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better AIRFLOW *by* DESIGN™

Installation & Maintenance

ECO-FLO *Plus*

ENERGY RECOVERY VENTILATOR

READ AND SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE.

SAFETY REQUIREMENTS

NOTICE

Read the user's manual carefully before operation and installation of ECO-FLO Plus.

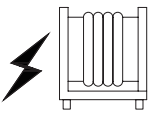
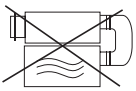
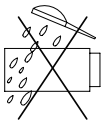
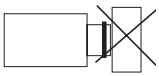
- Installation and operation of the ventilator shall be performed in accordance with this user manual as well as the provisions of all the applicable local and national construction, electrical and technical codes and standards.
- The warnings contained in this user manual must be considered since they 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.
- If the power cord is damaged, it must be replaced by the manufacturer or similarly qualified person in order to avoid a hazard.
- It is suggested to install the ventilator more than 6.9 feet (2.1 meters) above the floor.
- Precautions must be taken to prevent the backflow of gases into the room from the 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 combustion 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 appliance should be tested by a competent person to ensure that backflow of combustion gases does not occur.
- 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 battery should be removed.
- Do not short-circuit the power supply terminals.

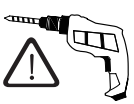
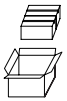
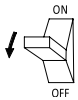
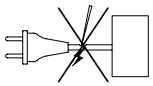
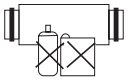
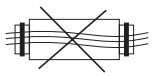
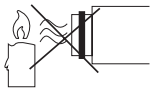
SYMBOLS USED IN THE MANUAL

WARNING!

DO NOT!

INSTALLATION SAFETY PRECAUTIONS

	The ventilator must be disconnected from the power supply before the installation or repair operation.
	The ventilator must not be operated outside the temperature range specified in the user's manual or in aggressive or explosive environment.
	Do not place any heating devices or other equipment in close proximity to the ventilator's power cord.
	Use the ventilator only as intended by the manufacturer.
	Do not touch the controller or the remote control with wet hands. Do not carry out the ventilator maintenance with wet hands.
	Do not allow children operate the ventilator.
	Do not clean the ventilator with water. Protect the electric parts from water ingress.
	Do not block the air duct when the ventilator is on.

	Do not use damaged equipment or conductors to connect the ventilator to power.
	While installing the ventilator, follow the safety regulations specific to the use of electric tools.
	Unpack the ventilator with care.
	Disconnect the ventilator from the power supply before maintenance.
	Do not damage the power cable while operating the ventilator. Do not put any objects on the power cable.
	Keep explosive and inflammable products away from the ventilator.
	Do not open the operating ventilator.
	Do not direct airflow from the ventilator onto the open flames or candles.

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ECO-FLO PLUS ENERGY RECOVERY VENTILATOR

This user's manual includes technical description of operation, installation and mounting guidelines, and technical data for the ECO-FLO Plus ventilator.

ECO-FLO Plus ERV 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 and extracts air with energy recovery. The telescopic design of the fan allows its through-the-wall installation in walls from 11.0" to 18.5" (280 mm to 470 mm) thick.

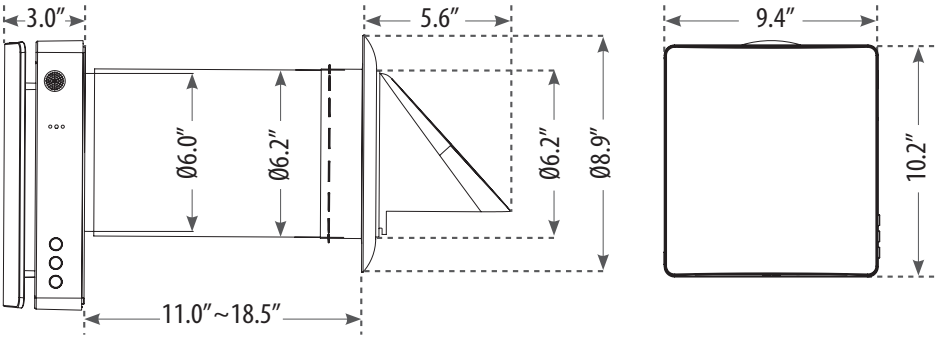
The ventilator is designed for continuous operation.

The delivery set includes:

- Ventilator - 1
- Accessories bag - 1
- Remote control - 1
- User's manual - 1

NOTICE 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.

Ventilator Overall Dimensions



ECO-FLO PLUS ENERGY RECOVERY VENTILATOR

The ventilator is designed for indoor application with an ambient temperature ranging from -4°F to 122°F (-20°C to 50°C) and relative humidity below 80%.

- The ventilator is classified as a class II electric appliance.
- Ingress Protection (IP) rating is IP X4.

