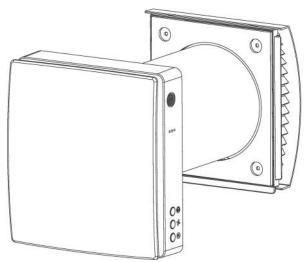
# Owner's Manual of Pioneer® Energy Recovery Ventilator

# 

# Applicable To Models:

- ERV050AHRMC02L





Attention Please read this manual carefully before installing or operating the equipment. Be sure to save this manual for future reference.

# Contents

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# Safety Remarks

# ► SAFETY REQUIREMENTS

- Read the user's manual carefully before operation and installation of the heat recovery ventilator ERV050AHRMC02L.
- Installation and operation of the ventilator shall be performed in accordance with the present user's manual, as well as the provisions of all applicable local and national construction, electrical and technical codes and standards.
- The warnings contained in the present user's manual must be considered seriously since they contain vital personal safety information.
- Failure to follow the safety instructions may result in personal injury or ventilator damage.
- Read the manual carefully and keep it as long as you use the ventilator.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the appliance in a safe way and understand the hazards involved.
- Don't allow children to play with the appliance.
- Don't allow children to clean and maintain the appliance without supervision.
- If the power cord is damaged, it must be replaced by the manufacturer or its service agent or similarly qualified person in order to avoid a hazard.

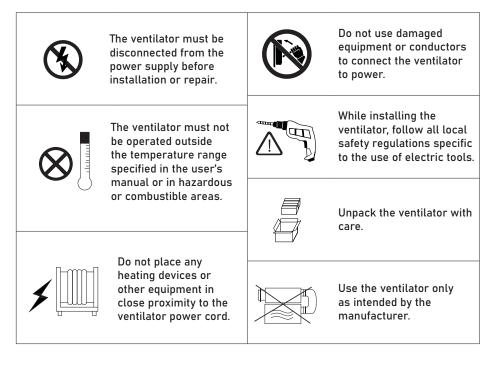
- It's suggested to install the ventilator more than 2.1 m (>7 Ft.) above the floor.
- Precautions must be taken to prevent the back-flow of gases into the room from any open flue of gas or other fuel-burning appliances.
- Exhaust fans may adversely affect the safe operation of appliances burning gas or other fuels (including those in other rooms) by the backflow of combustible gases. These gases may cause carbon monoxide poisoning. After installation of an exhaust fan such as a partition fan or a duct fan, the operation of an open flue gas appliances should be tested by a competent person to ensure that backflow of combustible gases does not occur.
- · Don't recharge non-rechargeable batteries.
- Batteries must be inserted with the correct polarity.
- Remove used batteries from the appliance and safely dispose of them.
- If the appliance is to be stored unused for a long period, the batteries should be removed.
- Don't short-circuit the power supply terminals.
- Take good care of the remote control to prevent children from attempting to swallow batteries and/or cause any related accidents.

### Symbol Used In The Manual

Safety Remarks

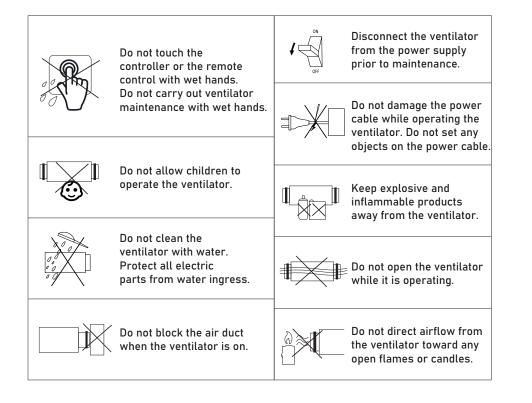


### **Ventilator Installation Safety Precautions**



# Safety Remarks

### **Ventilator Installation Safety Precautions**



# ► INTRODUCTION

This user's manual includes technical description operation, installation and mounting guidelines, as well as technical data for the heat recovery ventilator ERV050AHRMC02L.

