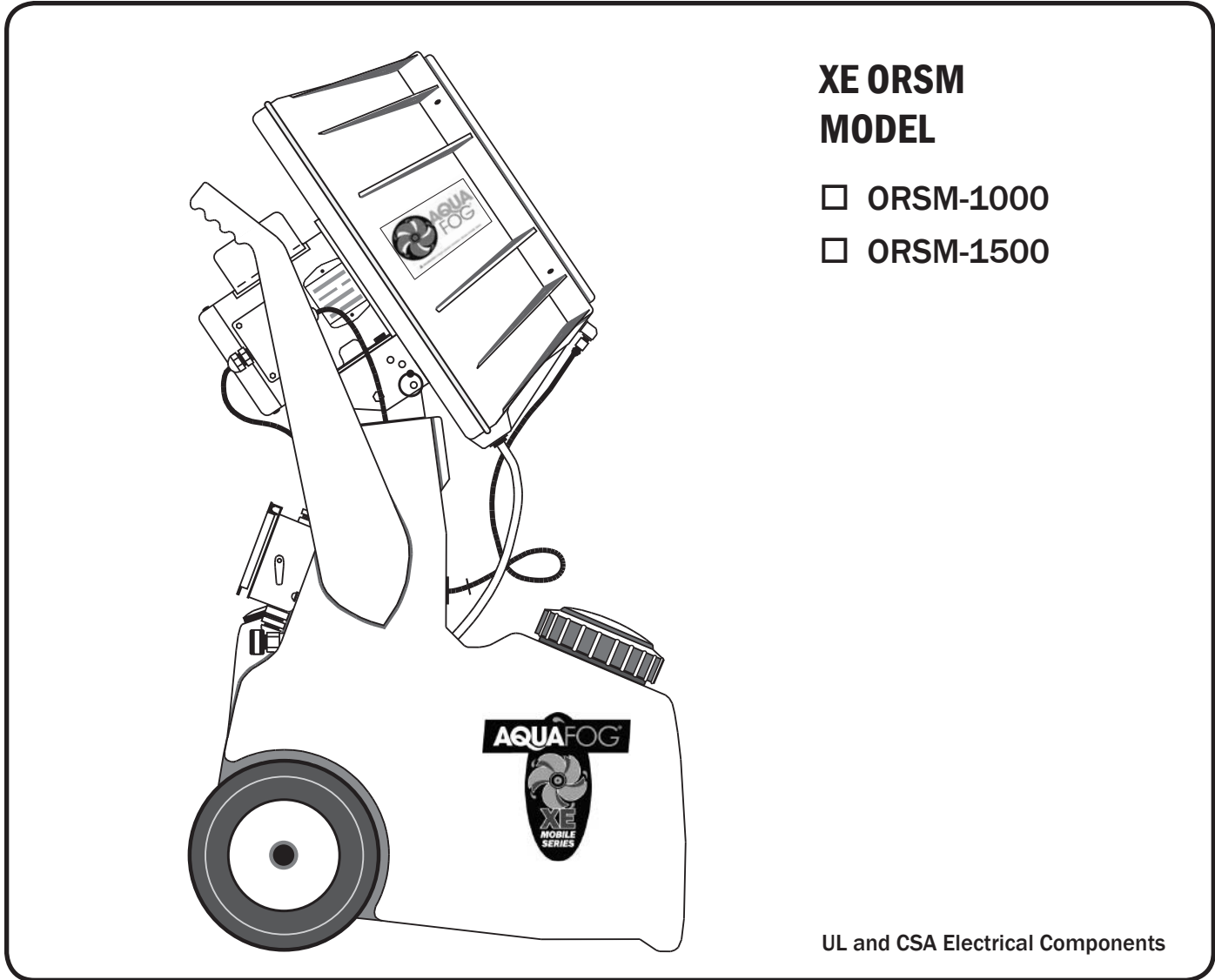




# XE MOBILE ATOMIZER

## USER'S MANUAL AND OPERATING INSTRUCTIONS



### XE ORSM MODEL

- ORSM-1000
- ORSM-1500

UL and CSA Electrical Components

## OPERATOR'S MANUAL



### **NOTICE**

Read & Understand  
Retain for Future Reference

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# DESCRIPTION

Aquafog mobile units are intended to condition large volumes of air using water or other non-hazardous liquids at air temperatures between 31°F 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.


# 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.

## Notes

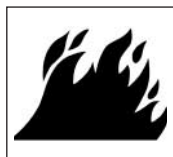
# GENERAL SAFETY

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. Follow United States Environmental Protection Agency (EPA) guidelines and regulations when fogging chemical solutions.
4. Follow all local electrical and safety codes as well as the United States National Electrical Codes (NEC) and Occupational Safety and Health Act (OSHA).
5. Only persons well acquainted with these rules of safe operation should be allowed to use the atomizer.
6. Keep visitors away and NEVER allow children in the work area.
7. 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.
8. Before each use, inspect blade assembly and electrical components for signs of damage, deterioration, weakness or leakage. Repair or replace defective items before using.
9. Check all fasteners at frequent intervals for proper tightness.
10. Keep fingers away from a running unit; fast moving and hot parts will cause injury and/or burns.

