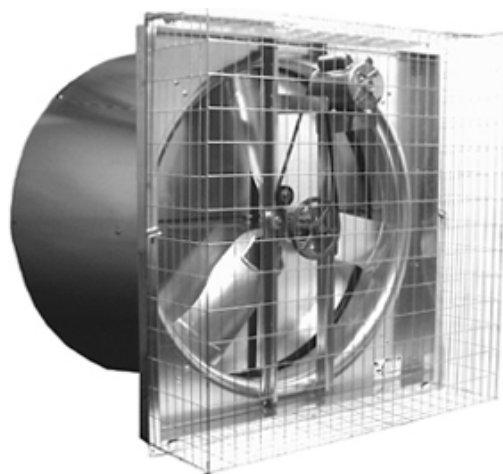


48" and 52" Hyflo® Fans Installation and Operators Instruction Manual



Thank You

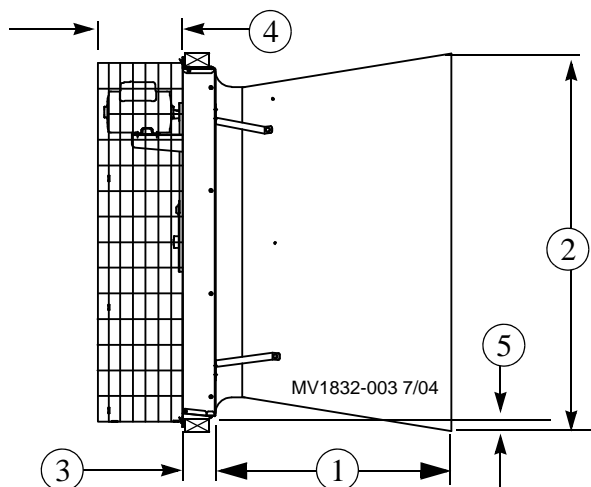
The employees of CTB Inc. would like to thank you for your recent Chore-Time purchase. If a problem should arise, your Chore-Time distributor can supply the necessary information to help you.

Contact your nearby Chore-Time distributor or representative for additional parts and information.

**CTB Inc.
P.O. Box 2000 • Milford, Indiana 46542-2000 • U.S.A.
Phone (574) 658-4101 • Fax (877) 730-8825
E-Mail: ctb@ctbinc.com • Internet: <http://www.ctbinc.com>
Printed in the U.S.A.**

Fan and Fan Framing Dimensions

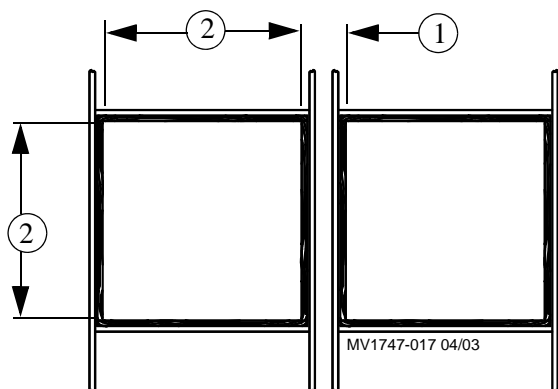
Fan Dimensions



Item		48" Hyflo® 49451-XX	48" Hyflo® (9 Inch Panels) 49515-XX	52" Hyflo® 49511-XX	52" Hyflo® (9 Inch Panels) 49519-XX
1	Bottom Length	41-7/8" [106.36 cm]	41-7/8" [106.36 cm]	44" [111.76 cm]	44" [111.76 cm]
2	Vertical Dim. of Cone	59" [149.9 cm]	59" [149.9 cm]	64" [162.56 cm]	64" [162.56 cm]
3	Shroud Mounting Surface	5-1/8" [13.02 cm]	9-1/8" [23.18 cm]	5-1/8" [13.02 cm]	9-1/8" [23.18 cm]
4	Screen Depth	12.35" [31.37 cm]	12.35" [31.37 cm]	12.35" [31.37 cm]	12.35" [31.37 cm]
5	Vertical Dimension of Cone	2-5/16" [5.87 cm]	2-5/16" [5.87 cm]	4-1/8" [10.48 cm]	4-1/8" [10.48 cm]

Figure 1. Fan Dimensions

Fan Spacing



Planning the layout of the spacing between Fans is very important. Spacing too close together will cause interference between the discharge Cones. **The Rough Opening dimensions for Fans are shown above.**

Item	48" Hyflo®	52" Hyflo®
1	4" [10.16 cm] Minimum	8" [20.32 cm] Minimum*
2	55" [139.7 cm]	56-1/2" [143.51 cm]

*52" models can be mounted 3.5" apart if Cone Clips are used. See Figures 16 and 17.

Figure 2. Fan Spacing

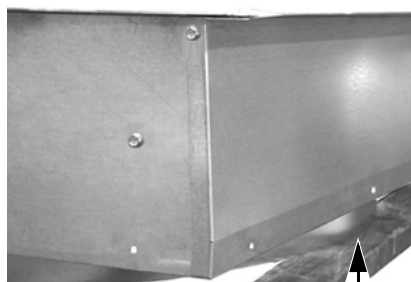
The Fan Inlet and exhaust must be kept clear of obstructions. Failure to keep the Fan airflow path clear of obstructions could cause loss of Fan performance and Fan damage.

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

Fan Assembly/Installation

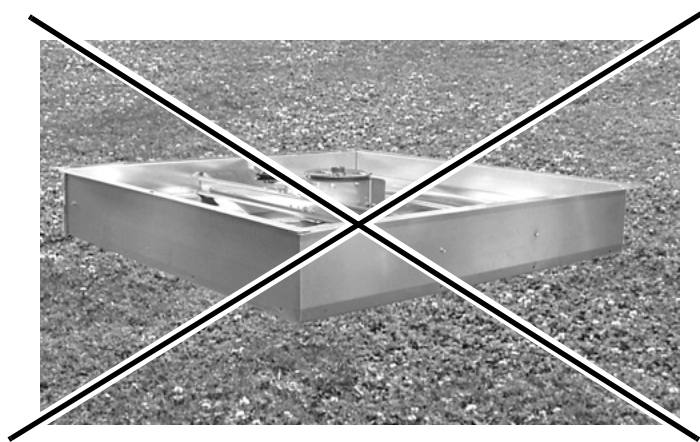
Assembly for 9" Panel Models (models 49515-XX and 49519-XX)

Hyflo® Fans with 9" panels need to be repositioned from their shipping position before they can be installed. Remove the Fan from the Crate, and with the Blade down, rest the Fan Shroud orifice on sawhorses. **Do Not** rest the Fan on the blade. (See Figure 3 below)



Fan Shroud orifice
resting on Sawhorse

Figure 3. Orifice resting on Sawhorse



Do Not lay Fan on the ground with the weight of the Fan on the Fan Blade.

Remove the 1/4 x 1/2" Screws from the Side Panels (**Figure 4**). Shift the Panels up until the second set of holes in the Panels line up with the holes in the Shroud (**Figure 5**). Re-attach the Panels with the 1/4 x 1/2" Screws as shown. Repeat the same procedure for the Top and Bottom Panels. The additional 1/4 x 1/2" Screws that are required are included in the Parts Package. Once all of the Panels have been shifted attach the Panels at the corners with 1/4 x 1/2" Screws.

