



Installation, Operations, and Maintenance instruction

EN

DBF 4XLT Duct Booster Fan



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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

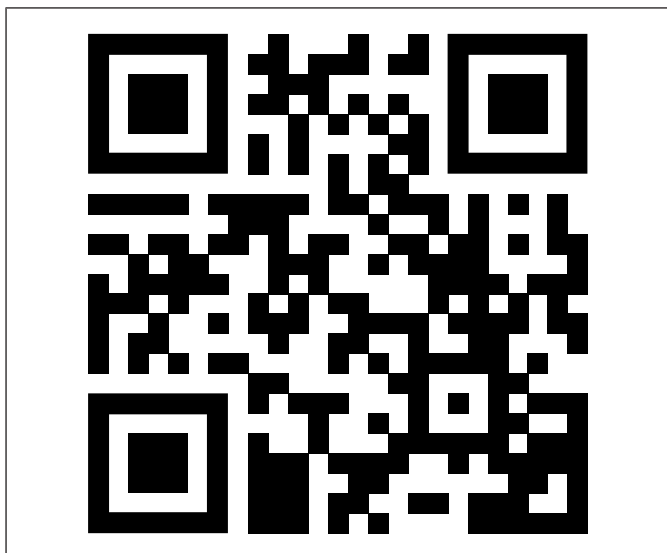
Use this product only in the manner intended by Fantech. If you have any questions, please contact a Fantech representative.

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.

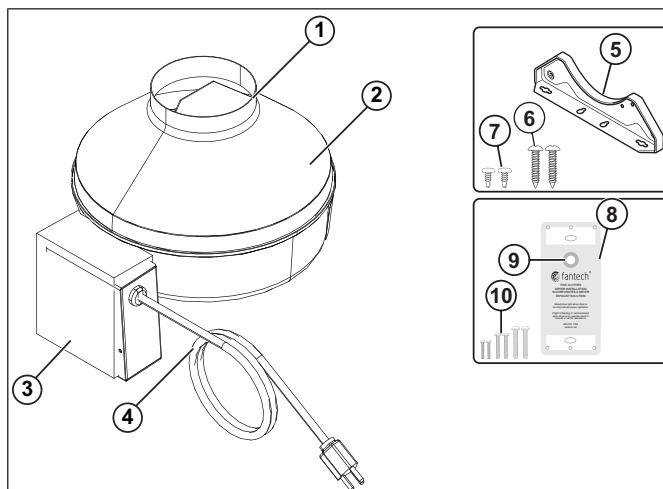
1.4 Fantech Warranty



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 Kanfläkt Way, Bouctouche, NB E4S 3M5 Canada.

1.5 Product Overview



1. Fan Inlet, quantity 1
2. Casing, quantity 1
3. Electrical Box, quantity 1
4. 3-prong Power Cord, quantity 1 — 5 feet (1.5 meters)
5. Mounting Bracket, quantity 1
6. Wood Screws, quantity 2 — 3/4 inch (19mm)
7. Self-tapping Screws, quantity 2 — 1/2 inch (13mm)
8. Indicator Panel with 50 feet (15.4 meters) of cable (not shown), quantity 1
9. LED Indicator
10. Threaded Screws, quantity 6
11. Tubing and Grommet (not shown), quantity 1

1.6 Type Designation

Product Name	DBF 4XLT, #40275
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, contact Fantech. To decrease the risk of fire, electric shock, or injury, read and obey the following warning instructions before you do work on the product:

- The ventilation contractor and the operator are responsible for correctly installing the product.
- When installing the product, obey all applicable local conditions and laws, and fire-rated construction codes and standards.
- Because the product has rotating parts, exercise safety precautions when installing, operating, and maintaining 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 following caution instructions 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 ducting upstream of the product.
- Do not use this product with high output dryers.
- When cutting or drilling into walls or ceilings, watch for electrical wiring and other hidden utilities to prevent damage.
- Ducted exhaust fans must always be 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 exhaust 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.
- If the LED light on the indicator panel starts to flash, do not use the dryer. See section 4 [Troubleshooting](#).
- To prevent the possibility of dryer fan cavitation and/or releasing hotter air than allowed for the drying cycle and compromising drying times, the airflow of the product must not exceed 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



Caution

This is a cord-connected product. Do not try to field wire the product. Tampering with the electrical enclosure voids the UL marking and the manufacturer's warranty.

