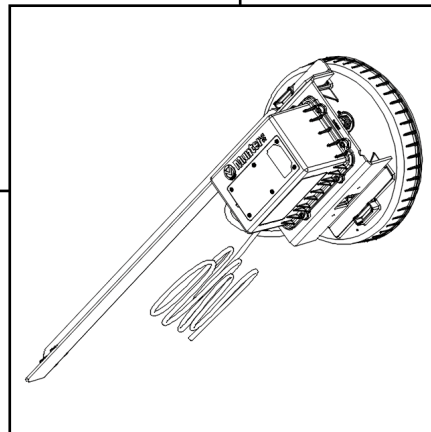
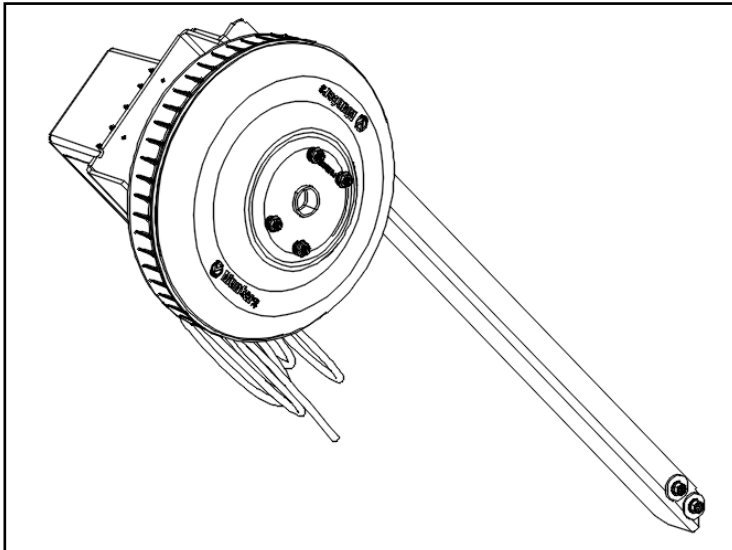


Instruction Manual

Munters Drive* WM54 Retrofit Kit

*Patents Pending



Munters Drive

WM54 Retrofit Kit

Models: RF-WM5421-xx • RF-WM5423-xx • RF-WM5443-xx



Munters Drive WM54 Retrofit Kit

Instructions for Use and Maintenance

Thank You:

Thank you for purchasing a Munters Drive WM54 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.

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.

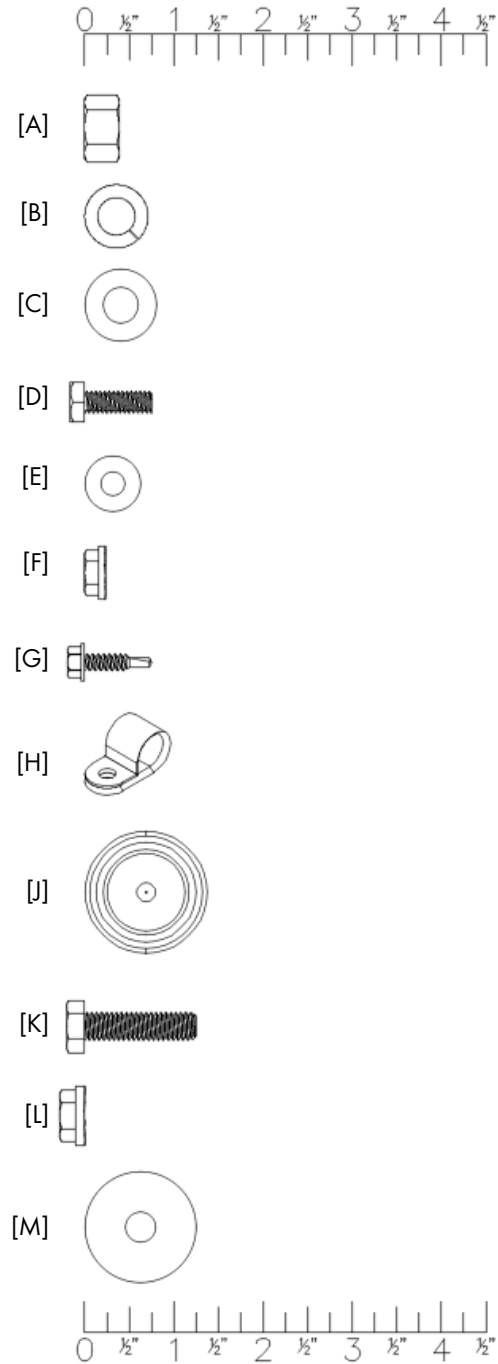
1.1 Parts List

Each Munters Drive Retrofit kit includes:

- 1 - Strut Brace, WM54DK/P, PWDCTD
- 1 - Munters Drive Motor
- 1 - Munters Drive Controller
- 1 - Hardware package as follows:

HP1393 - Hardware Package

ID	Qty.	Cat. No.	Description
[A]	2	KN1850	M10-1.5 x 10mm Hex Nut, ZP
[B]	2	KW3509	M10, Splitlock Washer, ZP
[C]	2	KW3016	7/16" Type-A Wide Flat Washer, ZP
[D]	4	KS1019	1/4"-20 x 1" Hex Head Bolt, SS
[E]	4	KW3002	1/4" Type-A Narrow Flat Washer, SS
[F]	4	KN0702	1/4"-20 Serrated Flange Hex Nut, SS
[G]	4	KS2258	#10-16 x 5/8" HXWSR TEK Screw, SS
[H]	4	KX1018	3/8" Dia. X 1/2"W. Wire Clamp, BLK NY
[J]	1	KX1157	1" Dia. Hole Plug, Black Rubber
[K]	2	KS1007	5/16"-18 x 1.25" Hex Head Bolt, SS
[L]	2	KN0704	5/16"-18 Serrated Flange Hex Nut, SS
[M]	2	KW4908	M8 x 32mm Flat Washer, ZP



2.1 Installation

Step 1

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

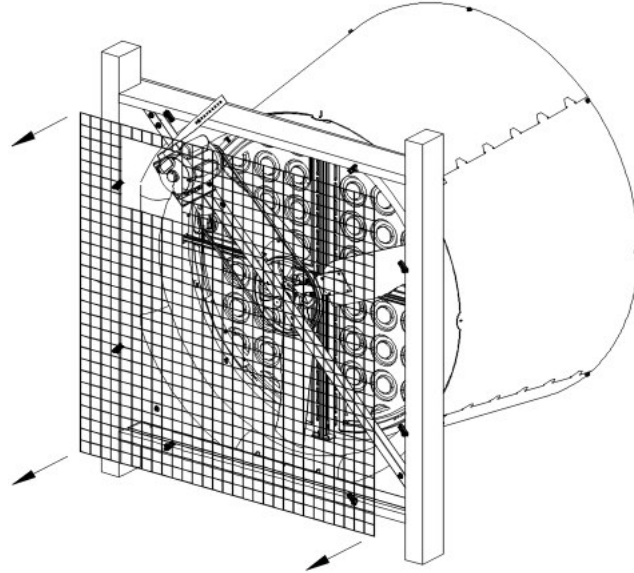


Figure 1

Step 2

Remove Bolts, Washers and Nuts holding the propeller to the hub and carefully set propeller into the cone to be reused. [See Figure 2.](#)