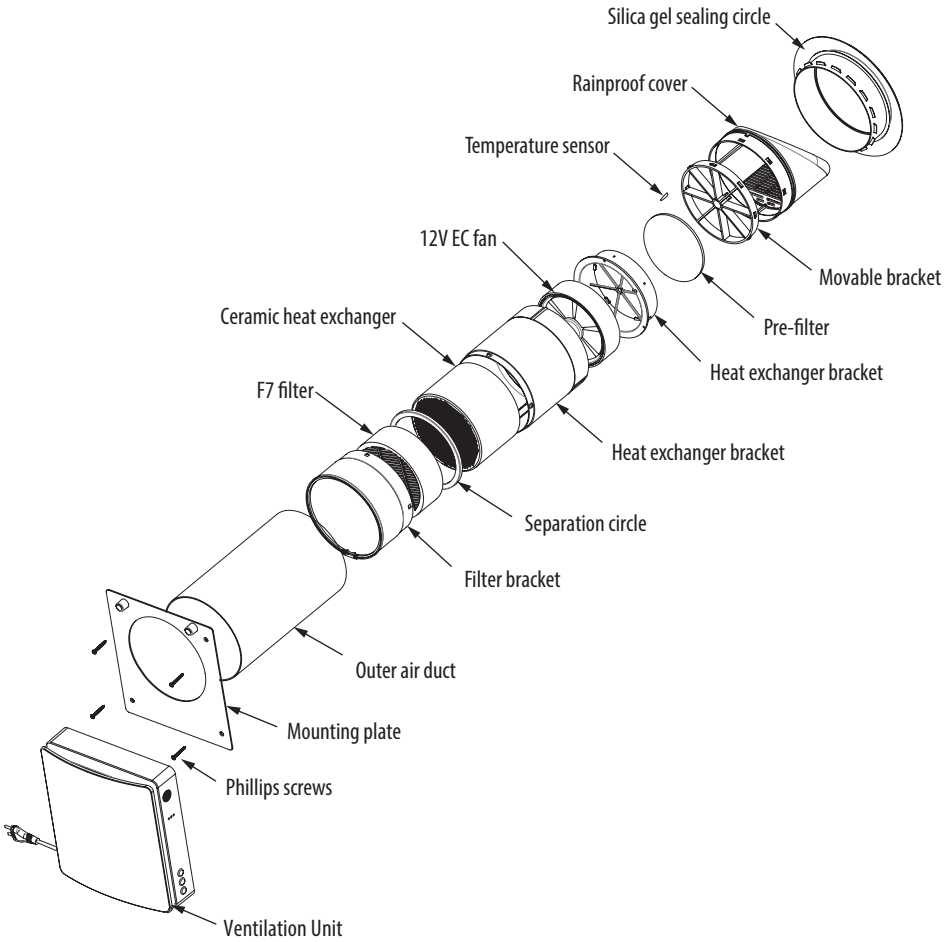
Description	Unit	Value
Voltage	V	100-240
Frequency	Hz	50/60
Input Power	W	6/7/7.8
Current	A	0.04/0.05/0.06
RPM	-	1000/1550/1800
RPM (max)	-	2200
Airflow (L/M/H) in supply exhaust mode (with F7 filter)*	m3/h	20/40/50
Airflow (L/M/H) in regeneration mode (with F7 filter)*	m3/h	10/20/25
Airflow in supply/exhaust 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
Ingress Protection Rating	-	IPX4
Air Duct Diameter	in.	6.22
SEC	-	Class A
Mounting Type	-	Wall Mounting
Net Weight	lbs	9.3

*Note: The airflow in supply/exhaust mode without an F7 filter is about 34/56/70 CMH or 20/33/41.2 cfm, and the relative parameters will be adjusted accordingly.

DESIGN

The ventilator consists of a telescopic air duct, ventilation unit, and ventilation hood. The telescopic air duct is regulated by the position of the inner air duct inside the outer air duct.

- F7 filter, pre-filter, and the ceramic energy regenerator are located inside the inner duct. The filters are designed to purify supply air and prevent foreign objects from ingress 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 removal from the ventilator. The regenerator is installed on an insulation material that is used as a sealant as well.



OPERATION MODES

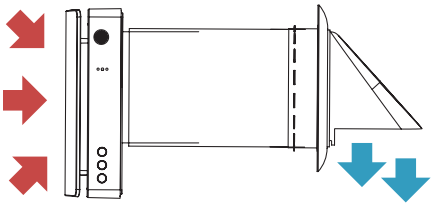
The ventilator is designed for continuous operation.

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

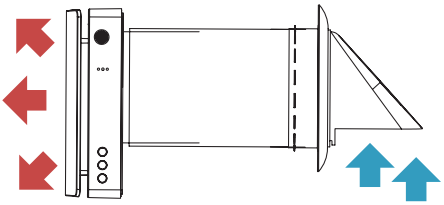
Regeneration Mode: The ventilator runs in two cycles of 75 seconds each, providing heat and moisture regeneration.

Interval 1:
The warm polluted air is extracted from the room and goes through the ceramic regenerator, which absorbs heat and moisture. After 75 seconds, the ventilator switches to air supply mode.

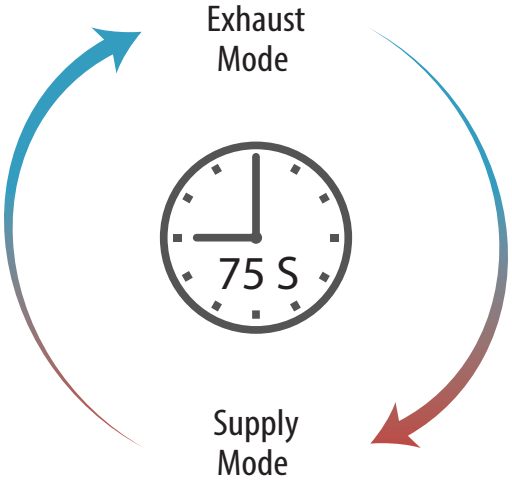
Interval 2:
The fresh and cold outdoor air flows through the heat regenerator, absorbing the accumulated moisture and heat. When the energy regenerator gets cold, the ventilator switches to the exhaust mode after 75 seconds.



Exhaust Mode



Supply Mode



INSTALLATION

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

THE VENTILATOR INSTALLATION SITES MUST PREVENT ACCESS BY UNATTENDED CHILDREN.

CAUTION!

TO PREVENT ROOM DUST DEPOSITION AND ACCUMULATION, THE VENTILATOR MUST NOT BE INSTALLED IN PLACES WHERE THE AIR DUCT MAY BE BLOCKED BY BLINDS, CURTAINS, DRAPES, ETC. MEANWHILE, CURTAINS MAY OBSTRUCT NORMAL AIRFLOW IN THE ROOM, MAKING THE OPERATION OF THE VENTILATOR INEFFICIENT.

