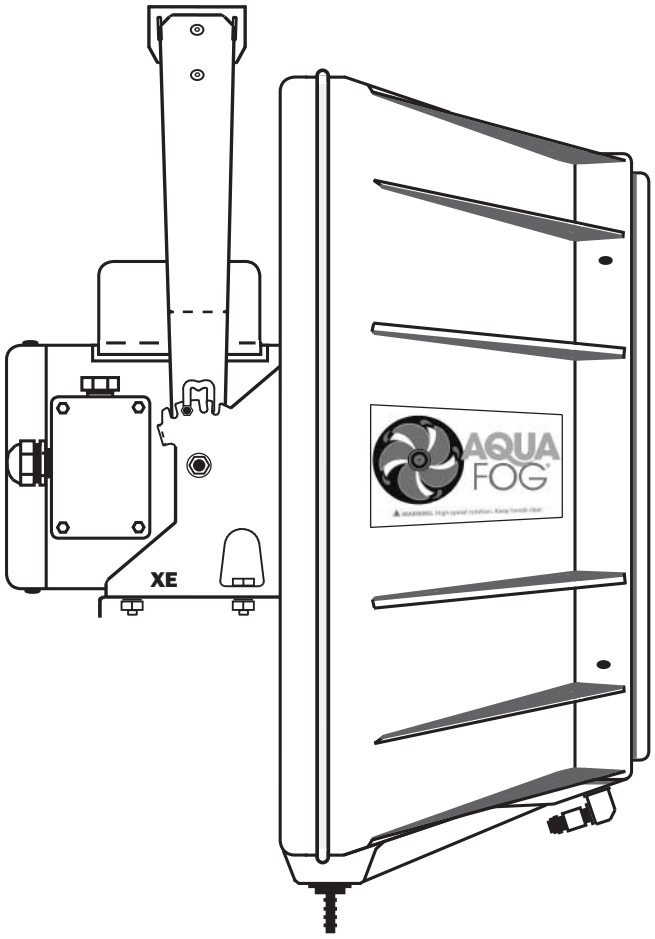
TURBO XE ATOMIZER

USER'S MANUAL AND OPERATING INSTRUCTIONS



TURBO XE MODEL

- ☐ XE-2000
- ☐ XE-2000-3ph
- ☐ XE-1000
- ☐ XE-500
- ☐ XE-330
- ☐ XE-1500
- ☐ XE-660
- ☐ XE-415

C US

Listed Motors & Components

OPERATOR'S MANUAL

MADE IN USA

NOTICE

Read & Understand
Retain for Future Reference

Table of Contents

Description

Aquafog 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 IMMINENTLY 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.***

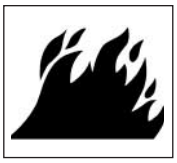
Notes

General Safety

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

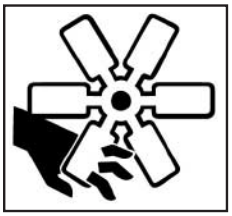
1. Read all manuals included with this product. Be familiar with the product and controls.
2. Follow United States Environmental Protection Agency (EPA) guidelines and regulations when fogging pesticide or chemical solutions.
3. Follow all local electrical and safety codes as well as the United States National Electrical Codes (NEC) and Occupational Safety and Health Act (OSHA).
4. Only persons well acquainted with these rules of safe operation should be allowed to use the atomizer.
5. Keep visitors away and NEVER allow children in the work area.
6. Use of an extension cord for the Turbo XE is not recommended. If necessary, consult a certified electrician about use of a heavy-gauge, grounded extension cord.
7. Before each use, inspect blade assembly and electrical components for signs of damage, deterioration, weakness or leakage. Repair or replace defective items before using.
8. 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***



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

When Turbo XEs are 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 TURBO XE WITHOUT THE SAFETY GUARD IN PLACE IF THE UNIT IS LOWER THAN SEVEN FEET ABOVE WORKING HEIGHT.***

9. Keep fingers away from a running unit; fast moving and hot parts will cause injury and/or burns.
10. 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 ***DO NOT ATOMIZE FLAMMABLE MATERIALS.***

11. Humidity and cold air are two common asthma triggers. Asthmatic people working with this equipment need to be made aware of the risk.
12. When atomizing toxic chemicals, follow the instructions provided by the chemical manufacturer.

Preparation

Hardware Checklist ✔

(2) 1/4-20" SST U-bolt

(4) 1/4" flat washer, lock washer, nut

(4) 1/4-20 nylon stop nut SST

(4) 5/16-18 bolt, flat washer, lockwasher, nut

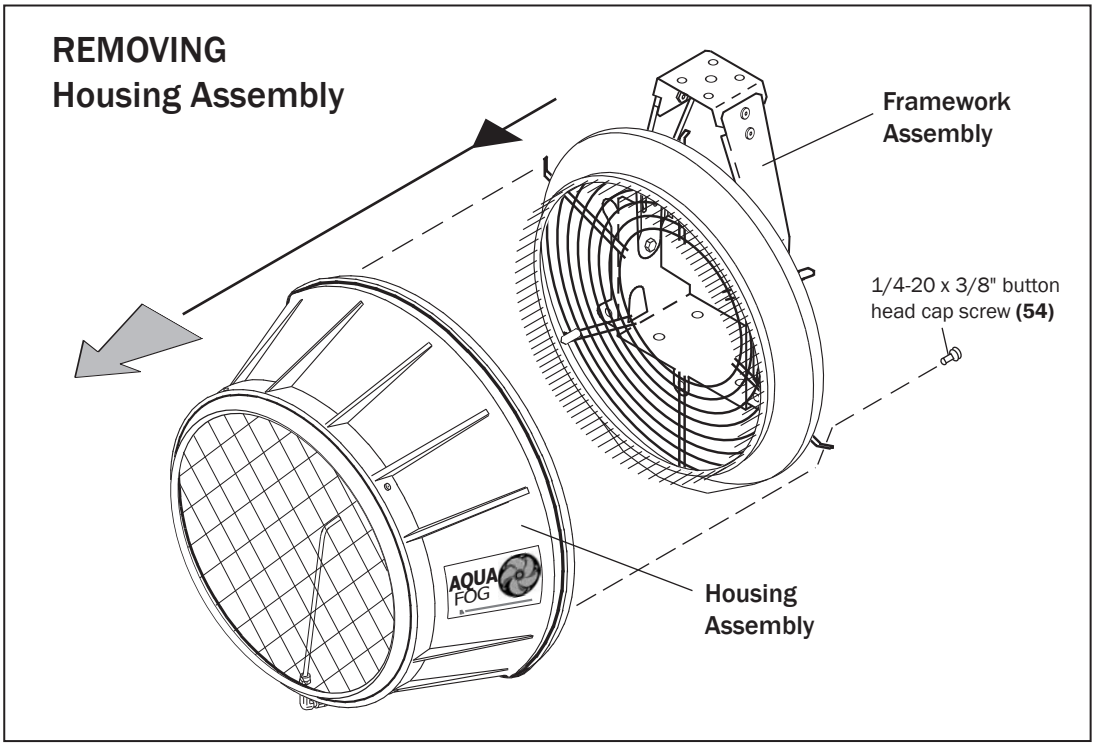
(1) motor shaft key

(6) wire tie

Tools Required

- Level
- 7/16" wrenches
- 1/2" wrenches
- 1/8" T-handle allen wrench
- 5/32" allen wrench

Fig. 1



Unpacking

After unpacking the unit, inspect for any damage that may have occured during transit. Make sure to tighten fittings, bolts, etc., before operation.

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

Pre-Installation

Detach housing assembly by using the 5/32" allen wrench to remove the six cap screws securing the housing assembly to the framework assembly. (See **Fig. 1**)

Store hardware in safe location for later use.

PLACEMENT

Placement Guidelines

⚠ NOTICE ***LOCATE A LEVEL AREA TO SET UP A STAND. TO HANG THE UNIT, SECURE AND LEVEL 1" PIPE ABLE TO SUPPORT 100 LBS.***

Mount the fan high overhead. Allow room in front of and below the fan for the unobstructed propulsion of fog. Rule of thumb: the higher the better, but mount at least three feet away from any roofing structures.

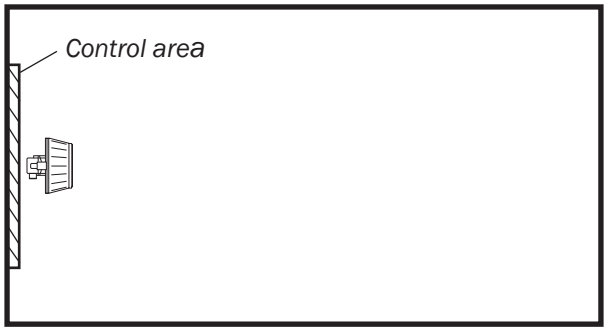
Mount the fan at the intake end of a ventilated structure. In structures with mild to no ventilation, propel fog the length of the structure. In large structures, use of an oscillator greatly enhances coverage and circulation.

DO NOT: Mount the fan near the ground or underneath tables or benches.

DO NOT: Propel the fog into the wind (direction of airflow).

