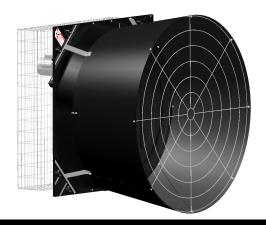


# 57" Endura® Fan Installation & Operator's Instruction Manual

**Thank You** The employees of CTB Inc. would like to thank you for your recent Chore-Time purchase. If a problem should arise, your Chore-Time distributor can supply the necessary information to help you.





## **Fan Part Numbers and Specifications**

								Static Pressure at .10" w.c. [25 Pa]		Static Pressure at .15" w.c. [37.5 Pa]	
Fan Part No.	Bess Lab Test No.	Voltage	Phase	Hz	Nominal RPM	Amps	Starting Amps	CFM [cmh]	CFM/W [cmh/W]	CFM [cmh]	CFM/W [cmh/W]
53464-21 53464-21S	12615	230	1	60	542	6.9	36.0	30400 [51600]	20.4 [34.7]	28400 [48200]	18.1 [30.7]
53464-22 53464-22S	12614	230	1	60	543	5.4	27.5	27100 [46100]	23 [39.1]	25100 [42700]	20.1 [34.2]
53464-23	17224	230	1	60	538	4.0	27.5	21200 [36000]	24.6 [41.7]	18900 [32200]	20.8 [35.3]
53464-41 53464-41S	12616	230	3	60	534	4.8	40.0	30000 [51100]	20.9 [35.6]	27800 [47200]	18.1 [30.8]
53464-42 53464-42S	12619	230	3	60	539	4.1	40.0	26900 [45600]	23.3 [39.6]	24800 [42200]	20.4 [34.6]
53464-51 53464-51S	12617	230	3	50	527	5.2	45.0	29500 [50100]	20.8 [35.3]	27200 [46200]	18.1 [30.8]
53464-52 53464-52S	12618	230	3	50	534	4.7	45.0	26500 [45100]	22.9 [38.9]	24500 [41600]	20.1 [34.1]



Operating static pressure should be less than 0.15 inches water column [37.5 Pa].

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.

August 2018 MV2406P

Safety Information 57" Endura<sup>®</sup> Fan

#### **Safety Information**

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.

#### **DANGER: Electrical Hazard**

Disconnect electrical power before inspecting or servicing equipment. 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 these things will cause serious injury including death.





#### Warranty

#### LIMITED WARRANTY

Chore-Time Group, a division of CTB, Inc. ("Chore-Time") warrants new CHORE-TIME Endura 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	<b>Extended Warranty Period</b>
Endura® Fan Housing and Cones (Including Composite Shrouds, Composite Doors and HDPE Cone Panels)	Five (5) Years

#### **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, WIHTOUT 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:

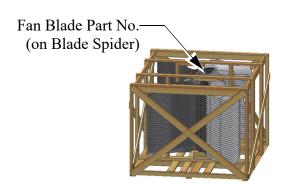
- · Modifications made to the Product not specifically delineated in the Product manual.
- · Product not installed and/or operated in accordance with the instructions published by the CHORE-TIME.
- · All components of the Product are not original equipment supplied by CHORE-TIME.
- · Product was not 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.

## **Un-Assembled Parts Packages**



(53843-XX) Component Package

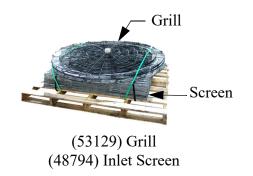


Fan Blade Package (53219-XX, 53532-XX, 54529-XX, or 54530-XX)



(53850-**XX**)
Shroud and Door Package







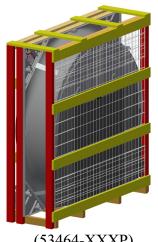


(53753-1, -2, -1S, -2S) Drive Assembly 1 or 2 Drives per Box

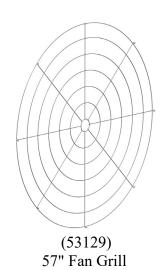
Un-Assembled 57" Endura® Fan Component Part Numbers

Fan Part No.	Drive Assembly	Motor	Hardware Pkg.	Fan Blade		
53464-21	53753-1	50496	53788-21XX	53219		
53464-21S	53753-1S	50496	53788-21XXS	54529		
53464-22	53753-1	49903	53788-22XX	53532		
53464-22S	53753-1S	49903	53788-22XXS	54530		
53464-41	53753-1	48608	53788-41XX	53219		
53464-41S	53753-1S	48608	53788-41XXS	54529		
53464-42	53753-1	48608	53788-42XX	53532		
53464-42S	53753-1S	48608	53788-42XXS	54530		
53464-51	53753-2	48608	53788-51XX	53219		
53464-51S	53753-2S	48608	53788-51XXS	54529		
53464-52	53753-2	48608	53788-52XX	53532		
53464-52S	53753-2S	48608	53788-52XXS	54530		
XX= Number of Fans that can be built with components in Package.						

## **Assembled Fan Component Part Numbers**



(53464-XXXP) Fan Assembly



Assembled 57" Endura® Fan Component Part Numbers

Part Numb	er	53464-21	53464-21S	53464-22	53464-22S	53464-23	53464-41	53464-41S	53464-42	53464-42S	53464-51	53464-51S
	Qty											
Fan Assembly	1	53464-21P	53464-21PS	53464-22P	53464-22PS	53464-23P	53464-41P	53464-41PS	53464-42P	53464-42PS	53464-51P	53464-51PS
Fan Grill	1	53219	53219	53219	53219	53219	53219	53219	53219	53219	53219	53219
Diverter Kit	1			I		53057	-					

## **Hardware Needed Per Fan (Un-Assembled)**

57" Endura® Fan Hardware Items Per Fan Items are Bulk packed in 53788-AAXX, or 53788-AAXXS (See previous page).						
Item	Qty.	Description	Part No.			
1	1	Bottom Pivot Plate	53036			
2	1	Top Pivot Plate	53037			
3	4	Door Hinge Pin	53038			
4	1	1/4 x 1-1-8" Sq. Key (For Blade)	2419-2			
5	40	5/16-18 x 1 SS Hx Hd Shoulder Bolt	54287			
6	55	5/16-18 Hx. Serrated SS Flange Nut	46764			
7	2	.38 SS Flat Washer	ST99070			
8	1	72.5" Fan Cone Cable	53399			
9	1	5/16-18 x 3" Eye Bolt	30663			
10	2	Ø1/2" x 11" Door Spring	49629			
11	24	1/4-10 x 1-1/2" Lag Screw SS	41561			
12	7	Open Eye Hook	1214			
13	1	Screen Spring (4 pc. per package)	54480-4			
14	6	Orifice Frame Bracket	53611			
15	2	Cable Clamp	732			
16	1	Fan Description Decal	39002-XXX			
17	1/3	Anti-Seize Lubricant	47749			
18		57" Endura <sup>®</sup> Fan Instruction Manual	MV2406			