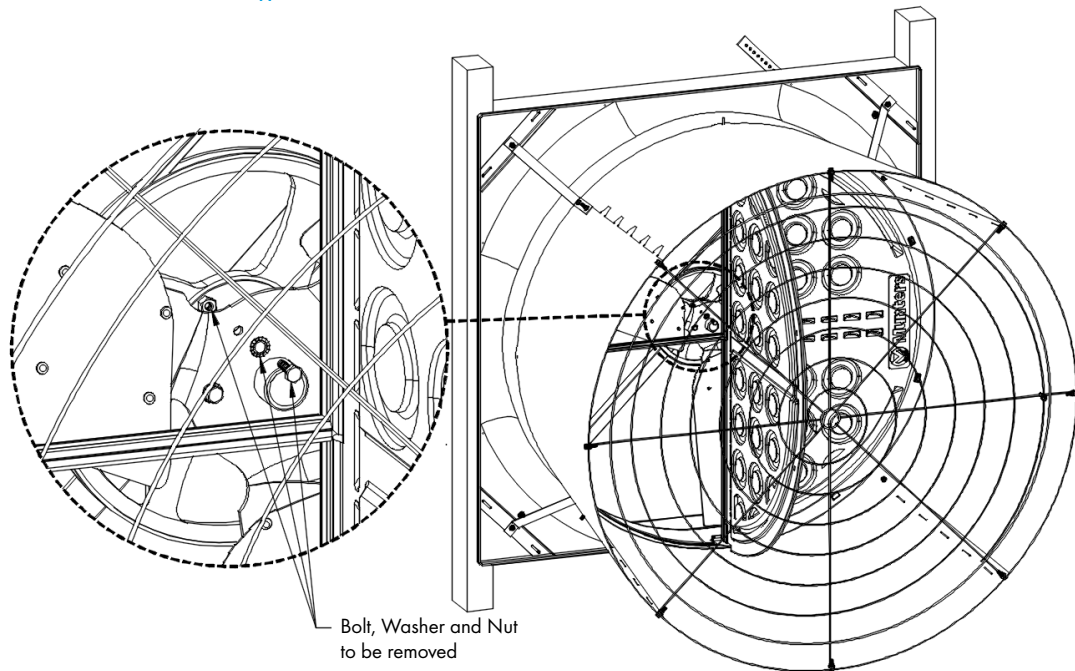


Figure 2

Step 3

Disconnect the electrical power leads from the motor. Remove belt from fan. Remove lag screw from stiffener bracket. Remove the (3) bolts and (6) nuts holding the motor base and tensioner bracket to strut and remove motor with base and tensioner from fan. See Figure 3.

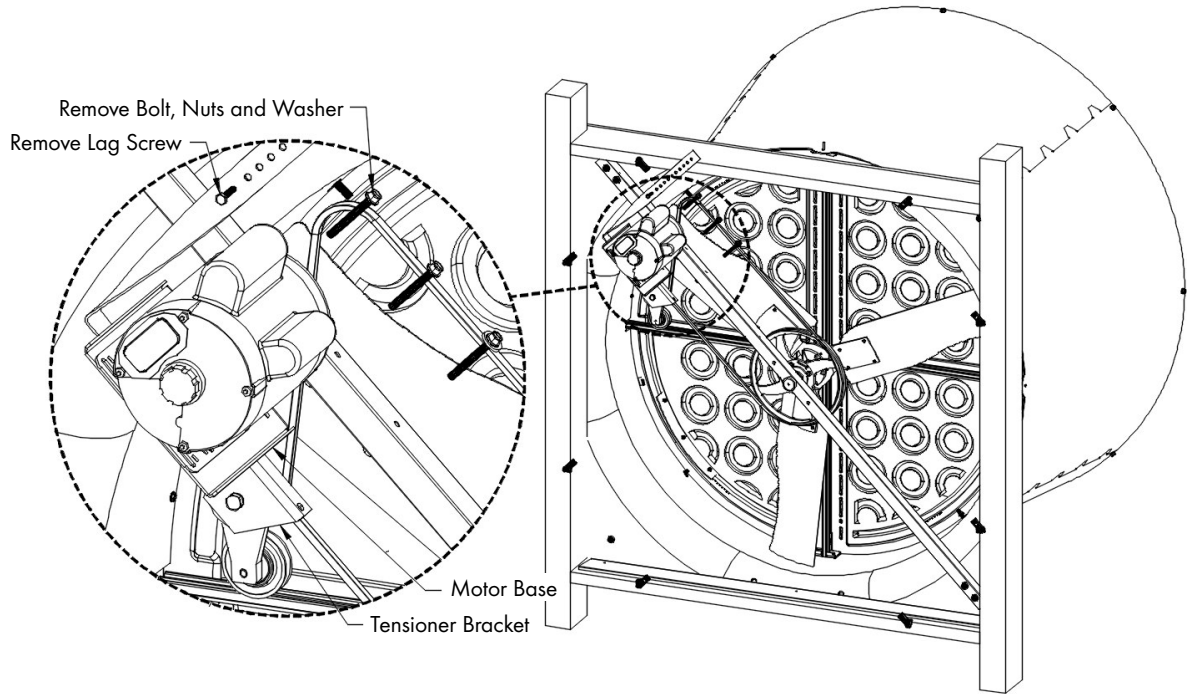


Figure 3

Step 4

Remove Screw and Cap covering the Nut on the back of the Hub Shaft. Remove Nut holding Hub to Strut, then remove Hub/Sheave assembly from fan. See Figure 4.

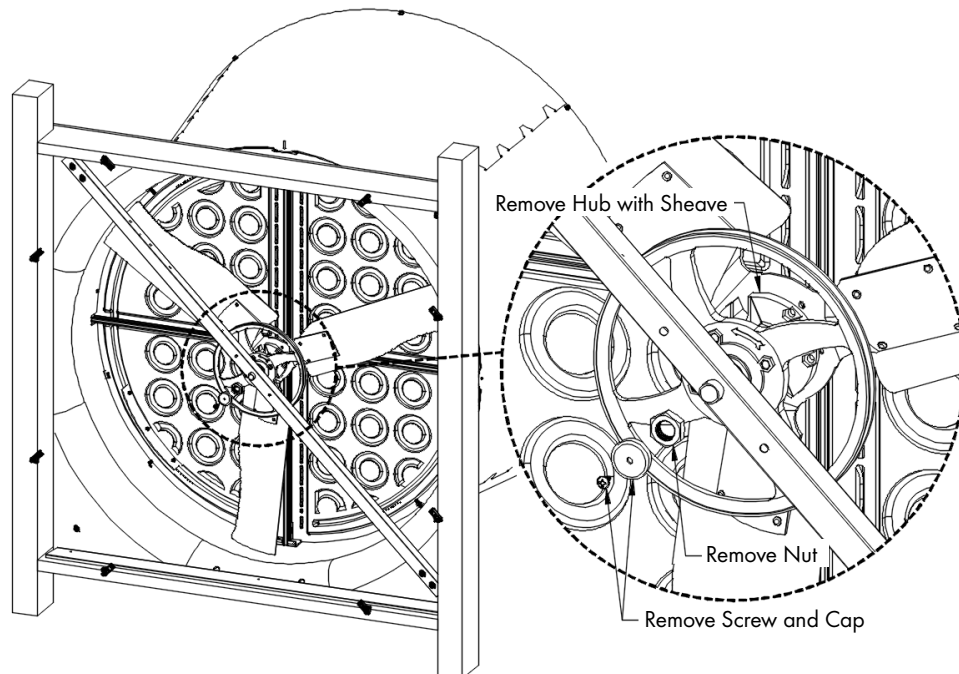


Figure 4

Step 5

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. If the cable from the Controller is connected to the motor then disconnect the cable with the quick connector from the motor. [See Figure 5.](#)

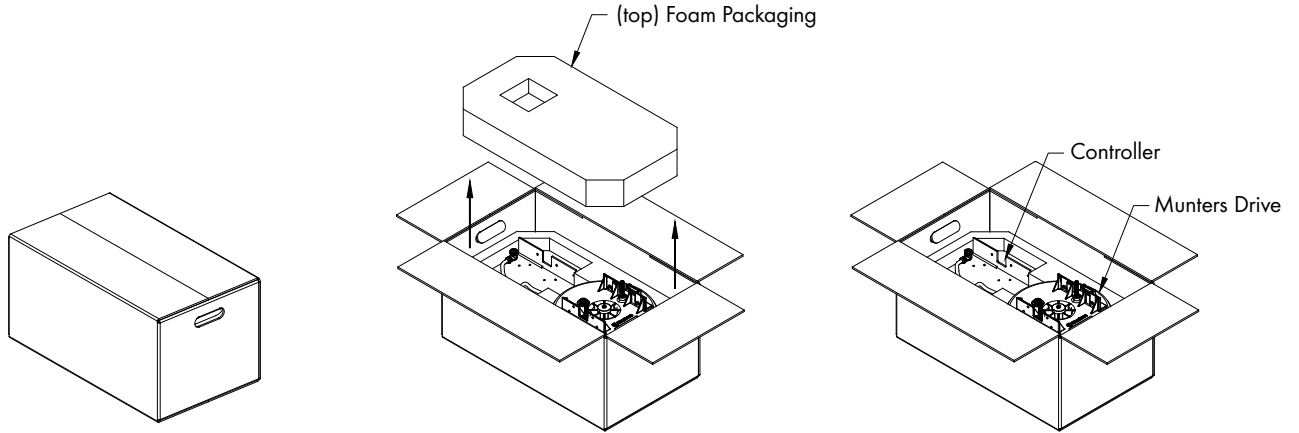


Figure 5

Step 6

The Motor in the foam packaging has pre-installed bolts sticking up. Carefully remove the Motor from the foam packaging and from the outside of the fan slide the motor onto the strut so the bolts go through the 2 small holes at the center of the strut and fasten in place using (2) Washers [C], Splitlock Washers [B] and Nuts [A]. Then install (1) Hole Plug [J] in the large center hole of the strut. [See Figure 6.](#)