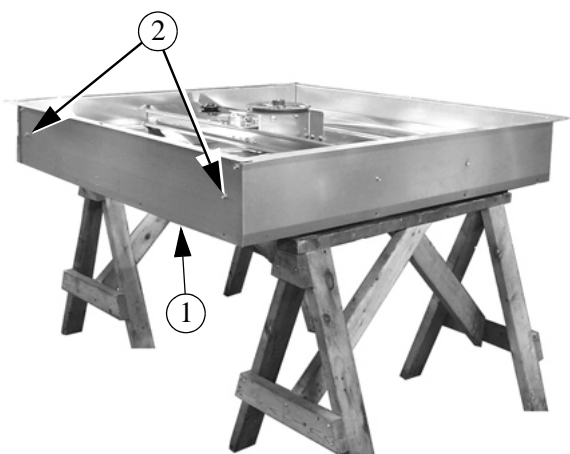


Figure 4. 9" Remove Screws

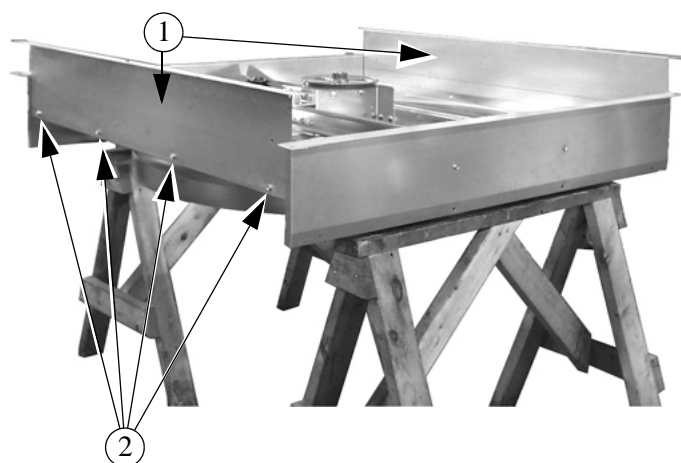


Figure 5. Shift Side Panels and re-attach

Item	Description
1	Side Panel
2	1/4 x 1/2" Screw

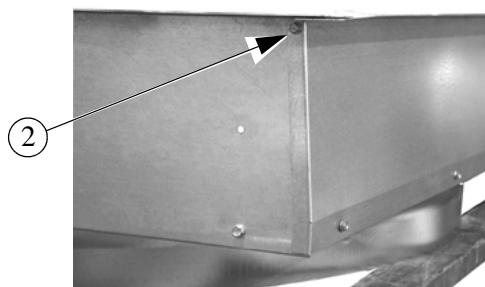
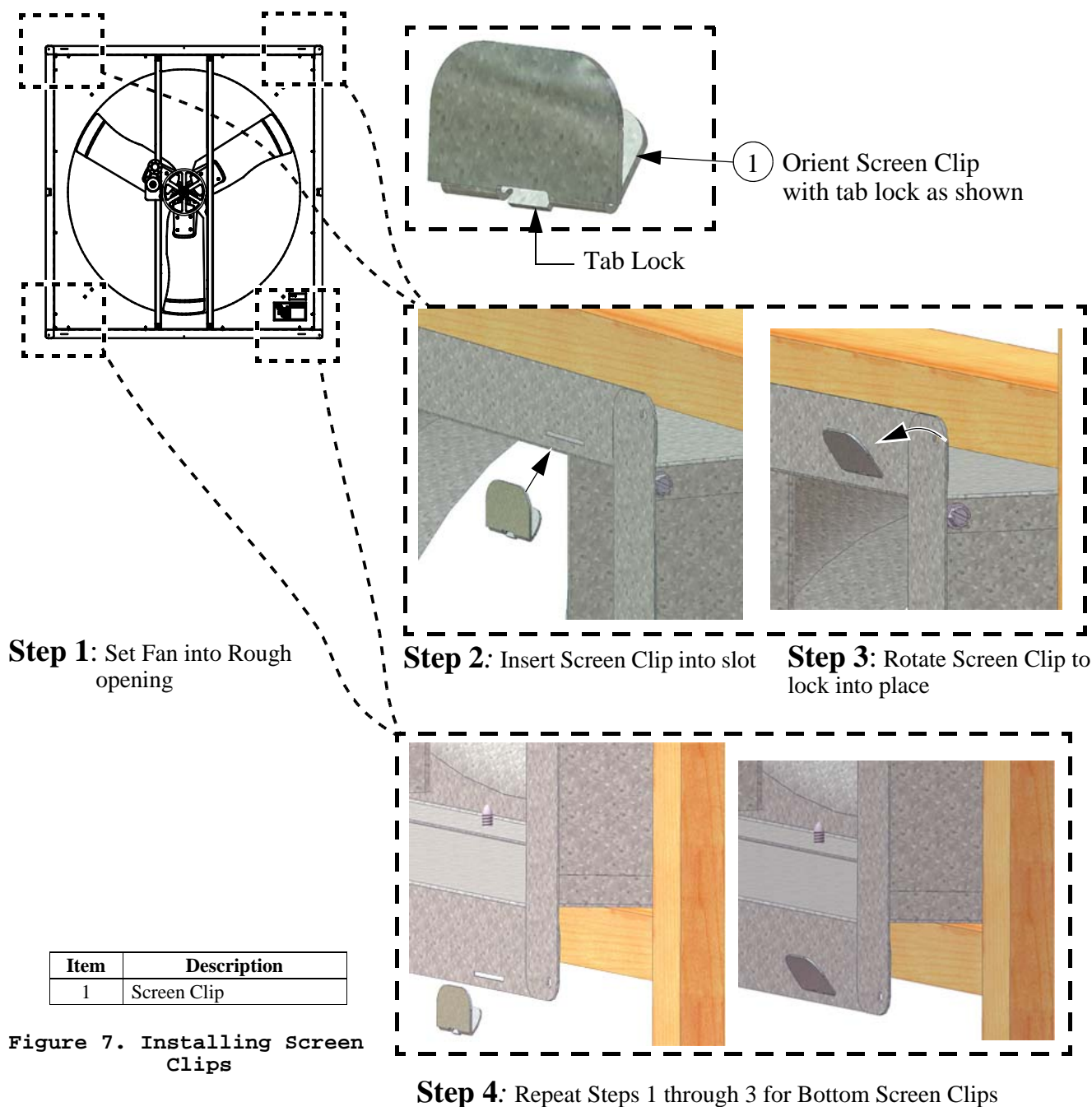


Figure 6. Attach Panels at Corners

Screen Clips

Set the Fan into the framed opening, but leave it hang out a few inches to allow for the insertion of four Screen Clips (**Item 1, Figure 7**). With the Screen Clips oriented with the tab lock as shown, push them into the slots in the Fan Housing Panels and rotate them forward until they lock into place **as shown**. Slide the Fan forward flush with the rough opening making sure that the Clips do not fall out.

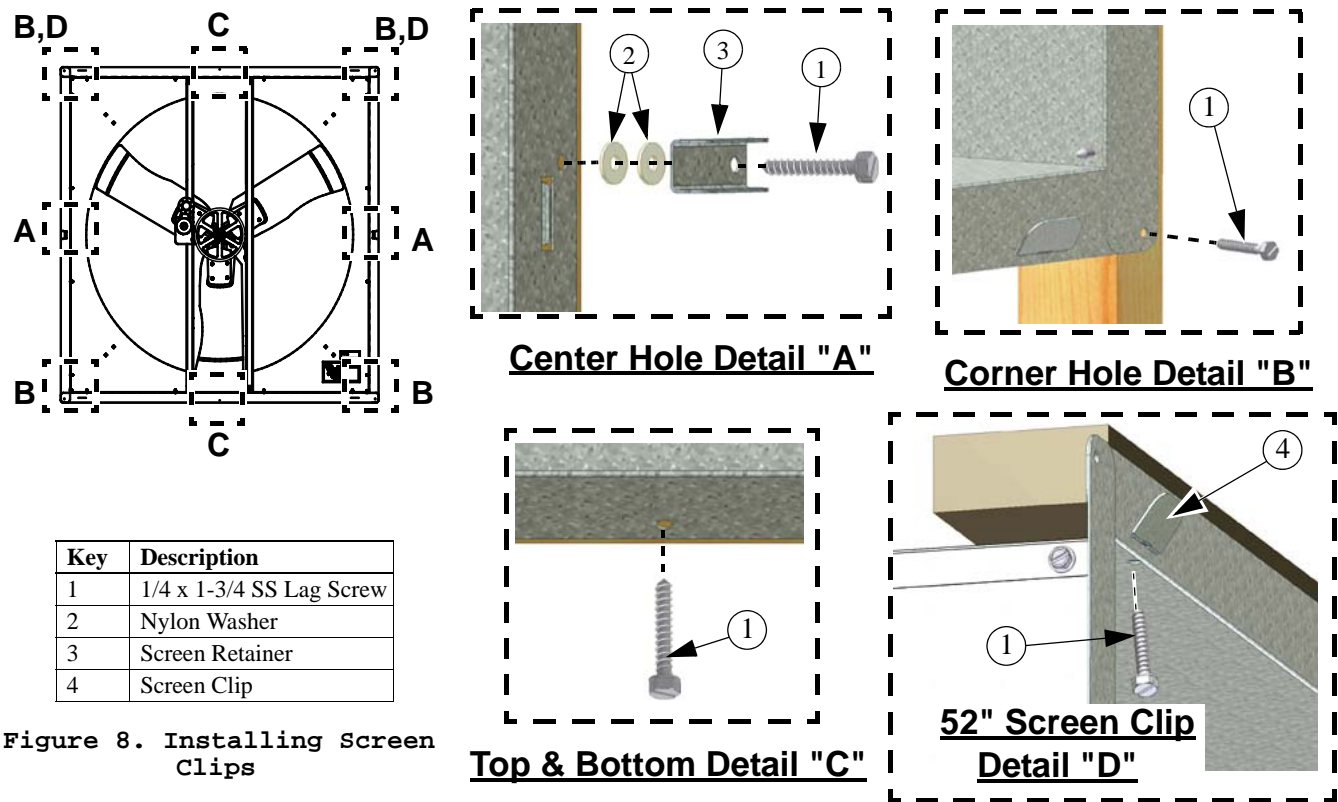


Attaching the Fan to the Wall

Slide the Fan assembly into the rough opening and starting with the two side hole locations (**Detail A**), use 1/4 x 1-3/4" Lag Screws (**Item 1, Figure 8**), two Nylon Washers (**Item 2**), and a Screen Retainer (**Item 3**) to attach the Fan to the Wall **as shown**. Use 1/4 x 1-3/4" Lag Screws to attach the Fan at the four corners (**Detail B**), and at center Top and Bottom (**Detail C**) **as shown**.

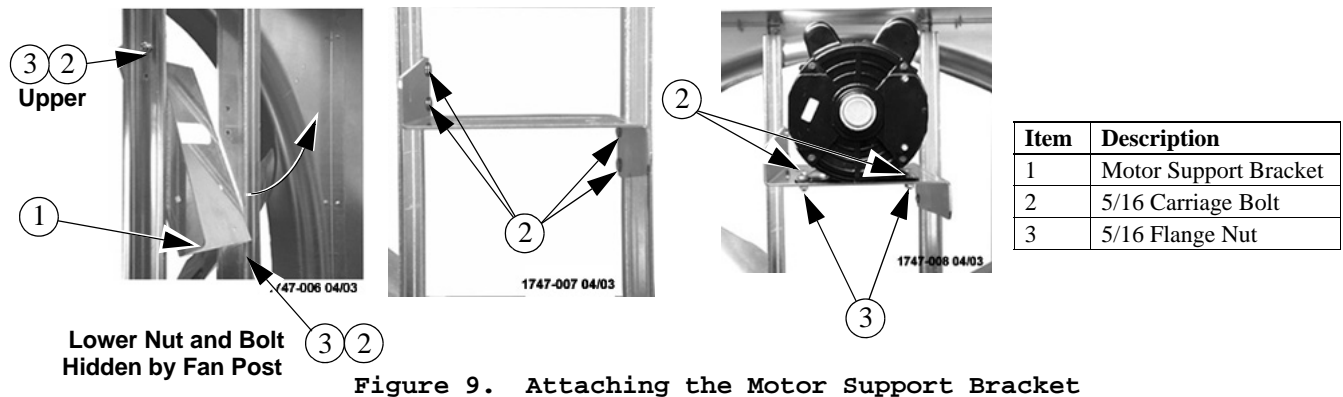
Securing Screen Clips on 52" Fans only

For 52" Fan applications, the Screen Clips (**Item 4**) on the Top Panel need to be secured in place by installing a Lag Screw through the holes in the Panel and into the Framing as shown in **Detail "D"**.



Motor Installation

Rotate the Motor Support Bracket into the upright position by removing the **Upper** Carriage Bolt and Nut and loosening the **Lower** Bolt and Nut (**See Figure 9**). Rotate the Motor Support Bracket until it is perpendicular to the Fan Posts and fasten with (4) 5/16 Carriage Bolts and (4) 5/16 Flange Nuts. *Note that the Nuts go outside the Posts.* Remove the Motor from the Crate and attach it to the Motor Support Bracket with (4) 5/16 Carriage Bolts and (4) 5/16 Flange Nuts **as shown**.



