# Instruction Manual



# ATLAS 74 Fan with Munters Drive

Models: ATS74D3F43CT-HO • ATS74D3F43CT-HE



\*Patents Pending



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# Munters ATLAS 74 Fan with Munters Drive Instructions for Use and Maintenance

# Thank You:

Thank you for purchasing an ATLAS 74 Fan with Munters Drive. Munters equipment is designed to be the highest performing, highest quality equipment you can buy. With the proper installation and maintenance it will provide many years of service.

# Please Note:

To achieve maximum performance and ensure long life from your Munters product it is essential that it be installed and maintained properly. Please read all instructions carefully before beginning installation.

# Warranty:

For Warranty claims information see the "Warranty Claims and Return Policy" form QM1021 available from the Munters Corporation office at 1-800-227-2376 or by e-mail at aghort.info@munters.com.

# **Conditions and Limitations:**

- Products and Systems involved in a warranty claim under the "Warranty Claims and Return Policy" shall have been properly installed, maintained and operated under competent supervision, according to the instructions provided by Munters Corporation.
- Malfunction or failure resulting from misuse, abuse, negligence, alteration, accident or lack of proper installation or maintenance shall not be considered a defect under the Warranty.

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# **Unpacking the Equipment**

Before beginning installation, check the overall condition of the equipment. Remove packing materials, and examine all components for signs of shipping damage. Any shipping damage is the customer's responsibility and should be reported immediately to your freight carrier. Fan is shipped complete with all accessories.

### 1.1 Parts List

#### Each Fan includes:

- 1 Munters Drive Fan
- 4 Cone Sections, PL
- 2 Guard Sections, CTD
- 1 Shutter
- 2 Shutter Wind Bracket, GZ
- 1 Shutter Wind Pipe, GZ
- 4 Reinforcing Ring, 1/4 Section, Atlas74, CTD-STL, White
- 1 Hardware Package as follows:

#### HP1169 – Atlas 74

ID	Qty.	Cat. No.	Description
[A]	28	KS1167	5/16"-18 x 1.25" SRTD Flange Head Bolt, ZP
[B]	32	KN0706	5⁄1₀"-18 SRTD Flange Nut, ZP
[C]	12	KW3011	<sup>5</sup> /16" x 1 <sup>1</sup> /4"O.D. Flat Washer, SS
[H]	3	KS1403	#9 x 2" Hex, Seal Washer Polebarn Screw, ZP
[J]	3	FH1968	1-Hole Pivoting Shutter Clip, BLK PL
	1	HP1202	Snow Ring Hardware Package
[D]	4	KS1169	5/16"-18 x 1.75" SRTD Flange Head Bolt, ZP
[E]	4	KN1706	5/16"-18 Nylock Nut, ZP

#### WARNING:

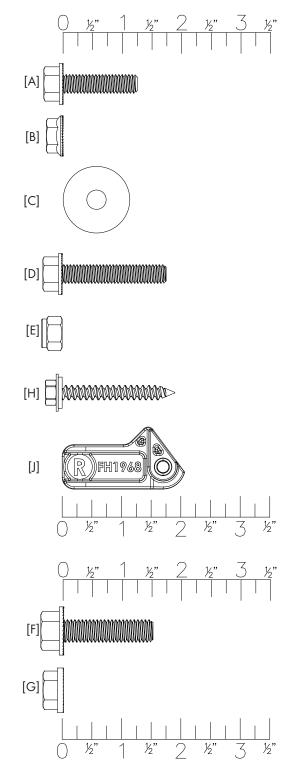
A Munters Lift Kit, FH1890, is required for installation of Atlas Fan. One Lift Kit may be used for multiple Atlas Fans. Failure to use the Munters Lift Kit may result in damage to fan. **DO NOT** use chains to lift fan for installation. Damage from chains will not be covered under warranty.

#### Each FH1890 Lift Bracket includes:

- 1 Left Lift Bracket, PWDCTD
- 1 Right Lift Bracket, PWDCTD
- 1 Hardware Package as follows:

#### HP1891 - for FH1890

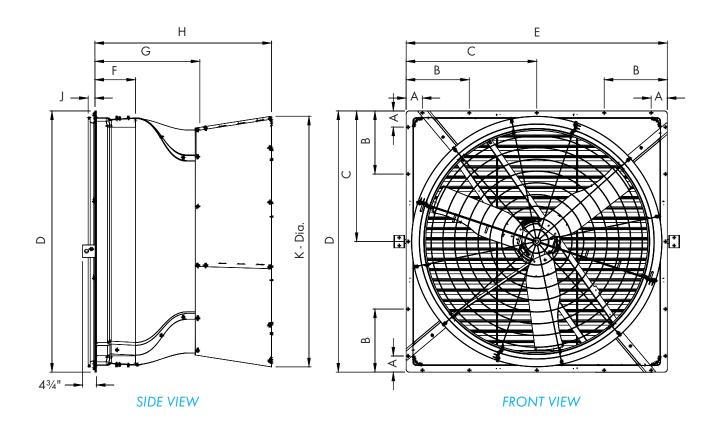
ID	Qty.	Cat. No.	Description
[F]	8	KS1180	¾"-16 x 1.5" Flange Head Bolt, ZP
[G]	8	KN0705	¾"-16 SRTD Flange Nut, ZP



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# 1.2 Fan Dimensions

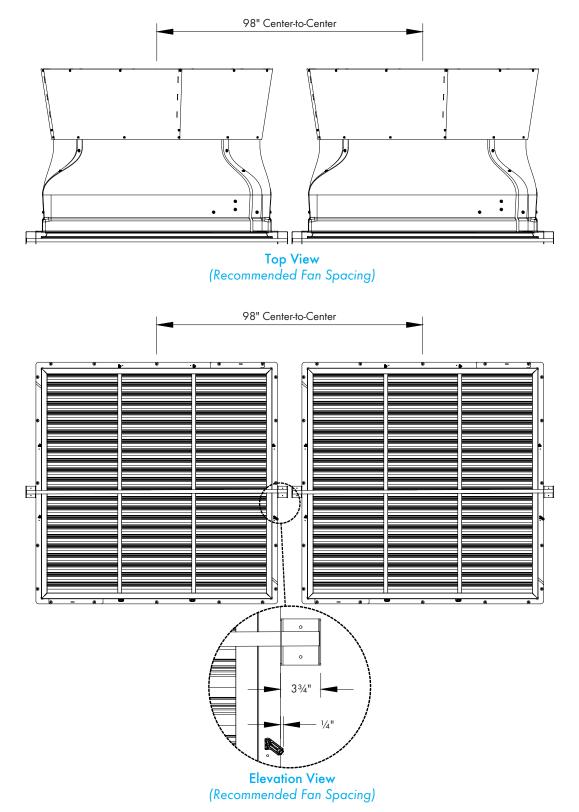
Fan Specifications:					
Hertz:	60				
Voltage:	460VAC				
Phase:	3				
Weight: 400 lbs. [182 Kg]					



FAN DIA.	А	В	С	D	Е	F	G	н	J	K-Dia.	WALL OF (I.D., f	PENING ramed)
74″	5½″	211/2"	<b>44</b> <sup>1</sup> / <sub>2</sub> "	89″	89″	13%″	35¾″	60 <sup>3/</sup> 16″	25/16″	85¾″	84½″W.	84½″H.