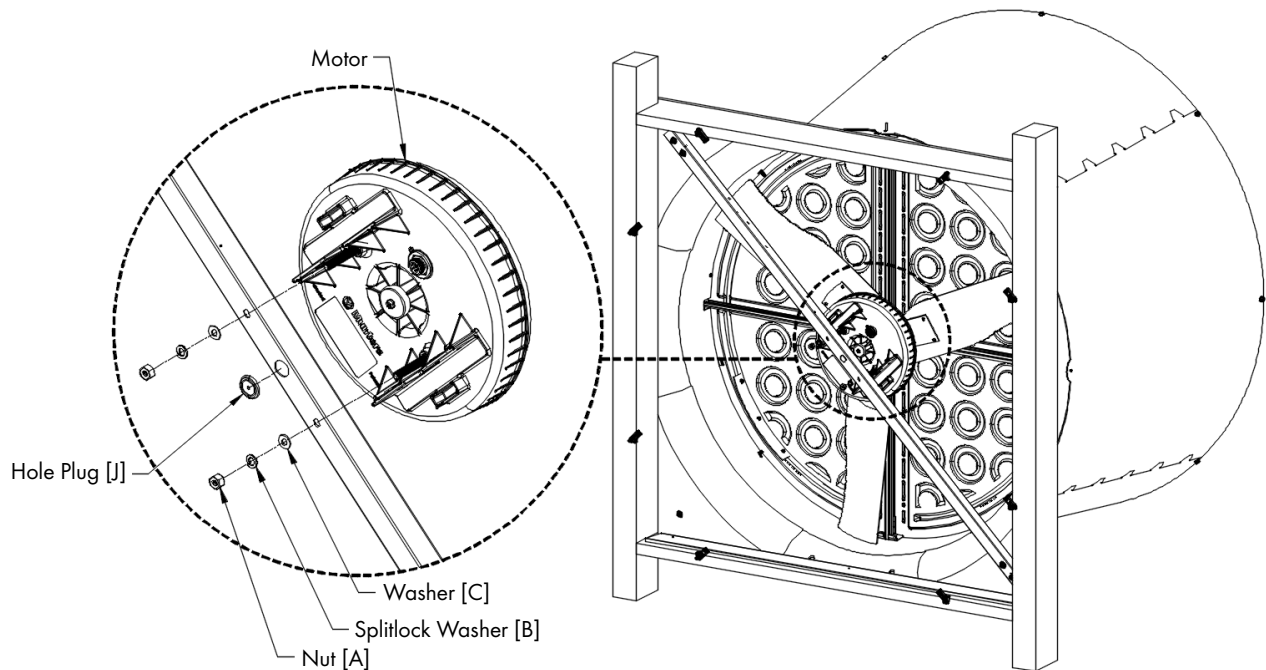


Figure 6

Step 7

Remove (4) Nuts from face of the Munters Drive Motor. Position Propeller onto bolts on Munters Drive Motor and secure with (4) Nuts just removed. Tighten the Nuts to 200 in-lbs. of torque. See Figure 7.

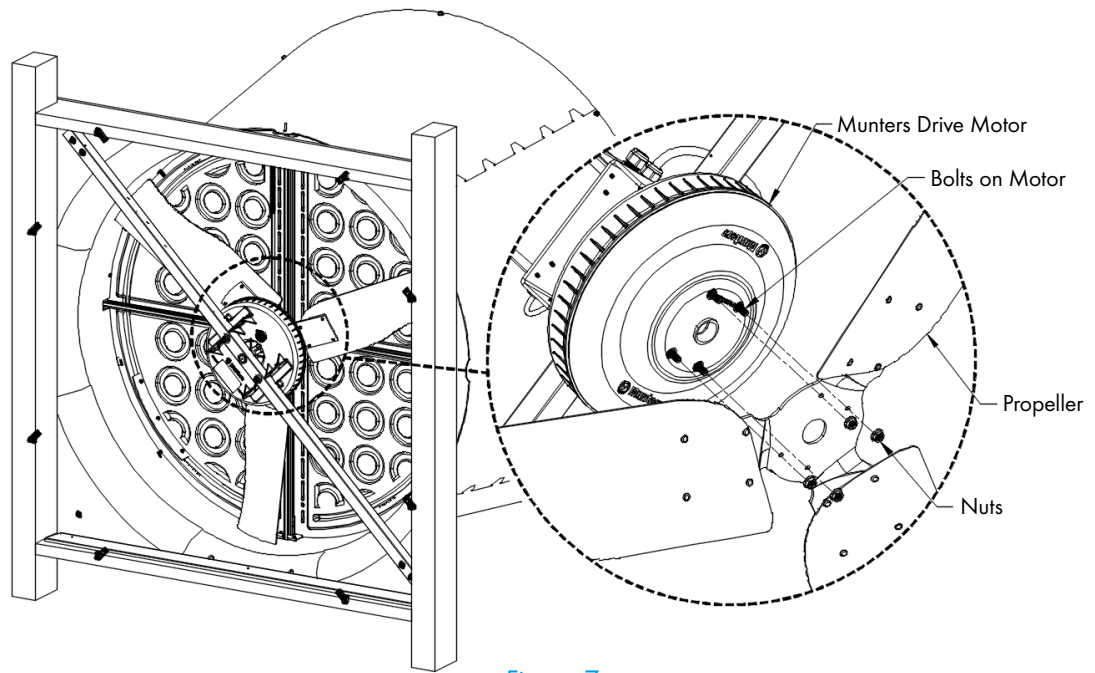


Figure 7

Step 8

Find Strut Brace and remove Controller from foam packaging. Plug the Quick Connect Connector into Motor and position Controller and Strut Brace over Strut, with bottom of box toward bottom of fan. Secure Controller and Strut Brace to Motor using (4) Bolts [D], Washers [E] and Nuts [F]. See Figure 8.

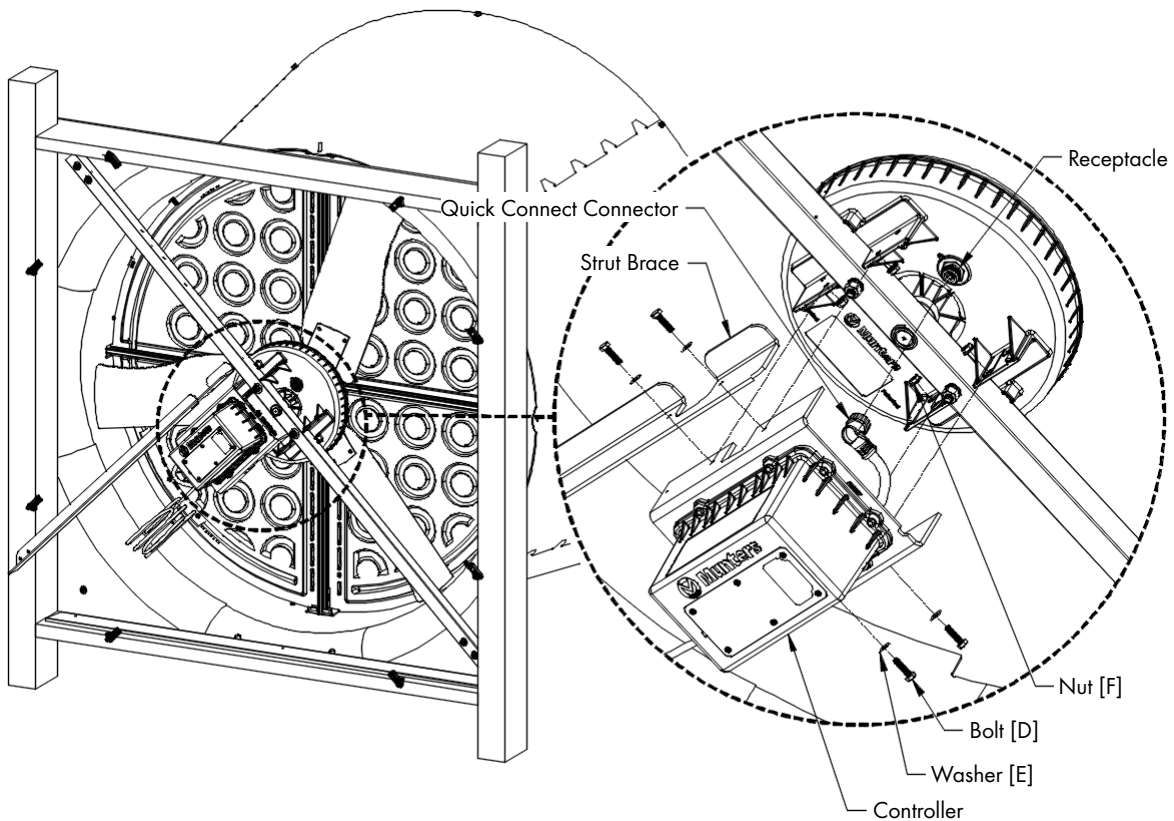


Figure 8

Step 9

Where the bottom of the Strut Brace meets the Orifice Panel, use the 2 holes in the Strut Brace as a guide and drill (2) $\frac{5}{16}$ " holes through the fiberglass Orifice Panel. Secure Strut Brace to Orifice Panel using (2) Bolts [K], Washers [M] and Nuts [L]. See Figure 9.

