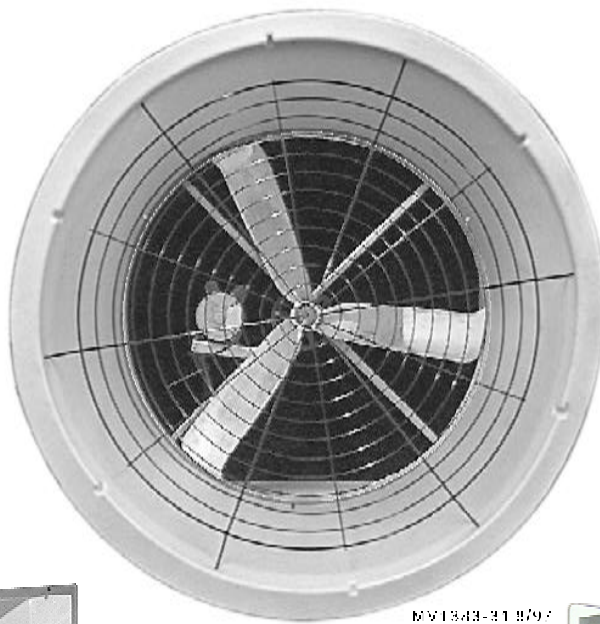
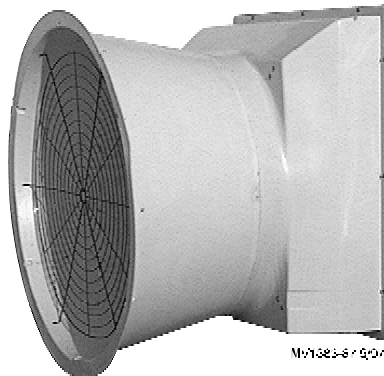


TURBO™ Fiberglass Cone Fan and Grill Fan 48" Belt Drive

Installation & Operator's Instruction Manual



MV1383-31 11/97



MV1383-31 11/97



MV 1383-31 11/97

Chore-Time TURBO™ Fan Extended Warranty

Chore-Time Equipment warrants new TURBO™ Fans and components manufactured by it to be free from defects in material or workmanship from the date of initial installation by the original purchaser until expiration of the appropriate period set forth below. If such a defect is found by Chore-Time to exist within the applicable 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. The extended warranty is provided to the original purchaser for the following periods:

- *1. **TURBO™ Fan** fiberglass housings, polyethylene cones, and cast aluminum blades - for as long as the original purchaser owns the product.
- *2. **TURBO™ Fan** motors and bearings - for two years from date of installation.
- *3. **TURBO™ Fan** components, including plastic shutters - for three years from date of installation.

Conditions and limitations:

1. Original purchaser must give prompt notice of any defect to obtain warranty service. The notice must be mailed to Chore-Time Equipment, P.O. Box 2000, Milford, Indiana, 46542-2000, U.S.A. The remedies provided under this warranty, if applicable, shall be provided within a reasonable time after Chore-Time's receipt of such notice.
2. The product must be purchased from an authorized Chore-Time distributor or dealer and installed, operated and maintained in accordance with instructions published by Chore-Time Equipment or warranty is void.
3. Warranty is void if all structural and operational parts and components of the product were not supplied by Chore-Time Equipment.
4. Failure, damage, or malfunction resulting from misuse, abuse, negligence, alteration, accident, lack of proper maintenance, improper or insufficient power sources or electrical connections, impact of foreign objects, tornado, hurricane, other violent storm, flood, fire, pollutants, chemicals, acts of God, or other causes outside the reasonable control of Chore-Time shall not be considered defects under this warranty and are not covered in any way by this warranty.

Chore-Time shall not be liable for any **Consequential** or **Special Damages** 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, property damage, 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(S) FURNISHED HEREUNDER.

*TURBO™ Fans include: (1) 10" Tube Fans; (2) 14", 18" and 24" Hood and Door Fans; and (3) 24", 36" and 48" Cone Fans and Grill Fans.

CHORE-TIME EQUIPMENT, a Division of CTB, INC.
P.O. Box 2000, Milford, Indiana, USA, 46542-2000

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***Legend: C = Customer (end user), D = Distributor (sales), I - Installer of equipment**

Support Information

Chore-Time TURBO™ Cone & Grill Fans are designed to be used as exhaust fans in corrosive environments. The primary components are made from plastic or stainless steel materials. 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!

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.

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 _____

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 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.



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.



DANGER

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



WARNING

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



CAUTION

DANGER: Electrical Hazard

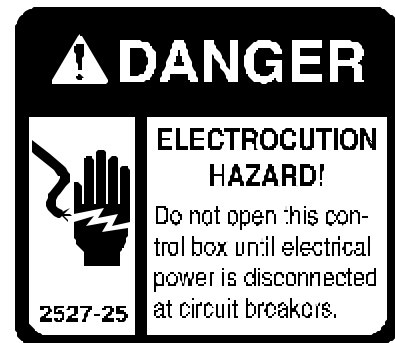
Disconnect electrical power before inspecting or servicing equipment unless maintenance instructions specifically state otherwise.

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.

