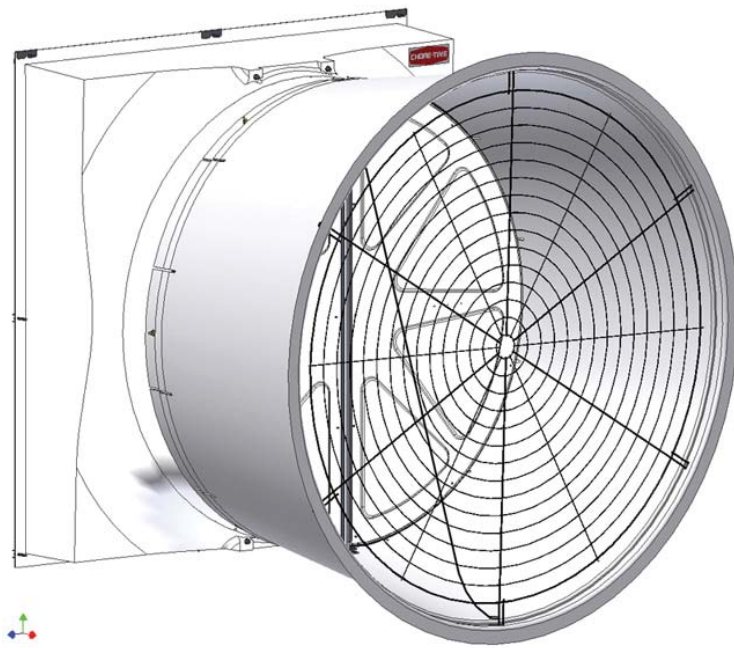




52" TURBO® Fan with HYFLO® Door Installation & Operator's Instruction Manual



Fan Type	Fan Assembly Part No.	Sub Assembly Part No.	Bess Lab Test No.	Voltage	Hz	Ph	HP	Fan rpm	cfm @ .10" w.c.	cfm/Watt .10" w.c.
Standard	49740-22*	49862-22	04334	230	60	1	1.5	564	24900	20.8
High Capacity	49740-21*	49862-21	04312	230	60	1	1.5	611	27700	18.3
Standard	49740-42*	49862-42	04335	208-230/460	60	3	1.5	566	24800	20.5
High Capacity	49740-41*	49862-41	04318	208-230/460	60	3	1.5	615	27900	18.2
High Capacity	49740-51*	49862-51		200-380/415	50	3	1.5			

*Part Numbers shown are for White Fans with White Cones. Add a "B" to the Part Number *example: "49740-22B"* for a Black Fan w/ Black Cone, Add a "BW" for a Black Fan w/ White Cone.



Fan and Fan Framing Dimensions

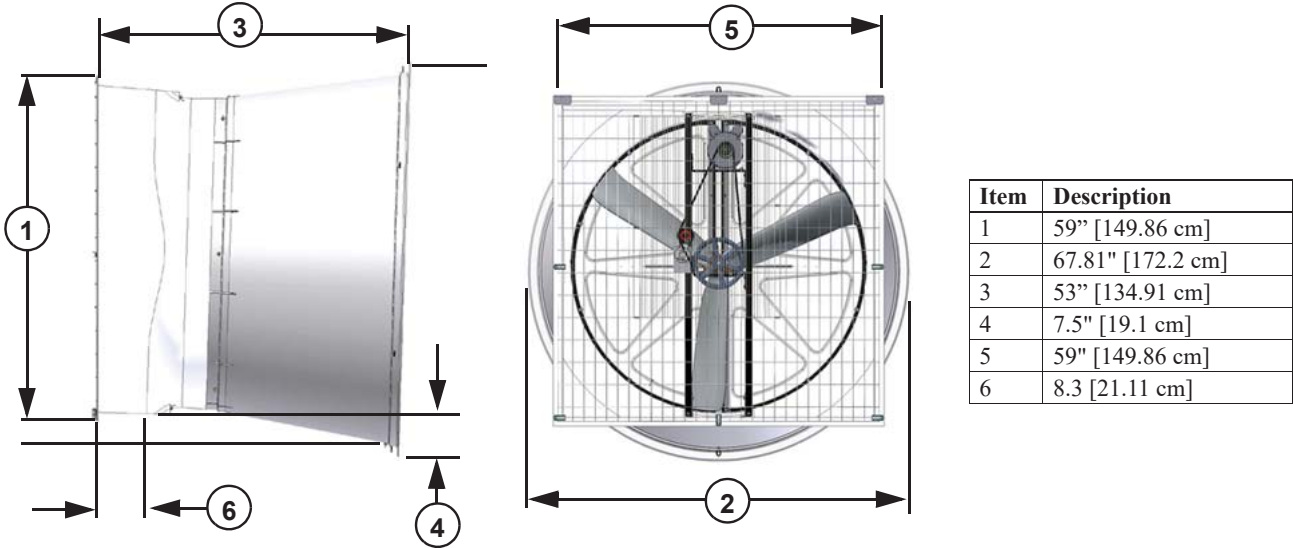


Figure 1. Fan and Framing Dimensions

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**.

