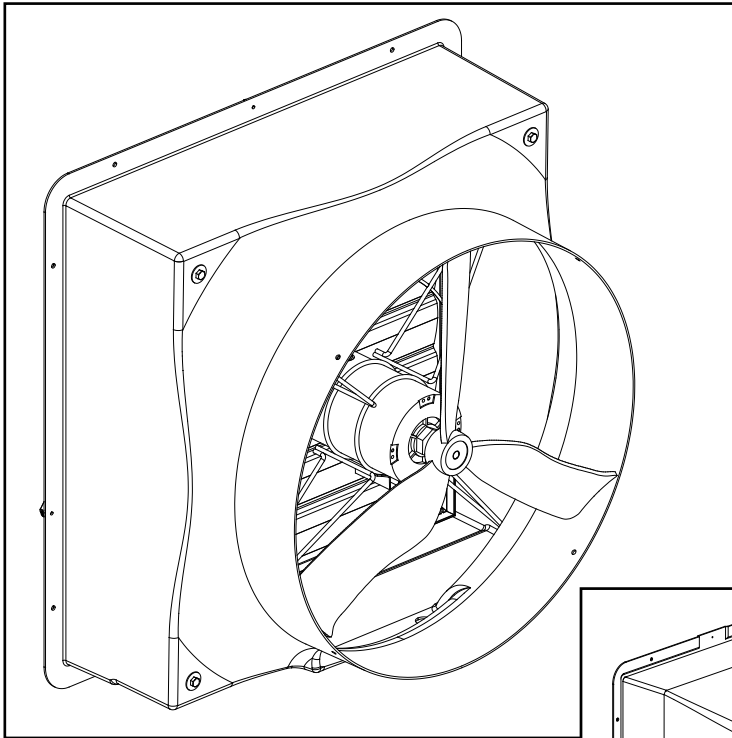
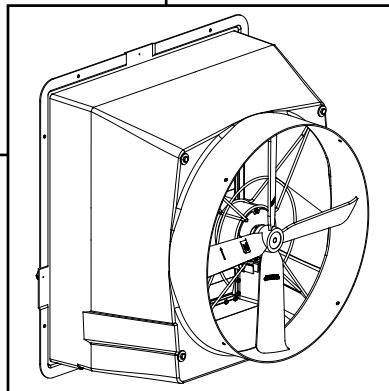


Instruction Manual

Aerotech VX Fan Direct Drive 14" - 26" Fans



VX26



VX14 - VX24

VX Fans Direct Drive

Models: VX14F1 • VX16F1 • VX18F1 • VX24F1 • VX24F3 •
VX26F1 • VX26F3



VX Fan Direct Drive 14", 16", 18", 24" & 26" Fans

Instructions for Use and Maintenance

Thank You:

Thank you for purchasing a Munters VX Fan Direct 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 insure 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

1.

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.

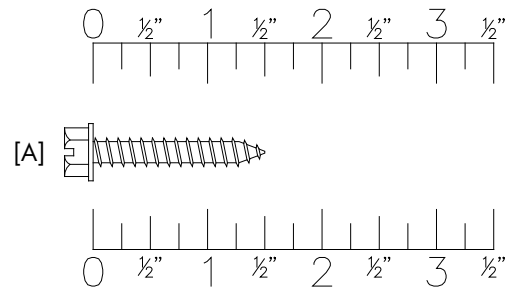
1.1 Parts List

Each Fan includes:

- 1 - Direct Drive Fan
- 1 - Hardware Package as follows:

HP1145 - VX Direct Drive Fans

ID	Qty.	Cat. No.	Description
[A]	12	KS2105	#14 x 1.5" Lag Screw, SS



Installation Instructions

2.

2.1 Install

Step 1

Construct the framed opening to correct size according to the Chart on the previous page. *See Figure 1.*