1. Drill a 6.69 inch (170 mm) round hole in the wall. The hole size is shown (Figure 1).
2. Assemble the inner duct and outer duct together, adapting to the thickness of the wall (Figure 2). The outer duct shall not exceed the wall thickness.
3. Remove the inner duct and insert the outer duct into the wall hole (Figure 3). Gently pull the duct if it is stuck or loose.

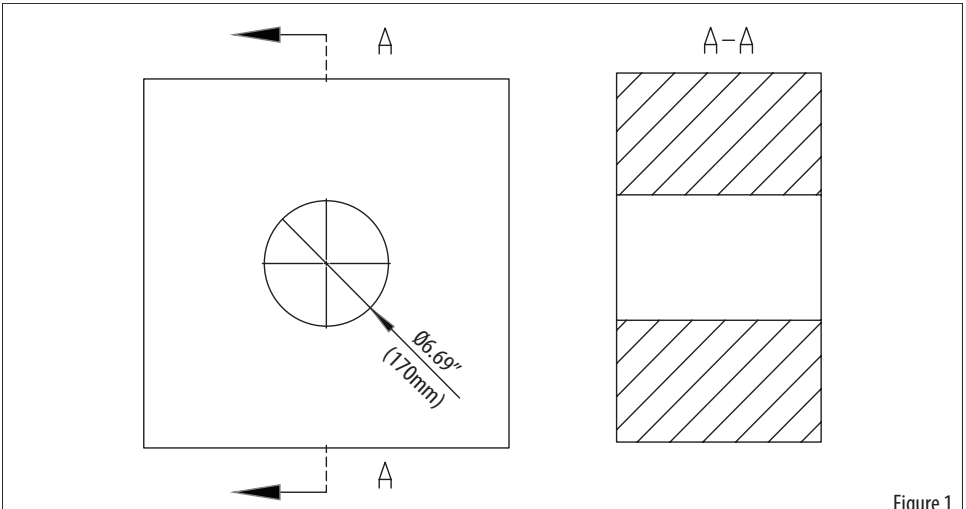


Figure 1

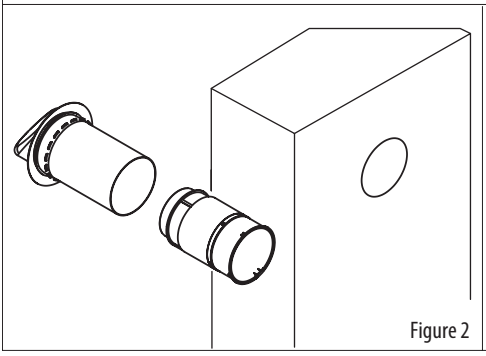


Figure 2

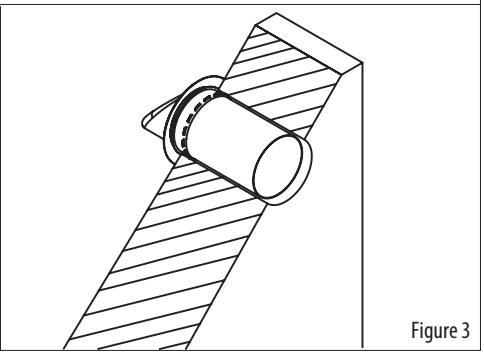


Figure 3

INSTALLATION

4. Rotate the outer duct so that the air inlet/outlet is positioned downward by the sign of the external ventilation hood (Figure 4).
5. Adjust the movable bracket in the outer duct so that the silicone ring on the outside of the outer duct is tight against the outer wall (Figure 5).
6. Fill the space between the wall and the outer duct with the provided PU glue (Figure 6).
7. After the glue is dry, install the mounting plate. Position the plastic block on the mounting plate at the top of the round hole. Align the round hole of the mounting plate with the round hole on the wall. Level the mounting plate, ensuring its installation is horizontal. Mark the holes, align the mounting plate with the holes, and fix it with screws (Figure 7).
8. Insert the inner air duct into the hole (Figure 8). Ensure the wire inside the inner air duct faces downward in the same direction as the mark of the outer duct (Figure 9).