Belt Installation

Guide the Belt through the Opening in the Motor Support Bracket and loop it over the Motor Sheave. Guide the Belt around the Tensioner Sheave and push on it to get enough slack to put the Belt on the Driven Sheave **as shown in Figure 10**. Make sure the Belt does not rub against the Motor Support Bracket.

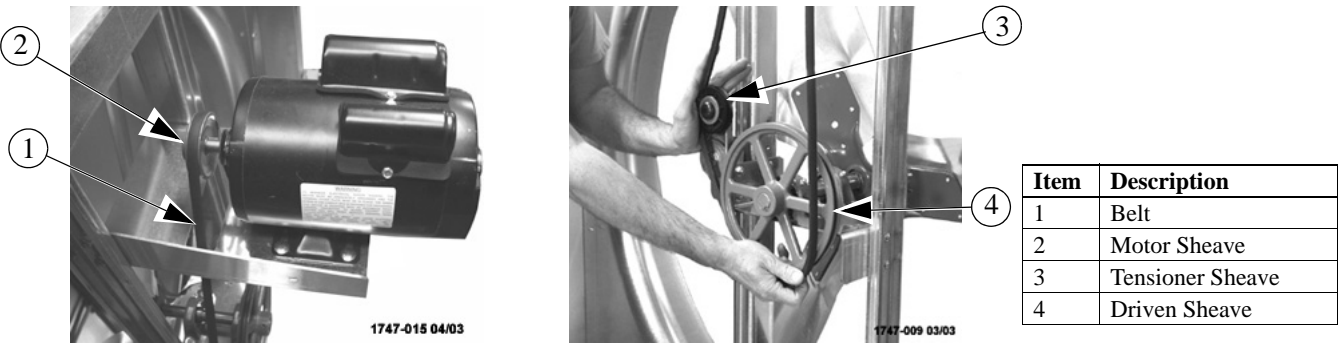
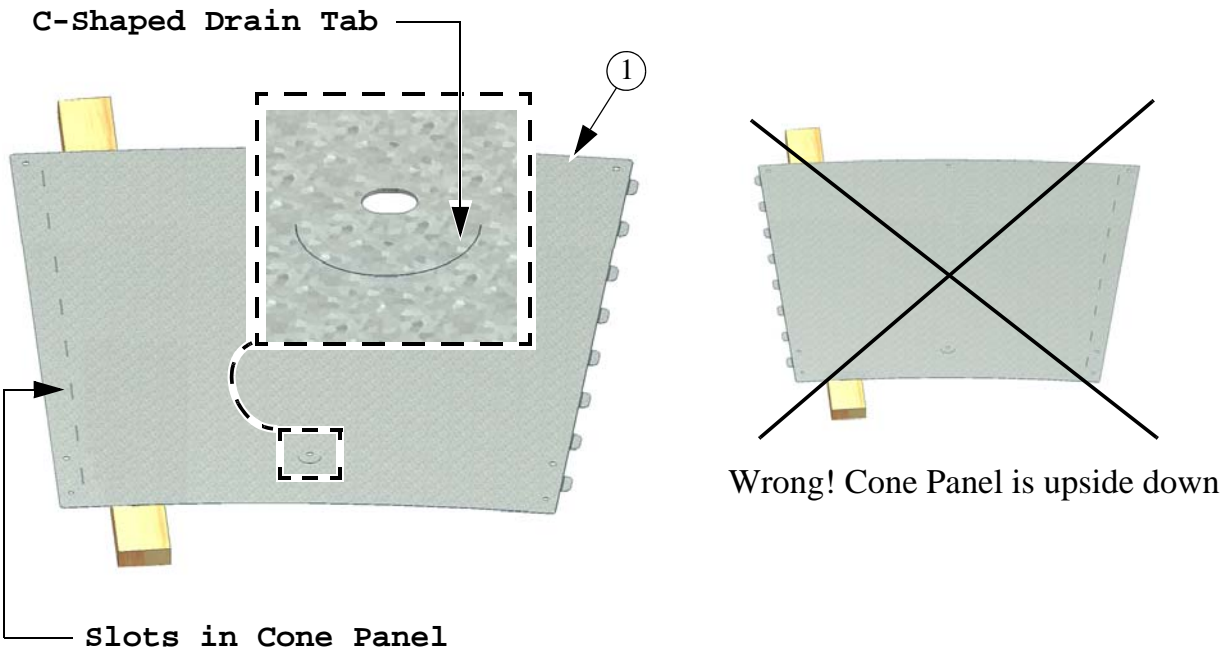


Figure 10. Installing the Belt

Cone Assembly and Installation

Step 1: Lay a Cone Panel down (Drain Tab at the bottom and slots to the left) and Prop the end up (Slotted end) with a 2 x 4 board.

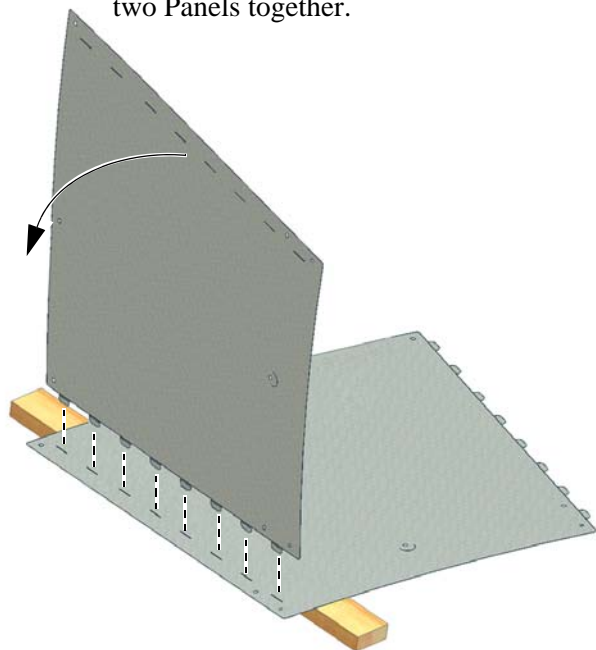


Item	Description
1	Cone Panel

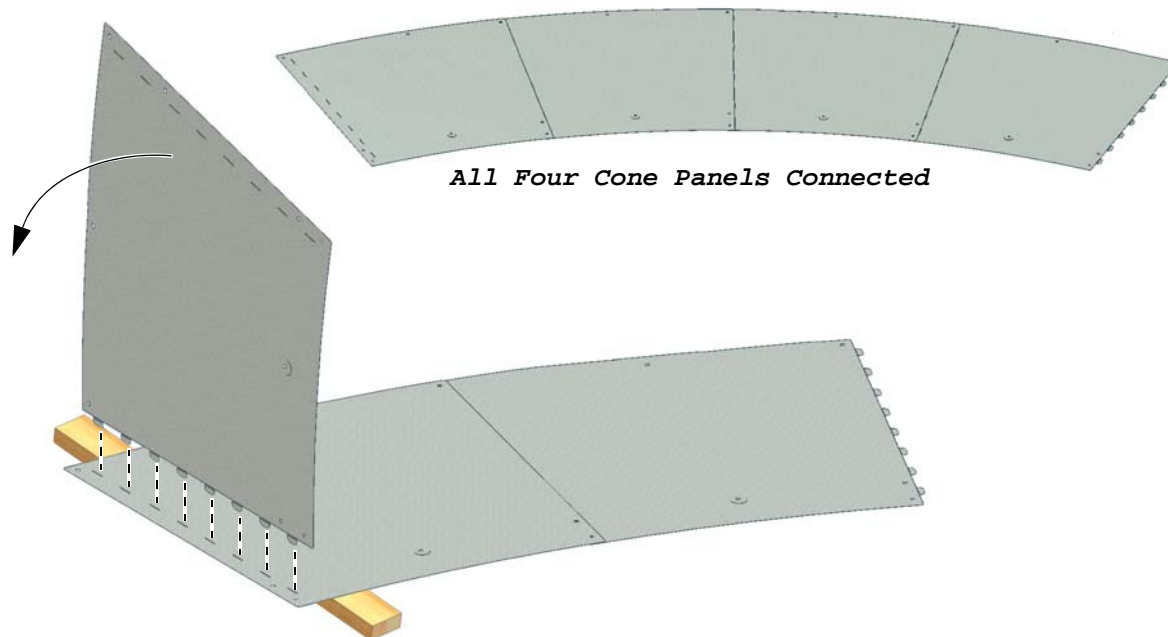
Figure 11. Assembling Cone Panels

Figure 12. Assembling the Cone

Step 2: Insert the Tabs of the second Cone Panel into the slots of the 1st Panel and lay it down locking the two Panels together.



Step 3: Repeat Step 2 until all four Cone Panels are locked together.

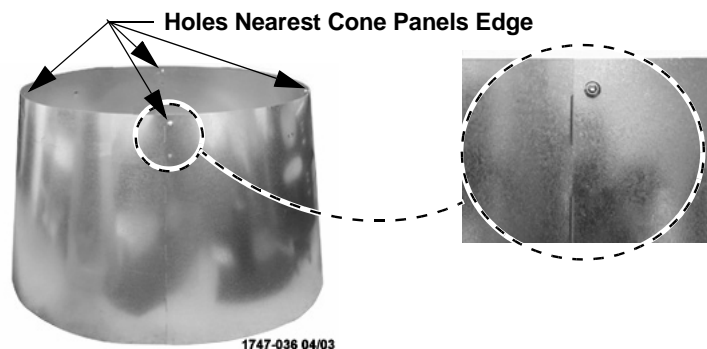


Step 4: Stand the Panels up on edge and curl the Panels around making a Cone shape with the smaller diameter up. Insert the Tabs of the last Panel into the Slots of the 1st and allow the Cone to take its shape.