#### 1.3A Recommended Fan Spacing

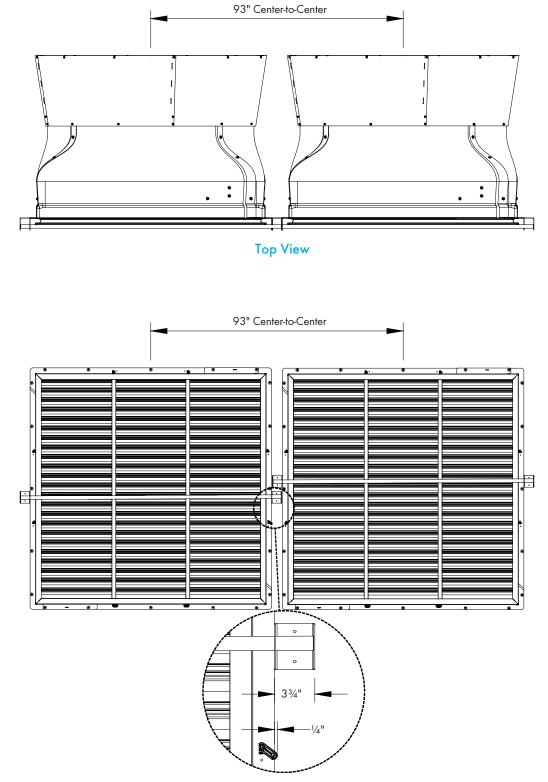
When determining fan spacing/fan layout, keep in mind that the fan requires <sup>1</sup>/<sub>4</sub>" clear space from the mounging flange so the Shutter Clips have room to rotate, to allow the shutter to be removed and reinstalled in the fan without interference. Also, the sides of the fan also require 3<sup>3</sup>/<sub>4</sub>" clearance for the Wind Kit Bracket to be installed. If the fans are to be installed side-by-side with the Wind Kit Brackets adjacent to each other, the minimum fan spacing is 98" Center-to-Center. See Figure Below.



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### 1.3B Minimum Fan Spacing (Optional)

If the fans are to be installed closer, then the Wind Kit Bracket for one fan should be offset 6" up or down from the previous fan, then the minimum fan spacing is 93" Center-to-Center. See Figure Below.



**Elevation View** 

# Installation Instructions

# 2.

### 2.1 Installation

#### Step 1

Construct the framed opening to correct size according to the Chart on Page 5. The frame should be constructed of 4x4 Treated Posts or double 2x Treated Studs. 2 fans can fit between Columns that are 20'O.C., and 3 fans can fit between Columns that are 25' or 30' O.C. See Figure 1A, 1B and 1C.

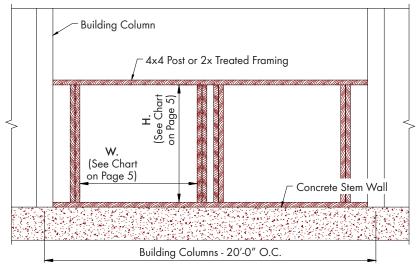


Figure 1A

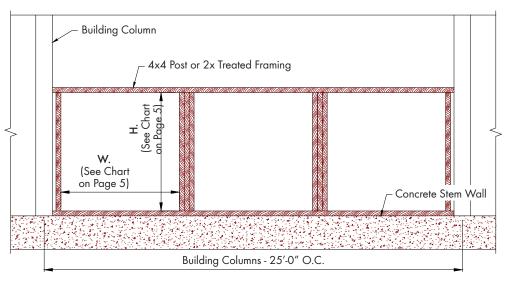
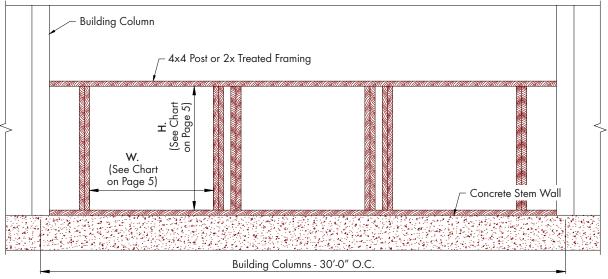


Figure 1B



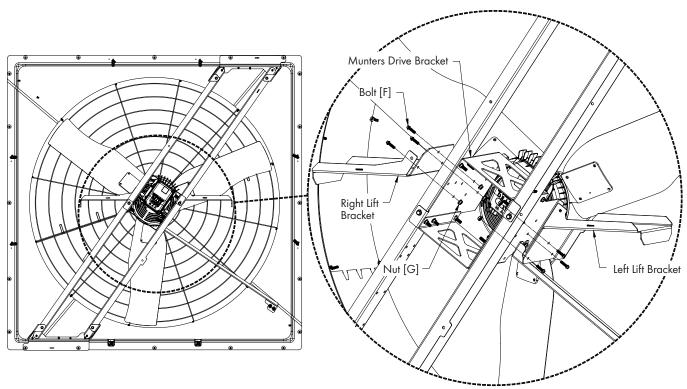
<b>F</b> • • • •	
Figure	
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#### WARNING:

A Munters Lift Kit, FH1890, is required for installation of Atlas Fan. One Lift Kit may be used for multiple Atlas Fans. Failure to use the Munters Lift Kit may result in damage to fan. **DO NOT** use chains to lift fan for installation. Damage from chains will not be covered under warranty.

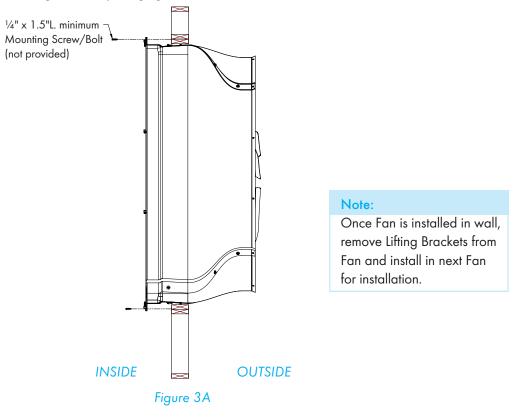
#### Step 2

A Lift Bracket Kit is available to be able to lift fan into the framed opening. Attach each Lift Bracket to Bearing Bracket and Strut using (4) Bolts [F] and Nuts [G]. See Figure 2. Once fan has been installed in wall Lift Bracket can be removed and installed in next fan for installation.