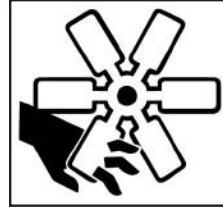
## **WARNING**

**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**



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 ORSM WITHOUT THE SAFETY GUARD**


**IN PLACE UNLESS THE UNIT IS RAISED SEVEN FEET ABOVE WORKING HEIGHT.**

11. 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**

12. Avoid exposure to hazardous chemicals. Wear a respirator and protective clothing - goggles, gloves, long sleeves and pants, etc. 
13. Read and understand all directions and safety precautions before operating ORSM. Follow all E.P.A. guidelines for chemical use.
14. **NO** humans or animals should be in the area during chemical/pesticide application. **SERIOUS INJURY OR DEATH COULD OCCUR!**
15. 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	14 AWG	12 AWG
230	16 AWG	14 AWG



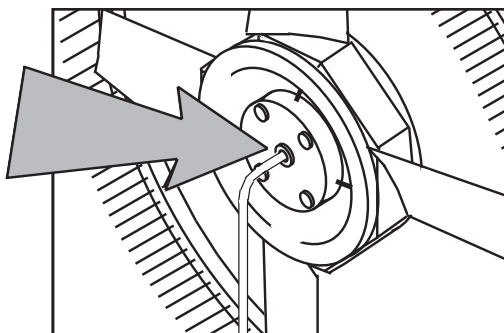
\*Grounded and suitable for outdoor use.

## UNIT PREPARATION

Visually check to make sure that the critically important liquid feed tube (Part #6) has maintained its center position, partially inserted into the blade assembly. Re-position if necessary. (See Fig. 1)

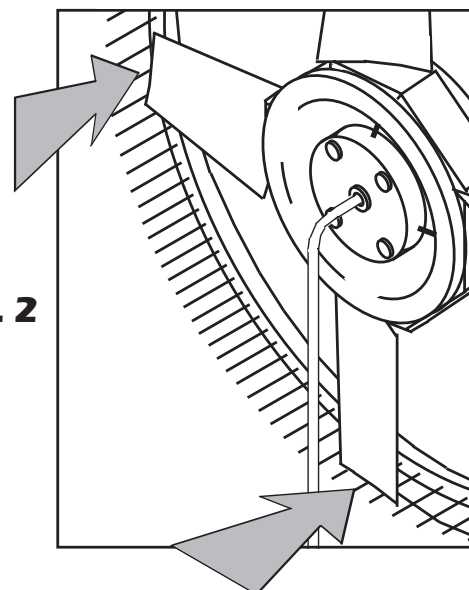
Visually check to make sure the blades can rotate freely without touching any venturi pins. There should be approximately 1/4" space between the pins and the blades. (See Fig. 2) Do Not operate if blades may hit pins. Refer to troubleshooting for adjustments.

**Fig. 1**



**⚠ WARNING** ENSURE THE BLADE ASSEMBLY IS CENTERED INSIDE THE PINNED VENTURI. ADJUST MOTOR AND BLADE AS NECESSARY.

**Fig. 2**



# TESTING AND EVALUATION

## **⚠ 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 one 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.

## **⚠ CAUTION**

**CAREFULLY LISTEN FOR UNUSUAL NOISE OR VIBRATION.**

- ▶ Turn on the unit and listen for any possible abnormalities, such as the blades rubbing against the venturi. Make re-adjustments if necessary.
- ▶ Evaluate fog quality adjusting the output by using the flow control valve. (See Fig. 3). After starting, it generally takes several seconds for the liquid to reach the atomizing fan.

# CONTROLS/ FEATURES

## Flow Control/ Strainer/ Pivot

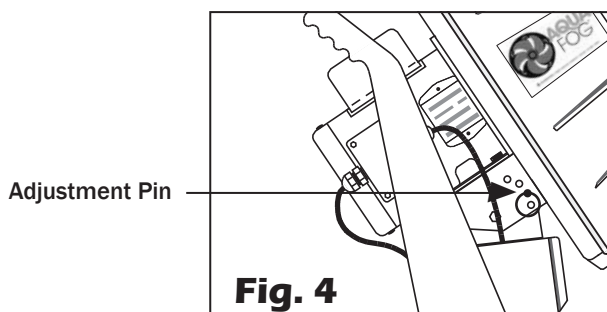
The volume of fog can be regulated by adjusting the Flow Control Valve. (See Fig. 3)

**Particle size is smaller at lower outputs, so it is better to operate the unit at a lower output for longer periods of time.**