# **Product Information**

## USE

- The ventilator is designed to exchange air in apartments, villas, hotels, cafes, and other domestic and public buildings. The ventilator is equipped with a ceramic energy regenerator, and a fan that supplies fresh air as well as extracts stale air with energy recovery technology.
- The ventilator is designed for through-the-wall mounting. The telescopic design of the fans allows for installation in walls ranging from 215 mm (8"-1/2) to 360mm (14"-1/8) thick.
- The ventilator is designed to remain connected to a power supply for continuous operation.
- The transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, coarse dust, soot and oil particles, sticky substances, fibrous materials, pathogens, or any other harmful substances.



INSTALLATION AND CONNECTION OPERATIONS MUST BE PERFORMED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER AN APPROPRIATE SAFETY BRIEFING.

THE VENTILATOR INSTALLATION SITES MUST NOT BE ABLE TO BE ACCESSED BY UNATTENDED CHILDREN.

### ► PACKING LIST

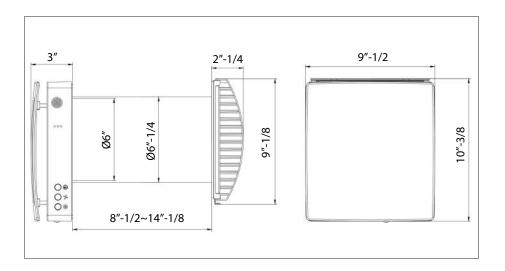
Ventilator	1x
Accessories Bag	1x
Remote Controller	1x
User's Manual	1x
Packaging Box	1x

# **Specifications**

### MAIN TECHNICAL PARAMETERS

- The ventilator is designed for indoor applications with an ambient temperature ranging from -20°C (-4°F) to +50°C (+122°F), and a relative humidity below 80%.
- The ventilator is classified as a class II electric appliance.
- The Ingress Protection (IP) rating is IPX4.
- The ventilator design is subject to continunous improvement, so some models may differ slightly from the models described in this manual.

### Ventilator Overall Dimensions (in.)



# **Specifications**

### ► TECHNICAL SPECIFICATIONS

Description	Unit	Value
Voltage	V	100-240
Frequency	Hz	50/60
Input Power	W	9.7/10.7/11.5
Current	A	0.14/0.15/0.16
RPM (rated)	-	1000/1550/1800
RPM (max)	-	2200
Airflow (L/M/H) in supply/exhaust mode (with F7 filter)*	m³/h	20/40/50
Airflow (L/M/H) in regeneration mode (with F7 filter)*	m³/h	10/20/25
Airflow in supply/exhaust mode (with F7 filter)*	CFM	11.8/23.5/29.4
Airflow in regenerator mode with F7 filter)*	CFM	5.9/11.8/15
Max airflow (under fan boost mode)	m³/h	60
Max airflow (under fan boost mode)	CFM	35
Sound Pressure Level	dB(A)	32.7
Heat Recovery Efficiency	%	up to 97
ngress Protection Rating	-	IPX4
Air Duct Diameter	mm (in.)	158 (6"-1/4)
SEC	-	Class A
Mounting Type	-	Wall Mounting
Net Weight	kg (lb)	4.2 (9.25)

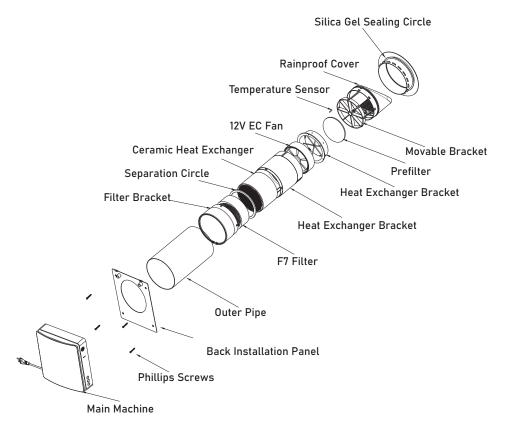
\*Note: The airflow in supply/exhaust mode without an F7 filter is about 34/56/70 m<sup>3</sup>/h or 20/33/41.2 CFM, and the relative parameters will be adjusted accordingly.