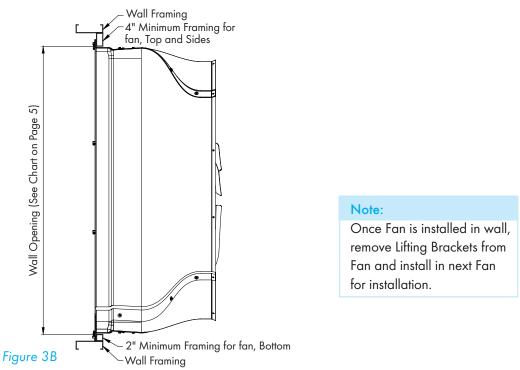
#### Step 3A

Using Munters Lift Kit, FH1890, insert fan into the framed opening from the inside. While holding fan tight to framing, fasten top of fan with (5)  $\frac{1}{4}$ " x 1.5"L. minimum Mounting Screw/Bolt (not provided). See Figure 3A. Next, fasten bottom of fan, then both sides with (5)  $\frac{1}{4}$ " x 1.5"L. minimum Mounting Screw/Bolt (not provided) per side. Install flashing around opening tight to fan and caulk around fan to seal.

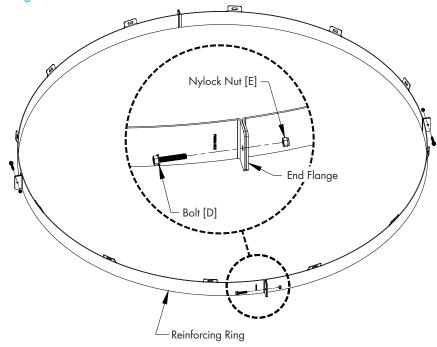


#### Step 3B

If fan needs to be mounted, so that shutter does not stick into building then frame fan as shown in *Figure 3B*. Top and sides require 4" minimum and bottom requires 2" minimum.



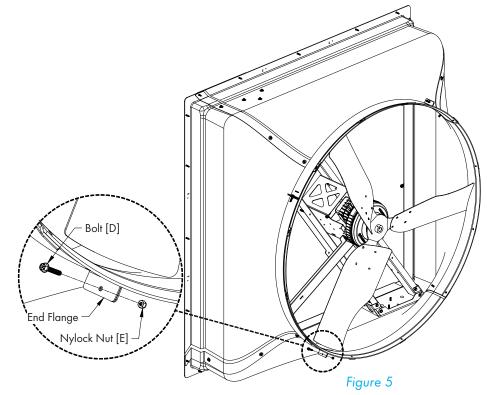
Lay (4) Reinforcing Rings in a circular pattern on a flat surface with the tabs facing up. Fasten the Rings together at the End Flanges using (3) Bolts [D] and Nylock Nuts [E], leaving one pair of the End Flanges unattached. *See Figure 4*.



#### Figure 4

#### Step 5

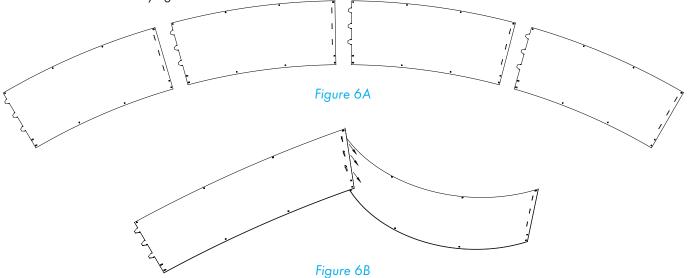
Wrap the Reinforcing Rings around the outlet orifice of the fan and align the slots in the tabs with the holes in the orifice and secure the final End Flanges together using (1) Bolt [D] and Nylock Nut [E]. See Figure 5. Do not fully tighten the last bolt and nut at this time.



### 2.2 Cone Installation

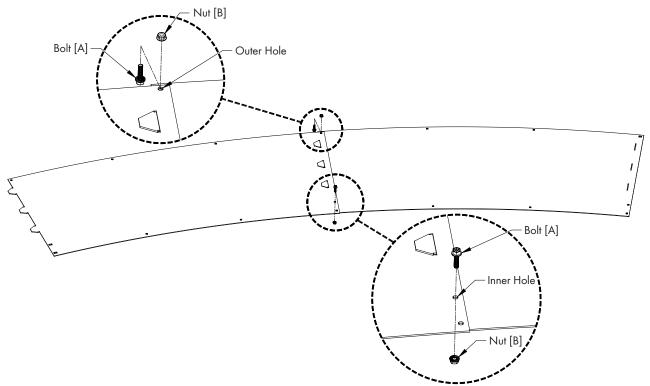
#### Step 6

Place all 4 cone sections on a flat surface with tabs from one facing slots of the next. See Figure 6A. Curl up tab end of first cone section and insert tabs up into slots in the next cone section. A mallet may be needed to seat slots over tabs completely. See Figure 6B. Repeat this step until all 4 cone sections are connected and laying flat.



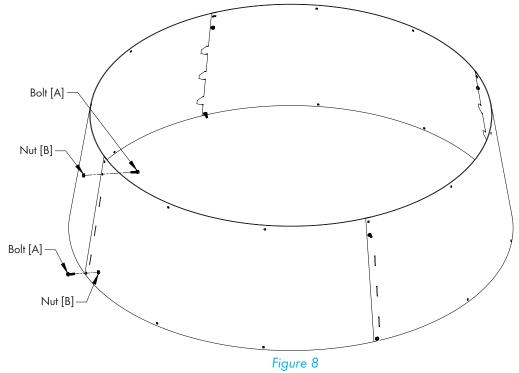
#### Step 7

Fasten each of the joints in the single outer hole using (1) Bolt [A] and Nut [B], with the nut on the side with the tabs. At the inner pair of holes of each joint fasten using (1) Bolt [A] and Nut [B] with the bolt head on the side with the tabs. See Figure 7.



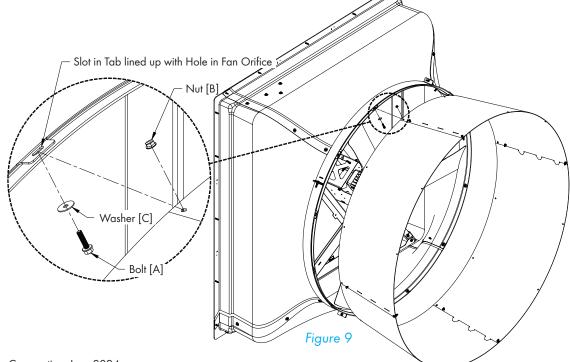


Stand cone sections on end and curl ends around to form cone so that the nuts are outside and tabs on inside. Insert remaining tabs into slots so tabs are inside cone and fasten final joint using (1) Bolt [A] and Nut [B], with nut on inside of cone. At the inner pair of holes fasten using (1) Bolt [A] and Nut [B] with bolt head on inside of cone. See Figure 8. Leave all bolts and nuts loose at this time.