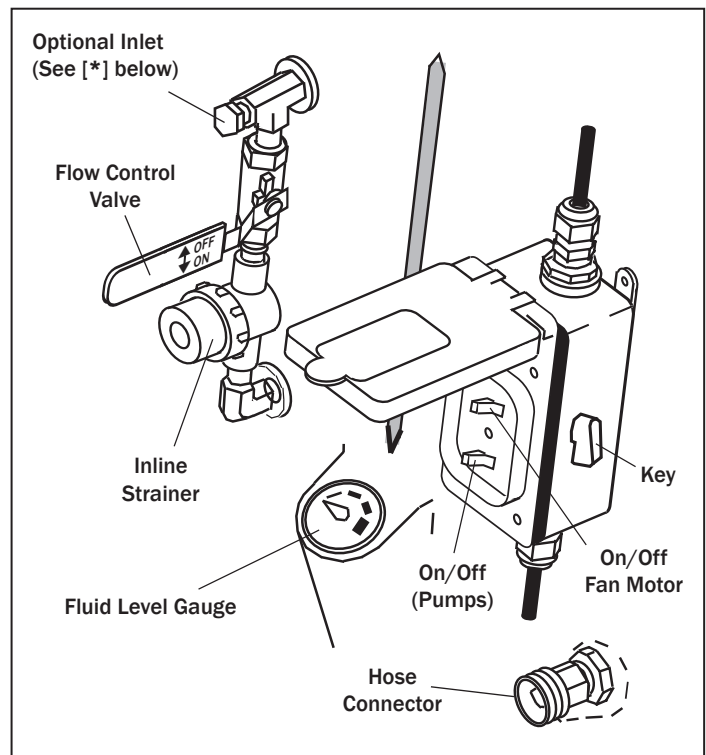
At the base of the plumbing is an in-line strainer with a removable cap. Periodically check inside and flush any sediment from the screen. (See Fig. 3)

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

When making an adjustment, balance the weight of the fogging head off of the pin for easy removal. (See Fig. 4)



**Fig. 3**



\* Connect unit's plumbing directly to a metering pump (with 3/8" tube fitting provided). This provides a way to feed chemical concentrate to the ORSM.

# INSTALLATION

## SETUP



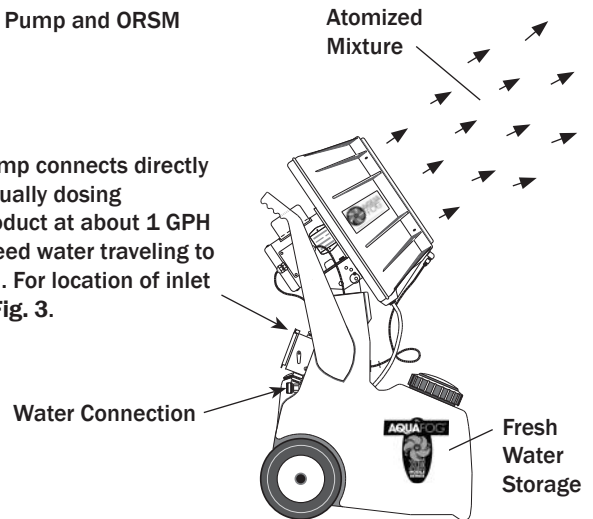
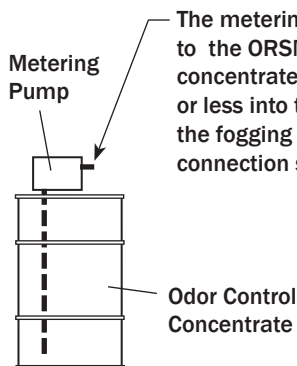
▶ A timer can be used to control the power to the Metering Pump and ORSM simultaneously.

### A) Short Treatments

For evaluation(s), simply fill the tank with some pre-diluted product and operate manually.

### B) Long Treatments

For permanent installation, connect the ORSM to a metering pump, to a concentrated supply of product, and a fresh water source.



**Fig. 5**

## FLOW RATE (FACTORY PRE-SET)



### NOTICE

*AUTOMATIC PRIMING OF THE SYSTEM OCCURS THROUGH THE FLOW RATE VALVE, SO IT SHOULD NEVER BE ADJUSTED TO FULLY CLOSED.*

### The Flow Rate (at full open) is pre-set 5 GPH

This flow rate can easily be changed to achieve customer's desired output. Output can accommodate the odor control product being used and customer's need to add humidity. Common outputs are:

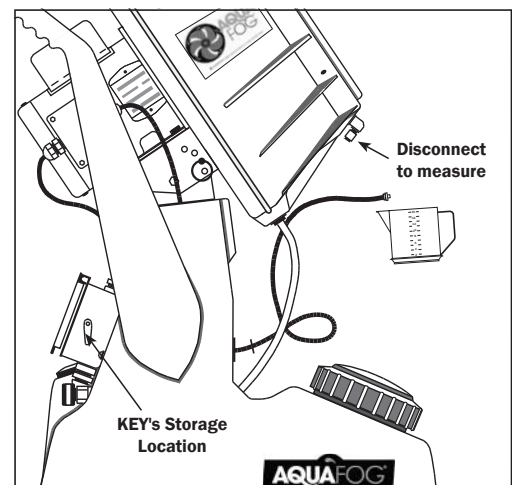
**4 to 8 GPH ~ Odor Control plus Humidification Treatment**

**1 to 2 GPH ~ Odor Control Treatment**

ORSM-1000 min/max range is 1 to 14 GPH.

ORSM-1500 min/max range is 2 to 8 GPH.

Once a flow rate has been chosen and set, connect an appropriately-sized metering pump to add odor control product.



**Fig. 6**

### The KEY is needed to make changes

You will need the KEY located on the side of the electrical control box to make changes (see Fig. 5). Slide this key on top of the flow valve's stem (see Fig. 6) to make your adjustment.