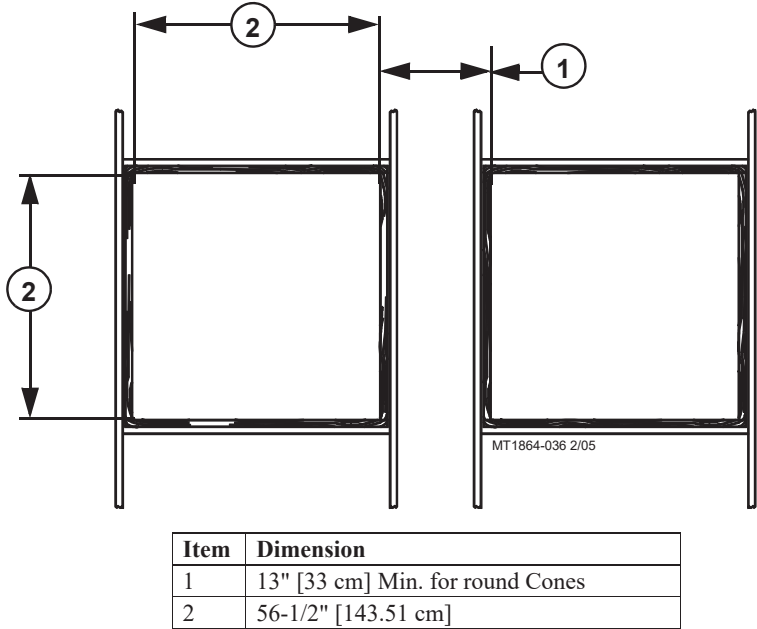


Figure 2. Rough opening Spacing

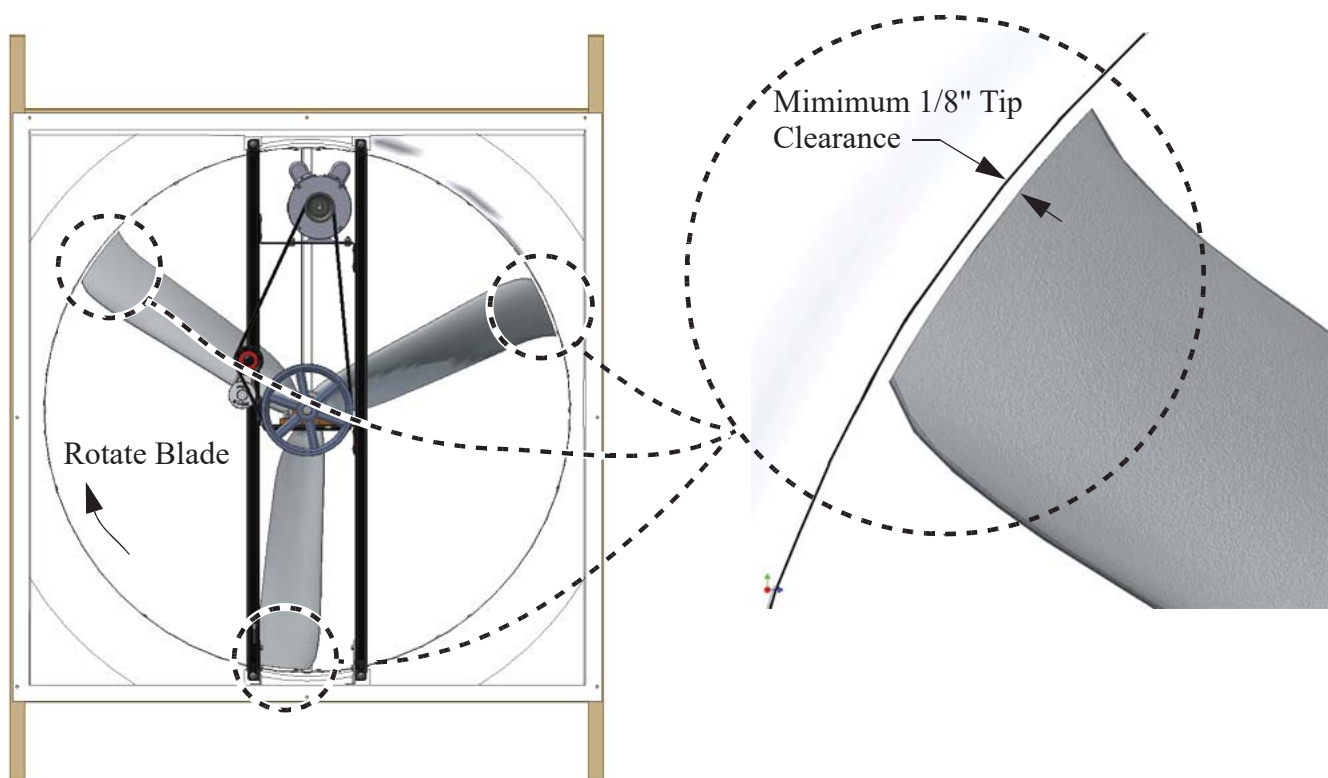
Important! The Fan Inlet and exhaust must be kept clear of obstructions. Failure to keep the Fan airflow path clear of obstructions could cause loss of Fan performance and Fan damage.

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**).

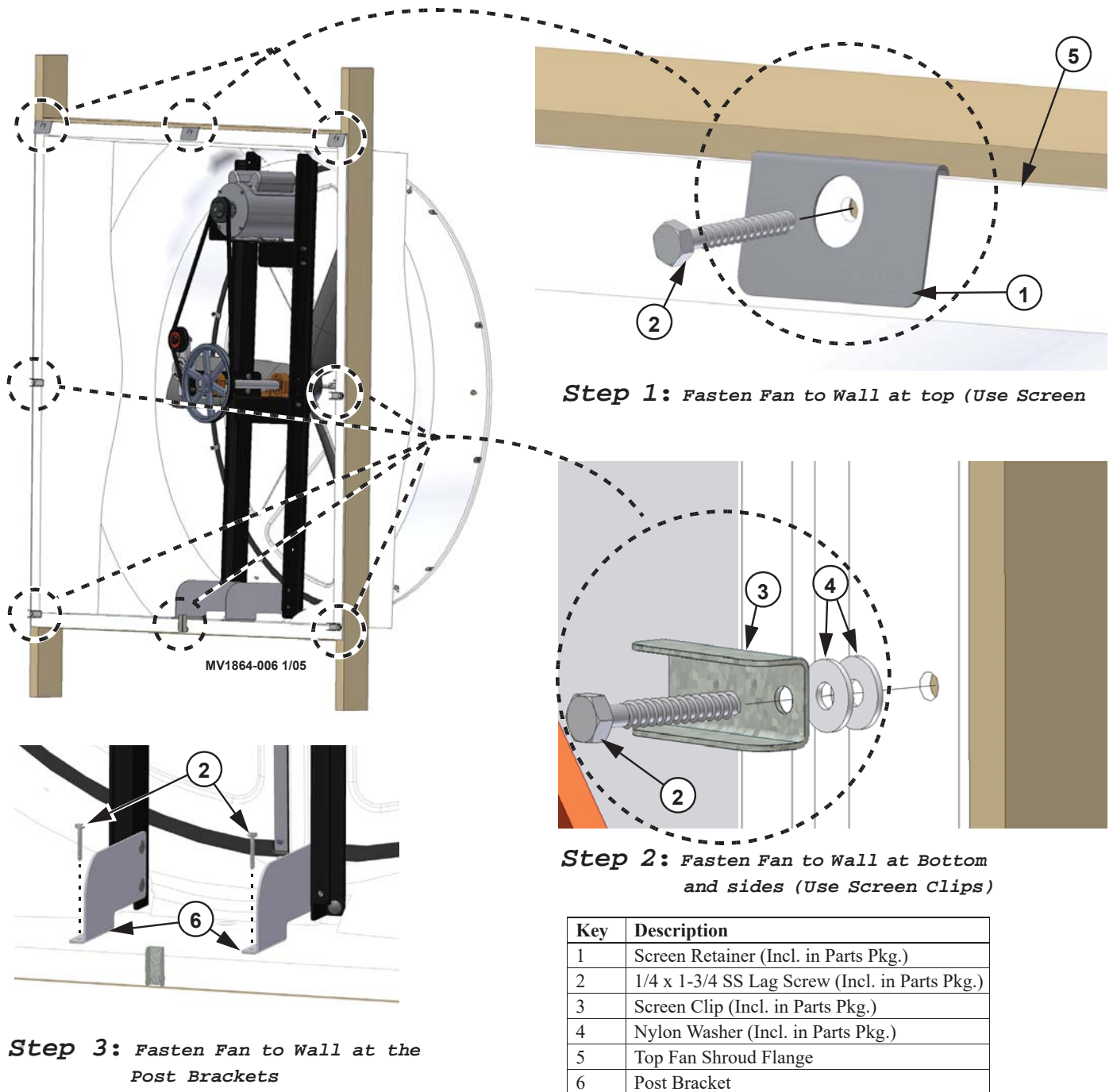


Figure 3. Installing Screen Clips

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**). Remove the Door Clip and Washer and open up the Doors (**Step 2**). You can discard the Door Clip and Washer. 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.

