fantech®
a systemair company

Installation, Operation and Maintenance instruction EN

DBF 110 Duct Booster Fan

Table of contents

1 Introduction 1
- 1.1 Product Description 1
- 1.2 Intended Use 1
- 1.3 Document Description 1
- 1.4 Fantech Warranty 1
- 1.5 Product Overview 1
- 1.6 Type Designation 2

2 Safety 2
- 2.1 Safety definitions 2
- 2.2 Safety Instructions 2
- 2.3 Personal protective equipment 2

3 Installation 3
- 3.1 To Do Before the Installation 3
  - 3.1.1 To Calculate the Duct Run 3
  - 3.1.2 To Select the Product Location 3
  - 3.1.3 About the Pressure Switch 3
  - 3.1.4 To Put the Pressure Switch in the Correct Position 3
- 3.2 To Install the Product 4
  - 3.2.1 To Mount the Bracket in a Vertical or a Horizontal Position 4
  - 3.2.2 To Install the Grommet and Tubing 4

4 Electrical connection 6
- 4.1 To Connect the Product to the Power Supply 6
- 4.2 Motor Protection 6

5 Commissioning 7
- 5.1 To Commission and Test the Product 7

6 Operation 7
- 6.1 How the Pressure Sensor Switch Operates 7

7 Maintenance 8
- 7.1 To Maintain the Product 8

8 Technical data 9
- 8.1 Product Dimensions 9

1 Introduction

1.1 Product Description

This product is a duct boosting fan that boosts air on applications such as extended duct systems, crawlspace ventilation, and dryer exhaust.

This fan has rotating parts and personnel must exercise safety precautions during installation, operations, and maintenance.

1.2 Intended Use

Use this product only in the manner intended by Fantech. If you have any questions, please contact a Fantech representative.

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.

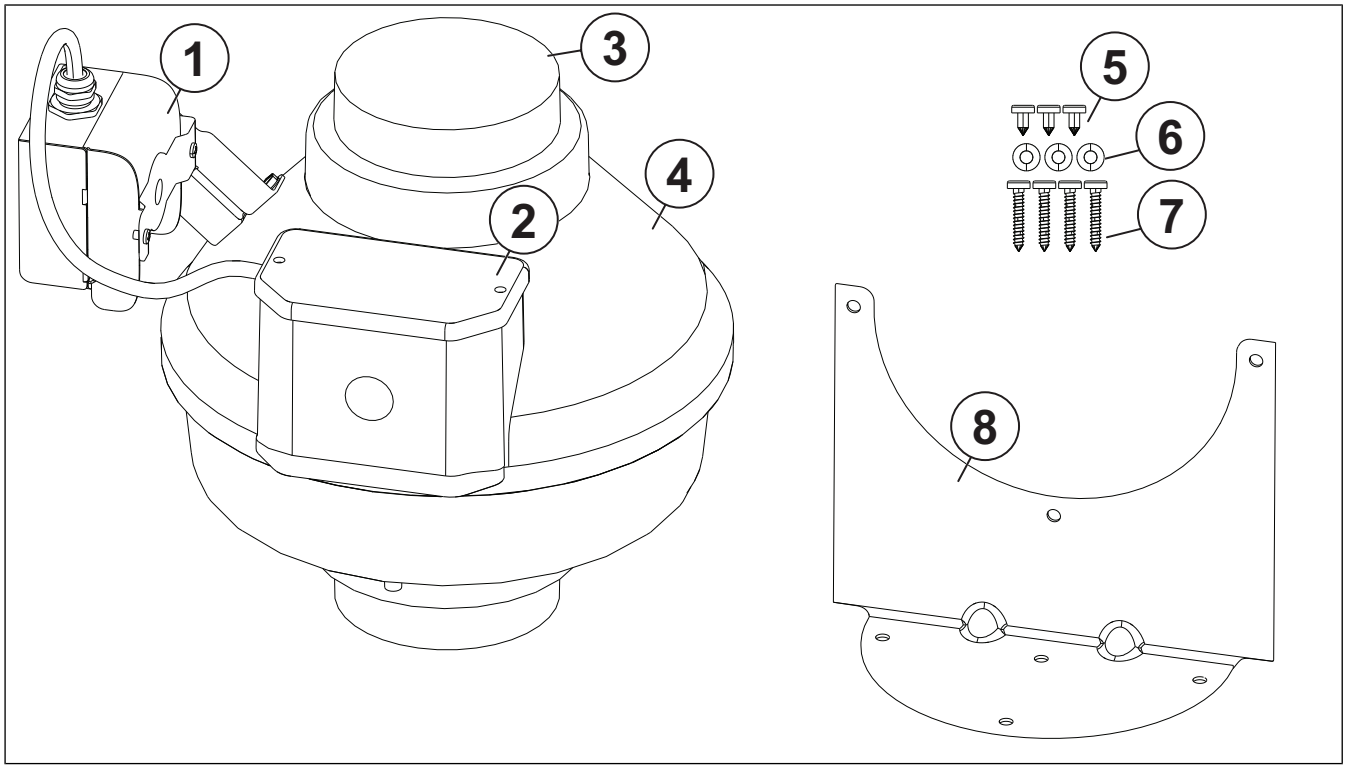
Speak to a Fantech representative for more information on how to install the product in different installation locations.