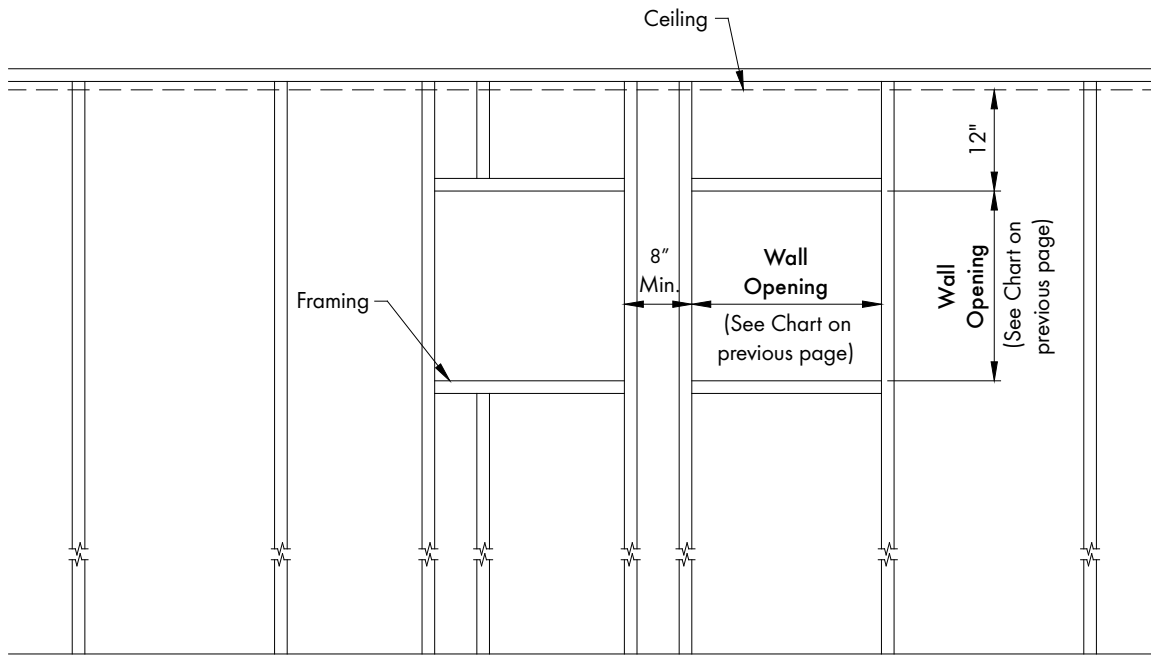


Figure 1

Step 2

Insert fan into framed opening from inside and fasten in place using (8) Lag Screws [A]. Flash and caulk around opening. *See Figure 2.*

Note:

Outlet of fan comes unguarded, it is recommended that a Munters Discharge Cone with Guard, a Fan Hood with Guard or a guard by others is installed on outlet of fan at this time.

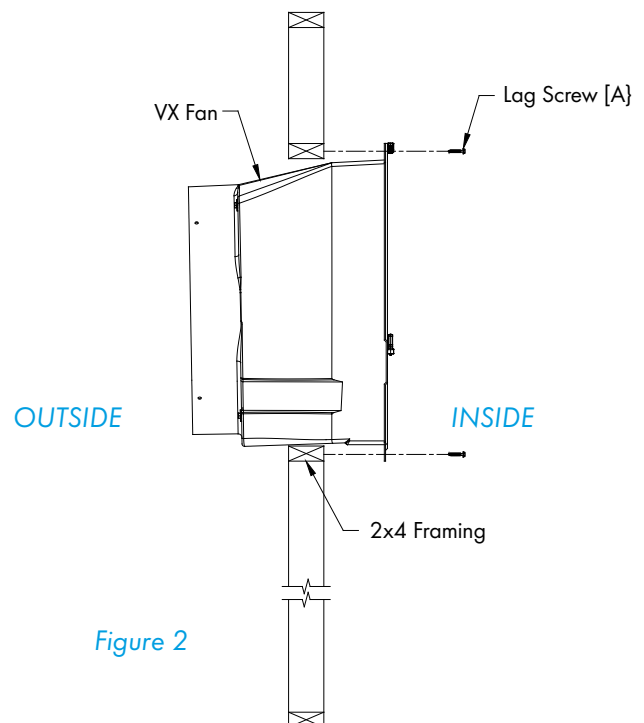


Figure 2

2.2 PZ/PV Style Shutter

Step 3

Insert PZ/PV shutter into back of fan. See [Figure 3A](#). Fasten shutter in place by rotating the side and top shutter clips over the shutter flanges. See [Figure 3B](#).

Installation is now complete, proceed to electrical wiring section.

