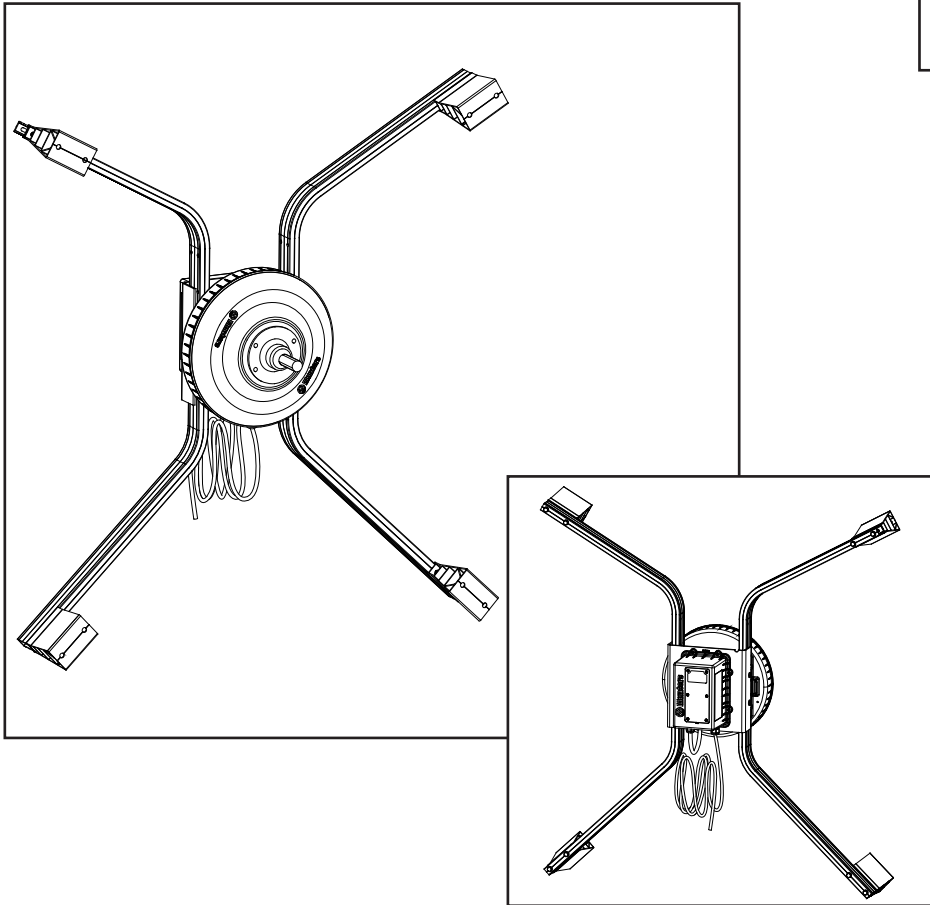


# Instruction Manual

## Munters Drive\* AT36/ VX36 AT48/VX48 Retrofit Kit

\* Patents Pending



## Munters Drive Retrofit Kit

AT36/VX36 or AT48/VX48 Retrofit Kit

Models: RF- VX36xx-Hx • RF-VX48xx-Hx



# Munters Drive AT36/48 & VX36/VX48 Retrofit Kit

## Instructions for Use and Maintenance

### Thank You:

Thank you for purchasing a Munters Drive Retrofit Kit. 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.

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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. Remove shutter, guard and cone sections before proceeding with installation.

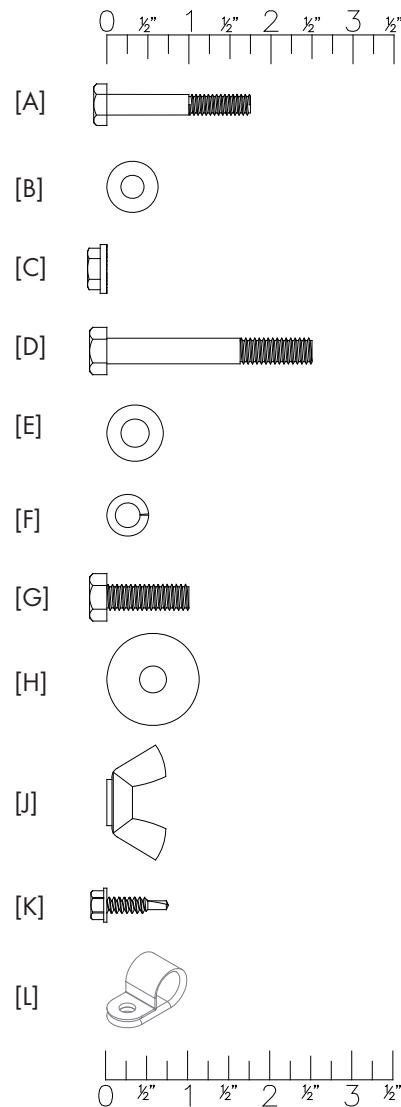
## 1.1 Parts List

### Each Munters Drive Retrofit Kit includes:

- 1 - Left Tube Strut
- 1 - Right Tube Strut
- 4 - Strut Spacer
- 1 - Munters Drive Motor
- 1 - Munters Drive Controller
- 1 - Hardware Package as follows:

#### HP1317 - Hardware Package

ID	Qty.	Cat. No.	Description
[A]	8	KS1006	1/4" x 1.75" Hex Bolt, SS
[B]	8	KW3002	1/4" Type-A Narrow Flat Washer, SS
[C]	8	KN0702	1/4" Hex Flange Nut, SS
[D]	8	KS1057	5/16" x 3" Hex Bolt, SS
[E]	8	KW3034	3/8" Flat Washer, SS
[F]	16	KW3504	5/16" Splitlock Washer, SS
[G]	8	KS1018	5/16" x 1" Hex Bolt, SS
[H]	8	KW3011	5/16" x 1 1/4" OD Flat Washer, SS
[J]	4	KN2302	5/16" Wing Nut, NY
[K]	4	KS2258	#10-16 x 5/8" HXWSR TEK Screw, SS
[L]	4	KX1018	3/8" Dia. X 1/2"W. Wire Clamp, BLK NY



## 2.1 Install

### Step 1

Disconnect power from fan before continuing. Remove the shutter from the back of the fan and the guard from the cone and set safely aside to be reinstalled later. [See Figure 1.](#)

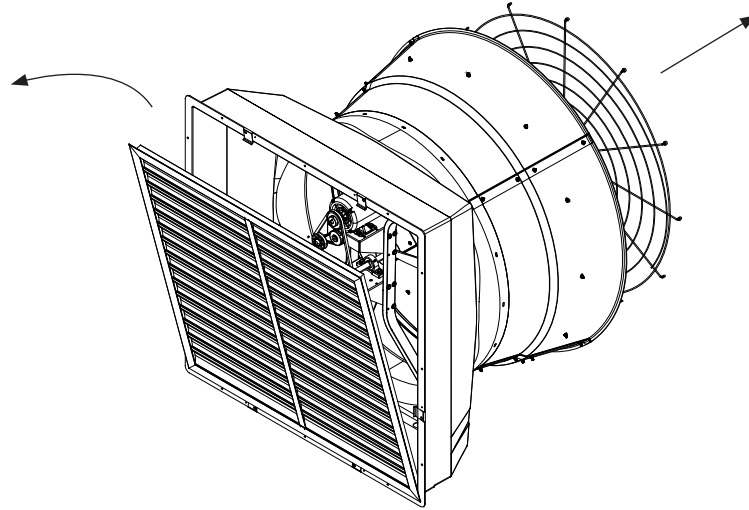


Figure 1

### Step 2

Loosen the set screws holding the propeller to the shaft. Carefully remove the propeller from the fan and set safely aside to be reused. A gear puller or prop puller may need to be used. [See Figure 2.](#)

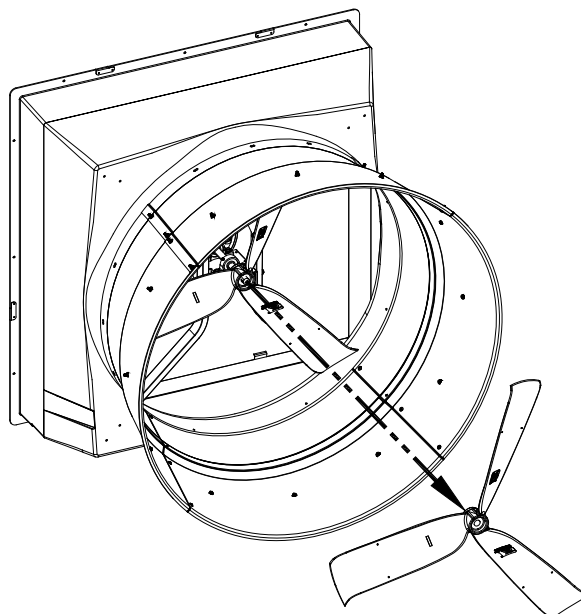
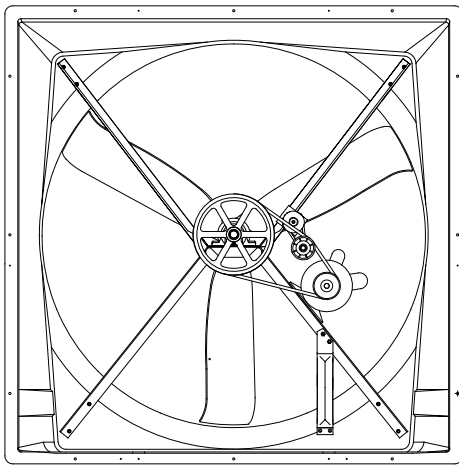


Figure 2

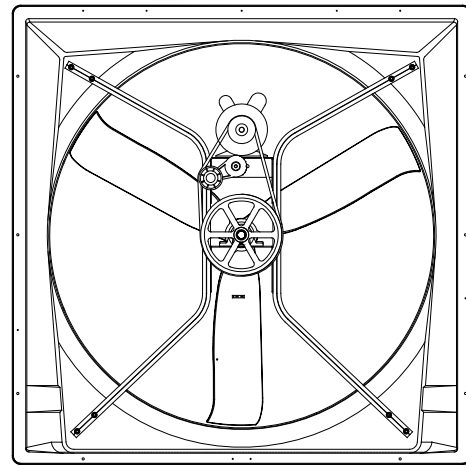
Step 3

Disconnect the electrical power leads from the motor. For an X-Strut frame remove the bolts and washers holding the fan struts to the fan housing and remove the fan drive unit in one piece, this includes the struts, motor, bearings and strut brace. See Figure 3A. For an H-Strut frame remove the bolts and washers holding the fan struts to the fan housing and remove the fan drive unit in one piece, this includes the struts, motor base, motor, bearing base, and bearings. Make sure that all the washers are removed from the fan housing in all 4 locations on the outside of the fan housing. See Figure 3B. Be sure not to damage the bolt holes in the housing, as these holes will be reused.