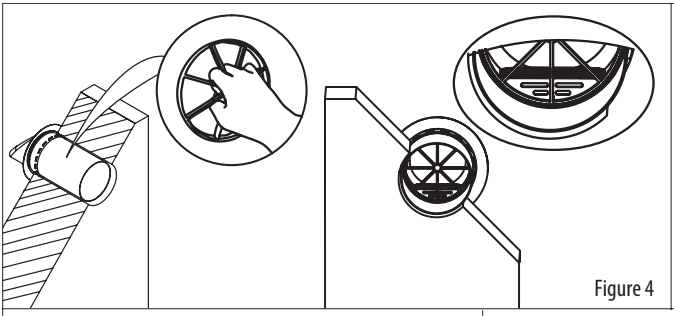


Figure 4

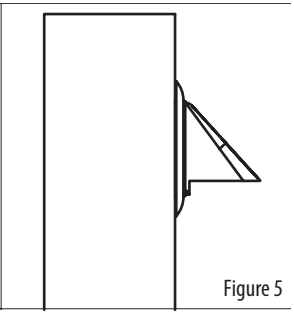


Figure 5

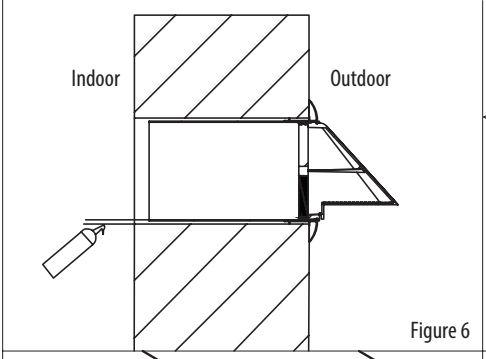


Figure 6

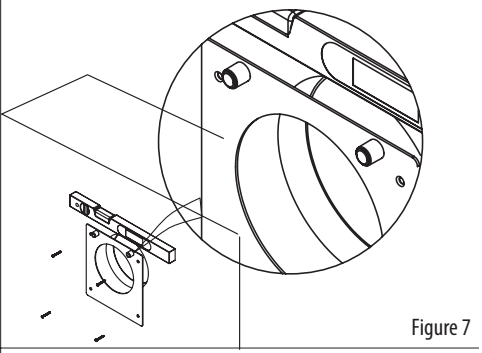


Figure 7

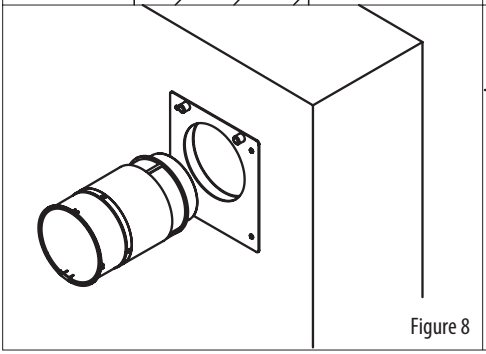


Figure 8

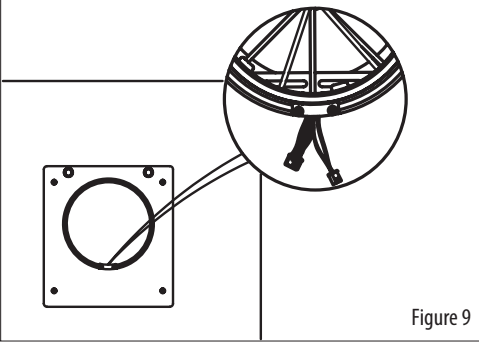


Figure 9

INSTALLATION

NOTICE The main ventilation unit is always installed on an interior surface wall.

9. Connect the adapter wire from the back of the ventilation unit to the wiring of the fan and temperature sensor exposed by the inner duct in the wall (Figure 10).
10. Tidy the wiring (Figure 11).
11. Align the concave holes on the back of the ventilation unit with the plastic blocks protruding on the mounting plate (Figure 12). The back of the ventilation unit is equipped with a magnet that will automatically attract to the mounting plate on the wall. No other operations are required.
12. The installation is complete if the ventilation unit is flush with the surface wall (Figure 13). If a large gap appears between the ventilation unit and the mounting plate, the wires in the ventilation unit need to be adjusted. Therefore, remove the ventilation unit and repeat steps 11 and 12.

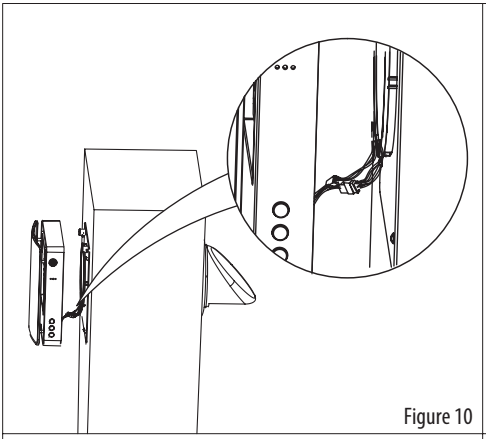


Figure 10

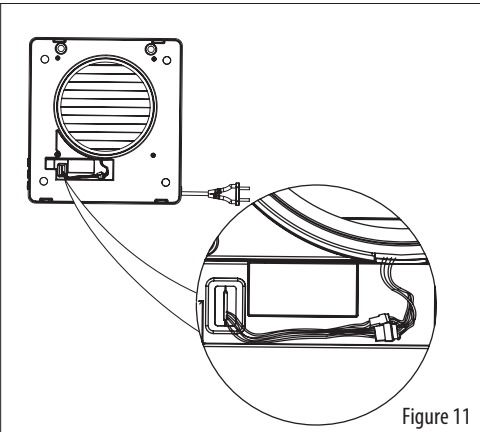


Figure 11

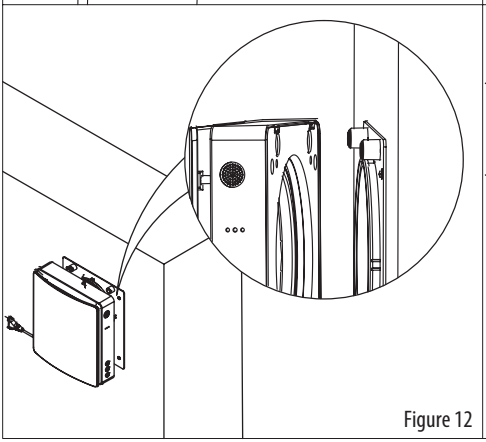


Figure 12

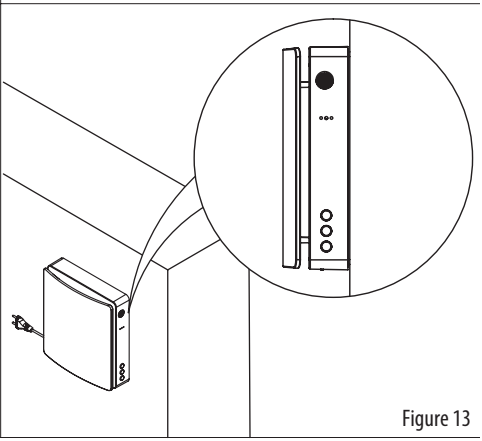


Figure 13

CONNECTION TO POWER

DISCONNECT THE VENTILATOR FROM THE POWER SUPPLY BEFORE ANY ELECTRIC INSTALLATION OPERATIONS.

