![fantech® a systemair company]

Installation, Operation and Maintenance Instructions   EN

FIT Series
Fresh Air Appliances (FAA/ERV)

HVI 2100 CERTIFIED   CSA C US   ENERGY STAR

Table of contents

1 Introduction

1.1 Product Description

This product is 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.

No drain required.

Only for the "-EC" products:

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 HRV/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
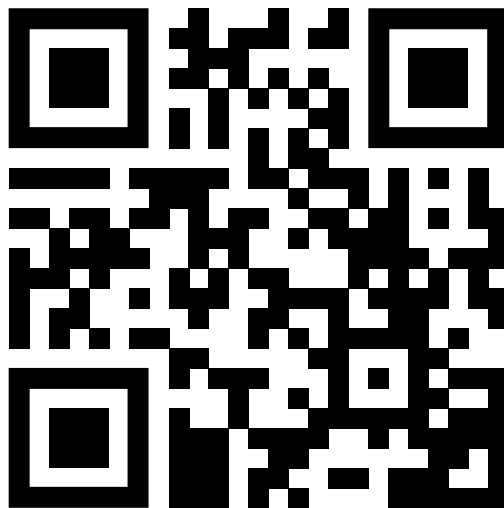
Make a scan of the code above to access Fantech's warranty in English, French, or Spanish.

These products have a 7–year limited warranty on the fan motors, a 5–year limited warranty on both the electrical components, core, and the damper motor (if applicable).

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

> **Note:**
>
> There is a spare washer and screw of each type supplied with the product.
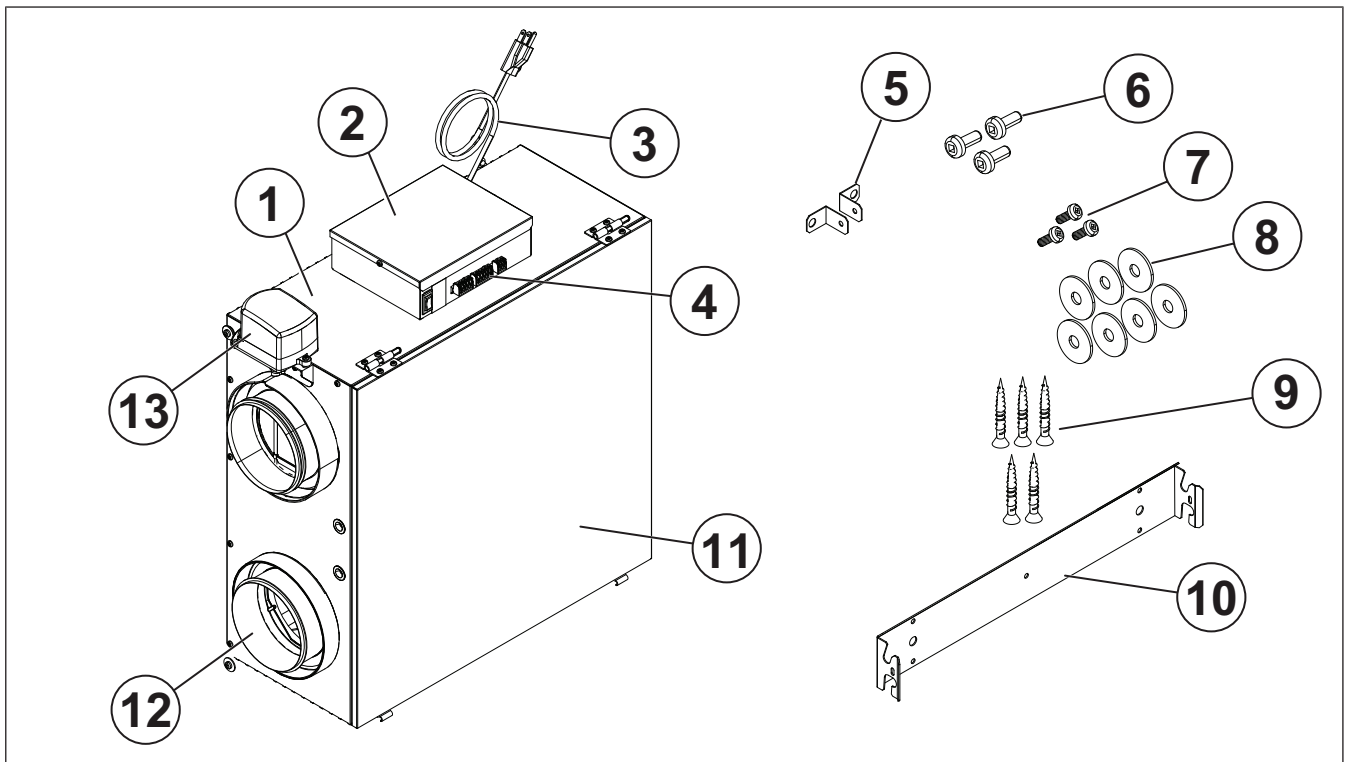
1. Casing
2. Electrical box
3. Power cord (If applicable)
4. Terminals
5. Angle brackets, quantity 2
6. Machine screw, quantity 3
7. Sheet-metal screw, quantity 3
8. Washer, quantity 7
9. Wood screw, quantity 5
10. Long bracket, quantity 1
11. Door
12. Plastic collars, quantity 4
13. Damper motor (Available only with the products with a "-D" in their name.)
14. Wire harness, quantity 1 (Not shown)

> **Note:**
>
> The airflows in the image that follow are reversed if you use an "-M" product.
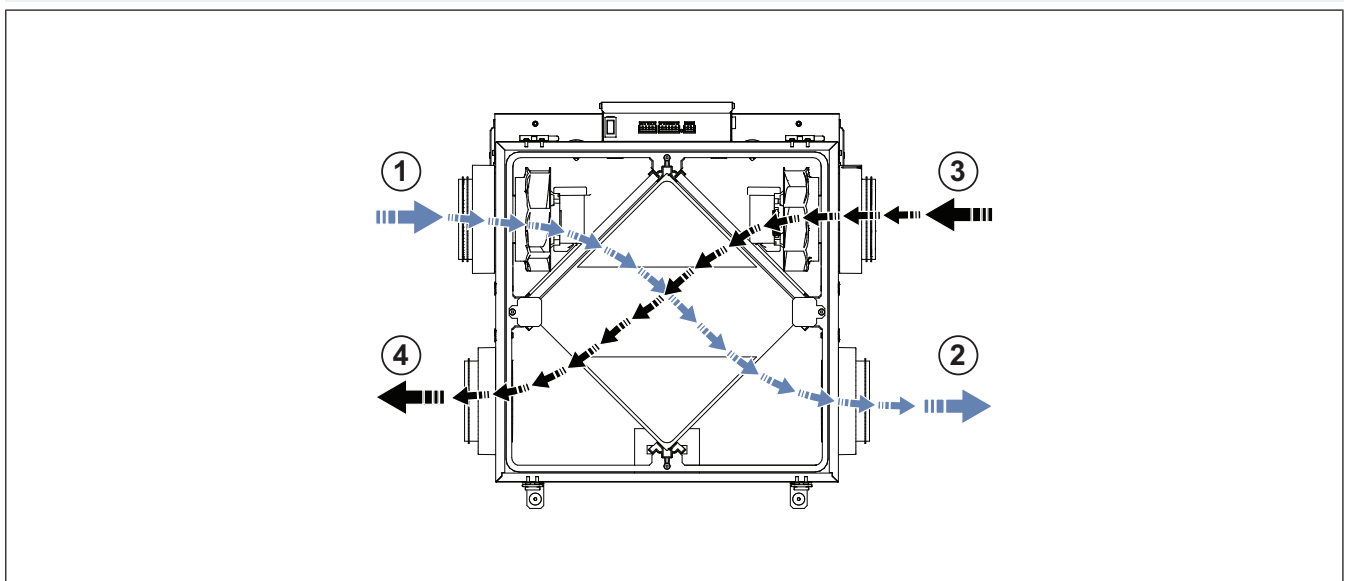
1. Fresh air from outdoors
2. Fresh air to indoors
3. Stale air from indoors
4. Stale air to outdoors

1.6 Name plate

> **Note:**
>
> Make sure the supply voltage corresponds to the product name plate.
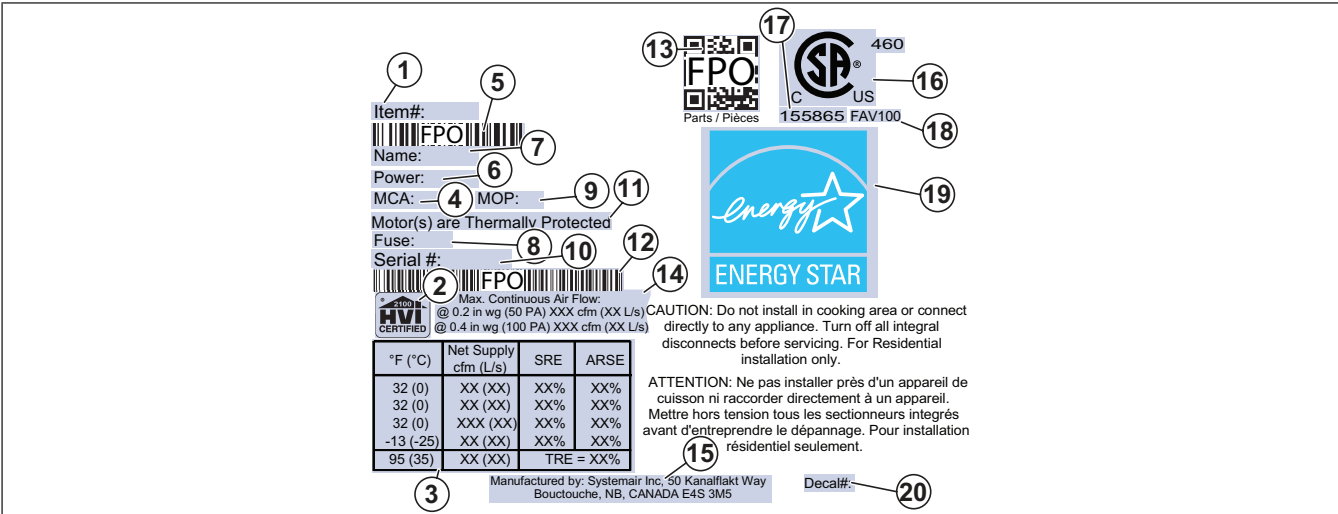
1.	Item Number	11.	Motor Protection
2.	HVI Certified[1]	12.	Bar Code
3.	Performance Table	13.	QR Code
4.	Minimum Circuit Ampacity	14.	Maximum Airflow
5.	Bar Code	15.	Factory Location
6.	Power	16.	CSA Certified[1]
7.	Name	17.	CSA File Number
8.	Fuse	18.	CSA Model Designation
9.	Maximum Overcurrent Protection	19.	ENERGY STAR® Certified[2]
10.	Serial Number	20.	Decal Number

1.6.1 Type Designation

Product Name	• FIT 120E, #463401 • FIT 120E-D, #463403 • FIT 120E-M, #463405 • FIT 120E-D-M, #463406 • FIT 120E-HC, #463409 • FIT 120E-D-HC, #463410 • FIT 120E-M-HC, #463412 • FIT 120E-D-M-HC, #463413
Duct Collar Dimensions in inches (mm.)	5 (127)
Motor Type	AC: Alternating Current, 1–phase

Product Name	• FIT 120E-D-EC, #463404 • FIT 120E-D-EC-M, #463407 • FIT 120E-D-EC-HC, #463411 • FIT 120E-D-EC-M-HC, #463414
Duct Collar Dimensions in inches (mm.)	5 (127)
Motor Type	EC: Electronically Commutated, 1–phase

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1. If applicable
2. If applicable

1.6.2 Nomenclature

FIT · 120 · E · - · D · - · EC · - · M · - · HC

Product Name	CFM @ 0.4 in. w.g.	Energy Recovery	Damper	Electronically Commutated	Mirrored	Hard Connect
Nom du produit	pcm @ 0.4 po d'eau	Récupération d'énergie	Volet d'arrêt mécanique	Commutation Électronique	En miroir	Connexion permanente

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 death 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 vented combustion equipment (Forced Air Systems, Wood Stoves, etc.).
- Think about how this system will operate if connected to any other piece of mechanical equipment, such as 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 5.2 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. If these products are used in a life support ventilation system where failure could result in loss or injury, the user should provide adequate back-up ventilation, supplementary natural ventilation or failure alarm system, or acknowledge willingness to accept the risk of such loss or injury.

- 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

> **Caution**
>
> Use this product with only one forced air system.
>
> If there are multiple forced air systems, speak with Fantech customer service before you make a product selection.

> **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 5.2 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.

> **Note:**
>
> Fantech recommends to install this product in the wall mounted position where the:
>
> - Outdoor temperature is 13°F (-25°C) or less for 48 consecutive hours or more.
> - Indoor relative humidity is at 40% or more.
> - Refer to section 3.7 To Mount the Product.

> **Note:**
>
> Obey the guidelines that follow to install the product:

- 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.

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

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

3.2 Overview of a Fully Dedicated System

Note:

This installation method is best for new construction applications.

A fully dedicated system 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. As a result, this system has the lowest operational cost of the three.

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 5.2 To Balance the Airflow.

Note:

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

Note:

If you plan to install an "-M" product, reverse the installation instructions within this section.
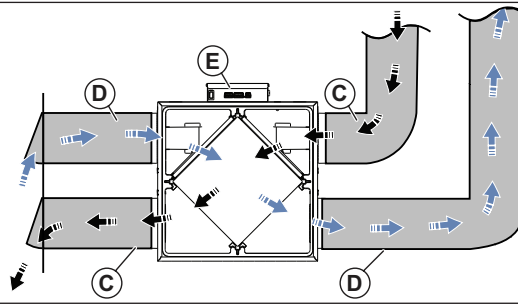
Note:

To hard connect this appliance, obey the steps that follow:

1 Remove the electrical compartment cover and set it aside.

2 Install a cable fastener on the electrical box (trade size 3/8 in. (10 mm.)). Then, put the field wire connections through the electrical box.

3 Complete the electrical connections to the leads and ground screw of the product.

4 Install and safety the electrical compartment cover to the model again. Be careful not to pinch any wires.

5 To operate the product, set the power switch in the "ON" position at the service panel.

Note:

To find where to put the airflow grilles, refer to section 3.3.1 To Position the Interior Grilles.
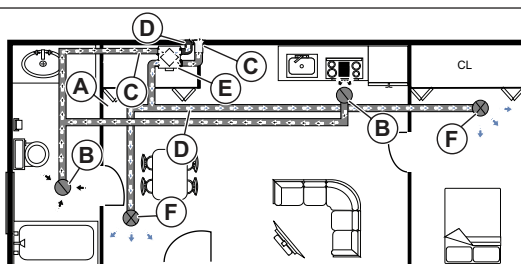
3.3   Overview of a Partially Dedicated System

Note:

A partially dedicated system 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:

- Direct connection to forced air system (central furnace or central air conditioner).