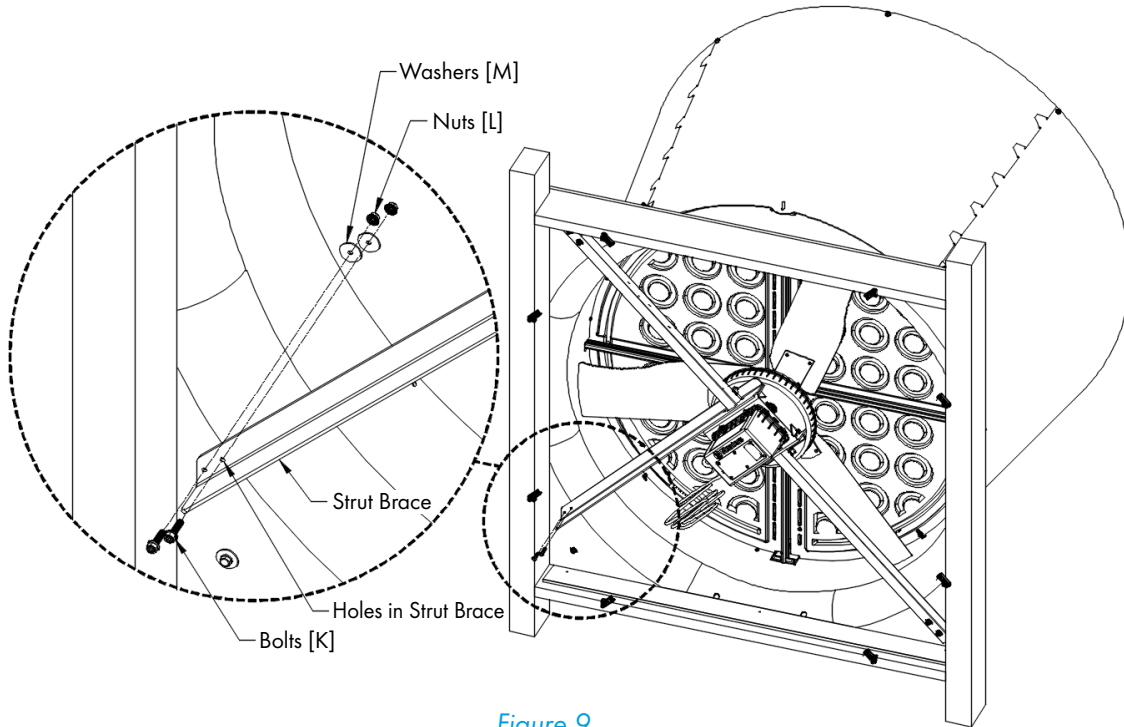


Figure 9

Step 10A

Cut a section of the Inlet Guard out to fit over the motor. When cutting the guard wires make sure to cut them as close to the other wires as possible. Save cut-out section to cover the existing hole. See Figure 10A.

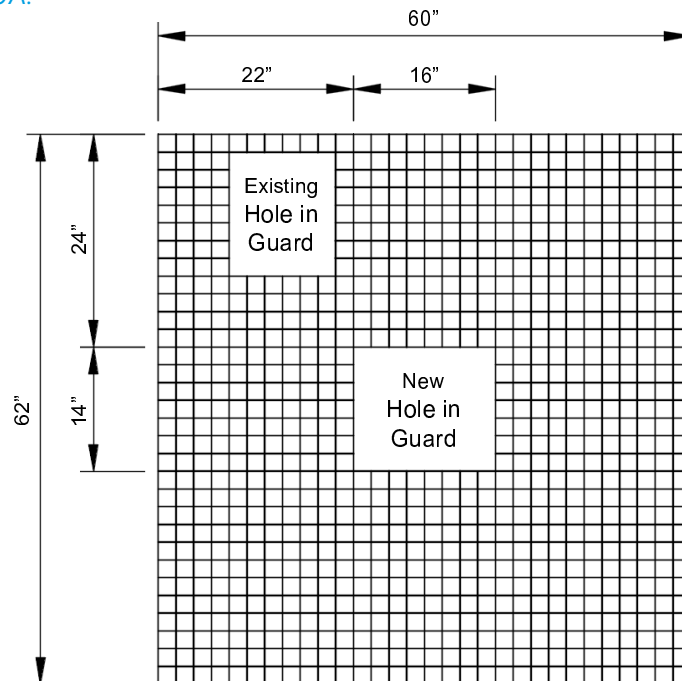


Figure 10A

Step 10B

Position new guard cut-out over the old hole in the guard where the old motor protruded through and fasten it in place using Zip-Ties (not provided). Place guard against framing and fasten guard in place using existing Shutter Clips or J-Nails. See Figure 10B.

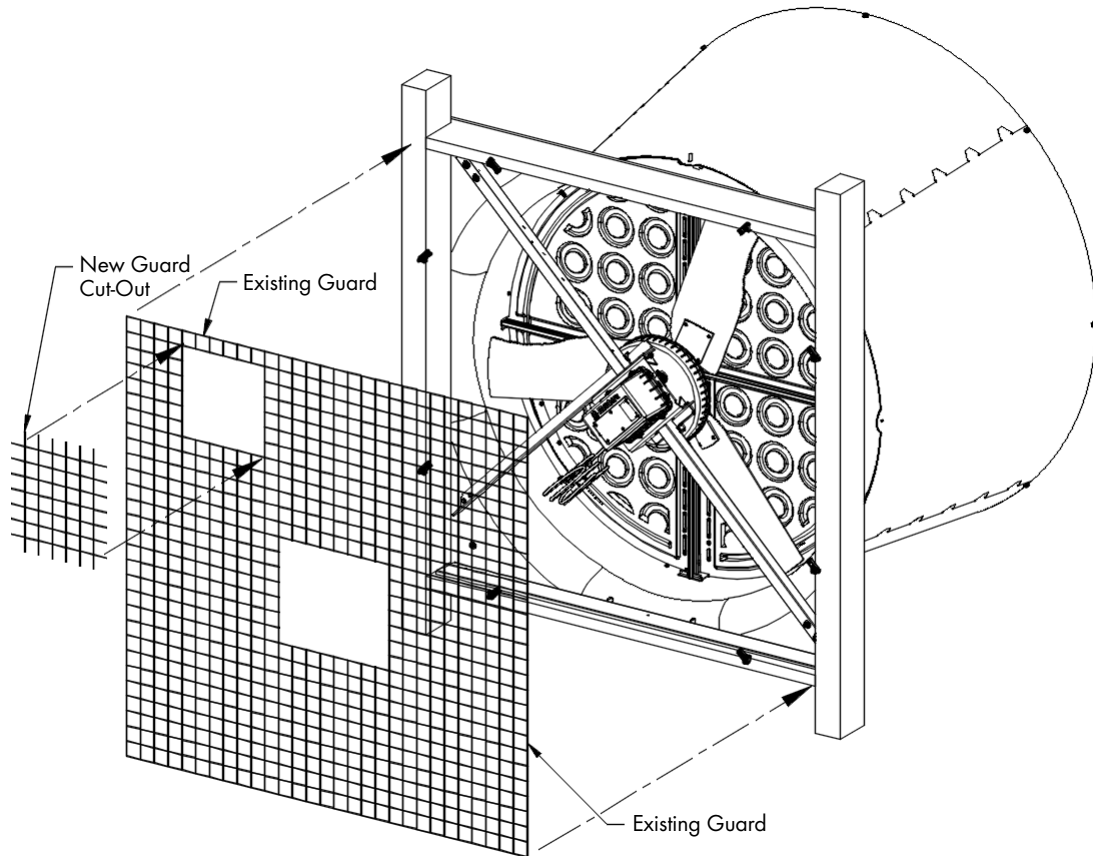


Figure 10B

3.1 Recommended Wire Routing:

The Munters Drive Kit comes with a coil of electrical cable that is pre-wired to controller. Find the end of the cable and route the cable up the strut and out of the fan. Create a drip loop in the bottom of the cable and then fasten it to the strut using (4) Wire Clamps [H] and TEK Screws [G]. Attach the new cable to the power supply for the fan. [See Figure 11A and 11B.](#) [Continue on next page](#)

