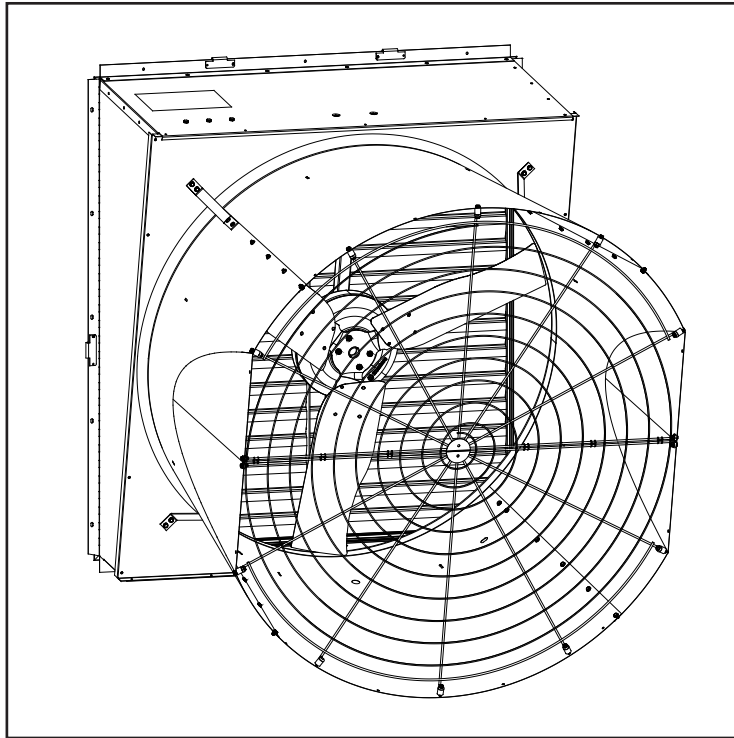


Instruction Manual



WF54 54" Tilt Fan with Munters Drive*

*Patents Pending

WF54 Tilt Wall Fan with Munters Drive

54" Tilt Wall Exhaust Fan

Models: WF54DTxxCXP-Hx • WF54DTxxCXJ-Hx



WF54 Tilt Fan with Munters Drive

Manual for use and Maintenance

Thank You:

Thank you for purchasing a Munters WF54 tilt 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 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](mailto: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.

Index

Chapters	Page
1. Unpacking the Equipment	3
1.1 Parts List	3
1.2 Fan Dimensions	5
2. Installation Instructions	6
2.1 Fan Installation	6
2.2 Shutter Installation	8
3. Electrical Wiring	9
3.1 Recommended Wire Routing	9
3.2 Electrical Wiring	10
4. Operation and Maintenance	16
4.1 Operation	16
4.2 Maintenance	16
5. Troubleshooting	17
6. Winterizing	18
6.1 Winterizing	18
6.2 Winter Weather Protection	18
7. Exploded View and Parts List	19

Unpacking the Equipment

1.

1.1 Parts List

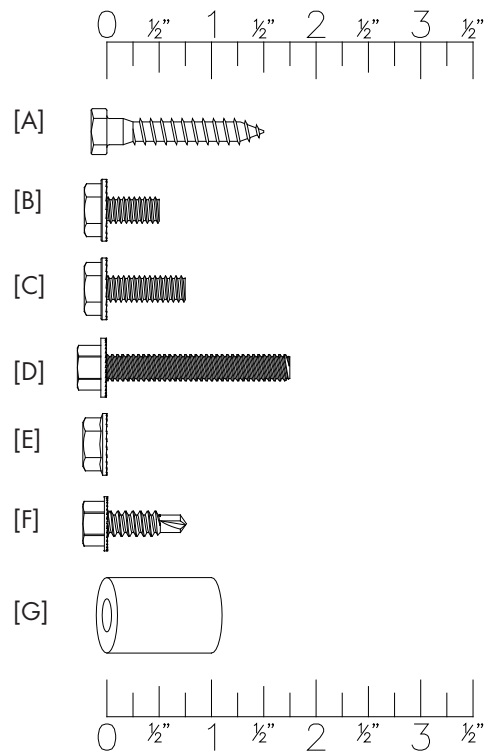
Before beginning installation, check the overall condition of the equipment. Remove packing materials, and examine all components for signs of shipping damage. Any shipping damage is the customer's responsibility and should be reported immediately to your freight carrier. Fan is shipped complete with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

Each Crate includes:

- 1 - 54" Belt Drive Fan
- 4 - Cone Sections (2 side, 2 top/bottom)
- 4 - Support Brackets, galvanized
- 1 - Cone Guard
- 1 - Shutter
- 1 - Hardware Package HP1116 for GCX

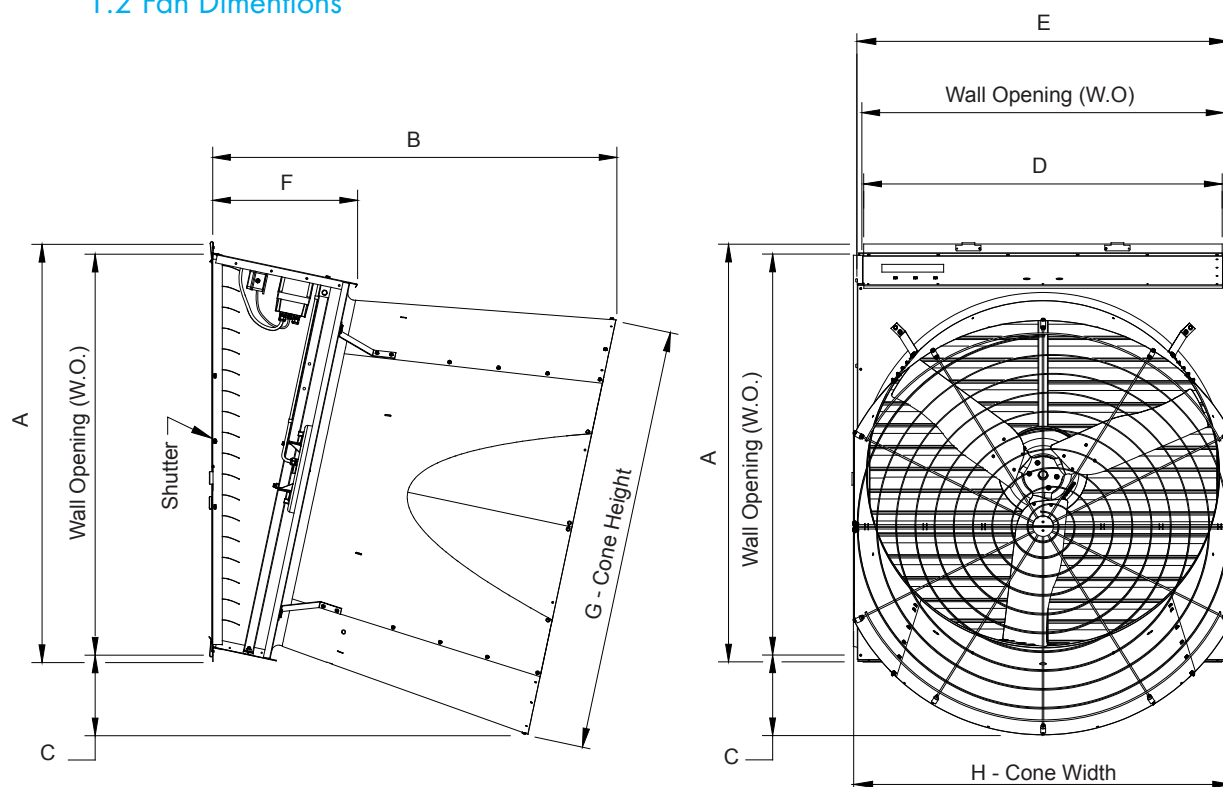
HP1116 for 54GCX

- [A].....16 - 1/4" x 1 1/2" Lag Screws, ZP
- [B].....26 - 1/4" x 1/2" Flange Head Bolts, ZP
- [C].....4 - 1/4" x 3/4" Flange Head Bolts, ZP
- [D].....10 - 1/4" x 1 3/4" Flange Head Bolts, ZP
- [E].....40 - 1/4" Flange Nuts, ZP
- [F].....8 - 1/4" x 3/4" TEK Screws, ZP
- [G].....10 - 3/4" O.D. x 1"L. Spacers



NOTE: Discharge cone is designed to mount on fan outlet for increased airflow and to support the exhaust guard. A shutter or guard must be mounted on the fan inlet.

