

VANGUARD Series 36" Slant Wall and Cone Direct 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.

Effective: **March 2004**

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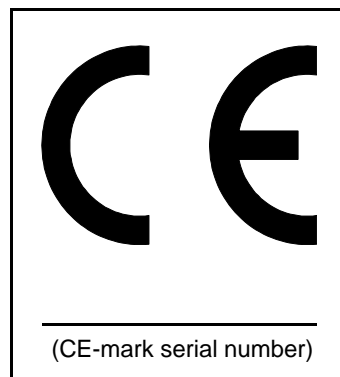
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The Chore-Time 36" Vanguard Series Cone and Slant Wall Fans are designed to be used as exhaust fans. The Fans are shipped assembled. Using this equipment for any other purpose or in a way not within the operating recommendations specified in this manual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

This manual is designed to provide comprehensive planning, installation, 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).

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 the 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 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

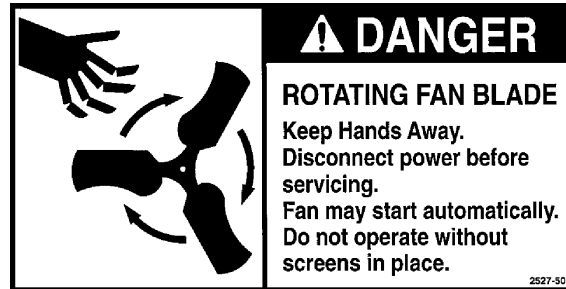


Figure 1. Danger Decal Part Number 2527-50

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.

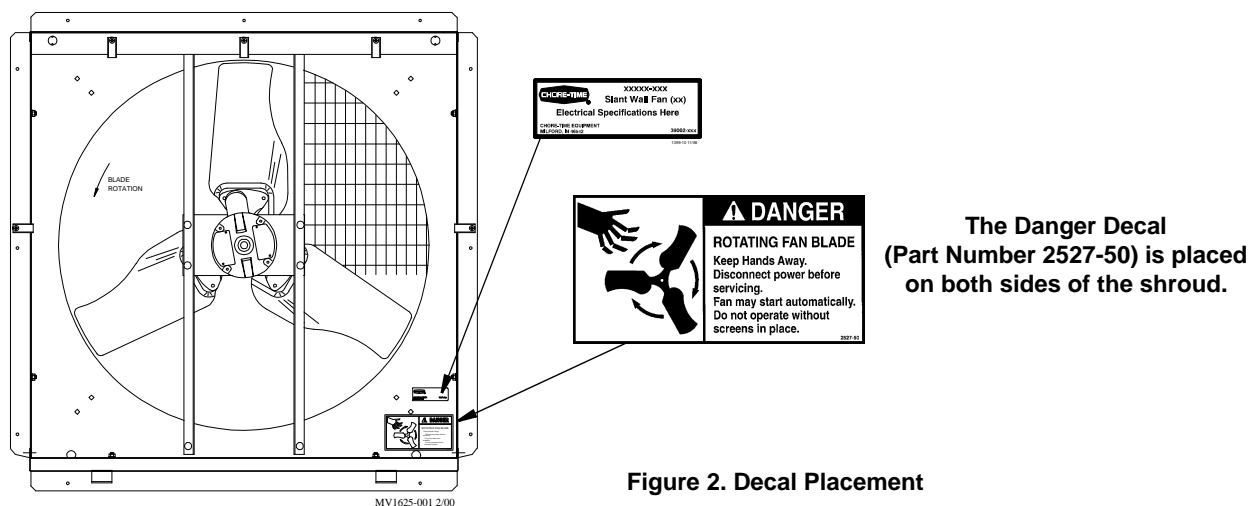


Figure 2. Decal Placement

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 side wall.

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 Fans can be mounted closer together, but do not overlap flanges.

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.

