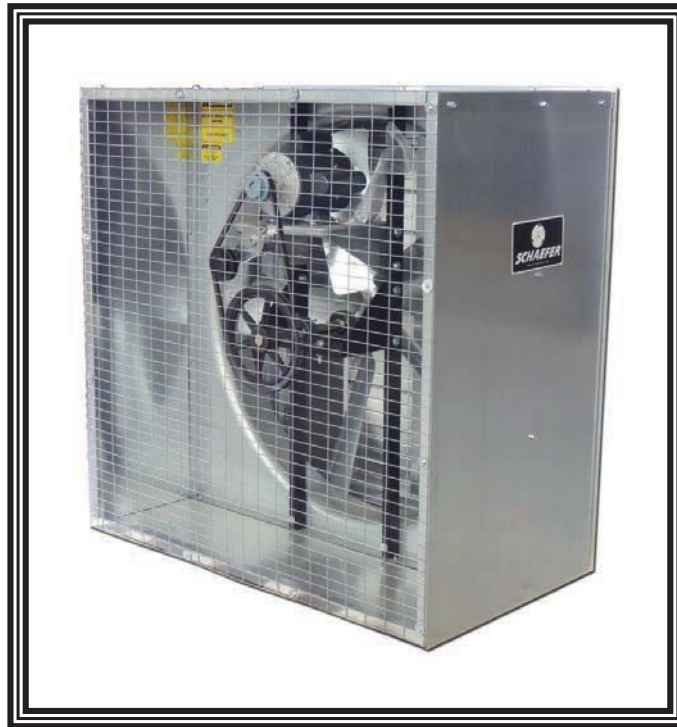


User Manual

Box Exhaust Fan Series (Belt Drive)



36" Box Exhaust Fan with Three Wing Blade



Box with Aluminum Shutter



54" Box with Cone



800-779-3267

sales@schaeferfan.com • www.schaeferfan.com

©2013 Schaefer Ventilation Equipment M-BEFB / 05-02-13

Table of Contents

About this Manual	3
Safety Information	3,4
Fan Installation	5
Shutter Installation	6
Hardware Cloth Installation	7
Shutter Installation (54" Models)	8
Maintenance	9
Cone Assembly	10-12
Parts Illustration	12
Troubleshooting	13
Warranty	14

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.

Using this equipment for any other purpose than it was intended or in a way not within the operating recommendations specified in this manual will void the warranty and may cause personal injury.

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.

The intent of this manual is to help you in two ways; to provide you with step-by-step instructions for quick and easy assembly of your product and to serve as a reference for simple maintenance and questions regarding your product.

Important!

*Read ALL instructions carefully before starting construction.
Instructions are provided with optional equipment.*

Important!

Pay particular attention to all SAFETY information.

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.

Using the equipment for purposes other than specified in this manual may cause personal injury and/or damage to the equipment.

Safety Alert Symbol



This is a safety alert symbol. When you see this symbol on your equipment, be alert to the potential for personal injury. This equipment is designed to be installed and operated as safely as possible... however, hazards do exist.

Understanding Signal Words

Signal words are used in conjunction with the safety alert symbol to identify the severity of the warning.



DANGER indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.