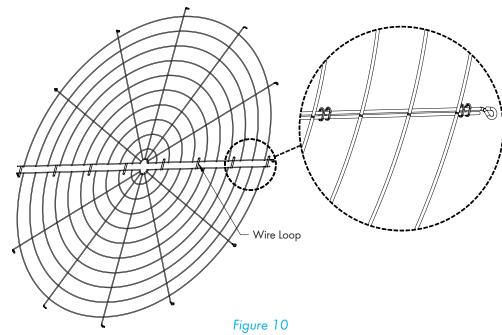


#### Step 9

Make sure the slots in the tabs of the Reinforcing Ring still line up with holes in the orifice of the fan. Install cone onto fan over the tabs of the Reinforcing Ring by putting cone over fan orifice and line up outer holes of cone with holes in fan orifice and tab slots. Fasten cone to fan orifice using (12) Bolt [A], Washer [C] and Nut [B] with bolt and washer on inside of fan orifice and nut on outside of cone with the tabs between orifice and cone. See Figure 9. Torque the last Ring Bolt to 125 in-lbs [14 Nm], and then tighten all the cone bolts at this time.

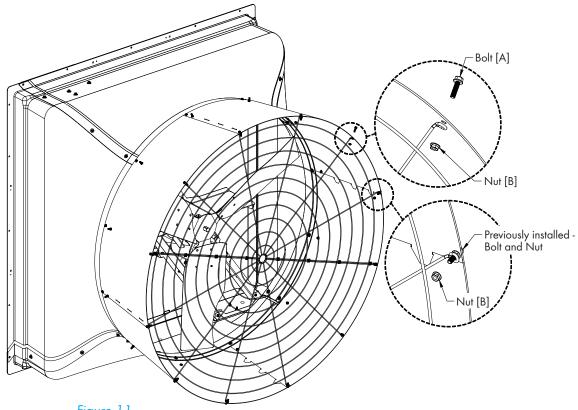


Find the 2 Guard Sections and line the 2 of them up with the eyelets both facing the same direction. Then secure the guard sections together by wrapping the wire loop on each guard section around center wire of opposite guard section. See Figure 10.



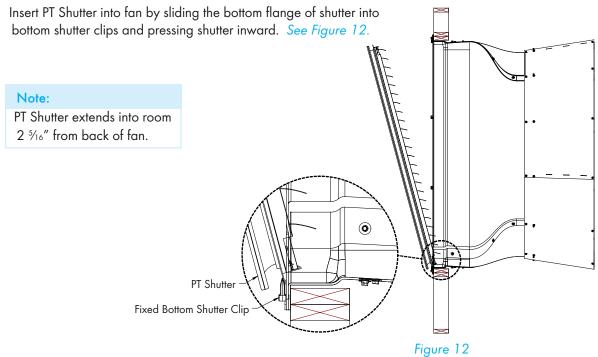
#### Step 11

Insert guard into cone with the eyelets facing you. Install eyelets over (4) Bolts already installed at joints in cone and fasten with Nut [B]. Secure (8) remaining eyelets using Bolt [A] and Nut [B]. See Figure 11.



#### 2.3 PT Shutter Installation

#### Step 12



#### Step 13

Fasten shutter in place by rotating the side and top shutter clips over the shutter flanges. See Figure 13.

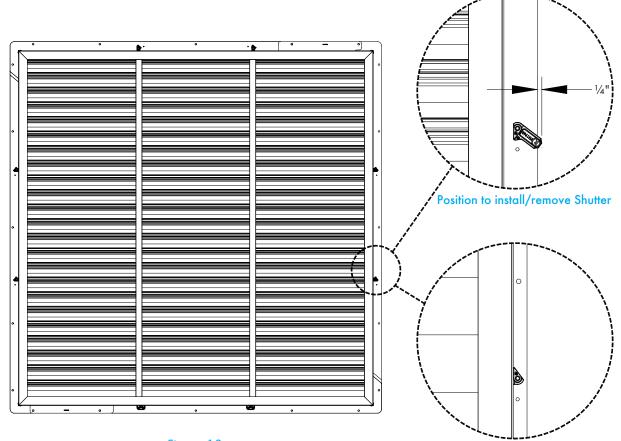


Figure 13

Position to hold Shutter in place

Drill (3)  $\frac{3}{16}$ " holes in the flange of the Atlas 74 fan. One hole should be in each side flange,  $1\frac{3}{16}$ " from the egde of each flange and  $7\frac{1}{2}$ " from the top edge of the flange. The 3rd hole should be  $1\frac{3}{16}$ " down from the top of the flange and  $1\frac{1}{2}$ " to the right of the center mounting screw. See Figure 14.

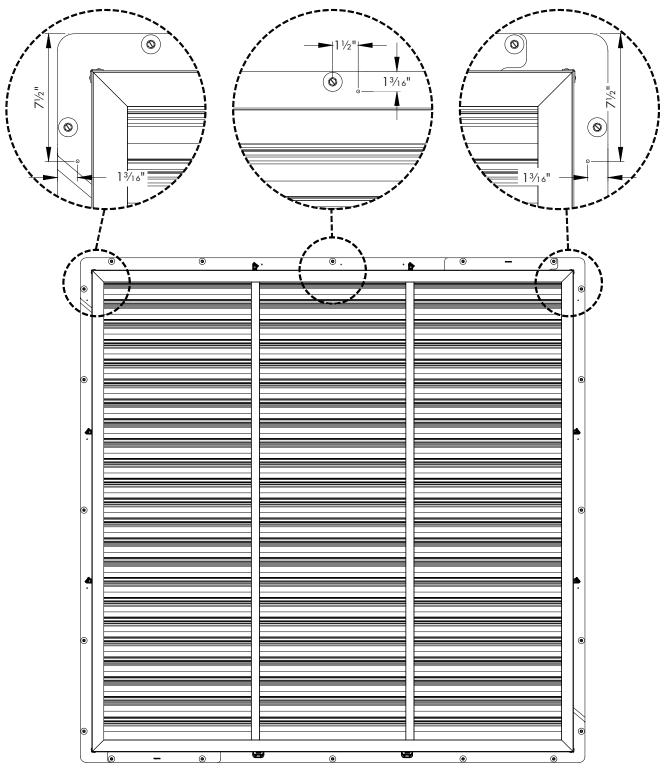


Figure 14

Fasten the (3) Shutter Clips [J] to the flanges in the holes drilled in the previous step using (3) Polebarn Screws [H]. The Clip on the left and top flanges should have the 'L' on the clip facing out and the Clip on the right flange should have the 'R' facing out. *See Figure 15.* 

