
MUAS 8 / MUAS 10

Makeup Air System (MUAS)



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1 Introduction

1.1 Product Description

This product is a galvanized sheet metal, insulated, rectangular filter supply fan. The cabinet features 1-inch eco-friendly mineral wool insulated panels, an 8–10 inch duct inlet and outlet, and an electronically commutated (EC) motor.

It is supplied with an 8–10 inch motorized damper and a MERV-11 filter.

This product is not supplied with a duct silencer, a duct heater, an intake hood, or mounting clamps. These parts are available and recommended as accessories.

1.2 Intended Use

The Fantech MUAS products are made to be installed vertically, horizontally, or in a floor-mount position.

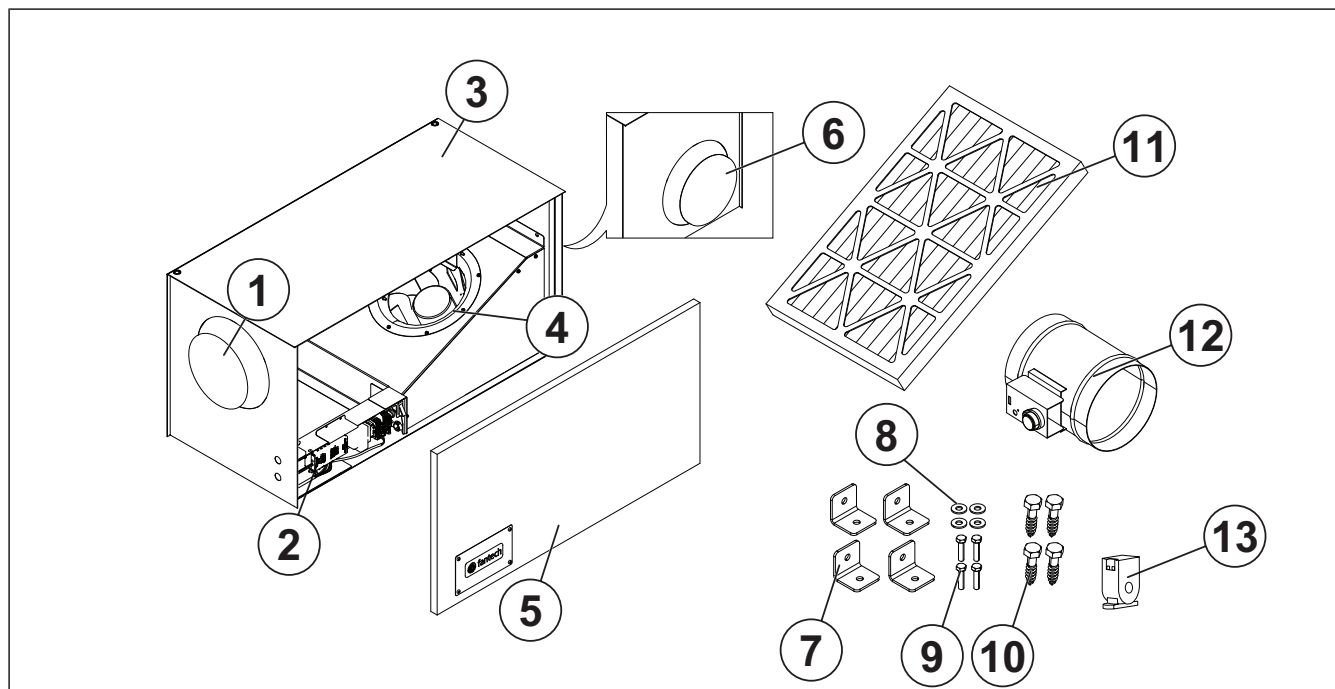
This product is used to bring outdoor air in to match outgoing exhaust air.

When controlled by the current sensing Fantech Makeup Air Controller (FMAC), it can match single speed, multi-speed, and adjustable speed exhaust fans.

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.

1.5 Product Overview

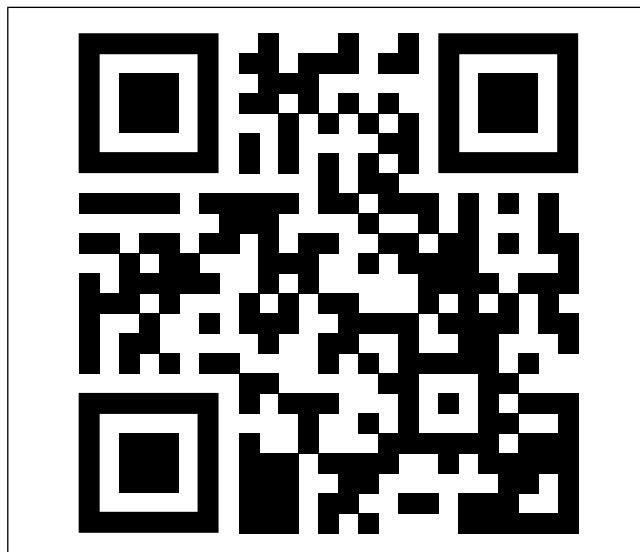


1. Air inlet
2. FMAC and wire connections
3. Insulated cabinet
4. Impeller
5. Door
6. Air outlet
7. Mounting brackets, quantity 4

8. Washers, quantity 4
9. Threaded screws, quantity 4
10. Lag bolts, quantity 4
11. Air filter, quantity 1
12. Motorized damper, quantity 1
13. Current transducer, quantity 1

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

1.4 Fantech Warranty

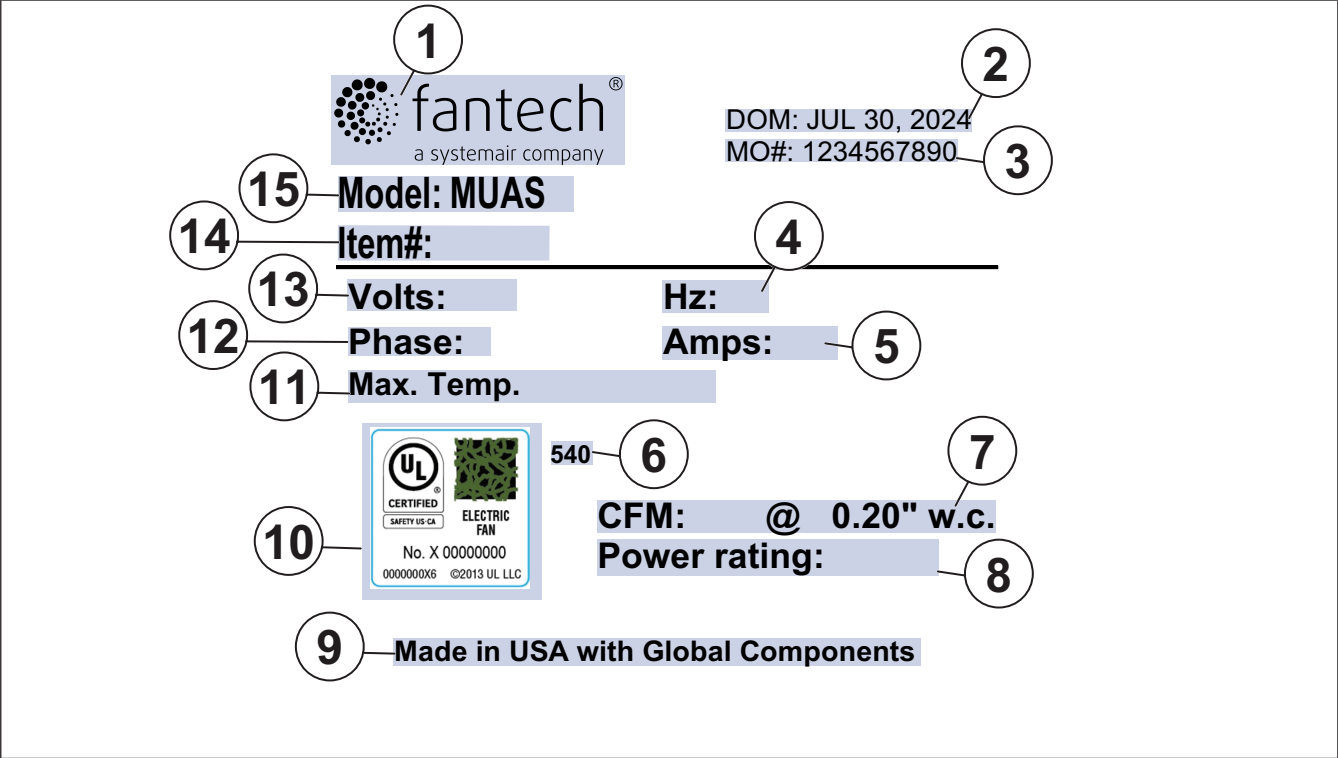


Make a scan of the code above to access Fantech's warranty in English, French, or Spanish. This product has a 5 year warranty.

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 Kanalfäkt Way, Bouctouche, NB E4S 3M5 Canada.

1.6 Name Plate

Note:
Make sure the product's voltage corresponds to the motor name plate.