**Note:** If your 48" fan was built before July 11, 2003 or 36" fan before March 15, 2004 and has the X-Strut then proceed to Step 4. If your fan was built after July 11, 2003 for the 48" or after March 15, 2004 for the 36" and/or has the H-Strut then proceed to Step 6.



48" Fan with X-Strut built before July 11, 2003  
36" Fan with X-Strut built before March 15, 2004



48" Fan with H-Strut built after July 11, 2003  
36" Fan with H-Strut built after March 15, 2004

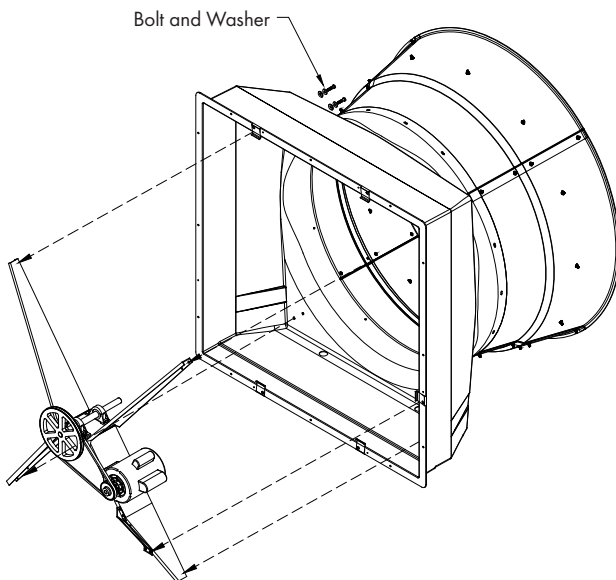


Figure 3A

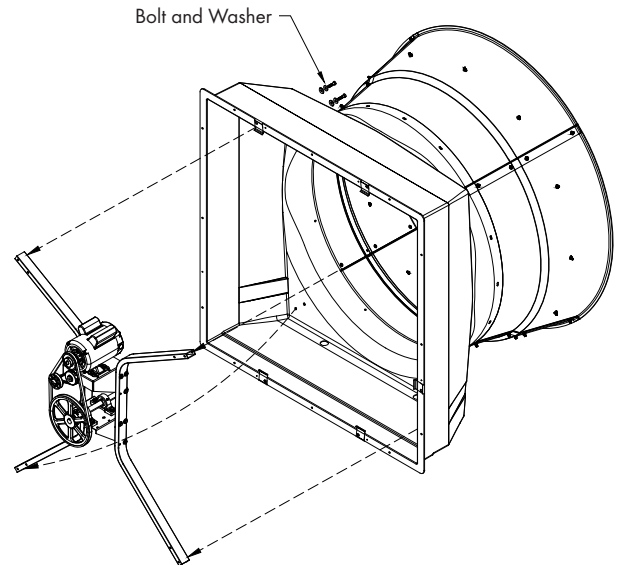


Figure 3B

## 2.2 Fan With X-Strut

### Step 4

Identify the top and bottom legs of the New Tube Struts (supplied). The top leg of the strut is the shorter leg with the larger angle and the bottom leg is the longer leg with the smaller angle. See Figure 4A. Position the Tube Struts into the fan housing and align the outermost holes in each strut leg with the outermost holes in the housing and fasten in place using (4) Bolts [D] and Wing Nuts [J]. See Figure 4B.

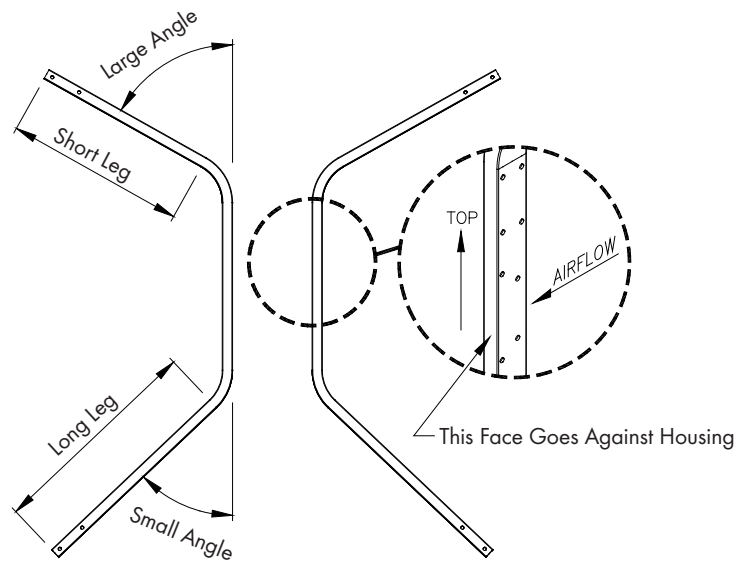


Figure 4A

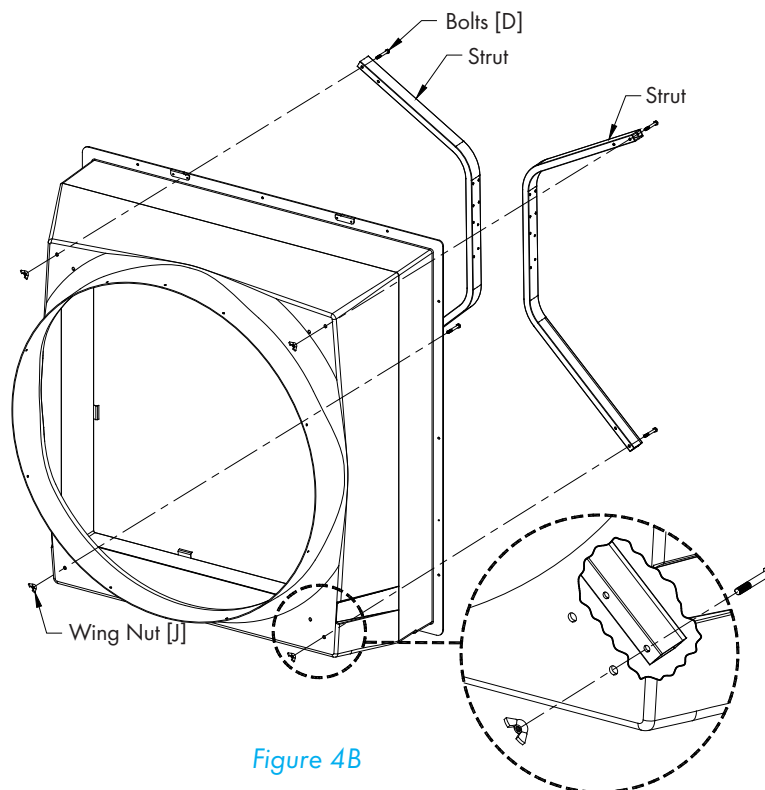


Figure 4B

**Step 5**

From the inside of the housing, use a drill and  $\frac{5}{16}$ " bit to drill a hole in each corner of housing using the inner most holes in each strut. Be sure to center the hole. [See Figure 5](#). Once all 4 holes are drilled remove the struts by removing the wing nuts and bolts. Bolts will be reused.

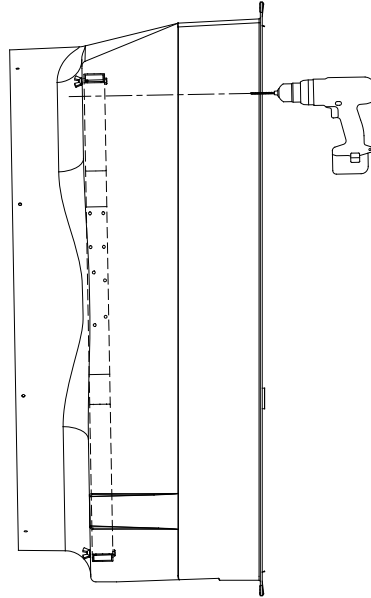


Figure 5

**2.3 Installation with Munters Drive H-Strut****Step 6**

Locate box and make sure it is facing up and open the box. Remove the top section of the foam packaging to reveal the Munters Drive Motor and Controller and leave them in the foam packaging. Carefully remove the lower section of foam packaging with the motor and controller still in it and set on a flat surface for assembly. [See Figure 6](#).

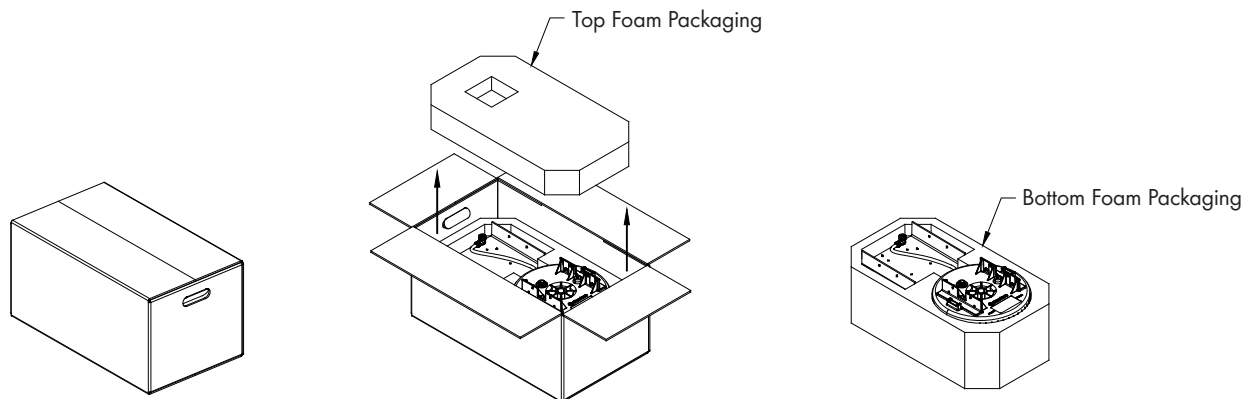


Figure 6



**Step 7**

Carefully remove the Munters Drive Controller from foam packaging and set safely aside for later installation. With the Motor sitting in the foam packaging, position the Strut on the motor with the short leg towards where controller was and the long leg away from the controller. Line up the offset hole pattern in the struts with the offset hole pattern in the motor. When the struts are in the correct position the 4 extra holes will be towards the controller. See Figure 7.

