Item #: 142000
Rev Date: 2021-08-16

Installation and Operation Manual

DBF 110 • DBF 4XL

Duct Booster Fan

PARTS IN THE BOX (DBF 110)
Duct Booster Fan, 1 pc
Fan Mounting Bracket, 1 pc
Hardware kit, 1 pc
Grommets, 3 pcs
Operation and Installation Manual, 1 pc

PARTS IN THE BOX (DBF 4XL)
Duct Booster Fan w/cord, 1 pc
Fan Mounting Bracket, 1 pc
Hardware kit, 1 pc
Operation and Installation Manual, 1 pc

DBF 110

DBF 4XL

Technical / Customer Support:
United States Tel.: 800.747.1762

fantech®
a systemair company

Note	Warning / Important note	Information	Technical information	Practical tip

Read and Save these instructions for future reference.

1. DBF 110 and DBF4XL fans are not explosion proof. Do not use the fans if a potentially explosive situation may exist.
2. Because this unit has rotating parts, safety precautions should be exercised during this phase of installation, operation and maintenance.
3. **CAUTION:** For General Ventilation Use Only. Do Not Use To Exhaust Hazardous Or Explosive Material and Vapors.
4. The fan motor, capacitor and pressure switch connections are pre-wired from the factory.

WARNINGS

DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED. MAKE SURE ELECTRICAL SERVICE TO THE FAN IS LOCKED IN "OFF" POSITION.

1. TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS - OBSERVE THE FOLLOWING:

a. Use this unit only in the manner intended by the manufacturer. If you have questions, contact the factory.

b. Before servicing or cleaning, switch power off at service panel and lock service panel to prevent fan 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.

c. Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.

d. The combustion airflow needed for safe operation of fuel burning equipment may be affected by this unit's operation. Follow the heating equipment manufacturer's guidelines and safety standards such as those published by the National Fire Protection Association (NFPA), the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) and the local code authorities.

e. When cutting or drilling into wall or ceiling, do not damage electrical wires or other hidden utilities.

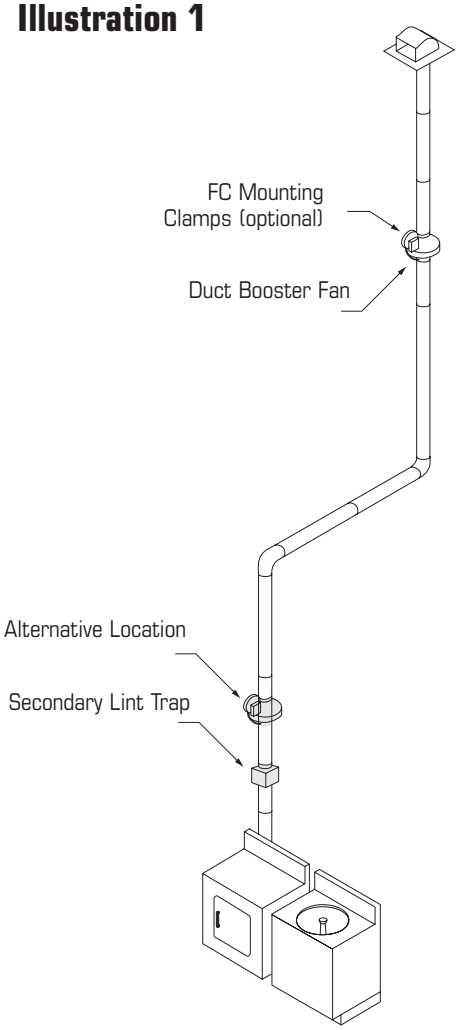
f. Ducted fans must always be vented to the outdoors.

g. Install the fan a minimum of 5 linear feet from the dryer outlet.

2. WARNING! Check voltage at the fan to see if it corresponds to the motor nameplate.

3. **DO NOT USE with heated air in excess 140°F (60°C).**

Illustration 1



Installation Guidelines

Fan and Switch Mounting

The DBF110 or DBF4XL is to be mounted a minimum of 5 linear (not equivalent) feet from the dryer outlet. A secondary lint trap (DBLT 4W) is recommended if the fan is installed between 5 and 15 linear (not equivalent) feet from the dryer outlet in applications, where excessive dryer lint generation is likely or to increase the time interval between routine maintenance of the Dryer Exhaust Fan (See illustration to left). An NB mounting bracket attached to a rafter or joist should be used to stabilize the fan. Although not recommended, a vertical rigid duct may support the fan if the duct is securely stabilized. (Consult local codes prior to supporting the fan in the duct alone.) Duct work should be attached to the inlet and outlet of the fan by means of FC vibration isolation clamps (not included) or duct tape. The duct connection should be properly sealed to prevent leakage and loss of fan performance. Flex duct connections between the dryer duct connection and exhaust duct should be stretched as smooth as possible.

