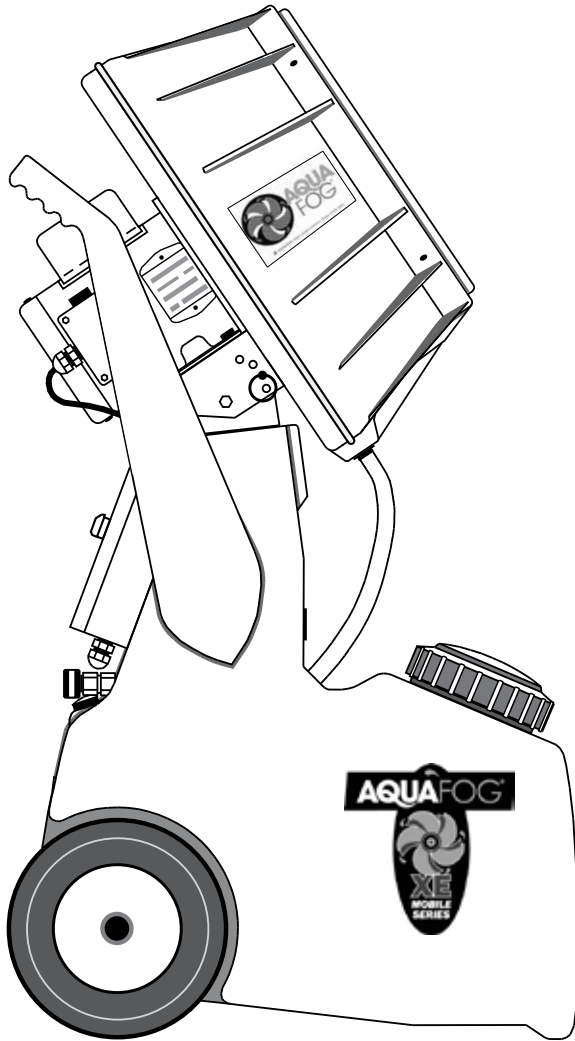




XE MOBILE ATOMIZER

USER'S MANUAL AND OPERATING INSTRUCTIONS



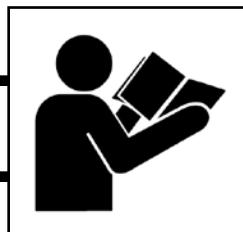
Rear-Feed

XE ORSM MODEL

- 115V 60Hz 1Ph
- 230V 50Hz 1Ph

UL and CSA Electrical Components

OPERATOR'S MANUAL



NOTICE

Read & Understand
Retain for Future Reference

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DESCRIPTION


Aquafof ORSM mobile units are intended to condition large volumes of air by atomizing chemical and water mixtures in air temperatures between 31° and 145°F. Any other use of these units will void the warranty and the manufacturer will not be responsible for problems or damages resulting from misuse.

Notes


SAFETY GUIDELINES

This manual contains very important information. This information will help ensure SAFETY and PREVENT EQUIPMENT PROBLEMS. Use these symbols to understand safety guidelines.

 **DANGER** DANGER INDICATES AN IMMEDIATELY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.


 **WARNING** WARNING INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

 **CAUTION** CAUTION INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY.

 **NOTICE** NOTICE INDICATES IMPORTANT INFORMATION, THAT IF NOT FOLLOWED, MAY CAUSE DAMAGE TO EQUIPMENT.

GENERAL SAFETY

Since the mobile ORSM uses high-speed components to atomize liquids, the following safety precautions must be observed at all times:

1. Read all manuals included with this product. Be familiar with the product and controls. 
2. The ORSM is intended to be used on level ground. Test for stability before operation.
3. Always operate ORSM with its safety guards and housing securely attached.
4. Follow United States Environmental Protection Agency (EPA) guidelines and regulations when fogging pesticide or chemical solutions.
5. Follow all local electrical and safety codes as well as the United States National Electrical Codes (NEC) and Occupational Safety and Health Act (OSHA).
6. Only persons well acquainted with these rules of safe operation should be allowed to use the atomizer.
7. Keep visitors away and NEVER allow children in the work area.
8. Use of an extension cord for the ORSM is not recommended. If necessary, refer to the A.W.G chart in the following section or consult a certified electrician.
9. Before each use, inspect blade assembly and electrical components for signs of damage, deterioration, weakness or leakage. Repair or replace defective items before using.
10. Check all fasteners at frequent intervals for proper tightness.

WARNING

MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS CAN CAUSE ELECTRICAL ARCS THAT WILL IGNITE FLAMMABLE LIQUID OR GAS. NEVER OPERATE OR REPAIR IN OR NEAR FLAMMABLE LIQUID OR GAS. NEVER STORE FLAMMABLE LIQUIDS OR GASES IN THE VICINITY OF THE ATOMIZER.

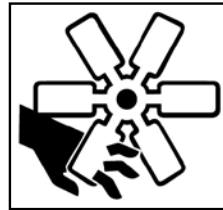


DANGER

HIGH-SPEED ROTATION

DANGER

KEEP SAFETY GUARDS ATTACHED AND IN GOOD WORKING CONDITION



A motionless atomizer may appear safe, but its blade could suddenly begin high-speed rotation without warning as a result of control programming.

When the ORSM is automated by controls, warning signs should be posted near the high-speed equipment.

Disconnect and lock out power source to inspect or service the unit.

WARNING


NEVER OPERATE UNIT WITHOUT THE HOUSING INSTALLED.

11. Keep fingers away from a running unit; fast moving and hot parts will cause injury and/or burns.
12. If the equipment starts to vibrate abnormally, STOP the motor and check immediately for the cause. Vibration is generally an indication of trouble.

Fogging Precautions

DANGER

POTENTIALLY HAZARDOUS CHEMICAL VAPORS

1. Avoid exposure to hazardous chemicals. Wear a respirator and protective clothing: goggles, gloves, long sleeves and pants, etc. 
2. Read and understand all directions and safety precautions before operating ORSM. Follow all E.P.A. guidelines for chemical/pesticide use.
3. **NO** humans or animals should be in the area during chemical/pesticide application. SERIOUS INJURY OR DEATH COULD OCCUR!
4. Follow chemical manufacturer's instructions regarding length of restricted entry interval (REI).

