



52" Fiberglass Fan with BI-Flow® Door Installation & Operator's Instruction Manual



Fan Type	Fan Assembly Part No.	Voltage	Hz	Ph	HP	Fan rpm	cfm @ .10" w.c.	cfm/Watt .10" w.c.
Standard	A49740-22*	230	60	1	1.5	564	24900	20.8
High Capacity	A49740-21*	230	60	1	1.5	611	27700	18.3
Standard	A49740-42*	208-230/460	60	3	1.5	566	24800	20.5
High Capacity	A49740-41*	208-230/460	60	3	1.5	615	27900	18.2

*Part Numbers shown are for White Fans with White Cones. Add a "B" to the Part Number *example:* "A49740-22B" for a Black Fan w/ Black Cone, Add a "BW" for a Black Fan w/ White Cone.

Fan and Fan Framing Dimensions

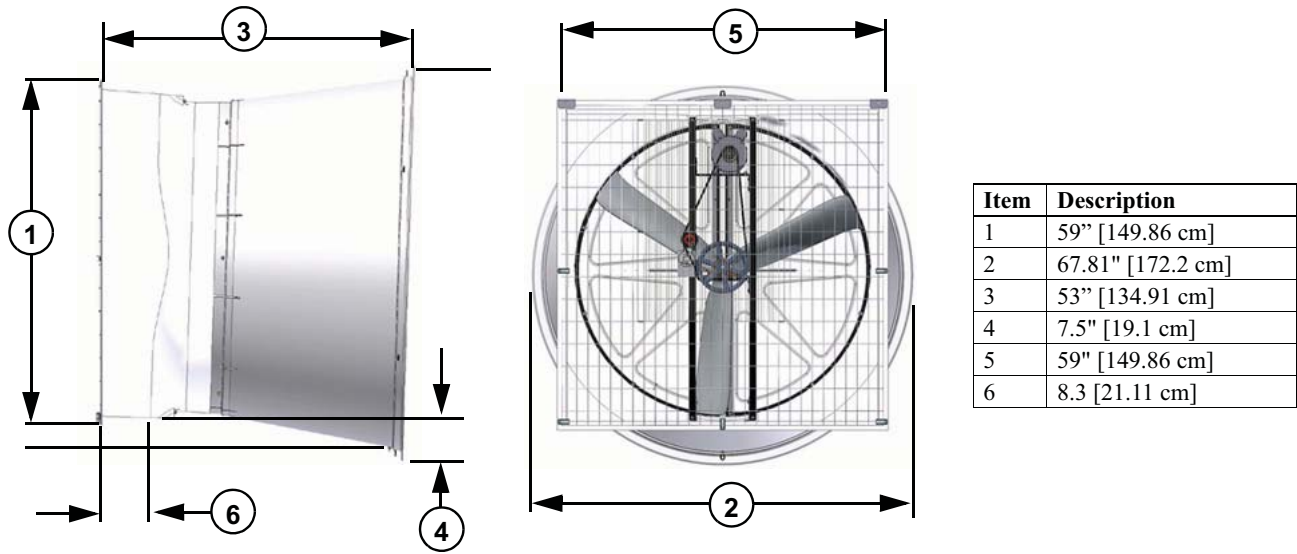
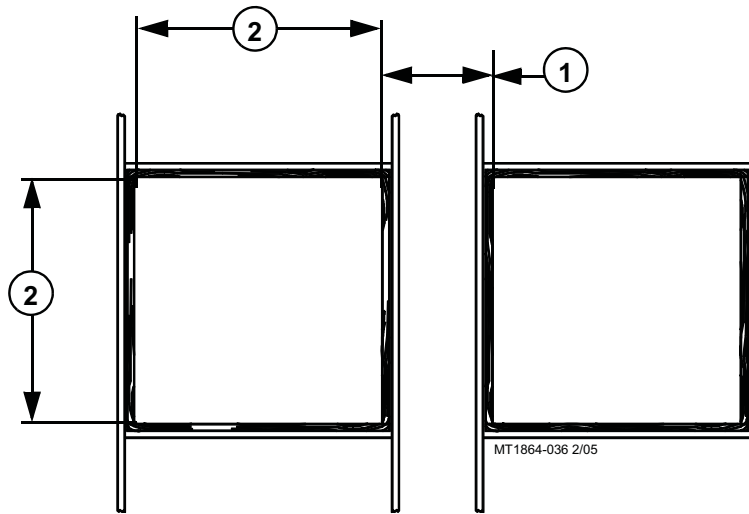


Figure 1. Fan and Framing Dimensions

Planning the layout of the spacing between fans is very important. A Minimum of 13" between Fan rough openings is required so the Cones do not interfere. Dimensions for rough openings for Fans are shown in Figure 2 below.



Item	Dimension
1	13" [33 cm] Min. for round Cones
2	56-1/2" [143.51 cm]

Figure 2. Rough opening Spacing

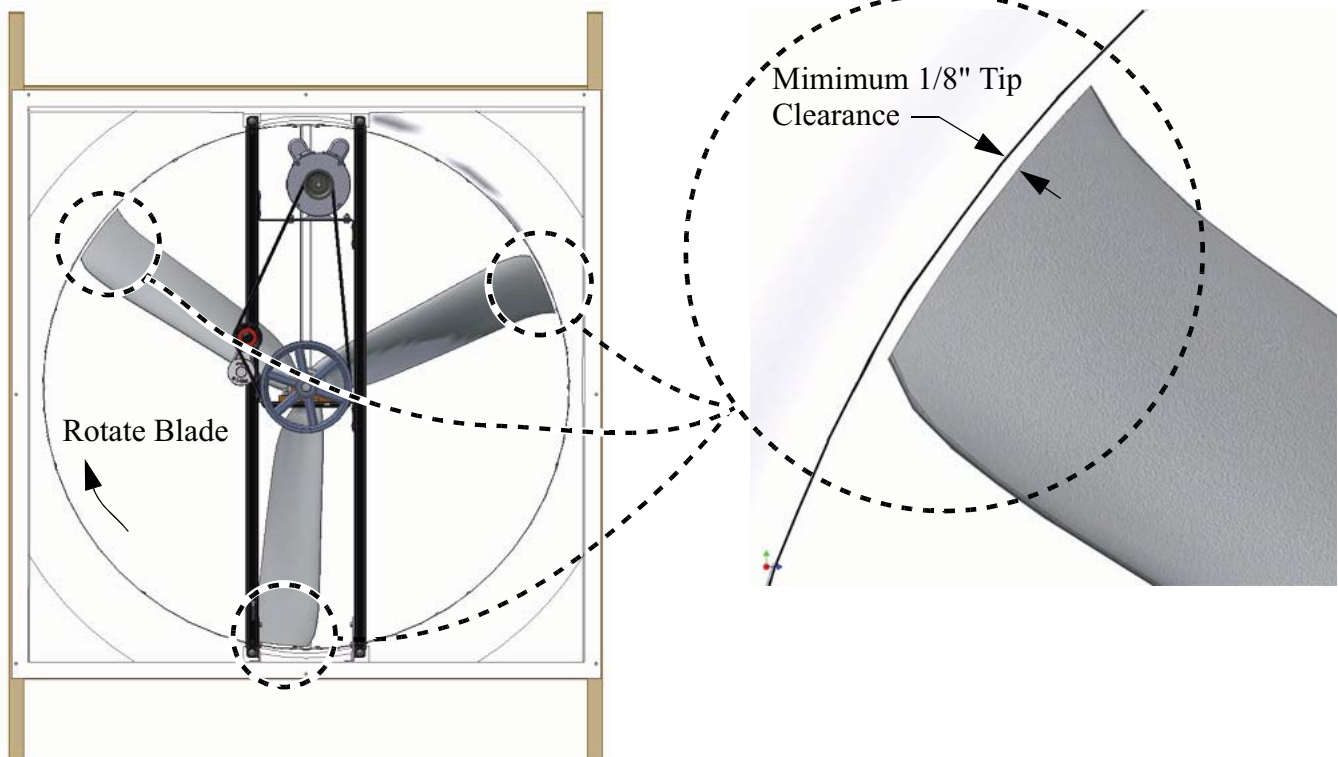
Important! The Fan Inlet and exhaust must be kept clear of obstructions. Failure to keep the Fan airflow path clear of obstructions could cause loss of Fan performance and Fan damage.