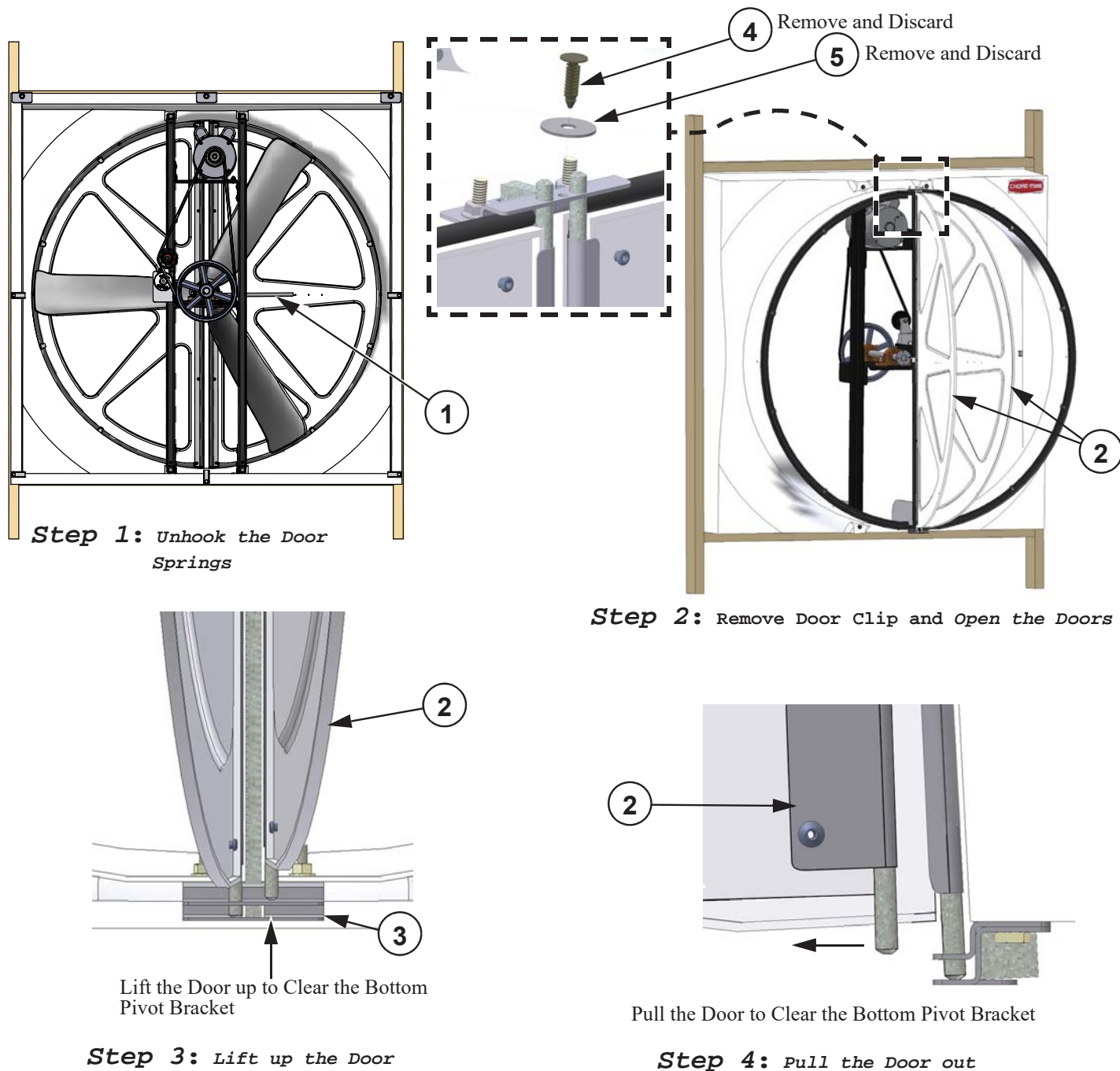


Figure 4. Removing the Doors

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**).

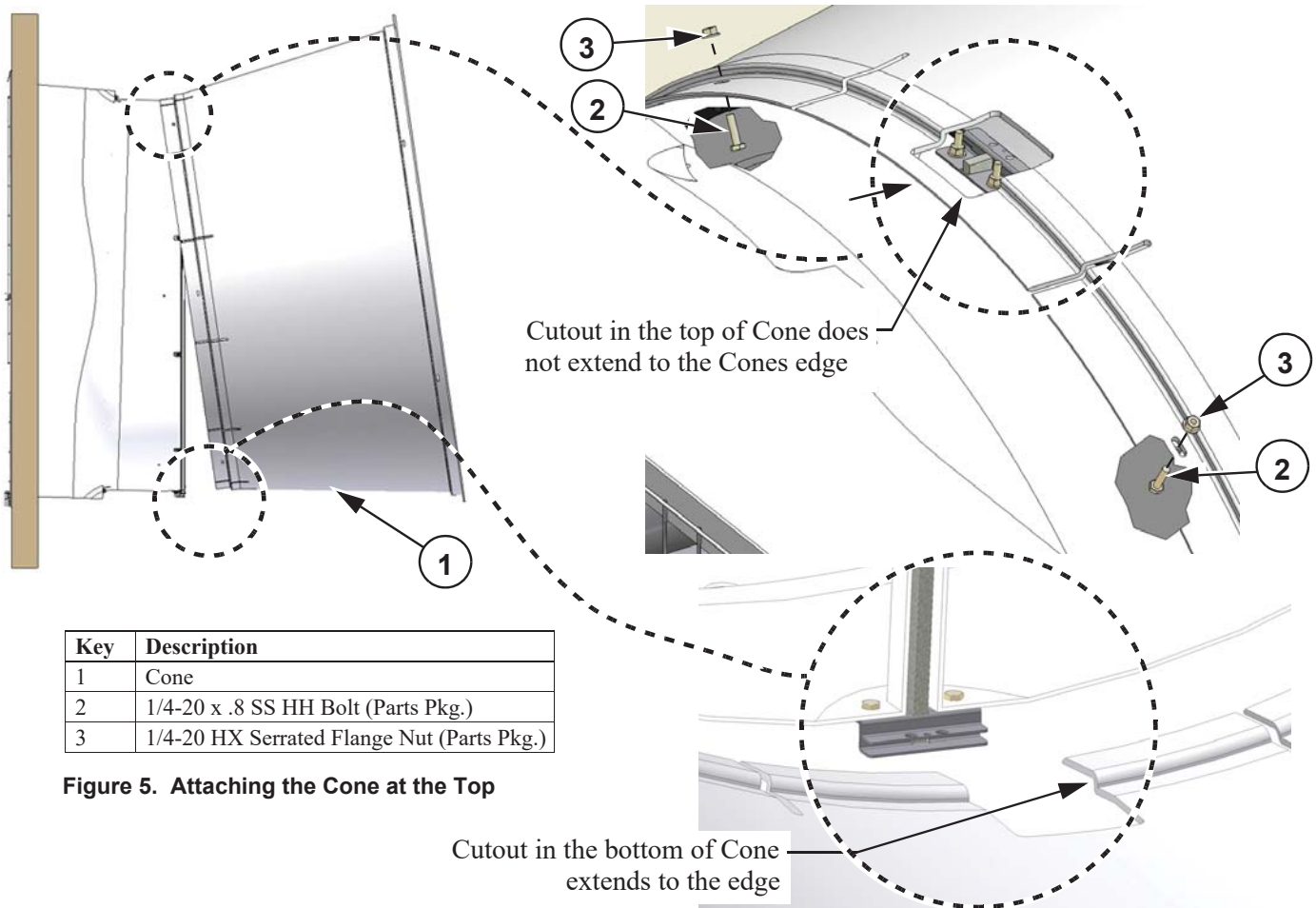
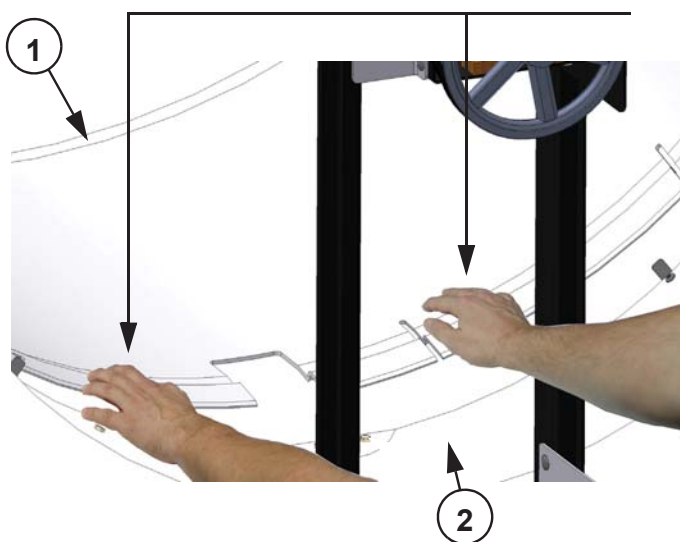


Figure 5. Attaching the Cone at the Top

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**).