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 Kanalfläkt Way, Bouctouche, NB E4S 3M5 Canada.

1.5 Product Overview



1. Pressure Switch, quantity 1
2. Electrical Box, quantity 1
3. Fan Outlet, quantity 1
4. Casing, quantity 1
5. Screws, quantity 3 — 3/8 in. (10 mm.)
6. Grommets, quantity 3
7. Wood Screws, quantity 4 — 1 in. (25 mm.)
8. Mounting Bracket, quantity 1
9. Tubing, Grommet, and Spring-Band Clamp (not shown), quantity 1

1.6 Type Designation

Product Name	DBF 110, #95900
Duct Collar Dimensions in inches (mm.)	4 (102)
Motor Type	AC: Alternating Current, 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

This product is intended for general ventilation use only. If you have questions, speak with Fantech. To decrease the risk of fire, electric shock, or injury, read and obey these warning instructions before you do work on the product:

- It is the ventilation contractor's and the operator's responsibility to correctly install the product.
- When you install the product, obey all applicable local conditions and laws, and fire-rated construction codes and standards.
- Because the product has rotating parts, use safety precautions when you install, operate, and maintain the product.
- Before installing, servicing, or cleaning, set the product's electrical power supply source in the OFF position, and lock the service disconnecting means. If the service disconnecting means cannot be locked, tightly attach a large warning device to the service panel.
- To prevent the product from backdrafting, obey the heating equipment manufacturer's guidelines and safety standards such as those published by the National Fire Protection Association (NFPA), the American Society for Heating, Refrigeration & Air Conditioning Engineers (ASHRAE), and the local code authorities.

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:

- Do not install this product less than 5 linear feet (1.5 linear meters) or more than 40 linear feet (12.2 linear meters) from the dryer exhaust outlet.
- Do not install the product in the exhaust duct system of a dryer if it is not permitted to do so.
- Do not install insulated duct work upstream of the product.
- Do not use this product with high output dryers.
- When you cut or drill into walls or ceilings, watch for electrical wires and other hidden utilities to prevent damage.
- Make sure air from ducted exhaust fans is released to the outdoors
- Do not block the air intakes or exhaust.
- Do not mount this product in an outdoor location.
- Do not clean the product with chemicals that can cause corrosion or water hotter than 140° Fahrenheit (60° Celsius).
- Do not let unwanted objects enter the product.
- Do not use this product to remove hazardous or explosive material and vapours.
- Do not use this product to remove air hotter than 167° Fahrenheit (75° Celsius).
- Do not mount this product in kitchens.
- Do not release air into spaces within walls or into attics, crawl spaces, or garages.
- Do not allow the product's airflow to be more than the dryer fan capacity.

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

3.1.1 To Calculate the Duct Run

This product is able to overcome equivalent duct lengths up to 108 feet (34 meters) on duct systems with 4 in. (102 mm.) diameter galvanized, steel ducts.