### To calibrate a New Flow Rate

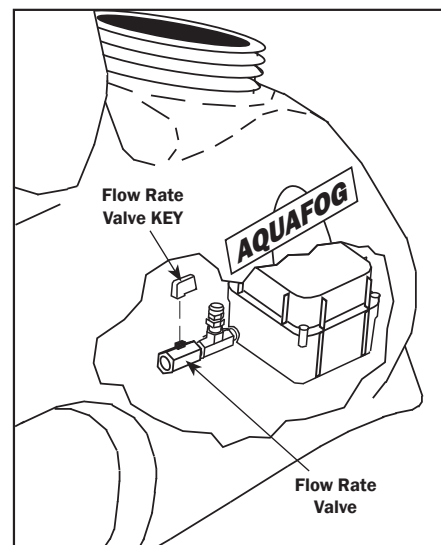
Fill the unit's tank with water only and disconnect the small 1/4" black plastic tubing at the bottom of the fan housing (See Fig. 5).

Use a measuring cup and turn on only the feed pump for a 60 second interval while catching the water from the feed tube. Multiply ounces of water by 60 and then divide by 128. This will give you your GPH rate.

**Example: 1 minute/ (4.2 ozs. x 60 ÷ 128 = 2 GPH)**

### Do not leave KEY on valve

Regular cleaning and/or maintenance inside the tank will likely move the setting and cause problems to your pre-set 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.) Ensure the SST liquid feed tube is properly inserted 1/4" into the center of the fan blade assembly.
- C.) Reservoir may be clogged. Fluid entering a clogged reservoir will spill out of the center bearing instead of entering the passageways of the fan blades. To clean, remove the blade assembly from the motor shaft and totally disassemble. Next, flush the reservoir under a sink, making sure the passageways are cleared. Check and clear the passageways for each individual blade as well. Reassemble and reattach.
- D.) It is possible for an air pocket to become caught within the plumbing. If you think this is occurring, throttle the flow control valve to wide open a few times to expel any trapped air. If the problem persists, check your pre-set flow rate valve (refer to page 6 Factory Pre-set Flow Valve). The ORSM will automatically prime the feed pump, but if the pre-set flow rate valve is in a fully closed position, the automatic priming will not occur, resulting in trapped air and poor/inconsistent fogging output.
- E.) 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. Blades Rub Against Venturi**

- A.) To make a horizontal adjustment, loosen the 4 bolts (Part #56) at the base of the main fan motor and shift motor side to side until centered. Retighten bolts.
- B.) To make a vertical adjustment, detach the housing by removing the 6 small bolts (Part #54). Next, loosen 4 bolts (Part #52) and make necessary adjustments. Retighten bolts and reattach housing.

### **3. 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 toggle switch. If the fan works but the pump does not, look for any loose connections inside the main motor's junction box. If there are no loose connections, the pump is probably damaged and should be replaced.

# TROUBLESHOOTING (CONT.)



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



## 4. No Fog

- A.) The self-priming system will usually take about 10 seconds before you see fog output. Check to see if the flow control valve is open. The valve is open when the handle is down.
- B.) Check the pre-set flow rate valve located inside the tank (refer to page 6 Factory Pre-set Flow Valve). Having the pre-set flow rate valve in either a fully closed or fully open position will result in no fog output. If the positioning is incorrect, refer to **page 6** for instructions on calibrating the pre-set flow rate valve.
- C.) Check for sediment clogs. Flush the inline strainer and check for sediment build-up around the base of the pump. Spray around the pump with a hose and drain the tank.
- 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.

## 5. Unusual Noise

It is normal to hear a slight rattling noise at start-up and shut-down. This is caused by the tip of the liquid feed tube entering the center of the fan blade assembly reservoir.