1747-031 04/03

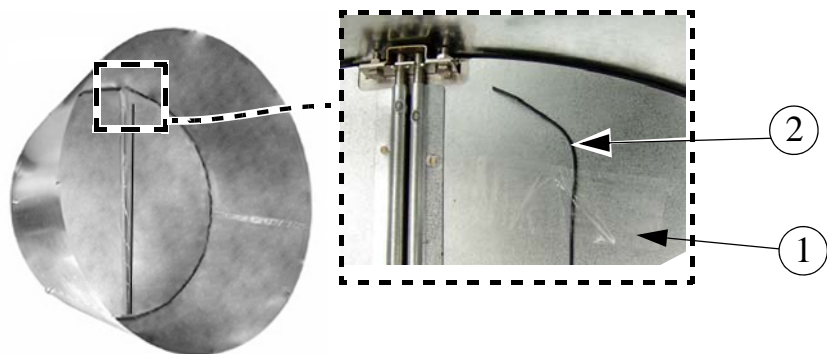
Step 5: Fasten the Cone Panels together with (4) 5/16" x 1/2" Hex Bolts threaded from inside the finished Cone. Do not tighten down the Nuts at this time. Leave the Nuts loose until the Cone is attached to the Fan.



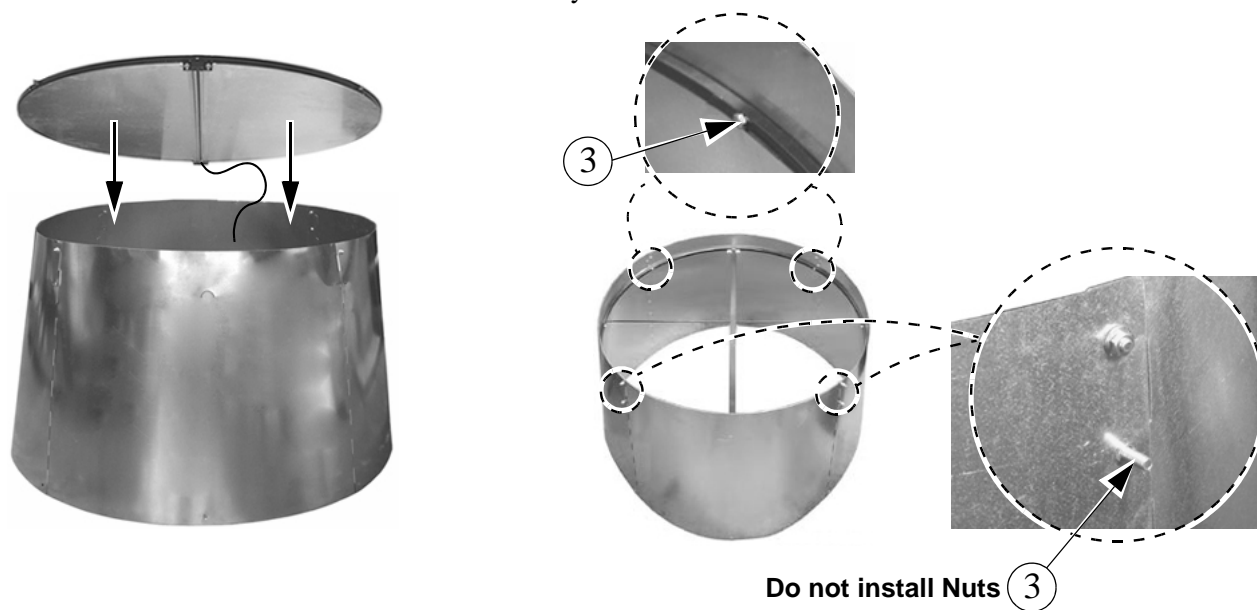
1747-036 04/03

Installing Door Assembly

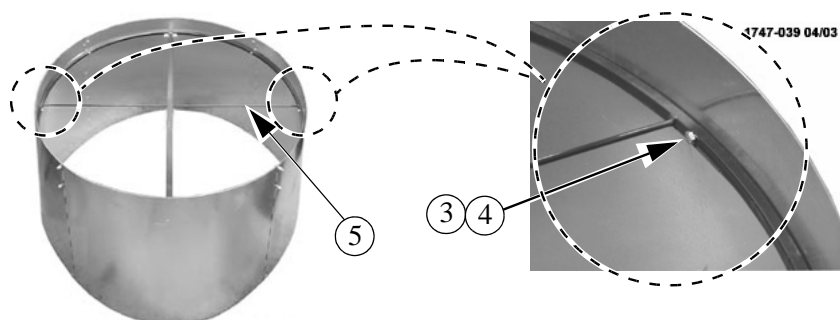
Step 1: Remove the Tape (**Item 1**) holding the Nylon Cable to the Door.



Step 2: Line up the Four Holes in the Door Ring with the holes in the Cone and thread (4) 5/16 x 1-1/4" Bolts (**Item 3**) in until they are tight. Do not install Nuts at this time. These Bolts will be use later to attach the Cone Brackets to the Cone Assembly



Step 3: Use (2) 5/16 x 1-1/4" Bolts (**Item 3**) and (2) 5/16" Flange Nuts (**Item 4**) to attach the Ring to the Cone using the holes located on both sides near the Door Center Brace (**Item 5**) as shown. The Nuts go outside the Cone.

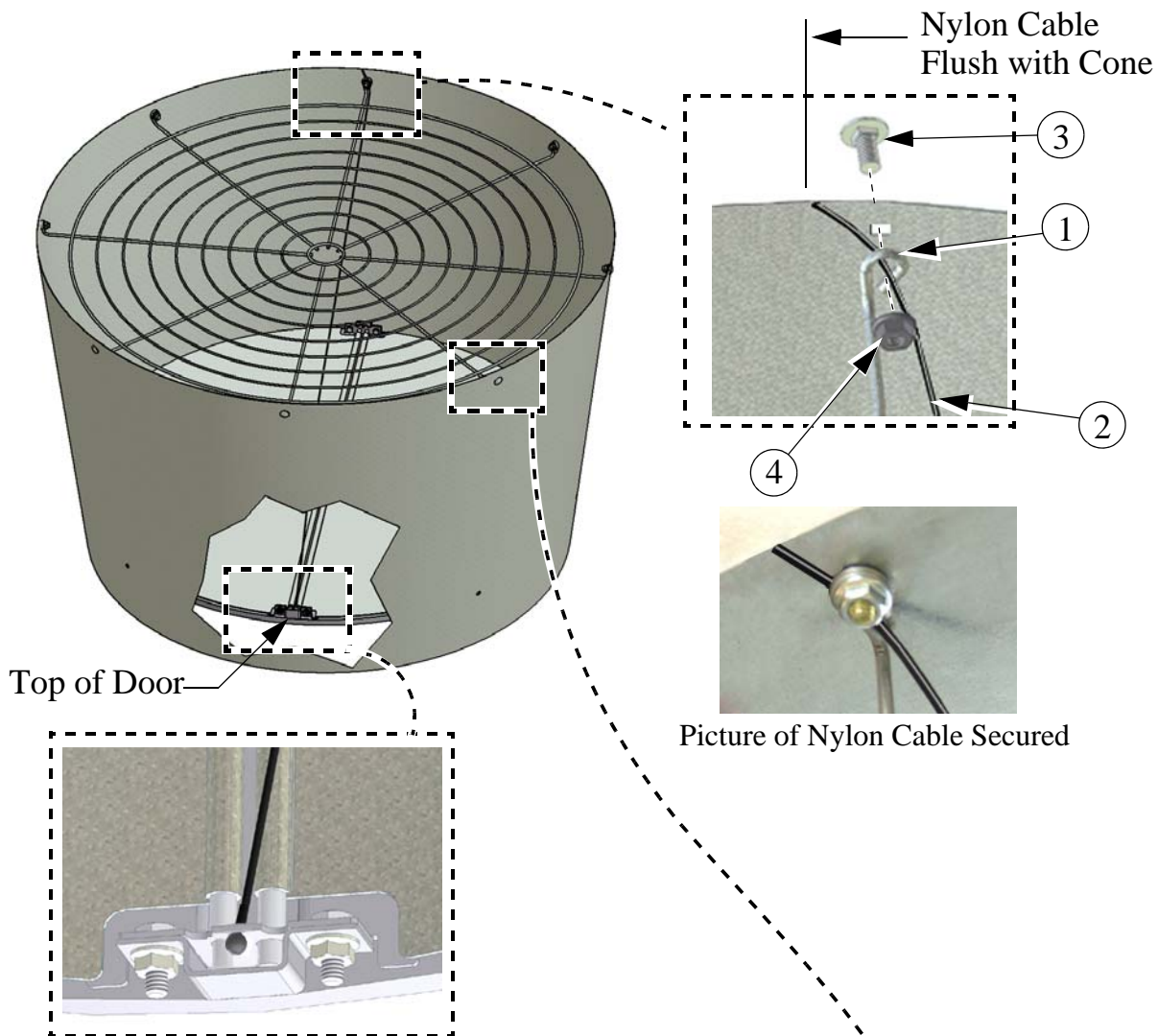


Item	Description
1	Tape
2	Nylon Cable
3	5/16 x 1-1/4" Bolt
4	5/16 Flange Nut
5	Door Center Brace

Figure 13. Installing the Door Assembly

Attaching the Door Stop Cable (Nylon Cable) and Grill.

Step 1: Line up the Grill Eyehooks with the holes in the Cone. Thread the free end of the Nylon Cable (**Item 2**) through the Bottom Grill Eyehook (**Item 1**) until it is flush with the Cone and secure it with a 5/16-18 Carriage Bolt (**Item 3**) and Flange Nut (**Item 4**) as shown.



Step 2: Use 5/16 Carriage Bolts (**Item 3**) and Nuts (**Item 4**) to fasten the Grill to the Cone at the remaining 7 locations.

Item	Description
1	Bottom Grill Eyehook
2	Door Stop Cable (Nylon Cable)
3	5/16-18 x .625 Carriage Bolt
4	5/16-18 Flange Nut

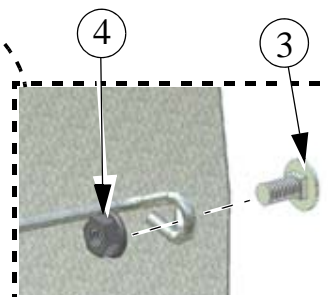


Figure 14. Installing the Door Stop Cable

Installing Fans 60"-64-1/2" on Center

If 52" Fans need to be installed 60"-64-1/2" on center, Cone Clips can be used to keep Cones from interfering with one another. First, cut the two legs from the horizontal Screen wire as shown in **Figure 16** below.