To calculate the length of your planned duct system, measure from the planned connected appliance to the external release point in the roof or the wall.

For each 45° elbow, add 2–1/2 feet (0.76 meters) to your total duct system calculations. Add 5 feet (1.5 meters) for every 90° elbow.

3.1.2 To Select the Product Location

Caution

To prevent damage to the dryer or to the product, do not install the DBF 110, #95900 within 5 linear feet (1.5 linear meters) or further than 40 linear feet (12 linear meters) from the dryer outlet.

Note:

If the product is installed less than 15 feet (4.6 meters) from the dryer outlet, install a secondary lint trap between the dryer and the product.

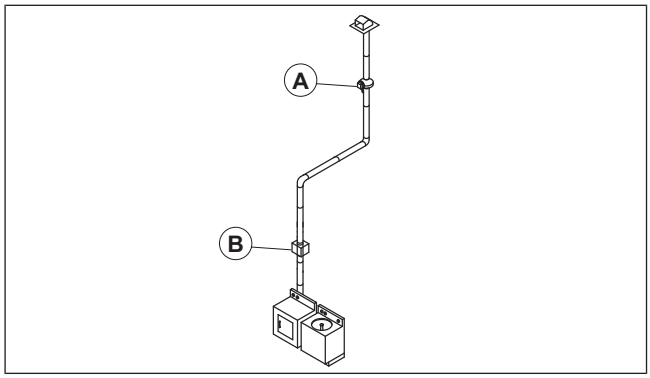
Note:

In order to do the recommended maintenance, make sure you allow sufficient space for the user so they can service the product. Refer to 8.1 Product Dimensions.

If allowed by building codes, stretch flex duct as smooth as possible.

Fantech recommends to use a Mounting Bracket (included) to install the product to a rafter or a joist. A vertical rigid duct can be used to hold the product if the duct is safely stabilized (refer to local codes before you support the product in the duct alone). Refer to section 7.1 To Maintain the Product for inspection recommendations.

Correctly seal all duct connections to prevent leakage and loss of product performance.



A. DBF 110, #95900

B. Secondary Lint Trap

3.1.3 About the Pressure Switch

Caution

Do not move the dial on the back of the pressure switch. This is set at the factory at an optimal position.

Note:

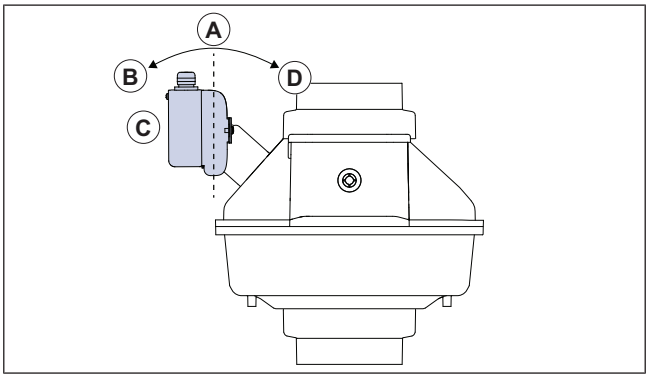
Make sure the pressure switch is in a vertical position. Refer to the figures that follow for more information.

This product has a mounted pressure switch on its casing.

If you rotate the switch (D) so that it points at the product, the switch will have less sensitivity.

If you rotate the switch (B) away from the product, the switch will have more sensitivity.

If the switch (C) is in the position of the graphic below, it is in a neutral position



A. Switch Diaphragm Plane

B. More Sensitivity

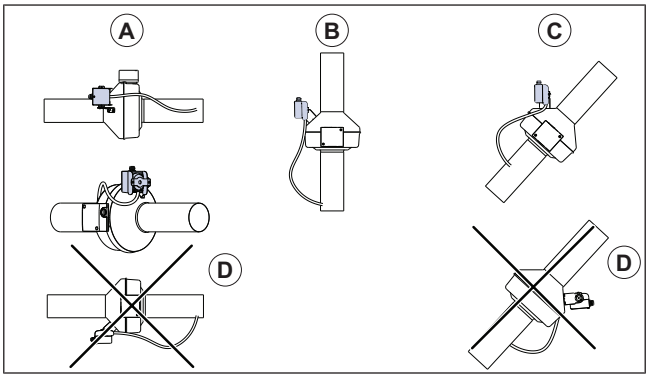
C. Neutral Position

D. Less Sensitivity

3.1.4 To Put the Pressure Switch in the Correct Position

Note:

The figure that follows shows how to correctly position the pressure switch on horizontal, angled, or vertical duct work.



