



better AIRFLOW by DESIGN™

Installation & Maintenance



***ECO-FLO
ENERGY RECOVERY VENTILATOR***

READ AND SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

SAFETY INSTRUCTIONS

NOTICE

The ECO-FLO Energy Recovery Ventilator is not explosion proof and should not be used when a potentially explosive situation exists.



WARNING

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, INJURY TO PERSONS, PLEASE READ THESE INSTRUCTIONS CAREFULLY

1. Disconnect the ventilator from power mains prior to any installation or maintenance operations.
2. Use this ventilator only in the manner intended by the manufacturer. If you have questions, contact the factory.
3. A qualified person(s) must perform installation work and electrical wiring in accordance with all applicable codes and standards, including fire-rated construction codes and standards.
4. While installing the ventilator, follow the safety regulations specified to the use of electric tools.
5. The installation location of the ventilator must prevent unauthorized access by unattended children.
6. Do not use damaged equipment or cables when connecting the ventilator to power mains.
7. Do not lay the power cable of the ventilator in close proximity to heating equipment.
8. Protect electric parts of the ventilator against ingress of water. Do not touch the ventilator's controls or carry out installation and maintenance operation with wet hands. Do not wash the ventilator with water.
9. The ventilator should never be operated in an area where there are hazardous and/or explosive vapors.
10. Do not direct the airflow produced by the ventilator toward open flame or ignition sources.
11. When cutting into walls, take care not to damage electrical wires and other hidden utilities.
12. Disconnect the ventilator from power supply and contact the Seller if unusual sounds are generated or smoke is emitted.
13. The ventilator must be grounded.



CAUTION

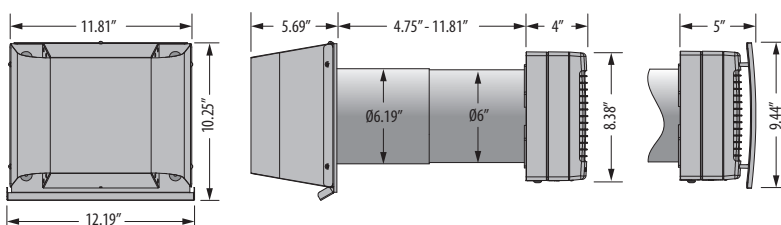
1. Check for any visible damage to the ventilator before installing it. The housing internals must be free of debris, which can damage the impeller blades.
2. For general ventilating use only. To avoid motor damage and noisy and/or unbalanced impeller, keep the ventilator clean from drywall spray, construction dust, etc.
3. Misuse of the ventilator and/or any unauthorized design alterations or modifications voids the warranty.
4. Avoid damaging the power cable. Do not bend or put foreign objects on the power cable.
5. For interior use only. Do not use where ambient temperature ranges from -4 F/-20 C up to 122 F/50 C. Relative humidity shall not exceed 80%. Do not operate the ventilator in aggressive or explosive environments.
6. Not for installation or operation by any person that is unable to follow these safety guidelines.
7. Do not open the ventilator during operation.
8. To ensure optimal airflow, do not close or block the ventilator's inlet or outlet. Do not sit or put objects on the ventilator.
9. In case of continuous operation of the ventilator, periodically check the security of mounting.

ECO-FLO ENERGY RECOVERY VENTILATOR

The ECO-FLO energy recovery ventilator is designed for through-the-wall mounting. The telescopic design enables its installation in walls with various thickness (4.75" to 11.81").

The delivery set includes:

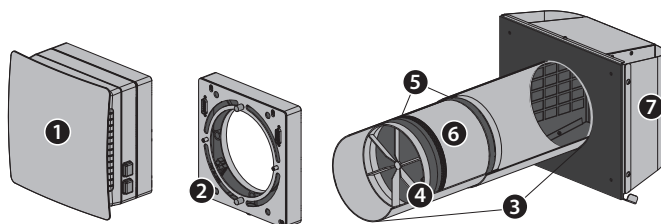
- Ventilator – 1
- Set of small wall anchors and steel screws for the fan – 1
- Set of large wall anchors and brass screws for the hood – 1
- Remote control – 1
- Installation & Maintenance Manual



