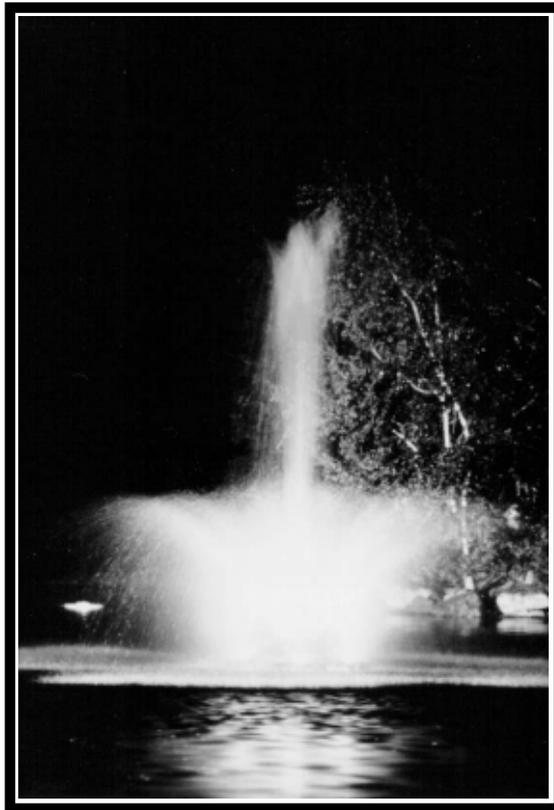




**FOUNTAIN-GLO₂
HIGH VOLTAGE
LIGHTING SYSTEM**

Owner's Manual



Otterbine Barebo, Inc.

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Revised 9/30/02

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.

Fountain Glo₂ Lighting System

Fountain-Glo₂ is Otterbine’s new CAD designed corrosion resistant 115 Volt lighting system. The fixture is manufactured of nickel plated copper and features a 250 or 500 watt halogen bulb. All mounting brackets and hardware are manufactured of stainless steel or naval brass. It is designed for both salt and fresh water use.

SPECIFICATIONS:

Operating Voltage:	110-120VAC 50/60 Hz
Maximum Lamp Wattage:	500W
Amp Draw*:	4.4 A @ 500W per light fixture; 2.2 A @ 250W per lite fixture
Lumens:	5,000 @ 250W; 10,450 @ 500w
Lamp Type:	T-4 Mini Can
Maximum Installation Depth:	3 ft (1 meter)
Cord Length of Light Fixture:	6-8 feet (1.8-2.4 meters)

Note the following maximum cable lengths for the high voltage lights running on 60Hz power:

# of Lights	Amp Draw	Lamp Wattage	12 Gauge max (ft)	10 Gauge max (ft)	8 Gauge max (ft)
2	4.4	250W	350	525	840
3	6.6	250W	250	350	560
4	8.8	250W	175	260	420
5	11.0	250W	150	210	335
2	8.8	500W	175	260	420
3	13.2	500W	110	180	280

***Note:** Each 250W fixture has an amperage draw of 2.2. Total amperage is calculated by multiplying 2.2 times the number of fixtures. (Examples: a (4) lite 250W set draws 8.8 amps and a (3) lite 500W set draws 13.2 amps).

Caution: Only replace 250W lamps with 250W lamps, using 500W lamps in a lite set configured for 250W lamps may cause excessive voltage drop or damage to the lighting system.

WARNING: THIS FIXTURE MUST BE FULLY SUBMERGED AT ALL TIMES WHEN ENERGIZED.

Installation

Unpack and inspect your light system, report any damage to your delivery carrier. Verify you received the following:

1. Light system - verify you received the proper number of lights and the correct lens color(s). Verify the proper length of main power cord is attached to the system.
2. Junction Box Mounting Kit - verify all parts are included in the kit as described on the following pages. There will be one kit per lite set.
3. Light Fixture Mounting Kit - verify all parts are included in each kit as illustrated on the following pages. There must be one mounting kit per light fixture. **Note:** This kit varies depending on the model of the aerator.

The Fountain Glo₂ lite system installation consists of connecting the junction box and fixtures to the aerator and completing the electrical hook up to the control panel.

To install your lighting system, proceed to the proper section in this manual pertaining to your aerator model (Concept₃, Concept₂, 10 HP).

Fountain Glo₂ Junction Box Installation - Concept₂ -

- A.** Place the aerator on a flat surface with the float down. Remove one of the support arms from your aerator by removing the two 1/4" flange nuts (Item A) at the brass mounting ring and the 5/16" bolt, washer and nut (Item B) from the support arm brace. Tip the arm outward. (See Figure 1)
- B.** Slide the junction box under the two remaining support arms and place on the motor housing. It may be necessary to feed one or two of the light housings and cable through the arms above the motor housing.
- C.** Reinstall the support arm removed in step A, by re-attaching it with the two 1/4" flange nuts and the 5/16" bolt, washer and nut.
- D.** Place the Spacer (Item #1) between the junction box and the support arm brace. Secure the junction box to the unit using a M6x12 S/S Hex Bolt (Item #2), a M6 Flat Washer (Item #3) and a M6 Split Lock Washer (Item #4) through the center hole of the support arm brace and spacer, and tighten to the center threaded hole of the junction box.

NOTE: Tighten 5/16" bolts to 15 ft-lbs (20 N-m), 1/4" flange nuts and M6 Screw to 10 ft-lbs (13 N-m).