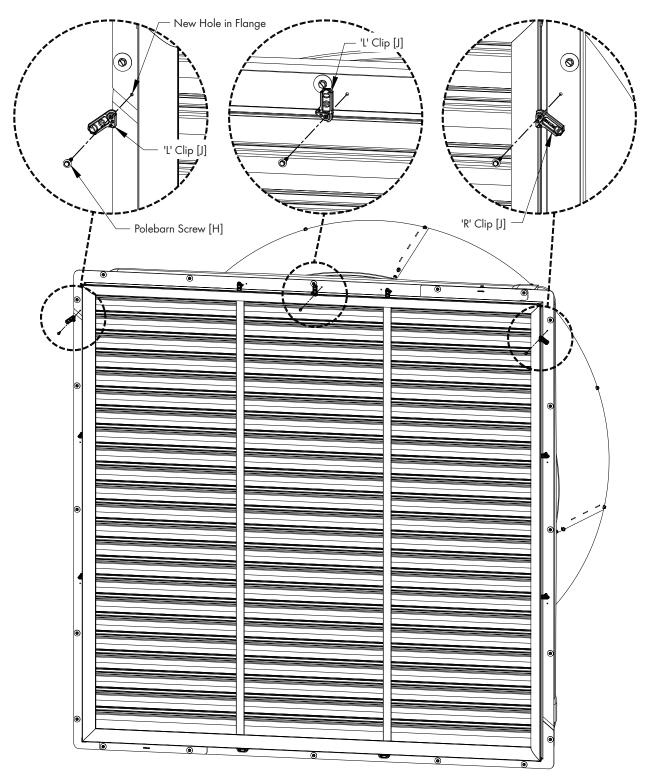


Figure 13

### 2.4 Shutter Wind Kit Installation

#### Step 16

Mount one Wind Kit Bracket on each side of fan, 3'-3" above the bottom flange of fan. The opening in the 'U' slot should be facing up and each Bracket should be mounted in same direction. *See Figure 16A*. Fasten Brackets in place using (2) Lag Screws (not provided). *See Figure 16B*.

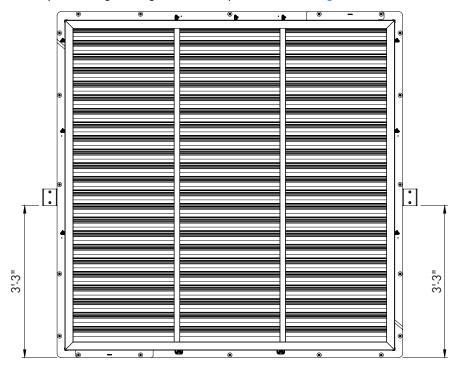
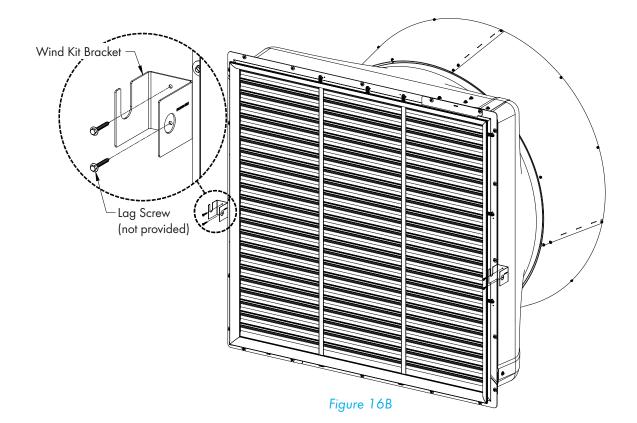
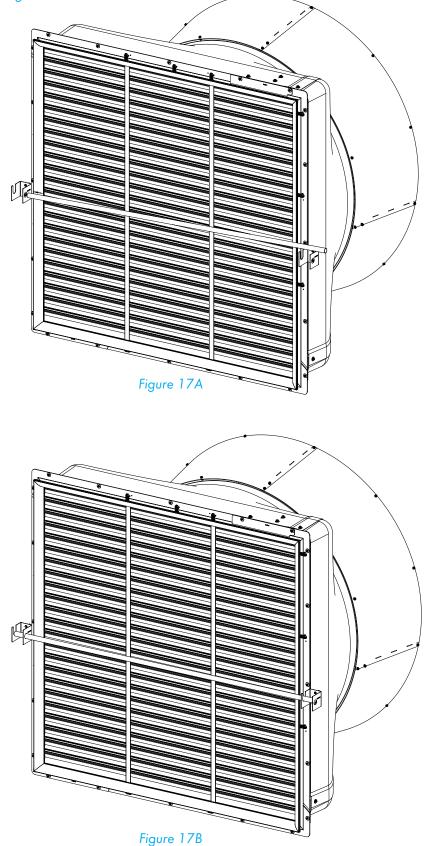


Figure 16A



Slide the Wind Kit Pipe into the hole in the Left Wind Kit Bracket until it stops at the other side of the Bracket and set Pipe down into slot in opposite Bracket. See Figure 17A. For the completed Wind Kit installation See Figure 17B.



# **Electrical Wiring**





All wiring should be installed in accordance with National, State, and Local electrical codes. Fans used to ventilate livestock buildings or other rooms where continuous air movement is essential should be connected to individual electrical circuits, with a minimum of two circuits per room. For electrical connection requirements, refer to diagram on motor nameplate and to information enclosed with the Munters environmental control to be used. After wiring check for proper motor rotation.

*Three Phase Fans*: motor overload protection should be provided for each fan. A three-pole motor starter or slow blow motor fuses must be used. *See Figure 18*.

NOTE: A safety cut-off switch should be located adjacent to each fan.

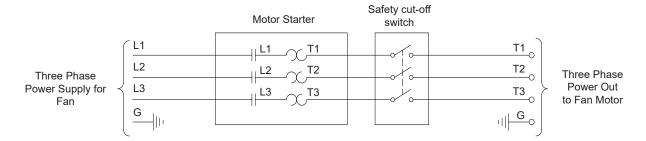


Figure 18 Three Phase - Motor Overload Protection with Disconnect

KEY: L1=Line 1 L2=Line 2 L3=Line 3 G=Ground

### 3.1 Recommended Wire Routing:

As the power cable exits the Munters Drive Box form a drip loop and then run power cable down along strut and "Zip" tie the cable to strut to prevent cable from getting tangled in the propeller. *See Figure 19*. Then run the cable out of fan to circuit breaker or control panel. (Continued on next page).

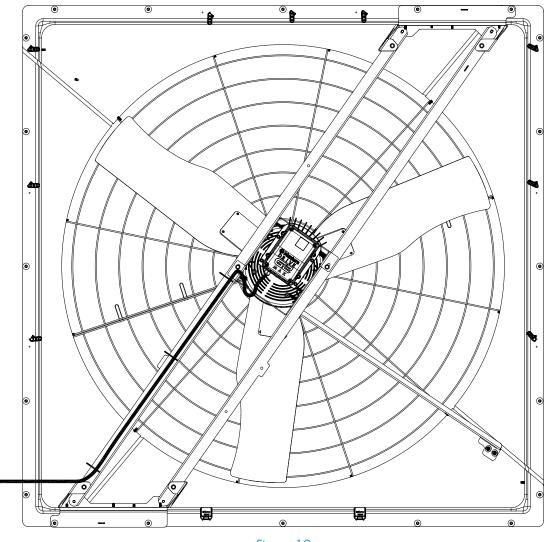


Figure 19

WARNING: Fan is designed to be operated with shutter in place. Do not apply power to fan without shutter being installed.