### DESIGN AND OPERATION

- The ventilator consists of a telescopic air duct with adjustable length regulated by the position of the inner air duct inside the outer air duct, the ventilation unit, and the ventilation hood.
- F7 filter+prefilter and the ceramic energy regenerator are located inside the inner duct. The filters are designed to purify supply air and prevent foreign objects from ingressing into the regenerator and the fan.
- The ceramic energy regenerator extracts energy from exhaust air to warm up or cool down supply air.
- The regenerator is equipped with a pull cord inside to facilitate its withdrawal from the ventilator. The regenerator is installed on an insulated material which is also used as a sealant.
- The ventilator is able to be installed from the inner side of the wall.

# **Specifications**

### ► INSTALLATION DRAWING



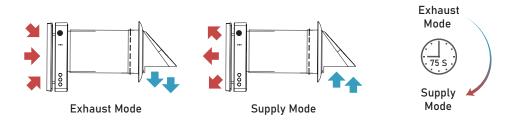
# Overview

### OPERATION MODES

Ventilation Mode - The ventilator runs in exhaust or supply mode at a set speed. When synchronous operation of two connected ventilators occurs, one runs in the supply mode and the other in exhaust mode.

Regeneration Mode - The ventilator runs in two cycles of 75 seconds each, to provide heat and moisture regeneration.

- Interval 1 The warm polluted air is extracted from the room and goes through the ceramic regenerator, which gradually absorbs heat and moisture. After 75 seconds the ventilator switches to air supply mode.
- Interval 2 The fresh and cold outdoor air goes through the heat regenerator and absorbs the accumulated moisture and heat after 75 seconds, and when the energy regenerator gets cold, the ventilator switches to the exhaust mode.





### **INSTALLATION AND SETUP**

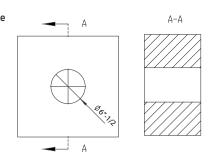
### Read The User's Manual Before Installing The Ventilator

To prevent room dust deposition and accumulation, the ventilator must not be installed in places where the air duct may be blocked by any blinds, curtains, drapes, etc. Window curtains might obstruct normal airflow in the room, making ventilator operation inefficient.

# Installation

# ▶ VENTILATOR INSTALLATION

1. Drill a 160~170 mm (6"-1/4~6"-3/4) round hole in the wall. The hole size is shown below.

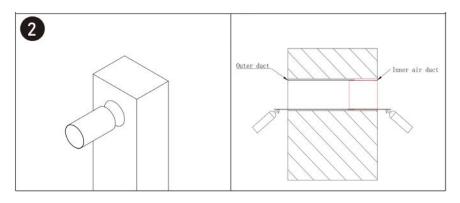


2. Insert the PVC pipe into the hole. Adjust the pipe so it fits flush with both the interior and exterior sides of the wall.

Use PU foam to fill the gap between the PVC pipe and the wall on both the indoor and outdoor sides to ensure an airtight seal.

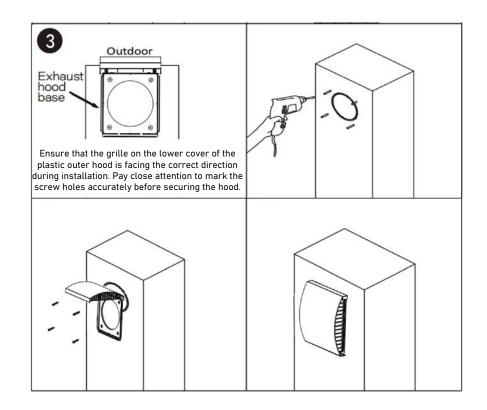
### Important Notes:

- The duct consists of two outer ducts and can be adjusted to accommodate wall thicknesses of up to 19"-5/8.
- If the wall thickness is less than 14"-5/8, the duct can be cut to size according to the wall thickness.
- For installation instructions of the outer grille, refer to the grille package.



