AQUARIAN® PROFESSIONAL OPERATION AND MAINTENANCE MANUAL



FLOATING $1/2 - 1 \frac{1}{2}$ HP AERATORS



THANK YOU!

We would like to thank you for your purchase of the Aquarian Professional aerator. We hope that you will enjoy your aerator for many years to come.

We at Air-O-Lator take pride in our products and want you to know that we will stand behind our products.

Once again, thank you and if there are any questions we can answer or supply more information, please do not hesitate to contact us.

Phone: 1-800-821-3177

E-Mail: <u>sales@airolator.com</u>

Website: <u>www.airolator.com</u>



8100-04 Paseo, Kansas City, Missouri 64131 800-821-3177

INSTALLATION

OPERATION

AND

MAINTENANCE

OF THE

AQUARIAN PROFESSIONAL AERATORS

2011

DO NOT DESTROY!

This manual is designed for your use in the installation, operation and maintenance of your Aquarian aerator, please do not dispose of this manual.

The following information is provided to alert persons to potential personal injury hazards inherent with products.

DANGER: Indicates an eminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

! CAUTION: Indicates a potentially hazardous situation, which may result in minor or moderate injury.



SAFETY DATA INFORMATION SHEET

- **! DANGER:** RISK OF ELECTRIC SHOCK. DO NOT INSTALL THIS EQUIPMENT IN SWIMMING AREAS. THIS EQUIPMENT HAS NOT BEEN INVESTIGATED FOR USE IN SWIMMING AREAS.
- **WARNING:** DISCONNECT AND LOCK OUT ELECTRICAL POWER BEFORE <u>ANY</u> SERVICE IS PERFORMED ON THIS DEVICE.

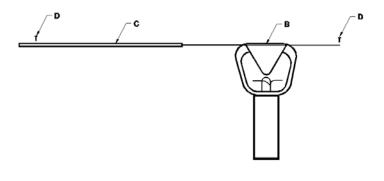
WARNING: THE CONTROL PANEL AND UNIT MUST BE GROUNDED. FAILURE TO CONNECT TO A PROPER GROUND COULD RESULT IN PERSONAL INJURY OR DEATH.

- WARNING: BEFORE ATTEMPTING TO INSTALL, SERVICE OR MAINTAIN THE UNIT AND/OR FLOTATION IN ANY BODY OF WATER A COAST GUARD APPROVED PERSONAL FLOTATION DEVICE (PFD, TYPE III OR HIGHER) MUST BE WORN.
- **WARNING:** THE FLOTATION PROVIDED FOR THIS EQUIPMENT, HAS <u>NOT</u> BEEN INVESTIGATED PERSONAL FLOTATION DEVICE.
- WARNING: ATTEMPTING TO INSTALL OR SERVICE EQUIPMENT FROM AN UNSTABLE WORK PLATFORM COULD RESULT IN DEATH OR INJURY.
- WARNING: POSSIBLE CUTTING HAZARD. ROTATING PROPELLER COULD RESULT IN SERIOUS INJURY. TURN OFF POWER AND LOCK OUT BEFORE INSTALLATION OR SERVICING.
- **! NOTICE**: DO NOT OPERATE THIS EQUIPMENT OUT OF THE WATER. (EXCEPTION:) IT IS PERMISSABLE TO BUMP RUN 3-PHASE EQUIPMENT OUT OF THE WATER TO VERIFY COUNTER CLOCKWISE MOTOR ROTATION WITH A RAPID ON/OFF OPERATION.
- **! CAUTION:** INSTALLATION OR SERVICE WORK MUST BE PERFORMED FROM A STABLE WORK PLATFORM TO AVOID THE POSSIBILITY OF CAPSIZING.



REMOVE THE AQUARIAN® PROFESSIONAL[™] UNIT FROM THE SHIPPING CONTAINER. INSPECT FOR ANY SHIPPING DAMAGE. <u>Do not dispose of the shipping container and packing material. SAVE in the unlikely</u> event of return for service.

Insert the support tube (C) into the power drive assembly (B); center the diffuser on the tube. Insert one (1) screw into the hole (D) provided in the support tube just outside the diffuser. Install the second screw on the other side of the diffuser, in the hole provided in the support tube.



