

**48" Belt Drive  
Cone Fan  
Installation & Operator's Instruction Manual**



## Chore-Time Warranty

**Chore-Time Equipment** warrants each new product manufactured by it to be free from defects in material or workmanship for one year from the date of initial installation by the original purchaser. If such a defect is found by Chore-Time to exist within the one year period, Chore-Time 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.

### Conditions and limitations:

1. The product must be installed and operated in accordance with instructions published by **Chore-Time or warranty will be void.**
2. Warranty is void if **all components** of a system are not supplied by **Chore-Time.**
3. This product must be purchased from and installed by an authorized Chore-Time dealer 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 this 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.

**Chore-Time** shall not be liable for any **Consequential or Special Damage** which any purchaser may suffer or claim to have suffered 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 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 AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE SOLD AND DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

Any exceptions to this warranty must be authorized in writing by an officer of the company. Chore-Time reserves the right to change models and specifications at any time without notice or obligation to improve previous models.

CHORE-TIME EQUIPMENT, A Division of CTB, Inc.  
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Milford, Indiana 46542-2000 U.S.A.

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# General

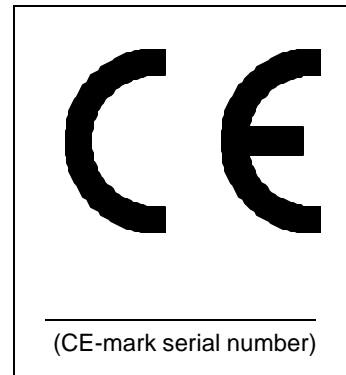
## Support Information

The Chore-Time 48" Galvanized Cone Fans are designed to be used as exhaust 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, 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).

**IMPORTANT: CE stands for certified Europe.** It is a standard which equipment must meet or exceed in order to be sold in Europe. CE provides a benchmark for safety and manufacturing issues. **CE is required only on equipment sold in Europe.**

Chore-Time Equipment recognizes CE Mark and pursues compliance in all applicable products. *Fill in the CE-Mark serial number in the blank space provided for future reference.*



## 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 square brackets, unless otherwise specified. “ ” equals inches and “ ’ ” equals feet in English measurements.*

*Examples:*

*1" [25.4]*

*4' [1 219]*



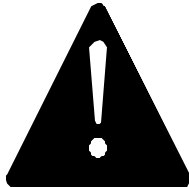
- Optional equipment contains necessary instructions for assembly or operation.
- Major changes from the last printing will be listed on the back cover.
- This Planning Symbol is used in areas where planning needs to take place before construction continues.
- Very small numbers near an illustration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

# Safety Information

**Caution, Warning, 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 signs.

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.



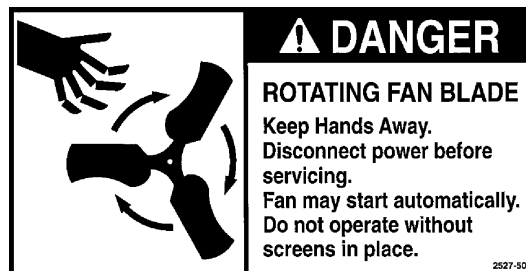
**CAUTION** indicates a hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

## 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



MV1600-011 6/99

## DANGER: Rotating Fan Blade

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 **DANGER Decal** information 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. Replace damaged or missing decals. Make sure the decals may be seen at all times.

**NOTE:** These decals are on placed on both sides of shroud.

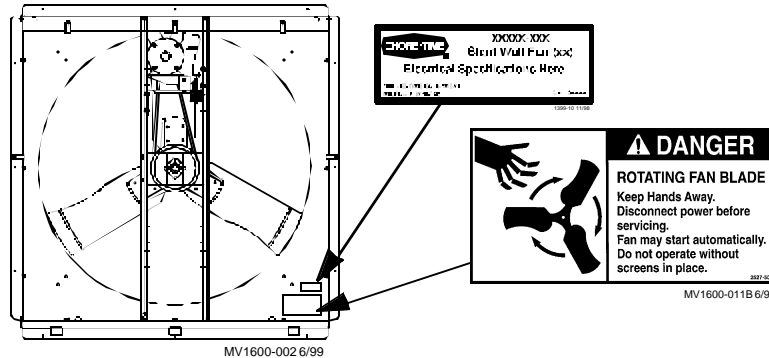


Figure 1. Decal Placement

**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.

## Technical Information

Motor choices and specifications are provided in the Parts List section of this manual. See **Page 23** 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.

## 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 48" Cone Fan must be installed in a side wall.**

Build fan framing out of 2" [50 mm] lumber (not supplied). The required rough opening is provided in the table below.

