:

CH-HRV2.5TKEC

CH-HRV3.5TKEC

CH-HRV5TKEC



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1. General Information

1.1 Safety Attention

Please read the following safety instructions carefully before installation. Please observe all instruction in order to avoid any injury or damage to equipment or property.

 Warning/Attention, a risk of injury or equipment damage.

1.1.1 Installation

- Installation and maintenance to be carried out by qualified person to avoid danger, end users must not install this equipment by themselves.
- This equipment must be connected to power supply by the qualified electrician, and it must be grounded.
- It shall be moved and installed according to the weight and size of the product.
- The equipment must be installed in accordance with the installation instructions (chapter 3).
- The equipment should be installed in a dry place indoors, must not in a place where there may be flammable gas leakage.
- A bird net or similar device should be installed at the vents of outdoor, when there are nests and obstructions there, please clean it, otherwise it will cause indoor hypoxia.

1.1.2 Operation

- Children, persons with reduced physical sensory/mental abilities or lack of experience and knowledge are prohibited from using this product unless they are supervised or guided by the person responsible for their safety.
- Must use rated voltage, otherwise it may cause fire or electric shock.
- Shall replace the filter at the recommended/required interval.
- Do not use corrosive or solvents to clean the equipment.
- Do not touch the equipment with wet hand.

1.1.3 Maintenance

- If there is abnormal noise, smell or smoke, please cut off the power supply and contact the installation technician.
- Power Supply must be cut off before maintenance (chapter 5).
- It is forbidden to modify the unit. A qualified professional must use the original spare parts provided by the manufacturer to replace the parts.

1.2 Package

The package includes the following items. Please check when open the box. In case of damage or incomplete delivery, please contact your supplier immediately.

	HRV 1pic Please check the sticker and model to make sure they are correct.
	Mounting bracket 1pic
	Condensate drain connector (with seal ring) 1pic
	Condensate drain seal (with seal ring) 1pic
	manual 1 set

2. Introduction

2.1 Principle and functions.

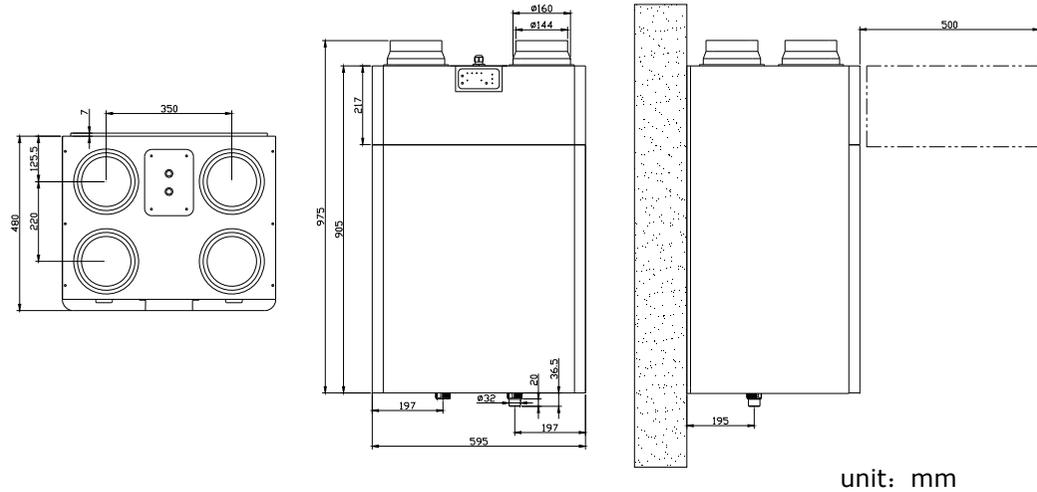
This unit is designed to provide mechanical supply and extract ventilation with heat recovery. It is equipped with heat exchanger, filters and EC motor, etc. It has functions as below:

- Fresh air purification: after the outdoor air driven by supply fan and go through the filter, the indoor air quality will highly improved.
primary filter
- Energy recover: the unit is equipped with heat exchanger, which can recover the energy of EA and then recycle to OA, this function will greatly decrease the loss of energy.