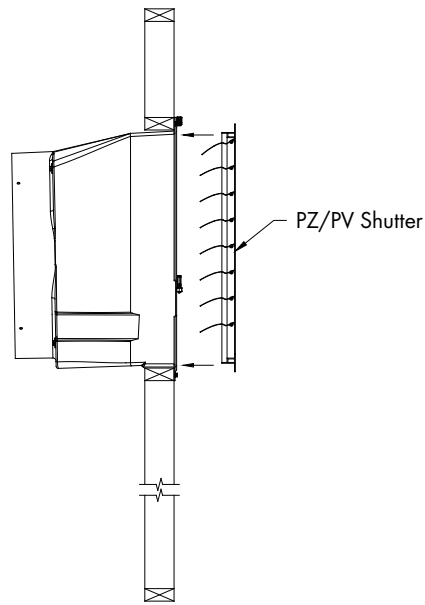


Figure 3A

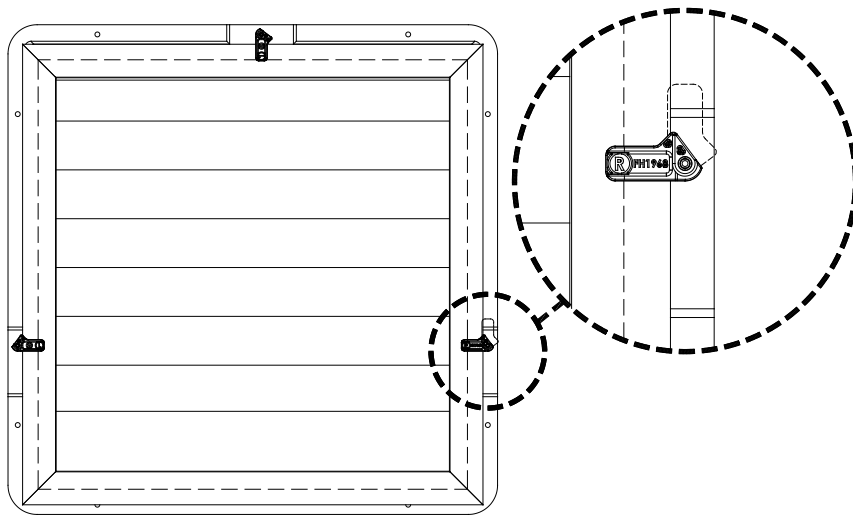


Figure 3B

2.3 PT Style Shutter

Step 4

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

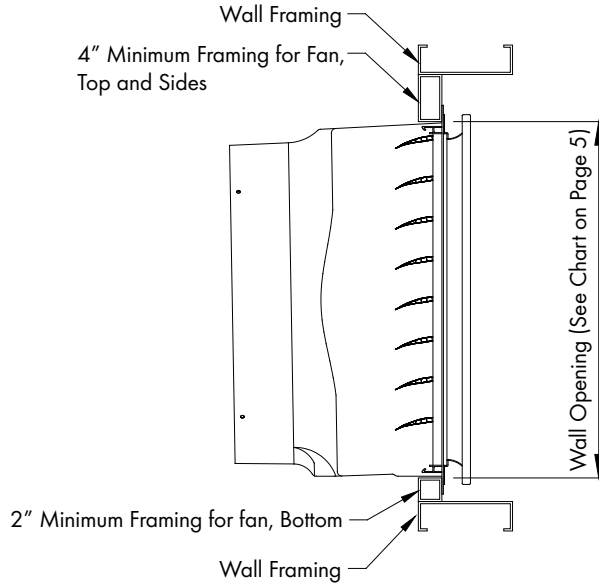


Figure 4

Step 5

Insert PT shutter into back of fan. [See Figure 5A](#). Fasten shutter in place by rotating the side and top shutter clips over the shutter flanges. [See Figure 5B](#).

Installation is now complete, proceed to electrical wiring section.