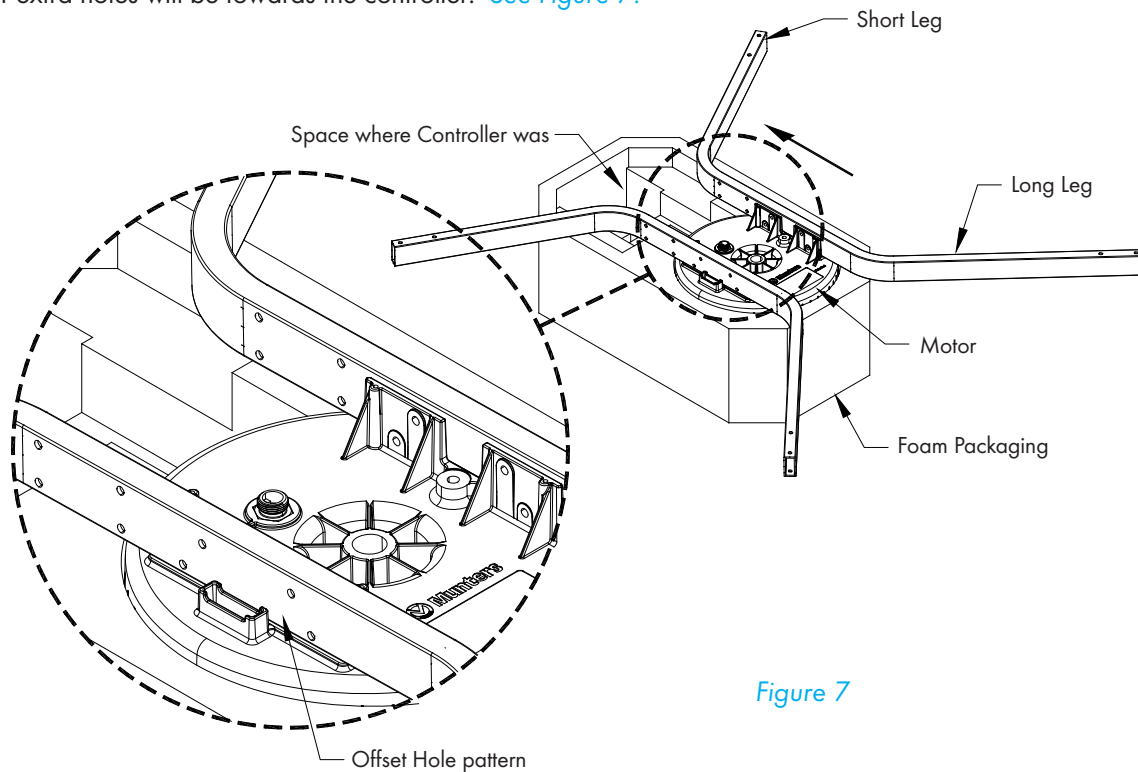


Figure 7

**Step 8**

Fasten Struts to Motor using (4) Bolts [A], Washers [B] and Nuts [C] in the outer holes closest to the motor. See Figure 8.

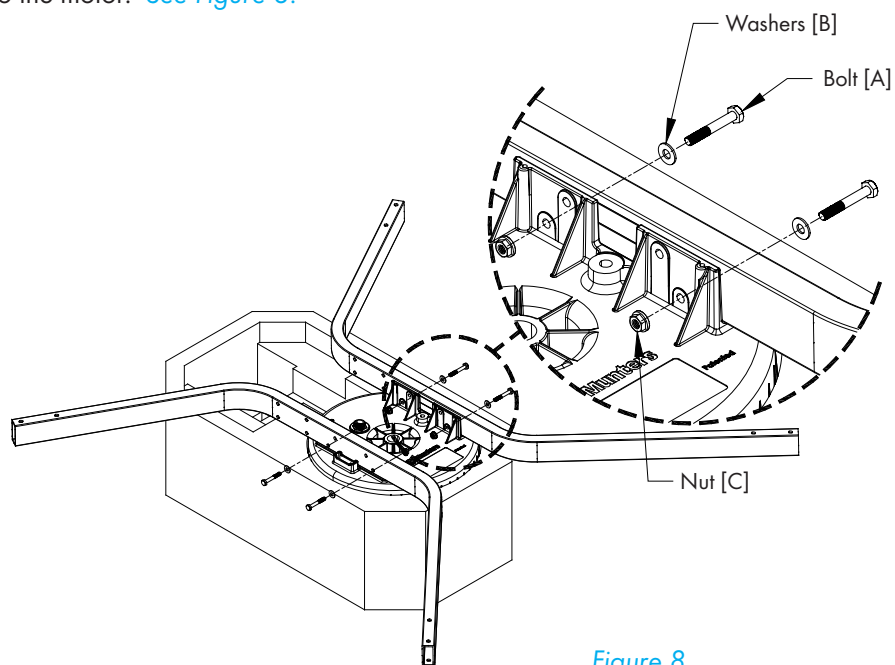


Figure 8

Step 9

Retrieve the Munters Drive Controller and connect the Quick Connect Connector to the Motor. Slide the Controller with bracket over the struts so that the 2 remaining holes in each strut line up with the holes in each side of the Controller bracket and fasten with (4) Bolts [A], Washers [B] and Nuts [C]. See Figure 9.

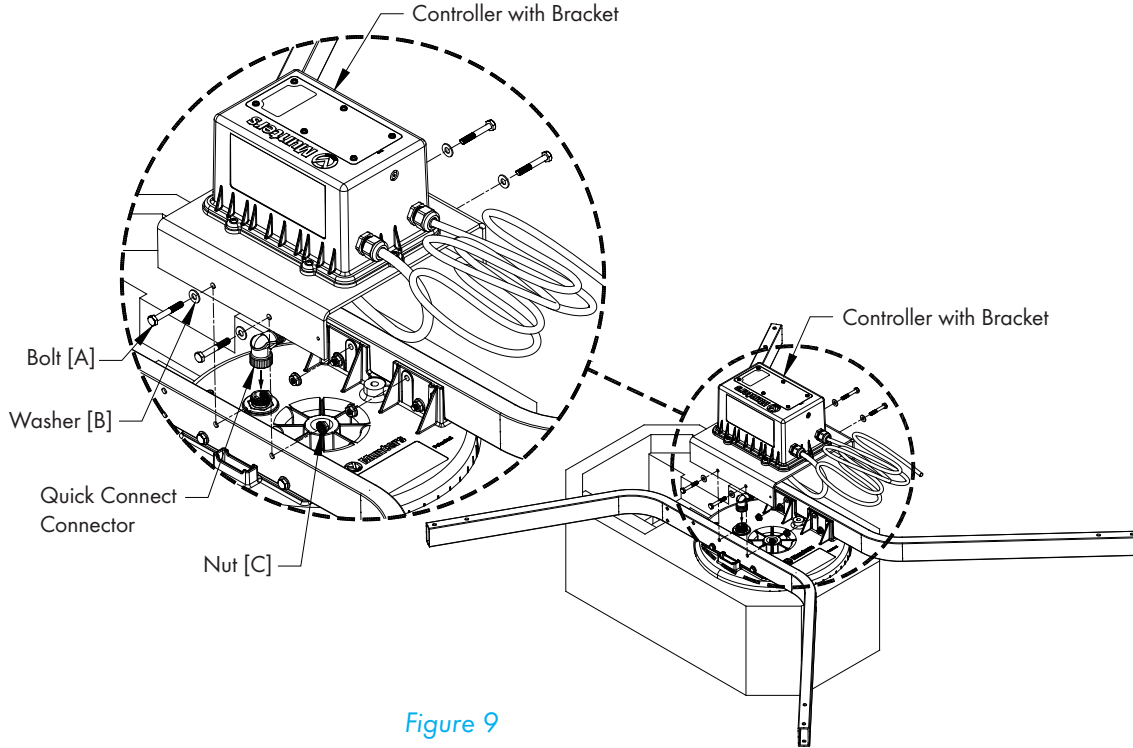


Figure 9

Step 10

With the Munters Drive Motor/strut assembly still sitting in the foam packaging attach the (4) Strut Spacers to the under side of the tube strut using (2) Bolts [D], Washers [E] and Splitlock Washers [F]. See Figure 10.

