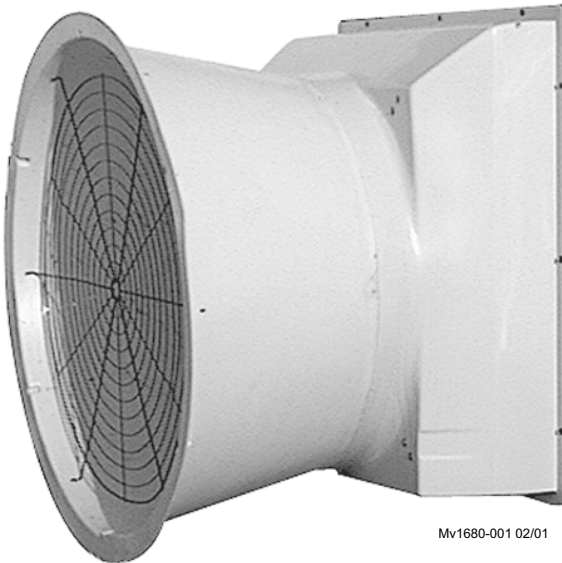




# Fiberglass Cone and Grill Fans 36" Belt Drive

## Installation & Operator's Instruction Manual



Mv1680-001 02/01



Mv1680-002 02/01

## Agile Manufacturing Extended Warranty

**Agile Manufacturing** warrants new ProTerra® Fiberglass Fans and components manufactured by it to be free from defects in material or workmanship from the date of initial installation by the original purchaser until expiration of the appropriate period set forth below. If such a defect is found by Agile Manufacturing to exist within the applicable period, Agile Manufacturing will, at its option, (a) repair or replace such product free of charge, F.O.B. the factory of manufacture, or (b) refund to the original purchaser the original purchase price, in lieu of such repair or replacement. The extended warranty is provided to the original purchaser for the following periods:

- \*1. Fan fiberglass housings and cast aluminum blades - for as long as the original purchaser owns the product.
- \*2. Fan motors and bearings - for two years from date of installation.
- \*3. Fan components, including plastic shutters and polyethylene cones - for three years from date of installation.

### Conditions and Limitations

1. The product must be installed by and operated in accordance with the instructions published by the **Manufacturer or Warranty will be void.**
2. Warranty is void if **all components** of the system are not original equipment supplied by the **Manufacturer.**
3. This product must be purchased from and installed by an authorized distributor or certified representative thereof or the Warranty will be void.
4. Malfunctions or failure resulting from misuse, abuse, negligence, alteration, accident, or lack of proper maintenance shall not be considered defects under the Warranty.
5. This Warranty applies only to systems for the care of poultry and livestock. Other applications in industry or commerce are not covered by this Warranty.

The **Manufacturer** shall not be liable for any **Consequential or Special Damage** which any purchaser may suffer or claim to suffer as a result of any defect in the product. **“Consequential” or “Special Damages”** *as used herein include, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs and operational inefficiencies.*

THIS WARRANTY CONSTITUTES THE MANUFACTURER’S ENTIRE AND SOLE WARRANTY AND THIS MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, EXPRESS AND IMPLIED WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES SOLD AND DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

Pro-Terra® distributors are not authorized to modify or extend the terms and conditions of this Warranty in any manner or to offer or grant any other warranties for Pro-Terra® products in addition to those terms expressly stated above. An officer of Agile Manufacturing must authorize any exceptions to this Warranty in writing. The Manufacturer reserves the right to change models and specifications at any time without notice or obligation to improve previous models.

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# General

## Support Information

The ProTerra® Fiberglass Cone & Grill Fans are designed to be used as exhaust fans in corrosive environments. The primary components are made from plastic or stainless steel materials. Using this equipment for any other purpose or in a way not within the operating recommendations specified in this manual will void the warranty and may cause personal injury.

This manual is designed to provide comprehensive planning, installation, safety, operation, and parts listing information. The Table of Contents provides a convenient overview of the information in this manual. The Table of Contents also specifies which pages contain information for the sales personnel, installer, and consumer (end user).

### Important!

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

Agile Manufacturing also recommends that an alternate power source be available for confinement buildings in case of power failure.

## Distributor and Installer Information

Please fill in the following information about your Product.  
Keep this manual in a clean, dry place for future reference.