THE VENTILATOR IS DESIGNED FOR CONNECTION TO SINGLE-PHASE AC100-240 V/50-60 HZ POWER SUPPLY. CONNECT THE VENTILATOR TO THE SOCKET DIRECTLY.

FUNCTION DESCRIPTION

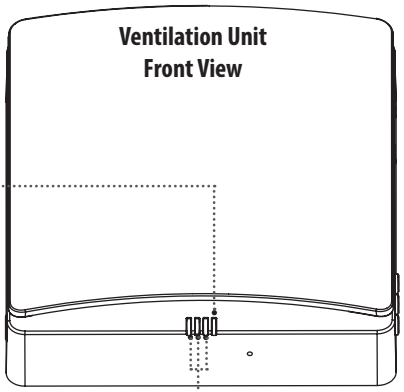
STATUS LIGHT (RGB-LED)

ON STATUS

1. **Blue light glows:** Pairing mode is activated, and the linkage communication function is realized between the primary and secondary ventilators.
2. **Green light glows:** IoT function is enabled, WIFI is connected, and the APP is operational.
3. **Red light glows:** Notification that it is time to clean or replace the filter in the inner duct.
4. **Purple light glows:** The primary ventilator's role is in primary-secondary online mode and the primary Iot networking function is enabled, and the APP is operational.
5. **Green light flashes:** Automatic ventilation function is on and running.
6. **Blue light flashes:** The free-cooling function is on and running.
7. **Red light flashes three times:** The filter cleaning is complete, and the cleaning time is reset.

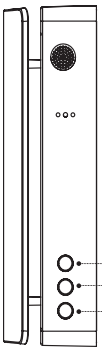
OFF STATUS (coordinate with buttons)

1. **Blue light flashes:** The primary ventilator is in pairing mode.
2. **Green light flashes:** The secondary ventilator is in pairing mode.
3. **Red light flashes:** The ventilator is in WIFI connection mode.



FUNCTION LIGHTS (RGB-LED)

1. Function light indicates the fan speed (3 speeds).
2. The green light indicates air supply.
3. The red light shows as air exhaust.
4. The blue light shows as the regeneration mode, which switches after 75 seconds of cyclic operation between supply and exhaust.



Ventilation Unit
Side View

WORKING MODE
Adjusts the (supply, exhaust, or regeneration) mode of the ventilator.

FAN SPEED
Changes the (low, medium, or high) speed of the fan.

ON/OFF
Controls the ventilator to an ON or OFF state.

PRIMARY / SECONDARY VENTILATOR SETUP

Primary Ventilator Setup
In the OFF state, press the fan speed button for 5 seconds. The status indicator will slowly flash a blue light. At this time, the ventilator enters the linkage mode, setting the ventilator into the primary role. (Figure 14)

Secondary Ventilator Setup
In the OFF state, press the mode button for 5 seconds. The status indicator will slowly flash a green light. At this time, the ventilator enters the linkage mode, setting the ventilator into the secondary role. (Figure 15)

Pairing of ventilators occurs automatically within 1 minute of the linkage mode. For a successful pairing, the ventilators need to be within the suggested signal distance in order for the units to connect (Figure 16 on page 14). The status lights of the paired ventilator will change to blue (ON), indicating a successful pairing. If the pairing fails, status lights on the ventilators will flash for one minute and then light-off automatically.

Primary/Secondary Ventilator Reset and Cancellation
In the OFF state, press the fan speed button of the ventilator for 5 seconds. The status indicator will slowly flash a blue light. At this time, the ventilator enters the linkage mode. Wait for the status indicator to light-off automatically. The ventilator is disconnected and unpaired. The ventilator has been reset to the default factory state.

