
DEDPV-705 Dryer Exhaust Duct Power Ventilator



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1 Introduction

1.1 Product Description

This product is specially made to assist a single residential dryer (gas or electric) in overcoming dryer performance loss caused by long or restrictive duct systems. Dryer Exhaust Duct Power Ventilators (DEDPVs) are different from the term dryer booster because this product has to comply with strict safety requirements.

This product works together with the application's dryer. It may be installed in a different location than the dryer, such as an attic, a crawl space, or a basement.

This dryer depends on this product to safely and efficiently operate. If you operate this dryer without a functional product, it will cause unsatisfactory dryer operation and high energy consumption, and possibly a dryer fire. See the warning on the indicator panel.

1.2 Intended Use

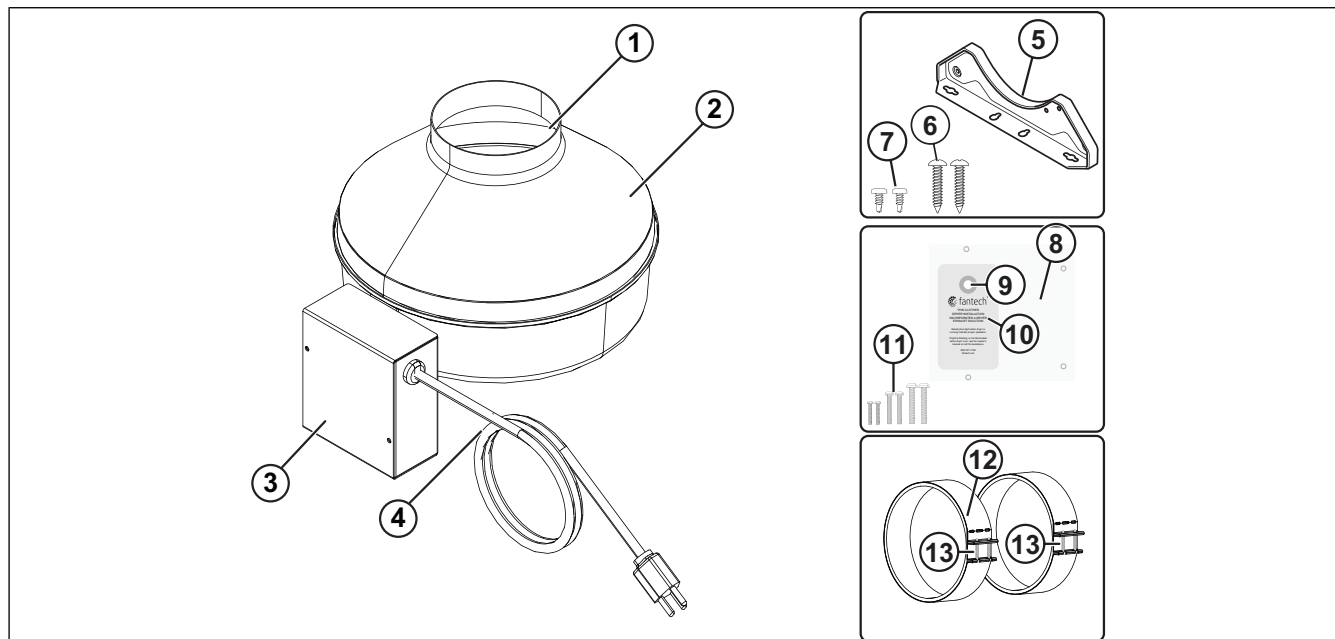
Use this product only in the manner intended by Fantech. If you have any questions, please contact a Fantech representative.

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.

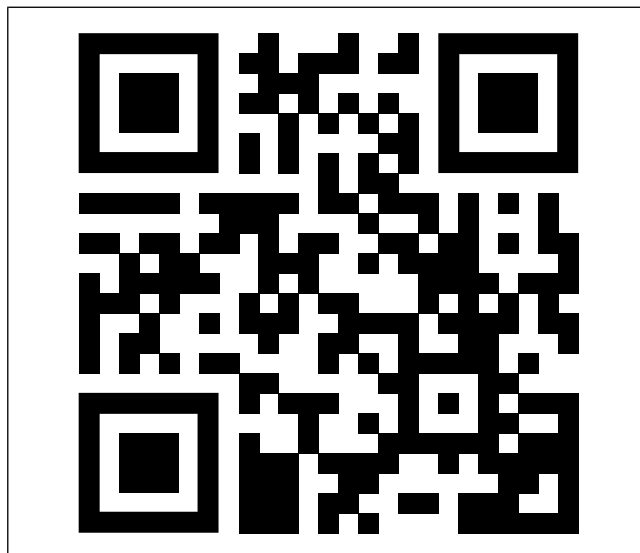
Speak to a Fantech representative for more information on how to install the product in different installation locations.