**Distributor's Name** \_\_\_\_\_

**Distributor's Address** \_\_\_\_\_

**Distributor's Phone** \_\_\_\_\_ **Date of Purchase** \_\_\_\_\_

**Installer's Name** \_\_\_\_\_

**Installer's Address** \_\_\_\_\_

**Installer's Phone** \_\_\_\_\_ **Date of Installation** \_\_\_\_\_

**System Specifications** \_\_\_\_\_

\_\_\_\_\_

## About This Manual

The intent of this manual is to help you in two ways. One is to follow step-by-step in the order of assembly of your product. The other way is for easy reference if you have questions in a particular area.

**Important !**    **Read ALL instructions carefully before starting construction.**

**Important !**    **Pay particular attention to all SAFETY information.**

- *Metric measurements are shown in millimeters and in brackets, unless otherwise specified. “ ” equals inches and “ ’ ” equals feet in English measurements.*

*Examples:*

*1" [25.4]*

*4' [1 219]*

- Optional equipment contains necessary instructions for assembly or operation.
- Major changes from the last printing will be listed on the back cover.
- This Planning Symbol is used in areas where planning needs to take place before construction continues.
- Very small numbers near an illustration (*i.e.*, 1257-48) are identification of the graphic, not a part number.



## Safety Information

**Caution, 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.



**CAUTION** indicates a hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

## Follow Safety Instructions

Carefully read all safety messages in this manual and on your equipment safety signs. Follow recommended precautions and safe operating practices.

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

## Decal Descriptions

### **DANGER: Electrical Hazard**

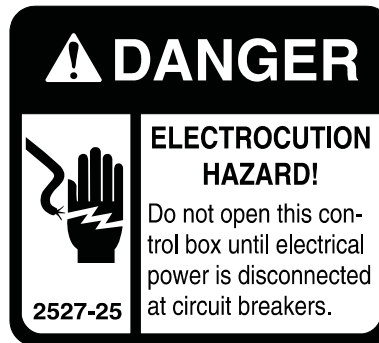
Disconnect electrical power before inspecting or servicing equipment unless maintenance instructions specifically state otherwise.

Ground all electrical equipment for safety.

All electrical wiring must be done by a qualified electrician in accordance with local and national electric codes.

Ground all non-current carrying metal parts to guard against electrical shock.

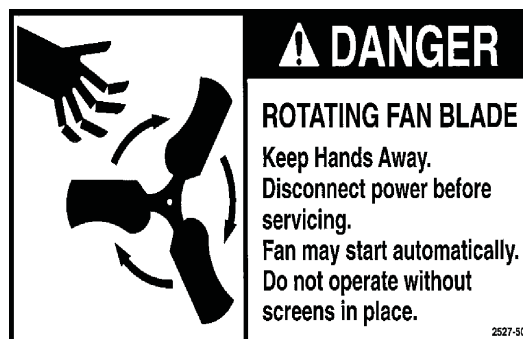
With the exception of motor overload protection, electrical disconnects and over current protection are not supplied with the equipment.



### **DANGER: Rotating Fan Blade (Part Number 2527-50)**

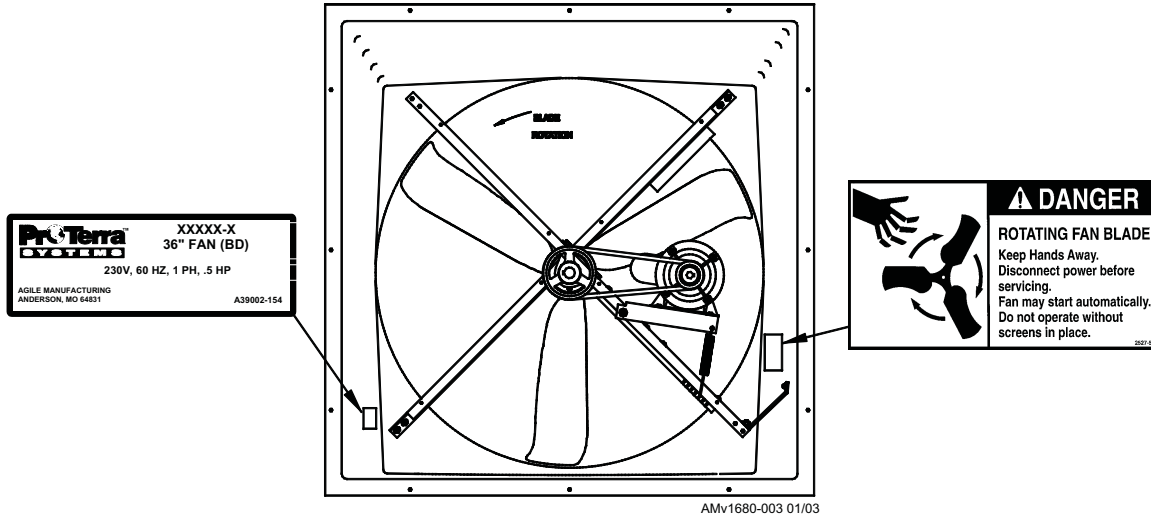
- This Decal is placed on both sides of the shroud.
- Keep hands away.
- Disconnect power before servicing.
- The Fan may start automatically.
- Do not operate the Fan without the screens in place.