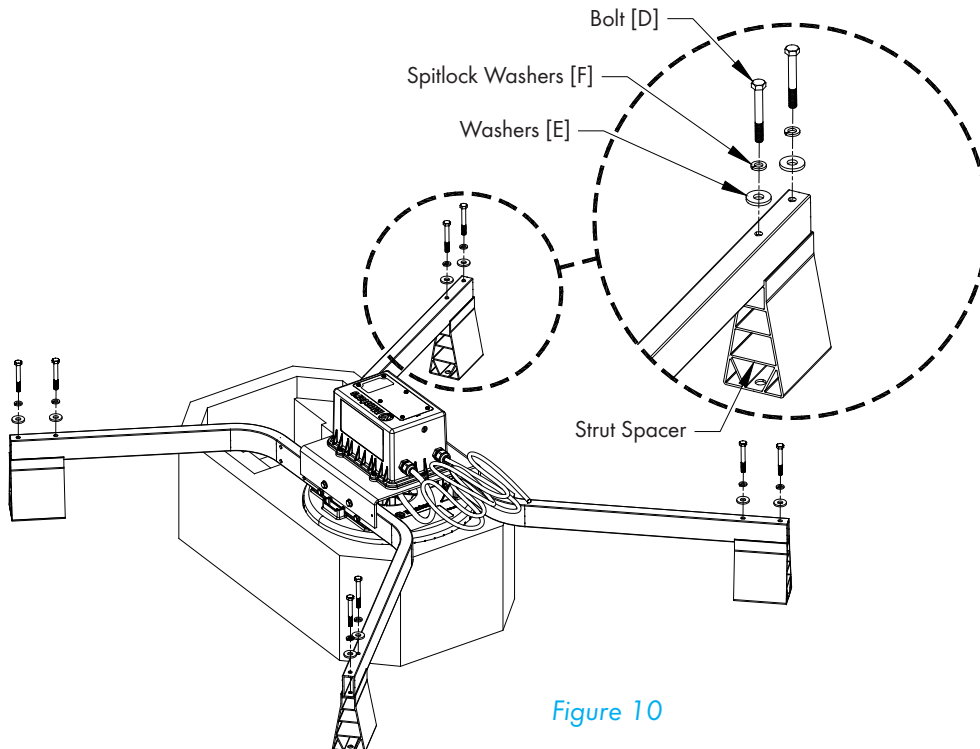


Figure 10

**Step 11**

A 2x4 wood block may be used to rest retrofit kit on as you position it. Position the completed Munters Drive Retrofit Assembly into the fan housing and fasten in place using (8) Bolts [G], Washers [H] and Splitlock Washers [F]. [See Figure 11](#). FINGER TIGHTEN ONLY AT THIS TIME.

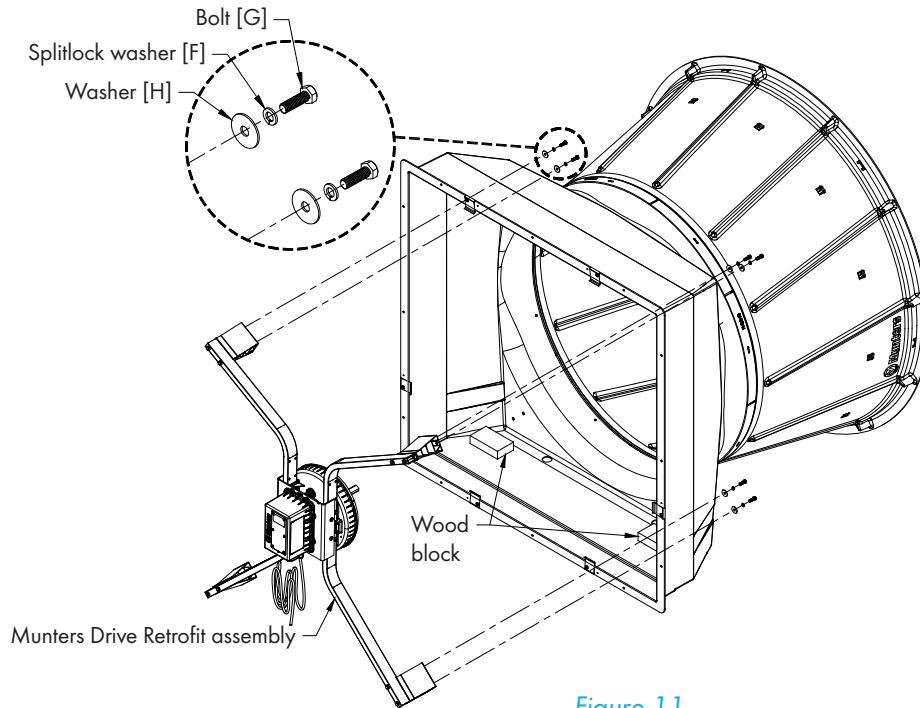


Figure 11

**Step 12**

Install the propeller that was removed in Step 2 onto the new shaft of the Munters Drive making sure that the set screws in the propeller lines up with the flats on the shaft. Tighten the set screws to 150 in-lbs. of torque. [See Figure 12](#). Make sure the propeller is centered in the fan orifice and spins freely. If needed the Munters Drive Kit can be pushed slightly to center the propeller. To help with centering, position propeller with 1 blade at the 12 o'clock position then use (2) wood or plastic wedge between the other 2 blades and the orifice. When the propeller is centered and can spin freely, tighten the (8) bolts holding the struts to the housing.

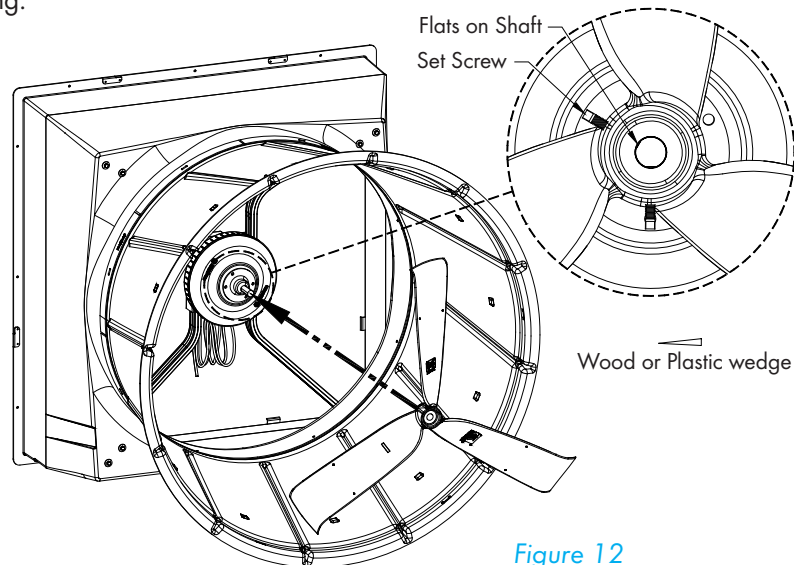


Figure 12

## 3.1 Recommended Wire Routing

### Step 13

The Munters Drive Retrofit Kit comes with a coil of electrical cable that is pre-wired to motor. Determine where the existing power for the fan entered the housing and route the cable up the left or right strut toward the existing power. Create a drip loop in the bottom of the cable and then fasten it to the strut using (4) Wire Clamps [L] and TEK Screws [K]. Attach the new cable to the existing power supply for the fan. See [Figure 13A & 13B](#). Continue on next page.

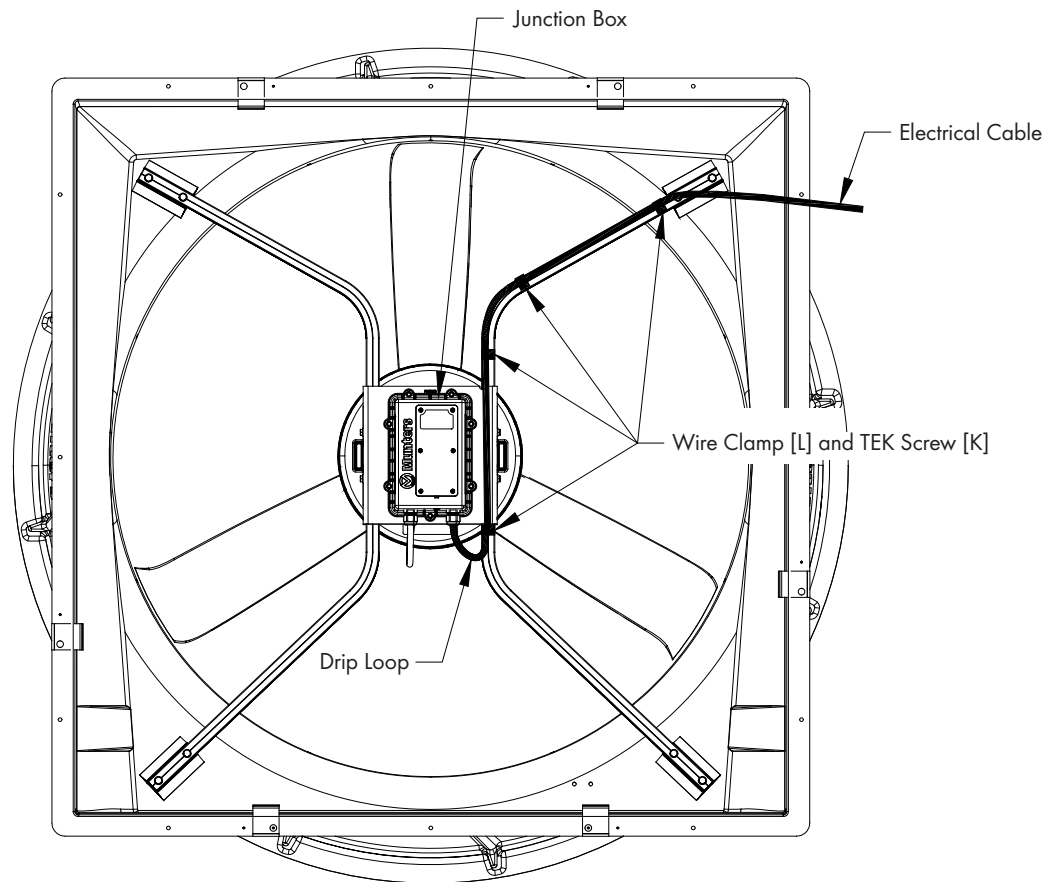


Figure 13A

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

### 3.2 Electrical Wiring

Continued from previous page

**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 Figures 13B and 13C.**

If lightning protection was purchased, wire it to the fan power supply as shown and secure the lightning protection unit out of the way of moving parts in the fan. **See Figure 13B. Continue on next page.**

Existing Circuits in this Configuration May be used:

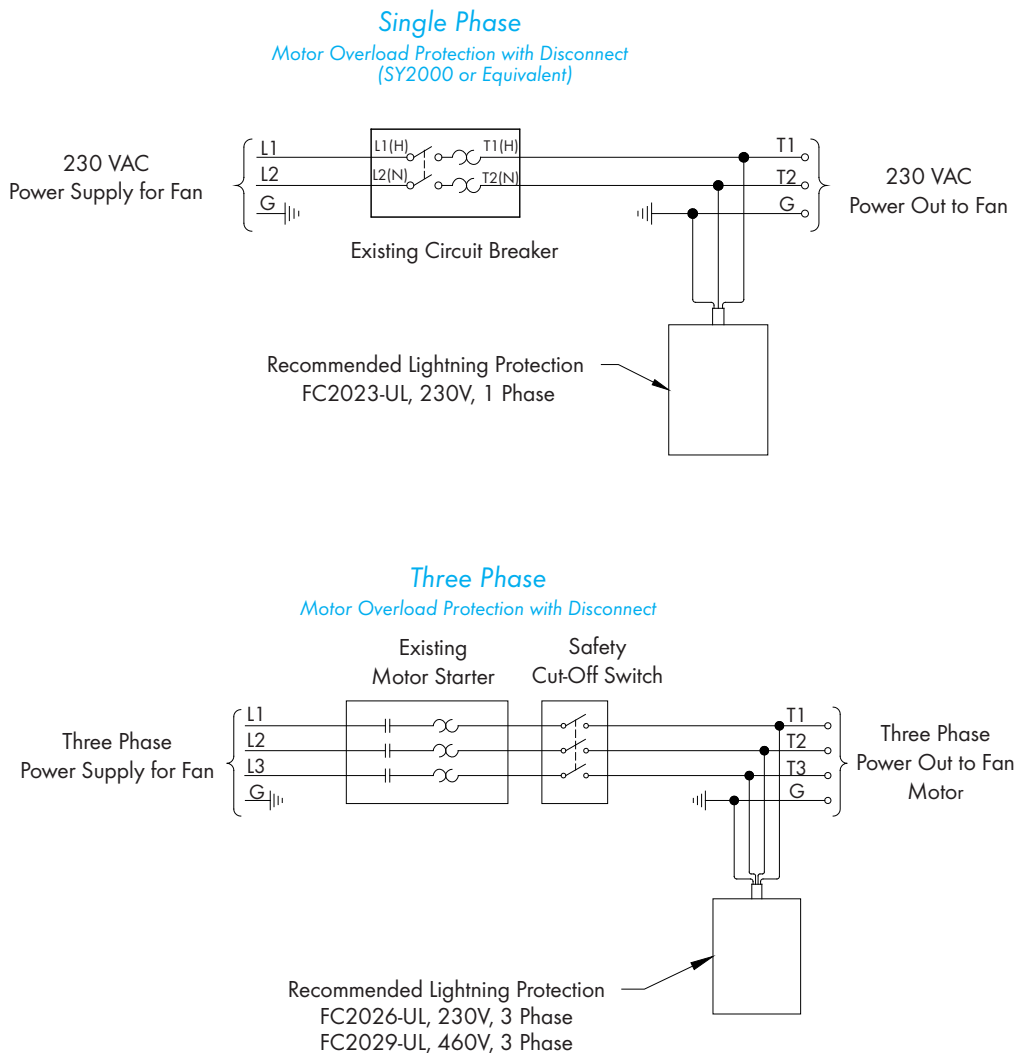


Figure 13B

(continued)

New Circuits in this Configuration May be used:

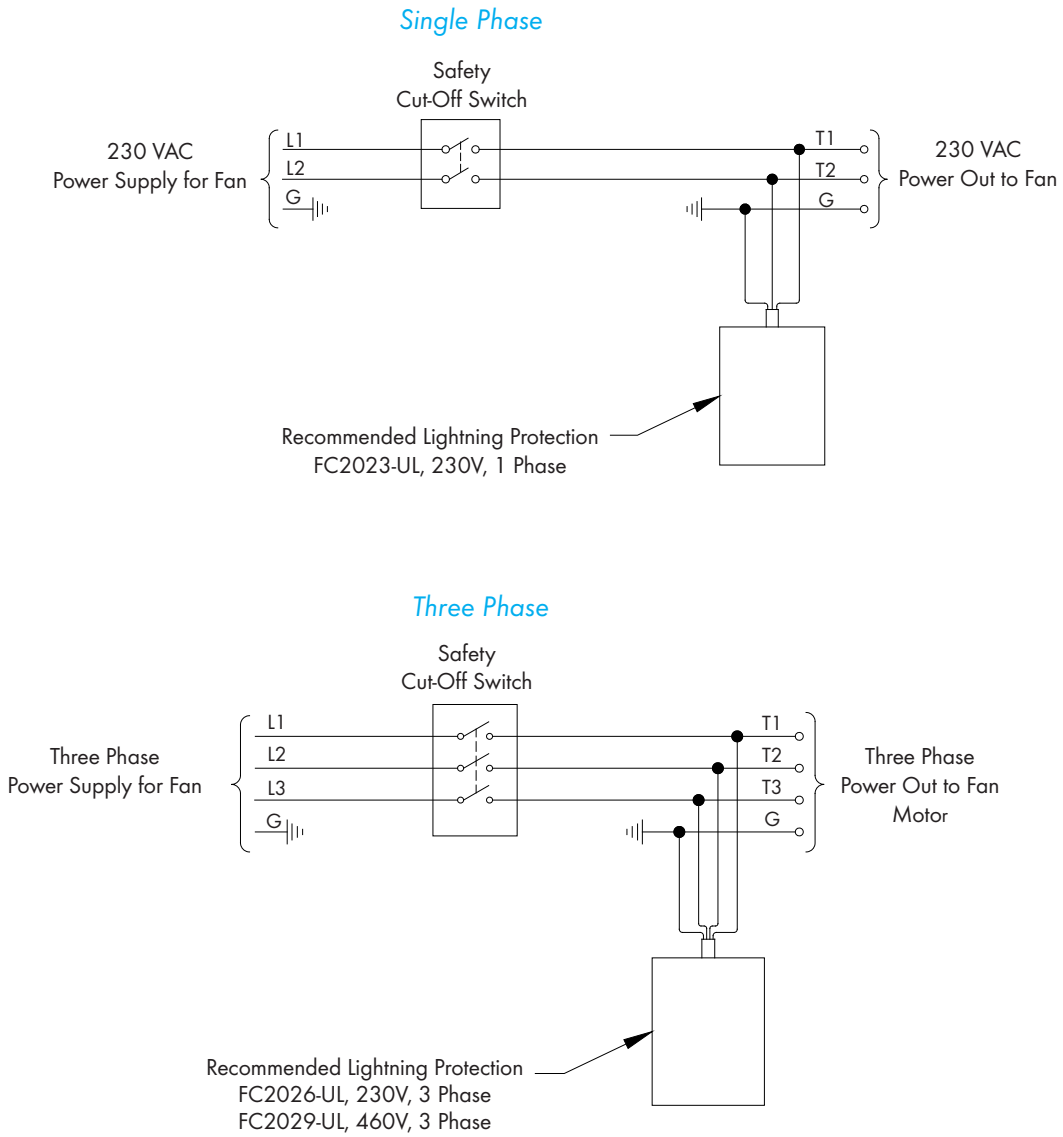


Figure 13C

### 3.3 Recommended Wiring

The Munters Drive fan ships configured for simple ON/OFF operation. When electrical power is applied to the main cable and the 'RUN' Switch is in the 'ON' Position, the fan will start and run at full speed.

See Figure 14A. 'RUN' Switch is defaulted to the 'OFF' position.

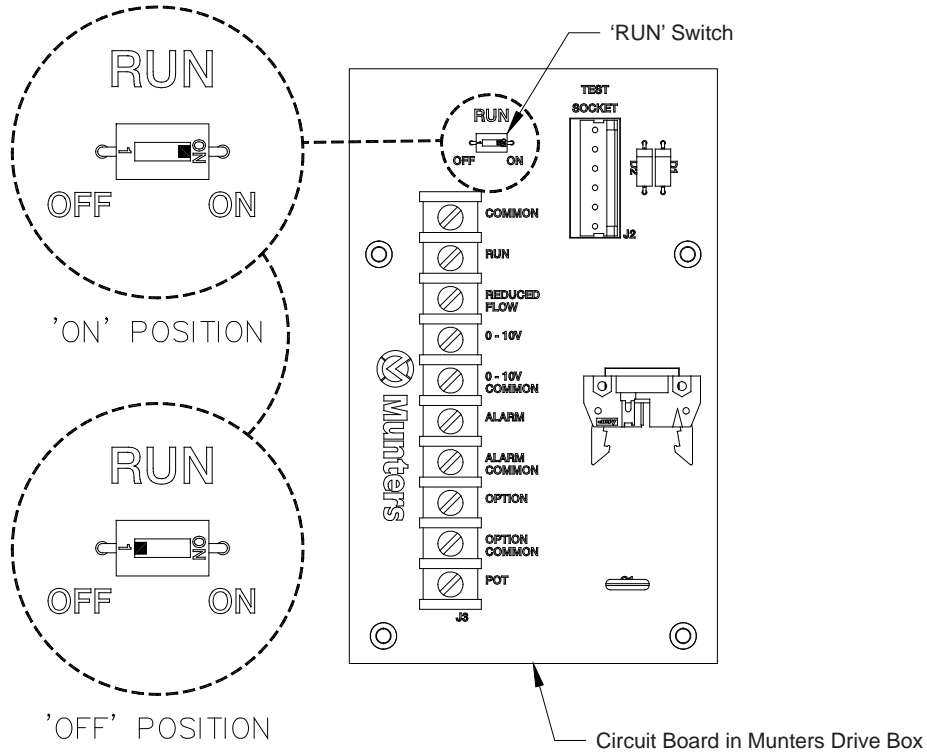


Figure 14A  
Default Operation Full Speed

#### \*\*\*WARNING\*\*\*

The Blue Box electrical enclosure must not be removed from mounting bracket. Removing Blue Box from the mounting bracket will void the warranty. Any water or other damage to the controller will not be covered if the Blue Box is removed.

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

All Low Voltage wire must be shielded cable. i.e. Belden 8770 or equivalent.

