



SCHAEFER

PFM Style Hazardous Location Fans Operators Manual

IMPORTANT: READ AND SAVE THESE INSTRUCTIONS

Read all instructions carefully before attempting to assemble, install, operate or service the product described. Failure to comply with instructions could result in personal injury and/or property damage.

Using this product for any other purpose than it was intended, or not within the operating specifications in this manual will void the warranty and may cause damage to the fan or serious injury to personnel.

Schaefer's line of Hazardous Location Fans are equipped with hazardous location electric motors, aluminum non-sparking blades, and conductive housings and guards, ensuring that the fan will not create a spark, which could ignite a hazardous environment. Locations are considered hazardous if the atmosphere contains or may contain gas, vapor, dust, or flyings in explosive quantities. The hazardous location motors we use are rated for Division I, Class I, Groups C & D, and Division I, Class II, Groups E, F, & G.

HAZARDOUS LOCATIONS DEFINITIONS

- Hazardous Locations – Areas where the possibility of explosion or fire exists because of the presence of flammable gases, vapors, dusts, or flyings.
- Division I – Locations where the hazard is expected to be present during normal production operations or during frequent maintenance and repair activities.
- Division II – Locations where the hazard would only exist as a result of an accident or other abnormal events such as rupture or spillage.
- Class I – Areas where sufficient quantities of flammable gases or vapors exist in the air to be explosive or ignitable.
 - Group A – Acetylene
 - Group B – Hydrogen
 - Group C – Propane and Ethylene
 - Group D – Benzene, Butane, Methane (this is not a complete list)
- Class II – Areas which are made hazardous by the presence of combustible dusts.
 - Group E – Metal Dust such as aluminum and magnesium
 - Group F – Carbon and Charcoal Dusts
 - Group G – Other ignitable dusts such as Flour, Starch, Wood, and Plastic
- Class III – Areas which are made hazardous by the presence of combustible flyings such as cotton fibers and sawdust.

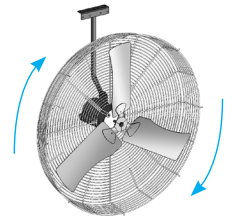


WARNING - TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK:

- Do not expose fan to water or rain.
- Do not use this fan with any speed control device unless otherwise noted.



CAUTION: ALL ELECTRICAL WORK SHOULD BE COMPLETED BY QUALIFIED ELECTRICIAN AND MEET ALL NATIONAL, STATE AND LOCAL CODES.



Blade Rotation

INSTALLATION

- Wiring should only be done by a qualified electrician to prevent injury or death.
- Use only wiring products and methods approved for hazardous locations.
- Follow all applicable electrical and building codes related to the hazardous location. Observe and adhere to all National, State, and Local Codes.
- When doing any work on the fan, including the initial electrical connection, disconnect the electric power at the main switch. Follow all applicable LOCK-OUT/TAG-OUT procedures.
- Confirm that the electrical supply is compatible with the nameplate rating of the fan.
- Refer to the motor wiring diagram to ensure that all connections are as required and are securely fastened.
- The hazardous location junction box provided with the motor is designed with threaded joints and metal-to-metal contact at lid and cover joints to prevent an explosion. Do not attempt to install gasket materials of any type at these joints. A light coating of anti-seize compound may be applied to the joint and threads to prevent seizing.
- Many of the motors used in our fans are reversible. Make sure the fan is rotating in the proper direction (refer to the figure at right and to the blade rotation label on the fan). Follow instructions on the motor label to change rotation if necessary.
- Schaefer recommends installing a lockable disconnect switch near each fan. All wiring devices must be rated for the hazardous location in which it will be installed.
- Route conduit to the motor using an appropriate drip loop to prevent moisture from draining into motor.
- Ensure that all wiring is of the appropriate gauge size and provide adequate strain relief at each connection.
- Before applying power to the fan, recheck the wiring to ensure all connections are tight, and that all wiring meets all applicable codes and practices for the hazardous location environment. Ensure that all guards are properly installed.

KEEP THIS MANUAL IN A CLEAN, DRY PLACE FOR FUTURE REFERENCE.

All information, illustrations and specifications in this manual are based on the latest product information available at the time of printing. Product specifications subject to change. We reserve the right to make changes at any time without notice.

If you need replacement parts, please contact your dealer. Take special care when ordering replacement blades, pulleys, motors and belts to ensure you get the proper configuration for your fan. If you do not have that information, please call Schaefer Ventilation Equipment at 800-779-3267 for assistance.

