

TURBO™ Fiberglass Cone and Grill Fans 36" Belt Drive

Installation & Operator's Instruction Manual



Chore-Time 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" White, and Black Cone Fans and Grill Fans.

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

Contents

Topic	Page	User
Chore-Time Extended Warranty	2	C
Support Information .....	.4	
Distributor and Installer Information .....	.4	
General	4	C,D,I
About This Manual	5	C,D,I
Safety Information	5	C,I
Safety–Alert Symbol .....	.5	
Understanding Signal Words .....	.5	
Follow Safety Instructions .....	.6	
Decal Descriptions .....	.6	
DANGER: Electrical Hazard .....	.6	
DANGER: Rotating Fan Blade .....	.6	
Decal Location .....	.7	
Fan Installation	7	C,I
Planning the Installation .....	.7	
Planning the Installation Continued....	.8	
Installing the Fan to the Framed Opening .....	.8	
Installing the Cone or Grill to the Fiberglass Fan .....	.9	
Fiberglass Cone Fan: .....	.9	
Fiberglass Grill Fan:	10	
Wiring	10	
Shutter Installation	11	
Shutter Installation Continued....	12	
Plastic Shutter Installation in Detail	12	
Motor Specifications and Drive Component Part Numbers	12	C,I
Motor Specifications and Drive Component Part Numbers	12	
Maintenance	13	C
Belt Drive TURBO™ Fan Parts List	14	C,I
Belt Drive TURBO™ Part Numbers	15	

General

Support Information

The 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, 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!

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 _____

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

DANGER: Electrical Hazard

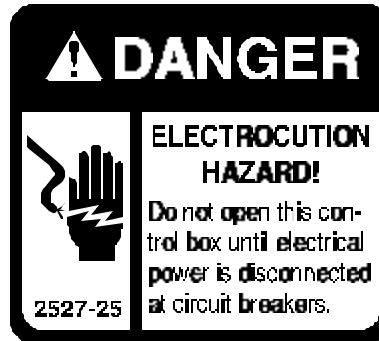
Disconnect electrical power before inspecting or servicing equipment unless maintenance instructions specifically state otherwise.

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.

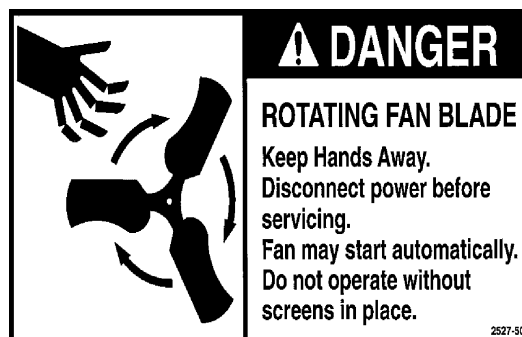
With the exception of motor overload protection, electrical disconnects and over current protection are not supplied with the equipment.



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

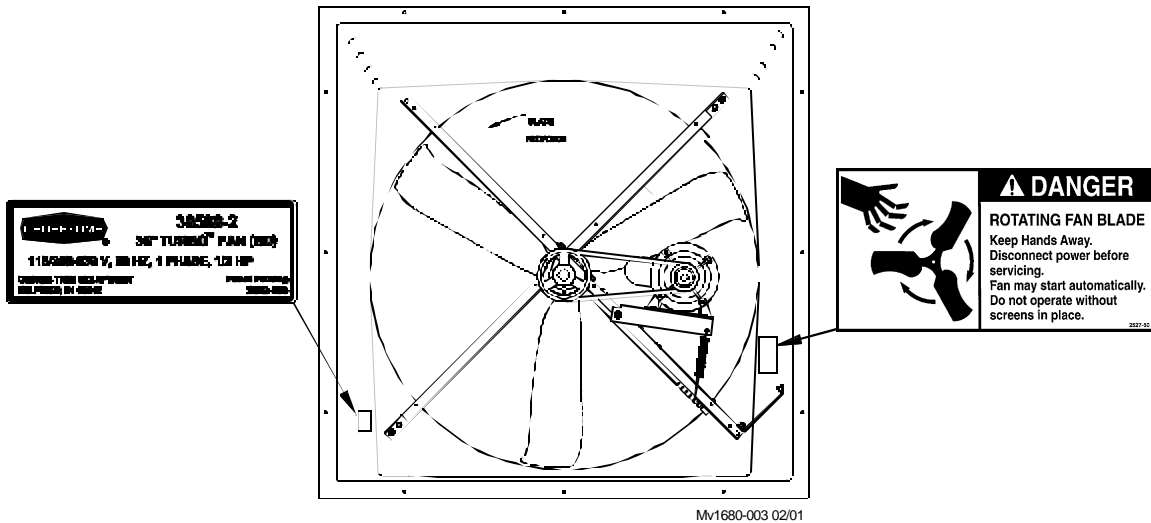
- This Decal is placed on both sides of the shroud.
- Keep hands away.
- Disconnect power before servicing.
- The Fan may start automatically.
- Do not operate the Fan without the screens in place.