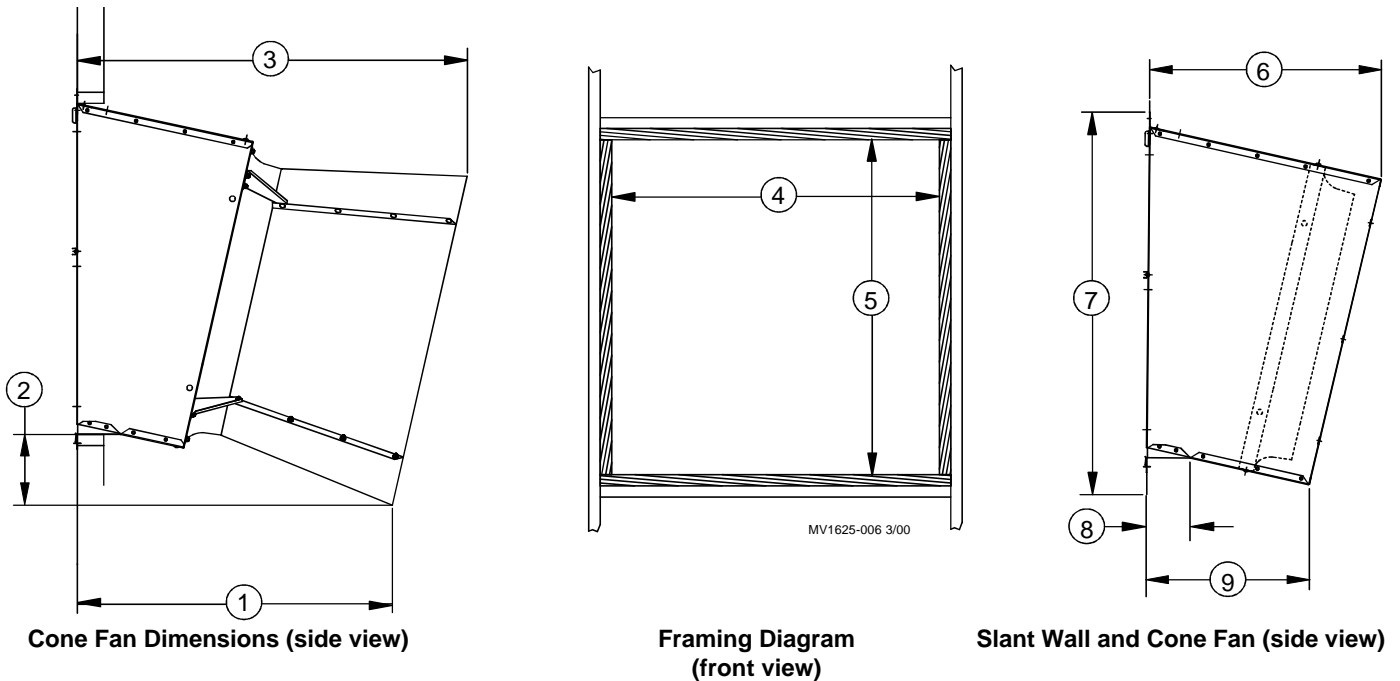


Table 1. Framing Size

| Item | Description | Dimension |
|------|-----------------------|-----------|
| 1 | Bottom Length | 41-3/8" |
| 2 | Vertical Dim. of Cone | 9-1/2" |
| 3 | Top Length | 51-1/8" |
| 4 | Rough Opening | 43" |
| 5 | Rough Opening | 45" |
| 6 | Top Length | 30-7/16" |
| 7 | Height | 48-3/8" |
| 8 | Slant Dim. | 5-3/4" |
| 9 | Bottom Length | 21-5/16" |

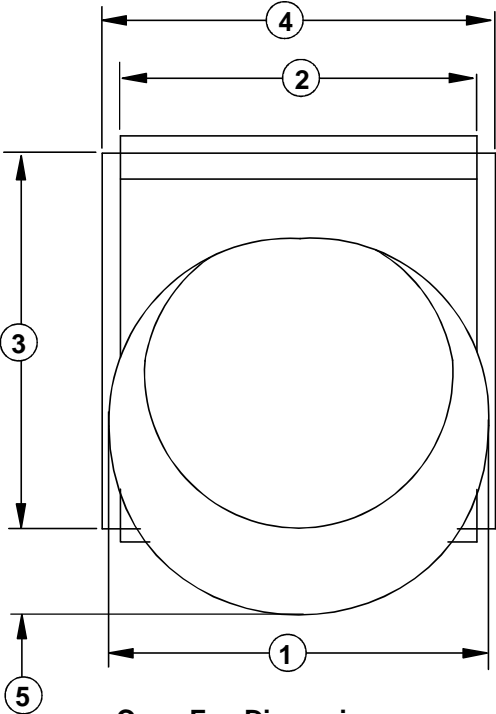
Figure 3. Slant Wall and Cone Fan Framing Dimensions