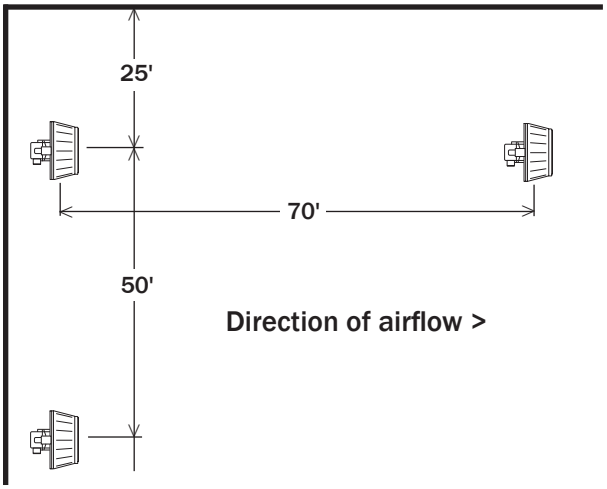
DO NOT: Cramp the fan in tight quarters or skinny aisle ways.

Layout Guidelines



Small structures

In applications requiring only one unit, mount the fan high, centered along one wall, with fog propelling horizontally along the length of the structure. If there is ventilation, mount the fan at the intake end of the structure. Generally, no oscillation is necessary unless the width of the structure is greater than 20'. The best location for automated controls is behind the fan, at an easily accessible level for monitoring.



Large structures, Force ventilation

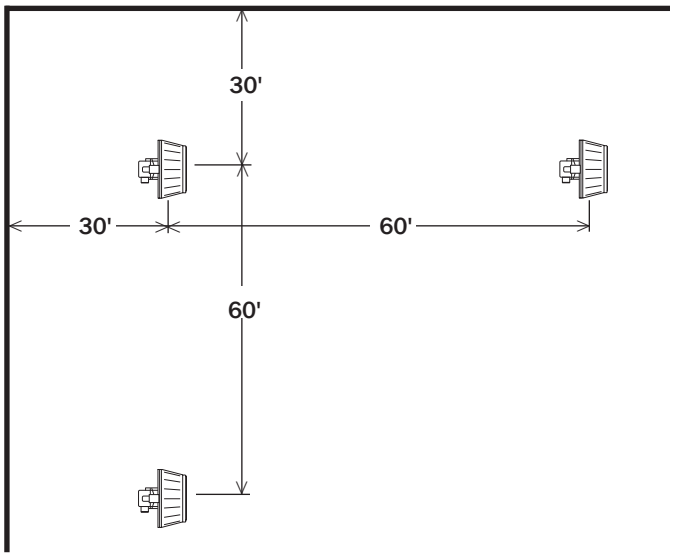
In large structures equipped with forced ventilation, the first fan row should be within a few feet of the intake end, with first fan:

- **centered along the end wall (or)**
- **placed no more than 25' from the side wall, with additional fans in the row equally spaced no more than 50' apart.**

Lengthwise, the fans should be equally spaced no farther than 70' apart. All fans should be equipped with oscillation, sweeping 180˚ in the direction of the airflow.

AVERAGE DISTANCE COVERAGE CAPABILITY			
XE-330	15 to 30 feet	XE-1000	35 to 60 feet
XE-500	25 to 40 feet	XE-1500	45 to 70 feet
XE-660	25 to 45 feet	XE-2000	50 to 85 feet

PLACEMENT (CONT.)

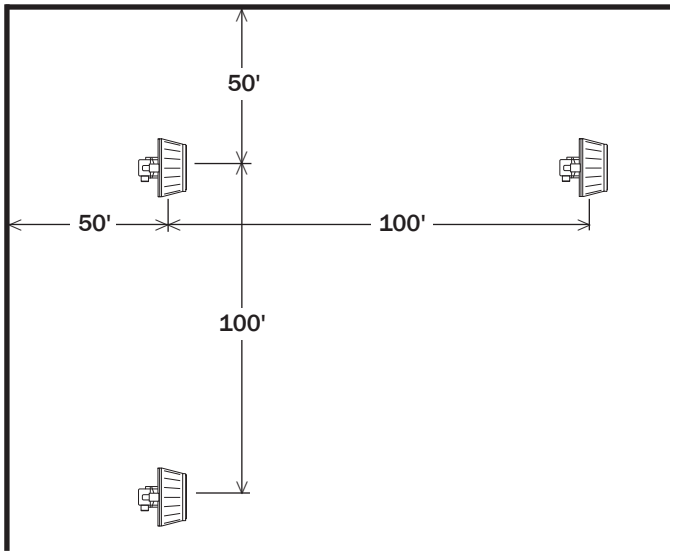


Large structures, Natural ventilation

In large structures with natural ventilation, propel fog the length of the structure with the first fan row no more than 30' from the end wall. The first fan should be:

- **centered along the end wall (or)**
- **placed no more than 30' from the side wall, with additional fans in the row equally spaced no farther than 60' apart.**

Lengthwise, the fans should be equally spaced and no more than 60' apart. All fans should be equipped with oscillation, sweeping 360˚.

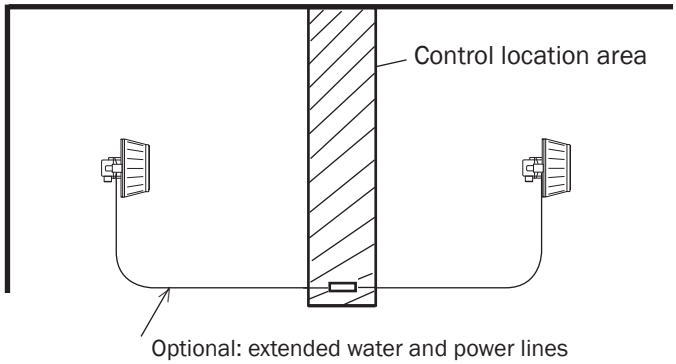


Large structures, Closed or minimum ventilation

In closed structures with little to no ventilation, propel fog the length of the structure with the first fan row no more than 50' from the end wall. The first fan should either be:

- **centered along the end wall (or)**
- **placed no more than 50' from the side wall, with additional fans in the row equally spaced no farther than 100' apart.**

Lengthwise, the fans should be equally spaced and no farther than 100' apart. All fans should be equipped with oscillation, sweeping 360˚.

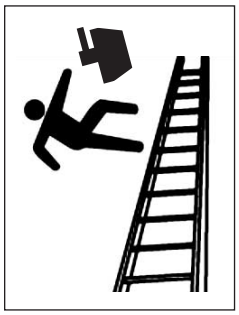


Operating two fans with one control

If you are planning to operate two fans using a single control (purchased from the manufacturer), we recommend ordering extended water and power lines. Units should be equal distances from the controls to reach a centrally-located control.

INSTALLATION

⚠ DANGER ***USING A LADDER TO HANG THE TURBO XE IS DANGEROUS. USE PROPER LIFTING EQUIPMENT LIKE A SCISSOR LIFT.***

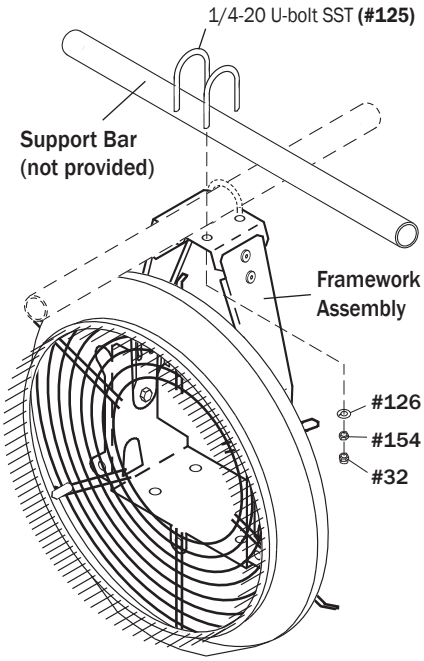
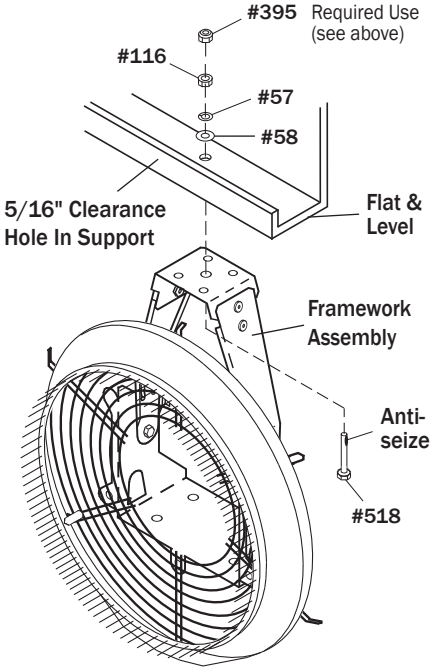
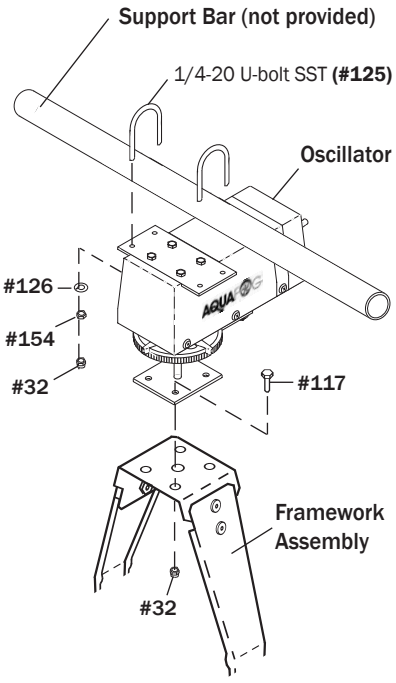


Installation without an Oscillator (Fig. 2A)

Securing To Pipe - Use U-bolts provided. Tighten securely. The second nylon lock-nut (Part #32) should be tightened on top of the first nut to provide added protection.