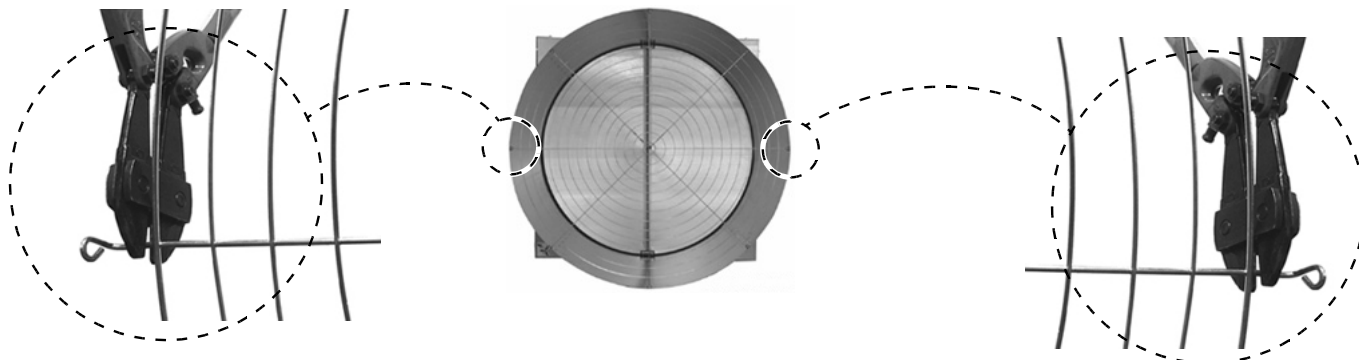
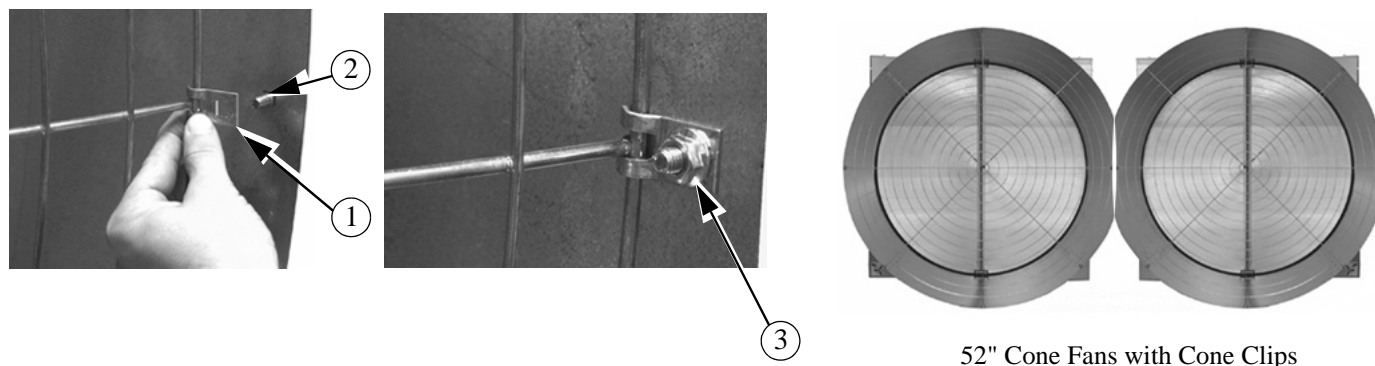


Figure 16. Cutting Screen Legs for Installing Cone Clips

Holding a Cone Clip in place, Push in the side of the Cone and fasten with 5/16 x 1/2" Carriage Bolts and Flange Nuts as shown in **Figure 17** below.



52" Cone Fans with Cone Clips

Item	Description	Part No.
1	Cone Clip	49504
2	5/16 x 1/2 Carriage Bolt	-
3	5/16 Flange Nut	-

Figure 17. Attaching Cone Clips

Assembling the Cone to the Fan

Use 5/16 x 5/8" Carriage Bolts and 5/16 Flange Nuts to attach the *four* Cone Brackets to the Fan Shroud **as shown in Figure 18.**

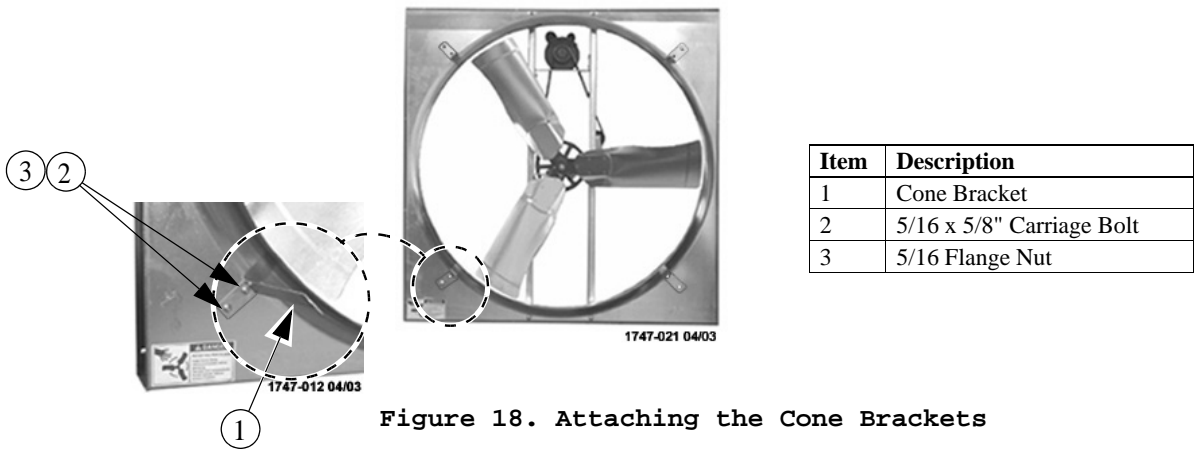


Figure 18. Attaching the Cone Brackets

Mounting the Cone and Door Assembly on the Fan requires at least two people. Pick up and orient the Cone with the Door Stop Cable (**Item 1, Figure 19**) attached at the top and rest the Cone on top of the Fan Orifice **as shown**. Attach the top of the Cone to the Cone Brackets (**Item 2**) with the Bolts that were previously threaded through the Ring and Cone and secure with 5/16 Flange Nuts (**Item 3**). Only hand tighten the Nuts at this time. Working around the Fan Orifice from inside the fan, in a circular motion Slide the Cone over the Fan Orifice. The Cone will Fit snug. Use the Bolts previously threaded through the Ring and Cone and the 5/16 Flange Nuts to secure the bottom of the Cone to the Fan **as shown**. Use a Level and rotate the Cone until the Door center rail is Vertical (**See Figure**). Now tighten all Hardware.

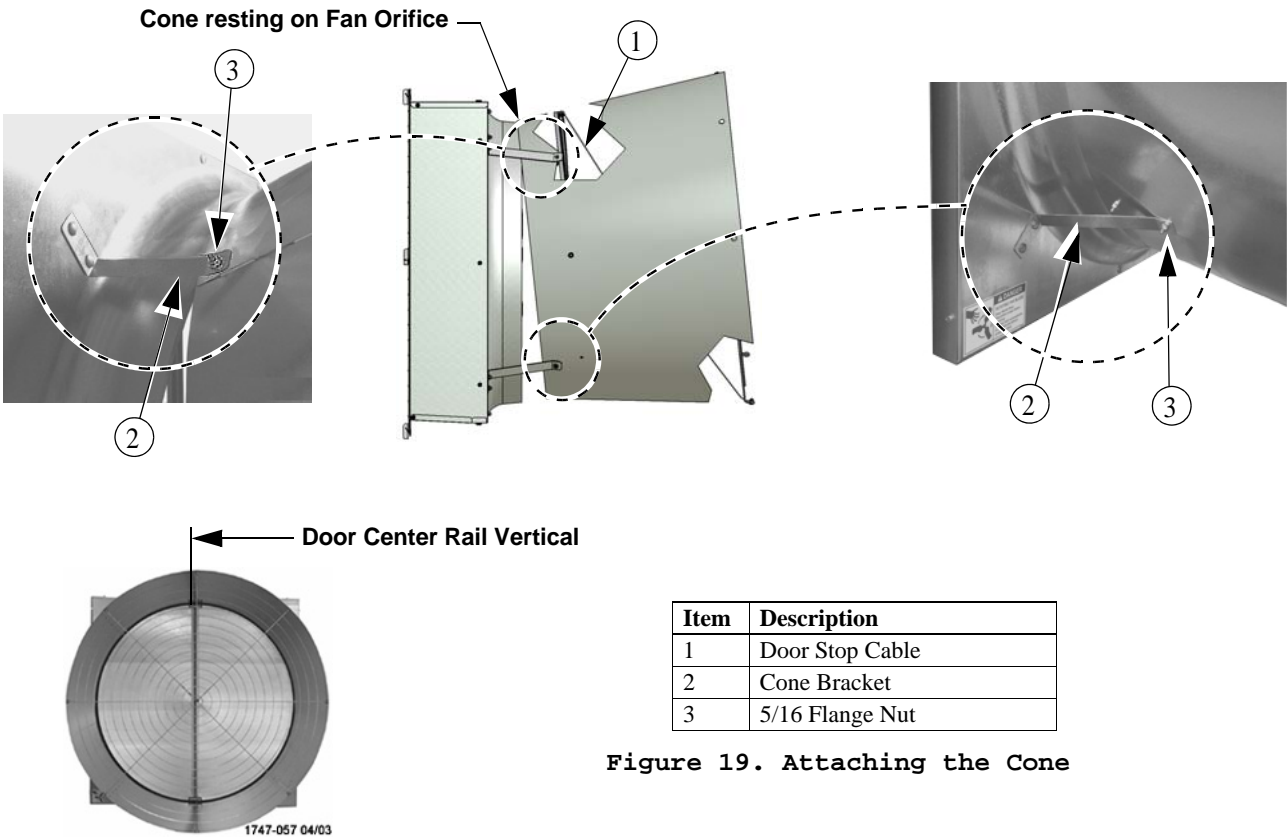
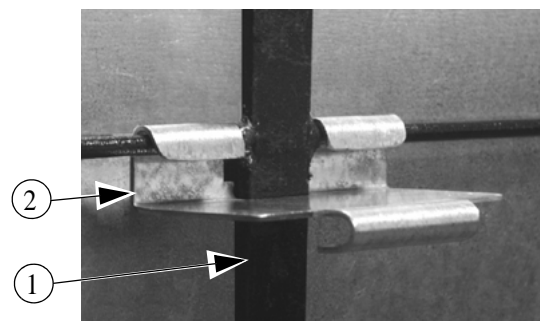