Calculating Duct Run

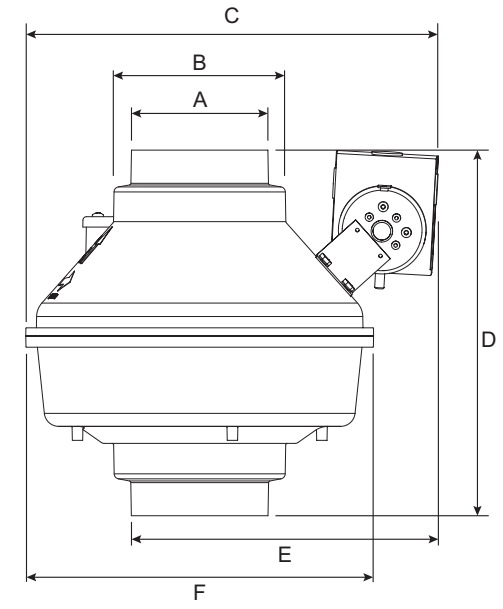
To calculate the length of your planned duct run, measure from the dryer to external venting point in roof or wall. For each bend or elbow add 5-7 feet to your total duct run calculations. The DBF110 and DBF4XL can be used on runs up to 120 feet.

Pressure Sensor Switch Operation

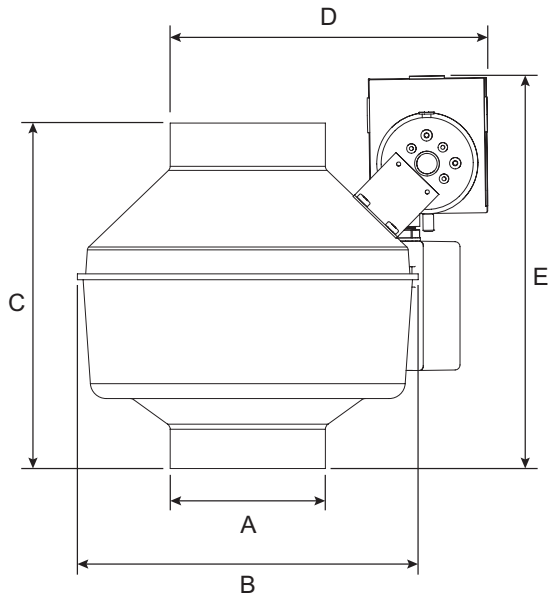
Fantech's DBF110 and DBF4XL are equipped with a positive pressure sensing switch which recognizes dryer operation and activates the dryer exhaust fan from an independent electrical circuit. This eliminates connections through the dryer circuit which may void the manufacturers' warranty as well as manual systems which require the attention of the operator or costly current/temperature sensing systems.

The electricity to the dryer exhaust fan is connected in series through a normally closed terminal on the switch. A pressure tap is connected to a fitting on the side of the switch. When the dryer begins operation, positive pressure in the duct causes the switch diaphragm to expand, closing the circuit to the dryer exhaust fan. An integral delay-on-break timer in the switch will cycle the fan on for intervals of 10 minutes. This will continue until the dryer has stopped and the timer delay period has lapsed. Drying cycles, the dryer exhaust fan, the delay timer and the pressure switch are not adversely affected by the starting/stopping intervals.

Dimensional Data



	A	B	C	D	E	F
DBF 110	3 31/32	4 31/32	12 3/4	11 1/4	9 1/2	10 5/8



	A	B	C	D	E
DBF4XL	3 7/8	9 7/8	8 1/4	9 1/4	8 5/8

Dimensions are in inches.

Fan Installation

Step 1. Selecting Fan Location

Fan **must** be mounted a minimum of 5 feet from the dryer outlet. In order to perform recommended maintenance, fan location should allow sufficient access for service. Refer to dimensional drawings shown above.