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



Decal 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.



Fan Installation

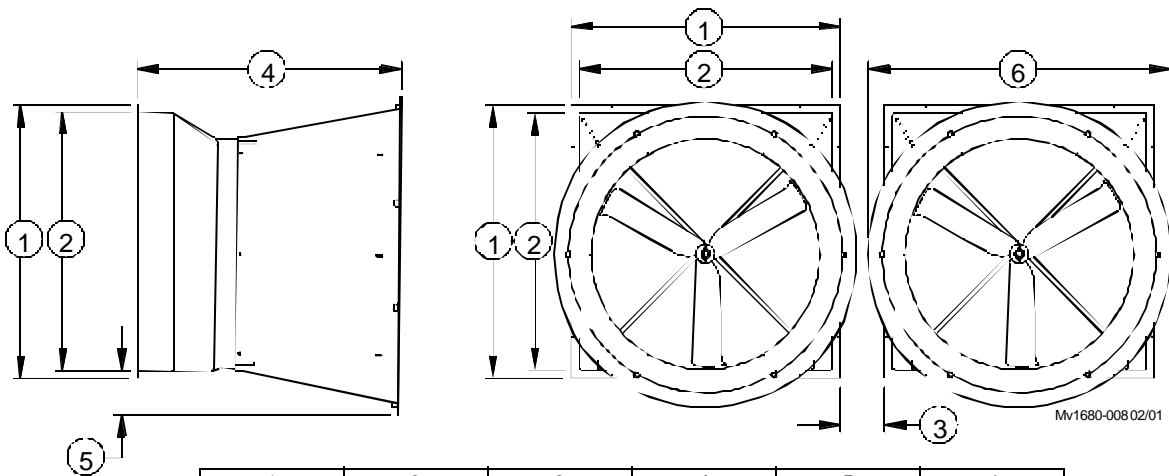
Planning the Installation

Carefully plan the installation.

Dimensions are provided for the 36" 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 8 for framed opening size.

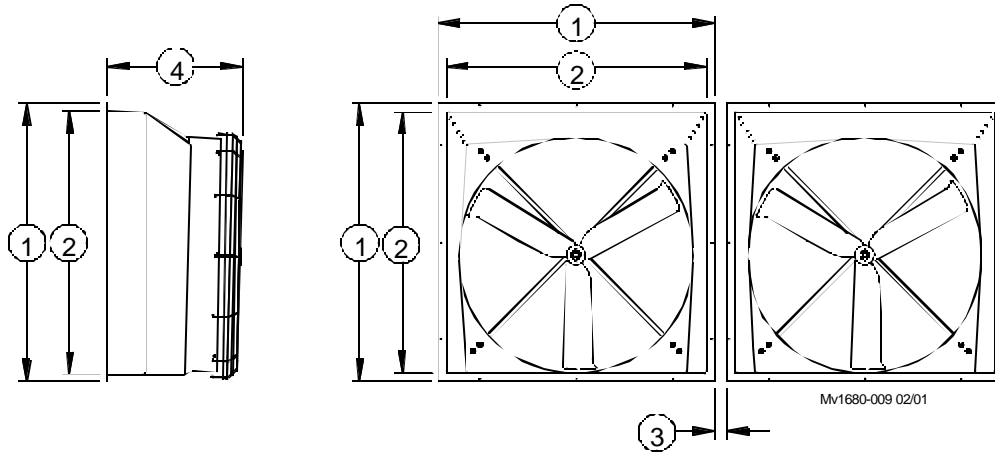
Important: Cones are wider than the actual opening cut into wall. Thus, dimension "3" must be no less than that listed in chart below.