Universal Mount - The support should be secure, level and flat. Drill a 5/16" clearance hole. It is VERY IMPORTANT to tighten the second nylon lock-nut (Part #395) on top of the first nut (Part #116). Jam the two together for a secure mount. **Note:** Anti-seize applied to the bolt is to prevent the stainless steel from galling.

Fig. 2

(A) Secure to Pipe	(A) Universal Mount	(B) Osc. Mount
		

Installation With an Oscillator (Fig. 2B)

Support bar should be level. Use the U-bolts (Part #125) supplied with the XE Turbo unit to secure the oscillator to the bar.

Level the oscillator so that the base of the oscillator housing is parallel to the ground. The framework assembly is capable of angling fog output up to 15° upward or downward.

Remove the nylon stop nuts (Part #32) loosely attached to the oscillator support plate. Raise the framework assembly directly underneath the oscillator and replace the nuts. Tighten securely. Use two wrenches when tightening part #117 with part #32 to prevent stress on the oscillator's gear train - one from above to keep the bolt head stationary and one from below to tighten the nut.

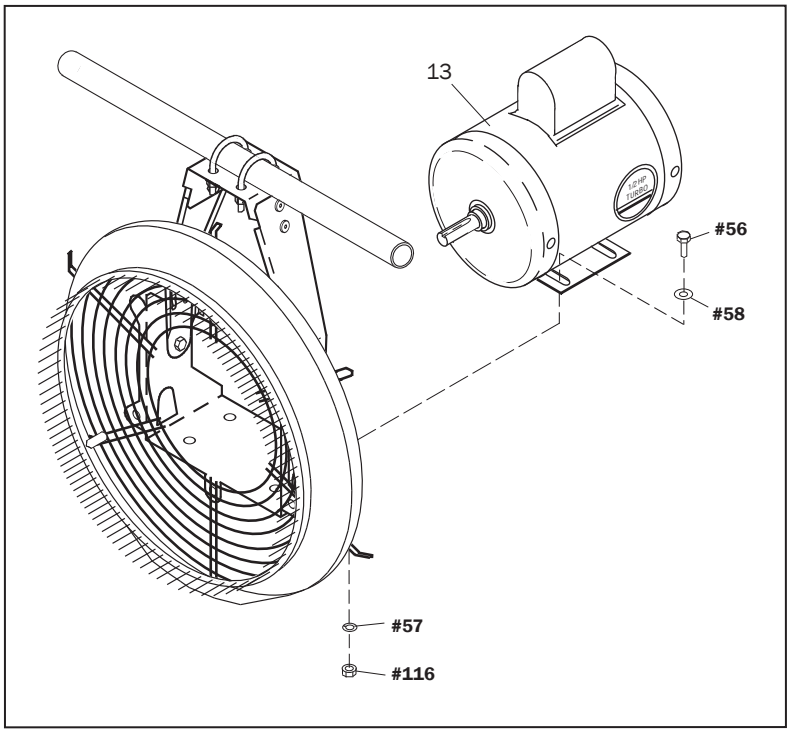
Installing Motor & Blade Assembly

Install Motor

Slide the motor onto the motor support plate of the framework assembly (as shown in **Fig. 3**). Secure the base of the motor to the motor support plate using 5/16" hardware provided (Part #56, 57, 58, 116).

Tighten hardware by hand at this stage, as final tightening will follow the blade adjustment procedure.

Fig. 3



⚠ WARNING

ENSURE THE BLADE ASSEMBLY IS FULLY ENGAGED ON THE SHAFT OF THE MOTOR

Install Blade Assembly

Rotate the motor's shaft until the key slot is at the top (see **Fig. 4**).

Place the key (provided) into the slot (see **Fig. 5**) and gently slide the blade assembly onto the shaft until it is fully engaged. If you encounter resistance, DO NOT FORCE. Remove assembly and try Scotch-Brite, sandpaper or a fine metal file to smooth down any areas of resistance.

When the blade assembly is in place, securely tighten the two (2) hub set screws with the long 1/8" T-handle allen wrench, reaching between venturi pins to gain access to the set screws.

Fig. 4

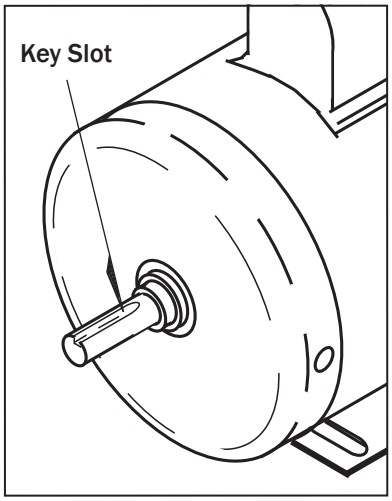
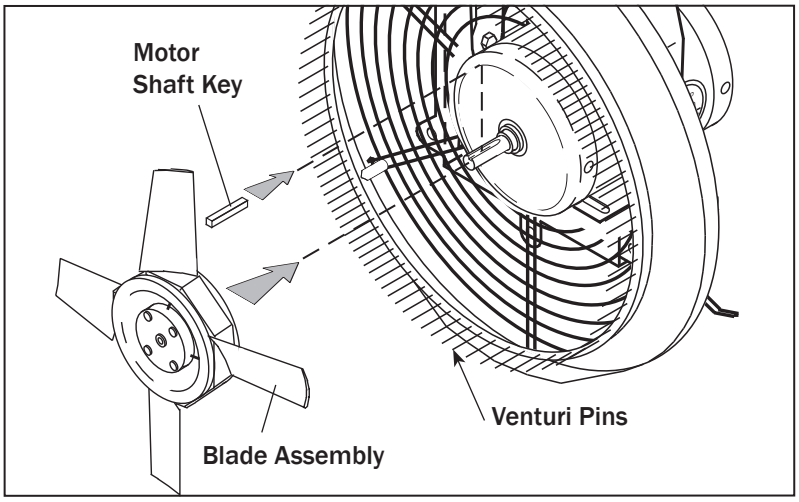
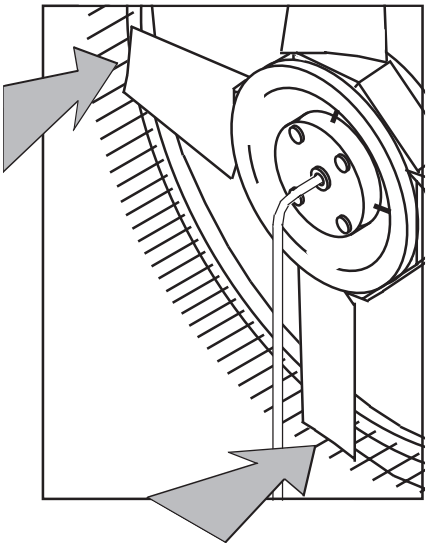


Fig. 5



Housing Re-Attachment

Fig. 6



⚠ CAUTION ***ENSURE THE BLADE ASSEMBLY IS CENTERED INSIDE THE PINNED VENTURI. ADJUST MOTOR IF NECESSARY.***

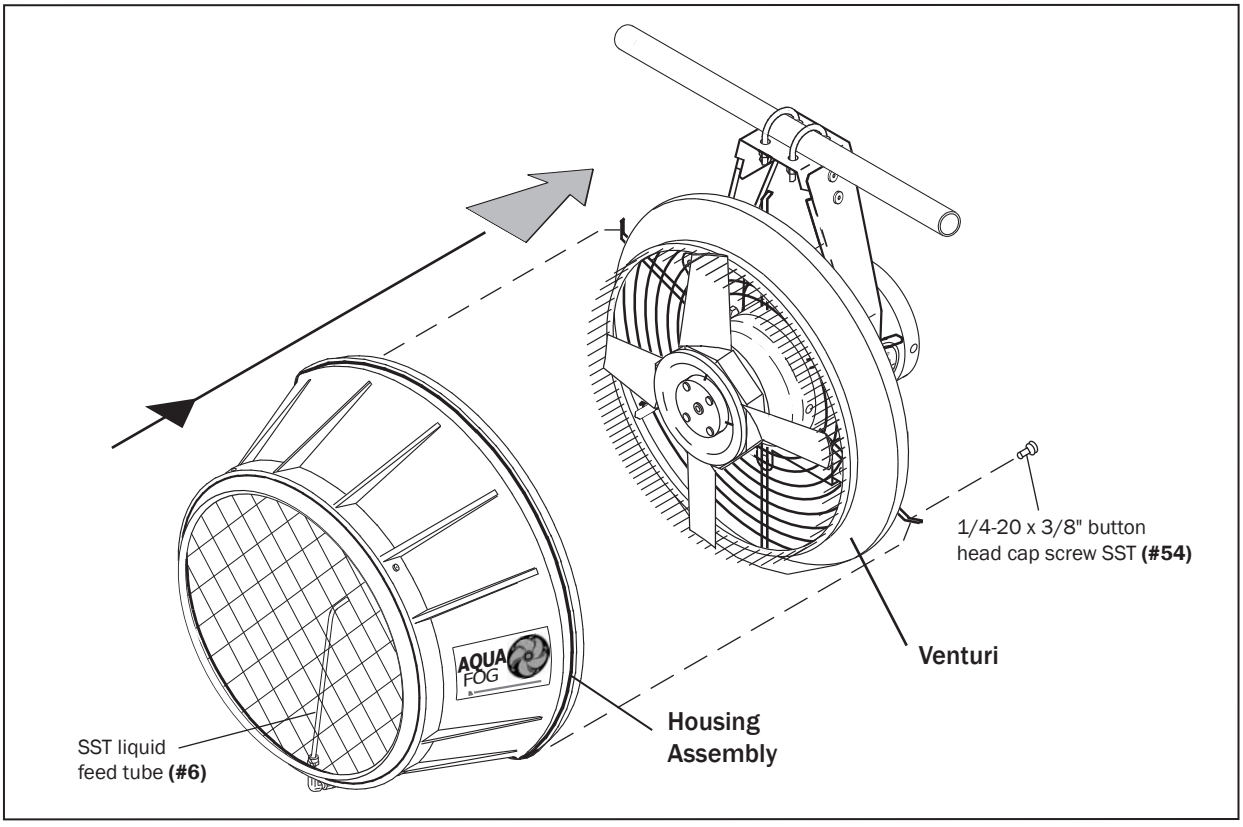
Once the blade assembly is secured to the motor, rotate it by hand to check for a centered circular rotation and clearance greather than 1/8”

If a horizional adjustment is needed, loosen the bolts (Part #56) securing the motor to the motor support plate and shift motor from side to side until centered. Tighten bolts securely.