Fan Dimensions

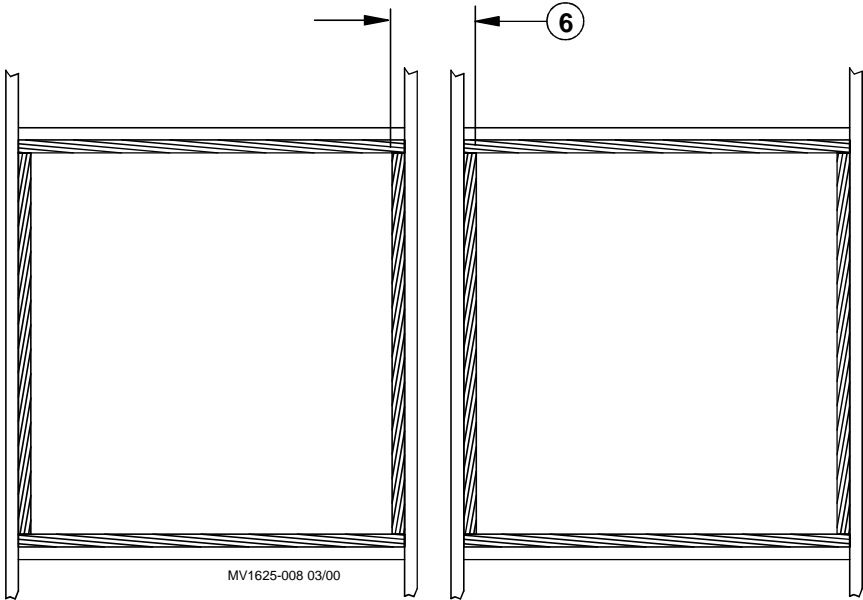


Planning the layout of the spacing between Cone Fans is very important. **SPACING TOO CLOSE TOGETHER WILL CAUSE DISTORTION** due to interference with the cones; thus, not allowing the fan to deliver optimum performance.

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" DD Fans | 1 | 2 | 3 | 4 | 5 | 6 |
| | 45" [114.3 cm] | 42" [106.68 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.