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

When making connections to Munters Drive 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 Munters Drive Box wall to prevent water infiltration.

If you are going to run the Munters Drive with a signal from a control, carefully remove 6 screws and the cover and save to reinstall later. Carefully punch the knock-out from the bottom of the Munters Drive Box and install the Watertight connector as shown. See Figure 14B and 14C.

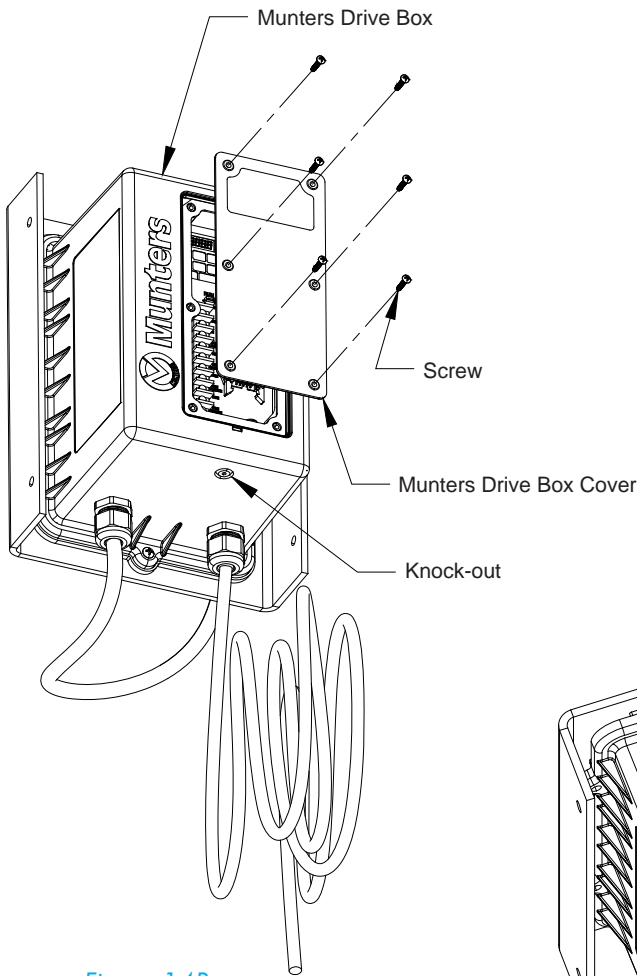


Figure 14B

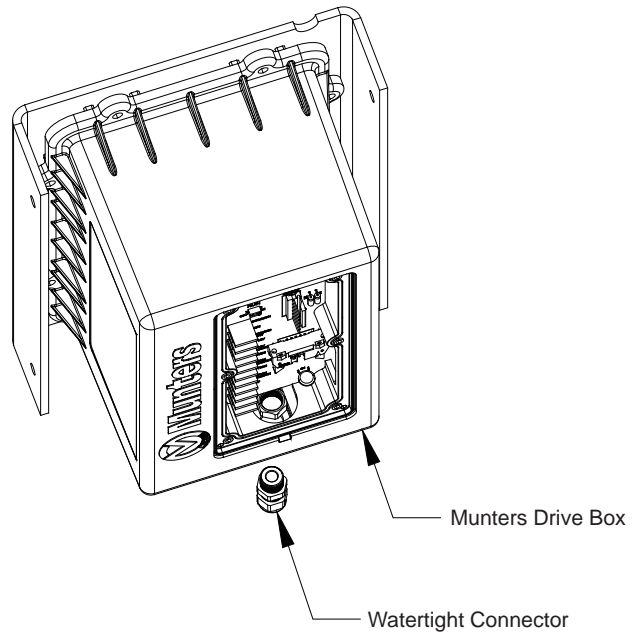


Figure 14C



To operate the Munters Drive On/Off with a control, Slide the 'RUN' switch, located on the circuit board in the Munters Drive Box, to the 'OFF' position. Now wire an 'ON' command from the 'COMMON' terminal to the input of the relay in the control and from the output of the control relay to the 'RUN' terminal in the Munters Drive Box. See Figure 14A and 14D.

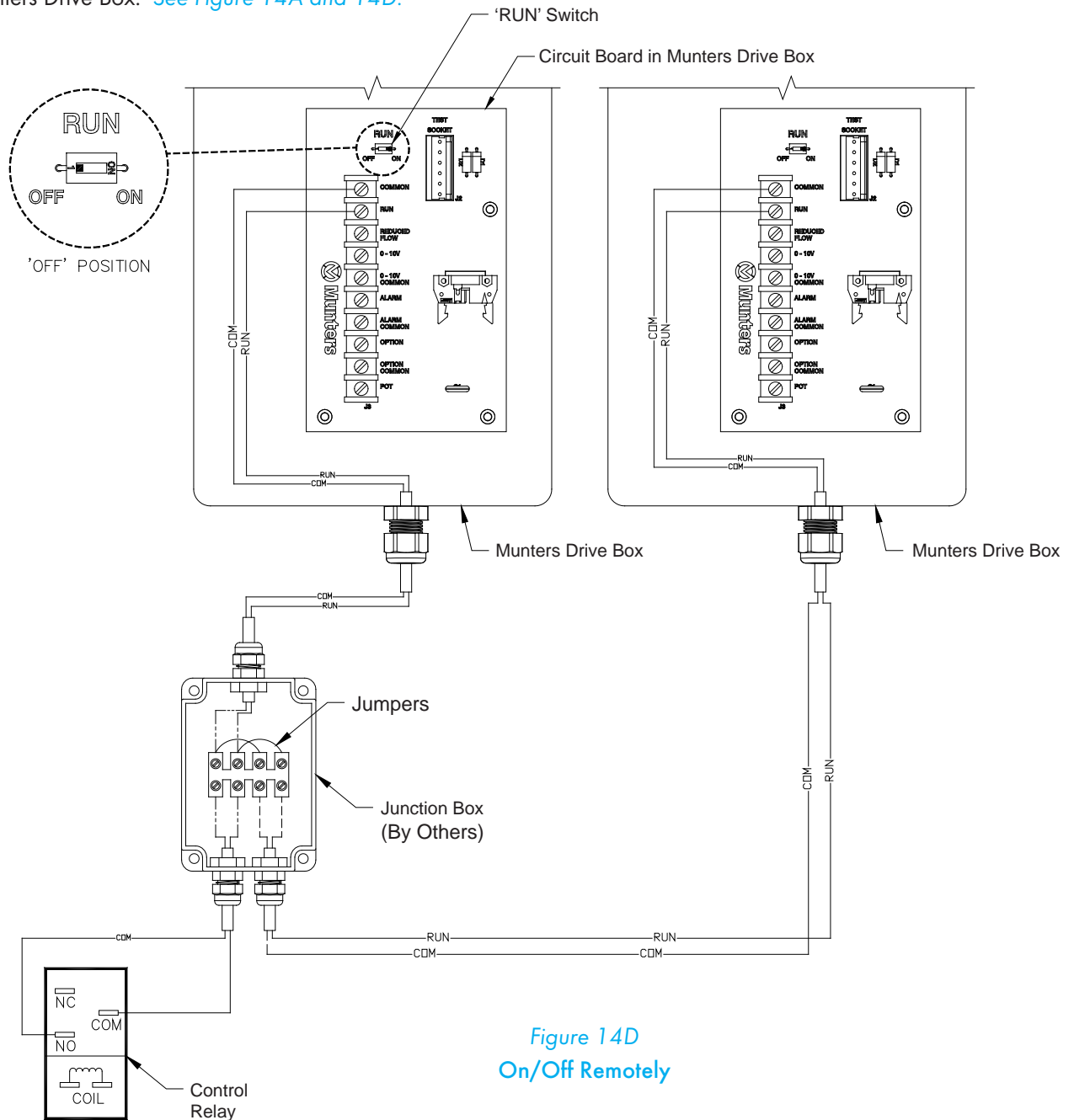


Figure 14D  
On/Off Remotely

**\*\*\*WARNING\*\*\***

The Blue Box electrical enclosure must not be removed from mounting bracket. Removing Blue Box from the mounting bracket will void the warranty. Any water or other damage to the controller will not be covered if the Blue Box is removed.

**\*\*\*NOTE\*\*\***

All Low Voltage wire must be shielded cable. i.e. Belden 8770 or equivalent.

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

To operate the Munters Drive Off/Low/High with a control, slide the 'RUN' switch, located on the circuit board in the Munters Drive Box, to the 'OFF' position. Now wire an 'ON' command from the 'COMMON' terminal to the input of the relay in the control and from the output of the control relay to the 'RUN' terminal in the Munters Drive Box. Then connect the output of the control relay for 'LOW' to the 'REDUCED FLOW' terminal in the Munters Drive Box. See Figure 14E.