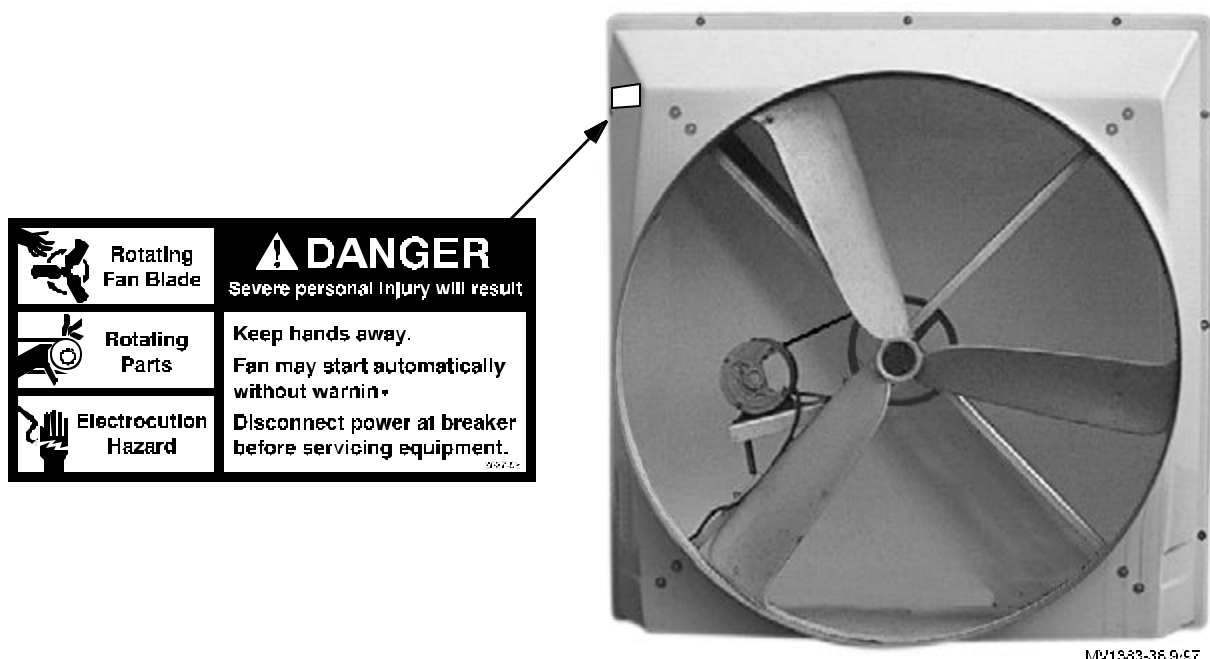


Tools Required for Installation

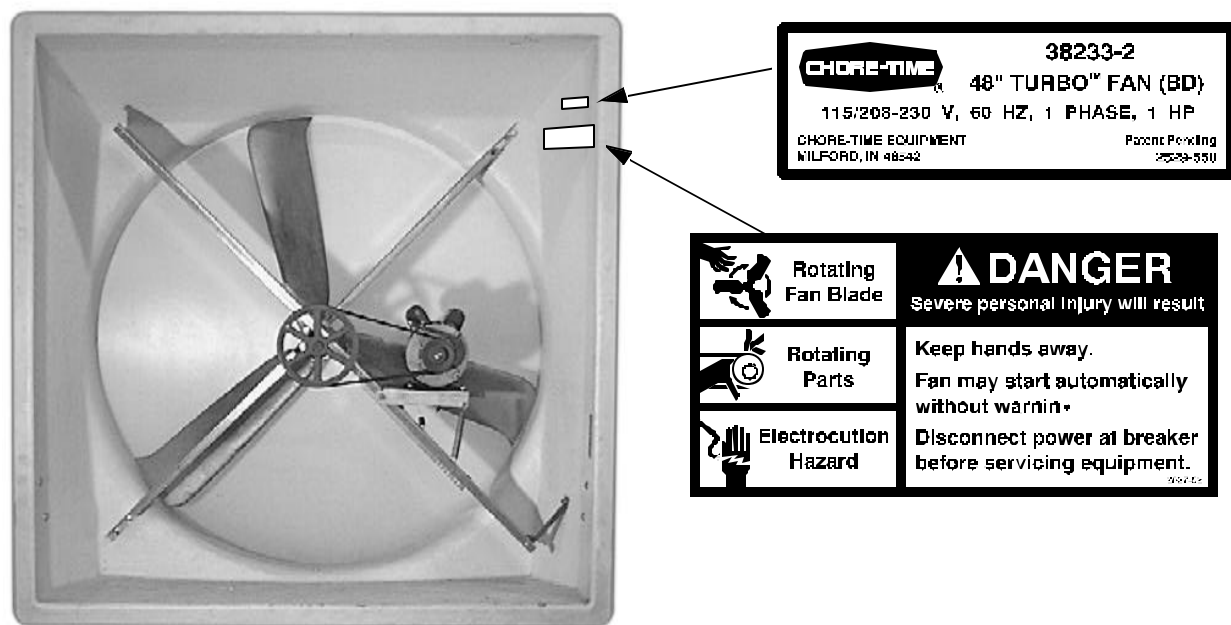
1. Regular Screwdriver
2. Allen Wrenches
3. Box-end Wrenches
4. Rubber Mallet
5. Wire Cutters
6. Wire Strippers
7. Adequate Supply of Wire
8. Electrical Drill and Drill Bits
9. Large Pliers or Channel Locking Pliers
10. Another Person to Help!

Decal Location

This diagram shows the proper location of the **Safety Decal** and a **Identification Decal** (the identification decal will be different depending on the type of fan purchased) as shipped from the factory. Replace damaged or missing decals. Make sure the decals can be easily seen at all times.



Outside View



Inside View

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Planning the Installation

Carefully plan the installation.

Dimensions are provided for the 48" TURBO™ Fans with Cones (**Figure 1**) and without cones (**Figure 2**). Be sure to allow enough space to install fans without interfering with other fans or equipment that may be installed at a later date.

Note: See page 11 for framed opening size.

Important: Cones are wider than the actual opening cut into wall. Thus, dimension "C" must be no less than that listed in chart below.