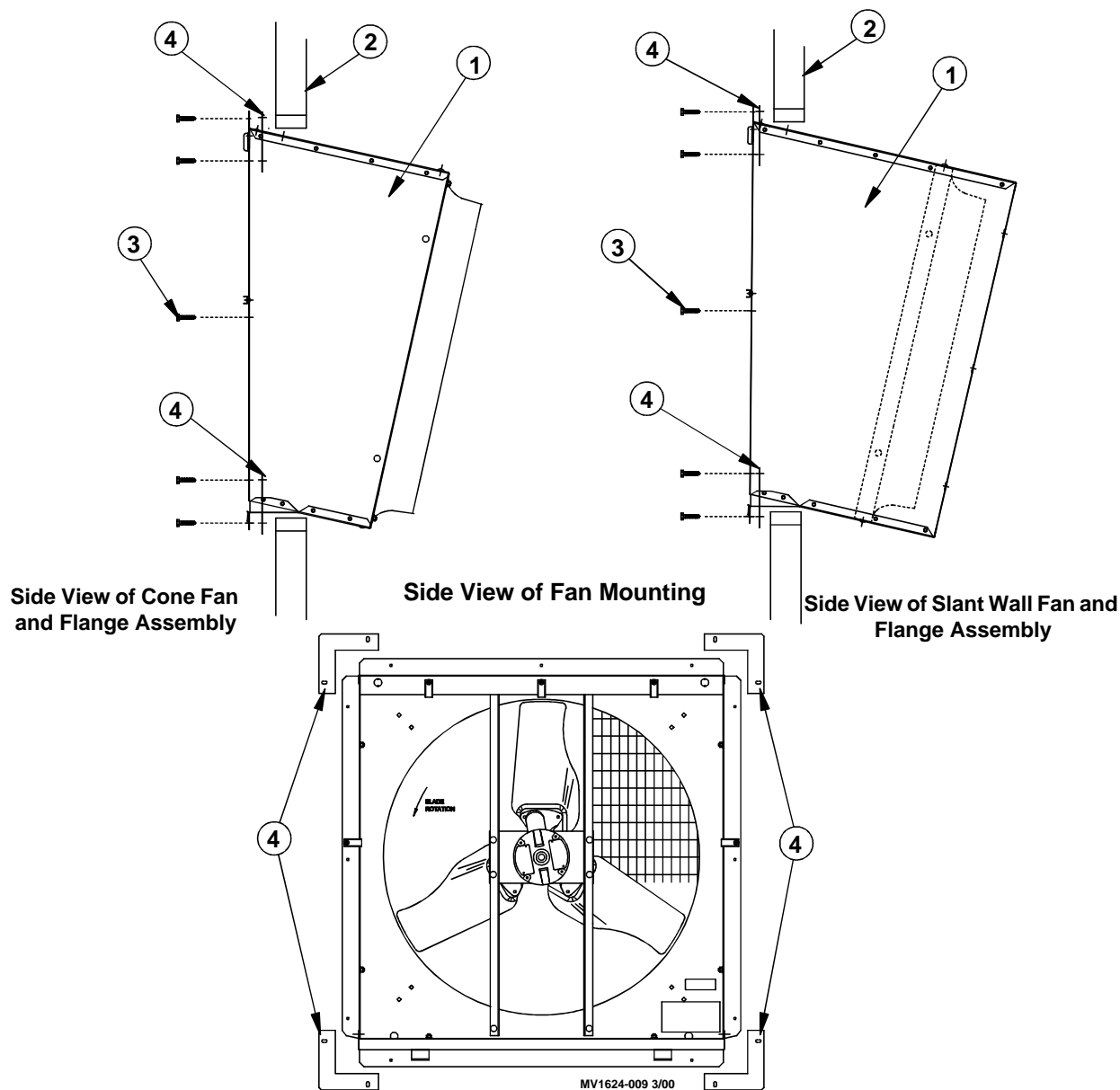


Figure 5. Corner Flange Angle Assembly

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.

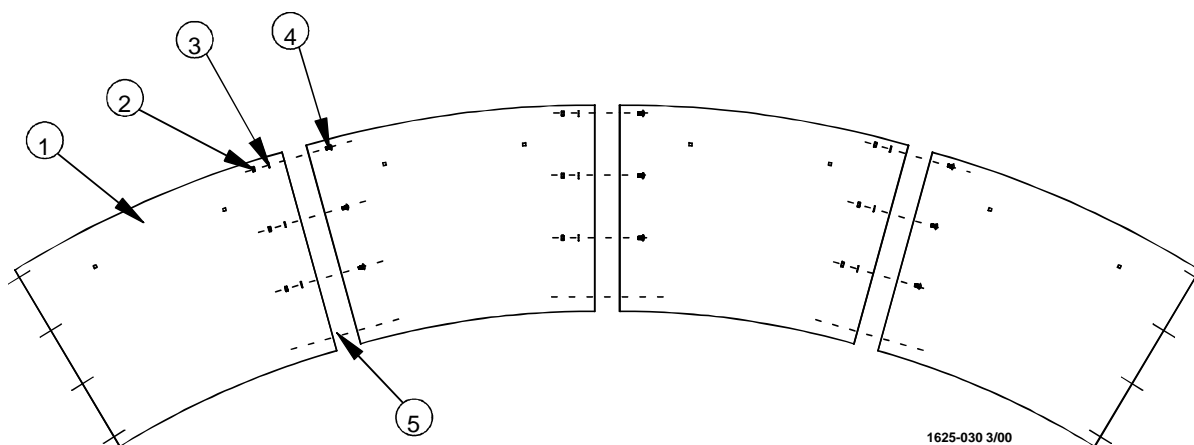
Important! The Fan must be installed in the wall before installing the Cone to the Fan.

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. | 39312 |

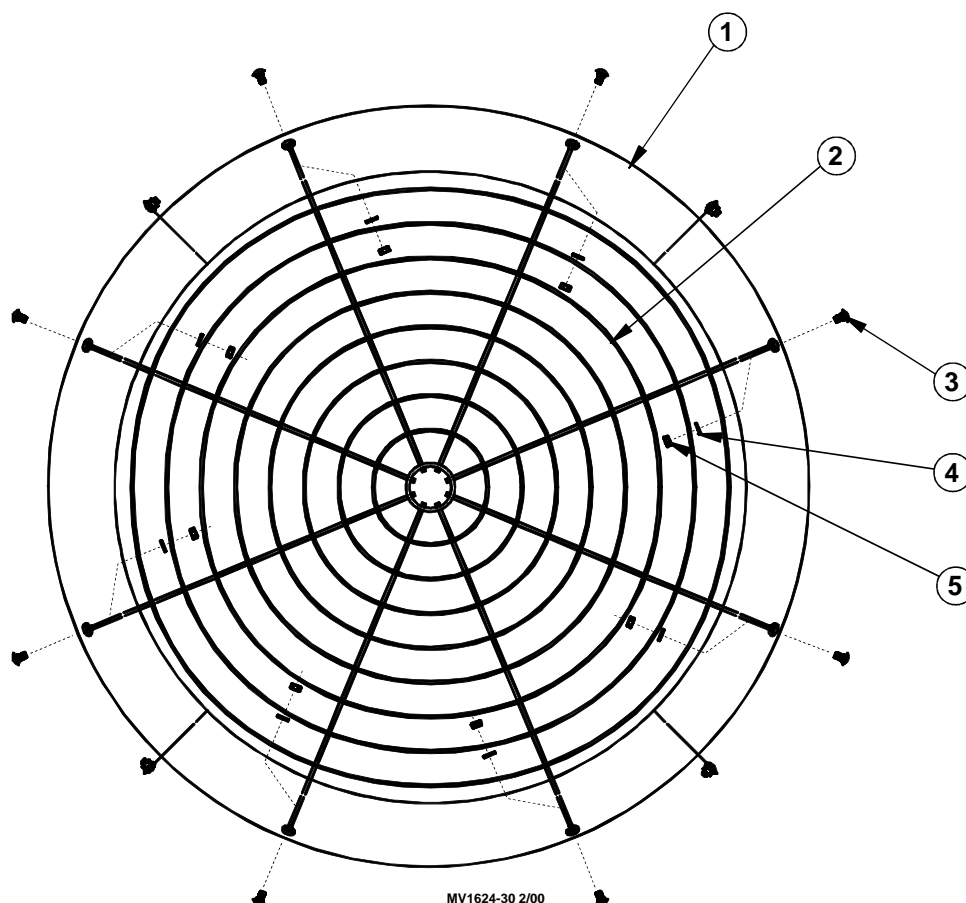
Figure 6. Cone Assembly (Top View)