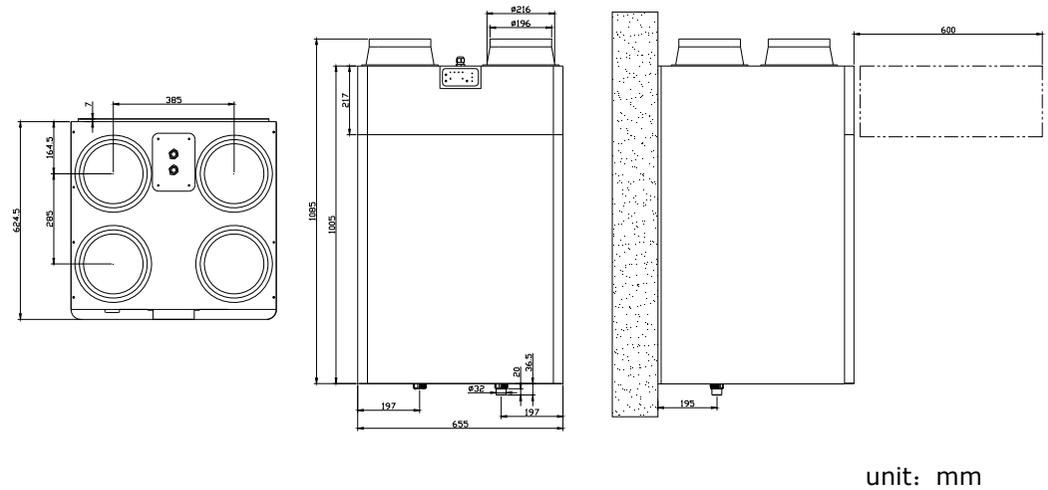
2.2 Specification

		CFA 250T	CFA 350T	CFA 500T
HRV	Housing material	sprayed sheet metal		
	Internal structure	EPP		
	Heat exchanger	Polystyrene		
	Fan motor	EC		
	Filter grade	G4 or optional F7		
	Control Panel	Two screen control, buttons + indicator light/digital tube		
	Bypass	100% auto bypass		
Working condition	Standard	-10 to 40°C		
	Equipped with pipeline heater	-20 to 40°C		
Pipe connection	pipe diameter	Φ160mm		Φ200mm
Electrical	Power supply	230V 50Hz 1Ph		
	Max. power	170W	320W	480W
	Max. current	1.5A	2.4A	3.2A

CFA 250T and CFA 350T



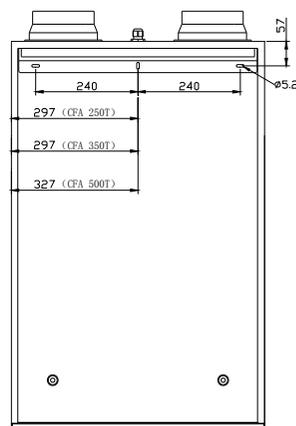
CFA 500T



3. Installation

3.1 Position

- All installation of the system must be carried out by qualified personnel, including all electrical engineering and connections should be completed by qualified personnel or Electrician.
- This equipment is designed to be installed in storage rooms, attic or interstitial spaces, away from places exposed to frost, water or extreme heat.
- The operation space should be reserved around the equipment to facilitate the placement and connection of piping systems, lines and condensed water drainage; At the same time, it's easy to replace the filters.
- The installation position can drain condensate water.