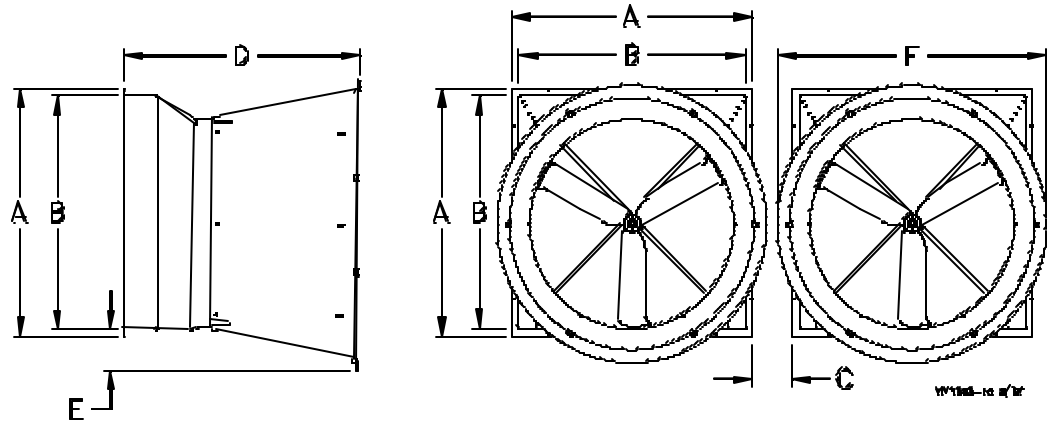


Figure 1. Planning and Layout Diagram for Cone Fans

A	B Rough Frame Opening	C Minimum	D	E	F
58.00" (147.32 cm)	55.00" (139.70 cm)	12.00" (30.48 cm)	44.00" (111.76 cm)	8.00" (20.32 cm)	64.50" (163.83 cm)

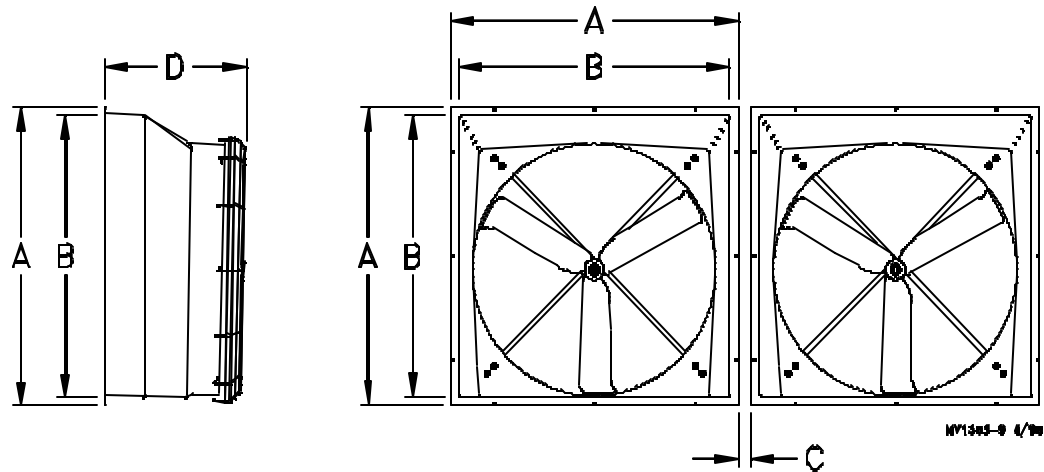


Figure 2. Planning and Layout Diagram for Grill Fans

A	B Rough Frame Opening	C Minimum	D
58.00" (147.32 cm)	55.00" (139.70 cm)	3.00" (7.62 cm)	28.50" (72.39 cm)

Motor Installation

The 48" Belt Drive Fans may be ordered with or without the motor. The following instructions provide complete installation information for fans ordered without the Motor. If your fans include the Motors, Skip ahead to the Installation Instructions on page 11.

1. **Figure 3** below shows the Fan if it is ordered without the Motor

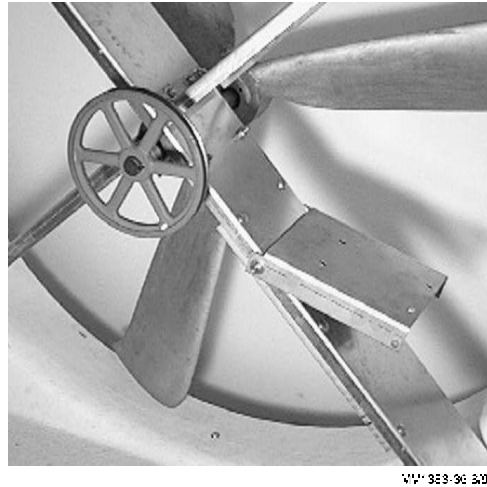


Figure 3. Fan Assembly with no Motor

2. Remove the Self Tension Motor Mount by loosening the two Swivel Bolts (5/16" Carriage Bolts). **Due to varying conditions it may be easier to mount the motor without removing the Self Tension Motor Mount.**

Mount the motor onto the Self Tension Motor Mount using the four 5/16-18 Carriage Bolts that are supplied in the hardware package.

Lift the Motor and the Self Tension Motor Mount assembly into place and reinstall the two original Swivel Bolts (5/16" Carriage bolts). **Figure 4.**