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 | 37630 |
| 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

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**.

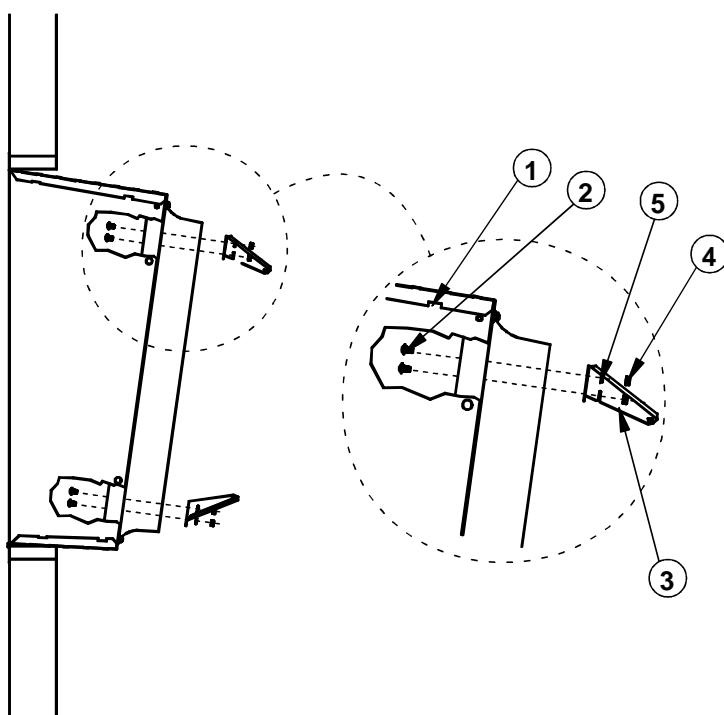


With the help of an assistant, lift the Cone Assembly to the Fan Shroud.

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.

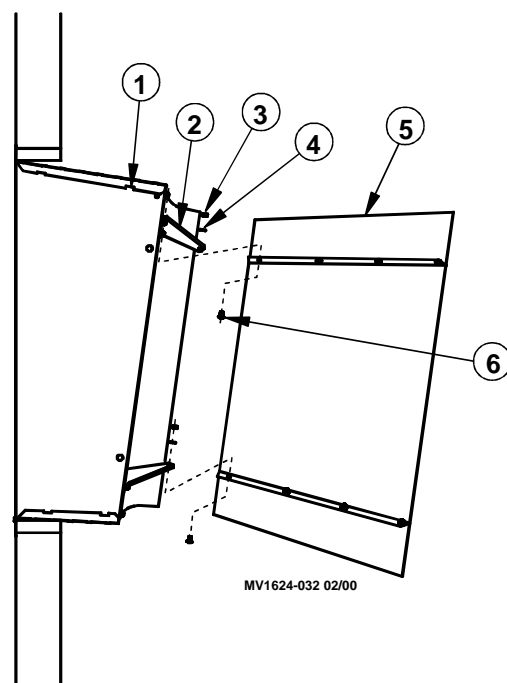
Secure the Cone Assembly to the Cone Hanger Brackets using (1) 5/16"-18 carriage bolt, 3/8" lock washer, and 5/16"-18 hex nut. See **Figure 8 and 9**.

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



| Hanger Bracket Installation | | |
|-----------------------------|------------------------------|-------------|
| Item | Description | Part Number |
| 1 | Fan Assembly | 44860-3620 |
| 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 | 44859-3620 |
| 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.

