

VANGUARD Series 36" Belt Drive Fans

Installation & Operator's Instruction Manual



Chore-Time 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, negligence, alteration, accident, or lack of proper maintenance shall not be considered defects under the Warranty.
5. This Warranty applies only to systems for the care of poultry and livestock. Other applications in industry or commerce are not covered by this Warranty.

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

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

Chore-Time 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 Chore-Time products in addition to those terms expressly stated above. An officer of CTB, Inc. must authorize any exceptions to this Warranty in writing. The Manufacturer reserves the right to change models and specifications at any time without notice or obligation to improve previous models.

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Contents

Topic	Page	User
Chore-Time Warranty	2	C,D
Distributor and Installer Information	4	
About This Manual	5	C,D,I
Safety Information	5	C,D,I
Safety–Alert Symbol	5	
Understanding Signal Words	5	
Follow Safety Instructions	6	
Decal Descriptions	6	
Decal Placement	6	
Technical Information	7	I
Tools Required	7	
Fan Installation	8	C,I
Fan Dimensions	9	C,D,I
Fan Assembly	10	C,I
Cone Assembly	11	C,I
Grill Installation	12	
Cone Installation	13	
Shutter Installation and Part Numbers	14	C,I
Belt Alignment and Spring Tension	15	C
Motor Specifications	16	C
Maintenance	17	C
Itemized Parts	18	C
Part Numbers	19	C

The Chore-Time 36" Vanguard Series fans are designed to be used as exhaust and/or circulation fans. The Fans are shipped assembled. Using this equipment for any other purpose or in a way not within the operating recommendations specified in this manual will void the warranty and may cause personal injury.

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

Distributor and Installer Information

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

Distributor's Name _____

Distributor's Address _____

Distributor's Phone _____ **Date of Purchase** _____

Installer's Name _____

Installer's Address _____

Installer's Phone _____ **Date of Installation** _____

System Specifications _____

About This Manual

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

Important ! Read ALL instructions carefully before starting construction.

Important ! Pay particular attention to all SAFETY information.

- *Metric measurements are shown in millimeters and in brackets, unless otherwise specified. " " equals inches and ' ' equals feet in English measurements.*

Examples:

1" [25.4]

4' [1 219]

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



Safety Information

Caution, Warning and Danger Decals have been placed on the equipment to warn of potentially dangerous situations. Care should be taken to keep this information intact and easy to read at all times. Replace missing or damaged safety decals immediately.

Using the equipment for purposes other than specified in this manual may cause personal injury and/or damage to the equipment.



Safety–Alert Symbol

This is a safety–alert symbol. When you see this symbol on your equipment, be alert to the potential for personal injury. This equipment is designed to be installed and operated as safely as possible...however, hazards do exist.

Understanding Signal Words

Signal words are used in conjunction with the safety–alert symbol to identify the severity of the warning.



DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



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

Follow Safety Instructions

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

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

Decal Descriptions

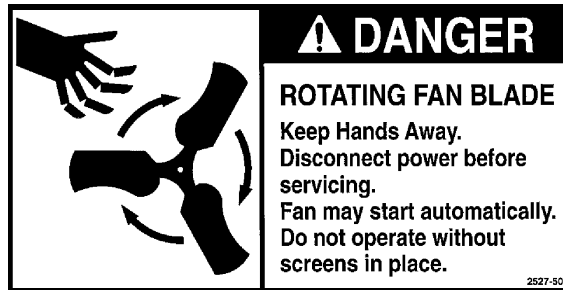


Figure 1. Danger Decal Part Number 2527-50

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

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

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

Decal Placement

This diagram shows the proper location of the safety decal “**DANGER—ROTATING FAN BLADE**” as shipped from the factory.

- Keep all Safety Signs and decals in good condition.
- Replace damaged or missing decals.
- Make sure the decals may be seen at all times.

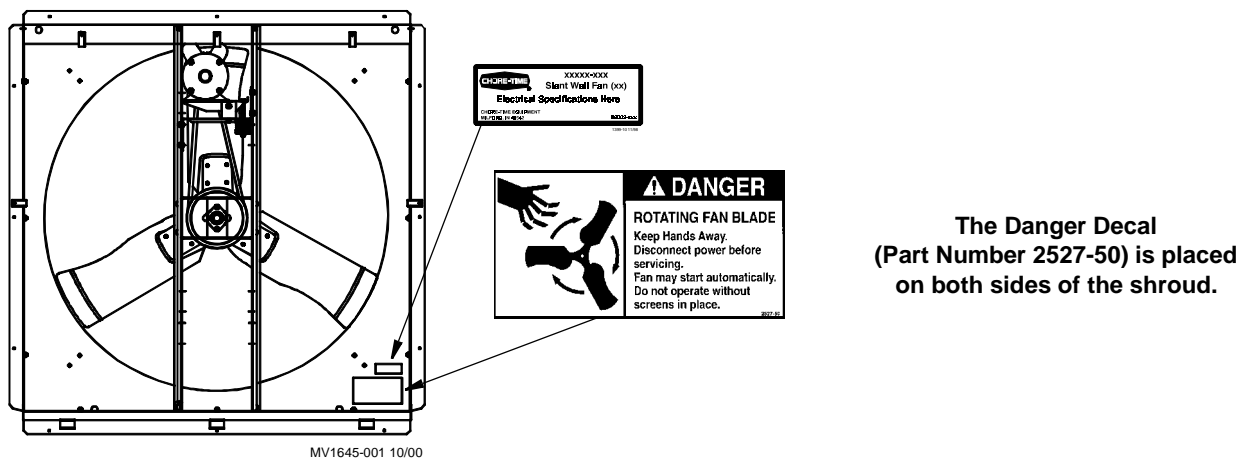


Figure 2. Decal Placement

Technical Information

Motor choices and specifications are provided in the Parts List section of this manual. See **Page 16** Fan Motor specifications.