1.2 Fan Dimensions



Fan Specifications: 60Hz shown (50Hz available)

Power: 230VAC or 230/460 VAC

Phase: 1 or 3

Dimensions:

Cat. No.	Cone Type	A	B	C Below F.O.	D	E	F	G Cone Height	H Cone Width	Wall Openings (W.O.)
WF54	54GCX	65 $\frac{1}{4}$ "	63 $\frac{1}{4}$ "	12 $\frac{5}{8}$ "	56"	58"	22 $\frac{5}{8}$ "	66"	59"	56 $\frac{1}{2}$ "W. x 62 $\frac{1}{2}$ "H.

Installation Instructions

2.

2.1 Fan Installation

Step 1

Construct framed opening to correct size according to the Wall Opening listed in chart below. See [Figure 1A](#), [1B](#), [1C](#) and [1D](#).

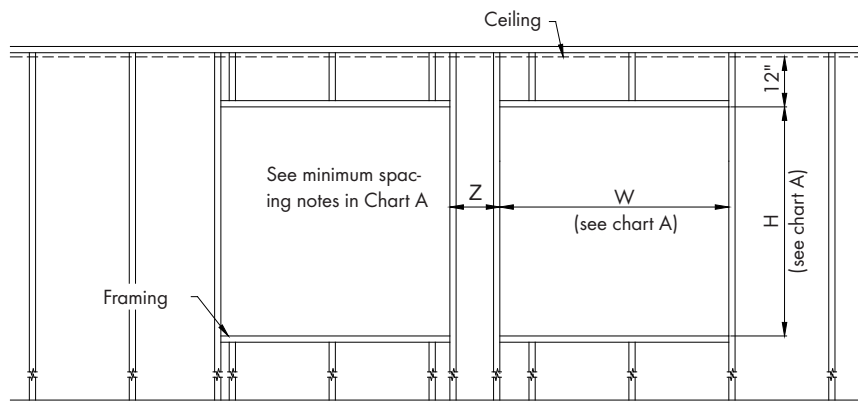
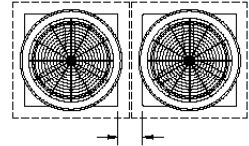


Figure 1A

NOTE:



Fan with Discharge Cone: a minimum clearance of 12" on all sides is recommended, but fans may be installed with less clearance if required. The minimum center-to-center distance is 60".

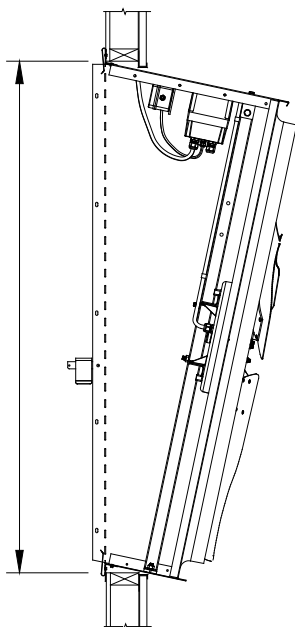


Figure 1B
2 x 4 Framing

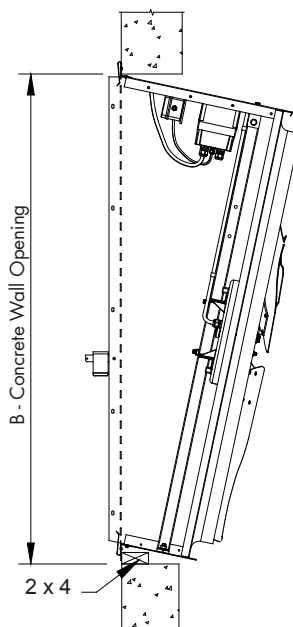


Figure 1C
Concrete Framing

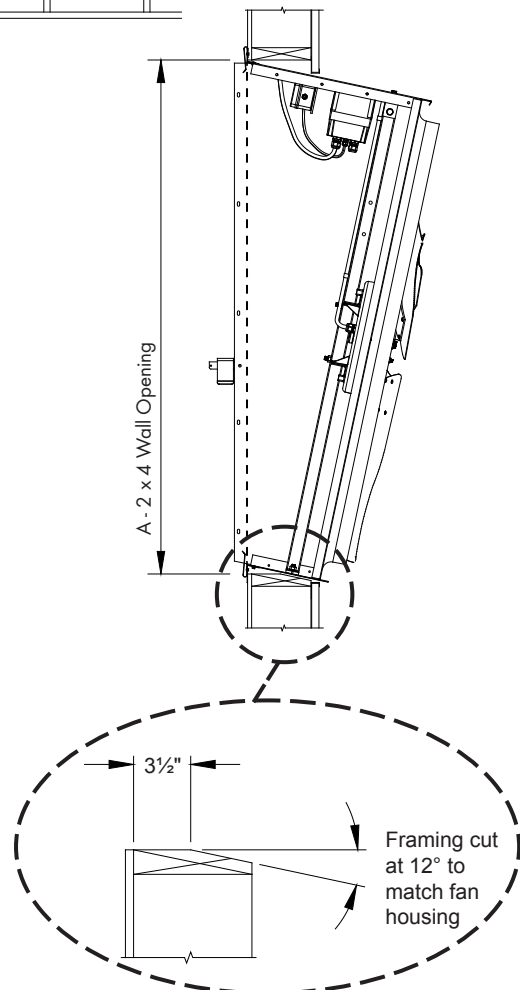


Figure 1D
Greater than 4" Wall Thickness

	A	B
Catalog No.	2 x 4 framing	Concrete framing
WF54	56½"W. x 62½"H.	56½"W. x 64"H.

Chart A

Step 2

Slide fan assembly into framed wall opening from outside of the building. Insert top of fan into opening and hold fan against top frame. Midpoint of top panel must be aligned with framing for bottom flange of fan to pass through opening. *See Figure 2.* Secure top and bottom flanges to wall using (6) Screws [A]. *See Figure 3A.*

Step 3

Left and right flanges must be bent outward over framing. This can be done by hand or with a rubber mallet. Be careful to bend along perforation and not to distort the housing. *See Figure 3B.*

Step 4

Confirm that housing inside dimensions match those shown in Figure 4A. Then secure left and right flanges to wall using (10) Screws [A] (provided). *See Figure 4B & 4C.*

Step 5

Outlet of fan comes unguarded, install discharge cone with guard on outlet of fan at this time. Refer to QM1049 for flat sided cone installation instructions.