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

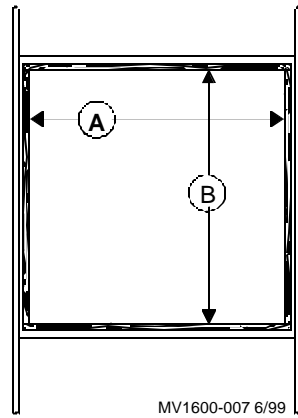


Figure 2. Framing Diagram (front view)

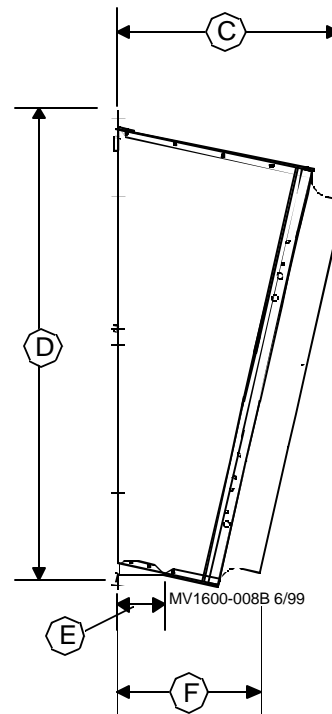


Figure 3. Fan (side view)

Table 1. Framing Size					
A Rough Opening	B Rough Opening	C	D	E	F
55"	57 1/2"	33-3/8"	60-7/8" x 58.3"	5-3/4"	21"



# Fan Dimensions



Planning the layout of the spacing between Cone Fans is very important. **SPACING TO CLOSE TOGETHER WILL CAUSE INTERFERENCE** with the cones.

Allow a minimum 4" spacing between framed openings for adjacent fans. This will provide clearance for the mounting flange.

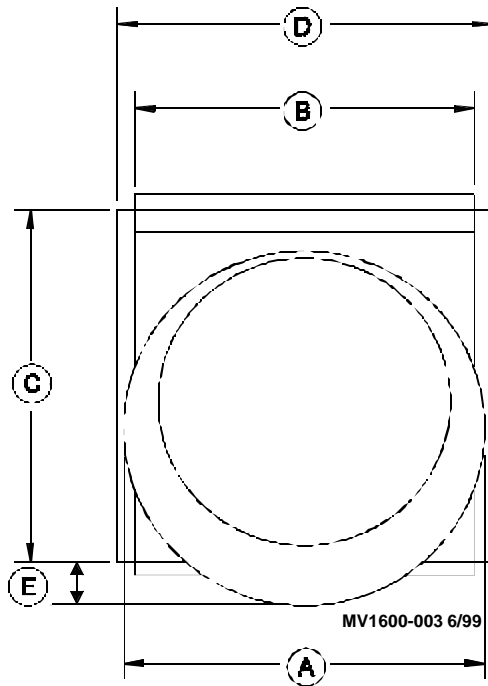


Figure 4. Fan/Cone Dimensions

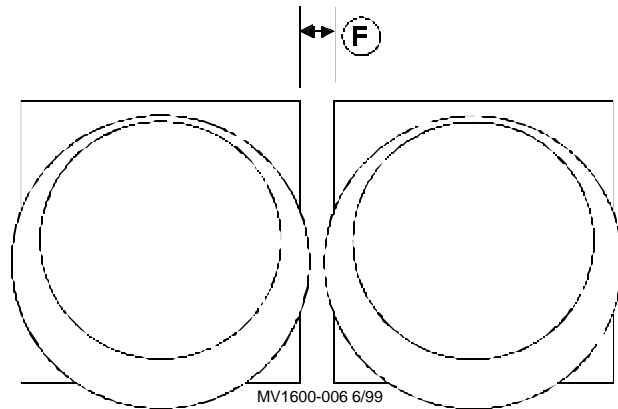


Figure 5. Cone Fan allow 4" spacing between framed openings.

Table 2. Fan Dimensions						
	"A"	"B"	"C"	"D"	"E"	"F"
<b>48" BD Cone Fan</b>	57" [144.8 cm]	54.5" [138.4 cm]	57" [144.8 cm]	58.25" [148.0 cm]	9.5" [24.13 cm]	4" Minimum Spacing [10.16 cm]

# 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.

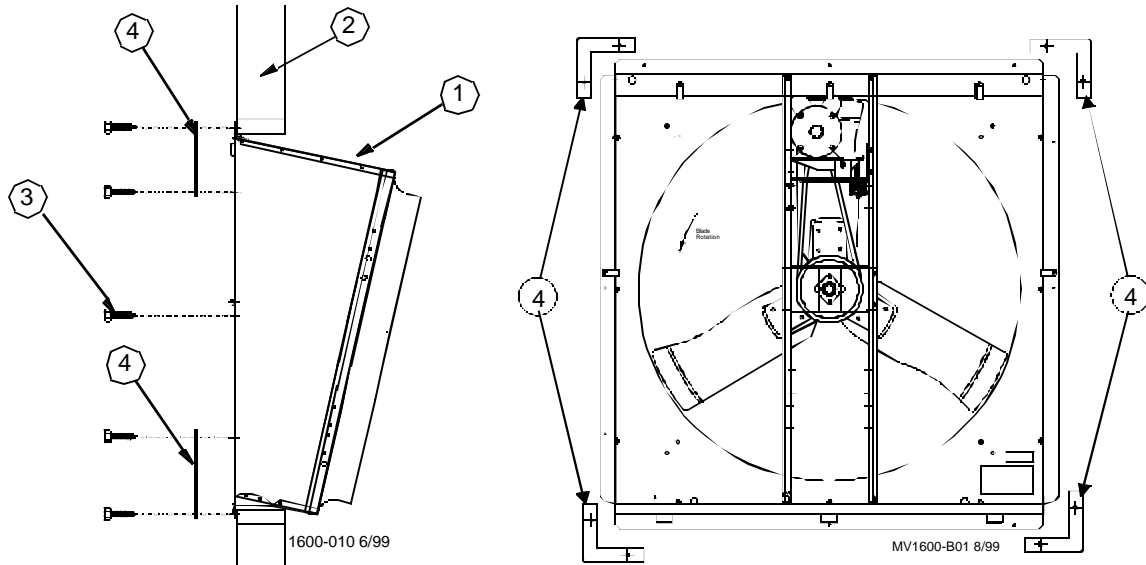


Figure 6. Fan Assembly (side view)

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 7**.