Important! Chore-Time Equipment strongly recommends that a good alarm system should be installed in confinement buildings to warn of power failure and high temperature.

Chore-Time Equipment also recommends that an alternate power source be available for confinement buildings in case of power failure.

Wiring: See wiring diagram on Motor for Motor Electrical Specifications. Chore-Time Equipment recommends that you follow local, state and national electric codes for wiring.

Tools Required

- Regular Screwdriver
- Hammer
- 1/2" Open End Wrench or Socket Wrench with 1/2" Socket
- Wire Cutters & Strippers
- Adequate Size & Quantity of Electrical Wire
- 5/16" Hex Key Wrench
- 5/16" Open End Wrench or a 12 Point 3/8" Socket and Ratchet

Fan Installation

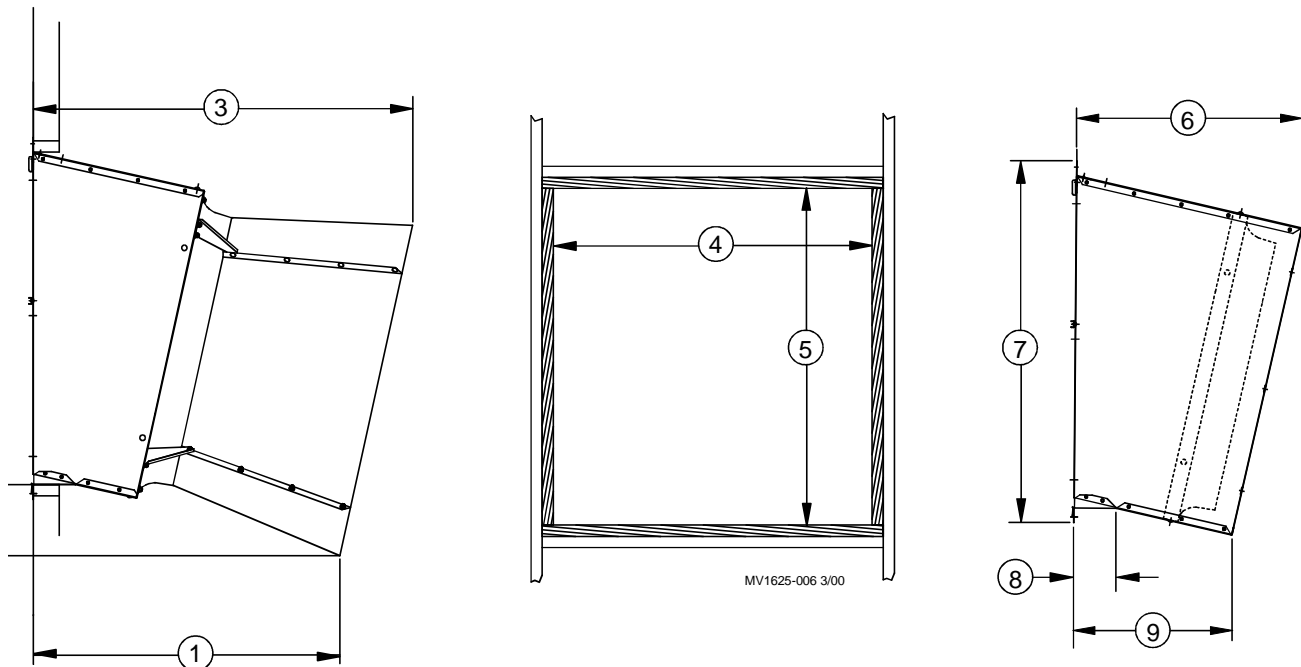
Important! The 36" Cone and Slant Wall Fan must be installed in a wall. The Box and Panel Fan may be installed in a wall or suspended from the ceiling. (No Hardware supplied to complete these tasks)

Build Fan framing out of 2" [50 mm] lumber (not supplied). The required rough opening is provided in the table below. Allow a minimum 4" spacing between framed openings for adjacent Cone Fan. Allowing a 4" spacing will provide clearance for the mounting flange. The Slant Wall and Box Fans can be mounted closer together, but do not overlap flanges.

Insert the Fan Assembly in the framed opening in the wall.

Center the Fan Assembly in the framed opening, left to right. Allow the Fan Housing to set on the bottom of the framed opening.

Secure the Fan Assembly to the framed opening, using the included 1/4" x 1-3/4" Lag Screws starting with the center holes in each panel. The end holes will also be used for attaching the Corner Flange Angles.