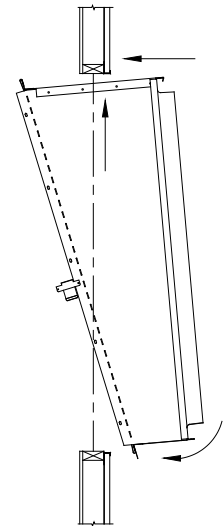


Figure 2

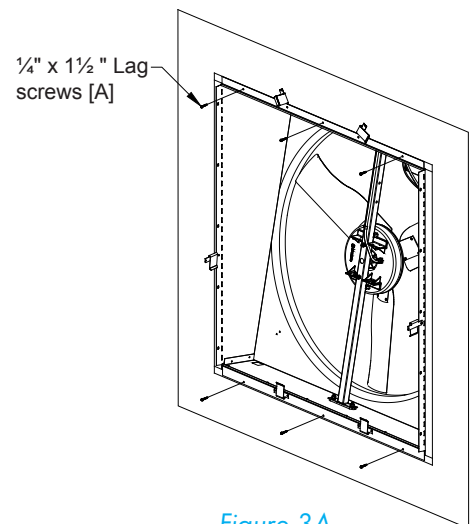


Figure 3A

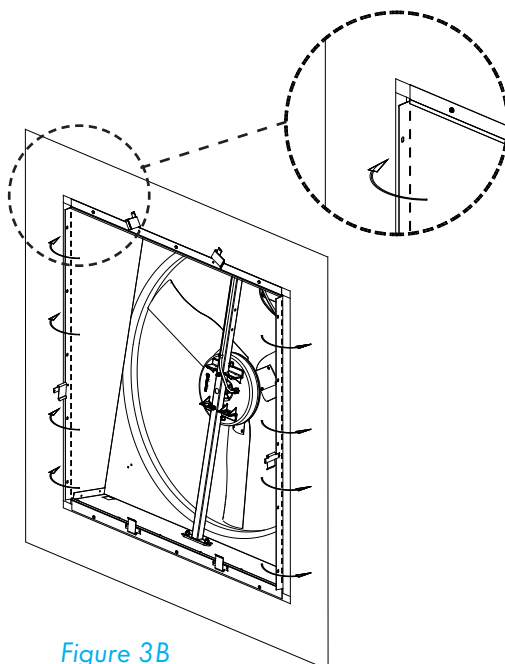


Figure 3B

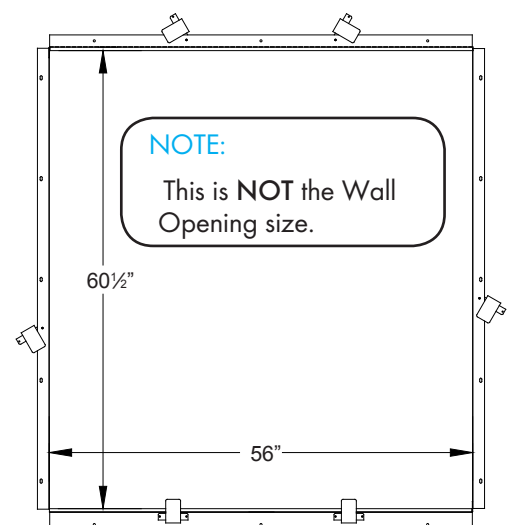


Figure 4A

Step 6

Make electrical connections to fan motor per instructions provided with fan or as shown on motor. *See Wiring Section on page 9.*

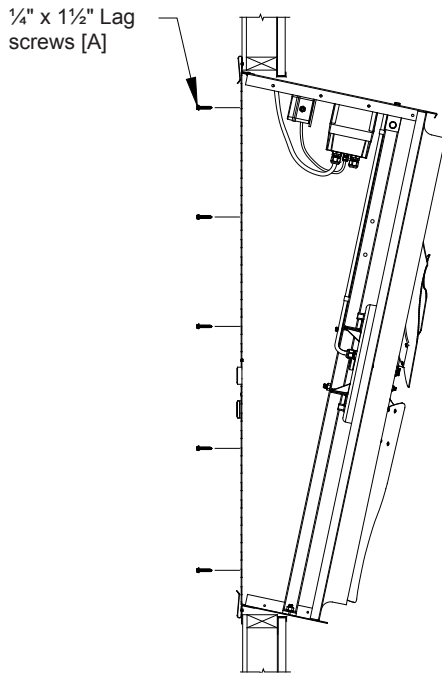


Figure 4B

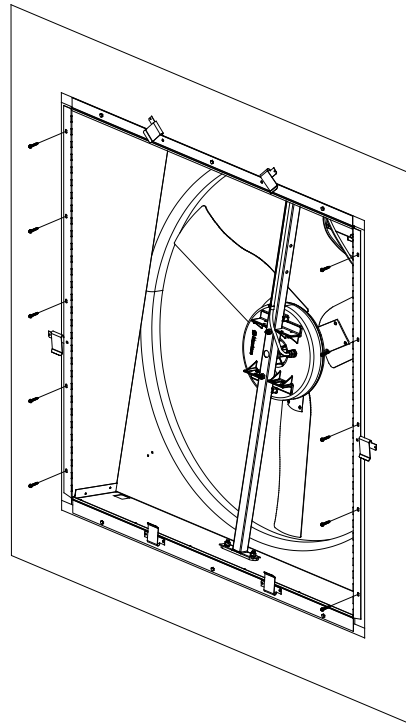


Figure 4C

2.2 Shutter Installation

Step 1

Insert shutter into fan by sliding the bottom flange of shutter into bottom shutter clips and pressing shutter inward, [See Figure 5A](#). Fasten shutter in place by rotating the side and top shutter clips over the shutter flanges, [See Figure 5B](#).