A. Horizontal Duct Installation

B. Vertical Duct Installation

C. Angled Duct Installation

D. Incorrect Positions

3.2 To Install the Product

3.2.1 To Mount the Bracket in a Vertical or a Horizontal Position

3.2.1.1 To Mount the Product in a Vertical Position

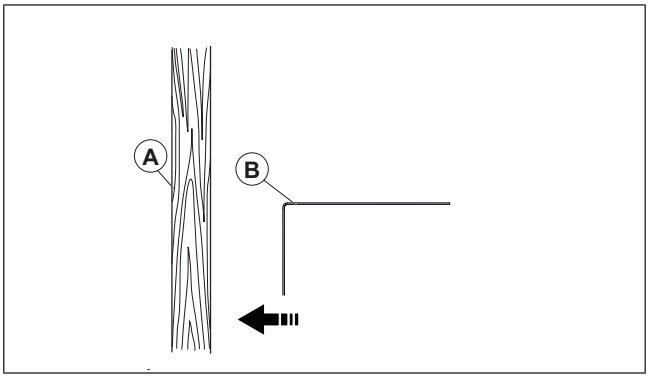
Caution

If you use the wrong length screws, it will damage the motor impeller.

Note:

A vertical mount position is recommended to reduce condensation buildup in the product.

1 Use four (4) 1 in. (25 mm.) wood screws to attach the mounting bracket to a support beam at the selected location.



A. Support Beam

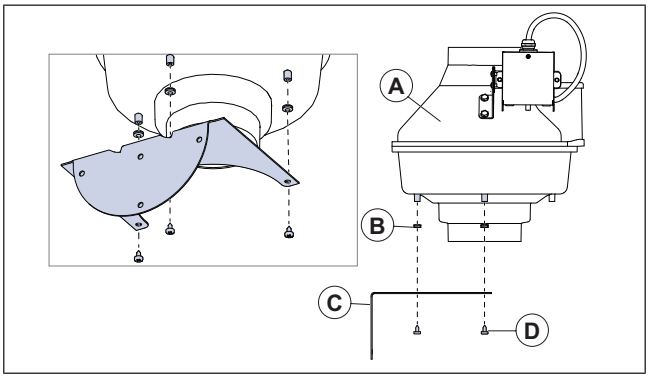
B. Mounting Bracket

2 On the opposite end of the electrical box, put the product onto the bracket.

3 Put grommets into the three (3) applicable holes that will be used to attach the bracket to the product.

4 Use one (1) of the three (3) 3/8 in. (10 mm.) screws and fully install the screw into the product.

5 Repeat the previous step until the product has been fully installed.



A. DBF 110, #95900

B. Grommet

C. Mounting Bracket

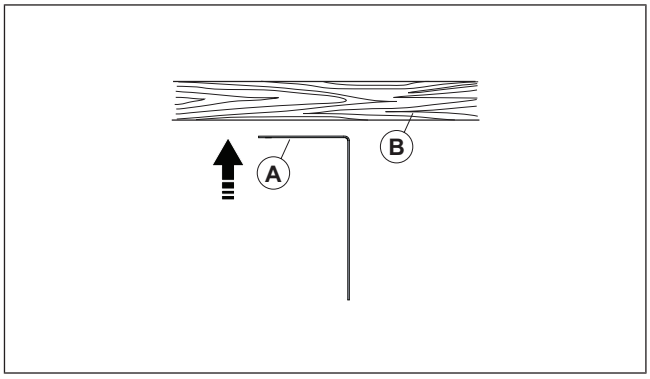
D. Screw

3.2.1.2 To Mount the Product in a Horizontal Position

Caution

If you use the wrong length screws, it will damage the motor impeller.