GETTING STARTED

UNPACKING CHECKLIST

⚠ WARNING DO NOT OPERATE UNIT IF DAMAGED DURING SHIPPING, HANDLING OR USE. DAMAGE MAY RESULT IN BREAKAGE AND CAUSE INJURY OR PROPERTY DAMAGE.

- ▶ Un-crate carefully and position ORSM on level ground.
- ▶ Save crate and packing materials until evaluation and testing are complete.
- ▶ Read manual carefully and understand all instructions.
- ▶ Do not connect power until after thorough inspection and filling the sump with liquid.
- ▶ After filling the unit with some liquid, inspect for leaks.
- ▶ Never operate without liquid in tank.
- ▶ Be sure guards are securely in place and warnings are clearly visible.
- ▶ Check power supply for correct voltage.

ELECTRICAL

⚠ WARNING GROUND FAULT RECEPTACLES ARE RECOMMENDED AND MAY BE REQUIRED BY LOCAL AND/OR NATIONAL CODE.

⚠ NOTICE USE OF AN EXTENSION CORD IS NOT RECOMMENDED. IF NECESSARY, REFER TO FIG. 12.

Fig. 12

EXTENSION CORD SPECIFICATIONS*		
FOR SINGLE FAN USE ONLY • (AWG - American Wire Gauge)		
Voltage	25 to 50 ft.	50 to 100 ft.
115/230	16 AWG	14 AWG



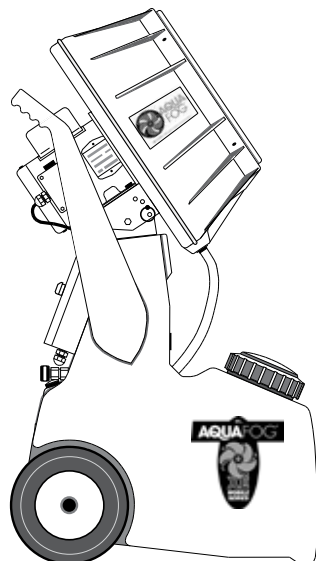
*Grounded and suitable for outdoor use.

UNIT PREPARATION

⚠ WARNING ENSURE THE BLADE ASSEMBLY IS FREE & CLEAR FOR START-UP (HIGH-SPEED ROTATION).

Locate a level, stable area to place the ORSM. If there's a slight grade, blocking the wheels may be necessary to keep unit secure.

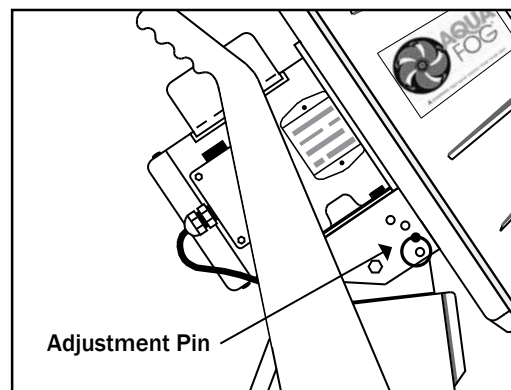
Visually check to make sure the fan blades can rotate freely. There should be approximately 1/4" space between the venturi pins and the blades.



The ORSM is equipped with a four position pivoting fogging head with 15° intervals up to 45° (see Fig. 1) Propelling the fog upward allows more time for the particles to evaporate, keeping floor areas drier.

When making an adjustment, support the weight of the fogging head off of the pin for easy removal.

Fig. 1



EVALUATION/ CONTROLS/ INSTALLATION

⚠ DANGER

BEFORE TESTING FAN MAKE SURE ALL OBJECTS ARE OUT OF THE ROTATION PATH OF THE FAN BLADES. HIGH-SPEED WARNING. KEEP HANDS CLEAR! MAKE SURE GUARDS ARE INSTALLED OR UNIT IS OUT OF REACH.



- ▶ For first-time evaluation, fill tank (with water only) about quarter full.
- ▶ Connect to power supply.
- ▶ BUMP START ORSM and check for proper fan blade rotation (clockwise if looking at front of unit). If incorrect, find rotation connection changes on the motor's electrical schematic.
- ▶ Turn on the unit and listen for any possible abnormalities, such as the blades rubbing against the venturi or any objects. Make re-adjustments if necessary.
- ▶ Evaluate fog quality adjusting the output by using the flow control valve. (See Fig. 2). After starting, it generally takes several seconds for the liquid to reach the atomizing fan.

Back Controls

The Control box offers two operational control modes:

[ON] - for manual or automated operation (when combined with additional control)

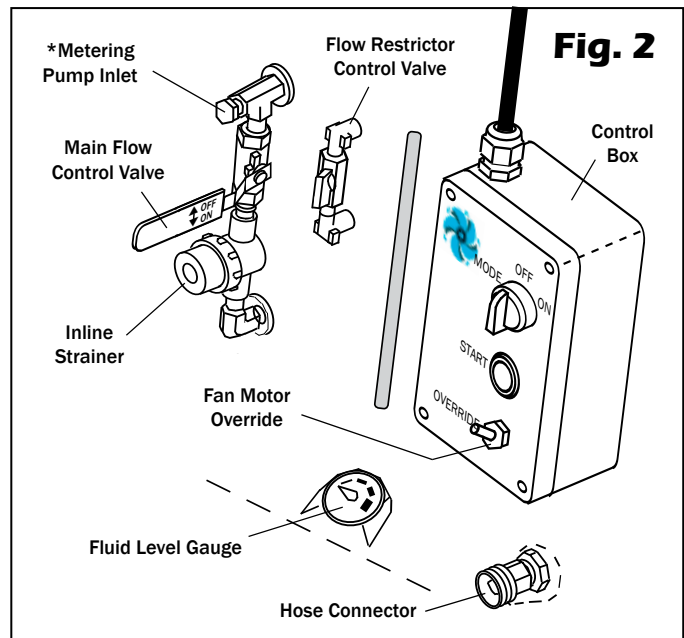
[SHUT-OFF mode] - will automatically turn off the unit when the tank becomes nearly empty. Expect about 1/2 to 1 gallon of unused liquid to remain.