1. Fantech Logo

2. Date of manufacture (MM/YY)

3. Manufacturing Order Number

4. Frequency, Hertz

5. Current, Ampere

6. Factory Location

7. Cubic Feet per Minute at Inches of Water Column

8. Input Power, Watt

9. Country of Origin
10. Certifications

11. Maximum Temperature

12. Load Distribution

13. Voltage, Volt

14. Item Number

15. Type Designation: Product Name, Dimension, and Motor Type. Refer to [1.6.1 Type Designation](#)

1.6.1 Type Designation

Product Name	MUAS
Duct Collar Dimensions (Inches)	8
	10
Motor Type	EC: Electronically commutated, 1-phase

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:

- Use this unit only in the manner intended by the manufacturer. If you have any questions, contact your manufacturer's representative.
- Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.
- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
- Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent back drafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.
- When cutting or drilling into wall and ceiling, do not damage electrical wiring and other hidden utilities.
- TO REDUCE THE RISK OF FIRE, USE ONLY METAL DUCTWORK.
- Do not connect the product to any combustion appliances.
- Do not put the outside air inlet near hazardous materials or explosives.



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:

- Examine the packaging for transportation damage and remove the packaging from the product carefully. Do this within 15 days after receipt. If damaged, tell the carrier about the damage. Do not operate this product if there is visible damage to the blower or impeller assembly.
- Make sure that the intake area for the outside air duct is not blocked and there is a clear pathway for outside air to enter the product (think about seasonal conditions).
- When you make holes or drill into wood frames such as floor supports, rim joists, and wall studs, obey code and manufacturer limitations on permitted modifications to these frames.
- Make sure the product is installed so that it only introduces outside air into the building.
- Do not install the product or the supply ductwork directly above or closer than 2 ft. (0.6 m.) to any forced air system or its supply plenum, boiler, or other heat-producing appliances.
- Make sure you install the ductwork in a way that complies with all applicable local and national codes.
- Make sure you install the filter correctly before you operate the product.
- Make sure the product and accessories are installed so that you can inspect and maintain it easily.

- Inspect and maintain the product and accessories on a regular basis.
- Do not install this product in a humid or wet location.
- Make sure the HVAC designer/contractor understands the effect supplied outdoor air can have on occupant comfort and the mechanical system of the building. Make sure the HVAC designer understands how the product will operate and the amount of outdoor airflow the product will supply.
- Do not supply outdoor air to a space or into a duct system where water pipes or coils might freeze from the supply of outdoor air.
- Federal, provincial, or state legislation prevails over this document's instructions and/or certification requirements. The installer agrees to these at their own expense.

2.3 Personal protective equipment

Use personal protective equipment during all work on the product.

- Approved eye protection
- Approved protective helmet
- Approved hearing protection
- Approved protective gloves
- Approved protective shoes
- Approved work clothing

3 Installation

3.1 To Do Before the Installation of the Product

You can use this product to replace kitchen exhaust air or other continuously or intermittently operating powered exhaust systems.

A duct heater is offered as an accessory to temper the supply of outdoor air from the product. It will not supply heat to the space, but it will temper the outdoor air for comfort.

You can install the MUAS vertically or horizontally. You can wall-mount it, suspend it from the ceiling, or install it on the floor.

The best location to install this product is one where the user can easily maintain and inspect it.

The figures that follow are suggested installation locations of where you could install the product.

Legend for Diagram	
English Terminology	Meaning
A	Intake Hood
B	Motorized Damper
C	MUAS
D	Supply Grille
E	Roof Cap
F	Range Hood
G	Attic Space
H	Crawlspace
I	Duct Heater

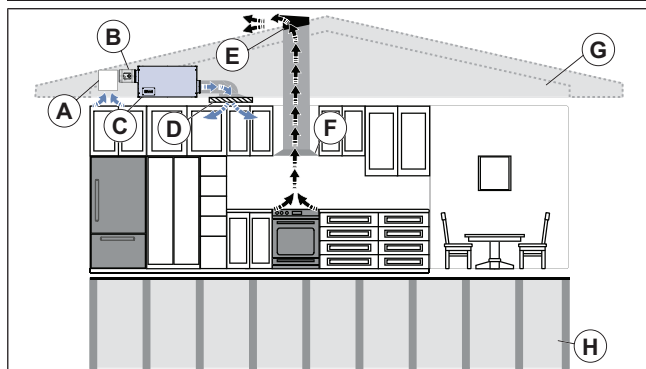


Fig. 1 Attic Installation, Floor Mount — Makeup Air Shown Supplied Above Kitchen Cabinets

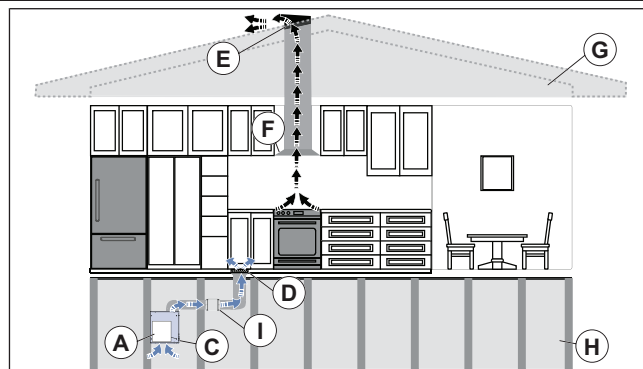


Fig. 3 Crawlspace Installation, Wall Mount — Makeup Air Shown Supplied Behind the Kick Board

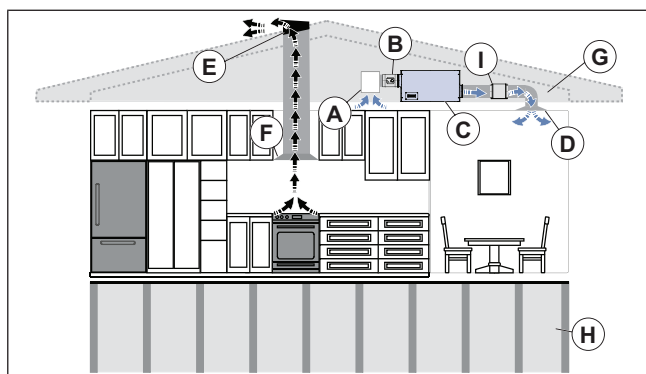


Fig. 2 Attic Installation, Floor Mount — Makeup Air Shown Supplied Above Dining Room

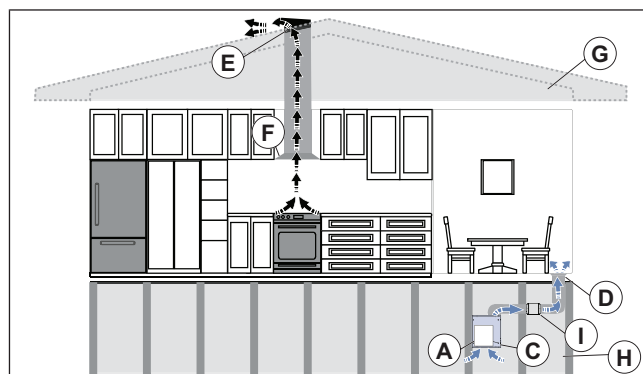


Fig. 4 Crawlspace Installation, Wall Mount — Makeup Air Shown Supplied in the Dining Room

Note:

Read and obey this section before you install the product.

- When you install accessories, such as a motorized damper, obey the instruction manual that comes with that product. Make sure to keep service clearances and straight duct lengths upstream and downstream of all components as needed.
- Make sure the supply air grille is a minimum of 8 ft. (2.4 m.) away from the range hood exhaust air stream.
- Contain the air outlet in duct so that the makeup air is supplied to the correct location.
- Insulate the duct of the MUAS and all accessories to prevent condensation.
- Install the makeup air duct to the location where the compensated exhaust is removed. For kitchen exhaust, supply the makeup air duct to the kitchen space.

Make sure that the makeup air does not change the exhaust air pattern at the hood. To do this, make sure the makeup air supply grille is installed a minimum of 3 ft. (0.9 m.) from the footprint of the kitchen hood and the makeup air stream is pointed away from the area between the range top and the hood.
- Because of the objectionable noise potential and the thermal discomfort this product can cause, plan to install the supply makeup air away from occupied living spaces.
- Install this product independently of the central HVAC system.
- Even though this product is installed independently of the HVAC system, the increased quantity of outdoor air will have an effect on the system. Make sure the HVAC designer/contractor understands this and finds that this product is compatible with the HVAC system.
- Keep low voltage wires short to prevent voltage drop.
- Make sure the transducer wires are a minimum of 18 AWG. Keep these wires and all control wires away from high voltage wires to prevent signal interference.
- The recommended ambient operating temperature range for the product is -20°F–140°F (-28.9°C–60°C). Make sure the entire length of the connected ductwork is insulated to prevent condensation.
- Make sure the 240V duct heater (optional) is installed on a correctly sized, dedicated electrical circuit. You can supply power to the product with a shared electrical circuit.

Note:

The items that follow are needed to install this product, and are not supplied with this product:

- Insulation
- Electrical wires
- Hanging straps
- Ductwork
- Electrical disconnect means
- Other hardware and items not described in this document

3.2 To Do Before the Installation of the Duct Run

Note:

To keep pressure losses to a minimum, prevent air leakage, and promote sufficient airflow, obey the guidelines that follow:

- Keep the number of elbows and bends to a minimum.
 - If necessary, long radius elbows or bends are recommended.
- Make sure duct sealant, caulk, or tape is applied to all seams.
 - This includes around the interior opening in the wall or ceiling and around exterior building penetrations.
- You can use flexible, spiral, or snap lock duct.
 - For optimal efficiency, use the correct kind of duct necessary to prevent duct bends.
- If rigid duct is used, Fantech recommends to use FC Mounting Clamps to connect the duct to the product. These clamps will make air tight seals at the connection points and will decrease vibrations transmitted throughout the duct system.
- To minimize static pressure losses and promote correct airflow, use short duct run lengths where possible.
 - If you use flex duct, keep duct runs straight and make sure the tension in the duct is correct.