## 6. 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.

## 7. 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.

## 8. Fan and/or Motor Vibration

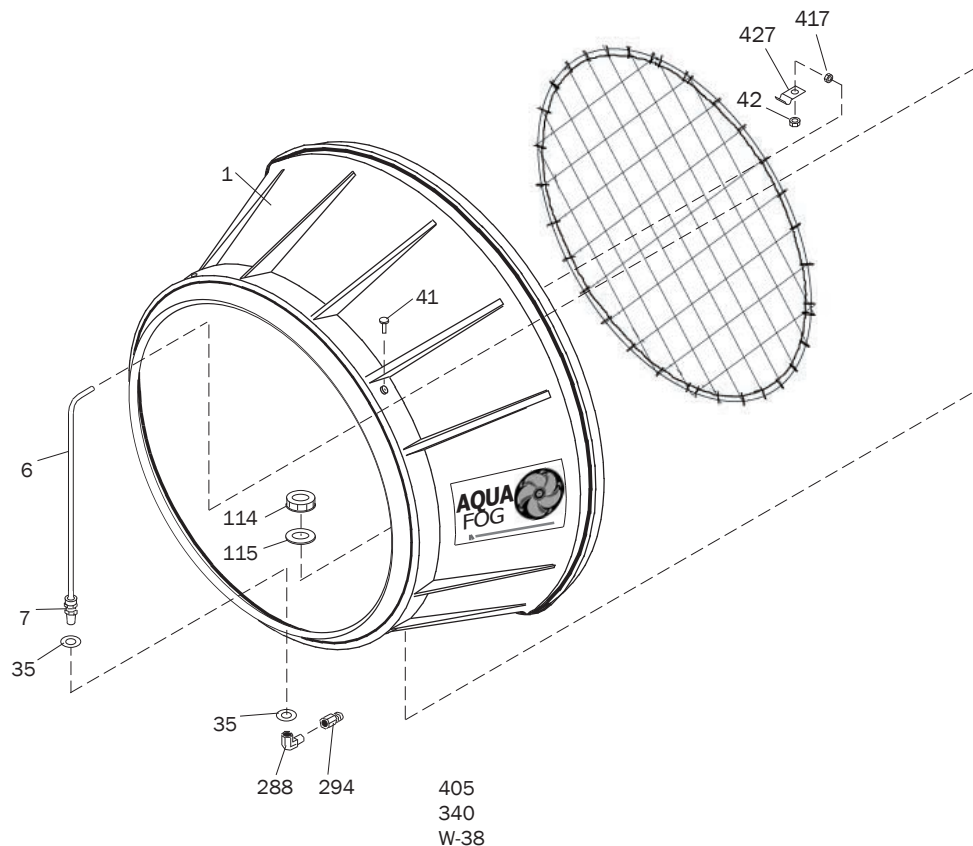
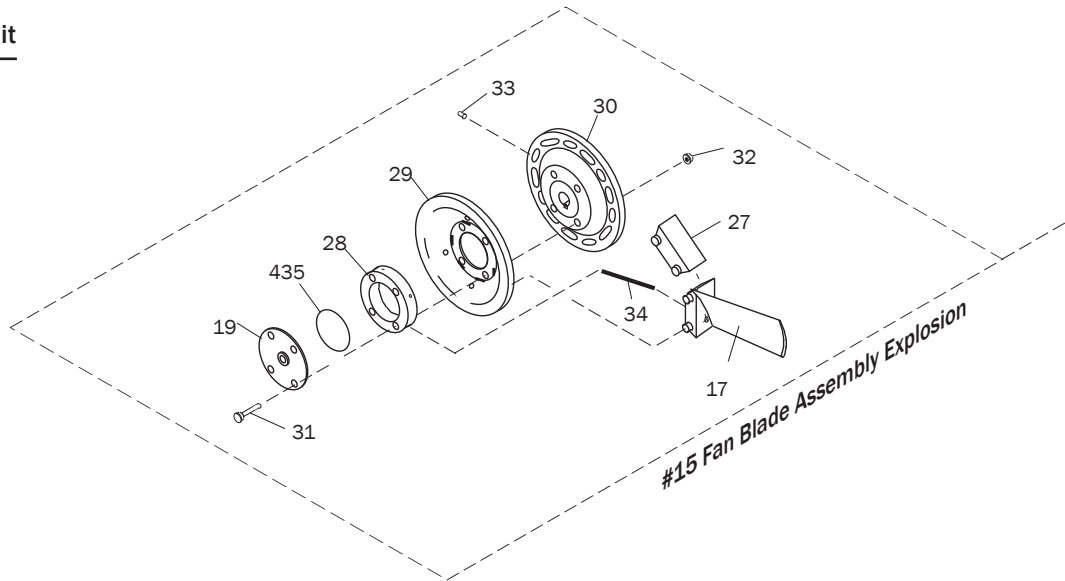
If the fan unit begins vibrating severely, first be sure the blade assembly is fully engaged and securely tightened on the motor shaft. Next, inspect the blade assembly, particularly the ends of the blades. Look for wear or cracks - replace as necessary. Look for deposits of calcium or minerals - clean and remove mineral deposits and/or calcium. Also check that the motor mounting hardware is securely tightened.