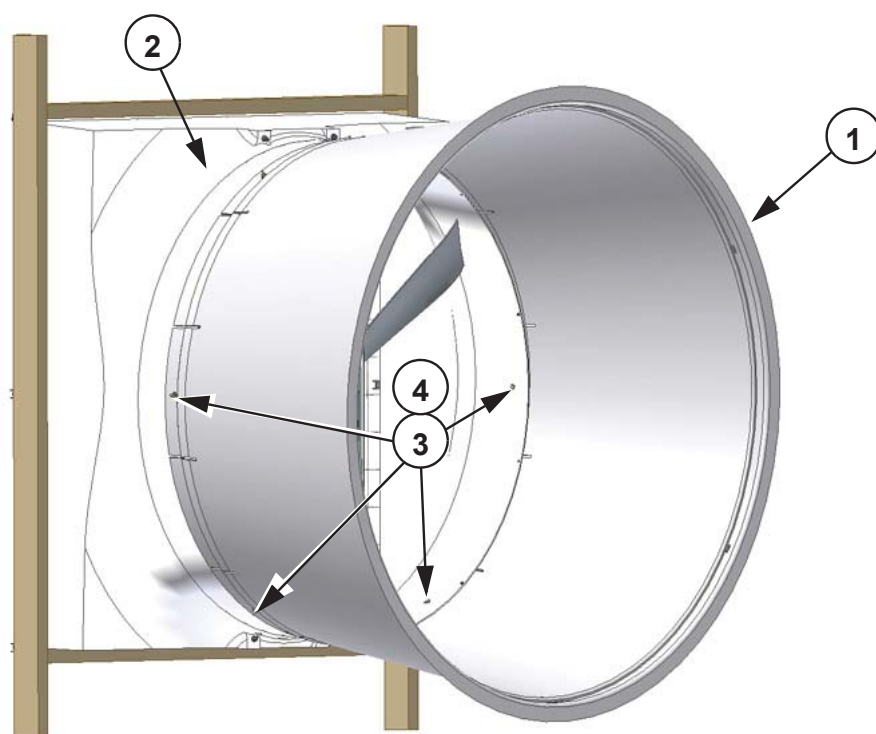


From inside of Fan push down on the Cone while a second person pushes the Cone onto Shroud from the outside.

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**).



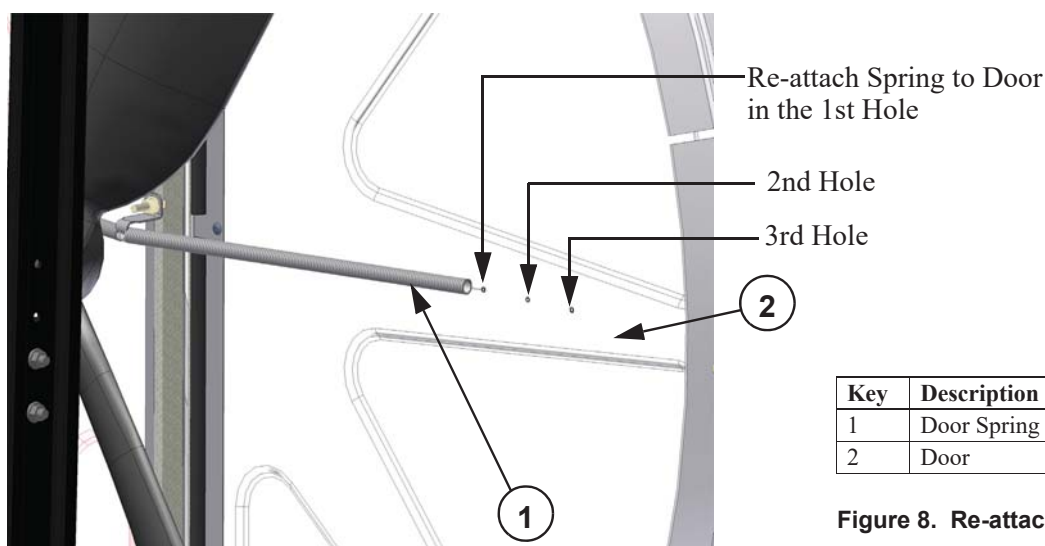
Key	Description
1	Cone
2	Shroud
3	1/4-20 x 7/8 SS HH Bolt (Included in Parts Pkg.)
4	1/4-20 HX Serrated Flange Nut (Included in Parts Pkg.)

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.