1 Use four (4) 1 in. (25 mm.) wood screws to attach the mounting bracket to a support beam at the selected location.



A. Mounting Bracket

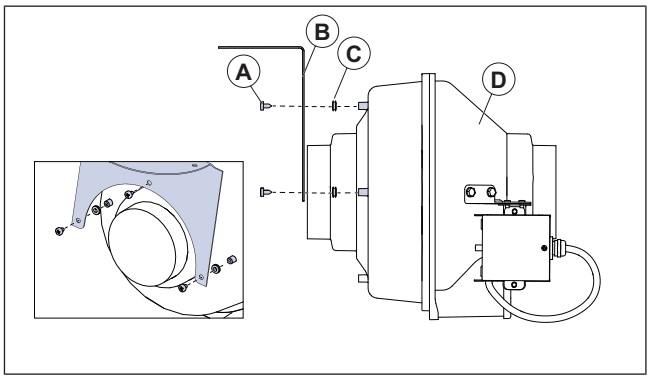
B. Support Beam

2 On the opposite end of the electrical box, put the product onto the bracket.

3 Put grommets into the three (3) applicable holes that will be used to attach the bracket to the product.

4 Use one (1) of the three (3) 3/8 in. (10 mm.) screws and fully install the screw into the product.

5 Repeat the previous step until the product has been fully installed.



A. Screw

B. Mounting Bracket

C. Grommet

D. DBF 110, #95900

3.2.2 To Install the Grommet and Tubing

Warning

A drill that hits metal duct can make burrs. Be careful not to be cut by the burrs.

Caution

Do not connect the tubes in such a manner as to allow condensation from the duct to collect in the tubes.

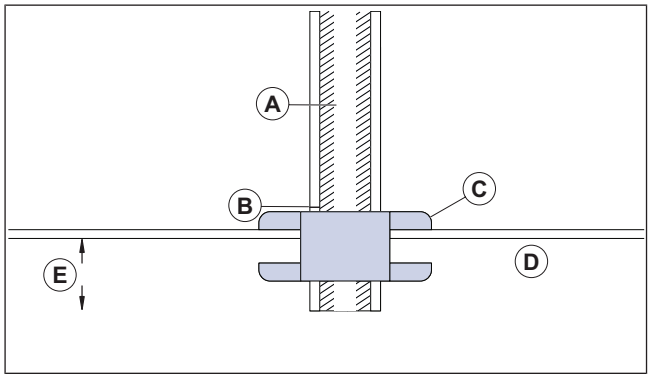
1 Drill a 7/16 in. (11 mm.) diameter hole in the duct wall.

2 Carefully put the grommet into the hole.

3 Push one end of the tube over the nipple on the control.

4 Make a mark a distance of 1/2 in. (13 mm.) from the other end of the tube.

5 Move this end of the tube through the center of the grommet up to the mark as shown in the figure from this section.



A. Tube

B. 1/2 in. (13 mm.)

C. Grommet

D. Duct Wall

E. 1/4 in. (6 mm.) maximum

4 Electrical connection

4.1 To Connect the Product to the Power Supply

Legend for Diagram	
English Terminology	Meaning
MTR	Motor Wires
SW	Switch Wires
BROWN	Brown
BLACK	Black
RED	Red
BLUE	Blue
WHITE	White
GREEN	Green
C	Capacitor
L	Line
N	Neutral
115V Power Supply	115 Volts Power Supply

Note:

All motor and pressure switch connections are pre-wired to an electrical terminal strip.

Note:

You will need a 3/8 in. (10 mm.) cable restraint connector to hold the wires through the knockout on the side of the electrical box.

1 Remove and set aside the screws that hold the electrical box cover plate in position. Remove the electrical box cover plate and set it aside.