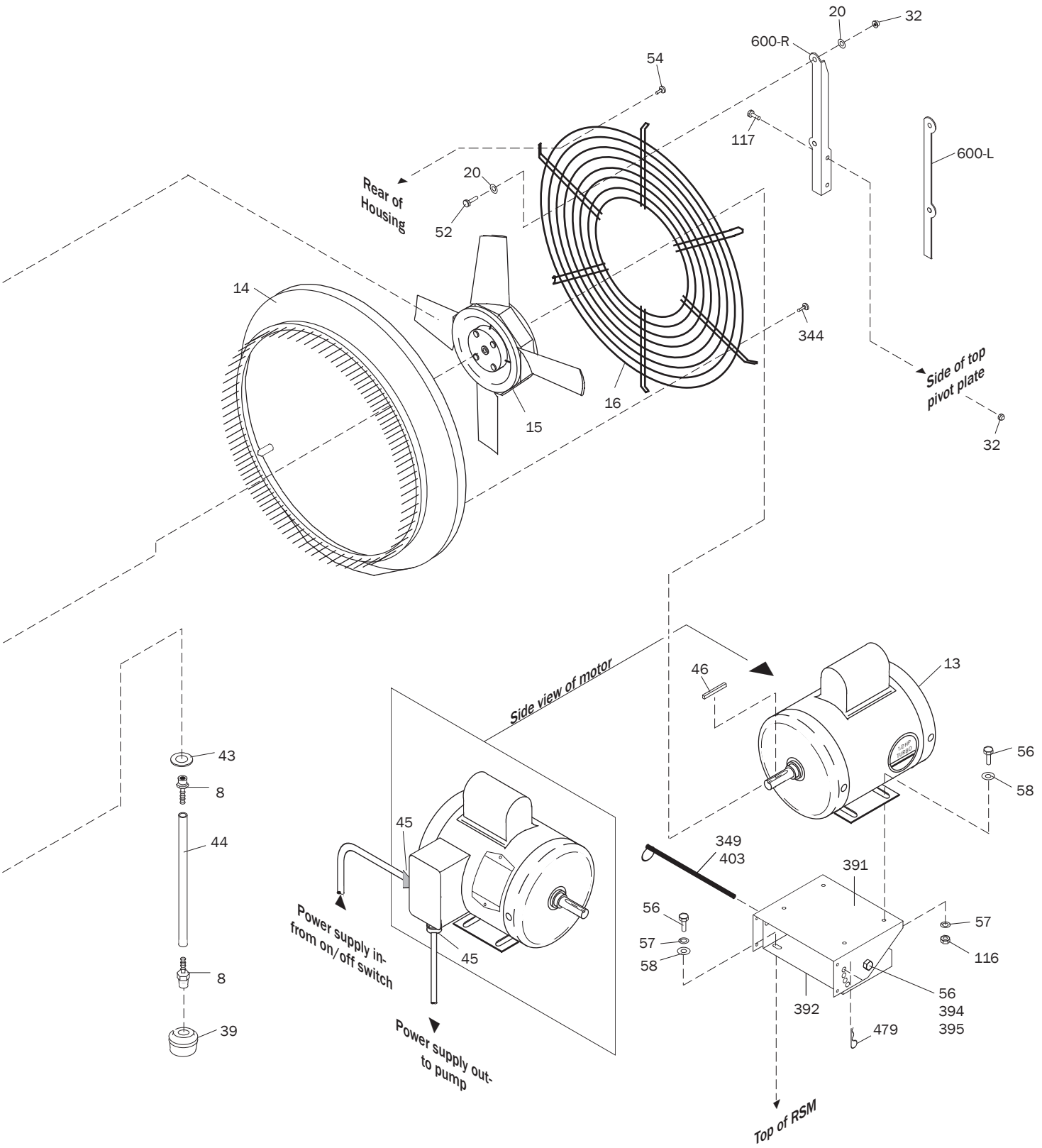


# AQUAFOG FAN EXPLODED VIEW

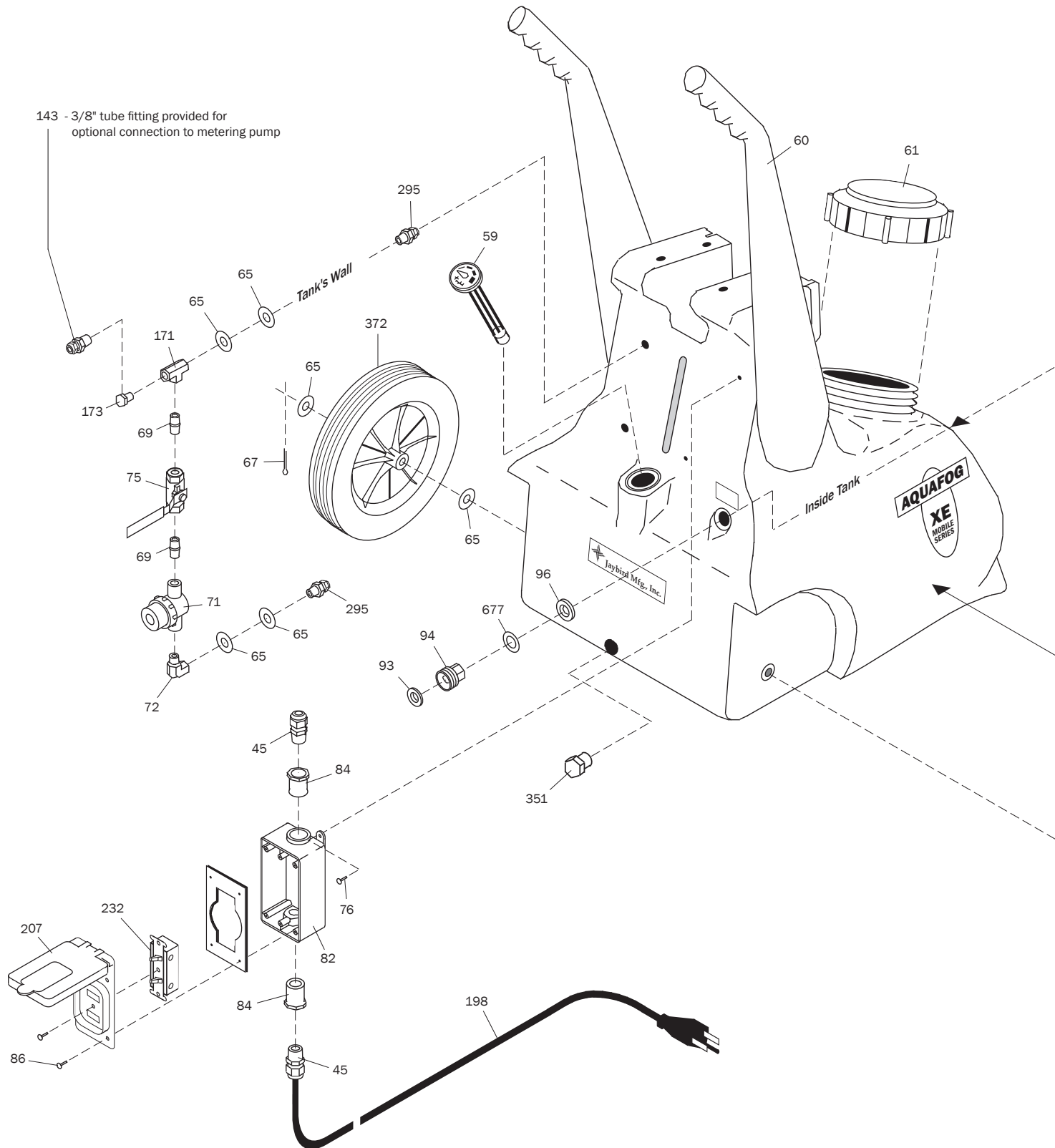
## PART IDENTIFICATION

ID #	Description	Qty/Unit
1	Housing	1
2	Safety guard	1
6	SST feed tube	1
7	Liquid feed tube fitting	1
8	Drain fitting	2
12	1/4" x 1" fender washer SST	1
13	Fan motor (specify Model)	1
14	Pinned venturi assembly	1
15	Fan blade assembly (specify Model)	1
16	Rear guard	1
17	Fan blade (specify Model)	4
19	SST Face plate & bearing	1
20	1/4" Heavy large diameter washer	8
27	Blade spacer	4
28	Reservoir (4 hole)	1
29	Front hub	1
30	Rear hub	1
31	1/4-20 x 1 1/4" HH bolt SST	4
32	1/4-20 nylon stop nut SST	12
33	1/4-20 x 3/8" socket set screw SST	2
34	Blade feeder tube	4
35	SST washer for feed tube fitting	2
39	Drain strainer	1
40	3/32 x 3/8" aluminum pop rivet	4
41	10-24 x 1/2" phillips RH SST	4
42	10-24 nylon stop nut SST	4
43	11/16 x 1 1/4" flat washer SST	1
44	Drain tubing	3'
45	Liquid-tight cord fitting	2
46	Key	1
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	12
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
276	1/4" tubing spring clamp	1
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
399	Brass ring	1
403	Brass ring	1
417	Machine Nut	4
427	Safety Guard Clip	4
434	1/8" x 1/4" tube fitting	1
435	Reservoir O-ring	1
479	Hair pin SST	1
600-L	RSM support left	1
600-R	RSM support right	1
W-14	1/4" tubing	5'