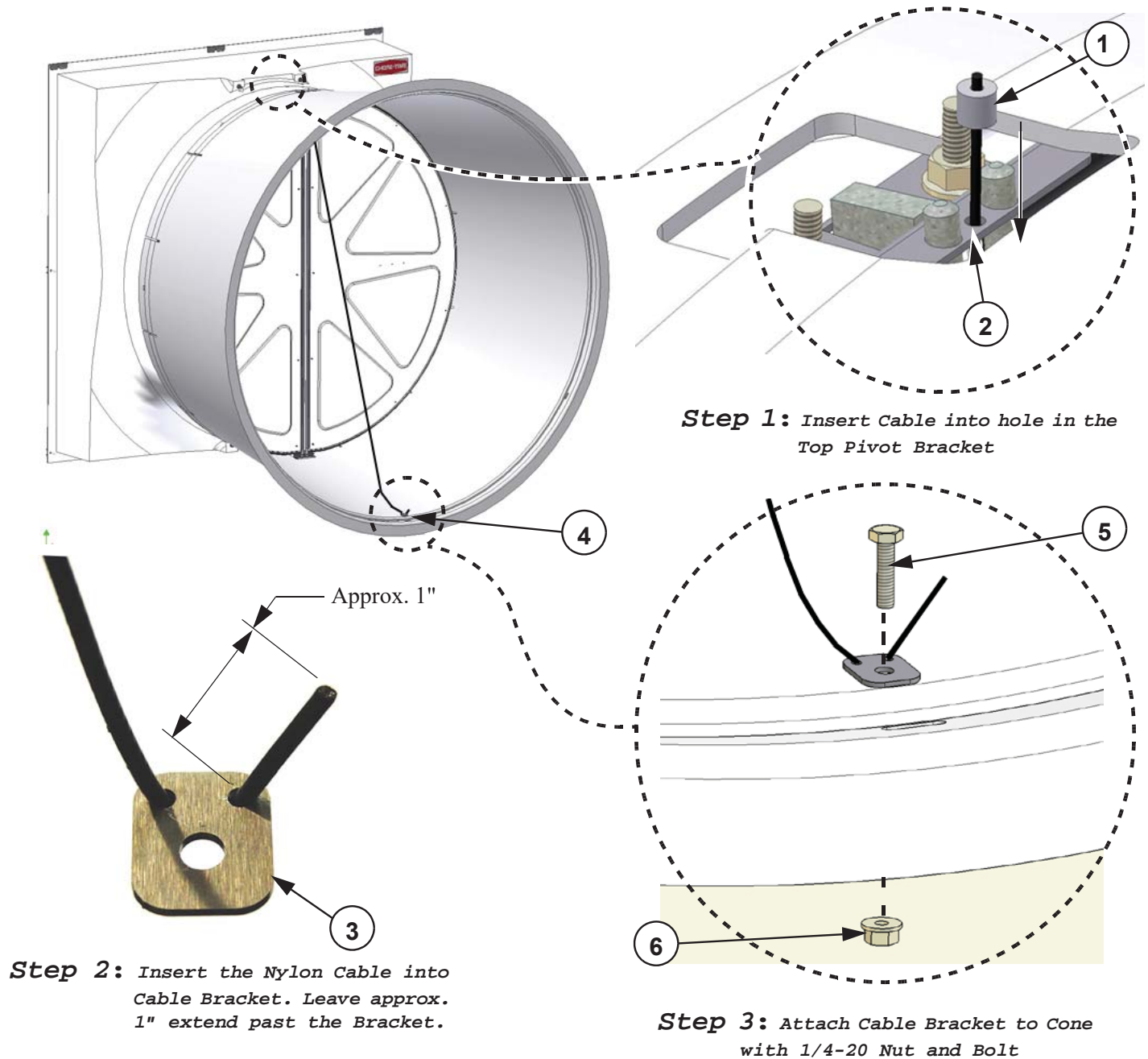


Key	Description
1	Door Spring
2	Door

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**

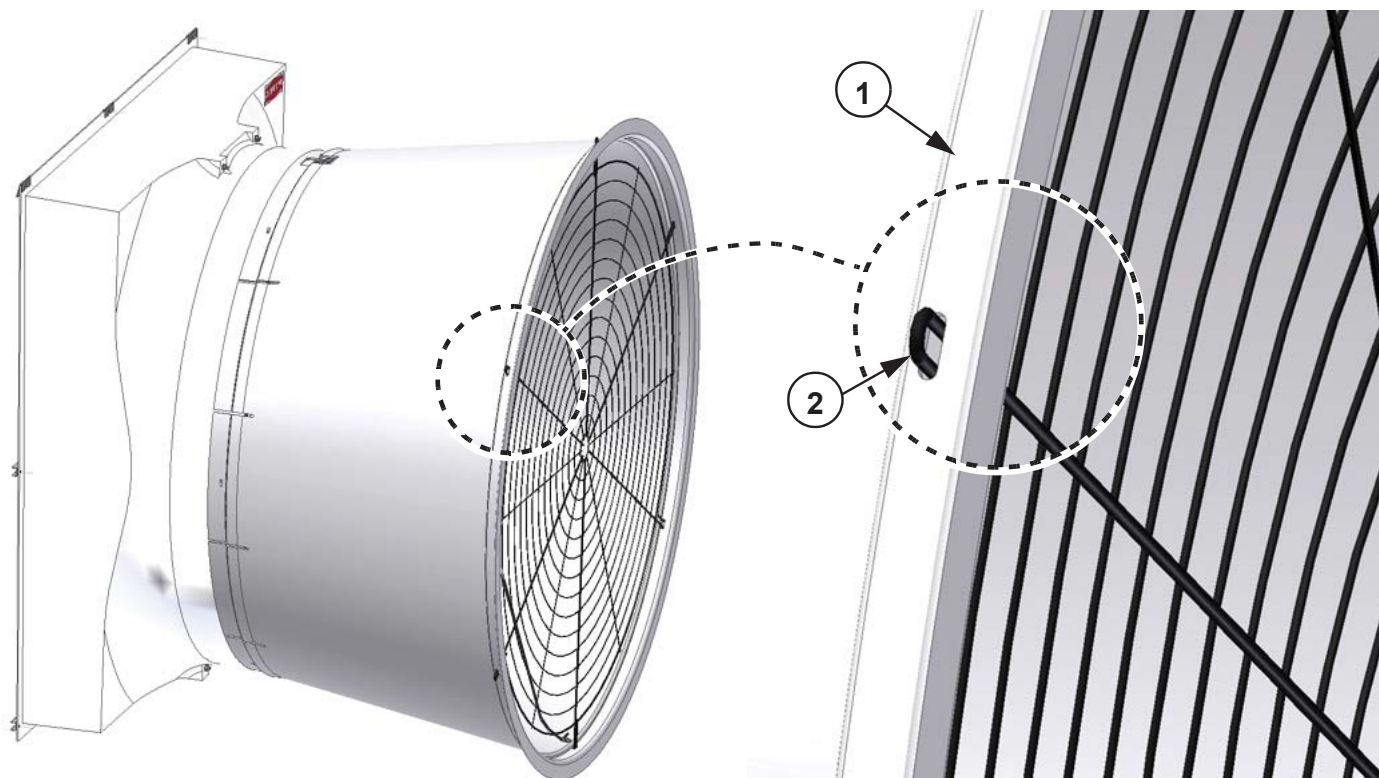


Item	Description
1	Nylon Cable
2	Top Pivot Bracket Hole
3	Cable Bracket
4	Hole in Cone
5	1/4-20 Flange Bolt
6	1/4-20 Flange Nut

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.