1.5 Product Overview



- | | |
|--|--|
| 1. Fan Outlet, quantity 1 | 9. LED Indicator, quantity 1 |
| 2. Casing, quantity 1 | 10. Indicator Panel with 50 ft. (15.4 m.) of cable (not shown), quantity 1 |
| 3. Electrical Box, quantity 1 | 11. Threaded Screws, quantity 6 |
| 4. 3-prong Power Cord, quantity 1 — 5 ft. (1.5 m.) | 12. FC Mounting Clamps, quantity 4 |
| 5. Mounting Bracket, quantity 1 | 13. Threaded Screws, quantity 8 |
| 6. Wood Screws, quantity 2 — 3/4 in. (19 mm.) | 14. Tubing and Grommet (not shown), quantity 1 |
| 7. Screws, quantity 2 — 1/2 in. (13 mm.) | |
| 8. Decora Plate, quantity 1 | |

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 Kanaflikt Way, Bouctouche, NB E4S 3M5 Canada.

1.6 Type Designation

Product Name	DEDPV-705, #499195
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

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.
- Ducted exhaust fans must always be vented to the outdoors.
- TO REDUCE THE RISK OF FIRE, USE ONLY METAL DUCTWORK.
- If a continuous alarm sounds or a visual error indicator is present, do not operate the dryer. Contact your service personnel.
- Your clothes dryer installation incorporates a dryer exhaust power ventilator (DEDPV) which may be in a different location than your dryer, such as in an attic, crawl space or basement.
- Your clothes dryer depends on the DEDPV for its safe and efficient operations. Operating your dryer without a

functional DEDPV will result in inefficient dryer operation, excess energy consumption and a possible fire hazard. See warning on the alarm notification panel.

- The notification/annunciator panel shall be permanently installed within the space in which the clothes dryer is installed. In the case of a dryer installed in an alcove provided with a door or doors the notification/annunciator panel shall be installed within the alcove or be installed immediately adjacent to the doors of the alcove. The notification/annunciator panel shall be located where it will be readily visible after the dryer is installed without having to open any doors other than those necessary to access the dryer.



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:

- For General Ventilating Use Only. Do Not Use To Exhaust Hazardous Or Explosive Material and Vapors.
- 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.
- Do not install the product in duct systems where the equivalent duct length is less than 35 feet (10.7 meters).
- 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.
- Do not use this product to remove air hotter than 167° Fahrenheit (75° Celsius).
- If the LED light on the indicator panel starts to flash, do not use the dryer. See section 7 [Troubleshooting](#).

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. If you tamper with the electrical enclosure, it will void the UL mark 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 in. (102 mm.) 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 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.

MAXIMUM EQUIVALENT DUCT LENGTH

130 ft. (40 m) of 4 in. diameter galvanized steel duct, and to maintain an air velocity of 1200 fpm (6.10 m/s).

MINIMUM EQUIVALENT DUCT LENGTH

40 ft. (12.2 m) of 4 in. diameter galvanized steel duct, as this will remove air from the dryer at an air velocity over 2200 fpm (11.2 m/s). This will decrease the performance of your clothes dryer.

Use the table below to find the length of duct this product can be used with at specified elevations:

Elevation in feet (meters)	Maximum Equivalent Duct length in feet (meters)
Sea Level	125 (38)
2000 (610)	114 (35)
4000 (1219)	106 (32)
6000 (1829)	98 (30)
8000 (2438)	92 (28)
10,000 (3048)	85 (26)
12,000 (3658)	80 (24)

3.1.2 To Select the Product Location



Caution

To prevent damage to the dryer or to the product, do not install the DEDPV-705, #499195 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](#).