Disregard to the above mentioned **DANGER** will cause serious injury including death.



### Decal Location

This diagram shows the proper location of the **Safety Decal** and a **Identification Decal** (the identification decal will be different depending on the type of fan purchased) as shipped from the factory. Replace damaged or missing decals. Make sure the decals can be easily seen at all times.



## Fan Installation

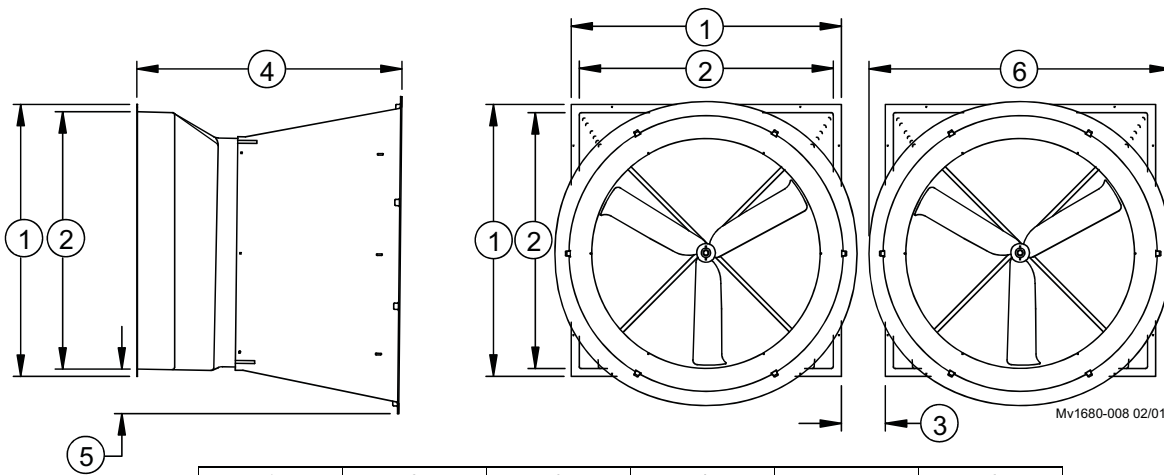
### Planning the Installation

Carefully plan the installation.

Dimensions are provided for the 36" Fiberglass Fans with Cones (**Figure 1**) and without Cones (**Figure 2**). Be sure to allow enough space to install fans without interfering with other fans or equipment that may be installed at a later date.

**Note:** See page 8 for framed opening size.

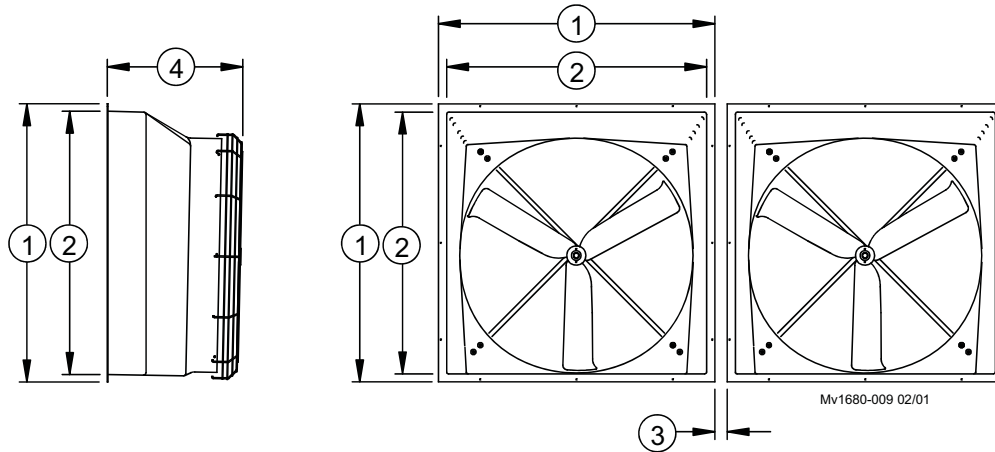
**Important:** Cones are wider than the actual opening cut into wall. Thus, dimension "3" must be no less than that listed in chart below.