Item	Description	S/W & Cone Dimension	Box Fan Dimension
1	Bottom Length	41-3/8"	Not Applicable
2	Vertical Dim. of Cone	9-1/2"	Not Applicable
3	Top Depth	51-1/8"	Not Applicable
4	Rough Opening Width	43"	42-1/4"
5	Rough Opening Height	45"	42-1/4"
6	Top Depth	30-7/16"	21"
7	Height	48-3/8"	Not Applicable
8	Slant Dim.	5-3/4"	Not Applicable
9	Bottom Depth	21-5/16"	21"

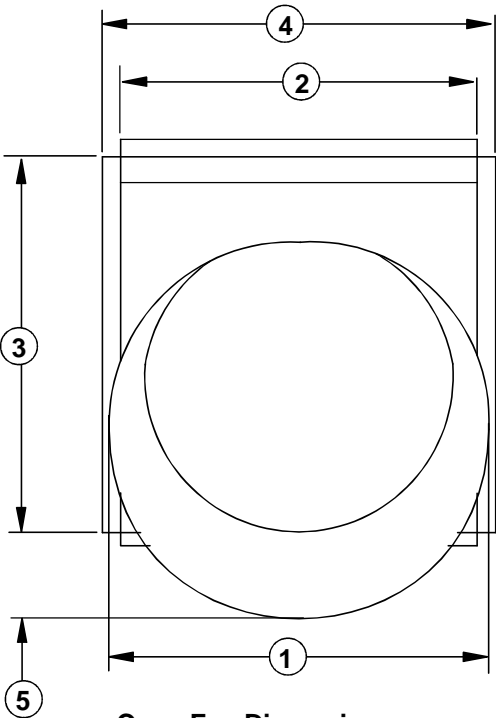
Figure 3. Fan Framing Dimensions

Fan Dimensions

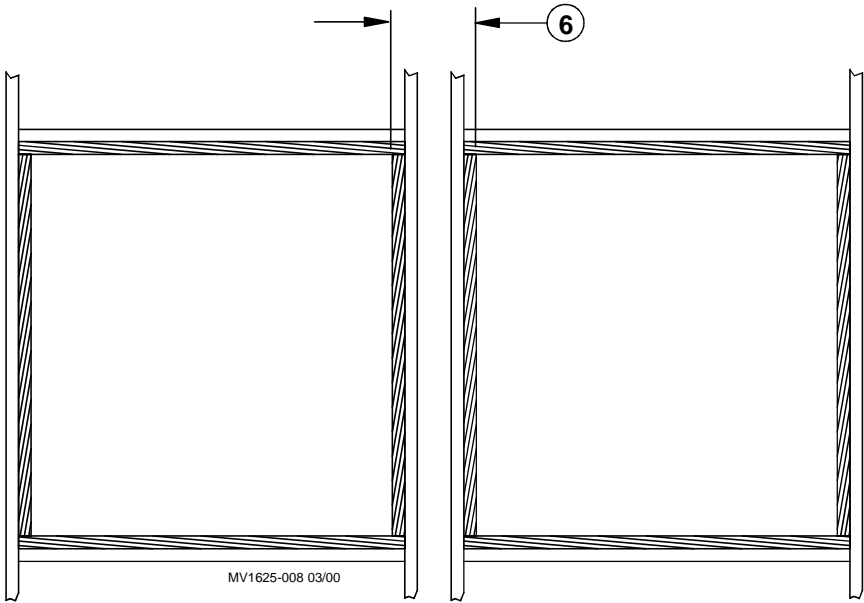


Planning the layout of the spacing between Cone Fans is very important. **SPACING TOO CLOSE TOGETHER WILL CAUSE DISTORTION** due to interference with the cones; thus, not allowing the fan to deliver optimum performance.

Allow a minimum 4" spacing between framed openings for adjacent Cone Fans.



Cone Fan Dimensions
(item 5, is for Cone Fans Only)



Spacing between framed openings 4"

Table 2. Fan Dimensions						
36" BD Fans	1	2	3	4	5	6
	45" [114.3 cm]	42.5" [107.95 cm]	44.375" [112.7 cm]	46" [116.84 cm]	10.156" [25.8 cm]	4" Min. Spacing [10.16 cm] Critical for Cone Fans

Figure 4. Slant Wall/Cone Fan spacing between framed openings.

Fan Assembly

Assemble the Corner Flange Angles in each corner of the Fan, by sliding the Corner Flange Angle under all edges of Flange Corners, secure with lag screws. The Slant Wall and Cone Fans are mounted the same way, as shown.