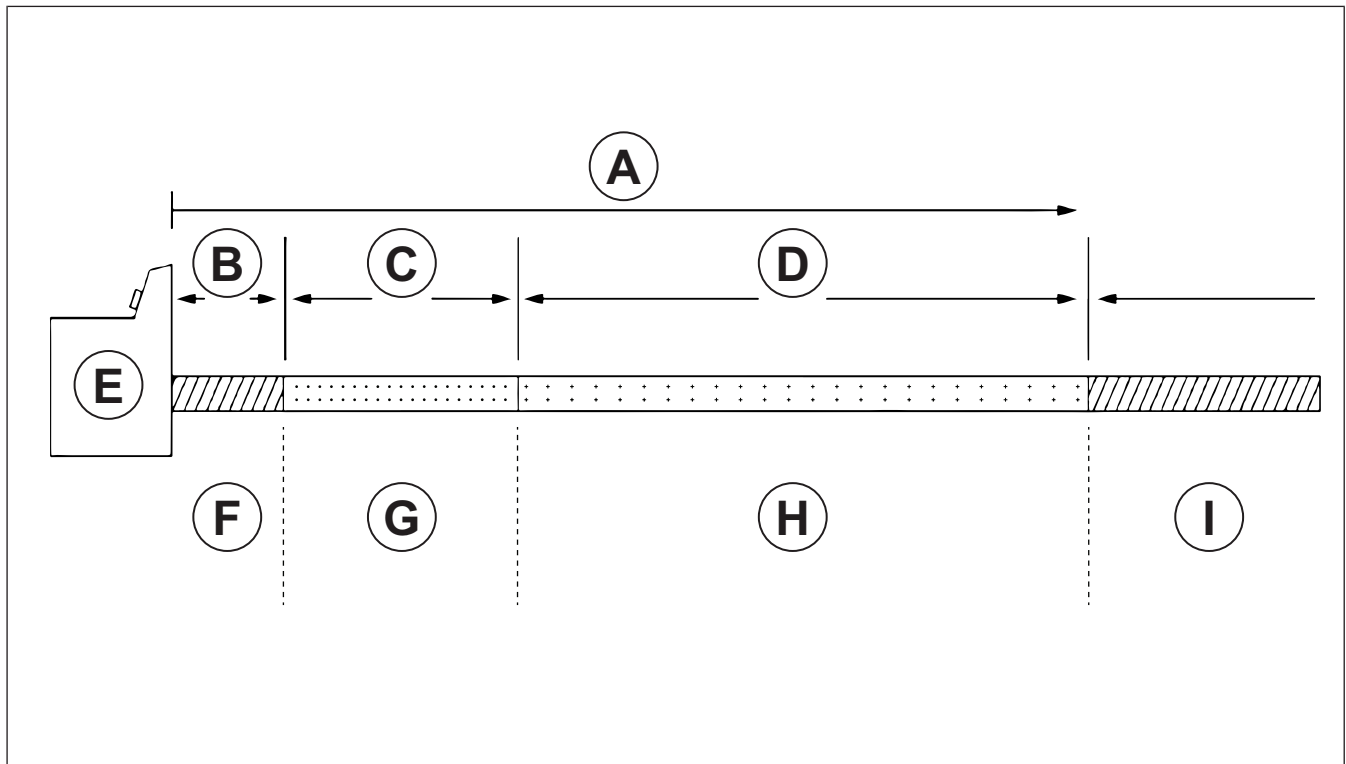
Caution

Do not use stretch flex duct to connect this product to clothes dryer applications.

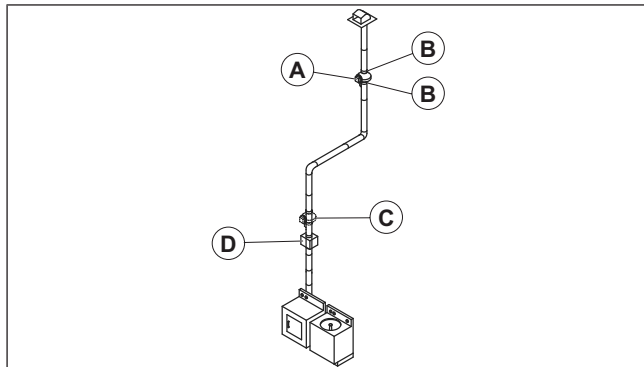
Fantech recommends to use a Mounting Bracket (included) to install the product to a rafter or a joist. A vertical rigid duct can be used to hold the product if the duct is safely stabilized (refer to local codes before you support the product in the

duct alone). Refer to section [6.1 To Maintain the Product](#) for inspection recommendations.