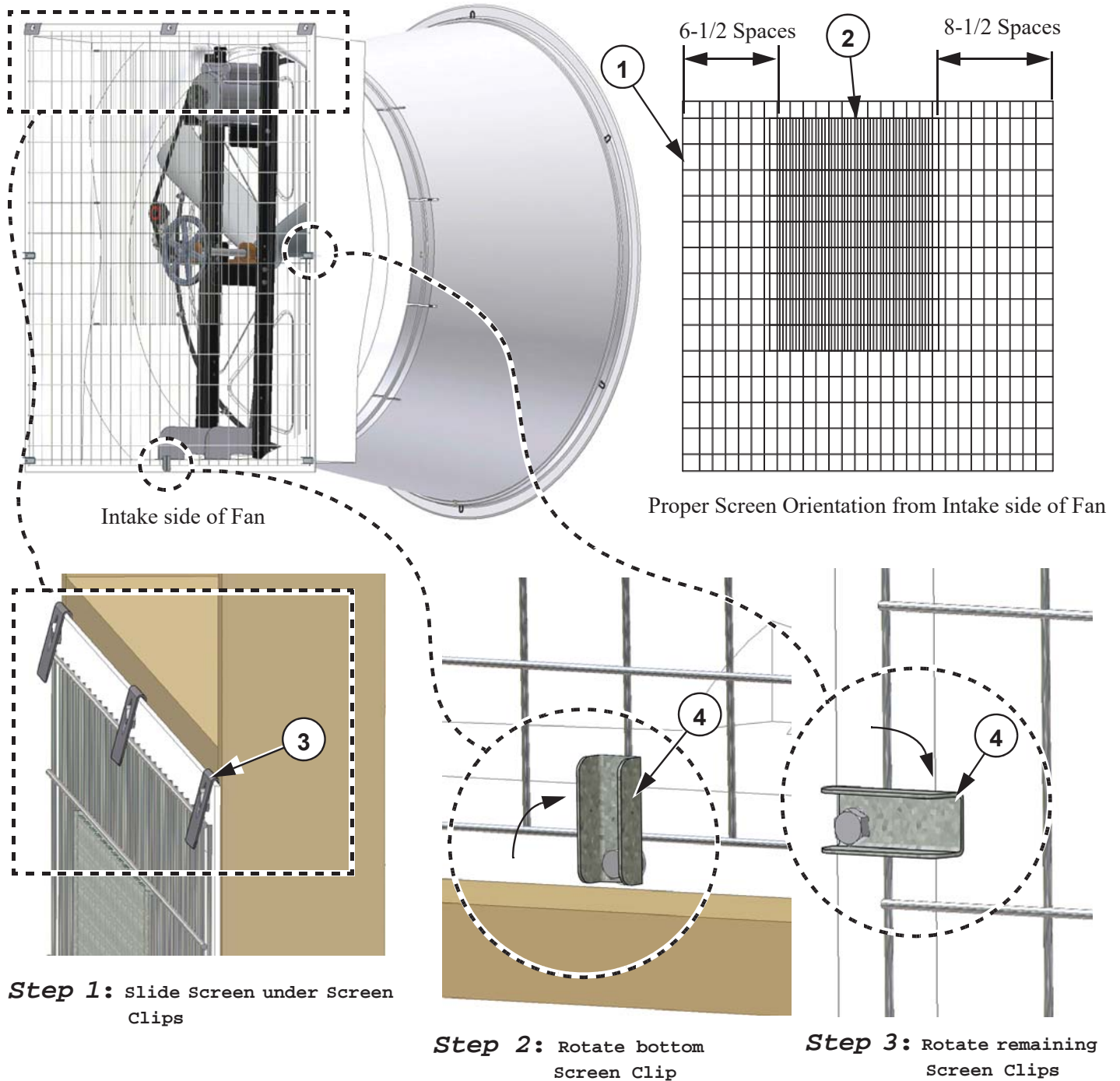


Key	Description
1	Cone
2	Grill End

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**)

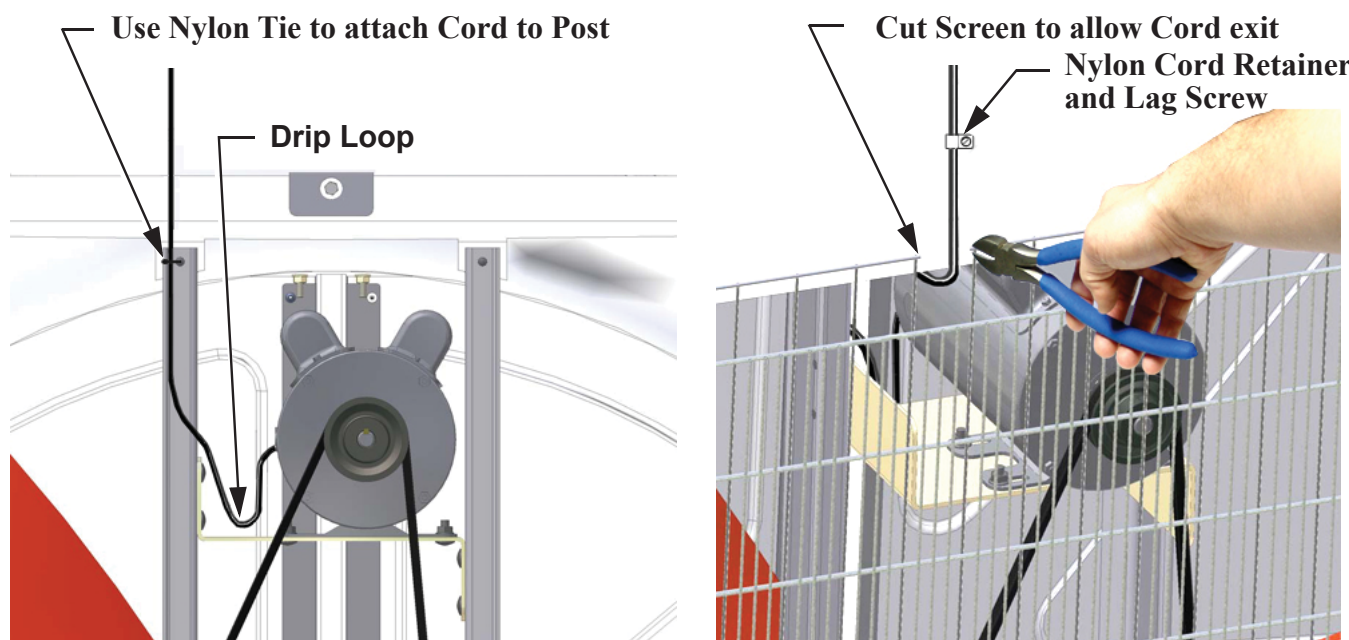


Figure 12. Wiring / Cord Routing

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 HYFLO® Doors, Blades, and Housing clear of obstacles for best air performance.

- Check Sheaves for wear. Replace if Sheave groove is worn. (See Figure 13 to the Right).

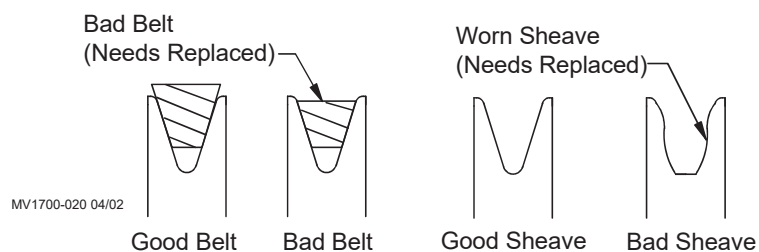
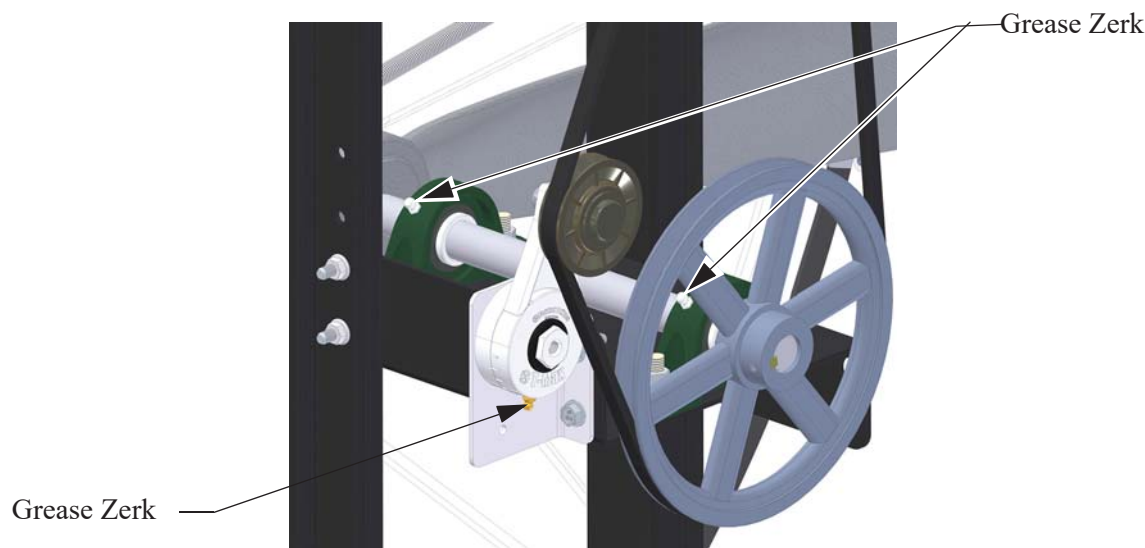