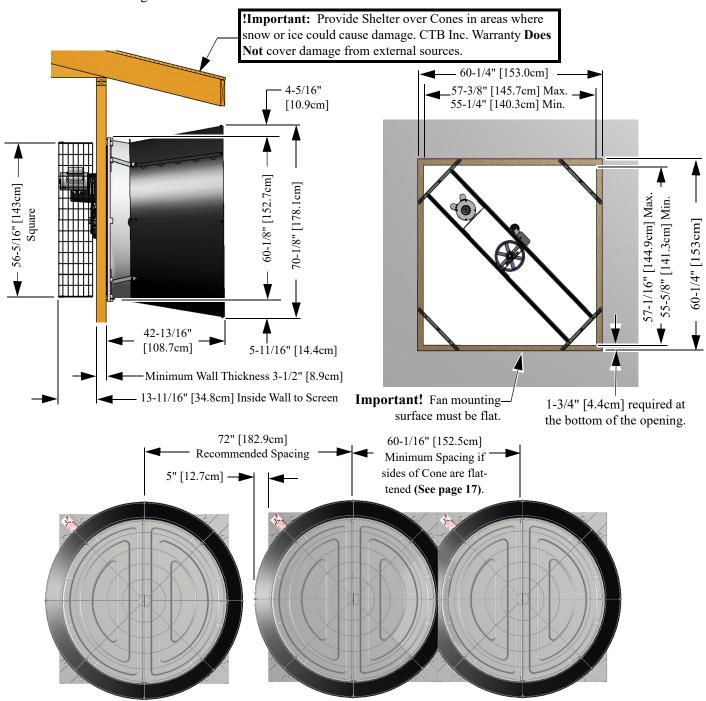
Tools Needed and Supplies 57" Endura® Fan

## **Tools Needed and Supplies**

3/8" socket, 1/2"socket or wrench, Side cutters, 1/4" nut driver, Motor power cord, Wire nuts / terminals, Optional screw hook installation tool (CTB part number 13150-1), Caulking, 5/32" allen wrench (un-assembled)

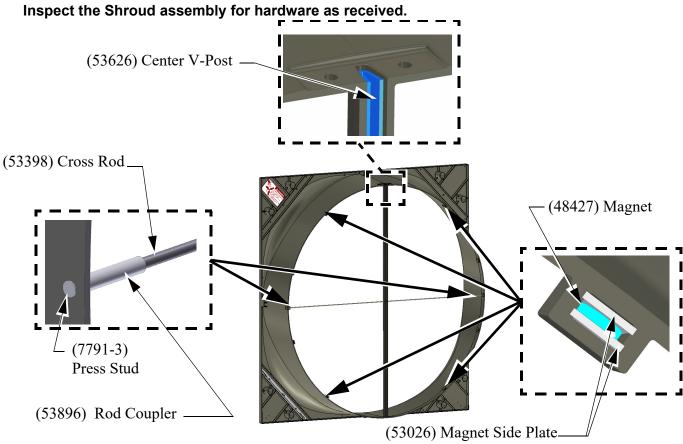
### **New Installation Planning**

Planning the layout of the spacing between Fans is very important. Spacing too close together will cause interference between the discharge Cones.



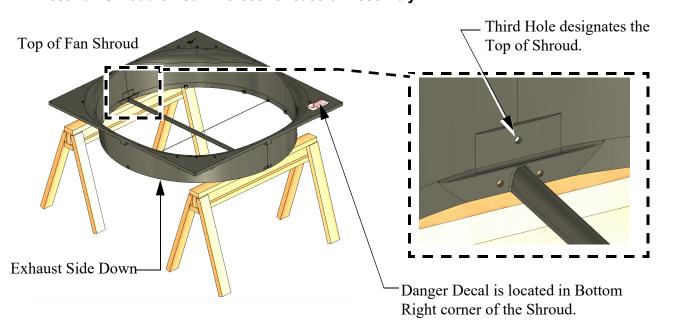
## Installation

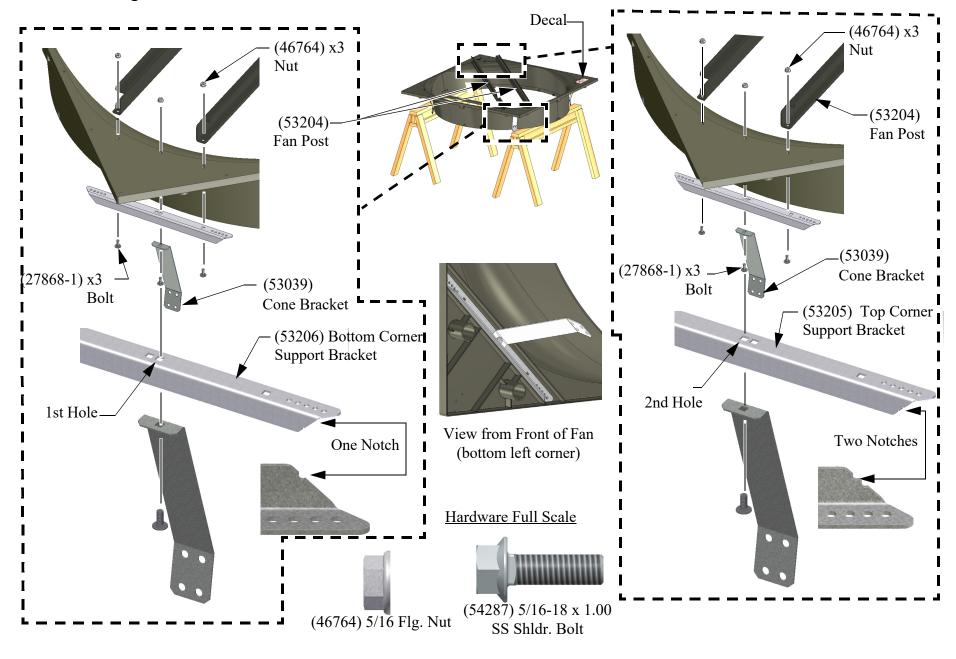
## Inspecting the Shroud (For assembled versions skip to page 12)