The fogging output can be regulated by adjusting the Primary Flow Valve. For fine control at low flow rates use the secondary High/Low flow control valve. (See Fig. 2)

Particle size is smaller/drier at lower outputs, so it is wise to operate the unit at a lower output for longer periods of time rather than high outputs for short periods of time.

Hose Connector is controlled by an internal float valve.

Fluid Level Gauge to aid in monitoring the tank's 18 gallon capacity.



*Connection for metering pump (3/8" fitting provided).

SETUP



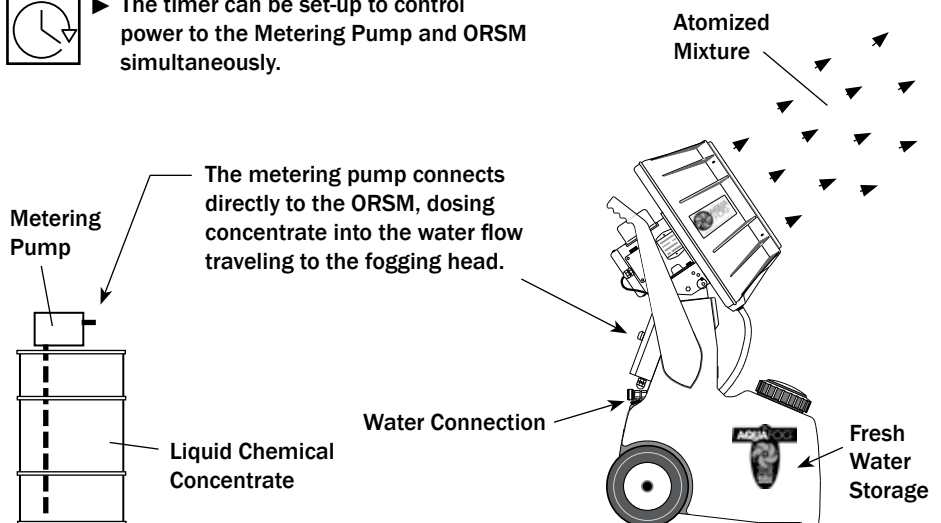
▶ The timer can be set-up to control power to the Metering Pump and ORSM simultaneously.

A) Mobile Treatments

For short-term use, simply fill the tank with diluted chemical product and operate manually.

B) Stationary Treatments

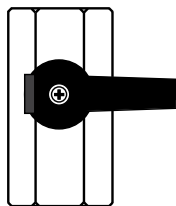
For long-term operation, connect to a metering pump, with chemical concentrate and water hose. Calibrate water flow-rate to match the chemical's dilution ratio.



ORSM FLOW RATES

LOW FLOW, Range

Output Range @ fully closed		
@ 60Hz	0 - 3.3	GPH
@ 50Hz	0 - 9.2	LPH



Low Flow, fully closed

Low Flow Setting (flow restrictor valve)

To gain more accurate control of low flow outputs. Turn flow restrictor valve knob to the 3 o'clock position or anywhere in between, then use the main flow control valve to control that specific range.

Net fogging output = range amount - drainage

HIGH FLOW, Range

Output Range @ fully open		
@ 60Hz	0 - 10.7	GPH
@ 50Hz	0 - 32.1	LPH



High Flow, fully open

High Flow Setting (flow restrictor valve)

To gain greater flow outputs. Turn flow restrictor valve knob to the 6 o'clock position or anywhere in between, then use the main flow control valve to control that specific range.

Net fogging output = range amount - drainage

CALIBRATE THE FLOW RATE

NOTICE

AUTOMATIC PRIMING OF THE SYSTEM OCCURS THROUGH THE CIRCULATION TUBE.

Calibrated Flow Rate

Means having a (set) specific flow rate when the large (main) flow control valve is fully open. This allows for an easy repeat of fogging operations.

Also, the flow rate can be calibrated to match with a chemical's dilution ratio. An important feature when using a metering pump.

To Calibrate a Flow Rate (Two Techniques)

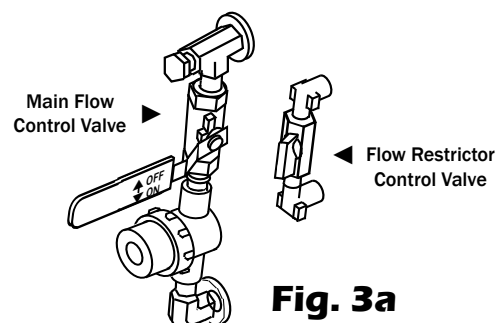
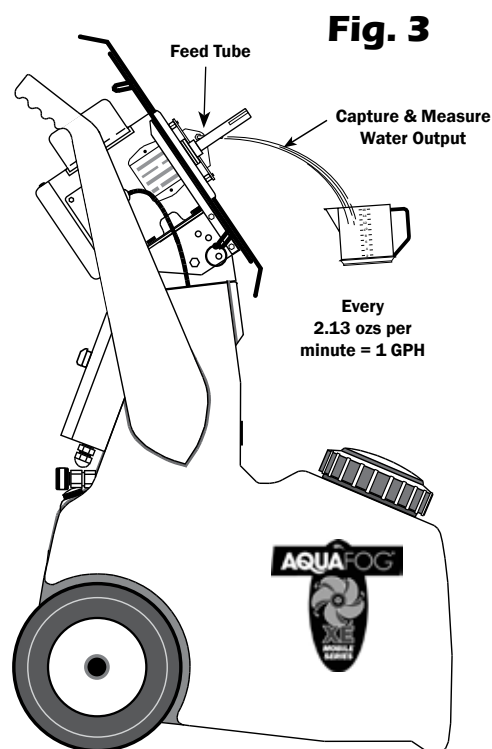
Fill the tank with some water.