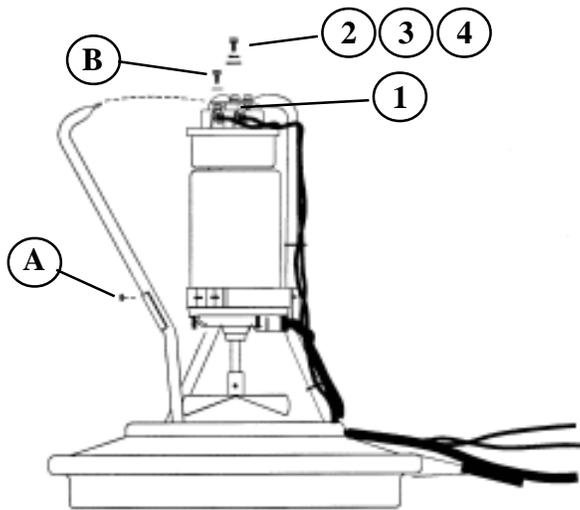


Figure 1

Item No	Description	Qty	Part Number
1*	Plastic Junction Box Spacer	1	41-0134
2*	M6x30 S/S Hex Bolt	1	22-0029
3*	M6 S/S Flat Washer	1	28-0020
4*	M6 S/S Split Lock Washer	1	28-0021

* Junction Box Mounting Hardware Kit, P/N 12-0101

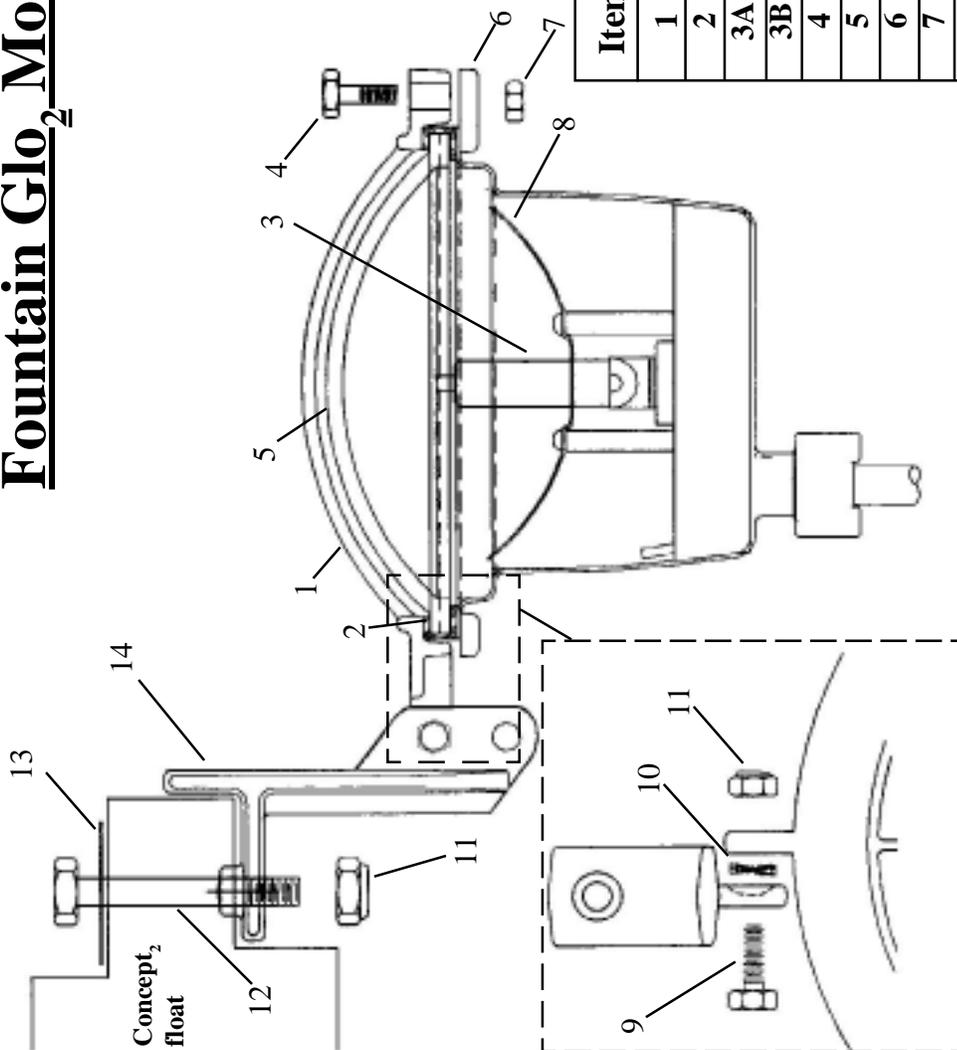
Fountain Glo₂ Light Fixture Installation - Concept₂ -

- A.** Refer to the diagram on the page six (6). Check that all hardware and parts are included with each kit.
- B.** The Concept₂ float has twelve 1/2" holes in the outer rim of the float. The light fixtures are designed to be mounted in any of these holes. The fixture is mounted with the bracket on the underside of the float. Secure each bracket to the float using items 11, 12, and 13. Install it with the float between the flat washer and bracket. Snug nut, overtightening will crush the float.
- C.** Mount each light fixture to a bracket. Look at the bracket, one side of the mounting hole is countersunk. Use this side and place the star washer (Item 10) between the light fixture bezel and the mounting bracket. Slide the bolt (Item 9) the hole and secure using locknut (Item 11). **Be sure that the countersunk hole in the bracket faces the bezel. Secure the bracket.**

Fountain Glo₂ Mounted to a Concept₂ unit

Assembly Notes:

- a. There are two mounting holes located in the light mounting bracket #14. The top hole is the preferred location. When using, it is important that the lite is mounted at an angle that holds the lens under the water surface
- b. Notice that on one side of the light mounting bracket the holes are countersunk. The light must be installed with the countersunk side facing the light bezel. The star washer #9 will only lock the light correctly when it is placed between the two brackets and compressed into the countersunk hole.