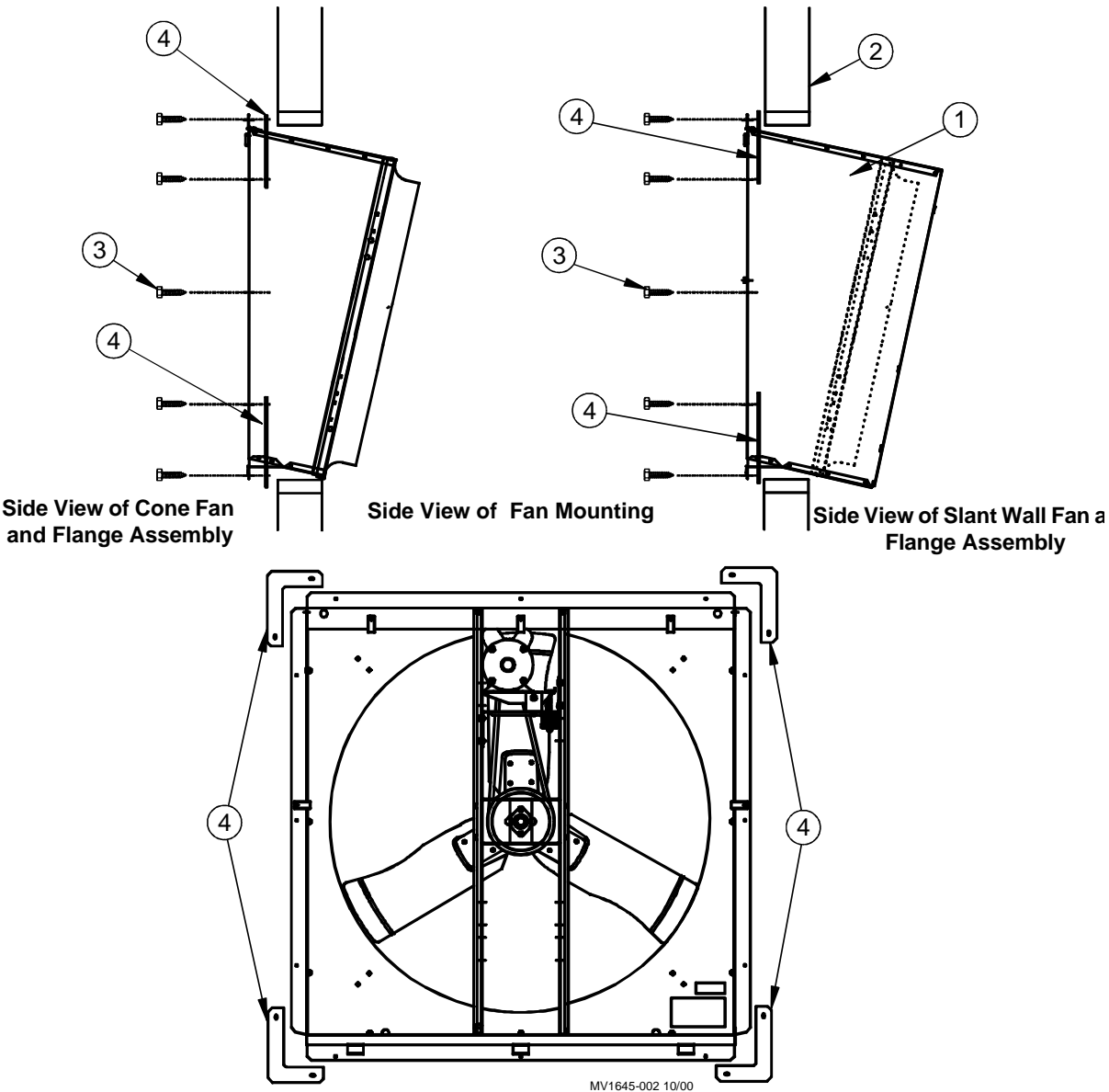


Figure 5. Corner Flange Angle Assembly

The Flange Angles are to be placed between the building and the Fan Flange

Item	Description
1	Fan Assembly
2	Side Wall of Building
3	1/4"x1-3/4" Lag Screw
4	Corner Flange Angles

Cone Assembly

The Cone must be assembled and installed in the field.

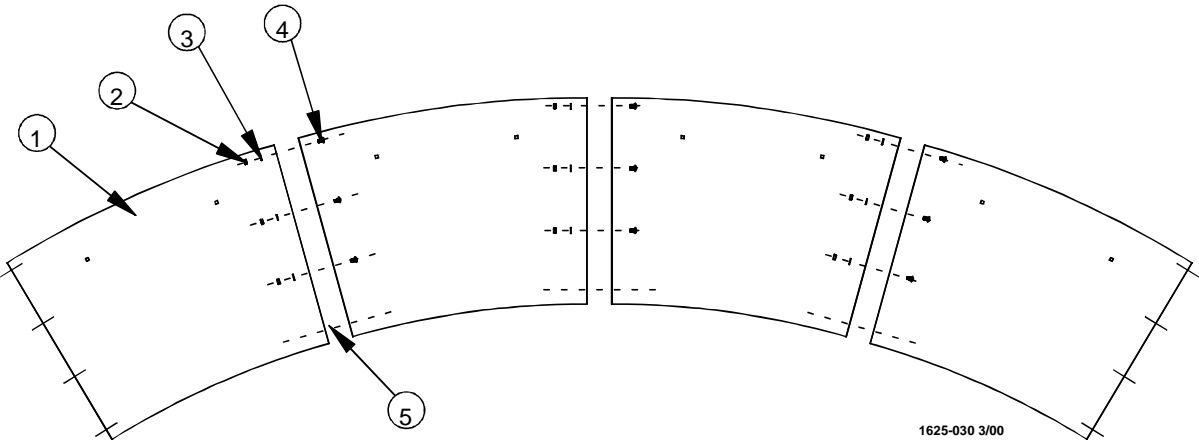
Important! The Fan must be installed in the wall before installing the Cone to the Fan.

Lay the Cone Panels, with the flanges up, on a flat surface, as shown in **Figure 6**.

Important! Do not fully tighten the hardware.

Loosely, fasten the Side Panels together with (3) 5/16-18 x 5/8" carriage bolts, (3) 3/8" lock washers, and (3) 5/16"-18 hex nuts per joint. Only install hardware at the locations shown in **Figure 6**.

Set the Cone Side Panels up and align the ends to create the cone shaped housing. **Loosely**, secure the ends similar to the other joints.



Cone Assembly		
Item	Description	Part Numbers
1	Cone Panel	37804
2	5/16-18" Hex Nut	2145
3	3/8" Lock Washer	5747
4	5/16-18 x 5/8" Carriage Bolt	8282
5	Do not install Hardware here.	