Attaching Housing

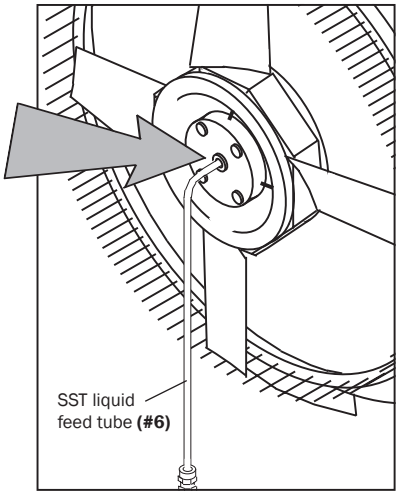
Locate the six cap screws set aside during preparation. (Refer to **Fig. 1**) Reposition the housing over the venturi starting with the lower half of the housing. **Tilt housing downward to clear the lower lip of the venturi. Raise the rear edge of the housing between the venturi and rear guard.** (See **Fig. 8**) Re-insert the six cap screws through the rear guard eyelets and thread *loosely* to housing.

Fig. 8



Housing & Pivot Adjustment

Fig. 9



Make sure liquid feed tube enters about 1/4" into reservoir's bronze bushing with minimal stress.

As you straighten the housing, it is important that the attached liquid feed tube (Part #6) is inserted properly into the reservoir. Adjust the feed tube (if necessary) so that it ends up centered and inserted approximately 1/4" into the reservoir's center bearing. (See **Fig. 9**)

Once the liquid feed tube is properly inserted, tighten the six cap screws until snug. **Do not over tighten.**

> *Ideally the liquid feed tube should not touch the inner wall of the bearing. However, it will not cause undue wear if the tube lightly touches the bearing.*

Note: If shifting the housing does not center the tube, it may be necessary to slightly re-form the tube. Remove the housing and loosen the brass cap at the base of the tube to detach the tube and cap. Slightly re-angle tube at the bend. Re-attach the tube and housing. Check feed tube position.

Pivot Locking System

After securing the hanging unit, a pivot adjustment can be made to direct the fogging output to a desired location.

This unit has a positive pivot locking system with four available positions.

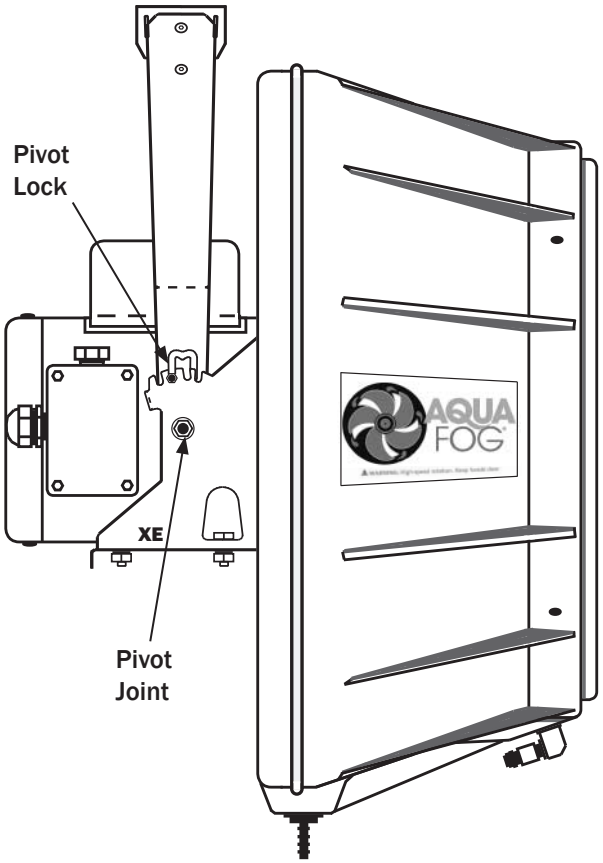
- 5° up
- Horizional
- 7° down
- 14° down

To Make an Adjustment

Relieve the weight of the unit and lift one pivot lock up and rest it in the middle of the "M". While securely support the unit lift the second lock up.

Adjust unit to desigered angle. Re-enguage both locks into the closest available slot.

NOTE: Use both sides of the "M" to get availability of all four pivot angles.



Connecting Utilities

Water Connections

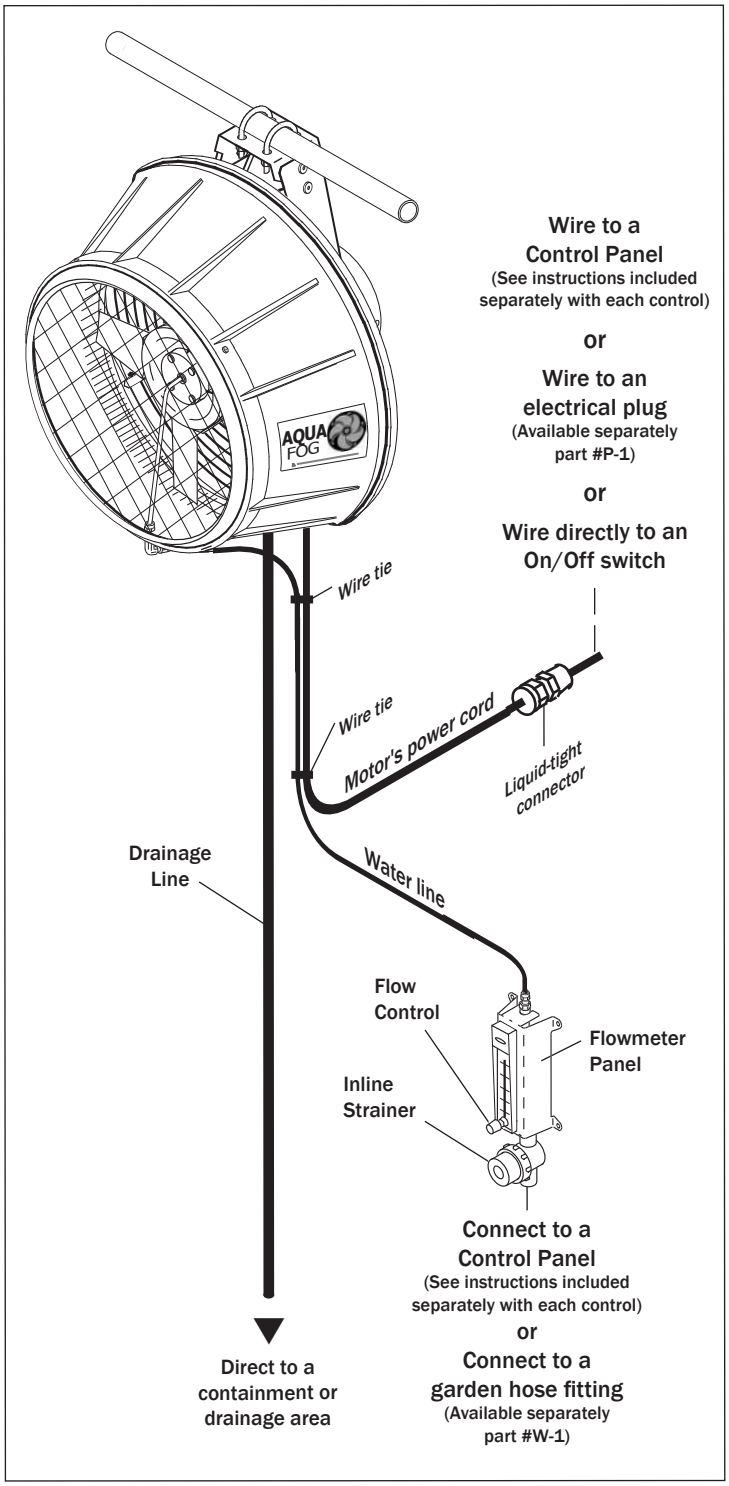
Insert the water line tubing into the brass connector at the front base of the housing. Insert the other end of the tubing into the brass connector at the upper left side of the flowmeter panel. *Tighten only about 1/2 turn past finger tight.* Using the wire ties provided, secure the water line tubing to the motor power cord. (Refer to **Fig. 10**)

The flowmeter panel is equipped with a 1/4" FNPT thread at the base of the inline strainer and can be connected to a water supply in various ways. (See **Fig. 10**)

- The Flowmeter Panel can be connected directly to an automated timer, thermostat or humidistat control.
- For a garden hose connection, a female swivel water hose connector assembly is sold separately (Part #W-1).
- The flowmeter panel can also be connected directly to a water supply using 1/4" NPT fitting.

Attach the 1/2" drain tubing (push fit) to the drain fitting (Part# 8) at bottom of housing.