Figure 19. Attaching the Cone

Door Spring Assembly

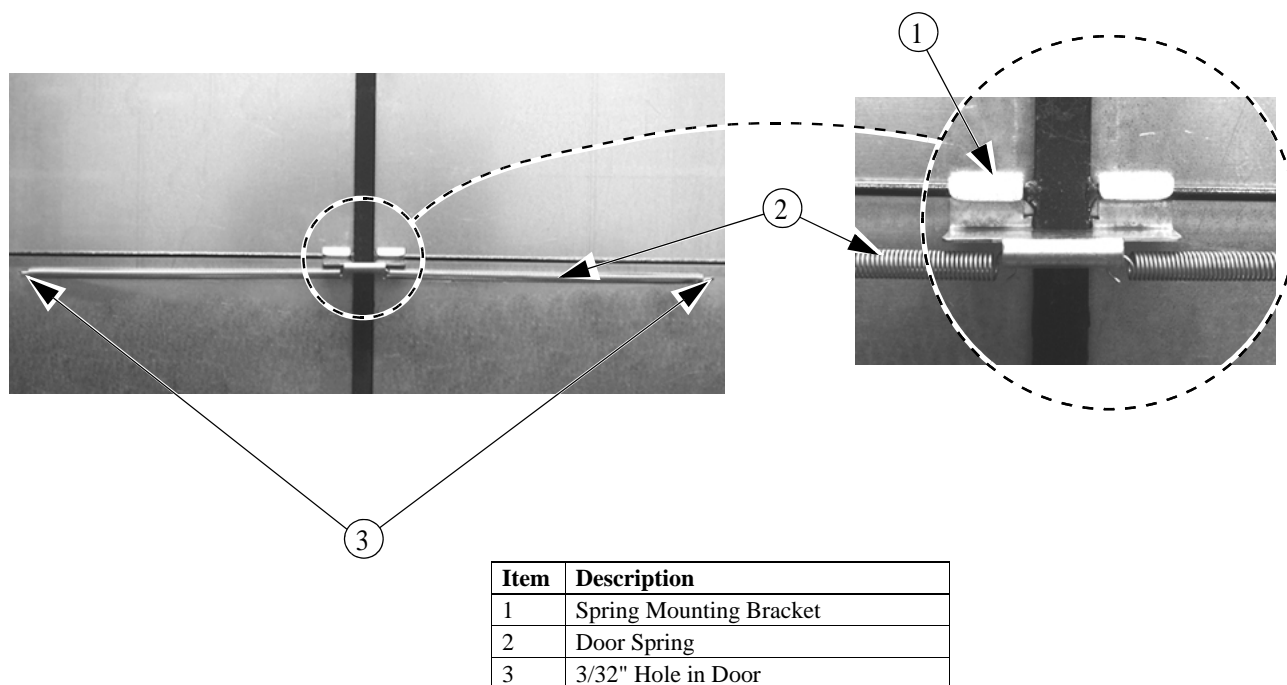
On the Door Assembly, at the middle of the Door Center Brace, attach the Spring Mounting Bracket (**Included in the Parts Package**) as shown in **Figure 20** below.



Item	Description
1	Door Center Brace
2	Spring Mounting Bracket

Figure 20. Attaching the Spring

Hook the rounded ends of the Door Springs onto the Spring Mounting Bracket. Stretch the Door Springs out and hook them in the 3/32" holes in the Doors (**See Figure 21**).



Item	Description
1	Spring Mounting Bracket
2	Door Spring
3	3/32" Hole in Door

Figure 21. Attaching the Door Springs

Cone Drain Tabs

The Fan Cone is designed with a C-Shaped Drain Tab located at the back of the Bottom Cone Panel. Use a screw driver to push the Drain Tab out as shown in **Figure 22 below**.

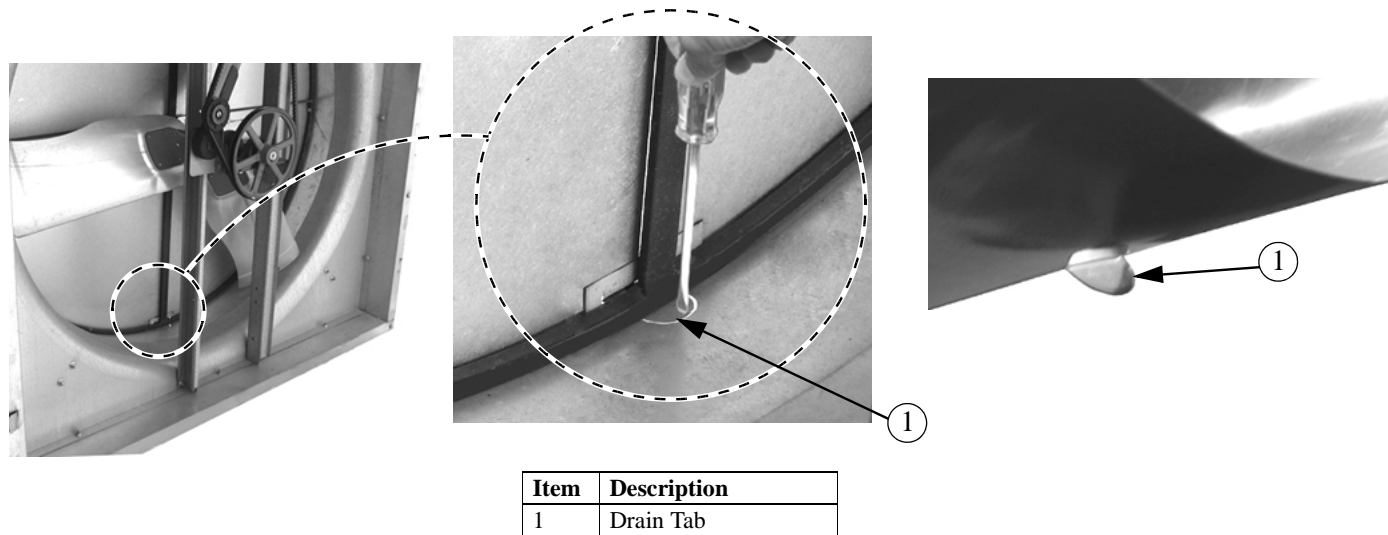


Figure 22. Cone Drain Tab

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. Cut out one section of the Screen to route the cord out of the Fan: This will allow for the Screen to be removed without interfering with the Cord. (See **Figure 23**). Attach the cord to the Wall using a Lag Screw and Cord Clip. Allow enough slack in the cord to form a "drip loop" for moisture to fall away from the cord and not into the motor

NOTE: For variable frequency drive wiring, see instruction located in the 52" Hyflo frequency drive kit (part no. 51738).

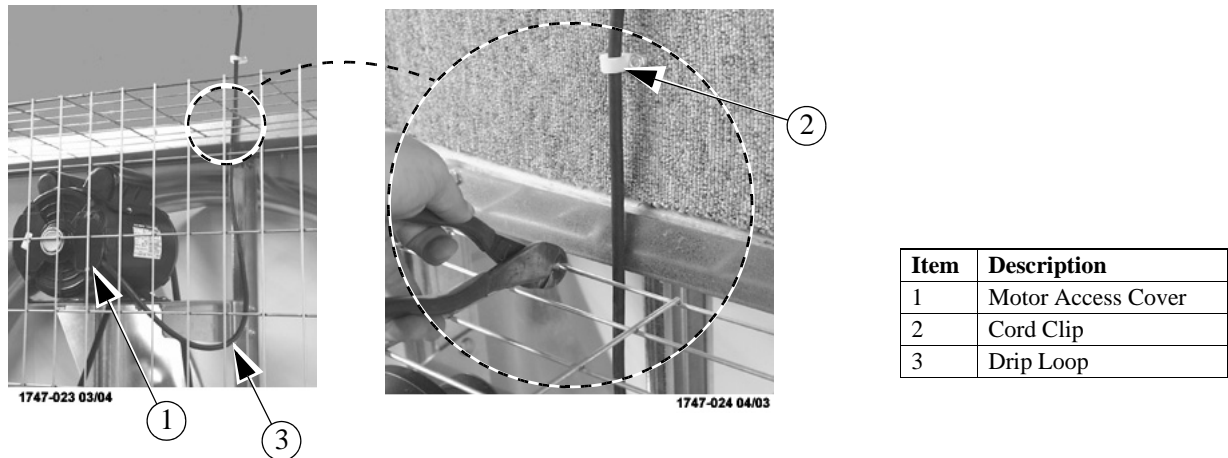
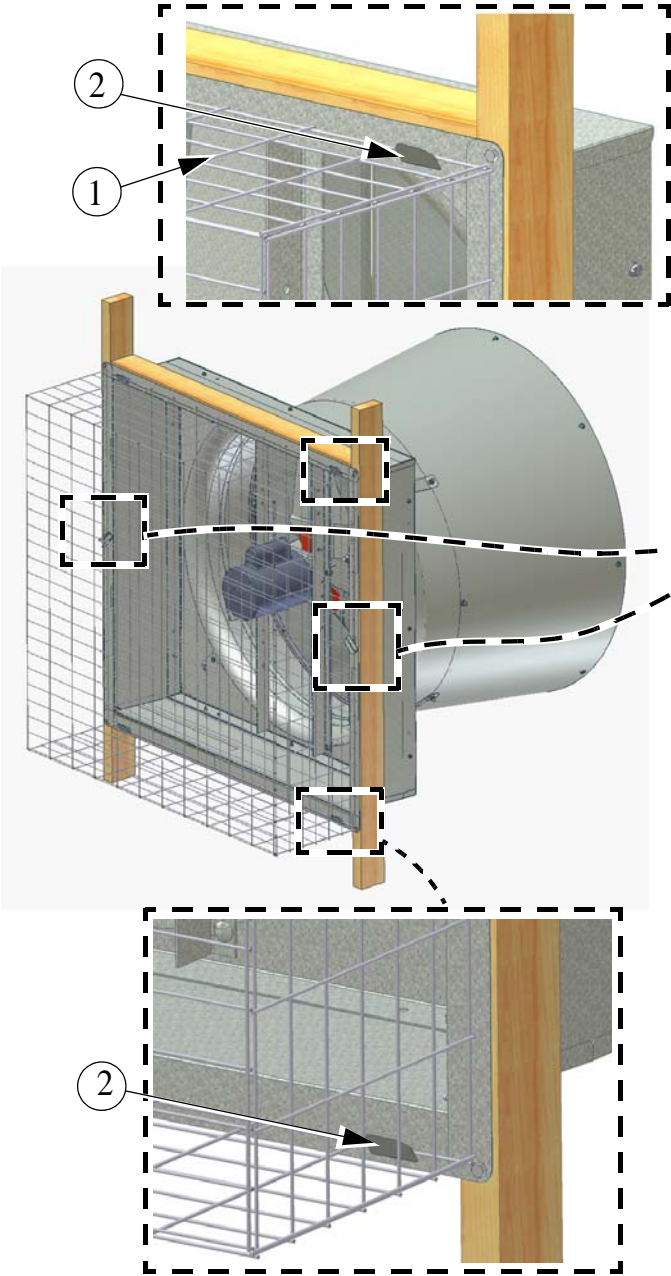