# Chapter 3 | Electrical Wiring

### 3.2 Three Phase Power connection:

All cables that enter the Munter Drive box must enter through a properly sized watertight fitting. Loosen the (4) screws in the cover of the Munters Drive box to access the terminals inside to connect power and other cables. *See Figure 20A*. Run the 3 phase power cable through watertight fitting into the Munters Drive box and connect to the terminals "R/L1, S/L2, T/L3" and Ground in the box. *See Figure 20B*. The Munters Drive is prewired to the Motor.

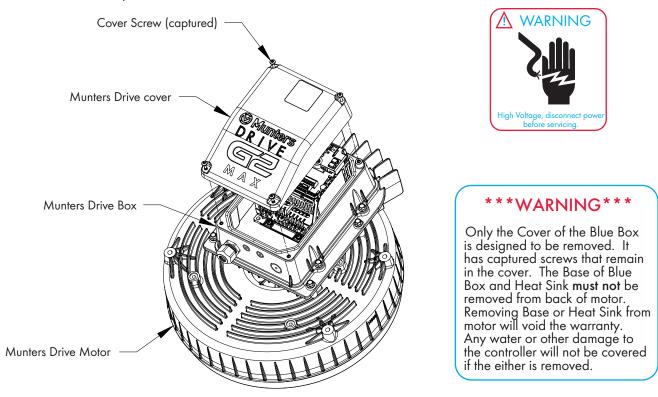


Figure 20A

# \*\*\*\*\* NOTE \*\*\*\*\*

Power to the Drive must be within -4%, +8% of nominal voltage.

Munters Recommended; Absolute Minimum Voltage = 440V Absolute Maximum Voltage = 500V

Munters Recommends Line to Line Voltage Unbalance to be 1% or less per NEMA MG-1-1998. Absolute maximum unbalance is 1.5%.

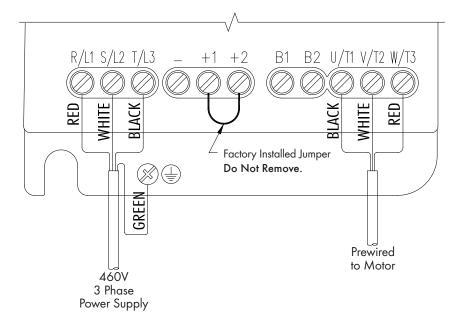
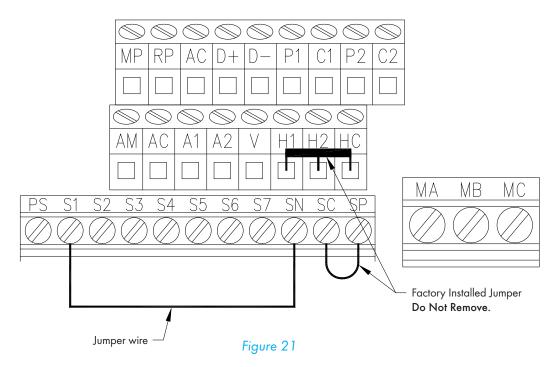


Figure 20B

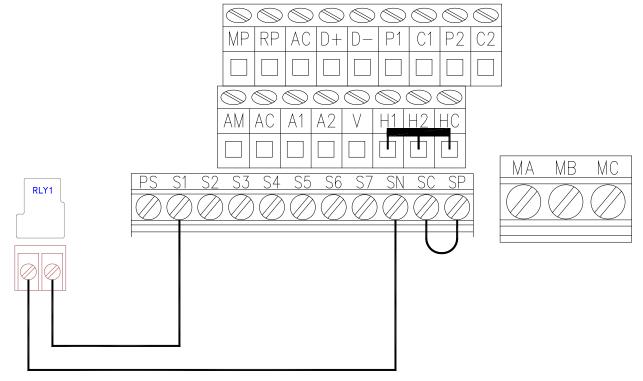
#### 3.3 Fan Operation with No Control

To operate the fan continuously with no control, provide a Jumper wires between terminals 'S1' and 'SN'. *See Figure 21*. Do not remove the Factory Installed Jumpers.



### 3.4 Fan Operation On/Off with Control

To operate the fan On/Off with a control, wire an 'ON' command from the'SN' terminal to the input relay in the control and from the output of the control relay to the 'S1' terminal. *See Figure 22*. Do not remove the Factory Installed Jumpers.





# 3.5 Fan Operation Off/Low/High

To operate the fan Off/Low/High with a control, connect a wire from 'SN' terminal to the input side of the 'ON' relay in the control, then install a jumper from the input side of the 'ON' relay to the input side of the 'LOW' relay in the control. Then connect a wire from 'S1' terminal to the output side of the 'ON' relay and then connect a wire from the 'S7' terminal to the ouput side of the 'LOW' relay. *See Figure 23*. Do not remove the Factory Installed Jumper.

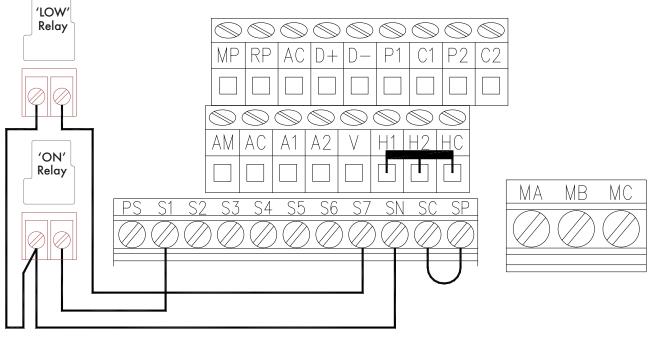


Figure 23

### 3.6 Fan Operation Off/Variable with 10-0V Signal

To operate the fan Off/Variable with a 10-0V Signal, wire an 'ON' command from the'SN' terminal to the input relay in the control and from the output of the control relay to the 'S1' terminal. Then connect wires from the 10-0V output in the control to the 'A1' and 'AC' terminals in the Munters Drive Box. The '+' output in the control shoud go to 'A1' and the '-' output should go to 'AC'. *See Figure 24*. Do not remove the Factory Installed Jumpers.

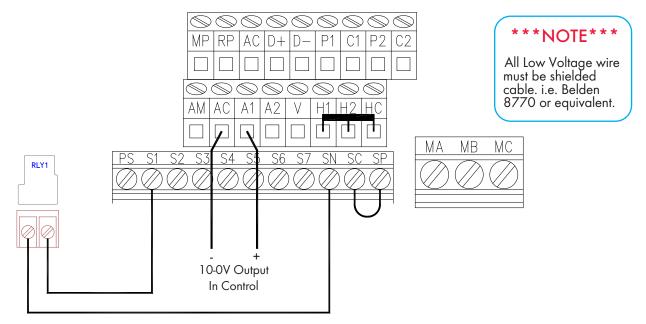


Figure 24

### 3.7 Fan Operation Off/Variable with Potentiometer

To operate the fan Off/Variable with a signal from a potentiometer, wire an 'ON' command from the'S1' terminal to the input relay in the control and from the output of the control relay to the 'SN' terminal. Then connect wires from the Potentiometer as follows, connect '-' to 'AC', connect 'L' to 'A1' and connect '+' to 'V'. See Figure 25. Do not remove the Factory Installed Jumpers.