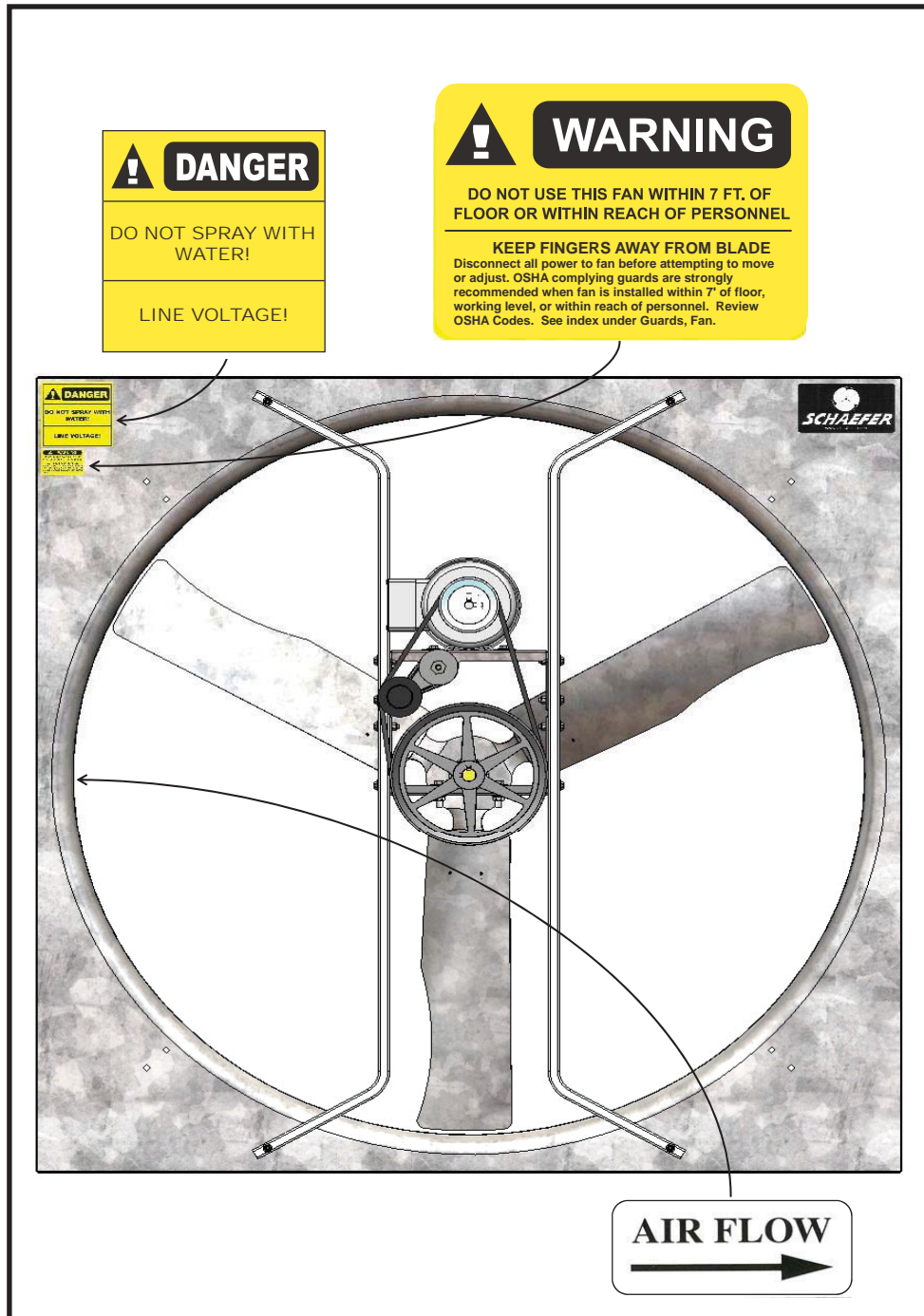
Safety Recommendations

- Use of an OSHA complying guard if within seven feet of floor is recommended.
- Use of a guard, shutter or hardware cloth if above seven feet of floor is recommended.
- Consult your local electrician before wiring and follow all local and state electrical codes.
- Disconnect all power before performing maintenance.
- Carefully read all safety messages in this manual and on your equipment safety decals. Follow recommended precautions and safe operating practices.

Safety Decals

Keep safety decals in good condition. Replace missing or damaged safety decals.

This diagram shows the proper location of the safety decals as shipped from the factory. Make sure the decals are easy to see at all times.



Important!

Schaefer Ventilation Equipment strongly recommends that a good alarm system should be installed in confinement buildings to warn of power failure and high temperature.

Schaefer Ventilation Equipment also recommends that an alternate power source be available for confinement buildings in case of power failure.

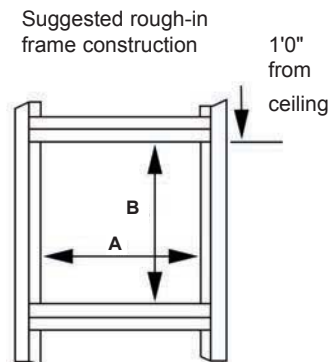
Installation

The installation information is the same for all belt drive box 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 appropriate fasteners for your facility (not supplied).

Rough-In Opening Dimensions

Model #	Width (A)	Height (B) *
36"	43"	43"
42"	49"	49"
48"	55"	55"
54"	61"	62"