1	2	3	4	5	6
45.38" (115.27 cm)	Rough Frame Opening 43.00" (109.22 cm)	Minimum 8.00" (20.32cm)	47.00" (119.38 cm)	6.85" (17.40 cm)	52.38" (133.05 cm)

Figure 1. Planning and Layout Diagram for Cone Fans

Planning the Installation Continued....

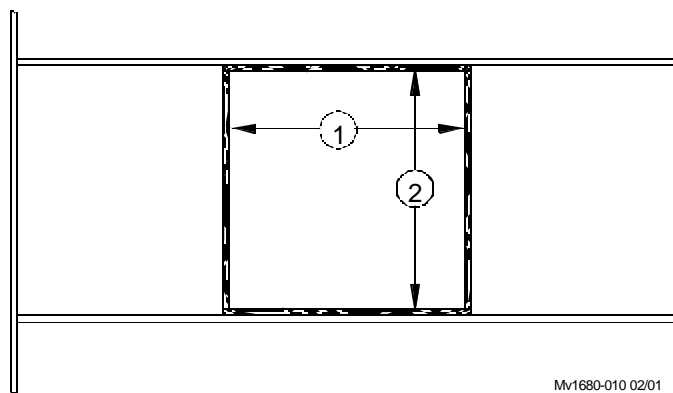


1	2 Rough Frame Opening	3 Minimum	4
45.38" (115.27 cm)	43.00" (109.22 cm)	0" (0.00 cm)	27" (68.58 cm)

Figure 2. Planning and Layout Diagram for Grill Fans

Installing the Fan to the Framed Opening

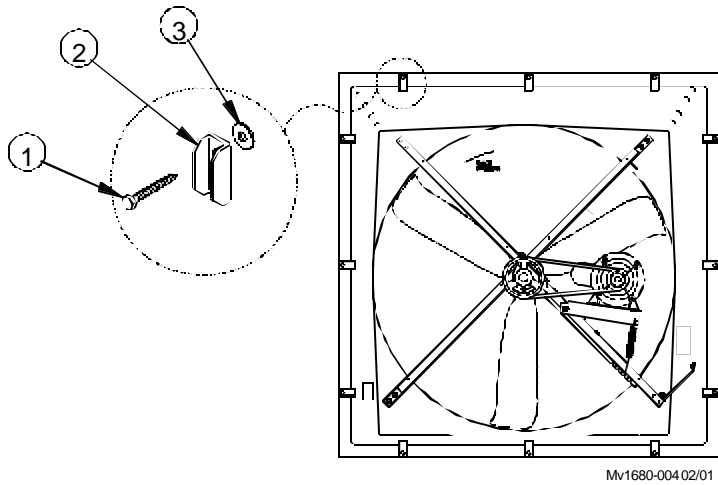
1. Cut an opening in the wall to house the fan—the required wall opening is provided in the chart below. **See Figure 3.**
2. Construct a frame in the opening of the wall for the fan using 2" x 6" (50 x 152 mm) lumber—not supplied.



Minimum Dimension	
1	2
43.00" (109.22 cm)	43.00" (109.22 cm)

Figure 3. Framing Diagram

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 4** below. This allows for rotation of the Shutter Clips when installing the Shutter.



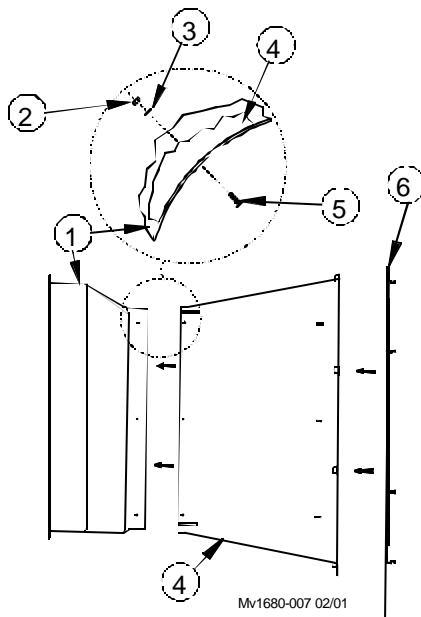
Key	Description	Part No.
1	1/4 x 1-3/4 SS Lag Screw	40938
2	Shutter Clip	36729
3	Nylon Washer	4856

Figure 4. 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 5**.
10" 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.