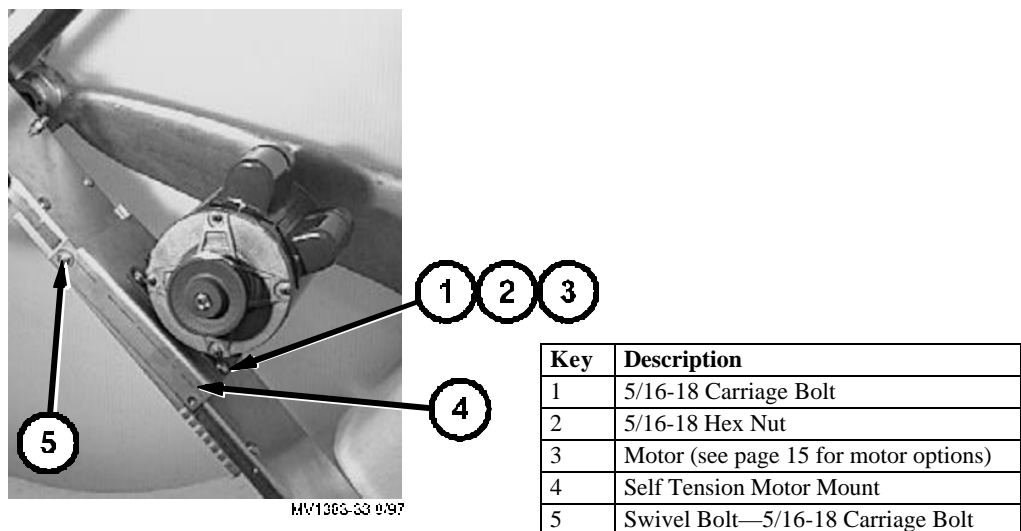


Figure 4. Fan Motor Installation

3. Rotate Fan Blade to make sure there is adequate distance between the Fan Blade and the back of the Motor. **Key 1 in Figure 5** below shows potential point of contact with Motor. If the Fan Blade does come in contact with motor, do not adjust for Fan Blade beyond the end of the Drive Shaft. If Motor, Fan Blade, and Drive Sheaves cannot be adjusted to allow clearance, selected Motor will not work. Contact CTB, Inc. for alternate Motors.

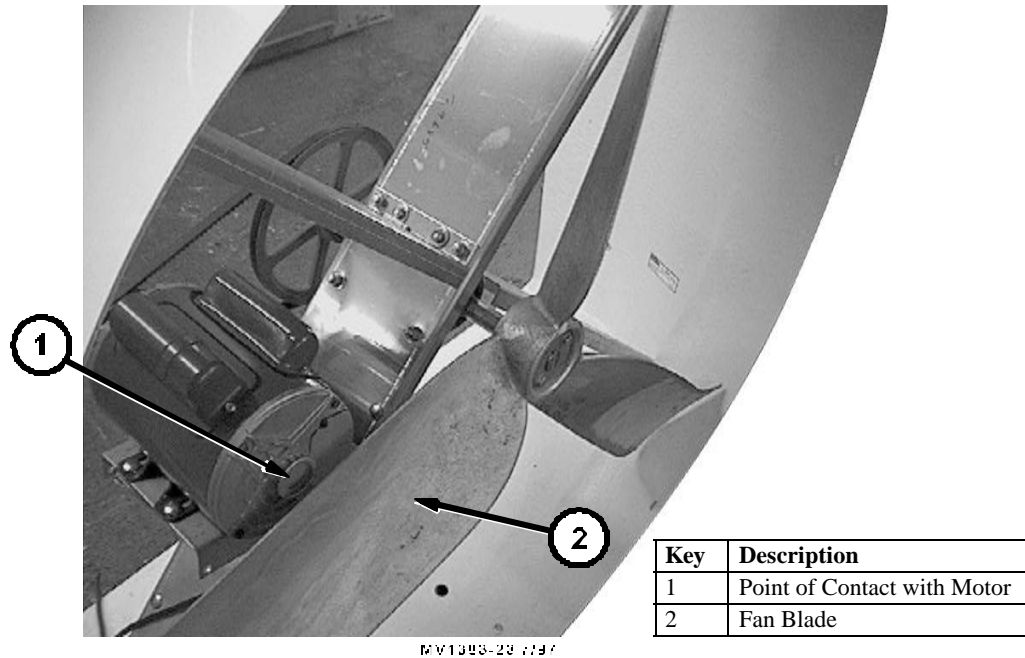


Figure 5. Fan Assembly Installation

4. Install the Motor Sheave on the output shaft of the Motor, **Figure 6**.

Important:

Make sure the Motor Sheave is aligned with the Fan Sheave—the belt must track straight.

Insert the key in the keyway of the output shaft. Tighten the 5/16" set screw in the Motor Sheave to 150-165 IN LBS—this will secure the Motor Sheave in place.

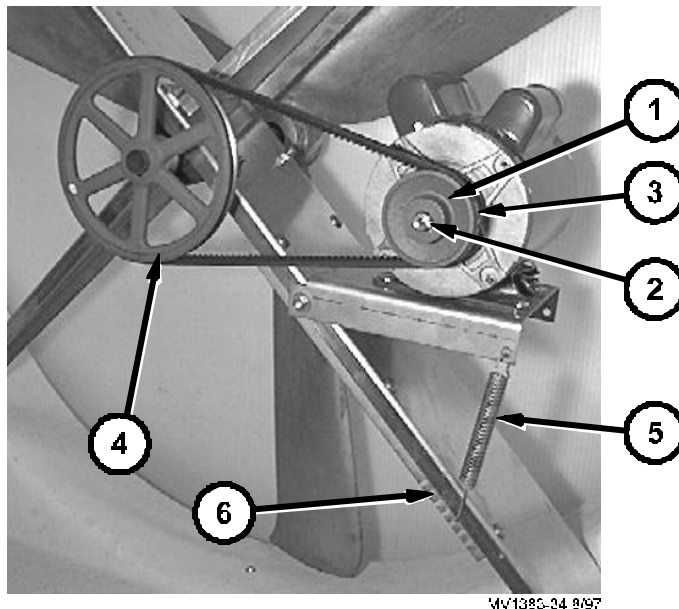


Figure 6. Fan Motor Installation

Key	Description
1	Motor Sheave
2	1/4" Square Key
3	5/16" Set Screw
4	Fan Sheave
5	Tension Spring
6	Notched Motor Mount

5. Install the Fan Belt around the Motor Sheave and Fan Sheave—This can be accomplished by doing the following:
- Position the Fan Belt around the Motor Sheave.
- Place your hand under the Self Tension Motor Mount and lift.
- Route the Fan Belt as far as possible around the Fan Sheave. Then carefully rotate the Fan Sheave to completely install the Fan Belt.
- Once the belt is on, it will support the motor as pictured in **Figure 6**.
6. Set the Spring in one of the notches on the Motor Mount. This may vary depending on the belt used and the desired tension.