Fig. 10



Power Connection

⚠ WARNING

ALL WIRING AND ELECTRICAL CONNECTIONS MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN. INSTALLATION MUST BE IN ACCORDANCE WITH LOCAL AND NATIONAL CODES.

Connect motor's power cord using the liquid-tight connector provided. (See **Fig. 10**)
For information on wire guage. (See **Fig. 11**)

- If automating the Turbo XE using a control system, relays or electrical contactors may be required along with water solenoids to control water supply.
- For manual operation, connect the motor's power line to an optional watertight electrical plug (Part #P-1).

Connecting Utilities (cont.)

Fig. 11

POWER SUPPLY (LOAD)			
# of Units & Voltage	1/4 & 1/3 HP	1/2 HP	3/4 HP
(1) Turbo XE 115V	15 A Circuit	15 A Circuit	20 A Circuit
(2) Turbo XE 115V	20 A Circuit	30 A Circuit	30 A Circuit
(1) Turbo XE 230V	15 A Circuit	15 A Circuit	15 A Circuit
(2) Turbo XE 230V	15 A Circuit	15 A Circuit	20 A Circuit

PROPERLY GROUND ALL CONNECTIONS

⚠ WARNING ***GROUND FAULT RECEPTACLE(S) IS 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.*

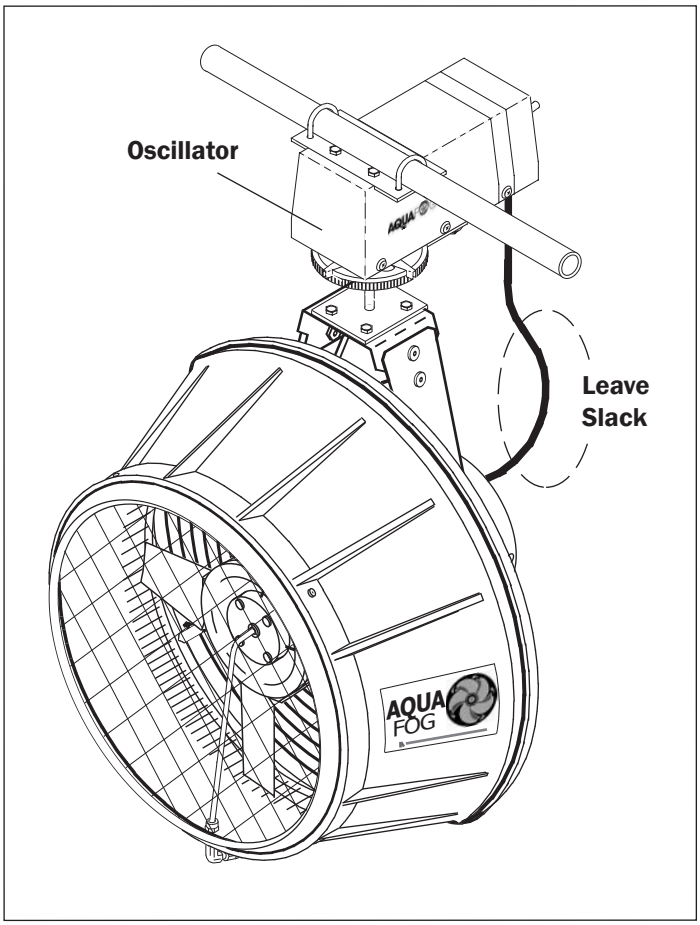
Wiring the Oscillator

⚠ WARNING ***ALL WIRING AND ELECTRICAL CONNECTIONS MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN.***

Remove the black plug from the the side of the motor's junction box. Install the oscillator power cord and connector. This cord is pre-measured to the appropriate length. DO NOT SHORTEN. (See **Fig. 13**)

Remove the motor junction box cover. Strip the ends of the oscillator power cord wires. Using the wire nuts provided, connect the oscillator cord wires and Turbo XE motor wires as shown in the appropriate wiring schematic. (See Next Page)

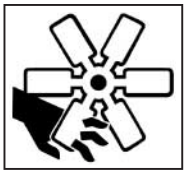
Fig. 13



NOTE: Turbo XE motors are dual voltage and can operate either on high or low voltage. For connection changes, refer to the electrical schematic located on the motor.

Operation

⚠ 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.***



BUMP START Turbo XE 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. If no problems are detected, slowly turn the flowmeter control knob counter-clockwise until the desired output is achieved. (See **Fig. 14**) The fluid level ball should move up and down as adjustments are made.

If using an oscillator, check the rotational movement and be SURE THE POWER CORD HAS ENOUGH SLACK. If there is not enough, try re-mounting the Turbo XE with the oscillator power cord falling in line with it's motor.

Note: *If desired, the unit can also be operated dry for continuous periods.*

Flowmeter Control

⚠ NOTICE ***CLOGGING OCCURS MORE FREQUENTLY WHEN OPERATING AT LOW FLOW RATES.***

The volume of fog can be regulated by adjusting the flowmeter.

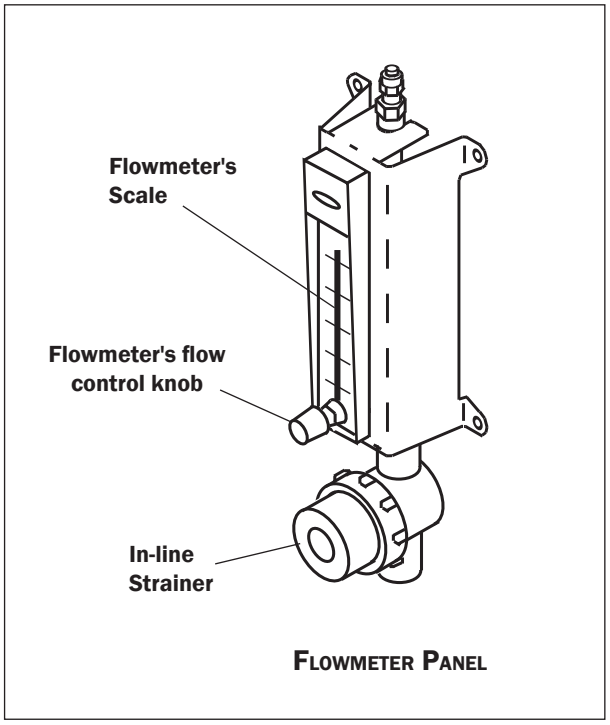
Particle size is smaller at lower outputs, so it is better to operate the fan at a lower output for a longer period of time.

Flowmeters maintain a more reliable flow rate if operated high on their flow scale.

> *If your desired output volume is close to the bottom of the scale, it may be beneficial to purchase a smaller flowmeter or install a 5 micron sediment filter.*

At the base of the flowmeter is an in-line strainer (Part #71) with a removable cap. Periodically check inside and flush any sediment from the screen.

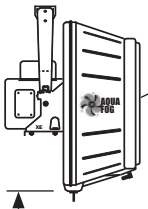
Fig. 14



FLOWMETER PANEL

COMMON SETUPS

7 FEET OR HIGHER



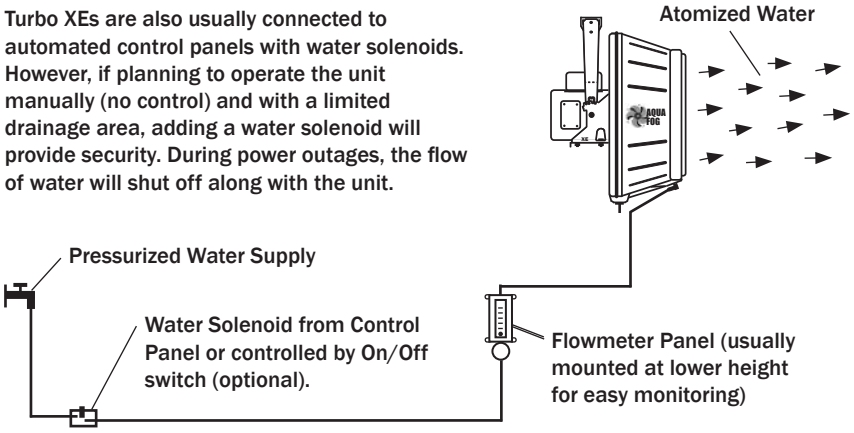
Removal of the front guard will produce drier results, especially when operating at higher fogging outputs.

7'

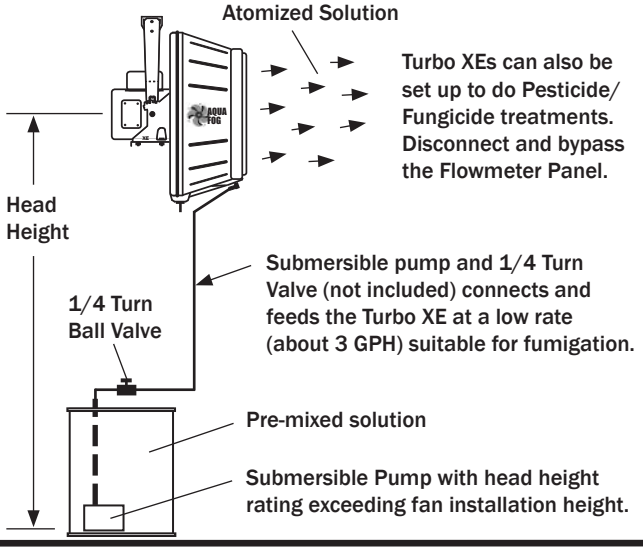
Turbo XEs perform best when mounted up high. In addition, OSHA regulations allow fans to be unguarded if mounted 7 feet above working height.