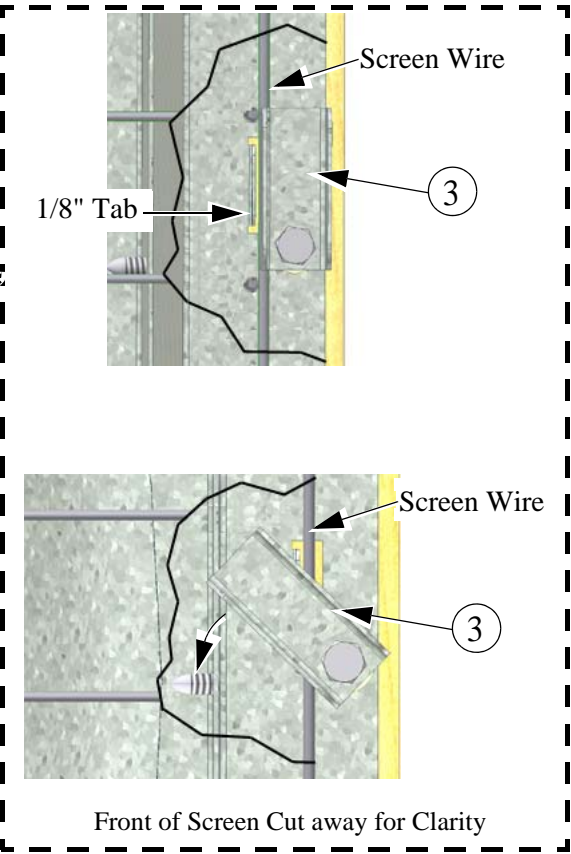
Figure 23. Cut out Screen for Motor Wiring

Installing the Screen

Step 1: Hang the Screen (**Item 1**) on the four Screen Clips (**Item 2**) and position it so the Screen Wire is captured between 1/8" tall Tabs and Screen Retainers (**Item 3**).



Step 2: Rotate the two Screen Retainers to capture the Screen.



Item	Description
1	Screen
2	Screen Clip
3	Screen Retainer

Figure 24. Installing the Screen

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 Figure 25 below)

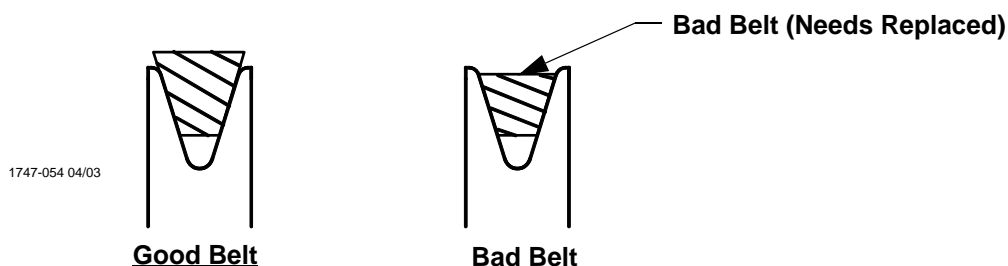


Figure 25. Belt Condition

- Check Belt Tension. The Belt should be tensioned just tight enough to minimize Belt slippage. Over tensioning the belt will cause premature Belt and Bearing wear. With a new Belt the Idler Sheave indicator mark should line up with the third notch in the Tensioner Housing (See Figure 26).

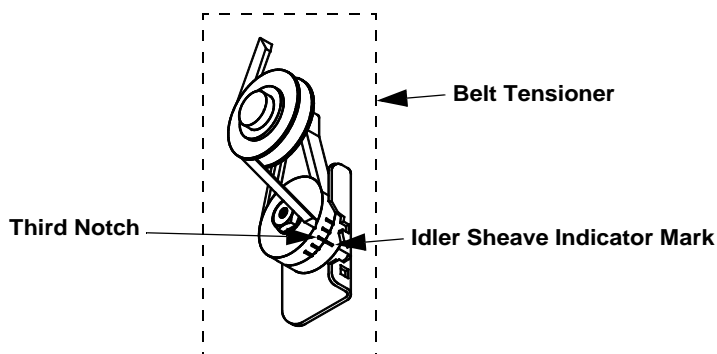


Figure 26. Idler Sheave Indicator

- Keep Shutters, Blades, and Housing clear of obstacles for best air performance.
- The motor and Fan Shaft Bearings are pre-lubricated. Grease zerks are provided on the fan shaft bearings for installations where re-lubrication is needed. 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. Chore-Time recommends using Shell Alvania # 2 in the fan shaft bearings.
- Check Sheaves for wear. Replace if a Sheave groove is worn. (See Figure 27)

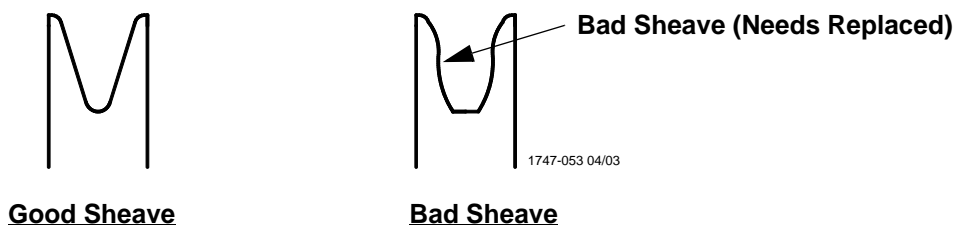
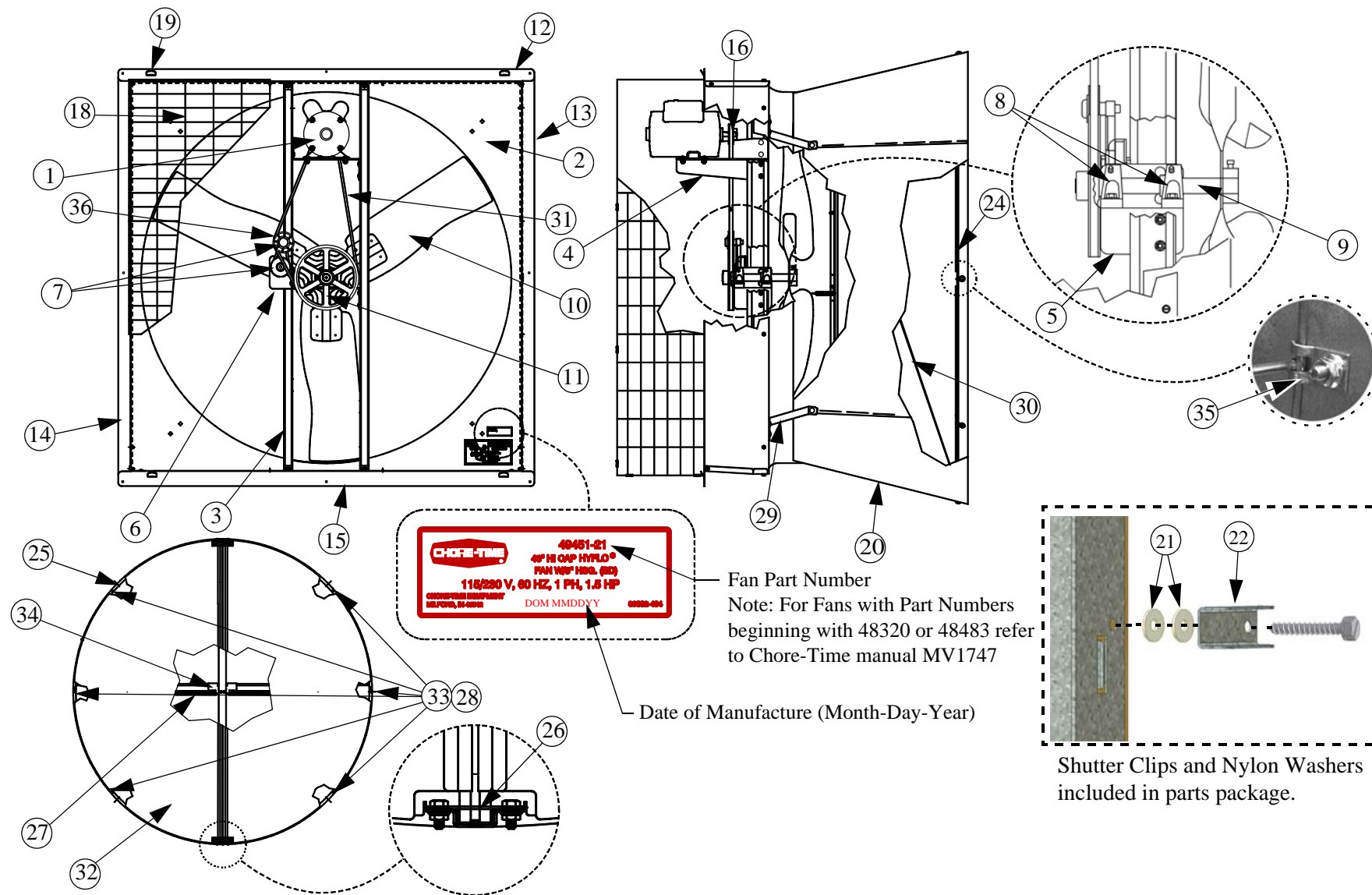


