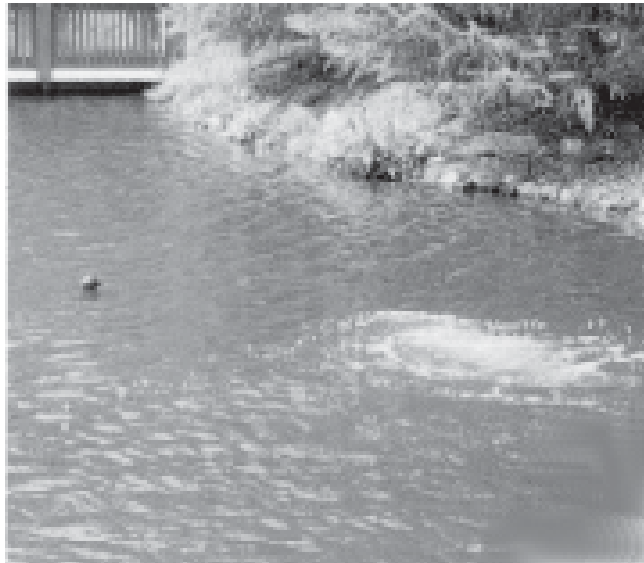




# Water Works With Otterbine



## **SUB-TRITON<sub>2</sub>** **Owner's Manual**

A Guide to More Dependable  
Water Quality Management  
With Otterbine Barebo Inc.'s  
Bottom Mounted Aeration Systems

## Welcome Aboard!

Welcome to the growing family of people who depend on aerating fountains for better water quality control and aesthetic improvement. Otterbine Barebo, Inc. moves its aerating fountain line into the next century with a revolutionary platform. This design offers an industry first five-year warranty with virtually no maintenance, reduced float visibility, and interchangeable spray patterns. All Otterbine products are safety tested and approved by ETL, ETL-C and CE

## Water Quality Specialists

Barebo, Inc. is a team of scientists, engineers, and crafts persons who specialize in efforts to improve water quality. Otterbine aerating fountains are built at Barebo, Inc.'s 25,000 square foot factory in Emmaus, Pennsylvania. Each step in assembly is followed by a quality assurance check to maintain high quality.

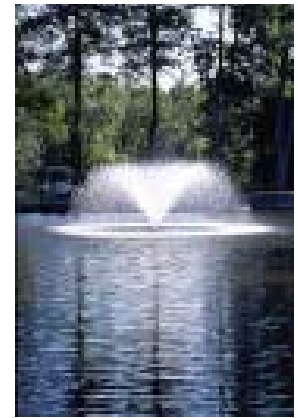
The **Concept<sub>3</sub>** line of Otterbine aerators, made of stainless steel and high tech engineering plastics, reflects the results of aerator research and development programs that started in 1956, plus the experience gained through thousands of installations on commercial fish farms, golf courses, parks, and architectural applications.

## Follow the Guidelines

You'll find guidelines for installing, operating, and maintaining your aerating fountain in the following pages. We strongly recommend that you read, understand, and apply these guidelines. They will help you get better performance and dependability from your Otterbine aerating fountain.



COMET<sub>3</sub>



SUNBURST<sub>3</sub>



GEMINI<sub>3</sub>



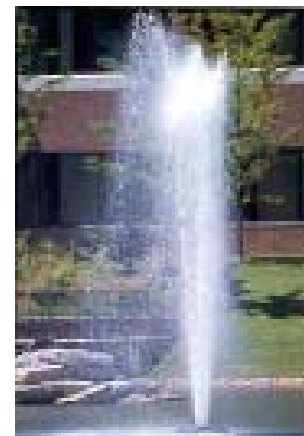
GALAXY<sub>3</sub>



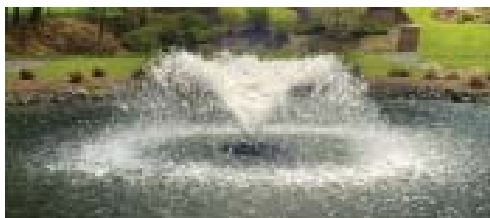
PHOENIX<sub>3</sub>



TRI-STAR<sub>3</sub>



ROCKET<sub>3</sub>

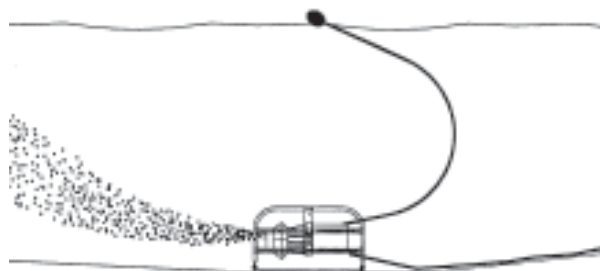


SATURN<sub>3</sub>



GENESIS<sub>3</sub>

*The Otterbine Sub-Triton<sub>2</sub> is an aeration system that transmits oxygen directly into the water while staying virtually unnoticed.*



## Where to find it:

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Last Update: 10/27/03

**WARNING:** **PHYSICALLY** disconnect the unit and lights from their electrical source before entering, wading in or swimming in the water in which they are installed.

# Aerator Equipment

Unpack and inspect your aerator, report any damage to the carrier that delivered your aerator. Make sure you have received the following:

- 1. Aerator** - you will find a label located on the housing of the aerator. Check the label to make sure you have received the correct horsepower and voltage aerator.
- 2. Power Control Center** - you will find a label inside of the Power Control Center door. This label lists the voltage and horsepower of the control center. Verify that the aerator and control center are the same horsepower and voltage.
- 3. Power Cable** - verify that you have received the correct length.
- 4. Warranty Registration Card** - make sure to fill in your Otterbine warranty registration card and send it back to the factory so that we can send you our bi-annual customer newsletter, which will keep you up to date on all the latest aeration news. **WARRANTY IS VOID UNLESS CARD IS RETURNED.**

## Electrical/PCC Installation

This weather resistant NEMA 3R Power Control Center comes complete with a twenty-four hour on/off timer, magnetic contactor with overload relay, surge arrestor, disconnect, overcurrent protection, HOA switch, and ground fault protection (where applicable). All internal connections are pre-wired. All electrical specifications are located on the door of the Otterbine Power Control Center. Otterbine recommends that all **ELECTRICAL WORK BE DONE BY A QUALIFIED, LICENSED ELECTRICIAN**. Make sure that all electrical work conforms with local, state and national electrical codes.

**NOTE:** Otterbine suggests coordinating electrical installation with physical installation. The electrician will need to be on hand for a two minute dry-run test of the unit and will also need to check the running amperage after installation. **These electrical tests are a crucial part of the installation process and should not be ignored.**

### **A. Install the Otterbine Power Control Center as close to the pond as possible.**



**CAUTION:** The Power Control Center should not be accessible from the water.

**ATTENTION:** la loite de control ne doit pas être accessible de l'eau.

**WARNING:** Screw connections may loosen during shipping, verify that all screw connections are tight before energizing PCC.

**CAUTION:** Otterbine recommends that the PCC not be mounted in direct sun light when installed outdoors.

### **B. Your Otterbine Power Control Center can be mounted indoors or outdoors.**

1. When mounting outdoors Otterbine suggests that you use a piece of exterior plywood and sturdy 4 x 4 post(s).
2. When mounting indoors the PCC can be mounted directly to the wall.

**C. Attach incoming power to the top of the disconnect**, neutral to the neutral bar (needed in 115V 1Ph 60Hz, 230V 1Ph 60Hz, and 230V 3Ph 60Hz PCC's; L1 to neutral must always be 115 volts) and earth ground to the ground lug. Otterbine recommends that all exterior incoming power cable and exterior aerator cable be encased in conduit.

**D. Attach aerator power cable to the contact points on the overload relay with the green ground wire to the ground lug in the Power Control Center.** Make sure to always use Otterbine aerator cable. If Otterbine aerator cable is not used, the **WARRANTY IS VOID**.

**CAUTION:** Each cable should be in its own conduit to avoid nuisance tripping of the GFCI device.

**NOTE:** Wiring schematics are located on the following pages. Please note on all 460V units EPD/GFCI (Equipment Protection Device/Ground Fault Circuit Interrupter) is an optional accessory.

**WARNING:** All Otterbine submersible aeration systems must be installed in conformance with all local, state and national electrical codes. Otterbine aeration systems require the use of GFCI for safe operation. If the proper grounding and GFCI protection are not used, serious or FATAL electrical shock may occur.

**ADVERTISSEMENT:** Otterbine® fortement suggère qu'au panneau de branchement électrique un interrupteur avec control de defaut de masse soit installé, ou les personnes se trouverai près de l'eau.

**SATELLITE CONTROLLERS:** Custom control panels are available as an option for customers using computerized irrigation controllers. These panels will interface with the computer and allow you to run your units(s)/lights(s) remotely. See your local Otterbine distributor or call Otterbine directly for more information.