3.1.1 To Calculate the Duct Run

This product is able to overcome equivalent duct lengths up to 125 feet (38 meters) on duct systems with 4 inch (102mm) diameter galvanized, steel ducts. It is also able to hold an air velocity of 1200 fpm (6.10 m/s).

To calculate the length of your planned duct system, measure from the dryer 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 4XLT, #40275 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.

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

Fantech recommends using a Mounting Bracket (included) to install the product to a rafter or a joist. A vertical rigid duct may be used to hold the product if the duct is safely stabilized (refer to local codes prior to supporting the product in the duct alone). Refer to section [5.1 To Maintain the Product](#) for inspection recommendations.

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

3.1.3 About the Indicator Panel

The product is equipped with a remote-mounted, low voltage operation indicator panel and a 50-foot cable. We recommend mounting this panel to a wall using applicable fasteners.

This wall-mounted indicator panel has a blue LED light that visually alerts the user of any malfunctions.

If installer chooses to mount indicator panel in a single gang junction box (by others), it should not be installed in a box that has line voltage wiring or devices.

3.1.4 How the Pressure Sensor Switch Operates

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

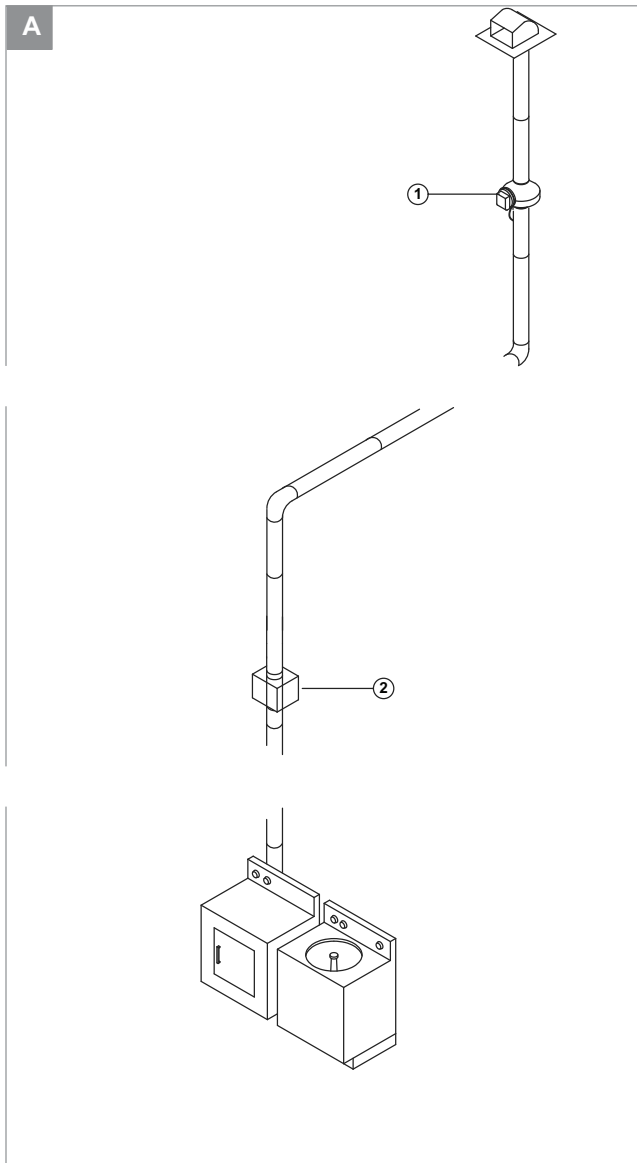
Power to the product is connected in series through a normally open terminal on the switch; while a pressure tap is connected to a nipple on the side of the switch.

When the dryer begins to operate, positive pressure in the duct causes the switch diaphragm to expand closing the circuit to the product.

Then, the delay-on-break timer in the switch will set the product to the 'ON' position for intervals of ten (10) minutes.