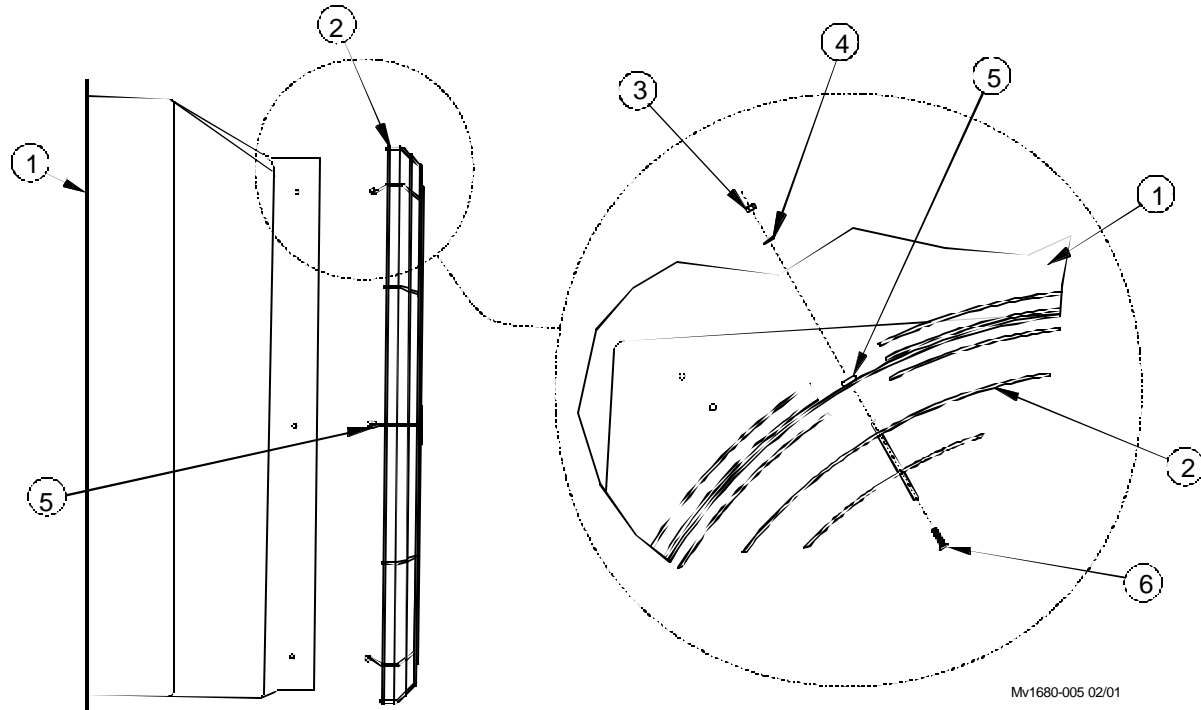


Key	Description	Part No.
1	Shroud (White)	38590
	Shroud (Black)	42338
2	1/4-20 Nylon Hex Nut	8916
3	Nylon Washer	4856
4	Cone (White)	38267
	Cone (Black)	46971
5	1/4-20 x 7/8 Wafer Head Bolt	40775
6	Cone Grill	35228

Figure 5. Cone Installation

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.



MV1680-005 02/01

Key	Description	Part No.
1	Shroud	38590
2	Shroud Grill	37920
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

Figure 6. Shroud Grill Installation

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 7.

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.