MOORING

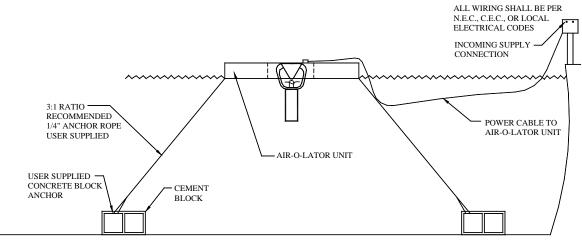
WARNING: DO NOT USE AS A PERSONAL FLOTATION DEVICE.

Cut two (2) lengths of ¹/₄" hollow braid rope or similar material of sufficient length to accommodate for the variations in the water that naturally occur. A ratio of a water level to rope of 2 - 3 to 1 should suffice.

Use (2) locally obtained concrete 8"X8"X16" building blocks as the anchor medium. Insert one of the ropes into one hole of the float and tie a knot of sufficient size that will not allow the knot to "pull out" of the float. Do the same with the other rope at a diagonal corner.

Tie the opposite end of the ropes to separate blocks in a secure manner and place on top of the float.

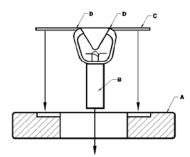




Position the float where desired and drop one anchor block and then the other at an angle to the float. (See the diagram below)

AERATION CONFIGURATION / BOTTOM MOORING

Place the Aquarian into the float (A) with the support tube (C) resting in the molded groove (E) in the float as indicated. The power cord is to rest on top of the float to minimize the possibility of entanglement with the propeller.



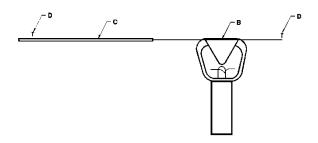
WARNING: POSSIBLE CUTTING HAZARD. ROTATING PROPELLER COULD RESULT IN SERIOUS INJURY. TURN OFF POWER BEFORE SERVICING.

An alternative to anchoring would be to moor the unit to the shore at any point that you desire.

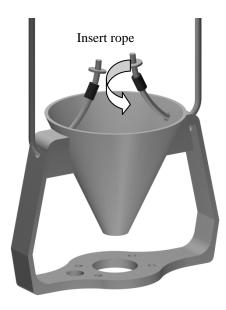
Aquarian Professional / Professional De-icing Conversion Kit Instruction

This rope kit is designed to convert the Aquarian Professional aerator from the aeration configuration to ice melting.

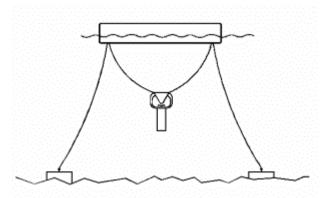
- STEP 1) Place the Aquarian aerator in an upright position on a level surface. Use caution making certain that the Aquarian does not fall over and damage the unit or cause personal injury.
- STEP 2) Remove one of the support tube retaining screws if installed and slide the support tube out from the molded support tube holes at the top edge of the diffuser. Reinstall the retaining screw to minimize the chance of misplacement.



STEP 3) Separate the two 10-foot sling ropes setting one of them aside. Insert the remaining sling rope. Select the rope end opposite the stainless steel washer and rubber bushing into the diffuser support tube hole inside the "funnel shaped" area. Do the same with the remaining sling rope and pull through the diffuser until the rubber bushing is in the diffuser support hole and the stainless washer is against the inside of the funnel shaped diffuser.



STEP 4) If the flotation is to be used during ice melting you must insert the loose sling rope ends into the flotation from the bottom of the float up and through the molded holes opposite the mooring ropes points.



STEP 5) At this point the selection of the operating depth is to be accomplished. Generally the depth of the propeller is the preferred point of reference since the propeller is what does the work and is commonly set at 5-foot of water depth. It may be desirable to select a different depth, however positioning the propeller any deeper than 8-feet of depth is not recommended. The motor at no time is to be operated while in mud, rocks or sand. Damage may result to the motor and propeller.

If varying water levels are to be expected consider any water level fluctuation into account when using this device. Damage will result if the unit is operated out of the water for longer than 5 seconds.

Empirical data indicates that the Aquarian Professional in the ice melting configuration is able to keep an 8-foot diameter open area of water per foot of propeller depth and is dependent on the available heat in the water. It is not the movement of the water that prevents ice formation.

END SLING ROPE DE-ICING KIT INSTRUCTION



ELECTRICAL

DANGER: ELECTRIC SHOCK HAZARD. DISCONNECT ELECTRICAL POWER BEFORE SERVICING PANEL OR EQUIPMENT.

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK CONNECT ONLY TO A PROPERLY GROUNDED CONNECTION. FAILURE TO CONNECT TO A PROPER GROUND COULD RESULT IN PERSONAL INJURY.