**WARNING:** A full three phase power supply is recommended for all three phase motors, consisting of three individual transformers or one three phase transformer. So called "open" delta or wye connections are not true three phase power supplies and are likely to cause problems of current unbalance. Open delta or wye power and phase converters often suffer from line unbalance which can cause poor motor performance, nuisance tripping or premature motor failure. **WARRANTY IS VOID** if a factory authorized phase converter is not used.



Earth Ground Symbol (used in PCC)

## Timer Operation

**Note:** There are two types of the timers used depending on the voltage and frequency of your unit. Refer to the appropriate timer instructions.



**Timer Type A**

### **Timer Type A (60Hz)**

1. Push **in** (towards center) all of the tripper pins on the timer dial.
2. Pull **out** all of the tripper pins on the dial that are between the times you want the unit to run. Example: If you want the unit on from 7:00AM - 5:00PM, you would then pull out all of the tripper pins between those times. When the dial rotates to a tripper pin that is in, it will turn off.
3. Turn the dial clockwise to set the time of day. Close the panel and apply power. In case of power failure, reset timer.

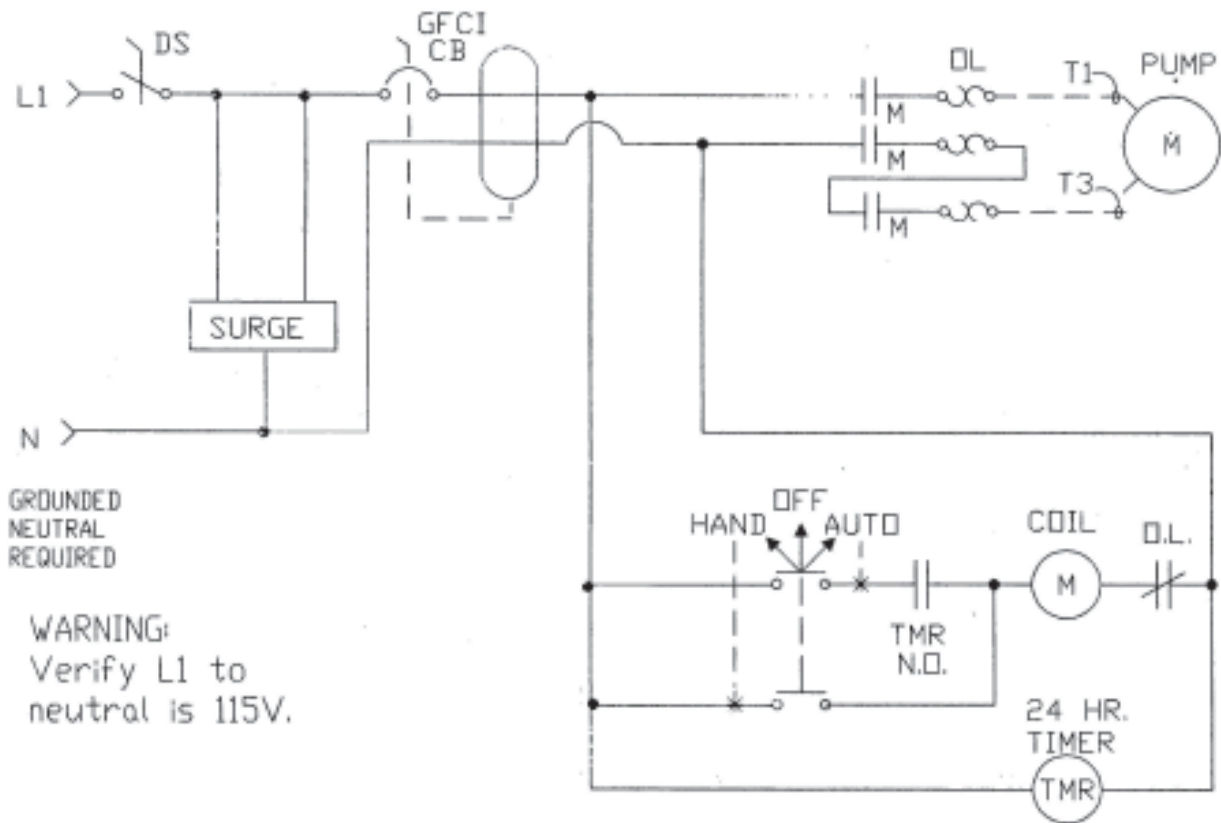


**Timer Type B**

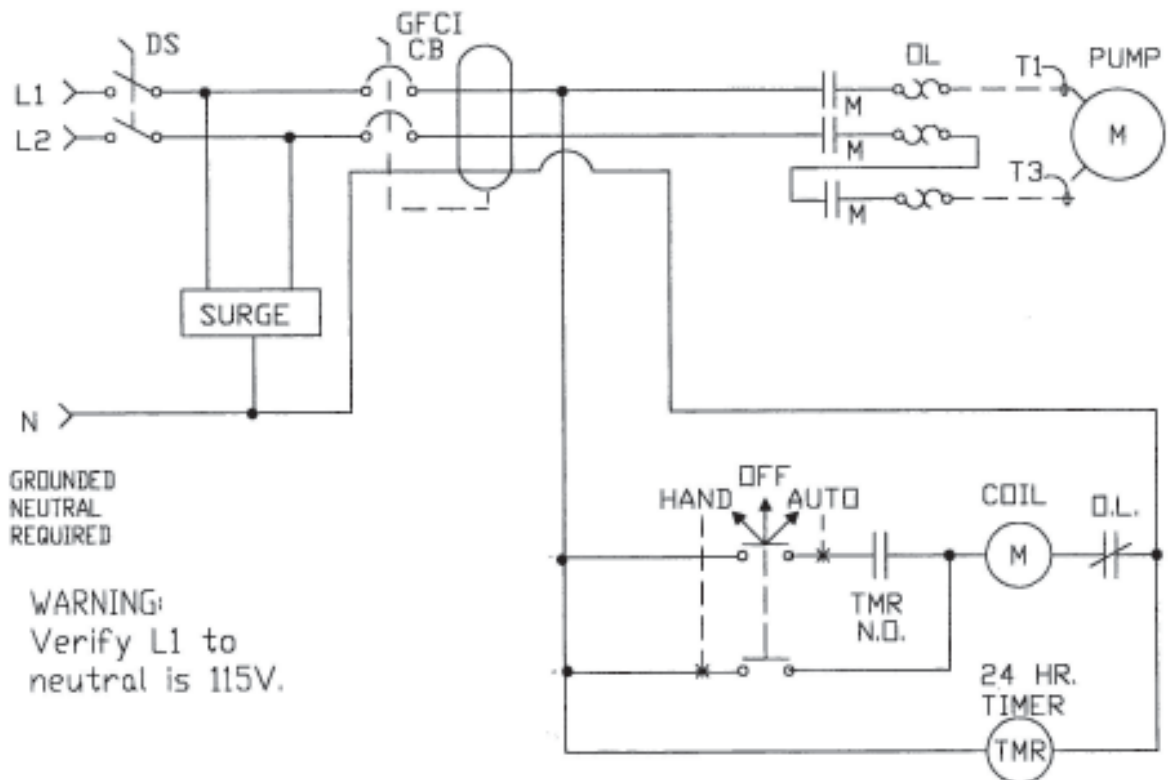
### **Timer Type B (50Hz)**

1. Set the timer trippers to the desired run time. Light colored tripper turns the unit on, Dark colored tripper turns the unit off. To move the trippers, loosen the set screw by hand and adjust
2. Turn the dial counter clockwise and align the actual time of day with the time tab point located off of the center of the face and pointing down. To manually operate the timer move the manual selector switch to the on or off position. Close panel and apply power. In case of power failure, reset timer.