Do Not operate these Fans with a variable speed control device. Operating static pressure should be less than 0.15 inches water column.

Installation

Fan Mounting

Insert the Fan Assembly in the wall opening. Rotate the Fan Blade by hand and check to make sure that there is a minimum of 1/8" Blade clearance all the way around the Shroud orifice. Shift the Fan around in the wall opening, if needed, to achieve at least 1/8" clearance all the way around. Now the Fan is ready to be attached to the wall.



Step 1: Set the Fan in the Framed Opening. Rotate Fan Blade and Check for 1/8" Blade Tip Clearance

Note: Fan shown without components for clarity.

Locate the three holes across the top Fan Shroud flange (**Item 5, Figure 3**). Line up the Screen Retainers included in the Parts Package (**Item 1, Figure 3**) with these three holes, slip them over the top Fan Shroud flange, and using (3) 1/4 x 1-3/4 Lag Screws included in the Parts Package attach the Fan to the Wall (**Step 1, Figure 3**). In each of the remaining 5 holes in the Fan Shroud flange, use a 1/4 x 1-3/4 Lag Screw, two Nylon Washers, and a Screen Clip, all included in the Parts Package, to secure Fan to the Wall as shown below in **Step 2**. Only tighten the Lag Screws enough that the Clip will retain it's position, but can still be rotated by hand. Use two more Lag Screws to attach the Fan to the Wall through the holes in the Post Brackets (**Step 3, Item 6**).

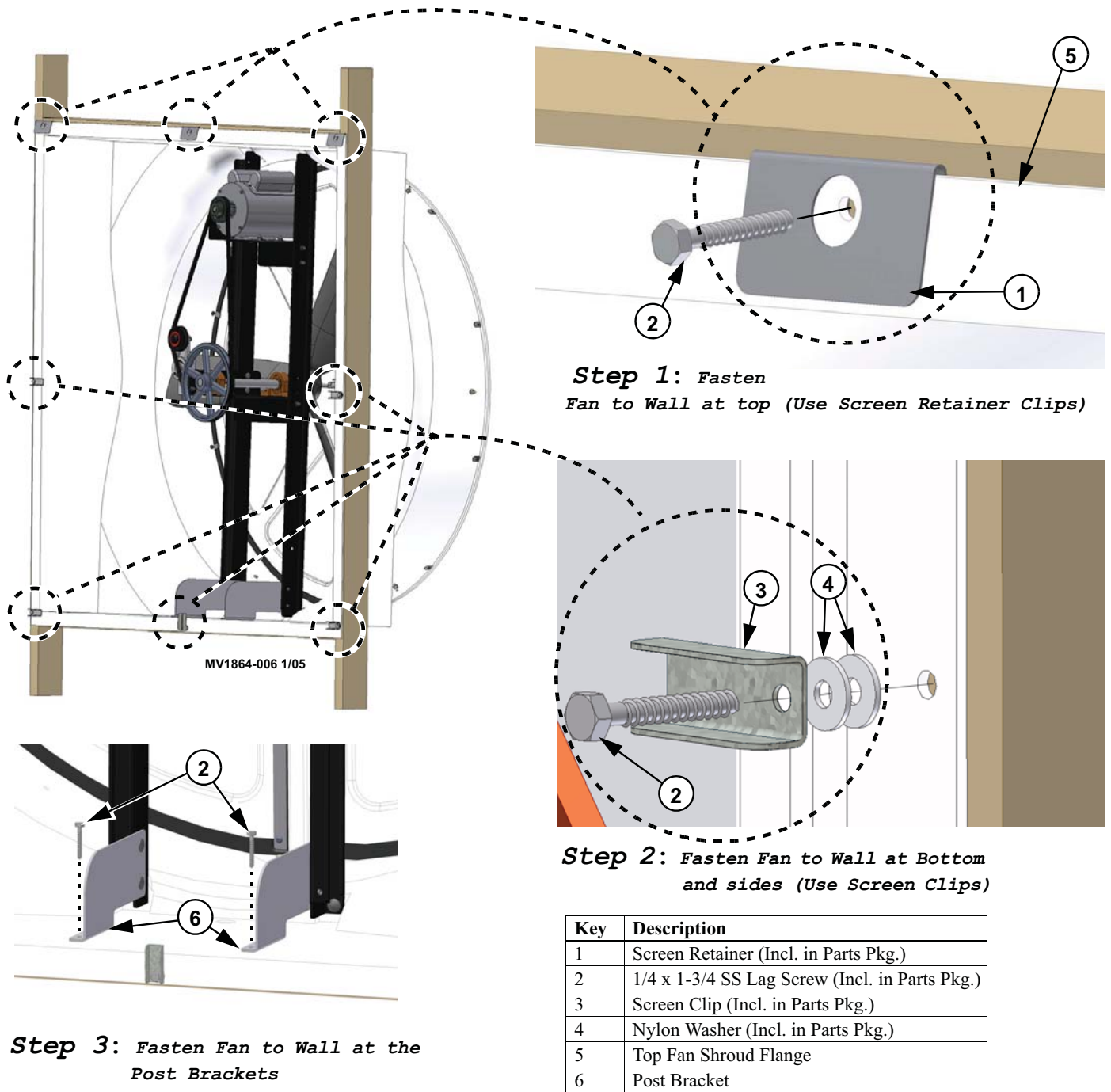
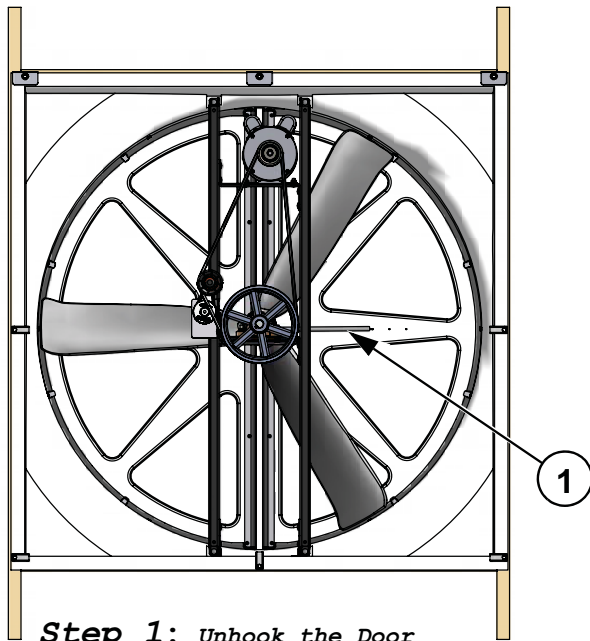