SAFETY INFORMATION

Warning and danger decals have been placed on the equipment to warn of potentially dangerous situations. Care should be taken to keep this information intact and easy to read at all times. Replace missing or damaged safety decals immediately.

IMPORTANT!

Schaefer Ventilation Equipment strongly recommends that a good alarm system be installed in confinement buildings to warn of power failure and high temperature. Schaefer also recommends that an alternate power source be available for confinement buildings in case of power failure.

INSTALLATION INFORMATION

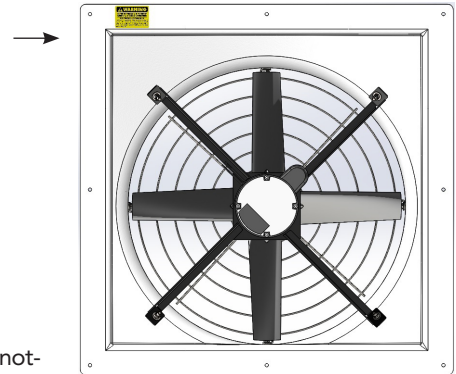
The installation information is the same for all polyethylene exhaust fans, unless otherwise noted. Refer to the Rough-In Opening Dimension chart for the correct opening for your product.

Build wall framing to the required wall opening illustrated in the chart below. The fans are shipped completely assembled and need only to be fastened to the wall framing with the supplied fasteners.

INSTALLATION INSTRUCTIONS

1. After you have made the correct sized opening in the wall, the fan unit can be placed into the opening and secured with lag bolts and washers (supplied) as in Figure 1.
2. There are two (2) shutter latches supplied with each fan which are used to hold the shutter in place. These latches should be positioned with one on the top and one on the bottom in the center hole of the fan panel. NOTE: Be sure to use two (2) washers for each shutter latch (see Figure 1).
3. Flashing should be attached across the top of the fan on the outside of the building. Caulking can be used on the sides of the fan housing to assure a tight seal.
4. Once the unit has been securely fastened to the wall, the fan is ready to be wired. As shown in Figure 2, the electrical wire from the motor should be run through the wire harness on the top inside of the fan housing and then through the notch in the upper right of the shutter frame.

Safety decal locations



Rough-in Opening Dimensions

Model #	Fan Size	Width (A)	Height (B)
PFM1600	16"	19-1/2"	20-1/2"
PFM2000	20"	23-1/2"	24-3/4"
PFM2400	24"	29"	29-1/2"

* Standard 2x6 wall construction.
* Rough-in Framing Tolerance: +1/4"/-0"

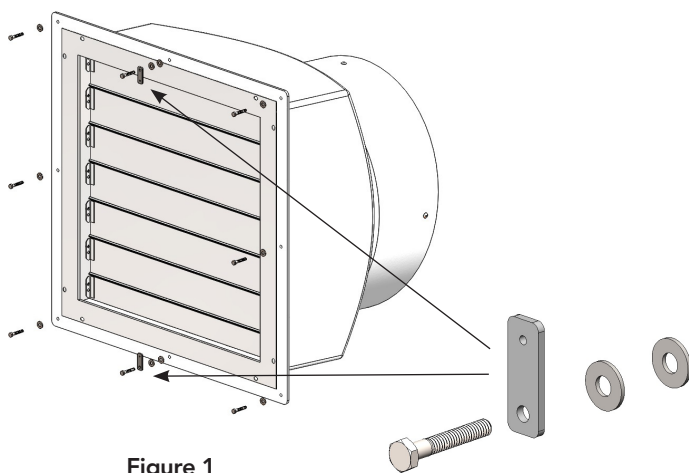
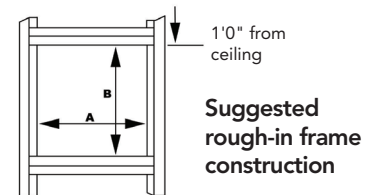


Figure 1

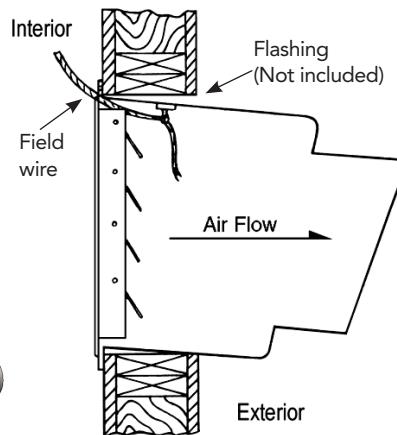


Figure 2

***NOTE:** Shutter is on the inside of building and poly housing extends outside the building.

MAINTENANCE

The fan you have purchased is built with heavy duty components, designed to give you many years of worry-free performance. Like anything else that is mechanical, your fan will require a small amount of periodic maintenance to assure maximum efficiency.