PERFORMANCE										
MODEL	THERMAL RECOVERY	SPEED	RPM	WATTS	AMPS	CFM	SONES @ 1M	SONES @ 3M	SONES (OUTDOOR)	POWER SUPPLY
ECO-FLO*	90%	Low	610	3.80	0.024	8	0.4	0.2	0.4	120 V 60 Hz 1 Phase
		Med	800	3.96	0.026	16	0.7	0.4		
		High	1450	5.61	0.039	32	1.0	0.5		

*Manufacture Code: RA1-50-2

IP24 protection



1. **Ventilation Unit** must be installed on inner side of the wall. It is equipped with an automatic shutter that closes the air duct during ventilation standby and prevents air backdraft.
2. **Mounting Plate** is used for installation of the ventilation unit on the wall and connecting it to power mains.
3. **Telescopic Duct** with adjustable length is where the airflow straightener, ERV core and filters are located.
4. **Airflow straightener** eliminates air turbulence inside the ventilator.
5. **Air Filters** are designed to purify supply air and prevent the ingress of foreign objects into the ERV core. Filters also prevent ERV core soiling.
6. **ERV Core** extracts heat from exhaust air to warm up supply airflow. The cord laid inside the ERV core is designed to remove the core from the ventilator. The ERV core is heat insulated with a specially designed insulating material.
7. **Exterior-Mounted Hood** must be installed on the outer side of the wall. It directs air discharge and prevents the ingress of water and other objects into the ventilator.

ECO-FLO ENERGY RECOVERY VENTILATOR

The ventilator is rated for continuous operation.

OPERATION MODES

1. Natural Airflow

- Shutter is open; fan does not run.
- Air flows freely through ventilator and is purified by filters.

2. Supply Mode

- Ventilator continuously draws in fresh air from outside.
- Air is purified by the filters.

3. Ventilation Mode

- Ventilator operates in permanent supply or extract mode.
- Synchronized units can provide balanced ventilation.

4. Regeneration Mode

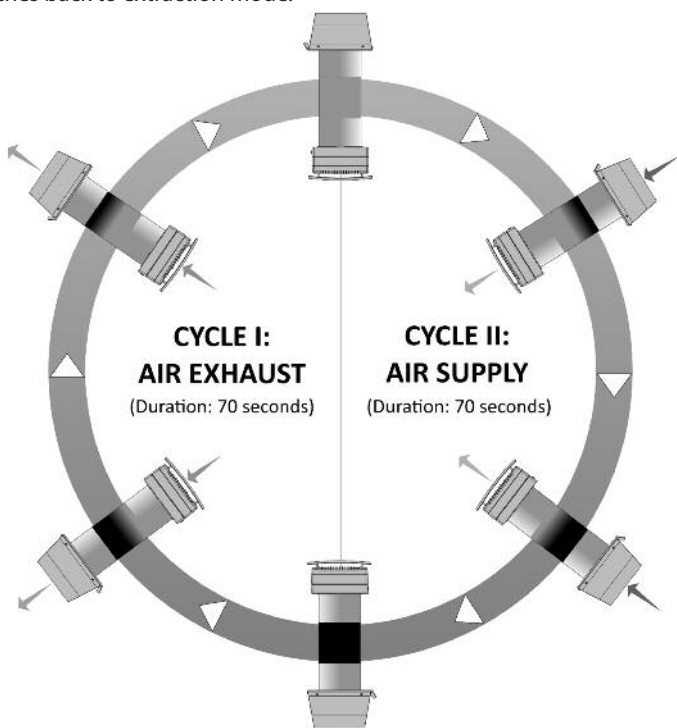
- Ventilator alternates between supply and exhaust every 70 seconds.
- Thermal energy is recovered, and the humidity setting is maintained.

Cycle I.

Warm stale air is extracted from the room. It heats and moisturizes the ERV core, transferring up to 90% of thermal energy. In 70 seconds, the ventilator switches to supply mode.

Cycle II.

Fresh outside air flows through the ventilator, absorbing the accumulated moisture and thermal energy in the ERV core and supplying warmed air into the room. In 70 seconds, the ventilator switches back to extraction mode.



INSTALLATION

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

⚠ CAUTION The ventilator must not be installed in sites where the air duct may be clogged by blinds, curtains, drapes, etc. to prevent dust deposition and accumulation. Also, curtains can impede the normal circulation of air in the room, making the operation of the ventilator ineffective.