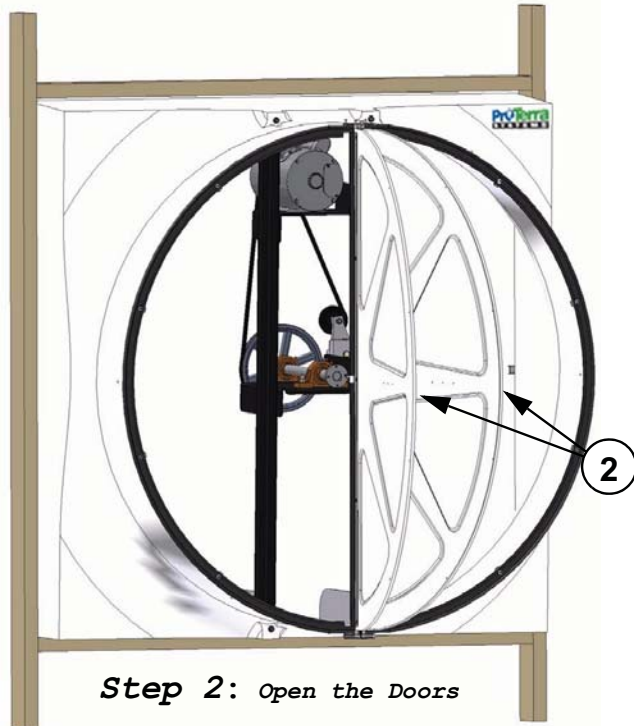
Figure 3. Installing Screen Clips

Removing the Doors

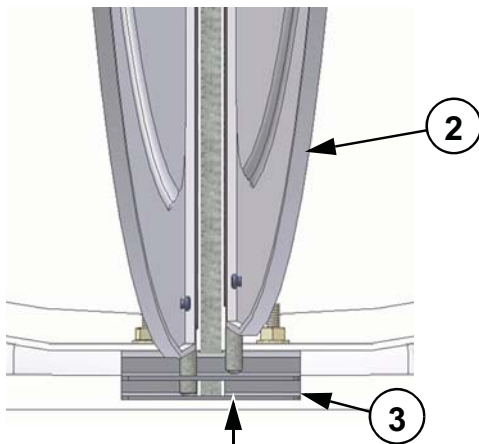
To avoid damaging the Fan Doors it is best to remove them before attaching the Cone. Unhook the Door Springs from the Door and leave them attached to the Fan so they are not lost (**Figure 4, Step 1**). Open up the Doors (**Step 2**). Lift one Door up so it will clear the Bottom Pivot Bracket (**Step 3**), and Pull the Door out (**Step 4**). Set the Door aside. Repeat the same process to remove the second Door.



Step 1: Unhook the Door Springs

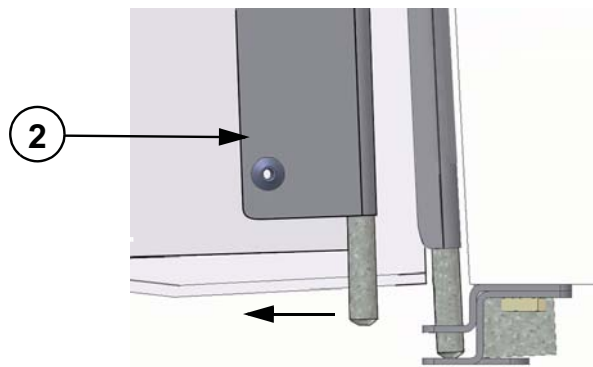


Step 2: Open the Doors



Lift the Door up to Clear the Bottom Pivot Bracket

Step 3: Lift up the Door



Pull the Door to Clear the Bottom Pivot Bracket

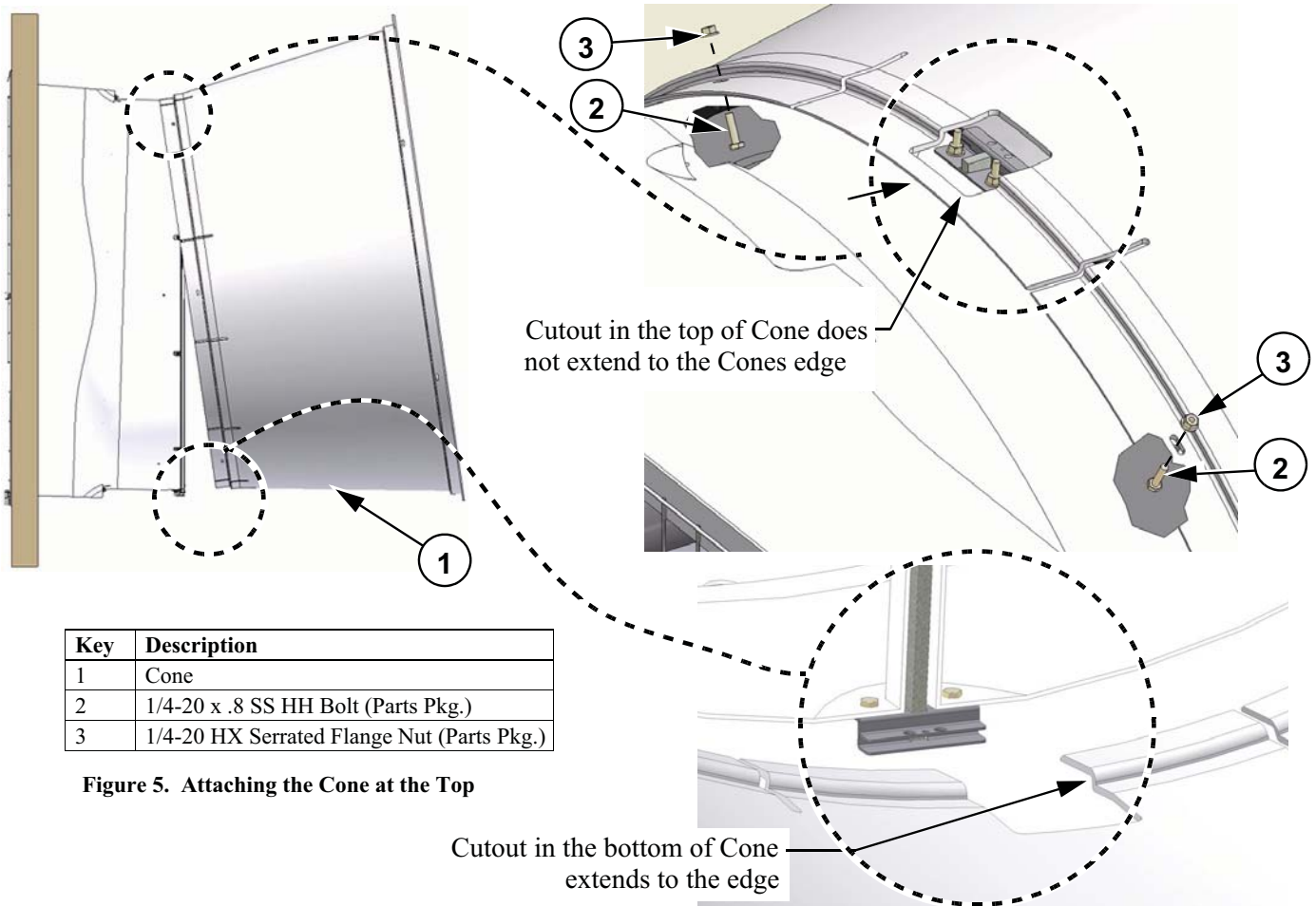
Step 4: Pull the Door out

Key	Description
1	Door Spring
2	Door
3	Bottom Pivot Bracket

Figure 4. Removing the Doors

Attaching the Cone

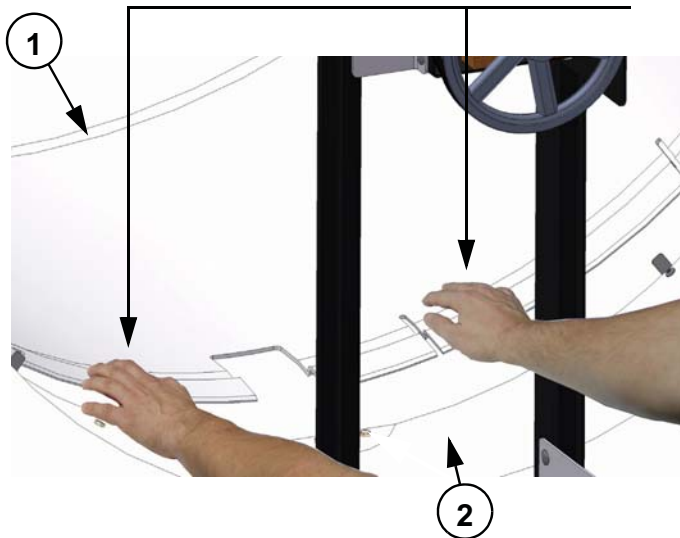
To install the Cone you must first identify the Top of the Cone. The cutout in the **top of the Cone** does not extend out to the Cones edge (See **Figure 5**). Begin Installing the Cone by hooking the top of the Cone over the top of the Fan orifice. At this time only attach the Cone to the Shroud at the upper most two holes using (2) 1/4-20 Bolts and (2) 1/4-20 Flange Nuts *provided in the Parts Package* (See **Figure 5**).