Item	Description	Part Number	Qty
1	Rockguard/Bezel	45-0001	1
2	Gasket	49-0001	1
3A	250 watt halogen lamp	31-0005-250	1
3B	500 watt halogen lamp	31-0005-500	1
4	Hex bolt, S/S, 1/4"-20 x 1.25"	101-001	6
5	Lens, Clear	GP5102	1
6	Clamp ring	45-0002	1
7	Hex nut, nylon lock, 1/4"-20	C2-112	6
8	Reflector plate	43-0005	1
9	* Hex bolt, S/S, 5/16"-18 x 1"	MP2008	1
10	* Star washer, external tooth	28-0006	1
11	* 5/16"-18 nylon locknut	GP1208	2
12	** Hex bolt, S/S, 5/16"-18x2.75	101-023	1
13	** Fender washer, S/S, 3/8"	927-009	1
14	* Lite mounting bracket	45-0003	1
	* Ty-rap (not shown)	GP5008	3
	* <i>Include in light kit 12-0095</i>		
	** <i>Included in light kit 12-0096</i>		

Transformer Mounting Hardware Kit GP-120		
Description	Part No.	Quantity
Hex bolt, s/s 5/16-18x3/4"	106-302	1
Int. star washer, s/s, 5/16"	927-005	1
Flat washer, s/s, 5/16"	927-004	1

NOTE: Mount the lights around the float so they are evenly spaced and provide the desired lighting scheme.

D. Each fixture comes with 6-8 feet of cord. This cord is provided to allow removal of the fixture from the float while in the water. To prevent the cord from interfering with the aerator, wrap the excess cord in a small loop and secure the cord to a support arm with the ty-wraps provided. Repeat for each fixture. (See Figure 3)

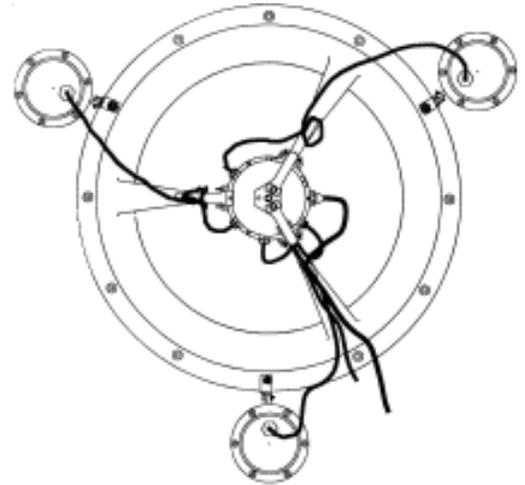


Figure 3

E. Fasten the main aerator power cord to the aerator with the strain-relief and ty-wraps provided. Route the aerator cord and the light power cord along one of the support arms and out from the float. Connect the light power cord strain relief to the unit, through one of the 12 holes on the outer diameter of the float.

F. If present, install the screen assembly.

Fountain Glo₂ Electrical Installation **- Concept₂ -**

ALL ELECTRICAL WORK MUST BE COMPLETED BY A QUALIFIED LICENSED ELECTRICIAN. Make sure that all electrical work conforms with local and national electrical codes for underwater lighting.

CAUTION: Light controls supplied by Otterbine contain GFCI protection; if you have purchased your system without a factory control system, the use of a GFCI is REQUIRED.

WARNING: THIS FIXTURE MUST BE FULLY SUBMERGED AT ALL TIMES WHEN ENERGIZED.

A. Connect the power cable to the power control panel, by referring the schematic supplied with the light set and at the end of this manual.

B. After all electrical connections have been made, place the aerator/fixture in the water and apply power. Position cable to prevent any possible damage. If adjustment of any fixture is required, disconnect power, referring to the illustrated diagram on page 5, loosen items 9 and 11 until the fixture can be adjusted. Angle the light to the desired position and tighten items 9 and 11.

C. In the power control panel, adjust the light timer to operate the lights at the desired time. Refer to the end of this manual for light timer instructions.

Fountain Glo₂ Junction Box Installation - Concept₃ -

- A.** Mount the four brackets (Item #1) to the threaded mounting holes in the junction box lid using a philips panhead screw (Item #3), a flat washer (Item #4), and a split lock washer (Item #5) for each as shown in Figure 4a. NOTE: The power and light cords are not shown in order to simplify the figures.
- B.** Place the band clamp (Item #2) loosely around the brackets as shown in Figure 4a.
- C.** Lay the unit upside down being careful not to damage the top of the pump chamber. Placing blocks or wood under the float will help prevent this damage. NOTE: Pump chamber and float not shown in Figure 4b.
- D.** Place the junction box onto the unit as shown Figure 4b and tighten the band clamp so there is approximately a 1/2 inch gap between the bottom of the motor housing and the top of the junction box.