The single (1) phase, ¹/₂-hp, 115-volt AQ-5 requires a 15 amp, 115-volt receptacle. The single (1) phase, ¹/₂-hp, 230-volt AQ-5 and the 1-hp AQ-10 require a 15 amp, 230-volt receptacle. It is permissible to "hard wire" the unit to the power connection. **Control box mounting** (AQ-10, ONLY): Remove the cover to control box. Mount the control box to any solid object, i.e., wall, posts, or struts using the holes provided. The panel must be mounted so that the electrical wires are downward. DO <u>NOT</u> ALLOW THE ELECTRICAL CONTROL BOX TO LAY ON THE GROUND.

WARNING: CONNECT TO A GROUNDED OUTLET OR CONNECTION ONLY. Failure to do so may result in personal injury. GROUND FAULT PROTECTION is strongly suggested on ANY electrical device. DO NOT INSTALL OR USE THIS DEVICE IN SWIMMING AREAS. This equipment has not been evaluated for use in swimming areas.



GROUND FAULT CIRCUIT INTERRUPTER INFORMATION

GROUND FAULT CIRCUIT PROTECTION is provided on 1-phase Aquarian equipment manufactured for use in the United States. Canadian Electric Codes require G.F.C.I. protection at the service entrance.

The "trip level" for 115-volt equip is 6-10 mA. The "trip level" for 230-volt equipment is nominally 30mA. GROUND FAULT DEVICES ARE NOT TO BE CONFUSED OR USED AS A CIRCUIT BREAKER OR SWITCH.

If the ground fault interrupter trips the cause may be difficult to discover. It is human nature to immediately suspect the equipment, when in fact outside influences should be suspect. To assist you in determining the best method of finding electric faults, contact a qualified electrical person in your area or call the factory at 1-800-821-3177, 8:30 a.m. – 4:30 p.m. Central time.

NOTE: ALTERATIONS TO ANY OF THE WIRING OR MOTOR CONNECTION, OTHERTHAN DIRECT WIRING FROM THE SERVICE, WILL VOID WARRANTY

MAINTENANCE

The Aquarian aerators are virtually maintenance free. It is recommended that you remove the unit from the water periodically to inspect, clean and remove build up on the motor. The motor is identified as the cylindrical device attached to and below the diffuser. The motor is water-lubricated and cooled. There is no circulation of water through the motor. It is sealed. **NO SEAL OR FLUID MAINTENANCE IS REQUIRED.** There are no user serviceable parts within. **DO NOT TAMPER WITH THE MOTOR OR DISASSEMBLE THE MOTOR.SUCH TAMPERING WILL BE EVIDENT AND WILL VOID THE WARRANTY.**

Inspect the propeller a minimum of **Two** times a year for wear and replace if any wear is indicated. Propeller wear can promote premature motor failure.



DEBRIS MANAGEMENT INFORMATION

The factory has included on Aquarian Commercial aerators, Ready 2000, Font'N-Aire and Gulf Stream fountains a "shroud" to minimize the chance of debris fouling the propeller or impeller area and yet maintain a maximum flow of water past the motor.

Add-on shrouds may be purchased for the Aquarian Professional and the Aquarian Aquaculture equipment. There is no shroud for the Quantum aerator.

The shroud is <u>only</u> to be considered a best-placed effort to minimize any fouling and is <u>not</u> a guarantee that foreign material will not come in contact with the moving components.

The shroud is **<u>NOT</u>** to be considered a safety device.

In certain situations it may be desired to add additional debris barriers to aerator or fountain equipment.

Material that should be considered for after market debris barriers are plastic or noncorrosive metal mesh materials. The material should be installed around the flotation periphery or within the unit-mounting hole located in the center of the float. Note: the threaded inserts seen on the center hole on some Air-O-Lator floats are provided as a convenience.

DO NOT install a bottom in this type of shroud **UNLESS** a shroud of similar material is placed on top of the flotation. The idea is to prevent "CRITTERS" from falling into the shroud area, thus becoming entrapped and then afoul of the smooth operation of the equipment.

Aerator "top of float" shroud material must be of a fine strand so that the water being delivered to the atmosphere by the aerator has minimal impingement of the water against the shroud.

Fountain "top of float" shroud material does not have the mesh size restrictions as that of the aerator. Simply cut a hole in the material to allow the nozzle to project through the hole so that the spray pattern is unimpeded.