- T1) Carefully remove the housing's drain tubing from the tank. Tilting the fogging head temporarily, will ease removal.
 - [or]
- T2) Remove the Fan Housing and Blade Assembly to expose the Feed Tube (See Fig. 3). This will allow a visual of the water stream, helpful when making adjustments

Fully open the Main Control Valve (See Fig. 3a) located on the back of the unit. Switch off the fan motor using the override toggle switch. Turn on the unit (only the pump should be running). Using a measuring cup to catch water in 60 second intervals from the Feed Tube or Drain Tubing. Multiply ounces of water by 60 and then divide by 128. This will give you your GPH rate.

Math example: 1 minute captures (4.2 ozs. x 60 ÷ 128 = 2 GPH)

Use the (small) Flow Restrictor Valve (See Fig. 3a) to make adjustments and repeat process as needed. Once having a calibrated (specific) flow rate, the small valve cannot be moved, but the large (main) valve can be, understanding that at full open, the flow rate will be at the specific calibrated flow rate.



TROUBLESHOOTING



WARNING

***BEFORE INSPECTION AND/OR SERVICE,
DISCONNECT AND LOCK OUT POWER SOURCE.***

1. Poor/Inconsistent Fogging Output

- A.) Inconsistent or spotty chemical coverage usually occurs because the fog volume output is too high. Ideally, fog will disappear when fogging at rates near 3 GPH. To check for fog volume output, refer to Maximum Pre-set Flow Rate (See **Page 6**).
- B.) Reservoir may be clogged. Fluid entering a clogged reservoir will spill out the back of the blade instead of entering the passageways of the fan blades (also ref. **6b**). To clean, remove the blade assembly from the motor shaft and disassemble. Next, flush the reservoir under a sink. Check and clear the passageways for each individual blade as well. Reassemble and reattach.
- C.) Consistency of fogging output greatly depends on the consistency of the cleaning procedures (See **Page 10**). Check strainer, plumbing, and inside of tank for dried sediment or clogs.

2. Fan and/or Pumps Do Not Operate

Check voltage requirements on unit and electrical supply. Have a certified electrician check for live receptacle, plug, power line, and fan's override toggle switch. If the fan works the pump does not, look for any loose connections inside the control box. If there are no loose connections, the pump is maybe damaged and should be replaced.

3. No Fog

- A.) The self-priming system will usually take about 10 seconds before you see fog output. Check to see if the main flow valve is open. The valve is open when the handle is down.
- B.) If after 20 seconds and still no flow output. Check restrictor flow rate valve. If good flow output at full open but none at fully closed, This would indicate clogged flow restrictor tubing. This special tubing is located behind the 1-1/4" NPT service access plug.
- C.) Check for sediment clogs. Flush the inline strainer and check for sediment build-up around the inlet of the pump. Clean inlet screen.
- D.) The pump may not be operating. Check by removing the Inline strainer cap and turning system On. If no fluid flows from the strainer, the pump may need to be replaced.
- E.) Liquid not traveling through the fan blades. This can be diagnosed by viewing the back of a blade assembly during operation (using a bright flashlight). If system is clogged, liquid can be seen spinning out of the slot area between the motor shaft and stainless steel face plate (Part #573). If confirmed, replace fan blade assembly (Part #571-assy). Cleaning the internal passageways of a blade assembly is feasible with the aid of some speciality tools.

4. Unusual Noise

Squealing at start-up or during operation may be caused by the motor shaft's bearing seal. Spray with lubricant at the front of the motor where the shaft exits the motor's frame.

TROUBLESHOOTING (CONT.)



WARNING

***BEFORE INSPECTION AND /OR SERVICE,
DISCONNECT AND LOCK OUT POWER SOURCE.***



5. Fan Motor Becomes Excessively Hot

The main fan motor normally becomes very hot to the touch. However, it should not get so hot that it begins to smell or smoke, nor should the power cord become hot. Discontinue operation and consult an electrician to properly evaluate the problem.

6. Electrical Breaker Tripping

If the electrical breaker trips off, there is an overload in the system and there may be a serious motor problem. Turn off all other devices connected to the same circuit. If the breaker continues to trip, the motor is probably in need of repair. Consult an electrician for evaluation.

MAINTENANCE

1. Clean Strainers

The ORSM is equipped with an accessible strainer that should be cleaned regularly - the in-line strainer (Part #71) at the bottom of the flow control valve. Unscrew strainer's cap regularly and remove any trapped debris.



2. Flush Out Tank

The tank should be rinsed regularly, especially if using chemicals. Remove drain plug (Part #351) and, using a garden hose, thoroughly flush tank and pump of any sediment.

3. Main Motor

The main motor is a permanently lubricated motor, but occasionally applying some spray oil to external rusty areas of the motor's body can help extend the motor's life.

4. Inspect Blade Assembly

Clean the exterior of the blades about once a year or whenever a film of calcium or mineral deposits is visible. While cleaning, inspect for irregularities or hairline cracks and replace as necessary.

5. Storage

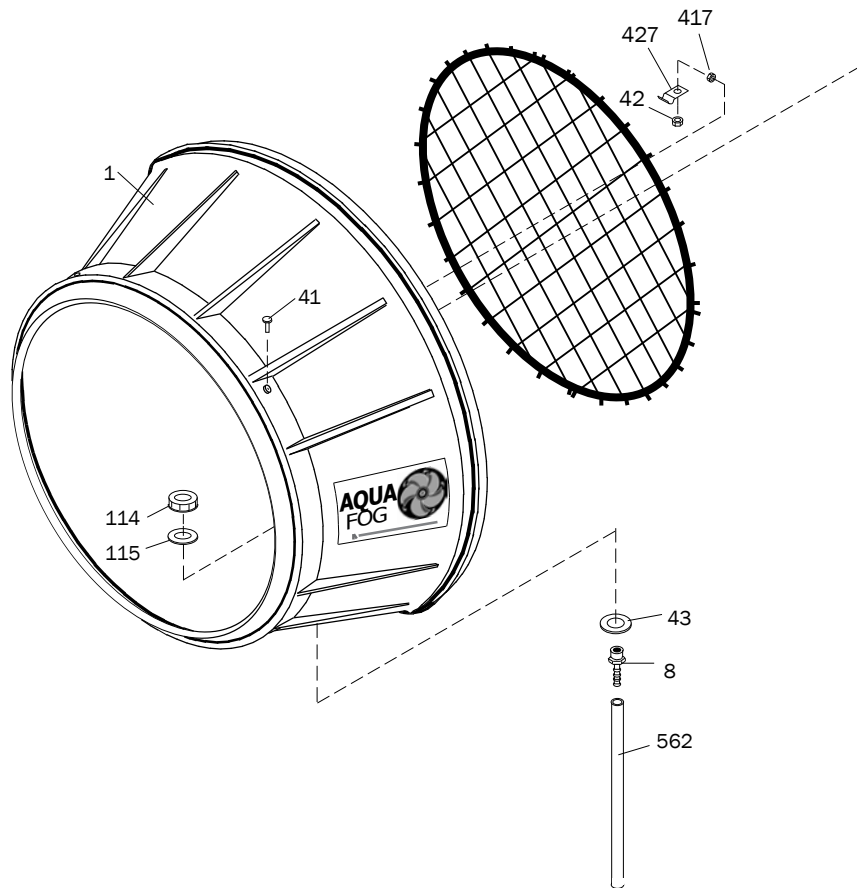
Protect your mobile Aquafog from winter damage. Expansion due to freezing can burst the fittings or the internal feed pump. If storing unit in below freezing temperatures, be sure all fluid is drained from the tank area. Damage due to freezing is not covered under warranty.