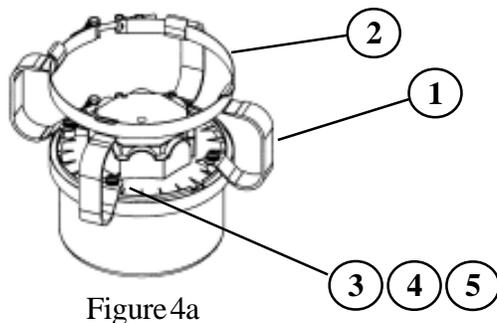


Figure 4a

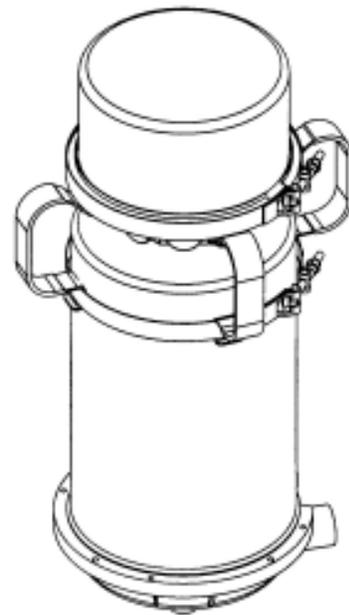


Figure 4b

* Junction Box Mounting Kit, P/N 12-0100

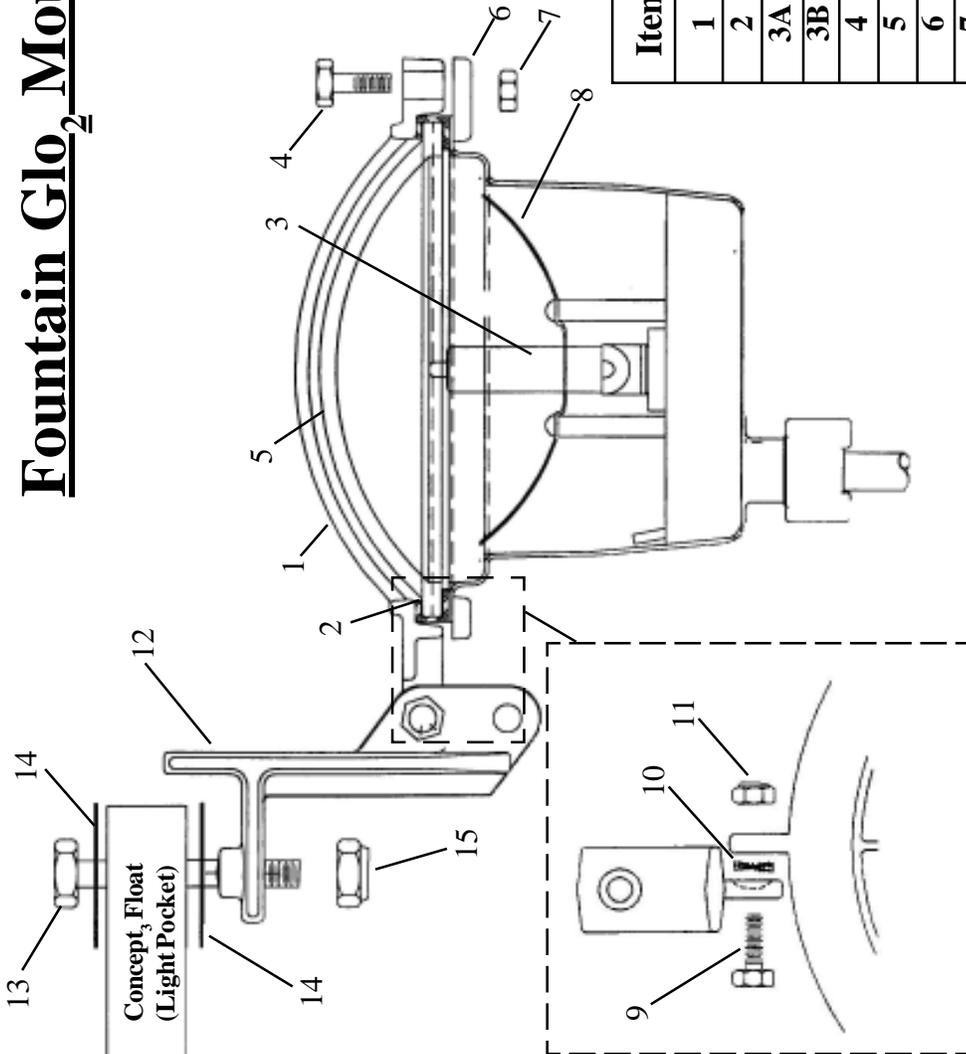
Fountain Glo₂ Light Fixture Installation - Concept₃ -

- A.** Refer to the diagram on the page nine (9). Check that all hardware and parts are included with each kit.
- B.** The Concept₃ float has four pockets with two holes in each pocket. The light fixtures are designed to be mounted in either of these holes. The fixture is mounted with the bracket on the underside of the float. Secure each bracket to the float using items 13, 14, and 15. Install it with the float between the two fender washers. Snug nut, overtightening will crush the float.
- C.** Mount each light fixture to a bracket. Look at the bracket, one side of the mounting hole is countersunk. Use this side and place the star washer (Item 10) between the light fixture bezel and the mounting bracket. Slide the bolt (Item 9) the hole and secure using locknut (Item 11). **Be sure that the countersunk hole in the bracket faces the bezel. Secure the bracket.**
- D.** Repeat for each remaining light fixture.