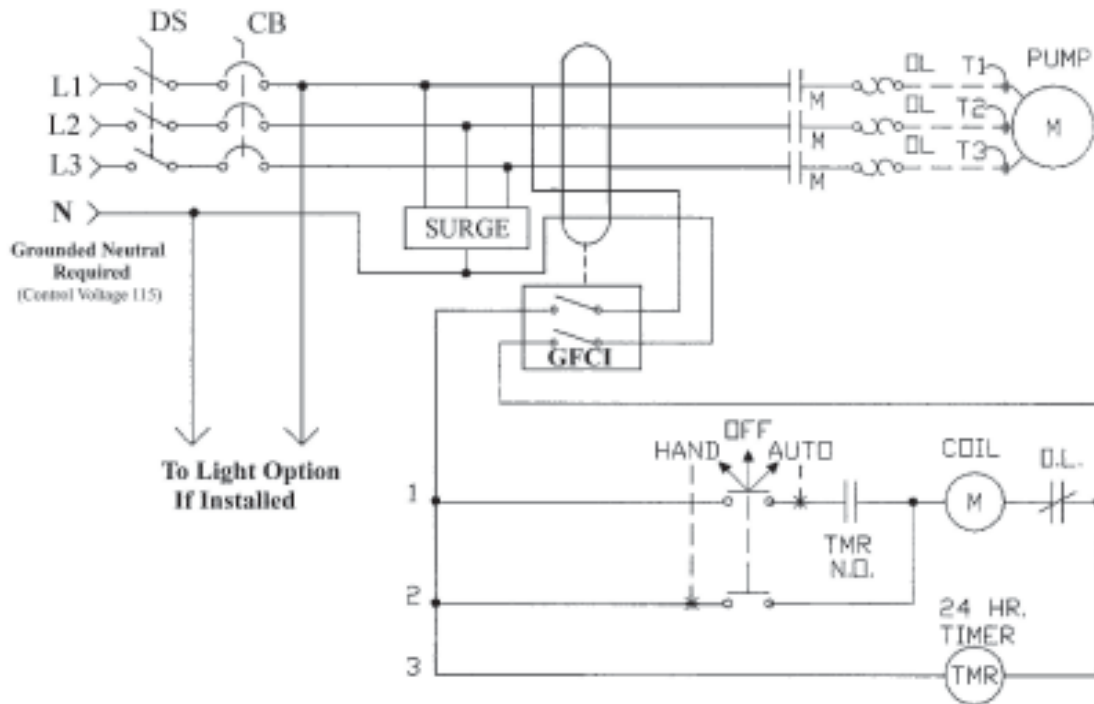
### 115 Volt 1 Phase 60 Hertz Schematic



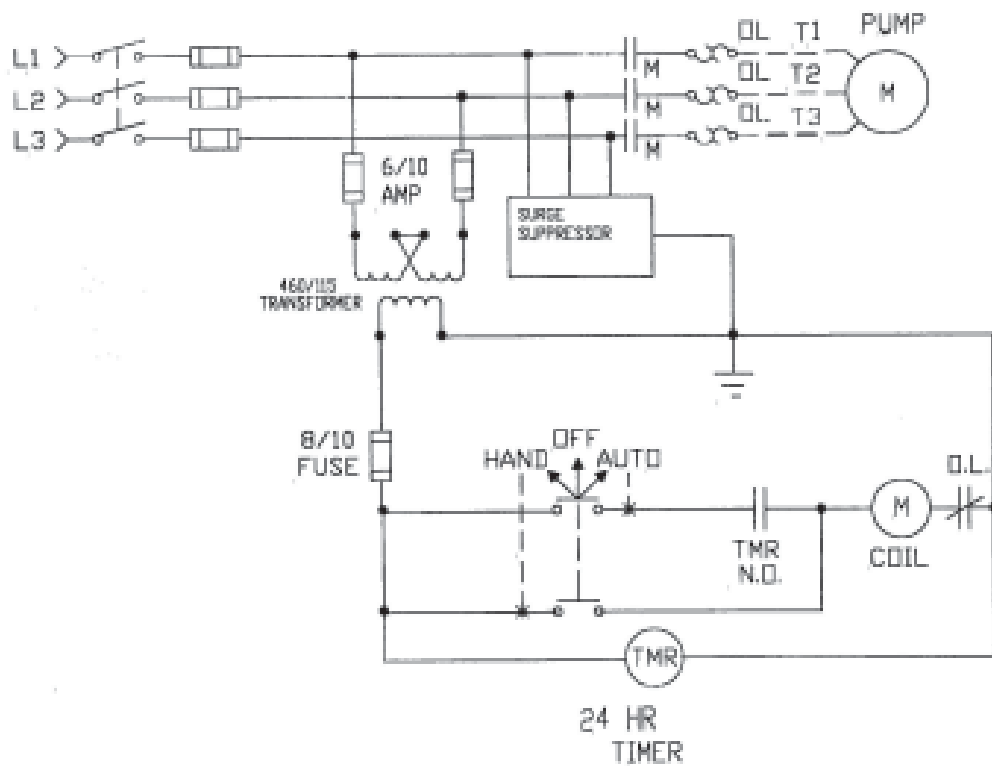
### 208-230 Volt 1 Phase 60 Hertz Schematic



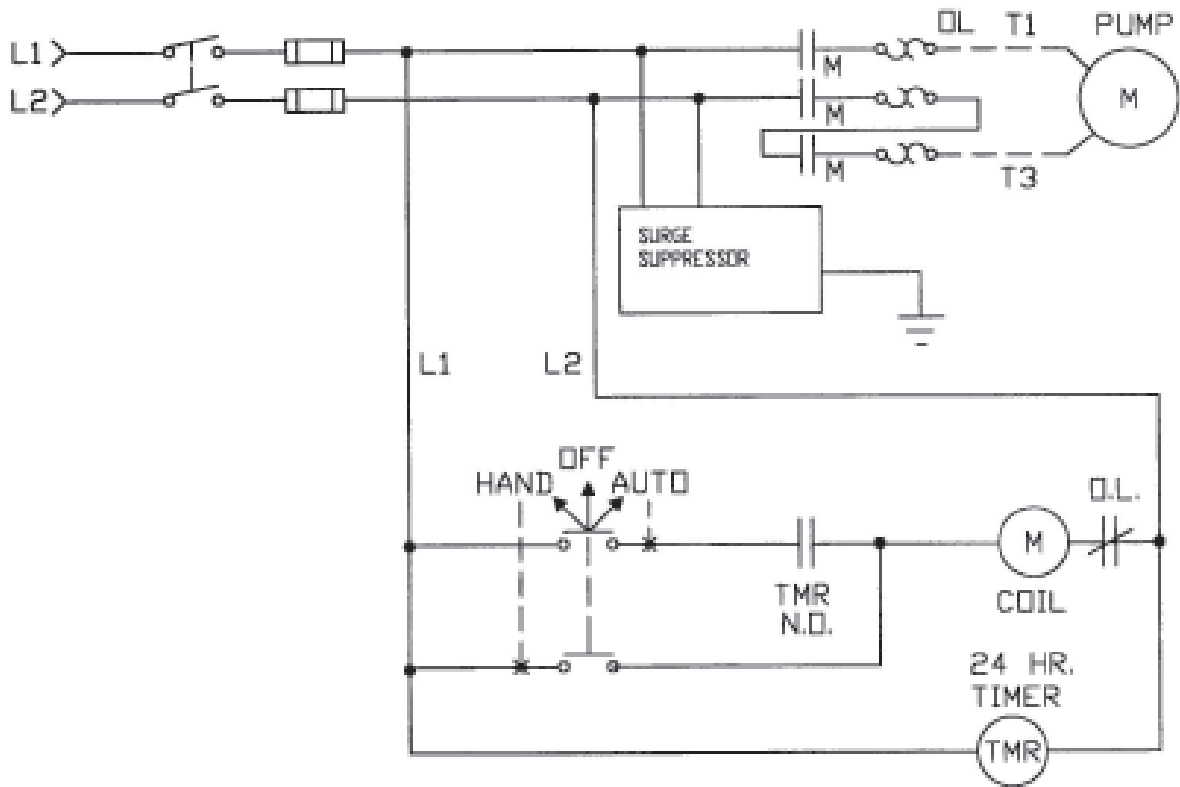
## 208-230 Volt 3 Phase 60 Hertz Schematic



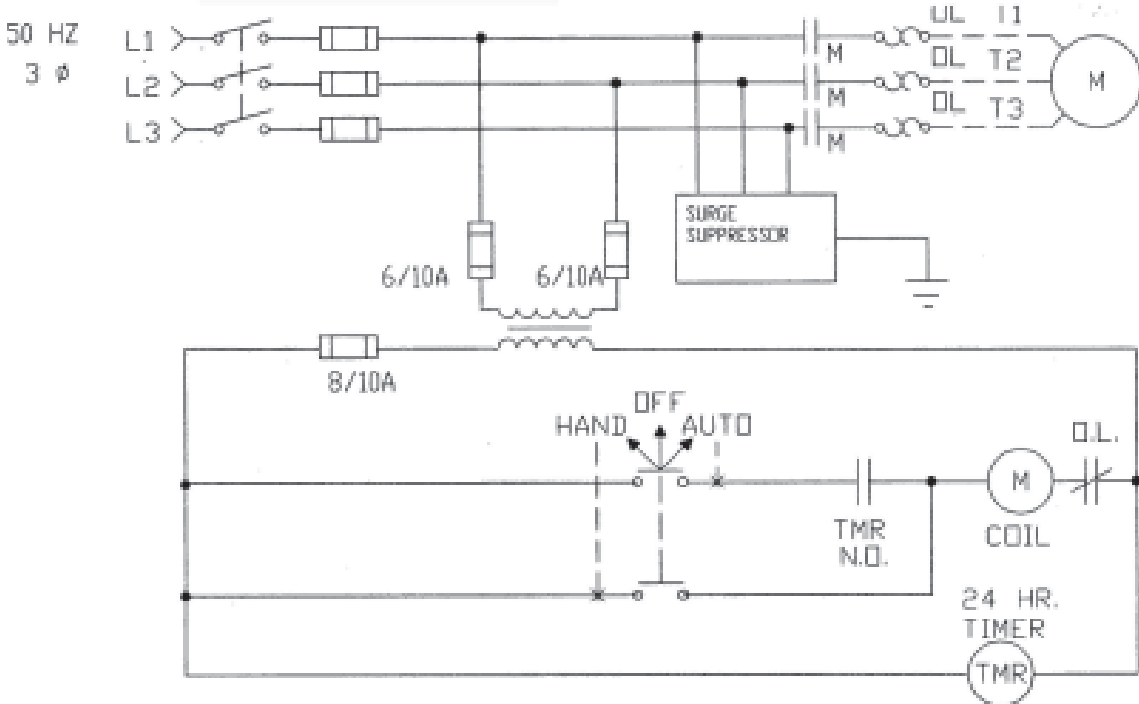
## 460 Volt 3 Phase 60 Hertz Schematic



### 220 Volt 1 Phase 50 Hertz Schematic



### 380/415 Volt 3 Phase 50 Hertz Schematic





# Physical Installation

**Prior to installation please measure your water depth. Otterbine Sub-Triton<sub>2</sub> models require at least 30"/.7m of water to run properly. If high waves or large fluctuations in water depth occur, it may be necessary to allow for more than the required 30"/.7m.**

