fantech®
a systemair company

Installation, Operation and Maintenance Instructions EN

HERO Series

Heat/Energy Recovery Ventilator (HRV/ERV)



2100 HVI CERTIFIED

C SA US

ENERGY STAR

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1 Introduction

1.1 Product Description

This product is a Heat Recovery Ventilator (HRV) or an Energy Recovery Ventilator (ERV).

The casing is made from galvanized steel.

It is insulated with 3/4 in. (20 mm) high density expanded polystyrene.

These products earned the ENERGY STAR® logo by meeting strict energy efficiency guidelines set by Natural Resources Canada and the US EPA. It meets ENERGY STAR requirements only when used in Canada.

To ensure quiet operation of ENERGY STAR certified H/ERVs, each product should be installed using sound attenuation techniques appropriate for the installation.

The way your heat/energy-recovery ventilator is installed can make a significant difference to the electrical energy you use. To minimize the electricity use of the heat/energy-recovery ventilator, a stand-alone fully ducted installation is recommended. If you choose a simplified installation that operates your furnace air handler for room-to-room ventilation, an electrically efficient furnace that has an electronically commutated (EC) variable speed blower motor will minimize your electrical energy consumption and operating cost.

Installation of a user-accessible control with your product will improve comfort and may significantly reduce the product's energy use.

1.2 Intended Use

This product is intended for residential use only.

1.3 Document description

This document contains instructions for installation, operation and maintenance of the product. The procedures must be done by approved personnel only.

Speak to Fantech for more information on how to install the product in different installation locations.

1.4 Fantech Warranty

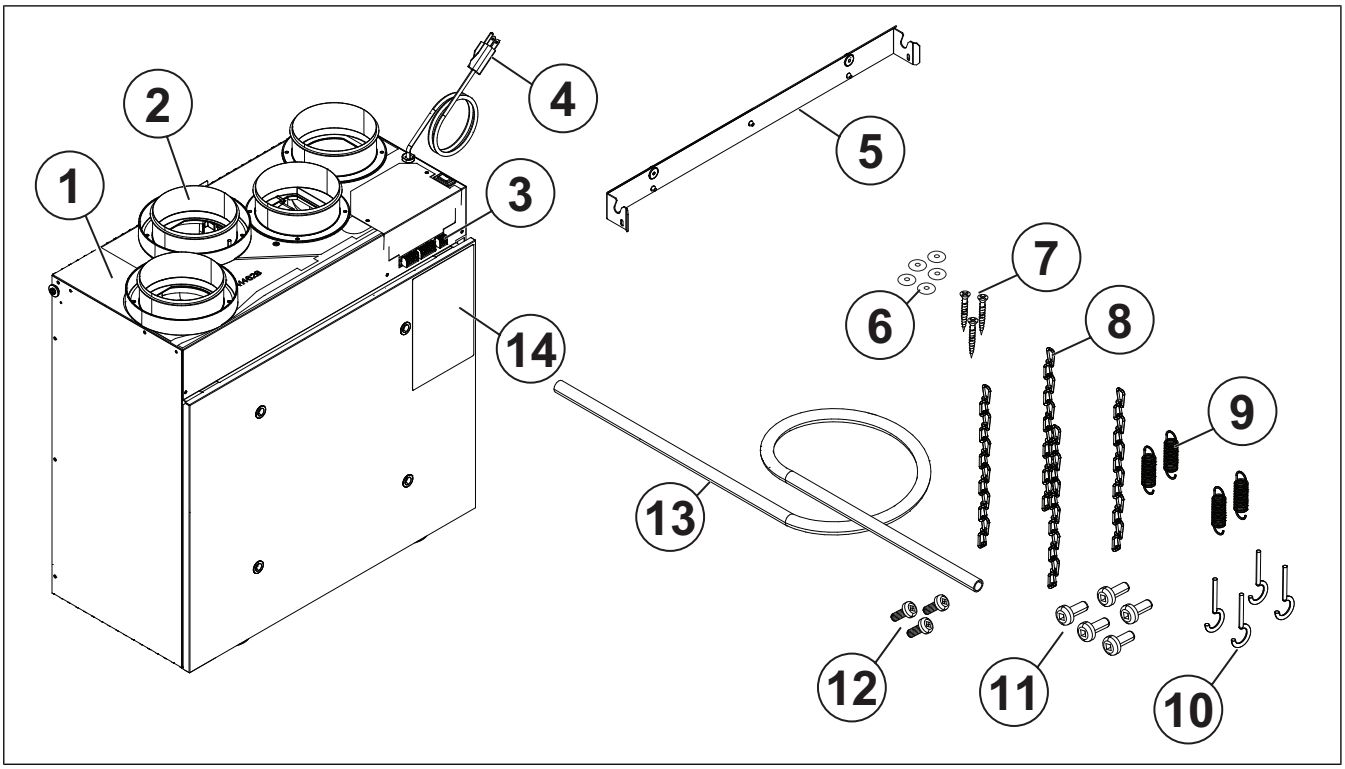
Use the QR code above to get access to Fantech's warranty in English or French.

The HRV products have a 7–year limited warranty on the fan motors, a 5–year limited warranty on the electrical components and the damper motor, and a lifetime limited warranty on the core.

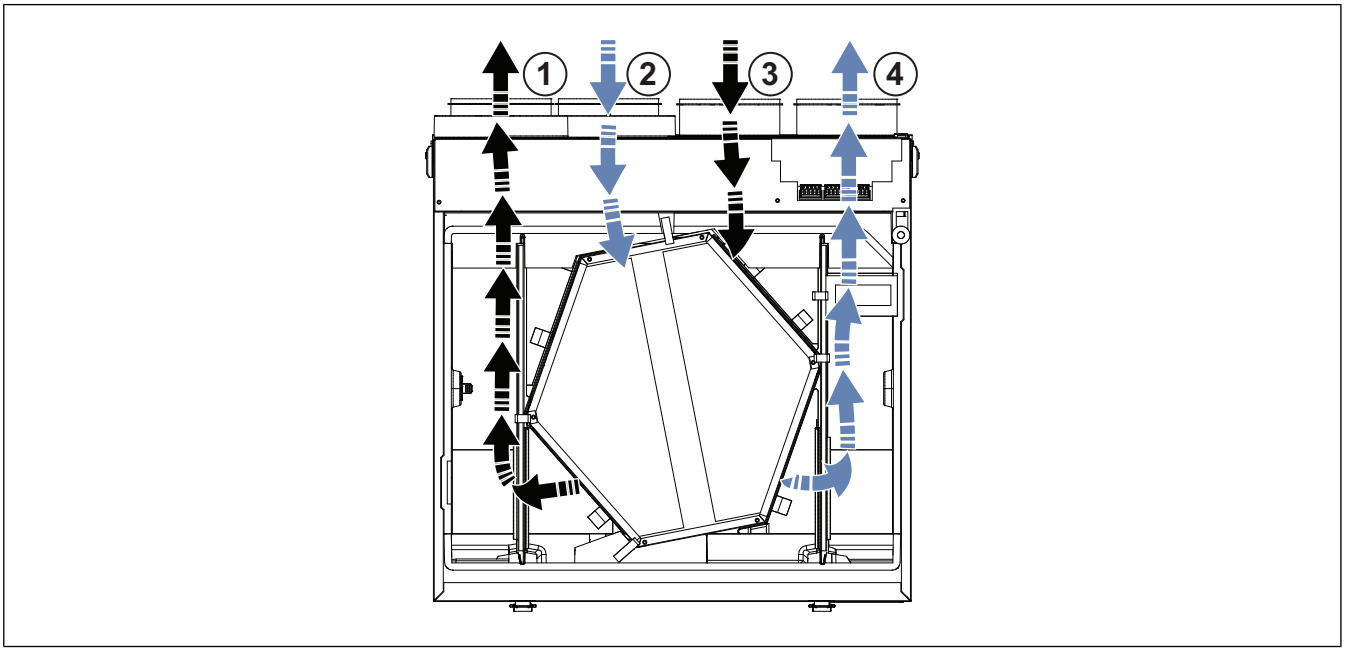
The ERV products have a 7–year limited warranty on the fan motors, and a 5–year limited warranty on both the electrical components and core.

If additional support is needed to retrieve the warranty, visit Fantech.net; call (800) 747–1762 (US), (800) 565–3548 (Canada), or +52 55 1328–7328 (Latin America); email support@fantech.net; or mail us at 10048 Industrial Blvd, Lenexa, KS 66215 United States or at 50 Kanalfläkt Way, Bouctouche, NB E4S 3M5 Canada.

1.5 Product Overview



1. Casing
2. Collars
3. Terminals
4. Power cord
5. Long bracket, quantity 1
6. Washers, quantity 5
7. Wood screws, quantity 3
8. Chains, quantity 4
9. Springs, quantity 4
10. Hook screws, quantity 4
11. Chain screws, quantity 5
12. Sheet-metal screws, quantity 3
13. Drain tube (HRV only), quantity 1
14. Balancing reference chart

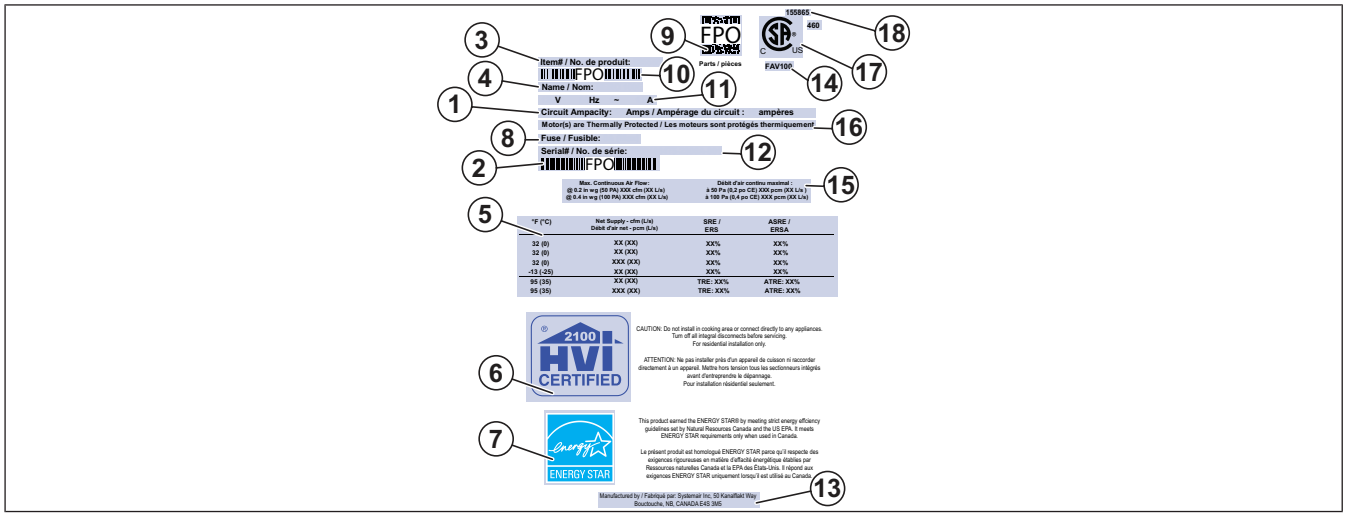


1. Stale air to outside
2. Fresh air from outside
3. Stale air from building
4. Fresh air to building

1.6 Name plate

Note:

Make sure the supply voltage corresponds to the product name plate.



1. Circuit Ampacity
2. Bar Code
3. Item Number
4. Name
5. Performance Table
6. HVI Certified[1]
7. ENERGY STAR® Certified[2]
8. Fuse
9. QR Code
10. Bar Code
11. Volts, hertz, phase, amperage
12. Serial Number
13. Factory Location
14. CSA Model Designation
15. Maximum Airflow
16. Motor Protection
17. CSA Certified[1]
18. CSA File Number

1.6.1 Type Designation

Product Name	• HERO 100E, #525555 • HERO 120H, #99400	• HERO 140E, #599140 • HERO 150H, #99401 • HERO 200H, #99402
Duct Connection Dimensions in inches (mm.)	5 (125)	6 (152)
Motor Type	AC: Alternating Current, 1–phase	AC: Alternating Current, 1–phase

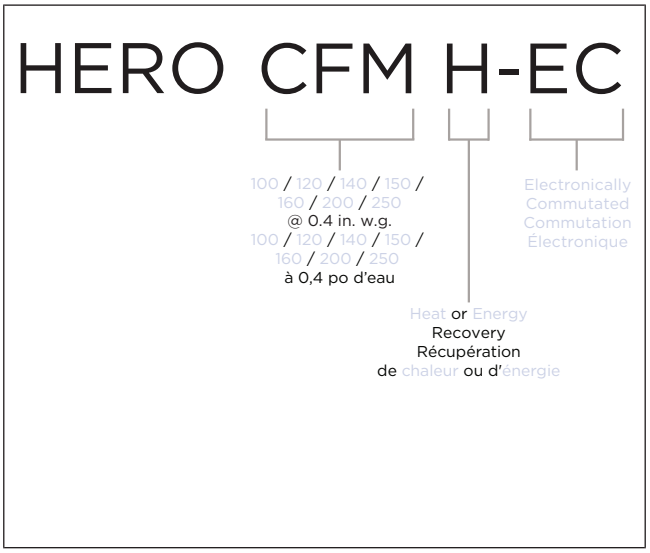
Product Name	• HERO 120E-EC, #579555	• HERO 150H-EC, #463253 • HERO 160E-EC, #599160 • HERO 250H-EC, #463254
Duct Connection Dimensions in inches (mm.)	5 (125)	6 (152)
Motor Type	EC: Electronically Commutated, 1–phase	

1. If applicable
2. If applicable

1.6.2 Nomenclature

Note:

Options are shown in blue:



2 Safety

2.1 Safety definitions

Warnings, cautions and notes are used to point out specially important parts of the manual.

Warning

If you do not obey these instructions, there is a risk of fatal injury or injury.

Caution

If you do not obey these instructions, there is a risk of damage to the product, other materials or the adjacent area.

Note:

Information that is necessary in a given situation.

2.2 Safety Instructions

Warning

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS - OBSERVE THE FOLLOWING:

- This product is for residential use only.
- Only qualified HVAC contractors, or equivalent, are allowed to install this product.
- Use applicable safety devices and personal protective equipment during all work on the product.
- Make sure that you can read all warning signs and labels on the product when it is installed. Replace labels that have damage.
- Do not install or operate the product if it is defective.
- Before installation, examine how this product will interact with combustion equipment (Forced Air Systems, Wood Stoves, etc.).
- Think about how this system will operate if connected to any other piece of mechanical equipment. For example, a forced air system or an air handler that operates at a higher static pressure.
- When you install the product, obey all applicable local conditions and laws, and fire-rated construction codes and standards. Make sure to install this ventilation system in accordance with the current edition of the National Building Code, and / or ASHRAE's "Good Engineering Practices". If there are no building code requirements, make sure to check with local authorities that have jurisdiction in your area for requirements before you install this product.
- If you install the product to the forced air system, use the balancing procedure in section 5.3 To Balance the Airflow to make sure that the forced air system and this product are compatible.
- Make sure that you know how to stop the product quickly in an emergency.
- Before you do work on the product, stop the product and wait until the fan impeller stops.
- Products are designed and manufactured to provide reliable performance, but they are not guaranteed to be

100% free of defects. Even reliable products will experience occasional failures, and this possibility should be recognized by the user.

- Do not put air return ducts, or air return openings, in closed spaces that have combustion appliances.



Caution

To decrease the risk of product malfunction or damage to the product or surrounding finishes and walls, read and obey the caution instructions that follow before you do work on the product:

- Always use spare parts from Fantech.
- Do not use this product for pool or spa applications.

3 Installation

3.1 To Do Before the Installation

Note:

Before you install this product, think about how this product will operate if it is connected to any other piece of mechanical equipment. For example, a forced air system or an air handler that operates at a higher static pressure, or vented combustion equipment such as gas and oil furnaces, wood stoves, and more.

After you install the product, use the 5.3 To Balance the Airflow section to measure the airflow of the connected equipment.

3.1.1 To Choose the Correct Location for the Product



Caution

Do not connect any appliances to the product as some appliances can cause lint, dust, or grease to collect in the product and damage it.

If you connect appliances to the product, you will void the warranty.

To see the warranty, refer to section 1.4 Fantech Warranty.

- Outdoor temperature is 13°F (-25°C) or less for 48 consecutive hours or more.
- Indoor relative humidity is at 40% or more.
- For more information, refer to section 3.5 To Mount the Product.

Note:

Obey the guidelines that follow to install the product:

- Indoors
- Near a power supply (120V, 60Hz).
- Where you can mount it onto support beams.
- In a space with a consistent temperature above 50°F (10° C).