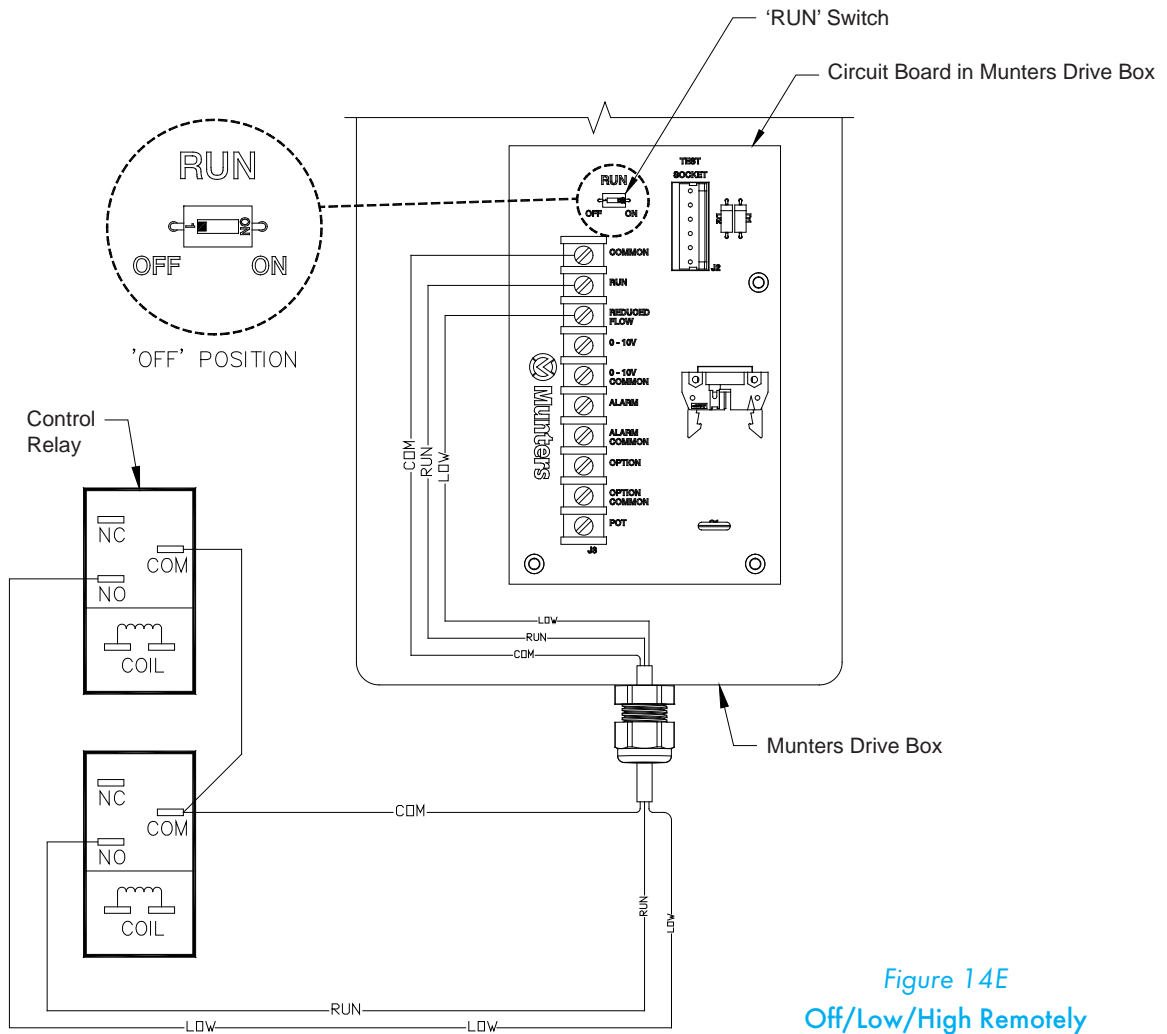


Figure 14E  
Off/Low/High Remotely

**\*\*\*WARNING\*\*\***

The Blue Box electrical enclosure must not be removed from mounting bracket. Removing Blue Box from the mounting bracket will void the warranty. Any water or other damage to the controller will not be covered if the Blue Box is removed.

**\*\*\*NOTE\*\*\***

All Low Voltage wire must be shielded cable. i.e. Belden 8770 or equivalent.

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

To Operate the Munters Drive variable with a 10-0V Signal, slide the 'RUN' switch, located on the circuit board in the Munters Drive Box, to the 'ON' position. Connect wires from the '0-10V IN' and '0-10V COMMON' terminals in the Munters Drive Box to the 10-0V output in the control. See Figure 14F.

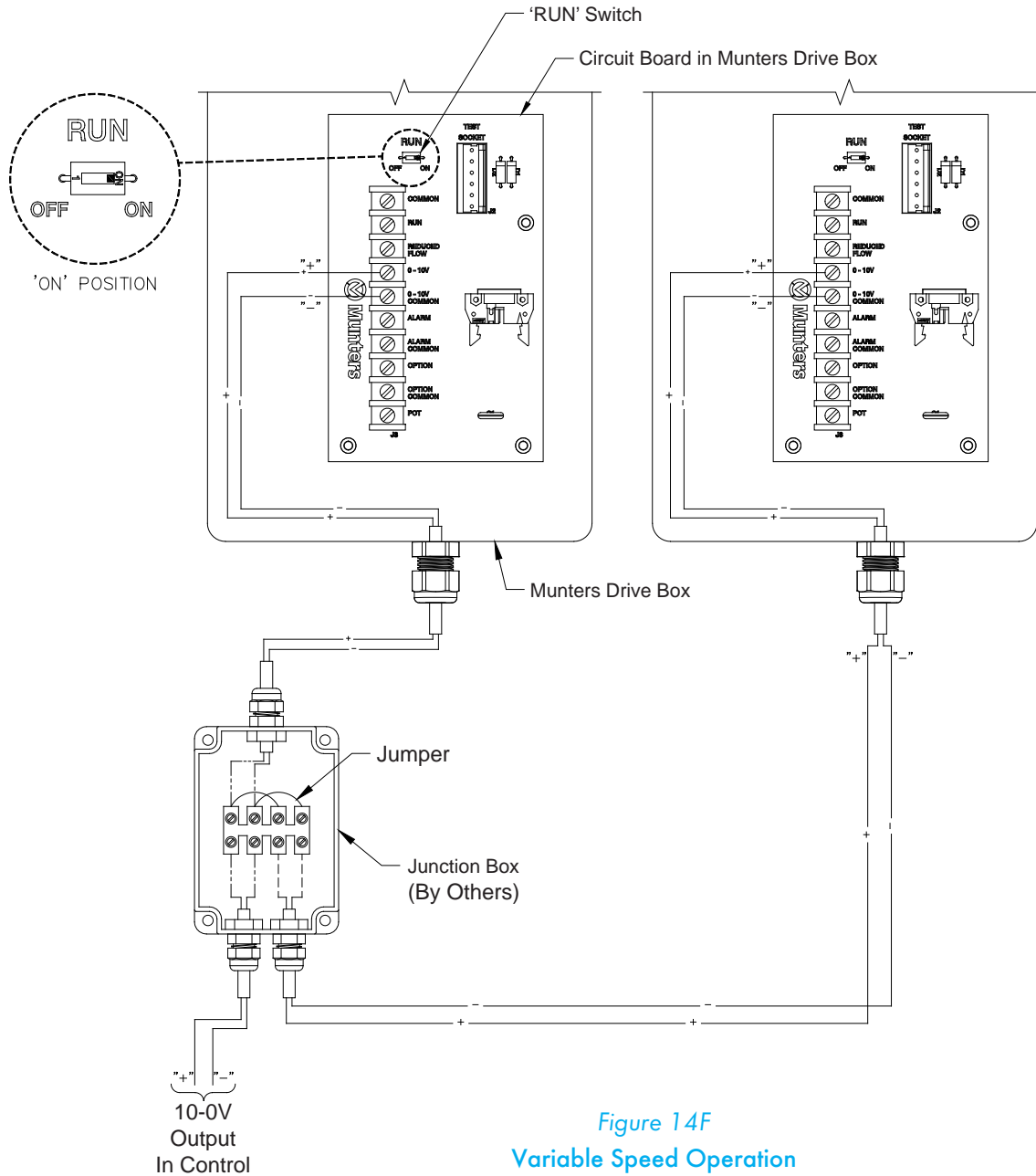


Figure 14F  
Variable Speed Operation

**\*\*\*WARNING\*\*\***

The Blue Box electrical enclosure must not be removed from mounting bracket. Removing Blue Box from the mounting bracket will void the warranty. Any water or other damage to the controller will not be covered if the Blue Box is removed.

**\*\*\*NOTE\*\*\***

All Low Voltage wire must be shielded cable. i.e. Belden 8770 or equivalent.

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

To operate the Munters Drive Off/Variable with a 10-0V Signal, slide the 'RUN' switch, located on the circuit board in the Munters Drive Box, to the 'OFF' position. Now wire an 'ON' command from the 'COMMON' terminal to the input of the relay in the control and from the output of the control relay to the 'RUN' terminal in the Munters Drive Box. Also, connect wires from the '0-10V IN' and '0-10V COMMON' terminals in the Munters Drive Box to the 10-0V output in the control. See Figure 14G.