- When you are not able to supply fresh air independently to primary areas of the home.

- If you use a "-D" product, use this installation method to not draw outdoor air directly into the forced air system when the system is OFF.

If the product does not have a built-in outdoor air motorized damper, and you want to install the product in this system, refer to section 3.5 To install a Damper Accessory to the Product.

⚠️ **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:

If you plan to install an "-M" product, reverse the installation instructions within this section.

Note:

Balance the airflow before you operate this product.
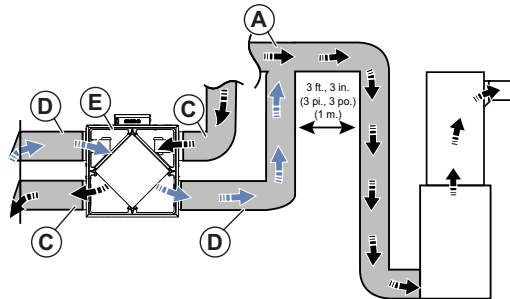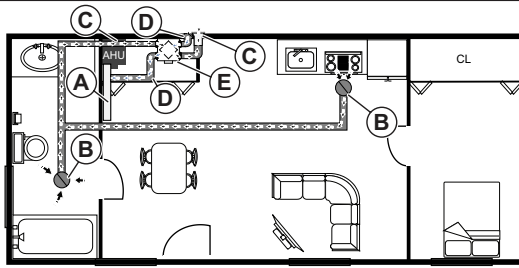
Refer to section 5.2 To Balance the Airflow.

While you do this procedure, make sure the forced air system blower is ON and the product is ON on "Normal" 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 3.3.1 To Position the Interior Grilles.

3.3.1 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

- 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.

In a Partially Dedicated System

- 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.

3.4 Overview of a Simplified System

Note:

A simplified system, 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. As a result, this method has the lowest installation cost of the three.

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

- When the bathroom and kitchen already have local exhaust systems.

- Retrofit applications

- If you use a "-D" product, use this installation method to not draw outdoor air directly into the forced air system when the system is OFF.

If the product does not have a built-in outdoor air motorized damper, and you want to install the product in this system, refer to section 3.5 To install a Damper Accessory to the Product.

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.

> **Note:**
>
> If you plan to install an "-M" product, reverse the installation instructions within this section.
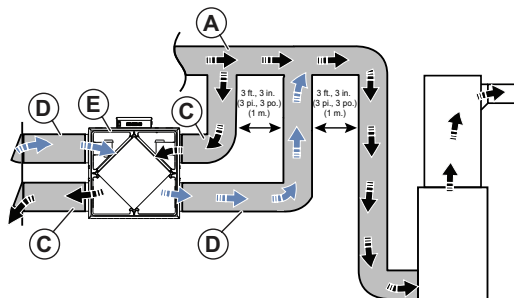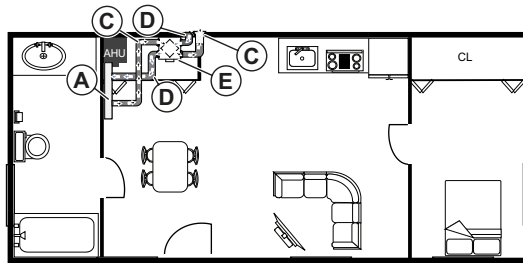
> **Note:**
>
> Balance the airflow before you operate this product.
>
> Refer to section 5.2 To Balance the Airflow.
>
> While you do this procedure, make sure the forced air system blower is ON and the product is ON on "Normal" speed.

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

3.5   To install a Damper Accessory to the Product

> **Note:**
>
> For products that do not include an outdoor air motorized damper:

If a partially dedicated or simplified installation is used, such as a connection to the product's supply air duct and to a forced air system's return air duct, operate this product continuously.

When the product is OFF, no warm exhaust air will flow through the product, but the forced air system's blower will continue to draw in outdoor air through the product.

When this happens, unconditioned outdoor air will be brought indoors. This can increase the load on the forced air system.

If the product is installed so that the homeowner can set the product to the OFF position, Fantech recommends to install a motorized damper between the product's supply air duct and the forced air system's return air duct.

This damper will close when the product is OFF to prevent the entry of unconditioned outdoor air into the building envelope.

1   To install a damper accessory to the product, find the auxiliary connector on the side of the electrical box.
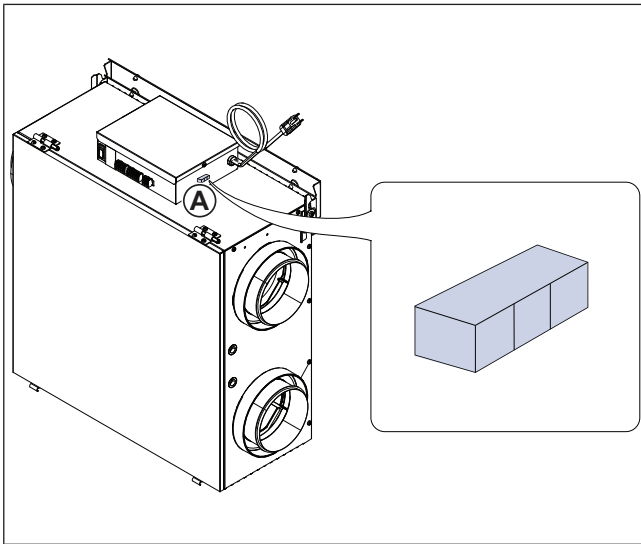
A. Auxiliary connector for external damper wire harness

2   Use the included wire harness to connect the damper accessory to the product.

Note:

Damper motor not included.

3.6   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).

3.6.1   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.

3.6.2   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).
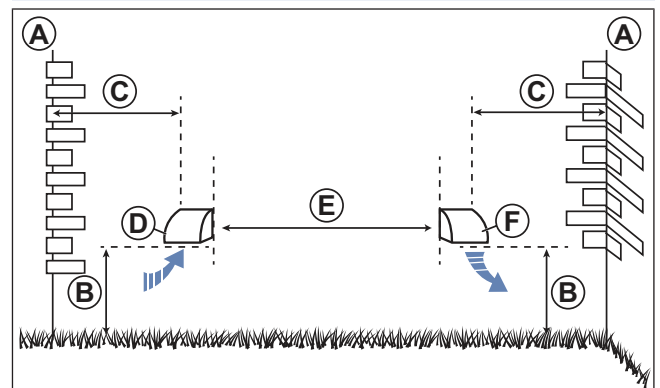
Keep 3 ft. (1 m.) from corners.

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.

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

3.6.3   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.

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4.   If there are prevailing winds.
5.   Always refer to local authorities with jurisdiction in your area.

- 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.
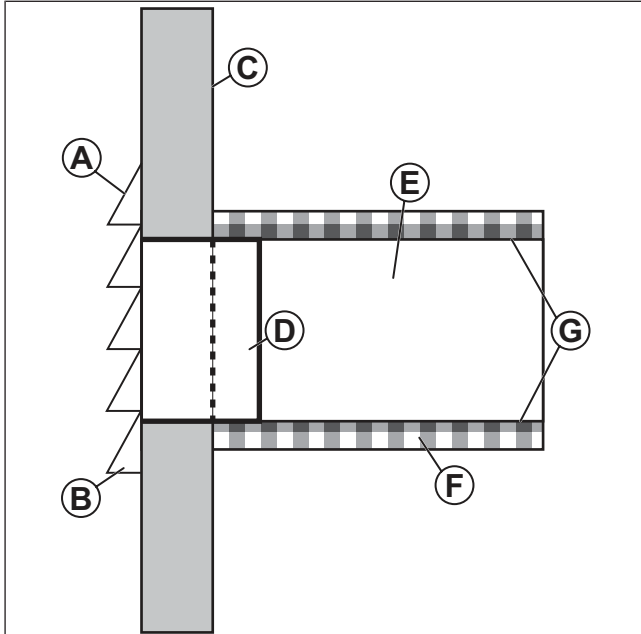
A. Hood
B. Bird Screen
C. Exterior Wall
D. Insulated Flexible Duct
E. Inner Liner
F. Outer Liner
G. Sleeve

3.6.4   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.
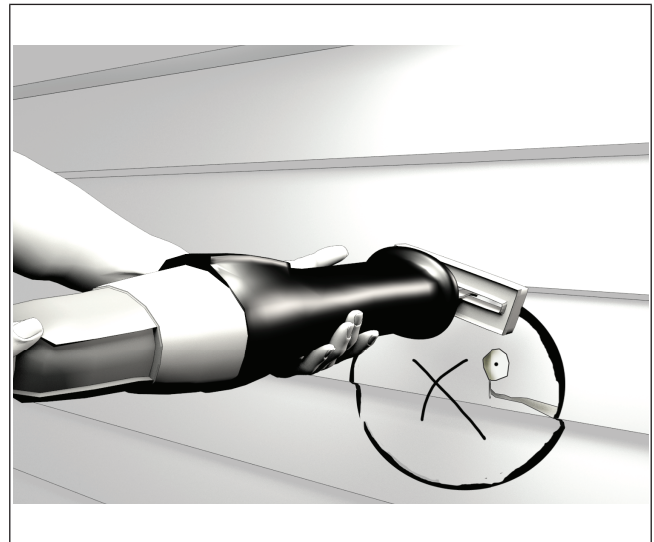
3 Pull the insulated flexible duct through the opening until it is fully extended and straight.

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.

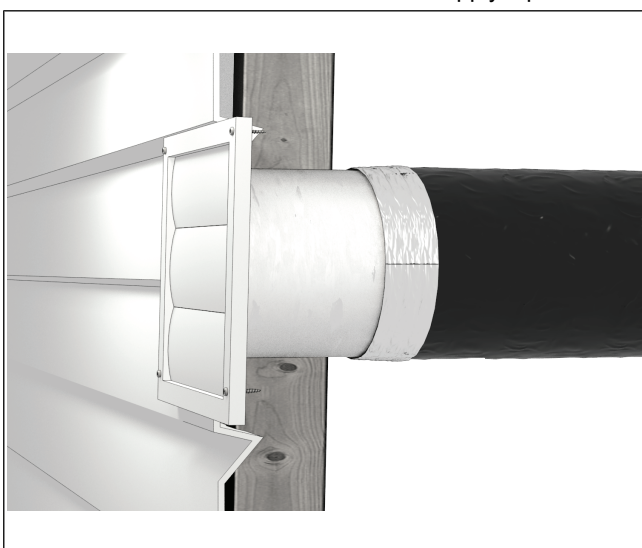**7** Safety the duct to the hood duct connection with applicable tape or sealant.
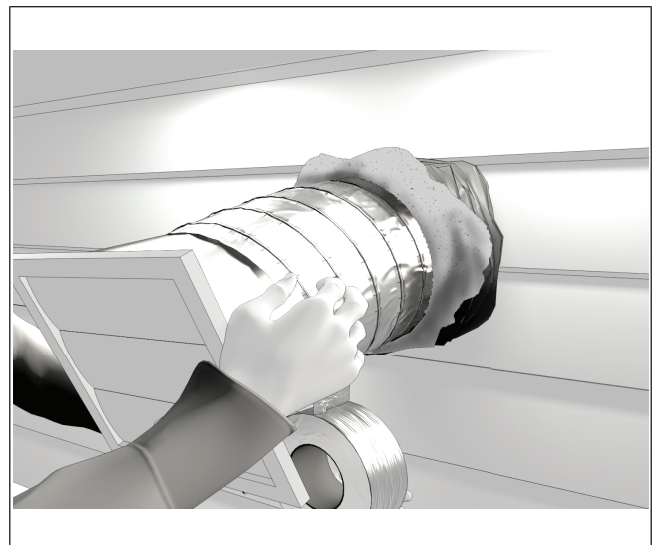
8   Push the supply hood into the opening.

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

10   Obey the previous seven (7) steps to install the exhaust hood.
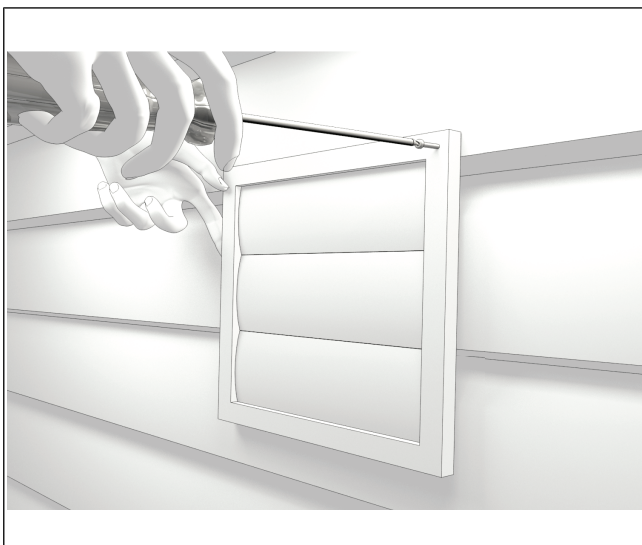
11   Use a caulk gun to seal around both hoods to prevent leaks.

12   Attach insulated duct from inside and apply tape.

3.7   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	
The space in front of the door that is necessary to remove the core:	8 1/2 (216)
The space above the electrical box that is necessary to do the wire connections:	2 3/8 (61)

Installation Type	A	B
Wall Mount	20 1/4 (514)	16 (406)
Ceiling Mount	21 1/2 (545)	16 (406)
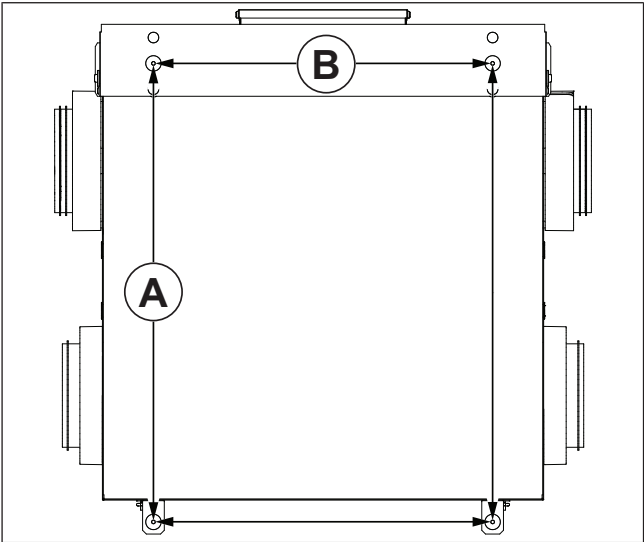
Fig. 1 Ceiling Mount Dimensions
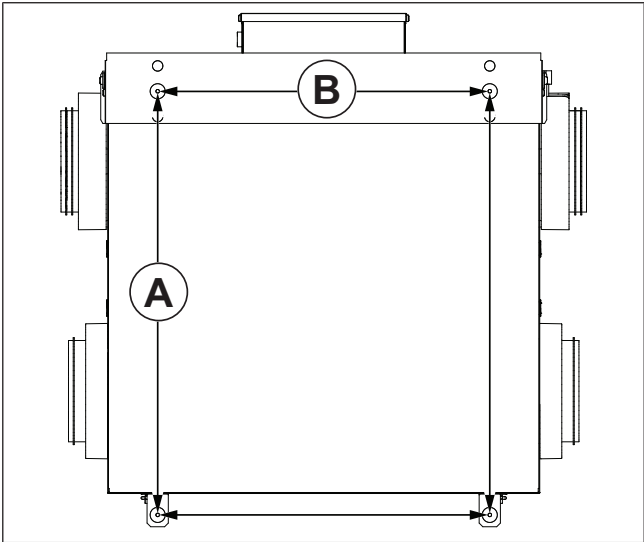
Fig. 2 Wall Mount Dimensions

3.7.1 To Mount the Product on the Ceiling
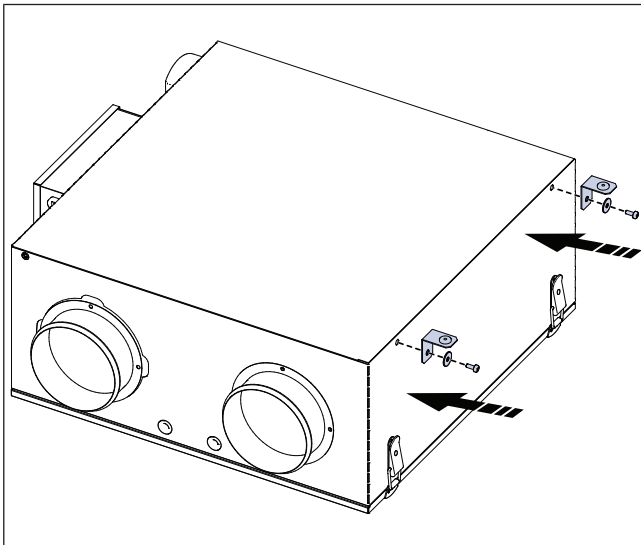
Note:

Make sure the bracket is straight when you install it.