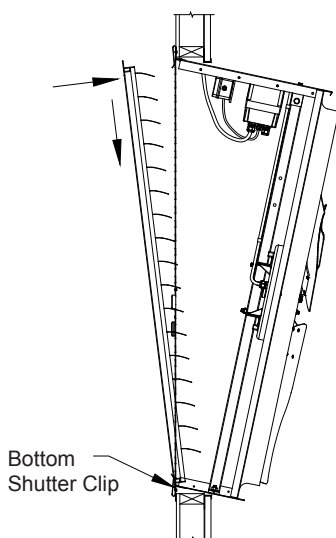


Figure 5A

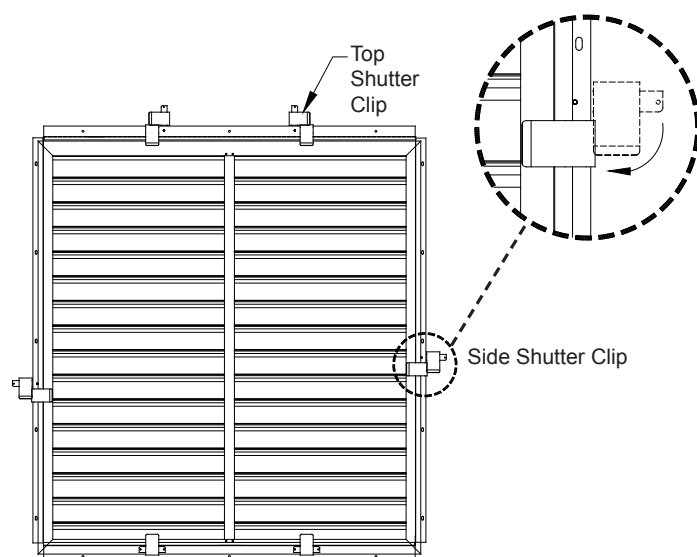


Figure 5B

3.1 Recommended Wire Routing

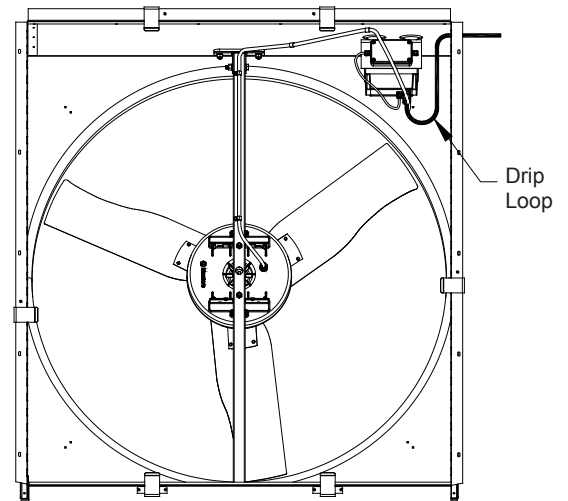
Option 1 -

Step 1

The Munters Drive fan comes with a coil of electrical cables that is pre-wired to the motor. Find the end of the cable and form a drip loop and then run the cable through the side of the fan housing, through flexible conduit and into building. [See Figure 6A & 6B.](#)

Step 2

Add flashing and/or caulk around completed housing on exterior side of building wall.



Option 2 -

Step 1

The Munters Drive fan comes with a coil of electrical cables that is pre-wired to the motor. Find the end of the cable and form a drip loop and then run the cable through housing and frame into wall cavity and into the building. [See Figure 7A & 7B.](#)

Step 2

Add flashing and/or caulk around completed housing on exterior side of building wall.

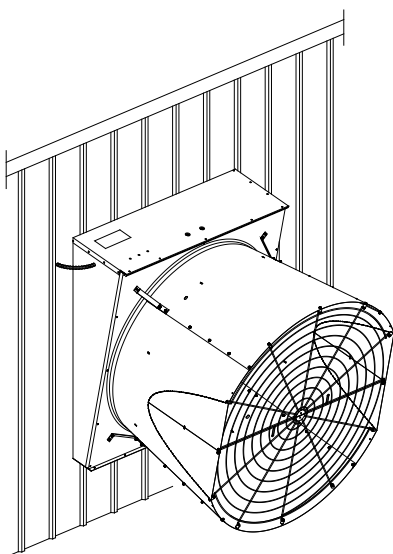


Figure 6B

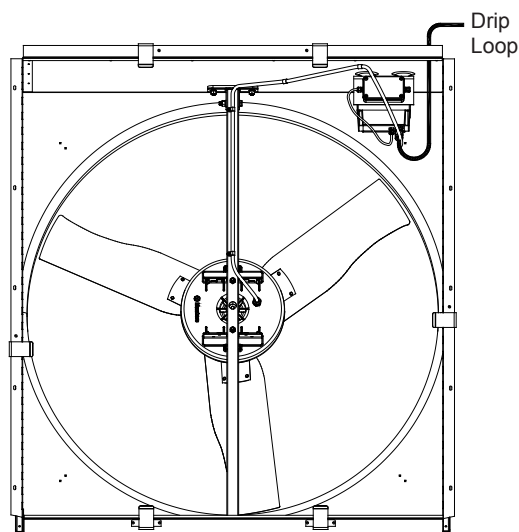


Figure 7A

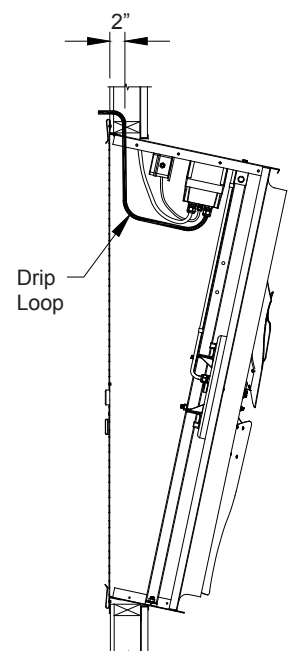
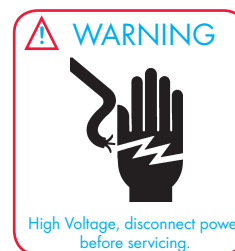


Figure 7B

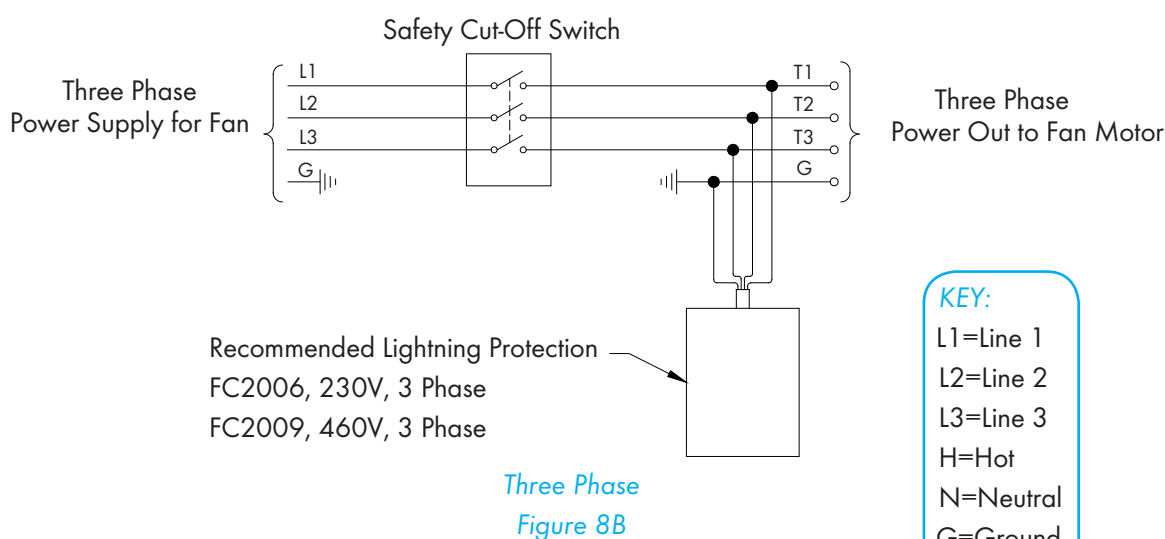
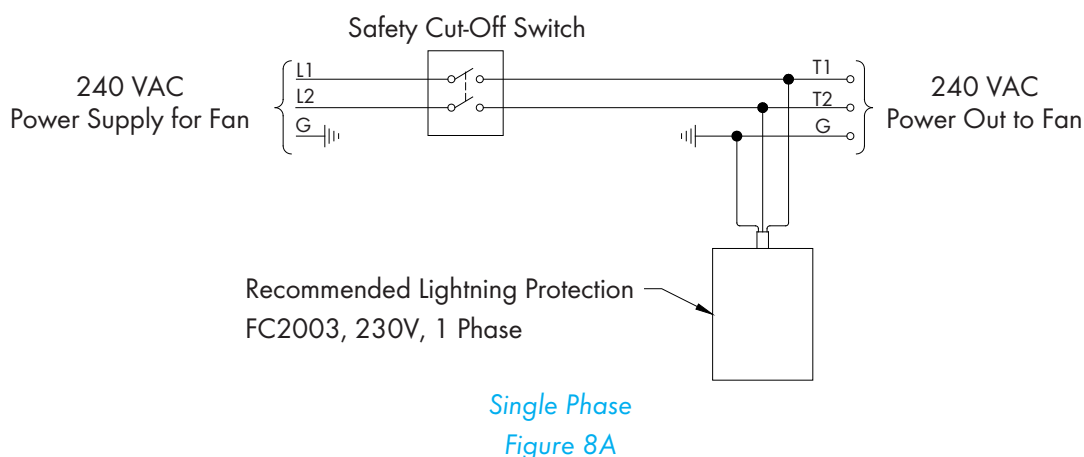
All wiring should be installed in accordance with National, State, and Local electrical codes. Fans used to ventilate livestock buildings or other rooms where continuous air movement is essential should be connected to individual electrical circuits, with a minimum of two circuits per room.