Key	Description
1	Cone
2	1/4-20 x .8 SS HH Bolt (Parts Pkg.)
3	1/4-20 HX Serrated Flange Nut (Parts Pkg.)

Figure 5. Attaching the Cone at the Top

Slide the Remaining Cone over the Shroud orifice, working around the Cone from top to bottom. When you get to the bottom of the Cone it is best to have a second person push down on the Cone from **inside** the Fan as you push the Cone on. (See **Figure 6** below).



From insided of Fan push down on the Cone while a second person pushes the Cone onto Shroud from the outside.

Key	Description
1	Cone
2	Shroud

Figure 6. Sliding the Cone on at the Bottom

Finish attaching the Cone to the Fan Shroud with (4) 1/4-20 x 7/8 Bolts and Flange Nuts in the (4) remaining holes pre-drilled in the Cone (**Figure 7 below**).

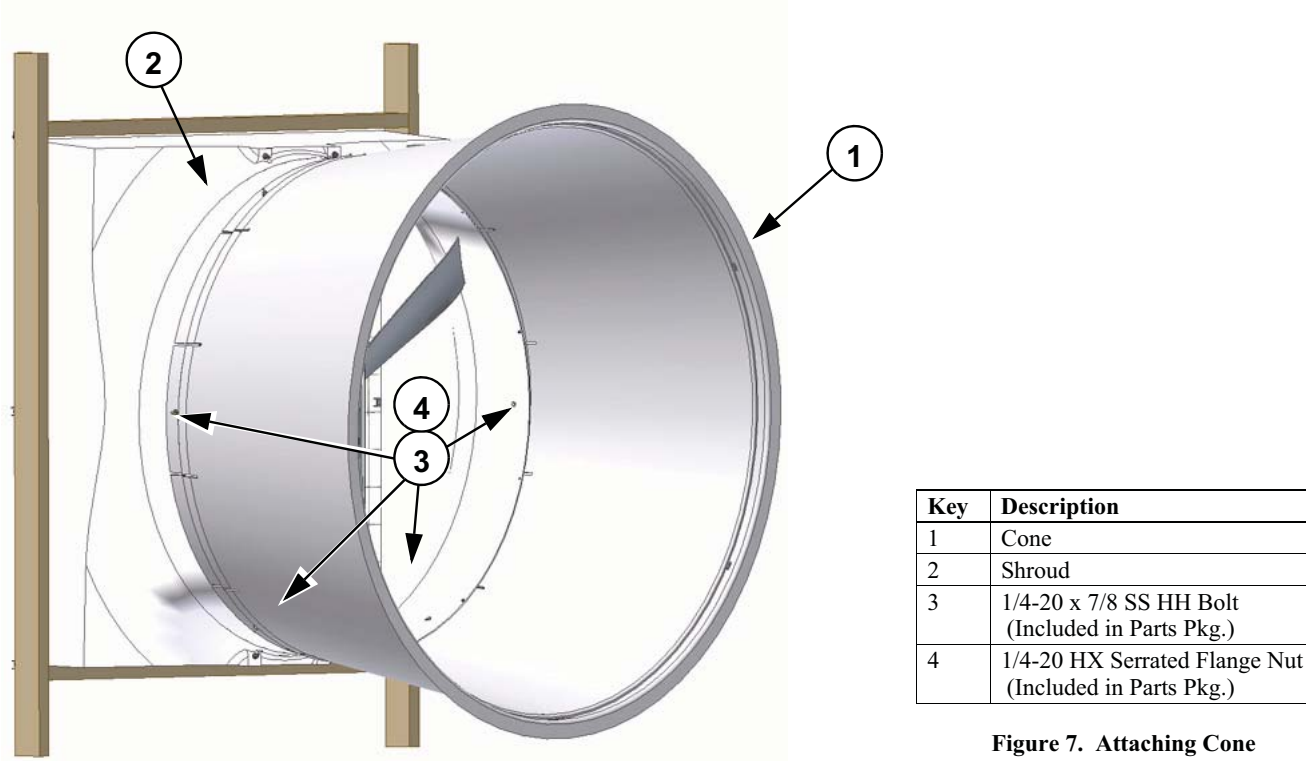


Figure 7. Attaching Cone

Replacing the Doors

Replace the Doors by reversing the steps used to remove them in the **Removing the Doors** section of this manual. **Important:** Re-attach the Door Springs to the 1st Hole in the Doors (**Figure 8**). *In windy conditions:* If the Fan Doors do not close when the Fan is off, or if the Doors open before the Fan turns on; increase the Spring tension by re-attaching the Spring to the second or third hole in the Doors.

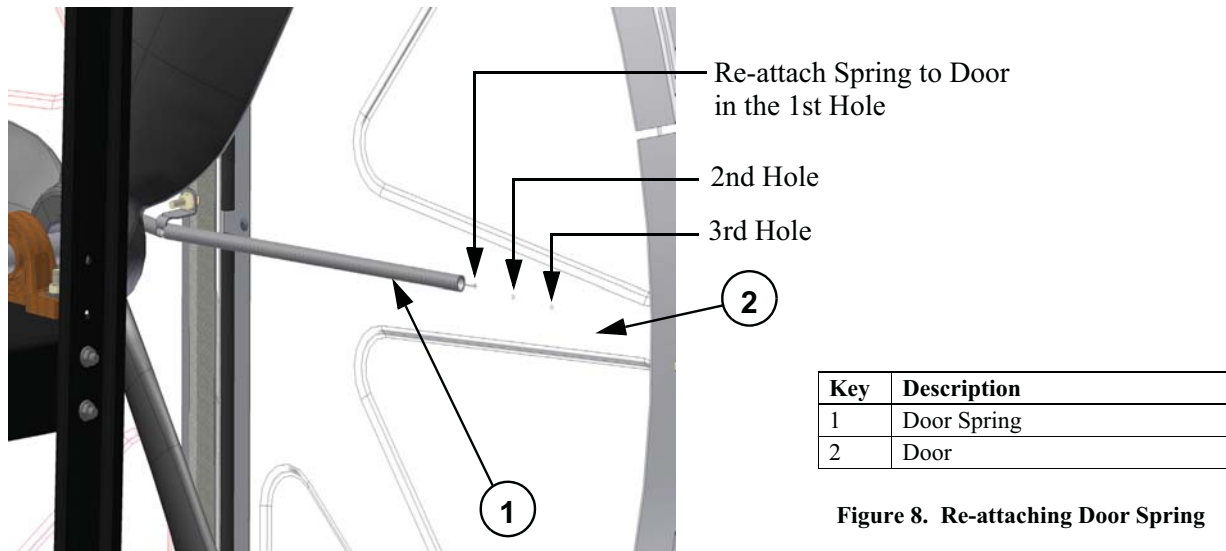
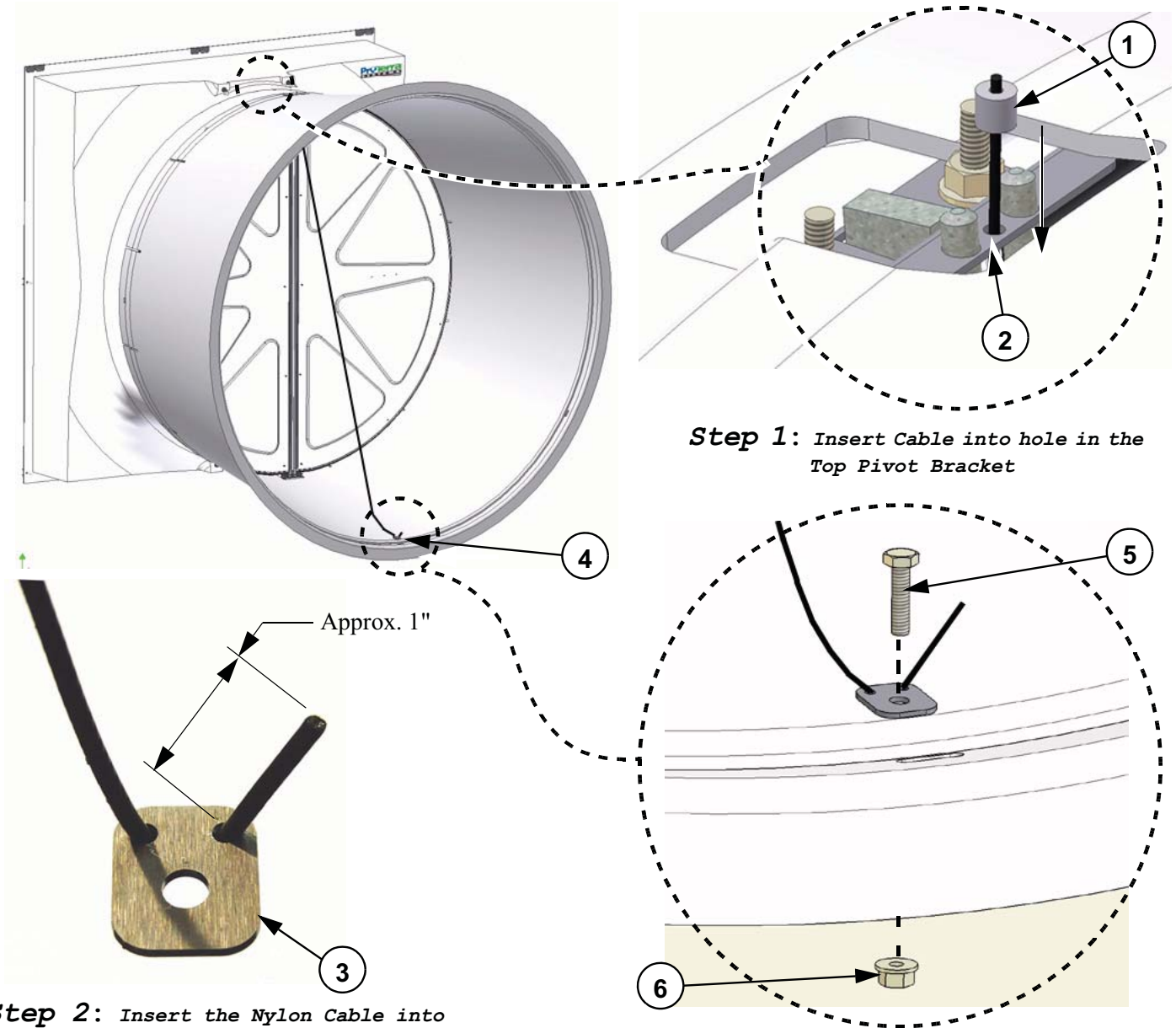