After all this has been said it is important to realize that if a shroud <u>truly</u> is effective that the shroud will have to be cleaned just as a propeller or nozzle would in the first place. Otherwise theoretically the unit could suffer from a lack of performance or worse.



STORAGE

Place unit in an upright position. Protect the unit from exposure to temperatures below -20°F and avoid exposure to temperatures over 120°F.

The most desired method of storing the unit would be to leave it in the pond or lake, as long as the unit is <u>not</u> allowed to freeze in, which could result in damage to the float or the unit.

Franklin Electric Submersible Motor Specifications (60 Hz)

Motor				Maximum		Line to Line	S.F.	Circuit Breaker	Fuse
								Amp Size	Amp Size
Model Number	H.P.	Volts	S. F.	S.F.Amps	Watts	Resistance	PowerFactor %	Standard	Time Delay
244301	0.5	115	1.6	12.0	1000	1.0-1.3	73.00%	35	20
224302	0.5	230	1.6	6.0	1000	4.2-4.5	73.00%	20	10
214508	1	230	1.4	Y 9.8	1500	2.2-2.7 Main	74.00%	30	20
				B 9.8		10.1-12.3 Start			
				R 0					

Cable Selection Guide

Single Phase, Three Wire with ground cable, 60 Hz

(Maximum length in feet – Service entrance to fountain)

HP	Volts	12	10	8
0.5	115	150	250	350
0.5	230	650	1000	1600
1	230	400	600	950



TROUBLE SHOOTING PROCEDURE

Due to the extremely simple design of the Aquarian® Professional® aerator and minimal maintenance required there is consequently a limited amount of trouble shooting to be sought. A volt ohmmeter is required to complete these checks.

DANGER: Electric shock hazard. Disconnect and lockout the electrical power before servicing.

If the aerator does not start:

- (1) Check for the correct voltage by using a voltmeter and verify that the voltage is within 10% of the nameplate rating. If the voltage is incorrect contact a licensed electrician or your power company.
- (2) If the correct is present check for the correct size of fuses, loose connections or a tripped circuit breaker. Replace the fuses with the correct size and rating or reset the circuit breaker. If the problem persists contact your electrician.
- (3) In the case of single-phase equipment check for loose connections or overload breakers of which there are two (located on the bottom of the control box) that may have tripped and push to reset.
- (4) Inspect the power cord and motor lead with an ohmmeter check for continuity. Check for cuts causing short circuits. Replace as necessary with a new motor lead or power cable. Use the correct gauge and type for the power cable that being SOW or SEOW.

If the aerator runs but the overloads trip:

- (5) Check for the correct voltage at the incoming line terminals. The voltage must be within 10% of the nameplate voltage. Contact the power company to correct the voltage.
- (6) Overloads are heat sensitive and can trip if a control box is exposed to an excessive amount of ambient heat. Shade or move the control box away from the heat source.
- (7) A possible condition although remote is that a control box has defective components or is defective. Possible causes are lightning or power surges. Repair or replace the defective components or the entire control box as required.
- (8) Check the power cable and motor lead for cuts or breaks using an ohmmeter. Never attempt to tape or splice a cable or motor lead.
- (9) The motor may be defective. There is nothing to repair in the motor. If found to be defective; replace the motor if required.



CONDITION OF MOTOR AND LEADS	OHM VALUE	MEGOHM VALUE
A used motor which can be reinstalled.	10,000,000 (or more)	10.0
MOTOR IN WATER. Ohm readings are for drop cable plus motor.		
A motor in the water in reasonably good condition	500,000-2,000,000	0.5-2.0
A motor which may have been damaged by lightning or with damaged leads. Do not pull aerator this reason.	20,000-500,000	0.02-0.5
A motor which definitely has been damaged or with a damaged cable. The aerator should be pulled and repairs made to the cable or the motor replaced. The motor will not fail for this reason alone, but it will probably not operate for long.	10,000-20,000	0.01-0.02
A motor which has failed or with completely de- stroyed cable insulation. The aerator must be pulled and the cable repaired or the motor replaced.	less than 10,000	0.0-0.1

Insulation resistance does not vary with rating. All motors of all HP, voltage, and phase rating have the same value of insulation resistance.



AQUARIAN "PROFESSIONAL" AERATOR

CERTIFICATE OF LIMITED WARRANTY

2011

1. Your Legal Rights Under This Warranty

This warranty is the only express warranty that Air-O-Lator makes for your Air-O-Lator product. This warranty gives you specific legal rights.

This warranty is only for products sold for use in the USA.