After a few seconds, the cycle will start automatically as long as the dryer is in operation. The cycle will continue until the dryer has stopped and the timer delay period has expired.

Drying cycles, the product, the delay timer, and the pressure switch are not affected negatively by the starting/stopping intervals.



1. DBF 4XLT, #40275
2. Secondary Lint Trap

3.2 To Install the Product/Switch

3.2.1 To Install the Indicator Panel



Caution

Install the indicator panel near the dryer so it can be clearly seen. If the panel cannot easily be seen, the user may miss an error notification that could cause damage to the product, the panel, or the dryer.

Note:

If the dryer is installed in an alcove with a door, install the panel within the alcove or adjacent to the door(s) of the alcove.

3.2.1.1 To Mount the Panel Location

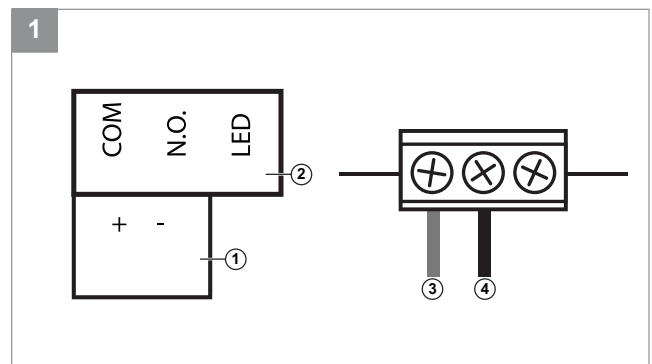
Note:

The DBF 4XLT, #40275 comes prewired from the factory.

- 1 Position the indicator panel and the product so that the cable can connect.
- 2 Mount the indicator panel so that it can be seen during dryer operation.

3.2.1.2 To Wire the Panel

- 1 On the end of the 50-foot (15.2 meter) cable with stripped wires, connect the red wire to the positive (+) position of the terminal block located on the indicator panel.
- 2 From that same end of the cable, connect the black wire to the negative (-) position of the terminal block located on the indicator panel as shown in the wiring diagrams.



1. 2 wire
2. 3 wire
3. Red wire
4. Black wire

3.2.2 To Install the Product

3.2.2.1 To Select the Product Location

Note:

In order to perform recommended maintenance, product location should allow sufficient access for service. Refer to [6.1 Product Dimensions](#).

Note:

Be sure to mount the product a minimum of five (5) linear feet (1.5 linear meters) from the dryer outlet.

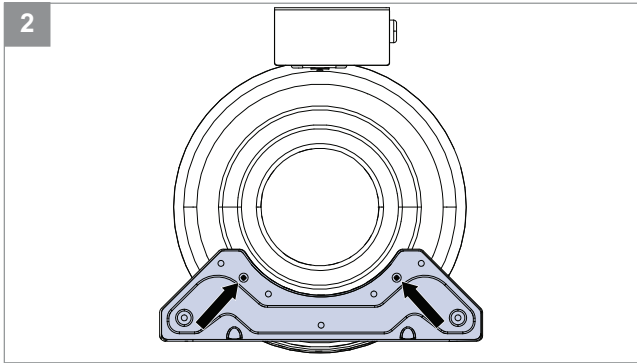
3.2.2.2 To Mount the Bracket



Caution

Using the wrong length screws will damage the motor impeller.

- 1 For correct operation, position the control box (located on the product) to provide access to the indicator panel wiring and tubing connections.
- 2 On the opposite end of the control box, position the bracket onto the product.
- 3 Make a mark through the middle holes of the bracket onto the product.
- 4 Using the marks for guidance, drill two (2) 3/32" (2mm) pilot holes in the product.
- 5 Using two (2) self tapping 1/2 inch (13mm) screws provided, attach product to the mounting bracket.