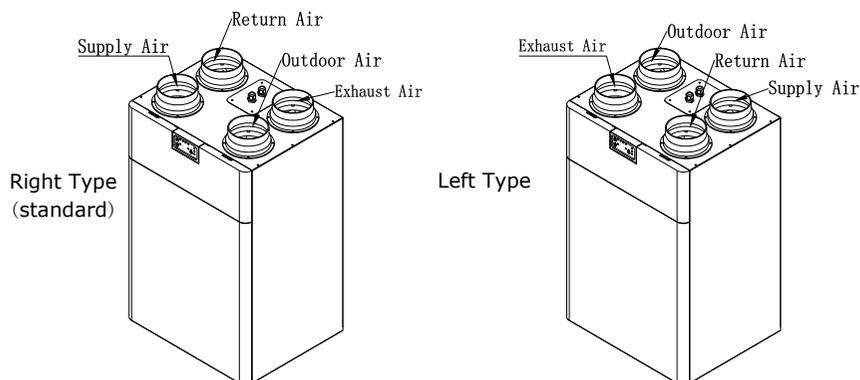
3.2 Hanging Installation

- The equipment must be installed vertically on the wall.
- The equipment is hung on the wall with a hanging plate (the wall must be weighted at 60kg above), the size of the hanging plate is shown on the right.

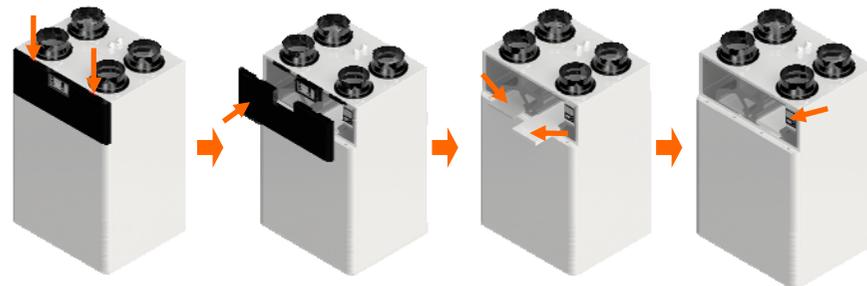
3.3 Pipes

- The equipment allows the user to adjust the position of the air inlet and outlet by himself, and the user first needs to select and install the pipe, then adjust the filter position, finally follow the operation note (4.3) to select the corresponding control program.

Note 1: This equipment factory default right pipe installation.



The operation process from right installation (factory default) to the left installation is as follows:



Step 1: Press the position indicated in the figure above to open the access panel buckle.

Step 2: Remove the access panel.

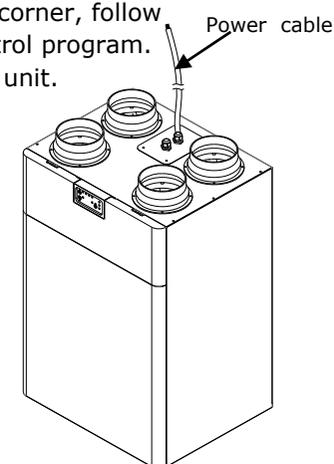
Step 3: If the equipment is equipped with an F7 filter as option, switch the positions of the two filters as shown in the figure. Note if both filters are G4 grade, this step can be ignored.

Step 4: Use the hidden control panel at the top right corner, follow the instructions (4.3) to select the corresponding control program.

Step 5: Install the filter and access panel back to the unit.

3.4 Electric

- Power supply of this equipment should be connected by a qualified electrician, and the equipment must be grounded.
- Use national standard cables, cable 3x1.5mm².
- Power supply: 230V/50Hz/1Ph
- L line=Brown, N line=Blue, GND line=Yellow&Green
- The electric circuit must be protected by a bipolar circuit breaker.



Remote controller (optional) connection

This product can be equipped with remote controller, connected through the control line. The connection process is as follows and must be operated by a qualified electrician:

Step1: Cut off the power.

Step2: Use a screw driver to remove the screws which fixing the cover of the electric control box at the top.