THERE ARE NOT WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

This warranty will be governed by the laws of the State of Missouri, USA.

2. What's Covered

2.1 Basic Warranty

Air-O-Lator warrants to the original purchaser that the equipment delivered by it will be of the kind and quality described in the order and will be free of defects in **workmanship**, **material or factory preparation** when operated under normal use and services.

A. What's Covered at No Cost to You

The Basic Warranty covers the cost of all parts needed to repair any defective item on your Air-O-Lator product – that is, defective in material, workmanship, or factory preparation. Warranty repairs or adjustments – including all parts and labor connected with them – will be made at Air-O-Lator Corporation or an AUTHORIZED repair facility.

B. Products Covered

The AQUARIAN "PROFESSIONAL" aerator using Franklin Electric 4" motors.

C. When It Begins

The Basic Warranty begins on either of the following dates, whichever is earlier:

- The date you take delivery of the Air-O-Lator product or
- The date when the product was first put into service up to 24 months from the date of manufacture.

D. When It Ends

The Basic Warranty lasts for 24 months for Aquarian "Professional" (12 months for equipment used in wastewater).

E. Exceptions

Exceptions to the 24 month warranty are: equipment used in severe environments, which are warranted for 12 months, i.e., wastewater applications or where high concentrations of corrosive or abrasive material are present.

F. Registration and Operation Requirements

The Basic Warranty covers your Air-O-Lator product only if:

- It was built for sale in the U.S.
- It's registered in the U.S.
- It's used in the U.S. and
- It's operated and maintained in the manner described in your Owner's Manual.

3. What's Not Covered

3.1 Modifications Not Covered

A. Some Modifications Don't Void this Warranty but Aren't Covered

Certain changes that you might make to your product do not, by themselves, void this warranty. Examples of some of these changes are:

Installing non-Air-O-Lator supplied parts, components, or equipment (such as a non-Air-O-Lator supplied Franklin Electric motor, stainless steel fasteners, or fountain nozzles).

But this warranty does not cover any part that Air-O-Lator did not supply. Nor does this warranty cover the cost of any repairs or adjustments that might be caused or needed because of the installation or use of non-Air-O-Lator parts, components, equipment, or materials.

Examples of the types of alterations not covered are:

- Installing accessories except for genuine Air-O-Lator accessories approved for installation such as lighting, propeller guards, rock covers, or motors.
- Labor to install or remove any Air-O-Lator product.

B. Modifications That Will Void Your Warranty

Disconnecting, tampering with, or altering the electric control panels will void your warranty, unless you or your repairing technician follows Air-O-Lator's requirements for repairing or replacing the controls.

Removing and operating Air-O-Lator equipment without Air-O-Lator approved electrical controls will also void this warranty. Using any electric cable, connectors or splices not provided or authorized by Air-O-Lator will also void this warranty.

3.2 Environmental Factors Not Covered

This warranty does not cover damage caused by environmental factors such as, chemicals, and salt. Nor does your warranty cover damage caused by windstorms, hailstorms, tornadoes, lightning, power surges, brownouts, floods, earthquakes, debris and animals.

3.3 Maintenance Costs Not Covered

This warranty does not cover the cost of repairing damage caused by poor or improper maintenance.

This warranty does not cover the costs of your equipment's normal or scheduled maintenance I.e. annual propeller/impeller replacement, cleaning etc.

3.4 Incidental and Consequential Damages Not Covered

This warranty does not cover any incidental or consequential damages connected with Air-O-Lator products' failure, either while under warranty or afterward. Examples of such damages include:

• Lost time, Inconvenience; The loss of the use of equipment; The loss of personal or commercial property; The loss of revenue; and Delay

3.5 Certain Kinds of Corrosion Not Covered

This warranty does not cover the following:

- Corrosion caused by accident, damage, abuse, or alteration;
- Surface corrosion caused by such things as, sand, salt, stones and barnacles.
- Corrosion caused by the extensive or abnormal exposure of caustic materials like chemicals, acids, and fertilizers.

3.6 Freight:

Warranty shipping charges are to be pre-paid by the owner. Warranty shipping charges are the responsibility of the owner.

4. How To Get Warranty Service

4.1 Where to Take Your Air-O-Lator Product Air-O-Lator authorizes you to return your Air-O-Lator products to the factory **upon notification**.

You may contact: Air-O-Lator Corporation: 8100-04 Paseo, Kansas City, MO 64131, 1-800-821-3177. http//:www.airolator.com

CUSTOMER REGISTRATION COPY

Owner Name		Model
Date Purchased		Serial No
Owner Address		Dealer Name
City		Address
State	Zip	City State Zip Code

NOTE: This information should be retained for your file.