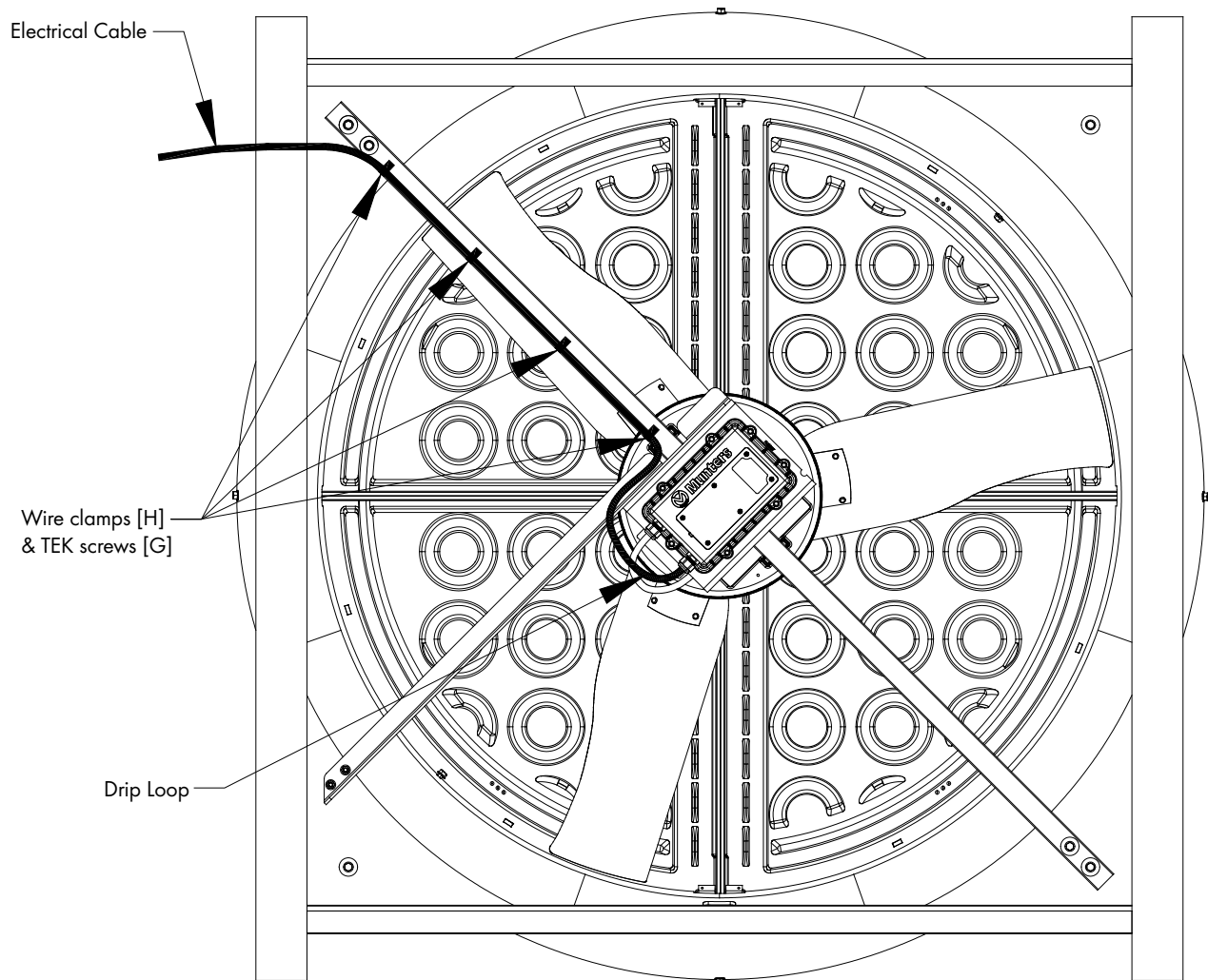


Figure 11A

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



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 environmental control to be used.

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 11B and 11C.

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 11B and 11C.

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

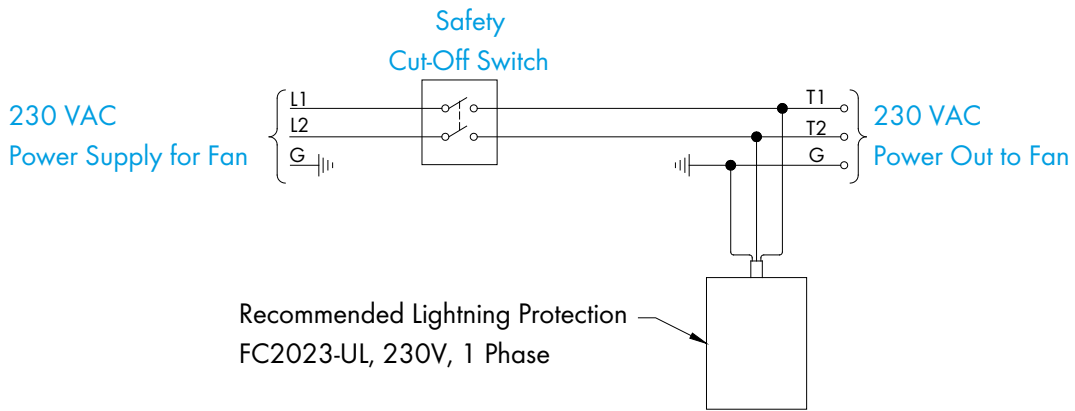


Figure 11B
Single Phase

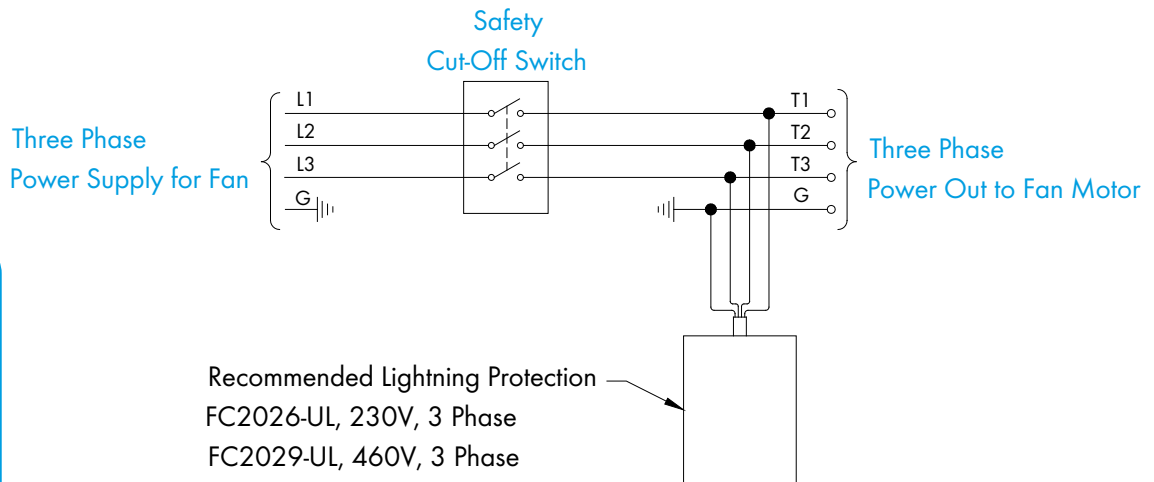


Figure 11C
Three Phase

KEY:

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

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 12A.