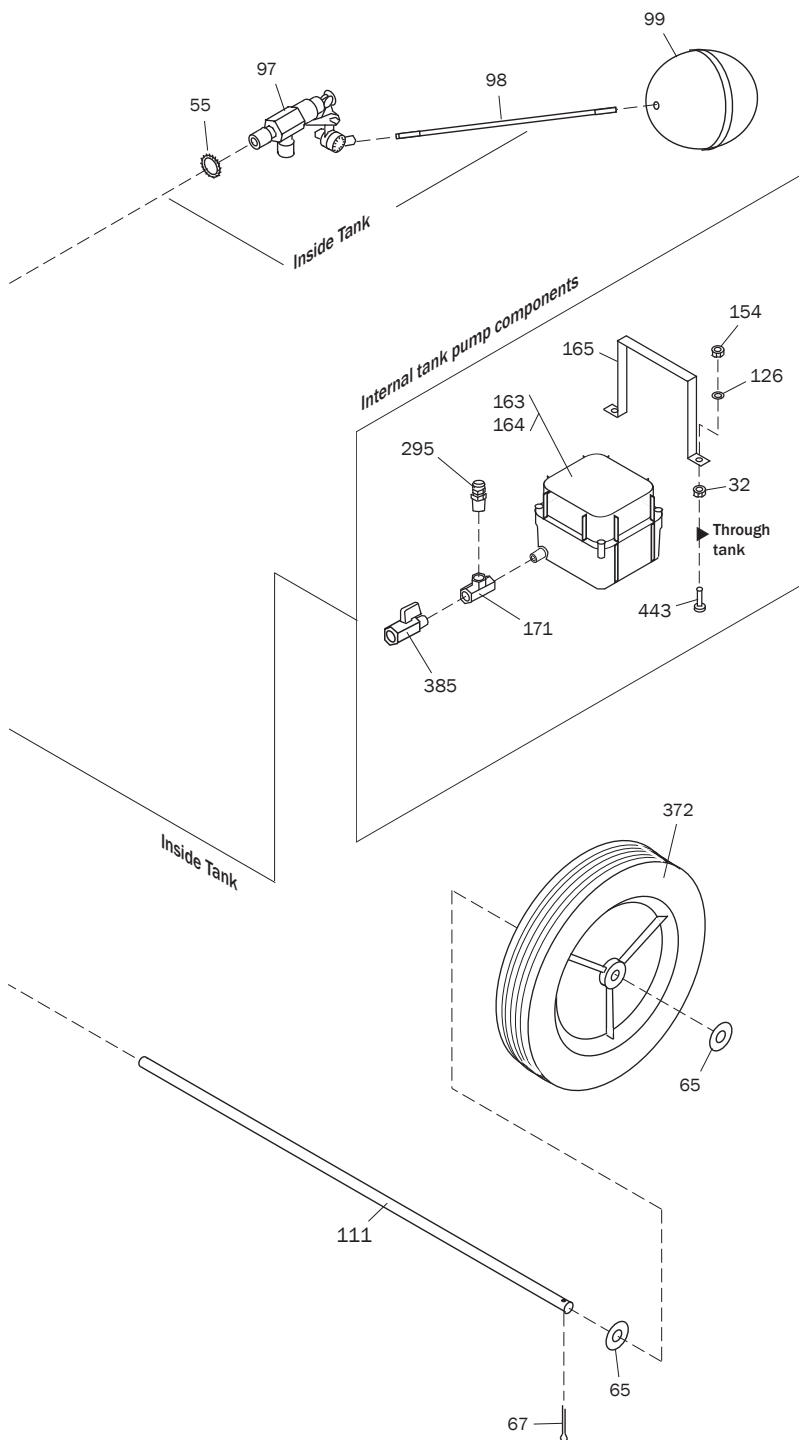
# ORSM TANK EXPLODED VIEW



# PART IDENTIFICATION LIST

## PART IDENTIFICATION

ID #	Description	Qty/Unit
32	1/4-20 nylon stop nut SST	2
45	Liquid-tight cord fitting	2
55	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" cotter pin SST	2
69	1/4" NPT close nipple	2
71	Inline strainer 1/4" female NPT	1
72	1/4" NPT street elbow	1
75	Flow control valve	1
76	10-24 x 3/4" phillips RH SST	2
82	Electrical switch box	1
84	3/4" M socket x 1/2" F NPT Bushing	2
86	6-32 x 1/2" oval slotted screw	6
93	Hose connector gasket	1
94	Hose connector	1
96	Gasket	2
97	Float valve	1
98	Stem	1
99	Float	1
111	Axle SST	1
126	1/4" lockwasher SST	2
143	1/4" NPT-M X 3/8" tube fitting	1
154	1/4-20 finish nut	2
163	Feed Pump 115 volt 60 hz.	1
164	Feed Pump 230 volt 50 hz.	1
165	Pump bracket	1
171	1/4" NPT TEE	2
173	1/4" NPT-M plug	1
198	18' Power cord with plug	1
207	Double switch cover	1
232	115/230V Double switch	1
295	1/4" NPT-M x 1/4" tube fitting	3
351	1" NPT black nylon hex plug	1
372	Heavy-duty RSM wheel	2
385	Pre-set flow rate valve	1
443	1/4-20 x 1-1/4 HH bolt	2
677	11/16 x 1-1/4" flat washer SST	1



# MAINTENANCE



## WARNING

**DISCONNECT AND LOCK OUT POWER SOURCE BEFORE SERVICING**

### 1. Clean Strainers

The ORSM is equipped with 2 accessible strainers that should be cleaned regularly - the drain strainer (Part #39) in the tank and the inline strainer (Part #71) at the bottom of the flow control valve. Check these strainers 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

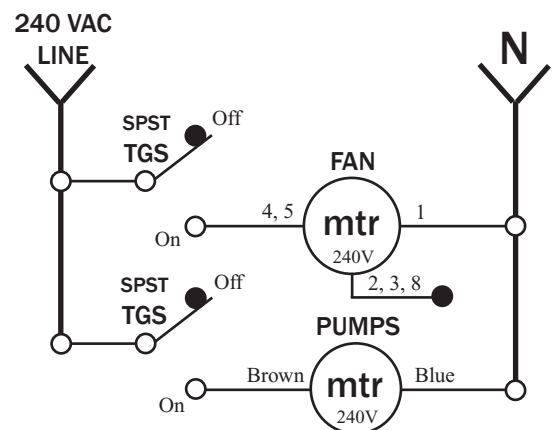
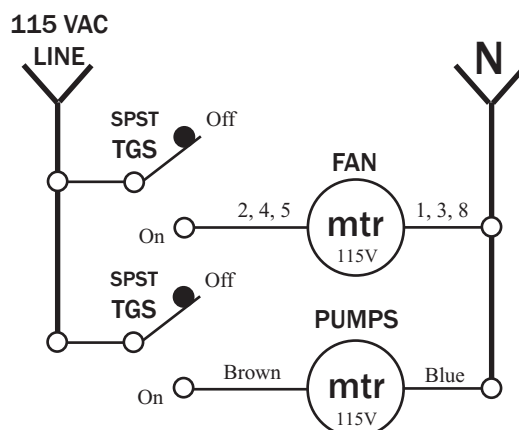
Protect your mobile Aquafog from winter damage. Expansion due to freezing can burst the fittings or the internal feed pump. If storing unit in below freezing temperatures, be sure all fluid is drained from the tank area. Damage due to freezing is not covered under warranty.

# ELECTRICAL SCHEMATICS

**115 VOLT 1 PHASE 60/50 HERTZ**  
*Domestic (USA)/ Foreign*

**240 VOLT 1 PHASE 50 HERTZ**  
*Foreign*

○ Denotes Line Connection  
● Denotes Termination  
Note: All green wires go to ground





## 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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