Fountain Glo₂ Mounted to a Concept₃ unit

Assembly Notes:

- a. There are two mounting holes located in the light mounting bracket #12. The top hole is the preferred location. When using, it is important that the lite is mounted at an angle that holds the lens under the water surface
- b. Notice that on one side of the light mounting bracket the holes are countersunk. The light must be installed with the countersunk side facing the light bezel. The star washer #9 will only lock the light correctly when it is placed between the two brackets and compressed into the countersunk hole.



Item	Description	Part Number	Qty
1	Rockguard/Bezel	45-0001	1
2	Gasket	49-0001	1
3A	250 watt halogen lamp	31-0005-250	1
3B	500 watt halogen lamp	31-0005-500	1
4	Hex bolt, S/S, 1/4"-20 x 1.25"	101-001	6
5	Lens, Clear	GP5102	1
6	Clamp ring	45-0002	1
7	Hex nut, nylon lock, 1/4"-20	C2-112	6
8	Reflector plate	43-0005	1
9	* Hex bolt, S/S, 5/16"-18 x 1"	MP2008	1
10	* Star washer, external tooth	28-0006	1
11	* 5/16"-18 nylon locknut	GP1208	2
12	* Lite mounting bracket	45-0003	1
13	* Hex Bolt, S/S, M8 x 45	22-0022	1
14	* Fender Washer, S/S, 5/16"	28-0008	2
15	* Nylon Locknut, M8	26-0007	1
	* Ty-rap (not shown)	GP5008	3

* Include in light kit 12-0095

E. Each fixture comes with 6-8 feet of cord. This cord is provided to allow removal of the fixture from the float while in the water. To prevent the cord from interfering with the aerator, wrap the excess cord in a small loop and secure to the light bracket with the ty-wraps provided. **Repeat for each fixture.**

F. Secure the main aerator power cord to one of the outer holes on the float with the strain relief and ty-wraps provided. Connect the light power cord to the outer hole on the float opposite the main aerator power cord with the strain relief and ty-raps provided.

G. If present, install the screen assembly.

Fountain Glo₂ Electrical Installation **- Concept₃ -**

ALL ELECTRICAL WORK MUST BE COMPLETED BY A QUALIFIED LICENSED ELECTRICIAN.
Make sure that all electrical work conforms with local and national electrical codes for underwater lighting.

CAUTION: Light controls supplied by Otterbine contain GFCI protection; if you have purchased your system without a factory control system, the use of a **GFCI is REQUIRED.**

WARNING: **THIS FIXTURE MUST BE FULLY SUBMERGED AT ALL TIMES WHEN ENERGIZED.**

A. Connect the power cable to the power control panel, by referring the schematic supplied with the light set and at the end of this manual.

B. After all electrical connections have been made, place the aerator/fixture in the water and apply power. Position cable to prevent any possible damage. If adjustment of any fixture is required, disconnect power, referring to the illustrated diagram on page 9, loosen items 9 and 11 until the fixture can be adjusted. Angle the light to the desired position and tighten items 9 and 11.

C. In the power control panel, adjust the light timer to operate the lights at the desired time. Refer to the end of this manual for light timer instructions.

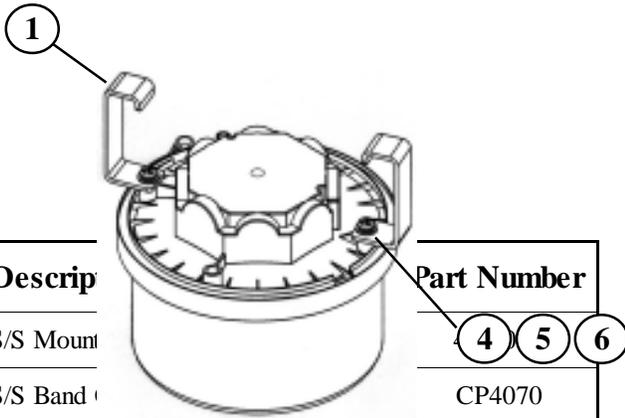
Fountain Glo₂ Junction Box Installation - 10HP Unit -

A. Open all plastic packets and check that all hardware is supplied with your unit.

B. Mount the two brackets (Item #1) to the threaded mounting holes in the junction box lid using a philips panhead screw (Item #4), a flat washer (Item #5), and a split lock washer (Item #6) for each as shown in Figure 6a. The brackets must be positioned as shown in Figure 6a. NOTE: The power and light cords are not shown in order to simplify the figures.

C. Referring to Figure 6b below, place the aerator on a flat surface with the float down. **If a screen assembly option was ordered with your unit install it now.** Assemble two of the larger hose clamps (Item #2) and one of the smaller clamps (Item #3). This large clamp assembly will now fit around the housing of the unit. Repeat for the remaining three hose clamps. Place the clamps over the bottom of the unit and leave loose.

D. Mount the junction box to the unit by sliding the "hook like" turns in each bracket behind the previously installed hose clamps. **Note: Mount the junction box opposite the power connection.** Tighten the fasteners on the clamps to secure.