3.3 To Put the Intake Hood in the Correct Position

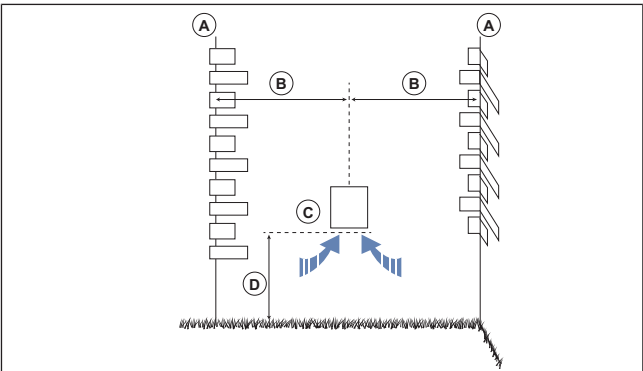
Note:

This section only applies if you plan to install an intake hood for the supply of makeup air.

Note:

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

- Upstream¹ 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.



- A. Corner
- B. 3 ft. (1 m.) Minimum⁴
- C. Intake Hood
- D. 18 in. (460 mm.) Minimum²

3.4 To Install the Product



Caution

Do not supply power to the product or any accessories connected to the product until all components have been installed and are ready to be commissioned.

Note:

Fantech recommends to install this product in a vertical, a horizontal, or a floor mount position. You can also suspend it from the ceiling with applicable hardware.

3.4.1 To Attach the Brackets to the Product

Legend for Diagram	
English Terminology	Meaning
A	Threaded screw
B	Washer
C	Mounting bracket
D	Air inlet
E	MUAS
F	Lag bolt



Caution

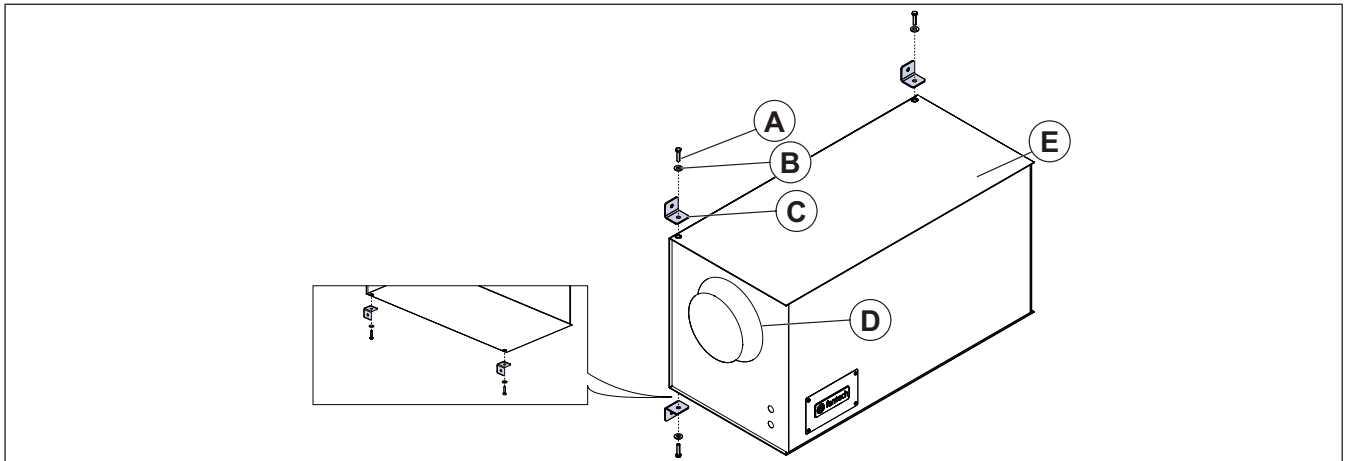
Do not supply power to the product or any accessories connected to the product until all components have been installed and are ready to be commissioned.

Note:

Fantech recommends to install this product in a vertical, a horizontal, or a floor mount position. You can also suspend it from the ceiling with applicable hardware.

¹. If there are prevailing winds.
². Always refer to local authorities with jurisdiction in your area.

- 1 Remove the four (4) screws from the door of the product. Set the screws aside and remove the door from the product casing.
- 2 Remove the damper box and the filter from the inside of the product.
- 3 Remove the filter packaging and install it correctly inside of the product. Make sure the arrow on the filter faces the correct way.
- 4 Install the door back onto the product.



- 5 If necessary, add support studs or blocks at the location where the product will be installed.
- 6 Use four (4) threaded screws, four (4) washers, and four (4) mounting brackets to install the mounting brackets in each threaded hole as shown.

3.4.2 To Attach the Product to the Support Beam



Caution

Only install lag bolts into wood frames that are a minimum of 1 1/2 in. (38 mm.) in thickness.

- 1 Make four (4) marks where the product will be installed.
- 2 Drill four (4) holes on the four (4) marks to make space for the four (4) lag bolts.
- 3 Align the brackets to the holes and use the four (4) lag bolts to safety the product in a horizontal or vertical position.
- 4 To install the motorized damper, refer to the manufacturer's instructions that come with that product.

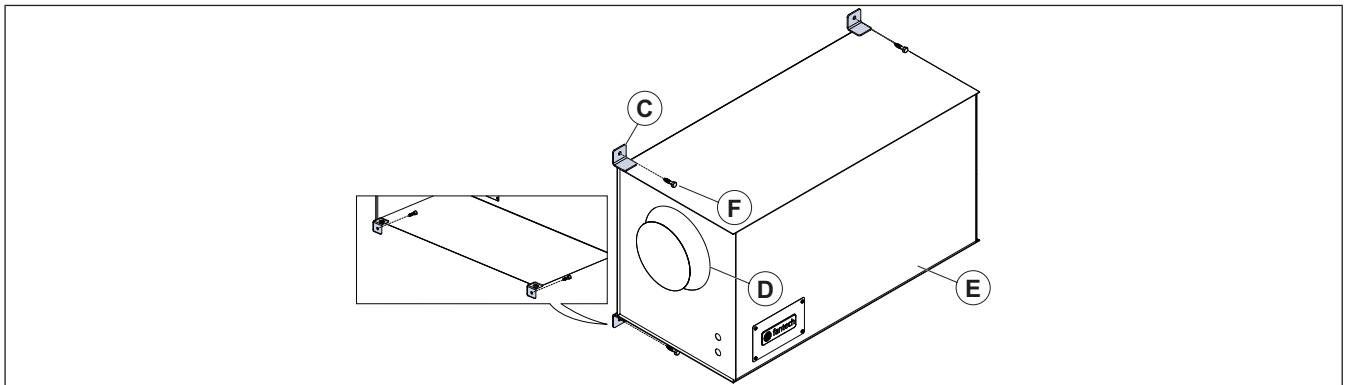


Fig. 5 Horizontal Wall-mount Position

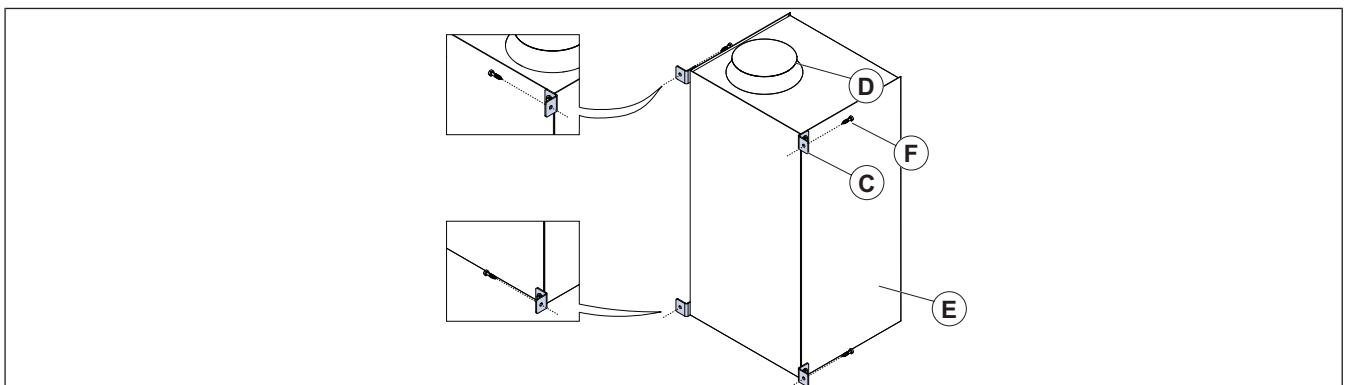


Fig. 6 Vertical Wall-mount Position

3.5 To Attach the Duct without Mounting Clamps

Note:

If your product has mounting clamps, refer to section 3.6 To Attach the Duct.

- 1 Use 1/4 in. (6 mm.) sheet metal screws to attach duct to the product.
- 2 Safety both the inlet and outlet with duct tape.

3.6 To Attach the Duct

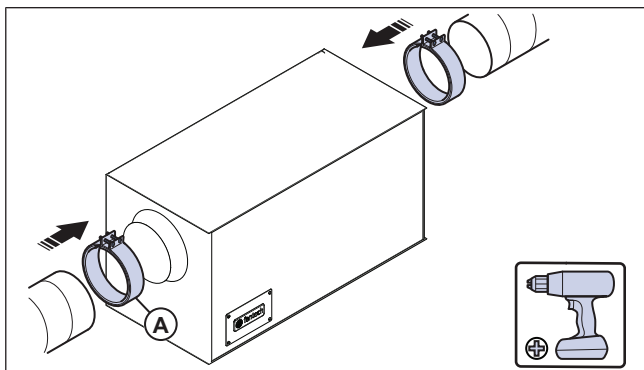
Note:

This section only applies if you plan to attach the duct to the product with FC mounting clamps.