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



- A. 40 feet (12 meters)
- B. 5 feet (1.5 meters)
- C. 10 feet (3 meters)
- D. 25 feet (7.6 meters)
- E. Dryer
- F. Do not install the product.
- G. If product is installed, install a secondary lint trap between the dryer and the product.
- H. If product is installed, Fantech recommends to install a secondary lint trap.
- I. Do not install the product.



- A. DEDPV-705, #499195
- B. FC Mounting Clamps
- C. Alternative Install Location for DEDPV-705, #499195
- D. Secondary Lint Trap

3.1.3 About the Indicator Panel



Caution

If you choose to mount the indicator panel in a single gang junction box (by others), do not install it in a box that has line voltage wires or devices.

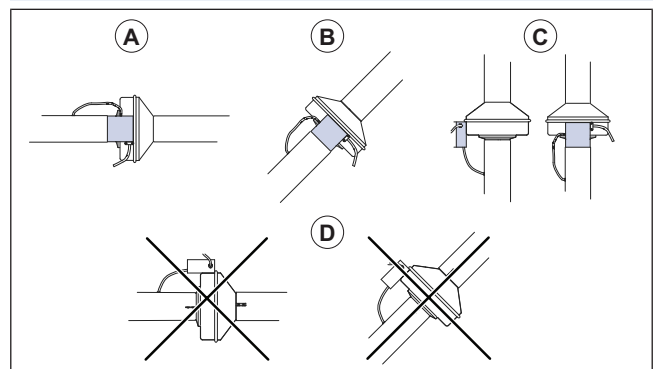
The product is equipped with a remote-mounted, low voltage operation indicator panel and a 50-foot cable. We recommend to mount this panel to a wall with applicable fasteners.

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

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. Angled Duct Installation
- C. Vertical Duct Installation
- D. Incorrect Positions

3.2 To Install the Product/Switch

3.2.1 To Install the Indicator Panel



Caution

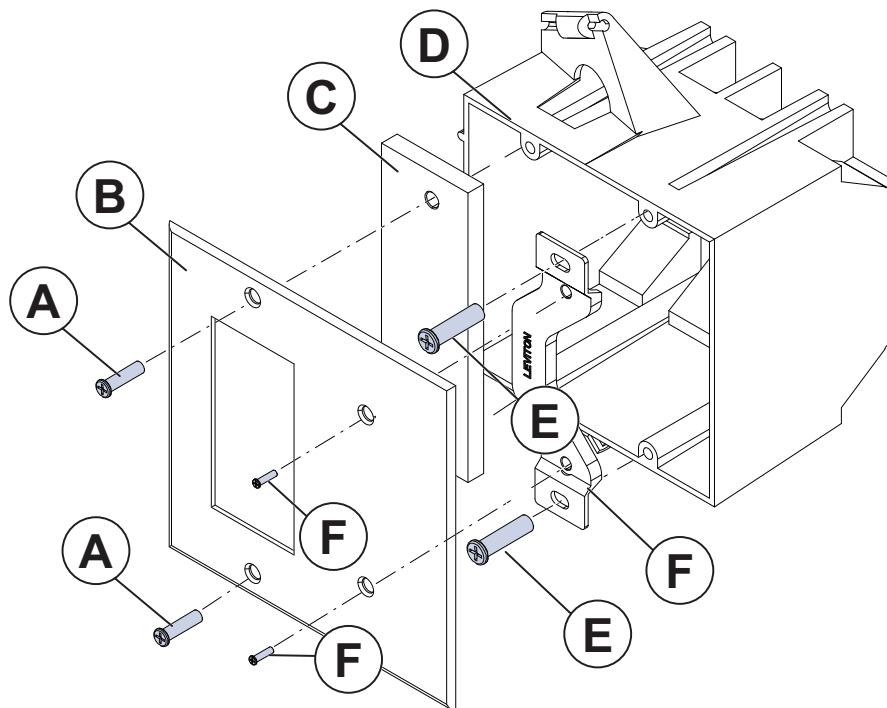
Install the indicator panel near the dryer so it can be clearly seen. If the panel cannot easily be seen, the user may miss an error notification that could cause damage to the product, the panel, or the dryer.