  At a minimum, in a space with a consistent temperature above freezing.
- Where you can service the product easily.
- Near an exterior wall where you will mount the hoods.
- Away from primary areas of the home.[3]
- Where the air quality is sufficient for occupants.
- Where the product can drain easily.

Legend for Diagram	
English Terminology	Meaning
A	AHU return air duct
B	Exhaust air grille
C	Stale air to outside
D	Fresh air from outside
E	Fantech H/ERV
F	Supply air grille
G	Source exhaust

3. Fantech recommends to install this product in the mechanical room, in a air handling unit area, or in an attic/basement where applicable.

3.1.2 Overview of a Fully Dedicated Installation

Note:

This installation method is best for new construction applications.

A fully dedicated installation supplies fresh air to the primary areas and draws stale air from key areas of the home, such as the bathroom, kitchen, and/or laundry room, independently of the forced air system.

Fantech suggests to use this installation method for the applications that follow:

- Hydronic Baseboard
- In-floor Heating System
- Electric Baseboard
- Mini-split Heat Pump

Note:

Balance the airflow before you operate this product.

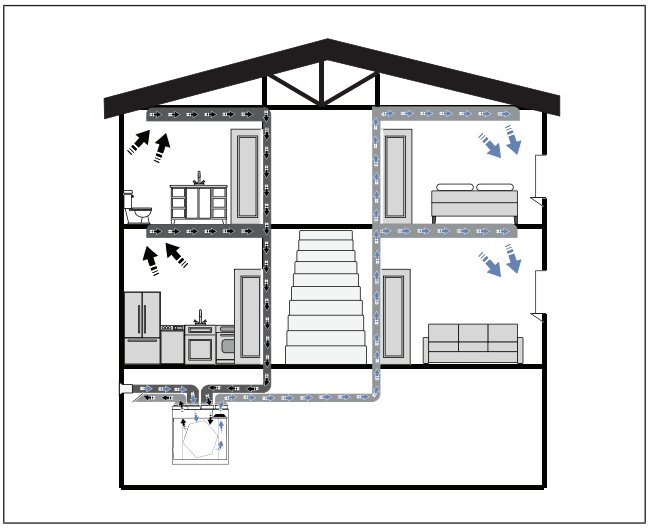
Refer to section 5.3 To Balance the Airflow.

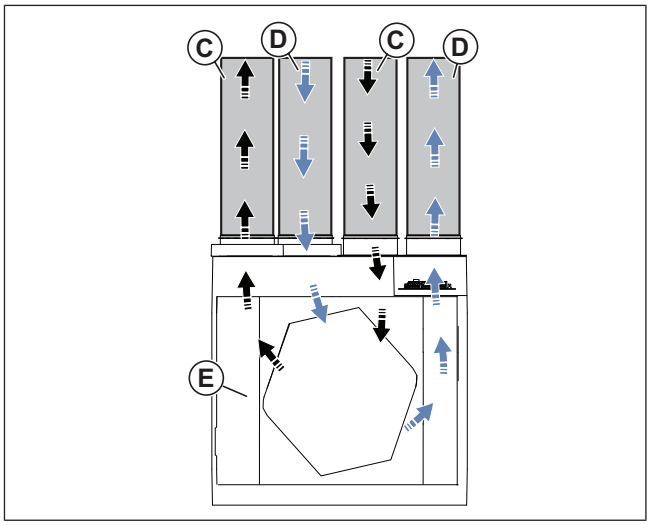
Note:

Other products may need a different duct layout then what is shown in this section.

Note:

To find where to put the airflow grilles, refer to section 3.2.1 To Position the Interior Grilles.





3.2 Overview of a Partially Dedicated Installation

Note:

A partially dedicated installation connects directly to the return plenum of the forced air system to deliver fresh air to the primary areas (Stale air is drawn from key areas of the home). As a result, this method tempers the fresh air before it is supplied throughout the home.

Fantech suggests to use this installation method for the applications that follow:

- When a direct connection to a forced air system is more favorable than a fully dedicated installation.
- When you are not able to supply fresh air independently to primary areas of the home.

Caution

If there is a multi-zone system, or if there is more than one forced air system, do not install this product in this manner.

Speak with Fantech technical support.

Caution

Make sure to operate the forced air system blower when ventilation from the product is necessary.

Make sure to set the forced air system to operate continuously or interlock it with the product (terminals NO, C, NC).



Refer to the table within section 6.1 Control Hierarchy / Operations.

Note:

Balance the airflow before you operate this product.

Refer to section 5.3 To Balance the Airflow.

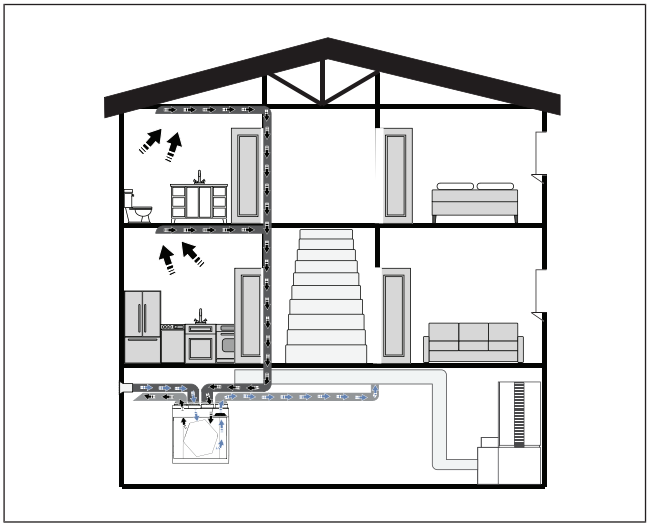
While you do this procedure, make sure the forced air system blower is ON. Operate the product on High (MAX) speed.

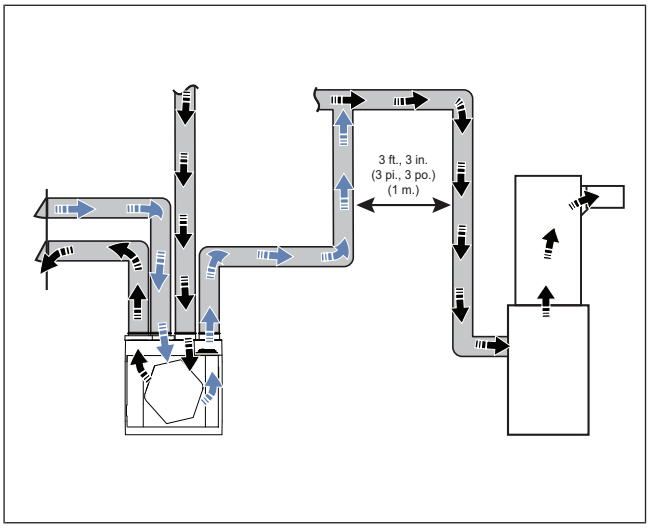
Note:

Other products may need a different duct layout then what is shown in this section.

Note:

To find where to put the airflow grilles, refer to section 3.2.1 To Position the Interior Grilles.





3.2.1 To Position the Interior Grilles

Note:

Use the sections that follow to select where to put the supply and exhaust grilles in your application.

In a Fully Dedicated System	In a Partially Dedicated System
• Supply Grilles – Connect all habitable rooms, including bedrooms and primary areas, to the fresh air port on the product. – Position these grilles high on the wall or on the ceiling. – Use grilles that diffuse air comfortably.	
• Exhaust Grilles – Connect rooms with typically bad air quality, such as bathrooms, kitchens, or laundry rooms, to the exhaust air port on the product. – Position these grilles high on the wall or on the ceiling.	• Exhaust Grilles – Connect rooms with typically bad air quality, such as bathrooms, kitchens, or laundry rooms, to the exhaust air port on the product. – Position these grilles high on the wall or on the ceiling.

3.3 Overview of a Simplified Installation

Note:

A simplified installation, or return/return method, connects both the supply air duct and the return air duct directly to the return plenum of the forced air system to remove stale air farther up on the plenum while it supplies fresh air directly into the forced air system.

Fantech suggests to use this installation method for the applications that follow:

- When a direct connection to a forced air system is more favorable than a fully dedicated system.

  When the bathroom and kitchen already have local exhaust systems.
- Retrofit applications where dedicated supply and exhaust ducts cannot be ported directly to their spaces.

Caution

If there is a multi-zone system, or if there is more than one forced air system, do not install this product in this manner.

Speak with Fantech technical support.

Caution

Make sure to operate the forced air system blower when ventilation from the product is necessary.

Make sure to set the forced air system to operate continuously or interlock it with the product (terminals NO, C, NC).



Refer to the table within section 6.1 Control Hierarchy / Operations.

Note:

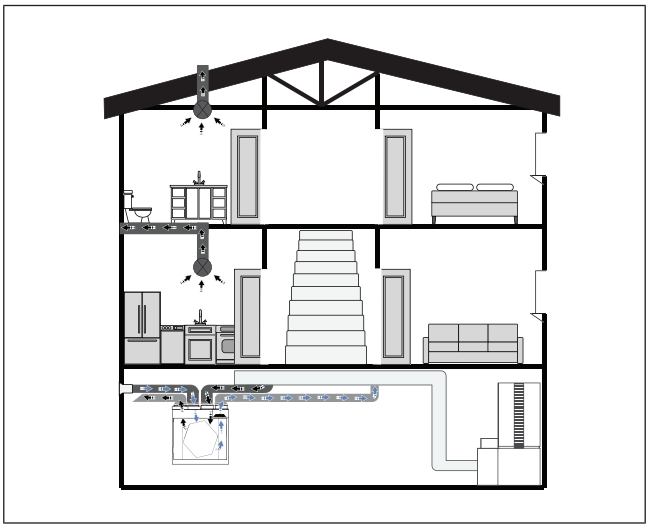
Balance the airflow before you operate this product.

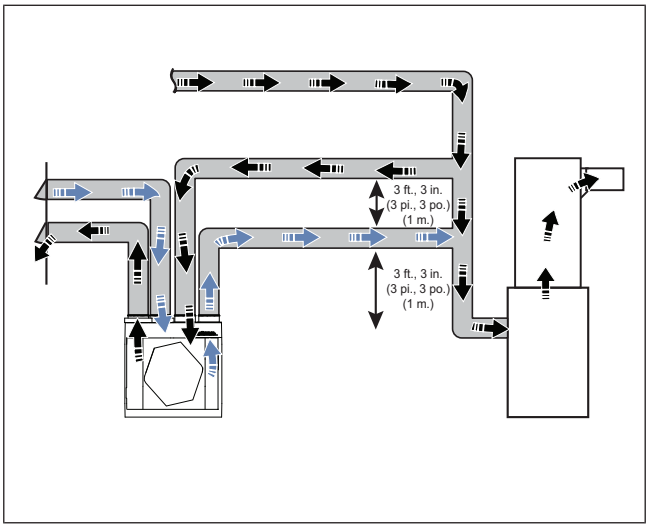
Refer to section 5.3 To Balance the Airflow.

While you do this procedure, make sure the forced air system blower is ON. Operate the product on High (MAX) speed.

Note:

Other products may need a different duct layout then what is shown in this section.





3.4 To Install the Intake Hoods

Note:

You can use tandem hoods if the jurisdiction allows it.

1 Select where to put the intake and the exhaust hoods (or just the tandem hood).

3.4.1 To Put the Intake Hood in the Correct Position

Note:

Use the guidelines that follow to put the intake hood in the correct position:

Note:

Some guidelines will not apply if you use a tandem hood.

Upstream[4] from the exhaust outlet.

A minimum of 3 ft. (1 m.) away from dryer vents and forced air system exhaust (medium or high efficiency systems), driveways, oil fill pipes, gas meters, or garbage containers.

A minimum of 18 in. (460 mm.) above the ground, or above the level of possible snowfall (if applicable).

Keep 3 ft. (1 m.) from corners.

Do not put in the garage, attic, crawlspace, or underneath the deck.

3.4.2 To Put the Exhaust Hood in the Correct Position

Note:

Use the guidelines that follow to put the exhaust hood in the correct position:

Note:

Some guidelines will not apply if you use a tandem hood.

A minimum of 18 in. (460 mm.) above the ground, or above the level of possible snowfall (If applicable).

Keep 3 ft. (1 m.) from corners.

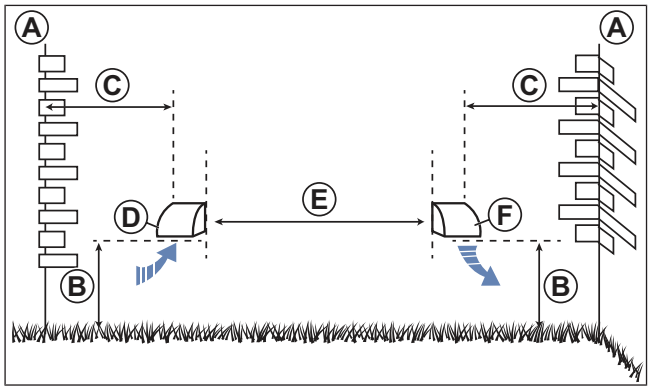
Away from a gas or electric meter, or a walkway where fog or ice can cause a blockage.

Do not put in the garage, workshop, or another unconditioned space.

Note:

All dimensions apply unless they do not agree with local code requirements or if you use a tandem hood.

4. If there are prevailing winds.



A. Corner

B. 18 in. (460 mm.) Minimum[5]

C. 3 ft. (1 m.) Minimum[4]

D. Intake Hood

E. 6 ft. (2 m.) Minimum[4]

F. Exhaust Hood

3.4.3 To Do Before Installing the Ductwork to the Hoods

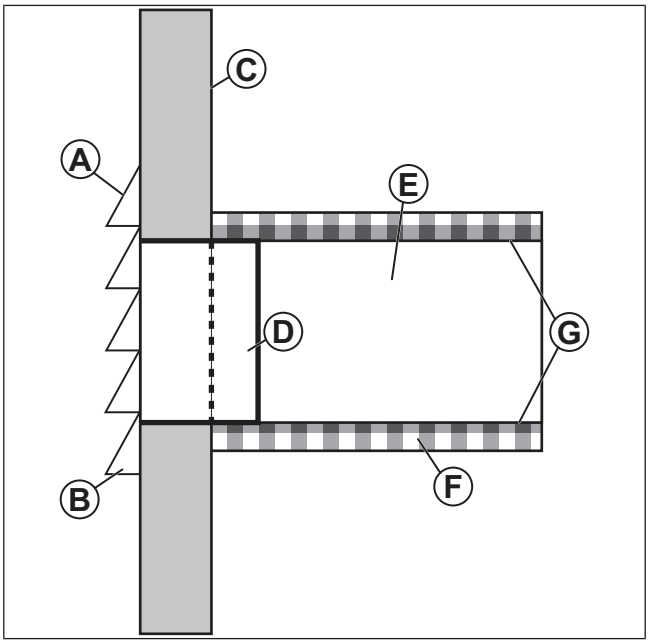
Note:

A well-designed and well-installed duct system allows the product to operate at maximum efficiency.

Use the guidelines that follow to correctly install the duct to intake, exhaust, or tandem hoods:

- To keep airflow restrictions to a minimum, stretch the flexible insulated duct that connects the two outside hoods to the product tightly.

  Make sure the duct is as short as possible.
- Do not twist or fold the duct will as this will dangerously reduce airflow.
- Be careful to not flatten or crush the insulation.
- From the interior of the space, attach the inner liner of the flexible insulated duct to the sleeve of the hood as close to the exterior wall as possible and as close to the product on the correct duct connection.
- Before you attach the duct to the hood, seal the inner flexible duct to the product's duct connection and to the hood with a good bead of high quality caulk (Fantech recommends acoustical sealant).
- Use aluminium foil duct tape or caulk to seal the outer liner to the exterior wall and to the duct connection.



A. Hood

B. Bird Screen

C. Exterior Wall

D. Sleeve

E. Insulated Flexible Duct

F. Outer Liner

G. Inner Liner

3.4.4 To Install the Ductwork to the Hoods

1 Use the duct connection of the outside hood as a guide to make two correctly-sized, round marks for the intake & exhaust hoods in the exterior wall.