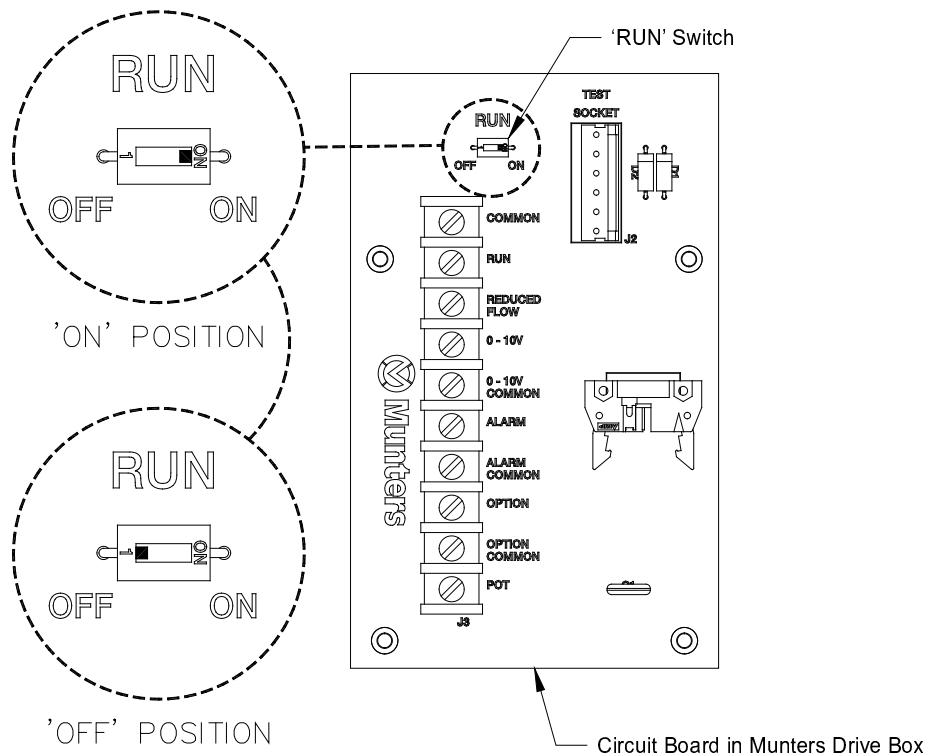


Figure 12A
Default Operation Full Speed

*****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.

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 12B and 12C.

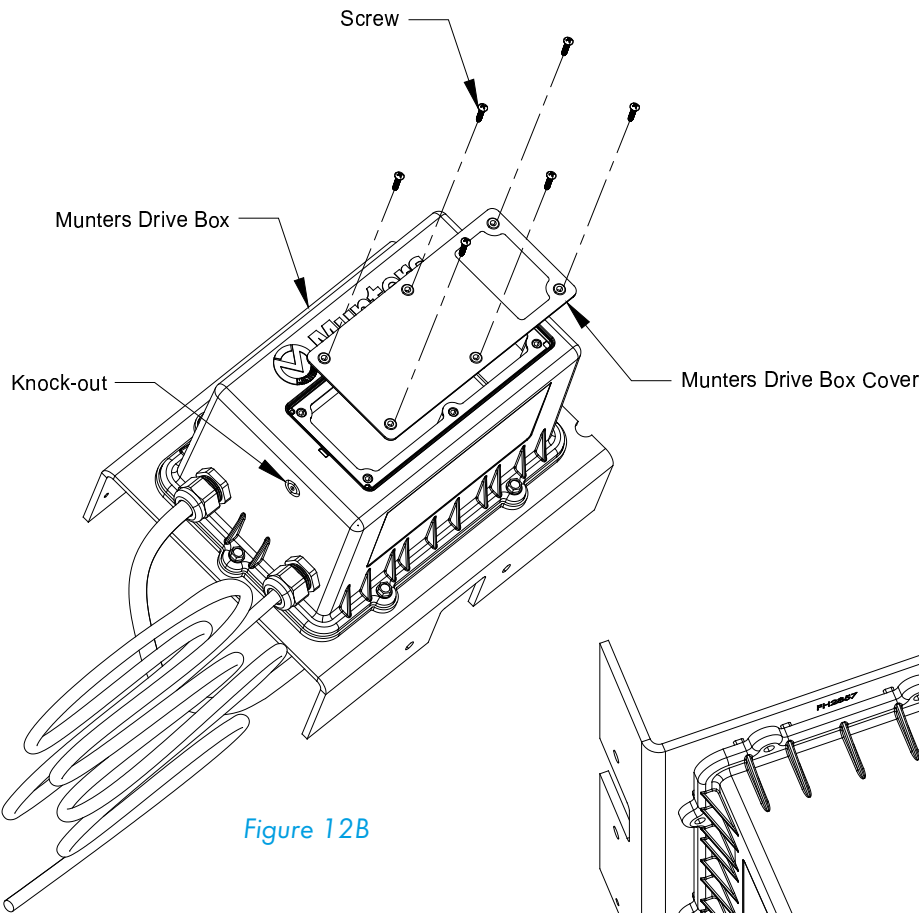


Figure 12B

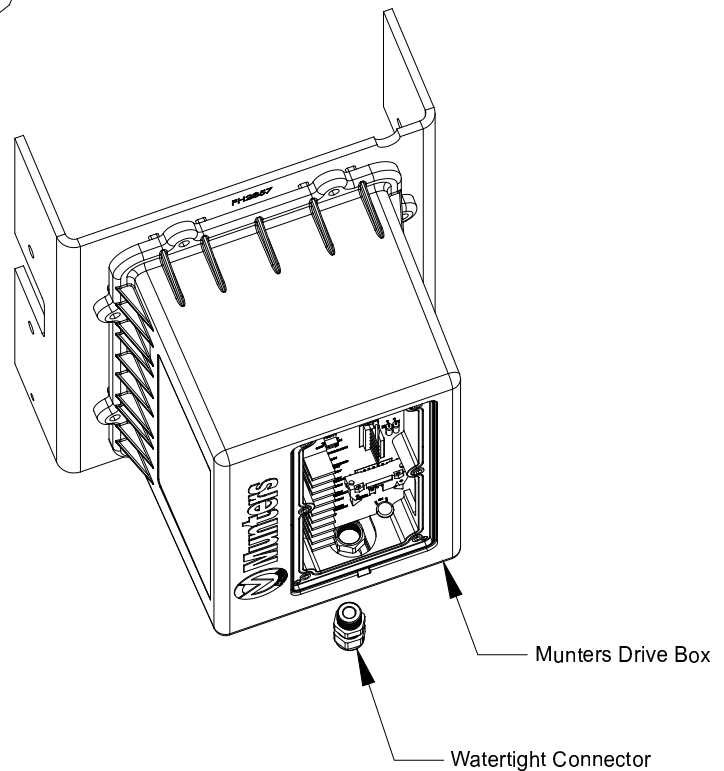


Figure 12C

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 relay in the control and from the output of the control relay to the 'RUN' terminal in the Munters Drive Box. See Figure 12A and 12D.