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 Install the Indicator Panel to the Wall

- 1 Put the indicator panel and the product in a position so that the cable can connect.
- 2 With the 2 gang mount box installed into the wall, and with two (2) supplied large-sized screws, install the adjustment plate correctly into the applicable holes of the mount box.
- 3 Put the indicator panel correctly behind the opening of the decora plate.
- 4 Use two (2) supplied medium-sized screws to install the decora plate and the indicator panel into the applicable holes of the mount box.
- 5 Use two (2) supplied small-sized screws to safety the decora plate to the adjustment plate through the applicable holes.

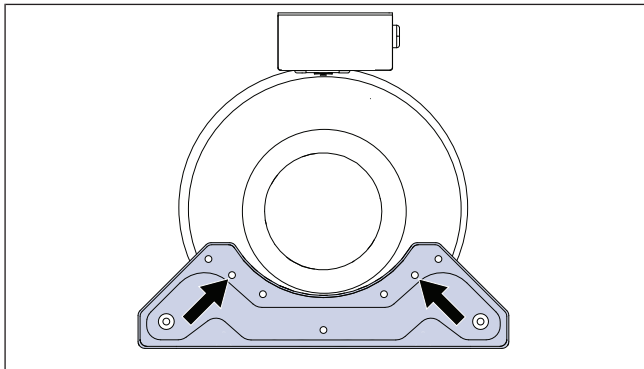


- A. Medium-sized Screw
- B. Decora Plate
- C. Indicator Panel
- D. 2 gang mount box (not included)
- E. Large-sized Screw
- F. Adjustment Plate
- G. Small-sized Screw

3.3 To Install the Product

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

- 1 For correct operation, put the electrical box (attached to the product) in a position so that you can easily make the indicator panel wire and tube connections.
- 2 On the opposite end of the electrical box, put the bracket onto the product.
- 3 Make a mark through the middle holes of the bracket onto the product.
- 4 Use the marks for guidance and drill two (2) 3/32 in. (2 mm.) pilot holes into the product.



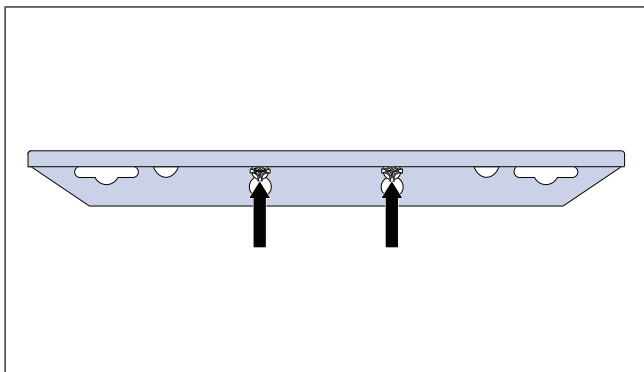
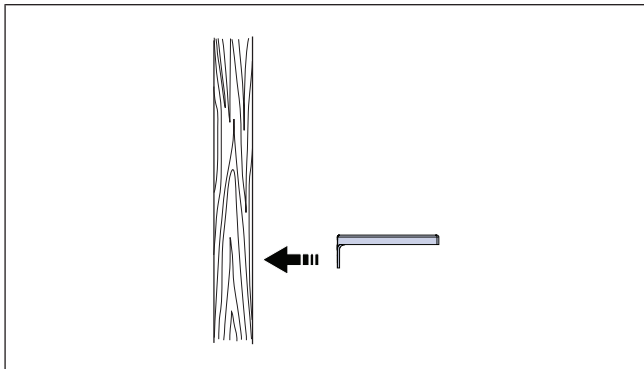
- 5 Set the product aside for now and get ready to mount the bracket by itself.

3.3.1.1 To Mount the Bracket in a Vertical Position

Note:

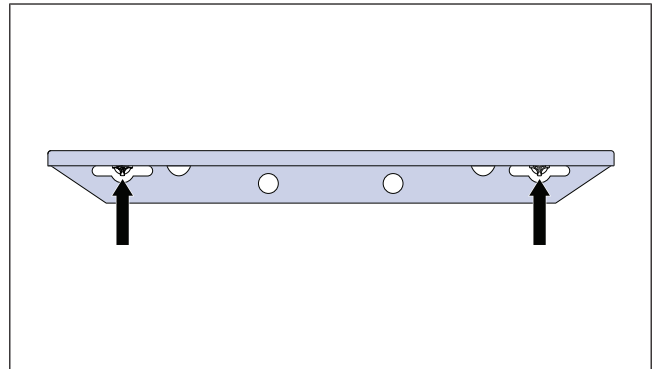
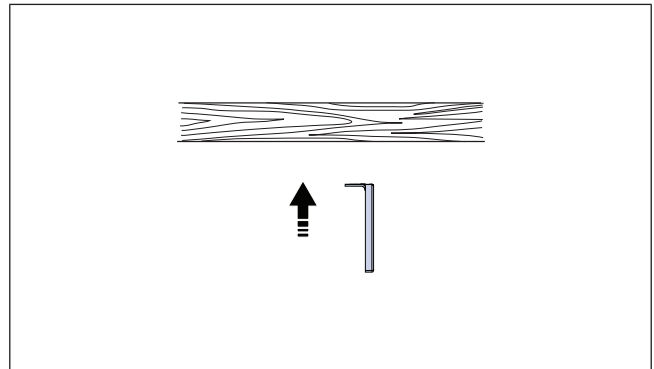
A vertical mount position is recommended to reduce condensation buildup in the product.

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



3.3.1.2 To Mount the Product in a Horizontal Position

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



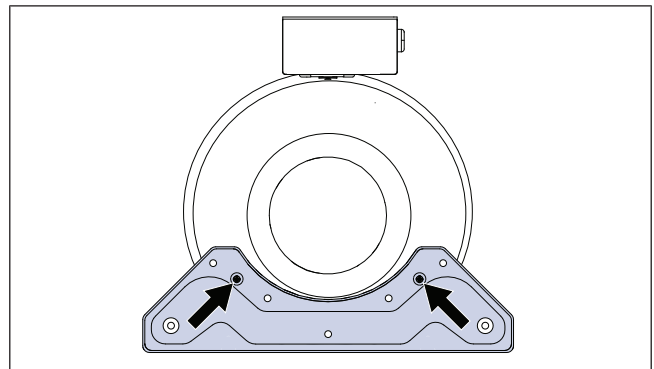
3.3.2 To Mount the Product to the Bracket



Caution

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

- 1 Use two (2) 1/2 in. (13 mm.) screws to attach the product to the mounting bracket.



3.3.3 To Install the Ducts

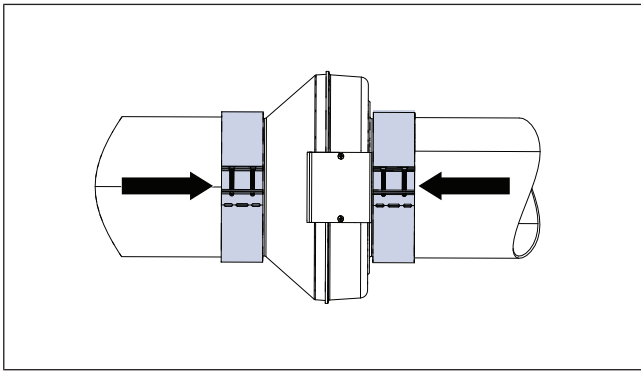
Note:

The cleanout ducts must be removable for maintenance work.

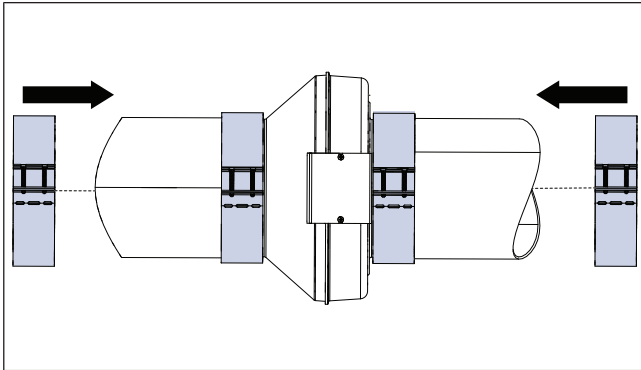
Note:

On both ends of the cleanout ducts, leave 0.06 inches (1.5 mm.) of clearance to mate the ducts.

- 1 Put the two (2) 10 in. (254 mm.) cleanout ducts 10–1/8 inches (257 mm.) away from the product outlet and inlet.
- 2 Use two (2) FC Mounting Clamps and the accompanied hardware to install the two (2) ducts onto the inlet and outlet of the product.



- 3 Move the two (2) FC Mounting Clamps onto both ends of the cleanout ducts.
- 4 Use the accompanied hardware to safety the clamps on-to the ends of both ducts.