9

# Installation



3. Insert the PVC pipe into the wall.

Adjust the pipe to fit snugly against the wall. Use PU foam to fill the gap between the PVC pipe and the wall, both inside and outside the building.

Open the hood cover and align the bottom of the hood base with the circular opening of the pipe.

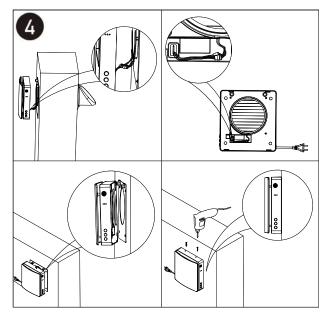
On the outside of the wall, mark the positions for the four screw holes on the base of the exhaust hood.

Drill the holes, then secure the bottom of the plastic hood using appropriate hardware.

# Installation

4. Install the main unit on the indoor surface wall. Connect the adapter wire from the back of the main unit to the wiring of the fan and temperature sensor exposed in the inner duct, and tidy the wiring. Then align and install the main unit with the protruding plastic and metal parts on the back cover plate (There are corresponding concave holes on the rear of the main unit).

The strong magnet equipped on the back of the main unit will automatically attract the wall mounting plate (After installation is complete, check if there is a large gap between the main unit and the mounting plate. If so, it means that the wires in the main unit are not placed properly. Please remove the main unit and reinstall it). Finally, turn the two small M3 screws (included in the kit) into the hole at the top of the main unit (shown in Figure 4), and the installation is complete.





### **CONNECTION TO POWER**

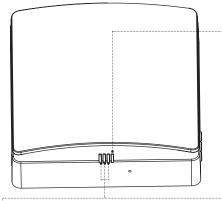
DISCONNECT THE VENTILATOR FROM THE POWER SUPPLY PRIOR TO PERFORMING ANY ELECTRIC INSTALLATION OPERATIONS. THE VENTILATOR IS DESIGNED FOR CONNECTION TO 1-PHASE AC100-240V/50-60 HZ POWER SUPPLY. CONNECT THE VENTILATOR TO THE SOCKET DIRECTLY.

# Operation

## ► FUNCTION DESCRIPTION

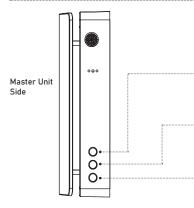
### **Description Of The Master Unit**

Master Unit Front



### Function Light (RGB-LED)

- 1. Function light indicates the fan speed. There are 3 speeds in total.
- 2. The green light indicates air supply.
- 3. The red light indicates air exhaust.
- The blue shows indicates regeneration mode, which switches on after 75 seconds of cyclic operation between air supply and air exhaust.

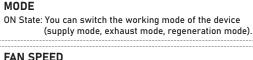


### Status Light (RGB-LED) ON Status

- Blue light is on: Pairing mode is activated, and the linkage communication function is active between the master and slave units.
- Green light is on: IoT function is enabled, Wi-Fi is connected successfully, and user is able to control the device from the phone.
- 3. Red light is on: Filter cleaning alarm to remind user that it is time to clean or replace the filter within the inner duct.
- Purple light is on: Indicates the master role in master-slave online mode, the master loT networking function is enabled, and the unit can be controlled by the user's phone.
- 5. Green light flashes slowly: Automatic ventilation function is on and running.
- 6. Blue light flashes slowly: Free-cooling function is on and running.
- 7. Red light flashes three times: Indicates that the filter cleaning is complete and the cleaning time has been reset.

### OFF Status (coordinated with the buttons)

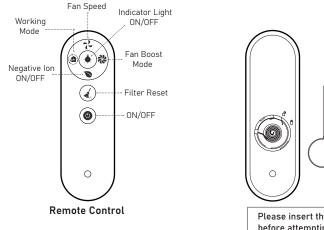
- 1. Blue light flashes slowly: Indicates the device role is set as the master in pairing mode.
- 2. Green light flashes slowly: Indicates the role of the device is set as a slave in pairing mode.
- Red light flashes slowly: Indicates that the device is in Wi-Fi connection mode.