1	2	3	4	5	6
	Rough Frame Opening	Minimum			
45.38" (115.27 cm)	43.00" (109.22 cm)	8.00" (20.32cm)	47.00" (119.38 cm)	6.85" (17.40 cm)	52.38" (133.05 cm)

Figure 1. Planning and Layout Diagram for Cone Fans

### Planning the Installation Continued...

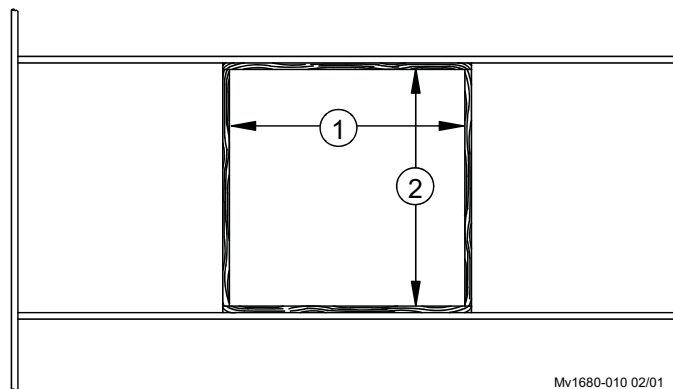


1	2 Rough Frame Opening	3 Minimum	4
45.38" (115.27 cm)	43.00" (109.22 cm)	0" (0.00 cm)	27" (68.58 cm)

Figure 2. Planning and Layout Diagram for Grill Fans

### Installing the Fan to the Framed Opening

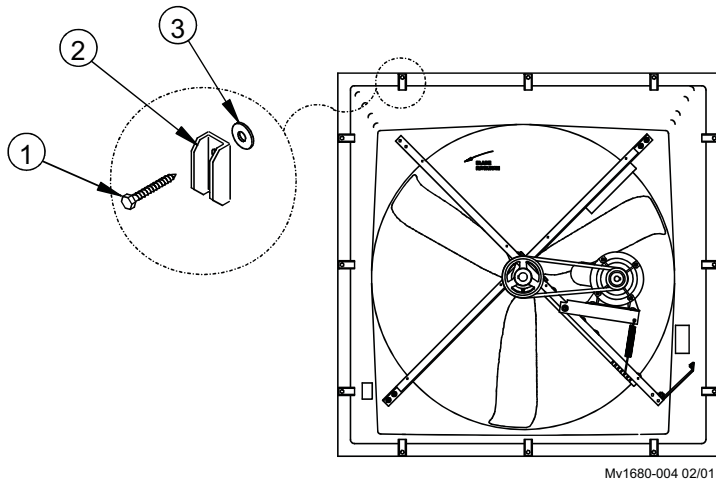
1. Cut an opening in the wall to house the fan—the required wall opening is provided in the chart below. **See Figure 3.**
2. Construct a frame in the opening of the wall for the fan using 2" x 6" (50 x 152 mm) lumber—not supplied.



Minimum Dimension	
1	2
43.00" (109.22 cm)	43.00" (109.22 cm)

Figure 3. Framing Diagram

3. Insert the Fan Assembly in the wall opening and secure using the (12) 1/4 x 1-3/4 Lag Screws, Shutter Clips, and Nylon Washers provided. The Shroud is pre-drilled (3 holes per side). The hardware must be installed as shown in **Figure 4** below. This allows for rotation of the Shutter Clips when installing the Shutter.