Item No	Descrip	Part Number
1*	S/S Mount	
2*	S/S Band	CP4070
3*	S/S Band Clamp, Small	MP2100
4*	M6x12 S/S Panhead Screw	24-0019
5*	M6 S/S Flat Washer	28-0020
6*	M6 S/S Split Lock Washer	28-0021

Combine 2 large clamps (Item #2) and 1 small clamp (Item #3) to secure J-box in 2 locations. (2 required)

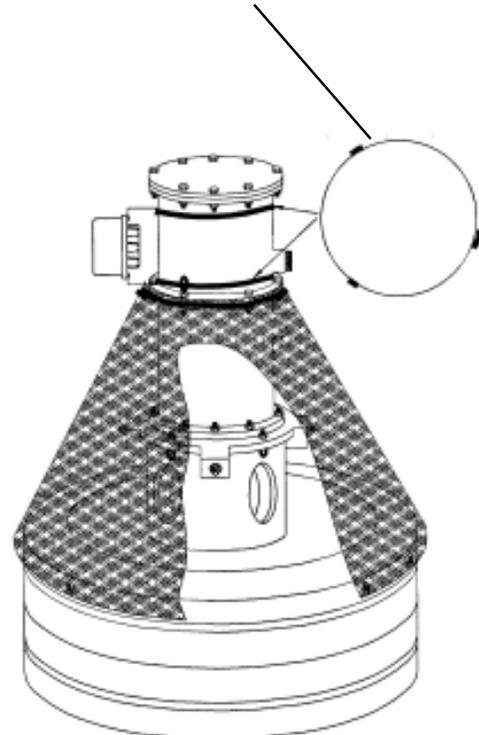


Figure 6b

* Junction Box Mounting Hardware Kit, P/N 12-0102

Fountain Glo₂ Light Fixture Installation - 10HP Unit -

For the following instructions, please refer to the exploded view diagrams of the following page

- A.** One mounting kit is supplied for each light fixture. Verify all parts were shipped with your kit.
- B.** Attach the light bracket (Item 11) to the top float of your unit. Turn the unit over so the unit is setting with the floats up. **Note: It may be easier to attach the brackets if you first remove the float retaining ring and lifting the float off and away from the unit.** Secure the brackets so they are evenly spaced around the float using two self tapping screws (Item 10). If float was removed, it should be installed back on the unit at this time.
- C.** Mount the light fixture to the brackets using hex bolt that is welded to the bracket , star washer (Item 8) and nylon lock nut (Item 9). Adjust fixture to desired angle and secure hardware.

WARNING: The light fixture and bracket assembly must be attached to the top float as shown. It is important that the light bezel is under water during operation.

- D.** Repeat for the remaining light fixtures

NOTE: Mount the lights around the float to provide the desired lighting scheme.

- E.** Each fixture comes with 6-8 feet of cord. This cord is provided to allow removal of the fixture from the float while in the water. To prevent the cord from interfering with the aerator, wrap the excess cord in a small loop and secure the cord to light mounting bracket with the ty-wraps provided. Repeat for each fixture. (See Figure 7)

- F.** Connect the power cable strain relief to the unit, using any of the eyebolts located on the unit.

- G.** It may be necessary to readjust the angle of the light set after the unit has been operational to acheive the desired lighting affect.