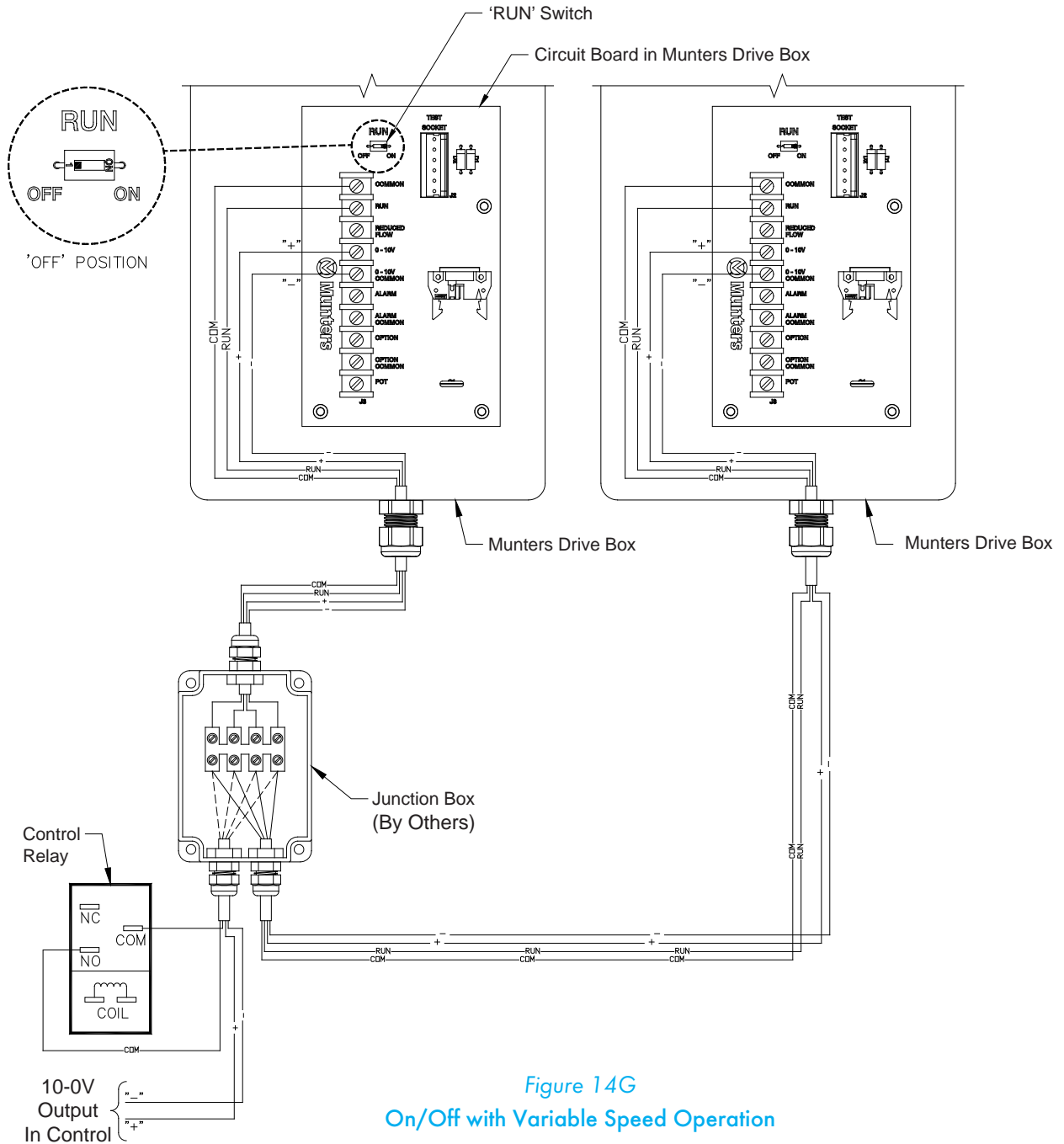
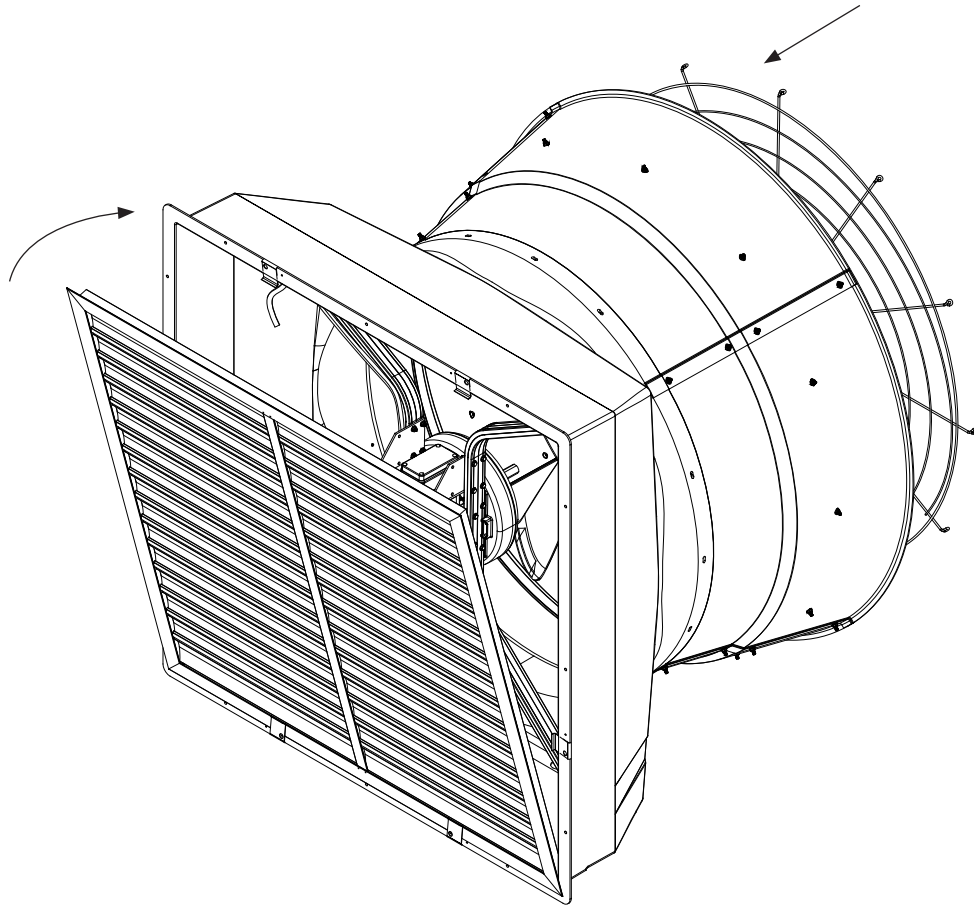


Figure 14G  
On/Off with Variable Speed Operation

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

**Step 14**

Reinstall the shutter in the back of the fan and the guard in the cone. [See Figure 15.](#)



*Figure 15*

Installation is now complete.

# 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. With shutter in place, turn on electrical power and confirm that the fan operates smoothly.
- 2) **TEMPERATURE ADJUSTMENTS:** Set the fan control to the temperature shown on your Munters ventilation system drawing, or to a value which will provide the desired environmental conditions.



## 4.2 Maintenance

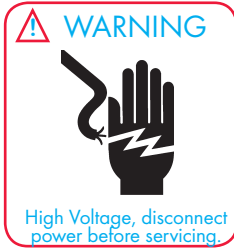
The following inspection and cleaning procedures should be performed monthly:

- 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.
  - **SHUTTER:** Carefully clean dust from shutter 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. 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!**

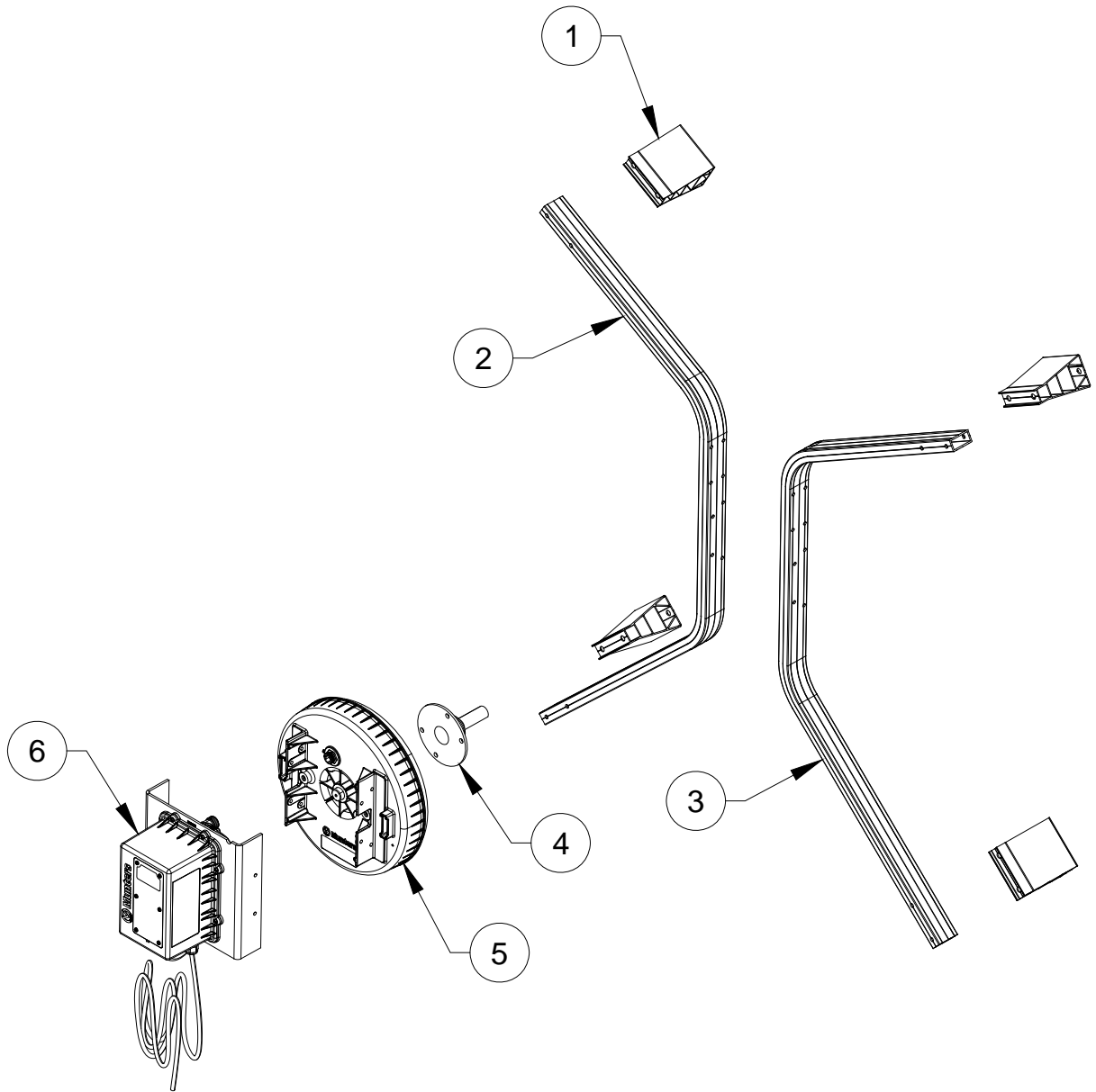
## 5.1 Troubleshooting



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

# Exploded View and Parts List

# 6.



Item	36"RF-VX36xx-Hx	48" RF-VX48xx-Hx	Description	Qty.
1	FH2808	FH2808	Strut, Spacer, Munters Drive, AL	4
2	FH3737	FH3749	Right Tubular Strut, H-Type, Munters Drive, AL	1
3	FH3736	FH3748	Left Tubular Strut, H-type, Munters Drive, AL	1
4	FP2064	FP2064	Hub, Prop Adaptor, 1" Dia. Steel	1
5	Various*	Various*	Motor for Munters Drive, Less Controller	1
6	Various*	Various*	Controller, AT Munters Drive	1

\*Contact Office for replacement part numbers for your fan configuration.



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Munters Drive Retrofit Kit is developed and produced by Munters Corporation, Lansing, Michigan U.S.A. 1-800-227-2376



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