Step 2. Mount Bracket

Using the wood screws provided, attach the mounting bracket to a support beam at the selected location. For the DBF110 only, the bracket is provided with grommets in order to isolate any vibration and prevent the transmission of sound through the structure. Be careful not to overtighten.

Fan mounting can be in any angle (see ill. 2), however, vertical mounting is recommended to reduce condensation buildup in the fan. If a horizontal installation is necessary and condensation buildup may pose a problem, a ¼" hole drilled in the bottom of the housing (along with an NPT insert [by others] and drain tubing) may be installed to allow condensation to drain.

Step 3. Mount Fan

For proper operation, the switch diaphragm must be positioned vertically. (See ill. 2 and ill. 4) If an increased or decreased sensitivity is required, such as in high altitude applications, the unit can be rotated (see ill. 4) to increase or decrease the sensitivity of the pressure switch. Wiring box should be positioned for easy access. Attach fan to the mounting bracket with the self tapping screws provided. Care should be taken not to strip the housing. Although screw pilot holes are not required, $^{3}/_{32}$" (or smaller) pilot holes are recommended.

Steps 2 & 3 may be reversed.

Step 4. Installing Grommet and tubing

First, drill a 7/16 inch to 1/2 inch diameter hole in the duct wall on the intake side of the fan. Carefully insert the grommet into the hole. (Drilling a metal duct may produce burrs. Be careful not to be cut or pricked by the burrs or the duct.) Next, force one end of the tubing over the nipple on the control. Make a mark a distance of 1/2 inch from the other end of the tubing. Slide this end of the tubing through the center of the grommet up to the mark as illustrated.

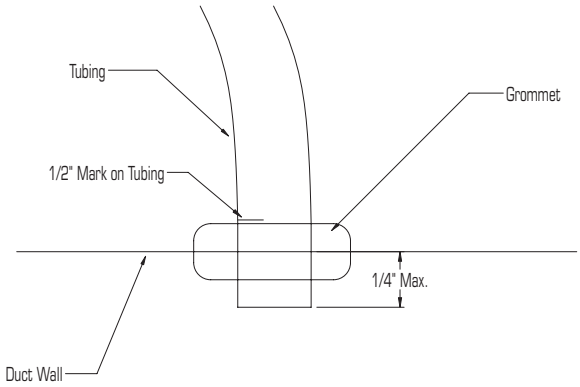
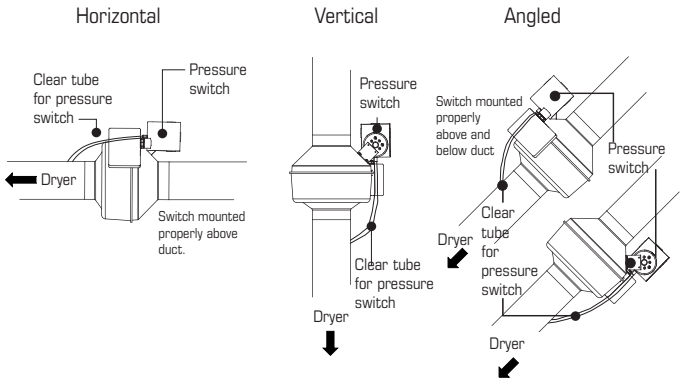


Illustration 2

Correct Mounting of Diaphragm Switch



Incorrect Mounting of Diaphragm Switch

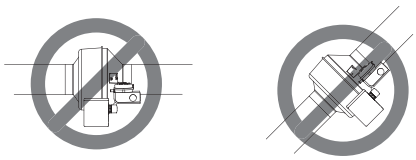
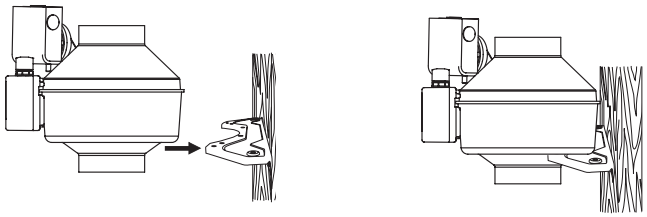


Illustration 3



Attach Mounting Bracket to stud using screws provided.

Attach Fan to Mounting Bracket using screws provided.