Single Phase and Three Phase Munters Drives: Power supply for fans to have Circuit Breaker or Fuse Protection. The installer must refer to NEC and local codes to ensure safety and compliance. *See Figure 8A & 8B.*

If recommended lightning protection was purchased, wire it to the fan power supply as shown and secure the lightning protection unit near the disconnect or the bus panel. *See Figure 8B & 8C (page 8).*



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



KEY:

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

3.2 Electrical Wiring

The Munters Drive fan ships configured for simple ON/OFF control. When electrical power is applied to the main cable the fan will start and run at full speed. See Figure 9A .

To operate the Munters Drive On/Off with a control, Slide the 'ON' switch, located on the circuit board in the junction box, away from the ON position. Now wire an 'ON' command from the 'COMMON' terminal to the input relay in the control and from the output of the control relay to the 'RUN' terminal in the junction box. See Figure 9A & 9B.

When making connections to junction box, be sure to use the supplied watertight fittings with only 1 cable per fitting. If watertight fittings are not used or if 2 cables or more are in 1 watertight fitting, equipment failure from water damage will not be covered under warranty. If 2 or more cables are used in 1 watertight fitting, they must be sealed on both sides of junction box wall to prevent water infiltration.

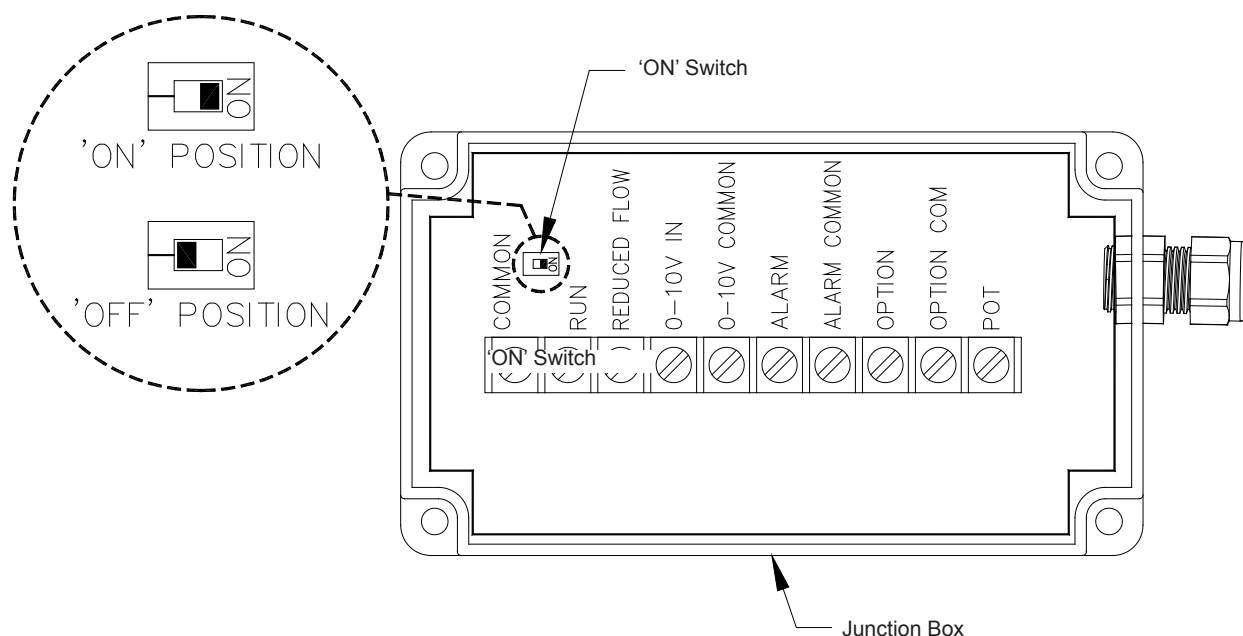


Figure 9A
Default Operation Full Speed

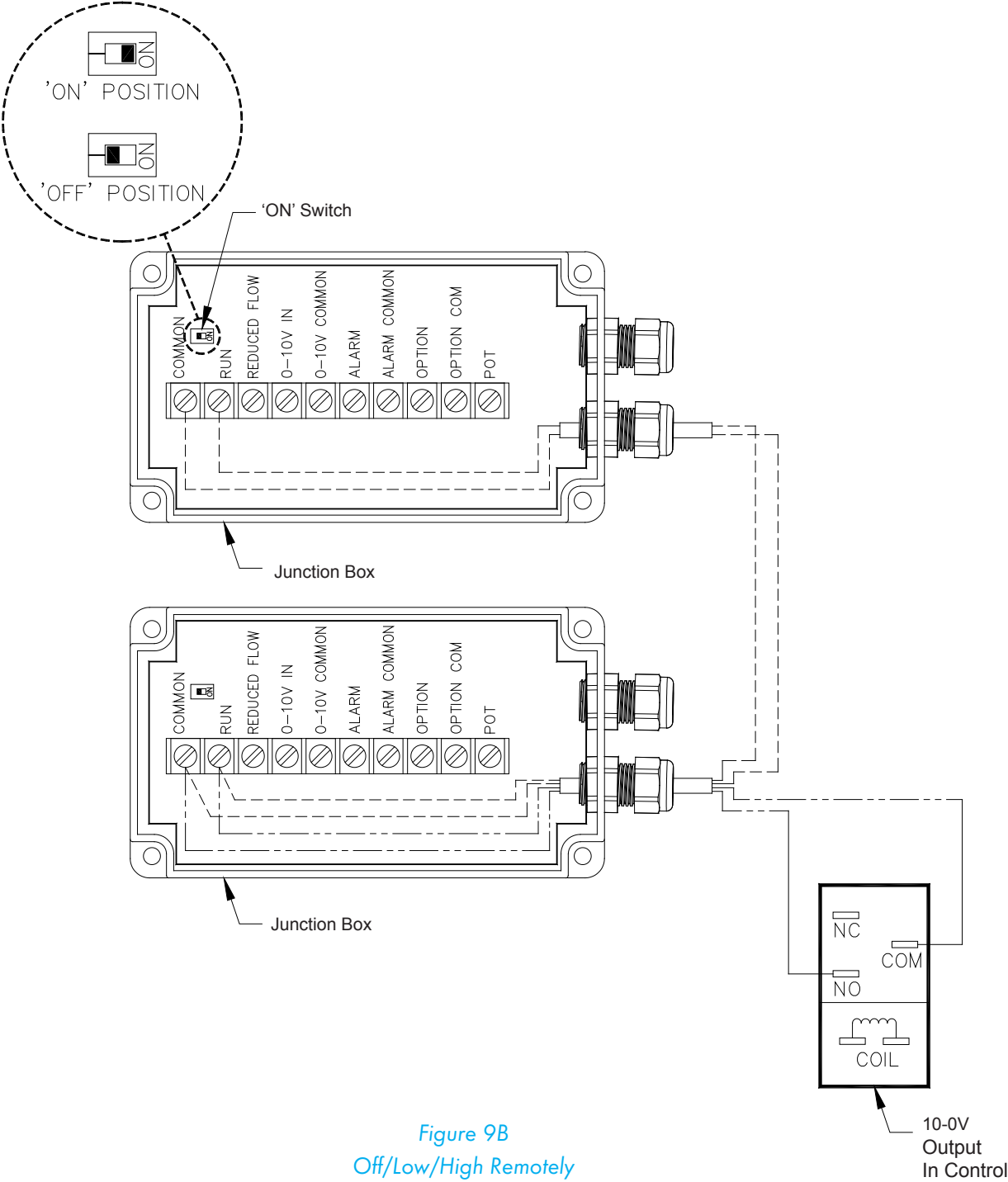


Figure 9B
Off/Low/High Remotely

To operate the Munters Drive Off/Low/High with a control, slide the 'ON' switch, located on the circuit board in the junction box, away from the ON position. Now wire an 'ON' command from the "COMMON" terminal to the input relay in the control and from the output of the relay to the 'RUN' terminal in the junction box. Then connect the output of the control relay for 'LOW' to the 'REDUCED FLOW' in the junction box. See Figure 9C.

To Operate the Munters Drive variable with a 10-0V Signal. connect wires from the '0-10V IN' and '0-10V COMMON' terminals in the Junction box to the 10-0V output in the control. See Figure 9D.