**NOTE:** Mixer model requires 36"/.9m of water.

**WARNING:** DISCONNECT POWER BEFORE INSTALLING, REMOVING, OR SERVICING UNIT

**A. Select a suitable location for your Otterbine aerator. See the aerator location chart. Figure 1**

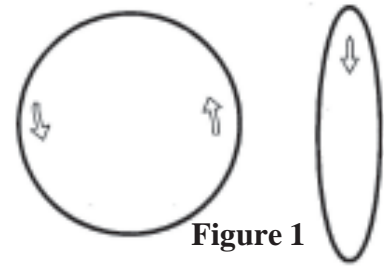


Figure 1

**B. Since the Sub-Triton<sub>2</sub> rests on the bottom, select a site where the bottom is flat and free of large rocks which may prevent the unit from laying flat. - Figure 2**

**WARNING:** The unit must be installed at no angle greater than 35 degrees in any direction.

**C. Measure your water depth where the unit will be located. The Sub-Triton<sub>2</sub> Aspirator Model requires a minimum of 2.5"/.7m of water while the Mixer Model requires 3"/.9m to run properly. If the water is too shallow, a different location must be located. Maximum depths for the Sub-Triton<sub>2</sub> Aspirating models depend on horsepower (refer to the following chart).**

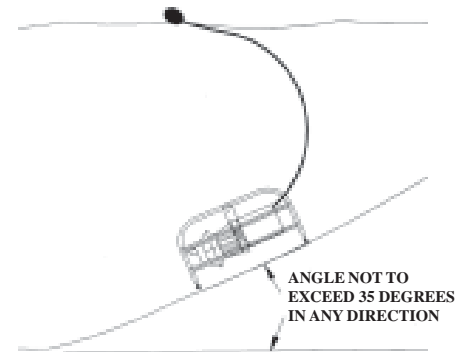


Figure 2

Verify the measured depth of the water does not exceed the maximum depth specified in the chart for your unit.

Horsepower	Maximum Depth
1	12' or 3.5 meters
2	21' or 6.5 meters
3	24' or 7.2 meters
5	28' or 8.5 meters

**NOTE:** Maximum operating depth of the Mixer model is 28"/8.5m

**D. The Sub-Triton<sub>2</sub> should be securely moored to keep the unit from moving.** The extremely high pumping rates of this unit could push the unit if not secured. The mooring lines also serve as a method to retrieve the unit

**NOTE:** Use of concrete anchor kit is required on Mixer model.

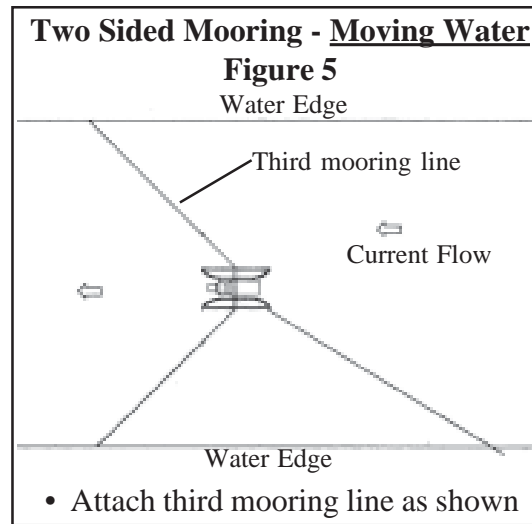
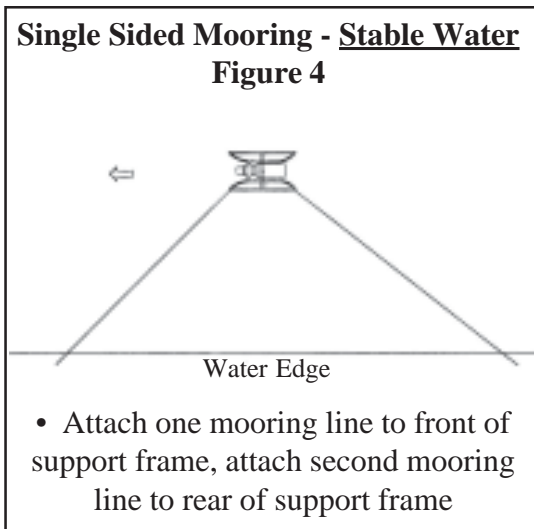
**1. You will need the following items in order to moor your Otterbine aerator:**

- a. Use all brass and stainless steel hardware in the installation of your Otterbine.
- b. Otterbine recommends using 1/4"/.63 cm or 1/2"/1.25 cm polypropylene rope or stainless steel cable for your mooring lines.
- c. At the mooring points themselves you will need a wooden stake, 1/2"/1.25 cm of rebar or a "duck bill" type earth anchor --See Figure 3. (Otterbine strongly suggests using earth anchors for installation. See your local Otterbine distributor for more information.)



Figure 3

- Duckbill Earth Anchors are driven into the ground, using a drive rod and heavy hammer, compacting the earth as they drive downward, until they reach the recommended depth. After removing drive rod, installer pulls up on cable. This planes or rotates the anchor into load lock position, like a toggle bolt in undisturbed earth.



**2. Choose the type of mooring you will need based on your application (water with movement/current or without movement/current). - Figures 4 & 5**

**3. Secure your first mooring point.** If you are using a stake or 1/2"/1.25cm rebar, make sure to pound the mooring point securely into the ground on the outer edge of the pond. If you are mooring with an earth anchor, you will need to place the earth anchor two feet into the pond and then pound the earth anchor about two feet into the pond bottom. The earth anchor will allow your mooring lines to be virtually un-noticed, as they will be hidden two feet beneath the surface of the water.

**WARNING:** When this unit is placed in moving water, the unit must be moored and anchored. Concrete anchor kit P/N 12-0018 must be used. This kit has forms and the necessary hardware to produce (2) 70 lb concrete weights to anchor the unit. (Concrete mix is not included in the kit.) This kit is included on all Mixer units and must be installed on those units. If required, contact your Otterbine distributor to obtain this kit.

**NOTE:** Concrete anchors must be installed on Mixer model.

**F. If required, construct and attach the concrete weights per instructions included in the kit.** Please note that the concrete must be allowed to harden at least 24 hours before being placed in the water.

**G. Adjusting Discharge Angle - Aspirating Model:** The unit can be adjusted to allow a +/- 20 degree tilt in the discharge. To adjust, remove the top bolts securing the power unit to the support frame (one on each side). Loosen the bottom bolts, and move the unit to align the bolts with the desired holes in the support frame. Install the bolts and secure all loosened/removed bolts. **Mixer Model:** The unit can be adjusted to allow a +10 degree tilt in the discharge. To adjust, remove the 3" bolts from the two angle brackets. (Refer to Mixer exploded view diagram). Reinstall the bolts in the desired mounting hole and secure with washer and nut.

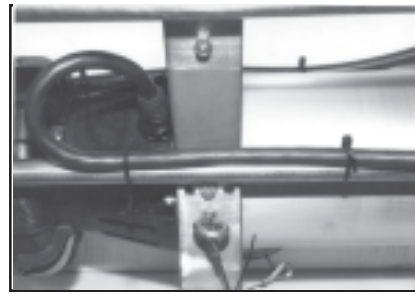
**NOTE:** Due to the extreme amount of water being discharged by the Mixer model, it is highly recommended that the discharge be set at the maximum 10 degrees to prevent erosion in front of the unit.

**WARNING:** Aiming the discharge down toward the bottom may erode the bottom in front of the unit, creating an unstable area, and allow the unit to shift. Otterbine does not recommend pointing the discharge down.