1 Put two (2) wood screws and two (2) washers through the back of the grommets on the long bracket and attach the bracket to the applicable support beams.
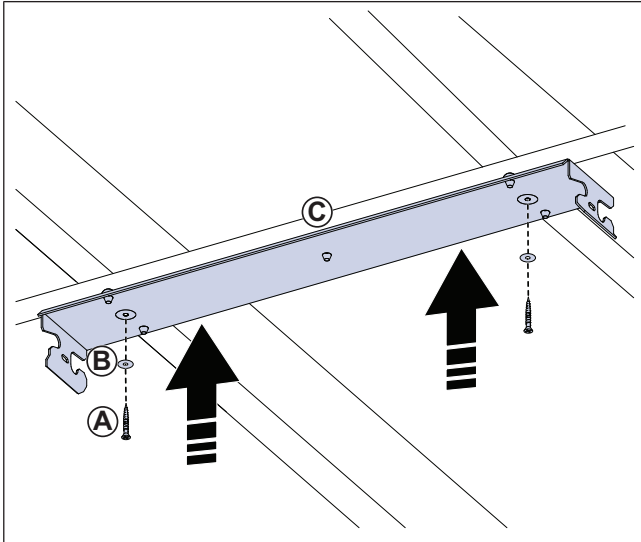
A. Wood Screw

B. Washer

C. Long Bracket

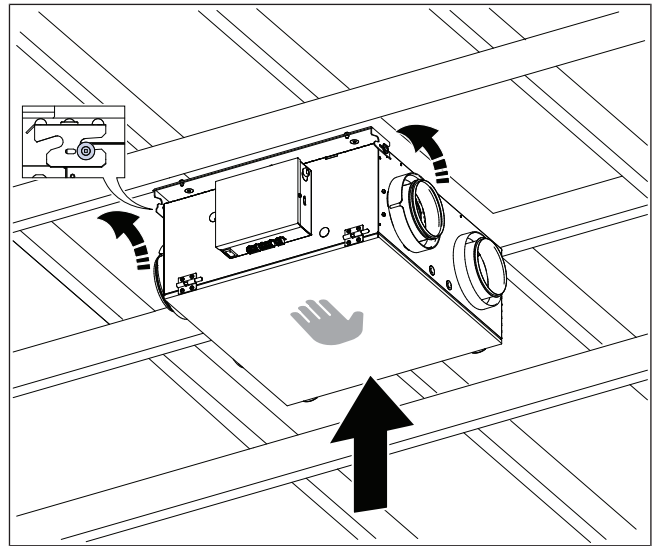**2** Use two (2) machine screws and two (2) washers to mount the two (2) angle brackets onto the product.

3 Push the product into a horizontal position against the ceiling.

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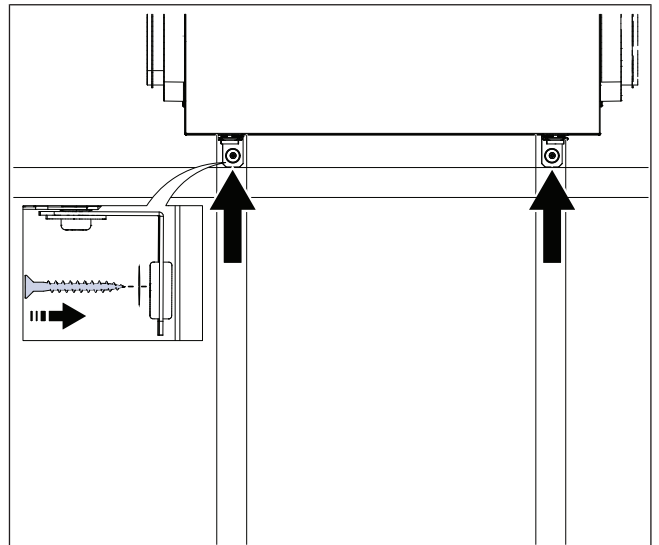
⚠ Caution

Keep your hand on the product so it does not tilt down and cause damage the electrical box.

4 Put two (2) wood screws and two (2) washers through the back of the grommets on the two (2) angle brackets and attach them to the applicable support beams.
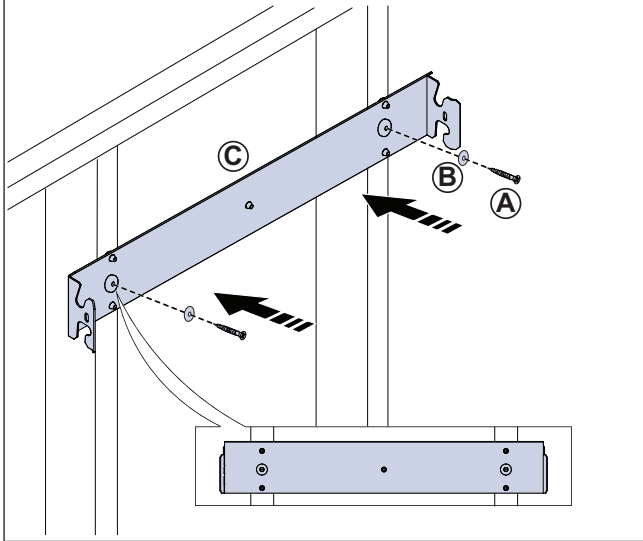
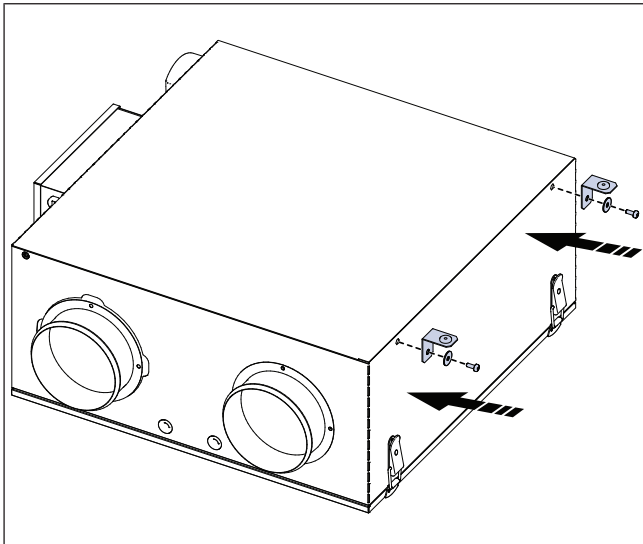### 3.7.2   To Mount the Product on the Wall

Note:

Make sure the bracket is straight when you install it.

1 Put two (2) wood screws and two (2) washers through the back of the grommets on the long bracket and attach the bracket to the applicable support beams.
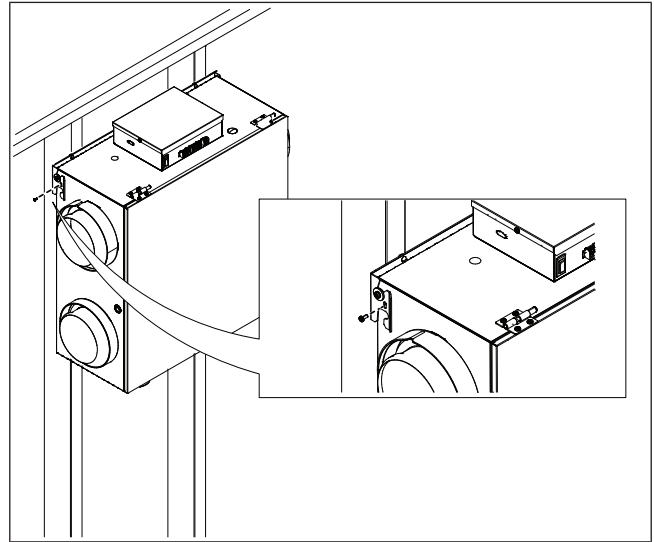

A. Wood Screw

B. Washer

C. Long Bracket

2 Use two (2) machine screws and two (2) washers to mount the two (2) angle brackets onto the product.

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.

5 Put two (2) wood screws and two (2) washers through the back of the grommets on the two (2) angle brackets and attach them to the applicable support beams.
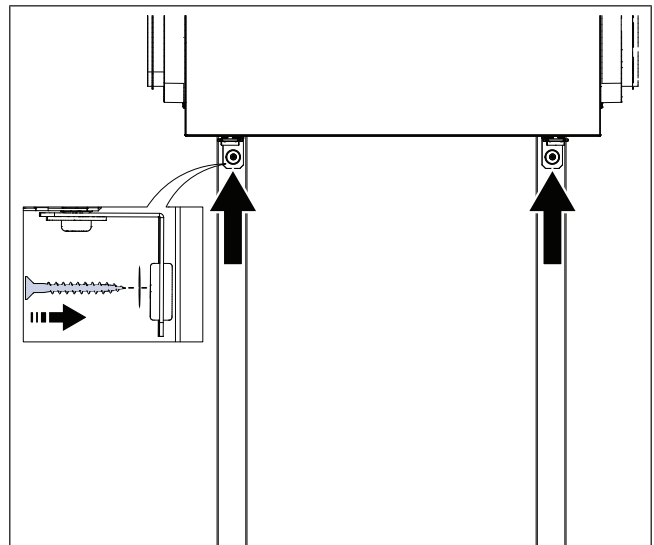
3.7.3 To Connect the Ducts to the Product

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. Move a 12 in. (300 mm.) segment of insulated flexible duct onto the applicable duct collar.

2. Use one (1) cable tie to attach flex duct onto the duct collar.

3. Do the previous two (2) steps for the other duct collars.
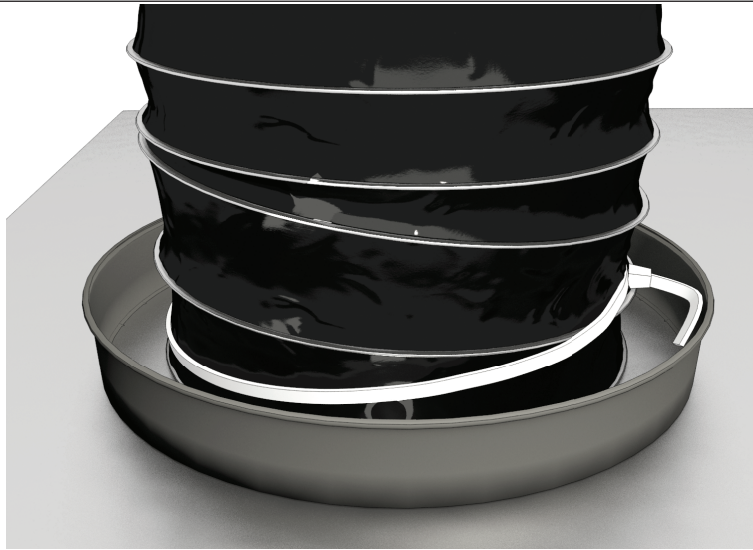
4 Electrical connection

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:**
>
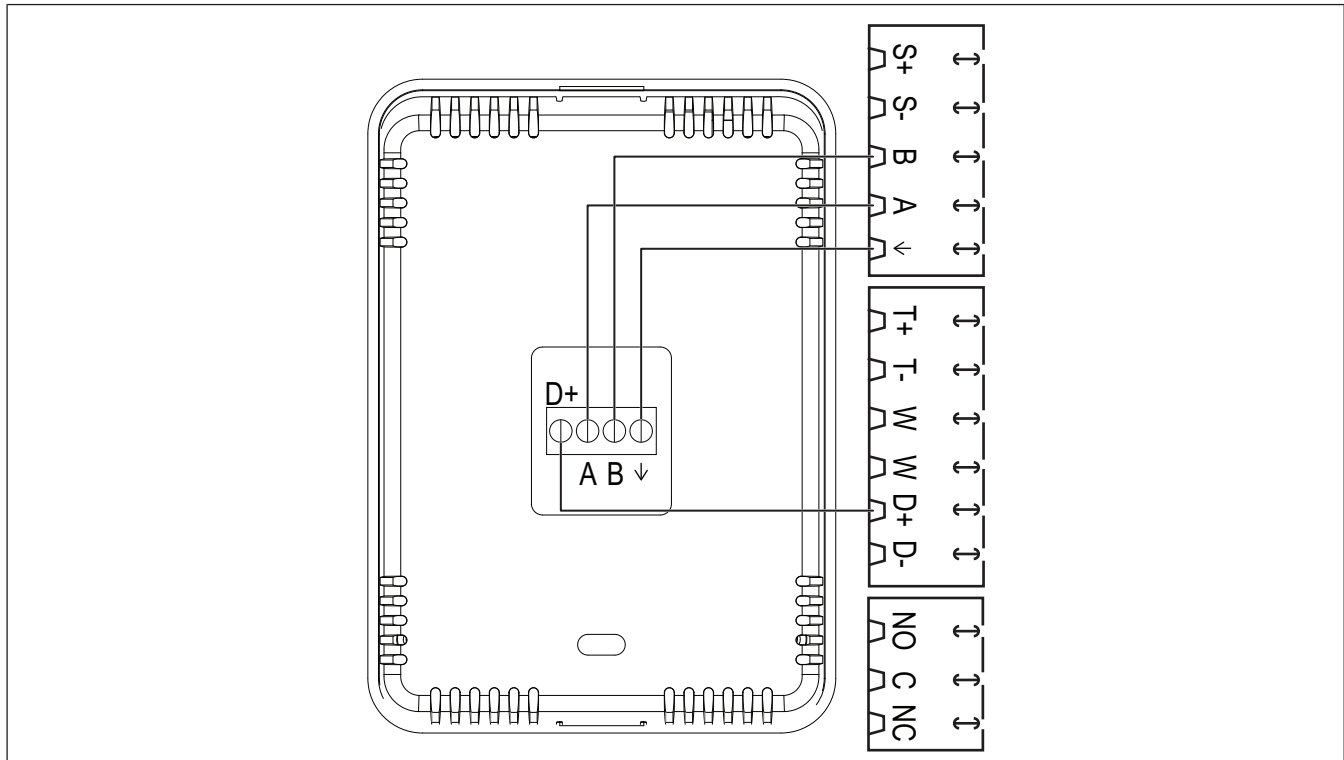> Only one central control can be used for each application.