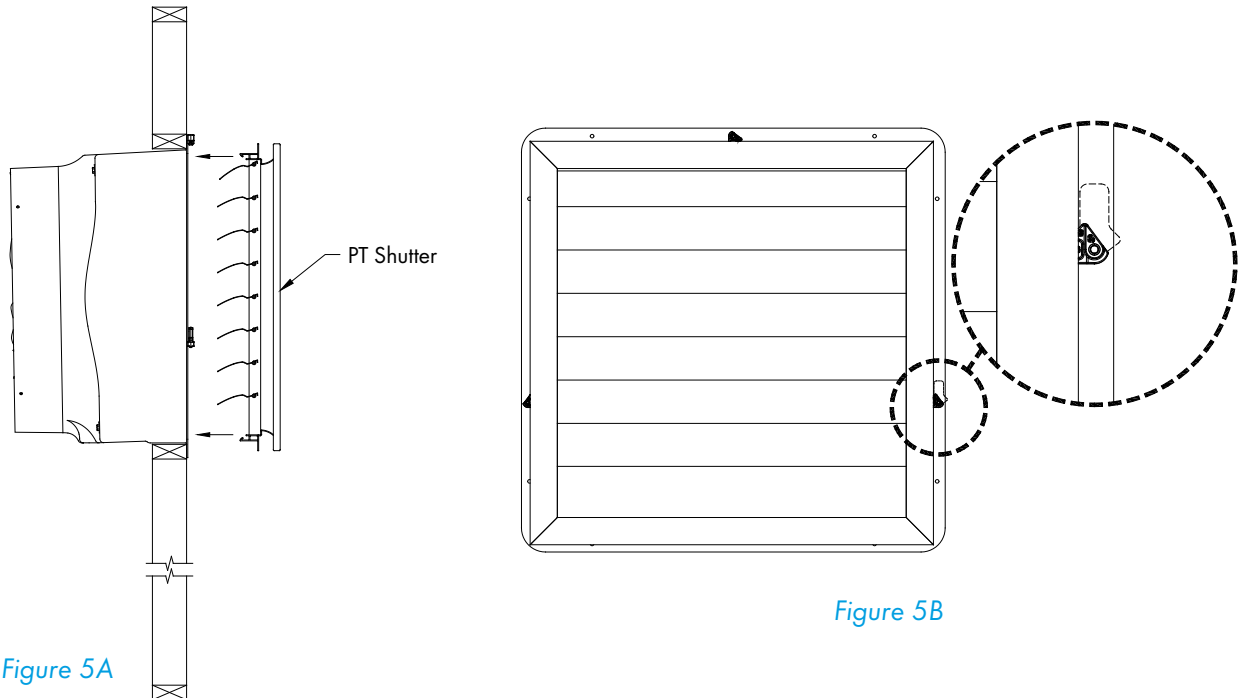


Figure 5A

Figure 5B

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.

Single Phase Fans: motor overload protection should be provided for each fan. A Circuit Breaker Switch or slow blow motor type fuses must be used, *See Figure 6A. See form QM1400 for proper size.*

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 6B.*

If a frequency drive (inverter) is used, confirm that motors are rated for inverter duty at the voltage used. Shielded power cable between frequency drive and each motor is highly recommended. Installation of line reactors is recommended to reduce voltage spikes and harmonic distortion. Supplemental motor overload protection is also recommended.

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

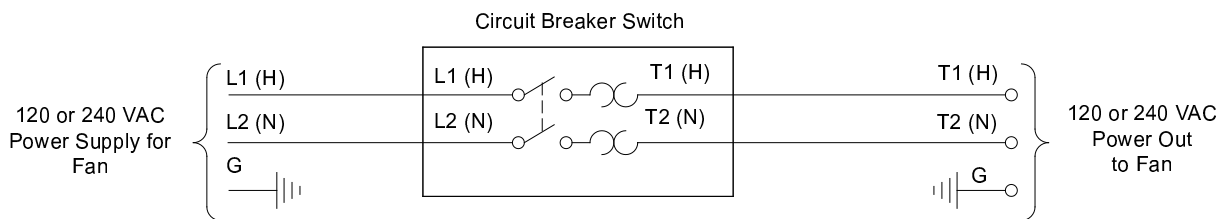


Figure 6A

Single Phase - Motor Overload Protection with Disconnect
(SY2000 or Equivalent)

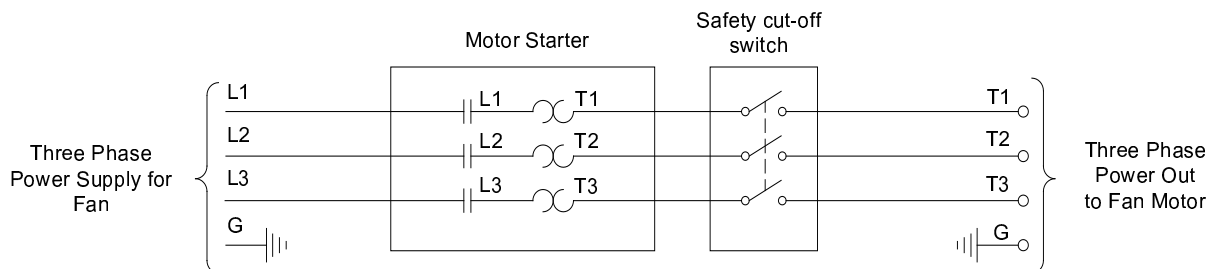


Figure 6B

Three Phase - Motor Overload Protection with Disconnect

KEY:

- L1=Line 1
- L2=Line 2
- L3=Line 3
- H=Hot
- N=Neutral
- G=Ground

NOTE: Information in parenthesis refers to 120 VAC control.

3.1 Recommended Wire Routing:

As the power cable exits the back of motor form a drip loop and then run power cable down along leg of motor mount and "Zip" tie the cable to leg to prevent cable from getting tangled. *See Figure 7.* Then run the cable out the drain hole to the circuit breaker or control panel. (Continued on next page).