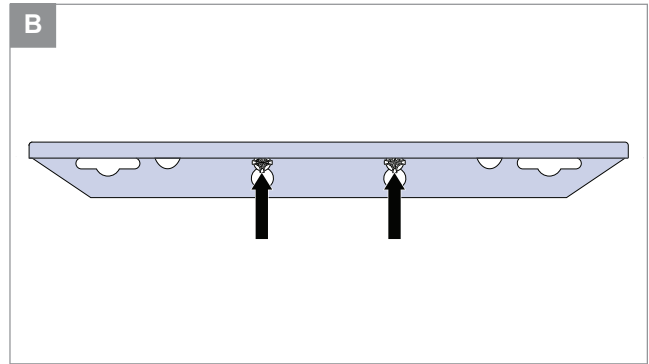
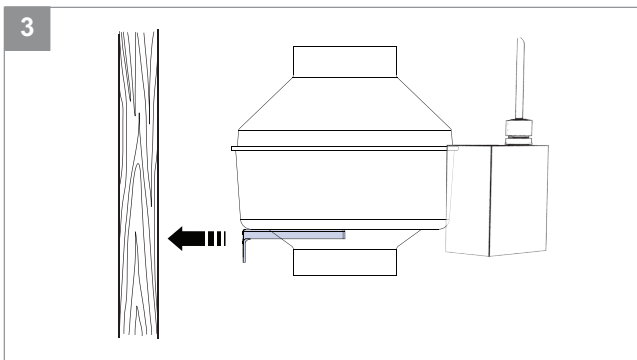
3.2.2.3 To Mount the Product in a Vertical or a Horizontal Position

3.2.2.3.1 To Mount the Product in a Vertical Position

Note:

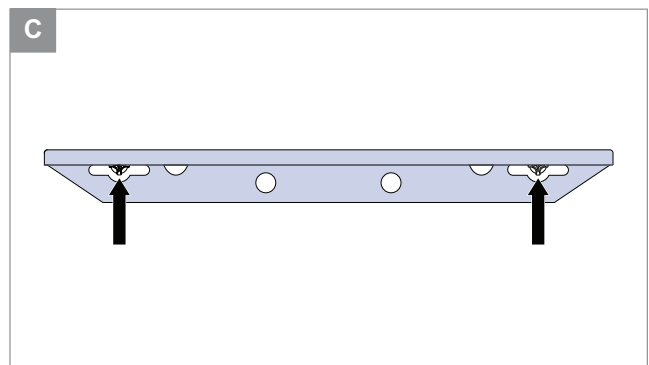
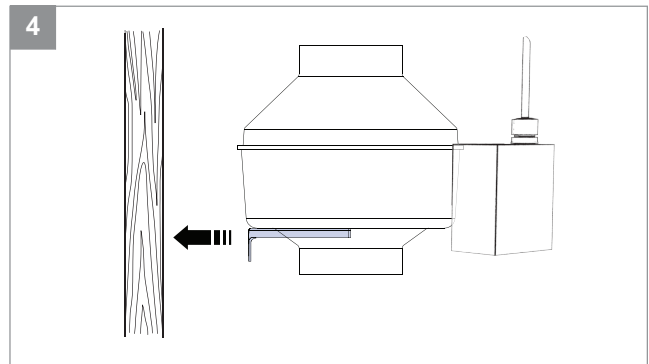
Vertical mounting is recommended to reduce condensation buildup in the product.

- 1 Using two (2) 3/4 inch (19mm) wood screws provided, attach the mounting bracket to a support beam at the selected location.



3.2.2.3.2 To Mount the Product in a Horizontal Position

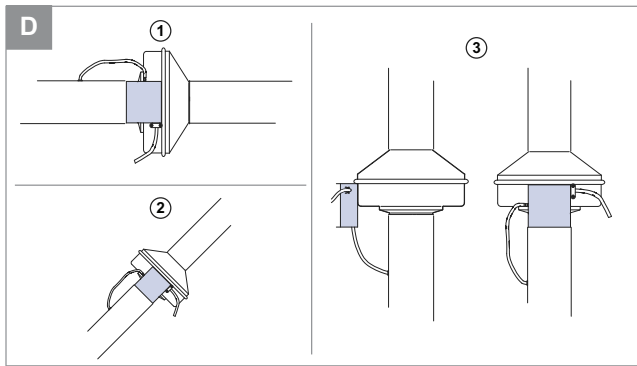
- 1 Drill a 1/4 inch (6mm) hole in the bottom of the housing (along with an NPT insert (provided by others) and drain tubing) to allow the condensation to drain.