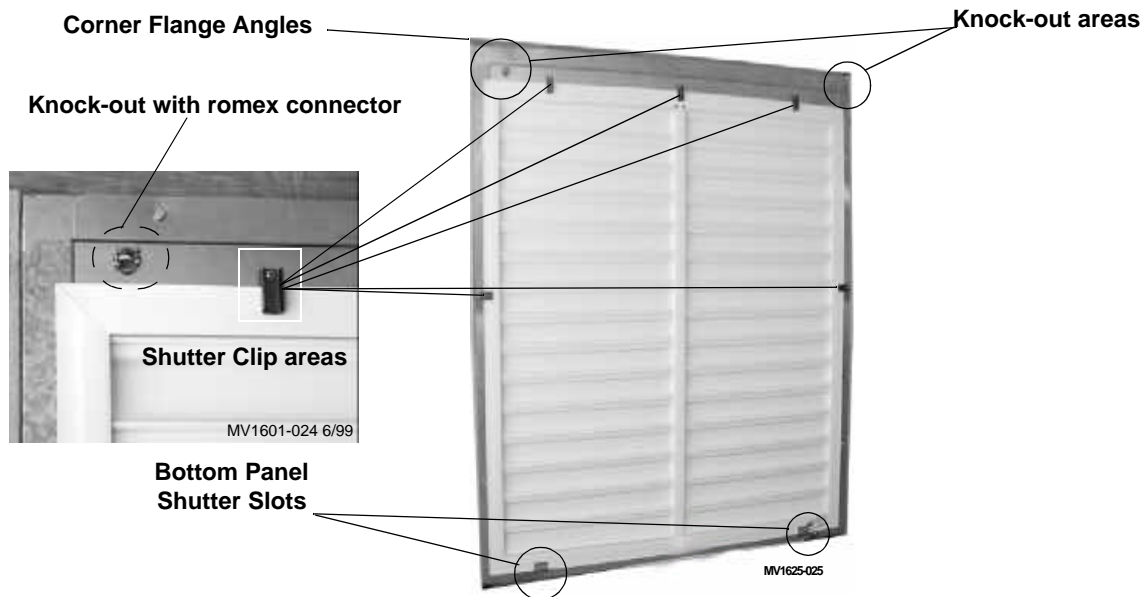


Figure 10. Shutter Placement Assembly

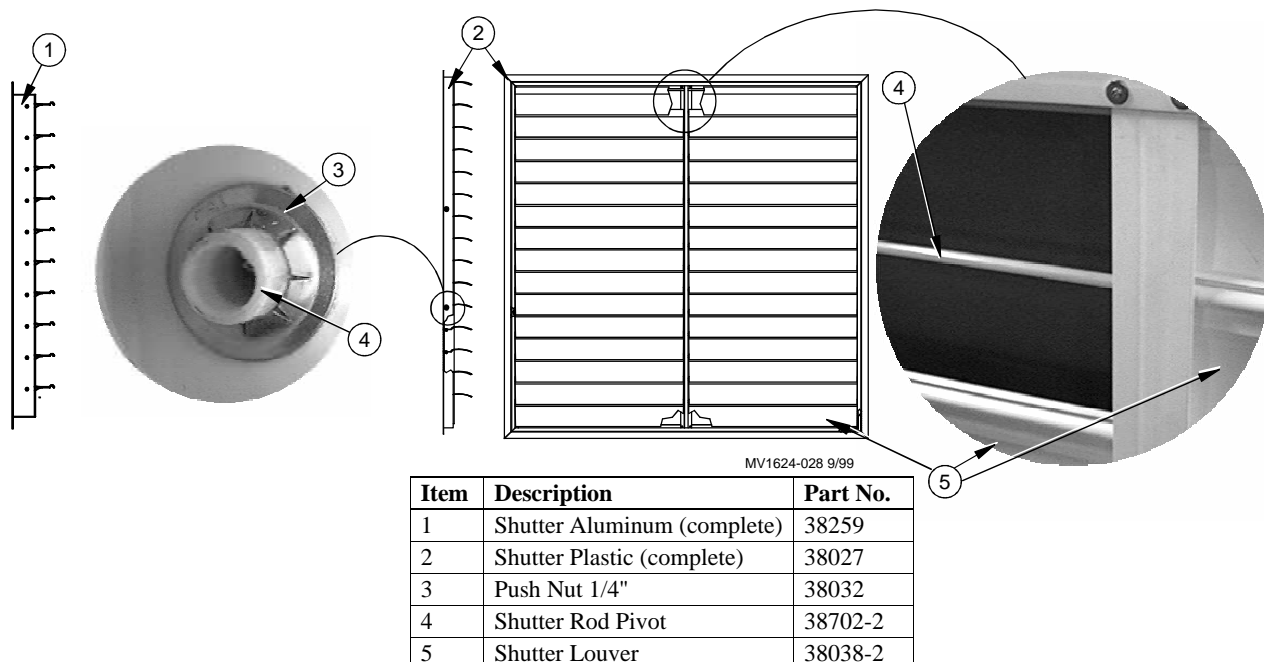


Figure 11. Plastic Shutter Parts

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 motor**
- Keep Shutters, Blades, and Housing clear of obstacles for best air performance. The motor bearings are prelubricated.