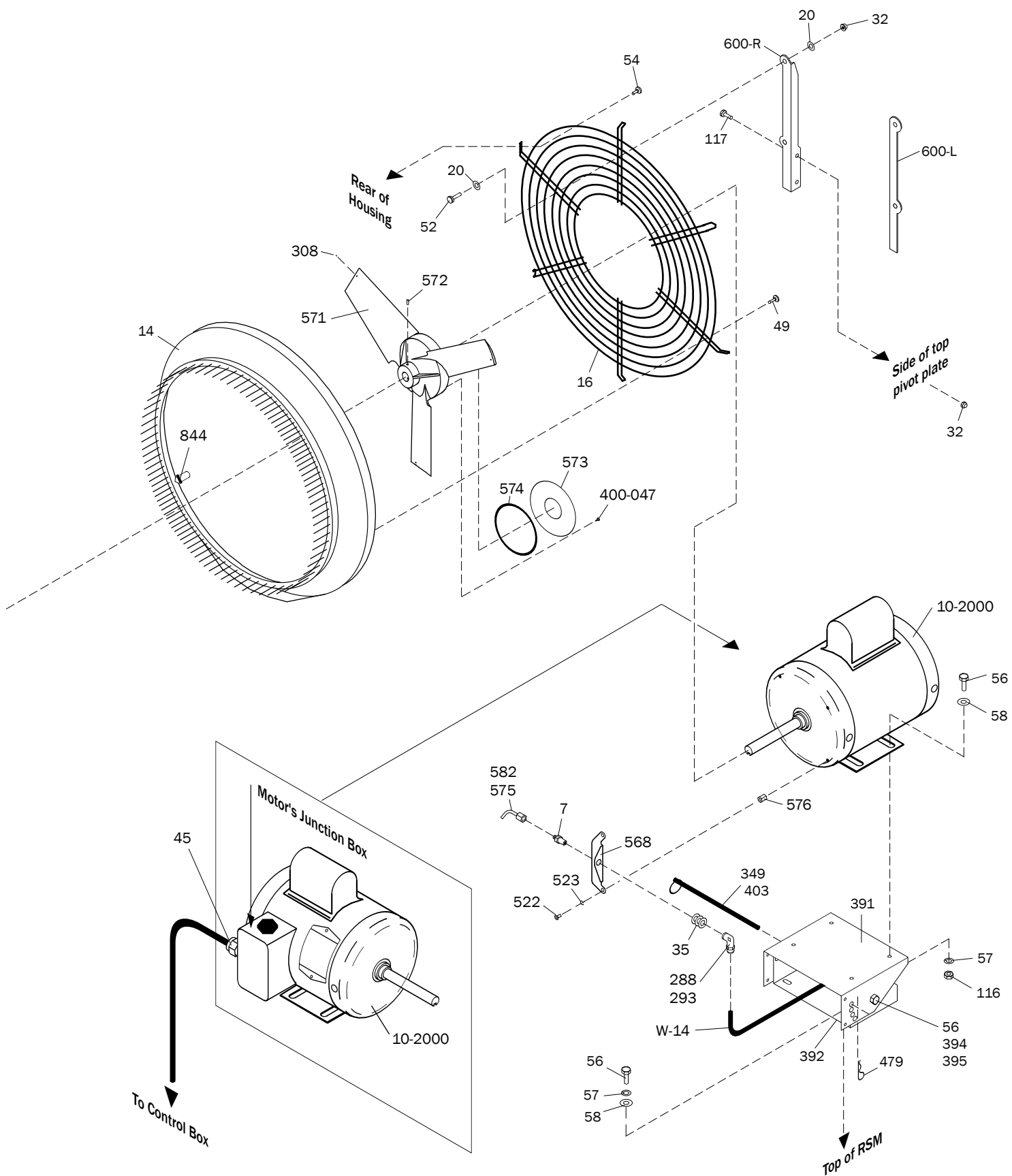
Contact Your Sales Representative for Further Assistance.