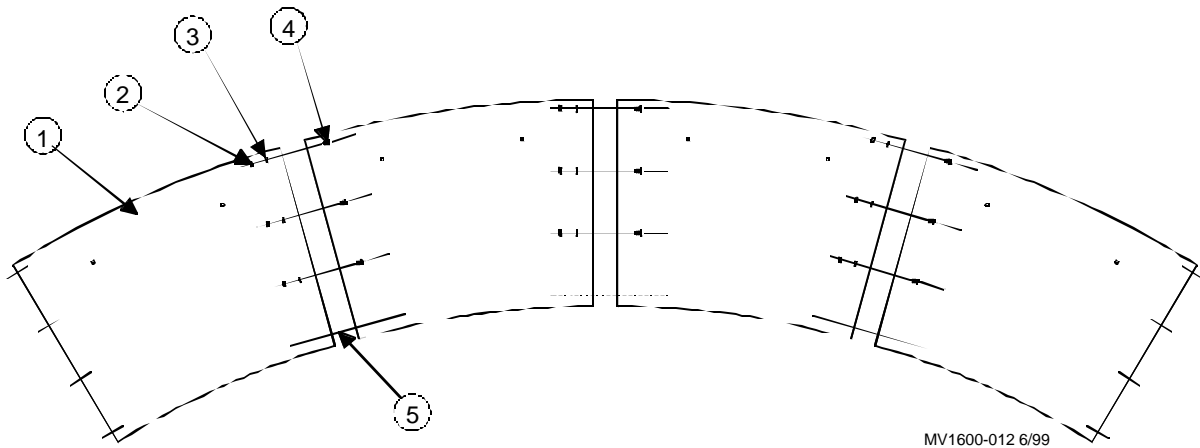
**Important!** **Do not tighten the hardware.**

**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 7**.

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.

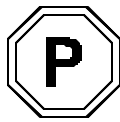
**Note:** **The flanges should be on the outside of the Cone.** Secure each Cone Hanger Bracket to the Fan Shroud, using 5/16"-18 carriage bolts,

3/8" lock washers, and 5/16"-18 hex nuts. See **Figure 8**.