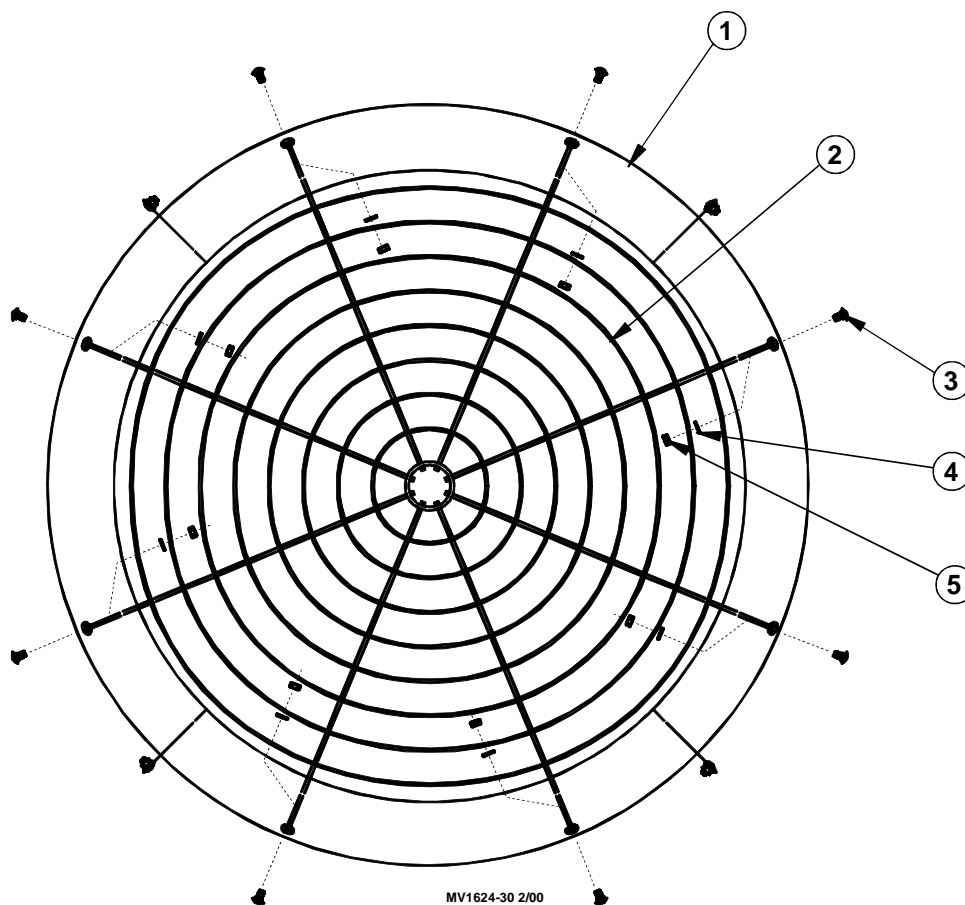
Figure 6. Cone Assembly (Top View)

Grill Installation

Notice: Position the Grill in the larger end of the Cone Assembly.

Secure the Grill in place using the 5/16"-18 carriage bolts, 3/8" lock washers, and 5/16"-18 hex nuts. See Figure 7.

This will help maintain the shape of the Cone Assembly while it is being secured to the Fan Shroud.



Grill Installation		
Item	Description	Part Numbers
1	36" Fan Cone Kit	37936
2	Grill	37629
3	5/16-18" Hex Nut	2145
4	3/8" Lock Washer	5747
5	5/16-18 x 5/8" Carriage Bolt	8282

Figure 7. Grill Installation Diagram

Cone Installation

Note: The flanges should be on the outside of the Cone. Secure each Cone Hanger Bracket to the Fan Shroud, using 5/16"-18 carriage bolts, 3/8" lock washers, and 5/16"-18 hex nuts. See **Figure 8**.

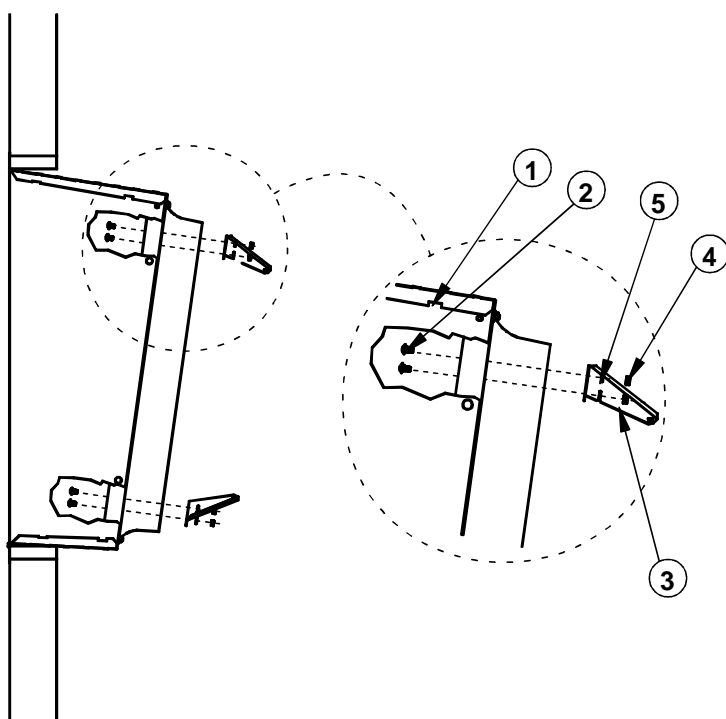


With the help of an assistant, lift the Cone Assembly to the Fan Shroud.

Slide the smaller end of the Cone Assembly over the Fan Shroud. Rotate the Cone Assembly to align the Panel Joints with the Cone Hanger Brackets.