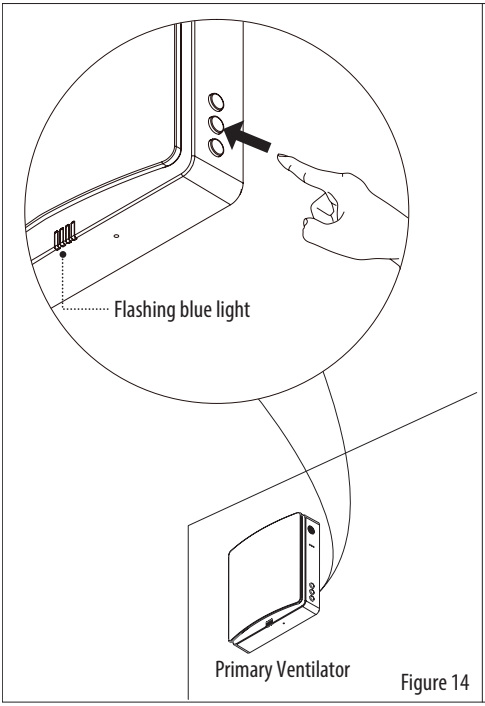


Figure 14

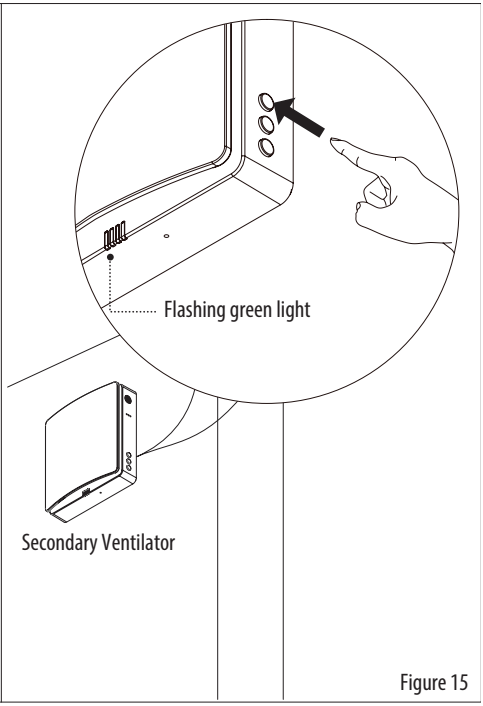


Figure 15

PAIRING SYNCHRONIZATION FUNCTION

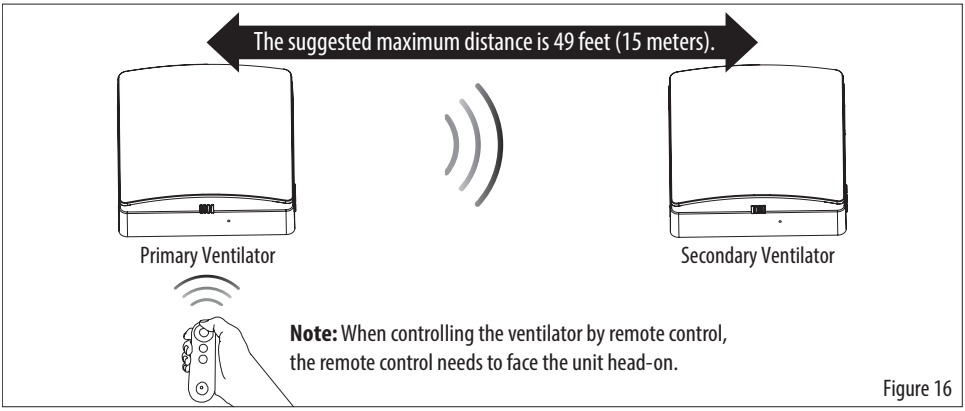


Figure 16

1. One remote control can control one or more ventilators without pairing the units.
2. After pairing the ventilators, the remote control will only control the primary ventilator. A synchronization signal is sent from the primary ventilator to the secondary ventilator. The primary ventilator can only control one secondary ventilator alone.
3. In regeneration mode, the secondary ventilator operates in the opposite direction of the primary ventilator.
4. In any other mode, the direction of the secondary ventilator is the same as the primary ventilator.

Note:

- The maximum linear unobstructed communication signal distance between primary and secondary ventilators is 49 feet (5 meters).
- The signal from the primary ventilator to the secondary ventilator can pass through a 7-inch (180- millimeter) thick brick wall.

REMOTE CONTROL

NOTICE **This remote control uses infrared signals.**

1. Insert the battery (type CR2025) into the remote control before use. The battery is not provided.
2. Replace the battery cover, turning it clockwise as shown. The cover is locked when the cover arrow aligns with the locking pattern (Figure 17). To avoid injury, do not tighten the cover with bare hands.
3. To remove the battery, turn the cover counterclockwise until the arrow on the cover aligns the unlocking pattern. The battery can then be removed.
4. Please store the remote control properly to prevent children from swallowing batteries and causing accidents.

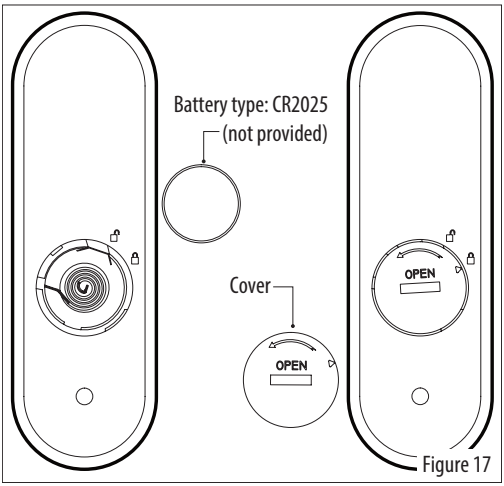
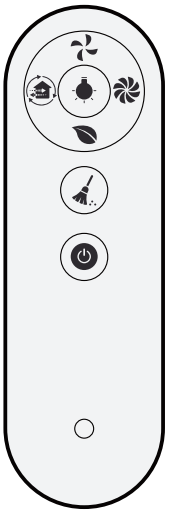


Figure 17

REMOTE CONTROL



ON/OFF BUTTON
Turns the ventilator ON or OFF.

INDICATOR LIGHT ON/OFF
Light indicates rather the ventilator is ON or OFF.

FILTER RESET
Resets the filter replacement time (720 hours).
After replacing the filter, press the button for 5 seconds. The red light will flash three times on the ventilator, reseting the time.

FAN SPEED
Changes the (low, medium, or high) speed of the fan.

WORKING MODE
Adjusts the (supply, exhaust, or regeneration) mode of the ventilator.

FAN BOOST MODE
Sets the fan into boost mode, operating the fan at maximum power. After 30 minutes, the boost mode automatically turns off.

NEGATIVE ION ON/OFF
This feature is not available with this model.

APP DOWNLOAD

Scan the QR code on the right to download the app, or search for "Smart Vent" in the Apple or Google Play store to install the app.

Use the device's WIFI connection to control the ventilator with the mobile app.

If you want to use the smart speaker voice control function, please scan this QR code to download the app, or search "Smart Life" in the Apple or Google Play store to install the app.

Download and install using the device's WIFI connection. It is available for the mobile app to control the ventilator and support Google and Alexa Smart Speaker control function.

IoT NETWORKING OPERATION

Before enabling IoT networking operation, ensure the following steps.

1. Turn on the Bluetooth function of mobile device, and connect mobile device to the home WIFI.
2. Ensure WIFI is enabled for 2.4 G network.
3. The ventilator and mobile device must be within WIFI range.