Fig. 3 Wire Connections for the ECO-Touch® Auto IAQ and the ECO-Feel® Auto IAQ[6]

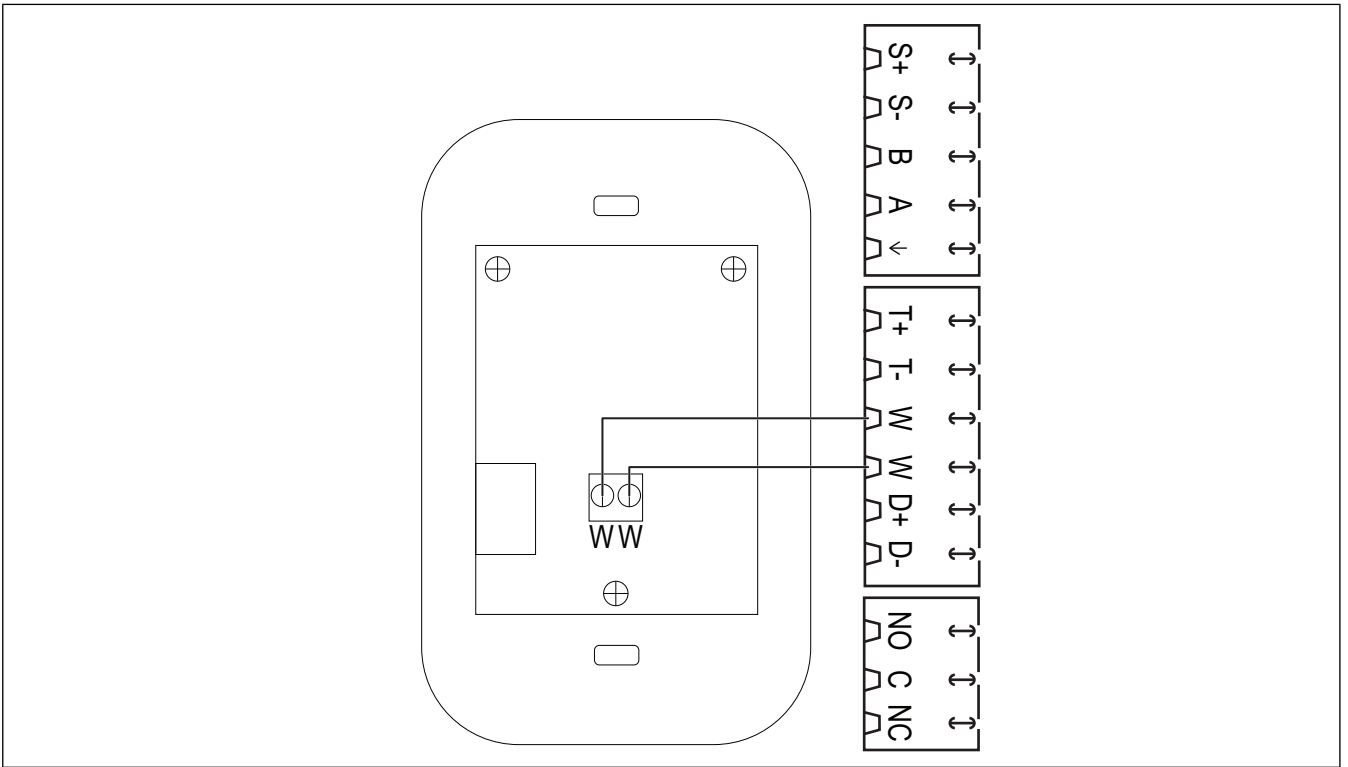6. Keep the polarity between the control and the product (+ → + | — → —)
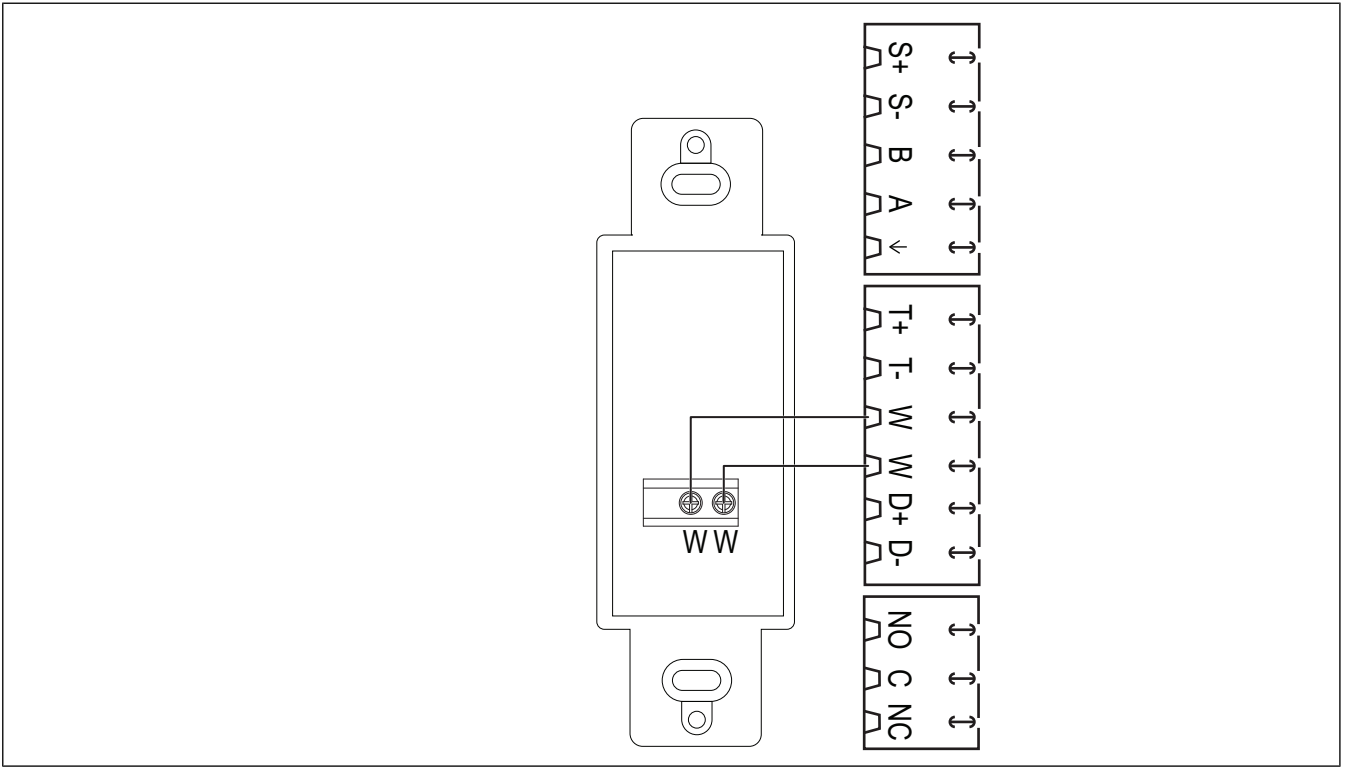
Fig. 4 Wire Connections for the EDF8

Fig. 5 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:

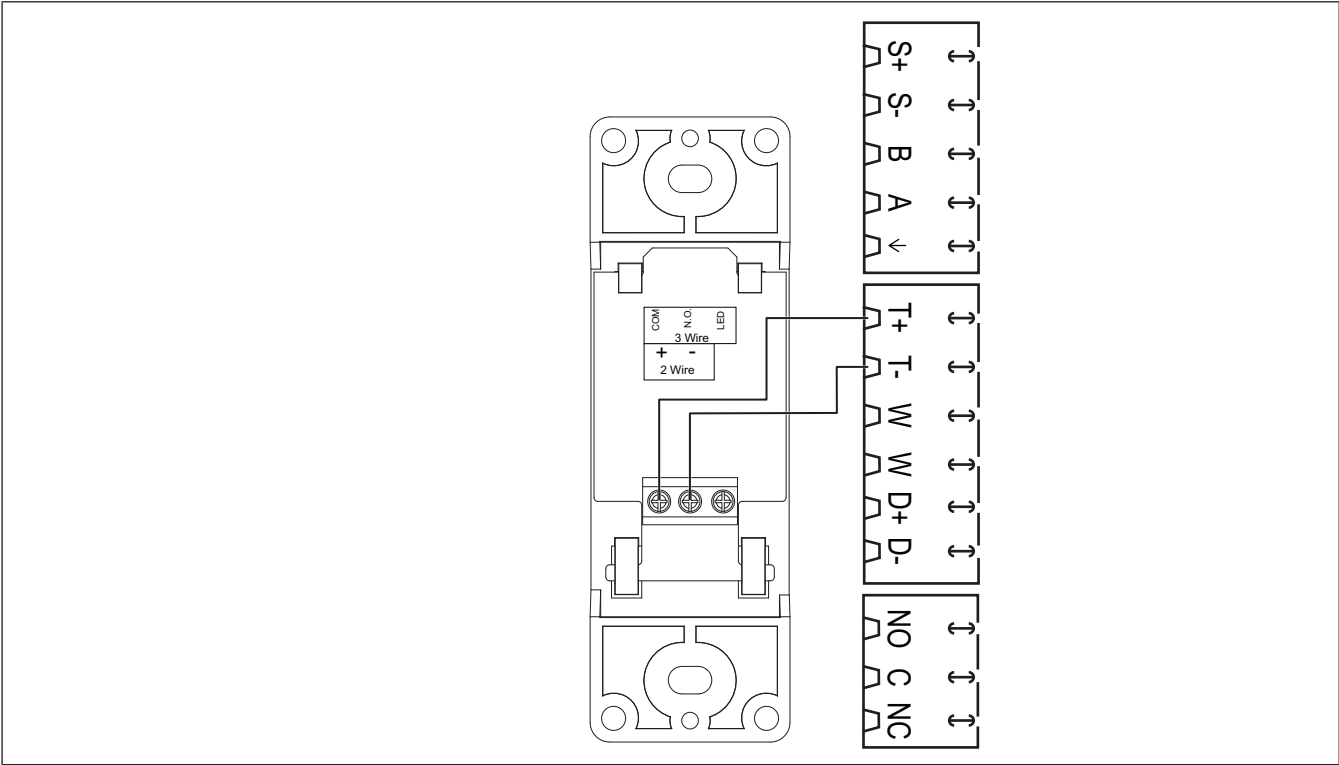You can connect these controls with central controls or with another control.
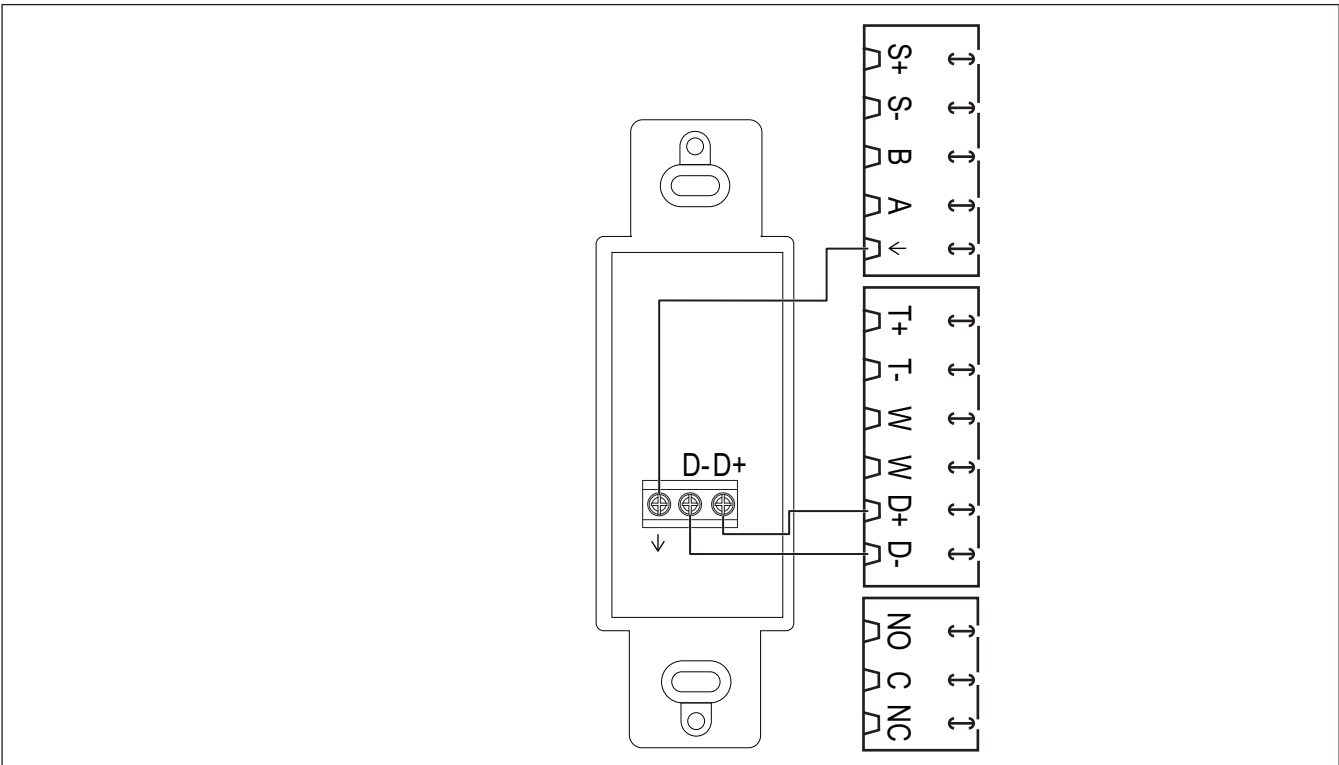

Fig. 6 Wire Connections for the RTS2[7]

Fig. 7 Wire Connections for the RTS4[7]