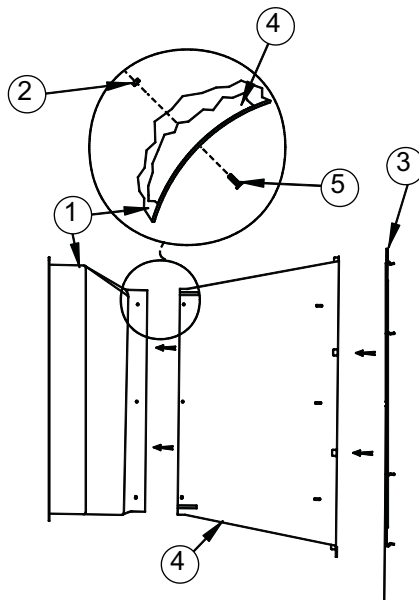
Key	Description	Part No.
1	1/4 x 1-3/4 SS Lag Screw	40938
2	Shutter Clip	36729
3	Nylon Washer	4856

Figure 4. Fan Assembly

### Installing the Cone or Grill to the Fiberglass Fan

#### Fiberglass Cone Fan:

1. Slide the Cone onto the Shroud—the Shroud fits inside the Cone. See **Figure 5**.  
10" slots are cut into the edge of the cone to allow expansion as the cone is slide onto the shroud.  
Align the holes in the Cone with the slots in the Shroud.  
Insert the (6) Wafer Head Bolts from inside the Shroud through the Cone, place and thread the Flange Nuts onto ends of the Wafer Head Bolts.
2. Snap the Cone Grill into the slots on the outlet end of the Cone.

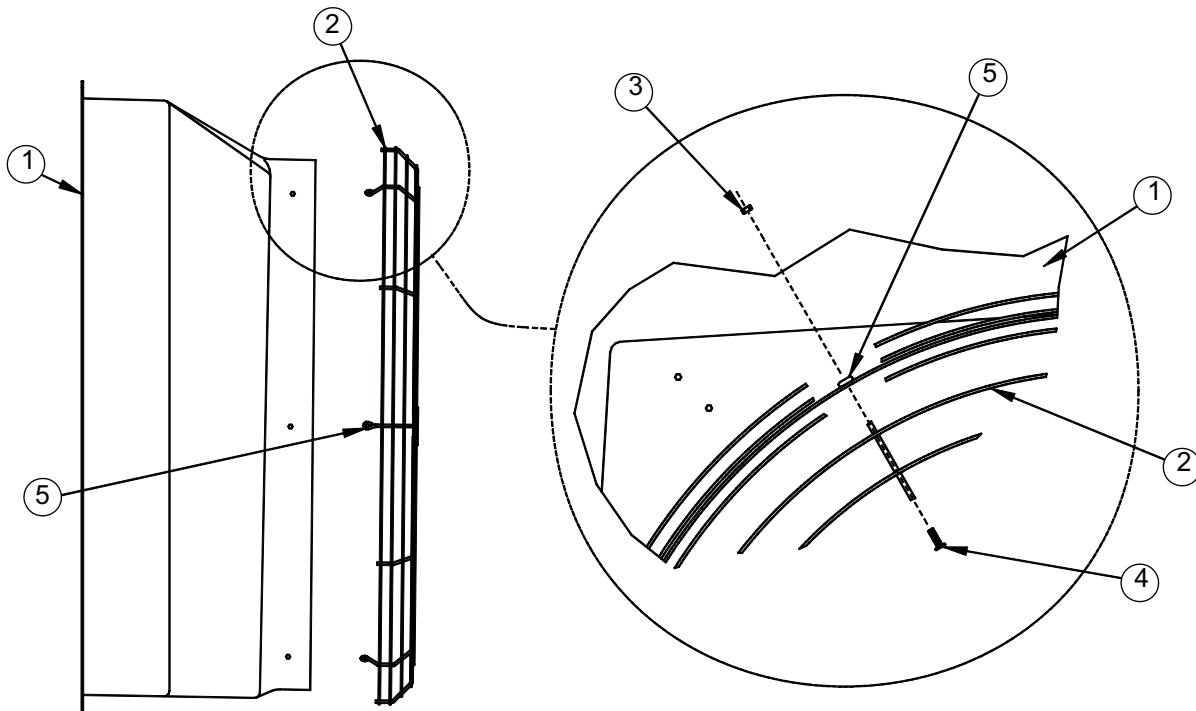


Key	Description	Part No.
1	Shroud (White)	37913
	Shroud (Black)	46970
2	1/4-20 SS Hex Ser. Flange Nut	46298
3	Cone Grill	35228
4	Cone (White)	38267
	Cone (Black)	46971
5	1/4-20 x 7/8 Wafer Head Bolt	40775

Figure 5. Cone Installation

**Fiberglass Grill Fan:**

1. Align the holes in the Grill with the slots in the Shroud.
2. Insert the (6) Wafer Head Bolts from inside the Shroud through the Grill and thread the Flange Nuts onto the ends of the Wafer Head Bolts.