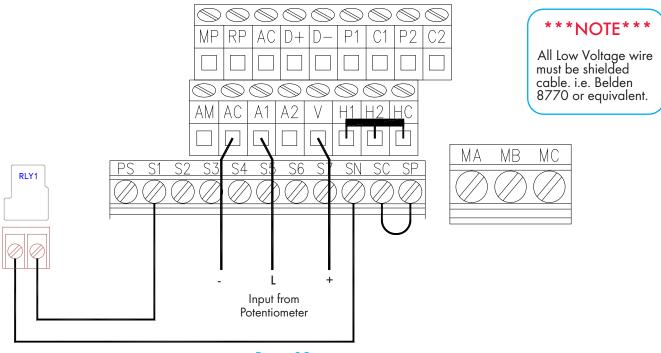


Figure 25

#### 3.8 Alarm Connections

The Munters Drive uses a Normally Closed circuit for alarm connections. To connect a control to the Normally Closed output make appropriate connections from the control to 'MB' and 'MC' terminals. *See Figure 26.* Do not remove the Factory Installed Jumbers.

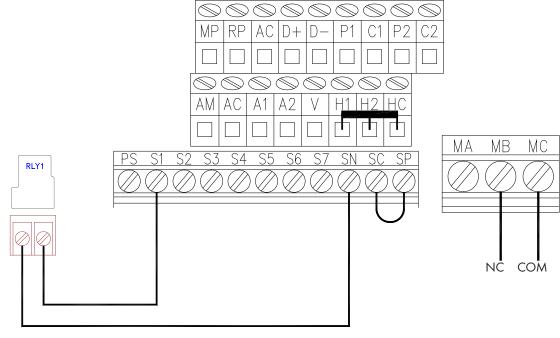


Figure 26

# **Operation and Maintenance**

### 4.1 Operation

- INITIAL START-UP: With electrical power off, verify that the fan propeller turns freely and that all fasteners are secure. Turn on electrical power and confirm that the fan operates smoothly.
- TEMPERATURE ADJUSTMENTS: Set the fan control to the temperature shown on your ventilations system drawing, or to a value which will provide the desired environmental conditions.

#### 4.2 Maintenance

The following inspection and cleaning procedures should be performed monthly:

- INSPECT PROPELLER: Check that propeller is secure on prop shaft or motor shaft and that there are no signs of damage. The blades are of a self-cleaning design and should not require maintenance.
- 2) CLEAN regularly for best results:
  - FAN MOTOR: Remove any dust accumulation from motor using a brush or cloth. (DO NOT use a pressure washer). A clean motor will run cooler and last longer. At the same time, verify that the motor is secure in its mount.
  - SHUTTER: Carefully clean dust from shutter blades and frame so that blades open and close freely. A brush or cloth should be used.
  - GUARD: Clean any dust or feathers from fan guards using a brush. Dirty guards can reduce airflow.
- 3) CHECK FASTENERS: For safety, all fasteners should be inspected 1 month after initial operation and yearly thereafter. Tighten any loose connections.
- INSPECT FAN CONTROL: With power disconnected, inspect all electrical connections. Wiring should be secure and in good condition. Remove any dust build-up from control case and sensor using a soft brush or cloth.

#### NEVER CLEAN ELECTRICAL EQUIPMENT WITH A PRESSURE WASHER!



WARNING







# Troubleshooting

5.

# 5.1 Troubleshooting

WARNING WARNING Disconnect Power Before Servicing	Moving Parts, Disconnect Power Before Servicing.	
• Fan Not Operating	<ul> <li>POSSIBLE CAUSES</li> <li>Fan control set above room temperature</li> <li>Blown Fuse or open circuit breaker</li> <li>Propeller blade contacting fan housing</li> </ul>	CORRECTIVE ACTION     Set to a lower temperature     Replace fuse or reset breaker     Realign motor in fan housing
	<ul> <li>Fan control defective (i.e. Farm Premium, etc.)</li> </ul>	Repair or replace control
• Fan Does Not Start Caution: There is a 10 second delay for the fan to start when an 'On' command is present.	<ul> <li>Munters Drive motor/controller issue</li> </ul>	<ol> <li>Verify AC voltage is present at fan.</li> <li>Turn AC power off to fan for 1 minute</li> <li>Verify Prop turns freely         <ul> <li>a. If not contact Munters Product Support</li> <li>b. If it turns freely go to next step</li> </ul> </li> <li>Turn AC power back on to fan         <ul> <li>a. If starts up and runs, fan OK</li> <li>Periodically observe fan to verify it is still running</li> <li>If it continues to run, fan is OK</li> <li>If fan stops, look through clear window in drive cover to check what drive display reads. Contact Munters Product Support</li> <li>b. If fan tries to start but stops, look through clear window in drive cover to check what drive display reads.</li> <li>Contact Munters Product Support</li> <li>c. If fan doesn't try to start, verify 'On' command signal is present at circuit board. Also, slide the switch on the circuit board to the 'On' position.</li> </ul> </li> </ol>
<ul> <li>Fan Operating - Insufficient Airflow</li> </ul>	<ul><li>Shutter or Damper door jammed</li><li>Guard dirty/clogged</li></ul>	<ul><li>Clean shutter or damper door</li><li>Clean guard</li></ul>
Excessive Noise	<ul><li>10-OV signal set incorrectly</li><li>Propeller blade contacting fan</li></ul>	<ul><li>Check and adjust 10-0V signal</li><li>Sand fan housing to remove high spot</li></ul>
Excessive Vibration	<ul><li>housing</li><li>Motor loose on mount</li><li>Propeller damaged</li></ul>	<ul><li>Tighten fasteners</li><li>Replace propeller</li></ul>

# Winterizing

# 6.

# 6.1 Winterizing

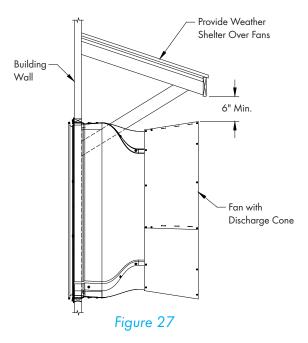
In most climates, it is probable that the ventilation system will never need to operate at a total capacity during the colder winter months. Consequently, it is advisable to "winterize" those fans which will not be used in cold weather to avoid unnecessary heat loss and condensation.

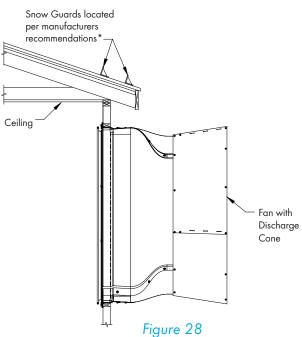
To winterize, turn fan control "off". Install the insulated closure panel over the fan intake. If you don't have an insulated closure panel, a piece of rigid insulation material can be used. Remember the insulation panel must be removed before warmer weather returns.

NOTE: At least one single speed fan should be left uncovered and with power available to provide air movement in the event of variable speed control difficulties.