3.2.2.4 To Position the Pressure Switch

Note:

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



1. Horizontal Duct Installation
2. Angled Duct Installation
3. Vertical Duct Installation

3.2.2.6 To Connect the Indicator Panel Cable to the Product

- 1 Connect the two (2) position connector at the end of the 50-foot (15 meter) indicator panel cable to the receptacle located on the product's control box.

3.2.2.5 To Install the Grommet and Tubing



Warning

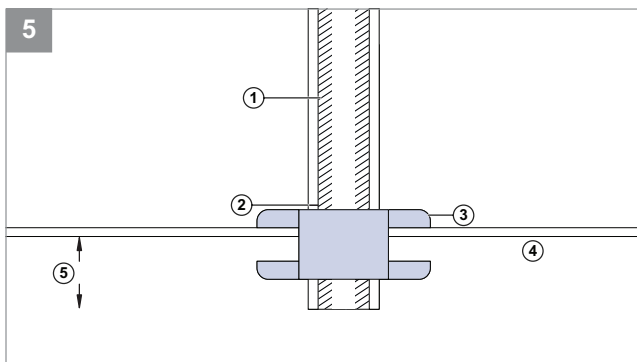
Drilling a metal duct may produce burrs. Be careful not to be cut or pricked by the burrs or the duct.



Caution

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

- 1 Drill a 5/16 inch (8mm) diameter hole in the duct wall.
- 2 Carefully put the grommet into the hole.
- 3 Push one end of the tubing over the nipple on the control.
- 4 Make a mark a distance of 1/2 inch (13mm) from the other end of the tubing.
- 5 Move this end of the tubing through the center of the grommet up to the mark as shown in the figure from this section.



1. Tubing
2. 1/2 inch (13mm)
3. Grommet
4. Duct Wall
5. 1/4 inch (6mm) maximum

4 Troubleshooting

Note:

If the panel LED flashes or does not illuminate when the dryer is on, see the below table for error indication and likely sources of the problem. If the product shows an error other than what is listed, or if these help topics do not solve the problem, please contact Fantech technical support for further assistance.

Problem	Cause	Solution
LED illuminates when the dryer is on and in a steady state.	Correct operation.	No other action is needed.
LED does not illuminate when the dryer is on and the product does not work.	The product is not plugged in.	Make sure that the product is correctly connected to a 120V AC power source.
	Blockages exist in the duct between the dryer and the product.	Remove the blockages.
	The clear plastic tubing is damaged.	Do a check of the tubing to make sure that it is free of moisture and cracks. If you see damage, replace the tubing.
	The tubing is not connected between the nipple on the product and the dryer duct.	Make sure the tubing is correctly connected to the product and to the dryer duct. Refer to section 3.2.2.5 To Install the Grommet and Tubing .
	The low voltage connection to the indicator panel is wrong.	Make sure the wire polarity is correct (red to positive, black to negative).
LED does not illuminate when the dryer is on and the product works.	The low voltage wire is not correctly plugged into the product.	Correctly plug the wire into the product.
	The low voltage connection to the indicator panel is wrong.	Make sure the wire polarity is correct (red to positive, black to negative).
LED flashes intermittently when the dryer is on.	Locked rotor condition.	Do a check of the product for buildup of debris or motor damage. If buildup exists, remove it.
LED flashes twice when the dryer is on followed by a brief pause.	Product working at less than its standard speed.	Do a check of the product for buildup of debris or motor damage. If buildup exists, remove it.
LED flashes three (3) times when the dryer is on followed by a brief pause.	System airflow has been reduced.	Speak to a professional and have the exhaust system inspected and cleaned.
	For new construction, the duct layout is too restrictive.	Do an inspection of the duct layout. Refer to sections 3.1.1 To Calculate the Duct Run and 3.1.2 To Select the Product Location
LED flashes after the dryer stops.	Decreased airflow through the duct system.	No other action is needed.

4.1 Product Operation Test

Note:

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

- 1 Make sure the product has power.

Note:

The indicator LED will illuminate only when the product operates.

- 2 Start the dryer.

- 3 After the dryer starts, the product will start to operate ten (10) seconds after the dryer has started.