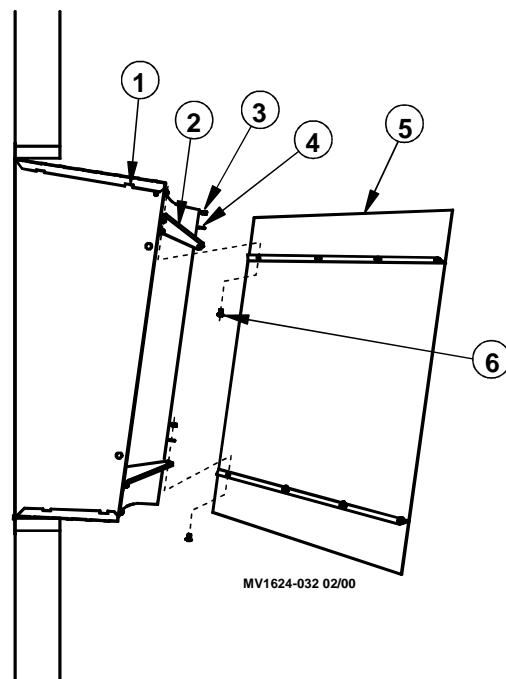
Secure the Cone Assembly to the Cone Hanger Brackets using (1) 5/16"-18 carriage bolt, 3/8" lock washer, and 5/16"-18 hex nut. See **Figure 8 and 9**.

Tighten all the hardware after the cone assembly is secure and in place.



Hanger Bracket Installation		
Item	Description	Part Number
1	Fan Assembly	46130-36XX
2	5/16-18 x 5/8" Carriage Bolt	8282
3	Cone Hanger Bracket	37806
4	5/16-18" Hex Nut	2145
5	3/8" Lock Washer	5747

Figure 8. Hanger Bracket Installation (Side View)



Cone Assembly		
Item	Description	Part Number
1	Fan Assembly	46130-36XX
2	Cone Hanger Bracket	37806
3	5/16-18" Hex Nut	2145
4	3/8" Lock Washer	5747
5	36" Fan Cone Kit	37935
6	5/16-18 x 5/8" Carriage Bolt	8282

Figure 9. Cone Installation (Side View).

Shutter Installation and Part Numbers

Plastic and Aluminum Shutters are available.

The Bottom Panel is designed with 2 tabs to hold either Shutter. **Shown in Figure 10.** Slide the bottom of the Shutter into position in the Bottom Panel Slots, lean the Shutter back and lock it in place by rotating the Shutter Clips. Check the Shutter for proper operation—the shutter must be able to open and close freely without obstructions.

Note: For both the Aluminum or Plastic Shutter, route the motor cord through the Knock-outs.