**Figure 7. Cone Assembly (Top View)**

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

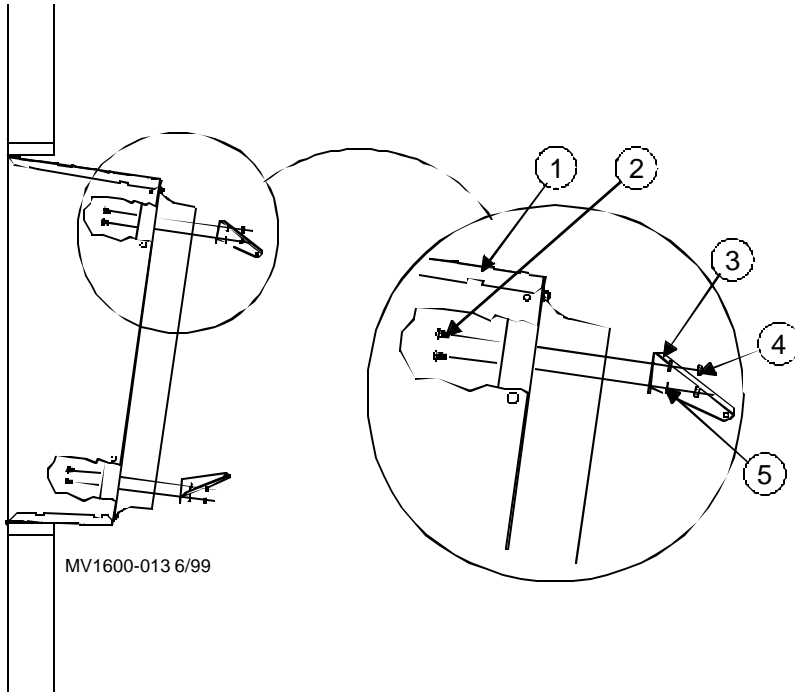


**With the help of an assistant, lift the Cone Assembly to the Fan Shroud.**

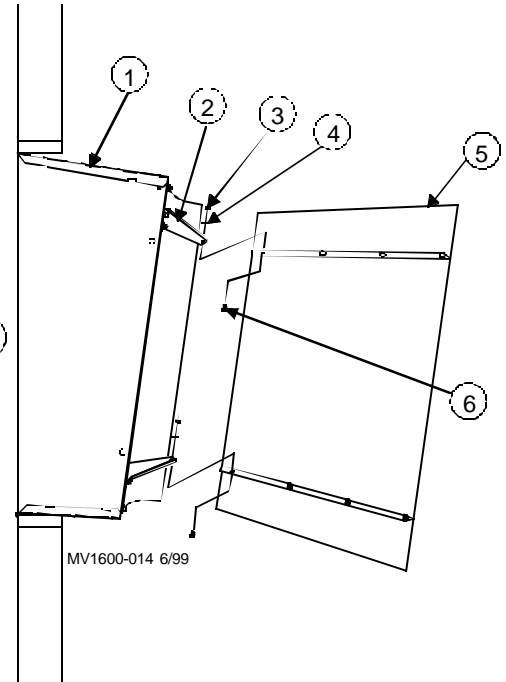
Slide the smaller end of the Cone Assembly over the Fan Shroud. Rotate the Cone Assembly to align the Panel Joints with the Cone Hanger Brackets.

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.



**Figure 8. Hanger Bracket Installation (Side View)**



**Figure 9. Cone Installation (Side View).**

Hanger Bracket Installation	
Item	Description
1	Fan Assembly
2	5/16-18 x 5/8" Carriage Bolt
3	Cone Hanger Bracket
4	5/16-18" Hex Nut
5	3/8" Lock Washer

## 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 10.

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

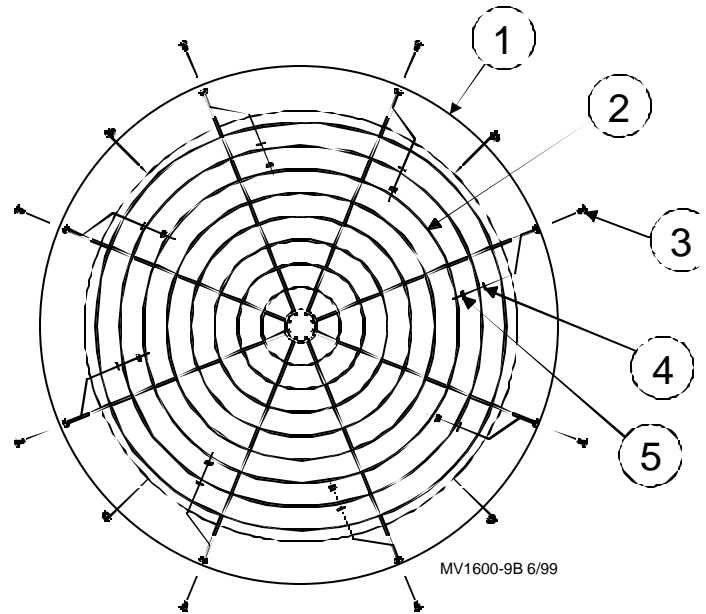


Figure 10. Grill Installation Diagram

Grill Installation	
Item	Description
1	Cone Assembly
2	Grill
3	5/16-18" Hex Nut
4	3/8" Lock Washer
5	5/16-18 x 5/8" Carriage Bolt

# Motor Installation For Belt Drive Units

Mount the Motor to the Pivot Motor Mount Plate by using the supplied 5/16-18 x .625" Carriage Bolt with the heads coming up from the bottom and the 5/16-18" Locking Hex Nut on top.

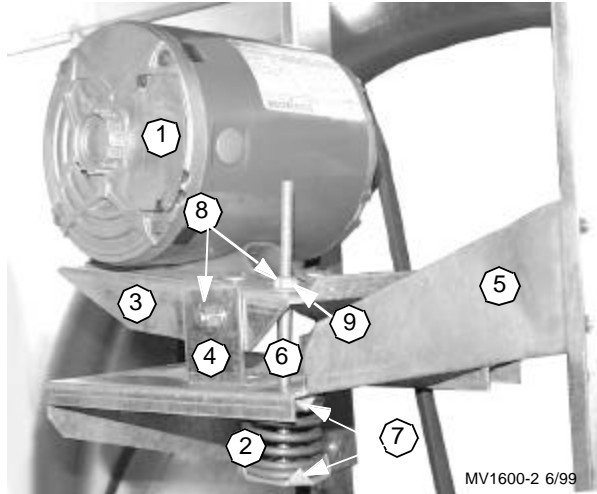


Figure 11. Rear View of Motor Installation.

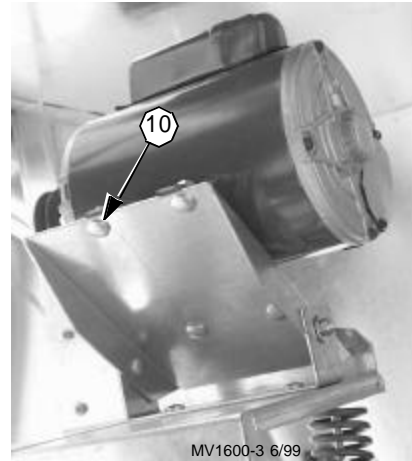


Figure 12. Motor position before putting Belt on Sheave and Pulley. Notice the bolt position Item 10 .