AQUAFOG FAN EXPLODED VIEW

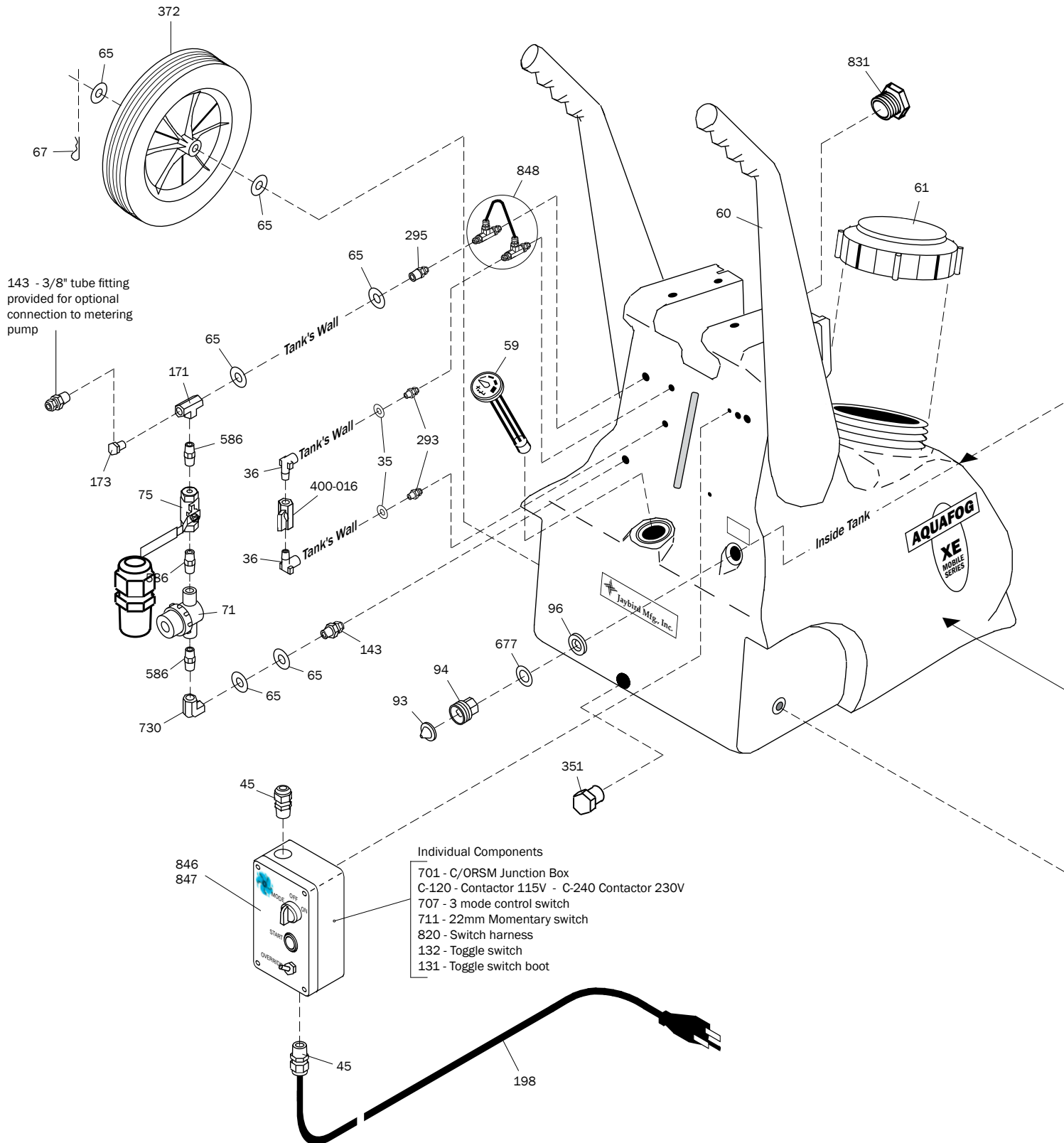
PART IDENTIFICATION

ID #	Description	Qty/Unit
1	Housing	1
2	Safety guard	1
7	Liquid feed tube fitting	1
8	Drain fitting	1
10-2000	WDD motor 115/240V // 60/50Hz	1
14	Pinned venturi assembly	1
16	Rear guard	1
20	1/4" Heavy large diameter washer	8
32	1/4-20 nylon stop nut SST	8
35	SST washer for feed tube fitting	3
41	10-24 x 5/8" phillips RH SST	4
42	10-24 nylon stop nut SST	4
43	11/16 x 1 1/4" flat washer SST	1
45	Liquid-tight cord fitting	1
49	10-24 x 1/2" TH phillips SST	4
52	1/4-20 x 3/4" HH bolt SST	4
54	1/4-20 x 3/8" button head cap screw	6
56	5/16-18 x 3/4" HH bolt SST	10
57	5/16" lock washer SST	8
58	5/16" flat washer SST	8
114	Drain fitting nut	1
115	Drain gasket	1
116	5/16-18 finish nut SST	4
117	1/4-20 x 5/8" HH bolt SST	4
288	1/8" NPT Elbow	1
293	1/4 tube x 1/8" MNPT	1
308	XE blade tip setscrew SST	3
349	5/16" brass rod	1
391	Top pivot plate	1
392	Bottom pivot plate	1
394	Brass pivot washer	2
395	5/16" nylon lock nut	2
400-047	XE Faceplate screw SST	8
403	Brass ring	1
417	Machine Nut	4
427	Safety Guard Clip	4
434	1/8" NPT x 1/4" tube elbow	1
510	10-24 setscrew SST	2
522	10-32 x 1/4" button head cap screw	2
523	#10 lock washer SST	2
562	Drain tubing	1.5'
568	XE Feed tube support SST	1
571	Turbo XE blade assembly	1
573	XE rear-feed faceplate SST	1
574	O-ring	1
575	Liquid feed tube	1
576	Brass stand-off	2
600-L	RSM support left	1
600-R	RSM support right	1
844	Venturi O-ring	2