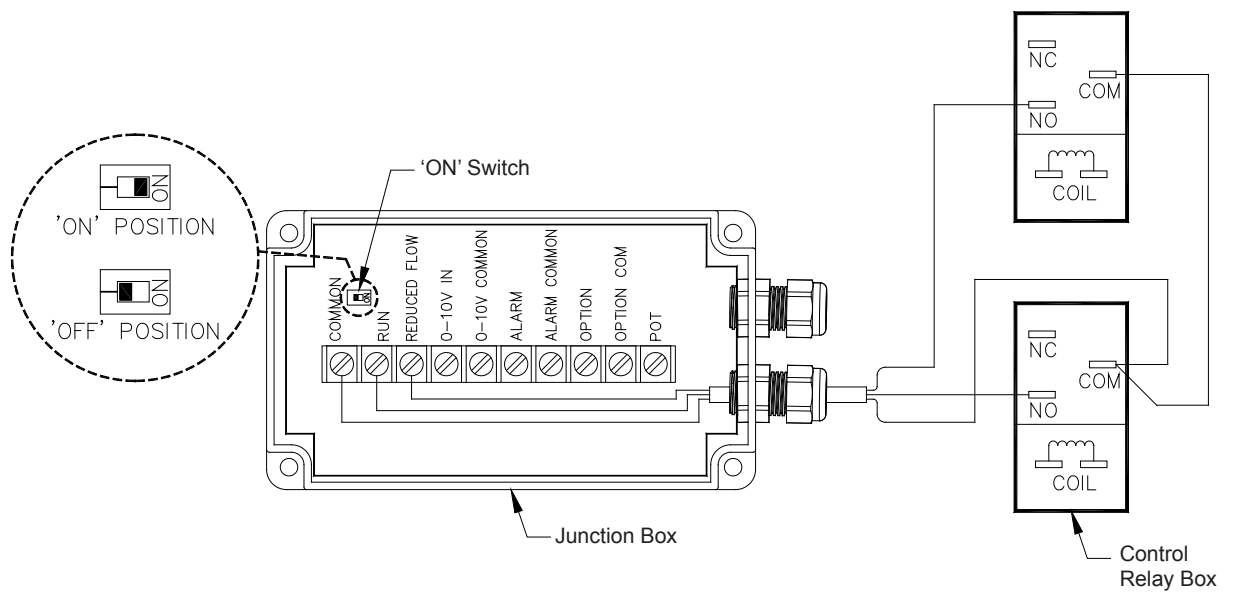


Figure 9C
Off/Low/High Remotely

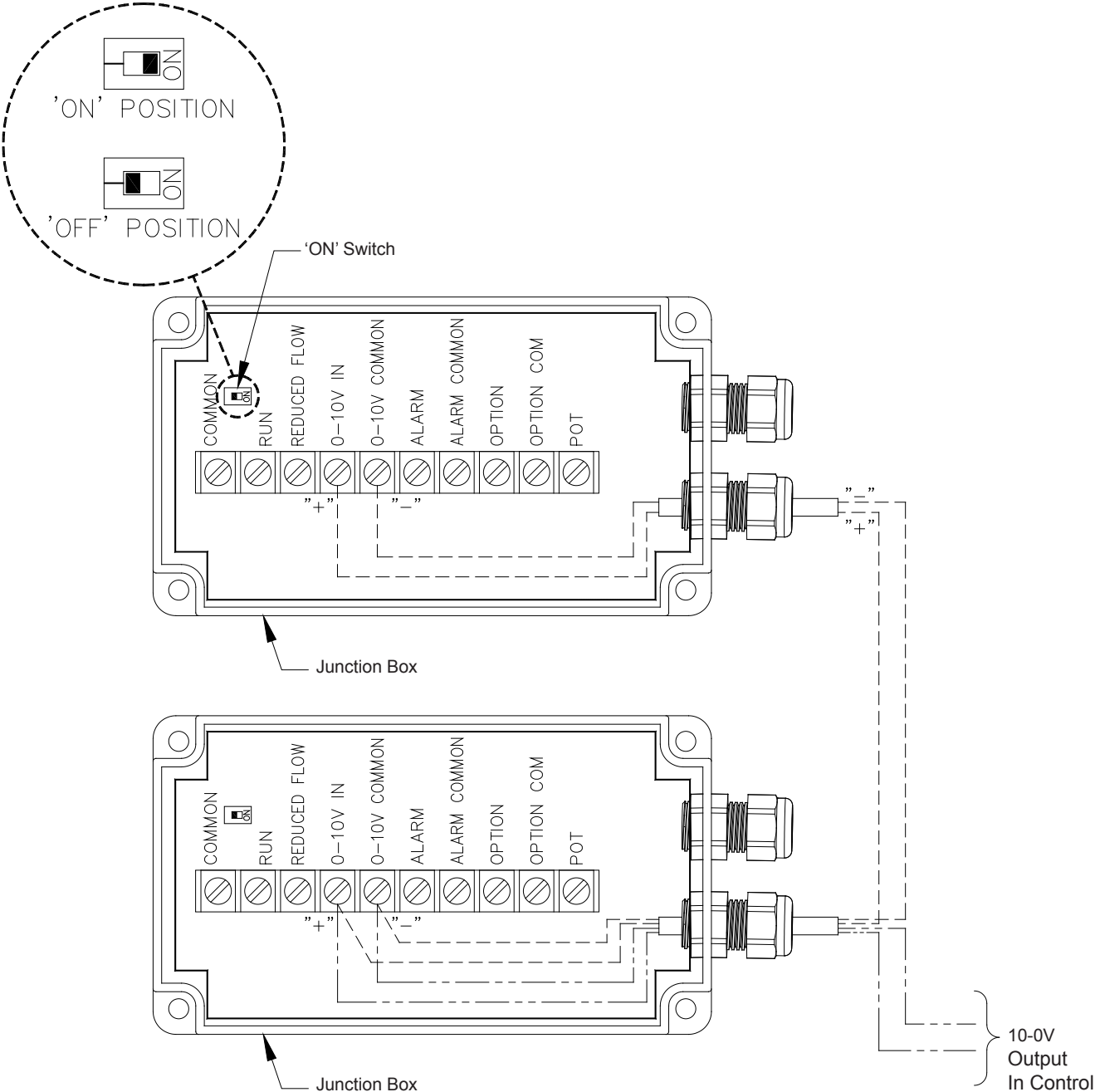


Figure 9D
Variable Speed Operation

To operate the Munters Drive Off/Variable with a 10-0V Signal, slide the 'ON' switch, located on the circuit board in the junction box, away from the ON position. Now wire an 'ON' command from the 'COMMON' terminal to the input relay in the control and from the output of the control relay to the 'RUN' terminal in the junction box. Also, connect wires from the '0-10V IN' and '0-10V COMMON' terminals in the junction box to the 10-0V output in the control. See Figure 9E.

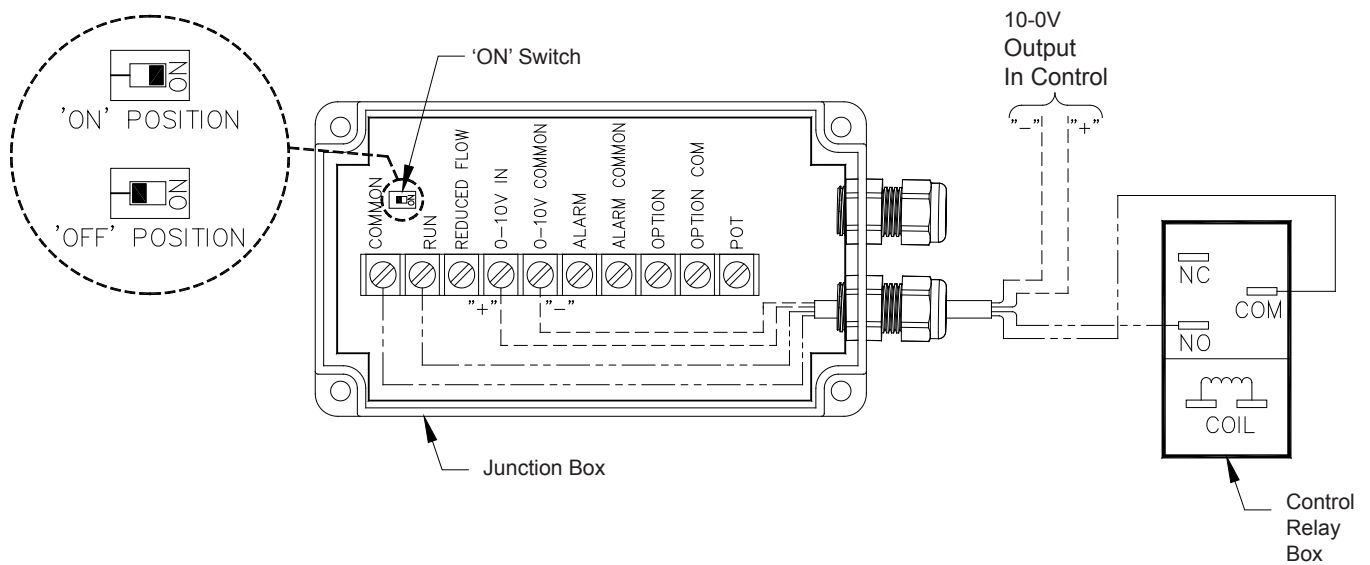


Figure 9E
Off/Variable Speed Operation

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

Operation and Maintenance

4.

4.1 Operation

- 1) **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.
- 2) **ADJUSTMENTS:** Set the fan control to the temperature shown on your Aerotech ventilation 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:

- 1) **INSPECT PROPELLER:** Check that propeller is secure on drive hub 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.
 - **DAMPER:** Carefully clean dust from damper door and frame so that damper door 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. 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!**



Troubleshooting

5.

5.1 Troubleshooting



SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
<ul style="list-style-type: none"> Fan Not Operating 	<ul style="list-style-type: none"> Fan control set above room temperature Blown Fuse or open circuit breaker Propeller blade contacting fan housing Fan control defective (i.e. Farm Premium, etc.) 	<ul style="list-style-type: none"> Set to a lower temperature Replace fuse or reset breaker Realign motor in fan housing Repair or replace control