Motor Specifications

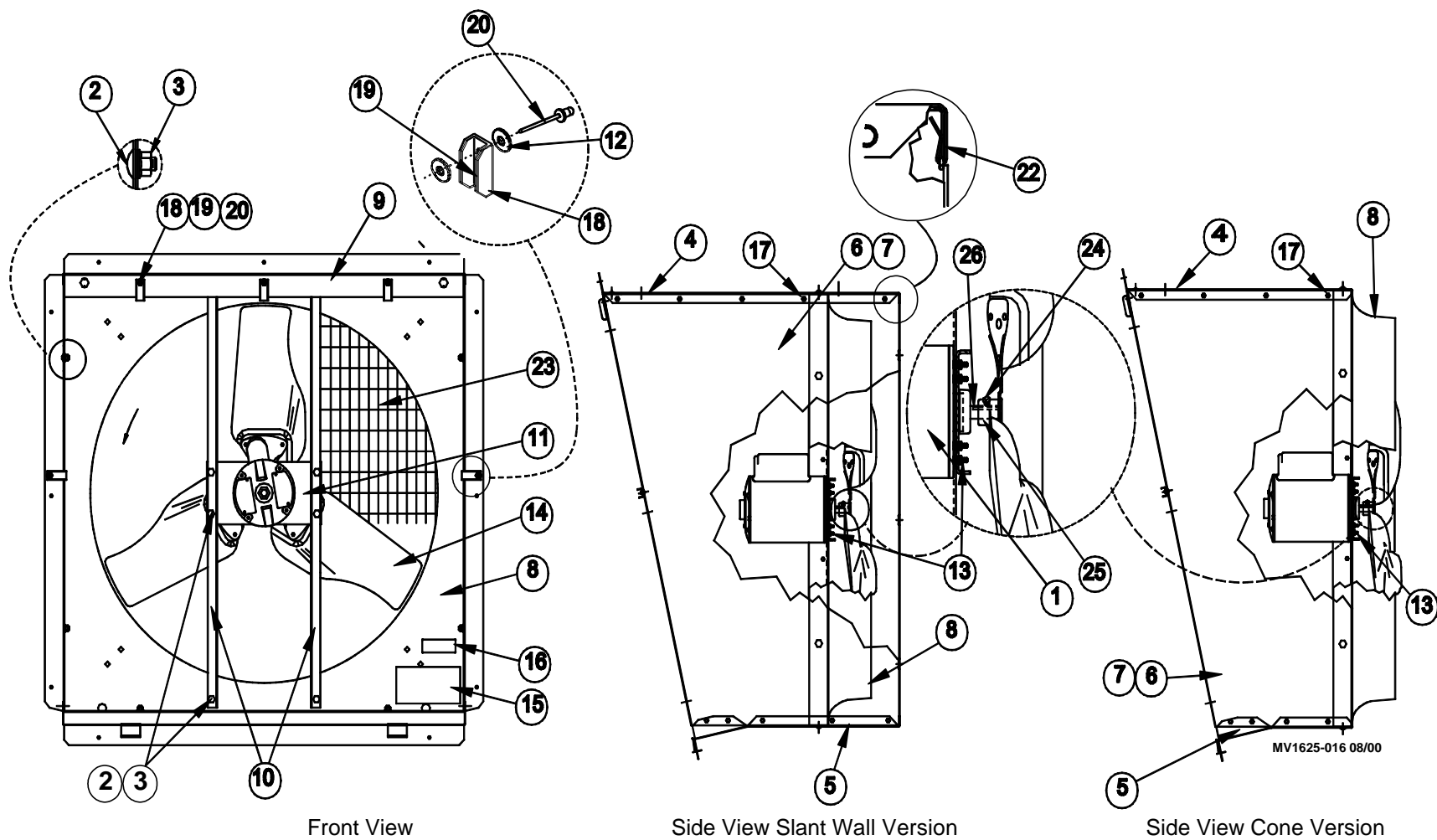
| Table 3. Motor Specifications and Part Numbers | | | | | | |
|--|----------------------|---------|----|-------|-----|----------------|
| Fan Specifications (assembled) | Motor Specifications | | | | | |
| Description | *Part No. | Voltage | HZ | Phase | HP | Motor Part No. |
| 36" Slant Wall Direct Drive Fan | 44859-362X | 230 | 60 | 1 | 0.5 | 28936 |
| 36" Slant Wall Direct Drive Fan | 44859-364X | 230/460 | 60 | 3 | 0.5 | 42098 |
| 36" Cone Direct Drive Fan | 44860-362X | 230 | 60 | 1 | 0.5 | 28936 |
| 36" Cone Direct Drive Fan | 44860-364X | 230/460 | 60 | 3 | 0.5 | 42098 |