**H. Attach your Otterbine power cable to the aerator.** Align the pigtail connector on the cable up to the pin configuration on the bulkhead connector. **HAND TIGHTEN** the coupling nut onto the bulkhead connector. **DO NOT OVER TIGHTEN-OVER TIGHTENING WILL CAUSE A FRACTURE IN THE CONNECTOR AND COULD RESULT IN A SHORT CIRCUIT.**

**I. Fasten the strain relief to the support frame.**

Using two ty-raps secure the cable to the side of the support frame and place a small loop in the cable between the last ty-rap and the connector. (Refer to Figure 6)



**Figure 6**

**J. Have your electrician perform an on-shore dry-run test:**

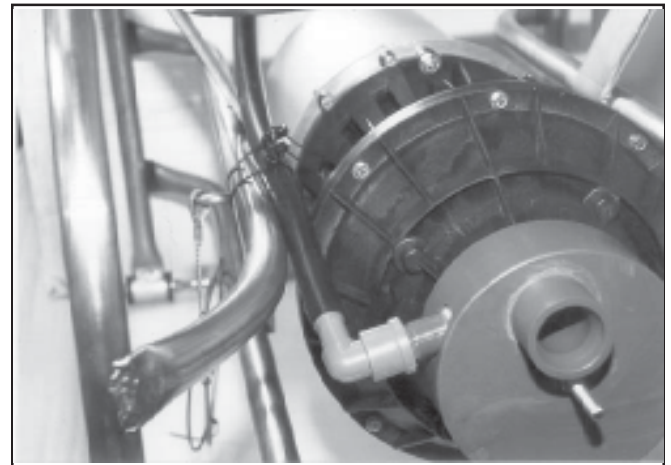
- 1. Check and compare the actual power supply at the site to the information on the aerator's nameplate in regard to: motor voltage, phase, and frequency. IF THIS INFORMATION DOES NOT MATCH, DO NOT OPERATE THE UNIT!**
- 2. With the aerator on dry land, attach the power cable to the aerator and power supply.**
- 3. Turn the handle mechanism on exterior of the power control center to "ON" position.**
- 4. Energize the unit by turning the "Hand, Off/Auto" switch to the "hand" position. Run the unit 2 minutes to break in the seals. DO NOT RUN UNIT FOR MORE THAN 2 MINUTES - MOTOR DAMAGE CAN OCCUR. Check for COUNTER CLOCKWISE rotation at this time.**
- 5. Turn the "Hand/Off/Auto" switch to "Off" and the disconnect switch to "Off".**
- 6. IF Steps 1-5 are successful, you are ready to install the unit in the water. Proceed with following instructions.**

**\*ON MIXER MODELS, STEPS K THROUGH N ARE OMITTED.**

**\*K. Attach the aspirator tubing to the barbed fitting on the venturi assembly. (Refer to figure 7).**

Secure the tubing to the support frame using two ty-raps. Cut the tubing to the desired length, allowing for fluctuations in the water depth. Connect the float/coupling assembly to the other end.

**NOTE:** If the float is not desired, the aspirator tubing can be secured to a rod or stake (Otterbine recommends using a 1.5" PVC pipe) along the edge of the water. The end of the tube must be fasten above the water surface. The muffler can be removed from the float and inserted into the top of the tube. Refer to figure 8.

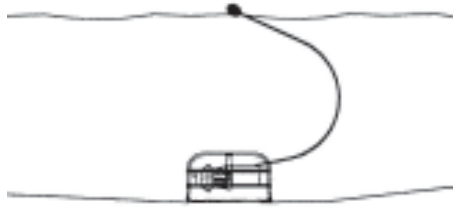


**Figure 7**

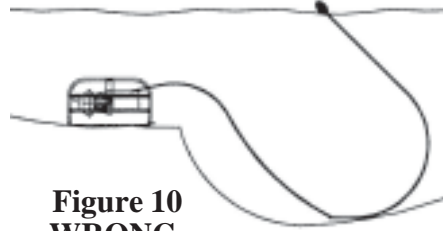


**Figure 8**

**NOTE:** The maximum length of aspirator tubing is 500 feet or 152 meters. The tubing must not be any deeper in the water than the aerator. See figures 9 & 10 below.



**Figure 9  
CORRECT**



**Figure 10  
WRONG**

**L. Place the screen assembly (PART# F-900-004) over the unit.** Pull the mooring cables and the aspirator tubing out through the sides/top of the unit.

**M. Secure the screen to the unit, using the ty-raps provided.** Use eight ty-raps to fasten the screen to the support frame. Place one ty-rap on each corner below the top side support. Use the other four ty-raps, to secure the top of the screen to the support frame at each corner. -Figure 11



**Figure 11**

**N. Use several ty-wraps to secure the bottom of the screen to the barrier and the support rods on all four sides.** Place a ty-rap through each of the holes of the barrier and secure the screen in position. (Refer to Figure 12)



**Figure 12**

**O. Fasten a mooring line to each of the mooring cables.** Use a strong, tight knot.

- 1. Place your Sub-Triton<sub>2</sub> into your previously chosen location.**
- 2. Secure your second and, possible third mooring points to shore (see fig. 4 & 5).**

**NOTE:** Mooring lines on the Mixer model serve as a method to retrieve the unit and are not required to hold the unit in place. On the Mixer model, secure mooring lines to keep them from becoming tangled with the impeller.

**P. Place the unit in the water, lowering the unit slowly to insure that it will rest in the proper position.** Verify the discharge is pointing in the proper direction.

**Q. Secure the mooring lines.**

**R. Energize your unit.**

S. Have your electrician do the following while the unit is in the water under load.

**1 PHASE UNITS:** Record running voltage and running amperage, power control center serial#, and cable length and size (gauge) on the sticker inside the power control panel. Proceed to step T.

**3 PHASE UNITS:** OTTERBINE aerators are designed to run in a COUNTER CLOCKWISE DIRECTION. CURRENT UNBALANCE BETWEEN THE LEGS ON 3 PHASE UNITS SHOULD NOT EXCEED 5%. Steps 1-6 below will help determine current unbalance.



1. **Check the direction of rotation.** Three phase motors can run in either direction depending on how they are connected to the power supply. When the three cable leads are first connected to the power supply, there is a 50% chance that the motor will run in the right direction.

2. **Verify correct motor rotation (Counter Clockwise).** Rotation can be changed by exchanging any two of the three motor leads. **FAILURE TO DO THE ABOVE MAY CAUSE THE MOTOR TO FAIL PREMATURELY. MOTOR FAILURE DUE TO REVERSED POLARITY (ROTATION) WILL NOT BE COVERED UNDER WARRANTY.**

3. **Check current readings in amps on each leg using the three possible hook-ups.** Roll the motor leads across the starter in the same direction to avoid motor reversal. EXAMPLE:

4. **Calculate the percent of current unbalance:**

- Add the three line amp values together.**
- Divide the sum by three,** yielding current average.
- Pick the amp value that is furthest from the average current** (either high or low).
- Determine the difference between this amp value (line C) and the avg. (line B).**
- Divide this difference (line D) by the average (line B).**
- Multiply the result (line E) by 100** to determine percent of unbalance.

5. **Current unbalance should not exceed 5% at the service factor load.** If unbalance cannot be corrected by rolling leads, locate source of unbalance & correct it. IF leg furthest from average stays on the same power lead, THEN the primary cause of unbalance is the power source. IF leg furthest from average moves on each of the hookups with a particular motor lead, THEN the primary cause of unbalance is the "motor side" of starter. Consider: damaged cable, leaking splice, poor connection, or faulty motor as possible causes.

6. **Record running voltage & running amperage, power control center serial #, and cable length and size (gauge) on the sticker inside the power control panel.** Proceed to step T.

T. **Lock your enclosure with a padlock to prevent any type of vandalism.** Set the "hands off" switch located on the outside of your Power Control Center to the ON or AUTO position. The ON position on the switch will let your aerator run continuously. The AUTO position on the switch will allow the automatic timer inside your aerator to operate the unit. See **page 5** for timer operating instructions. Your aerator should be running at this point and installation is complete.

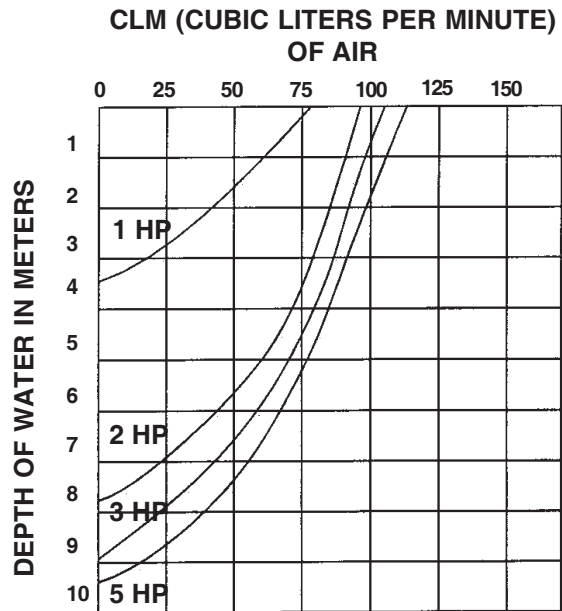
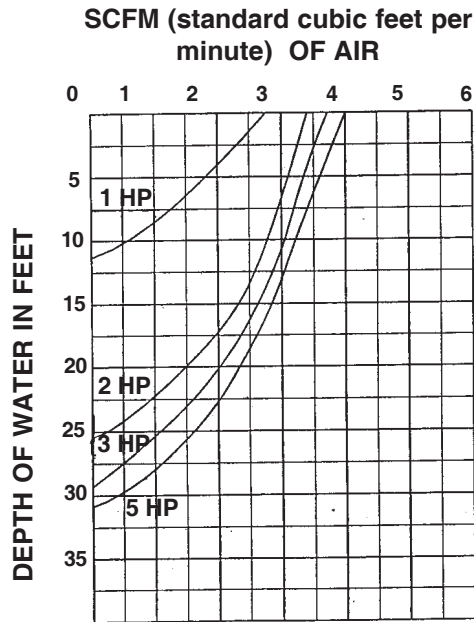
**CAUTION:** The aerator should be allowed to run continuously for 12 hours after installation. This will allow the aerator to properly "break in."