Note:

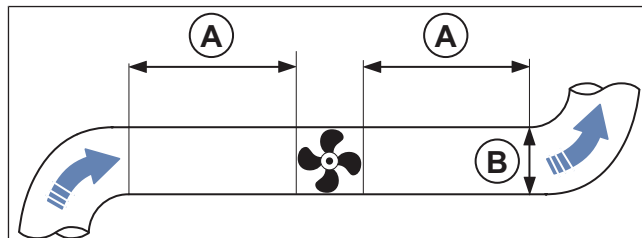
Refer to the FC Mounting Clamp installation manual (#450222) for more installation instructions.

- 1 Put the ducts on each side of the product.
- 2 Use 1/4 in. (6 mm.) sheet metal screws, and FC Mounting Clamps (A) to attach the duct to product.
- 3 Tighten the clamps (A) around the duct and the product with the supplied screws. Make sure that there is a distance between the duct and the product to decrease vibrations transmitted from the product to the duct system.



A. FC Mounting Clamps

- 1 If you install the product near a duct bend, do these steps to prevent vibrations, unwanted noise, and decreased air pressure:
 - a. Measure the distance (A) between the product and the duct bend.
 - b. Make sure that the distance (A) is a minimum of 2.5 x the diameter (B) of the duct system. For circular ducts, (B) is the nominal diameter. For rectangular ducts, (B) is the hydraulic diameter.



- A. Distance between product and duct bend.
B. Diameter of duct system

3.7 To Install the Duct Heater (Optional)

Legend for Diagram	
English Terminology	Meaning
Front	Front
Top	Top
Minimum	Minimum
Side	Side



Caution

Do not install an access panel in the duct closer than 24 in. (610 mm.) before or after the heater element. Obey local codes when you install the duct heater.

Note:

You can install the heater vertically or horizontally. Refer to the figure within this section.

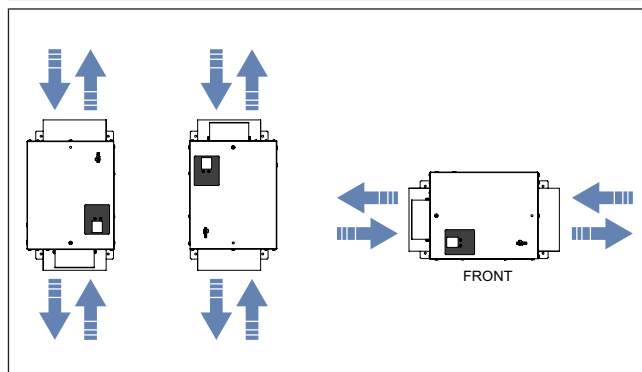


Fig. 7 Correct Position of the Heater

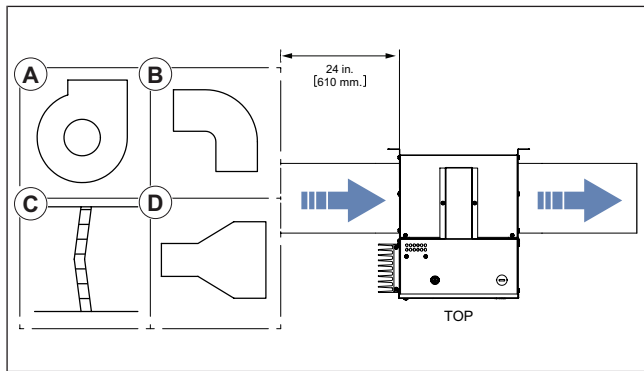


Fig. 8 Minimum Distance to Prevent Heat Buildup

- A. Blower
- B. Elbow
- C. Filter
- D. Transition

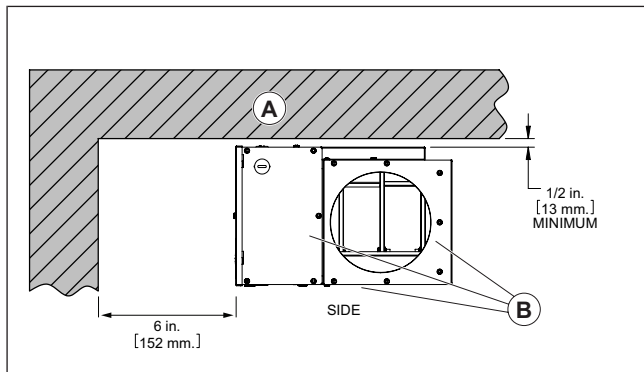


Fig. 9 Minimum Allowable Clearances

- A. Wall, ceiling, or obstruction
- B. Zero Clearances on bottom, back, and sides

3.7.1 To Install the Temperature Sensor



Caution

Do not install the temperature sensor in an elbow or a transition.



Caution

Always monitor the neutral wire of the exhaust fan motor. This will allow you to read correct amperage of variable- and multi-speed exhaust fans.

Note:

The sensor measures air velocity in the duct. If it is less than 100 ppm, the coil will not heat the air.

Note:

The duct heater does not come with a disconnect switch. Disconnect the power supply from the main electrical panel (circuit breaker) before you service the heater.

- 1 40 in. (1016 mm.) upstream of the heater, drill one (1) 1/2 in. (13 mm.) hole into the duct.
- 2 Install the temperature sensor into the newly made hole.

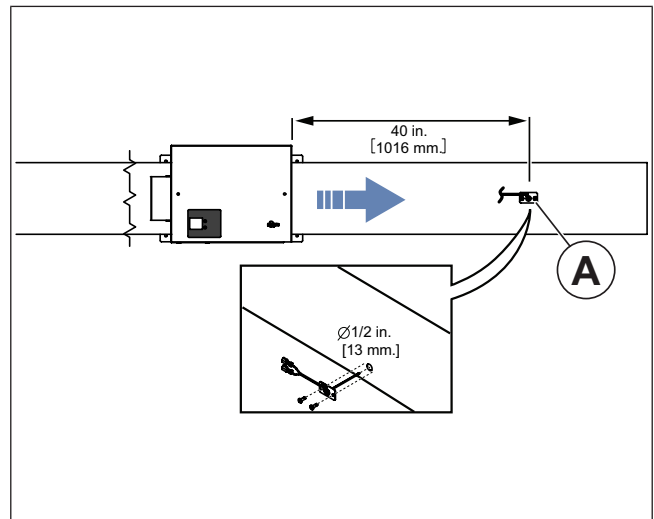
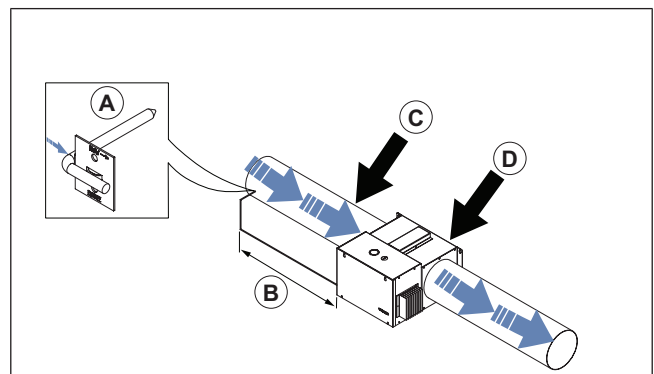


Fig. 10 Recommended Position for the Temperature Sensor

- A. Temperature Sensor



- A. Electronic Air Velocity Sensor

Sensor #	Length
SEN-005 ¹	5 ft. (1.5 m.)
SEN-012 ²	15 ft. (4.6 m.)

1. Compatible with CIR-047, CIR-048, CIR-017, and CIR-011
2. Compatible with CIR-047, CIR-048, CIR-017, and CIR-011

- B. Minimum Installation Distance Before the Coil

Power	B
12 kW or less	10 in. (254 mm.)
More than 12 kW	40 in. (1016 mm.)

- C. Duct
- D. Electric Coil

4 Electrical connection

4.1 To Connect the Product to the Power Supply

Note:

The supplied current transducer is rated for 5 Vdc output at 10 amps.

For best results, put the monitored wire through the transducer (multiple times if necessary) to get as close to 10 amps as possible.

Note:

Make sure the transducer is close to the exhaust fan or the dedicated circuit.

- 1 Install the FMAC's current transducer onto the neutral leg of the compensated exhaust fan (by others) wires.
- 2 Install low voltage wire between the current transducer and the FMAC.

Refer to section 8.2 Wiring Diagrams.

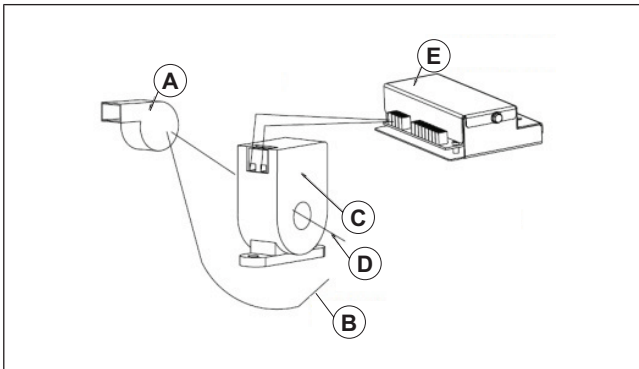


Fig. 11 Current Transducer Wire Connections and Installation

- A. Exhaust fan
 - B. Line wire
 - C. Current transducer
 - D. Neutral leg of wires
 - E. FMAC
- 3 If applicable, supply 240/1/60 electrical power to the duct heater on a dedicated circuit. The 10 kW heater uses 41.7 Amps and the 20 kW heater uses 83.3 Amps.