### 6.2 Winter Weather Protection

To prevent cone or fan damage from snow or ice sliding off building roof, weather protection must be provided. A weather shelter may be constructed to cover the entire fan, See Figure 27, or snow guards may be placed on the roof, See Figure 28.





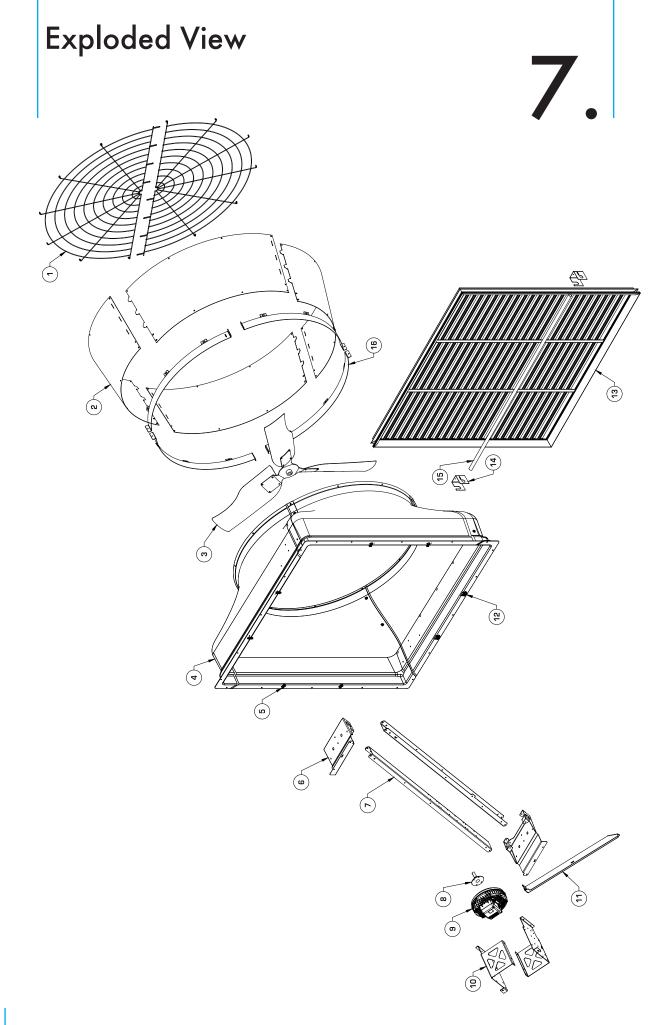
# \*Snow Guard Suppliers

Company Name	Phone No.	Fax No.	Web Site
Snojax, Inc.	800-766-5291	717-697-2452	www.snojax.com
Polar Blox	800-298-4328	814 629-9090	www.polarblox.com
LM Curbs	800-284-1412	903 759-3598	www.lmcurbs.com
Alpine Snow Guards	888-766-4273	888-766-9994	www.alpinesnowguc

# 🛕 IMPORTANT

Munters Product and System Warranties do not cover cone or fan damage from external sources. Note: Snow guards are designed to prevent sudden, dangerous snow and ice slides when attached to the building roof according to manufacturers recommendations. The supplier listing above is given as a reference only. Munters does not endorse any specific snow guard product and no performance warranty is implied.

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	Catalog No.				
ltem	ATS74D3F43CT-HO	ATS74D3F43CT-HE	Description	Qty.	
1	FH1475	FH1475	Outlet Guard Kit w/HDW, ½ Round (2), 74" Fan, CTD BLK	1	
2	FH4674	FH4674	Discharge Cone Section w/ Tabs, PL	4	
3	FP1874	FP1874	Prop Assembly, 74" Fan, 3-Blade, GZ	1	
4	FH2374	FH2374	Housing Assembly, 74" Fan, w/ Clips, FG	1	
5	FH1968	FH1968	Pivoting Shutter Clip, PL	6	
6	FH2877	FH2877	Strut Mount Bracket, 74" Fan, GZ	2	
7	FH2873	FH2873	C-Channel Strut, 74" Fan, GZ	2	
8	FP2066	FP2066	Hub, Prop Adapter, 1.188"D. x 2.875"L., w/ Keyway, ZP	1	
9	FM1465-ATS74HO	FM1465-ATS74HE	Assembly, Motor and Drive, Prgmd, ATS74, 460V	1	
10	FH2879	FH2879	G2 Motor Mount Bracket, ATS74, GZ	2	
11	FH2474	FH2474	G2 Motor Mount Brace, ATS74, GZ	1	
12	FH1967	FH1967	Fixed Shutter clip, PL	2	
13	PT74	PT74	Shutter, all plastic	1	
14	FA2619	FA2619	Wind Bracket, GZ	2	
15	AC1416	AC1416	Wind Pipe, GZ	1	
16	FH2890	FH2890	Reinforcing Ring, 1/4 Section, Atlas74, PWDCTD, WHT	4	
	HP1169	HP1169	Hardware Pkg., Fan/Cone Install	1	

Atlas 74 Fan with Munters Drive is developed and produced by Munters Corporation, Lansing, Michigan U.S.A. 1-800-227-2376



Munters Europe AB, Isafjordsgatan 1, P.O. Box 1150, SE-164 26 Kista, Sweden. Phone +46 08 626 63 00, Fax +46 8 754 56 66. Munters Corporation 2691 Ena Drive Lansing, MI 48917 U.S.A. Phone +1 800-227-2376, Fax +1 517-676-7078

www.munters.us

Australia Munters Pty Limited, Phone +61 2 6025 6422, Brazil Munters Brasil Industria e Comercio Ltda, Phone +55 41 3317 5050, Canada/US Munters Corporation Lansing, MI Phone +1 517 676 7070, China Munters Air Treatment Equipment (Beijing) Co. Ltd, Phone +86 10 80 481 121, Denmark Munters A/S, Phone +45 9862 3311, India Munters India, Phone +91 20 3052 2520, Indonesia Munters, Phone +62 818 739 235, Italy Munters Italy S.p.A., Chiusavecchia, Phone +39 0183 52 11, Japan Munters K.K., Phone +81 3 5970 0021, Korea Munters Korea Co. Ltd., Phone +82 2 761 8701, Mexico Munters Mexico, Phone +52 818 262 54 00, Russia Munters AB, Phone +7 812 448 5740, Singapore Munters Pte Ltd., Phone +65 744 6828, South Africa and Sub-Sahara Countries Munters (Pty) Ltd., Phone +27 11 997 2000, Spain Munters Spain S.A., Phone +34 91 640 09 02, Sweden Munters AB, Phone +46 8 626 63 00, Thailand Munters Co. Ltd., Phone +66 2 642 2670, Turkey Munters Form Endüstri Sistemleri A.Ş, Phone +90 322 231 1338, USA Munters Corporation Lansing, MI Phone +1 517 676 7070, Vietnam Munters Vietnam, Phone +84 8 3825 6838, Export & Other countries Munters Italy S.p.A., Chiusavecchia Phone +39 0183 52 11