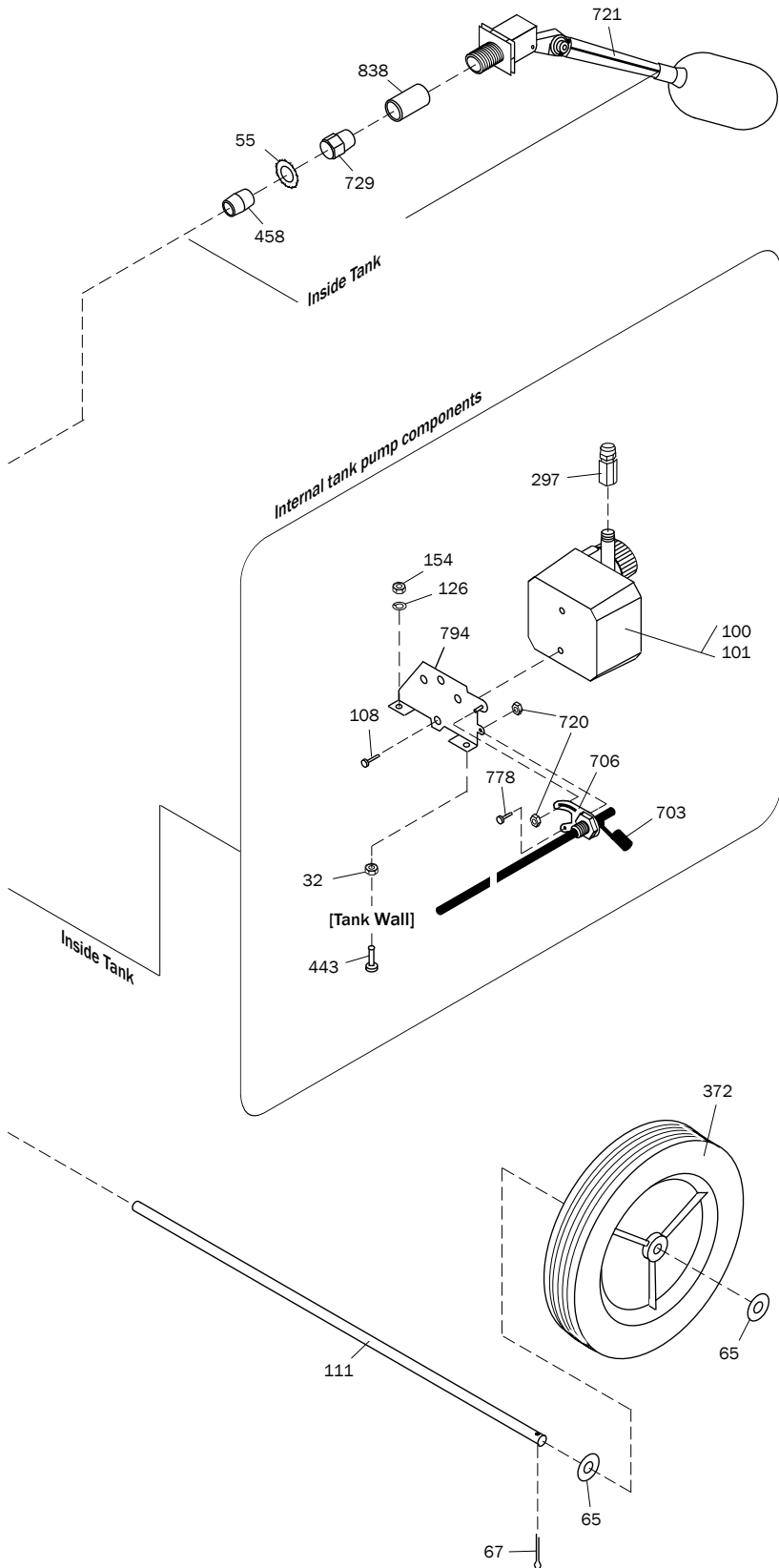




ORSM TANK EXPLODED VIEW



PART IDENTIFICATION LIST

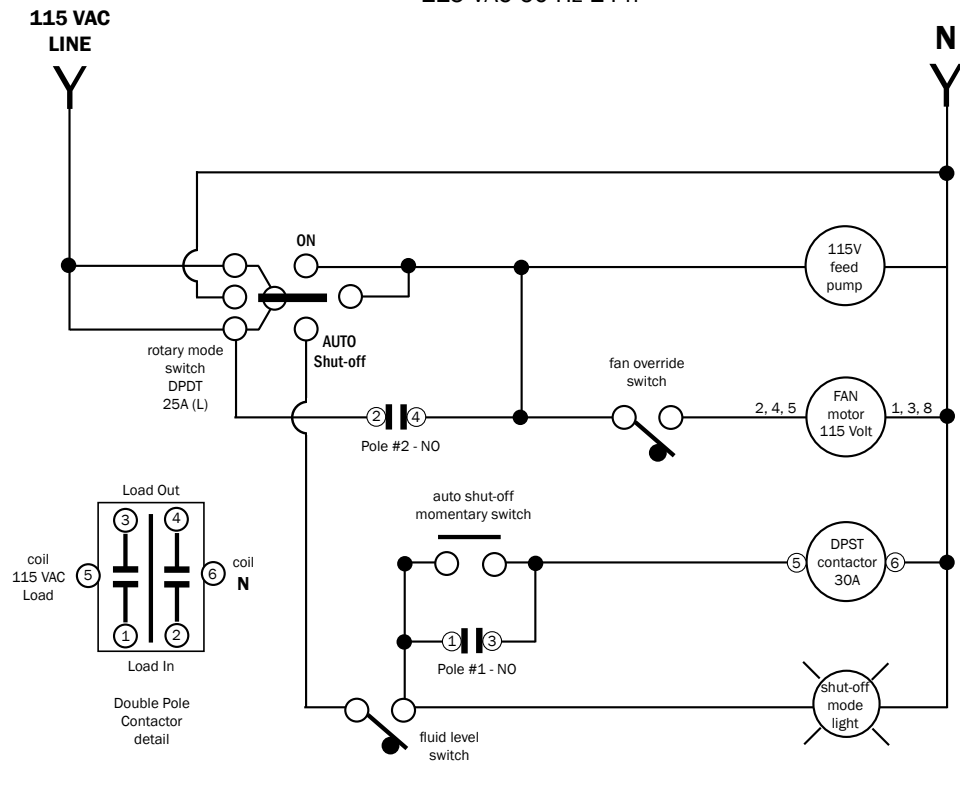


PART IDENTIFICATION

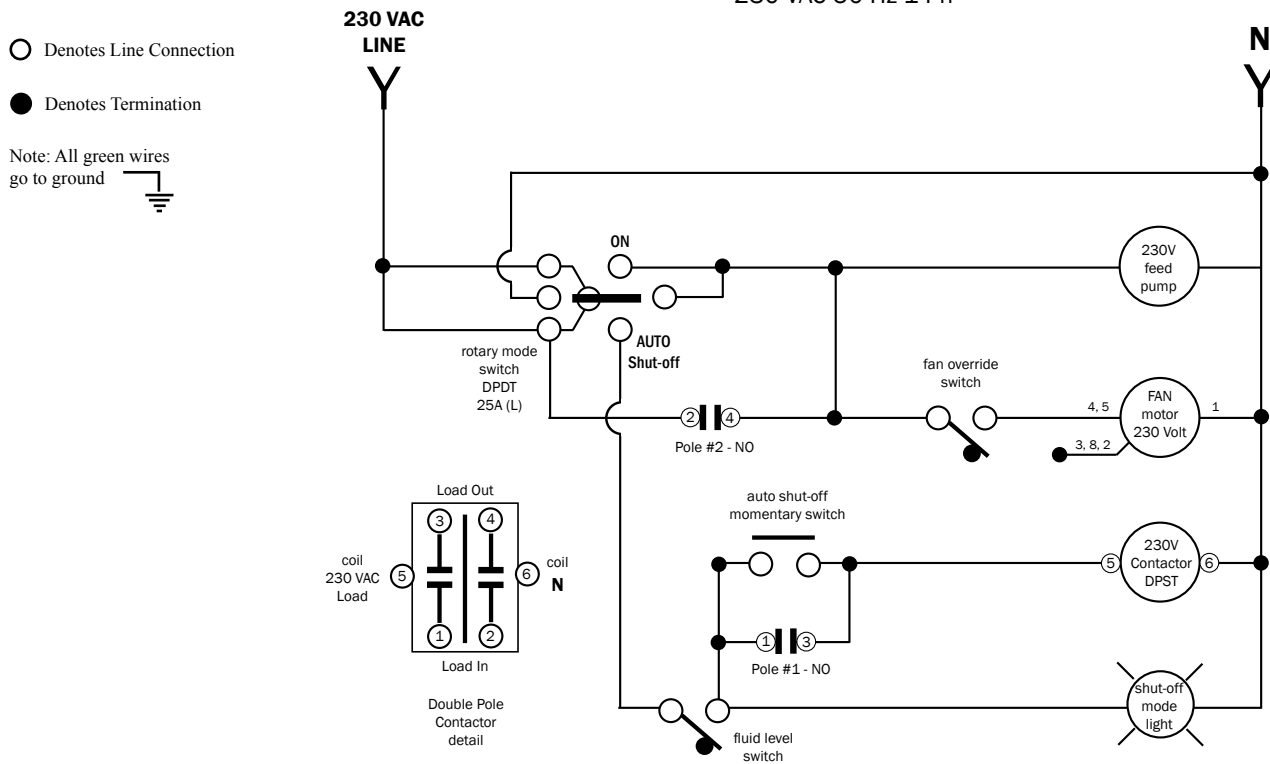
ID #	Description	Qty/Unit
32	1/4-20 nylon stop nut SST	2
35	1/8" NPT washer	2
36	1/8" NPT Street elbow	2
45	Liquid-tight cord fitting	2
55	M20 Serrated lock washer SST	1
59	Fluid level gauge	1
60	RSM tank	1
61	Fill cap	1
65	1/2" flat washer SST	8
67	5/32 x 1 1/4" hair pin	2
71	Inline strainer 1/4" female NPT	1
75	Flow control valve	1
76	10-24 x 3/4" phillips RH SST	2
93	Hose connector gasket	1
94	Hose connector	1
96	Gasket	1
100	Feed Pump 115 volt 60 hz.	1
101	Feed Pump 230 volt 50 hz.	1
108	#8 x 3/8" self tapping screw	2
111	Axle SST	1
126	1/4" lockwasher SST	2
143	1/4" NPT-M x 3/8 tube fitting	2
154	1/4-20 finish nut	2
171	1/4" NPT TEE	1
173	1/4" NPT-M plug	1
198	18' Power cord with plug	1
293	1/4" Tube x 1/8" NPT fitting	2
295	1/4" Tube x 1/4" tube fitting	2
297	3/8" Tube x 1/4" FNPT fitting	1
351	1" NPT black nylon hex plug	1
372	Heavy-duty RSM wheel	2
443	1/4-20 x 1-1/4 HH bolt	2
458	1/2" NPT Nipple	1
586	1/4" NPT Hex nipple	3
677	11/16 x 1-1/4" flat washer SST	1
703	RSM Fluid level switch	1
706	Fluid level bracket	1
720	8-32 Nylon lock nut	2
721	RSM Float valve	1
729	1/2" NPT Adapter	2
730	1/4" NPT elbow	1
778	8-32 Button head screw	2
794	C/ORSM Pump bracket	1
831	1-1/4" NPT Plug	1
838	1/2" NPT-F PVC Coupling	1
846	C/ORSM Control box assy. 115V	1