Figure 8. Re-attaching Door Spring

Attaching the Nylon Cable

Remove the Nylon Cable (**Item 1, Step 1**) from the parts package and insert it into the hole in the Top Pivot Bracket (**Item 2**) as shown. Insert the other end of the Nylon Cable into the Cable Bracket (**Item 3, Step 2**) included in the parts package leaving approximately 1" extend past the Bracket as shown. Attach the Cable Bracket to the hole at the bottom of the Cone (**Item 4**) with a 1/4-20 Flange Bolt (**Item 5**) and Nut (**Item 6**) as shown in **Step 3**



Step 1: Insert Cable into hole in the Top Pivot Bracket

Step 3: Attach Cable Bracket to Cone with 1/4-20 Nut and Bolt

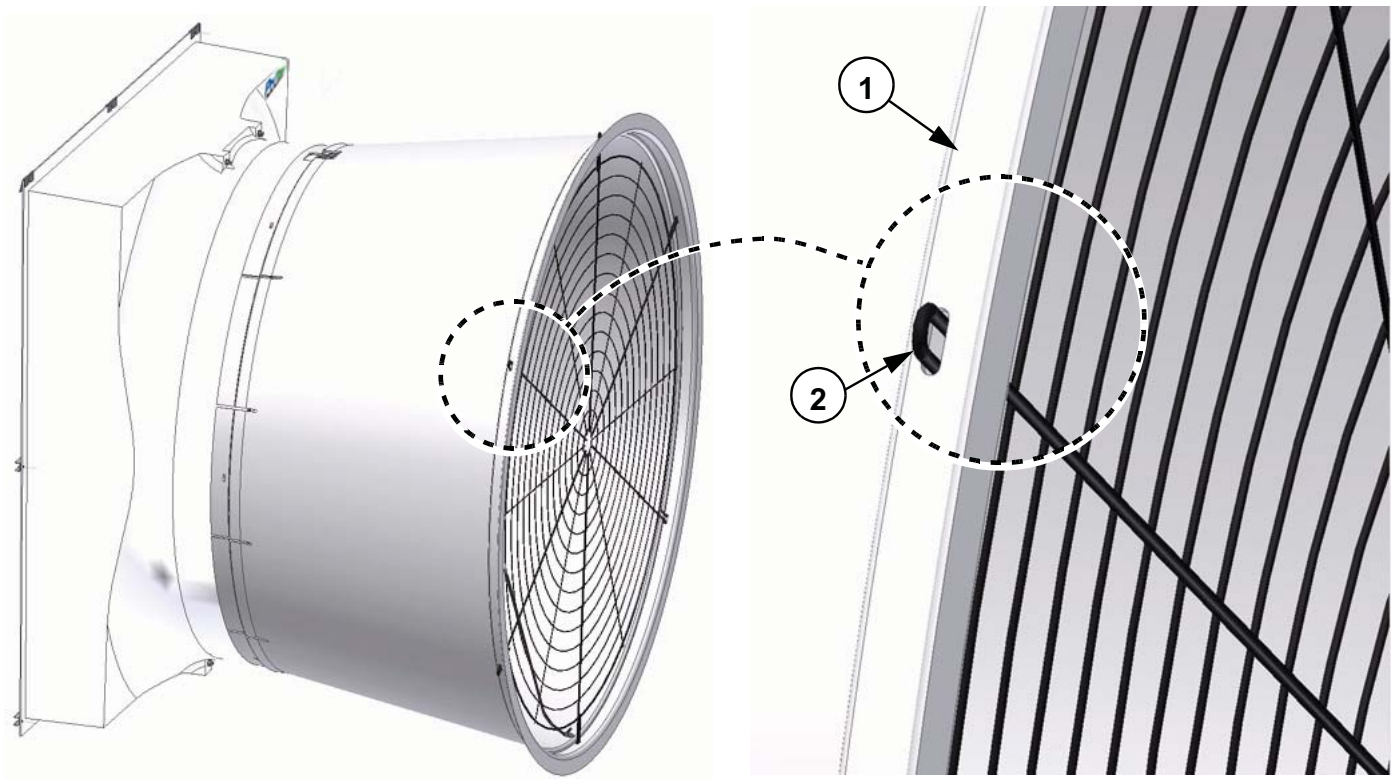
Step 2: Insert the Nylon Cable into Cable Bracket. Leave approx. 1" extend past the Bracket.

Item	Description
1	Nylon Cable
2	Top Pivot Bracket Hole
3	Cable Bracket
4	Hole in Cone
5	1/4-20 Flange Bolt
6	1/4-20 Flange Nut

Figure 9. Attaching Nylon Cable

Attaching the Grill

Attach the Grill to the Cone by inserting the Grill ends into the slots in the Cone as shown in **Figure 10** below.