3.3.4 To Install the Grommet and Tubing



Warning

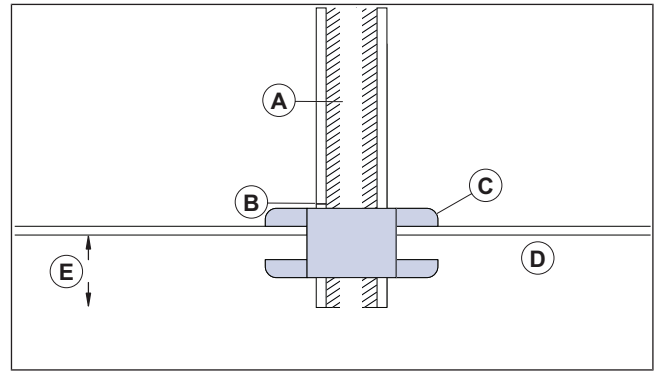
A drill that hits metal duct can make burrs. Be careful not to be cut by the burrs.



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

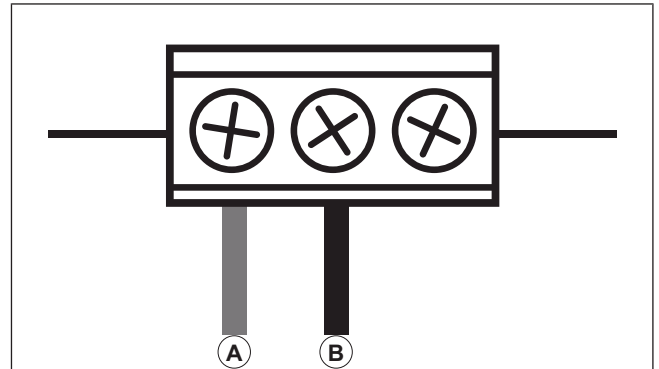
3.3.5 To Connect the Indicator Panel Cable to the Product

- 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.

3.4 Electrical connection

3.4.1 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.



- A. Red wire
- B. Black wire

3.4.2 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.

4 Commissioning

4.1 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.

Note:

The indicator LED will illuminate only when the product operates.

- 2 Start the dryer.
- 3 The product will start to operate five (5) seconds after the dryer appliance starts.

Note:

The indicator LED will also illuminate during this time.

- 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 After the appliance stops, the indicator LED will remain illuminated for five (5) to ten (10) minutes.
- 6 If indicator LED does not illuminate, see section [7 Troubleshooting](#).
- 7 If the product operates 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 appliance to the OFF position and wait at least five (5) minutes to allow the system to reset. Then, do the test again.

5 Operation

5.1 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 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 side 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 minimum 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 cycle will continue until the appliance has stopped and the pressure check has expired.

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

6 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.

6.1 To Maintain the Product

Note:

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

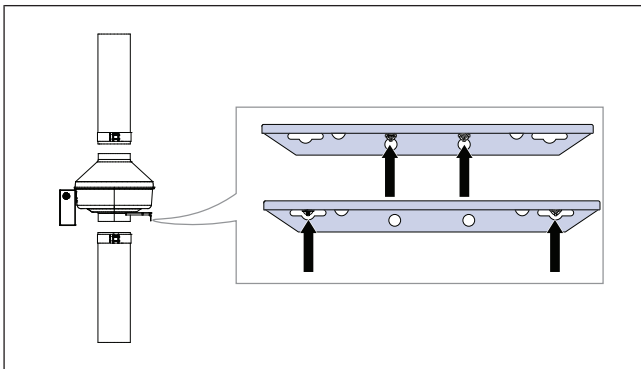
Note:

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 power supply at the source.
- 2 Loosen the two (2) FC clamps from both the inlet and the outlet of the product.
- 3 Remove the ducts from the product inlet and the outlet.
- 4 Temporarily remove the two (2) wood screws that connect the product to the support beam.
- 5 Remove any lint buildup or debris on the impeller.
- 6 Install the two (2) removed wood screws through the mounting bracket back onto the support beam.
- 7 Use the two (2) removed FC clamps to tighten the ducts back onto the product again.
- 8 Connect the power supply at the source again.