Note:

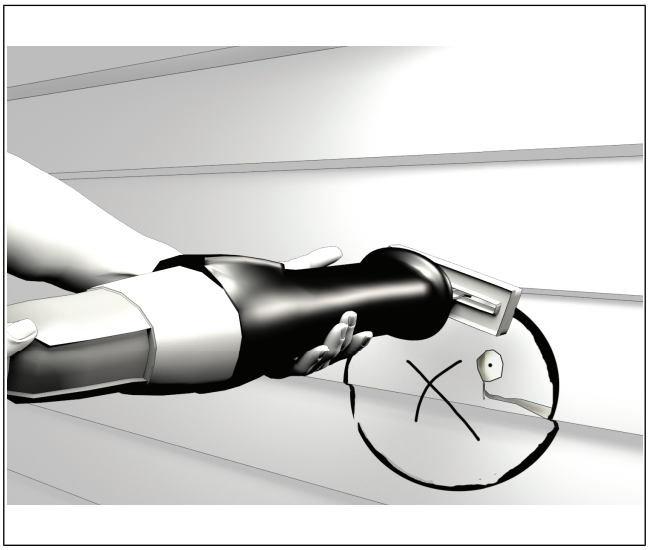
Make the holes slightly larger than the duct connection to allow for the thickness of the insulated flexible duct.

Note:

Only one hole is necessary if you use a tandem hood.

2 Use the applicable marks as guides to make holes for the intake and exhaust hoods.

5. Always refer to local authorities with jurisdiction in your area.



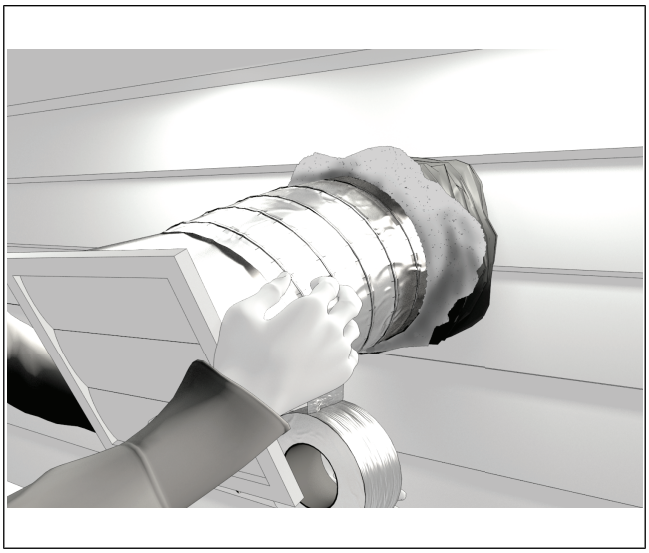
3 Pull the insulated flexible duct through the opening until it is fully extended and straight.

4 Move the duct's inner vinyl sleeve over the hood duct connection.

5 Safety the sleeve to the hood duct connection.

6 Pull the insulation over the duct and pull the vapour barrier over the sleeve.

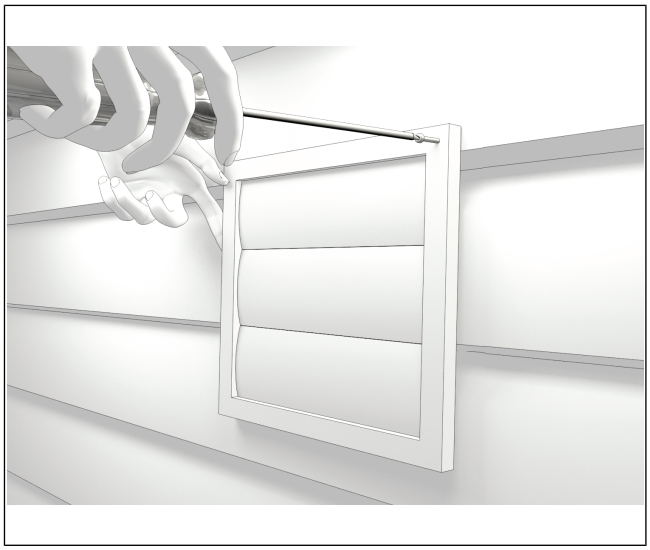
7 Safety the duct to the hood duct connection with applicable tape or sealant.



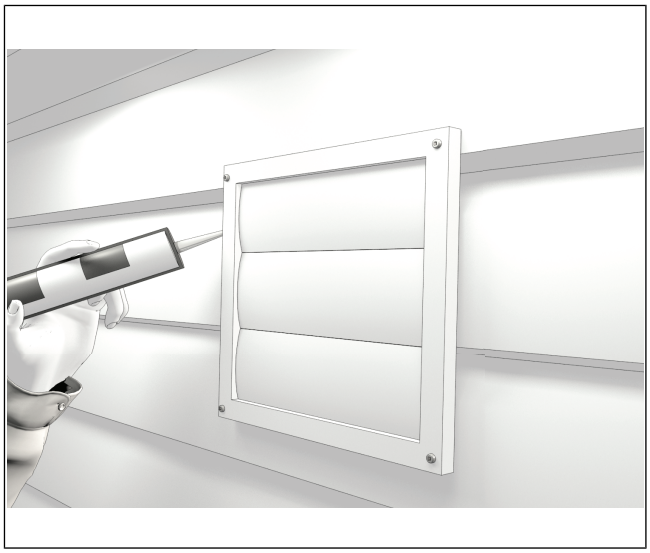
8 Push the supply hood into the opening.

9 Use mounting screws to attach the hood to the exterior wall.

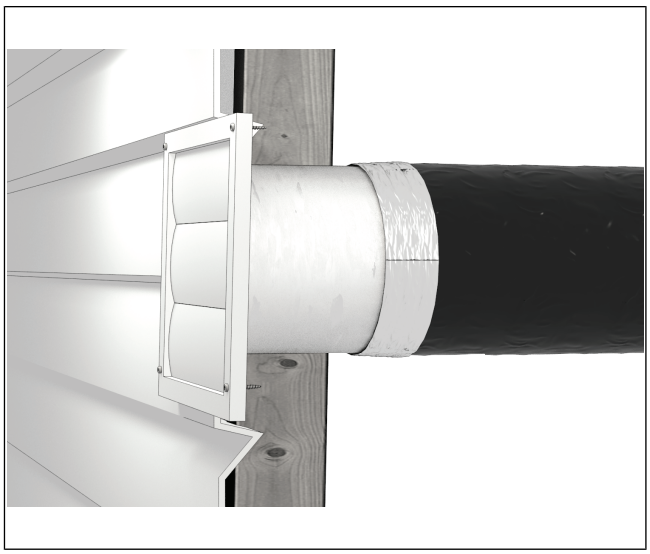
10 Obey the previous seven (7) steps to install the exhaust hood.



11 Use a caulk gun to seal around both hoods to prevent leaks.



12 Attach insulated duct from inside and apply tape.



3.5 To Mount the Product

Note:

If possible, install this product away from the primary areas of the home.

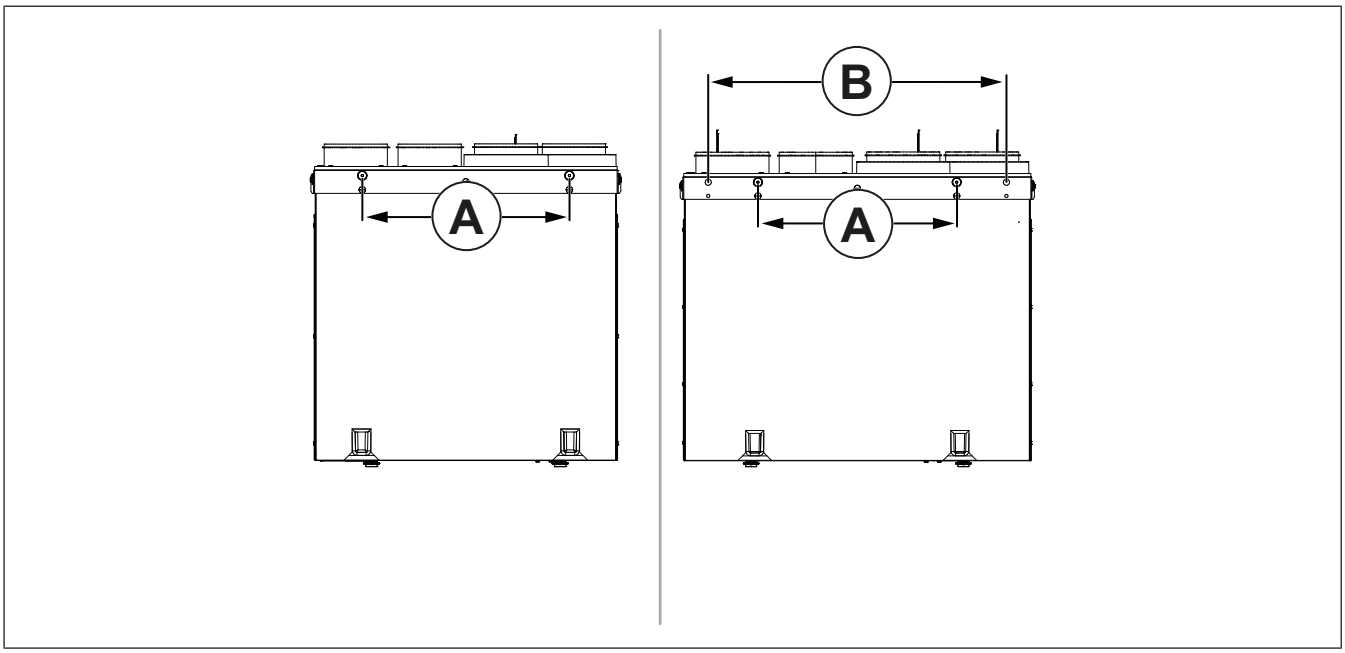
Refer to section 3.1.1 To Choose the Correct Location for the Product.

Note:

Dimensions are given in inches (mm.).

Clearances			
Conditions	• **HERO 100E, #525555** • **HERO 120H, #99400** • **HERO 120E-EC, #579555**	• **HERO 140E, #599140** • **HERO 150H, #99401** • **HERO 150H-EC, #463253** • **HERO 160E-EC, #599160**	• **HERO 200H, #99402** • **HERO 250H-EC, #463254**
The space in front of the door that is necessary to remove the core:	12 (305)	14 (355)	16 (406)
The space above the electrical box that is necessary to do the wire connections:	2 3/8 (61)		

Installation Type	A	B
Wall Mount	16 (406)	24 (610)



3.5.1 To Mount the Product on the Wall

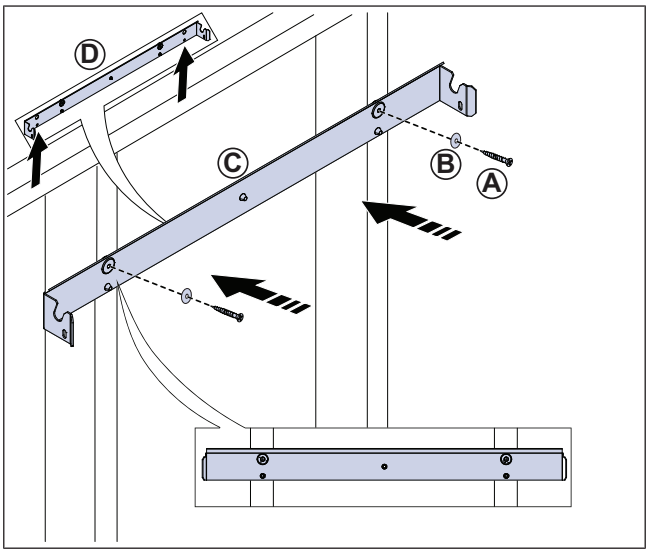
Note:

Make sure the bracket is straight when you install it.

1 Put two wood screws (A) and two washers (B) through the back of the grommets on the long bracket (C). Attach the bracket to the applicable support beams.

2 If you have one of the products in the list that follows, move the vibration isolators (D) to the holes shown.

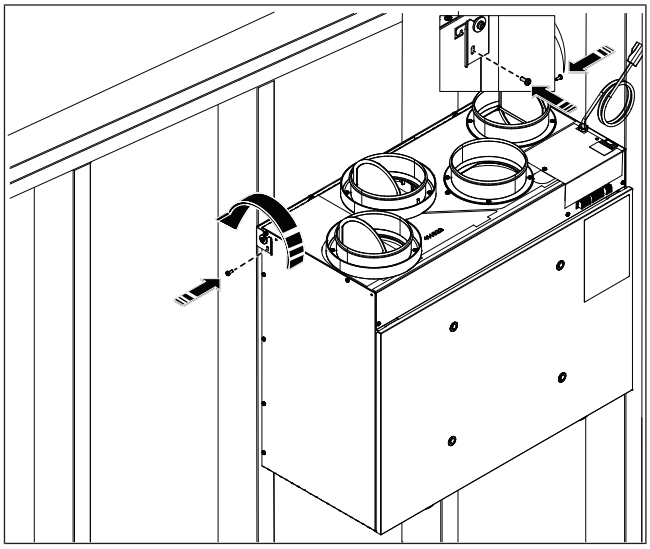
- HERO 140E, #599140
- HERO 150H, #99401
- HERO 160E-EC, #599160
- HERO 200H, #99402
- HERO 150H-EC, #463253
- HERO 250H-EC, #463254



3 Push the product into a vertical position against the wall.

Then, move the product onto the long bracket until it touches the bottom of the slot as shown.

4 To prevent the product from falls, install two (2) sheet-metal screws through the applicable holes of the bracket shown in the next figure.

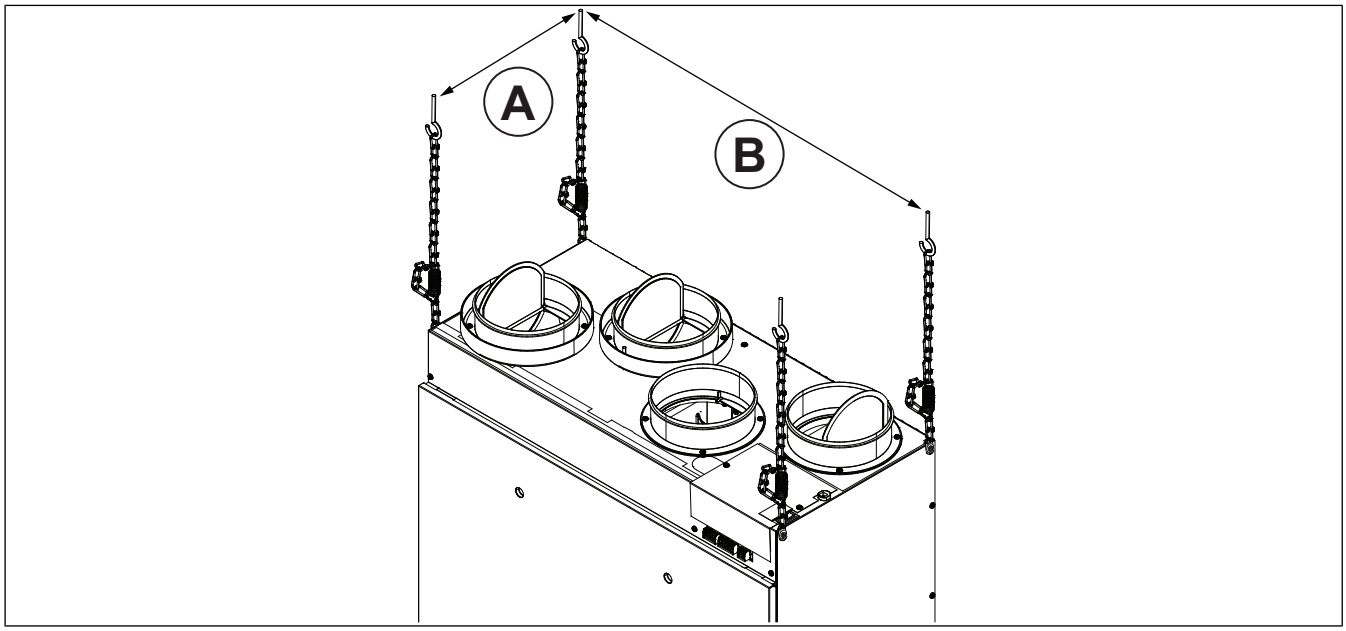


3.5.2 To Mount the Product with Chains

Note:

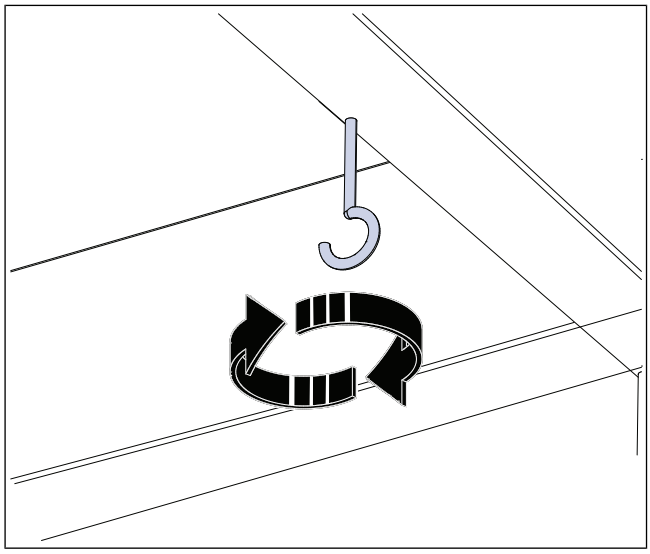
Dimensions are given in inches (mm.).