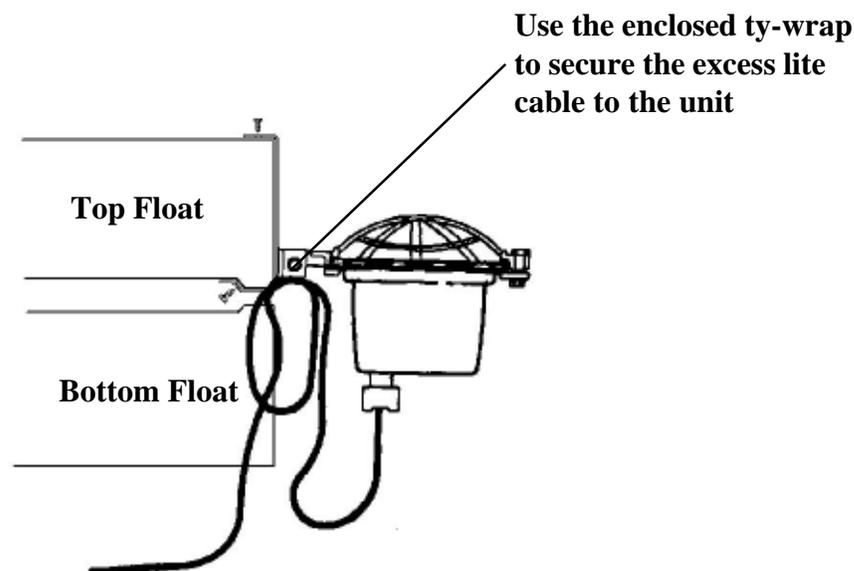
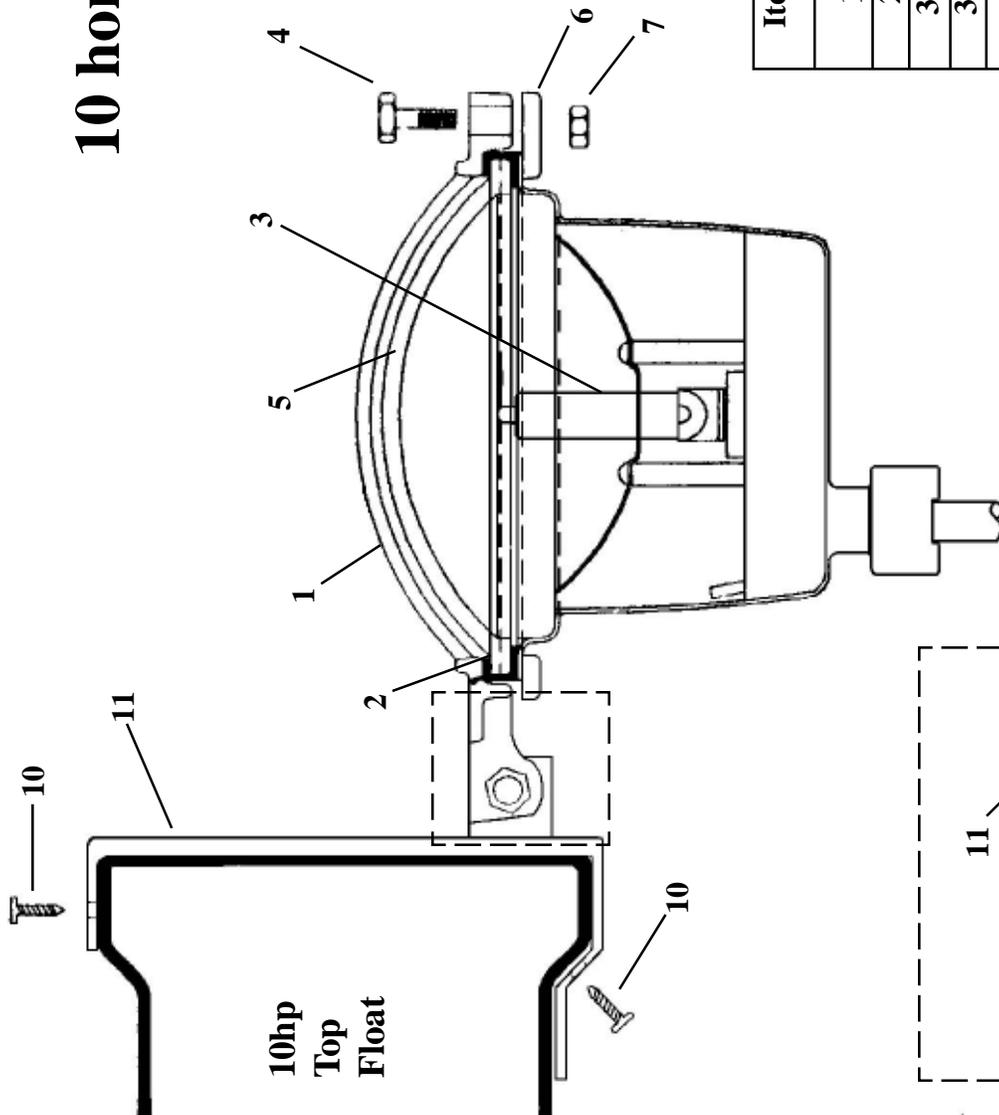
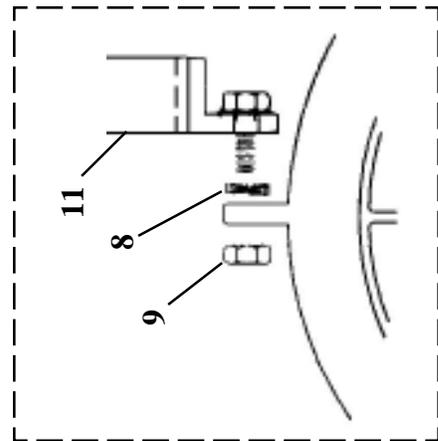


Figure 7

Fountain Glo₂ 10 horsepower configuration



Item	Description	Part #	Qty
1	Rockguard/Bezel	45-0001	1
2	Gasket	49-0001	1
3A	250w halogen lamp	31-0005-250	1
3B	500w halogen lamp	31-0005-500	1
4	Hex bolt, S/S, 1/4"-20 x 1.25"	101-001	6
5	Lens, Clear	GP5102	1
6	Clamp ring	45-0002	1
7	Hex nut, nylon lock, 1/4"-20	C2-112	6
8	* Star washer, S/S	28-0006	1
9	* Nylon locknut, 5/16"18	GP1208	1
10	* Screw, self tapping	BP2803B	2
11	* Lite mounting bracket	40-0007	1
	* Ty-rap (not shown here)	GP5008	3
	* included in mount kit 12-0015		



Fountain Glo₂ Electrical Installation

- 10HP Unit -

ALL ELECTRICAL WORK MUST BE COMPLETED BY A QUALIFIED LICENSED ELECTRICIAN.
Make sure that all electrical work conforms with local and national electrical codes for underwater lighting.

CAUTION: Light controls supplied by Otterbine contain GFCI protection; if you have purchased your system without a factory control system, the use of a GFCI is REQUIRED.

CAUTION: THIS FIXTURE MUST BE FULLY SUBMERGED AT ALL TIMES WHEN ENERGIZED.

NOTE: For 10HP Units, the lights will only turn on if the unit is running (ie-starter engaged) in order to insure that they are fully submerged.

A. Connect the power cable to the power control panel, by referring the schematic supplied in the control panel.

B. After all electrical connections have been made, place the aerator/fixture in the water and apply power. Position cable to prevent any possible damage. If adjustment of any fixture is required, disconnect power, referring to exploded view diagram on the previous page, loosen the nylon lock nut (9) until the fixture can be adjusted. Angle the light to the desired position and tighten.

C. In the power control panel, adjust the light timer to operate the lights at the desired time. Refer to your aerator manual, for timer operation.

Maintenance

Your Otterbine light fixture is designed for years of dependable service. Periodically clean the bezel of any debris and check the cord for any damage.

CAUTION: Always disconnect power from the light when performing maintenance

Light Bulb Replacement

In the event that the light bulb requires replacement, follow these steps.