1. Prepare a round through hole in the outer wall. The hole size is shown in Figure 1. While preparing the hole, consider the method of laying the power cable and provide a recess for the cable layout to enable connection of several ventilators in series.
2. Install the telescopic duct inside the wall, center the air duct using the mounting plate, and seal it with mounting foam as shown in Figure 2.

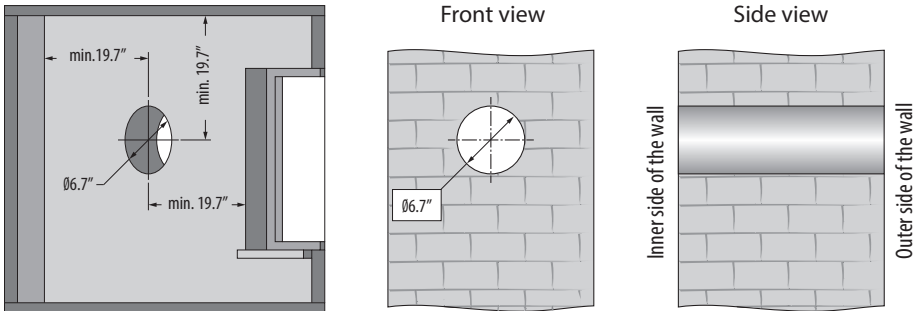


Figure 1

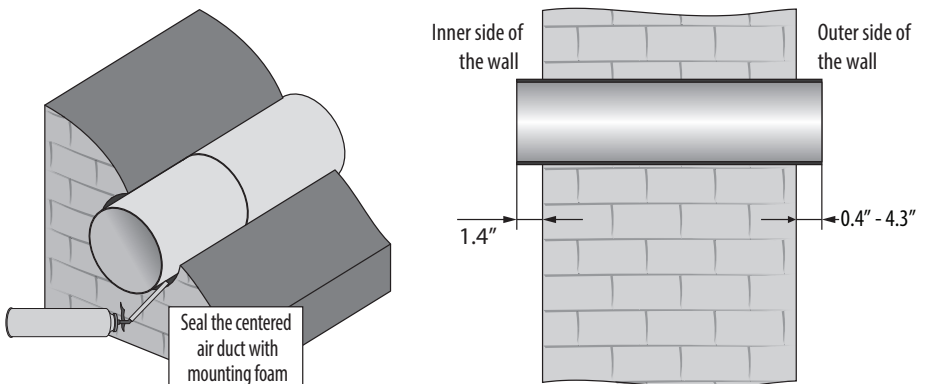


Figure 2

INSTALLATION

3. Position the mounting box against the wall and mark 4 holes for the wall anchors.
4. Install the mounting plate using the small wall anchors as shown in Figures 3-4.
5. Fix the mounting box to the wall with the steel screws as shown in Figures 5.
6. Consecutively install the filter, ERV core, second filter, and airflow straightener as shown in Figure 6.
7. Attach the ventilation unit to the mounting plate as shown in Figures 7-8.