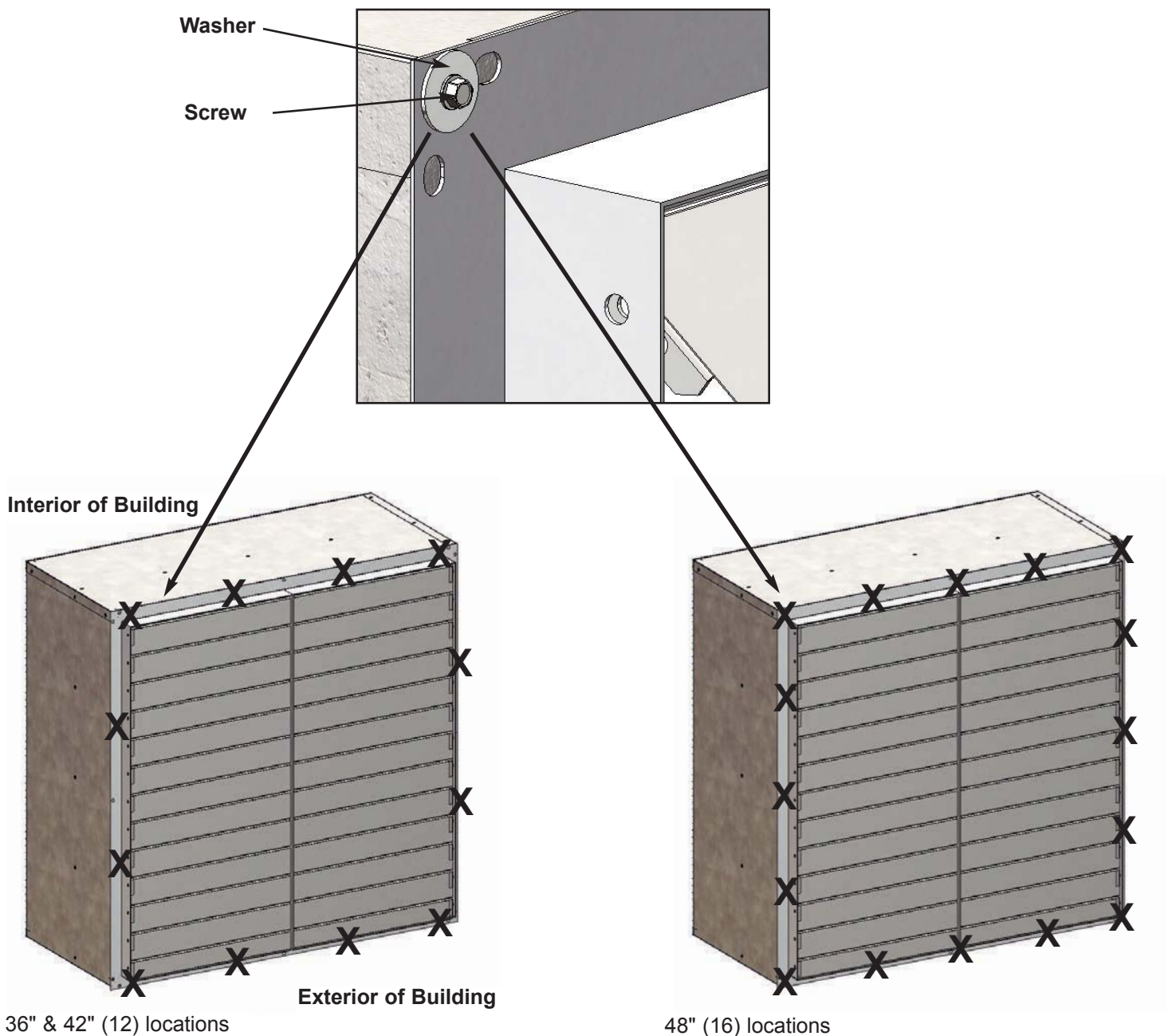
Installation

1. After you have made the opening in the wall, the fan unit can be placed into the opening and secured with fasteners appropriate for your application. Refer to the air flow directional arrow to ensure the fan is installed in the correct direction to achieve the desired air flow.
2. Once the unit has been securely fastened to the wall, the fan is ready to be wired. Refer to the wiring diagram on the motor. Consult your local electrician.
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.

Shutter Installation

- 1) Place the shutter against the housing as shown below. Shutter must open outward.
- 2) Center the shutter left to right on the fan housing.
- 3) Align the top edge of the shutter flange with the top of the fan housing.
- 4) Attach the shutter to housing using a screw and washer at the locations shown below.
- 5) Measure and mark screw locations on shutter to ensure screws fasten through fan housing flanges on all four sides.

Note: If installing shutter on a 54" Box Fan, see shutter installation on page 8.



Hardware Cloth Installation

Hardware Cloth Kit includes

- Self-tapping screws 0STS12X1Z
- Flat washers 0W316X1Z
- Hardware Cloth 48HC54

Tools required

- Electric/cordless drill
- 5/16" nut driver bit



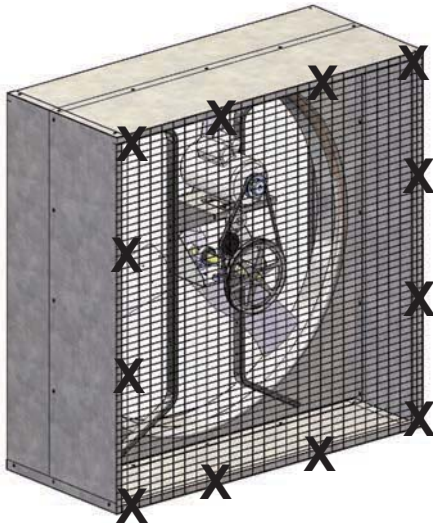
CAUTION Hardware Cloth may have sharp edges. Use caution while handling. Wear gloves.

Remove the entire kit from its packaging and inventory the contents making sure all the parts listed above are included. (If not, call your Schaefer dealer).

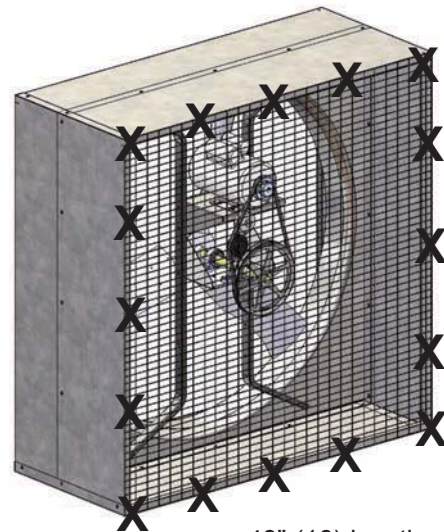
BOX FAN INTAKE SIDE

Installation

1. Place the cloth against the housing.
2. Attach the cloth to the housing by inserting a screw through a washer, then through the cloth between two horizontal wires, then into the housing. Insert a screw and washer at each location on the outer edge as shown below.