Refer to section 8.2 Wiring Diagrams.

- 4 Supply 120/1/60 electrical power to the supply fan. Install all wire connections and obey all applicable codes.

Refer to section 8.2 Wiring Diagrams.

- 5 If applicable, install low voltage wire between the FMAC and the motorized damper.

Refer to section 8.2 Wiring Diagrams.

4.2 Motor Protection

The product has integrated auto reset motor protection. If the product overheats, it will stop automatically. Once the temperature of the product cools down, the product will operate normally again.

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.

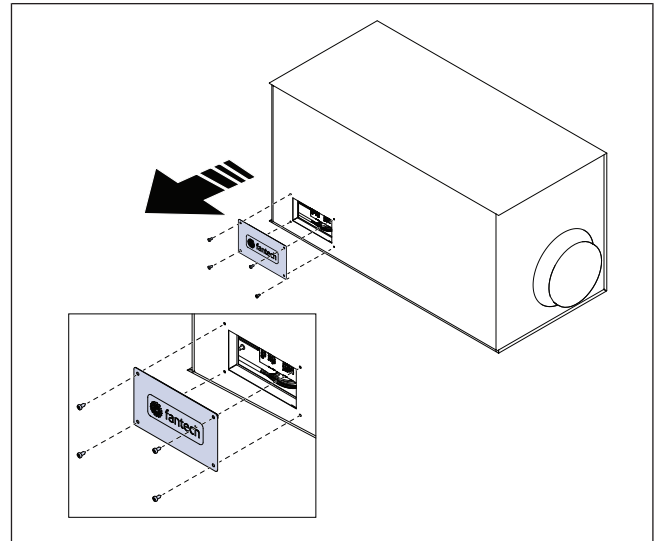
5.2 To Commission the Product



Caution

Before you operate this product, make sure that the MUAS and the compensated exhausted system are fully installed and wired.

- 1 Remove the four (4) screws that attach the FMAC cover to the door. Remove the FMAC cover. Set the cover and screws to the side.

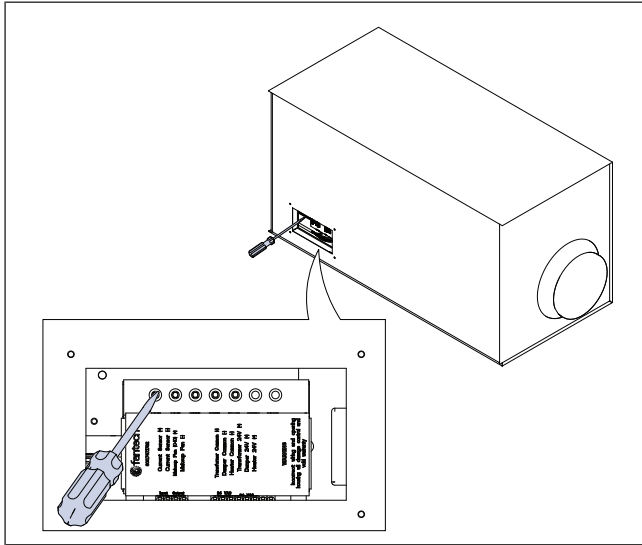


- 2 Energize the power circuits to the:
 - Makeup air fan
A power indicator and heart pulse LED will show when the FMAC is energized and ready to program.
 - Duct heater (if applicable)
 - Compensated exhaust fan
- 3 Operate the compensated exhaust system on high speed.
- 4 Press the "HI" button on the FMAC.
- 5 Operate the compensated exhaust fan on low speed.
- 6 Press the "LO" button on the FMAC.
- 7 Operate the compensated exhaust fan on high speed.
- 8 Adjust the FMAC "HT" trim pot to supply the necessary CFM from the MUAS.

If the necessary max CFM is not known, set the pot to max.
- 9 Operate the compensated exhaust fan on low speed.

- 10 Adjust the FMAC "LT" trim pot to supply the necessary CFM from the MUAS.

If the necessary min. CFM is not known, set the pot to min.



5.3 To Balance the Product



Caution

Trim pots are easily damaged. Be careful when you make any adjustments.



Caution

Do not force "HT" and "LT" into position.



Caution

During setup and the balancing procedure, it is necessary that all of the building's exterior openings are tightly closed. Openings include windows, doors, flue dampers, and more.

Also, de-energize any systems that use exhaust or supply air communication with the outdoors. Such systems include dryers, heating appliances, HRVs or ERVs, and bathroom and kitchen ventilation fans.

- 1 Energize both the MUAS and the compensated exhaust system.
- 2 Operate the compensated exhaust system on high speed.

Note:

You can adjust the MUAS airflow through one of the two methods that follow:

- 1 With a digital or analog pressure differential gauge, measure the difference in air pressure between the inside of the house and the outside of the house.
- 2 If the house pressure is positive, decrease the speed of the MUAS with the high-speed trim pot, "HT".

- 3 If the house pressure is negative, increase the speed of the MUAS with the "HT" trim pot.
- 4 With the "LT" trim pot, do this procedure again with the compensated exhaust system on low speed.

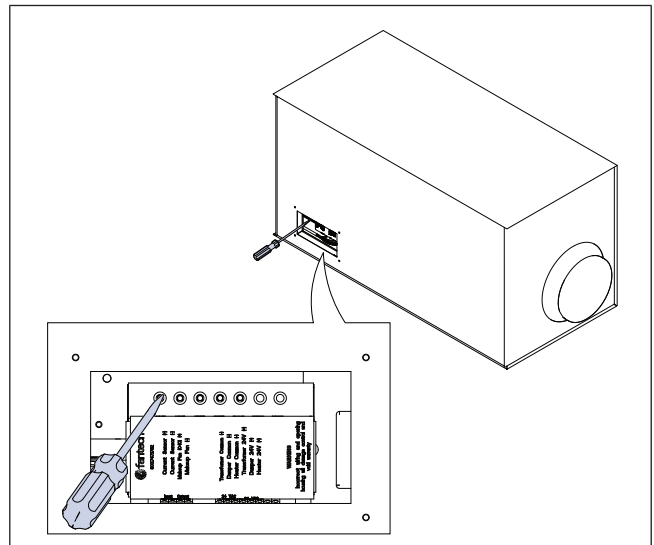
Note:

If you want a slightly positive or negative (no more than 5 Pa (0.02 in. wg.)) indoor pressure, use the method that follows.

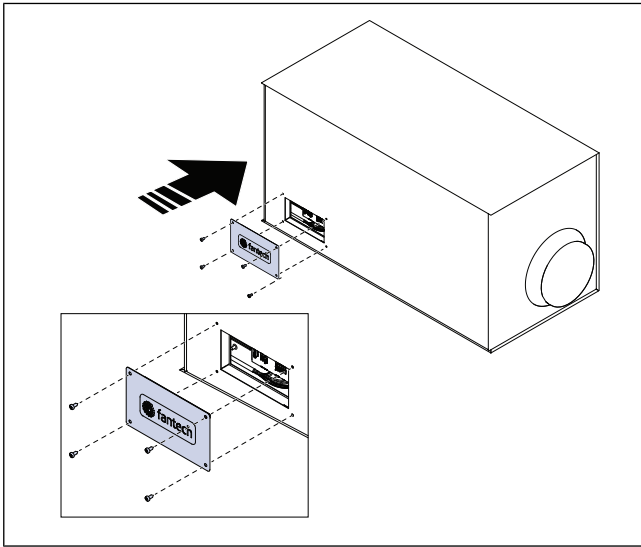
Do this procedure as necessary until the MUAS operates correctly.

- 1 If a pressure differential gauge is not available, open a window in the center of a building wall approximately 1/2 in. (12 mm.).

Make sure airflow moves in or out. You can do this by feel, with a light piece of tissue or paper, or with an anemometer.
- 2 If the flow moves out, the house is under positive pressure. Slow down the speed of the MUAS with the "HT" trim pot.
- 3 If airflow comes in, the house is under negative pressure. Increase the speed of the MUAS with the "HT" trim pot.
- 4 With the "LT" trim pot, do this procedure again with the compensated exhaust system on low speed.
- 5 Once both the "HT" and "LT" trim pots are adjusted, the house's air pressure will be stable throughout the compensated exhaust system range.



- 6** Use the four (4) removed screws to attach the FMAC cover to the door again.



The FMAC is now ready for service.

6 Operation

6.1 Sequence of Operations

When the FMAC receives a 0–5VDC signal from the current transducer that the compensated exhaust system is energized, the FMAC outputs will engage.

The FMAC will supply a 24VAC signal to engage the motorized damper (if applicable) to the open position.

The FMAC will supply a 0–10VDC signal to the MUAS to operate the internal fan at a speed in relation to the compensated exhaust fan's speed.

The FMAC will supply a 24VAC signal to engage the optional duct heater (if applicable). The heater includes its own operational sequence, and will only operate if the FMAC enables it, and then only if the supply air temperature has a lower temperature than set by the heater.

Fantech recommends to set the default mode of the duct heater on W1 and the default temperature at 60°F (15.5°C).