847	C/ORSM Control box assy. 230V	1
848	RSM Flow restrictor assy.	1
400-016	1/8" Quarter-turn valve	1

ELECTRICAL SCHEMATICS

115 VAC 60 Hz 1 Ph



230 VAC 50 Hz 1 Ph





ONE YEAR LIMITED WARRANTY

Aquafog and accessories are warranted to the original purchaser against defects in material and workmanship under normal use for one full year from date of purchase. Any part determined to be defective and returned to the manufacturer, shipping cost prepaid, will be repaired or replaced at Jaybird Manufacturing, Inc.'s discretion without charge. Proof of purchase date and an explanation of the problem or complaint must accompany the returned portion of the machine.

Jaybird Manufacturing, Inc. reserves the right to verify the legitimacy of claimed defects. The provisions of this warranty do not apply to damage resulting from direct or indirect misuse, negligence, accident, lack of maintenance, or unauthorized repairs or alterations which affect the machine's performance or reliability.

LIMITATIONS OF LIABILITY. TO THE EXTENT ALLOWABLE UNDER APPLICABLE LAW, JAYBIRD MANUFACTURING, INC.'S LIABILITY FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING FROM THE USE OF OUR EQUIPMENT IS EXPRESSLY DISCLAIMED. JAYBIRD MANUFACTURING, INC.'S LIABILITY IN ALL EVENTS IS LIMITED TO, AND SHALL NOT EXCEED, THE PURCHASE PRICE PAID. NO OTHER WARRANTY, EXPRESSED OR IMPLIED, IS AUTHORIZED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.



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