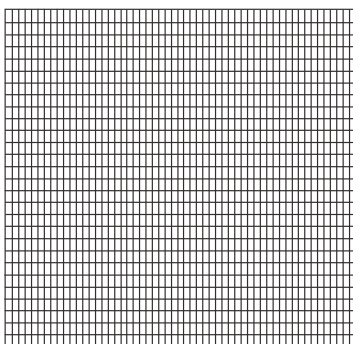


36" & 42" (12) locations



48" (16) locations

OPTIONAL HARDWARE CLOTH KIT



OSHA HARDWARE CLOTH KIT

- Meets OSHA Standards
- Heavy gauge pre-galvanized construction.
- Kit complete with fasteners.
- Easy step-by-step instructions.

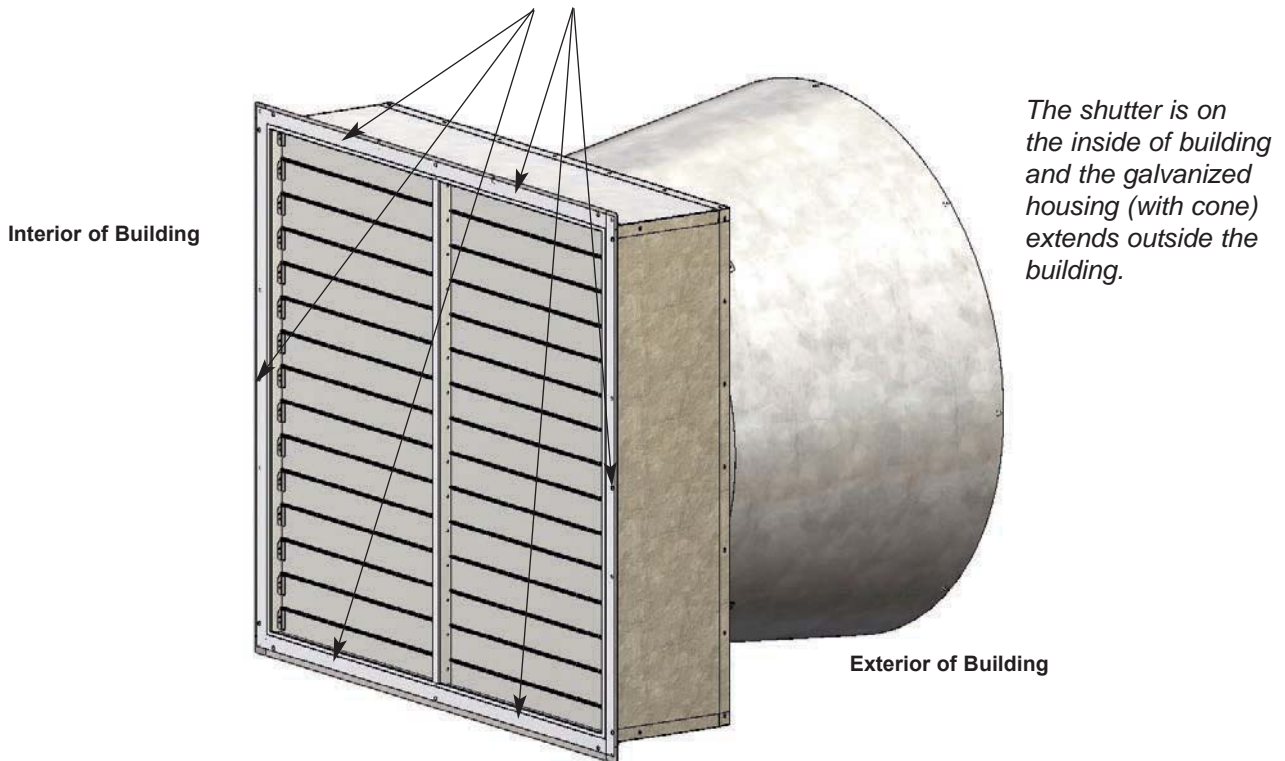
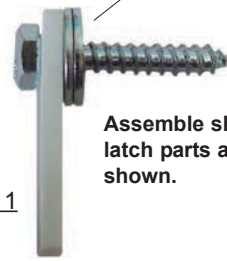
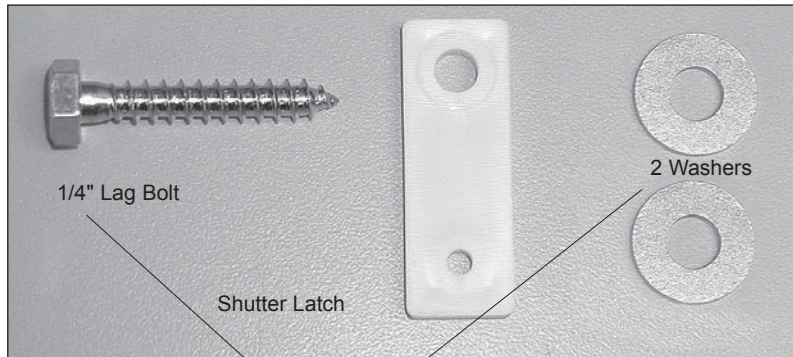
Shutter Installation (54" Models)

54" models:

Six shutter latches are supplied with each fan. Position two on the top, two on the bottom and two on the sides.

Tools:

- Electric/cordless drill
- 7/16" nut driver bit



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.