Figure 13. Worn Sheave

Fan Bearing and Belt Tensioner Lubrication

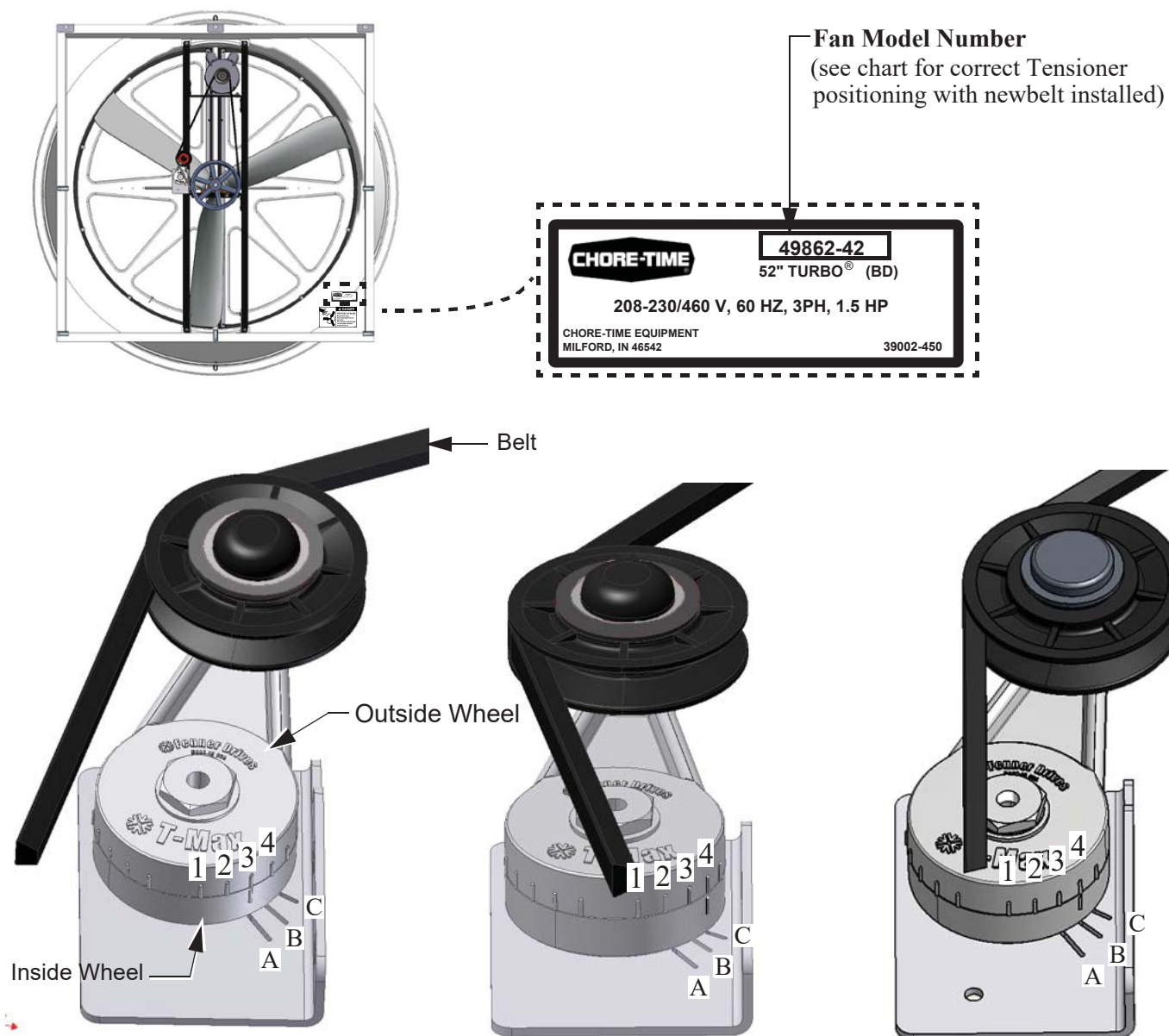
- Grease zerks are provided for lubrication on the fan shaft bearings and the belt tensioner.
- Lubricate the fan every 2-6 months or whenever these components get wet.
- Disconnect power to the fan before lubricating.
- Clean the zerk before lubricating to prevent contamination from entering the bearing.
- Use a high quality lithium based, NLGI #2, grease such as Shell Gadus S2 V100 2. Do not use incompatible greases containing aluminum, barium, calcium, bentonite clay or polyurea thickeners.
- Slowly rotate the fan shaft by hand while slowly applying the grease. Rapidly applying grease to a stationary bearing can damage the bearing seals.
- Apply about .10 oz (2.8 g, 3.1 cc) of grease at a time or until a slight amount of grease can be seen purging from the seal.



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.



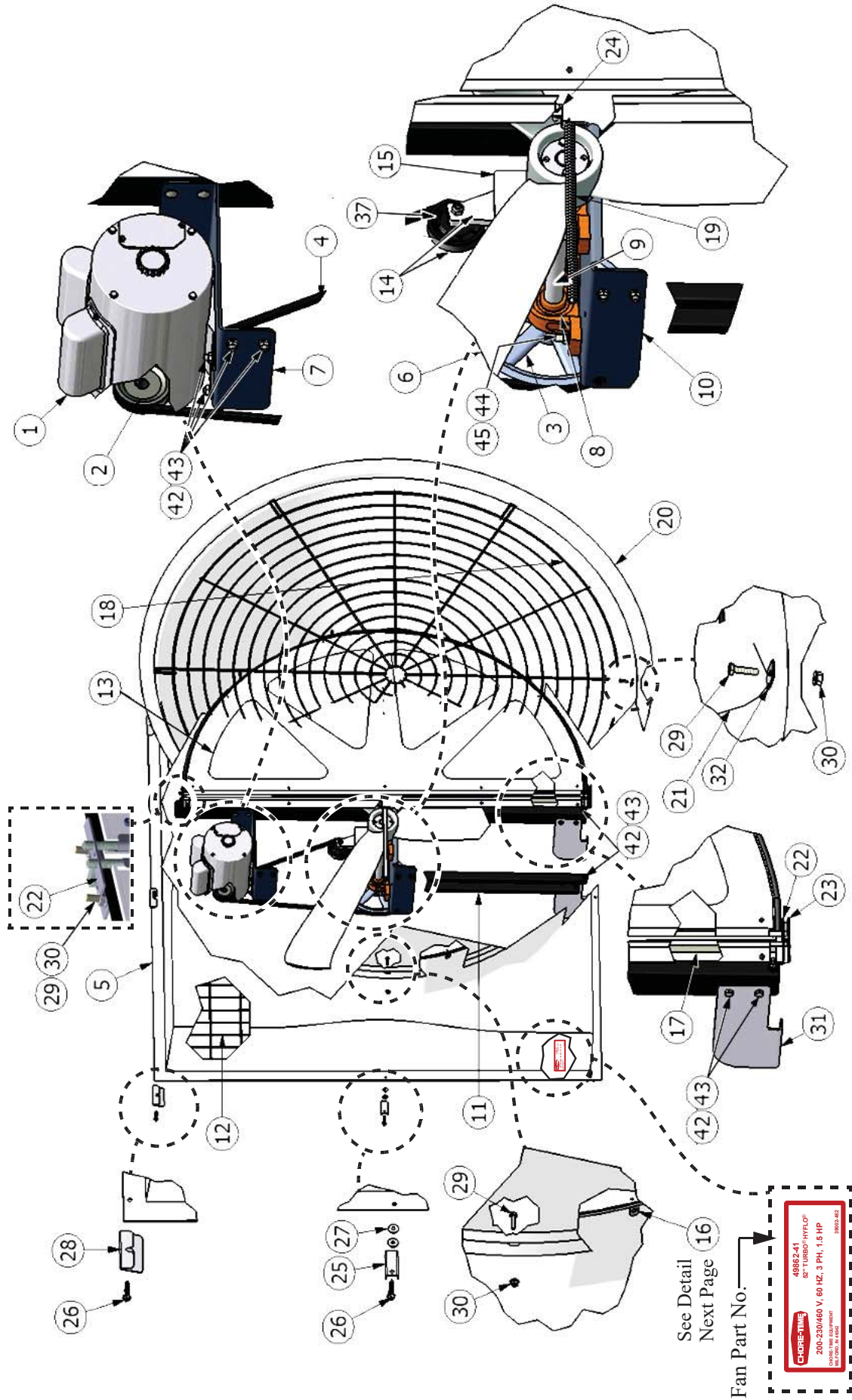
Fan Part No.	Tensioner Position
49862-22 Series	3rd Notch
49862-42 Series	"A" etched mark