Installation Type	Product Type	A	B
Chain Mount	• HERO 100E, #525555 • HERO 120H, #99400 • HERO 120E-EC, #579555	8 11/16 (220)	23 1/4 (591)
	• HERO 140E, #599140 • HERO 150H, #99401 • HERO 150H-EC, #463253 • HERO 160E-EC, #599160	10 5/8 (270)	27 13/16 (707)
	• HERO 200H, #99402 • HERO 250H-EC, #463254	12 1/2 (318)	27 13/16 (707)

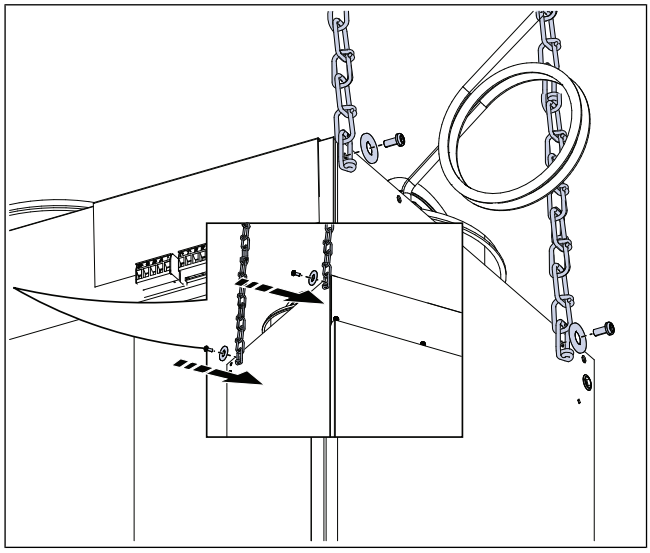


1 Install a hook screw into an applicable ceiling joist.

2 Repeat the previous step three (3) more times.



3 Attach each chain to the applicable holes shown with the supplied screw and flat washer.

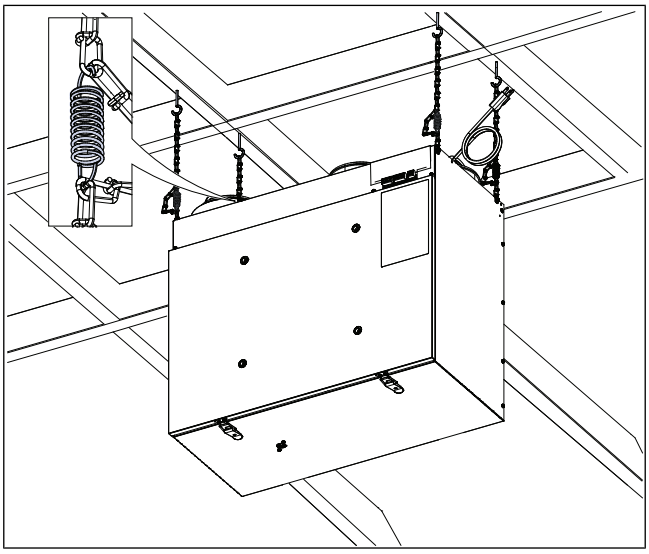


4 Attach each chain to each applicable hook screw.

Make sure the product is level.

5 Install a spring onto each chain as shown.

Attach the spring to the chain so that a loop is made.



3.5.3 To Connect the Ducts to the Product

Note:

Use the guidelines that follow to install the ductwork correctly onto the product:

Note:

For quiet operation, use the correct sound attenuation techniques when you install the product.

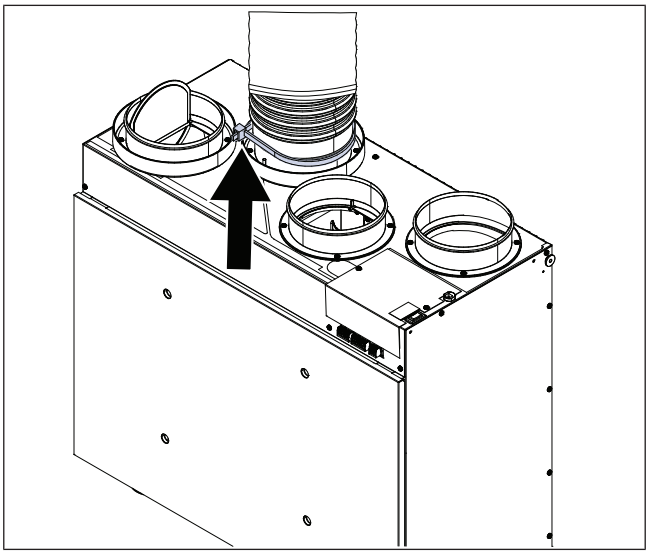
- Keep all duct lengths short.
- Keep bends or elbows to a minimum.
- Use 45° elbows instead of 90° elbows.
- Use “Y” ducts instead of “T” ducts.
- Connect all duct joints with screws or duct sealant.

  Make sure to wrap the joint with aluminium foil duct tape to prevent leaks.
- Use galvanized ductwork from the product to all primary areas.

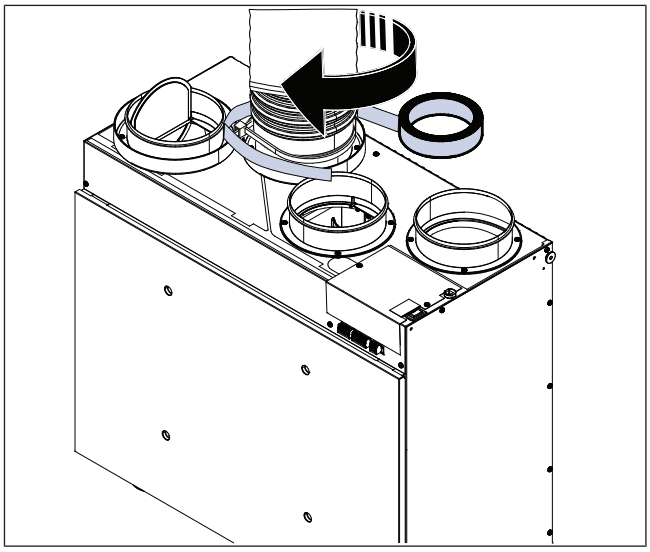
  You can use insulated flexible duct when necessary.
- Use the same size (or larger) diameter duct as the duct connection to attach the main supply and return duct line to/from the product.
- Keep branch lines to individual rooms at a minimum of 4 in. (100 mm.).

1 If applicable, pull the vapor barrier back on the duct to show the inner vinyl sleeve.

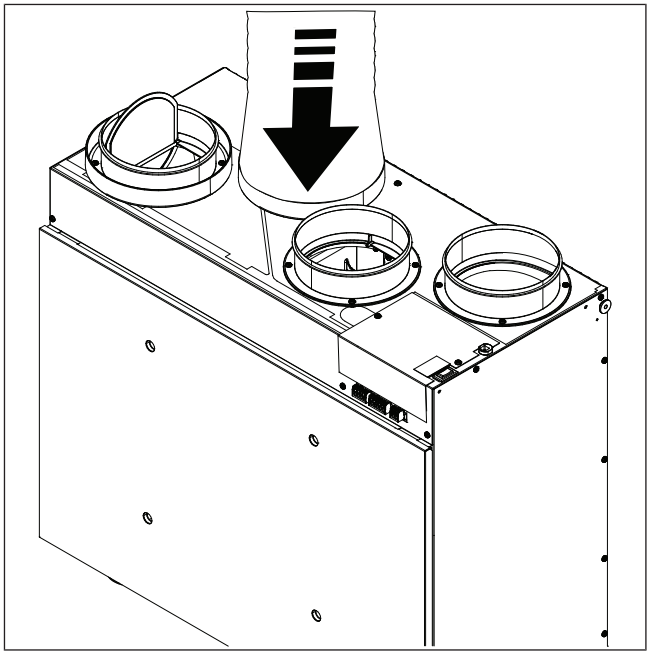
2 Use a cable tie to attach the duct to the collar.



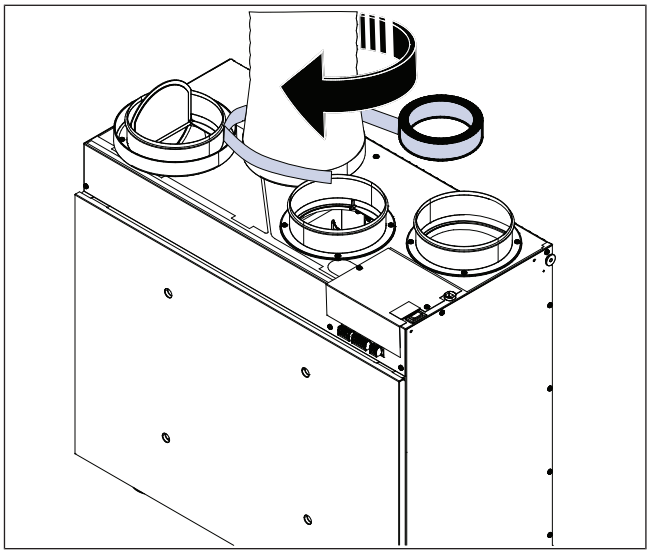
3 Put insulation inside the collar. Wind tape around the cable tie and the insulation.



4 If applicable, pull the vapor barrier over the collar.



5 Wind tape around the cable tie and the vapor barrier.



6 Repeat the steps within this section for the other three (3) collars until all ducts have been connected.

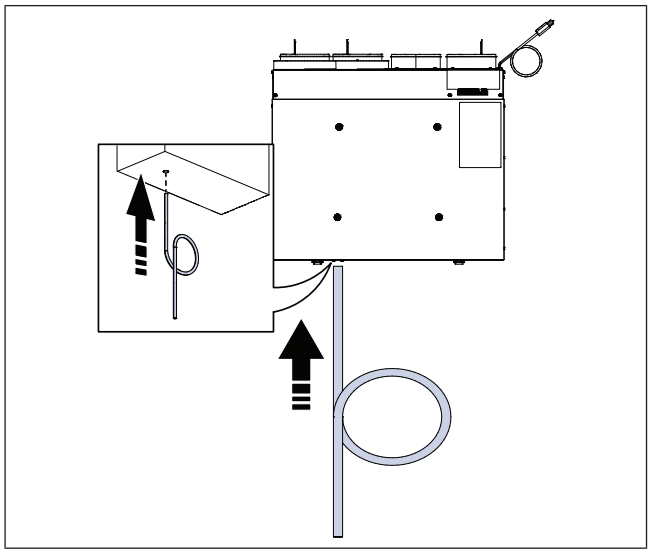
3.5.4 To Install the Drain Line

Note:

This procedure is only necessary for HRV products.

1 Install the drain tube onto the fitting. Once the tube is attached, pull on it lightly to make sure it will not fall.

2 Make a loop in the drain tube as shown in the figure that follows.



4 Electrical connection

4.1 To Connect a Central Control to the Product

Warning

Before you connect the product to the control, make sure to disconnect the product's power supply.

Note:

For more information on control operation, refer to section 6.2 Sequence of Operations — Central Controls.

Note:

Only one central control can be used for each application.

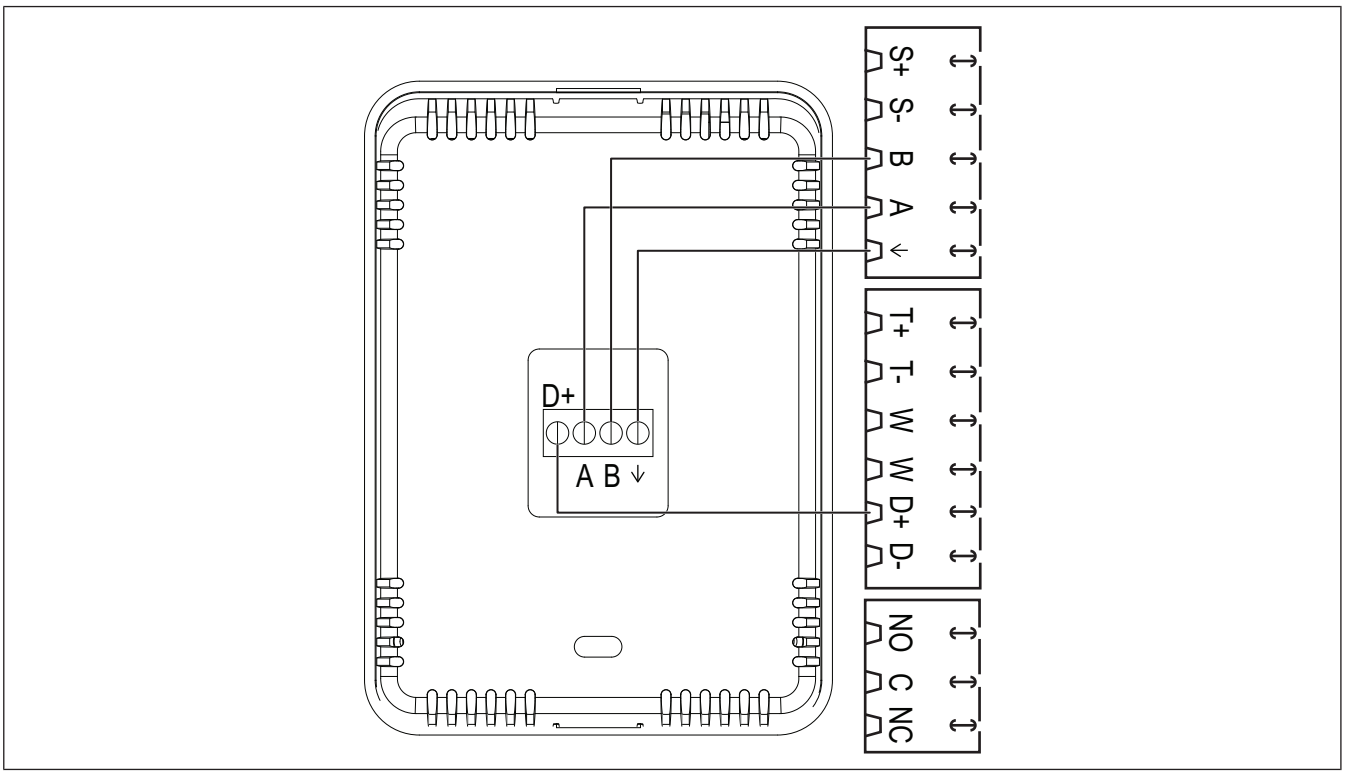


Fig. 1 Wire Connections for the ECO-Touch® Auto IAQ and the ECO-Feel® Auto IAQ[6]