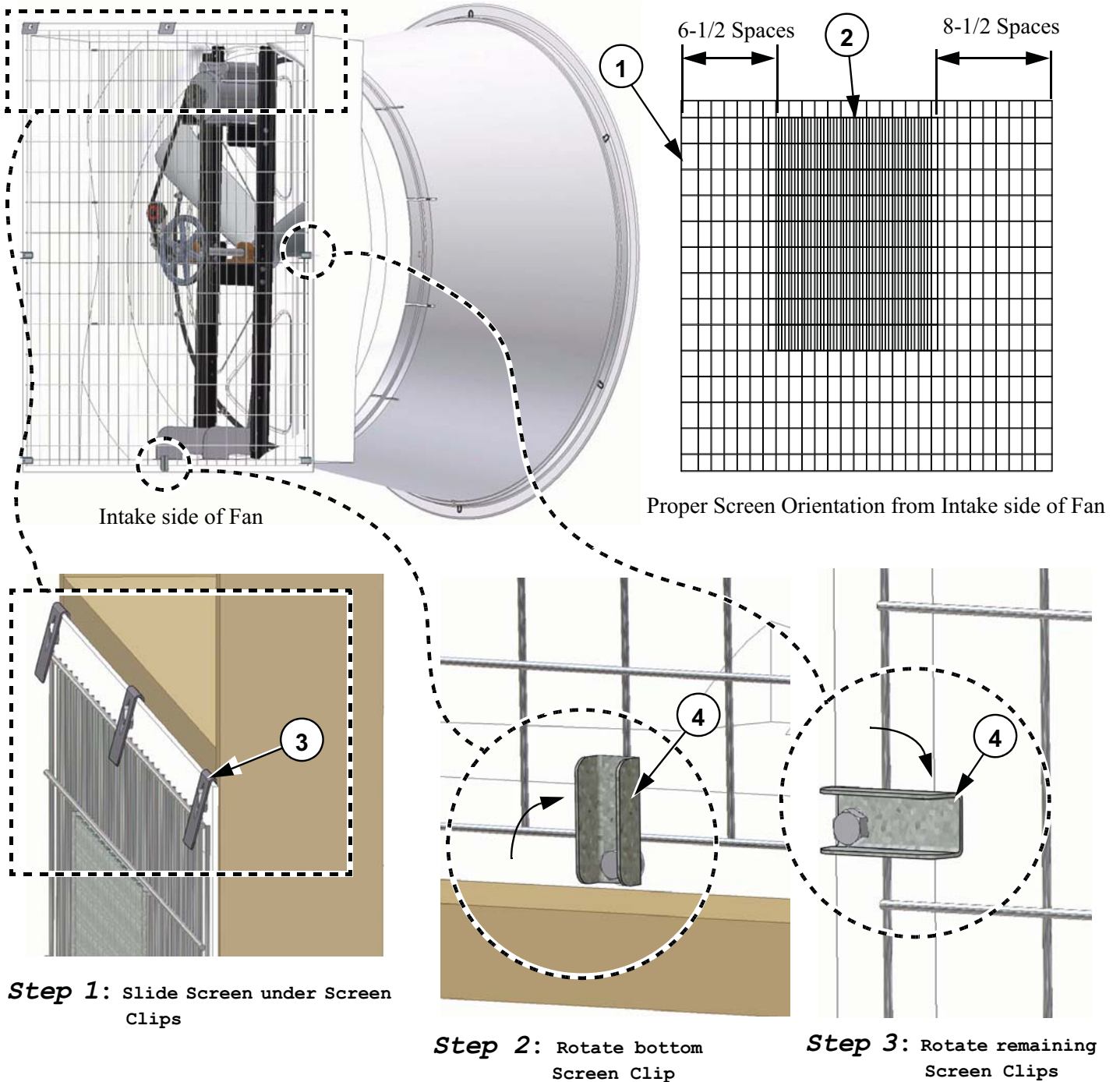


Key	Description
1	Cone
2	Grill End

Figure 10. Attaching Grill

Installing the Screen

Orient the Screen as shown below with the fine mesh section on the outside of the Fan. Slide the top of the Screen under the Screen Retainers (**Step 1, Figure 11**) and turn the bottom Screen Clip to hold the Screen in place (**Step 2**). Turn the other (4) Screen Clips to secure the Screen in Place (**Step 3**).



Key	Description
1	Screen
2	Insert Screen
3	Screen Retainer (Included in Parts Pkg.)
4	Screen Clip (Included in Parts Pkg.)

Figure 11. Attaching the Screen

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 Cable Tie—included in the hardware package. Leave a Drip Loop so that moisture collecting on the Cord will not run down and damage the Motor (See **Figure 12**). Cut out a section of the Screen where you want the Cord to exit the Fan, so that the Screen can be removed without the Cord getting in the way **Figure 12**). Use the Nylon Cord Retainer and Lag Screw provided to secure the Cord to the Wall outside of the Fan. (**Figure 12**)

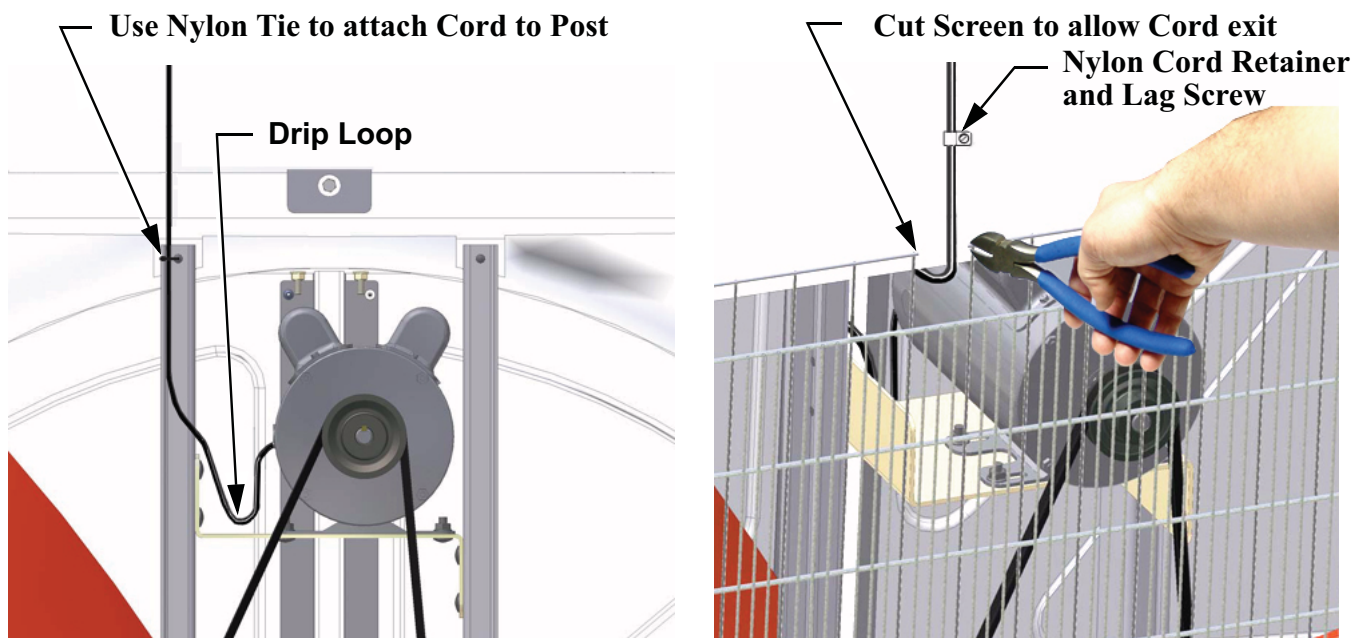


Figure 12. Wiring / Cord Routing

Maintenance

- Disconnect Power Prior To Maintaining Or Cleaning The Fan. The fan may start automatically causing serious injury or death.
- Service and repair of fans should be done only by a qualified technician.
- Keep the Fan clean for maximum life and best performance. **Do Not spray water on Fan Shaft Bearings, Belt Tensioner, or the Motor.**
- Periodically check the V-Belt and replace if necessary. A bad Belt will cause a substantial drop in Fan performance or can break and cause Fan failure. If a Belt rides below the Sheave edge, replace the Belt. (See Figure 13)
- Keep BI-FLOW[®] Doors, Blades, and Housing clear of obstacles for best air performance.
- The Motor and Fan Shaft Bearings are prelubricated. Grease Zerks are provided on the Fan Shaft Bearings for installations where relubrication is needed. Relubrication is required once annually or if water contacts the Bearings. Add only a small amount of grease to purge impurities out of the Bearing Seals.
- Use only high quality lithium soap base grease and clean all dirt from zerk before applying grease. Agile Manufacturing recommends using Shell Alvania # 2 in the Fan Shaft Bearings.
- Check Sheaves for wear. Replace if Sheave groove is worn. (See Figure 13 to the Right).