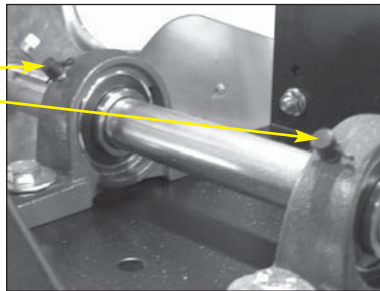
Our fans utilize pillow block bearings which require greasing. Periodically remove dust and grime that has accumulated on the motor, fan blade, and guard option. **PRESSURE WASHING THE UNIT WILL VOID THE WARRANTY.** Performing this small amount of maintenance will keep your fan unit running as efficiently as when it was brand new.

 **DANGER! Disconnect power before performing maintenance!**

Every 800 hours of operation

Grease the bearings

- While slowly turning the bearing, use 1-2 shots of a lithium base NLGI #2 grease from a hand operated grease gun to adequately fill the bearing 30-50% full.



Note: Verify that the grease seals on both sides of the bearing are intact and not showing signs of displacement or deformation once greasing activities have been completed. Over greasing bearings will cause premature failure of bearings if seals are compromised.

Bi-annually

 **DANGER**

DO NOT SPRAY WITH WATER!

LINE VOLTAGE!

Clean motor, fan blade and guard option.

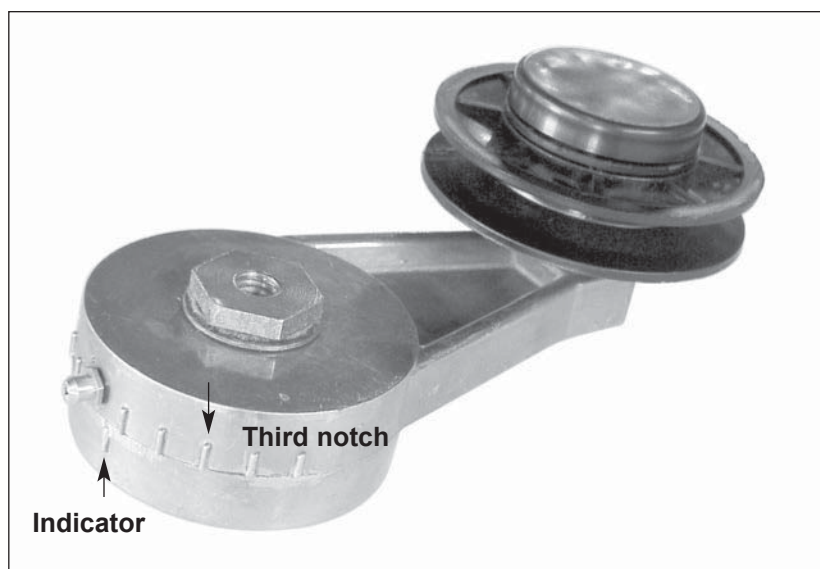
- Disconnect power.
- Use an air hose to remove dust.
- Use a damp cloth to remove grime and grease.
- **PRESSURE WASHING WILL VOID WARRANTY.**

Annually

Check belt tension.

- Belt tension should be just tight enough to minimize slipping, but not so tight as to cause premature wear. Correct tension is 3/4" deflect at 10 lbs. of force.
- When a new belt is installed, the indicator on the idler sheave should line up with the third notch on the housing.

Idler Style Tensioner :

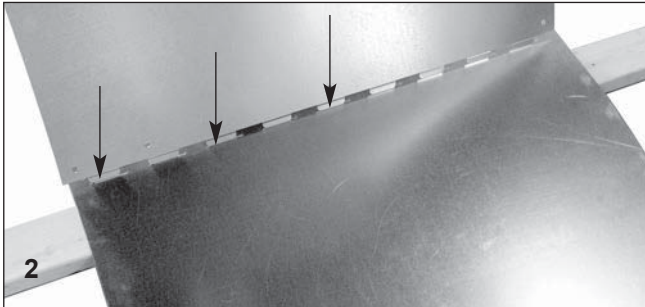


Assemble Cone

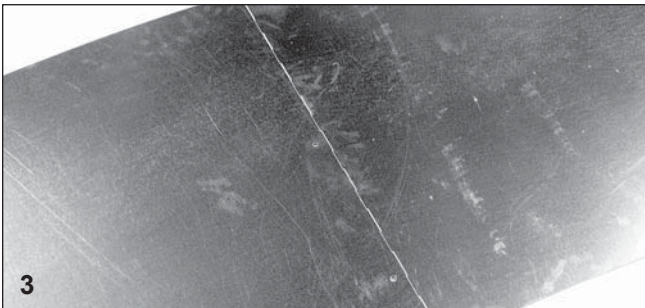
1. Lay one of the cone sections flat with the slotted end on a 2 x 4 board on the left and the tabs on the right, as shown.