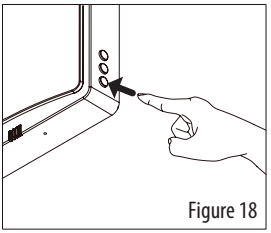


Figure 18

Connect the ventilator to the app as follows:

1. In the OFF state, hold the ON/OFF button of the device for 5 seconds (Figure 18). The status indicator will slowly flash red, indicating the device has entered the WIFI distribution state. The mobile device is now available for operation and connection.
2. Open the Smart Vent app and enter the operation page. Select 'Add Device' (Figure 19).
3. After the app discovers the device, select 'Add' next to the device for network connection (Figure 20).
4. Choose the WIFI name, ensuring it is the same as the name of the WIFI connection to your mobile device. Log in with the WIFI password (Figure 21).
5. Select the added device (Figure 22) to enter the operation page. See page 17 for details on operating the ventilator with the app.

Remove the ventilator from the app as follows:

1. Select the device that needs to be disconnected from the operation connection page. The option to remove the device will appear at the bottom (Figure 23).
2. Click on the 'Remove Device', disconnecting the device from the WIFI.

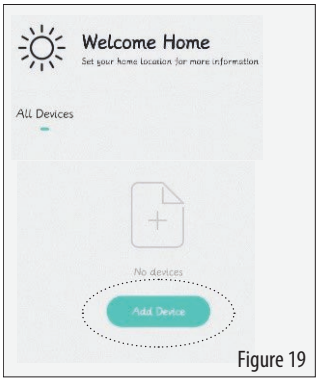


Figure 19

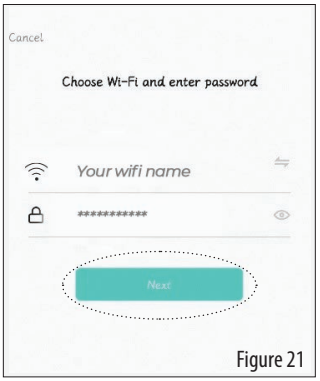


Figure 21

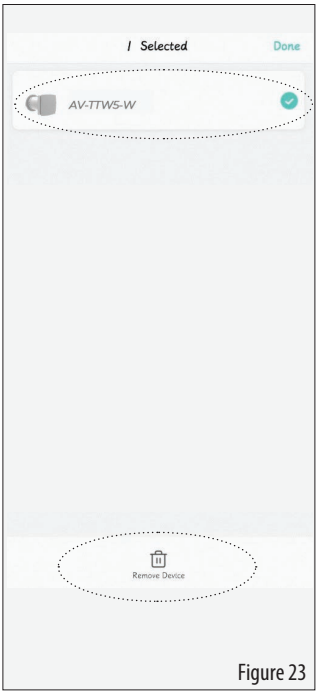


Figure 23

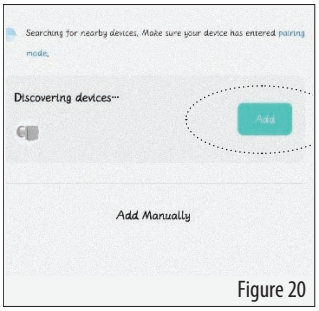


Figure 20

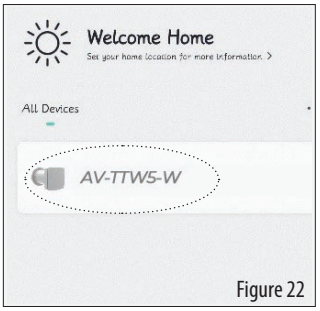


Figure 22

IoT NETWORKING FUNCTIONS

CO2 Version

Pairing. Icon appears after pairing. The secondary ventilator is off line and can not be operated.

Filter alarm. Icon reminds users to clean or replace filters, disappearing after a reset.

CO2 threshold. Users can set indoor CO2 levels from 400 to 2000 ppm. If CO2 concentration exceeds the set value during the operation of regeneration mode, the ventilator will switch to supply mode. Fresh air is introduced until CO2 is lower than the set value. The ventilator returns to its previous mode. CO2 Switch must be ON for this feature to work.

12-hour timer.

Power ON/OFF.

Operating mode (3-modes).

CO2 switch ON/OFF.

Free cooling function ON/OFF.

Name. The APP can connect multiple ventilators. Each device will have a different name that users can change.

Outdoor temperature. In regeneration or supply mode, the temperature displays. In exhaust mode, the temperature is neither sensed nor displayed.

Free cooling. Users can set the outdoor temperature between 50°F to 84°F (10°C to 29°C) so that fresh air can be introduced without heat recovery in supply mode.

Real-time indoor CO2 concentration.

Remaining time after the scheduled shutdown.

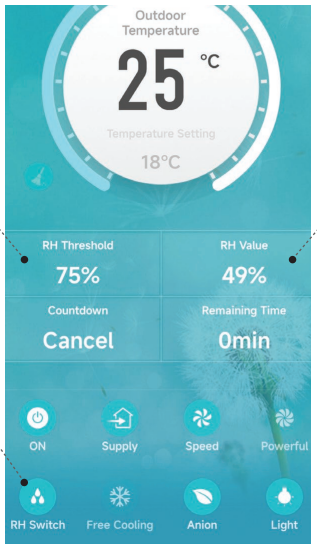
Fan boost function. The ventilator will supply/exhaust air at the highest speed.

Fan speed (3-speeds).

Indicator light ON/OFF.

Negative ion function ON/OFF.

Humidity Version (Optional)



Humidity setting. The ventilator switches from regeneration mode to exhaust mode when indoor humidity level exceeds the set value. The ventilator returns to the previous operation mode when the indoor humidity is <5% of the set range (40-95%).

Humidity function ON/OFF.

Real-time indoor RH concentration.

RECOMMENDED MAINTENANCE

⚠ WARNING Disconnect the ventilator from power mains prior to any maintenance operations. Working on or near energized equipment could result in death or serious injury.