### ON State: You can switch the fan speed of the device. There are 3 speeds in total.

**ON/OFF** Control the device to switch between an ON/OFF state.

# Operation



# Button cell CR2025

Please insert the button cell (prepared by user) before attempting to use the controller.

### **Remote Controller**

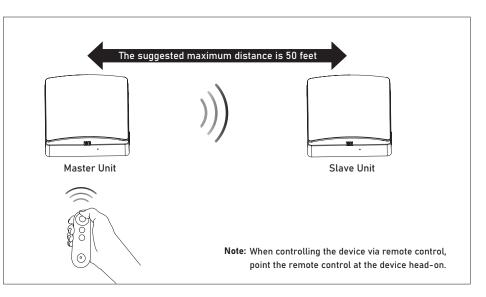
- 1. Fan Speed: Switches the fan speed of the device. There are 3 speeds in total.
- 2. Working Mode: Switches the working mode of the device (supply mode, exhaust mode, regeneration mode).
- 3. Negative Ion ON/OFF: Negative ion generator power socket work switch, (when the negative ion function is turned on, the device supplies air with the power supply. Negative ion generator is purchased separately and added on).
- 4. Indicator Light: Control indicator light for On and Off.
- 5. Fan Boost Mode: Sets the fan into fan boost mode, where the fan runs at maximum power if there is no other setting. The device runs this mode for 30 minutes before exiting automatically.
- 6. Filter Reset: After replacing the filter of the inner air duct, press and hold the button for 5 seconds, the device red light flashes three times, and the filer cleaning time is reset. (Reset time default: 720 hours)
- 7. ON/OFF: Turn ON/OFF the device.

### This remote control uses infrared signals.

- 1. Before using the remote control, insert the battery into the remote control and close the battery cover tightly.
- 2. After inserting the battery, screw the battery cover clockwise as shown until the cover triangle arrow indicates the locking pattern, which means it is locked (Do not tighten the cover with your bare hands to avoid potential injury).
- 3. To remove the battery, turn the battery cover counterclockwise as shown in the picture until the triangle arrow of the cover indicates the unlocking pattern. Once loose, the battery can be removed.
- 4. Please store the remote control properly to prevent children from attempting to swallow batteries and/or other potential accidents.

# **Oper**ation

# ► PAIRING SYNCHRONIZATION FUNCTION



1. Without setting a master/slave role, one remote control can control one or more devices.

- After setting the master/slave role, the current use of the remote control can only control the master, and the master forwards the synchronization signal to the slave (the slave does not receive the remote control signal), so that the slave mode is synchronized with the master. (The master can only control one slave alone).
- 3. In regeneration mode, the operation direction of the slave fan is opposite to that of the master, and the direction of the slave fan in other modes is the same as that of the master.
- The maximum linear unobstructed communication signal distance between master and slave is 50 feet.
- The signal from the master and slave can pass through an up to 7 inch thick brick wall.

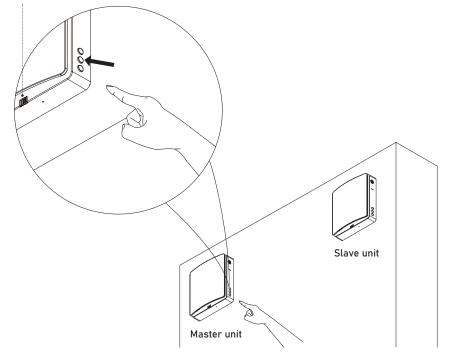
# Operation

### MASTER-SLAVE UNIT SETTINGS

### **Master Unit Settings**

Connect the device to power. In the OFF state, as shown in the figure, press and hold the fan speed button of the unit for 5 seconds, and the status indicator blue light flashes slowly. Once done, the device enters master-slave linkage mode, and is set to the master role.