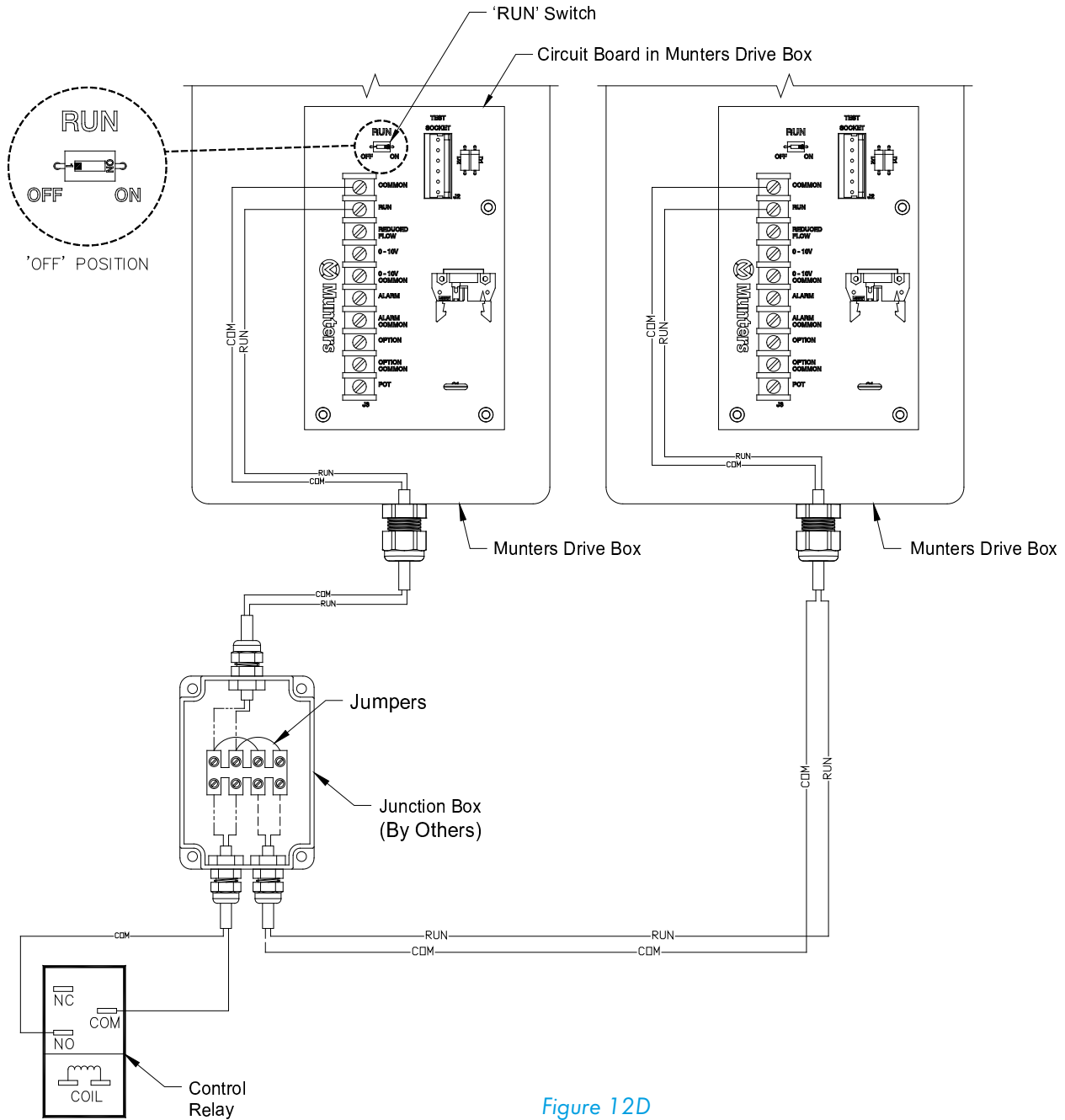


Figure 12D
On/Off Remotely

*****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.

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 relay in the control and from the output of the 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 12E.

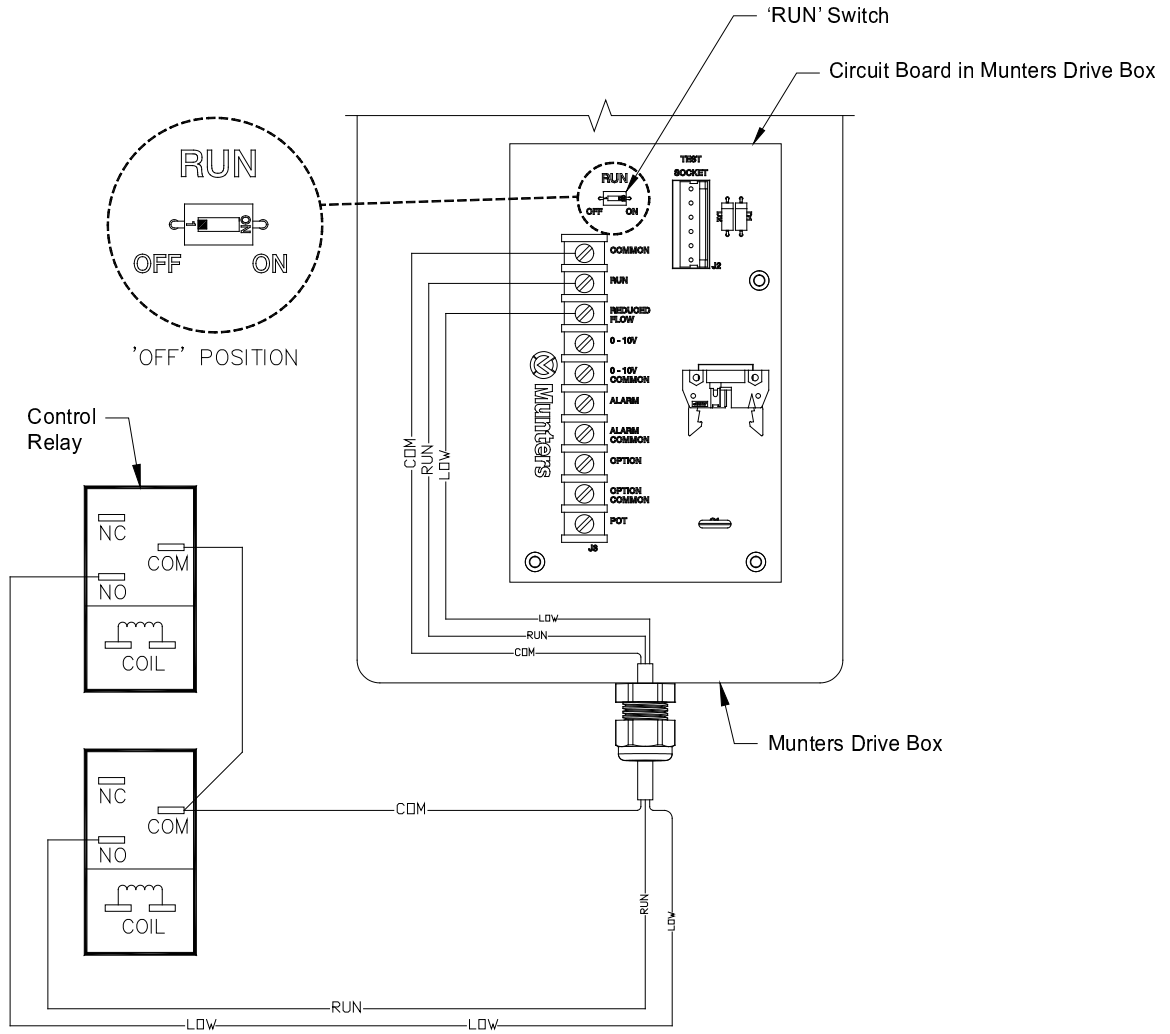


Figure 12E
Off/Low/High Remotely

*****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.

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 12F.

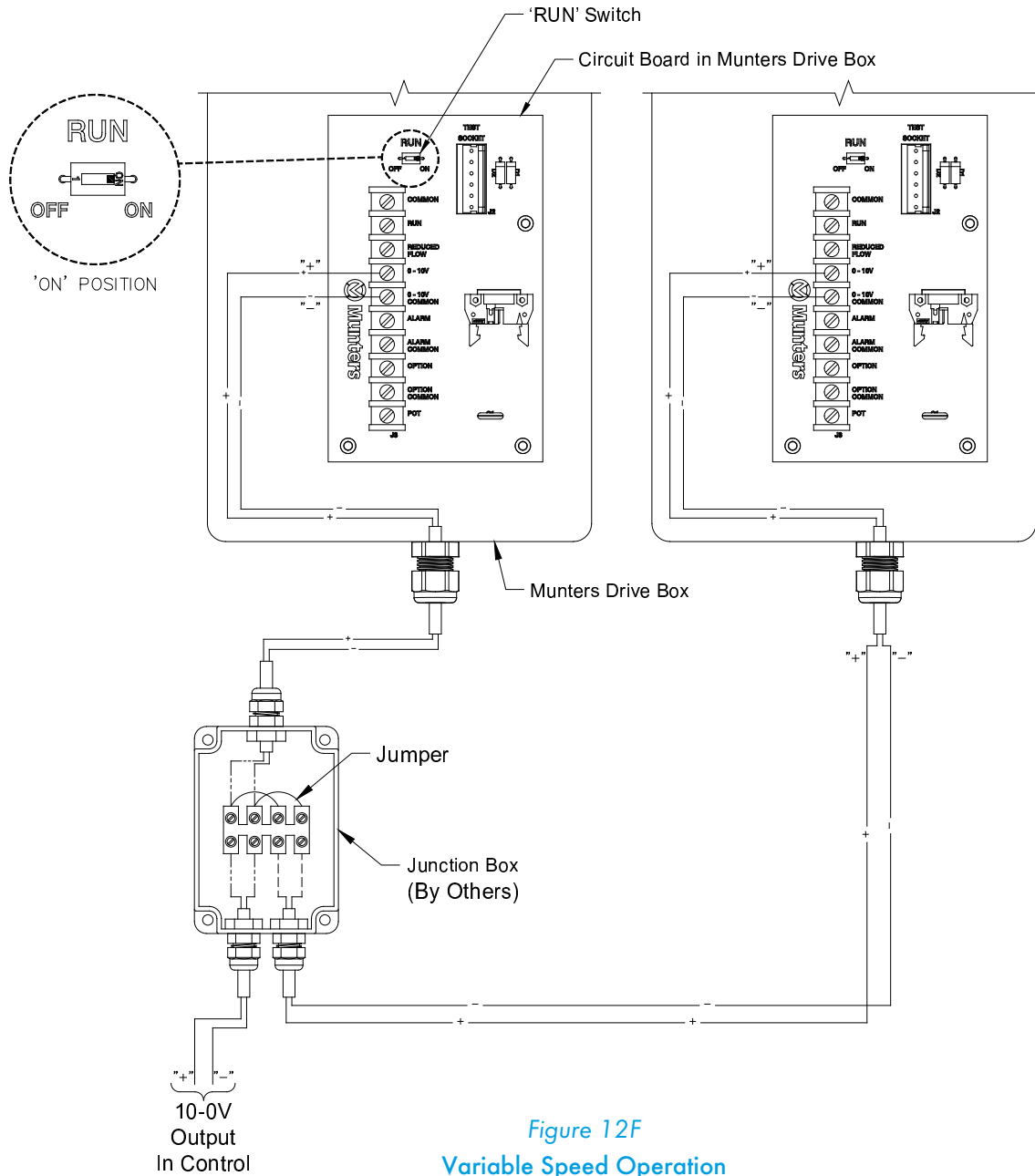


Figure 12F
Variable Speed Operation

*****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.

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 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 12G.