7 Troubleshooting

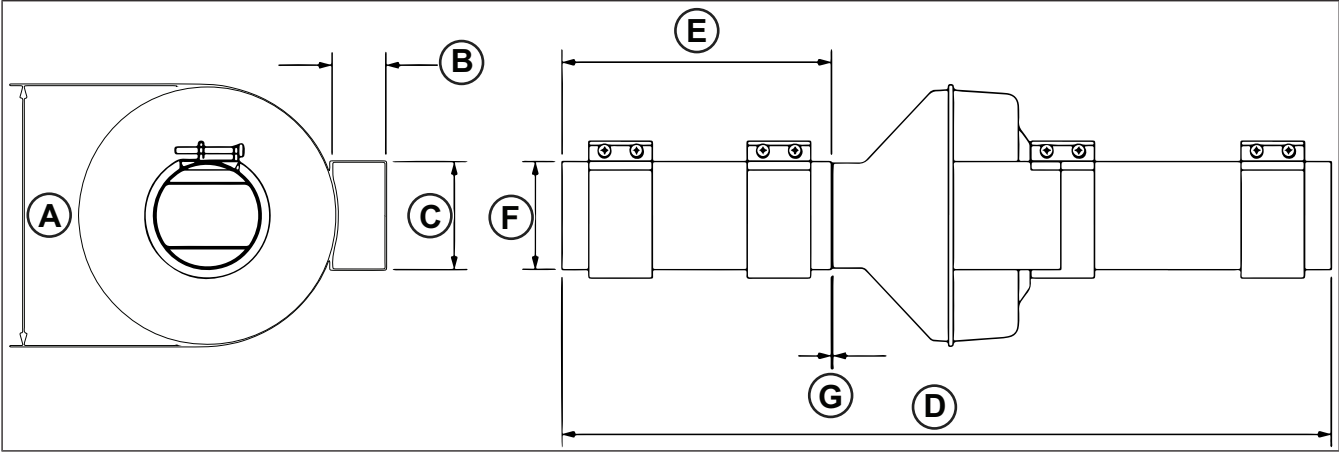
Note:

If the panel LED flashes or does not illuminate when the dryer appliance 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 speak with Fantech technical support.

Problem	Cause	Solution
LED illuminates when the connected appliance is on and in a steady state.	Correct operation.	No other action is needed.
LED does not illuminate when the appliance is on and the product does not work.	The product is not connected to a power source.	Make sure that the product is correctly connected to a 120 VAC power source.
	There are blockages in the duct between the appliance and the product.	Remove the blockages.
	The clear plastic tube is damaged.	Make sure the tube is free of moisture and cracks. If you see damage, replace the tube.
	The tube is not connected between the nipple on the product and the duct.	Make sure the tube is correctly connected to the product and to the duct. Refer to section 3.3.4 To Install the Grommet and Tubing .
	The low voltage connection to the indicator panel is wired incorrectly.	Make sure the wire polarity is correct (red to positive, black to negative).
	The safety thermal fuse has opened.	Replace the product. This happened because the exhaust temperature was hotter than 196° Fahrenheit (91° Celsius). Speak to the dryer manufacturer about this issue.
LED does not illuminate when the appliance is on and the product works.	The low voltage wire is not correctly connected to the product.	Correctly connect the wire to the product.
	The low voltage connection to the indicator panel is wired incorrectly.	Make sure the wire polarity is correct (red to positive, black to negative).
LED flashes intermittently when the appliance is on.	Locked rotor condition.	Make sure that there is no debris build-up or motor damage. If there is buildup, remove it. If there is motor damage, speak with Fantech technical support to replace the product.
LED flashes twice when the appliance is on followed by a brief pause.	Something has caused the product to operate at less than its standard speed.	Make sure that there is no debris build-up or motor damage. If there is buildup, remove it. If there is motor damage, speak with Fantech technical support to replace the product.
LED flashes three (3) times when the appliance is on followed by a brief pause.	Airflow has decreased through the duct system.	Speak to a professional and have the system inspected and cleaned.
	For new construction, the duct layout cannot supply sufficient airflow.	Examine 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 three (3) times when the appliance is off followed by a brief pause.	Airflow has decreased through the duct system.	No other action is needed.

8 Technical data

8.1 Product Dimensions



Note:
Dimensions are given in inches (mm).

	A	B	C	D	E	F	G
DEDPV-705, #499195	9-5/8 (244)	1-9/10 (49)	3-4/5 (97)	28 9/16 (725)	10 (254)	4 (102)	1/32 (0.8)



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