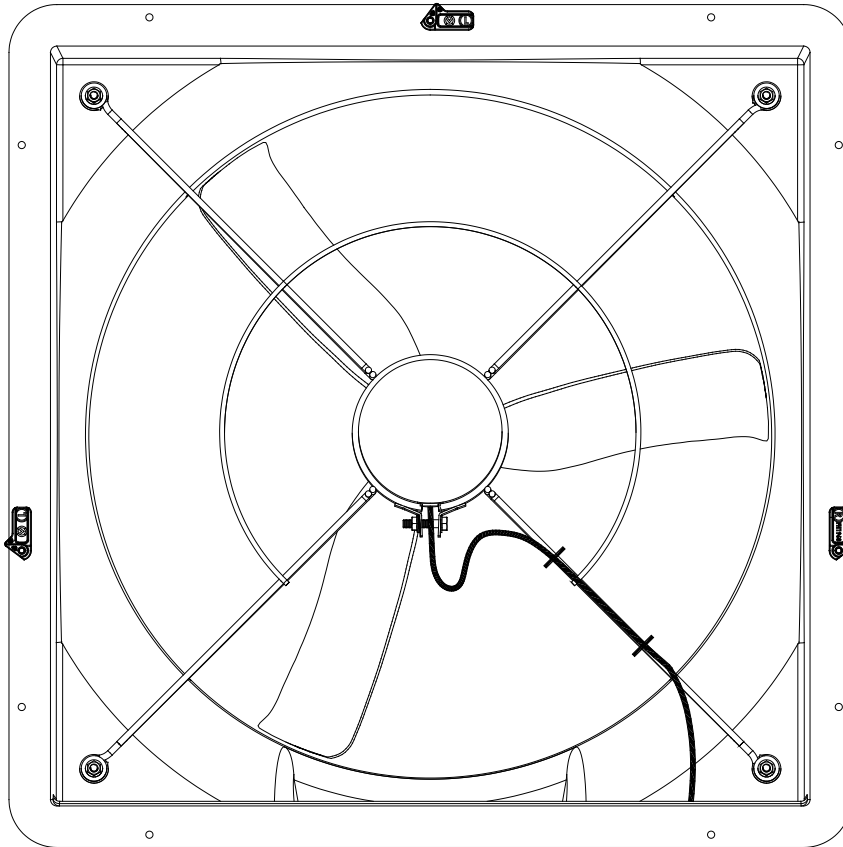


Figure 7

Three Phase Fans:

- 1) The use of a quality frequency drive and the installation of line reactors is recommended to reduce voltage spikes and harmonic distortion.
- 2) Minimum operating frequency of 30 Hz.
- 3) Will require three pole contractors with overload protection (by others).

Operation

4.

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.

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.

Single Phase Fans: When variable speed controls are used, the fan's idle speed will need to be set to the recommended minimum airflow rate. Refer to the procedures included with each control. The table below provides airflow rates at various propeller speeds for fans wired for 240 VAC.



CFM	A = Fan with cone & shutter				B = Fan with hood & shutter							
	0.025" Static Pressure								0.05" Static Pressure			
	A		B		A		B					
	RPM	VOLTS	RPM	VOLTS	RPM	VOLTS	RPM	VOLTS				
14" Fans	100	620	141	620	141	740	150	740	150			
	120	630	142	630	142	750	151	750	151			
	150	640	142	640	142	760	152	760	152			
	200	660	143	670	144	780	153	790	153			
	300	710	145	720	146	820	154	820	154			
	400	760	148	780	149	860	156	870	156			
	500	810	151	840	153	910	158	930	160			
	600	840	153	880	155	950	161	980	162			
	800	940	158	980	160	1030	164	1070	166			
	1000	1030	163	1070	165	1120	168	1180	170			
16" Fans	1200	1130	168	1210	173	1210	173	1280	177			
	1600	1370	182	1480	197	1400	186	1500	205			
	1950	1640	218	—	—	1630	230	—	—			
	150	590	96	600	96	700	103	720	104			
	175	600	96	610	97	710	103	730	104			
	200	610	97	620	98	720	104	740	105			
	300	640	98	660	99	740	105	760	106			
	400	670	100	700	102	770	106	780	107			
	500	700	102	740	104	800	108	810	108			
	600	730	103	780	106	830	109	840	110			
800	790	107	860	111	880	112	920	114				
1000	850	110	940	115	940	115	1000	117				
1250	930	114	1020	119	1020	118	1100	124				
1500	1020	119	1110	124	1090	123	1200	128				
1750	1100	123	1220	129	1180	127	1350	136				
2000	1190	127	1330	134	1260	131	1460	142				
2500	1380	136	1600	160	1430	140	1630	172				
3000	1600	160	—	—	1640	173	—	—				
3170	1680	190	—	—	1720	230	—	—				