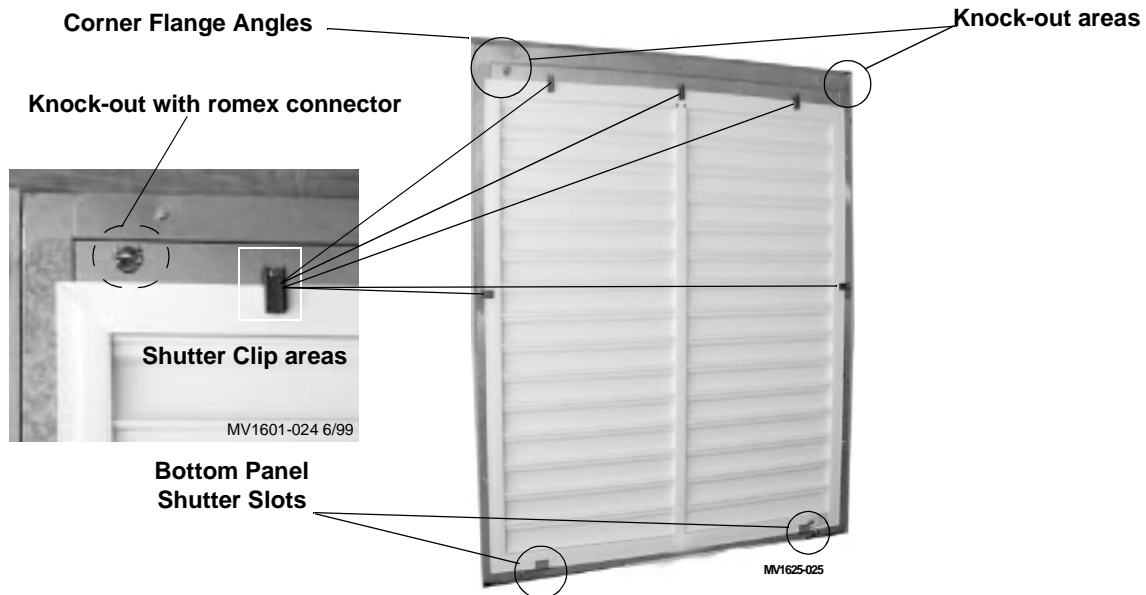


Figure 10. Shutter Placement Assembly

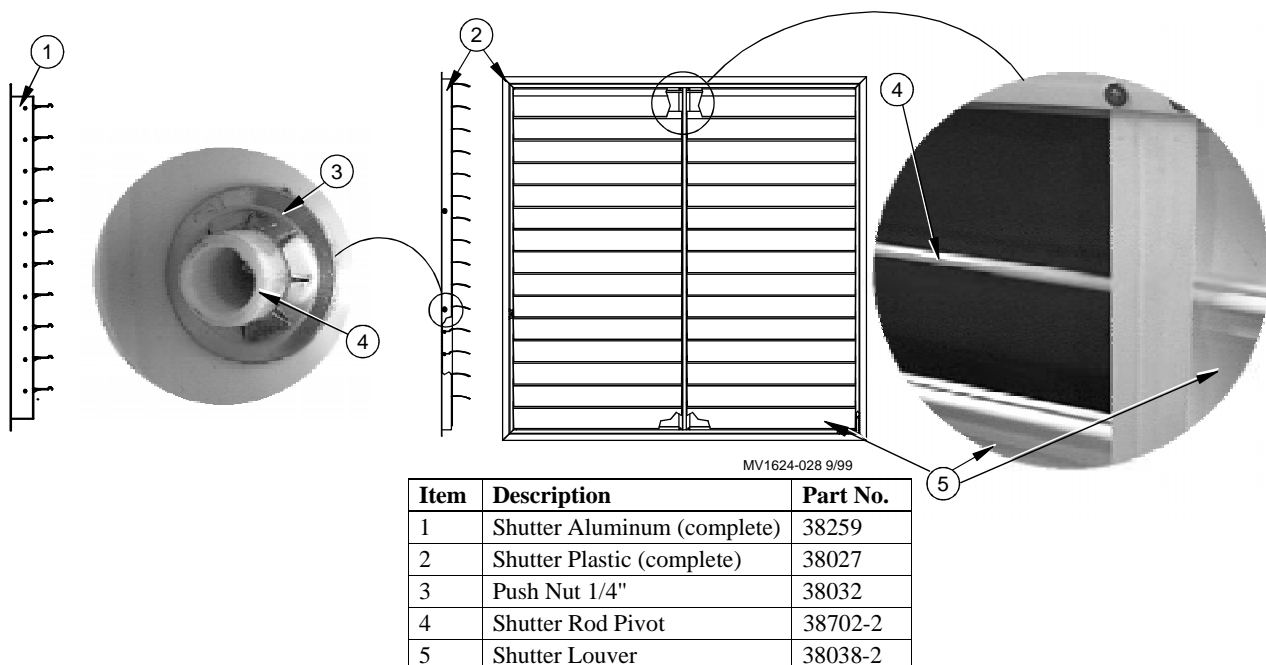
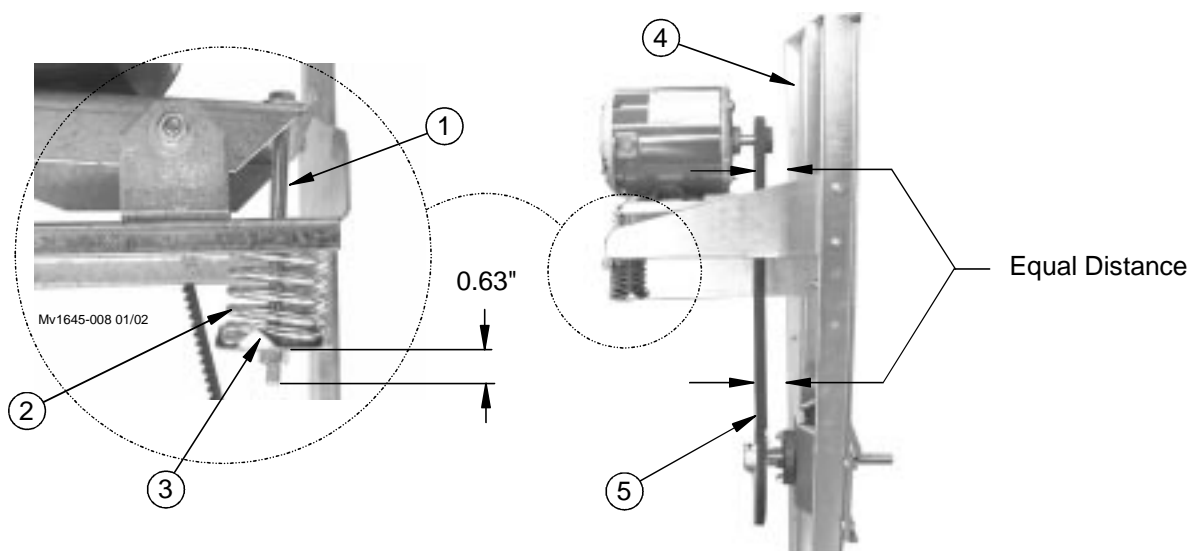


Figure 11. Plastic Shutter Parts

Belt Alignment and Spring Tension

Figure 12 shows how to properly align the belt and adjust the tension to insure the best installation and Fan life.

- Belt must be vertical to obtain maximum belt life.
- Measure from the Post to the belt as shown to make sure that there is equal distance. Lay a straight edge across the posts to get the measurement if necessary. (See **Figure 12**)
- Tighten the 5-16-18 x 5.5" Bolt (**Item 1, Figure 12**) until the measurement from the end of the Bolt to the Bottom Spring Cap (**Item 3**) is .63" [16 mm] as shown in **Figure 12**.