Installation Instructions

Fan Installation

1. Cut an opening in the wall to house the fan—the required wall opening is provided in the chart below. **See Figure 7.**
2. Construct a frame in the opening of the wall for the fan using 2" x 6" (50 x 152 mm) lumber—not supplied.

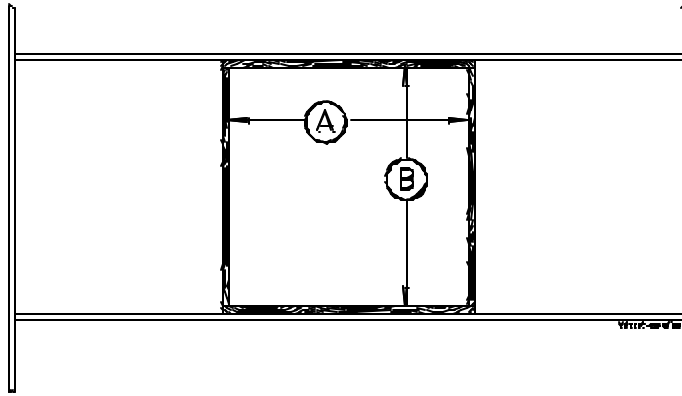
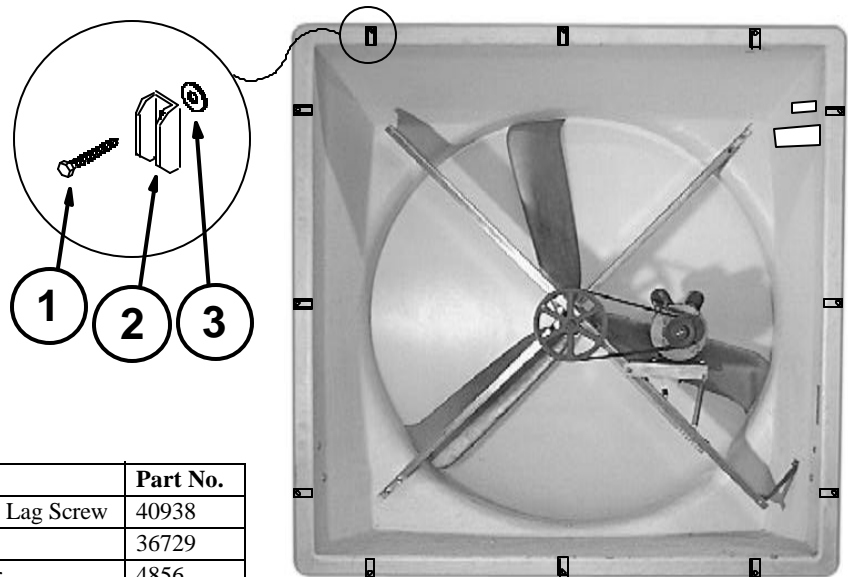


Figure 7. Framing Diagram

Rough Opening	
A	B
55.00" (139.70 cm)	55.00" (139.70 cm)

3. Insert the Fan Assembly in the wall opening and secure using the (12) 1/4 x 1-3/4 Lag Screws, Shutter Clips, and Nylon Washers provided. The Shroud is pre-drilled (3 holes per side). The hardware must be installed as shown in **Figure 8** below. This allows for rotation of the Shutter Clips when installing Shutter.



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Key	Description	Part No.
1	1/4 x 1-3/4 SS Lag Screw	40938
2	Shutter Clip	36729
3	Nylon Washer	4856

Figure 8. Fan Assembly

Installing the Cone or Grill to the Fiberglass Fan

Fiberglass Cone Fan:

1. Slide the Cone onto the Shroud—the Shroud fits inside the Cone. **See Figure 9.**

4" slots are cut into the edge of the cone to allow expansion as the cone is slide onto the shroud.

Align the holes in the Cone with the slots in the Shroud.

Insert the (6) Wafer Head Bolts from inside the Shroud through the Cone, place the Nylon Washers on the Wafer Head Bolts, and thread the Nylon Nuts onto ends of the Wafer Head Bolts.