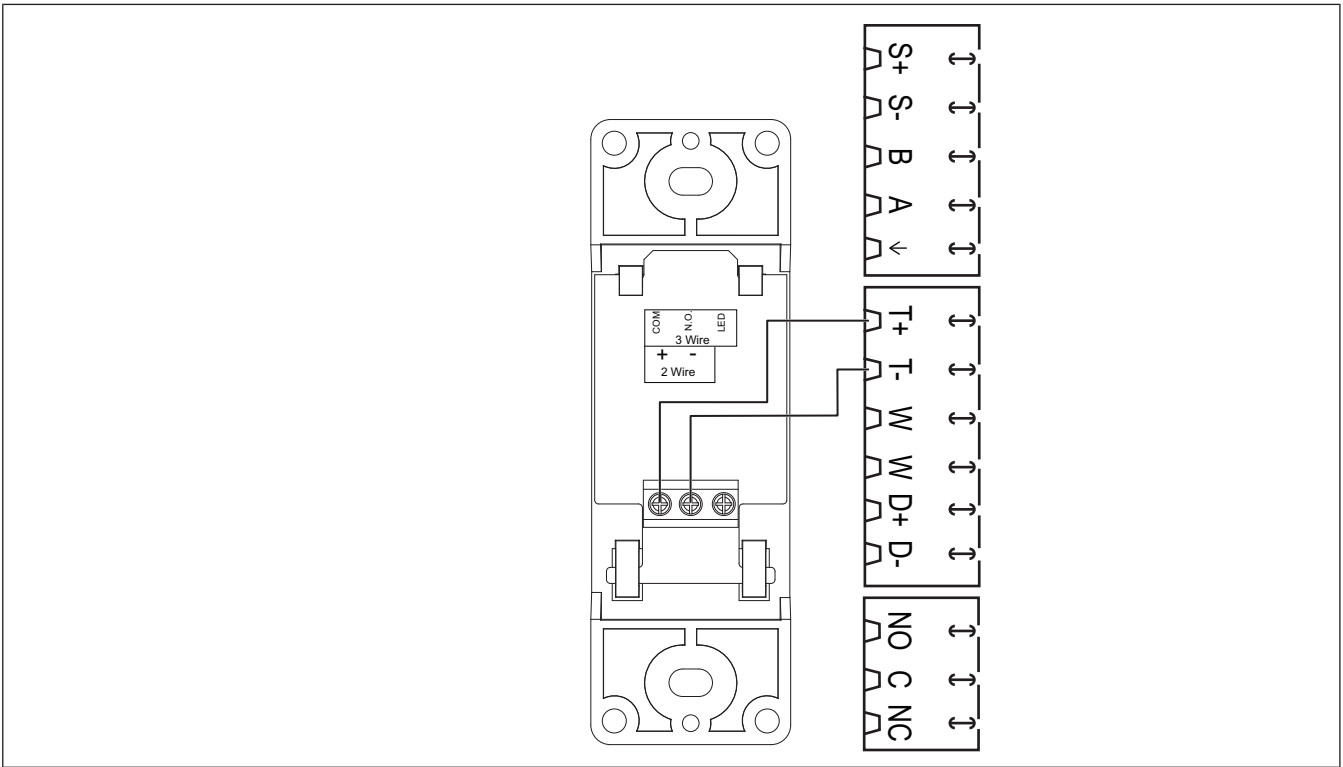7. Keep the polarity between the control and the product (+ → + | — → —)

Fig. 8 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:

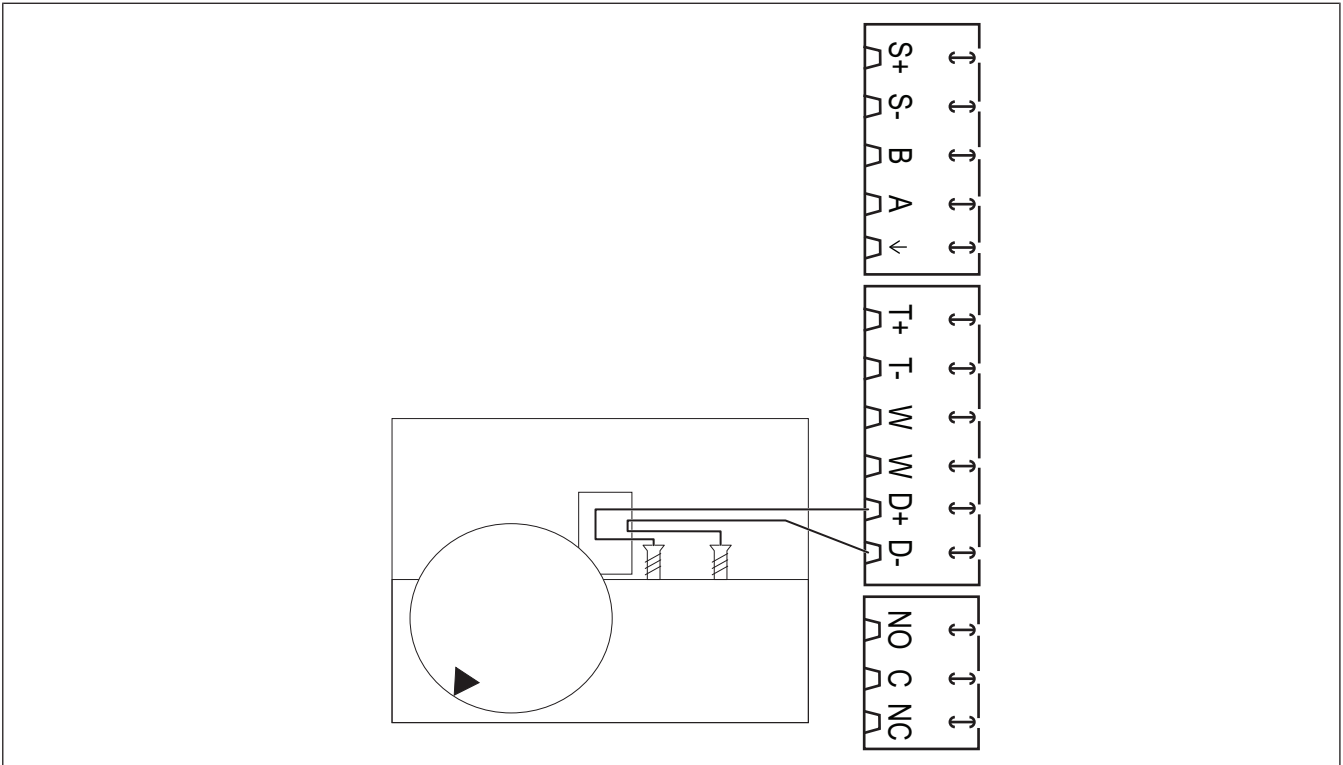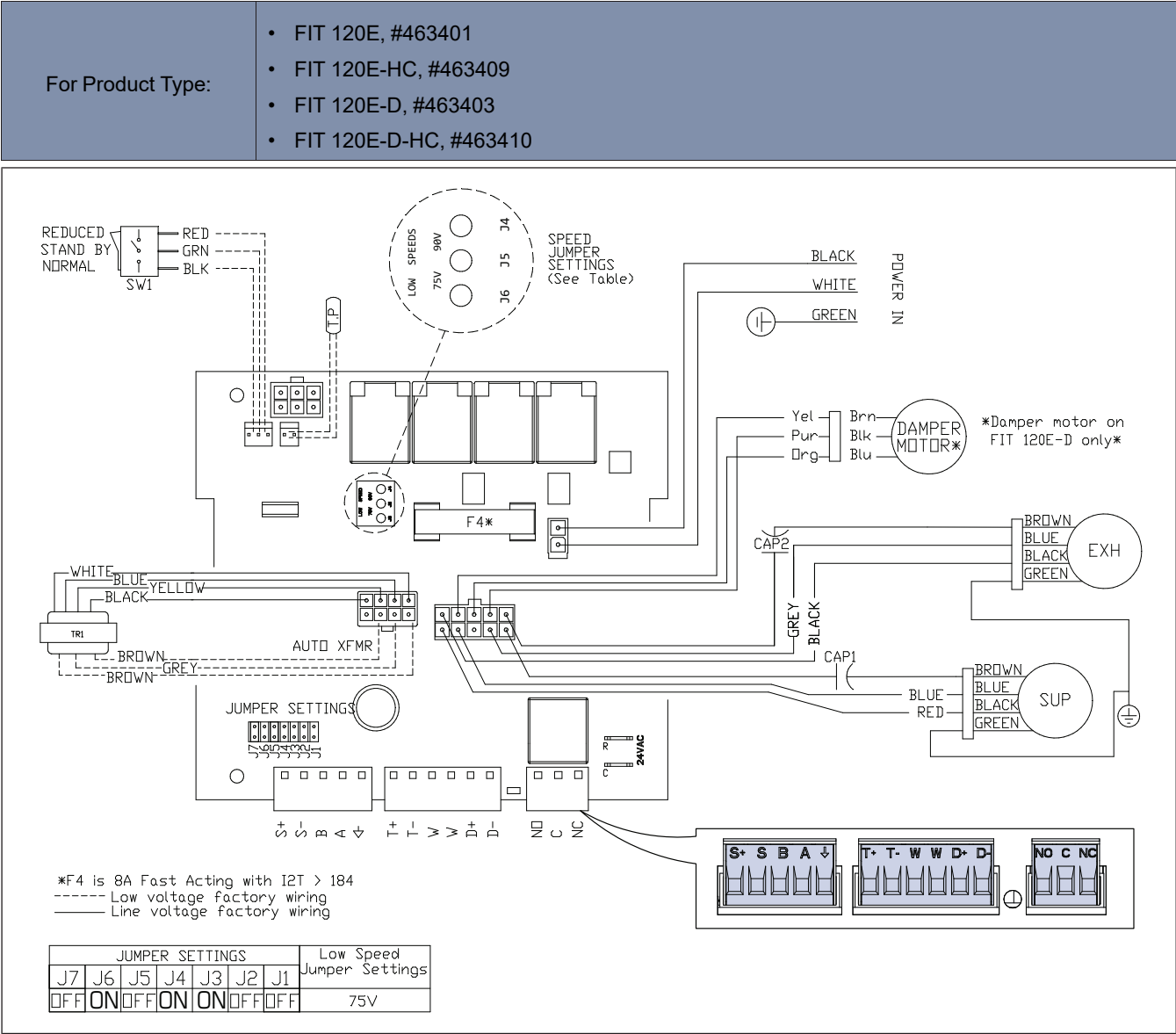You can connect these controls with central controls or with another control.

Fig. 9 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:	• FIT 120E, #463401 • FIT 120E-HC, #463409 • FIT 120E-D, #463403 • FIT 120E-D-HC, #463410

*F4 is 8A Fast Acting with I2T > 184
------ Low voltage factory wiring
———— Line voltage factory wiring

JUMPER SETTINGS							Low Speed Jumper Settings
J7	J6	J5	J4	J3	J2	J1	
OFF	ON	OFF	ON	ON	OFF	OFF	75V

4.5   Standard EC Product Wiring Diagram

For Product Type:	• FIT 120E-D-EC, #463404
	• FIT 120E-D-EC-HC, #463411
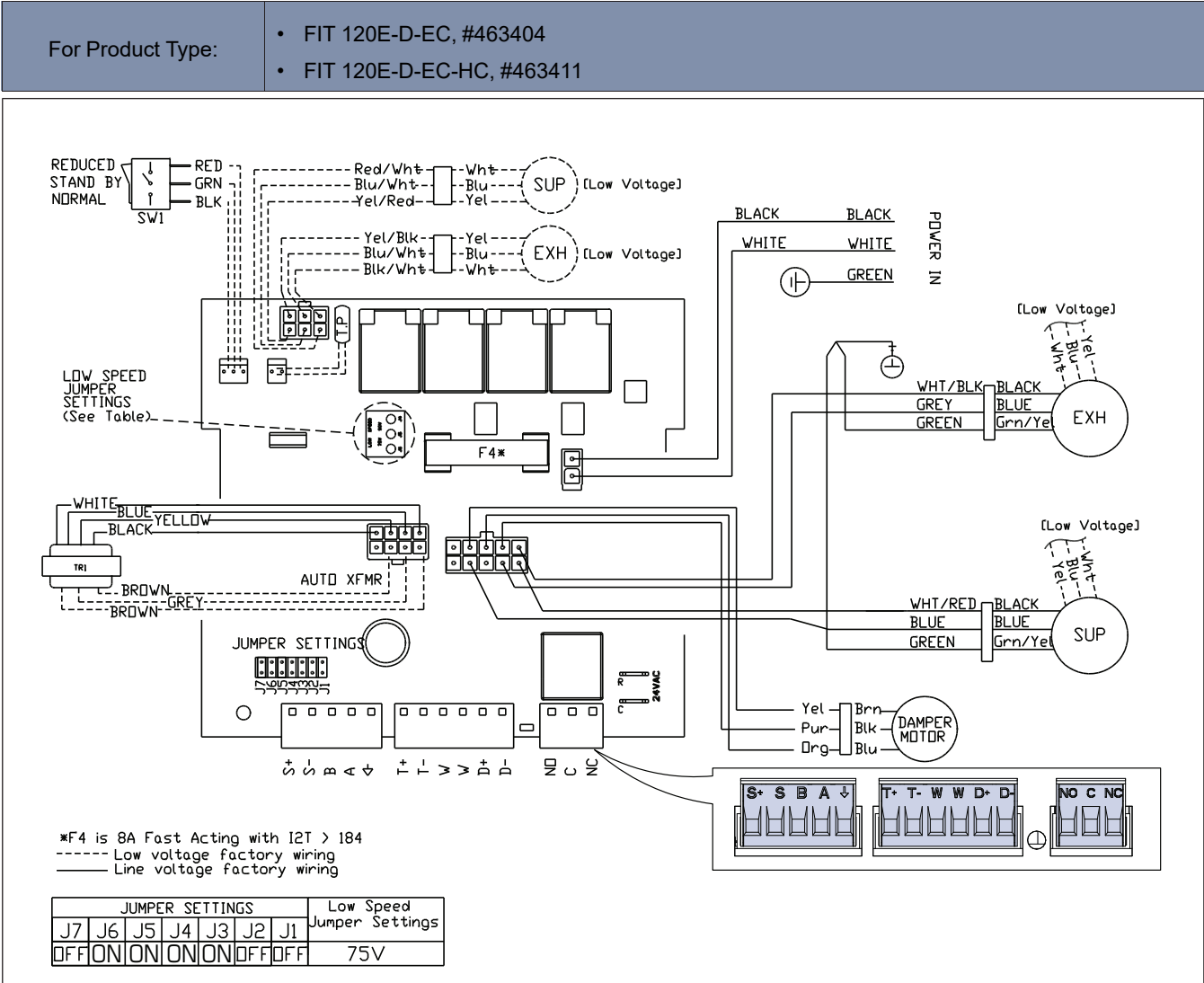
4.6   Mirrored AC Product Wiring Diagram