WATER FEED *(ordinary 30 - 70 PSI)*

Turbo XEs are also usually connected to automated control panels with water solenoids. However, if planning to operate the unit manually (no control) and with a limited drainage area, adding a water solenoid will provide security. During power outages, the flow of water will shut off along with the unit.

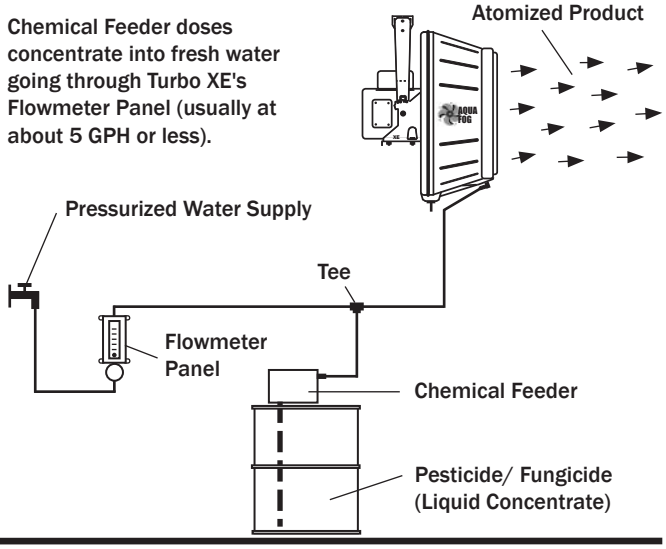


SUBMERSIBLE PUMP FEED

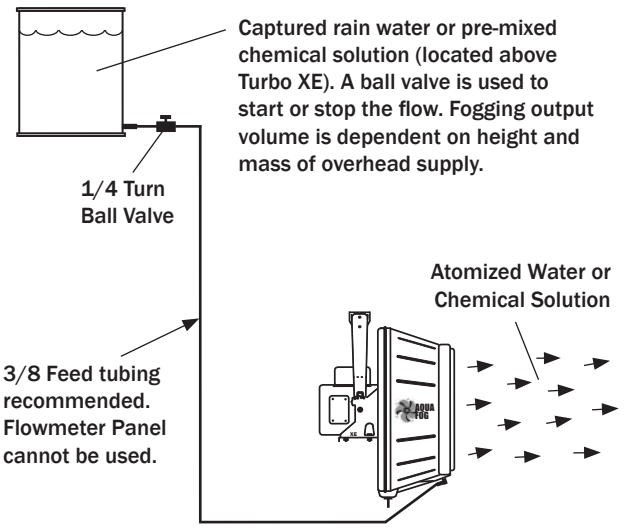


CHEMICAL INJECTION FEED

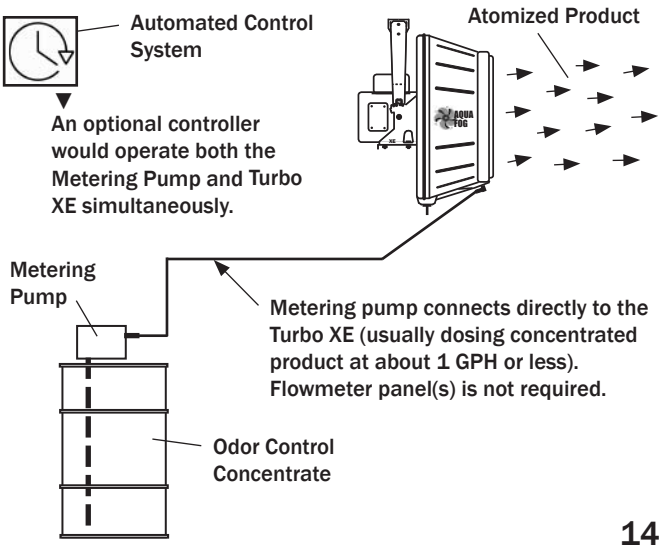
Chemical Feeder doses concentrate into fresh water going through Turbo XE's Flowmeter Panel (usually at about 5 GPH or less).



GRAVITY FEED



METERING PUMP FEED



TROUBLESHOOTING

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

1. Fan Does Not Operate

A.) Check voltage requirements on unit and electrical supply. Check for live receptacle, plug, power line and toggle switch.

B.) Look for any loose connections inside the main motor's junction box.

2. Unusual Noise

A.) 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.

B.) 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.

3. No Fog

A.) If the flowmeter is closed, turn the flow control knob counter-clockwise to increase fogging output. Visually check for sediment clogs within the flowmeter's body and remove inline strainer's cap to flush any debris from screen. Refer to the maintenance section for flowmeter cleaning instructions.

B.) If the fan is automated and the water is supplied through a water solenoid, check to see if the solenoid is electrically activated by the control and check the solenoid for clogs.

C.) If after checking both the flowmeter and solenoid, you still do not have any fog, begin a process of elimination starting with the water source. Disconnect and reconnect your plumbing before and after each device to check for any obstructions.

4. Poor Quality Fog

A.) The liquid feed tube (Part #6) may not be inserted properly into the reservoir. The feed tube must be inserted approximately 1/4" into the center bearing, but it should not touch the back of the reservoir.

B.) 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 pas sageways of each individual blade as well. Reassemble and reattach.

5. Fog Slowly Decreases

If fog output gradually decreases over time, sediment is slowly clogging the flowmeter's needle valve. Try operating at a higher output or cleaning the inline strainer (Part #71). If the problem persists, a smaller size flowmeter may be required. Flowmeters perform best when set half way up the scale or higher.

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

6. Fan Motor Becomes Excessively Hot

The main fan motor normally becomes very hot to the touch. However, if it gets so hot that it begins to smell or smoke or the power cord becomes 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

A.) 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.

B.) If the vibration seems to be coming from the motor, first check that the motor mounting hardware is securely tightened. If hardware is secure, remove the blade assembly and operate the motor without the blade. If vibration continues, the motor has a serious mechanical problem and probably needs to be replaced.

9. Liquid Spilling From Fan Housing

If liquid builds up inside the housing, the drain tube is clogged. Clean debris from around the drain inside the housing and flush drain tube.

10. Plumbing Leaks

Un-thread fittings and clean both the male and female threads. Apply new thread tape (approximately 2-3 wraps) and reconnect. If a tube fitting is leaking, tighten the cap - no more than 1 turn past finger tightened. If the leak persists, replace the tube fitting insert.

Turbo XE Exploded View

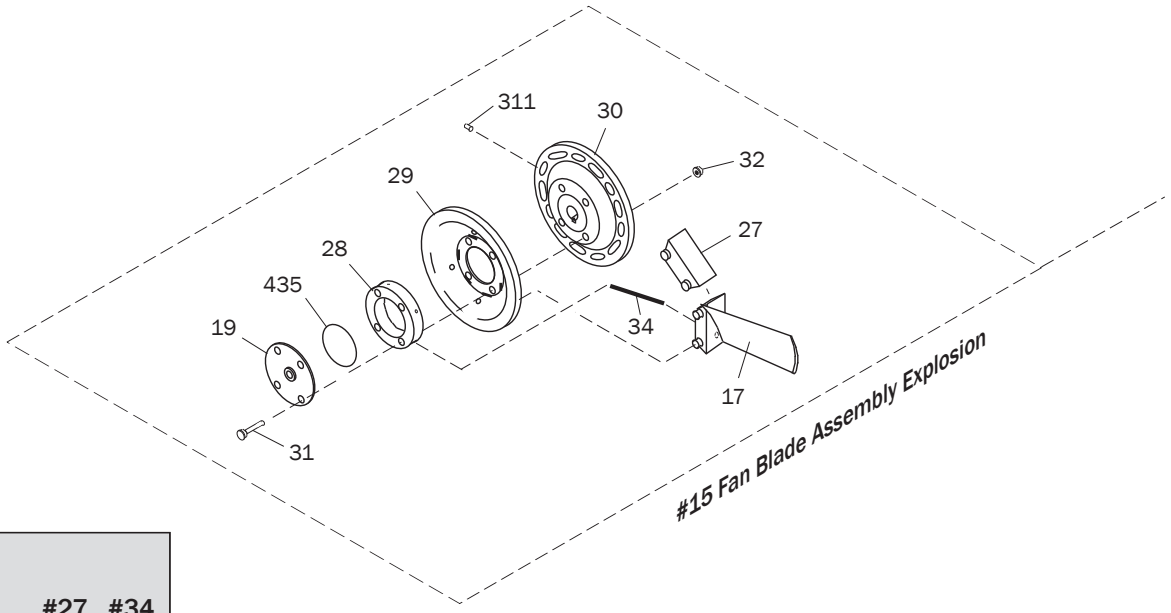
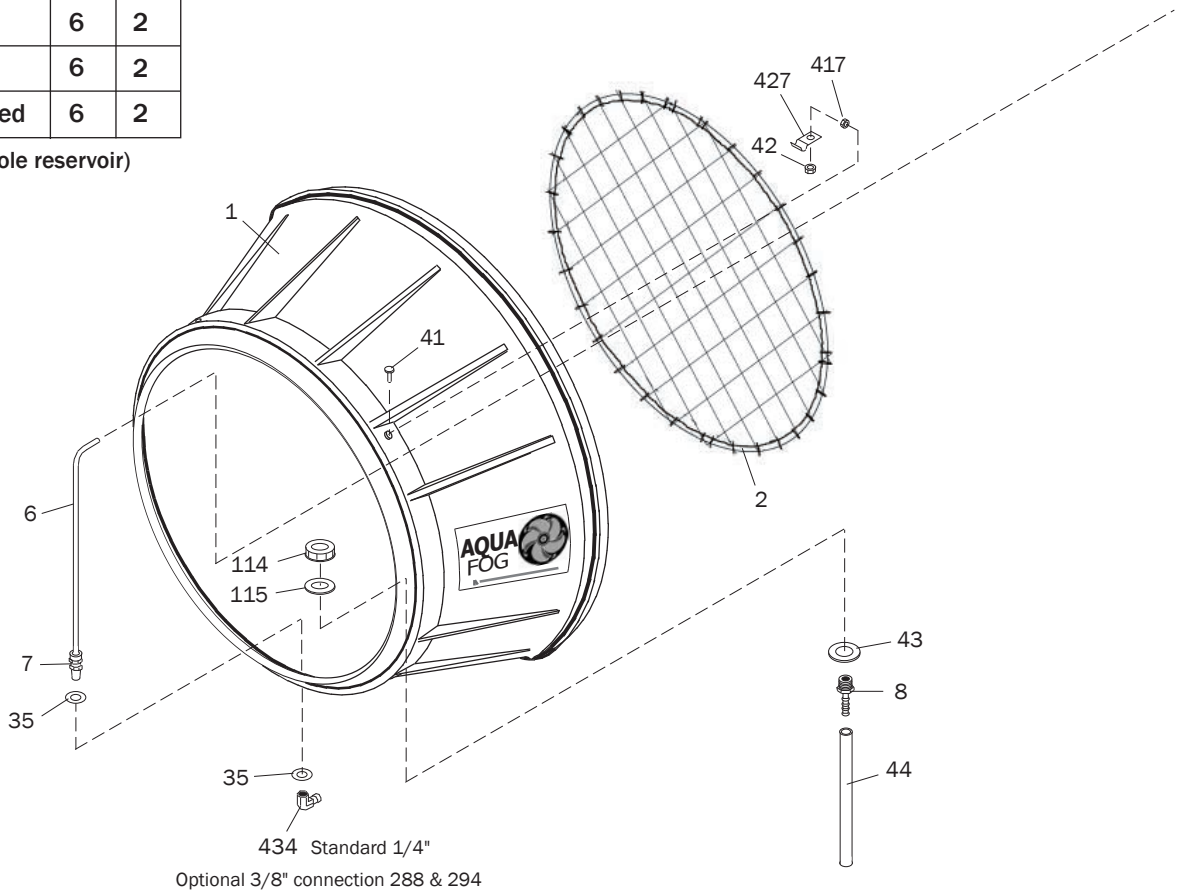