2 Bring the power supply through the cable restraint connector and the fan knockout.

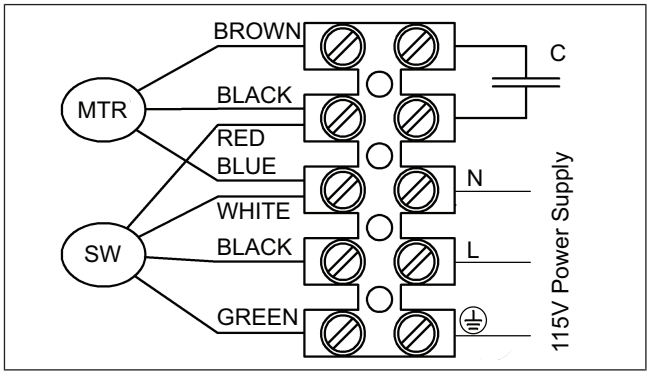
3 Put the connector nut over the power supply.

4 Connect the neutral wire of the power supply to the white wire on the terminal strip.

5 Connect the 115V line of the power supply to the black wire on the terminal strip.

6 Connect the ground wire of the power supply to the green wire on the terminal strip.

7 Safety the power supply with the cable restraint connector to the electrical box. Use the removed screws to put the electrical box cover plate back onto the product.



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 Commission and Test the Product

Note:

The procedure that follows will make sure that the product works correctly. Use this procedure at setup to make sure that the system operates correctly or as a system diagnostic when needed.

1. Make sure the product has power.
2. Start the appliance to make positive pressure in the duct.
3. The product will start to operate five (5) seconds after the appliance starts.
4. After five (5) minutes, the product will pause momentarily to do a pressure check.
   - If the product senses positive pressure within the duct, the product will start again and will operate for another five (5) minutes.
   - If the product does not sense positive pressure within the duct, the product will operate for a five (5) minute, post-purge, cooling cycle. Then, it will stop.
5. If the product operates correctly, no other action is needed.

6 Operation

6.1 How the Pressure Sensor Switch Operates

The product uses a positive pressure sensing switch that recognizes air pressure and activates the product from an independent electrical circuit. This sequence prevents the need for more connections through the appliance's circuit which may void the manufacturers' warranty as well as manual systems.

Power to the product is connected in series through a normally open terminal on the switch; while a pressure tap is connected to a nipple on the bottom of the switch.

When the appliance starts to operate, positive pressure in the duct causes the switch diaphragm to expand that closes the circuit to the product.

The product will operate for a total of ten (10) minutes in five (5) minute intervals. At each interval, the product will do a pressure check to look for positive pressure in the duct.

If there is positive pressure, the product will operate for five (5) more minutes.

If there is not positive pressure, the product will operate for a five (5) minute, post-purge, cooling cycle.

The product will not operate until it senses positive pressure in the duct again.

The cycle will continue until the appliance has stopped and the pressure check has expired.

7 Maintenance

Warning

Set the service disconnect switch in the OFF position before you do maintenance unless the instructions tell you differently. Make sure that the switch is not accidentally set in the ON position.

7.1 To Maintain the Product

Note:

The product bearings are sealed and are supplied with an internal lubricating material. No additional lubrication is necessary.

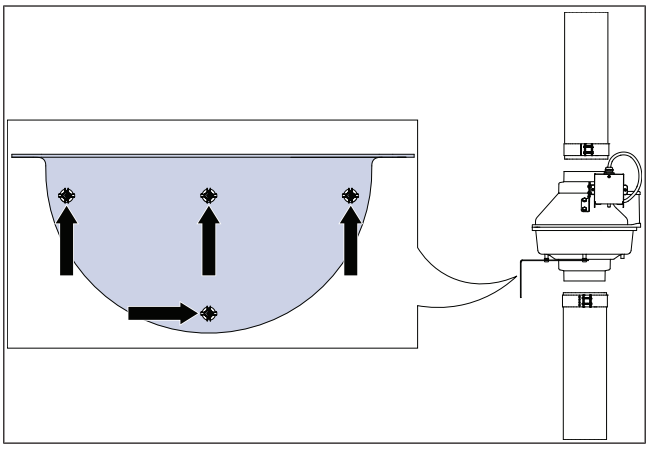
Note:

The product impeller may collect lint or debris. Inspect the product a minimum of every six (6) months.