6. Keep the polarity between the control and the product (+ → + | — → —)

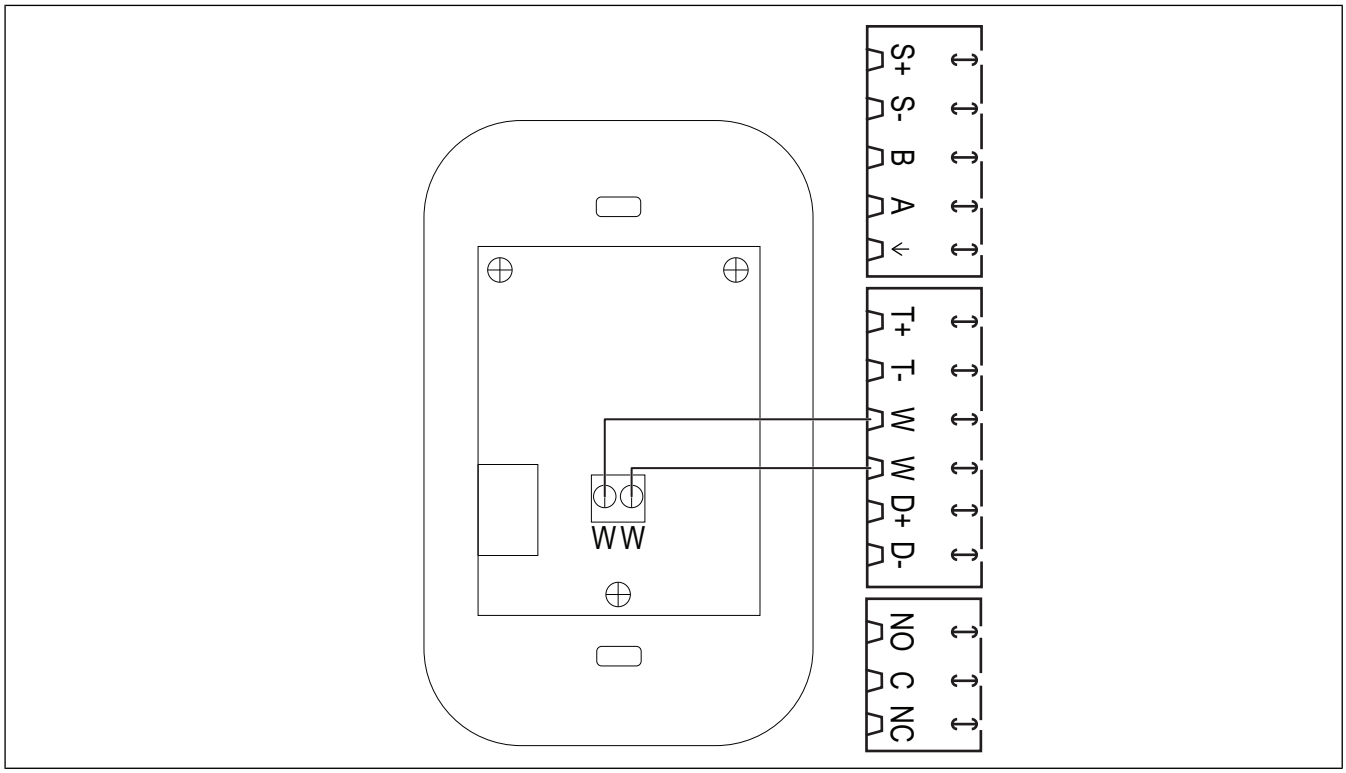


Fig. 2 Wire Connections for the EDF8

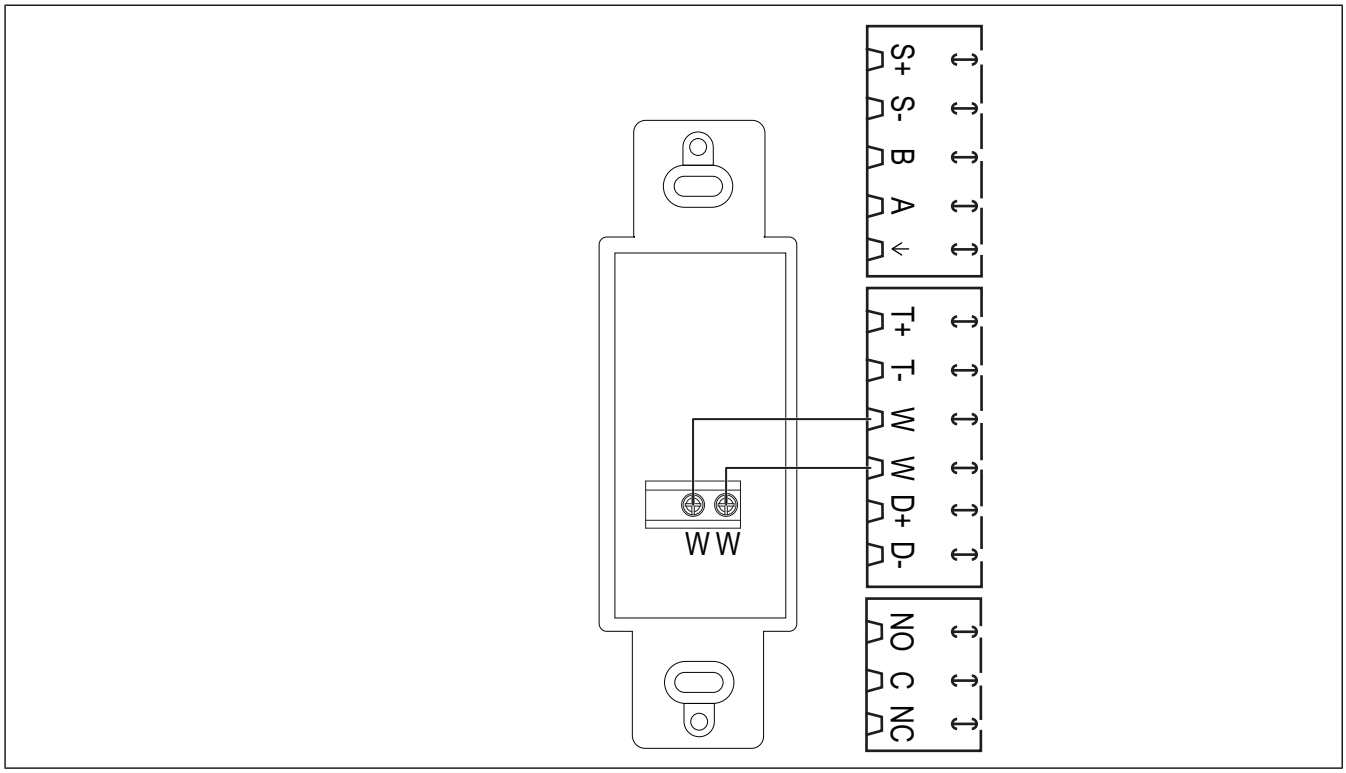


Fig. 3 Wire Connections for the EDF3

4.2 To Connect a Bathroom Timer to the Product

Note:

For more information on control operation, refer to section 6.3 Sequence of Operations — Bathroom Timers.

Note:

You can connect these controls with central controls or with another control.

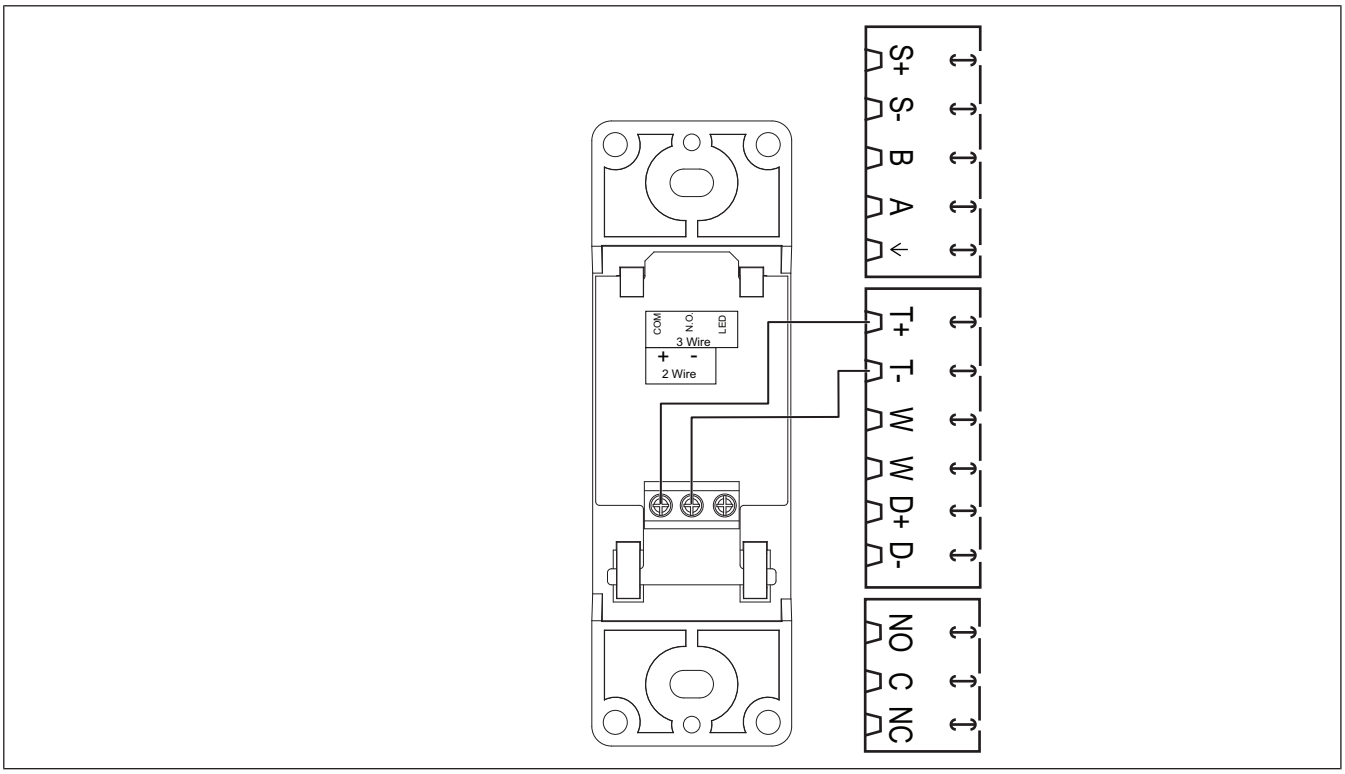


Fig. 4 Wire Connections for the RTS2[7]

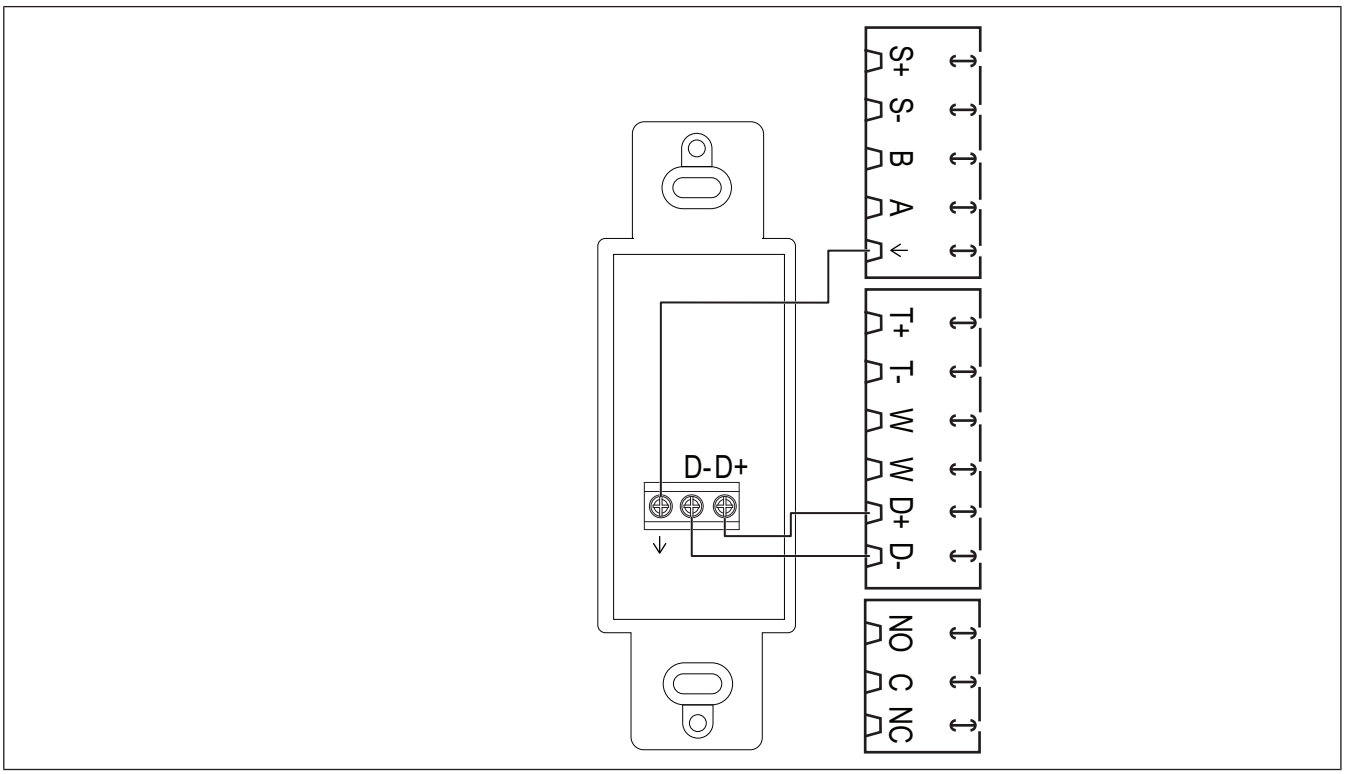


Fig. 5 Wire Connections for the RTS4[7]

7. Keep the polarity between the control and the product (+ → + | — → —)

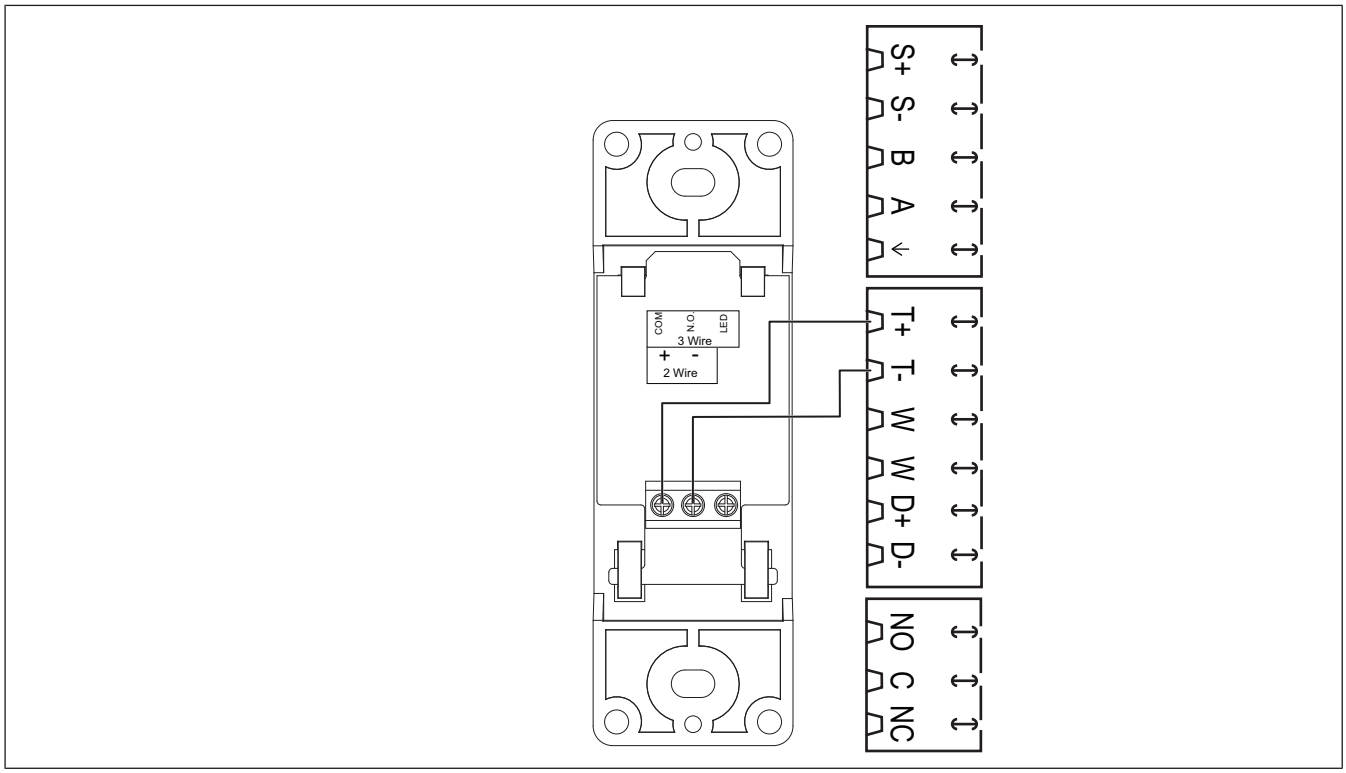


Fig. 6 Wire Connections for the RTS5[8]

4.3 To Connect an Auxiliary Control to the Product

Note:

For more information on control operation, refer to section 6.4 Sequence of Operations — Auxiliary Controls.

Note:

You can connect these controls with central controls or with another control.