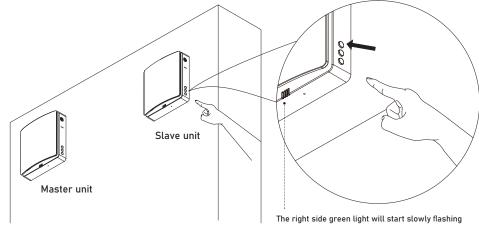
### The right side blue light will start slowly flashing



# Operation

### **Slave Unit Settings**

- Connect the device to power. In the OFF state, as shown in the figure, press and hold the mode button of the device for 5 seconds, and the status indicator green light will start flashing slowly. Once done, the device enters master-slave linkage mode, and the unit is set to the slave role.
- 2. During the master and slave set pairing mode, it must be carried out at the same time inside a limited time (within 1 minute). The devices should be as close as possible. The devices will be automatically connected.
- 3. The status light of the paired devices will change to blue light ON to indicate that the master-slave pairing is successful.
- **4.** If the master-slave pairing fails, the status lights on the devices will flash for one minute and before the lights turn off automatically.



### MASTER-SLAVE RESET AND CANCELLATION

Connect the device to power. In the OFF state, long press the fan speed button of the linked device for 5 seconds, and the device status indicator blue light will start flashing slowly. At this time, the linked device enters master-slave linkage mode, and the device defaults to the master role. It should be carried out at the same time inside a limited time (within 1 minute). Wait for the status indicator lights to come off automatically, whereby the device disconnects from the slave to break off the master-slave pairing automatically. At this stage, the device is reset and restored to the factory state, without any role definition.

# **Wi-Fi Connection**

### IOT NETWORKING FUNCTIONS

### CO<sub>2</sub> Version

ERV name: The app can connect multiple devices. Each device will have a different name, and users can change the device name freely

Pairina icon: After the devices are paired, the icon is displayed, and the  $\cdot$ . slave is offline and can't be controlled

Filter alarm: It reminds the user to clean or replace the filters. Icon disappears after reset

*CO*<sup>2</sup> *concentration setting:* When the CO<sub>3</sub> sensor is connected, if the indoor *CO*<sup>2</sup> *concentration exceeds* the set value while the unit is operating in regeneration mode, the unit will enter the supply mode to introduce fresh air to dilute the CO<sub>2</sub> concentration until the  $CO_2$ concentration is lower than the set value. The unit then returns to the previous mode. It can be set from 400 to 2000ppm 12-hours timer

Operating mode: (supply... mode, exhaust mode,

Power ON/OFF

CO, concentration



*Outdoor temperature:* Displays the outdoor temperature when the unit is ON and operating in supply or regeneration mode. In exhaust mode, the outdoor temperature is not sensed and displayed

Free cooling temperature setting: When the outdoor air is comfortable, it will work in supply mode to introduce fresh air without heat recovery, which is called free cooling. Users can set the outdoor temperature to enable this function. The settina ranae is 50°F to 84°F

Real-time indoor CO<sub>2</sub> concentration

Remaining time after the scheduled shutdown

Fan boost function: The unit will supply/exhaust at the highest speed.

Fan speed: Total 3 speeds

# Wi-Fi Connection

### Installation of "Pioneer Airlink" smartphone application

Search for "Pioneer Airlink" in the Google Play Store (for Android users) or the App Store (for iOS users). Note that a 2.4GHz Wi-Fi connection is needed to use the Wi-Fi control feature.



Or, scan the below QR code to download the app from the respective app store.





**Download Android App** 

### Wireless Control App Setup Process

### 1. Registration and Log-In:

If you do not already have a "Pioneer Airlink" account, please create and account and log-in by following the below steps:

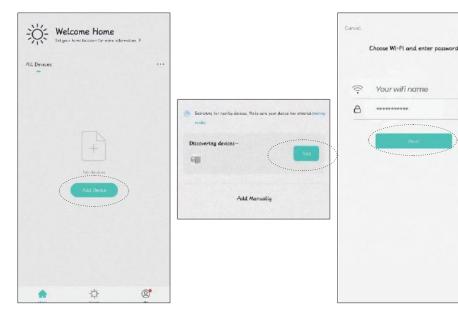
- Approve the "User Agreement" and "Privacy Policy" when they appear by tapping "I Agree".
- ii. Tap the "Sign Up" button, choose your country, and enter your mobile number/e-mail to register, tick "I Agree" on "User Agreement and Privacy Policy", then tap the "Get Verification Code" button. The phone or e-mail that you're registering will receive a registration verification code.
- Enter the verification code and select a password. You will then either land on the homepage of iii. the App, or back to the login interface to log into the app, by using the account you just created.