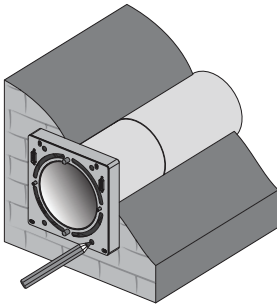


Figure 3

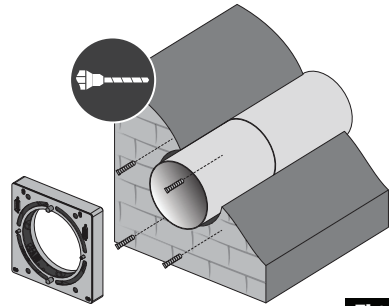


Figure 4

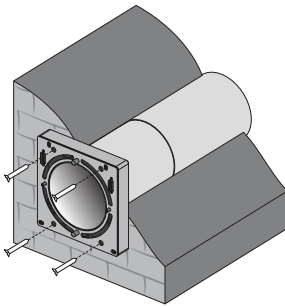


Figure 5

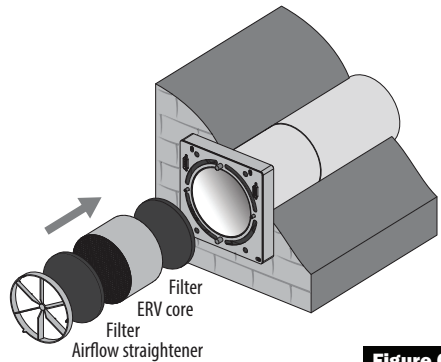


Figure 6

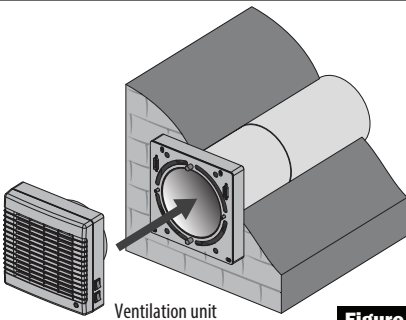


Figure 7

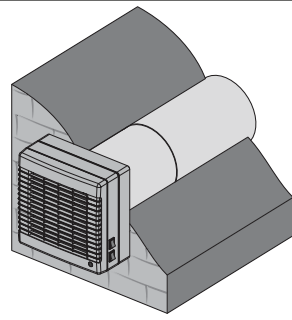


Figure 8

INSTALLATION

8. Mark the fastening holes for the exterior-mounted hood and drill holes for the wall anchors as show in Figure 9. For convenience of marking, use the back part of the exterior-mounted hood.
9. Insert the large wall anchors into the holes.
10. Disassemble the exterior-mounted hood to enable access to the fastening holes. Remove 5 screws and take off the front part of the exterior-mounted hood as shown in Figure 10.
11. Fix the back part of the exterior-mounted hood on the wall with the brass screws as shown in Figure 11.
12. Install the front part of the exterior-mounted hood as shown in Figure 12.