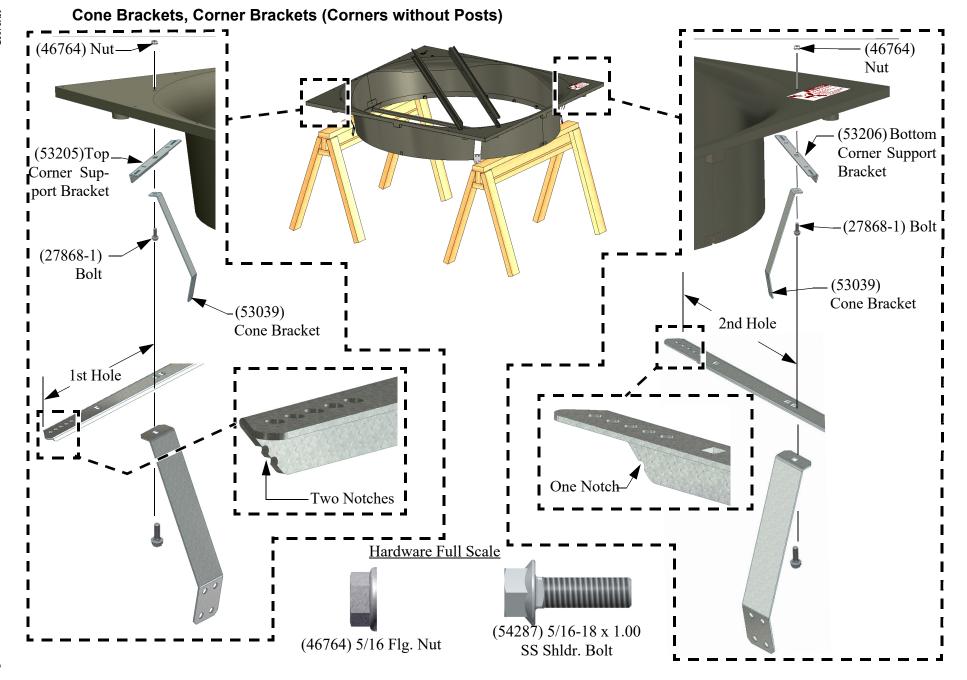


#### Fan Shroud Assembly (Unassembled version)

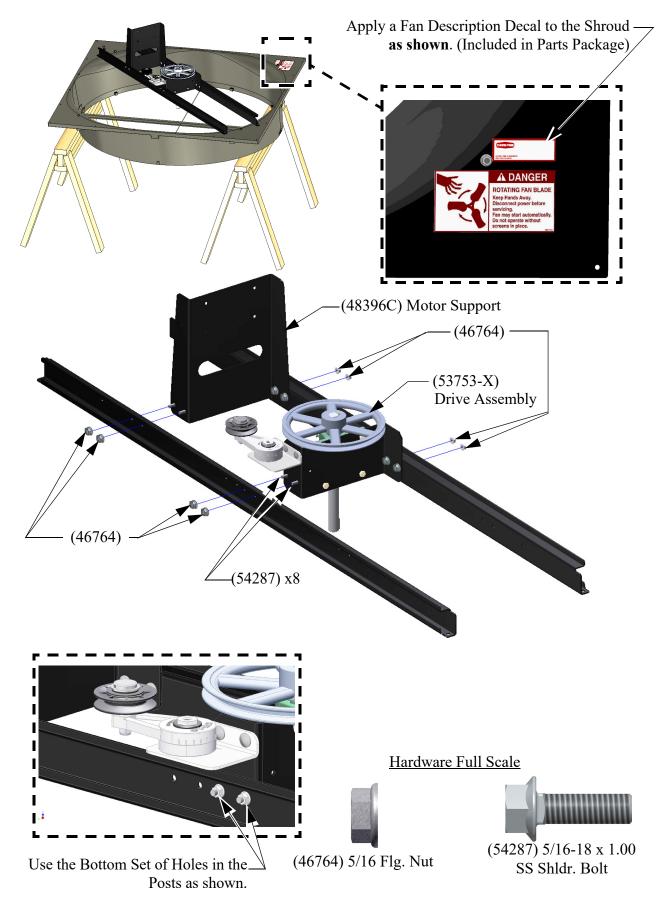
Rest Fan Shroud on Saw Horses for ease of Assembly



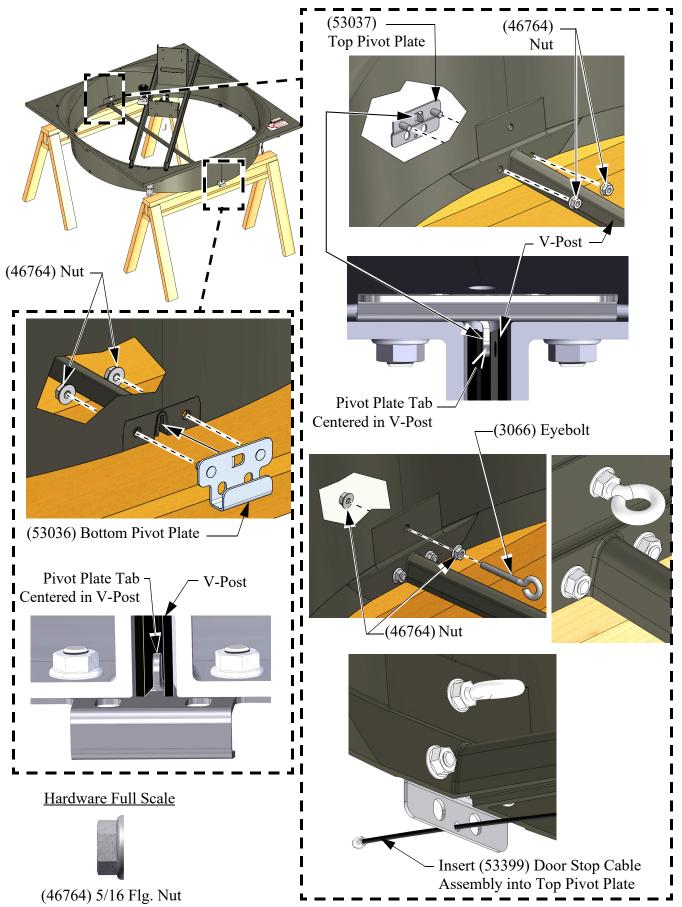




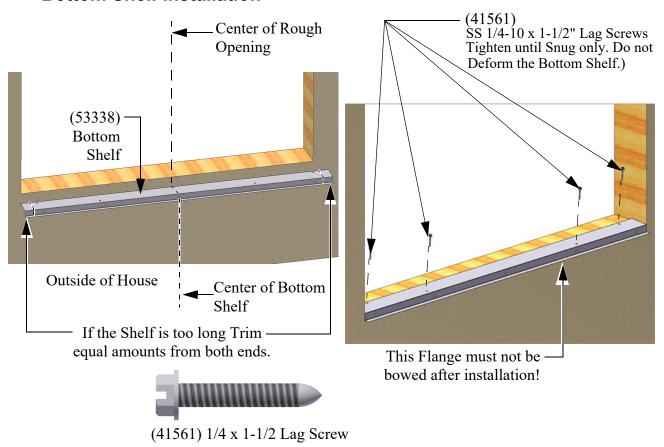
#### **Installing the Drive Assembly and Motor Mount**



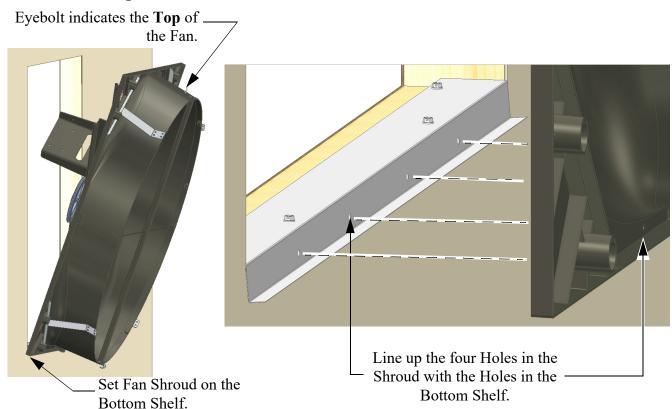
#### Top and Bottom Pivot Plates and Eyebolt, Door Stop Cable