Key	Description	Part No.
1	Shroud	37913
2	Shroud Grill	37920
3	1/4-20 SS Hex Ser. Flange Nut	46298
4	1/4-20 x 7/8 Wafer Head Bolt	40775
5	Shroud Grill Mounting Loop	

Figure 6. Shroud Grill Installation

**Wiring**

1. See Wiring diagram on Motor for Motor electrical connections. Follow local, state, and national electrical codes for wiring
2. Install an electrical disconnect within reach of each Fan.
3. Route the motor cord (not supplied) toward the upper left corner of the Fan and attach the cord to the Motor Mount using the three Cable Ties—included in the hardware package.

**Note:** If an Aluminum Shutter will be installed, route the motor cord through the Rubber Grommet—included in the hardware package see Figure 7.

Some installations may require an exit hole for the motor cord to be drilled in the side of the Shroud. These installations must have electrical wires routed through conduit.

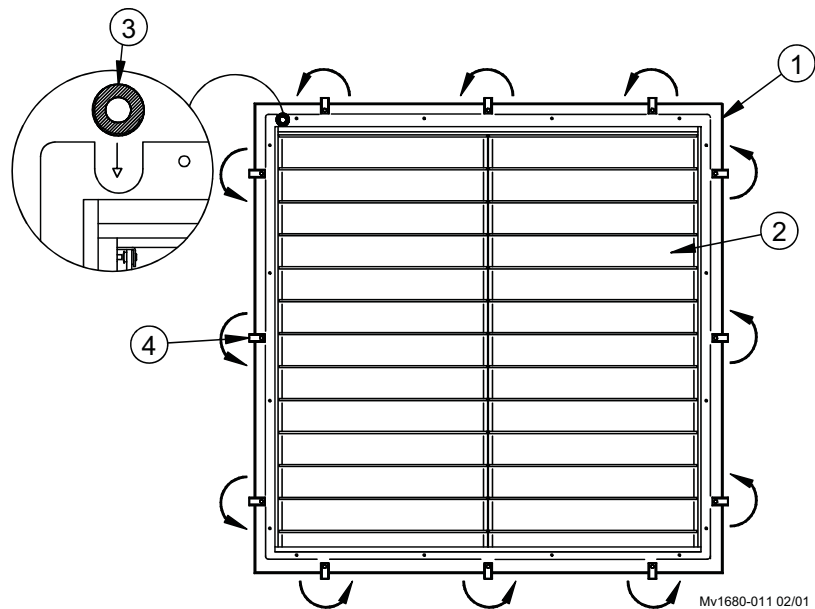
**Note:** Make sure the conduit or wires do not interfere with the Fan Blades or Shutter operation.

## Shutter Installation

**Plastic and Aluminum Shutters are available for the 36" Fans. Installation is identical except where noted. See below.**

1. If you have a Plastic Shutter—cut a 3/8" slot in the upper left flange of the Shutter frame in order to route the electrical cord out the back.
2. If you have an Aluminum Shutter, route the electrical cord through the notch in the top of the Shutter Frame. Make sure the Grommet is installed correctly in the notch in the Shutter Frame. (See **Figure 7 below**)
3. Position the Shutter, centered in the Fan Shroud, and rotate the Shutter Clips to lock the Shutter in place. Check the Shutter for proper operation—the shutter must be able to open and close freely without obstructions.

**Note: Make sure the electrical conduit and wire does not interfere with the Fan Blades or Shutter operation.**

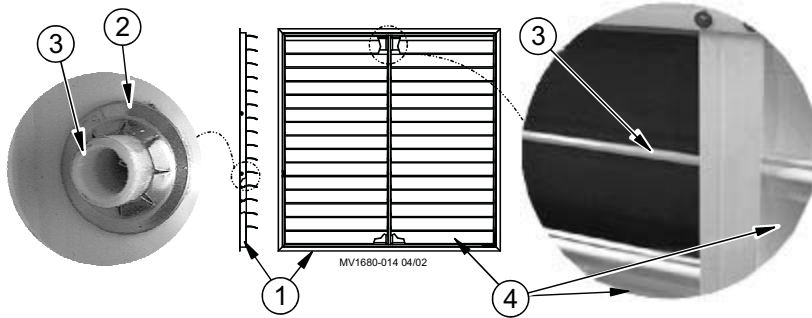


Key	Description	Part No.
1	Shroud (White)	37913
	Shroud (Black)	46970
2	Shutter (White Plastic)	A38027
	Shutter (Gray Plastic)	A46972
	Shutter (Aluminum)	38259
3	Grommet (Aluminum Shutter only)	7256
4	Shutter Clip	36729