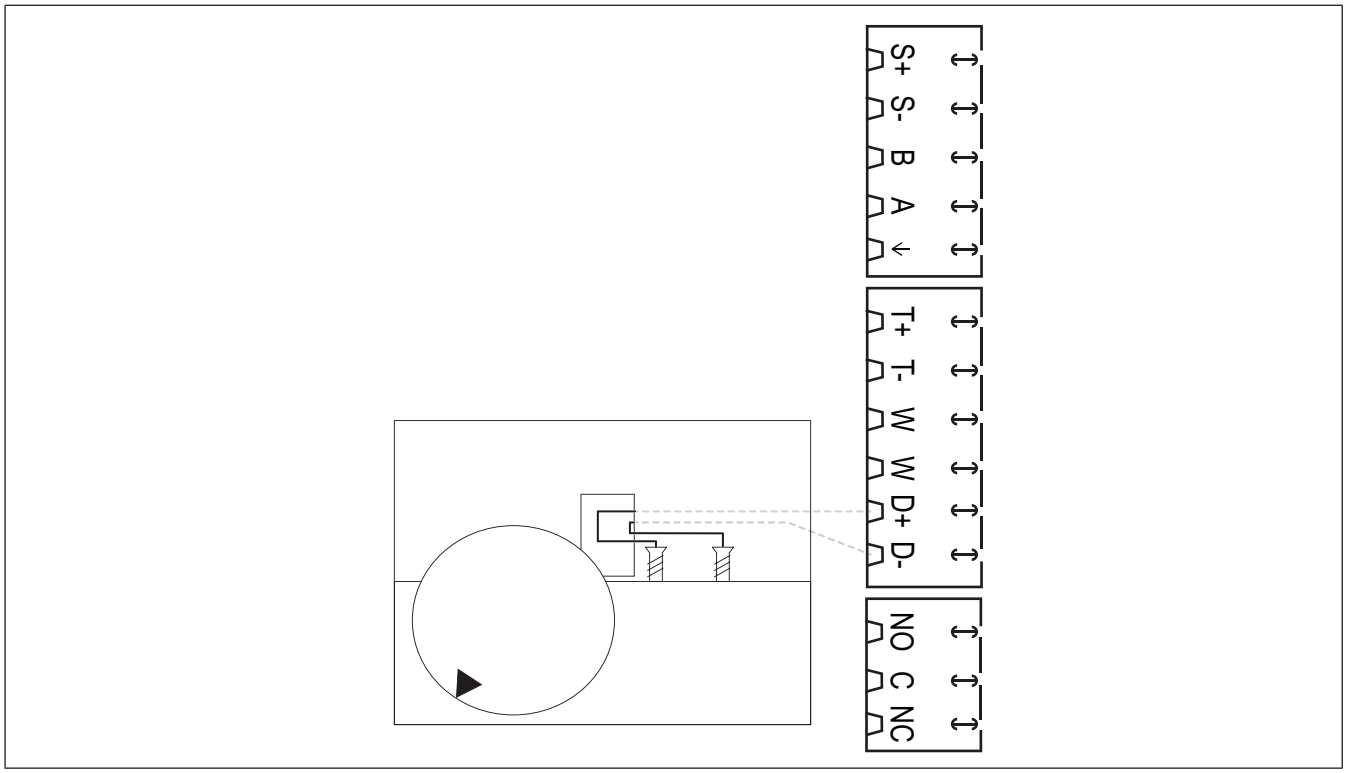
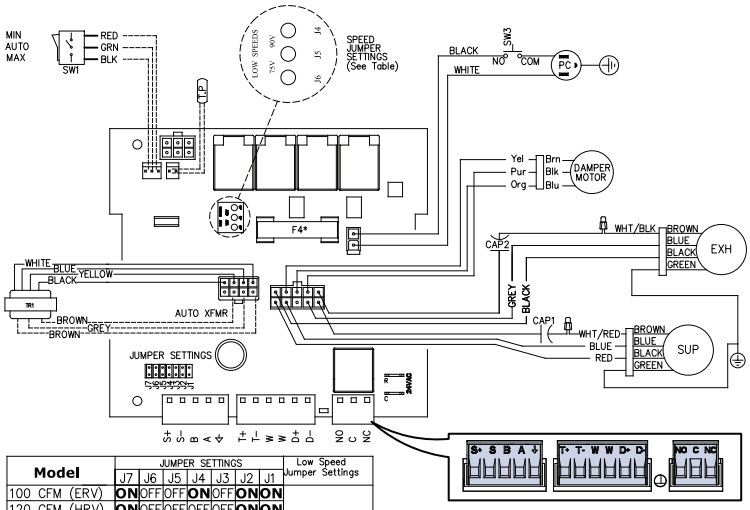


Fig. 7 Wire Connections for the MDEH1[8]

8. Keep the polarity between the control and the product (+ → + | — → —)

4.4 Standard AC Product Wiring Diagram

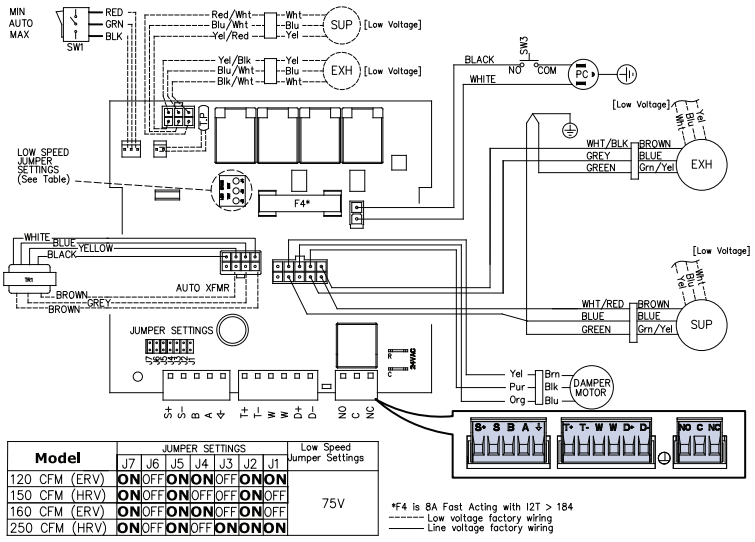
For Product Type:	• HERO 100E, #525555 • HERO 120H, #99400 • HERO 140E, #599140	• HERO 150H, #99401 • HERO 200H, #99402



Model	JUMPER SETTINGS J7	J6	J5	J4	J3	J2	J1	Low Speed Jumper Settings
100 CFM (ERV)	ON	OFF	OFF	ON	OFF	ON	ON	75V
120 CFM (HRV)	ON	OFF	OFF	OFF	OFF	ON	ON	
140 CFM (ERV)	ON	OFF	OFF	ON	OFF	ON	OFF	
150 CFM (HRV)	ON	ON	OFF	OFF	OFF	ON	OFF	
200 CFM (HRV)	ON	ON	OFF	OFF	ON	ON	OFF	

4.5 Standard EC Product Wiring Diagram

For Product Type:	• HERO 120E-EC, #579555 • HERO 150H-EC, #463253 • HERO 160E-EC, #599160 • HERO 250H-EC, #463254



Model	JUMPER SETTINGS J7	J6	J5	J4	J3	J2	J1	Low Speed Jumper Settings
120 CFM (ERV)	ON	OFF	ON	ON	OFF	ON	ON	75V
150 CFM (HRV)	ON	OFF	ON	OFF	OFF	ON	OFF	
160 CFM (ERV)	ON	OFF	ON	ON	OFF	ON	OFF	
250 CFM (HRV)	ON	OFF	ON	OFF	ON	ON	ON	

5 Commissioning

5.1 To do before the commissioning

- Make sure that the installation and electrical connection are correctly done.
- Visually examine the product and accessories for damage.
- Make sure that there are no blockages in the air inlet and the air outlet.
- Make sure that installation material and unwanted objects are removed from the product and the ducts.
- Make sure that ducts are sufficiently insulated and installed according to local rules and regulations.
- Make sure that any duct work accessories (if any) such as dampers, silencers, or other devices are correctly installed.
- Make sure that the duct system is correctly connected to the product.

5.2 To do the Commissioning

1 Apply power to the product.

2 Make sure the product goes into “recirculation defrost” mode for 10 seconds. To do this check, make sure that the:

- The damper is open to the indoor side.
- Supply fan operates in high (MAX) speed.
- Exhaust fan does not operate.

After this 10 second period, the product will operate in the selected mode.

5.2.1 To Commission the Product without a Wall Control

1 Standby (AUTO) Mode

After this time period, make sure the product goes into “standby” (AUTO) mode. To do this check, make sure that the:

- Speed selection switch is set to AUTO.
- Exhaust fan deactivates.
- Supply fan deactivates.

Once you are sure that the product operates correctly, move to the next step.

2 Low (MIN) Speed Operation

Make sure the product goes into “low” (MIN) mode. To do this check, make sure that the:

- Speed selection switch is set to “MIN”.
- Exhaust fan operates at low speed.
- Supply fan operates at low speed.

Once you are sure that the product operates correctly, move to the next step.

3 High (MAX) Speed Operation

Make sure the product goes into “high” (MAX) mode. To do this check, make sure that the:

- Speed selection switch is set to “MAX”.
- Exhaust fan operates at high speed.
- Supply fan operates at high speed.

Once you are sure that the product operates correctly, move to the next step.

4 Completion

If you do not use an external control, set the speed selection switch to the necessary setting.

The product is ready for service.

5.2.2 To Commission the Product with a Wall Control

If you use an external control, refer to the controller instruction manual and make sure the product responds correctly.

If the product does not respond correctly, refer to section 6 Operation and the applicable controller instruction manual.

If the product responds correctly, the product is ready for service.

5.3 To Balance the Airflow

Note:

Use a Fantech programmable touch screen wall control and a manometer to balance the airflow.

Note:

Before you start this procedure, refer to the balancing chart.

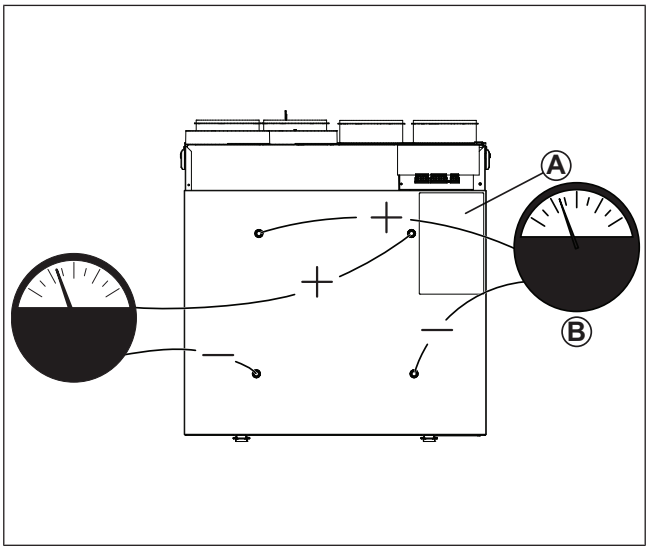
Note:

To see the airflow pattern of your product, refer to the balancing chart or to the airflow illustration in section 1.5 Product Overview.

Note:

+ = high pressure to manometer

- = low pressure to manometer



A. Balancing Reference Chart

B. Manometer

5.3.1 To Balance the Exhaust Fan

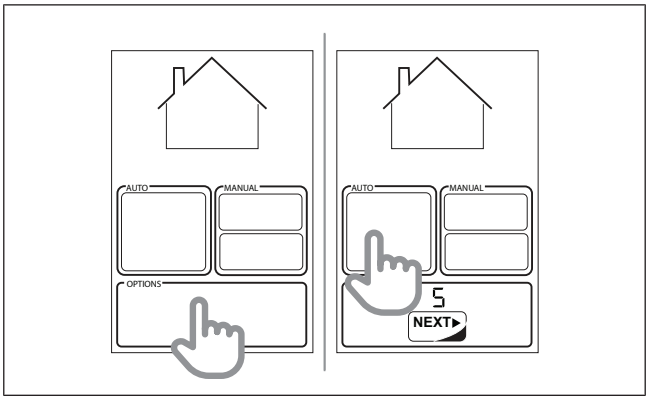
Note:

The “up” or “down” button on the control adjusts the fan speed by 1%.

1 Measure the airflow on the stale air side of the product.

2 To enter balancing mode, get to the options menu.

3 When the 5-second opening sequence starts, press and hold on the “ECO” area for 5 seconds to go into basic balancing mode.

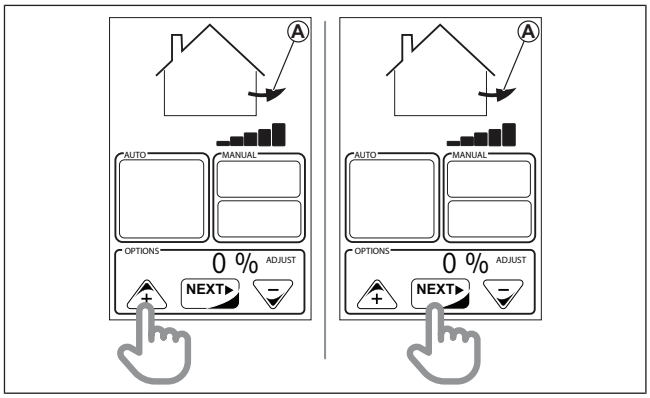


4 Use the “up” and/or “down” buttons on the control to get to the required fan speed.

Note:

The supply and exhaust fans are adjusted on high (MAX) speed only, and the offsets are applied in relation to the medium and low (MIN) speed automatically.

5 When the necessary fan speed is met, press the “next” button.



5.3.2 To Balance the Supply Fan

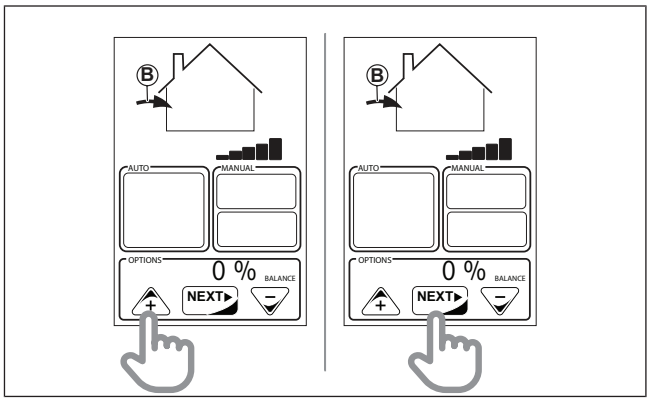
Note:

The “up” or “down” button on the control adjusts the fan speed by 1%.

1 Measure the airflow on the fresh air side of the product.

2 Use the “up” and/or “down” buttons on the control to get to the required fan speed.

3 When the necessary fan speed is met, press the “next” button.



A. Exhaust mode

B. Supply mode

The product is now ready for service.

5.4 Commissioning Report

Product	
Date:	
Description	
Product #:	Serial #:
Installer	
Company:	Contact person:
Company address:	
Phone #:	Email:
Receiving	
Packaging damage	□
Describe the damage:	
Product damage	□
Describe the damage:	
Missing hardware	□
Describe the missing hardware:	
Damaged hardware	□
Describe the damage:	
Installation	
All connections on the forced air system	□
Supply connections on the forced air system	□
Connections independent of forced air system	□
Location (attic, crawlspace, or another location):	
Indoor temperature:	
Electrical connection type	
Hardwired	□
Outlet connection	□
Balancing	
Product balanced (as specified in the applicable balancing procedure within the manual)	□
Measured pressure (in. wg.):	
Supply and exhaust values (xx;xx):	

Drain (If applicable)	
Drain trapped	□
Drain tested	□
Drain cap installed	□
Operation	
Completed the section 5.2 To do the Commissioning	□
Control (If applicable)	
Installed and connected correctly	□
I made sure that the above installation and commissioning steps have been completed as specified with the [Either the href or the keyref attribute should be set on xref elements] Fantech installation manual.	
Installer's name:	
Installer's signature:	
Owner/Operator's name:	
Owner/Operator's signature:	

6 Operation

6.1 Control Hierarchy / Operations

Note:

The ventilation product puts control signals in the order that follows:

1. Remote Off (S+/S-)
2. Timer (T+/T-) > Defrost Cycle (internal)
3. Dehumidistat (D+/D-)
4. Four-wire controller (B/A)
5. Two-wire controller (W/W)
6. Speed selection switch

Note:

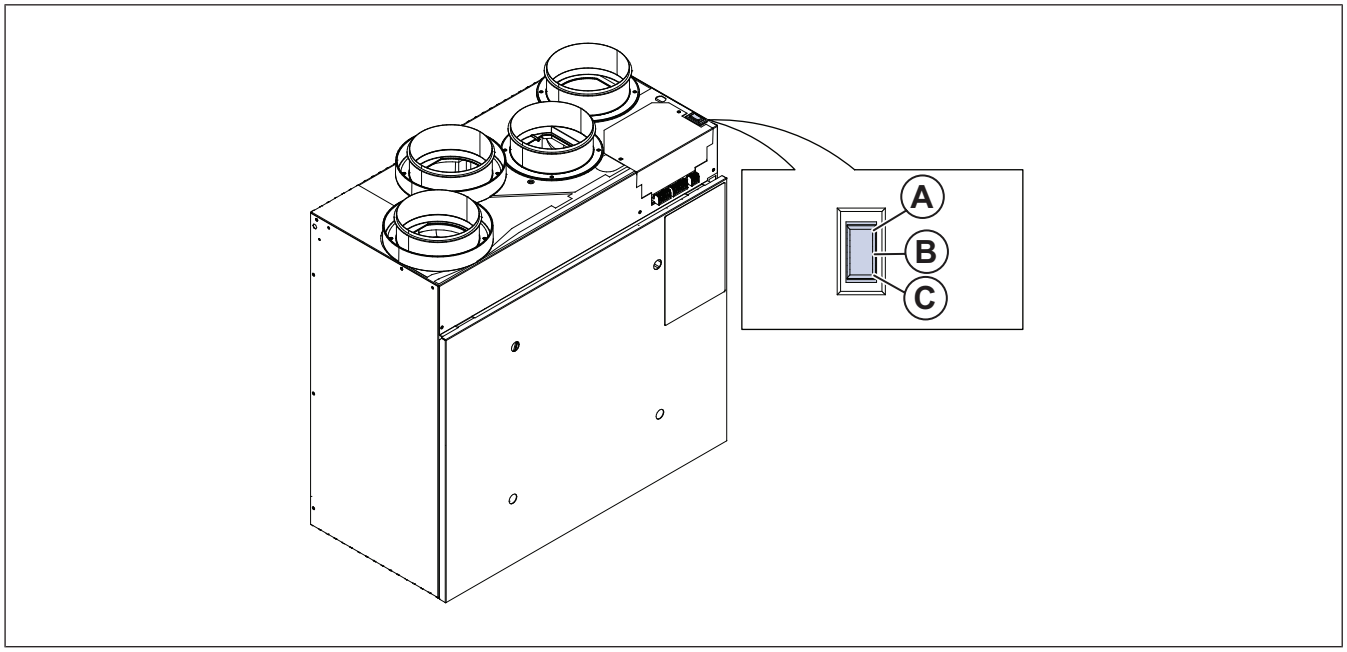
The speed selection switch is installed on or near the electrical box of the ventilation product.