**** BE CAREFUL! The cone sections have sharp edges; wear gloves to protect your hands. ****

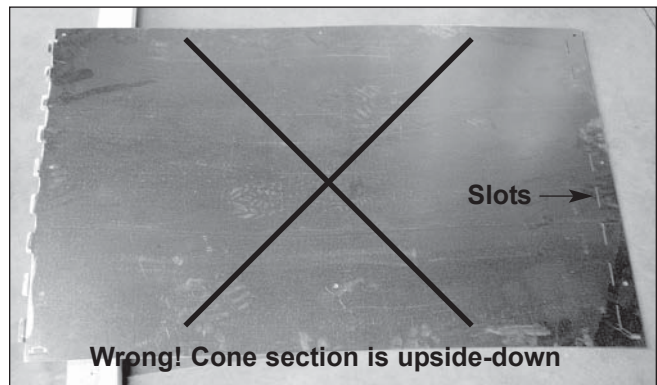
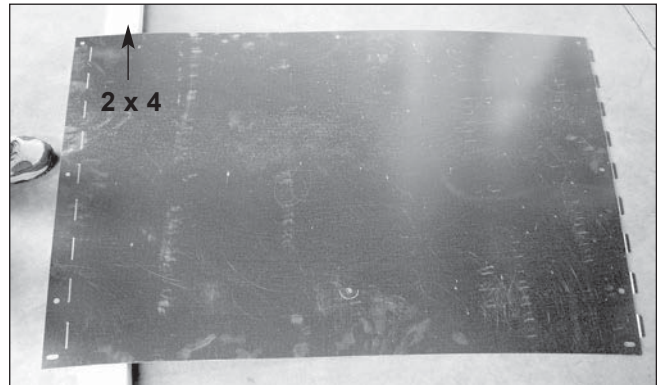
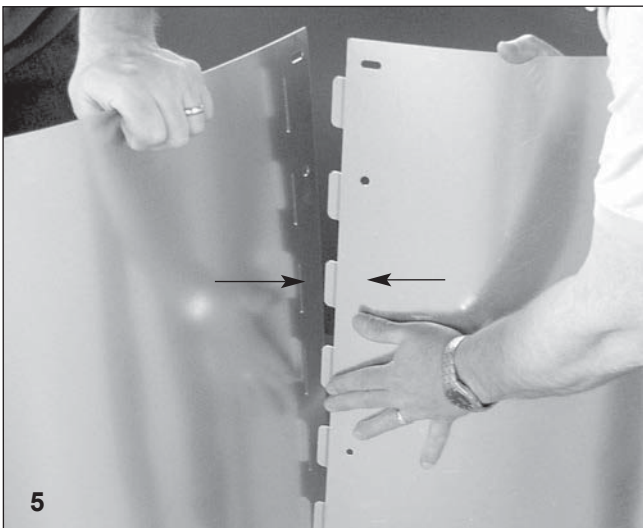
2. Insert the tabs of the second cone section into the slots of the first cone section.



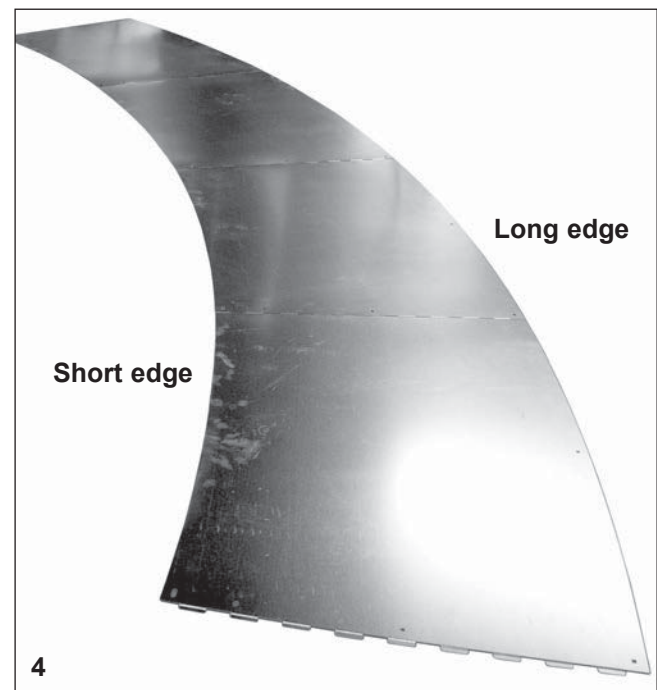
3. Carefully lay the section down to lock the two sections together. Move the 2 x 4 board to the slot end of the second section.



5. Stand the cone sections on edge (longer edge down, shorter edge up) and curl them around to make a cone shape. Insert the tabs of the first section into the slots of the last section.



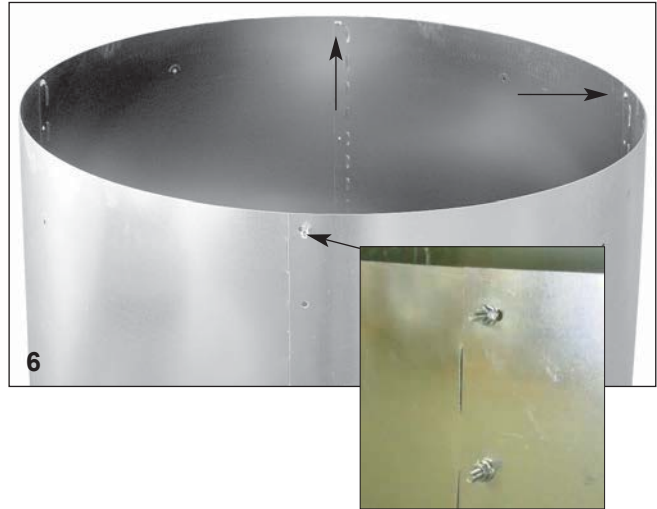
4. Repeat steps 2 and 3 until all four cone sections are locked together.