<ul style="list-style-type: none"> Fan Does Not Start Caution: There is a 10 second delay for the fan to start when an 'On' command is present. 	<ul style="list-style-type: none"> Munters Drive motor/controller issue 	<ol style="list-style-type: none"> Verify AC voltage is present at fan. Turn AC power off to fan for 1 minute Verify Prop turns freely <ol style="list-style-type: none"> If not contact Munters Product Support If it turns freely go to next step Turn AC power back on to fan <ol style="list-style-type: none"> If starts up and runs, fan OK <ul style="list-style-type: none"> Periodically observe fan to verify it is still running If it continues to run, fan is OK If fan stops, remove drive assembly cover to check what drive display reads. Contact Munters Product Support If fan tries to start but stops, remove drive assembly cover to check what drive display reads. Contact Munters Product Support 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.
<ul style="list-style-type: none"> Fan Operating - Insufficient Airflow 	<ul style="list-style-type: none"> Shutter or Damper door jammed Guard dirty/clogged 10-0V signal set incorrectly 	<ul style="list-style-type: none"> Clean shutter or damper door Clean guard Check and adjust 10-0V signal
<ul style="list-style-type: none"> Excessive Noise 	<ul style="list-style-type: none"> Propeller blade contacting fan housing 	<ul style="list-style-type: none"> Sand fan housing to remove high spot
<ul style="list-style-type: none"> Excessive Vibration 	<ul style="list-style-type: none"> Motor loose on mount Propeller damaged 	<ul style="list-style-type: none"> Tighten fasteners Replace propeller

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" and install an 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 10](#), or snow guards may be placed on the roof, [See Figure 11](#)