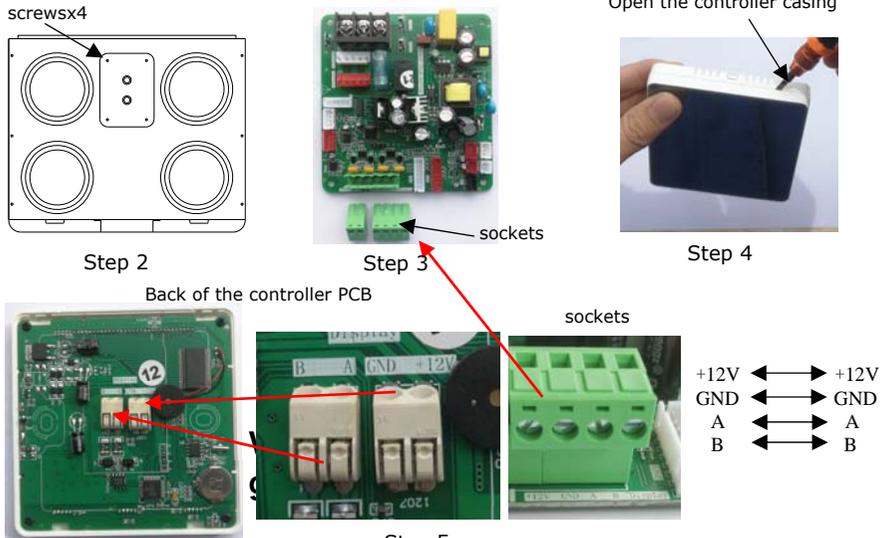
Step3: Pull out the sockets from PCB for use.

Step4: Open the controller casing.

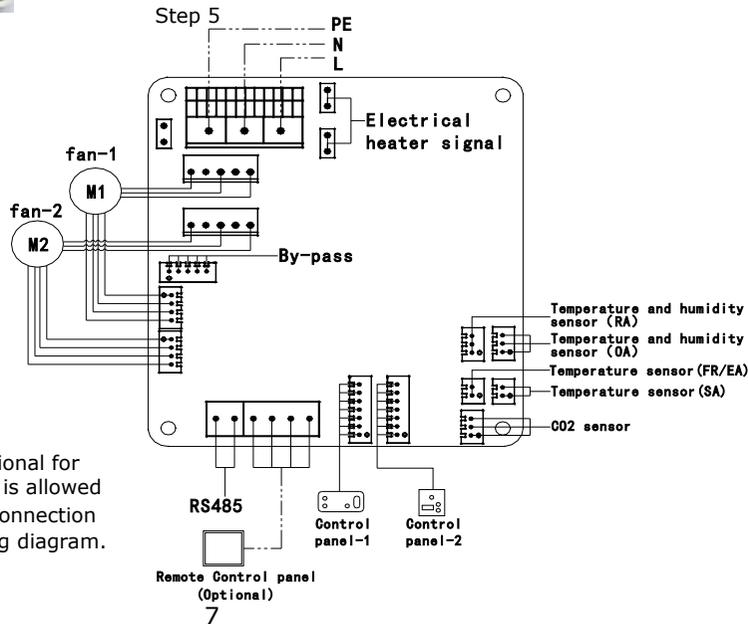
Step5: Connect the wires between controller and sockets (PCB) according to "A, B, GND and +12V".

Note: All the wires need to pass through the threading connector on the cover of the electric control box, and tighten the threading connector.

Step6: Finally, plug the sockets that has been wired back into the PCB, and cover the electric control box.