	A = Fan with cone & shutter					B = Fan with hood & shutter			
	CFM	0.025" Static Pressure				0.05" Static Pressure			
		A		B		A		B	
	RPM	VOLTS	RPM	VOLTS	RPM	VOLTS	RPM	VOLTS	
18" Fans	300	520	128	530	128	660	134	670	135
	400	550	129	560	129	670	135	680	136
	500	570	130	590	132	680	136	700	137
	600	590	132	610	133	710	137	740	139
	700	620	133	640	134	730	138	770	140
	800	640	134	660	135	740	139	780	141
	1000	700	136	730	138	780	141	830	143
	1250	760	139	800	141	840	144	890	147
	1500	820	143	860	144	890	147	950	150
	1750	880	145	950	149	940	149	1000	153
	2000	940	148	1020	152	990	152	1060	155
	2500	1070	154	1170	161	1110	157	1220	164
	3000	1210	162	1360	171	1240	165	1380	172
	3500	1380	172	1530	188	1420	175	1570	190
	4000	1570	190	–	–	1610	200	–	–
4200	1650	207	–	–	1680	230	–	–	
24" Fans	1000	–	–	–	–	490	144	510	145
	1250	–	–	–	–	520	146	530	147
	1500	480	141	490	142	540	148	560	150
	1750	500	143	520	144	560	150	600	153
	2000	530	145	550	147	580	152	630	157
	2250	560	148	590	151	610	154	670	160
	2500	580	150	620	153	630	157	690	163
	2750	610	152	660	156	660	159	720	166
	3000	640	155	690	160	680	162	740	168
	3500	690	160	760	167	730	167	790	172
	4000	750	166	820	172	790	172	860	179
	4500	820	172	900	183	850	178	940	191
5000	890	181	990	202	920	187	1020	210	
5500	970	195	1060	230	1000	204	–	–	
6000	1060	227	–	–	–	–	–	–	
26" Fans	1250	–	–	–	–	510	147	520	148
	1500	–	–	480	142	530	149	550	152
	1750	480	142	500	144	540	151	580	154
	2000	500	144	520	146	560	153	610	158
	2250	520	146	550	149	580	154	640	161
	2500	540	148	580	152	590	156	650	162
	2750	560	150	610	155	610	158	670	164
	3000	580	152	630	157	630	160	690	166
	3500	620	156	680	163	670	164	730	171
	4000	660	161	730	169	710	168	780	177
	4500	700	165	780	176	740	172	830	182
	5000	740	170	840	183	780	177	880	189
	5500	780	176	880	188	830	182	930	199
	6000	830	181	930	194	870	188	970	205
	6500	880	188	980	206	920	194	1030	225
7000	940	196	1040	225	970	205	–	–	
7500	990	208	–	–	1020	222	–	–	
8000	1050	229	–	–	–	–	–	–	

5.1 Maintenance

The following inspection and cleaning procedures should be performed monthly:

- 1) **INSPECT PROPELLER:** Check that propeller is secure on 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 shutter opens and closes 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.
- 4) **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!**



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 8*, or snow guards may be placed on the roof, *See Figure 9*.