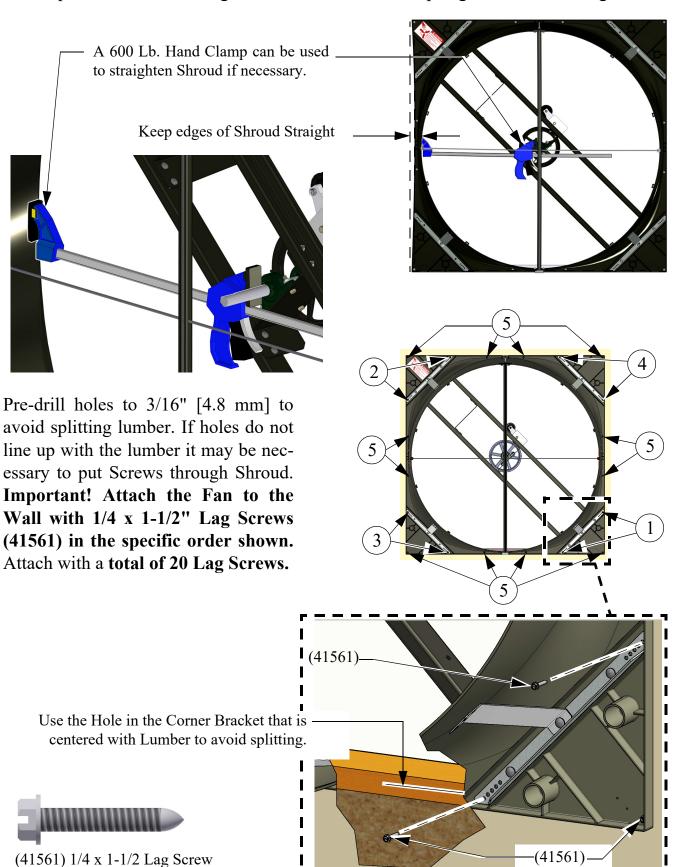
#### **Bottom Shelf Installation**



#### Attaching the Fan to the Wall

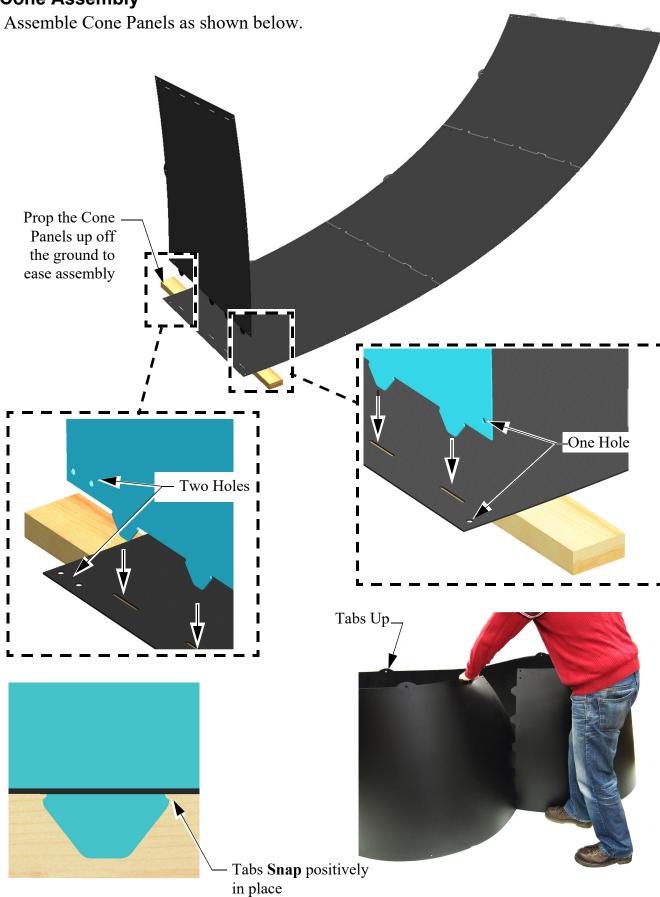


It is important when attaching the Fan to the Wall to keep edges of Shroud straight.

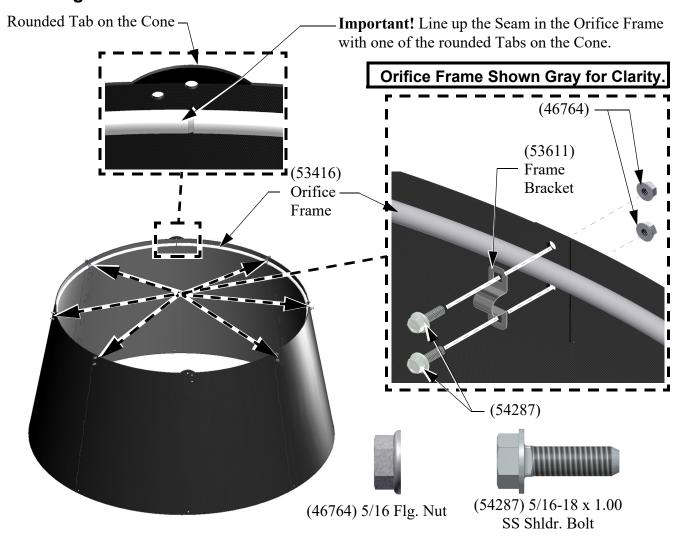


Installation 57" Endura<sup>®</sup> Fan

## **Cone Assembly**

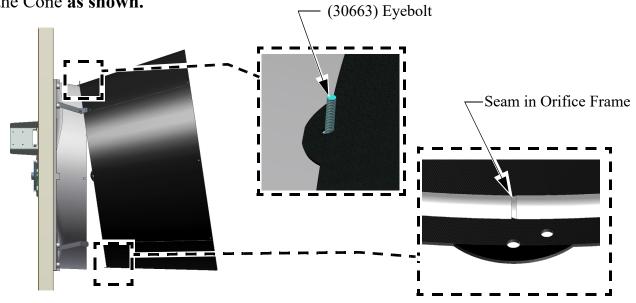


#### **Installing the Orifice Frame**

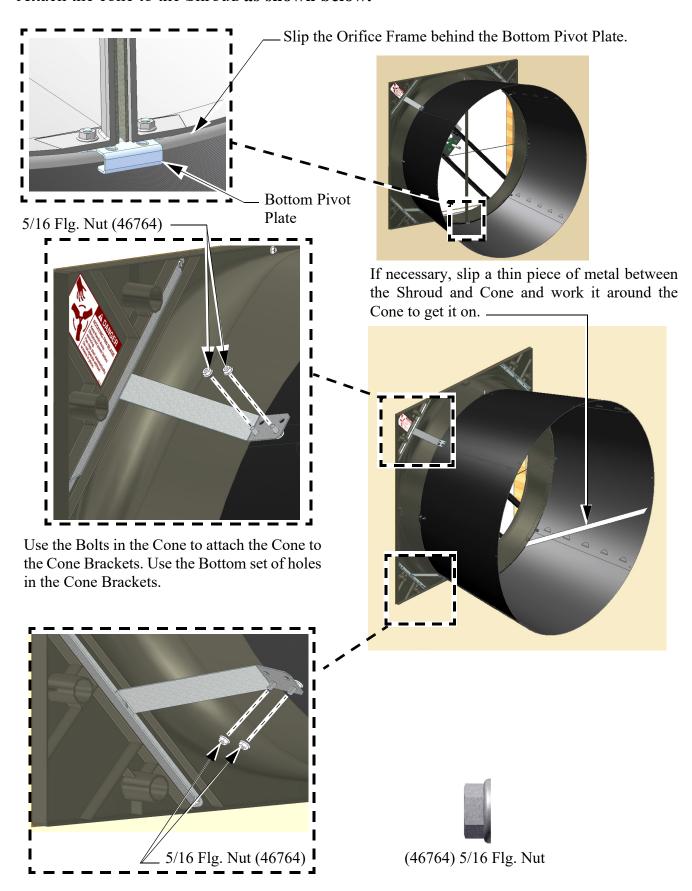


#### **Cone Installation**

Hang the Cone on the Eye-Bolt extruding from the top of the Shroud using the hole in the Cone as shown.

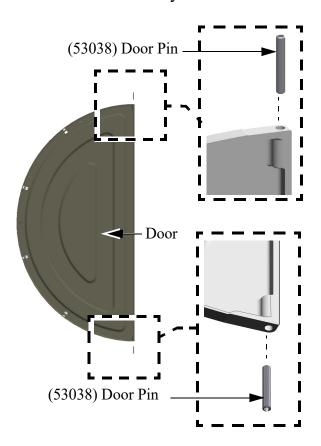


Attach the cone to the Shroud as shown below.

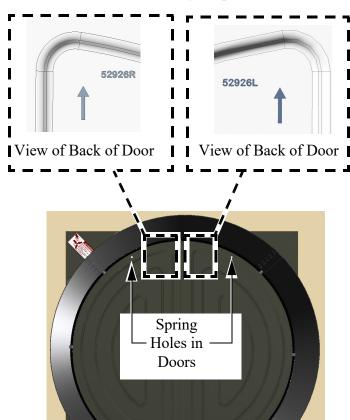


#### **Door Assembly and Installation**

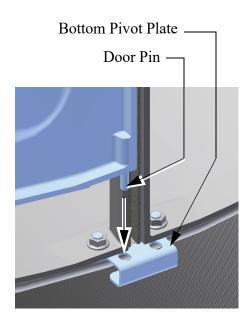
Insert Door Pins in both Doors as shown. Push Pins in until they bottom out.