For Product Type:	• FIT 120E-M, #463405
	• FIT 120E-M-HC, #463412
	• FIT 120E-D-M, #463406
	• FIT 120E-D-M-HC, #463413
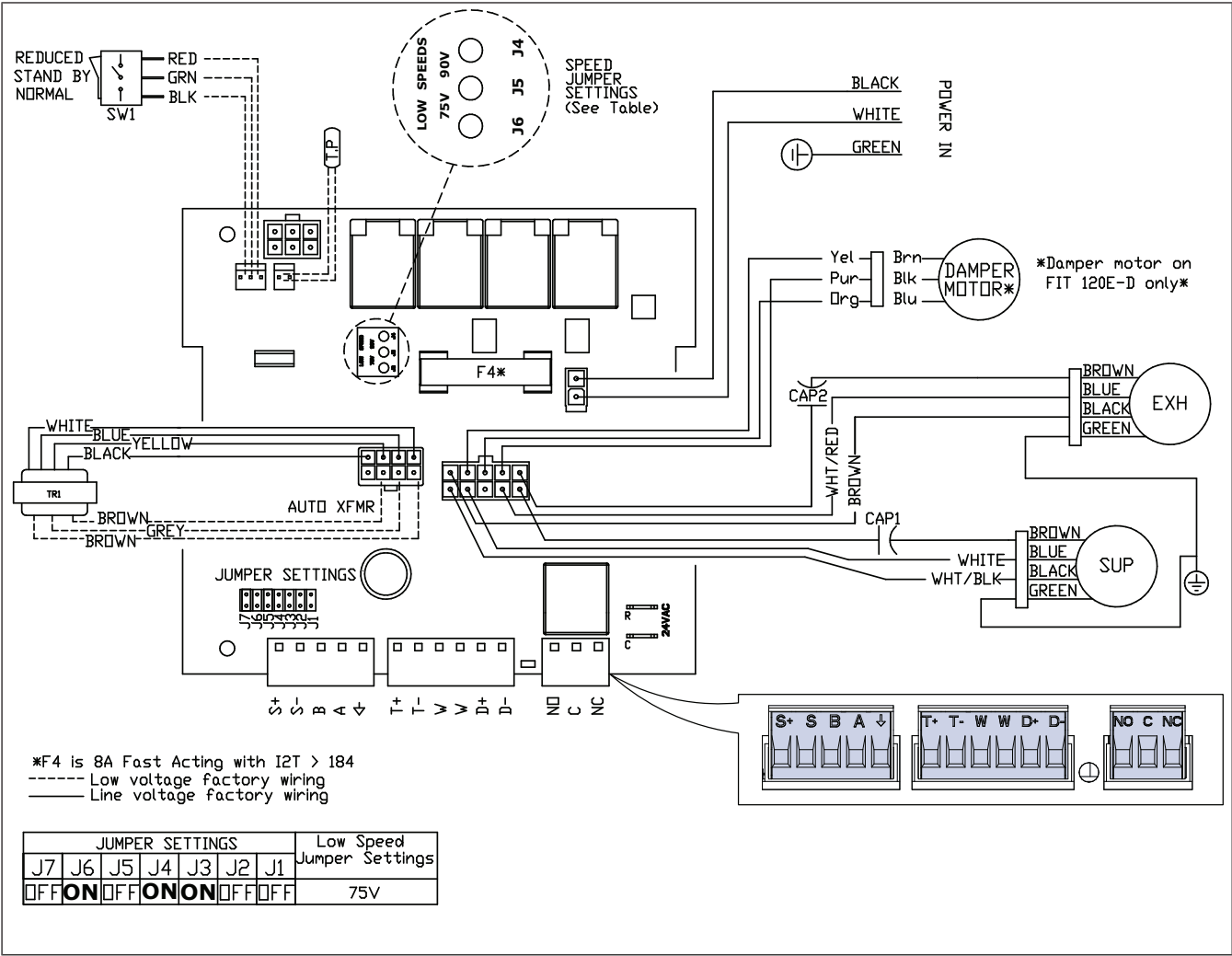
4.7   Mirrored EC Product Wiring Diagram

For Product Type:	• FIT 120E-D-EC-M, #463407
	• FIT 120E-D-EC-M-HC, #463414

*F4 is 8A Fast Acting with I2T > 184
------ Low voltage factory wiring
——— Line voltage factory wiring

JUMPER SETTINGS							Low Speed Jumper Settings
J7	J6	J5	J4	J3	J2	J1	
OFF	ON	ON	ON	ON	OFF	OFF	75V
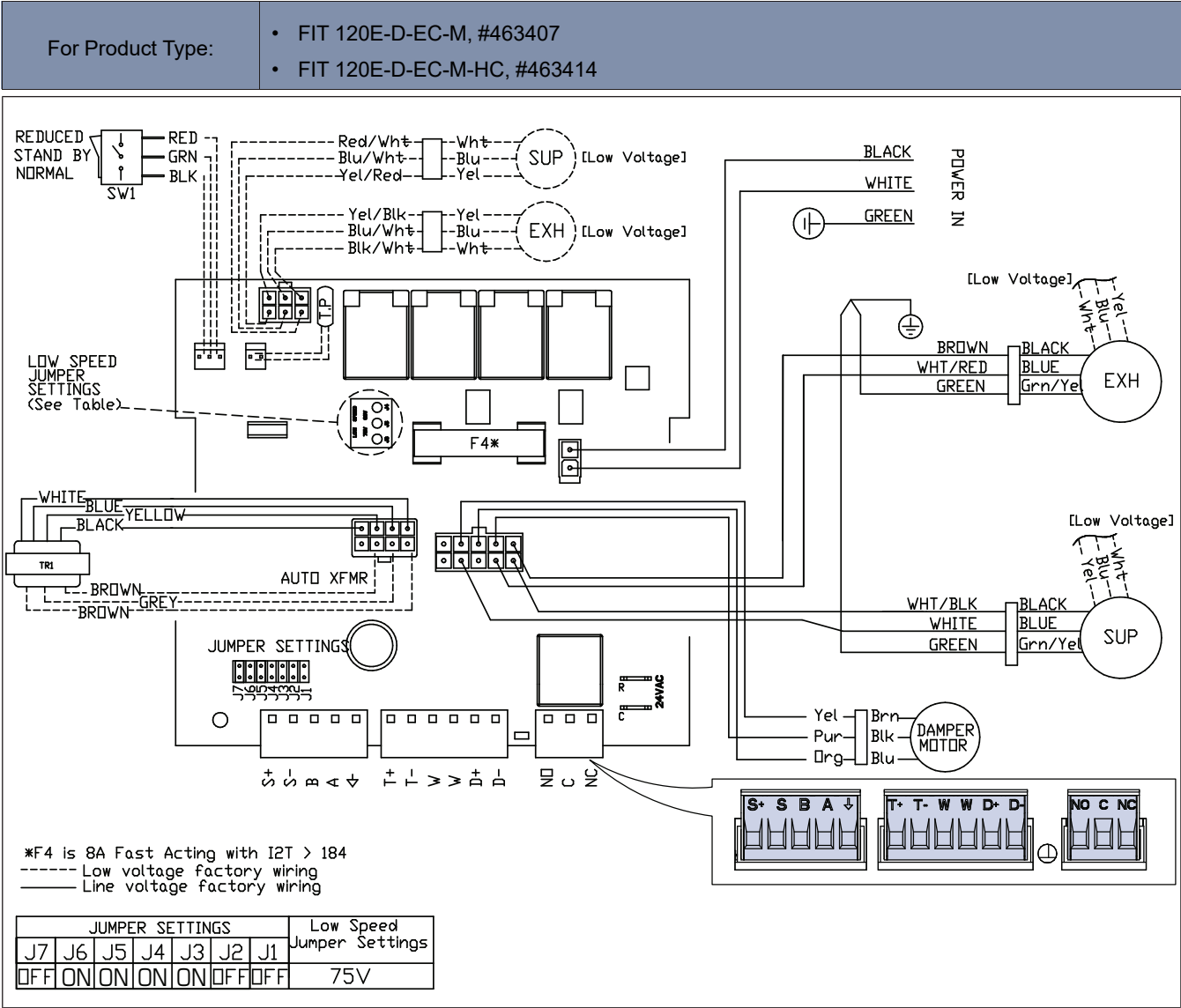
5 Commissioning

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.

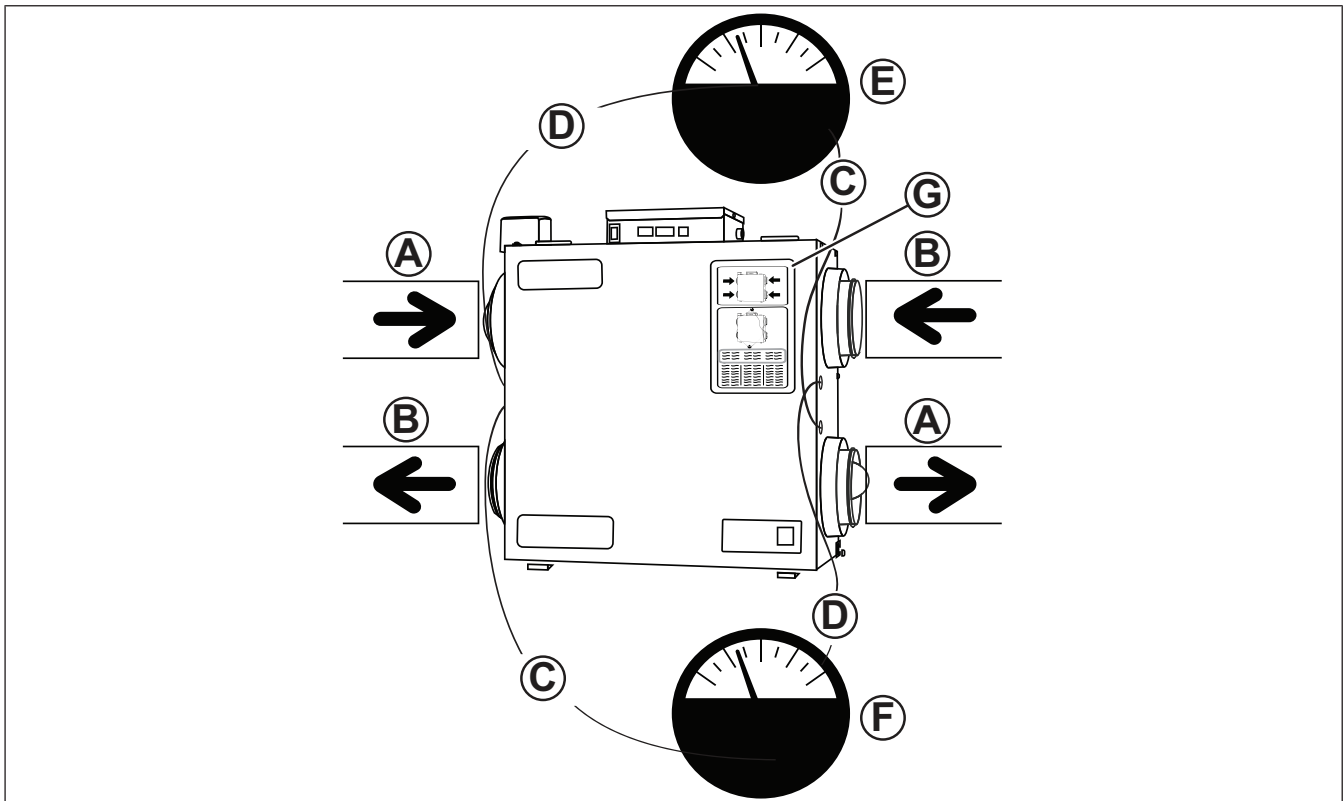## 5.2 To Balance the Airflow

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 label.

Note:

The figure within this section shows a standard product. For mirrored products, the airflows are opposite.

A. Fresh air from outdoors
B. Stale air to outdoors
C. Low
D. High

E. Fresh Air
F. Stale Air
G. Balancing Label
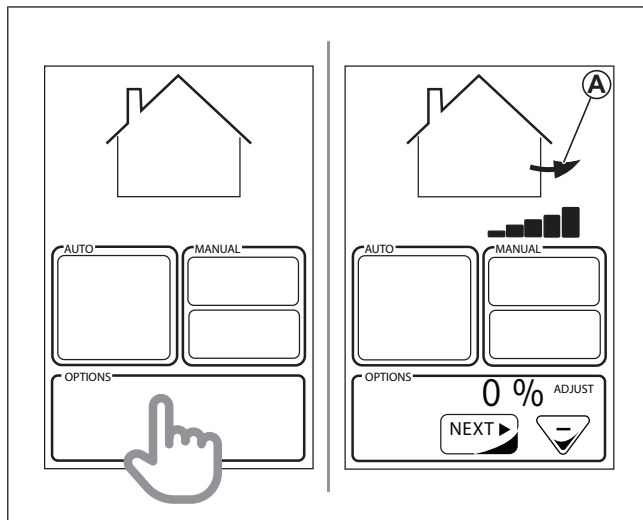
5.2.1 To Balance the Exhaust Fan

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.

Note:

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

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

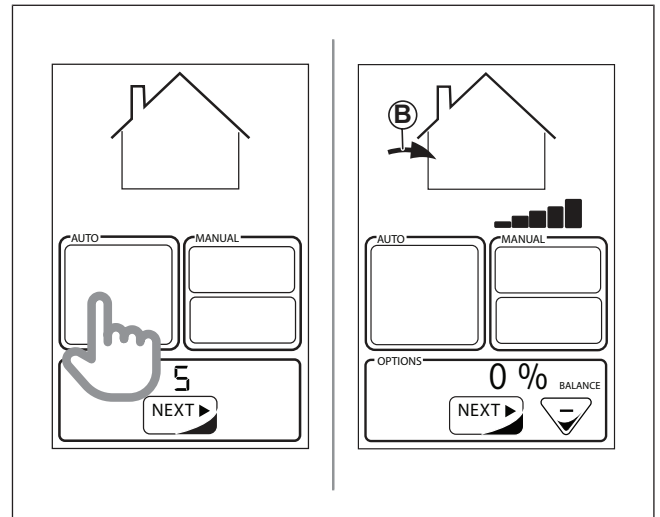5   When the necessary fan speed is met, press the "next" button.

5.2.2 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.