Wiring Diagram

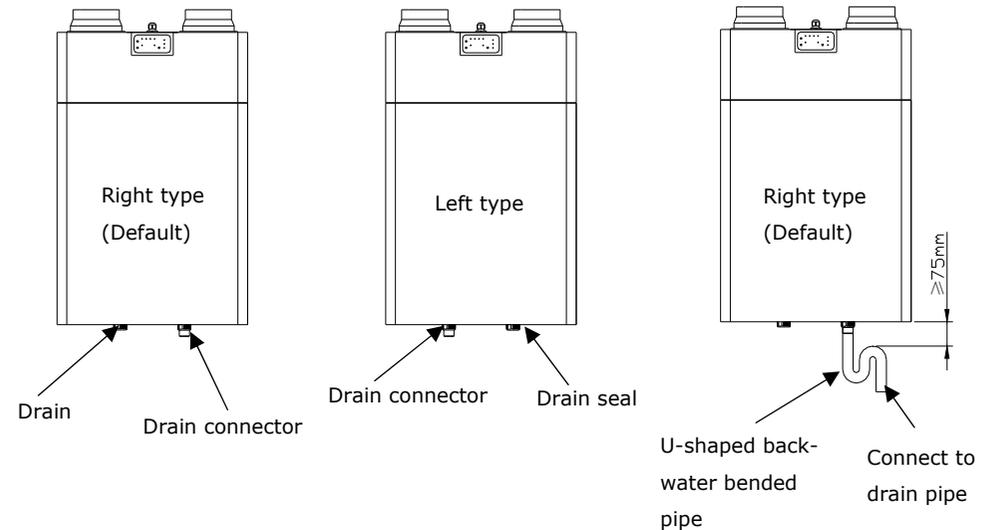


Note: CO2 sensor is optional for this device. Duct heater is allowed (provided by user), for connection please refer to the wiring diagram.

3.5 Condensate drain

Before using, make sure to connect a condensate drain with this device. The connection process for condensate drain is as below:

- According to the installation way, install the drain connector and drain seal to the corresponding position.



- Use a U-shaped backwater bended pipe to connect the drain connector and the drain pipe.
- Before using the device, make sure to immerse the drain pipe in water.
- Make sure that all connectors are tightly sealed to prevent water leakage.

4. Operation Instruction

4.1 Before Startup

Please carefully check the followings:

- Check the voltage and frequency of the power source and its connection if is correct.
- Must be properly connected to the ground line.
- Connected to ducting and condensation pipe properly

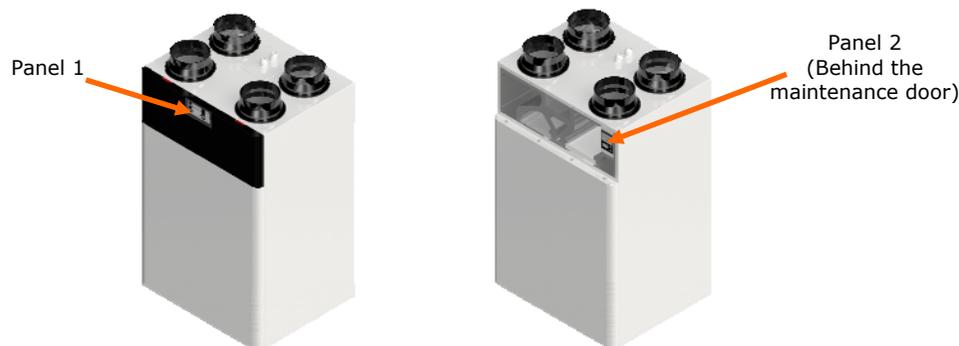
4.2 Default factory setting

The device comes with below default setting:

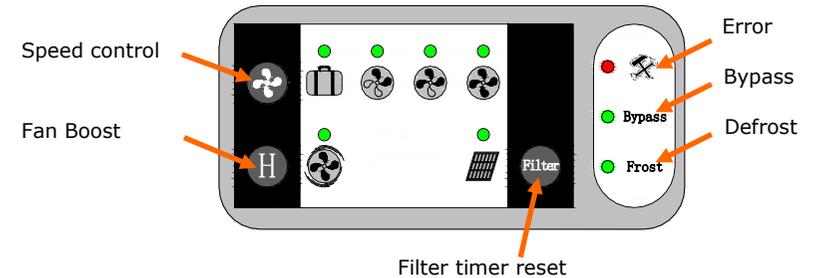
		CFA 250T	CFA 350T	CFA 500T
Volume m ³ /h	SPEED 1	80	100	105
	SPEED 2	100	130	185
	SPEED 3	145	180	270
	SPEED 4	175	245	350

4.3 Operation Instruction

The device has two controller panels, Panel 1-Daily simple settings, Panel 2-Advance parameters settings. Positions are as followed:



Panel 1 Instruction



Speed control: Press to switch from Speed 1 to 4, speed 1 is “traveling mode”, when switch to this mode, the ventilator turns to super low speed.

Fan Boost: Press to switch to the boost speed for 30 minutes, and then return to original status.

Filter timer reset: After 60 days running, when the filters is needed cleaning or replacement, the light will be illumined. After replacement or cleaning, hold this button for long time to reset the filter timer.