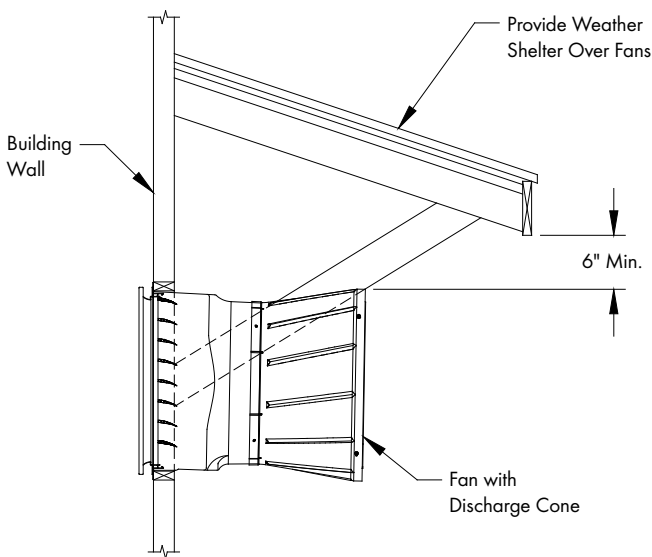


Figure 8

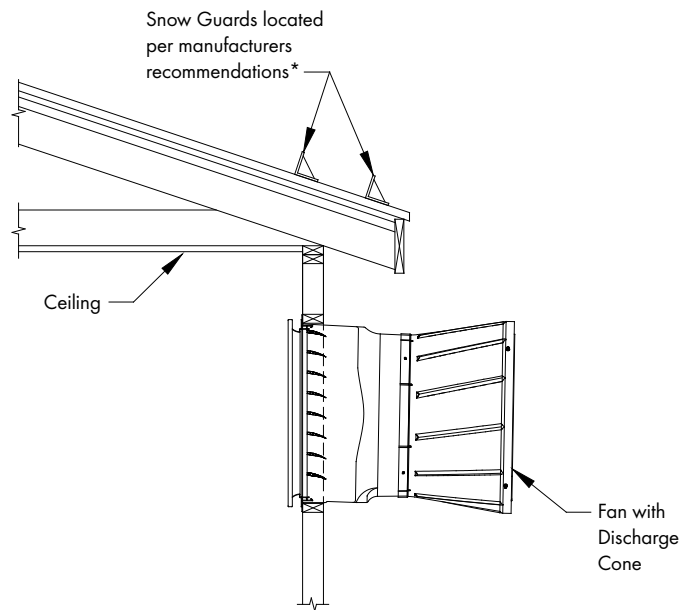


Figure 9

* 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.alpinesnowguards.com

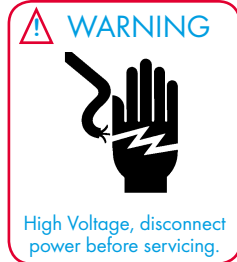


IMPORTANT

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.