6 Operation

6.1 Control Hierarchy / Operations

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

Control Hierarchy

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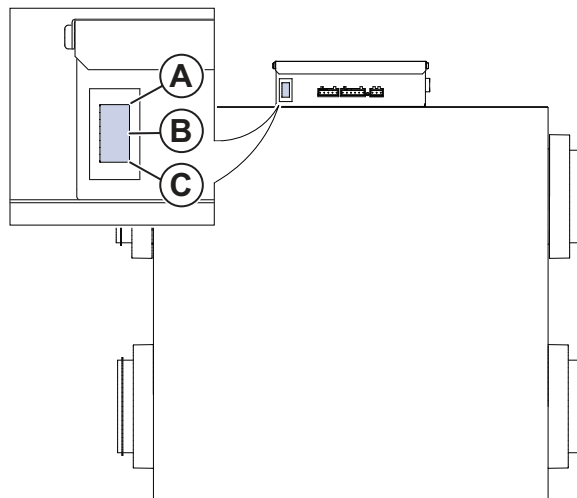5. Two-wire controller (W/W)
6. Speed selection switch

> **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 and high settings will keep the product in operation continuously if another function with a higher priority is not activated.
>
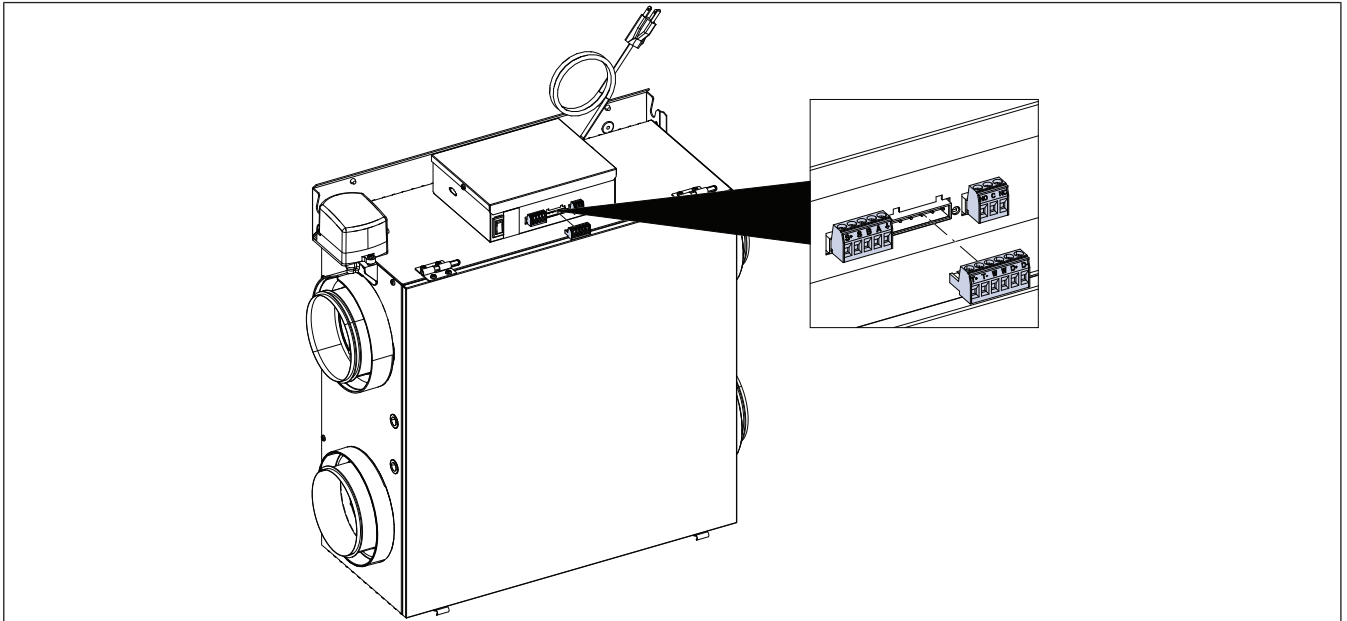> The selections that follow are available:

A. Low speed
B. Standby

C. High speed

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 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 high-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:
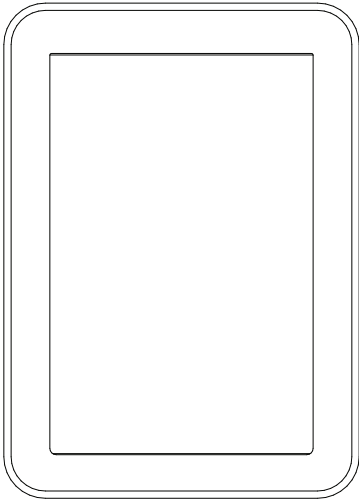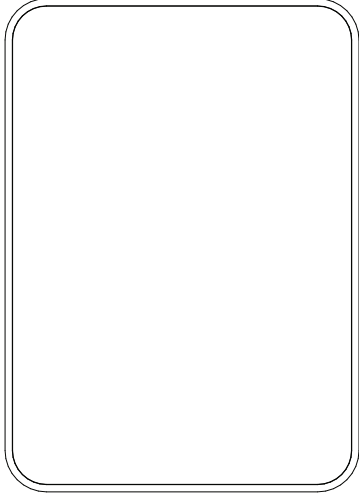
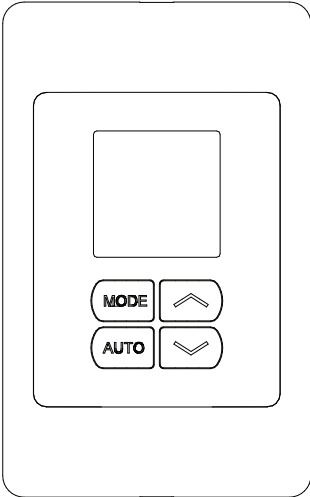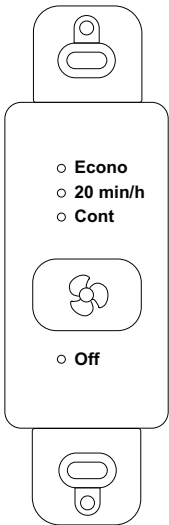- D+ and ↓   • S- and ↓

Or

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
	  – Medium
	  – High
	  – 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 speed.
	  – When humidity meets the set point, the product goes back to the original mode of operation before humidity rose.

EDF3
 	
 ○ **Econo**
○ **20 min/h**
○ **Cont**
 	
○ **Off**
	• 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 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 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 on high speed.

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

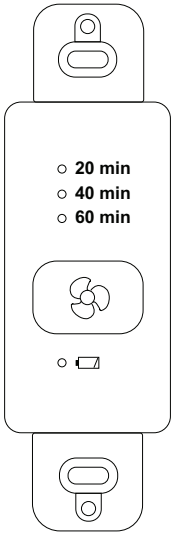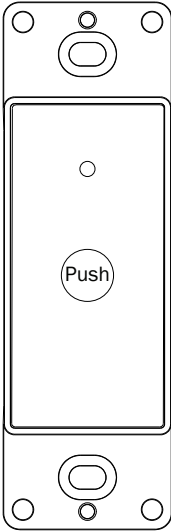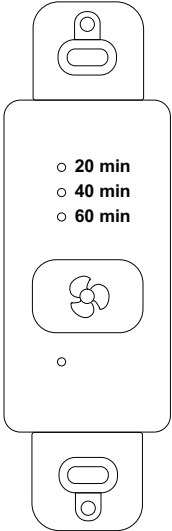## 6.3   Sequence of Operations — Bathroom Timers
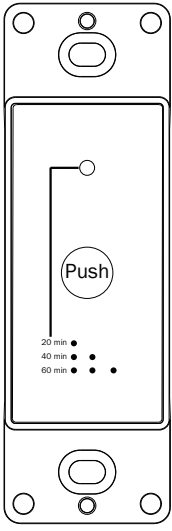
Table 2 Bathroom Timers

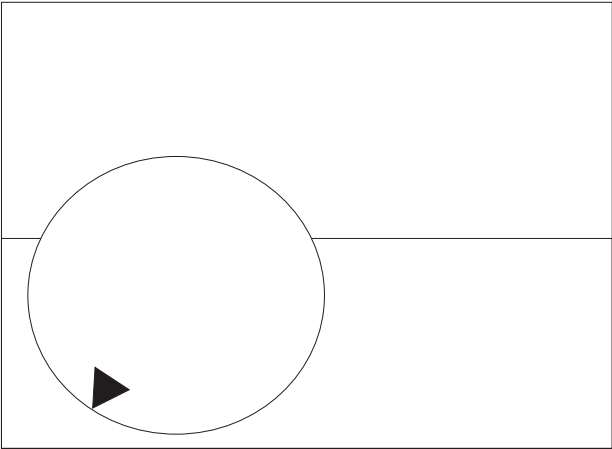| Bathroom Timers	Features
RTS-W ○ 20 min ○ 40 min ○ 60 min	• Connects only with the ECO-Touch® Auto IAQ – Wireless Timer • 20/40/60 minute timer with an LED light • Press the button to operate the product at high speed. • Up to 5 can be used together • For use in bathrooms, kitchens, laundry rooms,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

Table 2   Bathroom Timers (continued)

RTS4 ○ 20 min ○ 40 min ○ 60 min	• 20/40/60 minute timer with an LED light • Press the button to operate the product at high speed. • Up to 5 can be used together • For use in bathrooms, kitchens, laundry rooms, and more.
RTS5 Push 20 min 40 min 60 min	• 20/40/60 minute timer with an LED light • Press the button to operate the product at high 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.
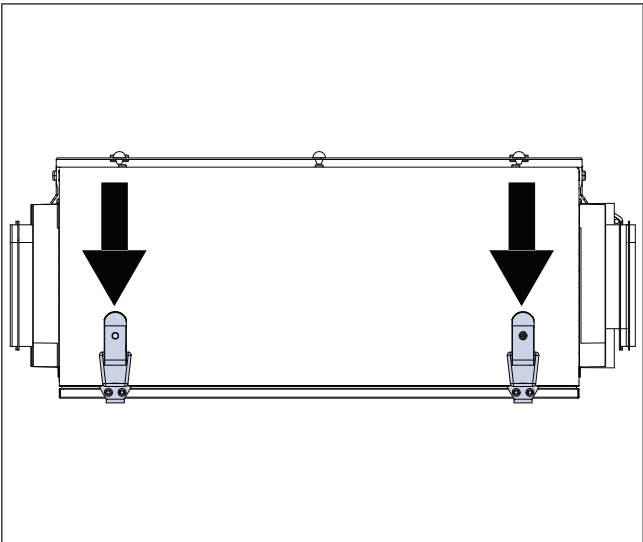
2. Pull the door away from the product and move it away from the hinges.

3. While you hold the core and filters in position, turn the metal plate that holds the product's core.

Note:

Be careful when you do this step. The core and filters can fall out if this product is in the ceiling position.

4. Remove the filters and the core from the product.
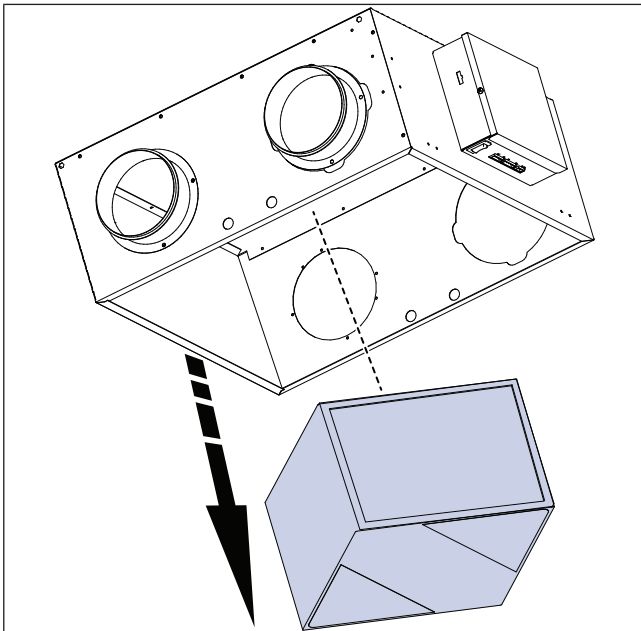
5   Put the filters and the core on a flat surface.

6   Wash the filters in warm, soapy water.

7   Rinse the soapy water off the filters.

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

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

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

Note:

Make sure the entire surface has been rinsed.

11   Turn the core so that the other air inlet points down.
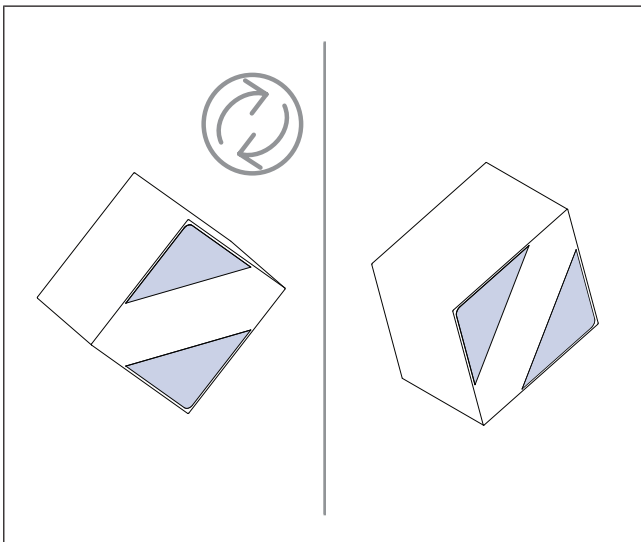
12   Do step 9 again.

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

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

15   Allow the core to dry completely.

Note:

This process takes about 2–3 hours.
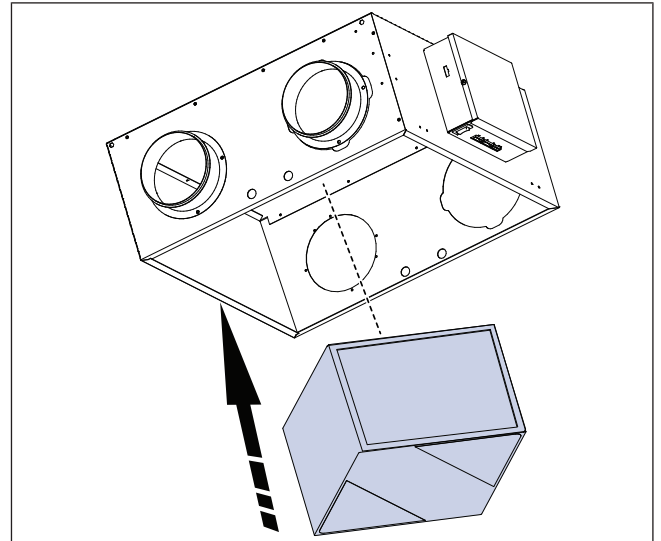
16   Put the core back in position within the product.