**ATTENTION:** l'aérateur doit être permis de fonctionner continuellement pendant 12 heures après l'installation. Cel permettra a l'aérateur d'être proprement rodé.

## Technical Specifications - Aspirating Model

Model	HP	Voltage and Phase	Motor RPM	Running Amp Draw	**Pond Volume Influenced ft <sup>3</sup>	Min. Depth	Shipping Weight*
<b>100</b>	1	115 1Ph	1725@60Hz	12.6	210,000	2.5'	202 lbs.
	1	208-230 1Ph	1725@60Hz	6.5	210,000	2.5'	202 lbs.
	1	220 1Ph	1425@50Hz	7.3	794,850 liters	80 cm	92 kilos
<b>200</b>	2	208-230 1Ph	1725@60Hz	11.5	420,000	2.5'	202 lbs.
	2	220 1Ph	1425@50Hz	12.0	1,589,700 liters	80 cm	92 kilos
<b>300</b>	3	208-230 1Ph	1725@60Hz	12.5	630,000	2.5'	202 lbs.
	3	220 1Ph	1425@50Hz	14.5	2,384,550 liters	80 cm	92 kilos
	3	208-230 3Ph	1725@60Hz	8.7	630,000	2.5'	205 lbs.
	3	380 3Ph	1680 @60Hz	4.7	610,000	2.5'	205 lbs.
	3	460 3Ph	1725@60Hz	4.1	630,000	2.5'	205 lbs.
<b>500</b>	3	380/415 3Ph	1425@50Hz	4.3	2,384,550 liters	80 cm	93 kilos
	5	208-230 3Ph	1725@60Hz	13.5	1,050,000	2.5'	205 lbs.
	5	380 3Ph	1680 @60Hz	7.5	1,022,000	2.5'	205 lbs.
	5	460 3Ph	1725@60Hz	7.0	1,050,000	2.5'	205 lbs.
	5	380/415 3Ph	1425@50Hz	6.2	3,974,250 liters	80 cm	93 kilos

\*Shipping weight includes unit, 50' or 16.7 meters of cable and power control center. \*\*Pond Volume influenced based from empirical data and may vary due to voltage, elevation, and relative humidity.



## Technical Specifications - Mixer Model

Model	HP	Voltage and Phase	Motor RPM	Running Amp Draw	**Pond Volume Influenced ft <sup>3</sup>	Min. Depth	Shipping Weight*
<b>100</b>	1	115 1Ph	1725@60Hz	12.6	490,000	3'	202 lbs.
	1	208-230 1Ph	1725@60Hz	6.5	490,000	3'	202 lbs.
	1	220 1Ph	1425@50Hz	7.3	1,854,650 liters	1m	92 kilos
<b>200</b>	2	208-230 1Ph	1725@60Hz	11.5	980,000	3'	202 lbs.
	2	220 1Ph	1425@50Hz	12.0	3,709,300 liters	1m	92 kilos
<b>300</b>	3	208-230 1Ph	1725@60Hz	13.7	1,470,000	3'	202 lbs.
	3	220 1Ph	1425@50Hz	12.5	5,563,950 liters	1m	92 kilos
	3	208-230 3Ph	1725@60Hz	8.8	1,470,000	3'	205 lbs.
	3	460 3Ph	1725@60Hz	4.2	1,470,000	3'	205 lbs.
	3	380 3Ph	1680 @60Hz	4.7	1,430,000	3'	205 lbs.
	3	380/415 3Ph	1425@50Hz	4.0	5,563,950 liters	1m	93 kilos

\*Shipping weight includes unit, 50' or 16.7 meters of cable and power control center. \*\*Pond Volume influenced based from empirical data and may vary due to voltage, elevation, and relative humidity.

# Trouble Shooting Guide

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>CORRECTION</u>
1) No bubbles in water discharge (Aspirator model only)	Clogged air hose  Cut or broken hose  Motor running clockwise  Unit too deep	Remove debris  Replace hose  Have electrician switch two wires at starter (3 phase only)  Move unit to shallower water
2) No water discharge	Debris around impeller  Broken impeller	Remove debris  Replace impeller
3) Aerator is wandering	Broken mooring line  Loose mooring line  Unit requires anchors	Replace broken line  Tighten mooring line  Add anchor kit
4) Severe vibration	Broken Impeller	Replace Impeller
5) Motor will not start	Blown fuse/breaker  Relay has tripped  Broken or disconnected wires  GFCI device has tripped  Short in power cable	Check fuses or breaker at P.C.C.  Check if overload relay tripped  Replace or attach loose or broken wires  Reset and test GFCI device. If device trips again call electrician or authorized service center  Check condition of power cable

**NOTE:** Most problems will be found by pulling the aerator out of the water.



**WARNING: DISCONNECT THE UNIT FROM THE POWER SOURCE BEFORE SERVICING THE UNIT!**



# Maintenance

Your Sub-Triton<sub>2</sub> aeration system requires periodic maintenance.

**A. Once a year, disconnect the unit from the power source and physically inspect the aerator and underwater cable for any cuts, cracks, or breaks in the power cable connector.** These may cause oil leaks and/or electrical shorts. Inspect and clean the pumping chamber component.

**B. After every three operating seasons, a simple oil change is necessary to keep your unit running smoothly.** Please contact your local Otterbine distributor to order a maintenance kit, PART #C2-MKIT.

When a unit is properly cared for it will give you years of trouble free service. If any problems arise, please contact your Otterbine distributor or the factory directly at 1-800-AER8TER.



**WARNING: DISCONNECT THE UNIT FROM THE POWER SOURCE BEFORE SERVICING THE UNIT!**



## WARNING:

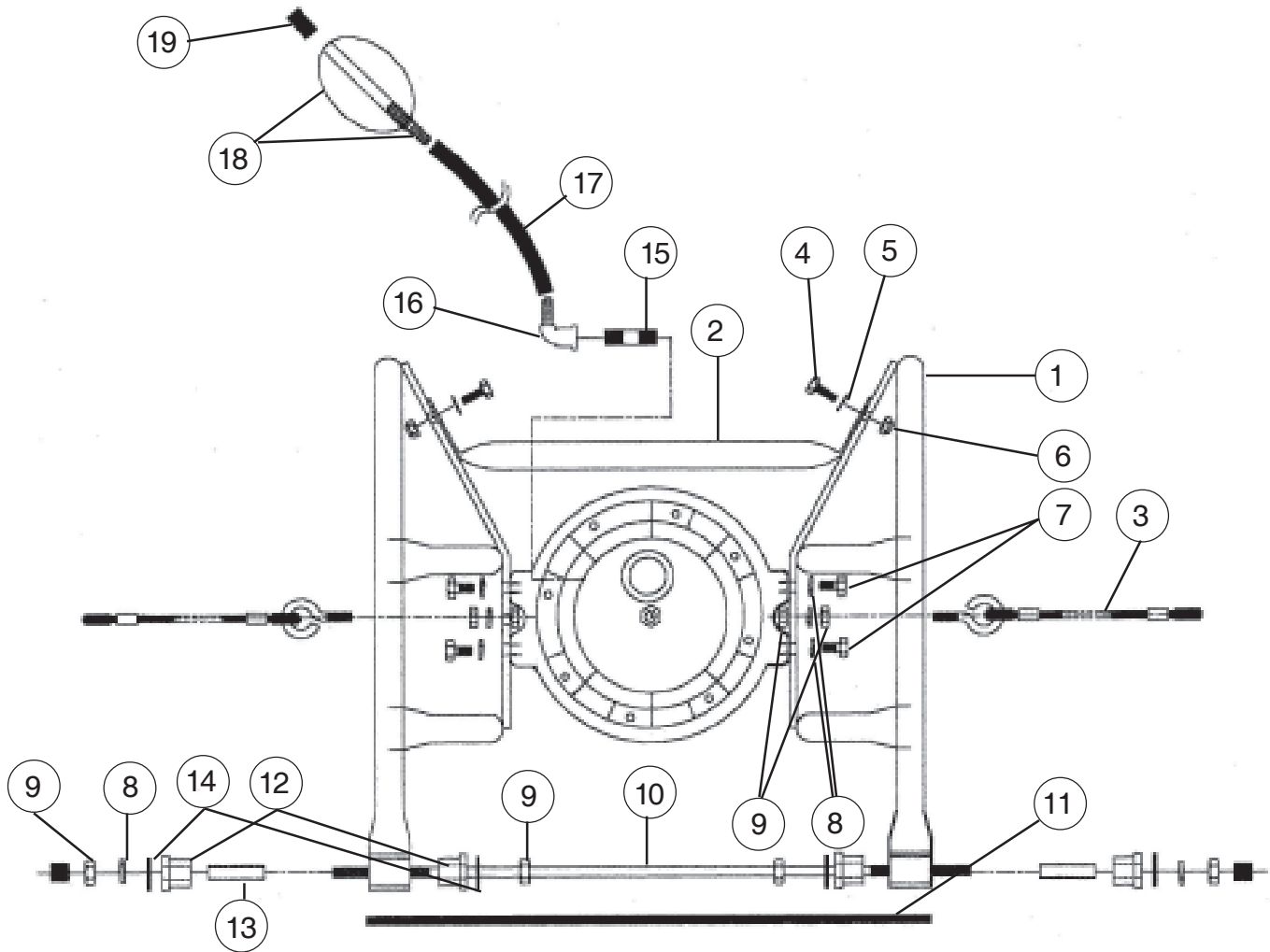
- Before entering, wading in or swimming in the water in which Otterbine Aerators or Fountains are installed, make sure they are **PHYSICALLY** disconnected from their electrical power sources.
- Aerators located in or near garden ponds and similar locations must be equipped with Ground Fault Circuit Interrupter.
- The permissible temperature range for this equipment is -12° to 40° C/10° to 104° F.
- It is possible for the water to become slightly polluted in the rare case that an oil leakage occurs.
- If the power cord is damaged, it must be replaced by a special cord or assembly available from Otterbine/ Barebo, Inc. or an authorized Otterbine/Barebo, Inc. sales and service center.