Figure 27. Sheave Condition

Hyflo® Fan Parts (Manufactured after July 2007)

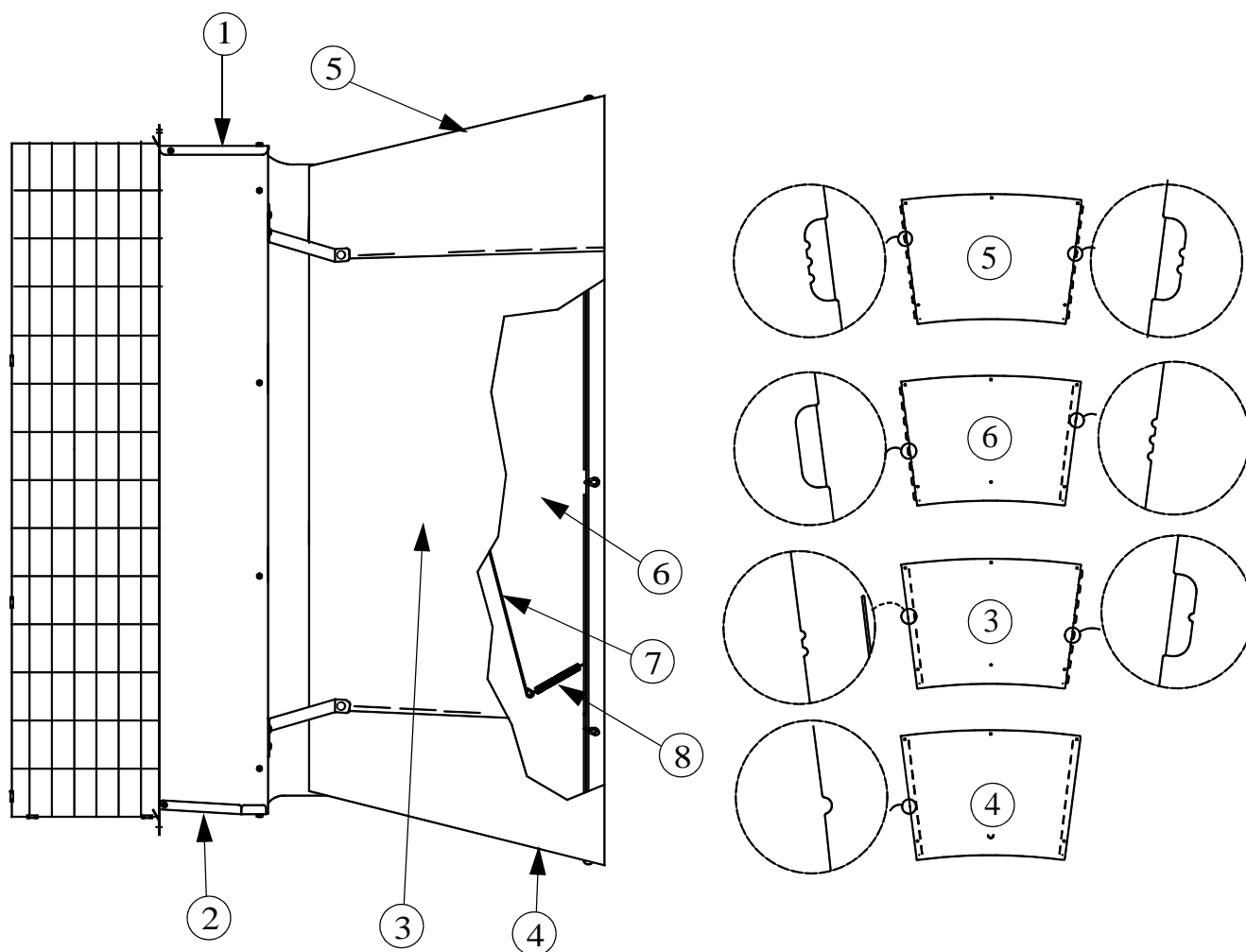
See page 18 for Fans manufactured September 2004 to July, 2007.



Item	Part Description	48" Fan Part Numbers		52" Fan Part Numbers	
		5" Deep Housing 49451-XX 9" Deep Housing 49515-XX		5" Deep Housing 49511-XX 9" Deep Housing 49519-XX	
		Part No.	Models-XX	Part No.	Models-XX
1	Motor, 1ph, 1.5hp, 1725 rpm	49903	-21	49903	-22
	Motor, 1ph, 1hp, 1725 rpm	37729	-22, -23	--	--
	Motor, 3ph, 1.5hp, 1725 rpm	47693	-52	--	--
	Motor, 3ph, 1hp, 1725 rpm	40157	-42	--	--
	Motor, 1ph, 1.5hp	--	--	48580	-21
	Motor, 3ph, 1.5hp	48608	-41,-51	48608	-41,-51,-42,-52
2	Shroud, Fan	48362	All	47710	All
3	Post, Fan	48393	All	48072	All
4	Motor Support, Idler Drive	48396	All	48396	All
5	Bearing Support, Idler Drive	48395	All	48395	All
6	Tensioner Support	48394	All	48394	All
7	Tensioner Assy with Idler	48429	All	48429	All
8	Bearing, 1" Pillow Block	50553	All	50553	All
9	Fan Shaft	48397	All	48397	All
10	Fan Blade, High Efficiency	45932	-23	--	--
	Fan Blade, Standard	28140	-22, -42, -52	48507	-22, -42, -52
	Fan Blade, High Capacity	46748	-21, -41, -51	48125	-21, -41, -51
11	Sheave, Driven AK84	28143	-51, -52, -23	28143	-51, -52
	Sheave, Driven AK94	40274	-21, -22, -41, -42	40274	-21, -22, -41, -42,
12	5" Hyflo® Top Panel	51045	All	51049	All
	9" Hyflo® Top Panel	51047	All	51051	All
13	5" Hyflo® R.H. Side Panel	49474-2	All	49510-2	All
	9" Hyflo® R.H. Side Panel	49514-2	All	49518-2	All
14	5" Hyflo® L.H. Side Panel	49474-1	All	49510-1	All
	9" Hyflo® L.H. Side Panel	49514-1	All	49518-1	All
15	5" Hyflo® Bottom Panel	51044	All	51048	All
	9" Hyflo® Bottom Panel	51046	All	51050	All
16	Sheave, Driver AK27	1381	-23	--	--
	Sheave, Driver AK30	8773	-21, -22, -41, 42	8773	-21, -22, -41, -42
	Sheave, Driver AK32	48504	-51, -52	48504	-51, -52
17					
18	Screen, 56 x 56 x 12	48794	All	48794	All
19	Clip, V Galv. Hyflo Screen	50409	All	50409	All
20	Cone Panel	51040	All	51041	All
21	Nylon Washer	4856	All	4856	All
22	Shutter Clip	36729	All	36729	All
23					
24	Grill, Galv. Cone	49447	All	49501	All
25	Frame, Hyflo® Door	49439	All	49499	All
26	Plate, SS Fan Door Pivot	49598	All	49598	All
27	Spring, Door Closing	49629	All	49629	All
28	Magnet, .125 Thk. x .50 Dia.	48427	All	48427	All
29	Bracket, Cone Support	49445	All	49445	All
30	Nylon Coated Door Stop Cable	50618-2	All	50618-1	All
31	V-Belt A59	48505	-23,-51,-52	48505	-23,-52
	V-Belt A60	48430	-21,-22,-41,-42	48430	-22, 42
	V-Belt AX59	--	--	48615	-51
	V-Belt AX60	--	--	48541	-21,-41
32	Hyflo® Door	49446	All	49500	All
33	Pop Rivet, SS 1/8 x .40	48936	All	48936	All
34	Support, Hyflo® Door Spring	49450	All	49450	All
35	Cone Clip (Optional)	--	--	49504	All
36	Idler with Bushings (For Repair)	50879	All	50879	All

Part Numbers (for Fans Manufactured September 2004 to July 2007)

Fans that were Manufactured from September 2004 to July of 2007 used four different Cone Panels, Housing Panels, and a Door stop Wire and Spring. The Part Numbers below are for Fans that were manufactured during that time.



		48" Fan Part Numbers		52" Fan Part Numbers	
		5" Deep Housing 49451-XX 9" Deep Housing 49515-XX		5" Deep Housing 49511-XX 9" Deep Housing 49519-XX	
Item	Part Description	Part No.	Models-XX	Part No.	Models-XX
1	5" Hyflo® Top Panel	48671	All	48685	All
	9" Hyflo® Top Panel	49207	All	49459	All
2	5" Hyflo® Bottom Panel	49473	All	49509	All
	9" Hyflo® Bottom Panel	49513	All	49517	All
3	Cone Panel, RH Hyflo®	49444	All	49508	All
4	Cone Panel, Bottom Hyflo®	49442	All	49506	All
5	Cone Panel, Top Hyflo®	49441	All	49505	All
6	Cone Panel, LH Hyflo®	49443	All	49507	All
7	Wire	49597	All	49597	All
8	Spring	49596	All	49596	All

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

Chore-Time Equipment ("Chore-Time") warrants each new Chore-Time product manufactured by it to be free from defects in material or workmanship for one year from and after the date of initial installation by or for the original purchaser. If such a defect is found by the Manufacturer to exist within the one-year period, the Manufacturer 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. Labor costs associated with the replacement or repair of the product are not covered by the Manufacturer.

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.

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Made to work. Built to last.

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Revisions to this Manual

Page No.	Description of Change
	Various Updates and Corrections

Contact your nearby Chore-Time distributor or representative for additional parts and information.

CTB Inc.

P.O. Box 2000 • Milford, Indiana 46542-2000 • U.S.A.

Phone (574) 658-4101 • Fax (877) 730-8825

E-Mail: ctb@ctbinc.com • Internet: <http://www.ctbinc.com>

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