Note:

Be careful when you do this step. The core and filters can fall out if this product is in the ceiling position.
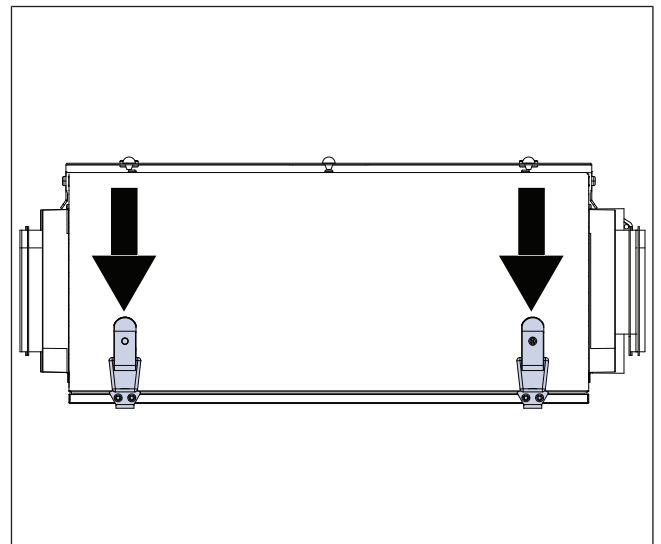
Note:

Make sure that the arrow points to the motors.
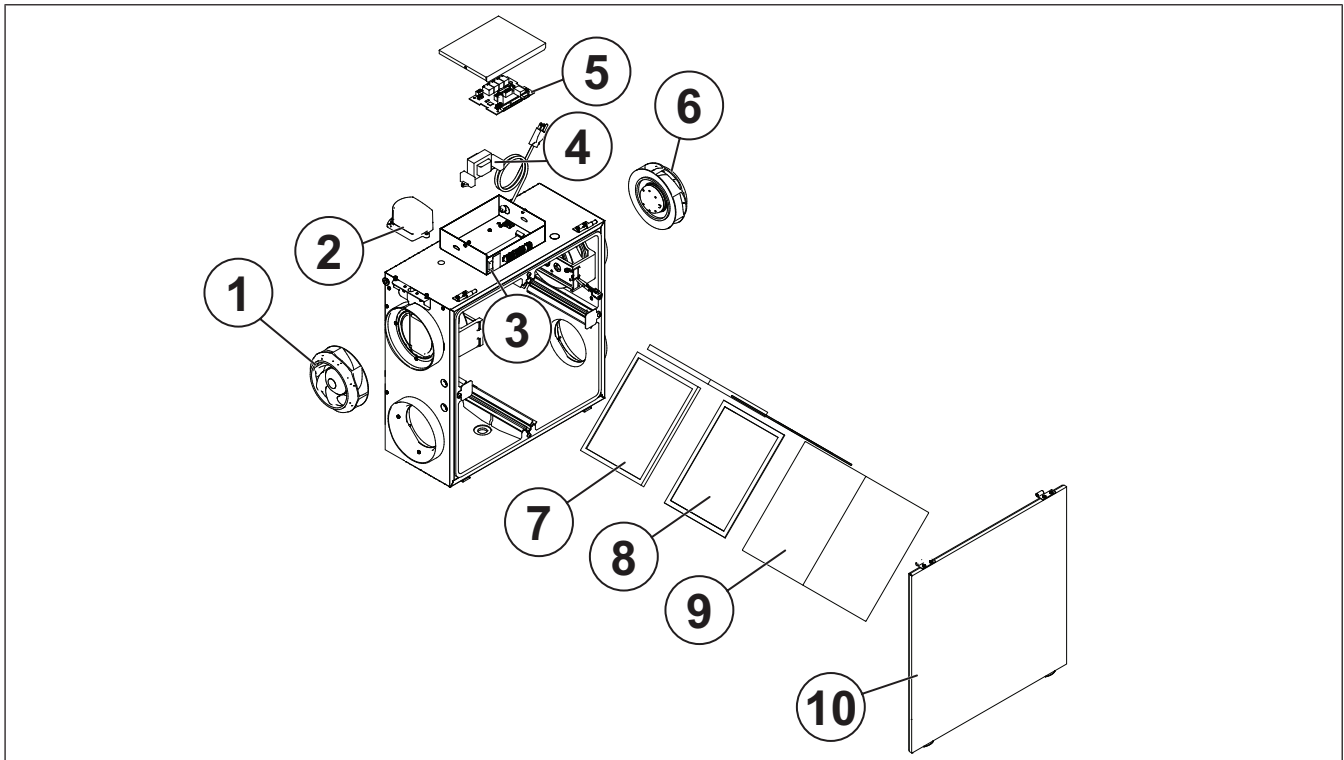
17   Put the filters back onto the core.

18   Turn the metal plate so that the filters and core stay in position.

19   Attach the door back onto the product.

20   Close the door.

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

7.2   Spare Parts

1.   Replacement motor

     Supply fan
2.   Replacement damper motor kit
3.   Control switch
4.   Auto transformer
5.   Replacement control board

6.   Replacement motor

     Exhaust fan
7.   MERV 3 replacement filter kit
8.   MERV 8 replacement filter kit
9.   Replacement exchanger
10. Replacement door

Note:

Make a scan of the code that follows to get access to our spare parts portal.

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

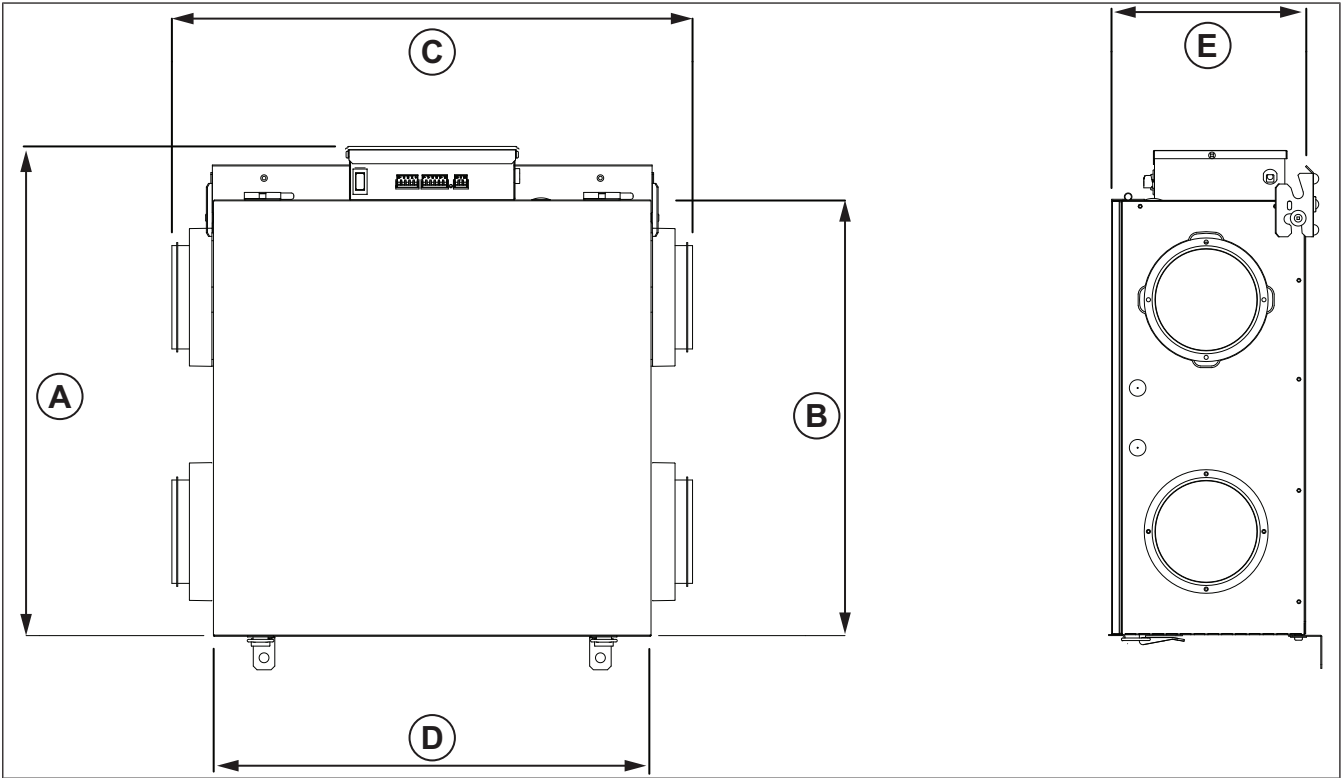> **Note:**
> When there is trouble with your product, it is best to speak with an HVAC contractor/technician.

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.).

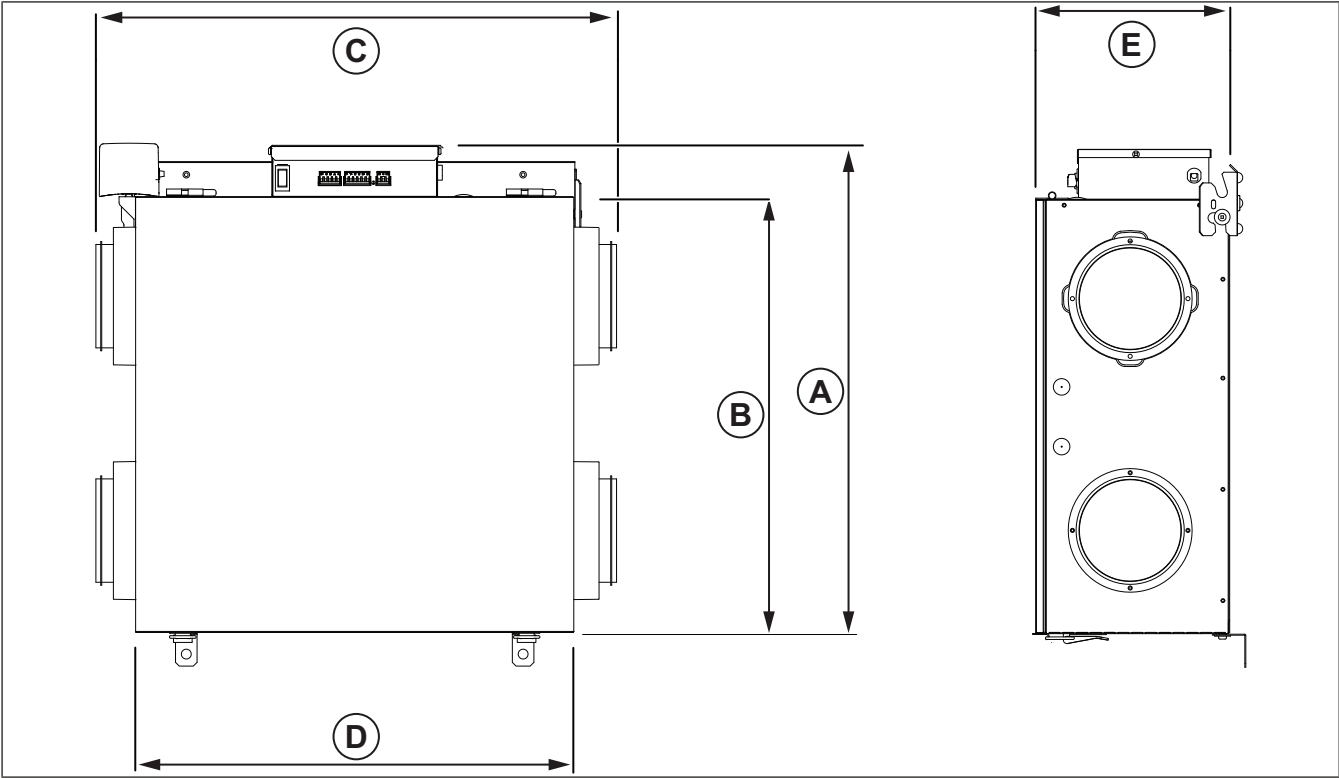|	A	B	C	D	E
• FIT 120E, #463401 • FIT 120E-M, #463405 • FIT 120E-HC, #463409 • FIT 120E-M-HC, #463412	23 5/32 (588)	20 3/4 (527)	24 5/8 (625)	20 27/32 (529)	9 1/4 (235)

9.2   Product Dimensions

Fig. 10 Standard Product with Damper

> **Note:**
>
> Dimensions are given in inches (mm.).

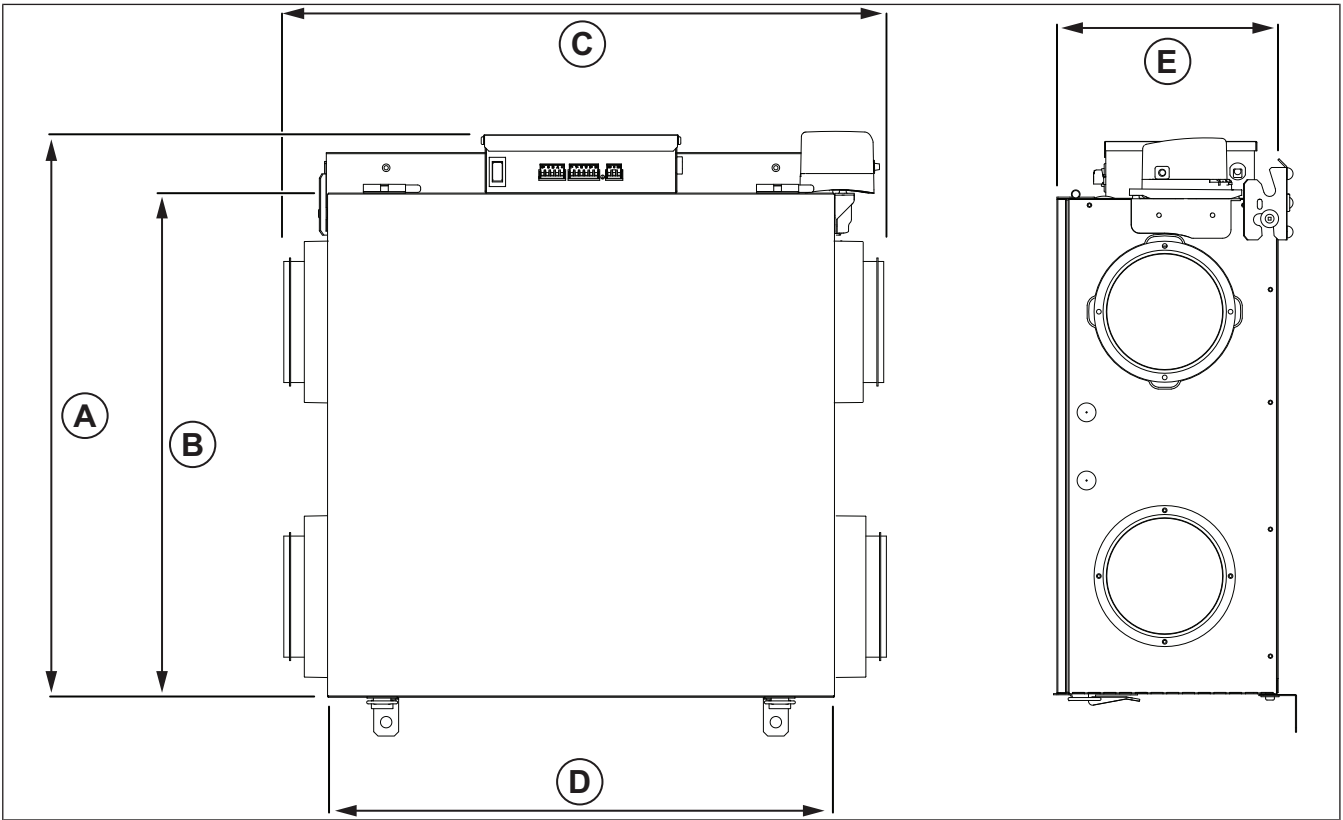|	A	B	C	D	E
• FIT 120E-D, #463403 • FIT 120E-D-EC, #463404 • FIT 120E-D-HC, #463410 • FIT 120E-D-EC-HC, #463411	23 5/32 (588)	20 3/4 (527)	25 (636)	20 27/32 (529)	9 1/4 (235)

Fig. 11 Mirrored Product with Damper

	A	B	C	D	E
• FIT 120E-D-M, #463406 • FIT 120E-D-EC-M, #463407 • FIT 120E-D-M-HC, #463413 • FIT 120E-D-EC-M-HC, #463414	23 5/32 (588)	20 3/4 (527)	25 (636)	20 27/32 (529)	9 1/4 (235)

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