Belt Alignment	
Item	Description
1	5/16-18 x 5.5" Bolt
2	Spring
3	Spring Caps
4	Post
5	Belt

Figure 12. Belt Alignment

Motor Specifications

Table 3. Motor Specifications and Part Numbers								
Fan Specifications (assembled)	Motor Specifications							
Description	*Part No.	Voltage	HZ	Phase	HP	Motor Part No.	Motor Sheave Part No.	Fan Sheave Part No.
36" Panel Belt Drive Fan	46128-3620	115/230	60	1	.5	40158	4906	42338
36" Panel Belt Drive Fan	46128-3640	200-230 400-460	60	3	.5	38566	4906	42338
36" Panel Belt Drive Fan	46128-3650	200-240 380-415	50	3	.5	38566	8773	42338
36" Deep Box Belt Drive Fan	46293-3620	115/230	60	1	.5	40158	4906	42338
36" Slant Wall Belt Drive Fan	46129-362X	115/230	60	1	0.5	40158	4906	42338
36" Slant Wall Belt Drive Fan	46129-364X	200-230 400-460	60	3	.5	38566	4906	42338
36" Slant Wall Belt Drive Fan	46129-365X	200-240 380-415	50	3	.5	38566	8773	42338
36" Cone Belt Drive Fan	46130-362X	115/230	60	1	0.5	40158	4906	42338
36" Cone Belt Drive Fan	46130-364X	200-230 400-460	60	3	0.5	38566	4906	42338

* Replace the "X" in fan P/N with "1" for an aluminum Shutter, "2" for a plastic shutter, and "4" for a grey plastic Shutter

Maintenance

**Danger!**

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. **Avoid spraying water on fan shaft bearings.**
- Periodically check the V-Belt. If necessary, adjust the spring tension to prevent the belt from slipping.
- Keep Shutters, 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.

Important!

Relubrication is required once annually or immediately after cleaning with a pressure washer. For lubricants, add only a small amount of grease to purge impurities out of the bearing seals.

DO NOT OVER GREASE!

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.

Cone Fan Version

Slant Wall Version

Deep Box Version

Panel Version

Mv1645-010 02/02

My1645-010 02/02

Part Numbers

Description	Cone Fan Version			Slant Wall Version		Deep Box Fan Version		Panel Fan Version	
	Item	Qty.	Part No.	Qty.	Part No.	Qty.	Part No.	Qty.	Part No.
Motor	1*	1	Varies	1	Varies	1	40158	1	Varies
5/16-18 x .625 Carriage Bolt	2	28	8282	28	8282	28	8282	20	8282
5/16-18 Hex Lock Nut	3	3	2148	3	2148	3	2148	3	2148
36" Top Panel	4	1	44739	1	44737	4	37556		
36" Bottom Panel	5	1	44738	1	44736				
36" Side (RH) Panel	6	1	44735-2	1	44734-2				
36" Side (LH) Panel	7	1	44735-1	1	44734-1				
36" Fan Shroud	8	1	5538	1	5538	1	5538	1	5538
36" Fan Shutter Mounting Brace	9	1	44740	1	44740				
36" x 12.5° Fan Post	10	2	46127	2	46127	2	46127	2	46127
Motor Mount Pivot Plate	11	1	43713	1	43713	1	43713	1	43713
Pivot Plate Mounting Bracket	12	1	46444	1	46444	1	46444	1	46444
Z-Motor Mounting Bracket	13	1	46445	1	46445	1	46445	1	46445
ST BD Module Bushing	14	2	38896	2	38896	2	38896	2	38896
Spring	15	1	43715	1	43715	1	43715	1	43715
36" Fan Blade	16	1	46126	1	46126	1	46126	1	46126
5-16-18 x 3/8 Set Screw	17	1	1174	1	1174	1	1174	1	1174
1/4 x 1 x 1/8 Square Key	18	2	2419-2	2	2419-2	2	2419-2	2	2419-2
Shaft	19	1	43691	1	43691	1	43691	1	43691
Rear Bearing Mount Plate	20	1	43690	1	43690	1	43690	1	43690
Front Bearing Mount Plate	21	1	43689	1	43689	1	43689	1	43689
1" Bore Cast Flange Bearing	22	2	43654	2	43654	2	43654	2	43654
5/16-18 Hex Serrated Flange Nut	23	30	8490	30	8490	30	8490	22	8490
AK51 x 1" Bore (4.95") Sheave	24	1	42338	1	42338	1	42338	1	42338
Corner Flange Angle	25	4	44284	4	44284				
5/16-18 x 1.25 Carriage Bolt	26	4	34885-2	4	34885-2	4	34885-2	4	34885-2
.375 x .875 x .078 Flat Washer	27	3	546	3	546	3	546	3	546
Danger Decal	28	2	2527-50	2	2527-50	2	2527-50	2	2527-50
36" S/W Cone Fan Decal	29	1	Varies	1	Varies	1	39002-164	1	Varies
EZ Fan Screen Clip	30			12	38891	32	38891		
Spring Coil Cap	31	2	44002	2	44002	2	44002	2	44002
#10-16 x .50 Hx WH Screw	32	16	3037	20	3037				
Wire Screen	33			1	29046	1	29046		
36 BD Fan Inlet Screen	34					1	46292		
5/16-18 x 5.5" Bolt	35	1	4412-24	1	4412-24	1	4412-24	1	4412-24
SS Shutter Clip	36	5	36729	5	36729				
Nylon Washer	37	5	4856	5	4856				
3/16" x 3/8" Pop Rivet	38	9	2569	9	2569				
.227 x .515 x .065 Flat Washer	39	2	2955-19	2	2955-19				
Cast Iron Sheave	40	1	4906	1	Varies	1	4906	1	Varies
AX39 V Belt	41	1	46285	1	46285	1	46285	1	46285
Grill	42	1	37629						
36" EZ Fan Cone Kit	43	1	37936						
36" Shutter	44**	1	Varies	1	Varies				
36" Box Fan Panel	45					4	37556		
Pkg, Hdwr Installation	-----	1	46287	1	46287				
* See Motor Specifications Chart on Page 16									
** See Shutter Detail on Page 14									



**Made to work.
Built to last.**

Revisions to this Manual

Page No.	Description of Change
Various pages	Updated Spring tension details. Added Panel and and Box Fans to Parts Page.

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

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