Assemble Cone cont'd

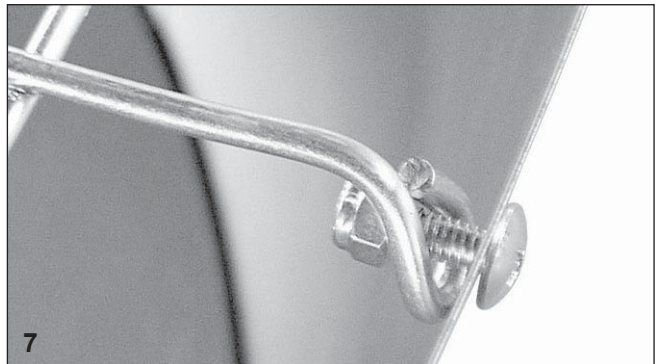
6. Fasten the cone sections together by inserting one 1/4"-20 phillips head bolt, threaded from inside the cone, into the top hole of each seam and secure with a 1/4"-20 nylock nut (**hardware bag #11**).

Insert one 5/16" - 18 phillips head bolt, threaded from inside the cone, into the second hole of each seam and secure with a 5/16" - 18 jam nut (**hardware bag #10**).



Install Guard

7. Turn the shutter and cone assembly upside down. Line up the eyelets in the guard with the holes in the cone. Use 1/4"-20 bolts and nylock nuts to fasten the guard to the cone at all eight locations (**hardware bag #11**).



Attach Cone Assembly to Fan

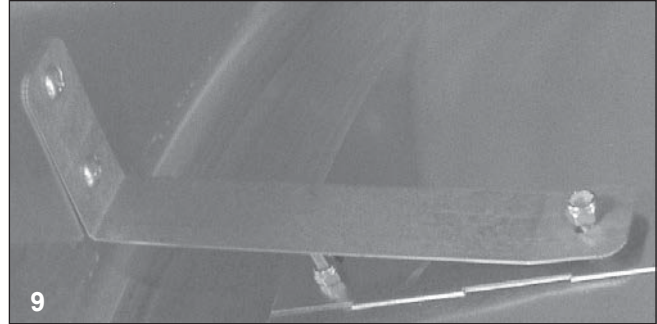
8. Attach the four cone brackets to the fan shroud using two 5/16" x 3/4" screws and nylock nuts per bracket, as shown (**hardware bag #10**).



Attach Cone Assembly to Fan cont'd

- Pick up the cone assembly and rest the cone on the top of the fan orifice.

With the cone resting on the top of the fan orifice, attach to the cone brackets using the bolts that were inserted through the cone in step 6 and secure with nylock nuts. Leave the nuts loose at this time.