## ADVERTISSEMENT:

- Les aérateurs situés à courte distance ou proche de piscines, étangs de jardin et semblables endroits doivent être équipés avec un interrupteur avec contrôle de défaut. S'il vous plaît voyez votre distributeur d'Otterbine local pour prix et responsabilité.
- La gamme de température permise pour cet équipement est de -12 à 40C/10 à 104F.
- Si la corde électrique est abîmée, elle doit être remplacée par une corde spéciale ou un assemblage disponible d'Otterbine®/Barebo, Inc. ou par un centre de service de vente autorisé par Otterbine®/Barebo, Inc.
- L'eau pourrait devenir légèrement polluée dans le très rare cas où l'huile fuirait.

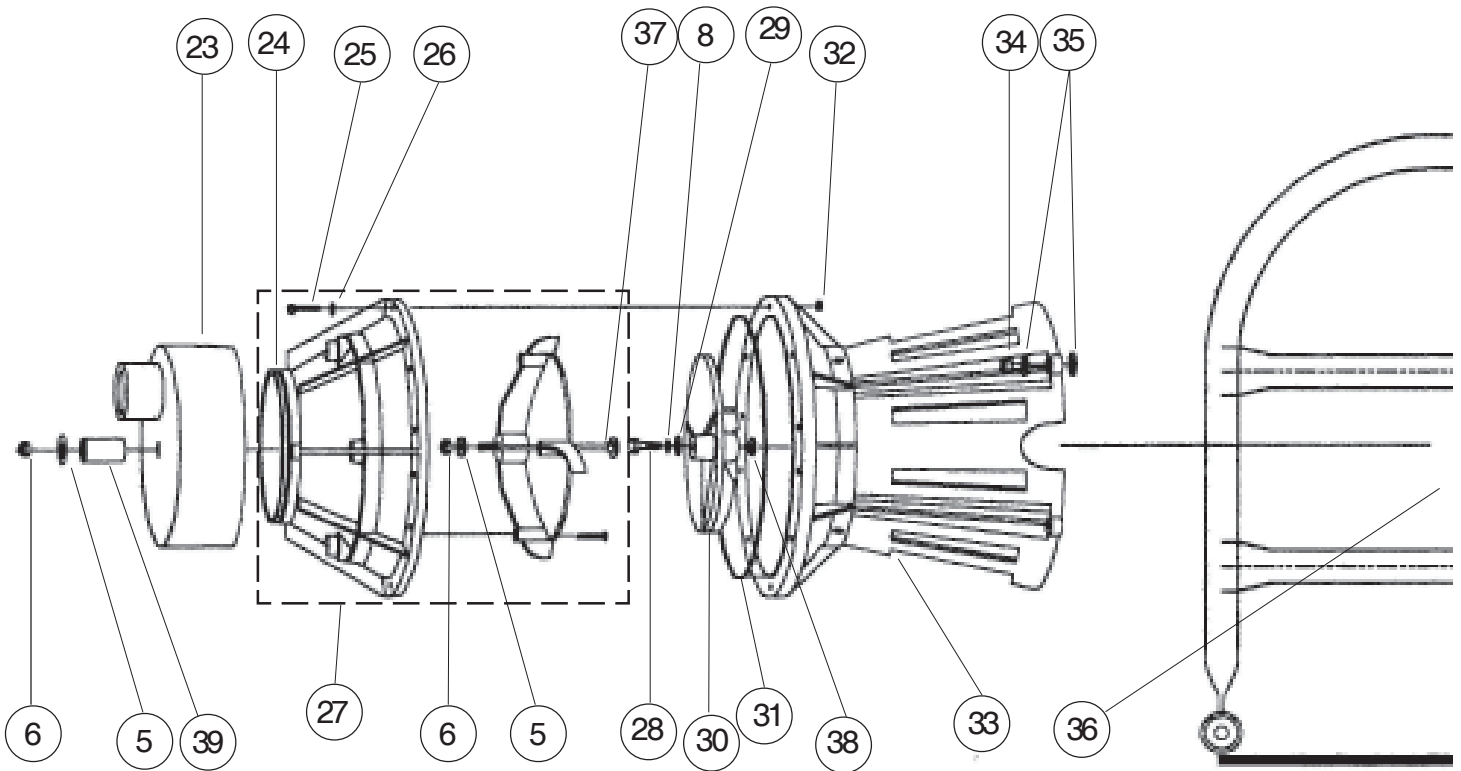


## Sub-Triton<sub>2</sub> Exploded Parts Diagram



Item	Description	Qty.	Part #	Item	Description	Qty.	Part #
1	Support Frame	2	10-0009	18	Float/Coupling Assembly	1(0)	10-0014
2	Support Brace	1	40-0003	19	Muffler	1(0)	46-0005
3	Mooring Cable Assembly	2	10-0010				
4	5/16" Bolt	2	106-302				
5	5/16" Flat washer	4(2)	28-0018	20	Screen Assembly	1	F-900-004
6	5/16"-18 Lock nut	4(2)	GP1208	21	Ty-rop	20	GP5008
7	3/8" Bolt	4	C2-111	22	Concrete weight kit	(0)1*	12-0018
8	3/8" Lock washer	10(12)	EP6301	Note: quantity in "( )" is for Mixer vs. Aspirator. *Part number depends on model and horsepower.			
9	3/8" Hex nut	12(14)	MP2001				
10	Support Rod	2	40-0011				
11	Bottom Barrier	1(0)	41-0004				
		0(1)	41-0005				
12	Bushing	8	41-0002				
13	2" Spacer	4	40-0005				
14	3/8" Fender washer	8(6)	29-0004				
15	Pipe nipple	1(0)	46-0006				
16	Elbow fitting	1(0)	46-0007				
17	Tubing	50(0)	TUBING				