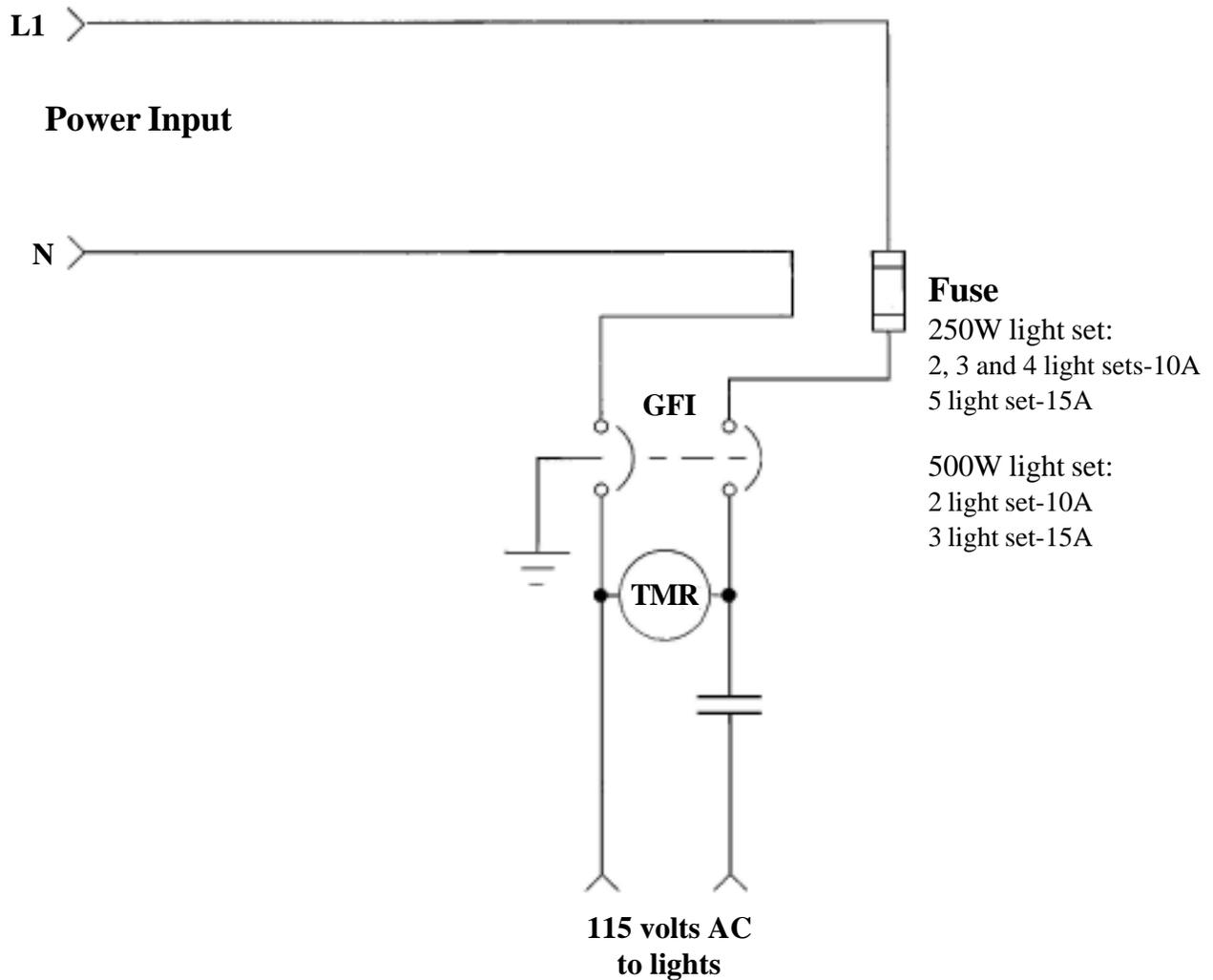
- A. Physically disconnect the power from the unit.**
- B. Remove the fixture from the float and from the water. Dry excess water off of the fixture.**
- C. Remove the bezel and lens from the fixture by removing the 6 bolts (Item 4) and nuts (Item 7) from the light.**
- D. The bulb can now be removed by hand from the fixture by turning counterclockwise. Remove the bulb.**

Note: When installing or inspecting the light bulb use only a clean dry cloth or plastic sheet to touch the bulb. Any finger prints/oil on the glass of the bulb may cause premature failure. Use alcohol and a clean dry cloth to remove and oily deposits from the bulb.

- E. Install the new bulb.**
- F. Remove the gasket from the lens and replace with a new gasket.**
- G. Reinstall the lens/gasket on top of the fixture and place the bezel on top and clamp ring on the bottom. Secure the items together using the 6 bolts and nuts from step C.**

NOTE: ALL BOLTS/NUTS ARE TO BE TIGHTENED TO 20 ft-lbs.

High Voltage Light Option P.C.C. Schematic



Light Timer Instructions

1. Push all of the white trippers inward towards the clock face.
2. Choose the desired on/off times and push all of the trippers out, (away from the clock face), that are between the desired times. Case in point, if you want your lights to come on between 9 PM and 1 AM, push all the trippers between these two points outward away from the clock face.
3. Turn the dial clockwise until the time of day is shown on the timer face, close the panel and apply power. Example, the timer shown is set for 4 PM. In case of power failure, reset the timer.



Limited 1 Year 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.

Reference Information

of Lights: 2 3 4 5

Wattage: 250 500

Sequencer: Yes No

Lights Serial # _____

Power Cord Length _____ **Power Cord Gage** _____

Options:



Water Works With Otterbine!

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