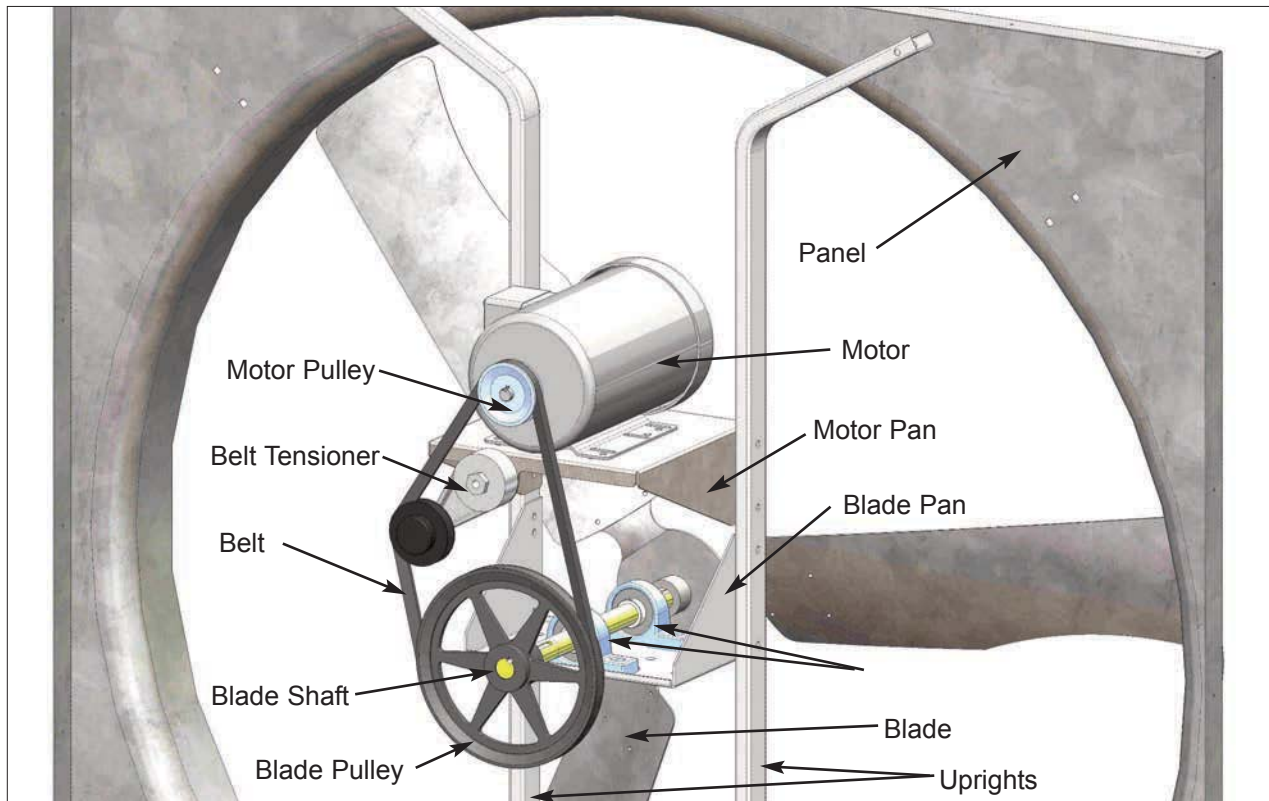


- Work around the bottom part of the shroud from inside the fan to guide the cone over the orifice. The cone should just fit. Use the bolts that were inserted through the cone in step 6 and secure with nylock nuts. Now tighten all the hardware.



Parts Illustration

Schaefer Idler Style Tensioner



Troubleshooting

<u>SYMPTOM</u>	<u>POSSIBLE CAUSES</u>	<u>CORRECTIVE ACTION</u>
<i>Fan not operating</i>	<ol style="list-style-type: none">1. Improper wiring2. Fan control set above room temperature3. Blown fuse or tripped breaker4. Fan blade contacting fan5. Fan control defective6. Motor defective	<ol style="list-style-type: none">1. Ensure wiring is done correctly2. Set to a lower temperature3. Replace fuse or reset breaker4. Realign fan blade in fan housing5. Repair or replace control6. Repair or replace motor
<i>Decreased airflow</i>	<ol style="list-style-type: none">1. Shutter jammed2. Guard dirty3. Incorrect belt tension4. Fan facing wrong direction	<ol style="list-style-type: none">1. Clean shutter and fan housing2. Clean guard3. See Maintenance section4. Orient fan correctly
<i>Excessive fan noise</i>	<ol style="list-style-type: none">1. Fan blade contacting fan panel2. Motor bearing defective	<ol style="list-style-type: none">1. Realign fan blade in fan housing2. Repair or replace motor
<i>Excessive vibration</i>	<ol style="list-style-type: none">1. Motor loose in mount2. Fan blade damaged3. Motor shaft bent4. Fan shaft bent5. Pillow block bearings defective	<ol style="list-style-type: none">1. Tighten fasteners2. Replace fan blade3. Repair or replace motor4. Replace fan shaft5. Replace pillow block bearings
<i>Fan does not turn off</i>	<ol style="list-style-type: none">1. Thermostat set incorrectly2. Control set for continuous operation	<ol style="list-style-type: none">1. Set to the desired temperature2. Set fan control correctly

Schaefer Ventilation Equipment, LLC
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:

- I. 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.

- II. This warranty does not cover:
 - a. Failure, damage or malfunction as a result of:
 - i. Improper installation or installation not in accordance with installation instructions.
 - ii. Operating conditions that vary from SVE's operating instructions.
 - iii. Misuse, abuse, negligence, alteration, or accident.
 - iv. Transporting the product.
 - v. Improper operation or lack of appropriate or regular maintenance of the product.
 - b. Loss of time, inconvenience, loss of use of the product or other consequential or incidental damages.
 - c. Parts that need replacement due to normal wear and tear.
 - d. Superficial or cosmetic rust or corrosion.
 - e. Any product whose name plate has been removed.

Products with warranty periods that differ from the standard 2-year warranty are as follows:

- | | |
|---|----------|
| • Poly Housings | 25 years |
| • Fiberglass Housings | 15 years |
| • Low-intensity Tube Heater Exchange Tubes | 5 years |
| • Heavy-Duty Industrial Wash-Down Fans (with VWD motors) | 3 years |
| • K-Series, 2-Stage, Compact and Stainless Steel Tube Heaters | 1 year |
| • Quartz and Zubri Heaters | 1 year |
| • Big Dog™ Fans | 1 year |
| • Shutter Motors and Aluminum Riveted Fan Blades | 1 year |
| • Epoxy Line Wash down fans (with EWD motors) | 1 year |
| • Evaporative Cooling Pads | 180 days |
| • HotZone® Electric Elements | 120 days |
| • Quartz Bulbs | 90 days |
| • Tuff & Gusty Fans | 90 days |
| • Any product or part as noted as an exception to the standard 2-year warranty in the product's operating manual. | |

SVE reserves the right to add or delete products from this exception list at any time.

THERE ARE NO WARRANTIES OF MERCHANTABILITY OR FITNESS OF USE.

SVE reserves the right to change product design and specification without prior notice or liability.

The above constitutes the sole warranty offered by Schaefer Ventilation Equipment, LLC.

Effective March 1, 2010.

All information, illustrations and specifications provided here are based on the latest product information available at the time of printing. Product specifications subject to change.



800-779-3267

sales@schaefervent.com • www.schaefervent.com