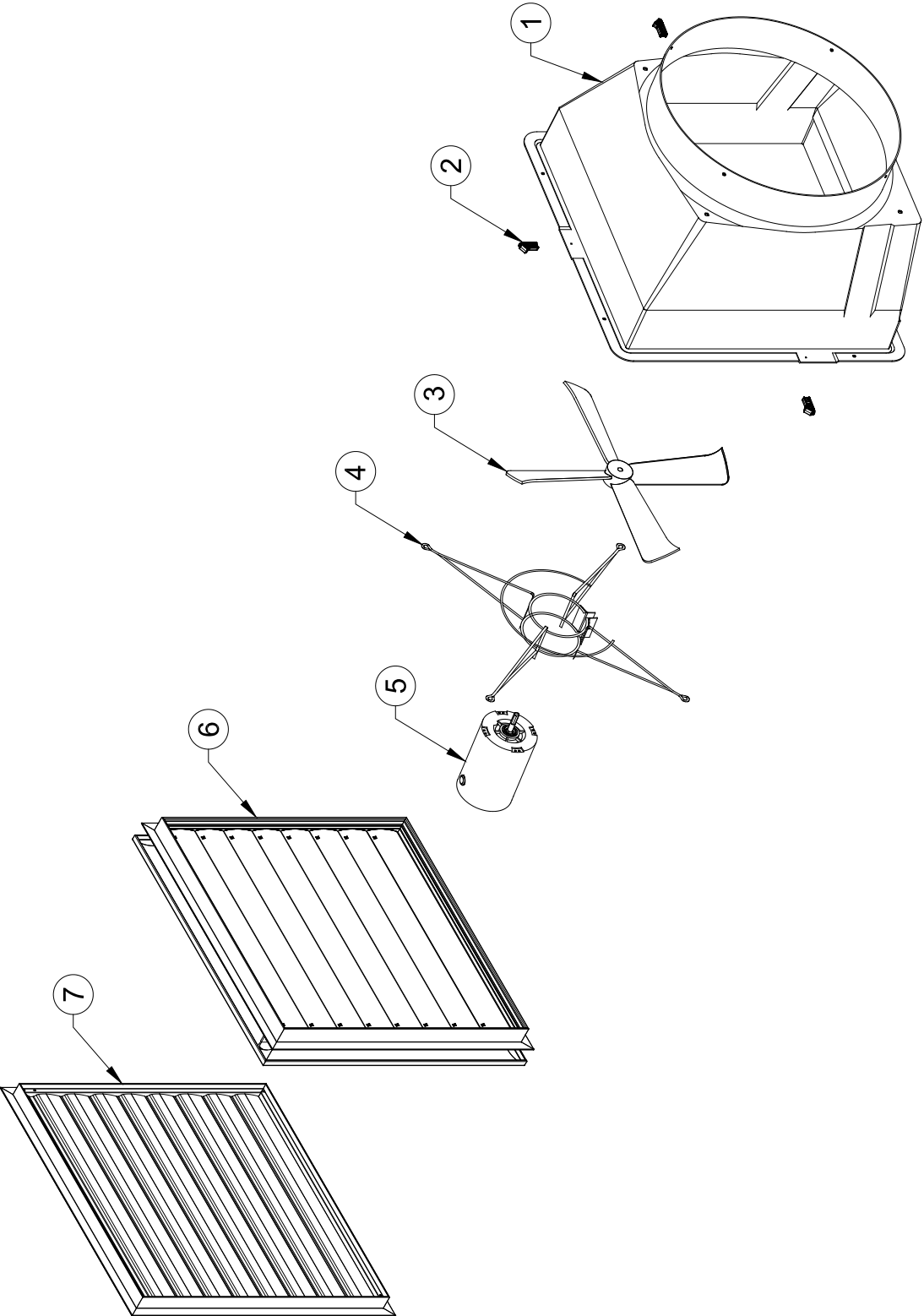
7.1 Troubleshooting



SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Fan Not Operating	<ol style="list-style-type: none"> 1. Fan control set above room temperature 2. Blown fuse or open circuit breaker 3. Propeller blade contacting fan housing 4. Fan control defective 	<ol style="list-style-type: none"> 1. Set to a lower temperature 2. Replace fuse or reset breaker 3. Realign motor in fan housing 4. Repair or replace control 5. Repair or replace motor
Fan Operating-Insufficient Airflow	<ol style="list-style-type: none"> 1. Variable speed control improperly adjusted 2. Shutter jammed or dirty 3. Guard dirty 	<ol style="list-style-type: none"> 1. See Operation, Step 2 for adjustment guidelines 2. Unjam and clean shutter 3. Clean guard
Excessive Noise	<ol style="list-style-type: none"> 1. Propeller blade contacting fan housing 2. Motor bearing or shaft bearing defective 3. Frequency drive improperly adjusted 	<ol style="list-style-type: none"> 1. Sand fan housing to remove high spot 2. Repair or replace motor or shaft bearings 3. See operation, Step 2 for adjustments guidelines
Excessive Vibration	<ol style="list-style-type: none"> 1. Motor loose on mount 2. Propeller damaged 3. Motor shaft bent 	<ol style="list-style-type: none"> 1. Tighten fasteners 2. Replace propeller 3. Repair or replace motor
Fan never turns off	<ol style="list-style-type: none"> 1. Override thermostat set incorrectly 2. Control set for continuous operation 	<ol style="list-style-type: none"> 1. Set to the correct temperature 2. Set speed control correctly

Exploded View

8.



Item	Catalog No.	Description	Qty.
1	FH3414	Housing, 14" VX Fan with Clips & Labels, FG	1
	FH3416	Housing, 16" VX Fan with Clips & Labels, FG	1
	FH3418	Housing, 18" VX Fan with Clips & Labels, FG	1
	FH3424	Housing, 24" VX Fan with Clips & Labels, FG	1
	FH3127	Housing, 26" VX Fan with Clips & Labels, FG	1
2	FH1968	Pivoting Shutter Clip, PL	3
3	FP1031SS	Propeller, 14"DD, 7-Blade, Set Screws, AL	1
	FP1038SS	Propeller, 16"DD, 4-Blade, Set Screws, AL	1
	FP1008SS	Propeller, 18"DD, 5-Blade, Set Screws, AL	1
	FP1033SS	Propeller, 24"DD, 4-Blade, Set Screws, AL	1
	FP1126SS	Propeller, 26"DD, 3-Blade, Set Screws, AL	1
4	FH1008	14" Fan, Motor Mount, PVC Coated	1
	FH1009	16"/18" Fan, Motor Mount, PVC Coated	1
	FH1010	24" Fan, Motor Mount, PVC Coated	1
	FH2526	26" Fan, Motor Mount, PVC Coated	1
5	FM1010	14" DD, Motor, 1/8 HP, 1625 RPM, 48 Fr., 1 ph., 115/230V	1
	FM1043	16" DD, Motor, 1/4 HP, 1625 RPM, 48 Fr., 1 ph., 115/230V	1
	FM1009	18" DD, Motor, 1/3 HP, 1625 RPM, 48 Fr., 1 ph., 115/230V	1
	FM1108	24"/26" DD, Motor, 1/3 HP, 1075 RPM, 48 Fr., 1 ph., 115/230V	1
	FM1074	24"/26" DD, Motor, 1/3 HP, 1140 RPM, 48 Fr., 3 ph., 230/460V	1
6	PT0914	Shutter for 14" Fan, 16 ³ / ₄ "SQ., Belled Inlet, White Plastic	1
	PT1618	Shutter for 16"/18" Fan, 21 ⁵ / ₈ " SQ., Belled Inlet, White Plastic	1
	PT24	Shutter for 24" Fan, 27 ⁵ / ₈ " SQ., Belled Inlet, White Plastic	1
	PT26	Shutter for 26" Fan, 29.4" SQ., Belled Inlet, White Plastic	1
7	PZ0914	Shutter for 14" Fan, 16 ³ / ₄ "SQ., White Plastic	1
	PZ1618	Shutter for 16"/18" Fan, 21 ⁵ / ₈ " SQ., White Plastic	1
	PZ24	Shutter for 24" Fan, 27 ⁵ / ₈ " SQ., White Plastic	1
	PV26	Shutter for 26" Fan, 29.4" SQ., White Plastic	1

VX Fan 14", 16", 18", 24", 26" with "RC" Cone is developed and produced by Munters Corporation, Lansing, Michigan U.S.A. 1-800-227-2376



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