### 2. Adding a New Device:

- i. Confirm that your phone is connected to Wi-Fi (2.4GHz networks only, 5Ghz will not work). Tap the "+" at the top-right corner of the homepage, to enter the device selection page.
- Once you've entered this page, head to your Pioneer ERV system and long press "On/Off" ii. buttons when the ventilator is turned ON, until the Wi-Fi symbol on the display screen flashes. (Fast flashing indicates Wi-Fi connection, slow flashing refers to hotspot network.)

# Wi-Fi Connection

### ▶ IOT NETWORKING OPERATION STEPS



- Before enabling IoT networking operation, please connect your cell phone to your home router Wi-Fi, turn on the Bluetooth function of your cell phone, and ensure that the device and cell phone are within the Wi-Fi signal coverage (make sure the router Wi-Fi is enabled for 2.4G network).
- When the device is powered on, in the OFF state, long press the ON/OFF button of any device for 5 seconds, the device status indicator will flash red slowly, then the device will enter the Wi-Fi pairing state, and the cell phone will be available for operation and connection.



- Open the downloaded Pioneer Airlink app, enter the operation page, click the add device box, and search for devices.
- At this time the app receives the signal from the device, then proceeds to add the device for network connection.

Wi-Fi Connection

## ▶ WI-FI RESET AND CANCELLATION

	ane location for more informatio	к.)	
ALL Devices			
1		10000	
ERV03	5AVTTW5		

5. Click Add Device to find the

Wi-Fi signal of your home

router, and make sure the

Wi-Fi name on the app is the

same as the name of the Wi-Fi

connection to your phone, then

log in with the Wi-Fi password.

6. After successful Wi-Fi connection,

page to operate.

the device will be connected to the

network, and after the connection is

completed, you can enter the operation



- Remove the device from the app as follows:
- Return to the app operation connection page, long press the device that needs to be disconnected, then the option to remove the device will appear at the bottom.
- 2. Click on the remove device option and confirm to successfully disconnect the device from Wi-Fi.

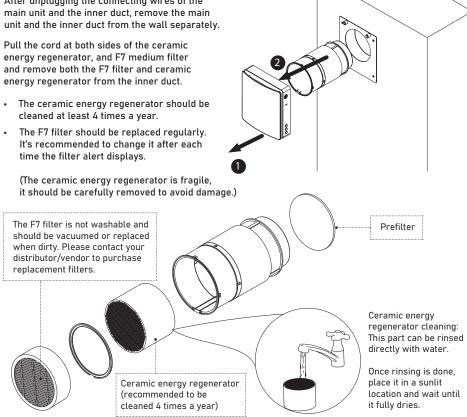
# Maintenance

# ► MAINTENANCE

Loosen the screws on the top of the main unit. After unplugging the connecting wires of the main unit and the inner duct, remove the main unit and the inner duct from the wall separately.

Pull the cord at both sides of the ceramic energy regenerator, and F7 medium filter and remove both the F7 filter and ceramic energy regenerator from the inner duct.

- The ceramic energy regenerator should be cleaned at least 4 times a year.
- It's recommended to change it after each time the filter alert displays.



Even regular technical maintenance may not completely prevent dirt accumulation on the regenerator assemblies.

Treat the exchanger with regular cleaning to ensure high heat exchange efficiency. Clean the exchanger using a vacuum cleaner at least once a year.