Fan Part No.	Tensioner Position
49862-21 Series	4th Notch
49862-41 Series	"C" etched mark

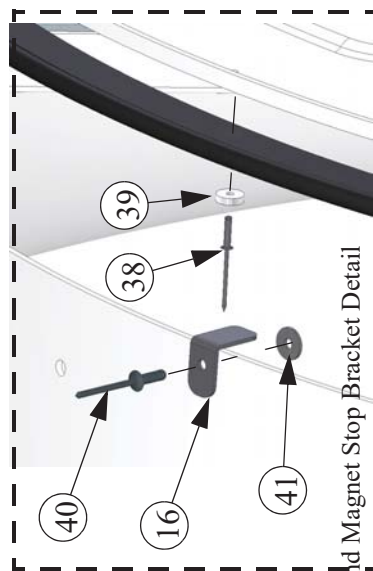
Fan Part No.	Tensioner Position
49862-51 Series	4th Notch
	"B" etched mark

Figure 14. Tensioner position

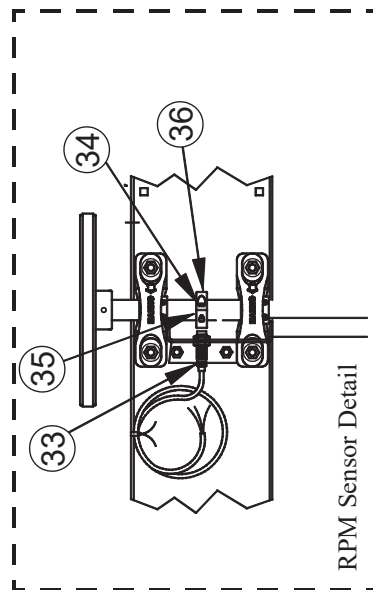
Part Numbers



Itemized Part Numbers



Magnet and Magnet Stop Bracket Detail



RPM Sensor Detail

52" TURBO® Fan with HYFLO® Door 49862-XX (Sub Assembly) See page 1 for ordered Fan Part Number				
Item	Part Description	Part No.	Models-XX	Models-XX
1	Motor, 3ph, 1.5hp, 60-230V	48608	-42,-41,-51,-51B	See Page 1
	Motor, 1ph, 1.5hp, 60-230V	50496	-22,-21	See Page 1
2	Sheave, 3" Motor (AK30)	8773	All	All
	Pulley, 3.45" Driven (AK34)	37919	-51,-51B	All
3	Sheave, 8.25" Driven (AK84)	28143	-21,-41	All
	Sheave, 9.25" Driven (AK94)	40274	-22,-42	All
	Sheave, 7.75" Driven (AK79)	41989	-51,-51B	All
4	V-Belt (AX59)	48615	-21,-41	All
	V-Belt (AX60)	48430	-22,-42	All
	V-Belt (AX58)	46676	-51,-52	All
5	Shroud, 52" (White Interior)	55204*	-22,-21,-42,-41,-51	All
	Shroud, 52" (Black Interior)	55204B*	-21B,-22B,-41B,-42B,-51B	All
6	Blade, Cast Aluminum w/ Bushing	49731	All	All
7	Motor Support	49734	All	All
8	Bearing, 1" Pillow Block	50553	All	-41BS,-41S
9	Shaft, 1" dia. x 15.75" SS	49822	All	-41BS,-41S
10	Bearing Support	49735	All	-41BS,-41S
11	Fan Post	49733	All	-41BS,-41S
12	Screen, 52" HYFLO® TURBO® Fan	50049	All	All
13	Door Assembly (White)	49767	-21,-22,-41,-42,-51	All
	Door Assembly (Black)	49767B	-21B,-22B,-41B,-42B,-51B	All
14	Tensioner Assembly	48429	All	All
15	Tensioner Support	49737	All	All
16	Magnet Stop Bracket	49738	All	All
17	Fan Post Brace	49900	All	All
18	Grill	49693	All	All
19	Spring, .055 x .50 O.D. x 11"	49629	All	All
*Includes items 16,40 and 41				

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Limited Warranty

Chore-Time Group, a division of CTB, Inc. ("Chore-Time") warrants new CHORE-TIME Turbo® Fans manufactured by Chore-Time to be free from defects in material or workmanship under normal usage and conditions, for One (1) year from the date of installation by the original purchaser ("Warranty"). Chore-Time provides for an extension of the aforementioned Warranty period ("Extended Warranty Period") with respect to certain Product parts ("Component Part") as set forth in the table below. If such a defect is determined by Chore-Time to exist within the applicable period, Chore-Time will, at its option, (a) repair the Product or Component Part free of charge, F.O.B. the factory of manufacture or (b) replace the Product or Component Part free of charge, F.O.B. the factory of manufacture. This Warranty is not transferable, and applies only to the original purchaser of the Product.

Component Part	Extended Warranty Period
TURBO® Fan fiberglass housings and cast aluminum blades	For as long as the original purchaser owns the product.
TURBO® Fan motors and bearings	Two years from date of installation.
TURBO® Fan components, including plastic shutters, fiberglass doors, and polyethylene cones	Three years from date of installation.

CONDITIONS AND LIMITATIONS

THIS WARRANTY CONSTITUTES CHORE-TIME'S ENTIRE AND SOLE WARRANTY AND CHORE-TIME EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, EXPRESS AND IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES. CHORE-TIME shall not be liable for any direct, indirect, incidental, consequential or special damages 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. *Some jurisdictions prohibit limitations on implied warranties and/or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the original purchaser specific legal rights. You may also have other rights based upon your specific jurisdiction.*

Compliance with federal, state and local rules which apply to the location, installation and use of the Product are the responsibility of the original purchaser, and CHORE-TIME shall not be liable for any damages which may result from non-compliance with such rules.

The following circumstances shall render this Warranty void:

- Modifications made to the Product not specifically delineated in the Product manual.
- Product not installed and/or operated in accordance with the instructions published by the CHORE-TIME.
- All components of the Product are not original equipment supplied by CHORE-TIME.
- Product was not purchased from and/or installed by a CHORE-TIME authorized distributor or certified representative.
- Product experienced malfunction 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.
- Product experienced corrosion, material deterioration and/or equipment malfunction caused by or consistent with the application of chemicals, minerals, sediments or other foreign elements.
- Product was used for any purpose other than for the care of poultry and livestock.

The Warranty and Extended Warranty may only be modified in writing by an officer of CHORE-TIME. CHORE-TIME shall have no obligation or responsibility for any representations or warranties made by or on behalf of any distributor, dealer, agent or certified representative.

Chore-Time Group. A division of CTB, Inc.
 PO Box 2000
 Milford, Indiana 46542-2000 USA
 Phone (574) 658-4101 Fax (877) 730-8825
 E-mail: www.choretimepoultry.com
 Internet: poultry@choretime.com

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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BUILT TO LAST.®

Revisions to this Manual

Page No.	Description of Change	ECO
1	Added Bess Lab Test Numbers and Sub Assembly Part Numbers	33151
15	Added -51 models to Parts List	

CTB, Inc.
PO Box 2000
Milford, Indiana 46542-2000 USA
Phone (574) 658-4101 Fax (877) 730-8825
E-mail: www.choretimepoultry.com
Internet: poultry@choretime.com