If a digital wall control is connected to the product, the speed selection switch will not change the airflow speeds. Use the connected digital wall control to change the airflow speed.

Note:

The low (MIN) and high (MAX) settings will keep the product in operation continuously if another function with a higher priority is not activated.

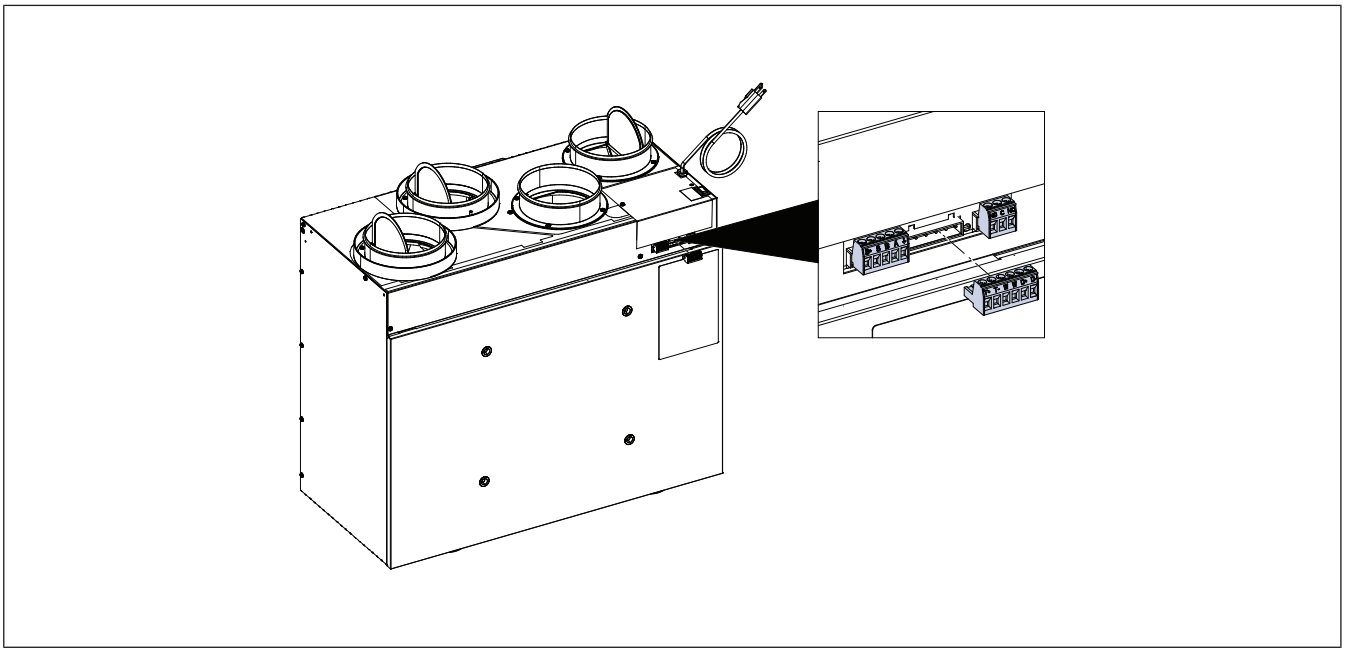
The selections that follow are available:



A. MIN (LOW) speed
B. AUTO (STANDBY)
C. MAX (HIGH) speed

Note:

Wire terminals are supplied with the product.



Terminal Block Label	Description
S+	Remote off function (dry contact) – When S+ and S- terminals are shorted together, the ventilation product will be forced into standby (AUTO) mode until the dry contact is opened.
S-	
B	Digital communication lines for four-wire controllers
A	
↓	12 VDC supply ground
T+	Timer connections
T-	
W	Interface for two-wire wall controllers
W	
D+	Dehumidistat Input (dry contact) – When D+ and D- terminals are shorted together, the ventilation product will be forced into MAX-speed ventilation mode until the dry contact is opened.
D-	
NO	Interlock relay connections –
C	These terminals are used to interlock the forced air system to the product. Once interlocked, the product will operate the system.
NC	When the product is in standby mode, the contact is made between the NC and C terminals. When the product is in ventilation or recirculation mode, the contact is made between NO and C.

Note:

The 12 VDC supply is available through connections across the terminals that follow:

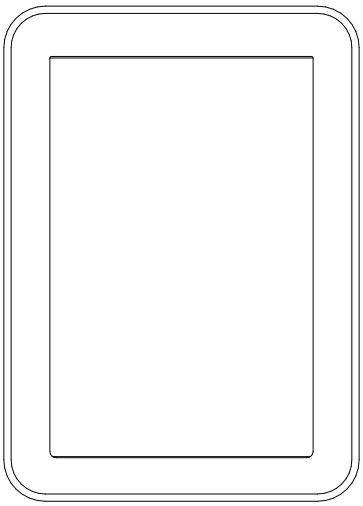
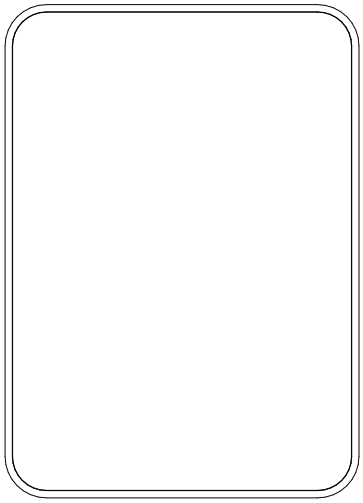
- D+ and ↓ Or
- S- and ↓

Note:

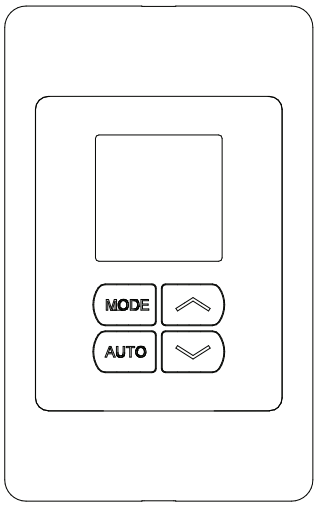
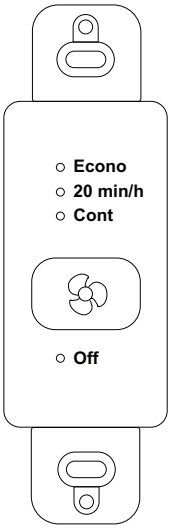
The 24 VAC supply is identified by a label on the control board within the electrical box. Please speak with customer service for more information on install types and power supply limits.

6.2 Sequence of Operations — Central Controls

Table 1 Central Controls

TVOC Controls	Features
ECO-Touch® Auto IAQ 	• Fantech's most complete, yet easy-to-use control system.[1] • Integrated VOC sensor • Sleek design with a backlit touchscreen LCD • The automatic ECO mode selects the best mode of operation and speed for the season. • You can set the indoor relative humidity range and ventilation mode for day and night conditions • No battery to replace. – If a power outage occurs, all programmed settings are kept. • Maintenance reminder indicator • Error code messages decrease the time to troubleshoot. • You can connect the RTS-W Wireless Timer with this control.
ECO-Feel® Auto IAQ 	• Integrated VOC sensor • The automatic ECO mode selects the best mode of operation and speed for the season. • No battery to replace. • No user interface. No user interaction possible. All settings are programmed at the factory for optimal IAQ.

1. Recirculation is only available with products that have a recirculation damper.

Multi-Function Controls	Features
EDF8 	• The “MODE” button gives 3 types of operation: – Ventilation – Recirculation[1] – Standby • 4 fan speeds to choose from: – Low (MIN) – Medium – High (MAX) – 20 minutes each hour • The “AUTO” button allows the homeowner to choose the humidity level. – If humidity is more than the set point, the product operates at high (MAX) speed. – When humidity meets the set point, the product goes back to the original mode of operation before humidity rose.
EDF3 	• This control has 3 types of operation (speed functions are based on how the installer sets the jumpers on the controller.): – ECONO Press the button one (1) time to get to this mode. When chosen, the product will operate at a continuous low (MIN) or medium speed. – 20 MIN/H Press the button two (2) times to get to this mode. When chosen, the product will operate for 20 minutes and pause for 40 minutes. It will operate on high (MAX) speed. This mode will continue to operate in this manner until changed by the user. – CONT Press the button three (3) times to get to this mode. When chosen, the product will operate continuously in ventilation or recirculation mode[1] on high (MAX) speed.

1. Recirculation is only available with products that have a recirculation damper.

6.3 Sequence of Operations — Bathroom Timers

Table 2 Bathroom Timers

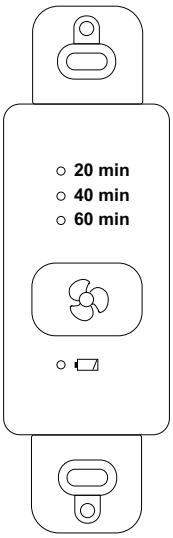
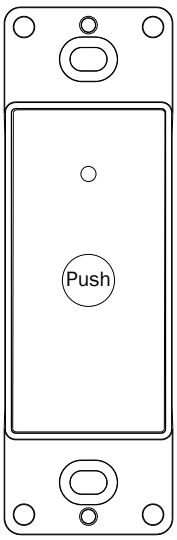
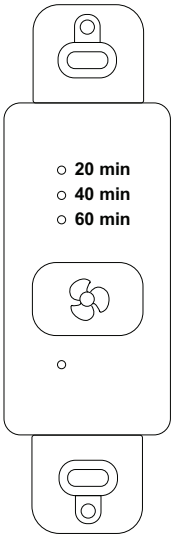
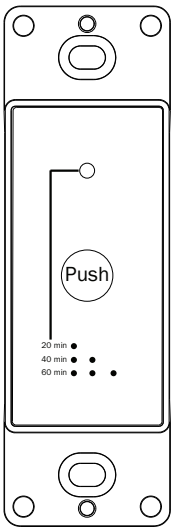
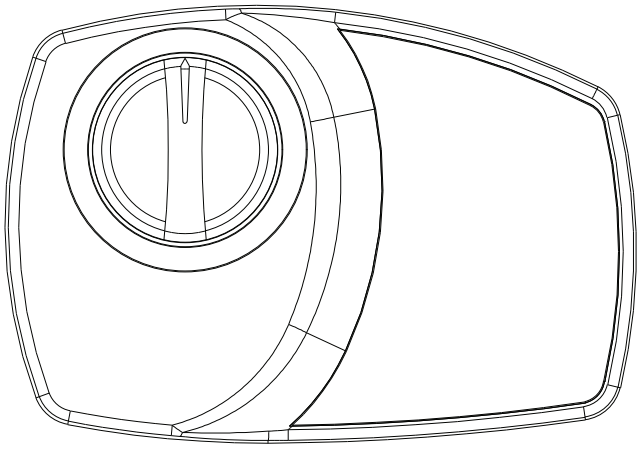
Bathroom Timers	Features
RTS-W 	• Connects only with the ECO-Touch® Auto IAQ – Wireless Timer • 20/40/60 minute timer with an LED light • Press the button to operate the product at high (MAX) speed. • Up to 5 can be used together • For use in bathrooms, kitchens, laundry rooms, and more.
RTS2 	• 20 minute timer with an LED light • Press the button to operate the product at high (MAX) speed. • Up to 5 can be used together • For use in bathrooms, kitchens, laundry rooms, and more.

Table 2 Bathroom Timers (continued)

Bathroom Timers	Features
RTS4 	• 20/40/60 minute timer with an LED light • Press the button to operate the product at high (MAX) speed. • Up to 5 can be used together • For use in bathrooms, kitchens, laundry rooms, and more.
RTS5 	• 20/40/60 minute timer with an LED light • Press the button to operate the product at high (MAX) speed. • Up to 5 can be used together • For use in bathrooms, kitchens, laundry rooms, and more.

6.4 Sequence of Operations — Auxiliary Controls

Table 3 Auxiliary Controls

Auxiliary Controls	Features
MDEH1 	• Rotary dial dehumidistat • You can use multiple of these together. • Fantech recommends to set the relative humidity above 80% during the summer.

7 Maintenance

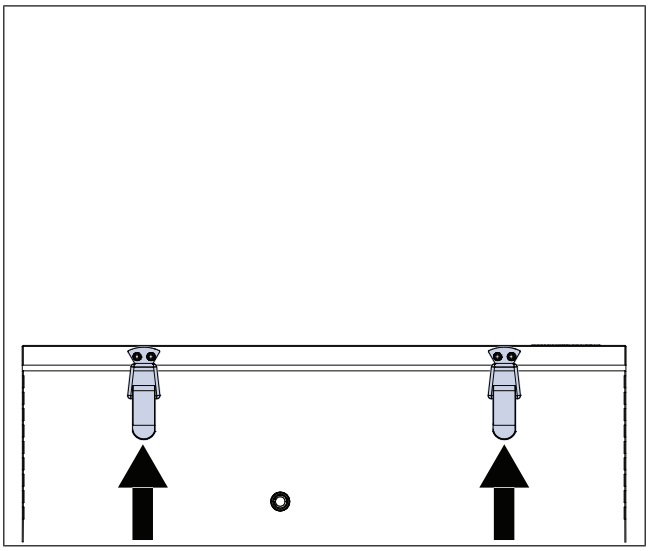
Warning

Make sure that the mains supply to the product is disconnected before performing any maintenance or electrical work.

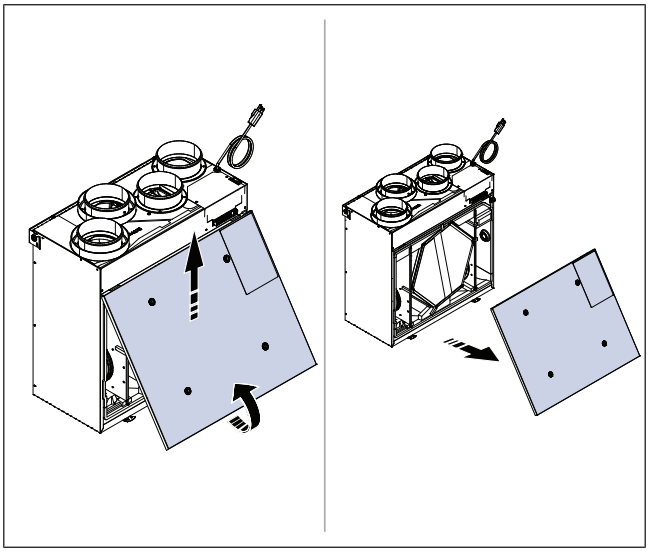
- When you send an order for spare parts, include the serial number of the product. The serial number is found on the name plate.
- For more information about spare parts, contact technical support.
- Always use spare parts from Fantech.
- To find spare parts, refer to the scannable code on the name plate.