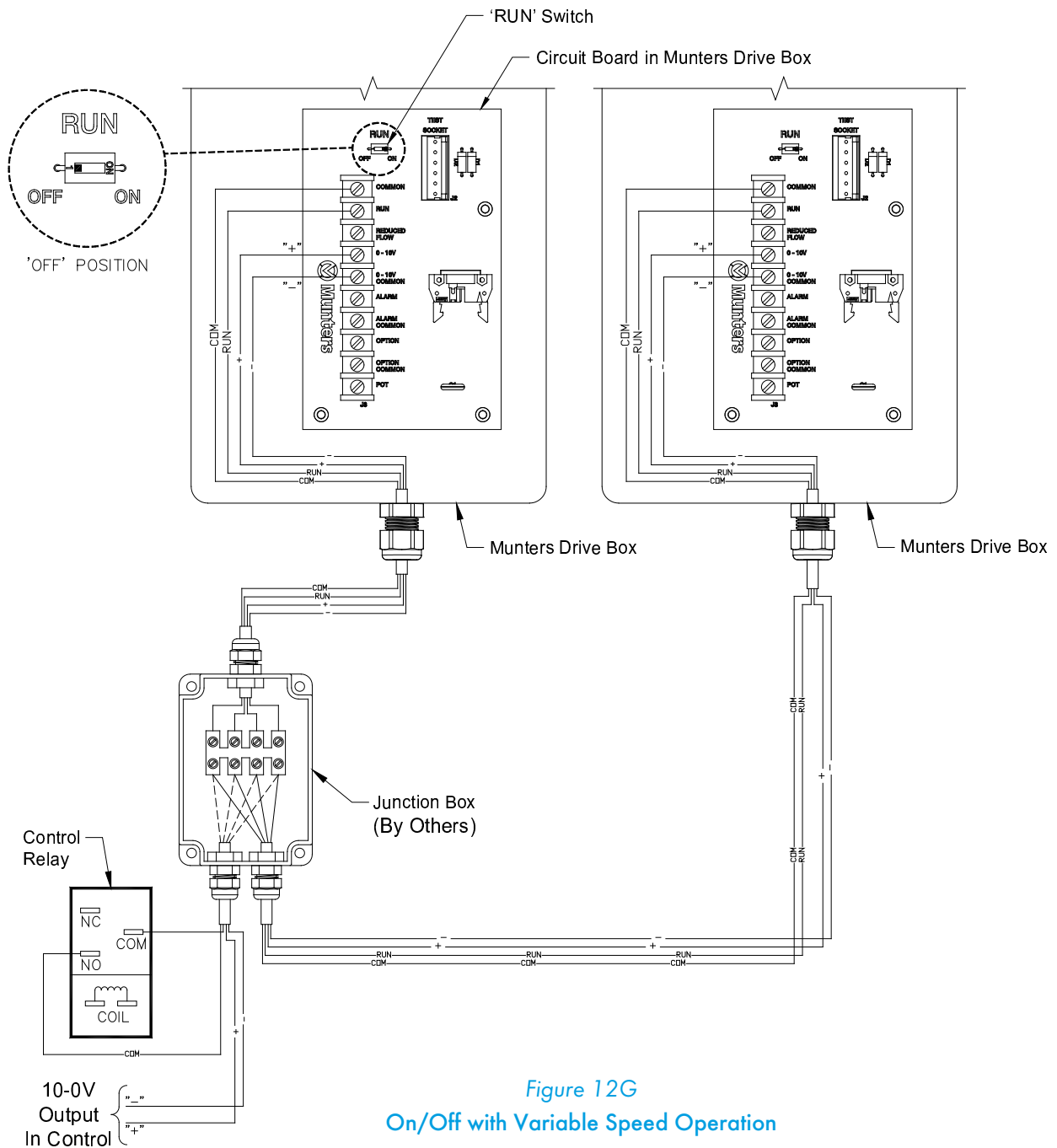


Figure 12G
On/Off with Variable Speed Operation

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

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 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!**



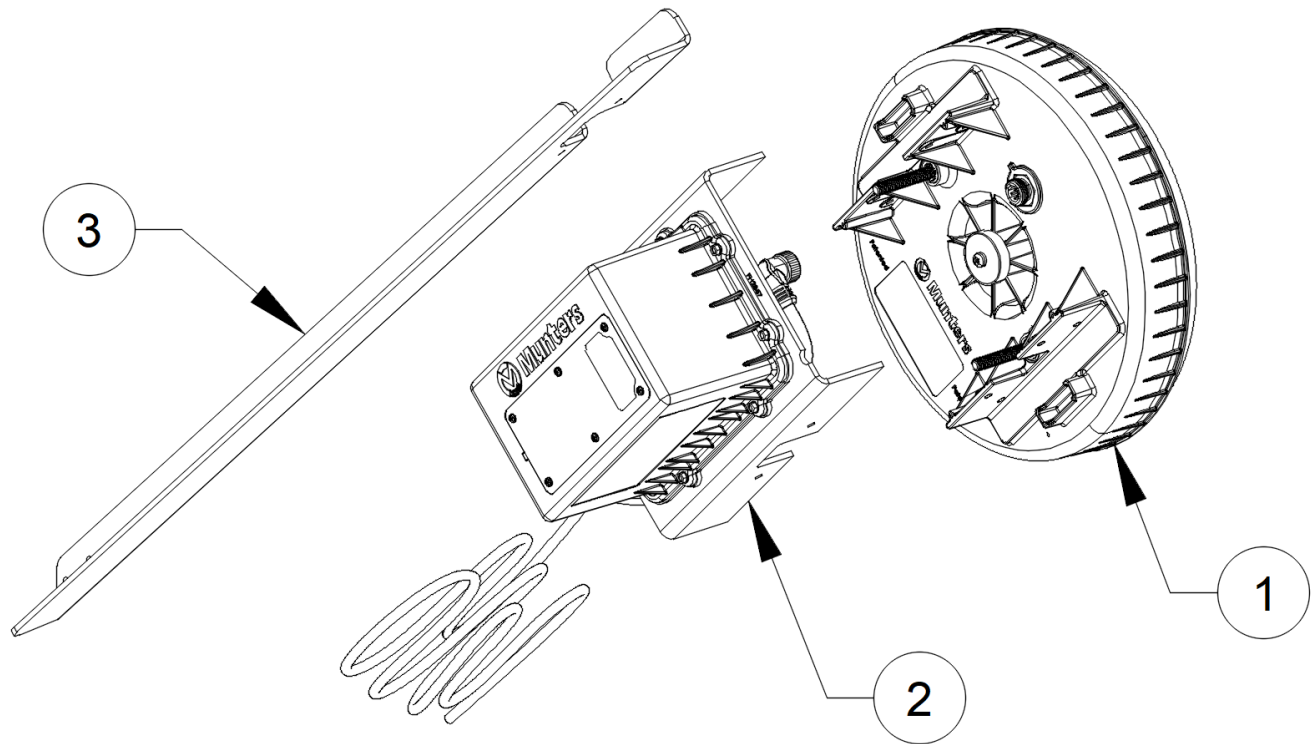
5.1 Troubleshooting



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. environmental control, 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, look through clear window in drive cover to check what drive display reads. Contact Munters Product Support If fan tries to start but stops, look through clear window in drive 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

Exploded View and Parts List

6.



Item	Catalog No.		Part Name/Description	
	Munters Drive			
1	Various*		Motor for Munters Drive, less controller	1
2	Various*		Controller, WM Munters Drive	1
2	FH1990		Strut Brace, 39.19"L, PWDCTD	1

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

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



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