Note:

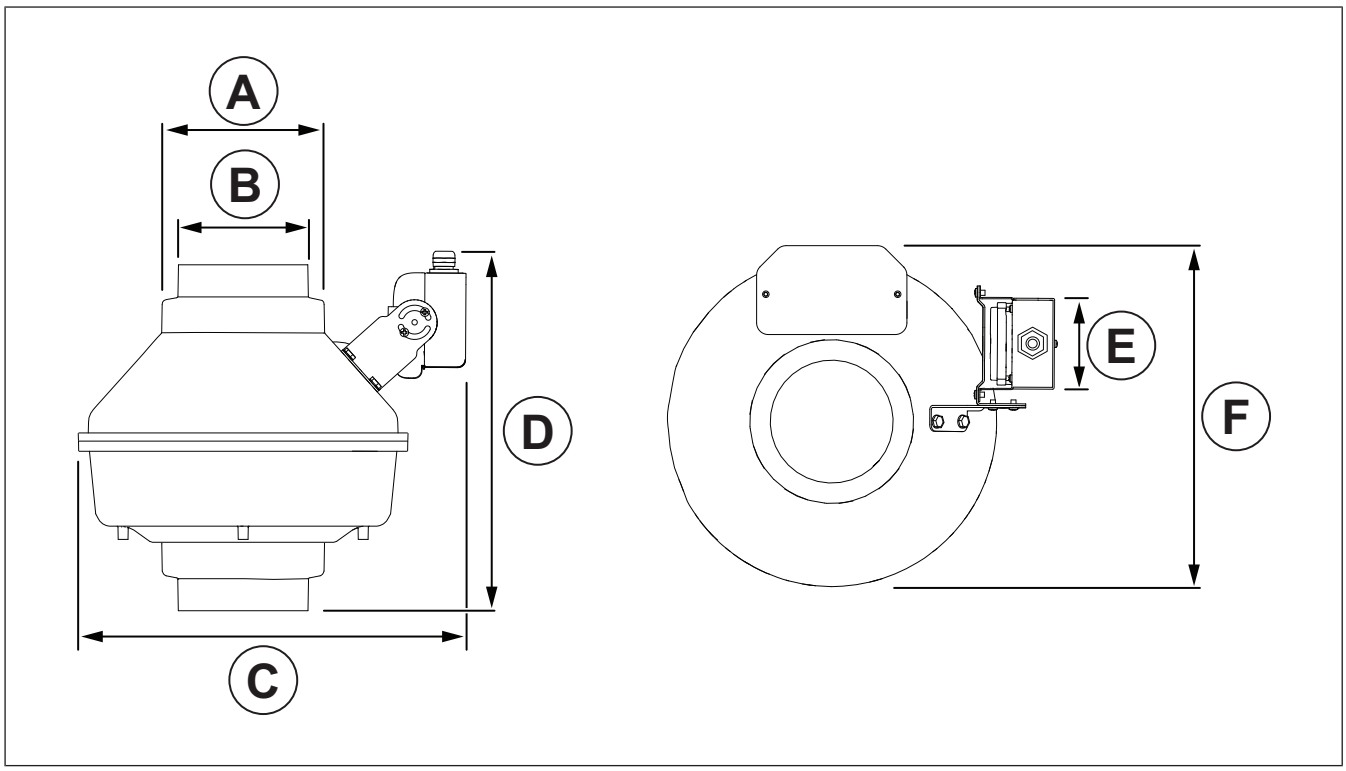
Excessive product noise or vibration may be an indication of lint buildup on the impeller. To inspect and clean the impeller, obey the steps that follow:

1. Disconnect the power supply at the source.
2. Remove the ducts from the product inlet and the outlet.
3. Remove any lint buildup or debris on the impeller.
4. Connect the duct to the product again.
5. Connect the power supply at the source again.



8 Technical data

8.1 Product Dimensions



Note:

Dimensions are given in inches (mm).

	A	B	C	D	E	F
DBF 110, #95900	5 (127)	4 (102)	11-7/8 (302)	11 (279)	2-7/8 (73)	10-1/2 (267)

fantech®
a systemair company

USA
(800) 747 1762
support@fantech.net

Canada
(800) 565 3548
support@fantech.net

Latin America
+52 55 1328 7328
support@fantech.net

Document in original language

2024-09-25

142000 - 002