2. Snap the Cone Grill into the slots on the outlet end of the Cone.

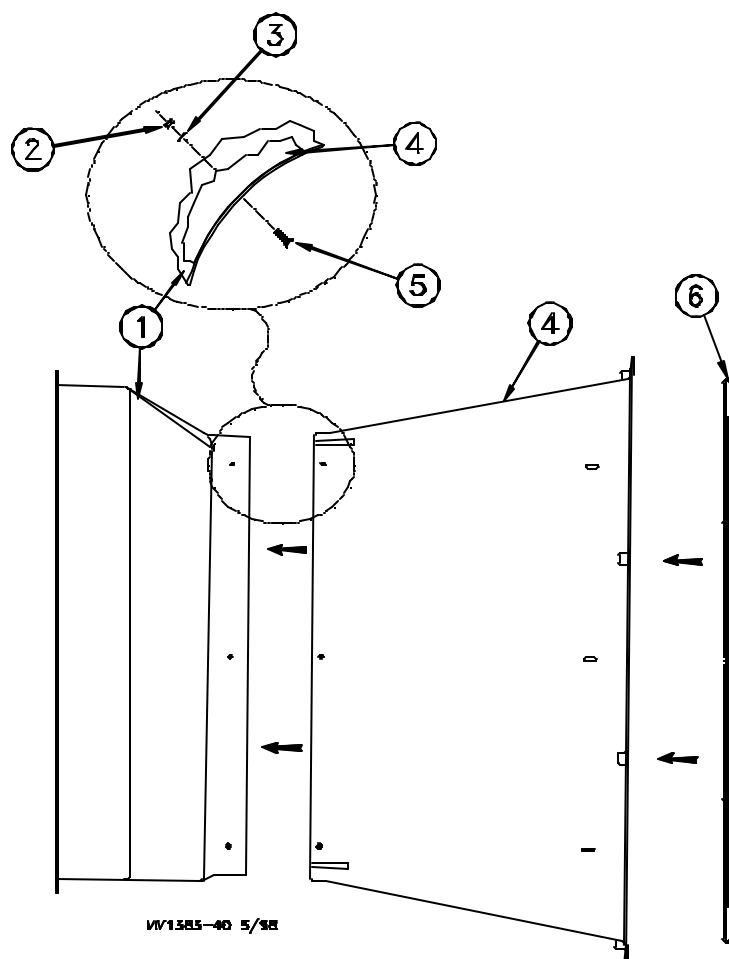


Figure 9. Cone Installation

Key	Description	Part No.
1	Shroud	37914
	Shroud (Black Inside)	46631
2	1/4-20 Nylon Hex Nut	8916
3	Nylon Washer	4856
4	Cone (White)	38266
	Cone (Black)	46630
5	1/4-20 x 7/8 Wafer Head Bolt	40775
6	Cone Grill	35199
	Cone Grill (Black)	37921

Fiberglass Grill Fan:

1. Align the holes in the Grill with the slots in the Shroud.
2. Insert the (6) Wafer Head Bolts from inside the Shroud through the Grill, place the Nylon Washers on the Wafer Head Bolts, and thread the Nylon Nuts onto the ends of the Wafer Head Bolts.

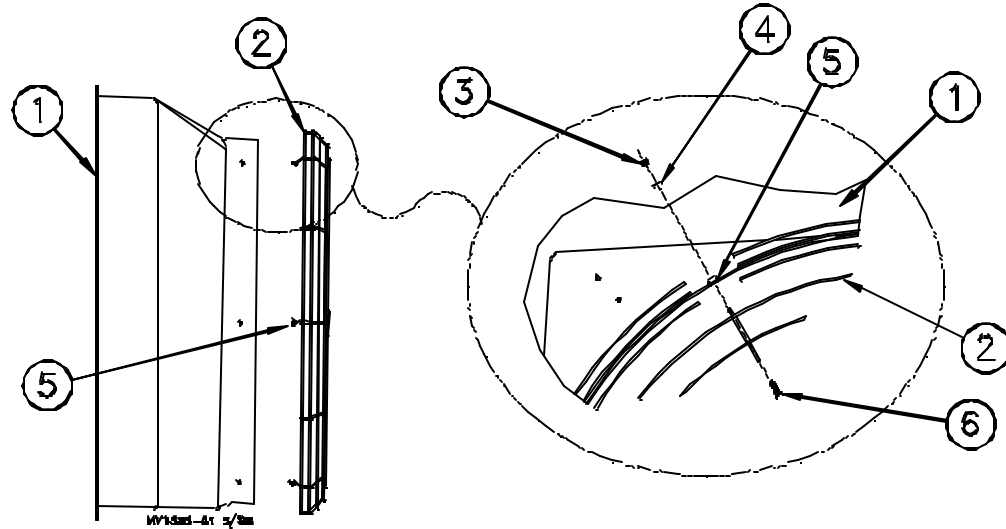


Figure 10. Shroud Grill Installation

Key	Description	Part No.
1	Shroud	37914
	Shroud (Black Inside)	46631
2	Shroud Grill	37921
3	1/4-20 Nylon Hex Nut	8916
4	Nylon Washer	4856
5	Shroud Grill Mounting Loop	
6	1/4-20 x 7/8 Wafer Head Bolt	40775

Wiring

1. See Wiring diagram on Motor for Motor electrical connections. Follow local, state, and national electrical codes for wiring
2. Install an electrical disconnect within reach of each Fan.
3. Route the motor cord (not supplied) toward the upper left corner of the Fan and attach the cord to the Motor Mount using the three Cable Ties—included in the hardware package.

Note: If an Aluminum Shutter will be installed, route the motor cord through the Rubber Grommet—included in the hardware package see Figure 11.

Some installations may require an exit hole for the motor cord to be drilled in the side of the Shroud. These installations must have electrical wires routed through conduit.

Note: Make sure the conduit or wires do not interfere with the Fan Blades or Shutter operation.

Shutter Installation

Plastic and Aluminum Shutters are available for the 48" Fans. Installation is identical except where noted. See below.

1. If you have a Plastic Shutter—cut a 3/8" slot in the upper left flange of the Shutter frame in order to route the electrical cord out the back.
2. If you have an Aluminum Shutter, route the electrical cord through the notch in the top of the Shutter Frame. Make sure the Grommet is installed correctly in the notch in the Shutter Frame. See Figure 12
3. Position the Shutter, centered in the Fan Shroud, and rotate the Shutter Clips to lock the Shutter in place. Check the Shutter for proper operation—the shutter must be able to open and close freely without obstructions.

Note: Make sure the electrical conduit and wire does not interfere with the Fan Blades or Shutter operation.

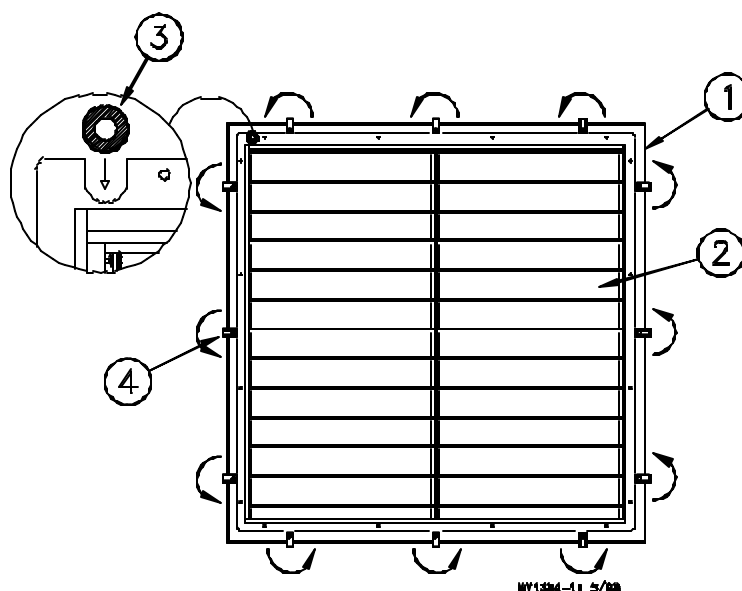


Figure 11. Shutter Installation

Key	Description	Part No.
1	Shroud	37914
	Shroud (Black Inside)	46631
2	Shutter (plastic)	38029
	Shutter (aluminum)	38260
3	Grommet (aluminum shutter only)	7256
4	Shutter Clip	36729

Maintenance



Service and maintenance of fans should be done only by a qualified technician.