Item	Description	Part Numbers
1	Motor Wiring Cover Plate	Motors Vary
2	Spring (Compress to 2")	43715
3	Pivot Motor Mount Plate	43713
4	Pivot Plate Mounting Bracket	43714
5	Z-Motor Mounting Bracket	43712
6	Bolt, 5/16-18 x 5"	4412-14
7	Spring Cap (2 pcs)	44002
8	5/16" Locking Hex Nut	2148
9	5/16" Flat Washer	546
10	5/16-18 x .625" Carriage Bolt	8282

Motor Specifications and Part Numbers								
Fan Specifications (assembled)		Motor Specifications						
Description	*Part No.	Voltage	HZ	Phase	HP	Motor P/N	Motor Sheave P/N	Fan Sheave P/N
48" Belt Drive Cone Fan	43679-482X	115/230	60	1	1	37729	35333	42072
	43679-484X	208-230/460	60	3	1	40157	35333	42072

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

## Sheave Mounting

Slide the Sheave onto the motor shaft as shown. Insert the key provided with the motor as shown in **Figure 13**. to lock the Sheave in place. Once the belt has been aligned, torque the set screw to 150-165 in-lbs to secure Sheave in place. (Do not tighten set screw until the belt is aligned.)

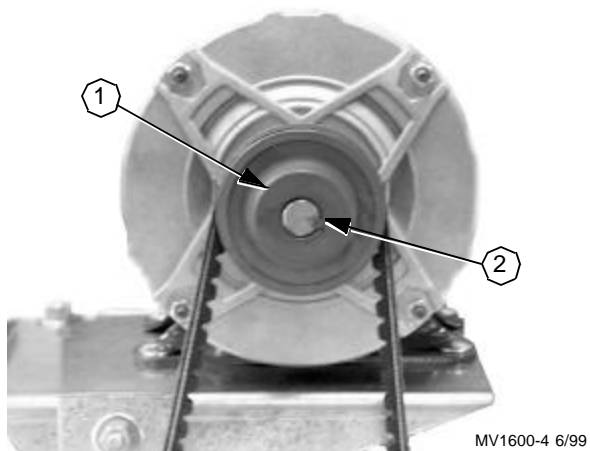


Figure 13. Sheave Mounting and Key Assembly.

Item	Description
1	Sheave
2	Key

### Belt Alignment

**Notice:** Figure 14. indicates the proper items to check to insure best installation and Fan life.

- Belt must be vertical to obtain maximum Belt Life.
- Measure from a straight edge to the sheave to make sure that there is equal distance. See Figure 14.

The spring is to be compressed to 2-1/4".

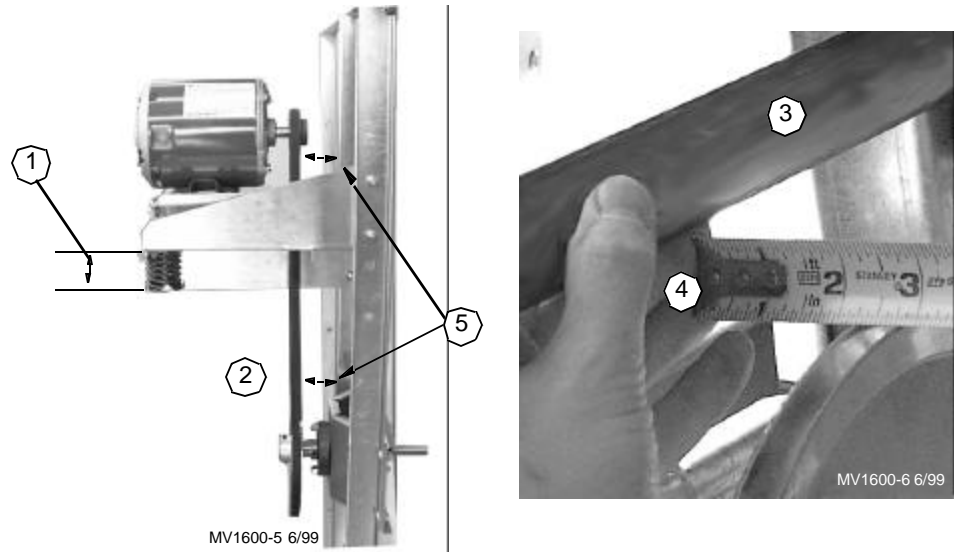
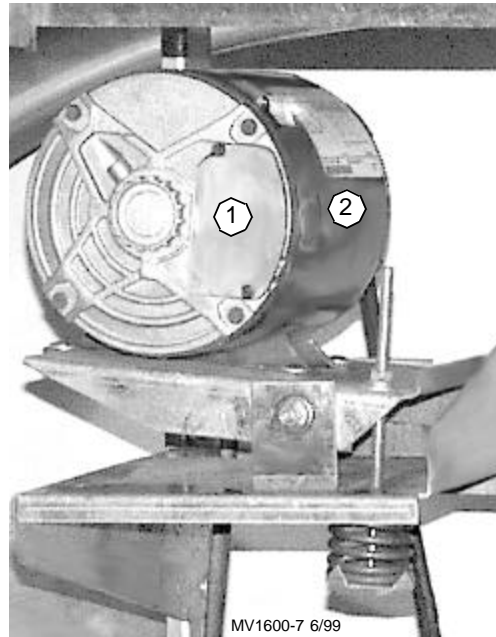


Figure 14. Belt Alignment

Belt Alignment	
Item	Description
1	Spring Compression to 2-1/4".
2	Install Belt as shown.
3	Straight edge
4	Measure from straight edge to sheave.
5	Frame to sheave measurement to be the same at motor and driven sheaves.