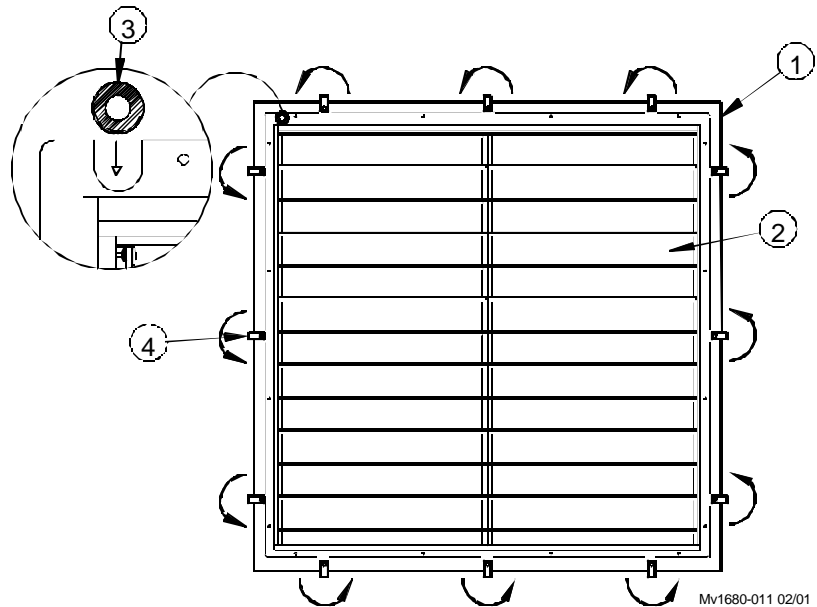
Note: Make sure the conduit or wires do not interfere with the Fan Blades or Shutter operation.

Shutter Installation

Plastic and Aluminum Shutters are available for the 36" 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 7** below)
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.

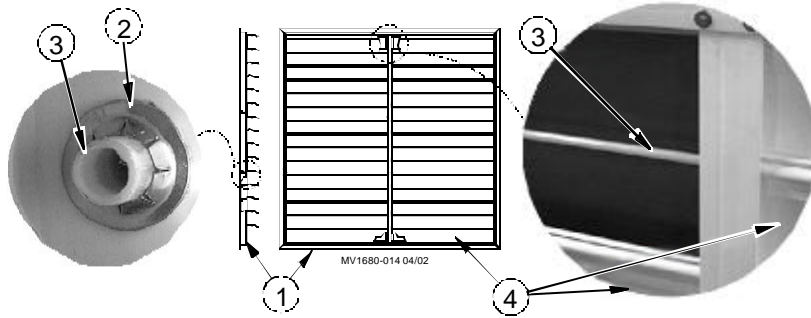


Key	Description	Part No.
1	Shroud (White)	38590
	Shroud (Black)	46970
2	Shutter (White Plastic)	38027
	Shutter (Gray Plastic)	46972
	Shutter (Aluminum)	38259
3	Grommet (Aluminum Shutter only)	7256
4	Shutter Clip	36729

Figure 7. Shutter Installation

Shutter Installation Continued....

Plastic Shutter Part Numbers



Item	Description	Part No.
1	Shutter Assembly (White) Plastic	38027
	Shutter Assembly (Gray) Plastic	46972
2	Push Nut, 1/4"	38032
3	Shutter Rod Pivot	38702-2
4	Shutter Louver (White)	38038-2
	Shutter Louver (Gray)	46715-2

Figure 8. Plastic Shutter Part Numbers

Motor Specifications and Drive Component Part Numbers

Motor Specifications and Drive Component Part Numbers.