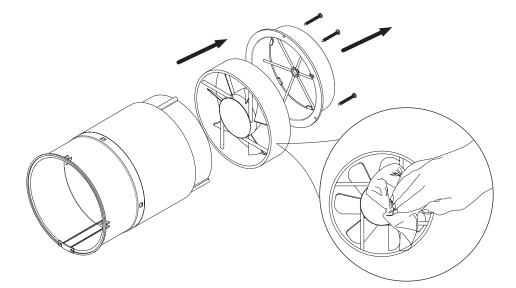
Clean the prefilter at least 4 times a year. The user can wash or vacuum the prefilter. Note that after washing the prefilter, it should be dried and reinstalled in the air duct. The lifetime of the prefilter is about 3 years. Purchase replacement filters from yendor.

# Maintenance

### Fan Maintenance (Once Per Year)

Remove the secured bracket from within the inner duct and take out the fan.

Clean the impeller blades. Use a soft brush, doth, or a vacuum cleaner to clean the impeller. Do not use water, abrasive detergents, solvents, or sharp objects. The impeller blades must be cleaned once a year.



### STORAGE AND TRANSPORTATION GUIDELINES

Store the ventilator inside the manufacturer's original packing box in a cool, dry place.

The storage environment must be free of any aggressive vapors and chemical mixtures that may cause corrosion, insulation, and sealing deformation. Use lifting equipment for handling and storage operations to prevent ventilator from damage as a consequence of failing or excessive vibration. Fulfill the handling requirements relevant to the applicable freight type.

Transportation via any type of vehicle is allowed, provided that the ventilator is protected against mechanical and weather damage.

Take care to avoid any mechanical shocks and sharp ends during handling operations.

# Troubleshooting

# ► TROUBLESHOOTING

Users can often perform basic self-troubleshooting using the below chart, in the event of any faults or malfunctions.

Fault	Possible Causes	Troubleshooting
The fan does not	No power supply	Make sure that the ventilator is properly connected to the power and make any corrections, if necessary
start up	The motor is stuck, or the impellers are clogged	Turn the ventilator off. Troubleshoot the motor jam and the impeller blockage. Clean the blades. Restart the ventilator.
	Low fan speed setting	Set a higher speed
Low airflow	Filter, fan, or exchanger are dirty	Clean or replace the filter, and clean the fan and the exchanger. For exchanger and filter maintenance, see page 22.
	The impeller is dirty	Clean the impeller
Noise/vibration	Loose connection of the ventilator casing or the ventilation hood	Tighten the screws of the ventilator or the outer hood
	Master-Slave units set by a different controller	According to the manual, use the same remote controller for the Master-Slave units settings
Master-Slave	The ventilator is installed where it is surrounded by a lot of metal/ there are many sources of interference	Excessive metal structures and interference sources around will weaken the wireless signal. Remove these sources of signal interference or change the installation location
pairing failed	The distance between Master and Slave units is too long/the wall between them is too thick	Please change the installation location according to the distances shown in the manual
	Other	Please reset the master-slave setting (press and hold the RESET button for ten seconds), and set it again after a period of power off
	The mobile phone is connected to the WiFi 5G network	Please switch to the 2.4G frequency/network to connect.
	Wrong connection to public WiFi (such as Wi-Fi in shopping malls, hotels, etc.) User must be registered and logged in	
Wi-Fi connection failed	The router has not yet set up an account and password	Please set up the Wi-Fi router correctly
	The router is set to a higher security level	
	You have exceeded the limit of devices that can be connected to the router.	
	Bluetooth on the mobile phone is off	Enable Bluetooth on the mobile phone to improve the success rate of networking

# Contact Information

The design and specifications of this product are subject to change without prior notice as development continues. Consult with the sales agency or manufacturer for details. Refer to the equipment nameplate for all other applicable specifications.

# **PISNEER**

is a registered trademark of Parker Davis HVAC International.

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Pioneer product line, parts, and supplies are available online for convenient ordering at: www.highseer.com www.pioneerminisplit.com

Scan the below code to visit our support page where you can find more installation materials:

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