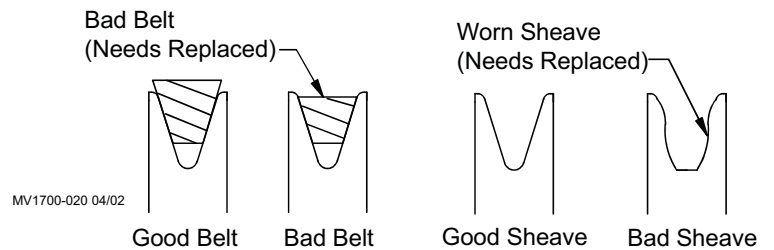
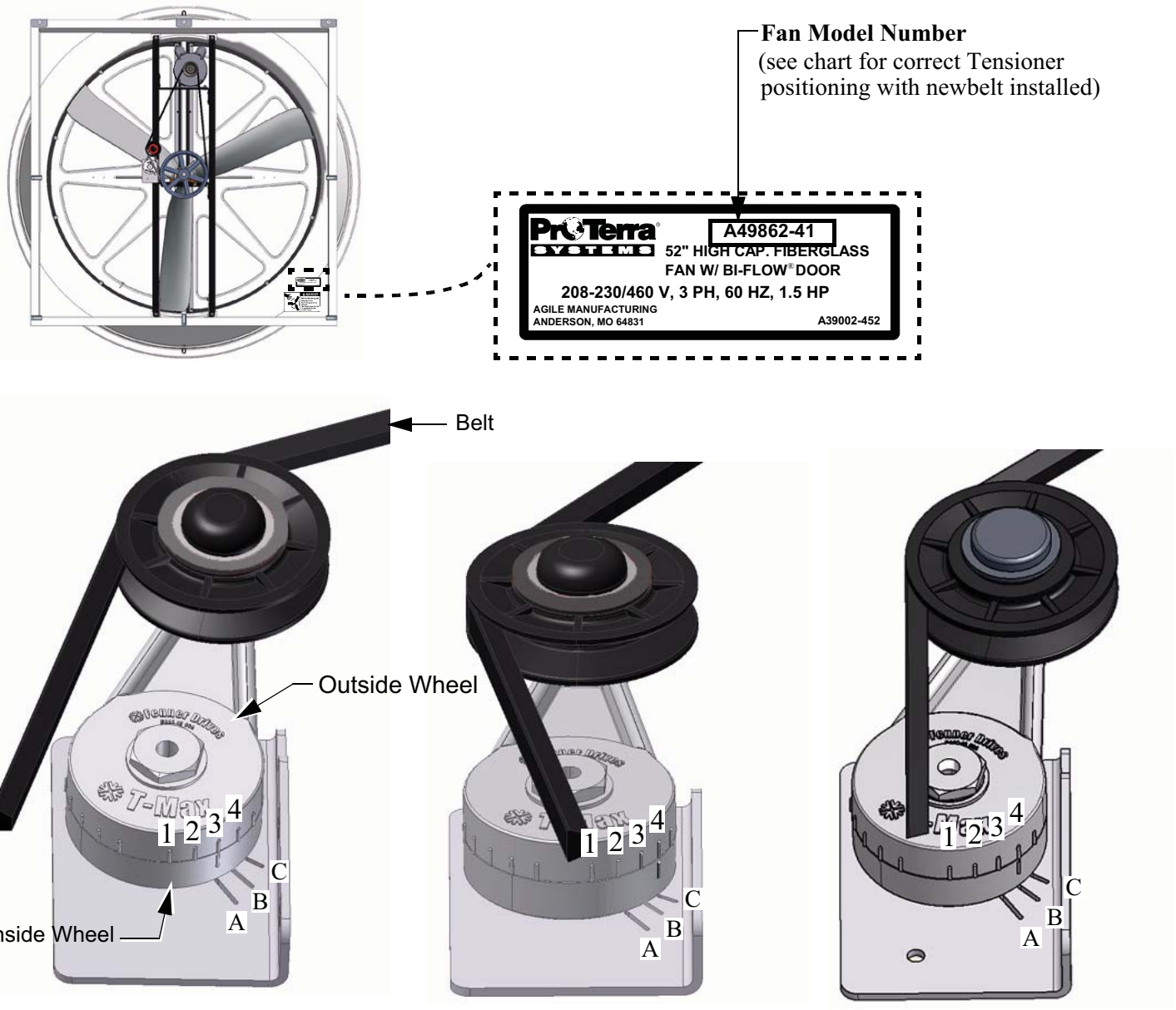


Figure 13. Worn Sheave

Belt Tensioner Position

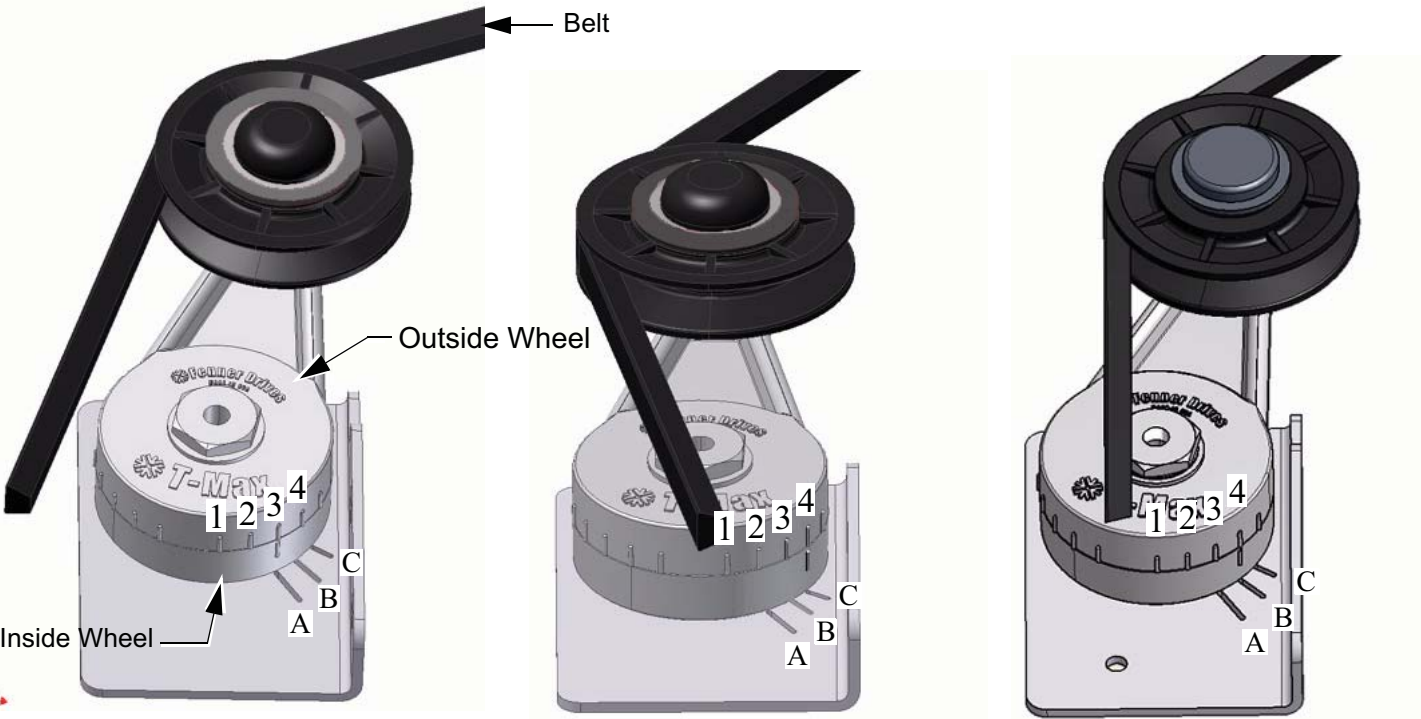
When the Belt is installed the Tensioner will rotate to a set position. The notches on the outside wheel of the Tensioner should line up with the etched mark (A,B, or C *per chart*) on the inside wheel of the Tensioner based on the **chart below**.

Note: When a Belt is worn the Tensioner position may vary as much as 1 full notch from new.