Fan Specifications (assembled)			Motor Specifications							
Description	Part Numbers	Sub-Assembly Part No's	Voltage	HZ	Phase	HP	Motor P/N	Motor Sheave Part No.	Fan Sheave Part No.	Belt P/N
*Fiberglass Cone Fan	38589-362X	38588-2	208/230	60	1	.5	40158	1381 (AK27)	42338 (AK51)	39783
	38589-363X	38588-3	220-240	50	1	.5	40159	8773 (AK30)	42338 (AK51)	39783
	38589-364X	38588-4	208-230/460	60	3	.5	4714	1381 (AK27)	42338 (AK51)	39783
	38589-365X	38588-5	220-240/380-415	50	3	.5	38566	8773 (AK30)	42338 (AK51)	39783
	38589-360X	38588-LM	--	--	--	--	--	1381 (AK27)	42338 (AK51)	39783
Black Fiberglass Cone Fan	46778-362X	46974-2	208/230	60	1	.5	40158	1381 (AK27)	42338 (AK51)	39783
	46778-363X	46974-3	220-240	50	1	.5	40159	8773 (AK30)	42338 (AK51)	39783
	46778-364X	46974-4	208-230/460	60	3	.5	4714	1381 (AK27)	42338 (AK51)	39783
	46778-365X	46974-5	220-240/380-415	50	3	.5	38566	8773 (AK30)	42338 (AK51)	39783
	46778-360X	46974-LM	--	--	--	--	--	1381 (AK27)	42338 (AK51)	39783
Fiberglass Cone Fan With Grill	38946-362X	38588-2	208/230	60	1	.5	40158	1381 (AK27)	42338 (AK51)	39783
	38946-363X	38588-3	220-240	50	1	.5	40159	8773 (AK30)	42338 (AK51)	39783
	38946-364X	38588-4	208-230/460	60	3	.5	4714	1381 (AK27)	42338 (AK51)	39783
	38946-365X	38588-5	220-240/380-415	50	3	.5	38566	8773 (AK30)	42338 (AK51)	39783
	38946-360X	38588-LM	--	--	--	--	--	1381 (AK27)	42338 (AK51)	39783
Black Fiberglass Cone Fan with Grill	46777-362X	46974-2	208/230	60	1	.5	40158	1381 (AK27)	42338 (AK51)	39783
	46777-363X	46974-3	220-240	50	1	.5	40159	8773 (AK30)	42338 (AK51)	39783
	46777-364X	46974-4	208-230/460	60	3	.5	4714	1381 (AK27)	42338 (AK51)	39783
	46777-365X	46974-5	220-240/380-415	50	3	.5	38566	8773 (AK30)	42338 (AK51)	39783
	46777-360X	46974-LM	--	--	--	--	--	1381 (AK27)	42338 (AK51)	39783

* Replace the "X" in fan P/N with "1" for an Aluminum Shutter, "2" for a Plastic Shutter, "4" for Gray Plastic Shutter.

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 Zerks 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.

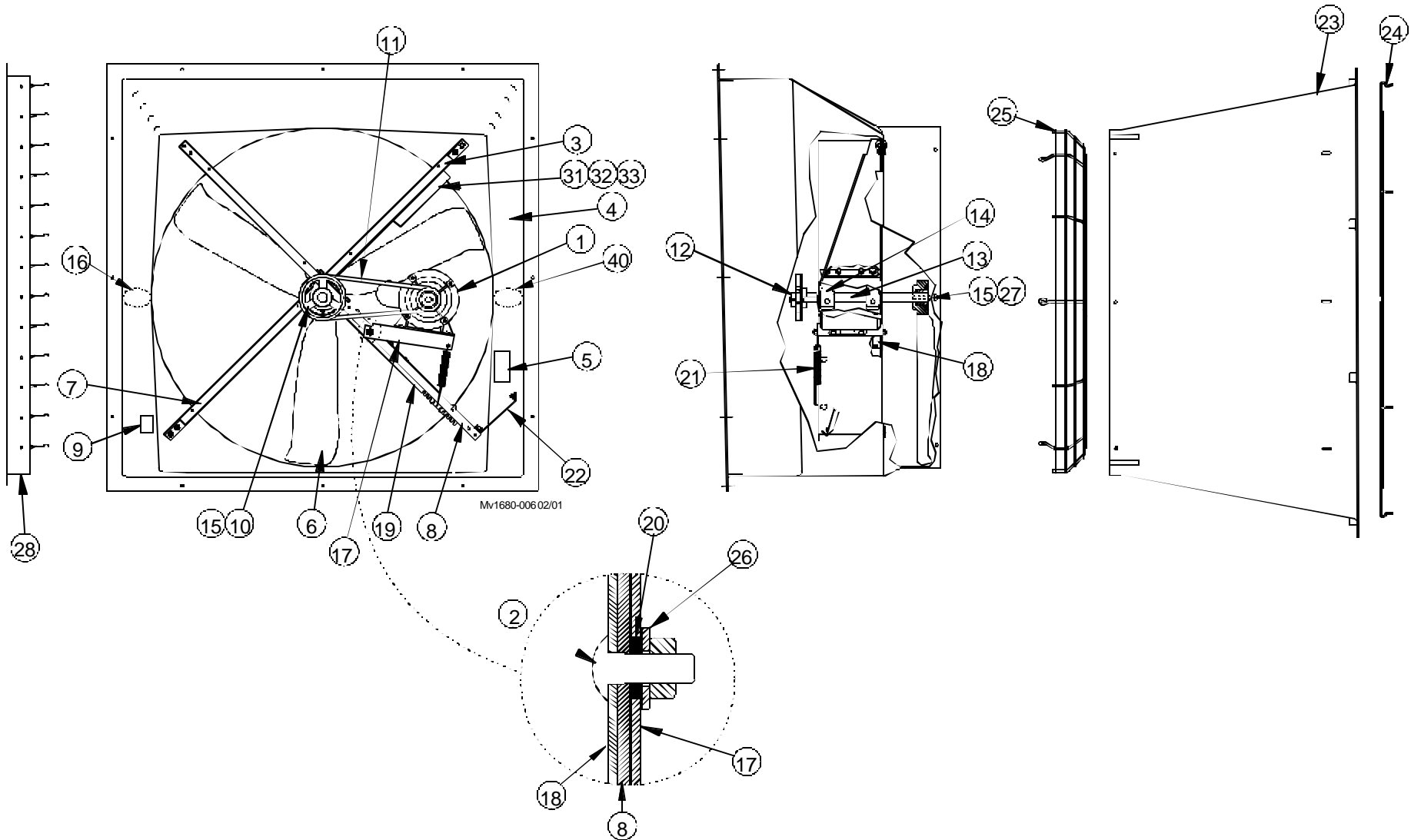
If the Decals becomes damaged or unreadable, order replacement Decals immediately.