Error Indicator: When it’s illumined, the fan or the sensors are in error, the indicator lights off after error cleared.

Bypass: When bypass is on, it will be illumined. When bypass is off, then the light is off, bypass opening temperature: Outdoor 17°C to 21°C.

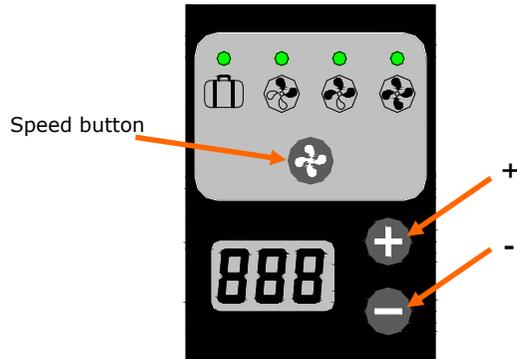
Humidity control: when the ventilator is running, if indoor humidity over 75%RH, ventilator will enter the boost speed, until the humidity lower than 75%RH.

CO2 control (optional): By connecting a CO2 sensor to it, when the ventilator is running, if the indoor CO2 value over 1000PPM, ventilator will enter the boost speed, until the CO2 value lower than 1000PPM.

Defrost: When defrost mode is activated, it will be illumined. Defrost mode activated temperature: Outdoor less than or equal to -5°C.
Note: In order to prevent frost inside the device, the ventilator is in automatic adjustment and cannot be operated when in defrost mode.

The above values are default values, by optional controller or Modbus can change the default values.

Panel 2 Instruction



Air volume setting: Press "Speed" to select speed 1 to 4, then press "+" or "-" to set air volume for the selected speed, after 4 speeds setting done then press "Speed" again to save setting or it will be automatically saved after 15 seconds without operation.

Balance rate setting: Long press the "Speed" button for 6 seconds when the digital display shows "LPL", press "+" or "-" to set the air volume balance rate of supply and exhaust.

- 1) The value is 0, then SA volume is equal to EA volume,
- 2) The value is 1 to 50, then SA volume is larger than EA volume,
- 3) The value is -50 to -1, then SA volume is less than EA volume,

Note: the larger the value, the smaller the EA volume

Note: the larger the absolute value, the smaller the SA volume

Right and left installation switching: Long press the "+" key for 6 seconds when the digital display shows "PLP", press "Speed" button to switch between the right and left installation modes. The number 1 represents the right type, and the number 2 represents the left type.

Note: The setting must be consistent with the installation form, otherwise, it will affect the use of the ventilator.

Restore factory settings: press the "+" and "-" buttons at the same time, the air volume and air volume balance rate will return to the factory default settings.

RS485 address setting: Long press the "-" key for 6 seconds, press "+" or "-" to set the RS485 address of the ventilator for centralized control.

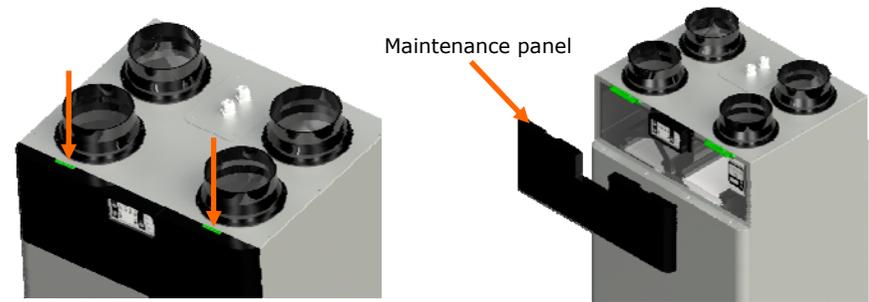
Note: please contact supplier/manufacturer for the Modbus list in case of need.