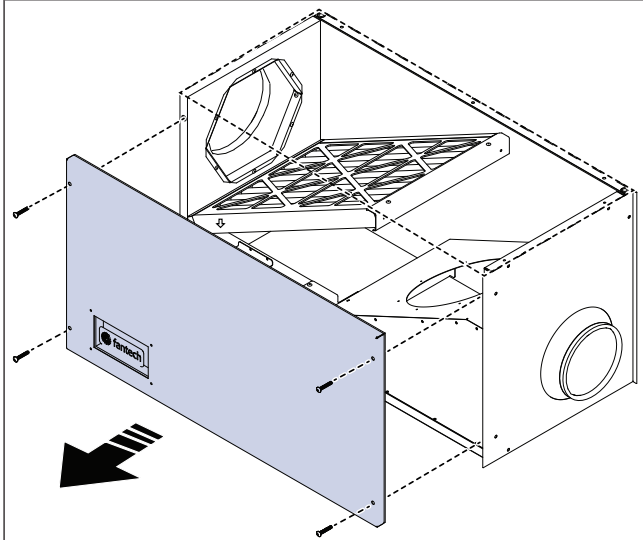
7 Maintenance

7.1 To Maintain the Product

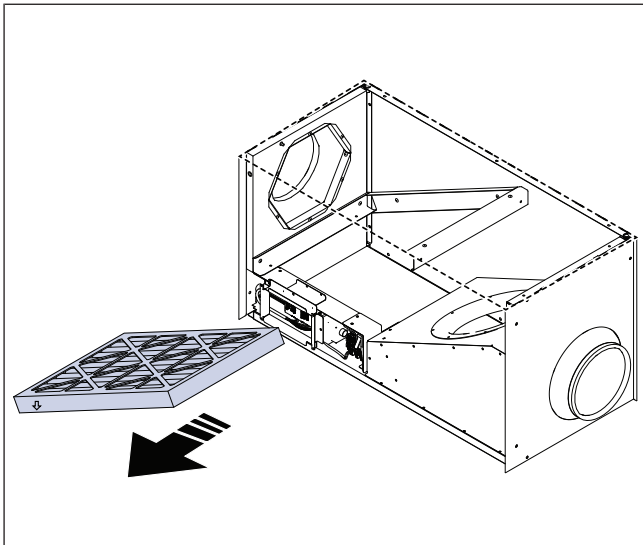
Note:

The supplied filter needs to be replaced every 6–12 months with a MERV-10 or -11 filter.

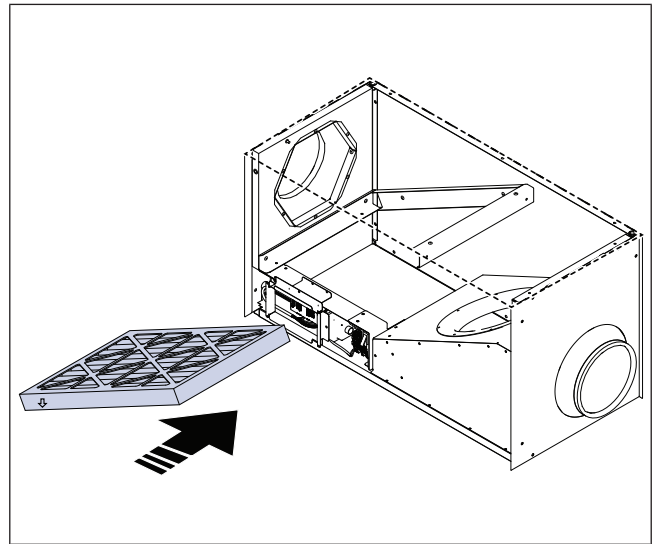
- 1 Remove the four (4) screws that attach the door to the casing. Remove the door. Set the screws and the door to the side.



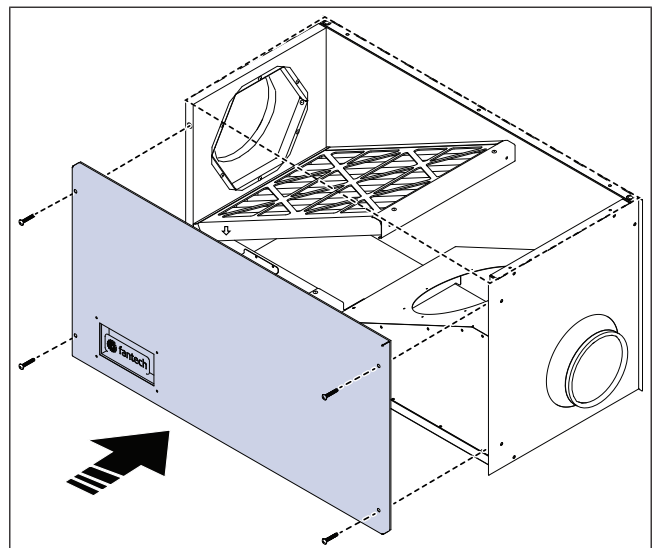
- 2 Remove the filter from the product. Discard of the filter correctly.



- 3 Remove the filter packaging and install it correctly inside of the product. Make sure the arrow on the filter faces the correct way.



- 4 Use the four (4) removed screws to attach the door onto the product again.



8 Technical data

8.1 Technical Data Overview

Max. temperature of transported air, °F	140
IP class	Refer to the data sheet on the online catalogue at Fantech.net.
Voltage, current, frequency	Refer to the nameplate. Refer to section 1.6 Name Plate for more information.
Motor data	Refer to the motor nameplate or the technical documentation from the motor manufacturer.

8.2 Wiring Diagrams

Legend for Diagram	
English Terminology	Meaning
BK	Black
BR	Brown
R	Red
Y	Yellow
BL	Blue
GR	Green
O	Orange
O/W	Orange/White
G	Grey
G/W	Grey/White
P	Purple
P/W	Purple/White
GRND	Ground
N	Neutral
L1	Line
FMAC	Fantech Makeup Air Controller
CT (0–5 vdc)	Current Transducer 0–5 Volts Direct Current
24vac Damper	24 Volts Alternating Current Damper
Optional Heater	24 Volts Alternating Current Heater
XFMR	24 Volts Alternating Current Transformer
DS	Door Switch
EC Motor	Electronically Commutated Motor
W1	Heat
C	Common

Note:

Factory wire connections are shown as follows:

1. High voltage wires are shown by thick, complete lines.
2. Low voltage wires are shown by slim, complete lines.

Note:

Field wire connections are shown as follows:

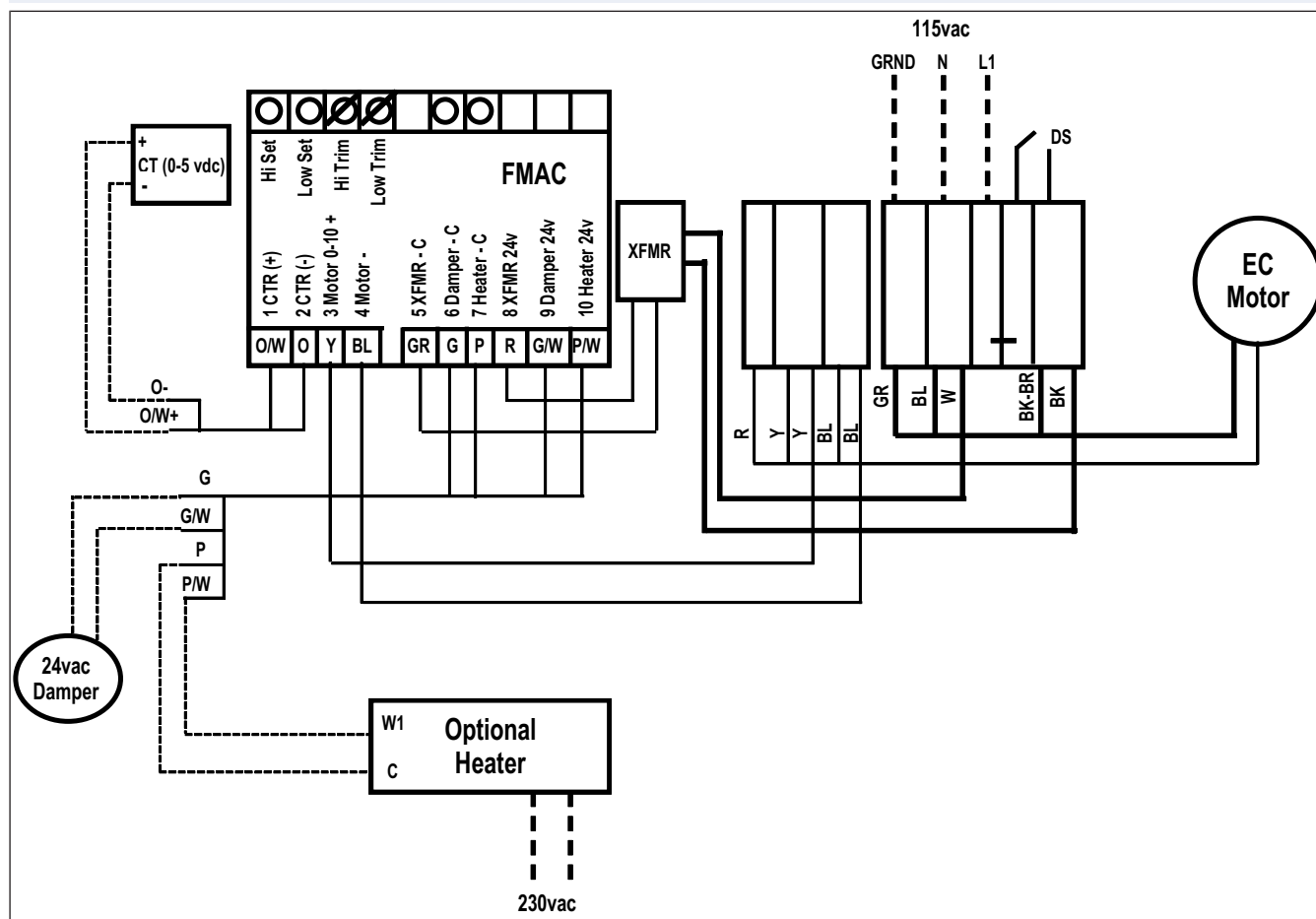
1. High voltage wires are shown by long dashes (115–120 Vac).
2. Low voltage wires are shown by short dashes (5 Vac / 24 Vdc).