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.

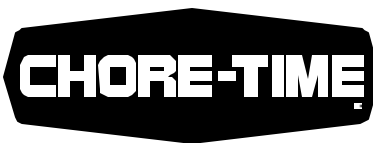
Belt Drive TURBO™ Fan Parts List



Belt Drive TURBO™ Part Numbers

Item	Qty.	Description	Part No.
1	1	Motor	Varies*
2	2	5/16-18x.75 SS Carr. Bolt	27868-1
3	1	Upper Motor Mount Support	37735
4**	1	36" Fiber Glass Fan Shroud	37913
		36" Fiber Glass Fan Shroud (Black)	46970
5	1	Danger Decal	2527-50
6	1	36" Cast Aluminum Fan Blade	38902-1
7	1	Lower Motor Mount Support	37736
8	1	36" Fan Motor Mount	39785
9*	1	Identification Decal	39002-XXX
10	1	AK-51 Sheave	42338
11	1	AX32 Gripnotch V-Belt	39783
12	1*	Sheave	Varies*
13	1	1" Shaft	39688

Item	Qty.	Description	Part No.
14	2	1" Pillow Block Bearing	37912
15	2	1/4 x 1-1/8 Sq. Key	2419-2
16	1	Chore-Time Decal	2525-4
17	1	Self Tension Motor Mount	39677
18	1	Front Motor Mount Reinforcement Angle	39678
19	1	Rear Motor Mount Reinforcement Angle	39679
20	2	SS Self Tension BD Motor Mount Bushing	39681
21	1	SS Self Tension Motor Spring	39684
22	1	TURBO™ Fan Motor Mount Brace	39710
23**	1	Outlet Cone (White)	38267
	1	Outlet Cone (Black)	46971
24	1*	Outlet Cone Grill	35228
25	1*	Shroud Grill	37920
26	2	.260 x .69 x .060 NY Washer	4856
27	1	1/4-20x 7/8 SS Bolt	4404-17
28**	1	Shutter Assembly (White)	38038-2
	1	Shutter Assembly (Gray)	46715-2
<p>*See Pg. 12 Motor Specifications and Drive Component Chart for Part Numbers and Quantities for Different Fan Models.</p> <p>**Due to different color availabilities, Item Numbers vary depending on model of Fan.</p>			



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

Revisions to this Manual

Page No.	Description of Change
Various	Added Black Shrouded Fan Models; 46777-36XX, and 46778-36XX

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

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