Fan Model Number
(see chart for correct Tensioner positioning with new belt installed)

ProTerra
SYSTEMS A49862-41
52" HIGH CAP. FIBERGLASS
FAN W/ BI-FLOW® DOOR
208-230/460 V, 3 PH, 60 HZ, 1.5 HP
AGILE MANUFACTURING
ANDERSON, MO 64831 A39002-452



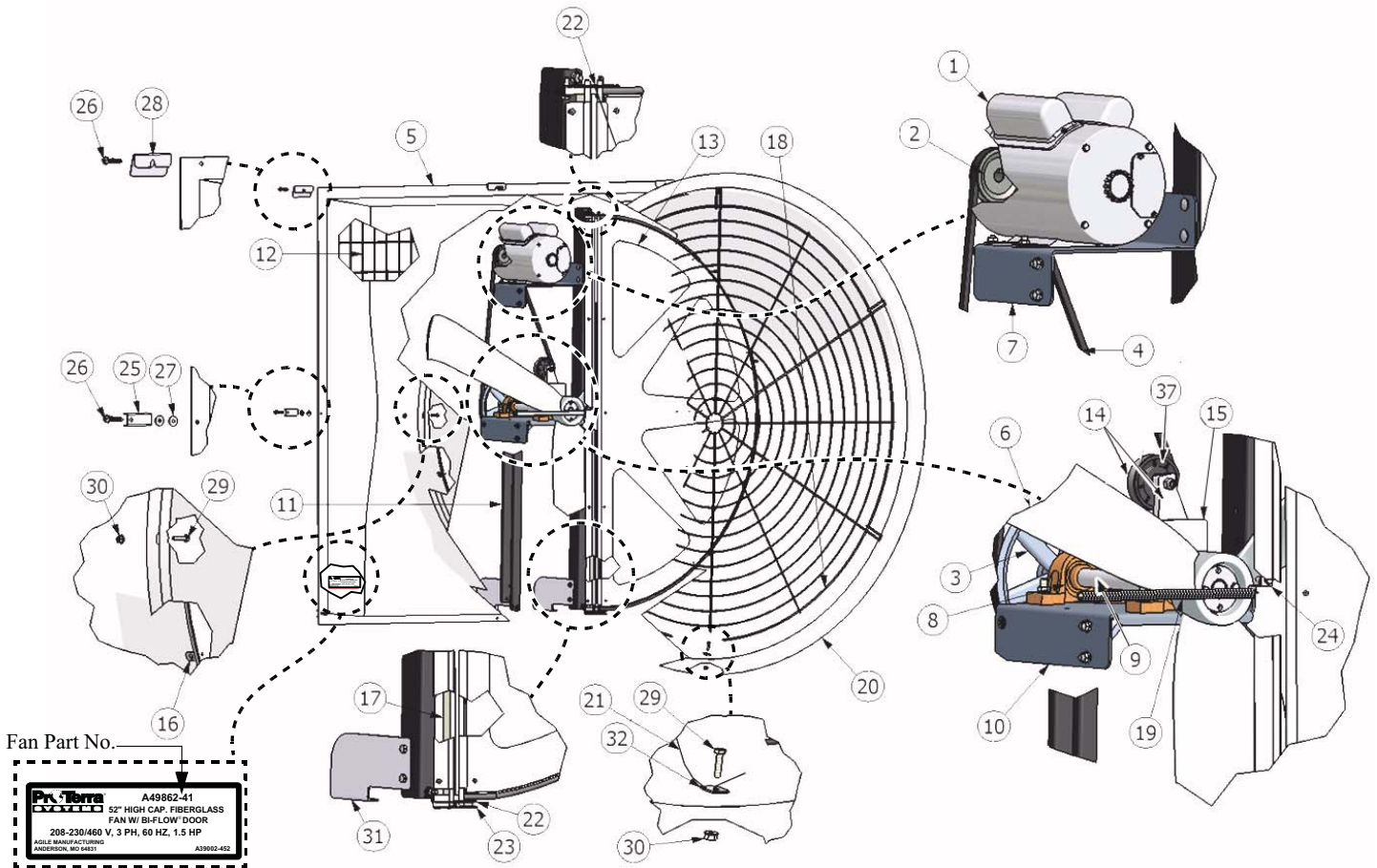
Fan Part No.	Tensioner Position
A49862-22 Series	3rd Notch
A49862-42 Series	"A" etched mark

Fan Part No.	Tensioner Position
A49862-21 Series	4th Notch
A49862-41 Series	"C" etched mark

Fan Part No.	Tensioner Position
A49862-51 Series	4th Notch "B" etched mark

Figure 14. Tensioner position

Part Numbers



Itemized Part Numbers

52" Fiberglass Fan with BI-FLOW [®] Door A49862-XX							
Item	Part Description	Part No.	Models-XX	Item	Part Description	Part No.	Models-XX
1	Motor, 3ph, 1.5hp, 60-230V	48608	-42,-41,	16	Magnet Stop Bracket	49738	All
	Motor, 1ph, 1.5hp, 60-230V	50496	-22,-21	17	Fan Post Brace	49900	All
2	Sheave, 3" Motor (AK30)	8773	All	18	Grill	49693	All
3	Sheave, 8.25" Driven (AK84)	28143	-21,-41	19	Spring, .055 x .50 O.D. x 11"	49629	All
	Sheave, 9.25" Driven (AK94)	40274	-22,-42,	20	Cone (White)	49686	See Page 1
4	V-Belt (AX59)	48615	-21,-41		Cone (Black)	49686B	See Page 1
	V-Belt (AX60)	48430	-22,-42	21	Cable Assembly	50618-1	All
5	Shroud, 52" (White Interior)	49732	-22,-21,-42,-41	22	Pivot Bracket	49750	All
	Shroud, 52" (Black Interior)	49732B	-21B,-22B,-41B,-42B	23	Pivot Support	49751	All
6	Blade, Cast Aluminum w/ Bushing	49731	All	24	Door Spring Support	49799	All
7	Motor Support	49734	All	25	Clip, 2.00 x .7 SS	36729	All
8	Bearing, 1" Pillow Block	50553	All	26	Lag Screw .25 x 1.7"	40938	All
9	Shaft, 1" dia. x 15.75" SS	49822	All	27	Nylon Washer	4856	All
10	Bearing Support	49735	All	28	Screen Retainer	49908	All
11	Fan Post	49733	All	29	Bolt, 1/4-20 x .8 HH	4404-17	All
12	Screen, 52" Fiberglass BI-FLOW Fan	50049	All	30	Nut, 1/4-20 HX FLG Ser.	46298	All
13	Door Assembly (White)	49767	-21,-22,-41,-42	31	52" Post Support	50122	All
	Door Assembly (Black)	49767B	-21B,-22B,-41B,-42B	32	Cable Assembly Bracket	50622	All
14	Tensioner Assembly	48429	All	37	Idler with Bushings (For Repair)	50879	All
15	Tensioner Support	49737	All				

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Warranty

Agile Manufacturing warrants new 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. Fiberglass Fan housings and cast aluminum blades - for as long as the original purchaser owns the product.
- *2. Fiberlass Fan motors and bearings - for two years from date of installation.
- *3. Fiberglass Fan components, including plastic shutters, fiberglass doors, 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, mismanagement, negligence, alteration, accident, or lack of proper maintenance, or from lightning strikes, electrical power surges or interruption of electricity shall not be considered defects under the Warranty. Corrosion, material deterioration and/or equipment malfunction caused by or consistent with excessive additions or application of chemicals, minerals, sediments or other foreign elements with the product 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.

Safety Information

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

Keep Hands away. Disconnect power before servicing. Fan may start automatically. Do not operate the Fan without the screens in place.

Disregard to the above mentioned **Danger** may cause serious injury including death.



- **Keep all Safety Signs and decals in good condition.**
Replace damaged or missing decals.

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Revisions to this Manual

Page No.	Description of Change
Various	Changed 48428 Bearing to 50553 Bearing, Changed arrows to better designate (50879) as a repair part.

Various

Changed 48428 Bearing to 50553 Bearing, Changed arrows to better designate (50879) as a repair part.

Contact your nearby Pro-Terra® distributor or representative for additional parts and information.

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