## Wiring



**Figure 15. Remove Motor Wiring Cover Plate.**

Item	Description
1	Wiring Cover Plate
2	Motor Varies

1. Remove Cover Plate **Item 1**.
2. Install an electrical disconnect within reach of each fan installed.
3. Remove the electrical knock-out nearest the fan power supply outlet.
4. Install the romex connector and cord throughout the knock-out selected before wiring the motor.
5. 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 opposite shaft end of the motor.)

**Important! Follow local, state, and national electrical codes for wiring.**

6. Attach the cord to the top panel of the fan using the cord clip to keep the cord off the shutter.
7. Allow enough slack in the cord to form a "drip loop" for moisture to fall away from the cord and not into the motor.
8. Remove the slack in the cord between the cord clip and the romex connector and then tighten the romex connector.

See wiring diagram on motor for Motor electrical connections. Follow local, state, and national electrical codes for wiring.

Install an electrical disconnect within reach of each Fan.

Route the motor cord (not supplied) toward the upper corners of fan using the Knockouts and cord bushing.

See Figure 16.

**Note:** For both the Aluminum and/or Plastic Shutter, route the motor cord through the Knockouts as shown in Figure 16.

Knock-outs allow the cord to be placed out of the way of the operation of the Fan

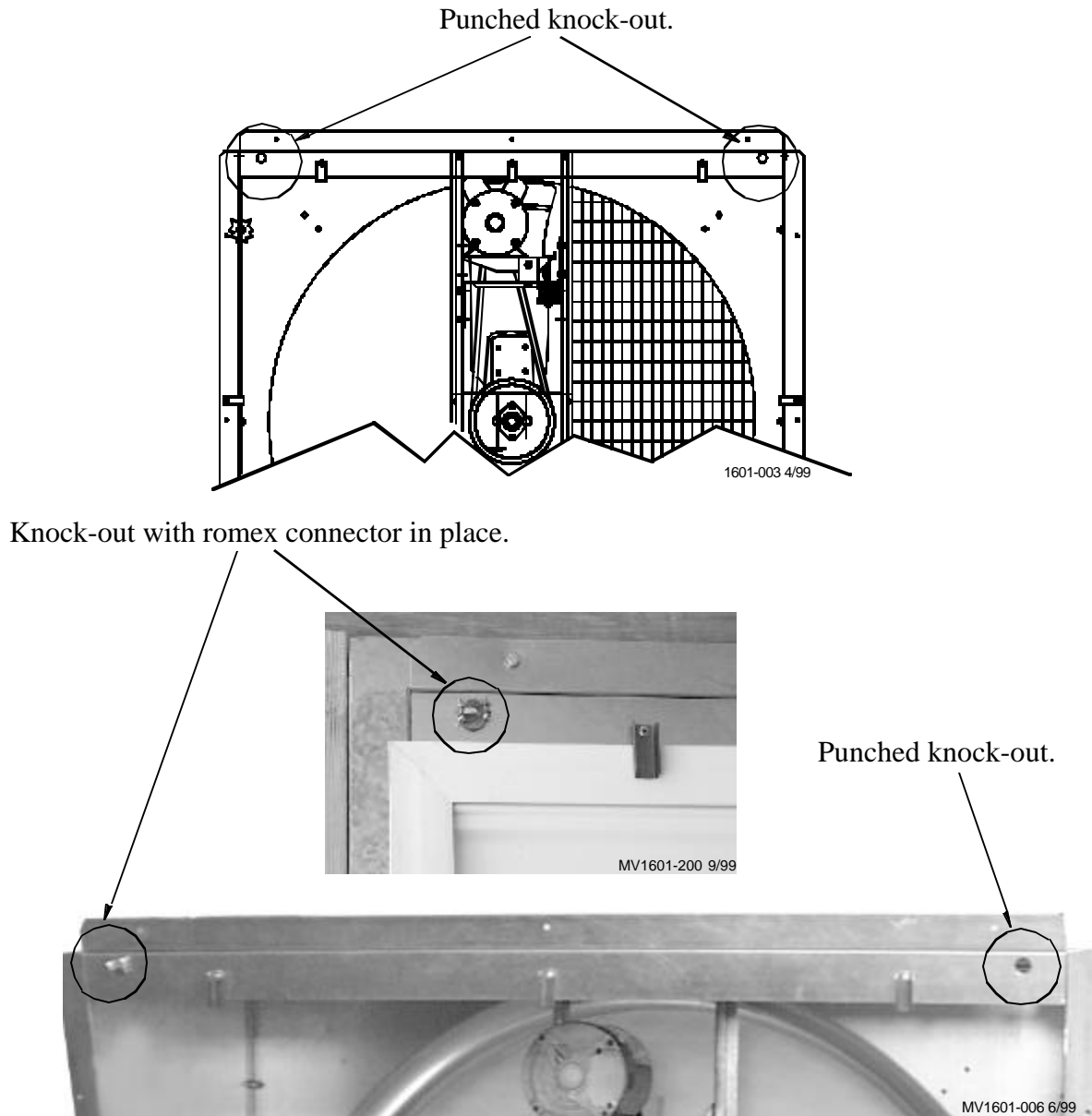
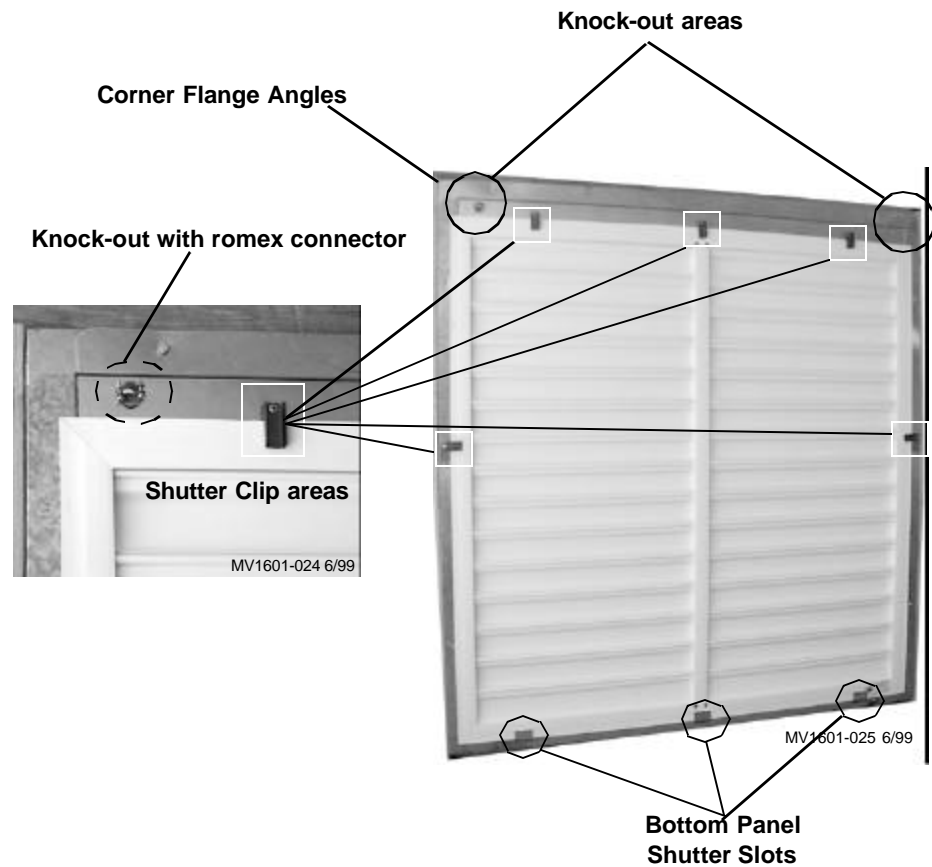