**Figure 7. Shutter Installation**

## Shutter Installation Continued...

### Plastic Shutter Part Numbers



Item	Description	Part No.
1	Shutter Assembly (White) Plastic	A38027
	Shutter Assembly (Gray) Plastic	A46972
2	Push Nut, 1/4"	38032
3	Shutter Rod Pivot	38702-2
4	Shutter Louver (White)	38038-2
	Shutter Louver (Gray)	46715-2

Figure 8. Plastic Shutter Part Numbers

## Motor Specifications and Drive Component Part Numbers

### Motor Specifications and Drive Component Part Numbers.

Fan Specifications (assembled)			Motor Specifications							
Description	Part Numbers	Sub-Assembly Part No's	Voltage	HZ	Phase	HP	Motor P/N	Motor Sheave Part No.	Fan Sheave Part No.	Belt P/N
*Fiberglass Cone Fan	A38589-362X	A38588-2	208/230	60	1	.5	40158	1381 (AK27)	42338 (AK51)	39783
	A38589-364X	A38588-4	208-230/460	60	3	.5	4714	1381 (AK27)	42338 (AK51)	39783

\* Replace the "X" in fan P/N with "1" for an Aluminum Shutter, "2" for a Plastic Shutter, "4" for Gray Plastic Shutter.

## Maintenance



**Service and maintenance of fans should be done only by a qualified technician.**

***Disconnect Power prior to maintaining or cleaning the fan! The fan may start automatically causing injury or death.***

1. Grease bearings—use only high quality lithium soap base grease and clean all dirt from Zerks before applying grease.
2. Keep the fan clean for maximum life and performance.
3. Clean Shutter, Cone and Shroud for maximum life and performance.
4. The Fiberglass Fans are shipped with the Danger Decal fastened to the Fan Shroud. Always keep the Decal clean and readable.

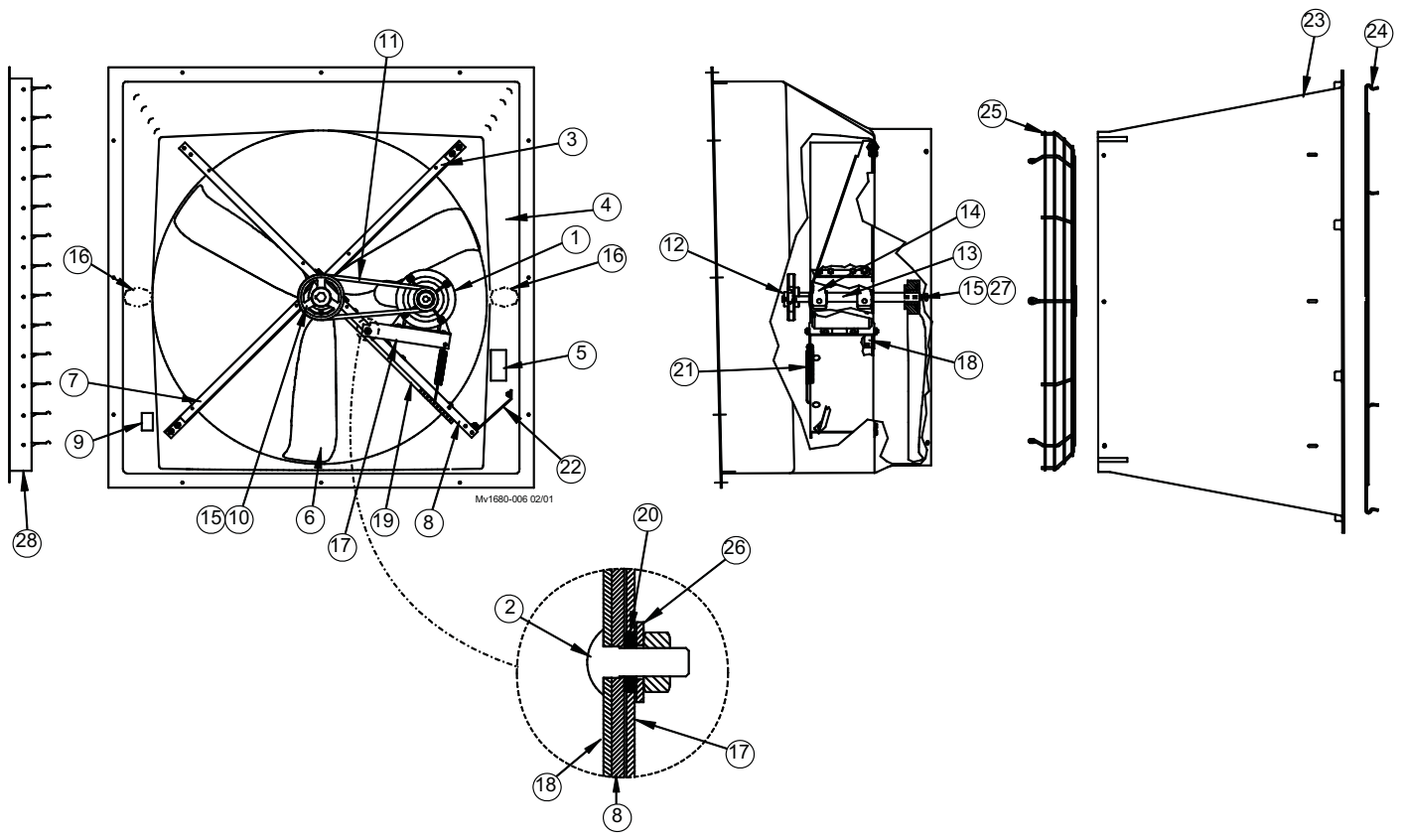
If the Decals becomes damaged or unreadable, order replacement Decals immediately.