Note:

You can only loop one conductor through the center of the current transducer neutral line.

Note:

All wire connections are by others. Wire terminations are contained in each component's installation instructions.



8.3 Product Dimensions

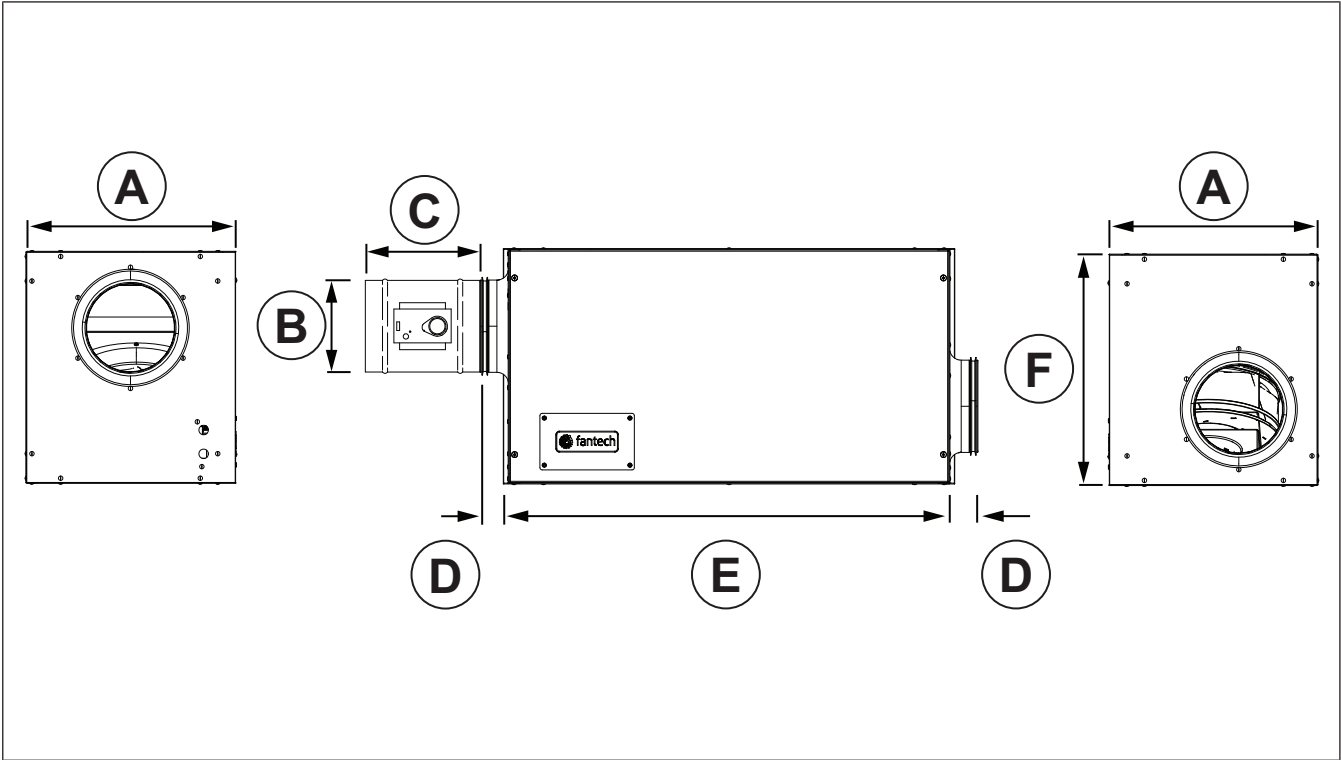


Fig. 12 MUAS Dimensions

Note:

Dimensions are given in inches (mm).

	A	B	C	D	E	F
#474049, MUAS 8	18 (457)	8 (203)	10 (254)	2 3/4 (70)	38 1/4 (972)	20 (508)
#474050, MUAS 10	18 (457)	10 (254)	10 (254)	2 3/4 (70)	38 1/4 (972)	20 (508)

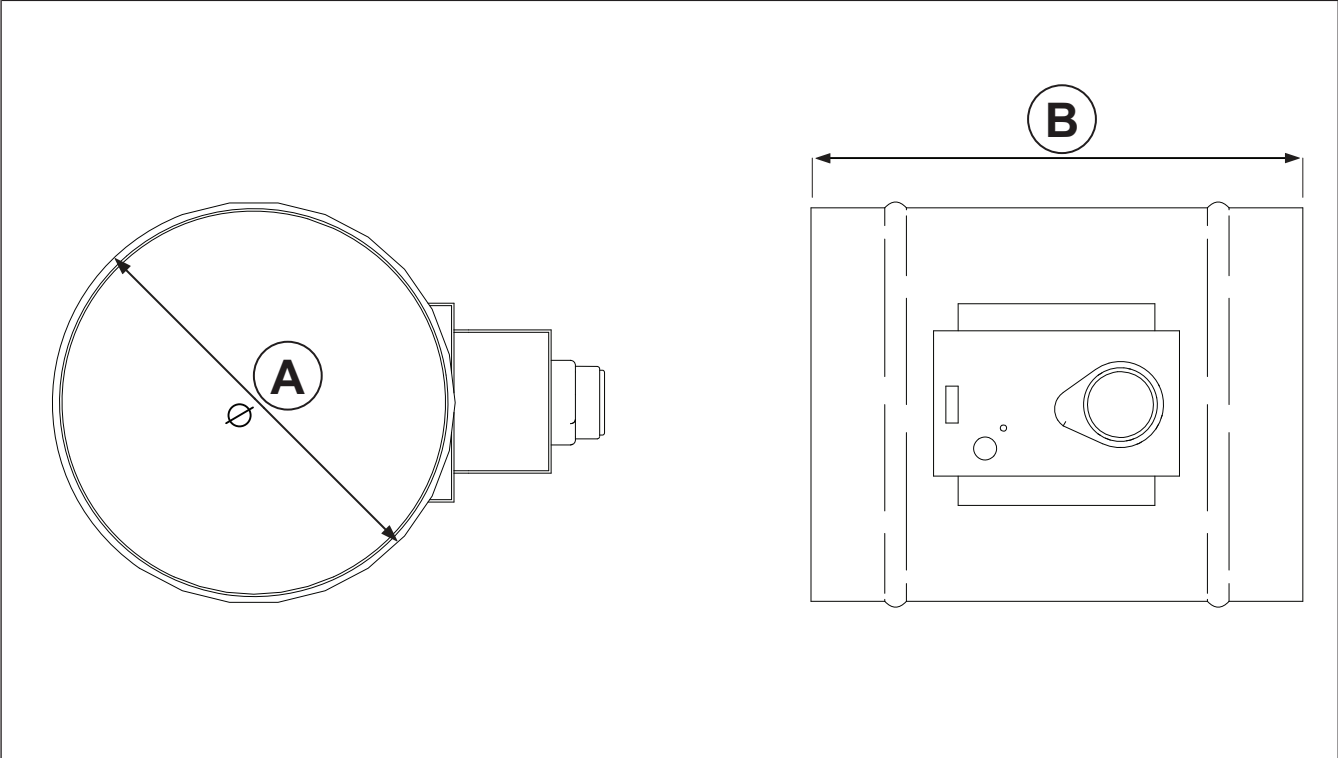


Fig. 13 Motorized Damper Dimensions

Note:
Dimensions are given in inches (mm).

	A	B
ADC 8	8 (203)	10 (254)
ADC 10	10 (254)	10 (254)