Disconnect power before cleaning or maintaining your fan in order to prevent serious injury or death.

PERFORM EVERY 6 MONTHS

Clean motor, fan blade and guard option

- Service and repair of fan should only be completed by a qualified technician.
- Use an air hose to remove dust.
- Use a damp cloth to remove grime and grease.
- PRESSURE WASHING WILL VOID WARRANTY.
- Do not use harsh chemicals or cleaners to clean any part of the fan.
- Sealed motor bearings are pre-lubricated and do not require servicing.



CAUTION: Fasteners may loosen over time. It is important to check and tighten fasteners frequently.

CAUTION: Inspect fan components and fasteners frequently for corrosion. Replace any corroded fasteners or parts.

SET SCREW TIGHTENING SCHEDULE

1. Before initial operation of the fan, tighten set screws according to the procedure outlined below.
2. After 500 operating hours or three months, whichever comes first, tighten set screws to the full recommended torque.
3. At least once a year, tighten set screws to the full recommended torque.

PROCEDURE FOR TIGHTENING SET SCREWS IN BEARINGS AND BLADES

ONE SET SCREW APPLICATION

Using a torque wrench, tighten the set screw to the full torque recommended in Table 1.

TWO SET SCREW APPLICATION

1. Using a torque wrench, tighten the one set screw to half of the torque recommended in Table 1.
2. Tighten the second set screw to the full recommended torque.
3. Tighten the first set screw to the full recommended torque.

Table 1. Recommended Tightening Torque for Set Screws

Set screw diameter	Torque (in-lbs)
#10	35
1/4	80
5/16	120
3/8	240

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Fan not operating	<ol style="list-style-type: none"> 1. Improper wiring 2. Fan control set above room temperature 3. Blown fuse or tripped breaker 4. Fan blade contacting fan 5. Fan control defective 6. Motor defective 	<ol style="list-style-type: none"> 1. Ensure wiring is done correctly 2. Set to a lower temperature 3. Replace fuse or reset breaker 4. Realign fan blade in fan housing 5. Repair or replace control 6. Repair or replace motor
Insufficient airflow	<ol style="list-style-type: none"> 1. Shutter jammed 2. Guard, shutter, fan blade dirty 3. Fan blade facing wrong direction 	<ol style="list-style-type: none"> 1. Clean shutter and fan housing 2. Clean guard, shutter and fan blade 3. Orient fan blade correctly
Excessive fan noise	<ol style="list-style-type: none"> 1. Fan blade contacting fan panel 2. Motor bearing defective 	<ol style="list-style-type: none"> 1. Realign fan blade in fan housing 2. Repair or replace motor
Excessive vibration	<ol style="list-style-type: none"> 1. Motor loose in mount 2. Fan blade damaged 3. Motor shaft bent 	<ol style="list-style-type: none"> 1. Tighten fasteners 2. Replace fan blade 3. Repair or replace motor
Fan does not turn off	<ol style="list-style-type: none"> 1. Thermostat set incorrectly 2. Control set for continuous operation 	<ol style="list-style-type: none"> 1. Set to the desired temperature 2. Set fan control correctly

WARRANTY

Schaefer Limited Warranty Policy

Schaefer Ventilation Equipment, LLC (SVE) provides the following limited warranty from the date of invoice to the initial purchaser of our products or to its customer with a dated proof of purchase:

Two-year coverage (unless otherwise indicated below) applies to all products, components and assemblies provided by SVE that prove to be defective in material or workmanship. Any such defective product will be repaired or replaced at SVE's option, with the defective product or component returned-upon approval, to SVE, F.O.B Sauk Rapids, Minnesota. This warranty does not cover: failure, damage or malfunction as a result of: Improper installation or installation not in accordance with installation instructions. Operating conditions that vary from SVE's operating instructions. Misuse, abuse, negligence, alteration, or accident. Transporting the product. Improper operation or lack of appropriate or regular maintenance of the product. Loss of time, inconvenience, loss of use of the product or other consequential or incidental damages. Parts that need replacement due to normal wear and tear. Superficial or cosmetic rust or corrosion. Any product whose name plate has been removed.

Full warranty statement may be printed or downloaded from www.schaeferventilation.com



www.schaeferventilation.com • 320.251.8696

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