Clean the Shroud at the approximate location where the Decal will be placed.

Peel the backing off the Decal and affix it to the Shroud.

5. Periodically check the V-Belt. If necessary, adjust the spring tension to prevent belt from slipping.

# Belt Drive Fiberglass Fan Parts List



## Belt Drive Fiberglass Part Numbers

Item	Qty.	Description	Part No.
1	1	Motor	Varies*
2	2	5/16-18x.75 SS Carr. Bolt	27868-1
3	1	Upper Motor Mount Support	37735
4**	1	36" Fiber Glass Fan Shroud	37913
5	1	Danger Decal	2527-50
6	1	36" Cast Aluminum Fan Blade	38902-1
7	1	Lower Motor Mount Support	37736
8	1	36" Fan Motor Mount	39785
9*	1	Identification Decal	A39002-XXXX
10	1	AK-51 Sheave	42338
11	1	AX32 Gripnotch V-Belt	39783
12	1*	Sheave	Varies*
13	1	1" Shaft	39688

Item	Qty.	Description	Part No.
14	2	1" Cast Pillow Block Bearing	50553
15	2	1/4 x 1-1/8 Sq. Key	2419-2
16	1	ProTerra <sup>®</sup> Decal	2525-67
17	1	Self Tension Motor Mount	39677
18	1	Front Motor Mount Reinforcement Angle	39678
19	1	Rear Motor Mount Reinforcement Angle	39679
20	2	SS Self Tension BD Motor Mount Bushing	39681
21	1	SS Self Tension Motor Spring	39684
22	1	Fiberglass Fan Motor Mount Brace	39710
23**	1	Outlet Cone (White)	38267
		Outlet Cone (Black)	46971
24	1*	Outlet Cone Grill	35228
25	1*	Shroud Grill	37920
26	2	.375 x .875 x .075 SS Washer	8933
27	1	1/4-20x 7/8 SS Bolt	4404-17
28**	1	Shutter Assembly (White)	A38038-2
	1	Shutter Assembly (Gray)	A46715-2
*See Pg. 12 Motor Specifications and Drive Component Chart for Part Numbers and Quantities for Different Fan Models.			
**Due to different color availabilities, Item Numbers vary depending on model of Fan.			



### Revisions to this Manual

<b>Page No.</b>	<b>Description of Change</b>
Various	Changed (8916) Nylon Nut to (46298) SS Hex Serrated Flange Nut. Deleted Nylon Washer (4856).

Contact your nearby ProTerra<sup>®</sup> distributor or representative for additional parts and information.

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