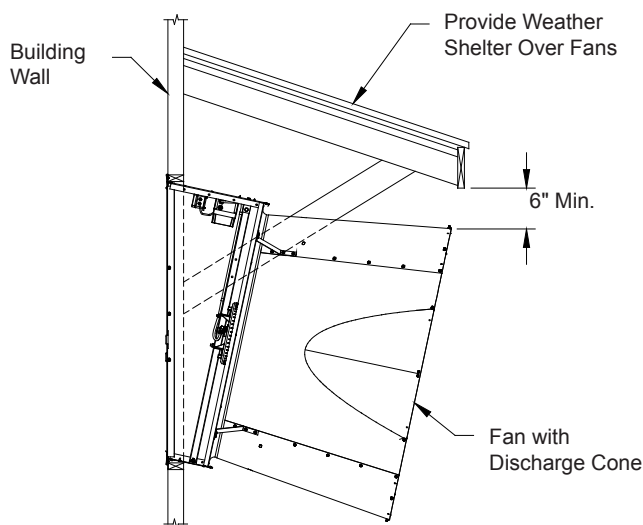


Figure 10

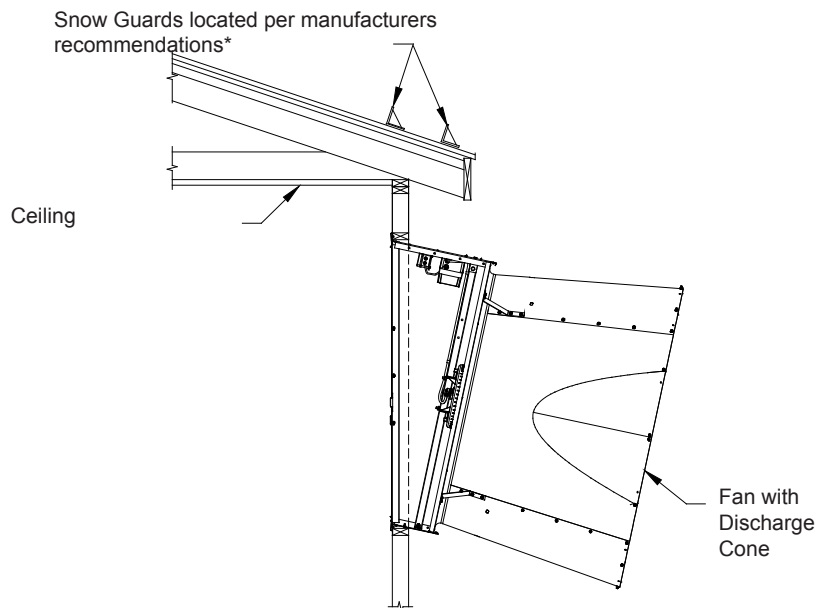


Figure 11

*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

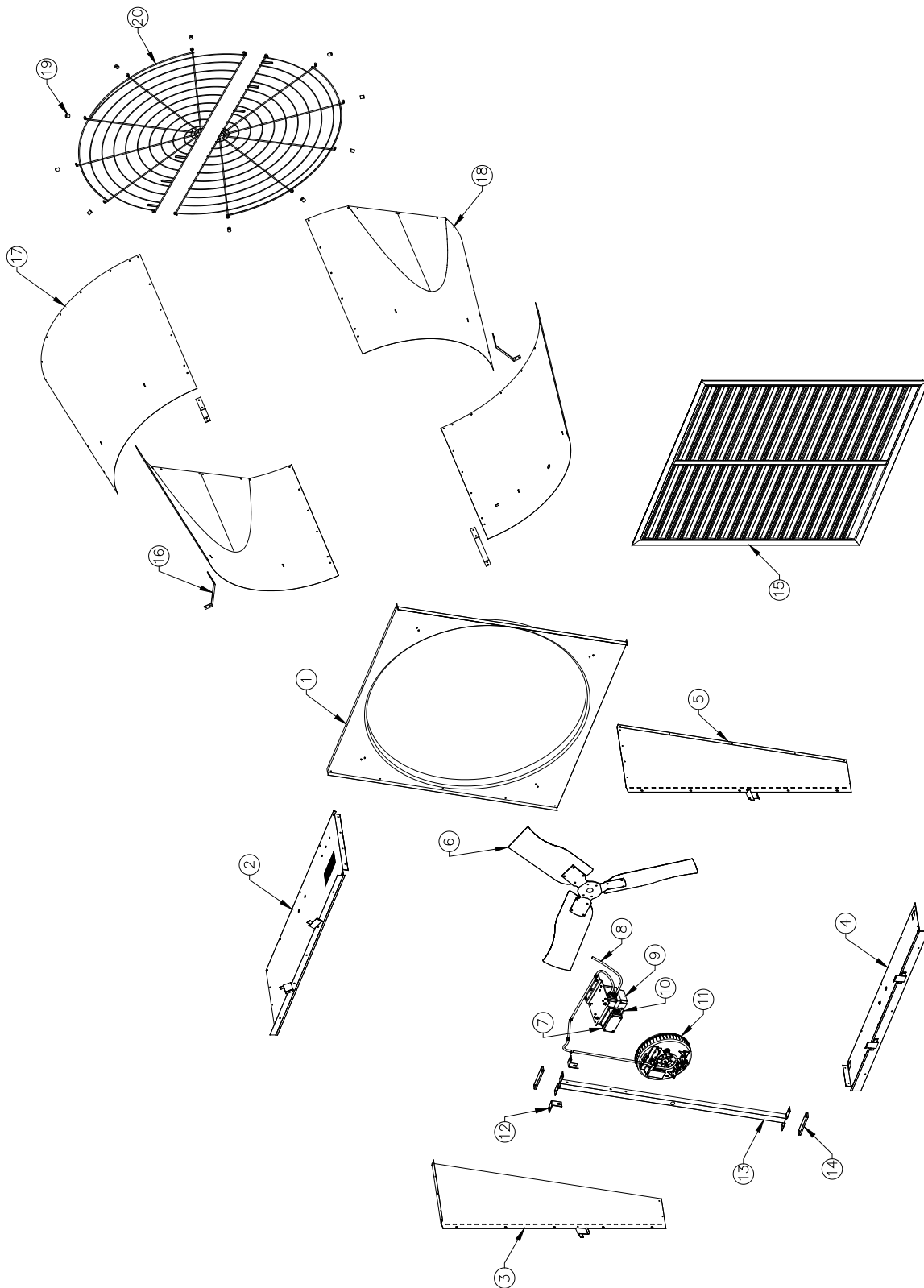
IMPORTANT

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. Aerotech does not endorse any specific snow guard product and no performance warranty is implied.

Exploded View

7.



Item	Catalog No. WF54	Part Name/Description	Qty.
1	FH1255	Orifice panel, galvanized	1
2	FH2972	Top housing panel, galvanized, with shutter clips	1
3	FH2970	Right side housing panel, galvanized, with shutter clip	1
4	FH2973	Bottom housing panel, galvanized, with shutter clips	1
5	FH2971	Left side panel of housing, galvanized, with shutter clip	1
6	FP1454	Propeller assembly, 3-blade, galvanized	1
7	AC1212-MD	Control signal junction box, Munters Drive, w/cable	1
8	various*	Cable, Power, Munters Drive	1
9	various*	Controller, WF Munters Drive	1
10	various*	Cable, Control signal, Munters Drive, w/fittings	1
11	various*	Motor, for Munters Drive, Less Controller	1
12	FH1302	Reinforcement bracket for strut, galvanized	2
13	FH1954	Strut, Munters Drive, galvanized	1
14	FH1932	Spacer plate, black plastic	2
15	PZ54 or GS54	Shutter, 55 $\frac{5}{8}$ "W. x 60 $\frac{1}{8}$ "H., all plastic or aluminum blade/galvanized frame	1
16	FH2130	Cone support bracket, galvanized	4
17	FH4354	Top/Bottom cone section, galvanized	2
18	FH4454	Side cone section, galvanized	2
19	KX1256	1"L, spacer, black plastic	10
20	FH2654	Guard, Flat sided cone, 1/2 circle PVC coated	1

* Contact office for replacement part numbers for your fan configuration.

WF54 Tilt Fan with Munters Drive is developed and produced by Munters Corporation, Lansing, Michigan U.S.A. 1-800-227-2376



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