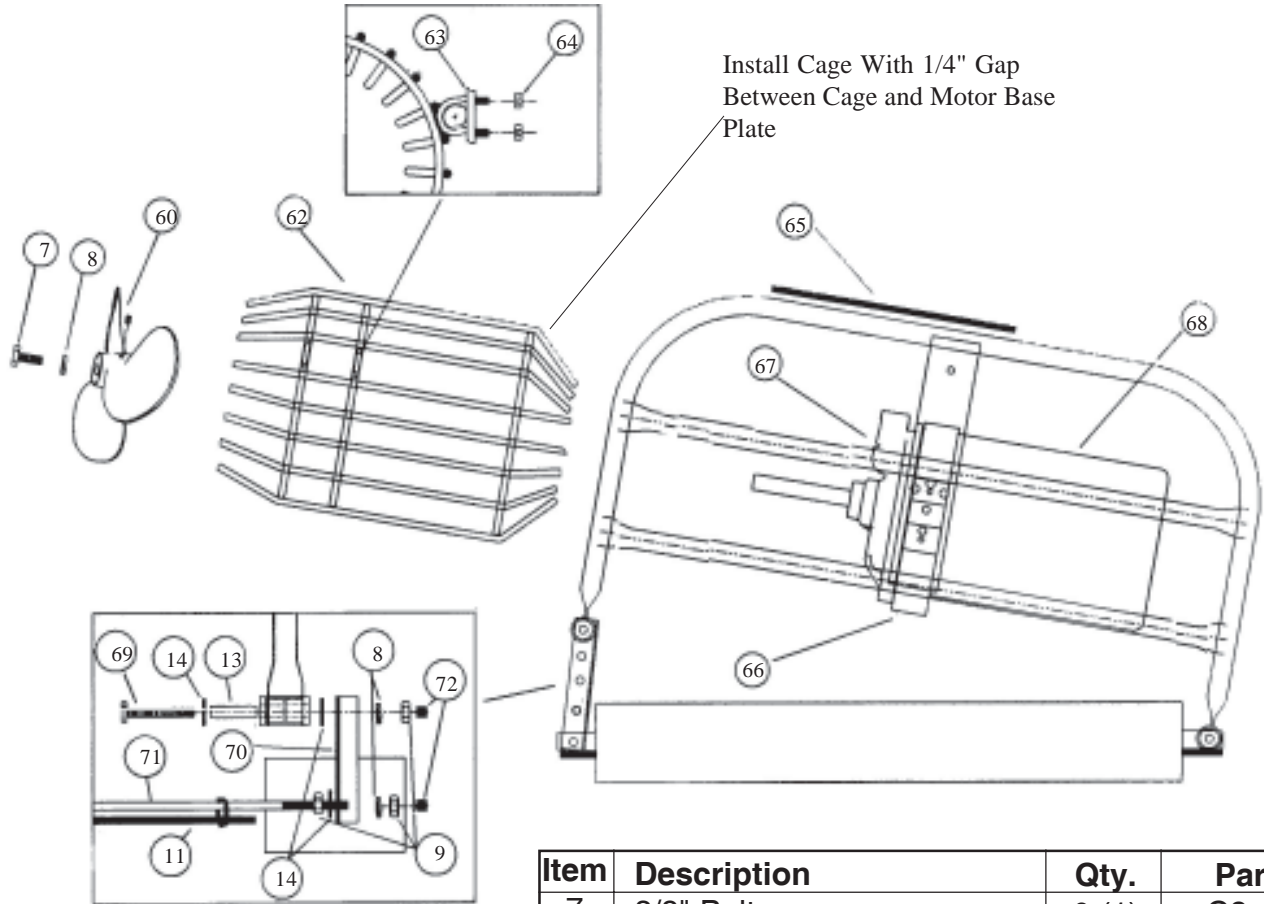
## Sub-Triton<sub>2</sub> Aspirator Pumping Chamber



Item	Description	Qty.	Part #	Item	Description	Qty.	Part #
6	5/16"-18 Lock nut	4(2)	GP1208	31	Pump chamber o-ring	1(0)	C2-706
5	5/16" Flat washer	4(2)	28-0018	32	10-24 Lock nut	8(0)	GP1207
8	3/8" Lock washer	15(14)	EP6301	33	Strainer/lower chamber assy.	1(0)	10-0005
23	Venturi assembly	1(0)	10-0013	34	1/4" Lock nut	4(0)	C2-112
24	Manifold o-ring	1(0)	49-0018	35	1/4" Flat washer	8(0)	927-000
25	10-24x1.25" bolt	8(0)	MP2004	36	Power unit	*	
26	#10 Flat washer	8(0)	GP5011	37	5/16"-18 Carriage bolt	1(0)	C2-140
27	Volute Manifold Assy.	1(0)	10-0006	38	Shim, prop spacer	1(0)	40-0099
28	3/8-16x1.25" Bolt	1(0)	C2-131	39	Spacer, 1.375" long	1(0)	895-0045
29	3/8" Flat washer	1(0)	927-003	Note: quantity in "( )" is for Mixer vs. Aspirator. *Part number depends on model and horsepower.			
30	Impeller, 1HP/60Hz only	1(0)*	C2-811				
	Impeller, 1HP/50Hz only		C2-816				
	Impeller, 2HP/60Hz only		C2-812				
	Imp.,3HP/60Hz or 2HP/50Hz		C2-813				
	Imp.,5HP/60Hz or 3HP/50Hz		C2-815				
	Impeller, 5HP/50Hz only		C2-817				

2/28/00

# Sub-Triton<sub>2</sub> Mixer



**Note:** quantity in "( )" is for Mixer vs. Aspirator.

\* Part number depends on model and horsepower.  
Items 11 and 65 secured using ty-rap P/N BP2874 (not illustrated)

Item	Description	Qty.	Part #
7	3/8" Bolt	0 (1)	C2-111
8	3/8" Lock Washer	10 (13)	EP6301
9	3/8" Hex Nut	12 (14)	MP2001
11	Bottom Barrier	0 (1)	41-0005
13	2" Spacer	4	40-0005
14	3/8" Fender Washer	8 (10)	29-0004
60	Mixer Impeller w/ Set Screw		
*	1HP 60Hz	0 (1)	50-0006-001
*	2HP 60Hz & 1HP 50Hz	0 (1)	50-0006-002
*	3 HP 60 Hz & 2HP 50Hz	0 (1)	50-0006-003
*	3 HP 50 Hz	0 (1)	50-0006-053
62	Protective Cage	0 (1)	C2-340
63	Cage Clamp	0 (4)	C2-345
64	1/4" Lock Nut	4 (8)	C2-112
65	Vortex Plate	0 (1)	41-0006
66	Brass Ring		Reference
67	Motor Base Plate		Reference
68	Power Unit	*	*
69	3/8-16 x 3" Bolt	(2)	22-0004
70	Adjustment Bracket	(2)	C2-350
71	Support Rod	(2)	40-0011
72	Rod End Cap	(4)	46-0012

11/25/02

**Limited 3 year (moving and related parts)**  
**+ 5 year (non-moving parts) Warranty**  
**Otterbine® Product**

**WARRANTY:** Barebo, Inc 3840 Main Road East, Emmaus Pennsylvania 18049, U.S.A. hereby warrants, subject to the conditions hereinbelow set forth, that should the **OTTERBINE** product prove defective by reason of improper workmanship or materials at any time during the warranty period the Purchaser at retail will be guaranteed that **BAREBO** will repair or replace the said **OTTERBINE** product as may be necessary to restore it to satisfactory operating condition, without any charge for materials or labor necessarily incident to such repair or replacement, provided that:

- a) The enclosed Warranty Registration Card should be mailed to **BAREBO** within fifteen (15) days of the original receipt by the Purchaser at retail in order to avoid delays:
- b) The **OTTERBINE** product must be delivered or shipped, prepaid, in its original container or a container offering an equal degree of protection, to **BAREBO** or a facility authorized by **BAREBO** to render the said repair or replacement services or, if purchased from an authorized **OTTERBINE** dealer, to such dealer;
- c) The **OTTERBINE** product must not have been altered, repaired or serviced by anyone other than **BAREBO**, a service facility authorized by **BAREBO** to render such service, or by an authorized **BAREBO** dealer, and the serial number of the **OTTERBINE** product must not have been removed or altered: and
- d) The **OTTERBINE** product must not have been subjected to lightning strikes and other Acts of God, vandalism, freezing-in, accident, misuse or abuse, and must have been installed in conformance with applicable electrical codes (including proper electrical protection), and also installed, operated and maintained in accordance with guidelines in the Owner's Manual shipped with the Otterbine product.

No implied warranties of any kind are made by **BAREBO** in connection with this **OTTERBINE** product, and no other warranties, whether expressed or implied, including implied warranties of merchantability and fitness for a particular purpose, shall apply to this **OTTERBINE** product. Should this **OTTERBINE** product prove defective in workmanship or material, the retail Purchaser's sole remedy shall be repair or replacement as is hereinabove expressly provided and, under no circumstances, shall **BAREBO** be liable for any loss, damage or injury, direct or consequential, arising out of the use of, or inability to use, the **OTTERBINE** product, including but not limited to retail Purchaser's cost, loss of profits, goodwill, damages due to loss of product or interruption of service, or personal injuries to Purchaser or any person.



AERATOR MODEL \_\_\_\_\_

HORSEPOWER \_\_\_\_\_

VOLTAGE \_\_\_\_\_ PHASE \_\_\_\_\_ FREQUENCY \_\_\_\_\_

CORD LENGTH \_\_\_\_\_

UNIT SERIAL NUMBER \_\_\_\_\_

PCC SERIAL NUMBER \_\_\_\_\_

OPTIONS \_\_\_\_\_



## Water Works With Otterbine!

Otterbine Barebo, Inc.  
3840 Main Road East  
Emmaus, PA. 18049  
U.S.A.

[www.otterbine.com](http://www.otterbine.com)  
1-800-AER8TER • (610) 965-6018  
FAX: (610) 965-6050