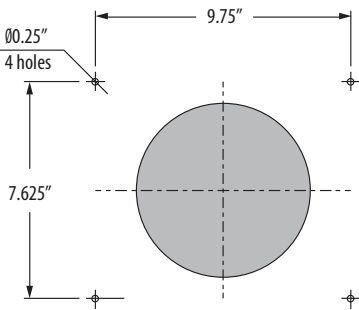


Figure 9

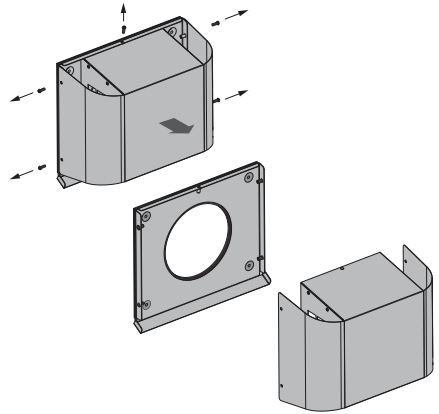


Figure 10

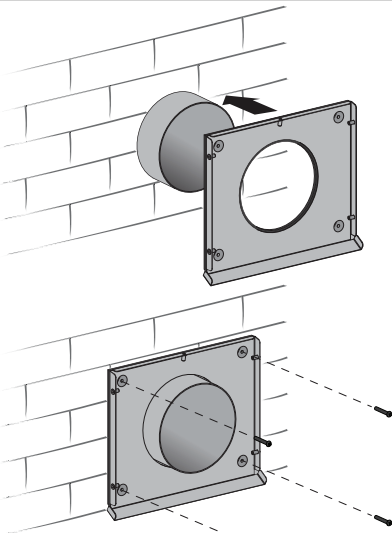


Figure 11

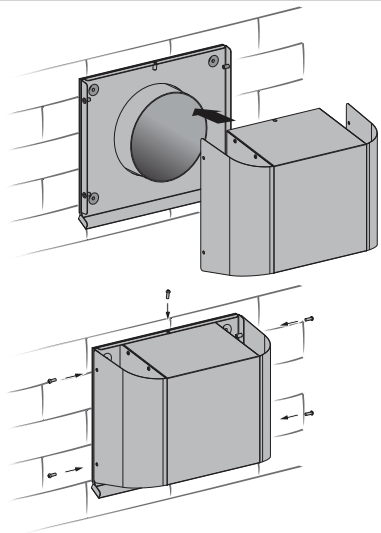
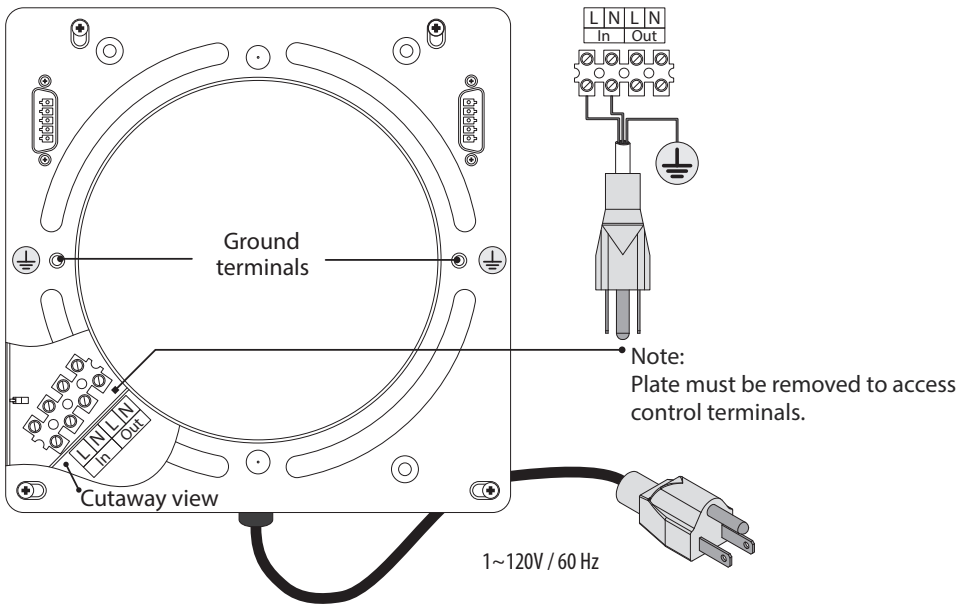


Figure 12

WIRING DIAGRAMS

⚠ WARNING Make sure to disconnect the ventilator from power mains prior to installation. Only qualified person(s) should work on electrical equipment. Working on or near energized equipment could result in death or serious injury.

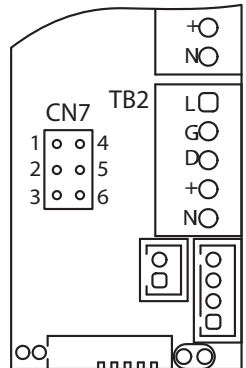
⚠ CAUTION The rated electrical parameters of the ventilator are given on the manufacturer's label. Any tampering with the internal connections is prohibited and will void the warranty. The ventilator is rated for connection to a single-phase AC 1~120 V/60 Hz. For this reason, the power cable with plug is connected by the manufacturer. Connect the ventilator to power mains through the external circuit breaker with a magnetic trip integrated into the fixed wiring system.



VENTILATION MODE SETTING

The jumper between contacts (1 and 2) or (2 and 3) of CN7 socket connector determines airflow direction in Ventilation mode. The circuit board of the controller is located inside the ventilation unit.

- If the jumper connects the contacts (1 and 2), air is **Extracted** from the room in Ventilation mode (factory setting).
- If the jumper connects the contacts (2 and 3), air is **Supplied** in the Ventilation mode.