Doors are Left and Right specific.

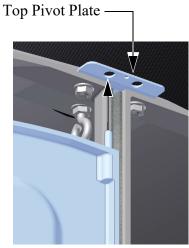


Insert Door Pins into Bottom Pivot Plate.



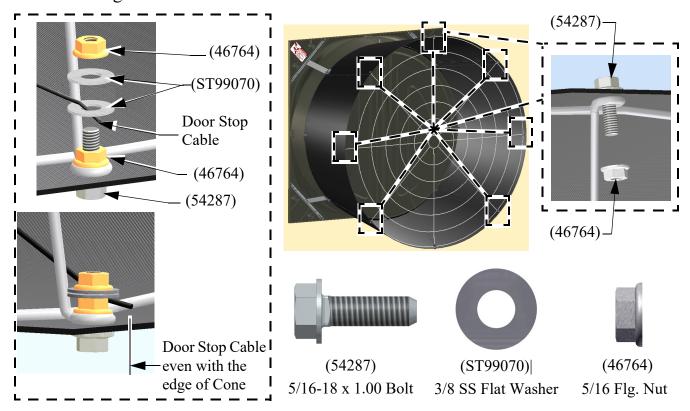
Grab the Door in the Center, Bow the Door outward, and insert the Top Door Pin into the Top Pivot Bracket as shown. **Do not Overbow the Doors!** 



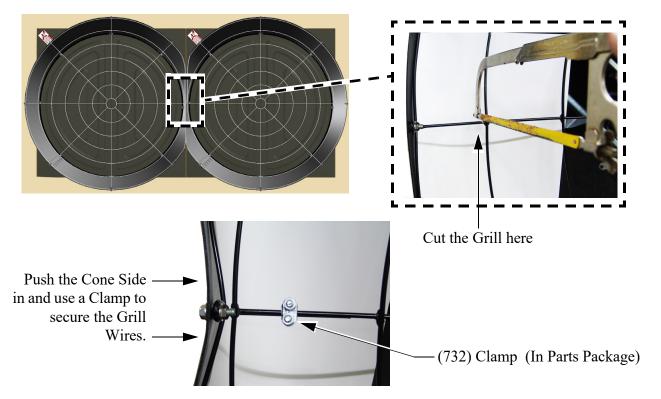


#### **Grill Installation**

Install the Fan Cone Grill (as shown). Attach the end of the Door Stop Cable to the bottom Grill Leg as shown.



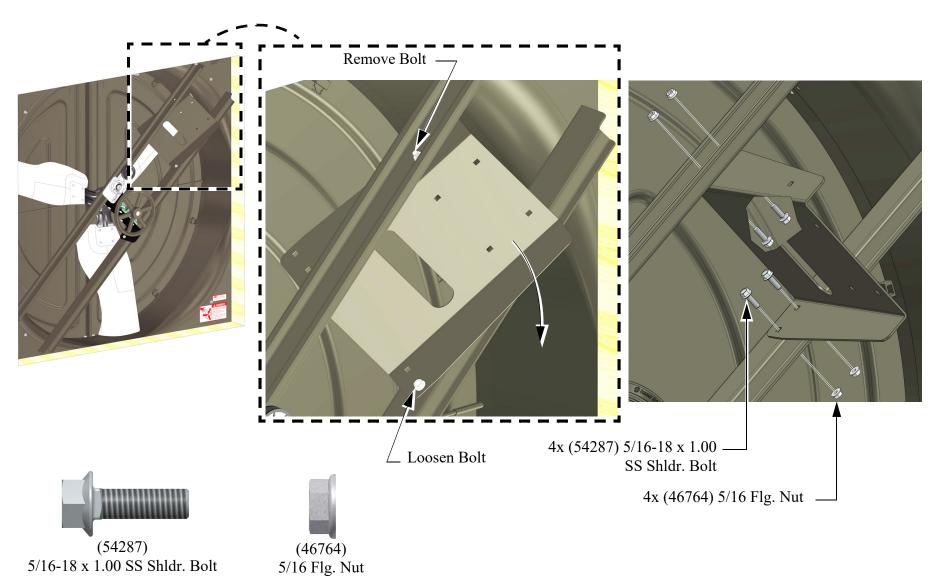
If it is desired to Mount Fans at the minimum spacing cutting the Grills is required **as shown.** 



#### **Rotate Motor Support (Assembled Fans)**

Rotate the Motor Support Bracket into the upright position by removing the **upper** Bolt and Nut, and loosening the **lower** Bolt and Nut.

Attach the Motor Support Bracket to the Posts with 5/16 Bolts (54287) and 5/16 Flange Nuts (46764).

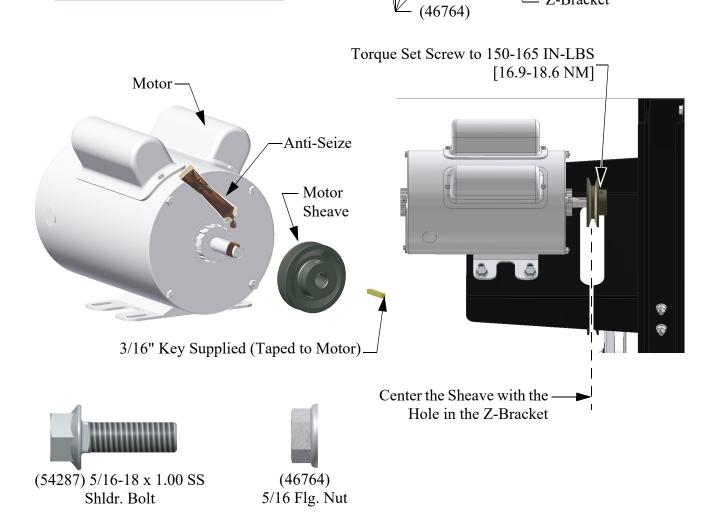


#### **Motor Installation**

Attach Motor to Z-Bracket.

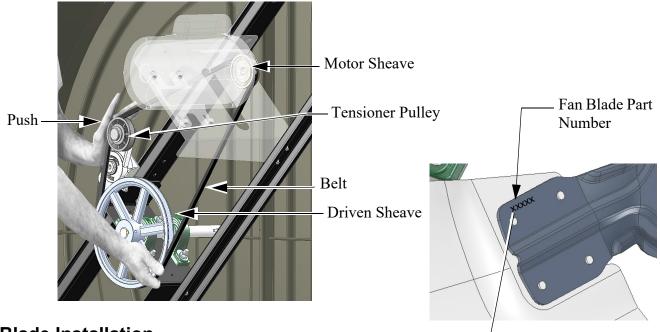
Motor

(54287)

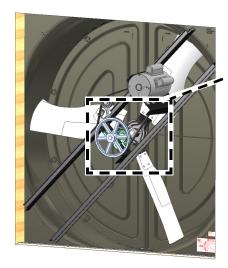


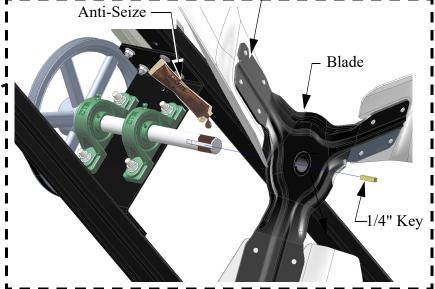
Z-Bracket

#### **Belt Installation**

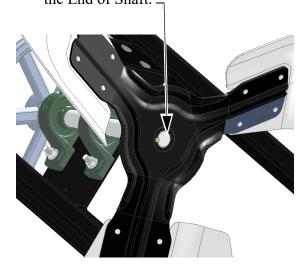


#### **Blade Installation**

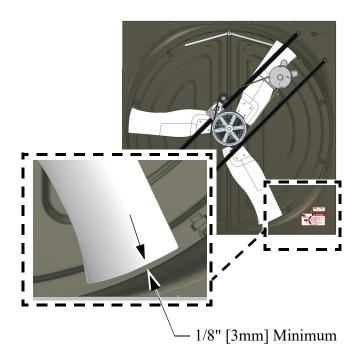




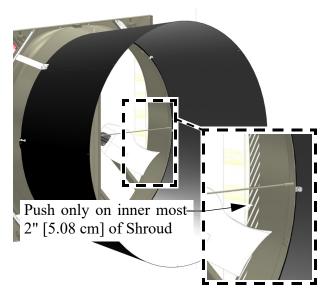
Fan Blade Flush with the End of Shaft.