5.Maintenance

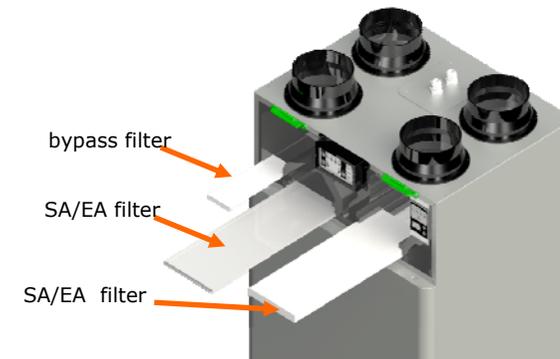
5.1 Filter replacement

It's recommended that all filters be inspected every 3 months and replaced once or twice a year, or be replaced when the "filter alarm" indicator on the control panel illuminated. Otherwise the performance or energy efficiency of the ventilator might be affected.

Step 1: Press the two buckles at the top to remove the maintenance panel.



Step 2: Take out the SA/RA/bypass filter



Step 3: Put the filters back in place after cleaning or replacing, re-install the maintenance panel, then reset the time of the filter alarm (Refer to instruction 4.3).

5.2 Drain pipe inspection

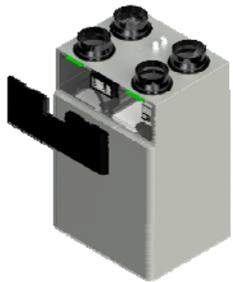
It's recommended that the condensate drain pipe should be inspected once or twice a year, preventing the leakage due to poor drainage.

5.3 Pipeline, air inlet/outlet inspection

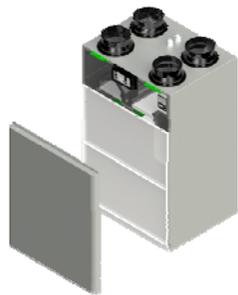
It's recommended that the pipe line, air inlet/outlet should be inspected regularly, preventing the unnormal ventilation of the equipment due to blockage.

5.4 Heat exchanger cleanness

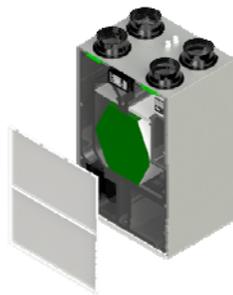
The heat exchanger needs cleanness and maintenance regularly, it's recommended that the heat exchanger should be cleaned or maintained every 3 years. Please contact your supplier if needed.



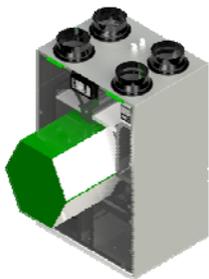
A. Remove the maintenance panel



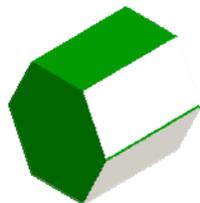
B. Remove the front panel



C. Remove the sealing plate



D. Pull out the heat exchanger



E. Clean the heat exchanger with a vacuum



F. Put all the parts back place

6. Fault diagnosis

Please inspect the machine refer to the table below if this product works unnormally, and contact your supplier to solve the problem in time.

Phenomenon	Possible reasons	Solution
Filter reset indicator light on	- Filter should be cleaned or replaced	- Clean or replace the filter, refer to 5.1
Error light on	- Fan error - Sensor error	- Restart the equipment, if still unsolvable, contact your supplier directly
Insufficient fresh air	- Air inlet/out was blocked - Filter clogged - Filters clogged by dusts	- Inspect and remove the unidentified matters - Replace the filters
No response to fan speed selection	- The device is in special working mode, like defrosting mode	- Wait until the special mode finished
Drop noise	- Condensate drain pipe clogged	Dredge the pipeline
Working noise	The pipe connected to the device is not firmly fixed - Unidentified matters enter into the internal of the device - SA fan or EA fan malfunction	- Unpack the device, clean the inside or replace the parts
The device fail to start	- Power wiring error - Equipment protection circuit trip	- Inspect the wiring - Close the protective circuit breaker



Users can configure the following accessories optionally according to their need.

No.	Picture	Description
1		F7 filter for fresh air purification
2		Remote touch screen controller
3		CO2 sensor with 5 meter wire



Designed by Cooper&Hunter International Corporation, Oregon, USA

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