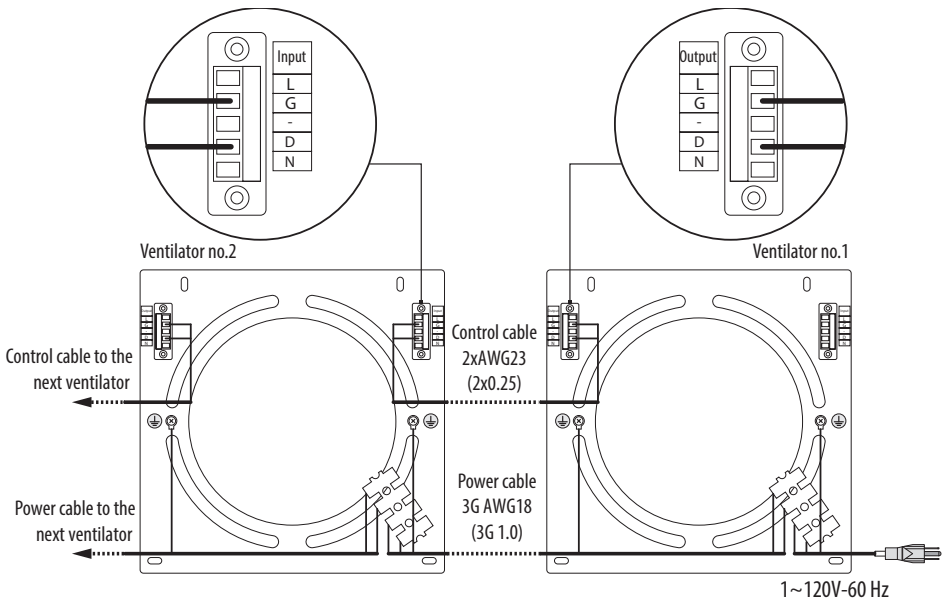


WIRING DIAGRAMS

CONNECTION OF VENTILATORS IN SERIES

When ventilators are connected in series, all connected ventilators are controlled with the first ventilator and a remote control. To connect ventilators in series, refer to the wiring diagram below. Connect the second ventilator with the third ventilator in the same way, etc. Up to 10 ventilators may be connected in series.

Use a 3G AWG18 (3G 1.0) cable and a 2xAWG23 (2x0.25) control cable (not included in the delivery set). The cables must be rated for operation with an alternating current power supply and the country-specific mains voltage. Disconnect the power cable while connecting the second, third, etc. ventilator in series.



(Backside view, the terminal block is shown schematically)

CONNECTION OF MORE THAN 10 VENTILATORS IN SERIES

When connecting more than 10 ventilators in series, power is supplied to the 11th ventilator from power mains (L and N terminals), not from the previous ventilator. The control signals G and D from the 10th ventilator are transferred through the cable 2xAWG23 (2x0.25). The ventilators no. 12...20 are connected to the ventilator no. 11 in the same way as the ventilators no. 1...10. All the connected ventilators are controlled with the ventilator no. 1.



WARNING

All the ventilators connected in series must be grounded!

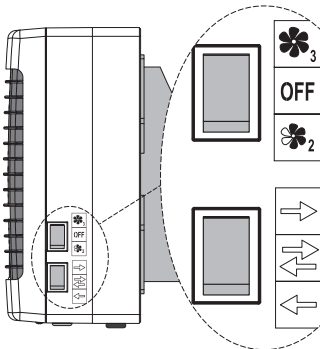
VENTILATOR CONTROLS

The ventilator is operated with either the remote control or the buttons on the ventilator casing.

The buttons on the ventilator casing have limited functionality: only the medium and high speeds can be activated; only three of the four modes of operation may be set.

The remote control has wider control capabilities. Guaranteed range of the remote control is 3 ft to the receiver, which is located on the casing of the ventilator. The ventilator stores the current operation mode and, in case of power failure, returns to this mode when power is restored.

VENTILATOR CONTROL



SPEED SELECTION SWITCH

High Speed (3) - Ventilator operates at maximum air capacity.

OFF - Ventilator does not operate. Shutter is closed.

Medium Speed (2) - Ventilator operates at 50% air capacity.

OPERATION MODE SWITCH

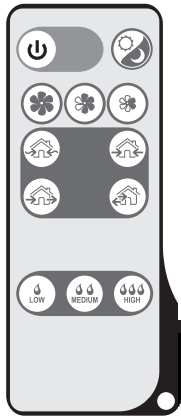
Ventilation Mode - Ventilators operate in either extract or supply mode, depending on CN7 jumper position.













Regeneration Mode - Ventilators switch every 70 seconds between supply and extraction, providing heat regeneration and humidity control.

Supply Mode - Ventilators operate in supply mode, irrespective of CN7 jumper position.

REMOTE CONTROL

Set the Speed Selection above to **OFF** and the Operation Mode to  to enable remote control.



1. Power Button		2. Night Mode (ON/OFF)	
		When activated, ventilator switches to low speed when room light is turned off. Activation is confirmed by a long sound signal. 	
3. Speed Selection			
 High		 Medium	
		Low 	
4. Operation Mode			
 Natural Airflow Shutter is open; fan does not run.		Supply Mode  Ventilators operate in supply mode, irrespective of CN7 jumper position.	
 Ventilation Mode Ventilators operate in either extract or supply mode, depending on CN7 jumper position.		Regeneration Mode  Ventilators switch every 70 seconds between supply and extraction, providing heat regeneration and humidity control.	
5. Humidity Control (May be activated with only the remote control)			
 45% Humidity		 55% Humidity	
		65% Humidity 	
Humidity Control is possible only in Regeneration mode. Select desired Humidity Control set point. If humidity exceeds the selected set point, ventilator switches to a higher speed. After reaching the desired humidity level, ventilator switches to a lower speed. Press any speed switch to deactivate Humidity Control.			