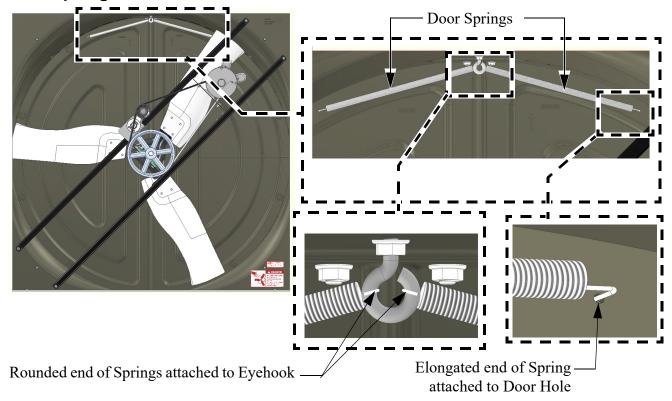


Spin the Blade by hand and check that there is minimum of 1/8" [3 mm] Clearance from the Shroud all the way around orifice.



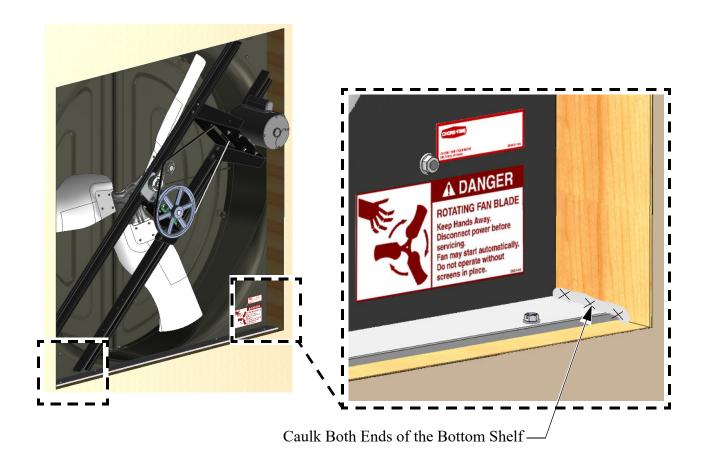
If Clearance is insufficient, check that the mounting surface is flat, and that the sides of the Shroud are straight. To Gain more Tip Clearance, remove the Lag Screws from the side with inadequate clearance, push out on the Shroud orifice. (Push only on the inner most 2" [5.08 cm]of the Shroud or damage could occur) Re-install Lag Screws in new holes.

#### **Door Spring Installation**



## Caulking

Caulk both Ends of the Bottom Shelf and as needed to fill any gaps between the Shroud and the Framed opening.

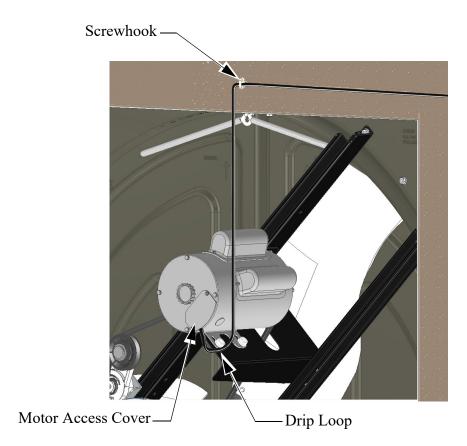


MV2406P

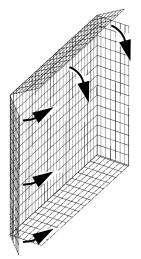
23

#### **Motor Wiring**

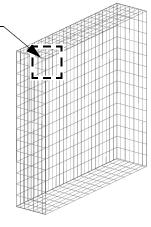
- 1. Check that the electrical power being supplied to the Fan matches the electrical Specifications on the Fan and Motor Decals.
- 2. Remove the Motor Access Cover.
- 3. Install an electrical disconnect within reach of each Fan installed.
- 4. Connect the cord to the motor according to the wiring diagram on the motor. Verify that the motor is connected for counter clockwise rotation (viewing the back of the motor, opposite the shaft end.)
- 5. Follow local, state, and national electrical codes for wiring.
- 6. Attach the Cord to the Wall using a Screwhook **as shown**. Allow enough slack in the cord to form a "drip loop" for moisture to fall away from the cord and not into the motor.



#### **Screen Assembly**

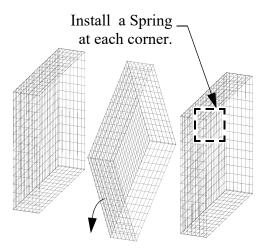


Install Springper steps A-D below.



1. Fold the Screen Sides as shown.

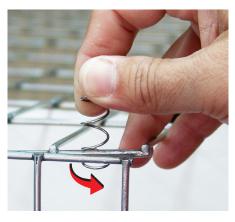
2. Install a spring (54480) in the upper left corner following steps A through D below. After Step D is complete go to step 3.



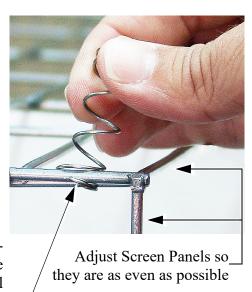
3. Rotate the Screen in the direction shown installing a Spring at a second corner. Repeat for remaining Corners.



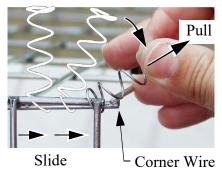
A) Slide a Spring (54480) over both Screen Panel Wires exactly as shown.



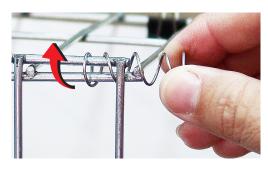
B) Rotate the Spring Counter-Clockwise until the end of the Spring snaps over the Side Panel Wire.



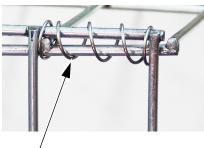
- Snapped over Side Panel Wire



C) Slide and Pull Spring over Corner Panel Wire.