Illustration 4

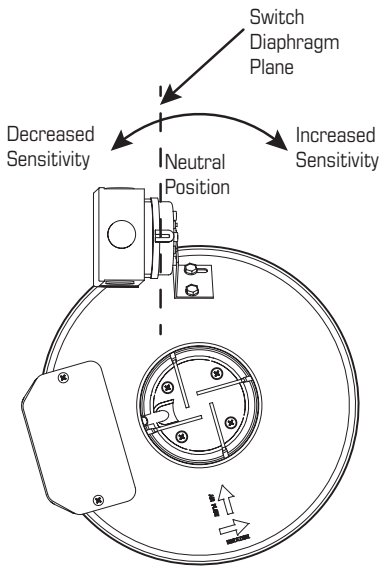


Illustration 5

DBF110 Wiring – Fan and Pressure Switch

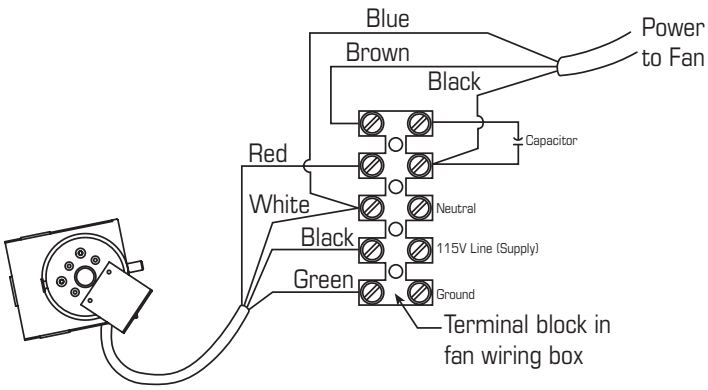
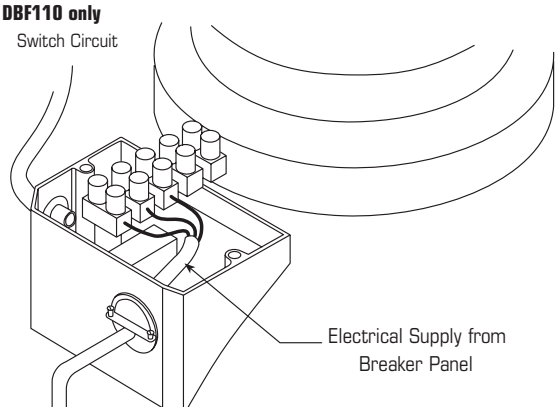


Illustration 6



Wiring Procedure DBF110

Step 1.

Remove the screws securing the terminal box cover plate located on the side of the fan. All fan motor and pressure switch connections are prewired to an electrical terminal strip. A $^{3}/_{8}$" romex type cable restraint connector will be needed to secure the wiring through the knockout provided on the side of the terminal box.

Step 2.

Bring incoming electrical service through the romex connector and the fan knockout. Be sure to place the connector nut over the wiring coming into the terminal box. There are three open ports on the terminal strip. Using a small regular screwdriver, match the neutral wire of the incoming supply to the white wire, the load wire of the incoming supply to the black wire, and the ground wire of the incoming supply to the green wire (see ill. 5). For reference, a wiring diagram is included on the inside of the terminal box lid.

Step 3.

Secure the romex connector. Secure the incoming supply with the romex connector. Replace the fan terminal box cover.

Wiring Procedure DBF4XL

The DBF4XL is pre-wired from factory.

Recommended Maintenance

1. Since fan bearings are sealed and provided with an internal lubricating material, no additional lubrication is necessary.
2. Fan impeller may accumulate lint. Periodic inspection, based upon dryer usage, should be performed to ensure that the fan impeller is not obstructed or loaded with lint. Under normal conditions, fan should be inspected a minimum of every Six (6) Months. Note: Excessive dryer exhaust fan noise or vibration may be an indication of lint buildup on the impeller. To inspect and clean the impeller:
   a. Disconnect the incoming power supply at the source.
   b. Remove the duct from the fan inlet and remove any lint buildup on the impeller.
   c. Reconnect the duct to the fan. Turn power supply on.

Troubleshooting

Prior to performing Steps 1 - 2, be certain that the electrical supply to the fan/switch is turned off.