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.

Maintenance of the ventilator means regular cleaning of its surfaces of dust, and cleaning or replacing its filters.

1. Ventilation unit inspection and cleaning (once per year)

Take off the ventilation unit and clean the fan blades as shown in Figure 13. Remove dust with a soft brush, cloth or vacuum cleaner. Do not use water, abrasive detergents, solvents or sharp objects.

2. ERV core and filter maintenance (3-4 times per year)

- a) Remove the airflow straightener, first filter, ERV core and second filter from the telescopic duct as shown in Figure 14. To remove the ERV core, pull the specially designed cord and use caution to avoid damage.
- b) Clean filters as they get soiled, at least once every three months.
 - After 90 days of operation, an alarm will sound indicating it is necessary to switch off the ventilator and replace or clean the filters.
 - Wash the filters and let them dry. Only install dry filters in the air duct.
 - Vacuum cleaning is allowed.
 - The filter rated service life is 3 years. For new filters contact the Seller.
- c) Some dust may accumulate on the ERV core even in case of regular maintenance of the filters.
 - Regularly clean the ERV core for maximum ventilator efficiency.
 - Vacuum the ERV core at least once per year.
- d) To reset the timer, install the airflow straightener, ERV core and filters into the ventilator and then press and hold the power button for 10 seconds. A long sound signal confirms that the timer has reset.

3. Exterior-mounted hood maintenance (once per year)

- a) The exterior-mounted hood may get clogged with leaves and debris, which may reduce the ventilator's performance. Check the exterior-mounted hood twice a year and clean it as often as required.
- b) To clean the exterior-mounted hood, disassemble it as shown in Figure 15 and then clean the hood and air duct.

4. Replacement of the remote control battery

- a) Replace the battery of the remote control after prolonged use.
- b) If the ventilator does not respond to the commands from the remote control, it is a signal to replace the battery (type: CR2025).
- c) To replace the battery of the remote control, remove the battery holder, replace the battery, and reinstall the holder as shown in Figure 16.

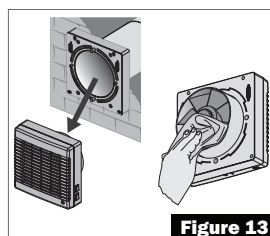


Figure 13

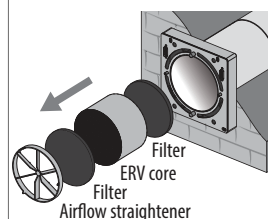


Figure 14

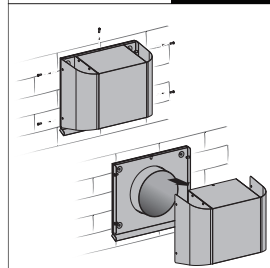


Figure 15

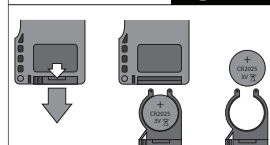


Figure 16

TROUBLESHOOTING

⚠ WARNING Only qualified personnel should work on electrical equipment. Working on or near energized equipment could result in death or serious injury.

1. If the fan fails to start, consult wiring diagram to ensure proper connection.
2. Check the incoming supply for proper voltage.
3. If the circuit breaker trips during start-up, turn off the ventilator and contact the Seller.
4. If the fan fails to start:
 - Lock electrical service to the fan in the "OFF" position.
 - Verify that the motor isn't jammed and impeller isn't clogged.
 - Verify that the impeller blades aren't soiled. Clean the blades according to the Recommended Maintenance section (page 11) in this manual.
5. If the fan experiences low airflow:
 - Adjust to a higher fan speed.
 - Clean or replace the filters, and clean the fan and ERV core according to the Recommended Maintenance section (page 11) in this manual.
6. If noise or vibration occurs:
 - Tighten screws of the ventilator and exterior-mounted hood.
 - Clean or replace the filters, and clean the fan and ERV core according to the Recommended Maintenance section (page 11) in this manual.
7. If fan fails to start, please contact Seller.

ACCEPTANCE CERTIFICATE

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

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.

ECO-FLO-I&M-1803

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