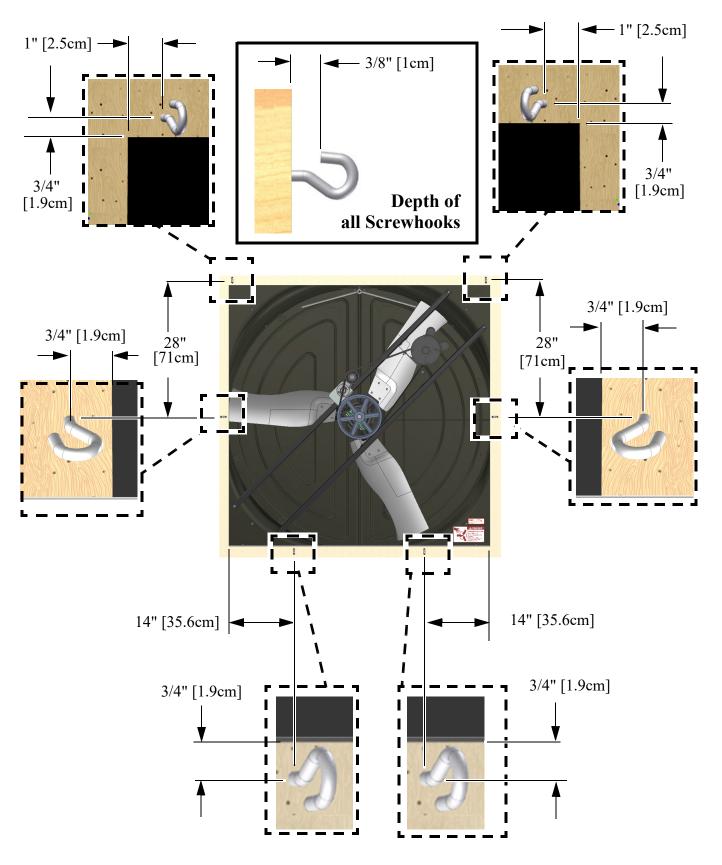
D) Twist Spring Clockwise until it is passed the outside wire and snapped firmly in place.



Spring snapped firmly between wires.

Screen Installation 57" Endura® Fan

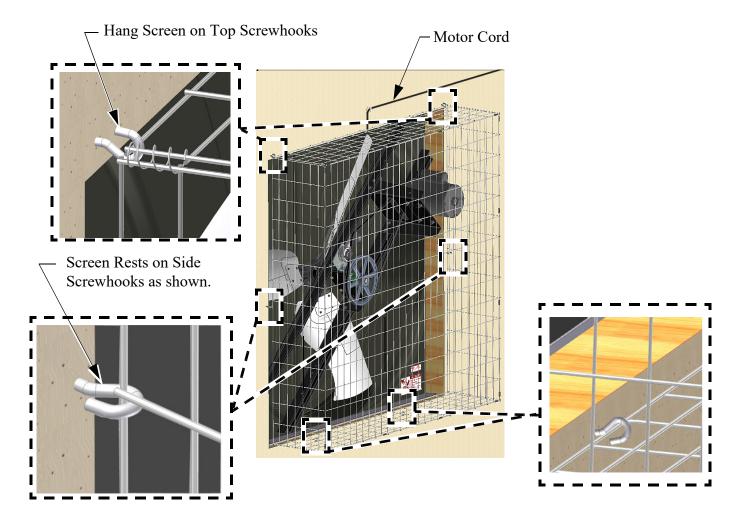
## **Screen Installation**



Continued on next page.....

57" Endura® Fan Screen Installation Continued

## **Screen Installation Continued**



#### Test Fan for proper operation.

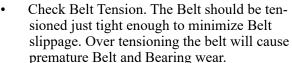
Plug the Fan in and test for proper operation

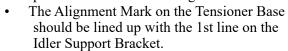
#### **Maintenance**

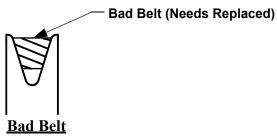
**IMPORTANT!** Disconnect Power Prior To Maintaining Or Cleaning The Fan. The fan may start automatically causing serious injury or death.

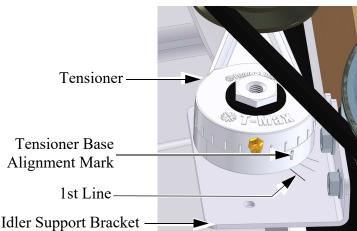
- Service and repair of fans should be done only by a qualified technician.
- Minimize contact of moisture or corrosive chemicals to the surfaces of the fan components to maximize fan life.
- After washing fans, operate fans long enough to remove moisture from all fan surfaces.
- Keep the fan clean for maximum life and best performance. Do Not spray water on the Fan Shaft Bearings, the Belt Tensioner, or the Motor.
- Periodically check the V-Belt and replace if necessary. A worn Belt will cause a substantial drop in Fan performance or it can break and cause Fan failure. If a Belt rides below the Sheave edge, replace the belt. (See below)











• Check Sheaves for wear. Replace if a Sheave groove is worn.



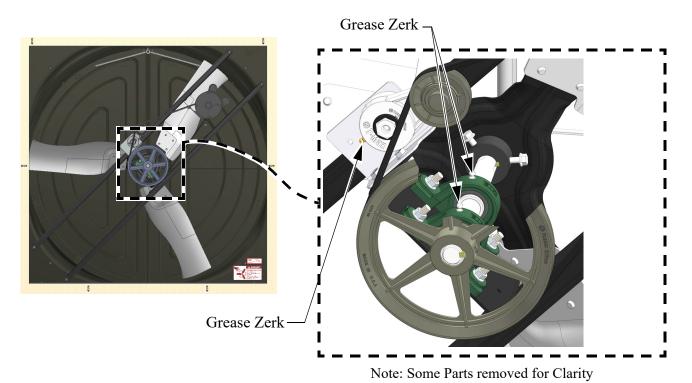


**Bad Sheave (Needs Replaced)** 

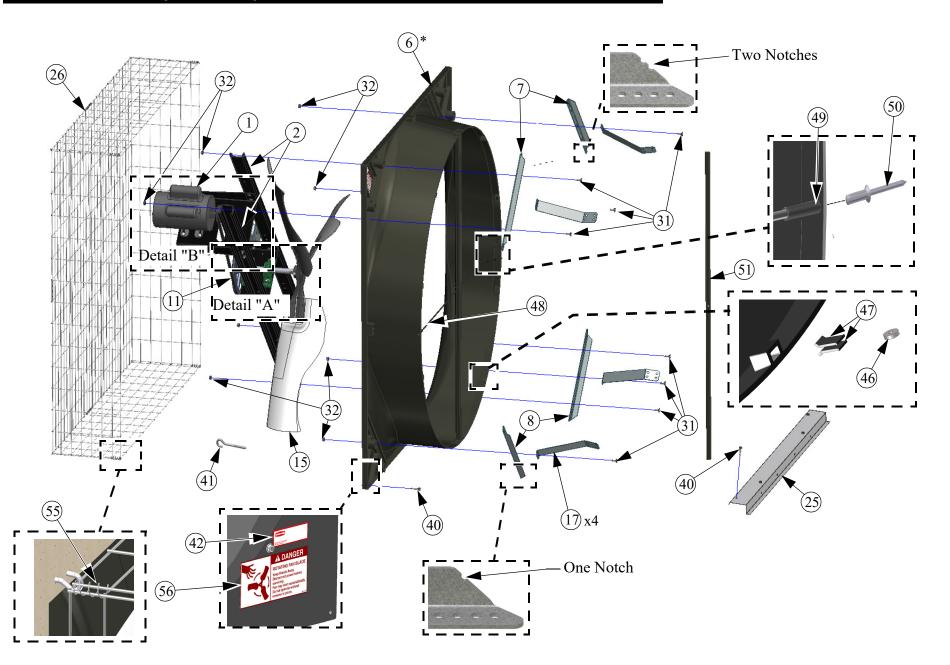
57" Endura® Fan Maintenance

#### **Fan Bearing and Belt Tensioner Lubrication**

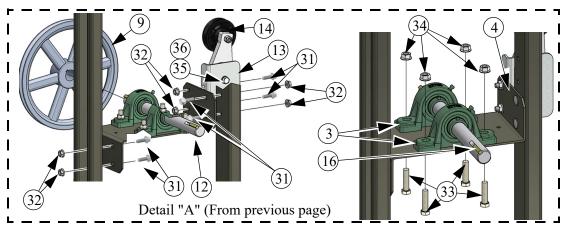
- Grease zerks are provided for lubrication on the fan shaft bearings and the belt tensioner.
- Lubricate the fan every 2-6 months or whenever these components get wet.
- Disconnect power to the fan before lubricating.
- Clean the zerk before lubricating to prevent contamination from entering the bearing.
- 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