After disconnecting the wires of the ventilation unit and the inner duct, remove the ventilation unit and the inner duct from the wall separately (Figure 24).

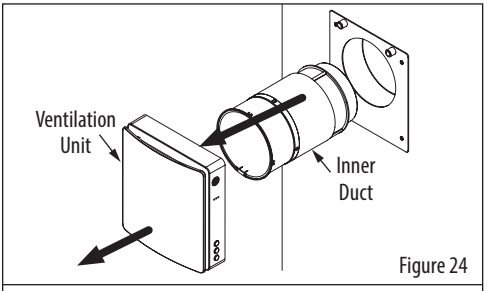


Figure 24

Filter Maintenance (Figure 25)
Gently pull the rope at both sides of the ceramic energy regenerator and F7 filter, removing them from the inner duct. The ceramic energy regenerator is fragile so use caution to avoid damage.

1. F7 filter is not washable and needs to be vacuumed or replaced when dirty. Replace the F7 filter after the filter alarm.
2. Clean the ceramic energy regenerator at least 4 times per year. Ceramic energy regenerator can be rinsed with water. Allow it to dry before re-installing.
3. Wash or vacuum the pre-filter at least 4 times per year. Allow it to dry before reinstalling it into the air duct. The rated service life of the pre-filter is about 3 years.

Contact seller to purchase replacement filter(s).

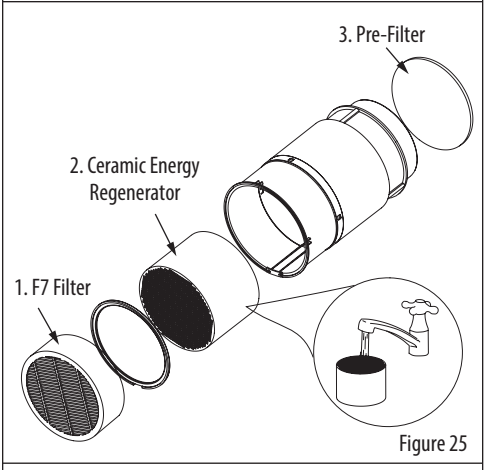


Figure 25

Fan Maintenance (Figure 26)
Remove the fixed bracket in the inner duct and take out the fan. Clean the impeller blades, using a soft brush, cloth, or vacuum cleaner. Do not use water, abrasive detergents, solvents, or sharp objects. The impeller blades must be cleaned once a year.

After reinstalling the inner duct and ventilation unit, reset the filter cleaning indicator by pressing and holding the filter reset button for 5 seconds. A red light will flash three times on the ventilation unit, indicating that the filter cleaning time has been reset.

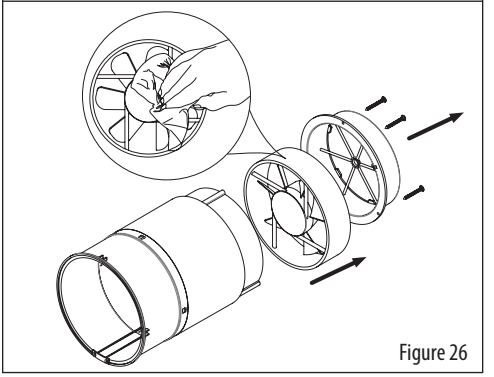


Figure 26

NOTICE Even regular technical maintenance may not completely prevent dirt accumulation on the regenerator assemblies. Subject the exchanger to regular cleaning to ensure high heat exchange efficiency. Clean the exchanger with a vacuum cleaner at least once a year.

TROUBLESHOOTING

Fault	Possible reasons	Troubleshooting
The fan fails to start	No power supply.	Consult wiring diagram to ensure proper connection.
	The motor is stuck, or the impellers are clogged.	Turn the ventilator off. Troubleshoot the motor jam and the impeller clog. Clean the blades. Restart the ventilator.
Low airflow	Low fan speed setting.	Set higher fan speed.
	Filter, fan or exchanger is dirty.	Clean or replace the filter. Clean the fan and the exchanger. See maintenance instructions (page 18).
Noise, vibration	The impeller is dirty.	Clean the impeller according to maintenance (page 18).
	Loose screw connection of the ventilator casing or the hood.	Tighten screws of the ventilator or the exterior hood.
Ventilator pairing failed	Primary and secondary ventilators are set by a different controller.	According to the manual, use the same remote controller for the primary-secondary ventilator settings.
	The ventilator is installed near sources of interference like excessive metal structures.	Sources of interference will weaken the wireless signal. Remove these sources of interference or change the installation location.
	The distance between primary and secondary ventilators is too long, or the wall between them is too thick.	Change the installation location according to the distance specified in the manual.
	Other	Reset the primary-secondary setting (press and hold the RESET button for ten seconds). Set it again after a period of power off.
WIFI connection failed	The mobile phone is connected to the WiFi 5G network.	Switch to the 2.4G frequency/network to connect.
	Wrong WiFi connection (WiFi needs to be registered and logged in).	Please set up the WiFi router correctly.
	The router has not yet set up an account and password.	
	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.

STORAGE AND TRANSPORTATION

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

The storage environment must be free of aggressive vapors and chemical mixtures that may cause damage. Use lifting equipment for handling and storage operations to prevent damage. Fulfill the handling requirements for the applicable freight type. Transportation by any type vehicle is allowed, provided that the ventilator is protected against mechanical and weather damage. Avoid any mechanical shocks during handling.

ACCEPTANCE CERTIFICATE

The ECO-FLO Plus has been duly certified as serviceable.

☐ ECO-FLO Plus

Manufactured on (date)

Date of sale

Sold by

(name of trading enterprise, stamp of store)

CONNECTION CERTIFICATE

Company name

Electrician name

Date

Signature

Due to constant product improvements, some models may differ slightly from those portrayed in this manual.