If fan fails to start when the air begins flowing, please follow the procedure listed below:

1. Check the incoming supply for proper voltage.
2. Verify that the pressure switch diaphragm is vertical as shown in Illustration 2 of these instructions. If the diaphragm is not vertical, reposition the pressure switch by turning (rotating) the fan and check for fan operation against another dryer cycle.
3. Verify that the tubing is not crimped and that the tubing connector nipples are not obstructed.
4. If switch diaphragm is vertical and fan still fails to start, with the electrical supply on, remove the tubing from the grommet on the duct and blow gently into the tubing. Consult Illustration 4 to alter sensitivity.
5. If fan fails to start, please consult Fantech for additional technical support.

WARRANTY

Five (5) Year Warranty

This warranty supersedes all prior warranties

DURING ENTIRE WARRANTY PERIOD:
Fantech will repair or replace any part which has a factory defect in workmanship or material. Product may need to be returned to the Fantech factory, together with a copy of the bill of sale and identified with RMA number.

FOR FACTORY RETURN YOU MUST:

- Have a Return Materials Authorization (RMA) number. This may be obtained by calling Fantech either in the USA at 1.800.747.1762 or in CANADA at 1.800.565.3548. Please have bill of sale available.
- The RMA number must be clearly written on the outside of the carton, or the carton will be refused.
- All parts and/or product will be repaired/replaced and shipped back to buyer; no credit will be issued.

OR

The Distributor may place an order for the warranty part and/or product and is invoiced. The Distributor will receive a credit equal to the invoice only after product is returned prepaid and verified to be defective.

FANTECH WARRANTY TERMS DO NOT PROVIDE FOR REPLACEMENT WITHOUT CHARGE PRIOR TO INSPECTION FOR A DEFECT. REPLACEMENTS ISSUED IN ADVANCE OF DEFECT INSPECTION ARE INVOICED, AND CREDIT IS PENDING INSPECTION OF RETURNED MATERIAL. DEFECTIVE MATERIAL RETURNED BY END USERS SHOULD NOT BE REPLACED BY THE DISTRIBUTOR WITHOUT CHARGE TO THE END USER, AS CREDIT TO DISTRIBUTOR'S ACCOUNT WILL BE PENDING INSPECTION AND VERIFICATION OF ACTUAL DEFECT BY FANTECH.

THE FOLLOWING WARRANTIES DO NOT APPLY:

- Damages from shipping, either concealed or visible. Claim must be filed with freight company.
- Damages resulting from improper wiring or installation.
- Damages or failure caused by acts of God, or resulting from improper consumer procedures, such as:
    1. Improper maintenance
    2. Misuse, abuse, abnormal use, or accident, and
    3. Incorrect electrical voltage or current.
- Removal or any alteration made on the Fantech label control number or date of manufacture.
- Any other warranty, expressed, implied or written, and to any consequential or incidental damages, loss or property, revenues, or profit, or costs of removal, installation or reinstallation, for any breach of warranty.

WARRANTY VALIDATION

- The user must keep a copy of the bill of sale to verify purchase date.
- These warranties give you specific legal rights, and are subject to an applicable consumer protection legislation. You may have additional rights which vary from state to state.

Limitation of Warranty and Liability

This warranty does not apply to any Fantech product or part which has failed as a result of faulty installation or abuse, incorrect electrical connections or alterations made by others, or use under abnormal operating conditions or misapplication of the product or parts. We will not approve for payment any repair not made by us or our authorized agent without prior written consent. The foregoing shall constitute our sole and exclusive warranty and our sole exclusive liability, and is in lieu of any other warranties, whether written, oral, implied or statutory. There are no warranties which extend beyond the description on the page hereof. In no event, whether as a result of breach of contract, or warranty or alleged negligence, defect incorrect advice or other causes, shall Fantech be liable for special or consequential damages, including, but not limited to, loss of profits or revenue, loss of use of equipment or any other associated equipment, cost of capital, cost of substitute equipment, facilities or services, downtime costs, or claims of customers of purchase for such damages. Fantech neither assumes or authorizes any person to assume for it any other liability in connection with the sale of product(s) or part(s). Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages so the above limitations and exclusions may not apply to you.

Warning

Fantech products are designed and manufactured to provide reliable performance, but they are not guaranteed to be 100% free from defects. Even reliable products will experience occasional failures and this possibility should be recognized by the user. If these products are used in a life support ventilation system where failure could result in loss or injury, the user should provide adequate backup ventilation, supplementary natural ventilation, failure alarm system, or acknowledge willingness to accept the risk of such loss or injury.

Fantech reserves the right to make technical changes.
For updated documentation please refer to www.fantech.net

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