7.1 To Clean the Product's Core and Filters

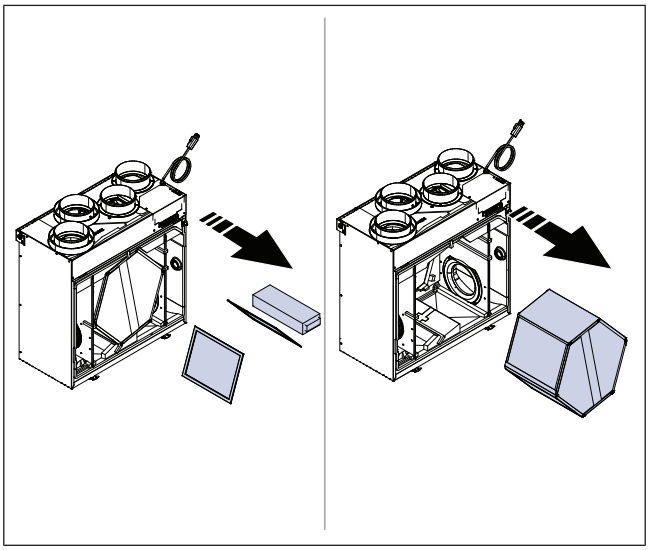
1 To remove the door, loosen both latches on the bottom of the product.



2 Pull the door away from the product and move it away from the hinges.



3 Remove the filters and the core from the product.



4 Put the filters and the core on a flat surface.

Note:

The MERV 8 or MERV 13 disposable filter is not washable.

5 Wash the filters in warm, soapy water.

6 Rinse the soapy water off the filters.

7 Put the filters off to the side until they are completely dry.

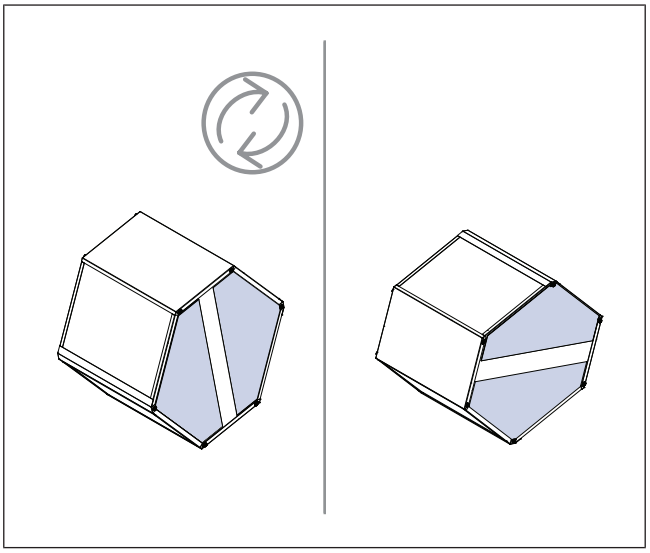
8 Point one of the core's inlets down and put the core in a large sink, bathtub, or shower.

9 Pour clean tap water through an inlet of the core until the water is clear.

Note:

Make sure the entire surface has been rinsed.

10 Turn the core so that the other air inlet points down.



11 Do step 9–10 again, then do step 13.

12 When the core has been rinsed correctly, remove it from the water.

13 With the plates in a vertical position, put the core on a mat to dry.

14 Allow the core to dry completely.

Note:

This process takes about 2–3 hours.

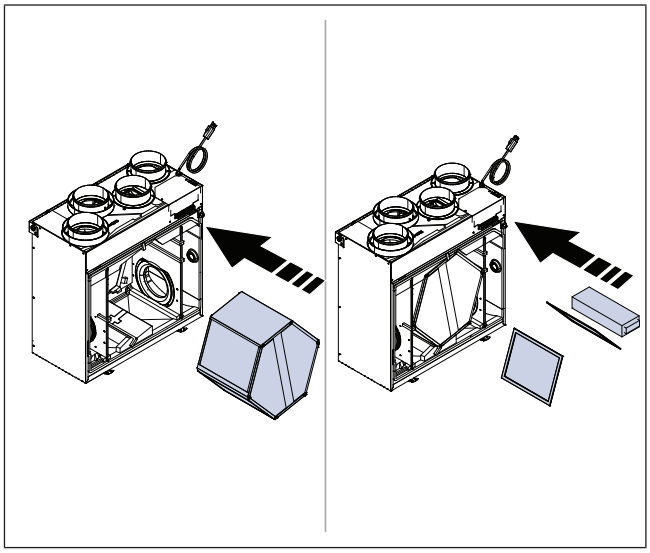
15 Put the core back in position within the product.

Note:

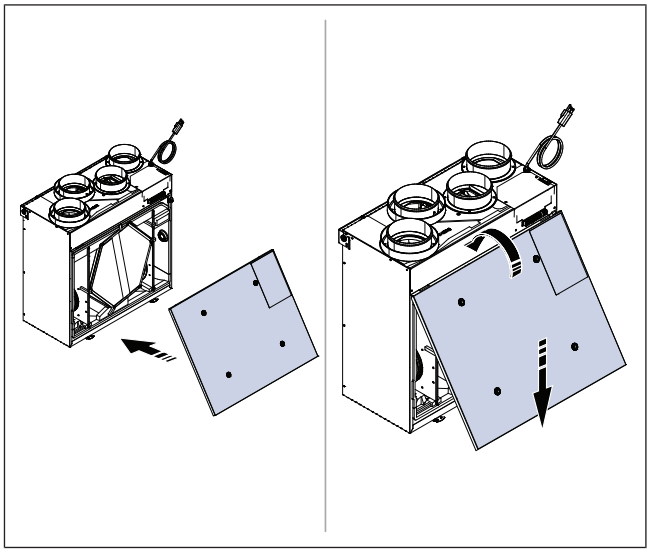
Make sure that the arrow points to the motors.

16 Put the filters back onto the core.

17 If applicable, replace the MERV 8 or 13 filter.

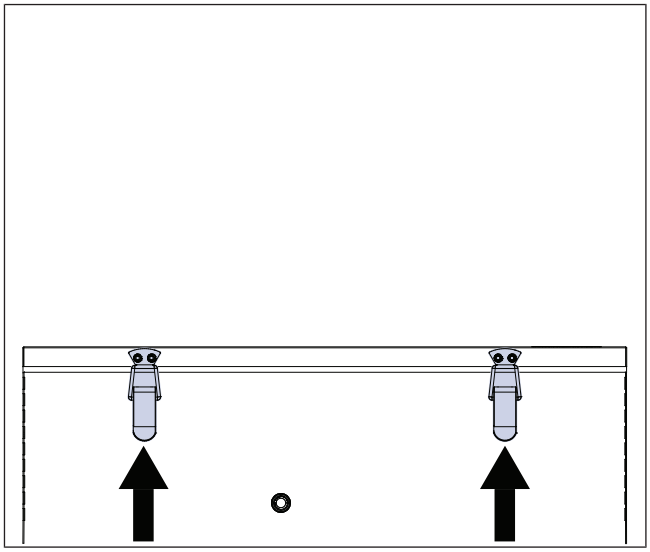


18 Attach the door back onto the product.

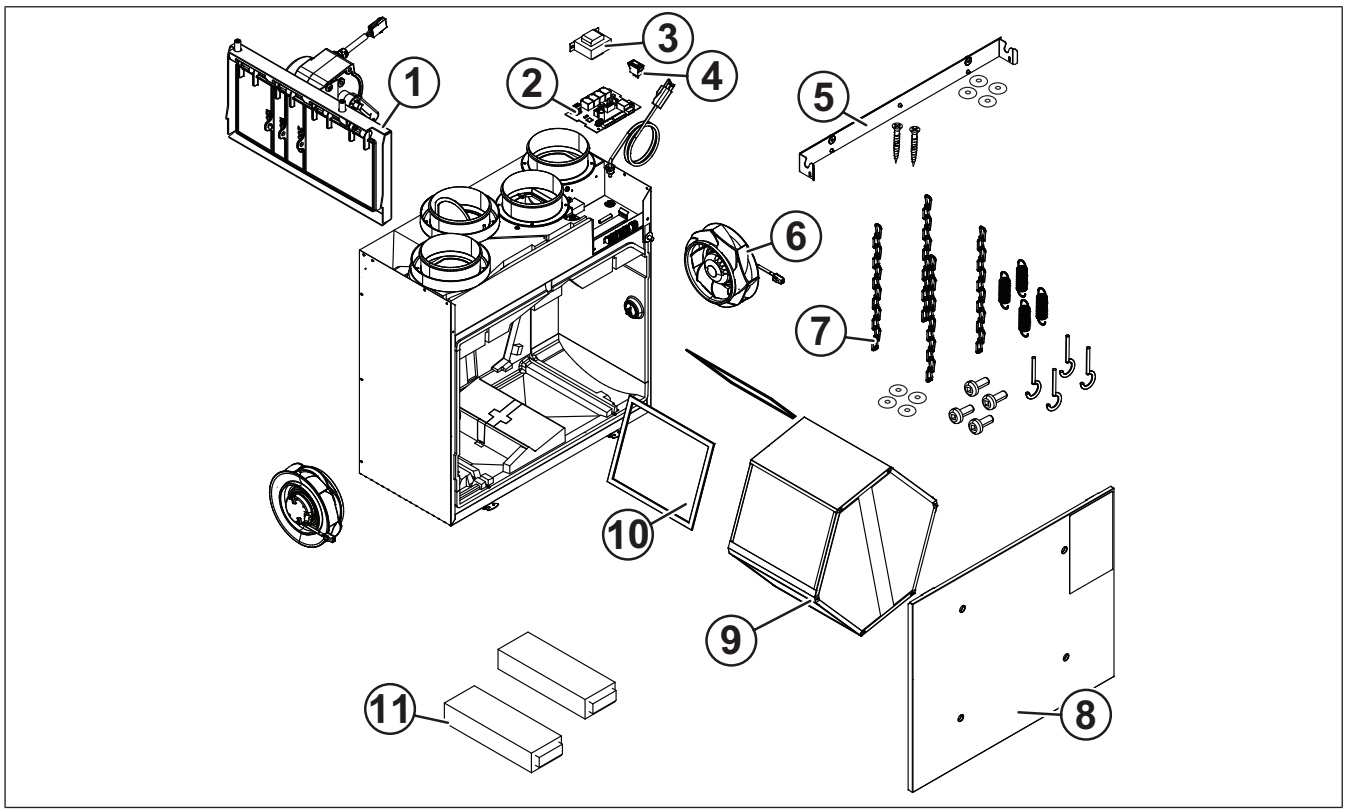


19 Close the door.

20 Close both latches to safety the door to the product.



7.2 Spare Parts



1. Defrost Damper Motor/Recirculation Door Assembly
2. Replacement control board
3. Auto transformer
4. Control switch
5. Replacement wall bracket
6. Replacement motor
7. Chain installation kit
8. Replacement door
9. Replacement core
10. MERV 3 replacement filter kit
11. MERV 8 replacement filter kit (Optional)

    MERV 13 replacement filter kit (Optional; for applicable products only)

Note:

Make sure that the arrow points to the motors.

7.3 Overview of the Maintenance Chart

Table 4 Maintenance Chart

Necessary Maintenance	Recommended Frequency	Date of Maintenance					
Examine and clean the filters	Every 3 months						
Examine the core	Every 6 months						
Examine drain pan and lines (If applicable)	Every 3 months						
Vacuum inside the product	Annually						
Clean and remove debris from exterior hoods	Annually						
Clean and remove debris from duct work	Annually						
General service procedures by a qualified contractor	Annually						

Contractor	Telephone Number	Date Serviced

8 Troubleshooting

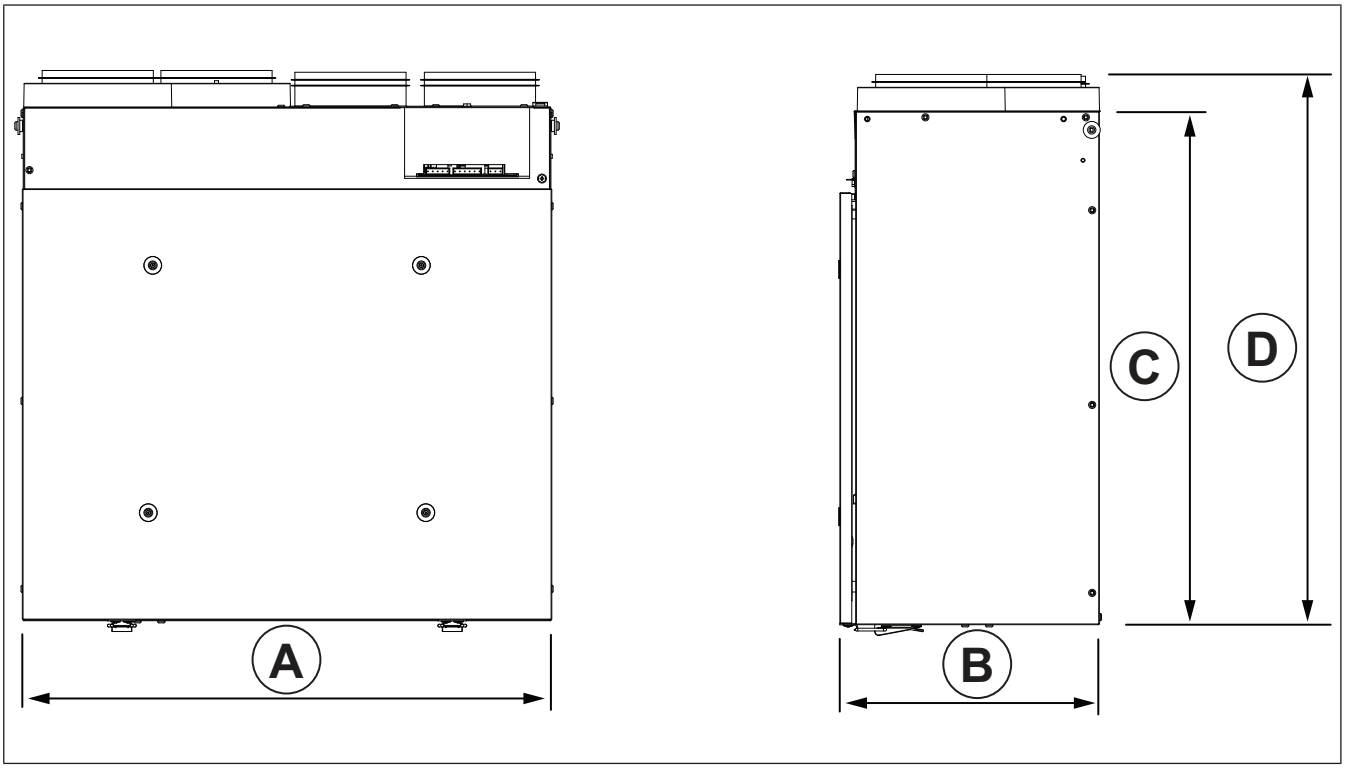
Note:

When there is trouble with your product, it is best to speak with an HVAC contractor/technician.

Problem	Cause	Solution
There is inadequate airflow and/or air quality.	An inadequate ventilation mode or central controller setting(s) were chosen.	• Refer to the manual for the applicable central control. • If a solution cannot be found and the issue(s) continues, speak with a qualified HVAC technician to examine the situation.
	The control(s) and/or bathroom timer(s) do not work.	Speak with a qualified HVAC technician to examine the situation.
	There is inadequate air distribution throughout the space.	• Examine the outdoor intake and exhaust registers for blockage. • Make sure product maintenance is not overdue, if it is, refer to section 7 Maintenance. • If a solution cannot be found and the issue(s) continues, speak with a qualified HVAC technician to examine the situation.
The product does not operate correctly or at all.	There is a high amount of condensation in the product (This situation only applies to products with a drain.).	Examine the drain pan and the condensate line for blockages.
	There is no power supplied to the product.	• Make sure the product is connected to a dedicated outlet and that the outlet has power. • If a solution cannot be found and the issue(s) continues, speak with a qualified HVAC technician to examine the situation.
	The product does not operate.	Speak with a qualified HVAC technician to examine the situation.

9 Technical data

9.1 Product Dimensions



Note:

Dimensions are given in inches (mm.).

	A	B	C	D
• HERO 100E, #525555 • HERO 120H, #99400 • HERO 120E-EC, #579555	23 1/4 (590)	11 1/2 (291)	22 5/8 (575)	24 1/4 (616)

	A	B	C	D
• HERO 140E, #599140 • HERO 150H, #99401 • HERO 150H-EC, #463253 • HERO 160E-EC, #599160	27 7/8 (707)	13 3/8 (341)	23 (584)	24 7/8 (626)

	A	B	C	D
• HERO 200H, #99402 • HERO 250H-EC, #463254	27 7/8 (707)	15 3/8 (391)	23 (584)	24 7/8 (626)

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