Fig. 15

BLADE DETAIL			
Model	Part #17	#27	#34
XE-2000	4) 30º pitch	4	4
XE-1500	4) 30º pitch	4	4
XE-1000	4) 25º pitch	4	4
XE-660	4) 25º pitch	4	4
XE-500*	2) 25º pitch	6	2
XE-415*	2) 25º pitch	6	2
XE-330*	2) 25º modified	6	2

*Part #28 (request a two hole reservoir)



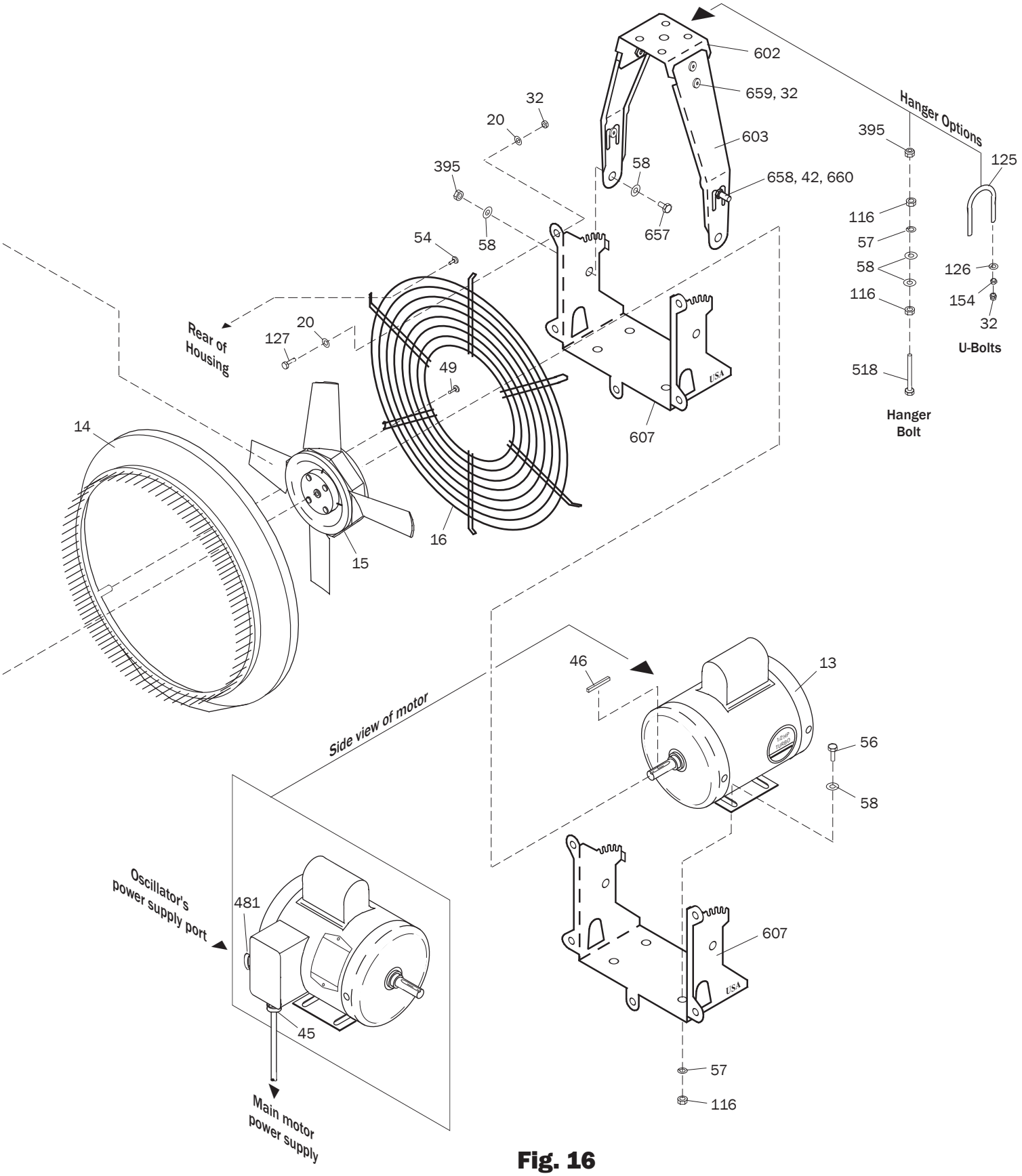
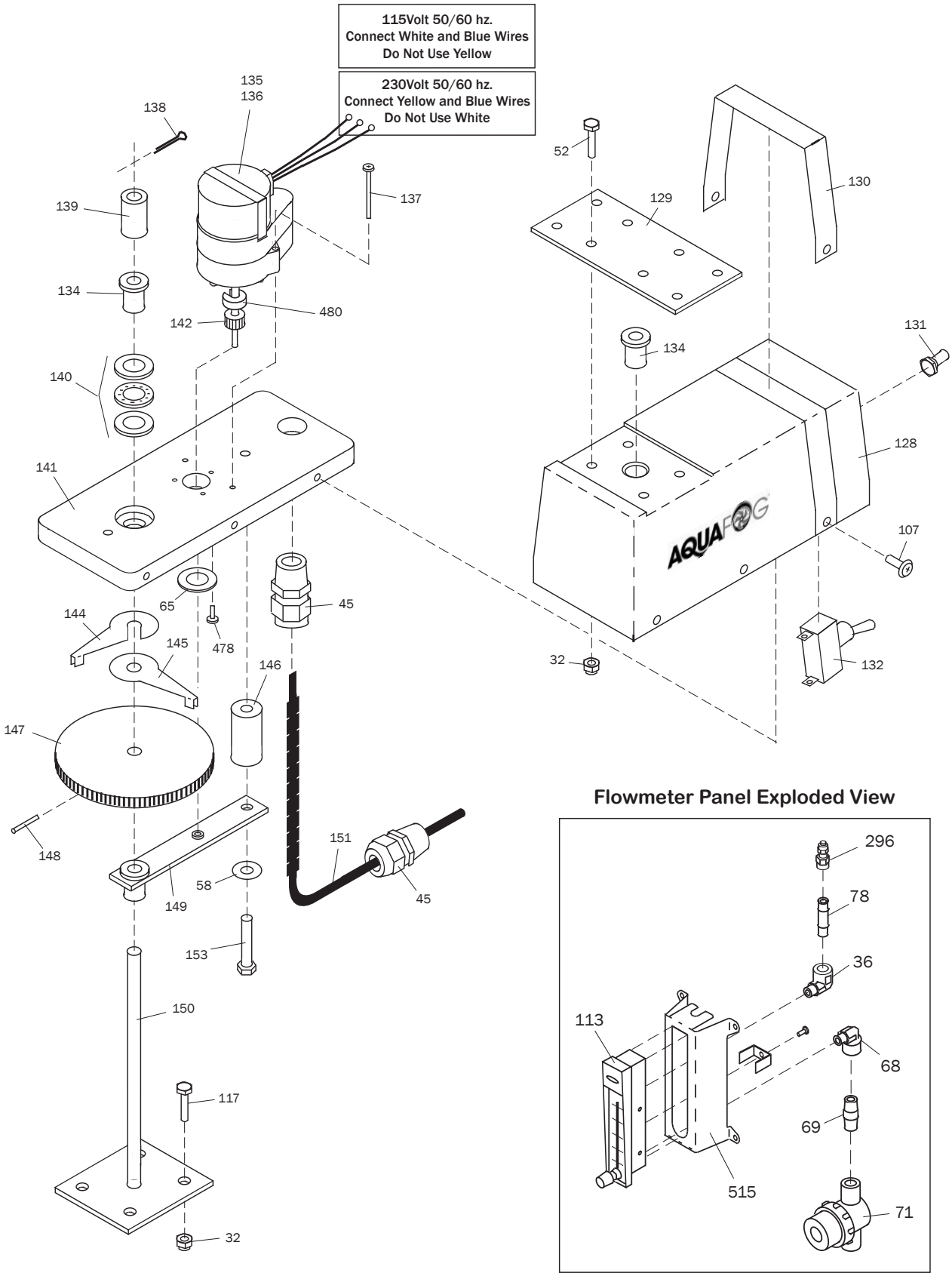