AIR-O-LATOR CORPORATION, 8100-04 PASEO, KANSAS CITY, MO 64131 1-800-821-3177 http://airolator.com



8100-04 Paseo, Kansas City, Missouri 64131 800-821-3177 MAIL IN FORM

WARRANTY REGISTRATION

<u>Font' N-Aire</u>		-	<u>Aquarian</u>	
Ready	``````````````````````````````````````]	Professional	
Platinum		(Commercial	
Gulf Stream		L	Aquaculture	
			Quantum	
Ice-Away				
Purchase Date	Mo	Day	Year	
Model No			Serial No.	
Owner Name			Dealer Na	me
Owner Address			Dealer Ad	ldress
City			_ City	
State	ZIP Code		State	ZIP Code



AIR-O-LATOR CORPORATION REPAIR RETURN FORM

To avoid delays in the repair of equipment in question, it is best to call the factory at 1-800-821-3177 to determine what portion or portions of the equipment in question should be returned. The fountain or aerator unit itself (that portion that sets down into the hole in the floatation) is to be returned completely assembled. DO NOT DISASSEMBLE ANY PORTION WITHOUT PRIOR AUTHORIZATION!

Shipping costs to and from the factory are the responsibility of the shipper as is the packaging. Air-O-Lator encourages the use of the original shipping container that is UPS approved for this equipment to minimize the possibility of shipping damage. Additional charges will apply if original packaging is not retained.

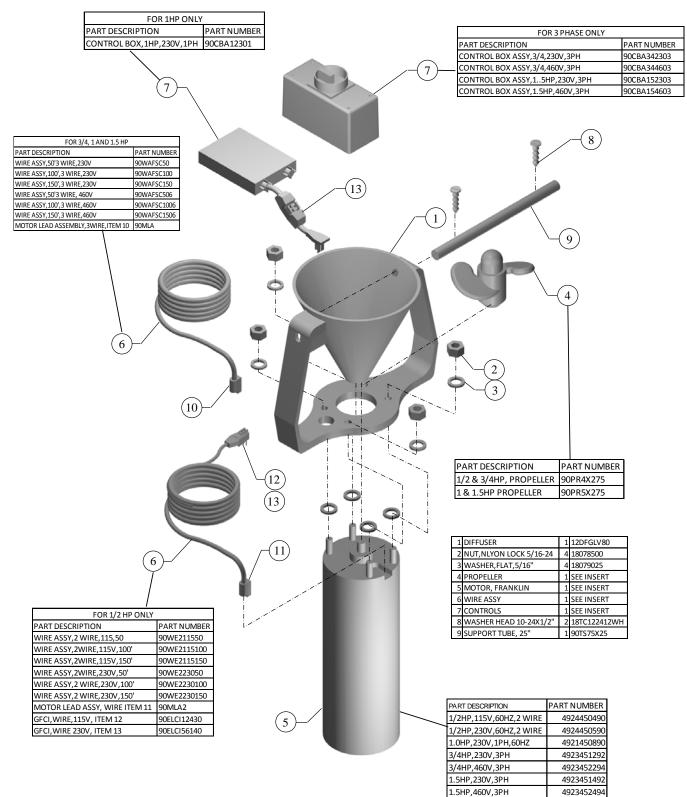
If the original packaging is not retained and used by the customer, Air-O-Lator will supply replacement packaging (at a nominal charge) upon return of the equipment to the shipper (call for current pricing).

Upon the inspection of returned equipment, whether in warranty or not, contact by Air-O-Lator to proceed with repair will be made to the owner or agent with an explanation of the repairs and charges if any. NO REPAIRS WILL BE MADE UNLESS AUTHORIZED BY THE OWNER OR AGENT. If Air-O-Lator is unable to contact the owner/agent within 30 days after receipt of the equipment for repair, a "signature required" notice will be forwarded to the owner or agent stating that disposal of the

equipment will be made 30 day	's from the date of the notice.	
Name		
Address		
Phone	_FAX	_E-Mail

E-mail_____Equipment Serial #_____ Comments:_____

AQUARIAN PARTS LIST (PROFESSIONAL)



NOTES:	

NOTES:	

8100-04 Paseo Kansas City, MO 64131 USA (800) 821-3177 (816) 363-4242 FAX (816) 363-2322 Email: sales@airolator.com Website: www.airolator.com