Figure 13. Installation of Motor Cord

# Shutter Installation

**Plastic and Aluminum Shutters are available.**

The Bottom Panel is designed with 3 tabs to hold the Shutter. 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. See Figure 15.



**Figure 14. Shutter Placement Assembly**

## 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. **Do not spray 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.

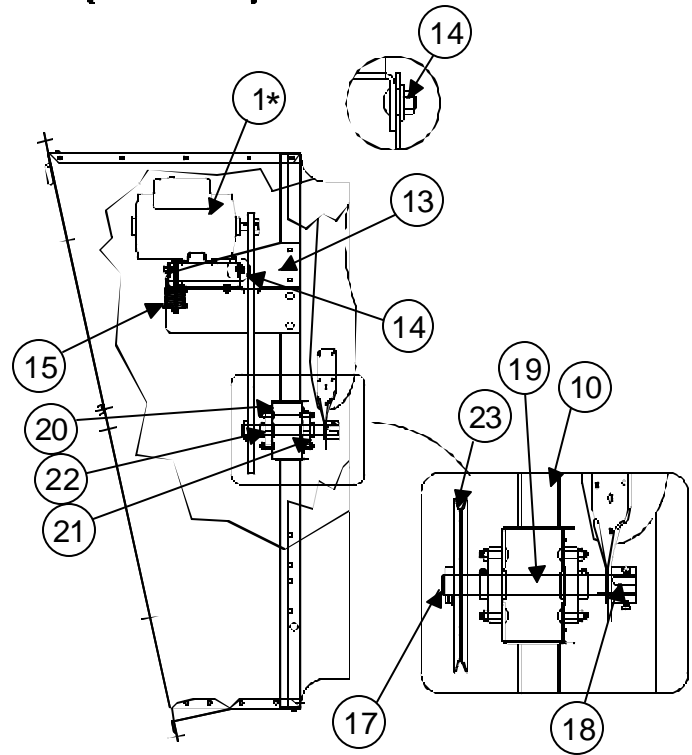
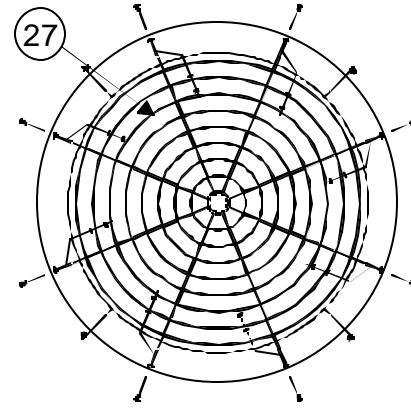
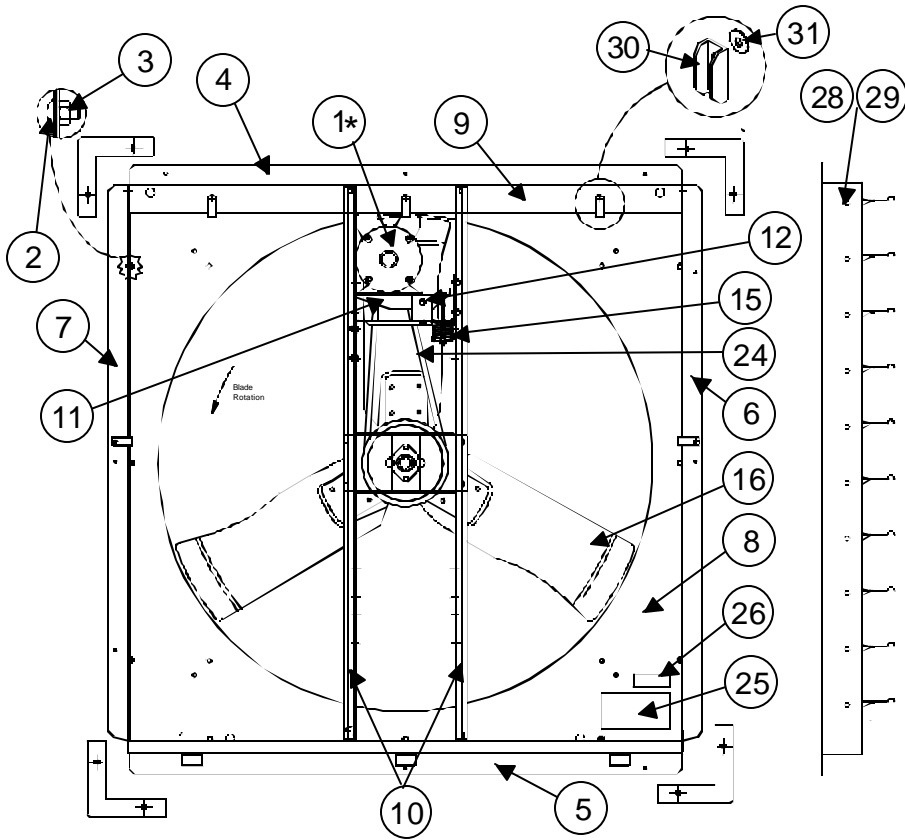
**Important!**

**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. (The recommended Grease to use is Shell Avian Grease.)

# Itemized 48" Belt Drive Cone Fan



MV1600-001 8/99

# Motor Specifications and Parts Listing

*Motor Specifications and Part Numbers								
Fan Specifications (assembled)		Motor Specifications						
Description	*Part No.	Voltage	HZ	Phase	HP	Motor P/N	Motor Sheave P/N	Fan Sheave P/N
48" Belt Drive Cone Fan	43680-482X	115/230	60	1	1	37729	35333	42072
	43680-484X	208-230/460	60	3	1	40157	35333	42072

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

Item	Description	Part No	Item	Description	Part No.
*1	Motor (See Motor Specification Table)	Varies	18	Sq. Key 1/4 x 1x 1/8"	2419-2
2	Bolt, Carriage 5/16-18 x .625	8282	19	Shaft, 1"	43691
3	Flange Nut, Hex 5/16-18	8490	20	Plate, Bearing Mount, Rear	43690
4	Top Panel 48" SW 12.5°	43667	21	Plate, Bearing Mount, Front	43689
5	Bottom Panel 48" SW 12.5°	43668	22	Bearing, Cast Flange 1" Bore	43654
6	Side Panel 48" SW 12.5° RH	41024-2	23	Sheave, 8-1/4 O.D. 1" Bore	42072
7	Side Panel 48" SW 12.5° LH	41024-1	24	V-Belt, 58.2"	43816
8	Shroud 48" Fan (54)	37583	25	Decal, Danger	2527-50
9	48" Shutter Mounting Brace	43673	26	Decal, 48" SW Cone Fan (BD)	39002-206
10	Post 48" x 12.5° Fan	43688	27	Grill	37630
11	Plate, Pivot Motor Mount	43713	28	Shutter, Plastic	38029
12	Bracket, Pivot Plate Mounting	43714	29	Shutter, Aluminum	38260
13	Bracket, Z-Motor Mounting	43712	30	Clip, Shutter SS 2.00 x .70	36729
14	Bushing, St Bd Module	38896	31	Washer, Nylon .260 x .69 x .060	4856
15	Spring	43715	-	Pkg., Hardware BD Cone Fan	44036
16	Blade, 48" Fan	28140	-	Kit, EZ Fan Cone	37935
17	Screw 5/16-18 x 3/8" Set	1174			

*This page left blank for your notes.*



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

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

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