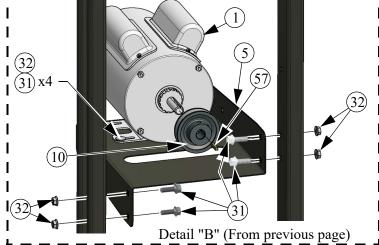
## Part Numbers (Itemized)



## **Part Numbers**

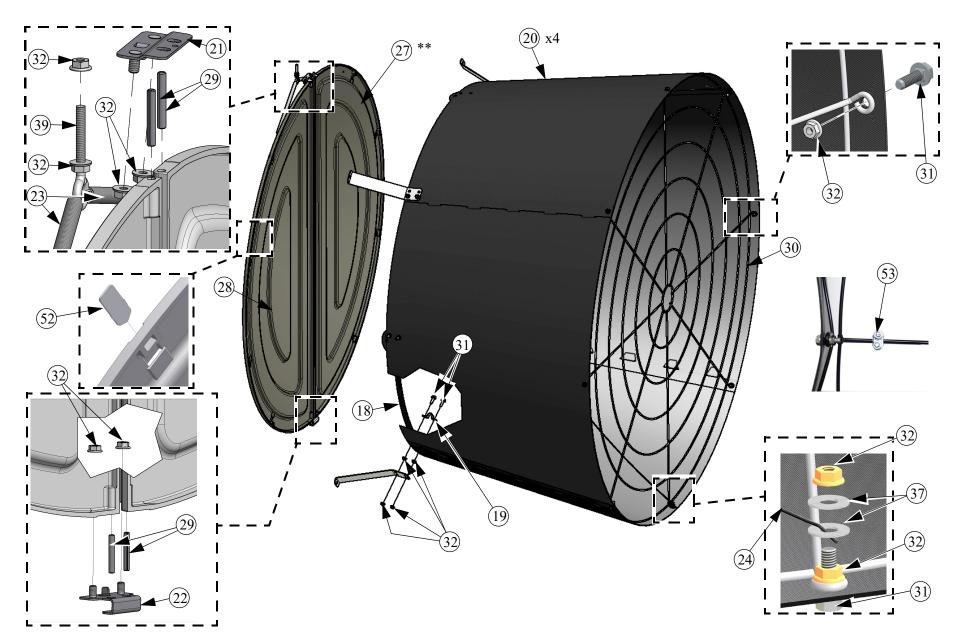


Item	Qty.	Description	Part No.	Models
1	1	Motor, 1.5H 1PH-60HZ-230V	49903	-22, -22S, -23
		Motor, 1.5H 3PH-60/50HZ-200/380-460V	48608	-41,-42,-51,-52,-41S,-42S,-51S,-52S
		Motor, 1.5H 1PH-60HZ-230V	50496	-21,-21S
2	2	57" Fan Post	53204	All
3	2	1" Pillow Block Bearing	50553	All
4	1	Idler Drive Bearing Support	48395C	All
5	1	Idler Drive Motor Support	48396C	All
*6	1	57" Fan Shroud Assembly	52925	All
7	2	Upper Corner Support (2 Notches)	53205	All
8	2	Lower Corner Support (1 Notch)	53206	All
9	1	AFD99100 Composite Sheave	54118	-21,-22,-41,-42,-21S,-22S,-41S,-42S
		AK94 x 1.00" Bore Driven Sheave	40274	-51,-52,-51S,-52S
10	1	AK30 3" O.D. x 5/8 Bore Motor Sheave	8773	-21,-22,-41,-42
		AK34	37919	-51,-52
11	1	AX60 V-Belt	48541	All
12	1	1" x 11.97" Fan Shaft	52083	-21,-22,-41,-42,-51,-52
		1" x 11.97 SS Fan Shaft	54438	-21S,-22S,-41S,-42S,-51S,-52S
13	1	Tensioner Support	49737	All
14	1	Tensioner Assembly 3.5" Arm 3" Dia.	48429	All
15	1	57" Galv. High Capacity Fan Blade	53219	-21,-41,-51
		57" Galv. E. Efficiency Fan Blade	53532	-22,-42,-52
		57" High Capacity SS Fan Blade	54529	-21S,-41S,-51S
		57" E. Efficiency SS Fan Blade	54530	-22S,-42S,-52S
		57" Galv. Min. Vent Fan Blade	56108	-23
16	2	1/4" Sq. 1.13" Key	2419-2	All



Item	Qty.	Description	Part No.	Models			
17	4	Cone Bracket	53039	All			
25	1	57" Fan Support Shelf	53338	All			
26	1	56 x 56 x 12.35 Inlet Screen	48794	All			
31	42	5/16-18 x 1 SS Shoulder Bolt	54287	All			
32	57	5/16-18 Hx. Serrated SS Flange Nut	46764	All			
33	4	3/8-16 x 1.50 SS HH Bolt	4413-10	All			
34	4	3/8-16 SS Serrated Flange Nut	50191	All			
35	1	3/8-16 x .75 SS Hx. Bolt	ST99277	All			
36	1	3/8 SS Lock Washer	ST99780	All			
40	24	1/4-10 x 1-1/2 Lag Screw SS	41561	All			
41	9	Open Eye Hook	1214	All			
42	1	Fan Decal	39002-XXX	All			
46	4	.125 x .50 Magnet	48427	All			
47	8	Magnet Side Plate	53026	All			
*48	1	57" Fan Cross Rod	53398	All			
*49	2	57" Fan Cross Rod Coupler (Rivet)	56339	All			
50	2	1/8 x .40 Countersunk SS Pop Rivet	48936	All			
*51	1	57" Center V-Post	53626	All			
55	1	Screen Spring (Package of 4)	54480-4	All			
*56	2	Fan Danger Decal	2527-50	All			
57	1	3/16 x 1-3/8 Key (w/motor)		All			
* Fan S	* Fan Shroud Assembly (Item 6) Includes items 48,49,50,51, and 56						

## Part Numbers Itemized (Continued)



## Part Numbers (Continued)

Item	Qty.	Description	Part No.	Models
18	1	Orifice Frame	53416	All
19	6	Orifice Frame Bracket	53611	All
20	4	57" Cone Panel	53163	All
21	1	Top Pivot Plate	53037	All
22	1	Bottom Pivot Plate	53036	All
23	1	Ø1/2" x 11" Door Spring	49629	All
24	1	72.5" Fan Cone Cable	53399	All
27**	1	Left 57" Door Assembly	52926L	All
28**	1	Right 57" Door Assembly	52926R	All
29	4	1/4 x 1-3/4 420 SS Spring Pin	53038	All
30	1	70" Cone Grill	53129	All
31	42	5/16-18 x 1 HXWH SS Shoulder Bolt	54287	All
32	57	5/16-18 Hx. Serrated Flange Nut	46764	All
37	2	3/8 SS Flat Washer	ST99070	All
39	1	5/16-18 x 2 SS Eye Bolt	30663	All
52	4	Striker Plate	53027	All
53	2	Cable Clamp	732	All
54	1/3	Anti-Seize (Not Shown)	47749	All

Part Numbers (Continued) 57" Endura® Fan

## Made to work. Built to last.®

#### **Revisions to this Manual**

Page No.	Description of Change	ECO
34	Updated Contact Info	33817
11	Added Pivot Plate Tab Detail	
30,31	Item 50 was (7791-3) 1/4-20 x 1/2 Press Stud	
30,31	Item 49 was 53896	



For additional parts and information, contact your nearest Chore-Time distributor or representative. Find your nearest distributor at: www.choretime.com/contacts

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