Fig. 16

HORSE POWER (HP) REFERENCE CHART	
3/4 HP	XE-2000, XE-1500
1/2 HP	XE-1000, XE-660, XE-500, XE-330

Oscillator Exploded View



Flowmeter Panel Exploded View

entire panel is also available, part# XE-FP
(must specify flowmeter size)

Part Identification List

ID #	Description	Qty per Unit
	TURBO XE COMPONENTS	
1	Housing	1
2	Safety guard	1
6	SST liquid feed tube	1
7	Liquid feed tube fitting	1
8	Drain fitting	1
13	Fan motor (specify H.P. reference **Fig. 16**)	1
14	Pinned venturi assembly	1
15	Fan blade assembly (specify model, see **cover**)	1
16	Rear guard	1
17	Blade, specify model & qty. (refer to **Fig. 15**)	
19	SST Face plate & bearing	1
20	1/4" Thick washer	10
27	Blade spacer (refer to **Fig. 15**)	
28	Reservoir (refer to "*" **Fig. 15**)	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	17
34	Blade feeder tube (refer to **Fig. 15**)	
35	SST washer for feed tube fitting	2
41	10-24 x 5/8" Phillips RH SST	4
42	10-24 nylon stop nut SST	6
43	11/16 x 1 1/4" flat washer SST	1
44	Drain tubing	1
45	Liquid-tight connector	1
46	Key	1
49	10-24 x 1/2" phillips truss head SST	4
54	1/4-20 x 3/8" button head cap screw	6
56	5/16-18 x 3/4" HH bolt SST	4
57	5/16" lock washer SST	3
58	5/16" flat washer SST	10
114	Drain fitting nut	1
115	Drain gasket	1
116	5/16-18 finish nut	6
125	1/4-20 U-bolt SST	2
126	1/4" lockwasher SST	4
127	1/4-20 x 7/8" HH bolt SST	5
154	1/4-20 finish nut SST	4
288	1/8" NPT Elbow	1
294	1/8" M x 2/8" tube fitting	1
311	1/4-20 x 3/8" socket set screw SST	2
395	5/16-18 nylon stop nut SST	3
417	10-24 Machine Nut SST	4
427	Safety guard clip	4
434	1/8" x 1/4" tube fitting elbow	1
435	Reservoir O-Ring	1
481	1/2" Black hex plug	1
518	5/16-18 x 2-3/4" HH bolt SST	1
602	XE Hanger Top SST	1
603	XE Hanger Side SST	2
607	XE Motor Plate SST	1
657	5/16-18 x 5/8" HH bolt SST	2
658	10-24 x 1" phillips truss MS SST	2
659	1/4-20 x 5/8" button HCS SST	4
660	Pivot, vinyl cap	2
661	1/8" SST blind rivet	4
	FLOWMETER & OSCILLATOR COMPONENTS	
32	1/4-20 nylon stop nut SST	8
36	1/8" NPT street elbow	1
45	Liquid-tight connector	2
52	1/4-20 x 3/4" HH bolt SST	4
58	5/16" flat washer SST	1
65	Washer	1
68	1/8" M x 1/4" F NPT elbow	1
69	1/4" NPT x 1 1/2" nipple	1
71	Inline strainer 1/4" female NPT	1
78	1/8 x 1 1/2" NPT nipple	1
107	1/4-20 x 3/4" phillips RH SST	6
113	Flowmeter	1
117	1/4-20 x 5/8" HH bolt SST	4
128	Oscillator housing	1
129	Hanger plate	1
130	Trim stripe	1
131	Toggle switch boot	1
132	Toggle switch	1
134	3/8" bronze bearing	2
135	115 volt 50/60 Hz. motor	1
136	230 volt 50/60 Hz. motor	1
137	6-32 x 1 1/4" RH phillips SST	2
138	3/32 x 3/4" cotter pin SST	1
139	3/8" spacer	1
140	Thrust bearing	1
141	Base plate	1
142	10 tooth brass gear	1
144	Upper gear stop	1
145	Lower gear stop	1
146	5/16" spacer	1
147	96 tooth brass gear	1
148	1/8 x 3/4" groove pin	1
149	Bearing block assembly	1
150	Drive shaft	1
151	Power cord	1
153	5/16-18 x 2" HH bolt SST	1
296	1/8" NPT-F x 1/4 tube fitting	1
478	6-32 x 7/16" THMS	3
480	C-shapped shaft stabilizer	1
515	SST Panel	1

MAINTENANCE

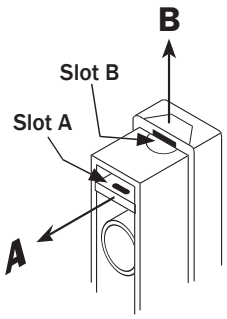
⚠ WARNING ***DISCONNECT AND LOCK OUT POWER SOURCE BEFORE SERVICING***

1. Inspect Blade Assembly

Clean the 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.

2. Cleaning Flowmeter

To expose the inside of the flowmeter, use a small screwdriver to remove the retaining key by using slot **A**. Next, pull the retainer cap straight up by using slot **B**. NOTE: After cap is removed, be careful not to lose the internal float ball when handling the flowmeter.



Top of Flowmeter

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. Clean Strainer

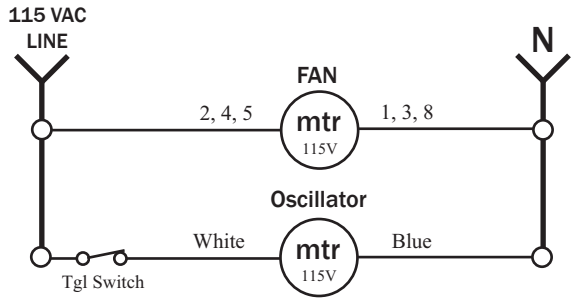
Periodically clean the inline strainer (Part #71) at the base of the flowmeter by removing cap and internal screen and flushing any sediment from screen.

5. Storage

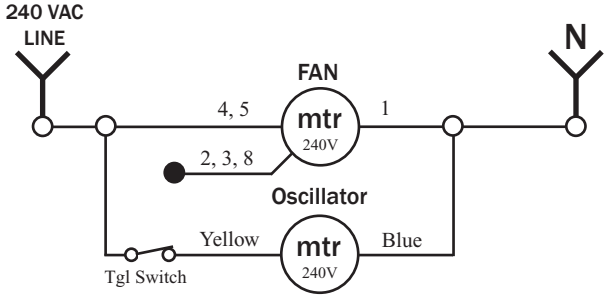
Protect your Aquafog from winter damage. Expansion due to freezing can burst fittings, solenoids and flowmeters. If storing unit in below freezing temperatures, be sure all fluid is drained from the unit. Damage due to freezing is not covered under warranty.

ELECTRICAL SCHEMATICS

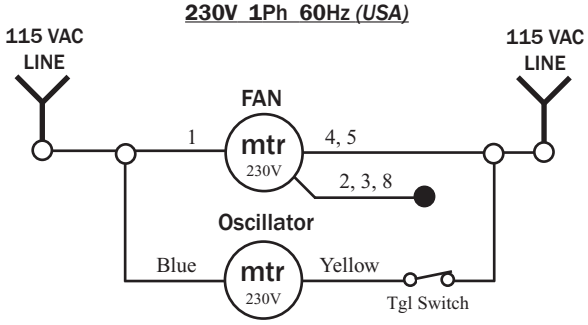
115V 1Ph 60/50Hz *(USA)/ Foreign*



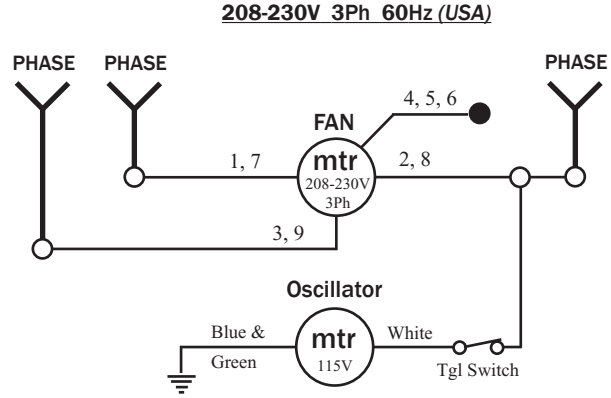
240V 1Ph 50Hz *(Foreign)*



230V 1Ph 60Hz *(USA)*



208-230V 3Ph 60Hz *(USA)*



Electrical Schematic Code Desination

○ Denotes Line Connection

● Denotes Wire NutTermination

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.

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