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

Parts Listing

| Cone Version | | | | Slant Wall (SW) Version | | | |
|--------------|---|---------------------------------|------------------|-------------------------|---|---------------------------------|------------------|
| Item | Qty. | Description | Part Number | Item | Qty. | Description | Part Number |
| 1 | 1 | Motor | Varies | 1 | 1 | Motor | Varies |
| 2 | 16 | Bolt, Carriage 5/16-18 x .625 | 8282 | 2 | 16 | Bolt, Carriage 5/16-18 x .625 | 8282 |
| 3 | 16 | Flange nut, Hex 5/16-18 | 8490 | 3 | 16 | Flange nut, Hex 5/16-18 | 8490 |
| 4 | 1 | Panel, Top 36" SW 12.5° | 44739 | 4 | 1 | Panel, Top 36" SW 12.5° | 44737 |
| 5 | 1 | Panel, Bottom 36" SW 12.5° | 44738 | 5 | 1 | Panel, Bottom 36" SW 12.5° | 44736 |
| 6 | 1 | Panel, Side 36" SW 12.5° RH | 43735-2 | 6 | 1 | Panel, Side 36" SW 12.5° RH | 43669-2 |
| 7 | 1 | Panel, Side 36" SW 12.5° LH | 43735-1 | 7 | 1 | Panel, Side 36" SW 12.5° LH | 43669-1 |
| 8 | 1 | Shroud 36" Fan | 5538 | 8 | 1 | Shroud 36" Fan | 5538 |
| 9 | 1 | Brace, 36" Fan Shutter Mounting | 44740 | 9 | 1 | Brace, 36" Fan Shutter Mounting | 44740 |
| 10 | 2 | Post, 36" x 12.5° Fan | 37209 | 10 | 2 | Post, 36" x 12.5° Fan | 37209 |
| 11 | 1 | Support, 36" DD Fan Motor | 36564 | 11 | 1 | Support, 36" DD Fan Motor | 36564 |
| 12 | 2 | Flat Washer | 2955-19 | 12 | 2 | Flat Washer | 2955-19 |
| 13 | 4 | 10-32 Serrated Flange Nut | 48113 | 13 | 4 | 10-32 Serrated Flange Nut | 48113 |
| 14 | 1 | Blade, 36" Fan | 40358 | 14 | 1 | Blade, 36" Fan | 40358 |
| 15 | 2 | Decal, Danger | 2527-50 | 15 | 2 | Decal, Danger | 2527-50 |
| 16 | 1 | Decal, 36" SW Cone Fan (DD) | 39002-216 or 217 | 16 | 1 | Decal, 36" SW Fan (DD) | 39002-214 or 215 |
| 17 | 16 | Screw, HXWH SFTP 10-16 x .50 | 3037 | 17 | 16 | Screw, HXWH SFTP 10-16 x .50 | 3037 |
| 18 | 5 | Clip, Shutter SS 2.00 x .70 | 36729 | 18 | 5 | Clip, Shutter SS 2.00 x .70 | 36729 |
| 19 | 5 | Washer, Nylon .260 x .69 x .060 | 4856 | 19 | 5 | Washer, Nylon .260 x .69 x .060 | 4856 |
| 20 | 9 | Pop Rivet 3/16 x 3/8 | 2569 | 20 | 9 | Pop Rivet 3/16 x 3/8 | 2569 |
| 24 | Set Screw Torque to 150-165 in/lbs. | | | 22 | 12 | Clip, Screen EZ Fan | 38891 |
| 25 | Fan Hub is to be flush with the end of the motor shaft. | | | 23 | 1 | Screen, Wire 40 x 40 | 29046 |
| 26 | Assemble the key supplied with motor as shown. | | | 24 | Set Screw Torque to 150-165 in/lbs. | | |
| ----- | 1 | Kit, 36" Fan Cone | 37936 | 25 | Fan Hub is to be flush with the end of the motor shaft. | | |
| ----- | 1 | Grill, 36" Cone | 37629 | 26 | Assemble the key supplied with motor as shown. | | |
| ----- | 1 | Pkg, Hdwr Installation | 44932 | ----- | 1 | Pkg, Hdwr Installation | 44932 |

Itemized Parts



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

Revisions to this Manual

| Page No. | Description of Change |
|-----------------|---|
| Various | Replaced 305 washer and 4297 nut with 48113 Serrated Flange Nut |

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

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