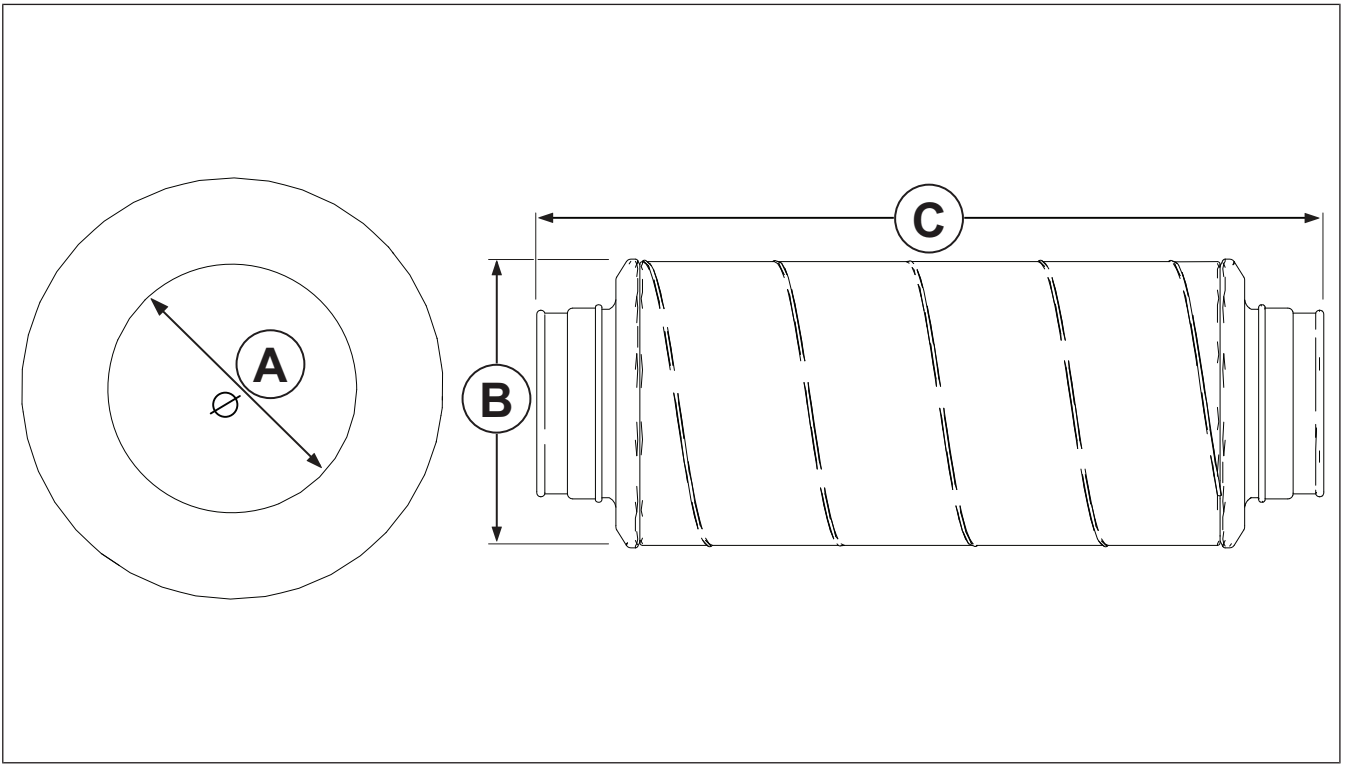


Fig. 14 Accessory — Duct Silencer Dimensions

Note:
 Dimensions are given in inches (mm).

	A	B	C
LD 8	8 (203)	8 (203)	23 5/8 (594)
LD 10	10 (254)	9 (229)	35 1/2 (902)

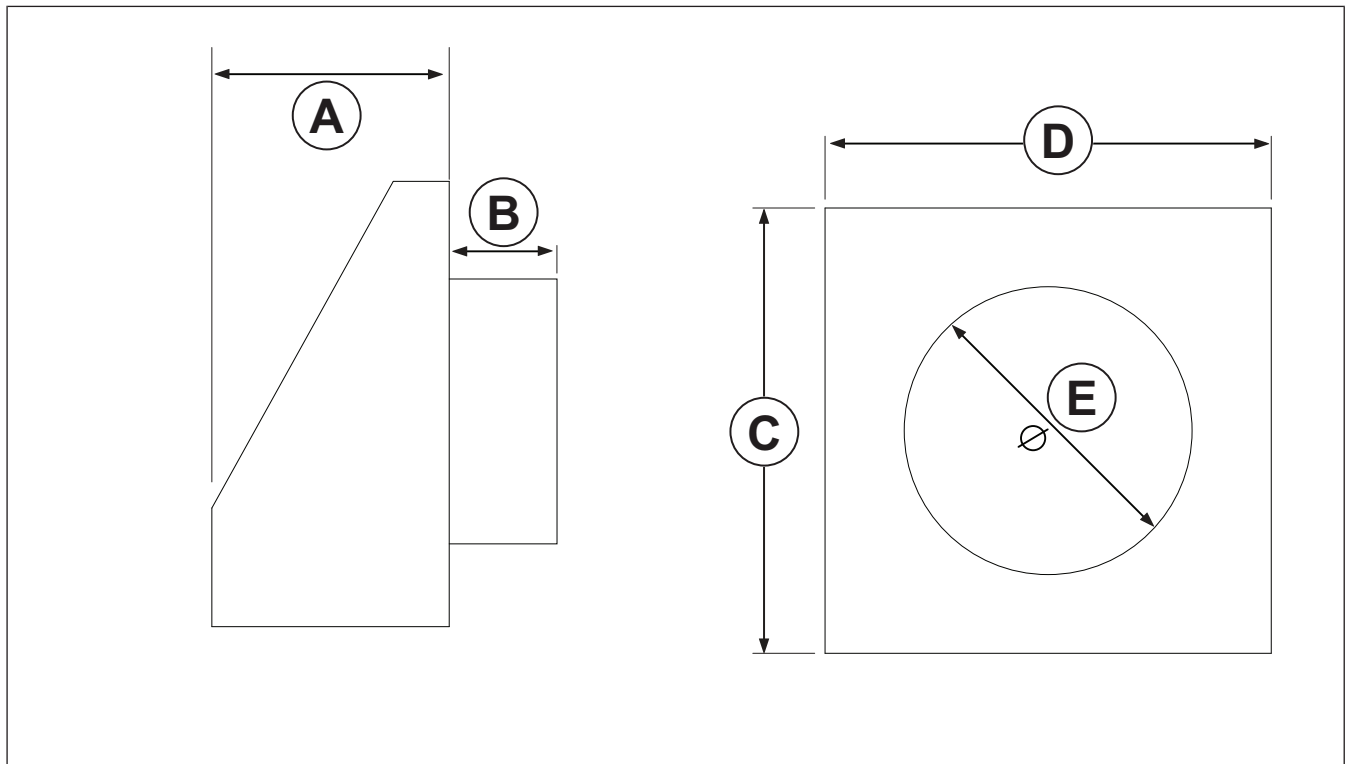


Fig. 15 Accessory — Intake Hood Dimensions

Note:

Dimensions are given in inches (mm).

	A	B	C	D	E
FML 8	5 (127)	3 1/2 (89)	9 (229)	9 (229)	8 (203)
FML 10	6 (152)	3 1/2 (89)	11 (279)	11 (279)	10 (254)
FML 12	12 (305)	13 (330)	13 (330)	7 (178)	3 1/2 (89)

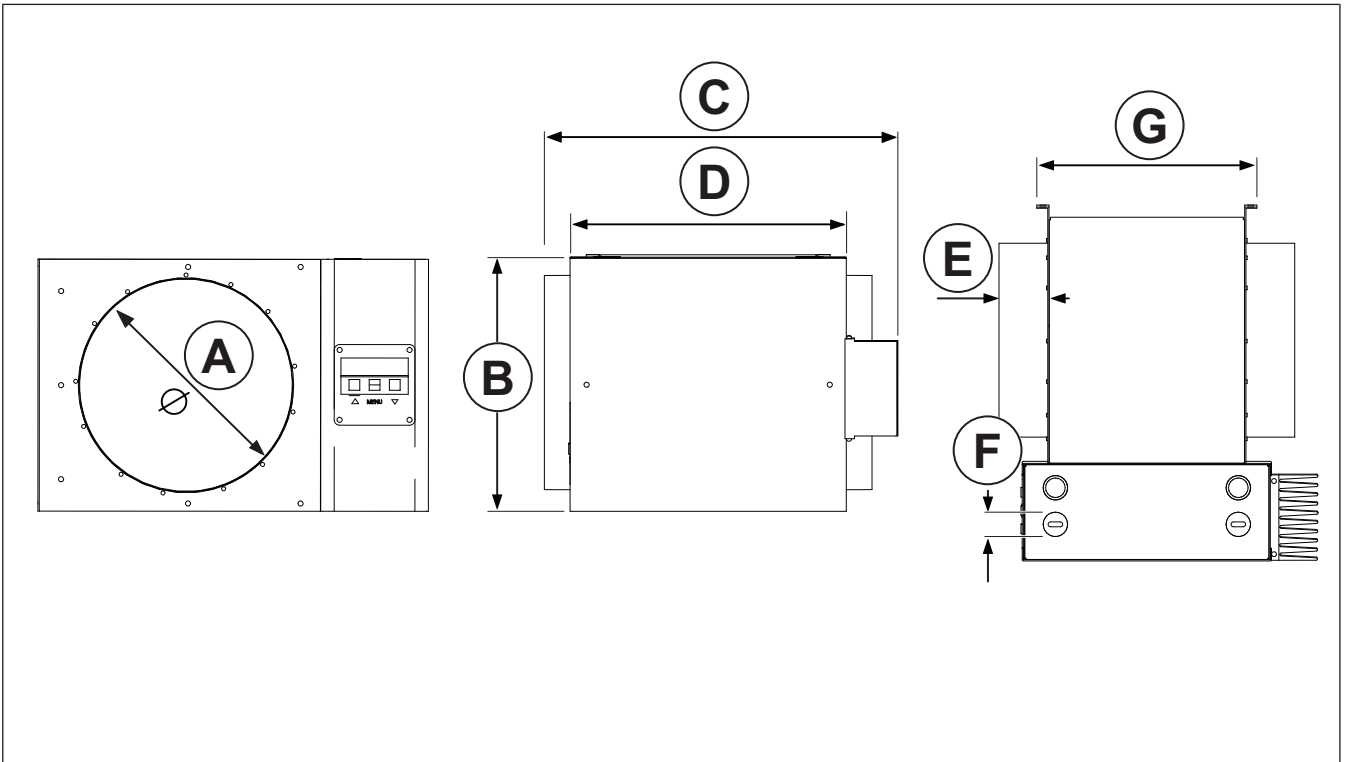


Fig. 16 Accessory — Duct Heater Dimensions

Note:
 Dimensions are given in inches (mm).

	A	B	C	D	E	F	G
MUAH 8/6	8 (203)	9 1/4 (235)	15 (381)	10 1/8 (257)	2 (51)	7/8 (22)	11 7/8 (302)
MUAH 10/10	10 (254)	11 1/4 (286)	17 1/4 (438)	10 1/8 (257)	2 (51)	7/8 (22)	11 7/8 (302)



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