Disconnect Power prior to maintaining or cleaning the fan! The fan may start automatically causing injury or death.

1. Grease bearings—use only high quality lithium soap base grease and clean all dirt from Zerk before applying grease.
2. Keep the fan clean for maximum life and performance.
3. Clean Shutter, Cone and Shroud for maximum life and performance.
4. The Fiberglass Fans are shipped with the Danger Decal fastened to the Fan Shroud. Always keep the Decal clean and readable.

If the Decals becomes damaged or unreadable, order replacement Decals immediately.

Clean the Shroud at the approximate location where the Decal will be placed.

Peel the backing off the Decal and affix it to the Shroud.

5. Periodically check the V-Belt. If necessary, adjust the spring tension to prevent belt from slipping.

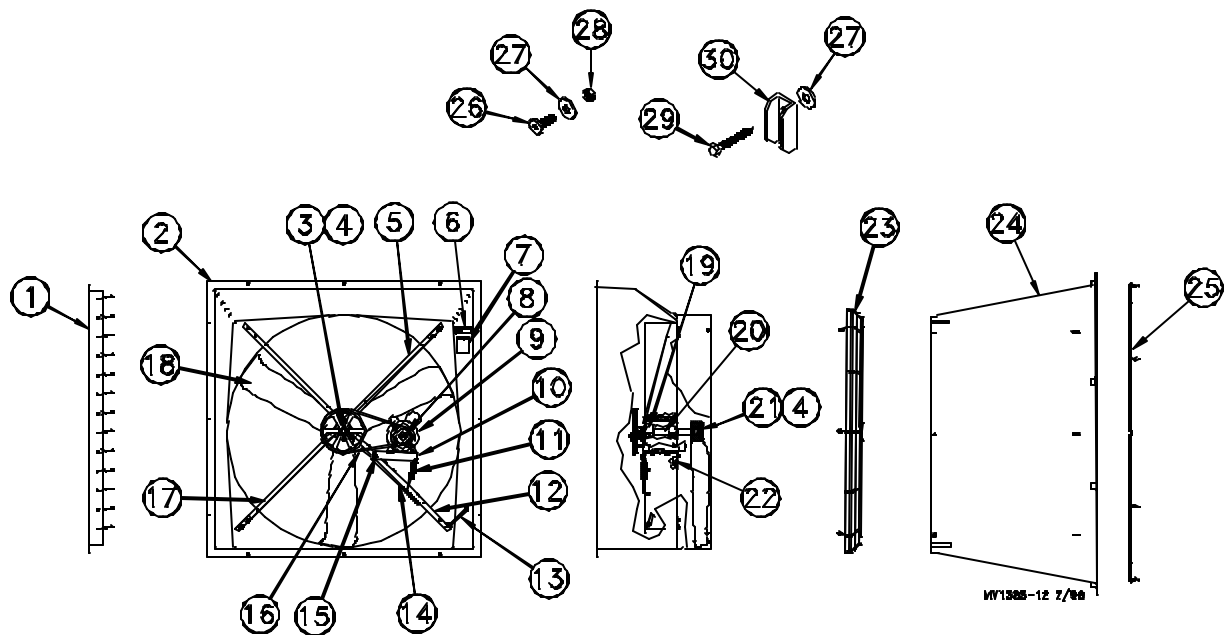
Motor Specifications and Part No.

Fan Specifications (assembled)			Motor Specifications						
Description	*Part No.	Sub-Assembly	Voltage	HZ	Phase	HP	Motor P/N	Motor Sheave Part No.	Fan Sheave P/N
Fiberglass Cone Fan	38264-482X	38233-2	115/208-230	60	1	1	37729	24697 (AK32)	40274 (AK94)
	38264-483X	38233-3	115/220-240	50	1	1	37729	37919 (AK34)	28143 (AK84)
	38264-484X	38233-4	460	60	3	1	40157	24697 (AK32)	40274 (AK94)
	38264-485X	38233-5	230/380-415	50	3	1	36142	37919 (AK34)	28143 (AK84)
Fiberglass Cone Fan (Japan Model)	38264-489X	38233-9	200/400	50	3	1	37729	37919 (AK34)	28143 (AK84)
Fiberglass Fans with Black Shroud Inside	46633-4834	46632-3	220-240	50	1	1	37729	37919 (AK34)	28143 (AK84)
	46633-4854	46632-5	220-240/380-415	50	3	1	36142	37919 (AK34)	28143 (AK84)
	46633-4874	46632-7	200/400	60	3		43290	24697 (AK32)	40274 (AK94)
	46633-4884	46632-8	208-230/460	60	3	1	44694	24697 (AK32)	40274 (AK94)
Grill Fans	4663-4894	46632-9	200/400	50	3	1	43290	37919 (AK34)	28143 (AK84)
	38948-482X	38233-2	115/208-230	60	1	1	37729	24697 (AK32)	40274 (AK94)
	38948-483X	38233-3	115/220-240	50	1	1	37729	37919 (AK34)	28143 (AK84)
	38948-484X	38233-4	460	60	3	1	40157	24697 (AK32)	40274 (AK94)
Black Grill Fans	38948-485X	38233-5	230/380-415	50	3	1	36142	37919 (AK34)	28143 (AK84)
	46750-4834	46632-3	220-240	50	1	1	37729	37919 (AK34)	28143 (AK84)
	46750-4854	46632-5	220-240/380-415	50	3	1	36142	37919 (AK34)	28143 (AK84)
	46750-4874	46632-7	200/400	60	3		43290	24697 (AK32)	40274 (AK94)
	46750-4884	46632-8	208-230/460	60	3	1	44694	24697 (AK32)	40274 (AK94)
	46750-4894	46632-9	200/400	50	3	1	43290	37919 (AK34)	28143 (AK84)