Note:

The indicator LED will also illuminate during this time.

- 4 After five (5) minutes, the product will stop operating.
- 5 If the dryer is still operating and if the product senses positive pressure within the exhaust duct, the product will start again and will operate for another five (5) minutes.
- 6 After the five (5) minute operation period, if the product does not sense positive pressure from the exhaust duct, the product will operate for five (5) more minutes.
- 7 After the dryer stops, the indicator LED will remain illuminated for five (5) to ten (10) minutes.
- 8 If indicator LED does not illuminate, see section 4 [Troubleshooting](#).
- 9 If the product is operating correctly, no other action is needed.

Note:

Generally, if the indicator LED is not illuminated, it is OK to run the test. If you see any behavior other than that described above, set the dryer to the OFF position and wait at least five (5) minutes to allow the system to reset. Then, do the test again.

5 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.

5.1 To Maintain the Product

Note:

Because the product bearings are sealed and provided with an internal lubricating material, no additional lubrication is necessary.

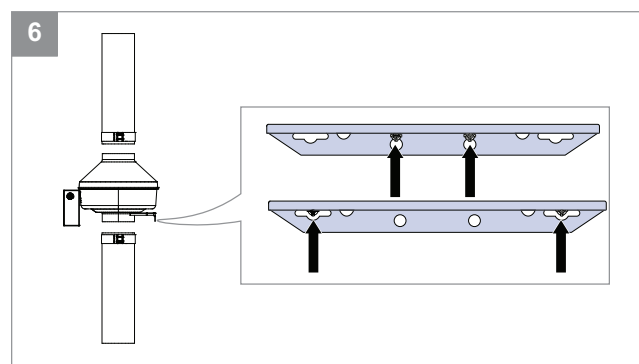
Note:

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

Note:

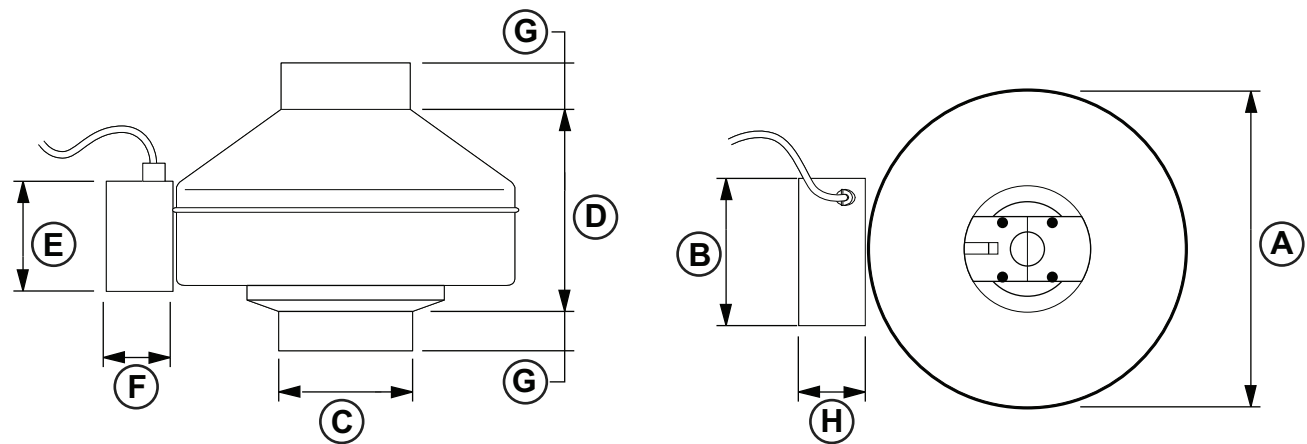
Excessive product noise or vibration may be an indication of lint buildup on the impeller. To inspect and clean the impeller, obey the steps that follow:

- 1 Disconnect the incoming 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.



6 Technical data

6.1 Product Dimensions



Note:

Dimensions are given in inches (mm).

	A	B	C	D	E	F	G	H
DBF 4XLT, #40275	9-3/4 (248)	3-3/4 (95)	3-7/8 (98)	6-15/16 (176)	3-7/8 (98)	2 (51)	1 (25)	2 (51)



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