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

Fan Parts List

Belt Drive TURBO™ Fan

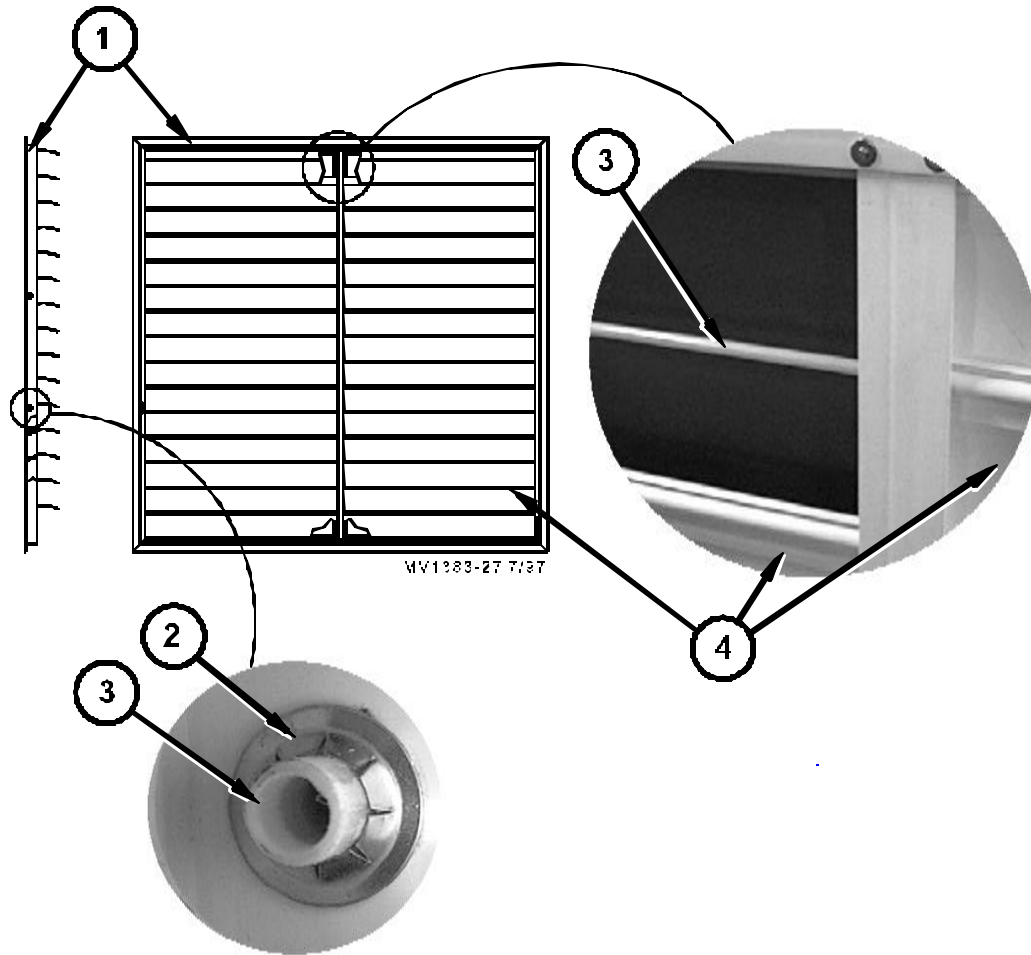


Item	Description	part No.
1	Shutter (plastic) Shutter (aluminum)	38029 38260
2	Shroud Shroud (Black Inside)	37914 46631
3	Fan Sheave	*
4	1/4 x 1-7/8 Sq Key	2419-2
5	Upper Motor Mount Support	37731
6	Identification Decal	Varies
7	Danger Decal	2527-52
8	Motor Sheave	*
9	Motor	*
10	Self Tension Motor Mount	39677
11	Tension Spring	39684
12	Fan Motor Mount	39685
13	Fan Motor Mount Brace	39710
14	Rear Motor Mount Reinf. Angle	39679
15	Motor Mount Bushing	39681

Item	Description	Part No.
16	V-Belt	40308
17	Lower Motor Mount Support	37732
18	Cast Aluminum Fan Blade	38903
19	Pillow Block Bearing	37912
20	Shaft	39688
21	Taper Lock Hub	38909
22	Front Motor Mount Reinf. Angle	39678
23	Shroud Grill	37921
24	Outlet Cone (White) Outlet Cone (Black)	38268 46630
25	Outlet Cone Grill Outlet Cone Grill (Black)	35199 37921
26	1/4-20 x 7/8 Wafer Head Bolt	40775
27	Nylon Washer	4856
28	1/4-20 Nylon Hex Nut	8916
29	1/4 x 1-3/4 SS Lag Screw	40938
30	Shutter Clip	36729

Notes: * See page 15 for part numbers.

Plastic Shutter



Item	Description	Part No.
1	Shutter (White Plastic)	38029
	Shutter (Gray Plastic)	46716
2	Push Nut, 1/4"	38032
3	Shutter Rod Pivot	38702-2
4	Shutter Louver (White)	38038-4
	Shutter Louver (Gray)	46715-4

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

Revisions to this Manual

Page No.

Description of Change

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Added 46750-X, and 46333-X Fans. Removed CE.

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

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